Ahtna Engineering Services, LLC

FINAL

STATE FISCAL YEAR 2019 GROUNDWATER COMPLIANCE AND PERFORMANCE MONITORING REPORT

RIVER TERRACE RV PARK
SOLDOTNA, ALASKA

HAZARD ID: 1535
ADEC FILE NO. 2333.38.014
MAY 2019

ALASKA Department of Environmental Conservation

Prepared For:
Alaska Department of Environmental Conservation
Division of Spill Prevention and Response
555 Cordova Street
Anchorage, Alaska 99501

Prepared By:
Ahtna Engineering Services, LLC
110 West 38th Avenue, Suite 200A
Anchorage, Alaska 99503

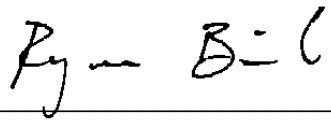
(This Page Intentionally Left Blank)

APPROVAL PAGE

This report on groundwater compliance and performance monitoring at the River Terrace RV Park in Soldotna, Alaska has been prepared for the Alaska Department of Environmental Conservation (ADEC) by Ahtna Engineering Services, LLC, with support from their teaming partners Rescon Alaska, LLC, Geosyntec Consultants, Inc. and Arctic Data Services, LLC.

ADEC Site Name: River Terrace RV Park
ADEC Hazard ID: 1535
ADEC File ID: 2333.38.014

This report was prepared by:



Ryan Burich
Associate Geologist
Rescon Alaska, LLC

and

Andrew Weller, PE,
Environmental Engineer
Ahtna Engineering Services, LLC

This report was reviewed by:

Nate Oberlee
Project Engineer
Rescon Alaska, LLC

TABLE OF CONTENTS

TABLES

APPENDED FIGURES

APPENDICES

ACRONYMS AND ABBREVIATIONS

AAC .....Alaska Administrative Code
ACL.....Alternative Cleanup Levels
ADEC.....Alaska Department of Environmental Conservation
ADOT&PF.....Alaska Department of Transportation and Public Facilities
ADS.....Arctic Data Services, LLC
Ahtna.....Ahtna Engineering Services, LLC
AK.....Alaska
bgs .....below ground surface
cDCE.....cis-1,2-dichloroethene
COC .....contaminants of concern
CSM .....conceptual site model
CV .....coefficient of variation
GCL.....groundwater cleanup level
gc/L .....gene copies per liter
ID .....identification
IDW.....investigation-derived waste
LOD .....limit of detection
LOQ .....limit of quantitation
MCL.....maximum contaminant level
ml .....milliliter
mg/kg .....milligrams per kilogram
mg/L.....milligrams per liter
NRC .....NRC Alaska
OASIS .....OASIS Environmental, Inc.
ORP.....oxidation-reduction potential
PCE .....tetrachloroethene
RCRA.....Resource Conservation and Recovery Act
ROD .....Record of Decision
S .....statistic
SFY .....State Fiscal Year
SGS .....SGS North America
TCE.....trichloroethene
tDCE trans-1,2-dichloroethene
TOC.....total organic carbon
TSDF.....treatment, storage, and disposal facility
USGS .....United States Geological Survey
VC.....vinyl chloride
VI .....vapor intrusion
VOC .....volatile organic compound
µg/L.....micrograms per liter
µg/m^3.....micrograms per cubic meter
1,1-DCE 1,1-dichloroethene

(This Page Intentionally Left Blank)

EXECUTIVE SUMMARY

Ahtna Engineering Services, LLC (Ahtna), in collaboration with teaming partners Rescon Alaska, LLC, (Rescon) Geosyntec Consultants, Inc. and Arctic Data Services, LLC, performed groundwater sampling and monitoring well maintenance at the River Terrace RV Park chlorinated solvent site in Soldotna, Alaska in December 2018. Ahtna performed this work for the Alaska Department of Environmental Conservation (ADEC) under Contract 18-3007-18, Notice-to-Proceed 190000428.

Dry cleaning operations at the site from the 1960s until about 1988 resulted in tetrachloroethene (PCE) releases to surface soils, which led to chlorinated ethene groundwater plumes consisting of PCE and its degradation products trichloroethene (TCE), cis-1,2-dichloroethene (cDCE), trans-1,2-dichloroethene (tDCE), 1,1-dichloroethene (1,1-DCE), and vinyl chloride (VC). Additionally, benzene has been found in onsite groundwater. Investigation and remedial efforts have been performed at the site since the mid-1990s, including source area removal, bioaugmentation using KB-1® *Dehalococcoides* (Dhc) injections, and bio-stimulation using variations of Hydrogen Release Compound® (HRC®). Remedial challenges include delivering substrates into the low hydraulic conductivity glacial till soils found at the site. Ecological receptors, in addition to human receptors) are at risk adjacent to the site because the site is located adjacent to, and is hydraulically connected to the Kenai River.

The purpose of the groundwater sampling was to obtain results from representative site groundwater samples for comparison to current Groundwater Cleanup Levels (GCLs) found in 18 Alaska Administrative Code (AAC) 75.345 Table C and Alternative Cleanup Levels (ACLs) established in the ADEC *Record of Decision (ROD), River Terrace RV Park*, approved on August 31, 2000 and to evaluate the current performance of past bioremediation efforts at the site.

In December 2018, the project team sampled 22 onsite groundwater monitoring wells for volatile organic compounds (VOCs) for comparison to GCLs and ACLs. They also sampled ten of those wells for performance monitoring parameters (including Dhc populations and associated functional genes, volatile fatty acids (VFAs), dissolved gases, total organic carbon (TOC), and total and dissolved iron).

Review of VOC analytical results indicated PCE, TCE, cDCE, tDCE, VC, and benzene were detected in samples from upper plume and lower plume wells at concentrations that exceeded applicable GCLs. Additionally concentrations of PCE, cDCE, DCE, VC, and benzene were present at concentrations above applicable ROD-specified ACLs.

Review of performance monitoring parameters indicated microbial populations and associated functional genes in lower and upper plume groundwater samples ranged in concentrations that are favorable to not favorable for complete dechlorination. Additional parameters observed (VFAs, dissolved gases, TOC, and total and dissolved iron) suggest anaerobic biodegradation is occurring, and subsurface site conditions are likely conducive for reductive dechlorination processes in most of the lower plume and the center of the upper plume.

.

(This Page Intentionally Left Blank)

1.0 INTRODUCTION

Ahtna Engineering Services, LLC (Ahtna) and their teaming partner Rescon Alaska, LLC (Rescon) performed compliance and performance groundwater sampling at the River Terrace RV Park (RTRVP) chlorinated solvent site, herein also referred to as "the site", in Soldotna, Alaska (AK) from December 11th through the 14th in 2018. This work was performed during Alaska State Fiscal Year 2019 (SFY 2019). Ahtna performed this work for the Alaska Department of Environmental Conservation (ADEC) under Contract 18-3007-18, Notice-to-Proceed 190000428, in accordance with the *Groundwater Compliance and Performance Monitoring Plan, River Terrace RV Park, Soldotna, Alaska* (Ahtna, 2018). The RTRVP has an ADEC Hazard Identification (ID) of 1535 and ADEC file number of 2333.38.014. This report describes the site background, field activities, sample results, findings, and recommendations for future site management.

1.1 Project Organization

The ADEC contracted Ahtna to manage and execute this project. The following organizations were involved in this project.

- Third-party environmental consultant: Ahtna Engineering Services, LLC of Fairbanks and Anchorage, AK in collaboration with teaming partners Rescon, Geosyntec Consultants, Inc. of Anchorage and Arctic Data Services (ADS) of Fairbanks.
- Analytical laboratory for groundwater volatile organic compounds (VOCs) analyses: SGS North America of Anchorage (SGS). SGS Anchorage subcontracted analyses of dissolved gases (methane, ethane, ethene) to SGS North America in Orlando, Florida.
- Analytical laboratory for groundwater *Dehalococcoides mccartyii* (Dhc) populations; functional genes: tceA, vcrA, and bvcA; volatile fatty acids (VFAs): lactate, pyruvate, acetate, butyrate and propionate: SiREM of Guelph, Ontario, Canada. SiREM subcontracted TOC and total and dissolved iron analyses to ALS of Waterloo, Ontario, Canada.
- Investigation-derived waste (IDW) manifesting, transportation, and disposal subcontractor: NRC Alaska of Soldotna, AK (NRC).

1.2 Contaminants of Concern

Contaminants of concern (COCs) are based on historic groundwater sampling at the site and include VOCs, specifically tetrachloroethene (PCE) and the associated degradation daughter products trichloroethene (TCE), cis-1,2-dichloroethene (cDCE), trans-1,2-dichloroethene (tDCE), 1,1-dichloroethene (1,1-DCE), and vinyl chloride (VC), as well as benzene.

1.3 Project Objectives

The objectives of the December 2018 compliance and performance groundwater monitoring at the RTRVP were to:

- Quantify current groundwater concentrations of the COCs;

- Assess remedial progress against respective Alternative Cleanup Levels (ACLs) established in the *Record of Decision, River Terrace RV Park* (ADEC, 2000) (ROD) and Groundwater Cleanup Levels (GCLs) found in 18 Alaska Administrative Code (AAC) 75.345 Table C;
- Investigate the down-gradient groundwater for evidence of offsite contaminant migration;
- Determine if additional treatment is necessary; and
- Develop a plan and schedule for subsequent treatment (if necessary) and continued monitoring events.

1.4 Scope of Work

The project team completed the following scope of work while performing fieldwork and finalizing this groundwater monitoring report.

- Sample 22 groundwater monitoring wells for water quality parameters and VOCs.
- Sample 10 of the 22 groundwater monitoring wells for analysis of: Dhc populations; tceA, vcrA, and bvcA functional genes; lactate, pyruvate, acetate, butyrate and propionate VFAs; TOC; and total and dissolved iron.
- Inspect and document monitoring well and well monument conditions, and perform repairs as needed.
- Generate a report presenting field observations, findings, analytical results, figures, conclusions, and recommendations.
- Determine scope of continued compliance monitoring and additional treatment, based on findings, and update schedule.

1.5 Regulatory Framework

The regulatory framework for this project was developed by consideration of the following regulations and guidance documents.

- *Record of Decision, River Terrace RV Park*, approved on August 31, 2000.
- 18 AAC 75, Oil and Other Hazardous Substances Pollution Control, revised as of October 27, 2018.
- *Guidance on Developing Conceptual Site Models*, ADEC Division of Spill Prevention and Response, Contaminated Sites Program, January 2017.
- *Site Characterization Work Plan and Reporting Guidance for Investigation of Contaminated Sites*, ADEC Division of Spill Prevention and Response, Contaminated Sites Program, March 7, 2017.
- *Field Sampling Guidance*, ADEC Division of Spill Prevention and Response, Contaminated Sites Program, August 2017.
- *Environmental Molecular Diagnostics*, Interstate Technology & Regulatory Council (ITRC), April 2013.

Table 1 shows ACLs listed in the ROD and GCLs listed in 18 AAC 75.345, Table C for site COCs.

TABLE 1: GROUNDWATER CLEANUP LEVELS AND ALTERNATIVE CLEANUP LEVELS

Compound	Table C GCLs (µg/L)	ROD ACLs (µg/L) On - Property Shallow Unconfined Aquifer	ROD GCLs (µg/L) Off-Property Shallow Unconfined Aquifer	ROD GCLs (µg/L) On-Property Deep Confined Aquifer
	18 AAC 75 (October 2018)	1997 ADEC Risk Evaluation and Letter	"the ten times rule" 18 AAC 75 (January 1999)	18 AAC 80 MCL (October 1999)
PCE	41	840	50	5
TCE	2.8	21,900	50	5
cDCE	36	11,600	700	70
tDCE	360	11,600	1,000	100
1,1-DCE	280	7	70	7
Vinyl Chloride	0.19	2	20	2
Benzene	4.6	50	50	5

ACL = Alternative Cleanup Level
GCL = Groundwater Cleanup Level
MCL = Maximum Contaminant Level
PCE = tetrachloroethene
TCE = trichloroethene
cDCE = cis-1,2-dichloroethene
tDCE = trans-1,2-dichloroethene
1,1-DCE = 1,1-dichloroethene
ROD = Record of Decision
µg/L = micrograms per liter

(This Page Intentionally Left Blank)

2.0 BACKGROUND

This section describes the site location, environmental setting, and environmental investigation history. Since 2000, multiple reports documenting the history of the RTRVP site and detailing remediation operations have been submitted to ADEC. To expedite review of this document and prevent excessive redundancy, relevant documentation will be referenced as appropriate. See ERM Alaska's *Final October 2016 Groundwater Monitoring Report* for greater detail (ERM, 2017).

2.1 Location

The RTRVP comprises three parcels on approximately 10 acres adjacent to the Kenai River in Soldotna (Figure 1). The eastern portion of the site is a residential trailer court. The western portion is used as a recreational vehicle camping site, and contains a building housing a coin-operated laundry and fish packing service for recreational fishermen.

2.2 Hydrology

Most of the groundwater on the Kenai Peninsula is located within unconsolidated deposits of glacial outwash, fluvial, and eolian (wind-blown) sediments. At the RTRVP site, three aquifers (water-bearing) zones are present: 1) upper aquifer, which is unconfined and the shallowest hydrogeologic unit, 2) semi-confined water-bearing zones lying below the upper aquifer; and 3) lower confined aquifer. Refer to Appendix A which contains Figure 2 from the *October 2016 Groundwater Monitoring Report, River Terrace RV Park, Soldotna, AK* (ERM, 2017) for a graphical interpretation of the site aquifers and their flow directions and gradients as measured in April 2013.

The upper unconfined aquifer at the RTRVP site is separated from the lower confined aquifer by a dense silty till that acts as a semi-confining unit. The semi-confined water-bearing zone consists of glaciofluvial sand lenses within the silty till unit. The upper aquifer consists of fill or alluvium (consisting of silty sand and gravel material) overlying the till unit. The upper aquifer is recharged during precipitation events and snowmelt. The confined aquifer also provides a component of recharge through flow of groundwater up through the semi-confining zone. An elevated ridge in the top of the till surface runs east-west across the site passing through the former dry cleaner building and divides the unconfined aquifer into two separate units. The northern unconfined unit flows generally to the north-northwest towards the Sterling Highway. A storm drain system installed by the Alaska Department of Transportation and Public Facilities (ADOT&PF) intercepts groundwater flow at the Sterling Highway and discharges it to the Kenai River at the Kenai River Bridge Outfall. The southern unconfined unit flows generally south toward the Kenai River. Flow gradients are generally higher when the Kenai River is at lower stages, which occur during the winter.

The semi-confining unit underlies the upper aquifer at varying depths across the site from less than five feet below ground surface (bgs) to greater than 20 feet bgs. ADOT&PF Kenai River bridge foundation investigations adjacent to the RTRVP site indicate that this confining layer extends to depths ranging from 81 feet bgs (ADOT&PF, 1997) to 95 feet bgs (ADOT&PF, 1963) where the lower confined aquifer is encountered.

The lower confined aquifer serves as a drinking water source for the RTRVP property's water wells as well as other private entities. Two test wells drilled at the site of the Kenai River Bridge by ADOT&PF in 1963 tapped into the confined aquifer exhibiting flowing artesian groundwater at a rate of approximately 50 gpm out of a three inch pipe and a static hydraulic head of 18 feet above ground surface (ADOT&PF, 1963). This data demonstrates an upward vertical hydraulic gradient between the confined aquifer and the shallow upper unconfined aquifer. Communication between the lower confined aquifer and shallower aquifers has not been evaluated due to insufficient data.

2.3 History

A dry cleaning business operated in the existing fish processing building from the 1960's until about 1988. Environmental studies began at the site with the discovery of 22 drums and observations of stained soils in 1992. Several soil and groundwater investigations occurred between 1995 and 1999 and a detailed remedial investigation/feasibility study was performed in 1999-2000 (OASIS/Bristol, 2000a). The dry-cleaning solvent PCE and its degradation daughter compounds TCE; tDCE; cDCE; 1,1-DCE, and VC were detected in the soil at the site. It was determined that PCE was the released contaminant. PCE and its degradation compounds were also detected in the groundwater on the RTRVP property and adjacent ADOT&PF Sterling Highway Right-of-Way. In addition, the contaminants were also detected in the surface water of a storm water outfall discharging to the the Kenai River, and in the riverbank sediments adjacent to the site.

The groundwater monitoring data collected during the early monitoring efforts indicated that three distinct groundwater contaminant plumes existed at the site. They were identified as follows:

- The upper (northern) contaminant plume located near the former dry cleaners building and migrating toward the Sterling Highway,
- The lower (southern) contaminant plume located south of the former dry cleaners building and migrating toward the Kenai River, and
- The semi-confined water-bearing zones located below the lower contaminant plume in the vicinity of MW-44 and MW-47 (note that the semi-confined water-bearing zones are believed to be a series of disconnected or partially connected sand stringers within the till).

2.3.1 Record of Decision

A ROD was completed for the site in 2000 (ADEC, 2000) that outlined the cleanup levels applicable to the RTRVP site. Guidance for the application of the surface water cleanup levels provided in the ROD is summarized below.

- Several of the monitoring wells adjacent to the Kenai River (MW- 27A, MW-20, MW-13, MW-12, MW-8, MW-7, MW-6 (currently MW-6A), MW-5, and MW-35) were designated as sentry wells to be used to determine compliance with surface water cleanup levels. Some of these wells have since been decommissioned.
- Modeling was used to determine that a concentration of 15 micrograms per liter (µg/L) PCE in the sentry wells should achieve the 5 µg/L surface water cleanup level at the

groundwater/surface water interface. Based on that model, values of three times the water quality criteria were established as the cleanup levels for the sentry wells.

In addition to the above referenced cleanup levels, the ROD established action levels for treatment. Action levels are contaminant concentrations that trigger the need for additional remedial treatment. For groundwater, the action levels were set at the respective cleanup levels.

The Selected Remedy in the ROD was a phased approach of injections of Hydrogen Release Compound® (HRC®) to enhance biological treatment of the groundwater contaminant plumes in conjunction with periodic monitoring to track the remedial progress.

2.3.2 Remediation Implemented To-Date

The first two phases of the HRC® remediation were performed in the fall of 2000 and the spring of 2001, respectively. A comprehensive report discussing the effectiveness of the Phase I and Phase II remediation efforts and recommendations for future phases of remediation was produced by OASIS/Bristol in June 2002 (OASIS/Bristol, 2002b).

On October 25, 2002, a bioaugmentation pilot test was initiated in the Lower Plume at RTRVP. The goal of the pilot test was to evaluate whether bioaugmentation could facilitate degradation of cDCE, the degradation product where bioremediation had stalled following the previous HRC® injections.

Four more HRC® injections were performed between 2003 and 2010, with the overall objective to continue mediating reductive dechlorination in the groundwater plumes. In addition, subsequent amendments of HRC PRIMER®, a less viscous composition of the HRC® solution, were injected in 2011 and 2012.

2.3.3 Joint United States Geological Survey / ADEC Project Evaluating Biodegradation Potential

In fall of 2003, the United States Geological Survey (USGS) and the ADEC initiated a joint project to evaluate the biodegradation potential at RTRVP. The goal of the project was to determine the best way to accelerate bioremediation (specifically of cDCE) at the RTRVP site. Results of the geochemical parameter measurements and soil and sediment sample collection are provided in the 2005 report, *Chloroethene Biodegradation Potential in the "Lower" Contaminant Plume, River Terrace RV Park, Soldotna, Alaska* (Bradley and Chapelle, 2005).

In the report, USGS reached the following conclusions:

- The RTRVP background sediments were predominantly oxic. Within the lower contaminant plume, sediment redox conditions were dominated by manganese (Mn [IV])-reduction and iron (Fe [III])-reduction with significant methanogenic conditions observed only in HRC®-treated areas.
- The addition of HRC® or another suitable electron donor appears to be necessary to stimulate reductive dechlorination of PCE and TCE at RTRVP. However, adding electron donor to

microcosm samples with a history of electron donor addition in the field did not enhance reductive dechlorination.

- Due to interspecies hydrogen competition, only limited respiratory reductive dechlorination of cDCE and VC is occurring at RTRVP. However, aerobic and anaerobic oxidation of cDCE and VC to carbon dioxide occurs in both RTRVP aquifer soils and Kenai River sediments. Therefore, a remediation assessment based only on the presence of reduced daughter products (VC and ethene) may underestimate the potential for DCE and VC degradation at RTRVP, and the total chlorinated ethene concentration should also be monitored to determine if it is declining.
- The effectiveness of KB-1®, a culture of dechlorinating microorganisms, at increasing reductive dechlorination of cDCE, was inconclusive.
- Future electron donor addition should be restricted to upgradient, predominantly PCE/TCE contaminated areas (including source areas), allowing the cDCE and VC to mineralize to carbon dioxide in the downgradient areas of the site.

2.3.4 Long-Term Monitoring Scope

The ROD selected two types of monitoring programs for the site to track the remedial progress, consisting of:

- Long-term compliance monitoring, which is foreseen for the duration of the RTRVP remediation program, will be used to evaluate compliance with cleanup levels, and
- Long-term performance monitoring of the remedial system (or natural attenuation, after active remediation has ceased).

The annual compliance monitoring program was initiated in 2008. The long–term performance monitoring, conducted from 2003 to 2014 was used to determine the efficacy of the HRC® injections as a viable remedial option and to assess the effects of the bioaugmentation agent KB-1® at RTRVP.

3.0 FIELD ACTIVITIES

This section describes the field activities performed in December 2018. Ryan Burich, of Rescon, a geologist and "qualified environmental professional" in accordance with 18 AAC 75.333 and Felipe Restrepo, of Ahtna, an environmental scientist and "qualified sampler" in accordance with 18 AAC 75.333 performed the fieldwork. A photographic log is shown in Appendix B. Field notes and data sheets are provided in Appendix C.

3.1 Groundwater Monitoring Well Gauging and Maintenance

The project team mobilized out of Anchorage and arrived at RTRVP in Soldotna, AK on December 11th , 2018. They met with the property owner, Gary Hinkle, and established a Central Accumulation Area (CAA) for the storage of IDW. They initially removed snow and ice from all site groundwater monitoring wells and opened the well covers for well identification. The team used a Solinst Model 122 water level indicator to check the depths-to-water at each well and ensure the wells were suitable for sampling. The team donned fresh pairs of nitrile gloves and decontaminated the water level indicator prior to gauging each well. Water level meter decontamination consisted of scrubbing with brushes using an Alconox® solution, a potable water rinse, a distilled water rinse, and drying with a paper towel.

The team performed minor well maintenance including replacing stainless-steel well cover bolts as needed and replacing compression caps on the following five monitoring wells: MW-16, MW-23, MW-38, MW-42, and MW-44.

3.2 Groundwater Monitoring Well Sampling

The field team performed groundwater sampling from December 12th – 14th, 2018. They used a low flow purging and sampling technique using a stainless-steel submersible pump, or peristaltic pump if well recharge was low, with Teflon®-lined tubing. The team purged and sampled monitoring wells in order from most highly contaminated to lowest expected amount of contamination.

The project team's process for purging and sampling was as follows:

- Don a new pair of nitrile gloves and ensure equipment was previously decontaminated.
- Measure initial depth-to-water using a Solinst Model 122 water level meter and remove the meter.
- Measure initial dissolved oxygen (DO) in situ using a YSI ProODO® luminescent DO meter lowered to approximately 0.5 feet from the base of the well and remove the meter.
- Connect Teflon®-lined tubing to a SS Monsoon® stainless-steel submersible pump and lower it to the bottom of the well. Pull it up so that the pump base was approximately 0.5 feet from the base of the well.
- Connect the other end of the Teflon®-lined tubing to a YSI 556® flow-through cell and begin purging at rate between 0.1 and 0.5 liters per minute, as measured using a graduated cylinder and watch. Place the flow-through cell discharge into a plastic bucket to contain all purge water.

- Record the depth to water and water quality parameters every three to five minutes until four of the five below parameters reach stability, based on the following criteria:
    - pH is stable within 0.1 pH units;
    - Temperature is stable within 0.2 degrees Celsius (˚C);
    - Conductivity is stable within 3%;
    - Oxidation-reduction potential (ORP) is stable within 10 millivolts (mV); or
    - DO in milligrams per liter (mg/L) is stable within 10%.
- Well MW-12 was low yield and was purged dry. The project team waited for approximately one hour, and the water level returned to at least 80% of the initial column height prior to sampling.
- Disconnect the Teflon®-lined tubing from the flow-through cell and fill three, 40-milliliter (mL) amber vials pre-preserved with hydrochloric acid (HCl) for VOCs analysis by SW8260C. The project team took care to minimize the occurrence of air entrainment in the VOCs vials by sampling at a low pumping rate; however, some air bubbles in the sample containers were unavoidable. See the quality assurance review for affected samples and the affects on data quality.
- For wells planned to be sampled for performance monitoring, the field team filled sample containers for additional analyses in the following order:
    - Three, 40-ml amber vials pre-preserved with HCl for dissolved gas analysis by RSK 175;
    - One, 40-ml amber vial for VFAs by customized ion chromatography;
    - One, 1-liter (L) HDPE bottle for Gene-Trac® Dhc and functional genes by quantitative polymerase chain reaction (qPCR);
    - One, 125-ml amber bottle pre-preserved with HCl for TOC analysis by SW9060A;
    - One, 125-ml HDPE bottle pre-preserved with nitric acid (HNO_3) for total iron analysis by SW6020A; and
    - The field team filtered water using a 0.45 micron filter into one, 125-ml HDPE bottle pre-preserved with HNO_3 for dissolved iron analysis by SW6020A.
- Samples were maintained at a temperatures between 0 and 4˚C using gel ice and coolers. The VFAs and Gene-Trac® analyses required lower sample storage temperatures than the ADEC-specified temperature requirement of 0-6˚C.
- They lowered the YSI ProODO® luminescent DO meter to approximately 0.5 feet from the base of the well to obtain a post-purge DO measurement.
- Decontaminate the DO meter, downhole pump, and water level indicator by scrubbing with an Alconox® solution, rinsing with potable water, rinsing with distilled water, and drying with paper towels. All decontamination water, paper towels, used Teflon®-lined tubing, and nitrile gloves were containerized and placed in the CAA for management as hazardous waste.
- Replace the well cap and cover.

Table 2 shows the monitoring wells that were sampled.

TABLE 2: GROUNDWATER MONITORING WELLS SAMPLED IN DECEMBER 2018

Well	Plume	VOCs (Compliance)	Geochemical / Microbial (Performance)
MW-16	Upper Plume	X	
MW-23		X	
MW-25		X	X
MW-38		X	X
MW-42		X	X
MW-09	Lower Plume	X	
MW-39		X	
MW-40		X	
MW-44		X	
MW-47		X	X
MW-48		X	X
MW-49		X	X
MW-50		X	X
MW-51		X	X
MW-52		X	
L-78		X	X
L-80A		X	
L103		X	X
MW-6A	Near River	X	
MW-7		X	
MW-12		X	
MW-35		X	

VOCs = volatile organic compounds

The project team collected field quality control samples. They collected field duplicates at a 10% rate for all analyses, submitted blind to the laboratory. They collected extra volume for site-specific matrix spike and matrix spike duplicate (MS/MSD) samples for all analyses at a 5% rate. They collected an equipment blank each sampling day by pumping distilled water into sample vials for VOCs analysis. A trip blank was in the cooler accompanying the VOCs samples. A temperature blank was used in each cooler.

The field team delivered the sample cooler containing VOCs and dissolved gases samples to SGS Anchorage. SGS Anchorage logged in the samples and then shipped the dissolved gases samples to SGS Orlando for analysis. The field team shipped the remaining sample coolers to SiREM laboratory in Guelph, Ontario via FedEx priority overnight option. SiREM logged the samples for Gene-Trac® Dhc, VFAs, TOC, and total and dissolved iron. SiREM shipped the TOC and total and dissolved iron samples to ALS Waterloo for analyses. Transfer-of-custody protocol was followed during the course of the samples' travels.

3.3 Investigation Derived Waste Management

The RTRVP has a Resource Conservation and Recovery Act (RCRA) ID of AKR000002790. The ADEC project manager updated its hazardous waste generator status to Small Quantity Generator in Fall 2018, where it may generate up to 1,000 kilograms (2,200 pounds) of hazardous waste per month and hazardous waste may be stored up to 270 days onsite, among other requirements. Waste

streams generated as part of this project may be classified as waste code D043 for VC or F002 for the following contaminants: PCE, methylene chloride, TCE, 1,1,1-trichloroethane, chlorobenzene, 1,1,2-trichloro-1,2,2-trifluoroethane, o-dichlorobenzene, trichlorofluoromethane, and 1,1,2-trichloroethane.

All IDW that could have come into contact with RTRVP groundwater was considered hazardous and placed into the CAA for storage adjacent to the fish processing building. Aqueous IDW consisted of purge water and decontamination water and was placed into two, open-top, 55-gallon steel drums with ring-lock lids. Non-aqueous IDW consisted of paper towels, tubing, groundwater metals filters, and nitrile gloves was placed into an open-top 20-gallon HDPE drum with ring-lock lid.

The Ahtna team subcontracted NRC Alaska of Soldotna to manifest and transport the wastes to US Ecology in Grandview, Idaho, a RCRA-permitted treatment, storage, and disposal facility (TSDF). NRC did not need to perform weekly inspections of the CAA while the waste was onsite at RTRVP because they picked up the waste within one week of generation. NRC removed the IDW from RTRVP on December 17th, 2018. The hazardous waste manifest is shown in Appendix D. The SFY 2019 IDW is summarized in Table 3.

TABLE 3: STATE FISCAL YEAR 2019 INVESTIGATION DERIVED WASTE SUMMARY

Manifest Number	Container	Contents	Approximate Weight (pounds)
002948235	55-gallon, steel, open-top drum	Purge water, decontamination water	200
002948235	55 gallon, steel, open-top drum	Purge water, decontamination water	200
002948235	20-gallon HDPE, open-top, ring lock lid drum	Paper towels, tubing, nitrile gloves, etc.	25
		Total	**425**

3.4 Work Plan Deviations

Several work plan deviations occurred during project execution, as described below.

- Groundwater drawdown at multiple wells exceeded the minimum prescribed amount of 0.3 feet, while purging. Low-flow purging was performed at each well, but undesired levels of drawdown were unavoidable and observed at the following wells: MW-12, MW-39, MW-44, MW-47, MW-48, MW-49, MW-50, MW-51, MW-52, MW-78, L-80A, and L-103.

- Bubbles greater than six millimeters of headspace were present in samples from four of the wells. Sample vials were filled until a positive meniscus formed. Vials were then capped, inverted, and checked for air bubbles. Air bubbles were unavoidable in some samples, as groundwater was effervescing at the following wells: MW-47, MW-48, MW-50, and L-103.

- Two submersible pumps were utilized simultaneously during this sampling event; however, only one equipment blank was collected per day (as opposed to collecting one equipment blank per pump per day). There was not an appropriate amount of sample jars

to collect two equipment blanks per day, as it was not anticipated that two submersible pumps would be utilized at the time the sample bottle order was submitted to the lab.

(This Page Intentionally Left Blank)

4.0 RESULTS

The following sections present the analytical results from December 2018 groundwater compliance and performance monitoring at the RTRVP. Analytical laboratory reports, ADEC Checklists, and a Data Quality Assurance Assessment are provided in Appendix E.

4.1 Compliance Monitoring Results

Summaries of the analytical results for the groundwater samples collected from upper plume wells, lower plume wells, and near-river sentry wells in December 2018 are provided in the following sub-sections, as well as in the appended Table 4, and in-text Tables 5, 6, and 7. The associated laboratory analytical reports are included in Appendix E. The analytical results from the 22 monitoring wells were compared to the cleanup levels stated in the ADEC Record of Decision for the site, as well as the ADEC's Table C Groundwater Cleanup Levels presented in 18 AAC 75. Any cleanup level exceedances are highlighted in the applicable tables and described below.

4.1.1 Upper Plume Compliance Monitoring Results

See Table 5, below, for analytical results and applicable cleanup levels.

- PCE was detected in all samples collected from the five upper plume wells. Concentrations ranged from 3.78 µg/L to 178 µg/L but were below the 840 µg/L on-RTRVP property ACL. The PCE concentration of 89.5 µg/L detected in a sample collected from one well (MW-25), located proximal to the northwestern boundary of the property (within 10 feet), did exceed the applicable off-RTRVP property ACL of 50 µg/L. Additionally, samples from two of the wells (MW-25 and MW-42) contained PCE concentrations that exceeded the current GCL of 41 µg/L.
- TCE was detected in samples from four of the five upper plume wells. Concentrations ranged from 2.97 µg/L to 82.1 µg/L but were below the 21,900 µg/L on-RTRVP property ACL. The TCE concentration of 82.1 µg/L in MW-38, located off the RTRVP property, exceeded the 50 µg/L off-RTRVP property ACL. All detected TCE concentrations exceeded the current GCL of 2.8 µg/L.
- cDCE was detected in samples from four of the five upper plume wells. Concentrations ranged from 3.65 µg/L to 281 µg/L but were below the 11,600 µg/L on-RTRVP property ACL. Additionally, concentrations were below the 700 µg/L off-RTRVP property ACL. However, samples from two of the wells (MW-25 and MW-38) contained cDCE concentrations that exceeded the current GCL of 36 µg/L.
- tDCE was detected in samples from three of the five upper plume wells. Concentrations ranged from 0.34 µg/L to 3.04 µg/L but were below all applicable cleanup levels.
- 1,1-DCE was not detected at, or above, the limit of detection in samples from any of the five upper plume wells.
- VC was detected in samples from three of the five upper plume wells. Concentrations ranged from 1.4 µg/L to 45.1 µg/L and exceeded the 2 µg/L on-RTRVP property ACL in samples from two of the wells (MW-16 and MW-38). The off-site well MW-38 had a TCE concentration of 45.1 µg/L that exceeded the off-RTRVP property ACL of 20 µg/L. All

detected TCE concentrations (in wells MW-16, MW-25, and MW-38) exceeded the current GCL of 0.19 µg/L.

- Benzene was detected in samples from two of the five upper plume wells. Concentrations ranged from 0.25 µg/L to 0.3 µg/L but were below all applicable cleanup levels.

TABLE 5: UPPER PLUME - GROUNDWATER ANALYTICAL RESULTS - DECEMBER 2018

COCs		PCE	TCE	cDCE	tDCE	1,1-DCE	Vinyl Chloride	Benzene
Cleanup Levels (in ug/L)	***GCL***	41	2.8	36	360	280	0.19	4.6
	On-RTRVP	840	21,900	11,600	11,600	7	2	50
	Off-RTRVP	50	50	700	1,000	70	20	50
Well ID		*Results (in ug/L)*						
MW-16		3.78	**2.97**	7.45 B	1.62	<0.500	**5.12**	0.300 J
MW-23		5.43	<0.500	<0.500	<0.500	<0.500	<0.0750	<0.200
MW-25		**89.5**	**44.3**	**67.1**	0.340 J	<0.500	**1.4**	<0.200
MW-38		36.4	**82.1**	**281**	3.04	<0.500	**45.1**	0.250 J
MW-42		**178**	**9.74**	3.65 B	<0.500	<0.500	<0.0750	<0.200

Cleanup level exceedances are coded as follows:

GCL = ADEC's 18 AAC 75 Table C Groundwater Cleanup Levels. **Emboldened result** = exceedance of cleanup level.

On-RTRVP action level = alternative cleanup levels established in 1997 risk evaluation, pertains to upper and lower plumes (all wells). Highlighted yellow = exceedance of cleanup level.

Off-RTRVP action level = cleanup levels in 18 AAC 75, adopted 1/22/99, multiplied by 10, pertains to wells near RTRVP property boundary in upper plume only. Highlighted blue = exceedance of cleanup level.

Upper plume wells located off-RTRVP property or within approximately 10 feet of the property boundary, applicable to B: off-RTRVP action levels, are shown in blue font.

< = analyte was not detected, limit of detection (1/2 the LOQ)
J = Result value is estimated. The analyte was detected below the LOQ or is affected by a QC anomaly.
B = Result value is estimated, biased high, due to blank contamination.
1,1-DCE = 1,1-dichloroethene
COCs = contaminants of concern
cDCE = cis-1,2-dichloroethene
GCL = groundwater cleanup level
PCE = tetrachloroethene
RTRVP = River Terrace RV Park
TCE = trichloroethene
tDCE = trans-1,2-dichloroethene
ug/L = micrograms per liter

4.1.2 Lower Plume Unconfined Aquifer Compliance Monitoring Results

See Table 6, below, for analytical results and applicable cleanup levels.

- PCE was detected in two of the three lower plume unconfined aquifer wells. PCE was 15 µg/L in MW-9 and 18.1 µg/L in MW-40. Both results were below the on-RTRVP property ACL of 840 µg/L and the current GCL of 41 µg/L.
- TCE was detected in two of the three lower plume unconfined aquifer wells. TCE was 0.53 µg/L in MW-9 and 0.66 µg/L in MW-40. Both results were below the on-RTRVP property ACL of 21,900 µg/L and the current GCL of 2.8 µg/L.

- cDCE was detected in all three lower plume unconfined aquifer wells. cDCE was 9.03 B µg/L in MW-9, 3.19 B µg/L in MW-39, and 22.8 µg/L in MW-40, where the B-qualified results are considered biased high due to blank contamination. All three results were below the on-RTRVP property ACL of 11,600 µg/L and the current GCL of 36 µg/L.
- tDCE was detected in all three lower plume unconfined aquifer wells. tDCE was 6.53 µg/L in MW-9, 15.1 µg/L in MW-39, and 9.11 µg/L in MW-40. All three results were below the on-RTRVP property ACL of 11,600 µg/L and the current GCL of 360 µg/L.
- 1,1-DCE was not detected in any of the three lower plume unconfined aquifer wells. The limits of detection (LODs) were all 0.5 µg/L. The LODs were lower than the on-RTRVP ACL of 7 µg/L and current GCL of 280 µg/L.
- VC was detected in all three lower plume unconfined aquifer wells. VC was 2.11 µg/L in MW-9, 2.71 µg/L in MW-39, and 22.2 µg/L in MW-40. All three results exceeded the on-RTRVP ACL of 2 µg/L and the current GCL of 0.19 µg/L.
- Benzene was detected in all three lower plume unconfined aquifer wells. Benzene was 1.65 µg/L in MW-9, 1.92 µg/L in MW-39, and 1.49 µg/L in MW-40. All three results were lower than the on-RTRVP ACL of 50 µg/L and current GCL of 4.6 µg/L.

TABLE 6: LOWER PLUME - GROUNDWATER ANALYTICAL RESULTS - DECEMBER 2018

COCs		PCE	TCE	cDCE	tDCE	1,1-DCE	Vinyl Chloride	Benzene
Cleanup Levels (in ug/L)	***GCL***	41	2.8	36	360	280	0.19	4.6
	On-RTRVP	840	21,900	11,600	11,600	7	2	50
Well ID		*Results (in ug/L)*						
Lower Plume (Unconfined Aquifer)								
MW-9		15.0	0.530 J	9.03 B	6.53	<0.500	**2.11**	1.65
MW-39		<0.500	<0.500	3.19 B	15.1	<0.500	**2.71**	1.92
MW-40		18.1	0.660 J	22.8	9.11	<0.500	**22.2**	1.49
Lower Plume - Semi-Confined Water-Bearing Zone within Glacial Till								
MW-44		1.45	0.770 J	**62.8**	1.99	0.320 J	**205**	<0.200
MW-47		**10,600 J-**	**2,550 J-**	**34,300 J-**	**477 J-**	31.0 J-	**676 J-**	**85.0 J-**
MW-48		22.5 J-	<25.0 UJ	**4,030 J-**	38.5 J-	<25.0 UJ	**1,350 J-**	**<10.0 UJ**
MW-49		0.540 J	0.340 J	**987**	5.16	1.71	**165**	0.180 J
MW-50		**2,960 J**	**988 J**	**167,000**	**548**	152	**34,500**	1.49
MW-51		4.83	1.02 J	**507**	21.5	0.580 J	**705**	<0.200
MW-52		23.0	0.380 J	20.1	3.3	<0.500	**30.7**	<0.200
L-78		35.0 J-	<50.0 UJ	**15,300 J-**	43.0 J-	<50.0 UJ	**2,540 J-**	**<20.0 UJ**
L-80A		**104,000 J-**	**19,300 J-**	**53,600 J-**	190 J-	197 J-	**2,640 J-**	**<20.0 UJ**
L-103		**7,290 J-**	**2,150 J-**	**18,000 J-**	201 J-	<50.0 UJ	**303 J-**	**45.0 J-**

Cleanup level exceedances are coded as follows:

GCL = ADEC's 18 AAC 75 Table C Groundwater Cleanup Levels. **Emboldened result** = exceedance of cleanup level.

On-RTRVP action level = alternative cleanup levels established in 1997 risk evaluation, pertains to upper and lower plumes (all wells). Highlighted yellow = exceedance of cleanup level.

< = analyte was not detected, limit of detection (1/2 the LOQ)
J = Result value is estimated. The analyte was detected below the LOQ or is affected by a QC anomaly.
J- = Result value is estimated, biased low, due to a QC anomaly.
UJ = Result value is estimated, biased low. The analyte was not detected.
B = Result value is estimated, biased high, due to blank contamination.
1,1-DCE = 1,1-dichloroethene.
COCs = contaminants of concern
cDCE = cis-1,2-dichloroethene
GCL = groundwater cleanup level
PCE = tetrachloroethene
RTRVP = River Terrace RV Park
TCE = trichloroethene
tDCE = trans-1,2-dichloroethene
ug/L = micrograms per liter

4.1.3 Lower Plume Semi-Confined Water-Bearing Zone Compliance Monitoring Results

Compliance groundwater monitoring results for the lower plume semi-confined water-bearing zone wells are shown above in Table 6.

- PCE was detected in samples collected from nine of the ten lower plume semi-confined water-bearing zone wells. Concentrations ranged from 0.54 µg/L to an estimated 104,000 J- µg/L and exceeded the 840 µg/L on-RTRVP property ACL in samples from four of the wells (MW-47, MW-50, L-80A, and L-103). Additionally, only the samples from these four wells contained PCE concentrations that also exceeded the current GCL of 41 µg/L.

- TCE was detected in samples collected from eight of the ten lower plume semi-confined water-bearing zone wells. Concentrations ranged from 0.34 µg/L to an estimated 19,300 J- µg/L. All results were below the 21,900 µg/L on-RTRVP property ACL. TCE concentrations in samples from four of the wells (MW-47, MW-50, L-80A, and L-103) did exceed the current GCL of 2.8 µg/L.
- cDCE was detected in all samples collected from the ten lower plume semi-confined water-bearing zone wells. Concentrations ranged from 20.1 µg/L to 167,000 µg/L and exceeded the 11,600 µg/L on-RTRVP property ACL in samples from five of the wells (MW-47, MW-50, L-78, L-80A, and L-103). Additionally, cDCE concentrations in samples from nine of the wells exceeded the current GCL of 36 µg/L.
- tDCE was detected in all samples collected from the ten lower plume semi-confined water-bearing zone wells. Concentrations ranged from 1.99 µg/L to 548 µg/L but were below the 11,600 µg/L on-RTRVP property ACL. Concentrations in two of the wells (MW-47 and MW-50) did exceed the current GCL of 360 µg/L.
- 1,1-DCE was detected in samples collected from six of the ten lower plume semi-confined water-bearing zone wells. Concentrations ranged from 0.32 µg/L to an estimated 197 J- µg/L and exceeded the 7 µg/L on-RTRVP property ACL in samples from three of the wells (MW-47, MW-50, and L-80A). Three of the wells where 1,1-DCE was not detected had LODs exceeding the 7 µg/L on-RTRVP property ACL. However, none of the detected concentrations or LODs exceeded the current GCL of 280 µg/L.
- VC was detected in all samples collected from the ten lower plume semi-confined water-bearing zone wells. Concentrations ranged from 30.7 µg/L to 34,500 µg/L. All VC results in the lower plume semi-confined water-bearing zone wells exceeded the 2 µg/L on-RTRVP property ACL and the current 0.19 µg/L GCL.
- Benzene was detected in four of the ten lower plume semi-confined water-bearing zone wells. Concentrations ranged from 0.18 µg/L to an estimated 85 J- µg/L in MW-47. The estimated 85 J- µg/L benzene concentration exceeded the on-RTRVP ACL of 50 µg/L. The estimated benzene concentration of 45 J- µg/L in L-103 and the estimated 85 J- µg/L in MW-47 exceeded the current GCL. Benzene was not detected in MW-48, L-78, and L-80A, but their LODs exceeded the current GCL.

4.1.4 Near River Compliance Monitoring Results

See Table 7, below, for analytical results and applicable cleanup levels.

- PCE was detected in all samples collected from the four near-river wells. Concentrations ranged from 1.46 µg/L to 16.9 µg/L but were below the 840 µg/L on-RTRVP property ACL. However, the PCE concentration in the sample collected from MW-7 exceeded the modeled action level of 15 µg/L. None of the detected PCE concentrations exceeded the current GCL of 41 µg/L.
- TCE was detected in samples from three of the four near-river wells. Concentrations ranged from 1.55 µg/L to 5.36 µg/L but were below the 21,900 µg/L on-RTRVP property ACL. The TCE concentration in a sample collected from one well (MW-7) did exceed the current GCL of 2.8 µg/L.
- cDCE was detected in samples from the four near-river wells. Concentrations ranged from 4.3 µg/L to 24.9 µg/L but were below applicable cleanup levels.

- tDCE was detected in samples from three of the four near-river wells. Concentrations ranged from 0.8 µg/L to 4.47 µg/L but were below applicable cleanup levels.
- 1,1-DCE was not detected at, or above, the limit of detection in any of the near-river wells sampled.
- VC was detected in all samples collected from the four near-river wells. Concentrations ranged from 0.24 µg/L to 8.02 µg/L and exceeded the 2 µg/L on-RTRVP property ACL in samples from two of the wells (MW-6A and MW-7). Additionally, the VC concentration of 8.02 µg/L in the sample collected from well MW-6A exceeded the modeled action level and eco-action level, both 6 µg/L. All concentrations of VC exceeded the current GCL of 0.19 µg/L.
- Benzene was detected in samples from two of the four near-river wells. Concentrations ranged from 0.69 µg/L to 0.81 µg/L but were below applicable cleanup levels.

TABLE 7: NEAR RIVER SENTRY WELLS - GROUNDWATER ANALYTICAL RESULTS - DECEMBER 2018

COCs		PCE	TCE	cDCE	tDCE	1,1-DCE	Vinyl Chloride	Benzene
Cleanup Levels (in ug/L)	***GCL***	41	2.8	36	360	280	0.19	4.6
	On-RTRVP	840	21,900	11,600	11,600	7	2	50
	Modeled Level	15	15	210	300	21	6	Not established
	Eco-Action Level	120	350	210	300	21	6	Not established
Well ID		*Results (in ug/L)*						
MW-6A		8.55	<0.500	4.30 B	4.47	<0.500	**8.02**	0.690
MW-7		16.9	**5.36**	11.1 B	3.31	<0.500	**2.88**	0.810
MW-12		1.46	1.55	14.4 B	<0.500	<0.500	**0.240**	<0.200
MW-35		1.76	1.77	24.9	0.800 J	<0.500	**1.24**	<0.200

Cleanup level exceedances are coded as follows:

GCL = ADEC's 18 AAC 75 Table C Groundwater Cleanup Levels. **Emboldened result** = exceedance of cleanup level.

On-RTRVP action level = alternative cleanup levels established in 1997 risk evaluation, pertains to upper and lower plumes (all wells). Highlighted yellow = exceedance of cleanup level.

Modeled action level = three times water quality criteria (18 AAC 70), pertains to lower plume, near river sentry wells only, for PCE and degradation products. Highlighted green = exceedance of cleanup level.

Eco-Action Level = aquatic organism screening level from *Ecotox Thresholds; Eco Update III (II; 1-12)* (EPA OSWER 1996), pertains to lower plume, near river sentry wells only, for PCE and degradation products. Highlighted orange = exceedance of cleanup level.

Lower plume sentry wells applicable to C: modeled action levels and D: eco action levels are shown in red font.

< = analyte was not detected, limit of detection (1/2 the LOQ)
J = Result value is estimated. The analyte was detected below the LOQ or is affected by a QC anomaly.
B = Result value is estimated, biased high, due to blank contamination.
1,1-DCE = 1,1-dichloroethene.
COCs = contaminants of concern
cDCE = cis-1,2-dichloroethene
GCL = groundwater cleanup level
PCE = tetrachloroethene
RTRVP = River Terrace RV Park
TCE = trichloroethene
tDCE = trans-1,2-dichloroethene
ug/L = micrograms per liter

4.2 Performance Monitoring Results

Performance monitoring results are compared to the thresholds shown below in the Table 8. The Appended Table 9 shows performance monitoring results for the December 2018 sampling event. Appendix F shows historical performance monitoring data.

TABLE 8: PERFORMANCE MONITORING PARAMETER SUMMARY

Parameter	Description	Threshold Level	Significance of Threshold Level
pH	pH is a measure of the acidity or alkalinity of the groundwater.	5 < pH < 9	Optimal range for reductive pathway
Temperature	Groundwater temperature affects the metabolic rate of bacteria. Groundwater temperatures less than 5°C tend to inhibit biodegradation. Biodegradation rates typically double for every 10°C increase in water temperature.	> 20°C	Biochemical process accelerated
Dissolved Oxygen	Depressed DO levels indicate that the reductive pathway is possible.	< 0.5 mg/L	Reductive pathway is not suppressed.
Oxidation Reduction Potential	ORP is an indicator of oxidation potential (aerobic) or reductive potential (anaerobic) of the groundwater system.	< 50 mV < -100 mV	Reductive pathway possible Reductive pathway likely
Dissolved Iron	Ferrous iron (iron II) is produced when ferric iron (iron III) is used as an electron acceptor during anaerobic biodegradation.	>1 mg/L	Indicative that reductive pathway is possible
Methane	The presence of methane in groundwater is indicative of strongly reducing conditions. Methanogenesis generally occurs after the oxygen, nitrate, and sulfate have been depleted in the treatment zone.	> 0.5 mg/L	Indicative that reductive pathway is likely but may also compete with reductive dechlorination process
Ethane and Ethene	Produced during reductive dechlorination.	> 0.01 mg/L	Indicative that reductive pathway is likely
Total Organic Carbon	Carbon is the energy source that drives reductive dechlorination.	> 20 mg/L	Energy source needed to drive reductive dechlorination
Lactic Acid	Nutrient and hydrogen ion source for dechlorinating microbes. Lactic acid is released during biodegradation of HRC™.	Not applicable	Presence indicates biodegradation of HRC™
Pyruvic Acid	As lactic acid is metabolized by anaerobic microbes, it is degraded to pyruvic acid.	Not applicable	Presence indicates presence and degradation of lactic acid
Acetic Acid	As pyruvic acid is metabolized by microbes, it is degraded to acetic acid.	Not applicable	Presence indicates presence and degradation of pyruvic acid
Butyric Acid	In a secondary reaction, lactic acid also degrades to butyric acid and propionic acid.	Not applicable	Presence indicates presence and degradation of lactic acid
Propionic Acid	In a secondary reaction, lactic acid also degrades to butyric acid and propionic acid.	Not applicable	Presence indicates presence and degradation of lactic acid

4.2.1 Upper Plume Performance Monitoring Results

4.2.1.1 Field Measured Results

Field-measured parameters were measured and recorded at each monitoring well prior to collecting groundwater samples. Results are displayed in the bullets below.

- The pH ranged from 6.33 to 7.27, which is within the optimal range for reductive dechlorination.
- The temperature ranged from 6.02°C to 8.69°C, which is below the 20°C threshold level for accelerated biochemical processes.
- The dissolved DO ranged from 0.38 mg/L to 8.08 mg/L. Groundwater at two of the wells (MW-16 and MW-38) had DO concentrations below the 0.5 mg/L threshold level indicating the reductive pathway is likely not suppressed at these two locations. Anaerobic bacteria generally do not tolerate dissolved oxygen concentrations greater than about 0.5 mg/L (US Environmental Protection Agency, 1998).
- The ORP ranged from 164.2 millivolts to -12.5 millivolts, which is above the threshold level of -50 millivolts. This range of values indicates the reductive pathway at these locations is likely not possible.

4.2.1.2 Laboratory Analytical Results

Groundwater samples were collected from three of the five upper plume wells (MW-25, MW-38, and MW-42) for the analysis of performance monitoring parameters. Results are displayed in the bullets below.

- The dissolved iron concentrations ranged from 0.007 mg/L to 0.813 mg/L. Detectable concentrations of dissolved iron are indicative of anaerobic biodegradation processes.
- Total organic carbon concentrations ranged from 2 mg/L to 4 mg/L, which are below the threshold level of 20 mg/L. This concentration range suggests the nutrient (electron donor) source at these locations is not likely sufficient to drive dechlorination processes.
- Methane concentrations ranged from 0.027 mg/L to 2.83 mg/L. The methane concentration of 2.83 mg/L at MW-38 is greater than the 0.5 mg/L threshold level and is indicative of strongly reducing conditions favorable for dechlorination.
- Ethane was not detected (ND) at or above the limit of detection in any of the upper plume wells, while ethene concentrations ranged from ND to 0.015 mg/L. The ethene concentration of 0.015 mg/L at MW-38 was greater than the threshold level of 0.01 mg/L. Ethene and ethane are daughter products of VC and indicates there is likely a reductive pathway in the groundwater at this location.
- The microbial species *Dehalococcoides mccartyi* (Dhc) was present in groundwater samples at concentrations ranging from 3 X 10^3 gene copies per liter (gc/L) to 4 X 10^5 gc/L. The 4 X 10^5 gc/L concentration at MW-38 is a moderate concentration that may or may not be associated with observable dechlorination activity. The low concentrations at wells MW-25 and MW-42 indicate subsurface conditions at these locations are likely sub-optimal for high rates of dechlorination.
- The VC reductase gene, vcrA, which plays a role in converting cDCE and VC to ethane, was detected at concentrations ranging from 6 X 10^3 gc/L to 1 X 10^6 gc/L. The concentration of 1

X 10^6 gc/L detected at MW-38 exceeds the minimum recommended concentration of 1 X 10^5 gc/L necessary for robust VC dechlorination. The other VC reductase gene, bvcA, and the TCE reductase gene, tceA, were not detected in samples from the three wells. Where tceA is not detected, the Dhc population may lack the ability to convert TCE to cDCE and VC. A lack of the VC reductase gene, bvcA, is not a concern if the other VC reductase gene, vcrA, is present.

- Volatile fatty acids (VFAs) were not detected in MW-38, MW-25, or MW-42, which indicates an inadequate fermentable substrate (carbon source) at those locations.

4.2.2 Lower Plume Performance Monitoring Results

4.2.2.1 Field Measured Results

Field-measured parameters were collected and recorded at each monitoring well prior to collecting groundwater samples. Results are displayed in the bullets below.

- The pH ranged from 5.46 to 8.89, which is within the optimal range for reductive dechlorination.
- The temperature ranged from 3.54°C to 6.45°C, which is below the 20°C threshold level for accelerated biochemical processes.
- The dissolved oxygen ranged from 0.22 mg/L to 4.75 mg/L. Four of the wells (MW-39, MW-44, MW-47, and L-103) had DO concentrations below the 0.5 mg/L threshold level indicating the reductive pathway is not suppressed at these two locations. Anaerobic bacteria generally do not tolerate dissolved oxygen concentrations greater than about 0.5 mg/L (US Environmental Protection Agency, 1998).
- The ORP ranged from 47.7 millivolts to -310.8 millivolts. Four of the wells (MW-44, MW-52, L-78, and L-80A) had ORP values less than -100 mV, which indicates a reductive pathway is likely at those locations. Additionally, four wells (MW-47, MW-48, MW-50, and L-103 had ORP values between -50 mV and -100 mV, which indicates the reductive pathway is possible at those locations. ORP values greater than -50 mV indicate the reductive pathway is likely not possible.

4.2.2.2 Laboratory Analytical Results

Groundwater samples were collected from seven of the thirteen lower plume wells (MW-47, MW-48, MW-49, MW-50, MW-51, L-78, and L-103), all located within the semi-confined water-bearing zone within the glacial till, for the analysis of performance monitoring parameters. Performance monitoring parameters were not analyzed for at the lower plume unconfined aquifer wells. Results are displayed in the bullets below.

- The dissolved iron concentrations ranged from 4.3 mg/L to 2,940 mg/L. Detectable concentrations of dissolved iron are indicative of anaerobic biodegradation processes.
- Total organic carbon concentrations ranged from 31 mg/L to 157,000 mg/L, which are above the threshold level of 20 mg/L. This concentration range suggests the nutrient (electron donor) source at these locations is likely sufficient to drive dechlorination processes.

- Methane concentrations ranged from 1.85 mg/L to 19.8 mg/L. Overall, this range is greater than the 0.5 mg/L threshold level and is indicative of strongly reducing conditions favorable for dechlorination.
- Ethane was detected in four of the wells. Concentrations ranged from 0.0025 mg/L to 0.011 mg/L. The concentration of 0.011 mg/L at well L-78 is greater than the threshold level of 0.01 mg/L and indicates the reductive pathway is likely at this location. Ethene was detected in all seven wells, and concentrations ranged from 0.032 mg/L to 2.610 mg/L. This concentration range is greater than the threshold level of 0.01 mg/L and also indicates the reductive pathway is likely at these sampling locations.
- The microbial species Dhc was present in groundwater samples at concentrations ranging from 2 X 10^5 gc/L to 2 X 10^9 gc/L. The concentration of 2 X 10^9 gc/L at well MW-48 is generally the highest observed for groundwater samples and is associated with very high rates of dechlorination. Concentrations at wells MW-49, MW-50, and MW-51 ranged from 7 X 10^7 gc/L to 8 X 10^8 gc/L and are associated with significant dechlorination rates. Concentrations at wells MW-47, L-78, and L-103 ranged from 2 X 10^5 gc/L to 3 X 10^6 gc/L and may or may not be associated with observable dechlorination activity.
- The VC reductase gene, vcrA, which plays a role in converting cDCE and VC to ethane, was detected at concentrations ranging from 6 X 10^3 gc/L to 5 X 10^9 gc/L. The concentration range at six of the seven wells exceeds the minimum recommended concentration of 1 X 10^5 gc/L necessary for robust VC dechlorination. The other VC reductase gene, bvcA, which also plays a role in converting cDCE and VC to ethane was detected in six of the wells at concentrations ranging from 7 X 10^3 gc/L to 2 X 10^7 gc/L. This concentration range exceeds the minimum recommended concentration of 1 X 10^5 gc/L necessary for robust VC dechlorination, as seen in wells MW-47, MW-48, MW-49, and MW-50. Additionally, the TCE reductase gene, tceA, was not detected in samples from the seven wells. Where tceA is not detected, the Dhc population may lack the ability to convert TCE to cDCE and VC. Overall, these results indicate microbial populations, and associated functional genes, are generally favorable for complete dechlorination.
- VFAs were detected in samples from six of the seven wells. The concentrations of VFAs ranged from 76.8 mg/L to 22,960 mg/L, above the 10 – 20 mg/L desirable treatment zone concentration (Air Force Center for Environmental Excellence, 2004). This indicates there is likely adequate electron donor at these locations; however, VFAs in samples from five of the wells are predominantly acetate. Acetate on its own is not an effective electron donor for complete reductive dechlorination.

4.2.3 Near River Performance Monitoring Results

4.2.3.1 Field Measured Results

Field-measured parameters were collected and recorded at each monitoring well prior to collecting groundwater samples. Results are displayed in the bullets below.

- The pH ranged from 5.81 to 7.31, which is within the optimal range for reductive dechlorination.
- The temperature ranged from 3.99°C to 7.41°C, which is below the 20°C threshold level for accelerated biochemical processes.

- The dissolved oxygen ranged from 0.3 mg/L to 2.04 mg/L. Two of the wells (MW-6A and MW-7) had DO concentrations below the 0.5 mg/L threshold level indicating the reductive pathway is not suppressed at these two locations. Anaerobic bacteria generally do not tolerate dissolved oxygen concentrations greater than about 0.5 mg/L (US Environmental Protection Agency, 1998).
- The ORP ranged from 166.9 millivolts to -13.5 millivolts, which is above the threshold level of -50 millivolts. This range of values indicates the reductive pathway at these locations is likely not possible.

4.2.3.2 Laboratory Analytical Results

Groundwater samples for analysis of performance monitoring parameters were not collected from the near-river sentry monitoring wells.

5.0 DISCUSSION

This section discusses the groundwater compliance and performance monitoring results from the December 2018 groundwater sampling event at the RTRVP site. An updated conceptual site model (CSM) is presented based on results and findings.

5.1 Statistical Trend Analyses

Mann-Kendall and linear regression trend analyses were performed on total chlorinated ethene molar concentrations, i.e, the sum of PCE, TCE, cDCE, tDCE, 1,1-DCE, and VC for 19 of the 22 monitoring wells sampled in December 2018, using all past results, some as far back as 2000 and also using only the latest five monitoring results in order to evaluate recent trends and to be more in accordance with the trend analysis evaluation described in the 2000 ROD (ADEC, 2000). The cumulative VOCs results are shown in Appendix G.

The analytical data were compared using the nonparametric Mann-Kendall test (Gilbert, 1987) to determine if total molar chlorinated ethene concentrations exhibit an increasing or decreasing trend over time at those monitoring wells. The Mann-Kendall test compares a later-measured value to each earlier-measured value and assigns the integer value of -1, 0, or 1, indicating that the later value is lower, equal or higher than each earlier value. The Mann-Kendall test does not assume a distribution and is resistant to the influence of outliers. A minimum of four sampling events is required for this test to be valid.

The Mann-Kendall test assumes the null hypothesis of "no trend" unless the data indicate the alternative. We selected a significance level of $\alpha = 0.10$, or 10%. If the probability, *p*, of obtaining the computed Mann-Kendall statistic (S) is less than 0.10 (or 10%), the confidence level is greater than 90%. If $p < 0.10$, the null hypothesis is rejected and there is evidence to conclude that constituent 'x' in the selected monitoring well 'y' exhibits a trend. If the probability of obtaining S is greater than 0.10 ($p > 0.10$), then the confidence level is less than 90% and the null hypothesis is not rejected. If the confidence level is greater than 90%, then the sign of the S value indicates the trend direction, with a positive S value indicating an increasing trend and a negative S value indicating a decreasing trend.

The coefficient of variation (CV) for each data set was computed to determine the stability of the contaminants regardless of the trend. The CV value identifies the degree of variation in concentrations between sampling events and is defined as the sample standard deviation divided by the sample mean. The lower the value of the CV, the less variation exists and the more stable the concentration is in the well. We assigned a benchmark CV value of one based on Table 3.2 in the Air Force Center for Environmental Excellence document: *Designing Monitoring Programs to Effectively Evaluate the Performance of Natural Attenuation* (AFCEE, 2000). For a negative S value with a confidence level of < 90%, a CV less than one (CV < 1) indicates that the concentration at that location is stable, and CV > 1 indicates no trend.

A linear regression analysis was also performed on the data as a parametric alternative to the Mann-Kendall test. The analysis assesses the slope and computes the R^2 value of the least-squares regression on the sample mean. The R^2 value indicates the fit of the data, or distance of data points from the regression line. Higher R^2 values (> 0.8) indicate a close fit of the data and a strong

correlation, suggesting that there is a trend. Values of R^2 between 0.5 and 0.8 suggest some correlation in the data and the possibility of a trend. Linear regression is based on the assumption that the data approximately follow a normal distribution and can confidently be used with eight or more data points. With fewer than eight data points it is difficult to determine if the normality assumption has been met and the linear regression has low power, or a lower probability of correctly detecting a trend when a trend exists. Linear regressions are provided as a qualitative assessment of trend, and should be used for decision-making with caution since the distribution of the data has not been determined and the number of data points has not been considered. However, the 2000 ROD (ADEC, 2000) stated that linear regression trend analysis of the five most recent quarterly sampling event results will be used to determine whether concentrations of COCs are decreasing. Quarterly monitoring has not been performed at the RTRVP; therefore, the latest five monitoring results were analyzed. Generally, these took place over the last six to ten years.

Worksheets displaying the Mann-Kendall tests and regression analyses for all chlorinated ethene molar concentrations are shown in Appendix H. Appendix I contains Mann-Kendall tests and regression analyses for chlorinated ethene molar concentrations for the last five events. Appendix H contains a table providing the Mann-Kendall confidence levels for various sample sizes and S values. The table shows the range of confidence levels which have been calculated using S values and sample size. If the S value and sample size fall in the dark blue shaded area, the confidence level is greater than 90% and the concentration exhibits a trend at that location. Results of the analyses are shown below in Tables 10 and 11.

TABLE 10: GROUNDWATER CHLORINATED ETHENES CONCENTRATION TREND SUMMARY FOR ALL SAMPLING EVENTS

Location	Number of Sampling Events	December 2018 Chlorinated Ethene Molar Concentration (µmol/L)	Mann-Kendall Statistic (S)	Coefficient of Variation (CV)	Trend at 90% Confidence Level	Linear Regression Trend	Linear Regression R^2
Upper Plume Wells							
MW-16	15	0.2235	-73	1.18	Decreasing	Possibly Decreasing	0.59
MW-25	16	1.5975	-66	0.94	Decreasing, Stable	Possibly Decreasing	0.55
MW-38	16	4.4986	-31	0.95	Decreasing, Stable	No Trend	0.07
MW-42	13	1.1909	-20	0.91	Likely No Trend, Stable	No Trend	0.23
Lower Plume Wells (Unconfined Aquifer)							
MW-9	16	0.2904	-98	1.11	Decreasing	Possibly Decreasing	0.74
MW-39	16	0.2380	-88	0.87	Decreasing, Stable	Possibly Decreasing	0.60
MW-40	15	0.8011	-71	1.26	Decreasing	Possibly Decreasing	0.65
Lower Plume Wells (Semi-Confined Water-Bearing Zone within Glacial Till)							
MW-44	12	3.9664	-48	1.19	Decreasing	Decreasing	0.80
MW-47	10	453.2185	-9	0.47	Likely No Trend, Stable	No Trend	0.08
MW-48	8	63.9306	4	1.19	Likely No Trend	No Trend	0.10
MW-49	8	12.8986	-2	0.75	Likely No Trend, Stable	No Trend	0.03
MW-50	8	2307.3580	6	1.01	Likely No Trend	No Trend	0.11
MW-51	7	16.8062	-11	1.05	Decreasing	Possibly Decreasing	0.53
L-78	8	199.5769	-10	0.31	Likely No Trend, Stable	No Trend	0.18
L-80A	4	1373.1923	4	0.76	Likely No Trend, Stable	Possibly Increasing	0.72

Lower Plume Wells (Near-River)							
MW-6	16	0.2748	-78	1.50	Decreasing	Possibly Decreasing	0.54
MW-7	12	0.3400	-28	1.30	Decreasing	Possibly Decreasing	0.51
MW-12	14	0.1781	-53	1.24	Decreasing	Possibly Decreasing	0.68
MW-35	15	0.3116	-49	0.57	Decreasing, Stable	No Trend	0.29

TABLE 11: GROUNDWATER CHLORINATED ETHENES CONCENTRATION TREND SUMMARY FOR LAST FIVE SAMPLING EVENTS

Location	Number of Sampling Events	December 2018 Chlorinated Ethene Molar Concentration (µmol/L)	Mann-Kendall Statistic (S)	Coefficient of Variation (CV)	Trend at 90% Confidence Level	Linear Regression Trend	Linear Regression R^2
Upper Plume Wells							
MW-16	5	0.2235	-4	1.54	Likely No Trend	No Trend	0.17
MW-25	5	1.5975	4	0.52	Likely No Trend, Stable	Possibly Increasing	0.64
MW-38	5	4.4986	6	1.23	Likely No Trend	Possibly Increasing	0.59
MW-42	5	1.1909	4	0.80	Likely No Trend, Stable	No Trend	0.03
Lower Plume Wells (Unconfined Aquifer)							
MW-9	5	0.2904	-2	0.64	Likely No Trend, Stable	No Trend	0.01
MW-39	5	0.2380	-10	0.52	Decreasing, Stable	Decreasing	0.95
MW-40	5	0.8011	-4	0.72	Likely No Trend, Stable	No Trend	0.28
Lower Plume Wells (Semi-Confined Water-Bearing Zone within Glacial Till)							
MW-44	5	3.9664	4	0.57	Likely No Trend, Stable	No Trend	0.26
MW-47	5	453.2185	-2	0.56	Likely No Trend, Stable	No Trend	0.07
MW-48	5	63.9306	0	1.15	Likely No Trend	No Trend	0.03
MW-49	5	12.8986	-2	0.94	Likely No Trend, Stable	No Trend	0.17
MW-50	5	2307.3580	8	1.36	Increasing	Possibly Increasing	0.70
MW-51	5	16.8062	-4	1.26	Likely No Trend	No Trend	0.42
L-78	5	199.5769	0	0.31	Likely No Trend, Stable	No Trend	0.02
L-80A	4	1373.1923	4	0.76	Likely No Trend, Stable	Possibly Increasing	0.72
Lower Plume Wells (Near-River)							
MW-6	5	0.2748	-4	0.51	Likely No Trend, Stable	No Trend	0.49
MW-7	5	0.3400	6	0.45	Likely No Trend, Stable	No Trend	0.32
MW-12	5	0.1781	-6	0.68	Likely No Trend, Stable	Possibly Decreasing	0.50
MW-35	5	0.3116	-8	0.59	Decreasing, Stable	Possibly Decreasing	0.53

5.1.1 Upper Plume Trend Analysis Discussion

The Mann-Kendall and linear regression trend analyses using all past sampling events' results for two of the four upper-plume monitoring wells evaluated (MW-16 and MW-25) exhibited a decreasing trend in total chlorinated ethene molar concentrations. MW-16 and MW-25 are both near-property-boundary wells. MW-38 exhibited a decreasing Mann-Kendall trend but no linear regression trend. MW-42 did not exhibit a trend using either analysis for the all past sampling events' results.

None of the four upper-plume wells exhibited a trend using Mann-Kendall analysis on the last five sampling events' results. However, MW-25 and MW-38, both either near the property boundary

or off the property boundary showed possibly increasing total chlorinated ethene molar concentrations for the last five sampling events' results.

5.1.2 Lower Plume Unconfined Aquifer Trend Analysis Discussion

The Mann-Kendall trend and linear regression analyses for the three lower-plume monitoring wells evaluated in the unconfined water-bearing zone (MW-9, MW-39, and MW-40) for all past sampling results exhibited a decreasing trend in total chlorinated ethene molar concentrations.

For the last five sampling events' total chlorinated ethene molar concentrations, only MW-39 showed decreasing Mann-Kendall and linear regression analyses trends. Neither analysis displayed trends for MW-9 and MW-40 for the last five sampling events.

5.1.3 Lower Plume Semi-Confined Water-Bearing Zone Trend Analysis Discussion

When analyzing all past results, two of the eight lower-plume monitoring wells in the semi-confined water-bearing zone (MW-44 and MW-51) exhibited decreasing total chlorinated ethene molar concentration trends for both Mann-Kendall and linear regression analyses. Five of the eight wells (WM-47, MW-48, MW-49, MW-50, and L-78) showed neither Mann-Kendall or linear regression trends. One of the eight wells (L-80A) showed a possibly increasing linear regression trend but no Mann-Kendall trend. However, this location has only been sampled four total times.

MW-50 in the lower plume semi-confined water-bearing zone showed increasing total chlorinated ethene molar concentrations during the last five sampling events, as analyzed by Mann-Kendall and linear regression. As stated in the previous paragraph, L-80A showed a possibly increasing linear regression trend but no Mann-Kendall trend. This location has only been sampled four total times; therefore, it is restated in this paragraph. The remaining six wells in the lower plume semi-confined water bearing zone (MW-44, MW-47, MW-48, MW-49, MW-51, and L-78) did not display total chlorinated ethene molar concentration trends during the last five sampling events.

5.1.4 Near River Trend Analysis Discussion

The Mann-Kendall trend analyses for the four near-river monitoring wells evaluated (MW-6, MW-7, MW-12, and MW-35) exhibited decreasing trends in total chlorinated ethene molar concentrations using all past sampling results. Three of these wells (MW-6, MW-7, and MW-12) also showed decreasing linear regression trends. MW-35 did not show a trend using linear regression analysis on all past sampling results.

When analyzing the last five sampling events' results, MW-35 showed a decreasing total chlorinated ethene molar concentration trend using both Mann-Kendall and linear regression analyses. MW-12 showed only a possibly decreasing linear regression trend. MW-6 and MW-7 did not exhibit trends using either Mann-Kendall or linear regression analyses using only the last five sampling events' data.

5.2 Distribution of Chlorinated Ethenes in Upper Plume and Near-River Sentry Monitoring Wells

The percentages of PCE, TCE, DCE isomers (cDCE, tDCE, and 1-1, DCE) and VC in groundwater for upper plume near-river wells for past sampling events are shown on bar graphs in Appendix J. Upper plume and near-river wells' total chlorinated ethene molar concentrations can also be seen plotted versus time in this Appendix. HRC® and KB-1® treatments are shown on these graphs. These graphs are shown on the same plots for the wells' groupings, as opposed to graphs for individual wells' total molar concentrations versus time in the Mann-Kendall and linear regression trend analyses graphs. The upper plume and near-river sentry wells were chosen for these graphical depictions because they have contaminant concentrations exceeding ACLs for off-site migration, as stated in the 2000 ROD.

In the upper plume wells (data graphed for MW-16, MW-23, MW-25, MW-38, and MW-42) the DCE isomers have been the predominant chlorinated ethene following the first HRC® treatment in 2000. Prior to any treatment, PCE was the predominant chlorinated ethene. This demonstrates the limited capacity of the upper plume for chlorinated ethene degradation without biostimulation. These bar graphs also demonstrate slower DCE degradation rates in the upper plume. It can be seen that the percentage of PCE has increased from the last HRC® injection in 2012. Overall, the last 10 years of data show higher percentages PCE and TCE, with two HRC® injections, than the first seven years, when three HRC® injections occurred.

The total chlorinated ethene concentrations visually appear to decrease over time in the upper plume wells. This is supported by the trend analyses in the previous section. The HRC® injections' influence on total molar concentrations can be on these graphs. Throughout the first three injections, the total molar sums were 15 µMol/L or greater. Following the first three injections, total chlorinated ethene molar sums in the upper plume wells have been approximately 10 µMol/L or less.

The DCE isomers have been the predominant chlorinated ethene in groundwater in the near-river sentry wells MW-6/6a, MW-7, MW-12, and MW-35 on a molar percentage basis since sampling began at the River Terrace RV Park site. However, similar to the upper plume wells, PCE generally had a higher percentage prior to the first HRC® treatment. VC has generally been at a higher percentage during the last 14 years of monitoring than the first four years. PCE existed in the near-river sentry wells at the greatest percentage in 2018 since sampling began. Pore water chlorinated ethene molar percentages also show a predominant percentage of the DCE isomers. It appears that the most recent pore water sampling event showed increasing percentages of PCE and TCE.

The total chlorinated ethene molar concentrations showed favorable responses to the HRC® and KB-1® injections. The graph showing the sum of the near-river sentry wells' total molar concentrations shows total chlorinated ethene concentration sums greater than 25 µMol/L during the first four injections. Following the fifth injection, their total molar concentrations remained below 10 µMol/L. A graph of the sum of total molar chlorinated ethenes for past pore water sample results is also shown in Appendix J. Similar to the near-river sentry wells, the contaminant concentrations appear to decrease in time in pore water.

5.3 Conceptual Site Model

The human health CSM (Appendix K) has been revised to reflect the most recent sampling data presented in this report. Complete pathways are described in this section.

The Incidental Soil Ingestion pathway is potentially complete for current and future adult and child residents, commercial or industrial workers, construction workers, site visitors, trespassers, and recreational users. Excavated soil and gravel from the lower plume area was treated onsite until COCs were below their respective ACLs and was land-spread onsite. However, COCs may still be present in soil at concentrations above their respective ADEC 18 AAC 75 Table B1. Method Two – Soil Cleanup Levels, which are more stringent, but intended to be protective of Human Health.

The Ingestion of Groundwater, as well as the Inhalation of Volatile Compounds in Tap Water, pathways are possibly complete for current and future adult and child residents, commercial or industrial workers, construction workers, site visitors, trespassers, and recreational users. The private well on the property is sampled annually under the ADEC Drinking Water Program for VOCs, in addition to other sampling frequencies for additional contaminants such as coliform and radionuclides. The Public Water System ID is AK2241012. Information can be found at http://dec.alaska.gov/DWW/JSP/WaterSystemDetail.jsp?tinwsys_is_number=1605&tinwsys_st_code=AK&wsnumber=AK2241012. The most recent VOCs samples were collected from the water system on December 26, 2018. No contaminants of concern were detected above reporting levels of 0.4 µg/L and 0.5 µg/L. Annual monitoring ensures receptor exposure remains below risk-based levels.

The Inhalation of Outdoor Air pathway is potentially complete for current and future adult and child residents, commercial or industrial workers, construction workers, site visitors, trespassers, and recreational users. Excavated soil and gravel from the lower plume area was treated onsite until COCs were below their respective ACLs and was land-spread onsite. However, COCs may still be present in soil at concentrations above their respective ADEC 18 AAC 75 Table B1. Method Two – Soil Cleanup Levels, which are more stringent, but intended to be protective of Human Health.

The Inhalation of Indoor Air pathway is complete for current and future adult and child residents, commercial or industrial workers, construction workers, site visitors, trespassers, and recreational users. Vapor intrusion (VI) evaluations have occurred at the site. In 2009, OASIS Environmental, Inc. (OASIS) sampled shallow soil at eight locations where the excavated soil from the lower plume area was land-spread. PCE was the only COC detected and had a concentration of 0.984 milligrams per kilogram (mg/kg) in one of the samples. Non-detect results were less than reporting limits of generally 0.04 mg/kg to 0.05 mg/kg. The PCE detection was input into the Johnson & Ettinger model. The modeled output showed a cancer risk of 8E-06, below the ADEC threshold of 1E-05, and a non-cancer risk of 5.2E-03, below the ADEC threshold hazard quotient of 1 (OASIS, 2009). OASIS performed a VI evaluation in 2010 that included installation and sampling of 32 exterior soil gas points and performance of indoor air and crawlspace or sub-slab soil gas sampling at four onsite structures. PCE and TCE exceeded the residential and commercial soil gas targets at eight of the 32 exterior locations and at three sub-slab locations within the former dry cleaner building. PCE in indoor air in the former dry cleaner building was 22 micrograms per cubic meter

(µg/m^3) which exceeded the past commercial indoor air target of 21 µg/m^3 within the former dry cleaner building (OASIS, 2011). The current PCE indoor air target is 41 µg/m^3 (ADEC, 2017). COCs are present in samples from groundwater monitoring wells proximal to the former dry cleaner building and at other locations on the property at concentrations exceeding their ADEC targets found in current VI Guidance (ADEC, 2017). As a result, the VI pathway should be re-evaluated if the former dry cleaner building use changes, its configuration changes, or if any new buildings are built onsite.

The Ingestion of Surface Water pathway is complete for current and future adult and child residents, commercial or industrial workers, construction workers, site visitors, trespassers, and recreational users. The Kenai River, which is adjacent to the property, is used for recreational purposes (fishing, boating, canoeing, kayaking, and swimming). Considering PCE and VC concentrations in groundwater samples collected from near-river sentry wells exceeded their respective modeled ACLs (three times their water quality criteria in 18 AAC 70), and the contaminated groundwater at these locations is likely hydraulically connected to the Kenai River, surface water may also be impacted by the COCs. Surface water nearest the near-river sentry wells MW-5, MW-6, and MW-8 was sampled during 16 events from 1997 to 2014. 2009 was the only surface water sampling event with COC detections when TCE, cDCE, and VC were detected (ERM, 2017).

The Direct Contact with Sediment pathway is potentially complete for current and future adult and child residents, commercial or industrial workers, construction workers, site visitors, trespassers, and recreational users. The Kenai River, which is adjacent to the property, is used for recreational purposes (fishing, boating, canoeing, kayaking, and swimming). Considering PCE and VC concentrations in groundwater samples collected from near-river sentry wells exceeded their respective modeled ACLs (three times their water quality criteria in 18 AAC 70), and the contaminated groundwater at these locations is likely hydrologically connected to the surface water, sediment may also be impacted by the COCs. COCs had been detected in site sediments during 1997, 1999, 2002, 2004, 2006, 2008, and 2013 sediment sampling events (ERM, 2013).

(This Page Intentionally Left Blank)

6.0 CONCLUSIONS

Ahtna, with assistance from its teaming partners Rescon, Geosyntec Consultants, Inc. and ADS, performed compliance and performance groundwater sampling at 22 groundwater monitoring wells at the RTRVP in December 2018 and reported on the results.

6.1 Results Comparison to ADEC Table C GCLs

The December 2018 groundwater sampling analytical results (provided in Tables 4 through 7) show that PCE, TCE, cDCE, tDCE, VC, and benzene are present at concentrations above their applicable ADEC Table C Groundwater Cleanup Levels. The following bullets summarize cleanup level exceedances from this most-recent monitoring event.

- PCE concentrations were detected above the 41 µg/L GCL in two upper plume wells (MW-25 and MW-42) and four lower plume wells (MW-47, MW-50, L-80A, and L-103) in the semi-confined water-bearing zone.
- TCE concentrations were detected above the 2.8 µg/L GCL in four of the upper plume wells (MW-16, MW-25, MW-38, and MW-42), four of the lower plume wells (MW-47, MW-50, L-80A, and L-103) in the semi-confined water-bearing zone, and one of the near-river sentry wells (MW-7).
- cDCE concentrations were detected above the 36 µg/L GCL in two of the upper plume wells (MW-25 and MW-38), and nine of the lower plume wells in the semi-confined water-bearing zone.
- tDCE concentrations were detected above the 360 µg/L GCL in only two wells (MW-47 and MW-50) in the semi-confined water-bearing zone.
- VC concentrations were detected above the 0.19 µg/L GCL in twenty of the twenty-two wells sampled.
- Benzene concentrations were detected above the 4.6 µg/L GCL at two wells (MW-47 and L-103) in the semi-confined water-bearing zone. However, the limits of detection for samples from three of the wells (MW-48, L-78, and L-80A) in the lower plume were greater than the GCL.

6.2 Results Comparison to ACLs established in 2000 ROD

The December 2018 groundwater sampling analytical results (provided in Tables 4 through 7) show that PCE, cDCE, DCE, VC, and benzene are present at concentrations above their applicable ROD-specified cleanup levels. The following bullets summarize cleanup level exceedances from this most-recent monitoring event.

- PCE concentrations were detected above the 840 µg/L on-RTRVP property cleanup level in samples from four lower plume wells (MW-47, MW-50, L-80A, and L-103) in the semi-confined water-bearing zone. PCE was also detected at a concentration above the 50 µg/L off-RTRVP property cleanup level at well MW-25, which is located in the upper plume within 10 feet of the northwestern property boundary. Additionally, PCE was detected at a concentration above the 15 µg/L modeled action level in a sample from the near-river sentry well MW-7.

- TCE exceeded the off-RTRVP property cleanup level of 50 µg/L at MW-38. MW-38 had a TCE concentration of 82.1 µg/L, and is located off the RTRVP property.
- cDCE concentrations were detected above the 11,600 µg/L on-RTRVP property cleanup level in five of the lower plume wells (MW-47, MW-50, L-78, L-80A, and L-103) in the semi-confined water-bearing zone.
- 1,1-DCE concentrations were detected above the 7 µg/L on-RTRVP property cleanup level in three of the lower plume wells (MW-47, MW-50, and L-80A) in the semi-confined water-bearing zone.
- VC concentrations were detected above the 2 µg/L on-RTRVP property cleanup level in seventeen of the twenty-two wells sampled. Additionally, a sample from one of the near-river sentry wells (MW-6A) had a VC concentration above the 6 µg/L modeled action level and the 6 µg/L eco-action level.
- Benzene was detected at a concentration above the 50 µg/L on-RTRVP property cleanup level at one well (MW-47) in the semi-confined water-bearing zone.

6.3 Current state of biodegradation for upper plume and lower plume

6.3.1 Upper Plume

Microbial and functional gene analyses of groundwater samples collected from three upper plume wells indicate microbial populations, and associated functional genes, are not favorable overall for complete dechlorination, as follows.

- The microbial species Dhc was present in groundwater samples at concentrations ranging from levels that may or may not be associated with observable dechlorination activity (MW-38) to levels that are typically sub-optimal for high rates of dechlorination (MW-25 and MW-42).
- The VC reductase gene, vcrA, which plays a role in converting cDCE and VC to ethane, was detected above the minimum concentration required for robust VC dechlorination at one of the three upper plume wells sampled (MW-38). The concentrations at the other two wells (MW-25 and MW-42) were below this minimum requirement.

Groundwater samples were also analyzed for additional parameters to assess for evidence of anaerobic biodegradation, as well as adequate microbial nutrients (electron donors). Results suggest anaerobic biodegradation is occurring, and subsurface site conditions are likely conducive for reductive dechlorination processes at well location MW-38 (center of the upper plume) only, as follows.

- Volatile fatty acids (VFAs) were not detected in the three upper plume wells with samples submitted for them (MW-25, MW-38, and MW-42), which indicate an inadequate fermentable substrate (carbon source) at those locations.
- Total organic carbon concentrations were below the threshold level of 20 mg/L. This suggests the nutrient (electron donor) source at these locations is not likely sufficient to drive dechlorination processes.
- The dissolved iron concentrations ranged from 0.007 mg/L to 0.813 mg/L. Detectable concentrations of dissolved iron are indicative of anaerobic biodegradation processes.

- The detected methane concentration was greater than the 0.5 mg/L threshold level in a sample from only one of the three wells sampled (MW-38) and suggests that strongly reducing conditions, favorable for dechlorination processes, are present in this location only.
- Ethane was not detected in any of the upper plume wells, while the ethene concentration in a sample from only one well (MW-38) was greater than the threshold level of 0.01 mg/L. Ethene and ethane are daughter products of VC and indicate there is likely a reductive pathway in the groundwater at this location.

6.3.2 Lower Plume

Microbial and functional gene analyses of groundwater samples collected from seven lower plume semi-confined water-bearing zone with glacial till wells indicate microbial populations, and associated functional genes, are currently generally favorable for complete dechlorination, as follows.

- Dhc concentrations ranged from levels typically associated with very high rates of dechlorination (MW-48) to levels associated with significant rates of dechlorination (MW-49, MW-50, and MW-51) to levels that may or may not be associated with observable dechlorination activity (MW-47, L-78, and L-103).
- The VC reductase gene, vcrA, which plays a role in converting cDCE and VC to ethane, was detected at concentrations generally associated with robust VC dechlorination at six of the seven wells sampled.

Groundwater samples were also analyzed for additional parameters to assess for evidence of anaerobic biodegradation, as well as adequate microbial nutrients (electron donor). Results suggest anaerobic biodegradation is occurring, and subsurface site conditions are likely conducive for reductive dechlorination processes, as follows.

- VFAs were detected in samples from six of the seven wells above 10 - 20 mg/L, which is generally indicative of the presence of adequate electron donors. However, VFAs in samples from five of the lower-plume wells were predominantly acetate. Acetate on its own is not an effective electron donor for complete reductive dechlorination. Consequently, it may be necessary to add additional electron donor.
- Total organic carbon concentrations in all seven wells sampled were above the threshold level of 20 mg/L. This concentration range suggests the nutrient (electron donor) source at these locations is likely sufficient to drive dechlorination processes.
- The dissolved iron concentrations in all seven wells sampled were above the threshold level of 1 mg/L. Detectable concentrations of dissolved iron are indicative of anaerobic biodegradation processes.
- Methane concentrations were greater than the 0.5 mg/L threshold level that is indicative of strongly reducing conditions favorable for dechlorination processes.
- Ethane was detected in four of the wells. The concentration of 0.011 mg/L at well L-78 was the only detectable concentration that exceeded the threshold level of 0.01 mg/L. Ethene was detected in all seven wells at concentrations greater than the threshold level of 0.01 mg/L. Both are daughter products of VC and their presence indicates there is likely a reductive pathway in the groundwater at these locations.

(This Page Intentionally Left Blank)

7.0 RECOMMENDATIONS

Based on review of the 2018 groundwater sampling analytical results and exceedances of applicable cleanup levels for PCE, cDCE, DCE, VC, and benzene, continued groundwater monitoring is warranted. The migration of contaminants off-site from the upper plume and into the Kenai River from the lower plume should be confirmed by additional rounds of sampling as soon as possible, due to exceedances of off-RTRVP property ACLs and modeled action levels at wells in these two areas.

Another round of VOCs sampling should occur at the upper plume wells as soon as possible to confirm the following cleanup level exceedances: off-site ACL for PCE at MW-25, off-site ACLs for TCE and VC at MW-38, and on-site ACL for VC at MW-16. If confirmed, additional HRC®, or similar treatment, should be performed in the upper plume area, to be in accordance with the 2000 ROD. It may just be necessary for a periodic maintenance injection.

It is recommended to conduct a round of surface water and pore water sampling along the river bank below the property this year, considering the near-river sentry wells had several exceedances: modeled ACL for PCE in MW-7, on-site ACL for VC in MW-7, and modeled and eco-action ACLs for VC in MW-6A. This event would aid in assessing the extent of the PCE / VC impact and the possibility of a completed exposure pathway in the Kenai River. This sampling event should occur when the Kenai River is at a low stage height and a gaining stream. Appendix L shows a hydrograph from the US Geological Survey station 15266300 for the last three years. Tables are shown in that appendix listing the prior pore water and surface water sampling events, which occurred in either spring or fall timeframes, when the river stage was likely low. Another table in that appendix shows minimum and maximum Kenai River stage heights for April, May, October, and November for the last three years. It can be seen that comparable stage heights occur in the spring and fall. Therefore, it is recommended to perform the additional pore water and surface water sampling in Fall 2019. If pore water or surface water results indicate contaminant migration into the Kenai River, additional HRC®, or similar treatment, should be performed in the lower plume area to be consistent with the 2000 ROD. Similar to the upper plume, maintenance injections may be necessary for the near-future to reduce off-site contaminant migration.

Appendix M shows an updated recommended monitoring program for the River Terrace RV Park site. This plan will be updated as future sampling results are obtained and evaluated.

Annual groundwater sampling should be performed at select upper plume and near-river sentry wells because these results identify off-site contaminant movement.

However, biennial groundwater sampling or groundwater sampling every three years is recommended for the lower plume wells based on the following.

- The Mann-Kendall trend analyses of chlorinated ethane molar concentrations in groundwater collected from lower plume wells generally exhibit decreasing to no trends.
- Microbial and functional gene analyses of groundwater samples collected from seven lower plume semi-confined water-bearing zone within glacial till wells indicate microbial

populations, and associated functional genes, are currently generally favorable for complete dechlorination.

- Performance monitoring results suggest anaerobic biodegradation is currently occurring, and subsurface site conditions are currently conducive for reductive dechlorination processes.

8.0 REFERENCES

Ahtna Engineering Services, 2018. *Groundwater Compliance and Performance Monitoring Plan, River Terrace RV Park, Soldotna, Alaska*. December 4.

Air Force Center for Environmental Excellence (AFCEE), 2000. *Designing Monitoring Programs to Effectively Evaluate the Performance of Natural Attenuation*. January.

AFCEE, 2004. *Principles and Practices of Enhanced Anaerobic Bioremediation of Chlorinated Solvents.* August.

Alaska Department of Environmental Conservation (ADEC), 2000. *Record of Decision, River Terrace RV Park*, approved on August 31, 2000.

ADEC, 2017. *Guidance on Developing Conceptual Site Models*. Division of Spill Prevention and Response, Contaminated Sites Program. January.

ADEC, 2017. *Site Characterization Work Plan and Reporting Guidance for Investigation of Contaminated Sites.* ADEC Division of Spill Prevention and Response, Contaminated Sites Program. March 7.

ADEC, 2017. *Field Sampling Guidance*. ADEC Division of Spill Prevention and Response, Contaminated Sites Program. August.

ADEC, 2017. *Vapor Intrusion Guidance for Contaminated Sites.* November.

ADEC, 2018. *Oil and Other Hazardous Substances Pollution Control*. Title 18 Alaska Administrative Code, Chapter 75. October 27.

Alaska Department of Transportation and Public Facilities (ADOT&PF), 1963. *Foundation Investigation Kenai River Bridge No. 671*. July.

ADOT&PF, 1997. *Memorandum of Kenai River Bridge No. 671 Drilling Activities.* November 12.

Bradley, Paul, and Francis Chapelle, 2005. *Chloroethene Biodegradation in the "Lower" Contaminant Plume, River Terrace RV Park, Soldotna, Alaska.* USGS Open File Report 2004-1427.

Environmental Resources Management Alaska, Inc. (ERM) 2013. *2013 Kenai River Sediment/Pore Water Sampling – River Terrace RV Park.* October.

ERM, 2017. *October 2016 Groundwater Monitoring Report, River Terrace RV Park, Soldotna, Alaska.* February.

Gilbert, R. O., 1987. *Statistical Methods for Environmental Pollution Monitoring.* Van Nostrand Reinhold, New York.

http://dec.alaska.gov/DWW/JSP/WaterSystemDetail.jsp?tinwsys_is_number=1605&tinwsys_st_code=AK&wsnumber=AK2241012.

Interstate Technology & Regulatory Council, 2013. *Environmental Molecular Diagnostics.* April.

OASIS Environmental Inc./Bristol Environmental Inc. (OASIS/Bristol), 2000. *River Terrace RV Park Final Remedial Investigation/Feasibility Study Report.* May.

OASIS/Bristol, 2002. *Final Phase I and Phase II Remediation Report, October 2000 through March 2002, River Terrace RV Park, Soldotna, Alaska.* June 27.

OASIS Environmental Inc. (OASIS), 2009. *Final Letter Report – 2009 Vapor Intrusion Evaluation at River Terrace RV Park, Soldotna, Alaska, NTP No. 18-9028-13-85*. November 25.

OASIS, 2011. *April and June 2010 Vapor Intrusion Assessment, River Terrace RV Park, Soldotna, Alaska.* March.

US Environmental Protection Agency, 1998. *Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Ground Water.* EPA/600/R-98/128. September.

TABLES

(This Page Intentionally Left Blank)

TABLE 4

GROUNDWATER SAMPLING RESULTS FOR CONTAMINANTS OF CONCERN - DECEMBER 2018

RIVER TERRACE RV PARK

Location	Sample ID	Date Sampled	PCE	TCE	cDCE	tDCE	1,1-DCE	Vinyl chloride	Benzene
			Results and Cleanup/Action levels in micrograms per liter (µg/L)						
			GCL = 41	GCL = 2.8	GCL = 36	GCL = 360	GCL = 280	GCL = 0.19	GCL = 4.6
			VI = 58 / 240	VI = 5.0 / 21	VI = not established	VI = not established	VI = 200 / 820	VI = 1.5 / 25	VI = 16 / 69
			MCL = 5	MCL = 5	MCL = 70	MCL = 100	MCL = 7	MCL = 2	MCL = 5
			on-RTRVP = 840	on-RTRVP = 21,900	on-RTRVP = 11,600	on-RTRVP = 11,600	on-RTRVP = 7	on-RTRVP = 2	on-RTRVP = 50
			off-RTRVP = 50	off-RTRVP = 50	off-RTRVP = 700	off-RTRVP = 1,000	off-RTRVP = 70	off-RTRVP = 20	off-RTRVP = 50
			modeled level = 15	modeled level = 15	modeled level = 210	modeled level = 300	modeled level = 21	modeled level = 6	not established
			eco action level = 120	eco action level = 350	eco action level = 210	eco action level = 300	eco action level = 21	eco action level = 6	not established
Upper Plume (Unconfined Aquifer)									
MW-16	18-RT-16-GW	12-Dec-18	3.78	2.97	7.45 B	1.62	<0.500	5.12	0.300 J
MW-23	18-RT-23-GW	12-Dec-18	5.43	<0.500	<0.500	<0.500	<0.500	<0.0750	<0.200
MW-25	18-RT-25-GW	12-Dec-18	89.5	44.3	67.1	0.340 J	<0.500	1.4	<0.200
MW-38	18-RT-38-GW	12-Dec-18	36.4	82.1	281	3.04	<0.500	45.1	0.250 J
MW-42	18-RT-42-GW	12-Dec-18	178	9.74	3.65 B	<0.500	<0.500	<0.0750	<0.200
Lower Plume (Unconfined Aquifer)									
MW-9	18-RT-9-GW	13-Dec-18	15.0	0.530 J	9.03 B	6.53	<0.500	2.11	1.65
MW-39	18-RT-39-GW	13-Dec-18	<0.500	<0.500	3.19 B	15.1	<0.500	2.71	1.92
MW-40	18-RT-40-GW	13-Dec-18	18.1	0.660 J	22.8	9.11	<0.500	22.2	1.49
Lower Plume - Semi-Confined Water-Bearing Zone within Glacial Till									
MW-44	18-RT-44-GW	13-Dec-18	1.45	0.770 J	62.8	1.99	0.320 J	205	<0.200
MW-47	18-RT-47-GW	13-Dec-18	10,600 J-	2,550 J-	34,300 J-	477 J-	31.0 J-	676 J-	85.0 J-
MW-48	18-RT-48-GW	13-Dec-18	22.5 J-	<25.0 UJ	4,030 J-	38.5 J-	<25.0 UJ	1,350 J-	<10.0 UJ
MW-49	18-RT-49-GW / 18-RT-FD1-GW	13-Dec-18	0.540 J	0.340 J	987	5.16	1.71	165	0.180 J
MW-50	18-RT-50-GW / 18-RT-FD3-GW	13-Dec-18	2,960 J	988 J	167,000	548	152	34,500	1.49
MW-51	18-RT-51-GW / 18-RT-FD2-GW	13-Dec-18	4.83	1.02 J	507	21.5	0.580 J	705	<0.200
MW-52	18-RT-52-GW	13-Dec-18	23.0	0.380 J	20.1	3.3	<0.500	30.7	<0.200
L-78	18-RT-78-GW	14-Dec-18	35.0 J-	<50.0 UJ	15,300 J-	43.0 J-	<50.0 UJ	2,540 J-	<20.0 UJ
L-80A	18-RT-80A-GW	13-Dec-18	104,000 J-	19,300 J-	53,600 J-	190 J-	197 J-	2,640 J-	<20.0 UJ
L-103	18-RT-103-GW	13-Dec-18	7,290 J-	2,150 J-	18,000 J-	201 J-	<50.0 UJ	303 J-	45.0 J-
Lower Plume - Near River (Sentry) (Unconfined Aquifer)									
MW-6A	18-RT-6A-GW	11-Dec-18	8.55	<0.500	4.30 B	4.47	<0.500	8.02	0.690
MW-7	18-RT-7-GW	12-Dec-18	16.9	5.36	11.1 B	3.31	<0.500	2.88	0.810
MW-12	18-RT-12-GW	12-Dec-18	1.46	1.55	14.4 B	<0.500	<0.500	0.240	<0.200
MW-35	18-RT-35-GW	12-Dec-18	1.76	1.77	24.9	0.800 J	<0.500	1.24	<0.200

Cleanup level exceedances are shaded to match highest cleanup criteria exceeded. Cleanup level exceedances are coded as follows:

A: on-RTRVP action level = alternative cleanup levels established in 1997 risk evaluation, pertains to upper and lower plumes (all wells).

B: off-RTRVP action level = cleanup levels in 18 AAC 75, adopted 1/22/99, multiplied by 10, pertains to wells near RTRVP property boundary in upper plume only.

C: modeled action level = three times water quality criteria (18 AAC 70), pertains to lower plume, near river sentry wells only, for PCE and degradation products.

D: eco action level = aquatic organism screening level from *Ecotox Thresholds; Eco Update III (II; 1-12)* (EPA OSWER 1996), pertains to lower plume, near river sentry wells only, for PCE and degradation products.

Upper plume wells located off-RTRVP property or within approximately 10 feet of the property boundary, applicable to B: off-RTRVP action levels, are shown in blue font.

Lower plume sentry wells applicable to C: modeled action levels and D: eco action levels are shown in red font.

A, B, C, and D action levels were established in the *Record of Decision, River Terrace RV Park* (ADEC, August 2000) (ROD). Exceedances of these levels require additional active treatment, in accordance with the ROD.

Site Institutional Controls are protective of the drinking water pathway; therefore, the MCLs and GCLs are shown for informational purposes only, along with VI targets. None are considered trigger points for active treatment.

GCL = Table C. Groundwater Cleanup Level (18 AAC 75)

VI = Vapor intrusion target levels for groundwater for residential / commercial scenarios from Vapor Intrusion Guidance (ADEC, November 2017)

MCL = drinking water maximum contaminant level, cleanup level for surface water and water hydrologically connected to surface water (18 AAC 80)

RTRVP = River Terrace RV Park

LOQ = limit of quantitation

QC = quality control

< = analyte was not detected, limit of detection (1/2 the LOQ)

B = Result value is estimated, biased high, due to blank contamination.

J = Result value is estimated. The analyte was detected below the LOQ or is affected by a QC anomaly.

J- = Result value is estimated, biased low, due to a QC anomaly.

UJ = Result value is estimated, biased low. The analyte was not detected.

PCE = tetrachloroethene

TCE = trichloroethene

cDCE = cis-1,2-dichloroethene

tDCE = trans-1,2-dichloroethene

1,1-DCE = 1,1-dichloroethene

(This Page Intentionally Left Blank)

TABLE 9

PERFORMANCE MONITORING RESULTS - DECEMBER 2018

RIVER TERRACE RV PARK

Location	Sample ID	Date Sampled	pH	Temp	ORP	DO*	TOC	Total Iron	Dissolved Iron	Methane	Ethane	Ethene	Dhc	vcrA	bvcA	tceA	Lactate	Acetate	Propionate	Formate	Butyrate	Pyruvate
			unitless	˚C	mV	mg/L	mg/L	mg/L	mg/L	ug/L	ug/L	ug/L	GC/L	GC/L	GC/L	GC/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Upper Plume (Unconfined Aquifer)																						
MW-16	18-RT-16-GW	12-Dec-18	6.42	7.27	-12.5	0.38*	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-23	18-RT-23-GW	12-Dec-18	6.41	6.40	164.2	8.08*	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-25	18-RT-25-GW	12-Dec-18	6.33	6.02	146.8	2.87*	3	0.842	0.007	27.0	< 0.50	1.0	3E+03	6E+03	3E+03 U	3E+03 U	0.39 U	0.54 U	0.31 U	0.22 U	0.41 U	0.69 U
MW-38	18-RT-38-GW	12-Dec-18	7.27	6.13	29.2	0.42*	2	1.43	0.813	2,830	< 0.50	15.9	4E+05	1E+06	3E+03 U	3E+03 U	0.39 U	0.54 U	0.31 U	0.22 U	0.41 U	0.69 U
MW-42	18-RT-42-GW	12-Dec-18	6.40	8.69	79.5	4.62*	4	0.361	0.01	85.3	< 0.50	< 0.50	6E+03	2E+04	3E+03 U	3E+03 U	0.39 U	0.54 U	0.31 U	0.22 U	0.41 U	0.69 U
Lower Plume (Unconfined Aquifer)																						
MW-9	18-RT-9-GW	13-Dec-18	7.52	5.72	-41.7	1.70	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-39	18-RT-39-GW	13-Dec-18	6.20	6.43	-48.3	0.40	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-40	18-RT-40-GW	13-Dec-18	6.87	5.12	0.3	1.89	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Lower Plume - Semi-Confined Water-Bearing Zone within Glacial Till																						
MW-44	18-RT-44-GW	13-Dec-18	7.41	5.44	-115	0.28*	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-47	18-RT-47-GW	13-Dec-18	5.46	4.41	-70.7	0.39	128,000	2,660	2,620	1,940	2.5	15.6	2E+05	4E+05	1E+04 U	1E+04 U	6,292	2,413	3,361	22 U	4,981	33
MW-48	18-RT-48-GW	13-Dec-18	8.72	5.67	-58.6	1.94	416	105	27.8	9,720	< 0.50	434	2E+09	5E+09	9E+06	6E+03 U	7.8 U	729	548	4.4 U	22	14
MW-49	18-RT-49-GW / 18-RT-FD1-GW	13-Dec-18	6.30	5.67	25.6	1.90	39	128	84.8	3,850	< 0.50	150	2E+08 J	3E+08	7E+06	1E+04 U	0.39 U	69	8.1	1.1 J	1.4 J	0.69 U
MW-50	18-RT-50-GW	13-Dec-18	8.68	4.11	-71.7	2.14	59	6.64	4.33	15,500	< 0.50	2,390	8E+08	1E+09	2E+07	4E+03 U	0.39 U	111	13	0.22 U	0.41 U	0.69 U
MW-51	18-RT-51-GW	13-Dec-18	6.92	5.33	47.7	4.75	44	7.12	5.00	3,060	< 0.50	1,570	7E+07	1E+08	2E+06	4E+03 U	0.39 U	83	11	0.22 U	0.41 U	0.69 U
MW-52	18-RT-52-GW	13-Dec-18	11.09	3.54	-126	1.90	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
L-78	18-RT-78-GW	14-Dec-18	6.40	4.99	-99.8	0.74	3,980	916	567	19,800	10.5	2,610	3E+06	7E+06	8E+04	6E+03 U	39 U	4,023	944	22 U	2,739	69 U
L-80A	18-RT-80A-GW	13-Dec-18	8.89	5.40	-311	1.91	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
L-103	18-RT-103-GW	13-Dec-18	5.48	4.98	-67.0	0.22	157,000	2,910	2,940	1,850	5.4	32.0	2E+06	8E+06	7E+03	1E+04 U	9,783	2,496	4,202	22 U	6,439	40
Lower Plume - Near River (Sentry) (Unconfined Aquifer)																						
MW-6A	18-RT-6A-GW	11-Dec-18	6.39	4.79	-13.5	0.34*	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-7	18-RT-7-GW	12-Dec-18	7.31	4.15	-2.6	0.30*	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-12	18-RT-12-GW	12-Dec-18	5.81	7.41	166.9	1.49	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-35	18-RT-35-GW	12-Dec-18	6.41	3.99	94.1	2.04*	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

< = analyte was not detected, limit of detection is shown (1/2 the LOQ)

˚C = degrees Celsius

Dhc = Dehalococcoides mccartyi

DO* = dissolved oxygen, values with asterisk were measured using downhole ODO meter, others were measured in flow-through cell

GC/L = gene copies per liter

LOQ = limit of quantitation

mg/L = milligrams per liter

mV = millivolts

ORP = oxidation-reduction potential

RTRVP = River Terrace RV Park

Temp = temperature

TOC = total organic carbon

J = Result value is estimated. The analyte was detected below the LOQ or is affected by a QC anomaly.

U = analyte was not detected, LOQ is shown

µg/L = micrograms per liter

(This Page Intentionally Left Blank)

FIGURES

(This Page Intentionally Left Blank)

FIGURE 1

SITE PLAN

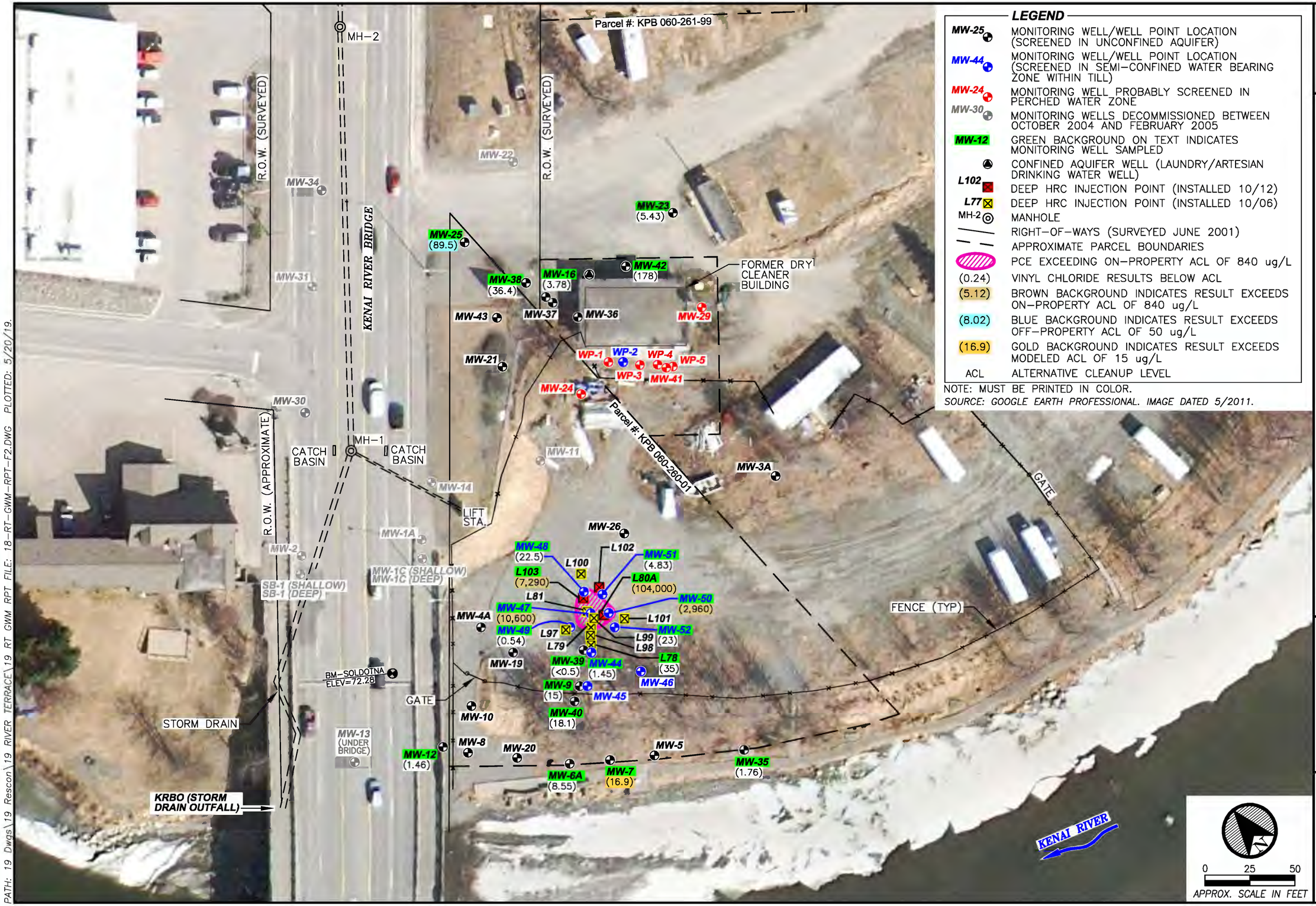
RIVER TERRACE RV PARK
2018 DECEMBER GROUNDWATER MONITORING REPORT
Soldotna, Alaska

Ahtna Engineering Services, LLC

DATE: MAY 2019
CHKD: R.M.B.
DRAWN: C.E.H.
PROJECT No.: 20301.005.01

PATH: 19 Dwgs\19 Rescon\19 RIVER TERRACE\19 RT GWM RPT FILE: 18-RT-GWM-RPT-F1.DWG PLOTTED: 5/20/19.

(This Page Intentionally Left Blank)



LEGEND

MW-25	MONITORING WELL/WELL POINT LOCATION (SCREENED IN UNCONFINED AQUIFER)
MW-44	MONITORING WELL/WELL POINT LOCATION (SCREENED IN SEMI-CONFINED WATER BEARING ZONE WITHIN TILL)
MW-24	MONITORING WELL PROBABLY SCREENED IN PERCHED WATER ZONE
MW-30	MONITORING WELLS DECOMMISSIONED BETWEEN OCTOBER 2004 AND FEBRUARY 2005
MW-12	GREEN BACKGROUND ON TEXT INDICATES MONITORING WELL SAMPLED
	CONFINED AQUIFER WELL (LAUNDRY/ARTESIAN DRINKING WATER WELL)
L102	DEEP HRC INJECTION POINT (INSTALLED 10/12)
L77	DEEP HRC INJECTION POINT (INSTALLED 10/06)
MH-2	MANHOLE
	RIGHT-OF-WAYS (SURVEYED JUNE 2001)
	APPROXIMATE PARCEL BOUNDARIES
	PCE EXCEEDING ON-PROPERTY ACL OF 840 ug/L
(0.24)	VINYL CHLORIDE RESULTS BELOW ACL
(5.12)	BROWN BACKGROUND INDICATES RESULT EXCEEDS ON-PROPERTY ACL OF 840 ug/L
(8.02)	BLUE BACKGROUND INDICATES RESULT EXCEEDS OFF-PROPERTY ACL OF 50 ug/L
(16.9)	GOLD BACKGROUND INDICATES RESULT EXCEEDS MODELED ACL OF 15 ug/L
ACL	ALTERNATIVE CLEANUP LEVEL

NOTE: MUST BE PRINTED IN COLOR.
SOURCE: GOOGLE EARTH PROFESSIONAL. IMAGE DATED 5/2011.

FIGURE 2

PCE EXTENT AND CONCENTRATION MAP

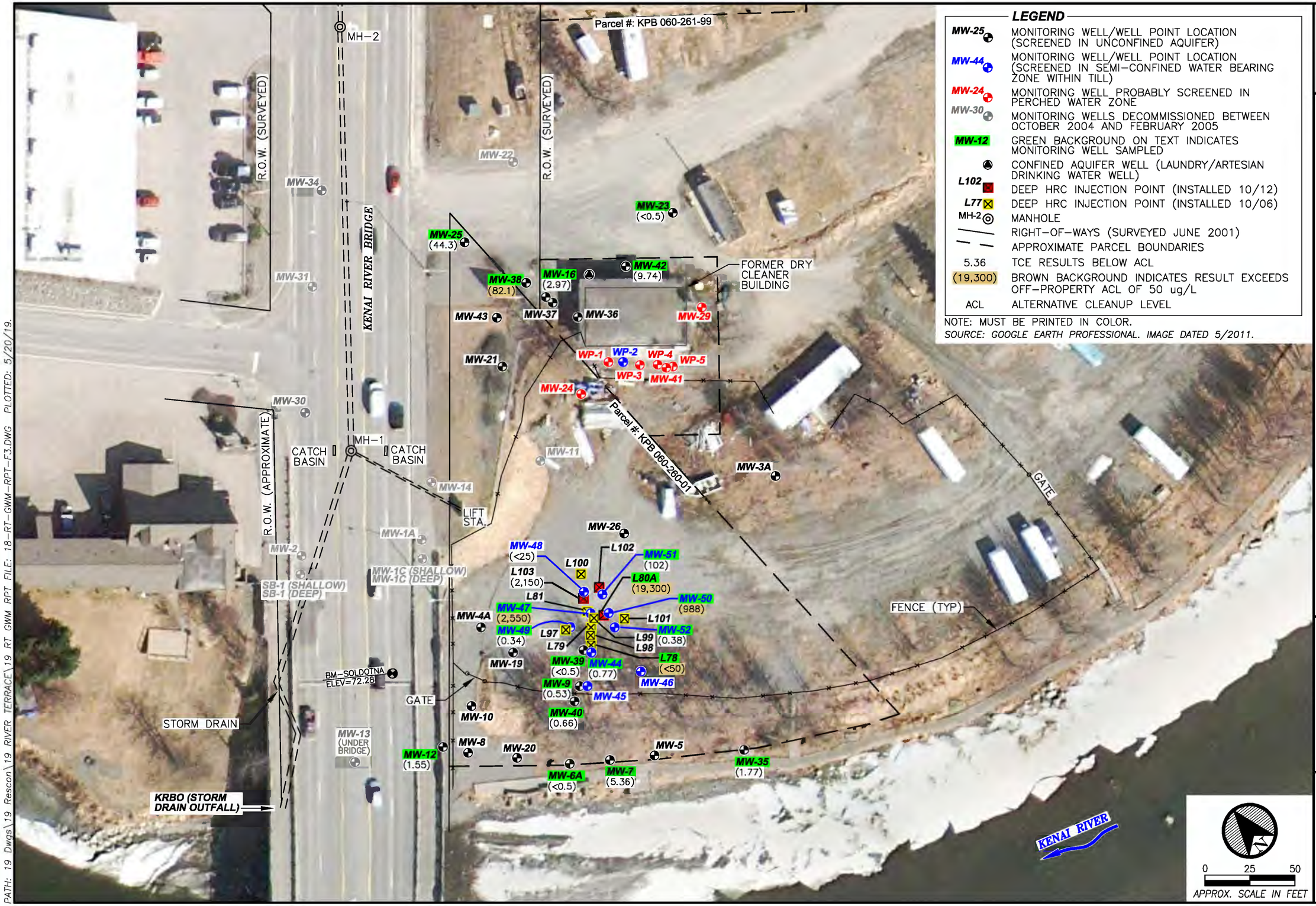
RIVER TERRACE RV PARK
2018 DECEMBER GROUNDWATER MONITORING REPORT
Soldotna, Alaska

Ahtna Engineering Services, LLC

DATE: MAY 2019
CHKD: R.M.B.
DRAWN: C.E.H.
PROJECT No.: 20301.005.01

PATH: 19 Dwgs\19 Rescon\19 RIVER TERRACE\19 RT GWM RPT FILE: 18-RT-GWM-RPT-F2.DWG PLOTTED: 5/20/19.

(This Page Intentionally Left Blank)



LEGEND

MW-25	MONITORING WELL/WELL POINT LOCATION (SCREENED IN UNCONFINED AQUIFER)
MW-44	MONITORING WELL/WELL POINT LOCATION (SCREENED IN SEMI-CONFINED WATER BEARING ZONE WITHIN TILL)
MW-24	MONITORING WELL PROBABLY SCREENED IN PERCHED WATER ZONE
MW-30	MONITORING WELLS DECOMMISSIONED BETWEEN OCTOBER 2004 AND FEBRUARY 2005
MW-12	GREEN BACKGROUND ON TEXT INDICATES MONITORING WELL SAMPLED
	CONFINED AQUIFER WELL (LAUNDRY/ARTESIAN DRINKING WATER WELL)
L102	DEEP HRC INJECTION POINT (INSTALLED 10/12)
L77	DEEP HRC INJECTION POINT (INSTALLED 10/06)
MH-2	MANHOLE
	RIGHT-OF-WAYS (SURVEYED JUNE 2001)
	APPROXIMATE PARCEL BOUNDARIES
5.36	TCE RESULTS BELOW ACL
(19,300)	BROWN BACKGROUND INDICATES RESULT EXCEEDS OFF-PROPERTY ACL OF 50 ug/L
ACL	ALTERNATIVE CLEANUP LEVEL

NOTE: MUST BE PRINTED IN COLOR.
SOURCE: GOOGLE EARTH PROFESSIONAL. IMAGE DATED 5/2011.

FIGURE 3

TCE EXTENT AND CONCENTRATION MAP

RIVER TERRACE RV PARK
2018 DECEMBER GROUNDWATER MONITORING REPORT
Soldotna, Alaska

Ahtna Engineering Services, LLC

DATE: MAY 2019
CHKD: R.M.B.
DRAWN: C.E.H.
PROJECT No.: 20301.005.01

PATH: 19 Dwgs\19 Rescon\19 RIVER TERRACE\19 RT GWM RPT FILE: 18-RT-GWM-RPT-F3.DWG PLOTTED: 5/20/19.

(This Page Intentionally Left Blank)

LEGEND

MW-25	MONITORING WELL/WELL POINT LOCATION (SCREENED IN UNCONFINED AQUIFER)
MW-44	MONITORING WELL/WELL POINT LOCATION (SCREENED IN SEMI-CONFINED WATER BEARING ZONE WITHIN TILL)
MW-24	MONITORING WELL PROBABLY SCREENED IN PERCHED WATER ZONE
MW-30	MONITORING WELLS DECOMMISSIONED BETWEEN OCTOBER 2004 AND FEBRUARY 2005
MW-12	GREEN BACKGROUND ON TEXT INDICATES MONITORING WELL SAMPLED
	CONFINED AQUIFER WELL (LAUNDRY/ARTESIAN DRINKING WATER WELL)
L102	DEEP HRC INJECTION POINT (INSTALLED 10/12)
L77	DEEP HRC INJECTION POINT (INSTALLED 10/06)
MH-2	MANHOLE
	RIGHT-OF-WAYS (SURVEYED JUNE 2001)
	APPROXIMATE PARCEL BOUNDARIES
	Cis-1,2-DCE EXCEEDING ON-PROPERTY ACL OF 11,600 ug/L
(14.4)	VINYL CHLORIDE RESULTS BELOW ACL
(18,000)	BROWN BACKGROUND INDICATES RESULT EXCEEDS ON-PROPERTY ACL OF 11,600 ug/L
ACL	ALTERNATIVE CLEANUP LEVEL

NOTE: MUST BE PRINTED IN COLOR.
SOURCE: GOOGLE EARTH PROFESSIONAL. IMAGE DATED 5/2011.

FIGURE 4

Cis-1,2-DCE EXTENT AND CONCENTRATION MAP

RIVER TERRACE RV PARK
2018 DECEMBER GROUNDWATER MONITORING REPORT
Soldotna, Alaska

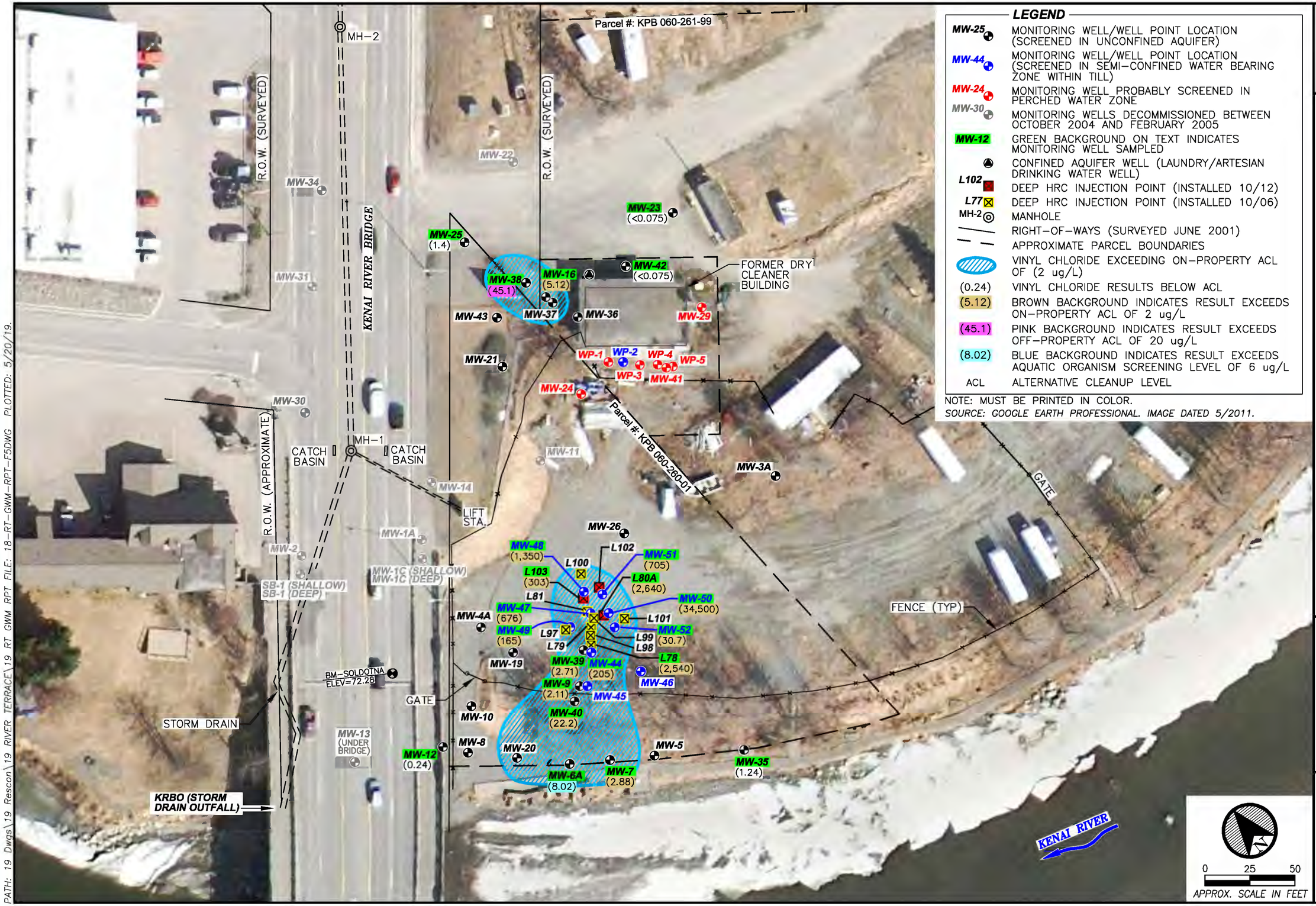
Ahtna Engineering Services, LLC

DATE: MAY 2019
CHKD: R.M.B.
DRAWN: C.E.H.
PROJECT No.: 20301.005.01

PATH: 19 Dwgs\19 Rescon\19 RIVER TERRACE\19 RT GWM RPT FILE: 18-RT-GWM-RPT-F4.DWG PLOTTED: 5/20/19.

(This Page Intentionally Left Blank)

PATH: 19 Dwgs\19 Rescon\19 RIVER TERRACE\19 RT GWM RPT FILE: 18-RT-GWM-RPT-F5DWG PLOTTED: 5/20/19.



LEGEND

MW-25	MONITORING WELL/WELL POINT LOCATION (SCREENED IN UNCONFINED AQUIFER)
MW-44	MONITORING WELL/WELL POINT LOCATION (SCREENED IN SEMI-CONFINED WATER BEARING ZONE WITHIN TILL)
MW-24	MONITORING WELL PROBABLY SCREENED IN PERCHED WATER ZONE
MW-30	MONITORING WELLS DECOMMISSIONED BETWEEN OCTOBER 2004 AND FEBRUARY 2005
MW-12	GREEN BACKGROUND ON TEXT INDICATES MONITORING WELL SAMPLED
	CONFINED AQUIFER WELL (LAUNDRY/ARTESIAN DRINKING WATER WELL)
L102	DEEP HRC INJECTION POINT (INSTALLED 10/12)
L77	DEEP HRC INJECTION POINT (INSTALLED 10/06)
MH-2	MANHOLE
	RIGHT-OF-WAYS (SURVEYED JUNE 2001)
	APPROXIMATE PARCEL BOUNDARIES
	VINYL CHLORIDE EXCEEDING ON-PROPERTY ACL OF (2 ug/L)
(0.24)	VINYL CHLORIDE RESULTS BELOW ACL
(5.12)	BROWN BACKGROUND INDICATES RESULT EXCEEDS ON-PROPERTY ACL OF 2 ug/L
(45.1)	PINK BACKGROUND INDICATES RESULT EXCEEDS OFF-PROPERTY ACL OF 20 ug/L
(8.02)	BLUE BACKGROUND INDICATES RESULT EXCEEDS AQUATIC ORGANISM SCREENING LEVEL OF 6 ug/L
ACL	ALTERNATIVE CLEANUP LEVEL

NOTE: MUST BE PRINTED IN COLOR.
SOURCE: GOOGLE EARTH PROFESSIONAL. IMAGE DATED 5/2011.

FIGURE 5

VINYL CHLORIDE EXTENT AND CONCENTRATION MAP

RIVER TERRACE RV PARK
2018 DECEMBER GROUNDWATER MONITORING REPORT
Soldotna, Alaska

Ahtna Engineering Services, LLC

DATE: MAY 2019
CHKD: R.M.B.
DRAWN: C.E.H.
PROJECT No.: 20301.005.01

(This Page Intentionally Left Blank)

APPENDIX A

SITE GROUNDWATER FLOW DIRECTION AND GRADIENT

(This Page Intentionally Left Blank)

APRIL, 2013 WATER TABLE CONTOURS

RIVER TERRACE RV PARK
2013 APRIL GROUNDWATER MONITORING REPORT
Soldotna, Alaska

FIGURE 2

LEGEND

- MW-25 — MONITORING WELL/WELL POINT LOCATION (SCREENED IN UNCONFINED AQUIFER)
- MW-44 — MONITORING WELL/WELL POINT LOCATION (SCREENED IN SEMI-CONFINED WATER BEARING ZONE WITHIN TILL)
- MW-24 — MONITORING WELL PROBABLY SCREENED IN PERCHED WATER ZONE
- MW-30 — MONITORING WELLS DECOMMISSIONED BETWEEN OCTOBER 2004 AND FEBRUARY 2005
- CONFINED AQUIFER WELL (LAUNDRY/ARTESIAN DRINKING WATER WELL)
- HRC INJECTION POINTS (PHASE II)
- HRC INJECTION POINTS (PHASE I)
- DRY INJECTION WELL
- DEEP HRC INJECTION POINT (INSTALLED 10/06-8/09)
- 57.90 — 10/18/10 GROUNDWATER ELEVATIONS IN FEET
- NM — NOT MEASURED
- 46 — WATER TABLE ELEVATION CONTOURS IN FEET (DASHED WHERE INFERRED FROM PREVIOUS MONITORING EVENTS) NOTE: PERCHED AND SEMI-CONFINED WATER ZONE ELEVATIONS ARE NOT CONTOURED
- INTERPRETED GROUNDWATER DIVIDE
- INFERRED GROUNDWATER FLOW DIRECTION
- INTERPRETED ZONE WHERE TOP OF TILL (PRE-EXCAVATION) IS NEAR OR ABOVE GROUNDWATER TABLE
- MH-2 — MANHOLE
- RIGHT-OF-WAYS (SURVEYED JUNE 2001)
- APPROXIMATE PARCEL BOUNDARIES

Parcel #: KPB 060-261-99
Parcel #: KPB 060-260-01
R.O.W. (SURVEYED)
R.O.W. (APPROXIMATE)
KENAI RIVER BRIDGE
FORMER DRY CLEANER BUILDING
CATCH BASIN
LIFT STA.
STORM DRAIN
BM-SOL DOTNA ELEV=72.28
MW-13 (UNDER BRIDGE)
MW-1C (SHALLOW)
MW-1C (DEEP)
SB-1 (SHALLOW)
SB-1 (DEEP)
KENAI RIVER

MW-22, MW-34, MW-31, MW-30, MW-2, MW-1A, MW-11, MW-14, MW-3A, MW-23 58.07, MW-25 58.04, MW-42 58.07, MW-38 57.99, MW-16 57.80, MW-37 NM, MW-36 58.13, MW-29 NM, MW-43 NM, MW-21 NM, WP-1, WP-2, WP-3, WP-4, WP-5, MW-41 NM, MW-24 NM, MW-26 51.20, MW-48, MW-51, MW-47, MW-50, MW-49, MW-52, MW-4A 52.99, MW-19 NM, MW-39 44.59, MW-44, MW-46 NM, MW-9 43.98, MW-45, MW-10 NM, MW-40 43.62, MW-12 43.91, MW-8 NM, MW-20 43.57, MW-6A 43.22, MW-7 NM, MW-5 42.87, MW-35 43.15

0 25 50 100 FEET

DATE: JUNE 2013
CHKD: T.M.
DRAWN: D.R.F.
PROJ. No.: 0174571

825 W. 8th Ave., Anchorage, AK 99501, (907) 258-4880

ERM

V:\PROJECT DRAWINGS\RIVER TERRACE\2013\REPORT\0174571_F2.dwg Jun 24, 2013.

MUST BE PRINTED IN COLOR

SOURCE: AERIAL PHOTOGRAPH SOLDOTNA9-30-06.TIF DATED 9/30/2006 PROVIDED BY AEROMAP INC.

(This Page Intentionally Left Blank)

APPENDIX B

PHOTOGRAPHIC LOG

(This Page Intentionally Left Blank)

PHOTOGRAPH 1: UPPER PLUME WELL MW-38 - LOOKING SOUTH. 12/12/2018.

PHOTOGRAPH 2: UPPER PLUME WELL MW-16 - LOOKING NORTHEAST. 12/12/2018.

PHOTOGRAPH 3: UPPER PLUME WELL MW-42 - LOOKING SOUTHEAST. 12/12/2018.

PHOTOGRAPH 4: NEAR RIVER SENTRY WELL MW-6A - LOOKING SOUTHWEST. 12/12/2018.

PHOTOGRAPH 5: LOWER PLUME WELL MW-9 - LOOKING SOUTHEAST. 12/13/2018.

PHOTOGRAPH 6: LOWER PLUME WELL MW-39 - LOOKING NORTHEAST. 12/13/2018.

PHOTOGRAPH 7: LOWER PLUME WELL MW-48 - LOOKING NORTHEAST. 12/13/2018.

PHOTOGRAPH 8: LOWER PLUME WELL MW-49 - LOOKING WEST. 12/13/2018.

APPENDIX C

FIELD NOTES AND SAMPLE DATA SHEETS

(This Page Intentionally Left Blank)

18°F River Terrace
Cloudy; Snow RB; FR 12/11/18
No wind

12/11/18

0700 Meet @ Rescon office (ANC) and load gear and equip for fieldwork.

0815 Depart ANC for Soldotna, Ak.

1200 Arrive at River Terrace RV Park.

1215 Check in with Gary Hinckle and let him know we'll be onsite collecting groundwater samples. Long conversation...

1245 Begin locating 22 wells using metal detector. The site is covered by approx 6"-12" of snow.

1415 All sites (wells) are marked. Begin digging into snow and ice at upper plume wells. (Note: complete tailgate safety form prior to initiating fieldwork). At well MW-16, the ice (below the snow) is approx 6"-8" thick. Use hammer drill to remove ice (use paddle bit).

River Terrace

12/11/18 RB FR

1700 Snow and ice removed from all upper plume wells. MW-36 is located below a new walk-in freezer placed along the west side of the former dry cleaner building.

1700 - 1730 Dinner break.

1730 Begin removing snow and ice from lower plume wells. Wells are located (closely) next to wells that are not scheduled to be sampled. It's necessary to expose extra wells to verify the correct wells are being sampled.

2030 Finish removing snow and ice from all lower plume wells. Ice was approx 6" to 12" thick in this area.

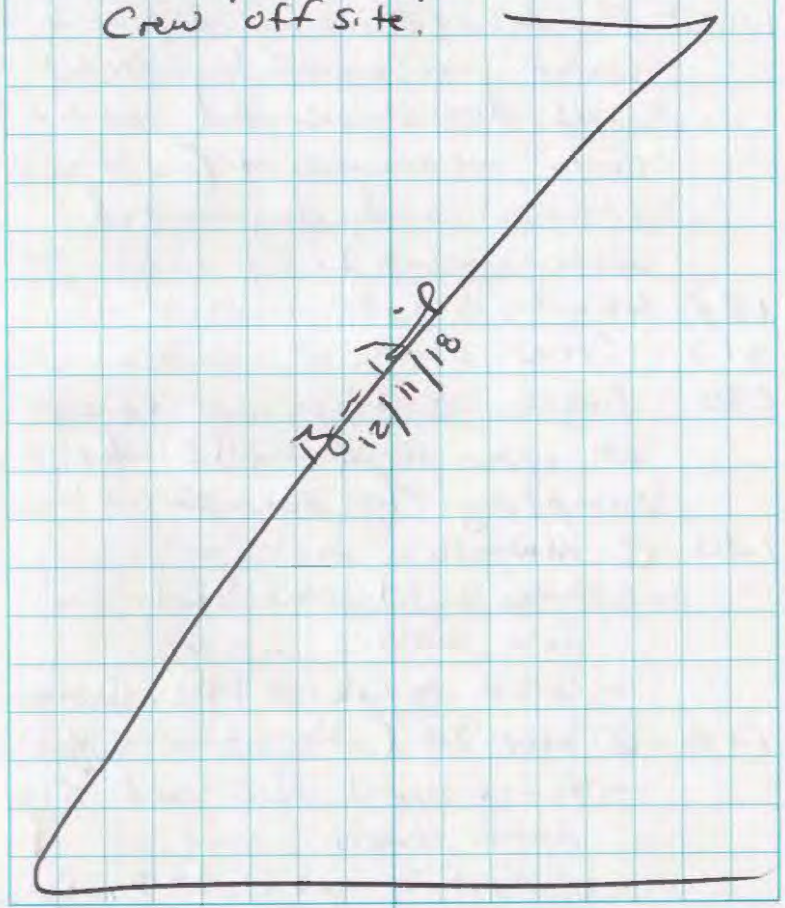
2045 Begin locating the four near river sentry wells.

River Terrace

EB FR 12/11/18

2045 cont. There's minimal snow at the rear river locations and no ice.

2200 All wells have been opened and positively identified. Crew off site.



River Terrace — 22°F Light Snow No wind

12/12/18 — RB FR

0730 Crew onsite.

0745 Tailgate safety meeting.

0800 Begin collecting depth-to-water measurements from all wells.

1100 Finish collecting depth-to-water measurements. Meter was decontaminated after each measurement (with alconox and deionized water rinse).

1130 Lunch break.

1215 Crew back at site.

1230 Begin setting up equip. at upper plume wells for sampling. Two set-ups utilized.

1315 @ MW-11c
- Purge until stabilized. See data sheets.
- Collect sample @ 1410. Decon.

1430 @ MW-38 (alternative to MW-36)
- Purge until stab.lized. See data sheets
- Collect sample@ 1510. Decon

River Terrace
RB FR
12/12/18

1530 @ MW 42
- Purge until stab.lized. See data sheets.
- Collect sample @ 1605. Decon.

1600 @ MW-25
- Purge until stab.lized. See data sheet.
- collect sample @ 1640. Decon.

1630 @ MW-23
- Purge until stab.lized. See data sheet.
- Collect sample @ 1710. Decon

1700 - Dinner break.

1745 - Crew back @ site.

1800 - @ MW-7
- Purge until stabilized.
- See data sheet.
- Collect sample @ 1840. Decon.

1830 - @ MW-12
Purge until stab.lized.
- Collect sample @ 1930.
- Decon.

River Terrace

12/12/18 RB FR

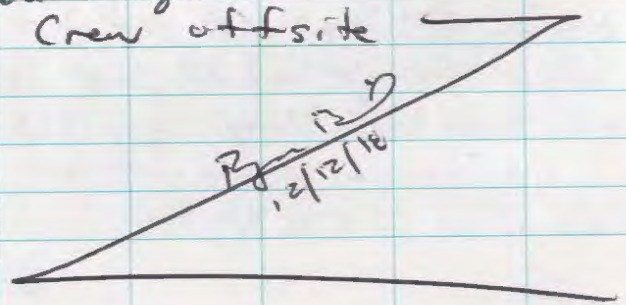
1915 @ MW-35
- Purge until stabilized.
- See data sheet
- Collect sample at 2000. Decon.

2030 @ MW-6A
- Purge until stabilized,
- See data sheet.
- Collect sample @ 2100. Decon.

Note: Submersible pump decontaminated by submersing in bucket of alconox/water solution, followed by a bucket of tapwater, followed by a bucket of de-ionized water.

2100 Place purge water in open-top drum staged at the northwest corner of the former dry cleaner building.

2130 Crew offsite



River Terrace

RB FR 12/13/18

0800 crew at site.

0830 Conduct tailgate safety meeting.

0900 Begin setting up equip @ sampling locations in the lower plume.

0930 @ MW-40
- Purge until stabilized
- See data sheet.
- Collect sample @ 1030. Decon.

Note: Collect equipment blank from one of the Submersible pumps prior to beginning sampling/purging.
Also, the down-hole DO meter was losing power due to the cold weather, so decided to use YSI only for DO readings.

1015 @ MW-44
Purge until stabilized
- See data sheet
- Collect sample @ 1100. Decon

Rite in the Rain

River Terrace

12/13/18 RB FR

1045 @ MW-09
- Purge until stabilized.
- See data sheet
- Collect sample at 1135. Decon.

1115 @ MW-39
- Purge until stab. lized
- See data sheet
- Collect sample @ 1200. Decon.

1145 @ MW-52
- Purge until stab. lized.
- See data sheet.
- Collect sample @ 1245. Decon.

1245 @ MW-47
- Purge until stab. lized.
- See data sheet.
- Collect sample @ 1315. Decon.

1300 @ MW-48
- Purge until stabilized.
- See data sheet
- Collect sample @ 1340. Decon.

1430 Temps drop. Water is freezing in tubing. Leave site to purchase gas canisters ~~for~~ for heater to place in ice-fishing tent.

River Terrace

RB FR 12/13/18

1430... cont.
Also, purchase new bolt for open-top purge water drums as well as a gas canister and torch to melt ice from monument covers.

1700 Back on site.

1730 @ MW-50
- Purge until stab. lized
- See data sheet
- Collect sample @ 1840.
- Decon.

1830 @ MW-49
- Purge until stab. lized.
- See data sheet
- Collect sample at 1925. Decon.

1950 @ MW-51
- Purge until stab. lized.
- See data sheet
- Collect sample @ 2035.
- Decon.

RB 12/13/18

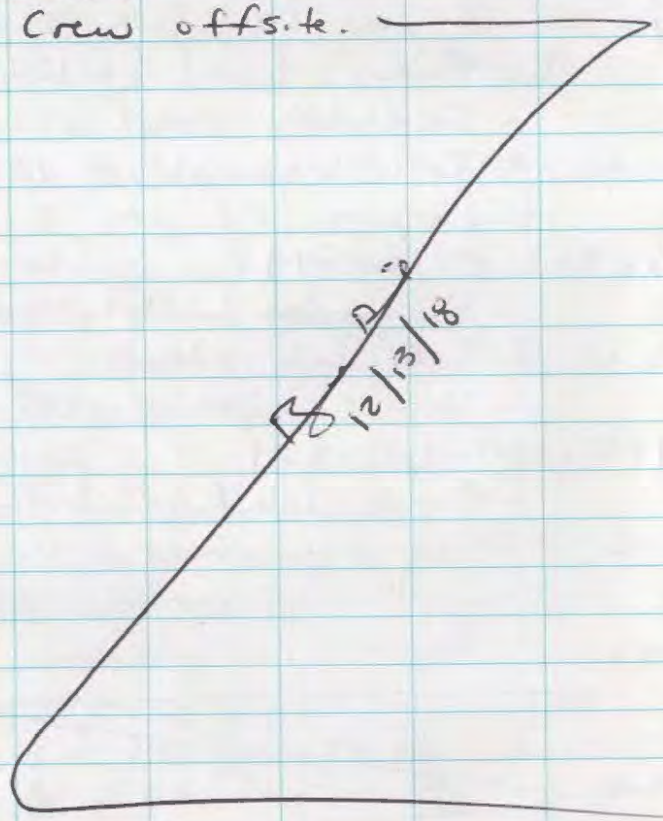
River Terrace

12/13/18 123 FR

2050 @ L 103
- Purge until stabilized.
- See data sheet
- Collect sample @ 2130. Decon.

2150 Decon equipment and place purge water in open-top drums in CAA.

2200 Crew offsite.



River Terrace

123 FR 12/14/18

0800 Crew onsite

0830 Conduct tailgate Safety meeting.

0845 @ MW-78
- Purge until stabilized.
- See data sheet.
- Collect sample @ 0950. Decon.

* Note: Equipment blank collected prior to beginning purging and sampling for the day.

1000 Ensure wells are all adequately labeled. Place monument covers back on housings. Bury monuments.

1200 Contact NRC and let them know purge water and IDW drums are ready for pickup and disposal. ADEC rep in Soldotna to sign manifest.

1400 Crew offsite. Return trip to ANC.

Ahtna Engineering Services, LLC

GROUNDWATER SAMPLING FORM

PROJECT NUMBER:	WELL NUMBER:	SHEET:
20301.005.01	MW-16	of

PROJECT NAME	Groundwater Comp. and Perf. Monitoring Plan	WELL CONDITION	Fair
CLIENT	ADEC	DAMAGE PRESENT	Missing (2) nuts
DATE	12/12/18	DEPTH TO WATER (FROM TOC)	16.85
SITE	River Terrace RV Park	DEPTH TO BASE (FROM TOC)	20.85
GEOLOGIST		HEIGHT OF WATER COLUMN	4.0'
WEATHER/ TEMPERATURE	23°F, Light snow, no wind	WELL VOLUME	0.68 gal
WIND		Pump Intake Depth	20.25

NOMINAL DIAMETER	O.D.	I.D.	VOLUME (GAL/LIN FT)
2"	2.375"	2.067"	0.17
3"	3.5"	3.068"	0.38
4"	4.5"	4.026"	0.66
6"	6.625"	6.065"	1.50
8"	8.625"	7.981"	2.60

SAMPLING DATA

SAMPLE TYPE (GW, PRODUCT, OTHER): Groundwater

SAMPLE COLLECTED WITH: __ Bailer; X Pump, Type: SS Monsoon; __ Other, Specify:

MADE OF: __ Stainless Steel; ____ PVC; __ Teflon; ____ Disposable LDPE; __ Other, Specify:

SAMPLING DECON PROCEDURE: Run Alconox solution through pump followed by **potable and deionized water**

SAMPLE DESCRIPTION: (color, free product thickness, odor, turbidity)

FIELD WATER QUALITY PARAMETERS

Time	Flow Rate (mL/min)	Water Level	Draw Down	Temperature (°C)	Spec. Cond. (µS/cm)	D.O. (%)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Color	Odor
13 59	250	17.45	0	6.99	231	—	0.45	6.48	4.8	—	grey	H_2S
1402	250	17.39	|	7.12	219	—	0.41	6.43	-2.7	—	grey-cl	H_2S
1405	250	17.39	|	7.14	213	—	0.42	6.43	-8.2	—	cl	H_2S
1408	250	17.39	"	7.27	209	—	0.46	6.42	-12.5	—	cl	H_2S

ANALYTICAL SAMPLE INFORMATION

Analyte	Time	Identification
VOC	1410	18-RT-16-GW

Additional Sample	Time	Identification
Duplicate		

Sampling Notes:

ODO pre = 0.52 mg/L

ODO post = 0.38 mg/L

Replaced compression cap

Groundwater Sampling Form

Project: ~~Kodiak LTM 18-19~~ **Site Location:** River Terrace RV Park

Project #: ~~05045.022~~ **Sample Location:** # 38 (alt to 36)

Water Column

Total Depth of Well (feet): 23.44 Water Level Measurement Date: 12/12/18

Depth to Water from TOC (feet): 16.22 Water Level Measurement Time: 1429

Column of Water in Well (feet): 7.22

Purge Information

Gallons per foot of 2" Screen: 0.17 (0.04 for 1" well) Total Volume Removed (gal): 4

Column of Water in Well (feet): X 7.22 Purge Method: Submersible / low flow

Volume of Water in Well Casing (gal): = 1.2274 Pump Placement (ft bgs): 22.90

Field Parameters

				Stabilize at least 3				
				+/- 0.1	+/- 3%	+/- 10%	+/- 10%	+/- 10 mV
Time	Depth to Water (ft)	Purge Rate (mL/min)	Temp (°C)	pH	~~Sp.~~ Cond. (mS/cm)	Turbidity (NTU)	DO (mg/L)	ORP (mV)
1445	1625	275	6.14	7.25	356	—	2.61	28.1
1450	1625	275	6.13	7.25	351	—	2.43	28.3
1455	1625	275	6.13	7.26	347	—	2.29	27.5
1500	1625	275	6.13	7.27	343	—	2.12	29.2

Sample Information

Sample Date: 1510 12/12/18 **Sample Number:** 18-RT-38-GW

Sample Time: 1510 **Field Duplicate Number:**

Sample Method: Submersible pump **Sampler:** FR

Laboratory Analyses Requested: Total Fe, Dissolved Fe, Dissolves bases, TOC, VFA, Gene Trac

Ferrous Iron: Tot

Comments: ODO: 0.42 mg/L (1530)

Monument cover missing two bolts. Bolts broke off in monument

Replaced compression cap.

Ahtna Engineering Services, LLC

GROUNDWATER SAMPLING FORM

PROJECT NUMBER:	WELL NUMBER:	SHEET:
20301.005.01	MW-42	of

PROJECT NAME	Groundwater Comp. and Perf. Monitoring Plan	WELL CONDITION	Fair weeds	NOMINAL DIAMETER	O.D.	I.D.	VOLUME (GAL/LIN FT)
CLIENT	ADEC	DAMAGE PRESENT	new compression cap	2"	2.375"	2.067"	0.17
DATE	12/12/18	DEPTH TO WATER (FROM TOC)	17.69	3"	3.5"	3.068"	0.38
SITE	River Terrace RV Park	DEPTH TO BASE (FROM TOC)	22.95	4"	4.5"	4.026"	0.66
GEOLOGIST		HEIGHT OF WATER COLUMN	5.24	6"	6.625"	6.065"	1.50
WEATHER/ TEMPERATURE	23°F, Light Snow	WELL VOLUME	0.8442	8"	8.625"	7.981"	2.60
WIND	No wind	Pump Intake Depth	17.19				

SAMPLING DATA

SAMPLE TYPE (GW, PRODUCT, OTHER): Groundwater

SAMPLE COLLECTED WITH: __ Bailer X Pump, Type: SS Monsoon __ Other, Specify:

MADE OF: __ Stainless Steel ____ PVC

__ Teflon ____ Disposable LDPE __ Other, Specify:

SAMPLING DECON PROCEDURE: Run Alconox solution through pump followed by potable and deionized water

SAMPLE DESCRIPTION: (color, free product thickness, odor, turbidity)

FIELD WATER QUALITY PARAMETERS

Time	Flow Rate (mL/min)	Water Level	Draw Down	Temperature (°C)	Spec. Cond. (µS/cm)*	D.O. (%)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Color	Odor
1545	300	—	—	7.61	211	—	4.45	6.24	104	—	clear	None
1548	300	17.75	—	8.30	184	—	3.93	6.39	71.4	—	clear	None
1551	300	17.75	—	8.63	178	—	3.63	6.40	61.4	—	"	"
1554	300	17.75		8.84	176	—	3.32	6.40	69.7	—	"	"
1557	300	17.75		8.76	174	—	3.07	6.40	77.4	—	"	"
1600	300	17.75		8.69	172	—	2.87	6.40	79.3	—	"	"

ANALYTICAL SAMPLE INFORMATION

Analyte	Time	Identification
VOC	1605	18-RT-42-GW
Total Iron		
Dissolved Iron		
Dissolved Gases TOC		
VFA		
Gene Trac - Dhc		

Additional Sample	Time	Identification
Duplicate		

Sampling Notes:
ODO = 4.02 mg/L
Replaced compression cap.

Ahtna Engineering Services, LLC

GROUNDWATER SAMPLING FORM

PROJECT NUMBER:	WELL NUMBER:	SHEET:
20301.005.01	MW-25	of

PROJECT NAME	Groundwater Comp. and Perf. Monitoring Plan	WELL CONDITION	OK
CLIENT	ADEC	DAMAGE PRESENT	None
DATE	12/12/18	DEPTH TO WATER (FROM TOC)	13.03
SITE	River Terrace RV Park	DEPTH TO BASE (FROM TOC)	18.59
GEOLOGIST	FR	HEIGHT OF WATER COLUMN	5.84
WEATHER/ TEMPERATURE	Snow, 25°	WELL VOLUME	0.9962 gal
WIND		Pump Intake Depth	18.30

NOMINAL DIAMETER	O.D.	I.D.	VOLUME (GAL/LIN FT)
2"	2.375"	2.067"	0.17
3"	3.5"	3.068"	0.38
4"	4.5"	4.026"	0.66
6"	6.625"	6.065"	1.50
8"	8.625"	7.981"	2.60

SAMPLING DATA

SAMPLE TYPE (GW, PRODUCT, OTHER): Groundwater

SAMPLE COLLECTED WITH: __ Bailer ✓ Pump, Type: Submersible ___ Other, Specify:

MADE OF: __ Stainless Steel ___ PVC

__ Teflon ___ Disposable LDPE ___ Other, Specify:

SAMPLING DECON PROCEDURE: Run Alconox solution through pump followed by potable and deionized water

SAMPLE DESCRIPTION: (color, free product thickness, odor, turbidity)

FIELD WATER QUALITY PARAMETERS

Time	Flow Rate (mL/min)	Water Level	Draw Down	Temperature (°C)	Spec. Cond. (µS/cm)[c]	D.O. (%)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Color	Odor
1615	250	13.07		6.08	151	38.8	4.80	6.25	148.4	—	Clear	None
1620	250	13.07		6.02	150	37.3	4.60	6.29	148.9	—	Clear	None
1625	250	13.06		6.01	150	36.2	4.45	6.31	148.8	—	Clear	None
1630	250	13.07		6.02	150	35.3	4.42	6.33	146.8	—	Clear	None

ANALYTICAL SAMPLE INFORMATION

Analyte	Time	Identification
VOC	1640	18-RT-25-GW
Total Iron		
Dissolved Iron		
Dissolved Gases TOC		
VFA		
Gene Trac - Dhc		

Additional Sample	Time	Identification
Duplicate		

Sampling Notes:

ODO: 2.87 mg/L (1650)

Groundwater Sampling Form

Project: Kodiak LTM 18-19 **Site Location:** River Terrace RV Park

Project #: 05045.022 **Sample Location:** ~~RT~~ MW-23

Water Column

Total Depth of Well (feet): 22.05 Water Level Measurement Date: 12/12/18

Depth to Water from TOC (feet): 17.35 Water Level Measurement Time: 1635

Column of Water in Well (feet): 4.7

Purge Information

Gallons per foot of 2" Screen: 0.17 (0.04 for 1" well) Total Volume Removed (gal): 2

Column of Water in Well (feet): x 4.7 Purge Method: Low Flow

Volume of Water in Well Casing (gal): = 0.799 gal Pump Placement (ft bgs): 21.50

Field Parameters

				Stabilize at least 3				
				+/- 0.1	+/- 3%	+/- 10%	+/- 10%	+/- 10 mV
Time	Depth to Water (ft)	Purge Rate (mL/min)	Temp (°C)	pH	Sp. Cond. (mS/cm)	Turbidity (NTU)	DO (mg/L)	ORP (mV)
1650	17.36	275	6.39	6.24	129	—	8.57	168.4
1655	17.36	275	6.36	6.37	129	—	8.51	167.7
1659	17.35	275	6.36	6.43	128	—	8.21	165.7
1705	17.35	275	6.40	6.41	128	—	8.29	164.2

Sample Information

Sample Date: 12/12/18 **Sample Number:** 18-RT-23-GW

Sample Time: 1710 **Field Duplicate Number:**

Sample Method: **Sampler:** FR

Laboratory Analyses Requested: VOC

Ferrous Iron:

Comments: ODO: 8.08 mg/L (1710)

New bolts needed; compression cap has been replaced

Groundwater Sampling Form

Project: ~~Kodiak LTM 18-19~~ **Site Location:** River Terrace RV Park

Project #: ~~05045.022~~ **Sample Location:** 07

Water Column

Total Depth of Well (feet): 8.42 Water Level Measurement Date: 12/12/18

Depth to Water from TOC (feet): 5.04 Water Level Measurement Time: 1815

Column of Water in Well (feet): 3.38

Purge Information

Gallons per foot of 2" Screen: 0.17 (0.04 for 1" well) Total Volume Removed (gal): 2.1

Column of Water in Well (feet): x 3.38 Purge Method. Low Flow

Volume of Water in Well Casing (gal) = 0.5746 Pump Placement (ft bgs): [redacted] 8' btoc

Field Parameters

				Stabilize at least 3				
				+/- 0.1	+/- 3%	+/- 10%	+/- 10%	+/- 10 mV
Time	Depth to Water (ft)	Purge Rate (mL/min)	Temp (°C)	pH	~~Sp.~~ Cond. (mS/cm)	Turbidity (NTU)	DO (mg/L)	ORP (mV)
1820	5.11	275	3.87	6.88	296	—	3.55	4.5
1825	5.12	275	4.04	7.21	299	—	2.49	-1.8
1830	5.11	275	4.05	7.28	300	—	2.26	-1.6
1835	5.11	275	4.15	7.31	300	—	2.17	-2.6

Sample Information

Sample Date: 12/12/18 **Sample Number:** 18-RT-07-GW

Sample Time: 1840 **Field Duplicate Number:**

Sample Method: Submers. 66 pump **Sampler:** FR

Laboratory Analyses Requested: VOCs

Ferrous Iron:

Comments: Only Square cap (no bolts)

ODO: 0.30 mg/L (1930)

Ahtna Engineering Services, LLC

GROUNDWATER SAMPLING FORM

PROJECT NUMBER: 20301.005.01 | WELL NUMBER: MW-12 | SHEET: of

PROJECT NAME	Groundwater Comp. and Perf. Monitoring Plan
CLIENT	ADEC
DATE	12/12/18
SITE	River Terrace RV Park
GEOLOGIST	
WEATHER/ TEMPERATURE	21°F, Light Snow
WIND	No wind
WELL CONDITION	Monument cover doesn't fit - too big.
DAMAGE PRESENT	No bolts or holes in monument for bolts
DEPTH TO WATER (FROM TOC)	5.18
DEPTH TO BASE (FROM TOC)	7.59
HEIGHT OF WATER COLUMN	2.41
WELL VOLUME	7.09 → 0.41 gal
Pump Intake Depth	

NOMINAL DIAMETER	O.D.	I.D.	VOLUME (GAL/LIN FT)
(2")	2.375"	2.067"	0.17
3"	3.5"	3.068"	0.38
4"	4.5"	4.026"	0.66
6"	6.625"	6.065"	1.50
8"	8.625"	7.981"	2.60

SAMPLING DATA

SAMPLE TYPE (GW, PRODUCT, OTHER): Groundwater

SAMPLE COLLECTED WITH: __ Bailer | X Pump, Type: SS Monsoon | __ Other, Specify:

MADE OF: __ Stainless Steel | ____ PVC | __ Teflon | ____ Disposable LDPE | __ Other, Specify:

SAMPLING DECON PROCEDURE: Run Alconox solution through pump followed by potable and deionized water

SAMPLE DESCRIPTION: (color, free product thickness, odor, turbidity)

FIELD WATER QUALITY PARAMETERS

Time	Flow Rate (mL/min)	Water Level	Draw Down	Temperature (°C)	Spec. Cond. (µS/cm)*	D.O. (%)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Color	Odor
1849	300	>6.59	0	5.38	991	—	2.11	5.57	178.5	—	Amber	None
1852	300	〃	〃	5.64	994	—	1.82	5.64	176.1	—	Amber	None
1855	150	>6.59	〃	6.23	970	—	1.65	5.65	176.4	—	Amber	None
1858	150	>6.59	〃	6.47	967	—	1.77	5.70	174.5	—	Amber	None
1901	150	>6.59	〃	7.15	939	—	1.45	5.80	169.7	—	Amber	None
1904	150	>6.59	〃	7.41	918	—	1.49	5.81	166.9	—	Amber	None
1907	150	>6.59	▼									

ANALYTICAL SAMPLE INFORMATION

Analyte	Time	Identification
VOC	1930	18-RT-12-GW

Additional Sample	Time	Identification
Duplicate		

Sampling Notes:
- ODO = N/A
- Water level was below top of submersible pump
- Well purged dry.
- Collect sample after recharge.

Groundwater Sampling Form

Project: ~~Kodiak LTM 18-19~~ **Site Location:** River Terrace RV Park

Project #: ~~05045.022~~ **Sample Location:** 35

Water Column

Total Depth of Well (feet): 6.98 Water Level Measurement Date: 12/12/18

Depth to Water from TOC (feet): ~~6.95~~ 5.85 Water Level Measurement Time: 1920

Column of Water in Well (feet): 1.13

Purge Information

Gallons per foot of 2" Screen: 0.17 (0.04 for 1" well) Total Volume Removed (gal): 2.4

Column of Water in Well (feet): x 1.13 Purge Method: Low Flow

Volume of Water in Well Casing (gal) = 0.192 Pump Placement (ft bgs): 6.5' btoc

Field Parameters

				Stabilize at least 3				
				+/- 0.1	+/- 3%	+/- 10%	+/- 10%	+/- 10 mV
Time	Depth to Water (ft)	Purge Rate (mL/min)	Temp (°C)	pH	~~Sp.~~ Cond. (mS/cm)	Turbidity (NTU)	DO (mg/L)	ORP (mV)
1935	5.85	200	3.84	6.05	200	—	5.51	96.5
1940	5.85	200	3.89	6.28	200	←	3.18	96.5
1945	5.85	200	3.95	6.36	200	—	2.73	95.9
1950	5.85	200	3.95	6.43	200	—	2.45	95.1
1955	5.85	200	3.99	6.41	199	←	2.25	94.1

Sample Information

Sample Date: 12/12/18 **Sample Number:** 18-RT-35-GW

Sample Time: 2000 **Field Duplicate Number:**

Sample Method: ~~Bl~~ Peri Pump **Sampler:** FR

Laboratory Analyses Requested: VOCs

Ferrous Iron:

Comments: Square cap only (no bolts/screws); Plug slightly deteriorated

ODO: 2.04 mg/L (2005)

Ahtna Engineering Services, LLC

GROUNDWATER SAMPLING FORM

PROJECT NUMBER: 20301.005.01

WELL NUMBER: MW-6A

SHEET: of

PROJECT NAME	Groundwater Comp. and Perf. Monitoring Plan
CLIENT	ADEC
DATE	12/12/18
SITE	River Terrace RV Park
GEOLOGIST	
WEATHER/ TEMPERATURE	20°F; Light snow
WIND	No wind
WELL CONDITION	Good
DAMAGE PRESENT	None
DEPTH TO WATER (FROM TOC)	4.75
DEPTH TO BASE (FROM TOC)	10.75
HEIGHT OF WATER COLUMN	6
WELL VOLUME	1.02 gal
Pump Intake Depth	10.25' btoc

NOMINAL DIAMETER	O.D.	I.D.	VOLUME (GAL/LIN FT)
(2")	2.375"	2.067"	0.17
3"	3.5"	3.068"	0.38
4"	4.5"	4.026"	0.66
6"	6.625"	6.065"	1.50
8"	8.625"	7.981"	2.60

SAMPLING DATA

SAMPLE TYPE (GW, PRODUCT, OTHER): Groundwater

SAMPLE COLLECTED WITH: __ Bailer; X Pump, Type: SS Monsoon; __ Other, Specify:

MADE OF: __ Stainless Steel; ____ PVC; __ Teflon; ____ Disposable LDPE; __ Other, Specify:

SAMPLING DECON PROCEDURE: Run Alconox solution through pump followed by potable and deionized water

SAMPLE DESCRIPTION: (color, free product thickness, odor, turbidity)

FIELD WATER QUALITY PARAMETERS

Time	Flow Rate (mL/min)	Water Level	Draw Down	Temperature (°C)	Spec. Cond. (µS/cm)*	D.O. (%)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Color	Odor
2042	300	4.95	—	4.91	348	—	1.79	6.40	8.0	—	Grey	Mod. S
2045	300	4.97	0.02	4.74	345	—	1.03	6.39	-10.1	—	"	"
2048	300	4.97	~~0.00~~	4.84	345	—	0.85	6.39	-14.5	—	Grey-Cl	"
2051	300	4.97	~~0.00~~	4.81	344	—	0.79	6.39	-14.0	—	Cl	"
2053	300	4.97	~~0.00~~	4.79	345	—	0.76	6.39	-13.5	—	Cl	"

ANALYTICAL SAMPLE INFORMATION

Analyte	Time	Identification
VOC	2100	18-RT-6A-GW

Additional Sample	Time	Identification
Duplicate		

Sampling Notes: ODO = 0.34 mg/L

Ahtna Engineering Services, LLC

GROUNDWATER SAMPLING FORM

PROJECT NUMBER:	WELL NUMBER:	SHEET:
20301.005.01	MW-40	of

PROJECT NAME	Groundwater Comp. and Perf. Monitoring Plan	WELL CONDITION	Good
CLIENT	ADEC	DAMAGE PRESENT	N/A
DATE	12/13/18	DEPTH TO WATER (FROM TOC)	15.64
SITE	River Terrace RV Park	DEPTH TO BASE (FROM TOC)	21.51
GEOLOGIST	ER	HEIGHT OF WATER COLUMN	5.87
WEATHER/ TEMPERATURE	9°, clear	WELL VOLUME	0.9979 gal
WIND		Pump Intake Depth	20.0

NOMINAL DIAMETER	O.D.	I.D.	VOLUME (GAL/LIN FT)
2"	2.375"	2.067"	0.17
3"	3.5"	3.068"	0.38
4"	4.5"	4.026"	0.66
6"	6.625"	6.065"	1.50
8"	8.625"	7.981"	2.60

SAMPLING DATA

SAMPLE TYPE (GW, PRODUCT, OTHER): Groundwater

SAMPLE COLLECTED WITH: __ Bailer ✓ Pump, Type: Submersible __ Other, Specify:

MADE OF: X Stainless Steel ____ PVC

__ Teflon ____ Disposable LDPE __ Other, Specify:

SAMPLING DECON PROCEDURE: Run Alconox solution through pump followed by **potable and deionized water**

SAMPLE DESCRIPTION: (color, free product thickness, odor, turbidity)

FIELD WATER QUALITY PARAMETERS

Time	Flow Rate (mL/min)	Water Level	Draw Down	Temperature (°C)	Spec. Cond. (µS/cm)[C]	D.O. (%)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Color	Odor
1010	175	15.90		5.12	260	20.8	~~20~~ 2.63	6.09	45.8	—	clear	None
1015	175	15.92		5.28	319	14.7	1.84	6.82	2.9	—	Clear	H_2S
1020	175	15.89		5.15	32.0	14.6	1.82	6.85	2.4	—	Clear	H_2S
1025	175	15.90		5.12	324	14.7	1.89	6.87	0.3	—	"	"

ANALYTICAL SAMPLE INFORMATION

Analyte	Time	Identification	Additional Sample	Time	Identification
VOC	1030	18-RT-40-GW	Duplicate		

Sampling Notes: 2.75 gal purged

Ahtna Engineering Services, LLC

GROUNDWATER SAMPLING FORM

PROJECT NUMBER:	WELL NUMBER:	SHEET:
20301.005.01	MW-44	of

PROJECT NAME	Groundwater Comp. and Perf. Monitoring Plan	WELL CONDITION	Fair
CLIENT	ADEC	DAMAGE PRESENT	Needs new cap
DATE	12/13/18	DEPTH TO WATER (FROM TOC)	13.94
SITE	River Terrace RV Park	DEPTH TO BASE (FROM TOC)	34.94
GEOLOGIST		HEIGHT OF WATER COLUMN	21.0
WEATHER/ TEMPERATURE	9°F, Partly Cloudy	WELL VOLUME	3.57 gal
WIND	No wind	Pump Intake Depth	34.44

NOMINAL DIAMETER	O.D.	I.D.	VOLUME (GAL/LIN FT)
2"	2.375"	2.067"	0.17
3"	3.5"	3.068"	0.38
4"	4.5"	4.026"	0.66
6"	6.625"	6.065"	1.50
8"	8.625"	7.981"	2.60

SAMPLING DATA

SAMPLE TYPE (GW, PRODUCT, OTHER): Groundwater

SAMPLE COLLECTED WITH: __ Bailer; X Pump, Type: SS Monsoon; __ Other, Specify:

MADE OF: __ Stainless Steel; ___ PVC; __ Teflon; ___ Disposable LDPE; __ Other, Specify:

SAMPLING DECON PROCEDURE: Run Alconox solution through pump followed by **potable and deionized water**

SAMPLE DESCRIPTION: (color, free product thickness, odor, turbidity)

FIELD WATER QUALITY PARAMETERS

Time	Flow Rate (mL/min)	Water Level	Draw Down	Temperature (°C)	Spec. Cond. (µS/cm)	D.O. (%)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Color	Odor
1035	250	18.95		6.29	1245	—	1.30	7.39	-109.6	—	Grey	H_2S
1038	250	20.35		6.06	1196	—	0.54	7.46	-128.6	—	Grey	"
1041	250	21.35		5.70	1083	—	0.42	7.49	-127.9	—	"	"
1044	250	22.65		6.31	1047	—	0.35	7.45	-132.8	—	"	"
1047	250	23.65		5.67	1013	—	0.34	7.42	-117.2	—	"	"
1050	125	24.25		5.66	992	—	0.32	7.42	-114.3	—	"	"
1053	125	24.95		5.44	960	—	0.34	7.41	-114.7	—	"	"

ANALYTICAL SAMPLE INFORMATION

Analyte	Time	Identification
VOC	1100	18-RT-44-GW

Additional Sample	Time	Identification
Duplicate		

Sampling Notes: ODO = 0.28 mg/l

Groundwater Sampling Form

Project: ~~Kodiak LTM 18-19~~ **Site Location:** River Terrace RV Park

Project #: ~~05045.022~~ **Sample Location:** MW-09

Water Column

Total Depth of Well (feet): 19.22 Water Level Measurement Date: 12/13/18

Depth to Water from TOC (feet): 15.70 Water Level Measurement Time: 1045

Column of Water in Well (feet): 3.52'

Purge Information

Gallons per foot of 2" Screen: 0.17 (0.04 for 1" well) Total Volume Removed (gal): 1.06 gal

Column of Water in Well (feet): x 3.52 Purge Method: Low Flow

Volume of Water in Well Casing (gal): = 0.5984 gal Pump Placement (ft bgs): 18.70 btoc

Field Parameters

				Stabilize at least 3				
				+/- 0.1	+/- 3%	+/- 10%	+/- 10%	+/- 10 mV
Time	Depth to Water (ft)	Purge Rate (mL/min)	Temp (°C)	pH	Sp. Cond. (mS/cm)	Turbidity (NTU)	DO (mg/L)	ORP (mV)
1100	15.33	200	4.16	7.77	393	—	2.78	~~H2S~~ -22.2
1105	15.82	200	4.45	8.45	407	—	2.42	-27.4
1115	15.8	200	5.49	7.54	415	—	1.76	-41.3
1120	15.82	200	5.63	7.53	413	—	1.78	-42.1
1125	15.82	200	5.72	7.52	410	—	1.70	-41.7

Sample Information

Sample Date: 12/13/18 **Sample Number:** 18-RT-09-GW

Sample Time: 1135 **Field Duplicate Number:**

Sample Method: Submersible Pump **Sampler:** FR

Laboratory Analyses Requested: VOCs

Ferrous Iron:

Comments: H_2S odor

Ahtna Engineering Services, LLC

GROUNDWATER SAMPLING FORM

PROJECT NUMBER:	WELL NUMBER:	SHEET:
20301.005.01	MW-39	of

PROJECT NAME	Groundwater Comp. and Perf. Monitoring Plan	WELL CONDITION	Fair
CLIENT	ADEC	DAMAGE PRESENT	Need a new cap
DATE	12/13/18	DEPTH TO WATER (FROM TOC)	15.48
SITE	River Terrace RV Park	DEPTH TO BASE (FROM TOC)	21.98
GEOLOGIST	—	HEIGHT OF WATER COLUMN	6.5
WEATHER/ TEMPERATURE	—	WELL VOLUME	1.05
WIND		Pump Intake Depth	15' btoc

NOMINAL DIAMETER	O.D.	I.D.	VOLUME (GAL/LIN FT)
2"	2.375"	2.067"	0.17
3"	3.5"	3.068"	0.38
4"	4.5"	4.026"	0.66
6"	6.625"	6.065"	1.50
8"	8.625"	7.981"	2.60

SAMPLING DATA

SAMPLE TYPE (GW, PRODUCT, OTHER): Groundwater

SAMPLE COLLECTED WITH: __ Bailer X Pump, Type: Submers. 64 __ Other, Specify:

MADE OF: X Stainless Steel ___ PVC

__ Teflon ___ Disposable LDPE ___ Other, Specify:

SAMPLING DECON PROCEDURE: Run Alconox solution through pump followed by **potable and deionized water**

SAMPLE DESCRIPTION: (color, free product thickness, odor, turbidity)

FIELD WATER QUALITY PARAMETERS

Time	Flow Rate (mL/min)	Water Level	Draw Down	Temperature (°C)	Spec. Cond. (µS/cm)*	D.O. (%)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Color	Odor
1131	150	—		6.65	824	~~10.98~~	1.98	6.73	-88.2	—	Amber	H_2S
1134	150	16.49		6.49	691	—	0.95	6.65	-95.4	—	"	"
1137	150	16.64		6.38	581	—	0.82	6.51	-84.4	—	"	"
1140	150	16.74		6.84	483	—	0.63	6.39	-74.0	—	"	"
1143	150	17.04		6.90	437	—	0.55	6.30	-62.5	—	Clear	"
1146	150	17.31		7.07	404	—	0.44	6.25	-51.0	—	"	"
1149	150	17.49		7.63	386	—	0.38	6.22	-43.1	—	"	"
1152	150	17.59		7.34	384	—	0.38	6.21	-41.4	—	"	"
1155	150	17.61		6.43	377	—	0.40	6.20	-48.3	—	"	"

ANALYTICAL SAMPLE INFORMATION

Analyte	Time	Identification
VOC	1200	18-RT-39-GW

Additional Sample	Time	Identification
Duplicate		

Sampling Notes:
* Could not use ODO, as cold temps were causing the unit to power down and not turn back on.

Surface water Sampling Form

Project: ~~Kodiak LTM 18-19~~ **Site Location:** ~~Site 6A~~

Project #: ~~05045.022.02~~ **Sample Location:** ~~MW-6A~~ MW-52

Water Column

Total Depth of Well (feet): 34.95 Water Level Measurement Date: 12/13/18

Depth to Water from TOC (feet): 8.64 Water Level Measurement Time: 1200

Column of Water in Well (feet): 26.31

Purge Information

Gallons per foot of 2" Screen: 0.17 (0.04 for 1" well) Total Volume Removed (gal): 1.5

Column of Water in Well (feet): x 26.31 Purge Method: Low Flow

Volume of Water in Well Casing (gal): = 4.47 gal Pump Placement (ft btoc): 34.4

Three Volume Well Casing (gal): x3 =

Field Parameters

				Stabilize at least 3				
				+/- 0.1	+/- 3%	+/- 10%	+/- 10%	+/- 10 mV
Time	Depth to Water (ft)	Purge Rate (mL/min)	Temp (°C)	pH	Sp. Cond. (mS/cm)	Turbidity (NTU)	DO (mg/L)	ORP (mV)
1210	13.17	150	3.63	11.40	1122	—	2.55	-142.4
1215	13.70	150	3.64	11.21	1117	—	2.45	-139.2
1220	14.03	150	3.57	11.11	1115	—	2.32	-136.4
1225	14.11	150	3.58	11.13	1108	—	2.08	-125.7
1230	14.27	150	3.54	11.09	1106	—	1.90	-126.3

Sample Information

Sample Date: 12/13/18 **Sample Number:** 18-RT-52-GW

Sample Time: 1240 **Field Duplicate Number:**

Sample Method: **Sampler:** FR

Laboratory Analyses Requested: **VOCs, ~~SVOCs~~**

Comments: H_2S odor

Ahtna Engineering Services, LLC

GROUNDWATER SAMPLING FORM

PROJECT NUMBER:	WELL NUMBER:	SHEET:
20301.005.01	MW-47	of

PROJECT NAME	Groundwater Comp. and Perf. Monitoring Plan	WELL CONDITION	Good 1"
CLIENT	ADEC	DAMAGE PRESENT	None
DATE	12/13/18	DEPTH TO WATER (FROM TOC)	7.04
SITE	River Terrace RV Park	DEPTH TO BASE (FROM TOC)	33.45
GEOLOGIST	———	HEIGHT OF WATER COLUMN	26.41
WEATHER/ TEMPERATURE	13°F, Partly cloudy	WELL VOLUME	4.489
WIND	No wind	Pump Intake Depth	33' 6 to C

NOMINAL DIAMETER	O.D.	I.D.	VOLUME (GAL/LIN FT)
2"	2.375"	2.067"	0.17
3"	3.5"	3.068"	0.38
4"	4.5"	4.026"	0.66
6"	6.625"	6.065"	1.50
8"	8.625"	7.981"	2.60

SAMPLING DATA

SAMPLE TYPE (GW, PRODUCT, OTHER): Groundwater

SAMPLE COLLECTED WITH: __ Bailer; X Pump, Type: peristaltic; __ Other, Specify:

MADE OF: __ Stainless Steel; ___ PVC; __ Teflon; ___ Disposable LDPE; __ Other, Specify:

SAMPLING DECON PROCEDURE: Run Alconox solution through pump followed by potable and deionized water

SAMPLE DESCRIPTION: (color, free product thickness, odor, turbidity)

FIELD WATER QUALITY PARAMETERS

Time	Flow Rate (mL/min)	Water Level	Draw Down	Temperature (°C)	Spec. Cond. (µS/cm)	D.O. (%)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Color	Odor
1258	150	—		4.58	5003	—	0.64	5.51	-67.6	—	DK Amb.	Sweet H_2S
1301	150	9.76		4.50	4770	—	0.50	5.48	-68.9	—	"	"
1304	150	9.97		4.29	4610	—	0.46	5.47	-69.4	—	"	"
1307	150	10.09		4.31	4565	—	0.41	5.46	-69.5	—	"	"
1310	150	10.16		4.36	4540	—	0.40	5.46	-70.0	—	"	"
1313	150	10.29		4.41	4535	—	0.39	5.46	-70.7	—	"	"

ANALYTICAL SAMPLE INFORMATION

Analyte	Time	Identification
VOC	1315	18-RT-47-GW
Total Iron	———	Collect additional volume for MS/ MSD
Dissolved Iron	———	
Dissolved Gases	———	
TOC	———	
VFA	———	
Gene Trac - Dhc	———	

Additional Sample	Time	Identification
Duplicate	———	———
	———	———
	———	———
	———	———
	———	———
	———	———
	———	———

Sampling Notes:
*GW is dark amber in color. Odor is sweet and vinegar. Water effervesces and air bubbles are present in every VOA vial.

Groundwater Sampling Form

Project: Kodiak LTM 18-19 **Site Location:** River Terrace RV Park

Project #: ~~05045.022~~ **Sample Location:** MW-48

Water Column

Total Depth of Well (feet): 29.60 Water Level Measurement Date: 12/13/18

Depth to Water from TOC (feet): 7.57 Water Level Measurement Time: 1255

Column of Water in Well (feet): 22.03

Purge Information

Gallons per foot of 2" Screen: 0.17 (0.04 for 1" well) Total Volume Removed (gal): 2.5

Column of Water in Well (feet): X 22.03 Purge Method: Low Flow

Volume of Water in Well Casing (gal): = 3.7451 gal Pump Placement (ft bgs): 29.0

Field Parameters

				Stabilize at least 3				
				+/- 0.1	+/- 3%	+/- 10%	+/- 10%	+/- 10 mV
Time	Depth to Water (ft)	Purge Rate (mL/min)	Temp (°C)	pH	~~Sp.~~ Cond. (mS/cm)	Turbidity (NTU)	DO (mg/L)	ORP (mV)
1315	15.17	200	5.63	8.62	1269	—	3.00	-58.9
1320	15.99	200	5.79	8.74	1274	—	2.40	-56.8
1325	19.13	200	5.63	8.76	1277	—	2.27	-56.3
1330	22.05	200	5.70	8.69	1295	—	2.02	-57.2
1335	23.91	200	5.67	8.72	1323	—	1.94	-58.6

Sample Information

Sample Date: 12/13/18 **Sample Number:** 18-RT-48-GW

Sample Time: 1340 **Field Duplicate Number:**

Sample Method: Submersible Pump **Sampler:** FR

Laboratory Analyses Requested: VOC, Diss. Iron/Tot. Iron VFA, Gases, TOC

Ferrous Iron: (+ ms/msd VOC)

Comments:

* Groundwater was fizzing @ this location. As a result, bubbles remained in VOA vials.

Ahtna Engineering Services, LLC

GROUNDWATER SAMPLING FORM

PROJECT NUMBER:	WELL NUMBER:	SHEET:
20301.005.01	MW-50	of

PROJECT NAME	Groundwater Comp. and Perf. Monitoring Plan	WELL CONDITION	Good
CLIENT	ADEC	DAMAGE PRESENT	None
DATE	12/13/18	DEPTH TO WATER (FROM TOC)	7.65
SITE	River Terrace RV Park	DEPTH TO BASE (FROM TOC)	34.90
GEOLOGIST	FR	HEIGHT OF WATER COLUMN	27.25
WEATHER/ TEMPERATURE	6°, clear, dark	WELL VOLUME	4.63 gal
WIND		Pump Intake Depth	34.40

NOMINAL DIAMETER	O.D.	I.D.	VOLUME (GAL/LIN FT)
2"	2.375"	2.067"	0.17
3"	3.5"	3.068"	0.38
4"	4.5"	4.026"	0.66
6"	6.625"	6.065"	1.50
8"	8.625"	7.981"	2.60

SAMPLING DATA

SAMPLE TYPE (GW, PRODUCT, OTHER): Groundwater

SAMPLE COLLECTED WITH: __ Bailer ✓ Pump, Type: Submersible __ Other, Specify:

MADE OF: __ Stainless Steel ___ PVC

__ Teflon ___ Disposable LDPE __ Other, Specify:

SAMPLING DECON PROCEDURE: Run Alconox solution through pump followed by **potable and deionized water**

SAMPLE DESCRIPTION: (color, free product thickness, odor, turbidity)

FIELD WATER QUALITY PARAMETERS

Time	Flow Rate (mL/min)	Water Level	Draw Down	Temperature (°C)	Spec. Cond. (µS/cm)[c]	D.O. (%)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Color	Odor
1810	200	8.10		4.22	1250	16.6	2.14	8.84	-77.8	—	Clear	Organic
1815	200	8.97		4.25	1237	16.2	2.09	8.76	-75.7	—	Clear	H_2S/Organic
1820	200	10.15		4.18	1215	16.2	2.11	8.73	-74.2	—	()	()
1825	200	11.99		4.17	1200	15.9	2.09	8.69	-72.4	—	()	()
1830	200	13.83		4.11	1199	16.1	2.14	8.68	-71.7	—	()	()

ANALYTICAL SAMPLE INFORMATION

Analyte	Time	Identification
VOC	1840	18-RT-50-GW
Total Iron	1840	
Dissolved Iron	1840	
Dissolved Gases TOC	1840	
VFA	1840	
Gene Trac - Dhc	1840	

Additional Sample	Time	Identification
Duplicate		18-RT-FD3-GW

Sampling Notes:

* Groundwater was fizzy @ this location. could not close VOA vials without bubbles remaining in VOA.

Ahtna Engineering Services, LLC

GROUNDWATER SAMPLING FORM

PROJECT NUMBER:	WELL NUMBER:	SHEET:
20301.005.01	MW-49	of

PROJECT NAME	Groundwater Comp. and Perf. Monitoring Plan	WELL CONDITION	Fair
CLIENT	ADEC	DAMAGE PRESENT	Cover missing (3) bolts
DATE	12/13/18	DEPTH TO WATER (FROM TOC)	7.42
SITE	River Terrace RV Park	DEPTH TO BASE (FROM TOC)	32.27
GEOLOGIST	[redacted]	HEIGHT OF WATER COLUMN	24.85
WEATHER/ TEMPERATURE	6°F Clear	WELL VOLUME	[redacted] 1.26ga
WIND	No wind	Pump Intake Depth	31.77

NOMINAL DIAMETER	O.D.	I.D.	VOLUME (GAL/LIN FT)
2"	2.375"	2.067"	0.17
3"	3.5"	3.068"	0.38
4"	4.5"	4.026"	0.66
6"	6.625"	6.065"	1.50
8"	8.625"	7.981"	2.60

SAMPLING DATA

SAMPLE TYPE (GW, PRODUCT, OTHER): Groundwater

SAMPLE COLLECTED WITH: __ Bailer; X Pump, Type: SS Monsoon; __ Other, Specify:

MADE OF: __ Stainless Steel; ___ PVC; __ Teflon; ___ Disposable LDPE; __ Other, Specify:

SAMPLING DECON PROCEDURE: Run Alconox solution through pump followed by **potable and deionized water**

SAMPLE DESCRIPTION: (color, free product thickness, odor, turbidity)

FIELD WATER QUALITY PARAMETERS

Time	Flow Rate (mL/min)	Water Level	Draw Down	Temperature (°C)	Spec. Cond. (µS/cm)	D.O. (%)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Color	Odor
1849	150	15.99		6.30	349	—	1.49	6.17	34.7	—	Grey	Unknown
1852	150	16.39		6.03	329	—	1.43	6.18	28.8	—	"	"
1855	150	16.69		5.69	308	—	1.43	6.20	26.1	—	"	"
1858	150	17.19		4.96	289	—	1.50	6.23	24.3	—	"	"
1901	150	17.49		4.60	276	—	1.49	6.24	24.3	—	"	"
1904	150	17.79		4.48	260	—	1.59	6.25	24.3	—	"	"
1907	150	18.29		4.27	249	—	1.59	6.26	25.5	—	"	"
1910	150	18.89		4.68	236	—	1.64	6.27	24.1	—	"	"
1913	150	19.59		5.35	221	—	1.82	6.29	20.2	—	"	"
1916	150	20.19		5.59	203	—	1.84	6.30	20.8	—	"	"
1919	150	20.59		5.70	199	—	1.93	6.29	22.2	—	"	"
1922	150	21.09		5.67	194	—	1.90	6.30	25.6	—	"	"

ANALYTICAL SAMPLE INFORMATION

Analyte	Time	Identification
VOC	1925	18-RT-49-GW
Total Iron	___	
Dissolved Iron	___	
Dissolved Gases	___	
TOC	___	
VFA	___	
Gene Trac - Dhc	___	

Additional Sample	Time	Identification
Duplicate	___	18-RT-FD1-GW @ 0600
	___	
	___	
	___	
	___	
	___	
	___	

Sampling Notes:

Ahtna Engineering Services, LLC

GROUNDWATER SAMPLING FORM

PROJECT NUMBER:	WELL NUMBER:	SHEET:
20301.005.01	L-80A	of

PROJECT NAME	Groundwater Comp. and Perf. Monitoring Plan	WELL CONDITION	Good
CLIENT	ADEC	DAMAGE PRESENT	None
DATE	12/13/18	DEPTH TO WATER (FROM TOC)	8.96
SITE	River Terrace RV Park	DEPTH TO BASE (FROM TOC)	20.55
GEOLOGIST	FR	HEIGHT OF WATER COLUMN	11.59
WEATHER/ TEMPERATURE	10°, clear, dark	WELL VOLUME	0.98 gal
WIND		Pump Intake Depth	20.0

NOMINAL DIAMETER	O.D.	I.D.	VOLUME (GAL/LIN FT)
1"	2.375"	2.067"	0.17
3"	3.5"	3.068"	0.38
4"	4.5"	4.026"	0.66
6"	6.625"	6.065"	1.50
8"	8.625"	7.981"	2.60

SAMPLING DATA

SAMPLE TYPE (GW, PRODUCT, OTHER): Groundwater

SAMPLE COLLECTED WITH: __ Bailer; ✓ Pump, Type: Peri; __ Other, Specify:

MADE OF: __ Stainless Steel; __ PVC; __ Teflon; __ Disposable LDPE; __ Other, Specify:

SAMPLING DECON PROCEDURE: Run Alconox solution through pump followed by potable and deionized water

SAMPLE DESCRIPTION: (color, free product thickness, odor, turbidity)

FIELD WATER QUALITY PARAMETERS

Time	Flow Rate (mL/min)	Water Level	Draw Down	Temperature (°C)	Spec. Cond. (µS/cm)[c]	D.O. (%)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Color	Odor
1905	210	10.11		5.39	5416	15.3	1.88	8.76	-281.7	—	Clear	Organic
1910	210	10.90		5.38	5411	15.2	1.87	8.80	-290.1	—	Clear	Organic/H_2S
1915	210	11.93		5.42	5410	15.7	1.93	8.85	-301.9	—	clear	putrid
1920	210	13.80		5.40	5412	15.7	1.91	8.89	-310.8	—	clear	Organic/H_2S

ANALYTICAL SAMPLE INFORMATION

Analyte	Time	Identification
VOC	1925	18-RT-80A-GW

Additional Sample	Time	Identification
Duplicate		

Sampling Notes:

Ahtna Engineering Services, LLC

GROUNDWATER SAMPLING FORM

PROJECT NUMBER:	WELL NUMBER:	SHEET:
20301.005.01	MW-51	of

PROJECT NAME	Groundwater Comp. and Perf. Monitoring Plan	WELL CONDITION	Good
CLIENT	ADEC	DAMAGE PRESENT	NA
DATE	12/13/18	DEPTH TO WATER (FROM TOC)	6.54
SITE	River Terrace RV Park	DEPTH TO BASE (FROM TOC)	29.55
GEOLOGIST	FR	HEIGHT OF WATER COLUMN	23.01
WEATHER/ TEMPERATURE	12°, dark, clear	WELL VOLUME	3.9117 gal
WIND		Pump Intake Depth	29.0

NOMINAL DIAMETER	O.D.	I.D.	VOLUME (GAL/LIN FT)
(2")	2.375"	2.067"	0.17
3"	3.5"	3.068"	0.38
4"	4.5"	4.026"	0.66
6"	6.625"	6.065"	1.50
8"	8.625"	7.981"	2.60

SAMPLING DATA

SAMPLE TYPE (GW, PRODUCT, OTHER): Groundwater

SAMPLE COLLECTED WITH: __ Bailer ✓ Pump, Type: Submersible __ Other, Specify:

MADE OF: __ Stainless Steel ___ PVC

__ Teflon ___ Disposable LDPE __ Other, Specify:

SAMPLING DECON PROCEDURE: Run Alconox solution through pump followed by **potable and deionized water**

SAMPLE DESCRIPTION: (color, free product thickness, odor, turbidity)

FIELD WATER QUALITY PARAMETERS

Time	Flow Rate (mL/min)	Water Level	Draw Down	Temperature (°C)	Spec. Cond. (µS/cm)[c]	D.O. (%)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Color	Odor
2010	175	10.51		4.53	147	46.1	5.86	6.84	59.4	—	Turbid	Putrid
2015	175	15.17		5.52	164	38.2	4.79	6.98	45.4	—	Cloudy	"
2020	175	19.21		5.42	149	38.0	4.79	6.95	44.9	—	Clear	Organic/H2S
2025	175	23.19		5.30	155	37.3	4.71	6.93	46.3	—	"	"
2030	175	24.21		5.33	147	36.9	4.75	6.92	47.7	—	"	"

ANALYTICAL SAMPLE INFORMATION

Analyte	Time	Identification	Additional Sample	Time	Identification
VOC	2035	18-RT-51-GW	Duplicate		18-RT-FD2-GW
Total Iron					
Dissolved Iron					
Dissolved Gases					
TOC					
VFA					
Gene Trac - Dhc					

Sampling Notes:

Ahtna Engineering Services, LLC

GROUNDWATER SAMPLING FORM

PROJECT NUMBER:	WELL NUMBER:	SHEET:
20301.005.01	L-103	of

PROJECT NAME	Groundwater Comp. and Perf. Monitoring Plan	WELL CONDITION	Good
CLIENT	ADEC	DAMAGE PRESENT	None
DATE	12/13/18	DEPTH TO WATER (FROM TOC)	7.30
SITE	River Terrace RV Park	DEPTH TO BASE (FROM TOC)	31.2
GEOLOGIST	—	HEIGHT OF WATER COLUMN	23.9
WEATHER/ TEMPERATURE	6°F; Clear	WELL VOLUME	2.03 gal
WIND	No wind	Pump Intake Depth	30.5' btoc

NOMINAL DIAMETER	O.D.	I.D.	VOLUME (GAL/LIN FT)
1 1/2"	2.375"	2.067"	0.17
3"	3.5"	3.068"	0.38
4"	4.5"	4.026"	0.66
6"	6.625"	6.065"	1.50
8"	8.625"	7.981"	2.60

SAMPLING DATA

SAMPLE TYPE (GW, PRODUCT, OTHER): Groundwater

SAMPLE COLLECTED WITH: __ Bailer; X Pump, Type: Peristaltic; __ Other, Specify:

MADE OF: __ Stainless Steel; ___ PVC; __ Teflon; ___ Disposable LDPE; __ Other, Specify:

SAMPLING DECON PROCEDURE: Run Alconox solution through pump followed by **potable and deionized water**

SAMPLE DESCRIPTION: (color, free product thickness, odor, turbidity)

FIELD WATER QUALITY PARAMETERS

Time	Flow Rate (mL/min)	Water Level	Draw Down	Temperature (°C)	Spec. Cond. (µS/cm)	D.O. (%)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Color	Odor
2103	150	10.25		5.30	5753	—	1.18	5.44	50.5	—	DK Amber	Sweet, H2S
2106	150	10.35		5.24	5670	—	1.14	5.47	33.7	—	"	"
2109	150	10.45		5.18	5595	—	1.13	5.49	6.1	—	"	"
2112	150	10.45		5.12	5516	—	0.99	5.49	-35.5	—	"	"
2115	150	10:55		5.13	5454	—	0.70	5.48	-49.5	—	"	"
2118	150	10.65		5.04	5346	—	0.37	5.48	-59.4	—	"	"
2121	150	10.75		4.99	5338	—	0.24	5.49	-63.3	—	"	"
2124	150	10.85		4.98	5317	—	0.23	5.49	-65.9	—	"	"
2127	150	10.95		4.98	5298	—	0.22	5.48	-67.0	—	"	"

ANALYTICAL SAMPLE INFORMATION

Analyte	Time	Identification
VOC	2130	18-RT-103-GW
Total Iron	—	
Dissolved Iron	—	
Dissolved Gases	—	
TOC	—	
VFA	—	
Gene Trac - Dhc	—	

Additional Sample	Time	Identification
Duplicate	—	—
	—	—
	—	—
	—	—
	—	—
	—	—
	—	—

Sampling Notes:

* Groundwater was fizzy. Bubbles present in VOA vials.

Ahtna Engineering Services, LLC

GROUNDWATER SAMPLING FORM

PROJECT NUMBER:	WELL NUMBER:	SHEET:
20301.005.01	MW-78 ~~MW-36~~	of

PROJECT NAME	Groundwater Comp. and Perf. Monitoring Plan	WELL CONDITION	Good
CLIENT	ADEC	DAMAGE PRESENT	NA
DATE	~~12/13/18~~ 12/14/18	DEPTH TO WATER (FROM TOC)	10.17
SITE	River Terrace RV Park	DEPTH TO BASE (FROM TOC)	35.54
GEOLOGIST	FR	HEIGHT OF WATER COLUMN	25.37
WEATHER/ TEMPERATURE	10°, clear	WELL VOLUME	~~[illegible]~~ 2.15 gal
WIND		Pump Intake Depth	35.0

NOMINAL DIAMETER	O.D.	I.D.	VOLUME (GAL/LIN FT)
1" ~~2"~~	2.375"	2.067"	0.17
3"	3.5"	3.068"	0.38
4"	4.5"	4.026"	0.66
6"	6.625"	6.065"	1.50
8"	8.625"	7.981"	2.60

SAMPLING DATA

SAMPLE TYPE (GW, PRODUCT, OTHER): Groundwater

SAMPLE COLLECTED WITH: __ Bailer ✓ Pump, Type: Peri ___ Other, Specify:

MADE OF: __ Stainless Steel ___ PVC

__ Teflon ___ Disposable LDPE ___ Other, Specify:

SAMPLING DECON PROCEDURE: Run Alconox solution through pump followed by **potable and deionized water**

SAMPLE DESCRIPTION: (color, free product thickness, odor, turbidity)

FIELD WATER QUALITY PARAMETERS

Time	Flow Rate (mL/min)	Water Level	Draw Down	Temperature (°C)	Spec. Cond. (µS/cm)[c]	D.O. (%)	D.O. (mg/L)	pH	ORP (mV)	Turbidity (NTU)	Color	Odor
920	200	12.51		5.25	3290	168.0	9.10	6.46	-90.5	—	Slightly Turbid	Putrid
925	200	17.64		5.19	2920	8.3	1.00	6.37	-97.2	—	~~clear~~ Cloudy	Strong
930	200	21.44		5.16	2928	6.7	0.82	6.40	-97.3	—	cloudy	"
935	200	25.71		5.02	2956	6.1	0.77	6.40	-97.6	—	"	"
940	200	26.11		5.01	2966	6.0	0.71	6.41	-99.2	—	"	"
945	200	26.50		4.99	2970	5.1	0.74	6.40	-99.8	—	"	"

ANALYTICAL SAMPLE INFORMATION

Analyte	Time	Identification
VOC	950	18-RT-78-GW ~~18-RT-36-GW~~
Total Iron		
Dissolved Iron		
Dissolved Gases TOC		
VFA		
Gene Trac - Dhc		

Additional Sample	Time	Identification
Duplicate		

Sampling Notes:

APPENDIX D

WASTE DOCUMENTS

(This Page Intentionally Left Blank)

133682(NR)

PO-133682 & 34022-NR

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: AKR000002790
2. Page 1 of: 3
3. Emergency Response Phone: 800-899-4672
4. Manifest Tracking Number: 002948235 FLE

GENERATOR

5. Generator's Name and Mailing Address
AHTNA ENGINEERING SERVICES LLC
110 WEST 38TH AVE., SUITE 200A
ANCHORAGE, AK 99503
Generator's Phone: (907) 262-3412

Generator's Site Address (if different than mailing address)
ADEC RIVER TERRACE RV PARK
44761 STERLING HWY
SOLDOTNA, AK 99669

6. Transporter 1 Company Name: NRC ALASKA LLC
U.S. EPA ID Number: AKR000004184

7. Transporter 2 Company Name: WEAVER BROTHERS
U.S. EPA ID Number: AKD002848372

8. Designated Facility Name and Site Address
US ECOLOGY NEVADA INC
HWY 95 11 MI S OF BEATTY
BEATTY, NV 89003
Facility's Phone:
U.S. EPA ID Number: NVT330010000

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
X	1. UN3082, Waste Environmentally hazardous substances, liquid, n.o.s. (Tetrachloroethylene, Trichloroethylene), 9, PGIII ERG#171	2	DM	400	P	D043	F002	
X	2. UN3077, Waste Environmentally Hazardous Substance, Solid, n.o.s. (Tetrachloroethylene, Trichloroethylene), 9, PGIII ERG#171	1	~~DM~~ DF	25	P	D043	F002	
	3.							
	4.							

14. Special Handling Instructions and Additional Information D20964
1) 070186814-47 PURGE WATER (DM 55)
2) 070126301-16637 CONTAMINATED DEBRI/SOLIDS (DF 20)

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Peter Campbell
Signature: [signature]
Month 12 Day 17 Year 18

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Thomas Robinson
Signature: [signature]
Month 12 Day [illegible] Year 18

Transporter 2 Printed/Typed Name: Todd Weaver
Signature: [signature]
Month 1 Day 2 Year 19

DESIGNATED FACILITY

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:

18b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:

18c. Signature of Alternate Facility (or Generator)
Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.
H132	H132		

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: Emily Salisbury
Signature: [signature]
Month 2 Day 4 Year 19

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO EPA E-MANIFEST

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)	21. Generator ID Number	22. Page	23. Manifest Tracking Number
	AKR000002790	2	002948235FLE

24. Generator's Name: ADEC RIVER TERRACE RV PARK
44761 STERLING HWY
SOLDOTNA, AK 99669
(907) 262-3412

25. Transporter 3 Company Name: TOTEM OCEAN TRAILER EXPRESS — U.S. EPA ID Number: WAD070397955

26. Transporter 4 Company Name: EQ INDUSTRIAL SERVICES — U.S. EPA ID Number: MIK435642742

27a. HM	27b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	28. Containers No.	28. Containers Type	29. Total Quantity	30. Unit Wt./Vol.	31. Waste Codes

32. Special Handling Instructions and Additional Information

GENERATOR

TRANSPORTER

33. Transporter 3 Acknowledgment of Receipt of Materials
Printed/Typed Name: T. DIAZ — Signature — Month: 1 Day: 2 Year: 19

34. Transporter ____ Acknowledgment of Receipt of Materials
Printed/Typed Name: William Dallis — Signature — Month: 1 Day: 22 Year: 19

DESIGNATED FACILITY

35. Discrepancy

36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)	21. Generator ID Number	22. Page	23. Manifest Tracking Number
	AKR000002790	3	002948235FLE

24. Generator's Name: ADEC RIVER TERRACE RV PARK
44761 STERLING HWY
SOLDOTNA AK 99669
(907) 262-3412

25. Transporter 5 Company Name: STEVE FORLER TRUCKING — U.S. EPA ID Number: IDR000205625

26. Transporter 6 Company Name — U.S. EPA ID Number:

27a. HM	27b. U.S. DOT Description (Including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	28. Containers No.	28. Containers Type	29. Total Quantity	30. Unit Wt./Vol.	31. Waste Codes

32. Special Handling Instructions and Additional Information

GENERATOR

TRANSPORTER

33. Transporter Acknowledgment of Receipt of Materials
Printed/Typed Name: Tim Vogen — Signature — Month: 2 Day: 1 Year: 19

34. Transporter Acknowledgment of Receipt of Materials
Printed/Typed Name — Signature — Month — Day — Year

DESIGNATED FACILITY

35. Discrepancy

36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

EPA Form 8700-22A (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

133617(NR)

PO-133617-6-3402-NR

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved, OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: AKR000200352
2. Page 1 of: 3
3. Emergency Response Phone: 800-899-4672
4. Manifest Tracking Number: 002948238 FLE

GENERATOR

5. Generator's Name and Mailing Address
DUNKIN & BUSH, INC.
PO BOX 97030
KIRKLAND, WA 98033
(907) 776-5252
Generator's Phone:

Generator's Site Address (if different than mailing address)
DUNKIN & BUSH, INC.
MILE 25 KENAI SPUR HWY PO BOX 7119
NIKISKI, AK 99635

6. Transporter 1 Company Name: NRC ALASKA LLC
U.S. EPA ID Number: AKR000004184

7. Transporter 2 Company Name: WEAVER BROTHERS
U.S. EPA ID Number: AKD002848372

8. Designated Facility Name and Site Address
US ECOLOGY NEVADA INC.
HWY 95 11 MI S OF BEATTY
BEATTY, NV 89003
775-553-2203
Facility's Phone:
U.S. EPA ID Number: NVT330010000

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. UN3264, Waste Corrosive liquid, acidic, inorganic, n o.s. (Hydrochloric acid, Phosphoric acid), 8, PGII ERG#154	1	DM	300	P	D002
	2. Material Not Regulated By D O T	1	DM	100	P	
	3. Material Not Regulated By D.O.T	1	DM	100	P	
	4. Material Not Regulated By D.O.T	1	DM	200	P	

14. Special Handling Instructions and Additional Information D21011
1) 070137714-1298 CORROSIVE LIQUID LABPACK (DM55)
2) 070137747-14425 CHLORORID 102 (DM30)
3) 070137747-14427 HOLDTIGHT 102 (DM30)
4) 070128043-14472 DESNYL TAPE (DM30)

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: X Duraine Rawls
Signature: Duraine Rawls
Month 12 Day 14 Year 18

INTL

16. International Shipments ☑ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Thomas Robinson
Signature:
Month 12 Day 14 Year 18
Transporter 2 Printed/Typed Name: Todd Weaver
Signature:
Month 12 Day 14 Year 18

DESIGNATED FACILITY

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator) U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator) Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. H039 2. H039 3. H039 4. H132

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: Emily Salisbury
Signature:
Month 12 Day 19 Year 19

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO EPA E-MANIFEST

APPENDIX E

LABORATORY ANALYTICAL REPORTS, ADEC CHECKLISTS, DATA QUALITY ASSURANCE ASSESSMENT

(This Page Intentionally Left Blank)

Laboratory Report of Analysis

To: Ahtna Engineering Svs
305 34th Ave
Fairbanks, AK 99701
907-455-5953

Report Number: **1187094**

Client Project: **20301.005.01 River Terrace**

Dear Andrew Weller,

Enclosed are the results of the analytical services performed under the referenced project for the received samples and associated QC as applicable. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of ten years in the event they are required for future reference. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. Any samples submitted to our laboratory will be retained for a maximum of fourteen (14) days from the date of this report unless other archiving requirements were included in the quote.

If there are any questions about the report or services performed during this project, please call Justin at (907) 562-2343. We will be happy to answer any questions or concerns which you may have.

Thank you for using SGS North America Inc. for your analytical services. We look forward to working with you again on any additional analytical needs.

Sincerely,
SGS North America Inc.

Justin Nelson Date
Project Manager
Justin.Nelson@sgs.com

SGS North America Inc. 200 West Potter Drive, Anchorage, AK 99518
t 907.562.2343 f 907.561.5301 www.us.sgs.com

Case Narrative

SGS Client: **Ahtna Engineering Svs**
SGS Project: **1187094**
Project Name/Site: **20301.005.01 River Terrace**
Project Contact: **Andrew Weller**

Refer to sample receipt form for information on sample condition.

18-RT-25-GW (1187094007) PS

RSK 175 - methane, ethene, ethane were analyzed by SGS of Orlando, FL.

18-RT-47-GW (1187094014) PS

8260C - Sample had headspace greater than 6mm.
8260C - Sample has a pH greater than two.

18-RT-48-GW (1187094017) PS

RSK 175 - methane, ethene, ethane were analyzed by SGS of Orlando, FL.
8260C - Sample had headspace greater than 6mm.

18-RT-78-GW (1187094024) PS

8260C - Sample has a pH greater than two; however, the sample was analyzed within 7 days from collection.

18-RT-80A-GW (1187094025) PS

8260C - Sample has a pH greater than two.

18-RT-103-GW (1187094026) PS

8260C - Sample had headspace greater than 6mm.
8260C - Sample has a pH greater than two; however, the sample was analyzed within 7 days from collection.

18-RT-47-GW MS (1187094015) BMS

RSK 175 - methane, ethene, ethane and MS were analyzed by SGS of Orlando, FL.
8260C - BMS recovery for tetrachloroethene does not meet QC criteria. See LCS/LCSD for accuracy requirements.
8260C - Sample had headspace greater than 6mm.
8260C - Sample has a pH greater than two.

18-RT-48-GW MS (1187094018) BMS

8260C - BMS recovery for cis-1,2-Dichloroethene does not meet QC criteria. See LCS/LCSD for accuracy requirements.
8260C - Sample had headspace greater than 6mm.

18-RT-47-GW MSD (1187094016) BMSD

RSK 175 - methane, ethene, ethane and MSD were analyzed by SGS of Orlando, FL.
8260C - BMSD recovery for tetrachloroethene does not meet QC criteria. See LCS/LCSD for accuracy requirements.
8260C - Sample had headspace greater than 6mm.
8260C - Sample has a pH greater than two.

18-RT-48-GW MSD (1187094019) BMSD

8260C - Sample had headspace greater than 6mm.

SGS North America Inc.
200 West Potter Drive, Anchorage, AK 99518
t 907.562.2343 **f** 907.561.5301 www.us.sgs.com

Case Narrative

SGS Client: **Ahtna Engineering Svs**
SGS Project: **1187094**
Project Name/Site: **20301.005.01 River Terrace**
Project Contact: **Andrew Weller**

1187094017(1492386MS) (1492387) MS

8260C - MS recovery for cis-1,2-Dichloroethene does not meet QC criteria. See LCS/LCSD for accuracy requirements.

1187094017(1492386MSD) (1492388) MSD

8260C - MSD recovery for cis-1,2-Dichloroethene does not meet QC criteria. See LCS/LCSD for accuracy requirements.

*QC comments may be associated with the field samples found in this report. When applicable, comments will be applied to associated field samples.

SGS North America Inc.
200 West Potter Drive, Anchorage, AK 99518
t 907.562.2343 **f** 907.561.5301 www.us.sgs.com

Report of Manual Integrations

Laboratory ID	Client Sample ID	Analytical Batch	Analyte	Reason
SW8260C				
1187094007	18-RT-25-GW	VMS18633	Dichlorodifluoromethane	SP

Manual Integration Reason Code Descriptions

Code	Description
O	Original Chromatogram
M	Modified Chromatogram
SS	Skimmed surrogate
BLG	Closed baseline gap
RP	Reassign peak name
PIR	Pattern integration required
IT	Included tail
SP	Split peak
RSP	Removed split peak
FPS	Forced peak start/stop
BLC	Baseline correction
PNF	Peak not found by software

All DRO/RRO analysis are integrated per SOP.

Print Date: 01/09/2019 8:55:34AM

Laboratory Qualifiers

Enclosed are the analytical results associated with the above work order. The results apply to the samples as received. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. This document is issued by the Company under its General Conditions of Service accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx>. Attention is drawn to the limitation of liability, indenmification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the context or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS maintains a formal Quality Assurance/Quality Control (QA/QC) program. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request. The laboratory certification numbers are AK00971 (DW Chemistry (Provisionally Certified as of 12/06/2018 for Uranium by EPA200.8, TDS by SM 2540C and Nitrate by SM 4500-NO3-F) & Microbiology) & 17-021 (CS) for ADEC and 2944.01 for DOD ELAP/ISO17025 (RCRA methods: 1020B, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035A, 6020A, 7470A, 7471B, 8015C, 8021B, 8082A, 8260C, 8270D, 8270D-SIM, 9040C, 9045D, 9056A, 9060A, AK101 and AK102/103). Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP and, when applicable, other regulatory authorities.

The following descriptors or qualifiers may be found in your report:

*	The analyte has exceeded allowable regulatory or control limits.
!	Surrogate out of control limits.
B	Indicates the analyte is found in a blank associated with the sample.
CCV/CVA/CVB	Continuing Calibration Verification
CCCV/CVC/CVCA/CVCB	Closing Continuing Calibration Verification
CL	Control Limit
DF	Analytical Dilution Factor
DL	Detection Limit (i.e., maximum method detection limit)
E	The analyte result is above the calibrated range.
GT	Greater Than
IB	Instrument Blank
ICV	Initial Calibration Verification
J	The quantitation is an estimation.
LCS(D)	Laboratory Control Spike (Duplicate)
LLQC/LLIQC	Low Level Quantitation Check
LOD	Limit of Detection (i.e., 1/2 of the LOQ)
LOQ	Limit of Quantitation (i.e., reporting or practical quantitation limit)
LT	Less Than
MB	Method Blank
MS(D)	Matrix Spike (Duplicate)
ND	Indicates the analyte is not detected.
RPD	Relative Percent Difference
U	Indicates the analyte was analyzed for but not detected.

Note: Sample summaries which include a result for "Total Solids" have already been adjusted for moisture content. All DRO/RRO analyses are integrated per SOP.

SGS North America Inc. 200 West Potter Drive, Anchorage, AK 99518
t 907.562.2343 **f** 907.561.5301 www.us.sgs.com

Sample Summary

Client Sample ID	Lab Sample ID	Collected	Received	Matrix
18-RT-6A-GW	1187094001	12/12/2018	12/17/2018	Water (Surface, Eff., Ground)
18-RT-7-GW	1187094002	12/12/2018	12/17/2018	Water (Surface, Eff., Ground)
18-RT-9-GW	1187094003	12/13/2018	12/17/2018	Water (Surface, Eff., Ground)
18-RT-12-GW	1187094004	12/12/2018	12/17/2018	Water (Surface, Eff., Ground)
18-RT-16-GW	1187094005	12/12/2018	12/17/2018	Water (Surface, Eff., Ground)
18-RT-23-GW	1187094006	12/12/2018	12/17/2018	Water (Surface, Eff., Ground)
18-RT-25-GW	1187094007	12/12/2018	12/17/2018	Water (Surface, Eff., Ground)
18-RT-35-GW	1187094008	12/12/2018	12/17/2018	Water (Surface, Eff., Ground)
18-RT-38-GW	1187094009	12/12/2018	12/17/2018	Water (Surface, Eff., Ground)
18-RT-39-GW	1187094010	12/13/2018	12/17/2018	Water (Surface, Eff., Ground)
18-RT-40-GW	1187094011	12/13/2018	12/17/2018	Water (Surface, Eff., Ground)
18-RT-42-GW	1187094012	12/12/2018	12/17/2018	Water (Surface, Eff., Ground)
18-RT-44-GW	1187094013	12/13/2018	12/17/2018	Water (Surface, Eff., Ground)
18-RT-47-GW	1187094014	12/13/2018	12/17/2018	Water (Surface, Eff., Ground)
18-RT-47-GW MS	1187094015	12/13/2018	12/17/2018	Water (Surface, Eff., Ground)
18-RT-47-GW MSD	1187094016	12/13/2018	12/17/2018	Water (Surface, Eff., Ground)
18-RT-48-GW	1187094017	12/13/2018	12/17/2018	Water (Surface, Eff., Ground)
18-RT-48-GW MS	1187094018	12/13/2018	12/17/2018	Water (Surface, Eff., Ground)
18-RT-48-GW MSD	1187094019	12/13/2018	12/17/2018	Water (Surface, Eff., Ground)
18-RT-49-GW	1187094020	12/13/2018	12/17/2018	Water (Surface, Eff., Ground)
18-RT-50-GW	1187094021	12/13/2018	12/17/2018	Water (Surface, Eff., Ground)
18-RT-51-GW	1187094022	12/13/2018	12/17/2018	Water (Surface, Eff., Ground)
18-RT-52-GW	1187094023	12/13/2018	12/17/2018	Water (Surface, Eff., Ground)
18-RT-78-GW	1187094024	12/14/2018	12/17/2018	Water (Surface, Eff., Ground)
18-RT-80A-GW	1187094025	12/13/2018	12/17/2018	Water (Surface, Eff., Ground)
18-RT-103-GW	1187094026	12/13/2018	12/17/2018	Water (Surface, Eff., Ground)
18-RT-FD1-GW	1187094027	12/13/2018	12/17/2018	Water (Surface, Eff., Ground)
18-RT-FD2-GW	1187094028	12/13/2018	12/17/2018	Water (Surface, Eff., Ground)
18-RT-FD3-GW	1187094029	12/13/2018	12/17/2018	Water (Surface, Eff., Ground)
18-RT-TB-1	1187094030	12/11/2018	12/17/2018	Water (Surface, Eff., Ground)
18-RT-EB1-GW	1187094031	12/13/2018	12/17/2018	Water (Surface, Eff., Ground)
18-RT-EB2-GW	1187094032	12/14/2018	12/17/2018	Water (Surface, Eff., Ground)

Method	Method Description
SW8260C	Volatile Organic Compounds (W) FULL

SGS North America Inc.
200 West Potter Drive, Anchorage, AK 99518
t 907.562.2343 f 907.561.5301 www.us.sgs.com

Detectable Results Summary

Client Sample ID: **18-RT-6A-GW**
Lab Sample ID: 1187094001
Volatile GC/MS

Parameter	Result	Units
Benzene	0.690	ug/L
cis-1,2-Dichloroethene	4.30	ug/L
Tetrachloroethene	8.55	ug/L
trans-1,2-Dichloroethene	4.47	ug/L
Vinyl chloride	8.02	ug/L

Client Sample ID: **18-RT-7-GW**
Lab Sample ID: 1187094002
Volatile GC/MS

Parameter	Result	Units
1,2-Dichloropropane	0.310J	ug/L
Benzene	0.810	ug/L
cis-1,2-Dichloroethene	11.1	ug/L
Tetrachloroethene	16.9	ug/L
trans-1,2-Dichloroethene	3.31	ug/L
Trichloroethene	5.36	ug/L
Vinyl chloride	2.88	ug/L

Client Sample ID: **18-RT-9-GW**
Lab Sample ID: 1187094003
Volatile GC/MS

Parameter	Result	Units
1,2-Dichloropropane	1.06	ug/L
Benzene	1.65	ug/L
cis-1,2-Dichloroethene	9.03	ug/L
Tetrachloroethene	15.0	ug/L
Toluene	0.680J	ug/L
trans-1,2-Dichloroethene	6.53	ug/L
Trichloroethene	0.530J	ug/L
Vinyl chloride	2.11	ug/L

Client Sample ID: **18-RT-12-GW**
Lab Sample ID: 1187094004
Volatile GC/MS

Parameter	Result	Units
cis-1,2-Dichloroethene	14.4	ug/L
Tetrachloroethene	1.46	ug/L
Trichloroethene	1.55	ug/L
Vinyl chloride	0.240	ug/L

SGS North America Inc.
200 West Potter Drive, Anchorage, AK 99518
t 907.562.2343 **f** 907.561.5301 www.us.sgs.com

Detectable Results Summary

Client Sample ID: **18-RT-16-GW**
Lab Sample ID: 1187094005
Volatile GC/MS

Parameter	Result	Units
1,2,4-Trimethylbenzene	1.08	ug/L
4-Isopropyltoluene	0.810J	ug/L
Benzene	0.300J	ug/L
cis-1,2-Dichloroethene	7.45	ug/L
Ethylbenzene	0.370J	ug/L
Naphthalene	0.420J	ug/L
n-Butylbenzene	1.12	ug/L
n-Propylbenzene	0.500J	ug/L
o-Xylene	0.480J	ug/L
P & M -Xylene	0.850J	ug/L
sec-Butylbenzene	0.670J	ug/L
Tetrachloroethene	3.78	ug/L
Toluene	0.820J	ug/L
trans-1,2-Dichloroethene	1.62	ug/L
Trichloroethene	2.97	ug/L
Vinyl chloride	5.12	ug/L
Xylenes (total)	1.33J	ug/L

Client Sample ID: **18-RT-23-GW**
Lab Sample ID: 1187094006
Volatile GC/MS

Parameter	Result	Units
Bromodichloromethane	0.600	ug/L
Chloroform	1.10	ug/L
Dibromochloromethane	0.270J	ug/L
Tetrachloroethene	5.43	ug/L

Client Sample ID: **18-RT-25-GW**
Lab Sample ID: 1187094007
Volatile GC/MS

Parameter	Result	Units
Chloroform	0.680J	ug/L
cis-1,2-Dichloroethene	67.1	ug/L
Dichlorodifluoromethane	0.550J	ug/L
Tetrachloroethene	89.5	ug/L
trans-1,2-Dichloroethene	0.340J	ug/L
Trichloroethene	44.3	ug/L
Vinyl chloride	1.40	ug/L

Client Sample ID: **18-RT-35-GW**
Lab Sample ID: 1187094008
Volatile GC/MS

Parameter	Result	Units
Chlorobenzene	0.560	ug/L
cis-1,2-Dichloroethene	24.9	ug/L
Tetrachloroethene	1.76	ug/L
trans-1,2-Dichloroethene	0.800J	ug/L
Trichloroethene	1.77	ug/L
Vinyl chloride	1.24	ug/L

SGS North America Inc.
200 West Potter Drive, Anchorage, AK 99518
t 907.562.2343 f 907.561.5301 www.us.sgs.com

Detectable Results Summary

Client Sample ID: **18-RT-38-GW**
Lab Sample ID: 1187094009
Volatile GC/MS

Parameter	Result	Units
Benzene	0.250J	ug/L
cis-1,2-Dichloroethene	281	ug/L
o-Xylene	0.550J	ug/L
P & M -Xylene	1.10J	ug/L
Tetrachloroethene	36.4	ug/L
trans-1,2-Dichloroethene	3.04	ug/L
Trichloroethene	82.1	ug/L
Vinyl chloride	45.1	ug/L
Xylenes (total)	1.65J	ug/L

Client Sample ID: **18-RT-39-GW**
Lab Sample ID: 1187094010
Volatile GC/MS

Parameter	Result	Units
1,2-Dichloropropane	0.630J	ug/L
Benzene	1.92	ug/L
cis-1,2-Dichloroethene	3.19	ug/L
Toluene	1.52	ug/L
trans-1,2-Dichloroethene	15.1	ug/L
Vinyl chloride	2.71	ug/L

Client Sample ID: **18-RT-40-GW**
Lab Sample ID: 1187094011
Volatile GC/MS

Parameter	Result	Units
1,2-Dichloropropane	0.600J	ug/L
Benzene	1.49	ug/L
cis-1,2-Dichloroethene	22.8	ug/L
Tetrachloroethene	18.1	ug/L
Toluene	0.630J	ug/L
trans-1,2-Dichloroethene	9.11	ug/L
Trichloroethene	0.660J	ug/L
Vinyl chloride	22.2	ug/L

Client Sample ID: **18-RT-42-GW**
Lab Sample ID: 1187094012
Volatile GC/MS

Parameter	Result	Units
1,2,4-Trichlorobenzene	0.370J	ug/L
Chloroform	0.400J	ug/L
cis-1,2-Dichloroethene	3.65	ug/L
Tetrachloroethene	178	ug/L
Trichloroethene	9.74	ug/L

SGS North America Inc.
200 West Potter Drive, Anchorage, AK 99518
t 907.562.2343 **f** 907.561.5301 www.us.sgs.com

Detectable Results Summary

Client Sample ID: **18-RT-44-GW**
Lab Sample ID: 1187094013
Volatile GC/MS

Parameter	Result	Units
1,1-Dichloroethane	0.630J	ug/L
1,1-Dichloroethene	0.320J	ug/L
1,2-Dichloropropane	3.53	ug/L
2-Butanone (MEK)	4.07J	ug/L
cis-1,2-Dichloroethene	62.8	ug/L
Tetrachloroethene	1.45	ug/L
Toluene	0.370J	ug/L
trans-1,2-Dichloroethene	1.99	ug/L
Trichloroethene	0.770J	ug/L
Vinyl chloride	205	ug/L

Client Sample ID: **18-RT-47-GW**
Lab Sample ID: 1187094014
Volatile GC/MS

Parameter	Result	Units
1,1-Dichloroethene	31.0J	ug/L
1,2-Dichloropropane	65.0J	ug/L
2-Butanone (MEK)	1930	ug/L
Benzene	85.0	ug/L
cis-1,2-Dichloroethene	34300	ug/L
Tetrachloroethene	10600	ug/L
Toluene	34.0J	ug/L
trans-1,2-Dichloroethene	477	ug/L
Trichloroethene	2550	ug/L
Vinyl chloride	676	ug/L

Client Sample ID: **18-RT-48-GW**
Lab Sample ID: 1187094017
Volatile GC/MS

Parameter	Result	Units
2-Butanone (MEK)	1130	ug/L
cis-1,2-Dichloroethene	4030	ug/L
Tetrachloroethene	22.5J	ug/L
trans-1,2-Dichloroethene	38.5J	ug/L
Vinyl chloride	1350	ug/L

Client Sample ID: **18-RT-49-GW**
Lab Sample ID: 1187094020
Volatile GC/MS

Parameter	Result	Units
1,1-Dichloroethene	1.53	ug/L
1,2-Dichloropropane	1.29	ug/L
2-Butanone (MEK)	25.9	ug/L
Benzene	0.160J	ug/L
cis-1,2-Dichloroethene	987	ug/L
trans-1,2-Dichloroethene	4.74	ug/L
Vinyl chloride	165	ug/L

SGS North America Inc.
200 West Potter Drive, Anchorage, AK 99518
t 907.562.2343 f 907.561.5301 www.us.sgs.com

Detectable Results Summary

Client Sample ID: **18-RT-50-GW**
Lab Sample ID: 1187094021
Volatile GC/MS

Parameter	Result	Units
1,1-Dichloroethane	11.1	ug/L
1,1-Dichloroethene	152	ug/L
1,2-Dichloropropane	121	ug/L
2-Butanone (MEK)	32.3	ug/L
Benzene	1.49	ug/L
cis-1,2-Dichloroethene	167000	ug/L
o-Xylene	0.370J	ug/L
P & M -Xylene	0.650J	ug/L
Tetrachloroethene	2960	ug/L
Toluene	1.40	ug/L
trans-1,2-Dichloroethene	548	ug/L
Trichloroethene	988	ug/L
Vinyl chloride	34500	ug/L
Xylenes (total)	1.02J	ug/L

Client Sample ID: **18-RT-51-GW**
Lab Sample ID: 1187094022
Volatile GC/MS

Parameter	Result	Units
cis-1,2-Dichloroethene	507	ug/L
Tetrachloroethene	4.20J	ug/L
trans-1,2-Dichloroethene	21.5	ug/L
Vinyl chloride	705	ug/L

Client Sample ID: **18-RT-52-GW**
Lab Sample ID: 1187094023
Volatile GC/MS

Parameter	Result	Units
1,1-Dichloroethane	0.930J	ug/L
1,2-Dichloropropane	3.10	ug/L
2-Butanone (MEK)	49.1	ug/L
cis-1,2-Dichloroethene	20.1	ug/L
Tetrachloroethene	23.0	ug/L
trans-1,2-Dichloroethene	3.30	ug/L
Trichloroethene	0.380J	ug/L
Vinyl chloride	30.7	ug/L

Client Sample ID: **18-RT-78-GW**
Lab Sample ID: 1187094024
Volatile GC/MS

Parameter	Result	Units
1,2-Dichloropropane	32.0J	ug/L
2-Butanone (MEK)	961J	ug/L
cis-1,2-Dichloroethene	15300	ug/L
Tetrachloroethene	35.0J	ug/L
trans-1,2-Dichloroethene	43.0J	ug/L
Vinyl chloride	2540	ug/L

SGS North America Inc.
200 West Potter Drive, Anchorage, AK 99518
t 907.562.2343 f 907.561.5301 www.us.sgs.com

Detectable Results Summary

Client Sample ID: **18-RT-80A-GW**
Lab Sample ID: 1187094025
Volatile GC/MS

Parameter	Result	Units
1,1-Dichloroethane	48.0J	ug/L
1,1-Dichloroethene	197	ug/L
1,2-Dichloropropane	465	ug/L
cis-1,2-Dichloroethene	53600	ug/L
Tetrachloroethene	104000	ug/L
trans-1,2-Dichloroethene	190	ug/L
Trichloroethene	19300	ug/L
Vinyl chloride	2640	ug/L

Client Sample ID: **18-RT-103-GW**
Lab Sample ID: 1187094026
Volatile GC/MS

Parameter	Result	Units
1,2-Dichloropropane	35.0J	ug/L
2-Butanone (MEK)	1740	ug/L
Benzene	45.0	ug/L
cis-1,2-Dichloroethene	18000	ug/L
Tetrachloroethene	7290	ug/L
Toluene	32.0J	ug/L
trans-1,2-Dichloroethene	201	ug/L
Trichloroethene	2150	ug/L
Vinyl chloride	303	ug/L

Client Sample ID: **18-RT-FD1-GW**
Lab Sample ID: 1187094027
Volatile GC/MS

Parameter	Result	Units
1,1-Dichloroethene	1.71	ug/L
1,2-Dichloropropane	1.26	ug/L
2-Butanone (MEK)	29.7	ug/L
Benzene	0.180J	ug/L
cis-1,2-Dichloroethene	958	ug/L
Tetrachloroethene	0.540J	ug/L
trans-1,2-Dichloroethene	5.16	ug/L
Trichloroethene	0.340J	ug/L
Vinyl chloride	161	ug/L

Client Sample ID: **18-RT-FD2-GW**
Lab Sample ID: 1187094028
Volatile GC/MS

Parameter	Result	Units
1,1-Dichloroethene	0.580J	ug/L
1,2-Dichloropropane	2.17	ug/L
2-Butanone (MEK)	17.0	ug/L
cis-1,2-Dichloroethene	498	ug/L
Tetrachloroethene	4.83	ug/L
trans-1,2-Dichloroethene	21.4	ug/L
Trichloroethene	1.02	ug/L
Vinyl chloride	679	ug/L

SGS North America Inc.
200 West Potter Drive, Anchorage, AK 99518
t 907.562.2343 f 907.561.5301 www.us.sgs.com

Detectable Results Summary

Client Sample ID: **18-RT-FD3-GW**
Lab Sample ID: 1187094029
Volatile GC/MS

Parameter	Result	Units
1,1-Dichloroethane	10.5	ug/L
1,1-Dichloroethene	118	ug/L
1,2-Dichloropropane	112	ug/L
2-Butanone (MEK)	26.6	ug/L
Benzene	1.47	ug/L
cis-1,2-Dichloroethene	125000	ug/L
P & M -Xylene	0.680J	ug/L
Tetrachloroethene	21.4	ug/L
Toluene	1.18	ug/L
trans-1,2-Dichloroethene	469	ug/L
Trichloroethene	4.19	ug/L
Vinyl chloride	33300	ug/L

Client Sample ID: **18-RT-EB1-GW**
Lab Sample ID: 1187094031
Volatile GC/MS

Parameter	Result	Units
Chloroform	0.820J	ug/L
Toluene	0.720J	ug/L

Client Sample ID: **18-RT-EB2-GW**
Lab Sample ID: 1187094032
Volatile GC/MS

Parameter	Result	Units
cis-1,2-Dichloroethene	1.47	ug/L

SGS North America Inc.
200 West Potter Drive, Anchorage, AK 99518
t 907.562.2343 **f** 907.561.5301 www.us.sgs.com

Results of **18-RT-6A-GW**

Client Sample ID: **18-RT-6A-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094001
Lab Project ID: 1187094

Collection Date: 12/12/18 21:00
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250 U		0.500	0.150	ug/L	1		12/19/18 15:25
1,1,1-Trichloroethane	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:25
1,1,2,2-Tetrachloroethane	0.250 U		0.500	0.150	ug/L	1		12/19/18 15:25
1,1,2-Trichloroethane	0.200 U		0.400	0.120	ug/L	1		12/19/18 15:25
1,1-Dichloroethane	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:25
1,1-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:25
1,1-Dichloropropene	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:25
1,2,3-Trichlorobenzene	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:25
1,2,3-Trichloropropane	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:25
1,2,4-Trichlorobenzene	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:25
1,2,4-Trimethylbenzene	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:25
1,2-Dibromo-3-chloropropane	5.00 U		10.0	3.10	ug/L	1		12/19/18 15:25
1,2-Dibromoethane	0.0375 U		0.0750	0.0180	ug/L	1		12/19/18 15:25
1,2-Dichlorobenzene	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:25
1,2-Dichloroethane	0.250 U		0.500	0.150	ug/L	1		12/19/18 15:25
1,2-Dichloropropane	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:25
1,3,5-Trimethylbenzene	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:25
1,3-Dichlorobenzene	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:25
1,3-Dichloropropane	0.250 U		0.500	0.150	ug/L	1		12/19/18 15:25
1,4-Dichlorobenzene	0.250 U		0.500	0.150	ug/L	1		12/19/18 15:25
2,2-Dichloropropane	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:25
2-Butanone (MEK)	5.00 U		10.0	3.10	ug/L	1		12/19/18 15:25
2-Chlorotoluene	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:25
2-Hexanone	5.00 U		10.0	3.10	ug/L	1		12/19/18 15:25
4-Chlorotoluene	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:25
4-Isopropyltoluene	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:25
4-Methyl-2-pentanone (MIBK)	5.00 U		10.0	3.10	ug/L	1		12/19/18 15:25
Benzene	0.690		0.400	0.120	ug/L	1		12/19/18 15:25
Bromobenzene	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:25
Bromochloromethane	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:25
Bromodichloromethane	0.250 U		0.500	0.150	ug/L	1		12/19/18 15:25
Bromoform	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:25
Bromomethane	2.50 U		5.00	1.50	ug/L	1		12/19/18 15:25
Carbon disulfide	5.00 U		10.0	3.10	ug/L	1		12/19/18 15:25
Carbon tetrachloride	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:25
Chlorobenzene	0.250 U		0.500	0.150	ug/L	1		12/19/18 15:25
Chloroethane	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:25

Results of **18-RT-6A-GW**

Client Sample ID: **18-RT-6A-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094001
Lab Project ID: 1187094

Collection Date: 12/12/18 21:00
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:25
Chloromethane	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:25
cis-1,2-Dichloroethene	4.30		1.00	0.310	ug/L	1		12/19/18 15:25
cis-1,3-Dichloropropene	0.250 U		0.500	0.150	ug/L	1		12/19/18 15:25
Dibromochloromethane	0.250 U		0.500	0.150	ug/L	1		12/19/18 15:25
Dibromomethane	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:25
Dichlorodifluoromethane	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:25
Ethylbenzene	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:25
Freon-113	5.00 U		10.0	3.10	ug/L	1		12/19/18 15:25
Hexachlorobutadiene	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:25
Isopropylbenzene (Cumene)	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:25
Methylene chloride	2.50 U		5.00	1.00	ug/L	1		12/19/18 15:25
Methyl-t-butyl ether	5.00 U		10.0	3.10	ug/L	1		12/19/18 15:25
Naphthalene	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:25
n-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:25
n-Propylbenzene	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:25
o-Xylene	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:25
P & M -Xylene	1.00 U		2.00	0.620	ug/L	1		12/19/18 15:25
sec-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:25
Styrene	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:25
tert-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:25
Tetrachloroethene	8.55		1.00	0.310	ug/L	1		12/19/18 15:25
Toluene	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:25
trans-1,2-Dichloroethene	4.47		1.00	0.310	ug/L	1		12/19/18 15:25
trans-1,3-Dichloropropene	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:25
Trichloroethene	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:25
Trichlorofluoromethane	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:25
Vinyl acetate	5.00 U		10.0	3.10	ug/L	1		12/19/18 15:25
Vinyl chloride	8.02		0.150	0.0500	ug/L	1		12/19/18 15:25
Xylenes (total)	1.50 U		3.00	1.00	ug/L	1		12/19/18 15:25
Surrogates								
1,2-Dichloroethane-D4 (surr)	110		81-118		%	1		12/19/18 15:25
4-Bromofluorobenzene (surr)	98.8		85-114		%	1		12/19/18 15:25
Toluene-d8 (surr)	99.7		89-112		%	1		12/19/18 15:25

Results of **18-RT-6A-GW**

Client Sample ID: **18-RT-6A-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094001
Lab Project ID: 1187094

Collection Date: 12/12/18 21:00
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS18632
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 12/19/18 15:25
Container ID: 1187094001-A

Prep Batch: VXX33639
Prep Method: SW5030B
Prep Date/Time: 12/18/18 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **18-RT-7-GW**

Client Sample ID: **18-RT-7-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094002
Lab Project ID: 1187094

Collection Date: 12/12/18 18:40
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		12/19/18 15:40
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		12/19/18 15:40
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		12/19/18 15:40
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		12/19/18 15:40
1,1-Dichloroethane	0.500	U	1.00	0.310	ug/L	1		12/19/18 15:40
1,1-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		12/19/18 15:40
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		12/19/18 15:40
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		12/19/18 15:40
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		12/19/18 15:40
1,2,4-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		12/19/18 15:40
1,2,4-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		12/19/18 15:40
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		12/19/18 15:40
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		12/19/18 15:40
1,2-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		12/19/18 15:40
1,2-Dichloroethane	0.250	U	0.500	0.150	ug/L	1		12/19/18 15:40
1,2-Dichloropropane	0.310	J	1.00	0.310	ug/L	1		12/19/18 15:40
1,3,5-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		12/19/18 15:40
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		12/19/18 15:40
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		12/19/18 15:40
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		12/19/18 15:40
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		12/19/18 15:40
2-Butanone (MEK)	5.00	U	10.0	3.10	ug/L	1		12/19/18 15:40
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		12/19/18 15:40
2-Hexanone	5.00	U	10.0	3.10	ug/L	1		12/19/18 15:40
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		12/19/18 15:40
4-Isopropyltoluene	0.500	U	1.00	0.310	ug/L	1		12/19/18 15:40
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		12/19/18 15:40
Benzene	0.810		0.400	0.120	ug/L	1		12/19/18 15:40
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		12/19/18 15:40
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		12/19/18 15:40
Bromodichloromethane	0.250	U	0.500	0.150	ug/L	1		12/19/18 15:40
Bromoform	0.500	U	1.00	0.310	ug/L	1		12/19/18 15:40
Bromomethane	2.50	U	5.00	1.50	ug/L	1		12/19/18 15:40
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		12/19/18 15:40
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		12/19/18 15:40
Chlorobenzene	0.250	U	0.500	0.150	ug/L	1		12/19/18 15:40
Chloroethane	0.500	U	1.00	0.310	ug/L	1		12/19/18 15:40

Results of **18-RT-7-GW**

Client Sample ID: **18-RT-7-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094002
Lab Project ID: 1187094

Collection Date: 12/12/18 18:40
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:40
Chloromethane	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:40
cis-1,2-Dichloroethene	11.1		1.00	0.310	ug/L	1		12/19/18 15:40
cis-1,3-Dichloropropene	0.250 U		0.500	0.150	ug/L	1		12/19/18 15:40
Dibromochloromethane	0.250 U		0.500	0.150	ug/L	1		12/19/18 15:40
Dibromomethane	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:40
Dichlorodifluoromethane	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:40
Ethylbenzene	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:40
Freon-113	5.00 U		10.0	3.10	ug/L	1		12/19/18 15:40
Hexachlorobutadiene	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:40
Isopropylbenzene (Cumene)	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:40
Methylene chloride	2.50 U		5.00	1.00	ug/L	1		12/19/18 15:40
Methyl-t-butyl ether	5.00 U		10.0	3.10	ug/L	1		12/19/18 15:40
Naphthalene	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:40
n-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:40
n-Propylbenzene	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:40
o-Xylene	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:40
P & M -Xylene	1.00 U		2.00	0.620	ug/L	1		12/19/18 15:40
sec-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:40
Styrene	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:40
tert-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:40
Tetrachloroethene	16.9		1.00	0.310	ug/L	1		12/19/18 15:40
Toluene	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:40
trans-1,2-Dichloroethene	3.31		1.00	0.310	ug/L	1		12/19/18 15:40
trans-1,3-Dichloropropene	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:40
Trichloroethene	5.36		1.00	0.310	ug/L	1		12/19/18 15:40
Trichlorofluoromethane	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:40
Vinyl acetate	5.00 U		10.0	3.10	ug/L	1		12/19/18 15:40
Vinyl chloride	2.88		0.150	0.0500	ug/L	1		12/19/18 15:40
Xylenes (total)	1.50 U		3.00	1.00	ug/L	1		12/19/18 15:40
Surrogates								
1,2-Dichloroethane-D4 (surr)	106		81-118		%	1		12/19/18 15:40
4-Bromofluorobenzene (surr)	101		85-114		%	1		12/19/18 15:40
Toluene-d8 (surr)	98.1		89-112		%	1		12/19/18 15:40

Results of **18-RT-7-GW**

Client Sample ID: **18-RT-7-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094002
Lab Project ID: 1187094

Collection Date: 12/12/18 18:40
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS18632
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 12/19/18 15:40
Container ID: 1187094002-A

Prep Batch: VXX33639
Prep Method: SW5030B
Prep Date/Time: 12/18/18 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **18-RT-9-GW**

Client Sample ID: **18-RT-9-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094003
Lab Project ID: 1187094

Collection Date: 12/13/18 10:45
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		12/19/18 15:56
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		12/19/18 15:56
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		12/19/18 15:56
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		12/19/18 15:56
1,1-Dichloroethane	0.500	U	1.00	0.310	ug/L	1		12/19/18 15:56
1,1-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		12/19/18 15:56
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		12/19/18 15:56
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		12/19/18 15:56
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		12/19/18 15:56
1,2,4-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		12/19/18 15:56
1,2,4-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		12/19/18 15:56
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		12/19/18 15:56
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		12/19/18 15:56
1,2-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		12/19/18 15:56
1,2-Dichloroethane	0.250	U	0.500	0.150	ug/L	1		12/19/18 15:56
1,2-Dichloropropane	1.06		1.00	0.310	ug/L	1		12/19/18 15:56
1,3,5-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		12/19/18 15:56
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		12/19/18 15:56
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		12/19/18 15:56
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		12/19/18 15:56
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		12/19/18 15:56
2-Butanone (MEK)	5.00	U	10.0	3.10	ug/L	1		12/19/18 15:56
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		12/19/18 15:56
2-Hexanone	5.00	U	10.0	3.10	ug/L	1		12/19/18 15:56
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		12/19/18 15:56
4-Isopropyltoluene	0.500	U	1.00	0.310	ug/L	1		12/19/18 15:56
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		12/19/18 15:56
Benzene	1.65		0.400	0.120	ug/L	1		12/19/18 15:56
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		12/19/18 15:56
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		12/19/18 15:56
Bromodichloromethane	0.250	U	0.500	0.150	ug/L	1		12/19/18 15:56
Bromoform	0.500	U	1.00	0.310	ug/L	1		12/19/18 15:56
Bromomethane	2.50	U	5.00	1.50	ug/L	1		12/19/18 15:56
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		12/19/18 15:56
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		12/19/18 15:56
Chlorobenzene	0.250	U	0.500	0.150	ug/L	1		12/19/18 15:56
Chloroethane	0.500	U	1.00	0.310	ug/L	1		12/19/18 15:56

Results of **18-RT-9-GW**

Client Sample ID: **18-RT-9-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094003
Lab Project ID: 1187094

Collection Date: 12/13/18 10:45
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:56
Chloromethane	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:56
cis-1,2-Dichloroethene	9.03		1.00	0.310	ug/L	1		12/19/18 15:56
cis-1,3-Dichloropropene	0.250 U		0.500	0.150	ug/L	1		12/19/18 15:56
Dibromochloromethane	0.250 U		0.500	0.150	ug/L	1		12/19/18 15:56
Dibromomethane	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:56
Dichlorodifluoromethane	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:56
Ethylbenzene	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:56
Freon-113	5.00 U		10.0	3.10	ug/L	1		12/19/18 15:56
Hexachlorobutadiene	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:56
Isopropylbenzene (Cumene)	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:56
Methylene chloride	2.50 U		5.00	1.00	ug/L	1		12/19/18 15:56
Methyl-t-butyl ether	5.00 U		10.0	3.10	ug/L	1		12/19/18 15:56
Naphthalene	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:56
n-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:56
n-Propylbenzene	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:56
o-Xylene	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:56
P & M -Xylene	1.00 U		2.00	0.620	ug/L	1		12/19/18 15:56
sec-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:56
Styrene	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:56
tert-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:56
Tetrachloroethene	15.0		1.00	0.310	ug/L	1		12/19/18 15:56
Toluene	0.680 J		1.00	0.310	ug/L	1		12/19/18 15:56
trans-1,2-Dichloroethene	6.53		1.00	0.310	ug/L	1		12/19/18 15:56
trans-1,3-Dichloropropene	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:56
Trichloroethene	0.530 J		1.00	0.310	ug/L	1		12/19/18 15:56
Trichlorofluoromethane	0.500 U		1.00	0.310	ug/L	1		12/19/18 15:56
Vinyl acetate	5.00 U		10.0	3.10	ug/L	1		12/19/18 15:56
Vinyl chloride	2.11		0.150	0.0500	ug/L	1		12/19/18 15:56
Xylenes (total)	1.50 U		3.00	1.00	ug/L	1		12/19/18 15:56
Surrogates								
1,2-Dichloroethane-D4 (surr)	104		81-118		%	1		12/19/18 15:56
4-Bromofluorobenzene (surr)	103		85-114		%	1		12/19/18 15:56
Toluene-d8 (surr)	102		89-112		%	1		12/19/18 15:56

Results of **18-RT-9-GW**

Client Sample ID: **18-RT-9-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094003
Lab Project ID: 1187094

Collection Date: 12/13/18 10:45
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS18632
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 12/19/18 15:56
Container ID: 1187094003-A

Prep Batch: VXX33639
Prep Method: SW5030B
Prep Date/Time: 12/18/18 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **18-RT-12-GW**

Client Sample ID: **18-RT-12-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094004
Lab Project ID: 1187094

Collection Date: 12/12/18 19:30
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250 U		0.500	0.150	ug/L	1		12/19/18 23:30
1,1,1-Trichloroethane	0.500 U		1.00	0.310	ug/L	1		12/19/18 23:30
1,1,2,2-Tetrachloroethane	0.250 U		0.500	0.150	ug/L	1		12/19/18 23:30
1,1,2-Trichloroethane	0.200 U		0.400	0.120	ug/L	1		12/19/18 23:30
1,1-Dichloroethane	0.500 U		1.00	0.310	ug/L	1		12/19/18 23:30
1,1-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		12/19/18 23:30
1,1-Dichloropropene	0.500 U		1.00	0.310	ug/L	1		12/19/18 23:30
1,2,3-Trichlorobenzene	0.500 U		1.00	0.310	ug/L	1		12/19/18 23:30
1,2,3-Trichloropropane	0.500 U		1.00	0.310	ug/L	1		12/19/18 23:30
1,2,4-Trichlorobenzene	0.500 U		1.00	0.310	ug/L	1		12/19/18 23:30
1,2,4-Trimethylbenzene	0.500 U		1.00	0.310	ug/L	1		12/19/18 23:30
1,2-Dibromo-3-chloropropane	5.00 U		10.0	3.10	ug/L	1		12/19/18 23:30
1,2-Dibromoethane	0.0375 U		0.0750	0.0180	ug/L	1		12/19/18 23:30
1,2-Dichlorobenzene	0.500 U		1.00	0.310	ug/L	1		12/19/18 23:30
1,2-Dichloroethane	0.250 U		0.500	0.150	ug/L	1		12/19/18 23:30
1,2-Dichloropropane	0.500 U		1.00	0.310	ug/L	1		12/19/18 23:30
1,3,5-Trimethylbenzene	0.500 U		1.00	0.310	ug/L	1		12/19/18 23:30
1,3-Dichlorobenzene	0.500 U		1.00	0.310	ug/L	1		12/19/18 23:30
1,3-Dichloropropane	0.250 U		0.500	0.150	ug/L	1		12/19/18 23:30
1,4-Dichlorobenzene	0.250 U		0.500	0.150	ug/L	1		12/19/18 23:30
2,2-Dichloropropane	0.500 U		1.00	0.310	ug/L	1		12/19/18 23:30
2-Butanone (MEK)	5.00 U		10.0	3.10	ug/L	1		12/19/18 23:30
2-Chlorotoluene	0.500 U		1.00	0.310	ug/L	1		12/19/18 23:30
2-Hexanone	5.00 U		10.0	3.10	ug/L	1		12/19/18 23:30
4-Chlorotoluene	0.500 U		1.00	0.310	ug/L	1		12/19/18 23:30
4-Isopropyltoluene	0.500 U		1.00	0.310	ug/L	1		12/19/18 23:30
4-Methyl-2-pentanone (MIBK)	5.00 U		10.0	3.10	ug/L	1		12/19/18 23:30
Benzene	0.200 U		0.400	0.120	ug/L	1		12/19/18 23:30
Bromobenzene	0.500 U		1.00	0.310	ug/L	1		12/19/18 23:30
Bromochloromethane	0.500 U		1.00	0.310	ug/L	1		12/19/18 23:30
Bromodichloromethane	0.250 U		0.500	0.150	ug/L	1		12/19/18 23:30
Bromoform	0.500 U		1.00	0.310	ug/L	1		12/19/18 23:30
Bromomethane	2.50 U		5.00	1.50	ug/L	1		12/19/18 23:30
Carbon disulfide	5.00 U		10.0	3.10	ug/L	1		12/19/18 23:30
Carbon tetrachloride	0.500 U		1.00	0.310	ug/L	1		12/19/18 23:30
Chlorobenzene	0.250 U		0.500	0.150	ug/L	1		12/19/18 23:30
Chloroethane	0.500 U		1.00	0.310	ug/L	1		12/19/18 23:30

Results of **18-RT-12-GW**

Client Sample ID: **18-RT-12-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094004
Lab Project ID: 1187094

Collection Date: 12/12/18 19:30
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500 U		1.00	0.310	ug/L	1		12/19/18 23:30
Chloromethane	0.500 U		1.00	0.310	ug/L	1		12/19/18 23:30
cis-1,2-Dichloroethene	14.4		1.00	0.310	ug/L	1		12/19/18 23:30
cis-1,3-Dichloropropene	0.250 U		0.500	0.150	ug/L	1		12/19/18 23:30
Dibromochloromethane	0.250 U		0.500	0.150	ug/L	1		12/19/18 23:30
Dibromomethane	0.500 U		1.00	0.310	ug/L	1		12/19/18 23:30
Dichlorodifluoromethane	0.500 U		1.00	0.310	ug/L	1		12/19/18 23:30
Ethylbenzene	0.500 U		1.00	0.310	ug/L	1		12/19/18 23:30
Freon-113	5.00 U		10.0	3.10	ug/L	1		12/19/18 23:30
Hexachlorobutadiene	0.500 U		1.00	0.310	ug/L	1		12/19/18 23:30
Isopropylbenzene (Cumene)	0.500 U		1.00	0.310	ug/L	1		12/19/18 23:30
Methylene chloride	2.50 U		5.00	1.00	ug/L	1		12/19/18 23:30
Methyl-t-butyl ether	5.00 U		10.0	3.10	ug/L	1		12/19/18 23:30
Naphthalene	0.500 U		1.00	0.310	ug/L	1		12/19/18 23:30
n-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		12/19/18 23:30
n-Propylbenzene	0.500 U		1.00	0.310	ug/L	1		12/19/18 23:30
o-Xylene	0.500 U		1.00	0.310	ug/L	1		12/19/18 23:30
P & M -Xylene	1.00 U		2.00	0.620	ug/L	1		12/19/18 23:30
sec-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		12/19/18 23:30
Styrene	0.500 U		1.00	0.310	ug/L	1		12/19/18 23:30
tert-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		12/19/18 23:30
Tetrachloroethene	1.46		1.00	0.310	ug/L	1		12/19/18 23:30
Toluene	0.500 U		1.00	0.310	ug/L	1		12/19/18 23:30
trans-1,2-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		12/19/18 23:30
trans-1,3-Dichloropropene	0.500 U		1.00	0.310	ug/L	1		12/19/18 23:30
Trichloroethene	1.55		1.00	0.310	ug/L	1		12/19/18 23:30
Trichlorofluoromethane	0.500 U		1.00	0.310	ug/L	1		12/19/18 23:30
Vinyl acetate	5.00 U		10.0	3.10	ug/L	1		12/19/18 23:30
Vinyl chloride	0.240		0.150	0.0500	ug/L	1		12/19/18 23:30
Xylenes (total)	1.50 U		3.00	1.00	ug/L	1		12/19/18 23:30
Surrogates								
1,2-Dichloroethane-D4 (surr)	106		81-118		%	1		12/19/18 23:30
4-Bromofluorobenzene (surr)	101		85-114		%	1		12/19/18 23:30
Toluene-d8 (surr)	101		89-112		%	1		12/19/18 23:30

Results of **18-RT-12-GW**

Client Sample ID: **18-RT-12-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094004
Lab Project ID: 1187094

Collection Date: 12/12/18 19:30
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS18633
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 12/19/18 23:30
Container ID: 1187094004-A

Prep Batch: VXX33640
Prep Method: SW5030B
Prep Date/Time: 12/19/18 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **18-RT-16-GW**

Client Sample ID: **18-RT-16-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094005
Lab Project ID: 1187094

Collection Date: 12/12/18 14:10
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		12/19/18 23:45
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		12/19/18 23:45
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		12/19/18 23:45
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		12/19/18 23:45
1,1-Dichloroethane	0.500	U	1.00	0.310	ug/L	1		12/19/18 23:45
1,1-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		12/19/18 23:45
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		12/19/18 23:45
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		12/19/18 23:45
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		12/19/18 23:45
1,2,4-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		12/19/18 23:45
1,2,4-Trimethylbenzene	1.08		1.00	0.310	ug/L	1		12/19/18 23:45
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		12/19/18 23:45
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		12/19/18 23:45
1,2-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		12/19/18 23:45
1,2-Dichloroethane	0.250	U	0.500	0.150	ug/L	1		12/19/18 23:45
1,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		12/19/18 23:45
1,3,5-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		12/19/18 23:45
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		12/19/18 23:45
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		12/19/18 23:45
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		12/19/18 23:45
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		12/19/18 23:45
2-Butanone (MEK)	5.00	U	10.0	3.10	ug/L	1		12/19/18 23:45
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		12/19/18 23:45
2-Hexanone	5.00	U	10.0	3.10	ug/L	1		12/19/18 23:45
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		12/19/18 23:45
4-Isopropyltoluene	0.810	J	1.00	0.310	ug/L	1		12/19/18 23:45
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		12/19/18 23:45
Benzene	0.300	J	0.400	0.120	ug/L	1		12/19/18 23:45
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		12/19/18 23:45
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		12/19/18 23:45
Bromodichloromethane	0.250	U	0.500	0.150	ug/L	1		12/19/18 23:45
Bromoform	0.500	U	1.00	0.310	ug/L	1		12/19/18 23:45
Bromomethane	2.50	U	5.00	1.50	ug/L	1		12/19/18 23:45
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		12/19/18 23:45
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		12/19/18 23:45
Chlorobenzene	0.250	U	0.500	0.150	ug/L	1		12/19/18 23:45
Chloroethane	0.500	U	1.00	0.310	ug/L	1		12/19/18 23:45

Results of **18-RT-16-GW**

Client Sample ID: **18-RT-16-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094005
Lab Project ID: 1187094

Collection Date: 12/12/18 14:10
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500	U	1.00	0.310	ug/L	1		12/19/18 23:45
Chloromethane	0.500	U	1.00	0.310	ug/L	1		12/19/18 23:45
cis-1,2-Dichloroethene	7.45		1.00	0.310	ug/L	1		12/19/18 23:45
cis-1,3-Dichloropropene	0.250	U	0.500	0.150	ug/L	1		12/19/18 23:45
Dibromochloromethane	0.250	U	0.500	0.150	ug/L	1		12/19/18 23:45
Dibromomethane	0.500	U	1.00	0.310	ug/L	1		12/19/18 23:45
Dichlorodifluoromethane	0.500	U	1.00	0.310	ug/L	1		12/19/18 23:45
Ethylbenzene	0.370	J	1.00	0.310	ug/L	1		12/19/18 23:45
Freon-113	5.00	U	10.0	3.10	ug/L	1		12/19/18 23:45
Hexachlorobutadiene	0.500	U	1.00	0.310	ug/L	1		12/19/18 23:45
Isopropylbenzene (Cumene)	0.500	U	1.00	0.310	ug/L	1		12/19/18 23:45
Methylene chloride	2.50	U	5.00	1.00	ug/L	1		12/19/18 23:45
Methyl-t-butyl ether	5.00	U	10.0	3.10	ug/L	1		12/19/18 23:45
Naphthalene	0.420	J	1.00	0.310	ug/L	1		12/19/18 23:45
n-Butylbenzene	1.12		1.00	0.310	ug/L	1		12/19/18 23:45
n-Propylbenzene	0.500	J	1.00	0.310	ug/L	1		12/19/18 23:45
o-Xylene	0.480	J	1.00	0.310	ug/L	1		12/19/18 23:45
P & M -Xylene	0.850	J	2.00	0.620	ug/L	1		12/19/18 23:45
sec-Butylbenzene	0.670	J	1.00	0.310	ug/L	1		12/19/18 23:45
Styrene	0.500	U	1.00	0.310	ug/L	1		12/19/18 23:45
tert-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		12/19/18 23:45
Tetrachloroethene	3.78		1.00	0.310	ug/L	1		12/19/18 23:45
Toluene	0.820	J	1.00	0.310	ug/L	1		12/19/18 23:45
trans-1,2-Dichloroethene	1.62		1.00	0.310	ug/L	1		12/19/18 23:45
trans-1,3-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		12/19/18 23:45
Trichloroethene	2.97		1.00	0.310	ug/L	1		12/19/18 23:45
Trichlorofluoromethane	0.500	U	1.00	0.310	ug/L	1		12/19/18 23:45
Vinyl acetate	5.00	U	10.0	3.10	ug/L	1		12/19/18 23:45
Vinyl chloride	5.12		0.150	0.0500	ug/L	1		12/19/18 23:45
Xylenes (total)	1.33	J	3.00	1.00	ug/L	1		12/19/18 23:45
Surrogates								
1,2-Dichloroethane-D4 (surr)	104		81-118		%	1		12/19/18 23:45
4-Bromofluorobenzene (surr)	101		85-114		%	1		12/19/18 23:45
Toluene-d8 (surr)	103		89-112		%	1		12/19/18 23:45

Results of **18-RT-16-GW**

Client Sample ID: **18-RT-16-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094005
Lab Project ID: 1187094

Collection Date: 12/12/18 14:10
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS18633
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 12/19/18 23:45
Container ID: 1187094005-A

Prep Batch: VXX33640
Prep Method: SW5030B
Prep Date/Time: 12/19/18 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **18-RT-23-GW**

Client Sample ID: **18-RT-23-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094006
Lab Project ID: 1187094

Collection Date: 12/12/18 17:10
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		12/20/18 00:00
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		12/20/18 00:00
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		12/20/18 00:00
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		12/20/18 00:00
1,1-Dichloroethane	0.500	U	1.00	0.310	ug/L	1		12/20/18 00:00
1,1-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		12/20/18 00:00
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		12/20/18 00:00
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 00:00
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		12/20/18 00:00
1,2,4-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 00:00
1,2,4-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 00:00
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		12/20/18 00:00
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		12/20/18 00:00
1,2-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 00:00
1,2-Dichloroethane	0.250	U	0.500	0.150	ug/L	1		12/20/18 00:00
1,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		12/20/18 00:00
1,3,5-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 00:00
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 00:00
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		12/20/18 00:00
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		12/20/18 00:00
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		12/20/18 00:00
2-Butanone (MEK)	5.00	U	10.0	3.10	ug/L	1		12/20/18 00:00
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		12/20/18 00:00
2-Hexanone	5.00	U	10.0	3.10	ug/L	1		12/20/18 00:00
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		12/20/18 00:00
4-Isopropyltoluene	0.500	U	1.00	0.310	ug/L	1		12/20/18 00:00
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		12/20/18 00:00
Benzene	0.200	U	0.400	0.120	ug/L	1		12/20/18 00:00
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 00:00
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		12/20/18 00:00
Bromodichloromethane	0.600		0.500	0.150	ug/L	1		12/20/18 00:00
Bromoform	0.500	U	1.00	0.310	ug/L	1		12/20/18 00:00
Bromomethane	2.50	U	5.00	1.50	ug/L	1		12/20/18 00:00
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		12/20/18 00:00
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		12/20/18 00:00
Chlorobenzene	0.250	U	0.500	0.150	ug/L	1		12/20/18 00:00
Chloroethane	0.500	U	1.00	0.310	ug/L	1		12/20/18 00:00

Results of **18-RT-23-GW**

Client Sample ID: **18-RT-23-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094006
Lab Project ID: 1187094

Collection Date: 12/12/18 17:10
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	1.10		1.00	0.310	ug/L	1		12/20/18 00:00
Chloromethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:00
cis-1,2-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:00
cis-1,3-Dichloropropene	0.250 U		0.500	0.150	ug/L	1		12/20/18 00:00
Dibromochloromethane	0.270 J		0.500	0.150	ug/L	1		12/20/18 00:00
Dibromomethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:00
Dichlorodifluoromethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:00
Ethylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:00
Freon-113	5.00 U		10.0	3.10	ug/L	1		12/20/18 00:00
Hexachlorobutadiene	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:00
Isopropylbenzene (Cumene)	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:00
Methylene chloride	2.50 U		5.00	1.00	ug/L	1		12/20/18 00:00
Methyl-t-butyl ether	5.00 U		10.0	3.10	ug/L	1		12/20/18 00:00
Naphthalene	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:00
n-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:00
n-Propylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:00
o-Xylene	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:00
P & M -Xylene	1.00 U		2.00	0.620	ug/L	1		12/20/18 00:00
sec-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:00
Styrene	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:00
tert-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:00
Tetrachloroethene	5.43		1.00	0.310	ug/L	1		12/20/18 00:00
Toluene	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:00
trans-1,2-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:00
trans-1,3-Dichloropropene	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:00
Trichloroethene	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:00
Trichlorofluoromethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:00
Vinyl acetate	5.00 U		10.0	3.10	ug/L	1		12/20/18 00:00
Vinyl chloride	0.0750 U		0.150	0.0500	ug/L	1		12/20/18 00:00
Xylenes (total)	1.50 U		3.00	1.00	ug/L	1		12/20/18 00:00
Surrogates								
1,2-Dichloroethane-D4 (surr)	104		81-118		%	1		12/20/18 00:00
4-Bromofluorobenzene (surr)	103		85-114		%	1		12/20/18 00:00
Toluene-d8 (surr)	101		89-112		%	1		12/20/18 00:00

Results of **18-RT-23-GW**

Client Sample ID: **18-RT-23-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094006
Lab Project ID: 1187094

Collection Date: 12/12/18 17:10
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS18633
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 12/20/18 00:00
Container ID: 1187094006-A

Prep Batch: VXX33640
Prep Method: SW5030B
Prep Date/Time: 12/19/18 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **18-RT-25-GW**

Client Sample ID: **18-RT-25-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094007
Lab Project ID: 1187094

Collection Date: 12/12/18 16:40
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		12/20/18 00:15
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		12/20/18 00:15
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		12/20/18 00:15
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		12/20/18 00:15
1,1-Dichloroethane	0.500	U	1.00	0.310	ug/L	1		12/20/18 00:15
1,1-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		12/20/18 00:15
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		12/20/18 00:15
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 00:15
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		12/20/18 00:15
1,2,4-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 00:15
1,2,4-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 00:15
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		12/20/18 00:15
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		12/20/18 00:15
1,2-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 00:15
1,2-Dichloroethane	0.250	U	0.500	0.150	ug/L	1		12/20/18 00:15
1,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		12/20/18 00:15
1,3,5-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 00:15
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 00:15
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		12/20/18 00:15
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		12/20/18 00:15
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		12/20/18 00:15
2-Butanone (MEK)	5.00	U	10.0	3.10	ug/L	1		12/20/18 00:15
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		12/20/18 00:15
2-Hexanone	5.00	U	10.0	3.10	ug/L	1		12/20/18 00:15
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		12/20/18 00:15
4-Isopropyltoluene	0.500	U	1.00	0.310	ug/L	1		12/20/18 00:15
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		12/20/18 00:15
Benzene	0.200	U	0.400	0.120	ug/L	1		12/20/18 00:15
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 00:15
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		12/20/18 00:15
Bromodichloromethane	0.250	U	0.500	0.150	ug/L	1		12/20/18 00:15
Bromoform	0.500	U	1.00	0.310	ug/L	1		12/20/18 00:15
Bromomethane	2.50	U	5.00	1.50	ug/L	1		12/20/18 00:15
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		12/20/18 00:15
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		12/20/18 00:15
Chlorobenzene	0.250	U	0.500	0.150	ug/L	1		12/20/18 00:15
Chloroethane	0.500	U	1.00	0.310	ug/L	1		12/20/18 00:15

Results of **18-RT-25-GW**

Client Sample ID: **18-RT-25-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094007
Lab Project ID: 1187094

Collection Date: 12/12/18 16:40
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.680	J	1.00	0.310	ug/L	1		12/20/18 00:15
Chloromethane	0.500	U	1.00	0.310	ug/L	1		12/20/18 00:15
cis-1,2-Dichloroethene	67.1		1.00	0.310	ug/L	1		12/20/18 00:15
cis-1,3-Dichloropropene	0.250	U	0.500	0.150	ug/L	1		12/20/18 00:15
Dibromochloromethane	0.250	U	0.500	0.150	ug/L	1		12/20/18 00:15
Dibromomethane	0.500	U	1.00	0.310	ug/L	1		12/20/18 00:15
Dichlorodifluoromethane	0.550	J	1.00	0.310	ug/L	1		12/20/18 00:15
Ethylbenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 00:15
Freon-113	5.00	U	10.0	3.10	ug/L	1		12/20/18 00:15
Hexachlorobutadiene	0.500	U	1.00	0.310	ug/L	1		12/20/18 00:15
Isopropylbenzene (Cumene)	0.500	U	1.00	0.310	ug/L	1		12/20/18 00:15
Methylene chloride	2.50	U	5.00	1.00	ug/L	1		12/20/18 00:15
Methyl-t-butyl ether	5.00	U	10.0	3.10	ug/L	1		12/20/18 00:15
Naphthalene	0.500	U	1.00	0.310	ug/L	1		12/20/18 00:15
n-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 00:15
n-Propylbenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 00:15
o-Xylene	0.500	U	1.00	0.310	ug/L	1		12/20/18 00:15
P & M -Xylene	1.00	U	2.00	0.620	ug/L	1		12/20/18 00:15
sec-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 00:15
Styrene	0.500	U	1.00	0.310	ug/L	1		12/20/18 00:15
tert-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 00:15
Tetrachloroethene	89.5		1.00	0.310	ug/L	1		12/20/18 00:15
Toluene	0.500	U	1.00	0.310	ug/L	1		12/20/18 00:15
trans-1,2-Dichloroethene	0.340	J	1.00	0.310	ug/L	1		12/20/18 00:15
trans-1,3-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		12/20/18 00:15
Trichloroethene	44.3		1.00	0.310	ug/L	1		12/20/18 00:15
Trichlorofluoromethane	0.500	U	1.00	0.310	ug/L	1		12/20/18 00:15
Vinyl acetate	5.00	U	10.0	3.10	ug/L	1		12/20/18 00:15
Vinyl chloride	1.40		0.150	0.0500	ug/L	1		12/20/18 00:15
Xylenes (total)	1.50	U	3.00	1.00	ug/L	1		12/20/18 00:15
Surrogates								
1,2-Dichloroethane-D4 (surr)	105		81-118		%	1		12/20/18 00:15
4-Bromofluorobenzene (surr)	99.5		85-114		%	1		12/20/18 00:15
Toluene-d8 (surr)	104		89-112		%	1		12/20/18 00:15

Results of **18-RT-25-GW**

Client Sample ID: **18-RT-25-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094007
Lab Project ID: 1187094

Collection Date: 12/12/18 16:40
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS18633
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 12/20/18 00:15
Container ID: 1187094007-A

Prep Batch: VXX33640
Prep Method: SW5030B
Prep Date/Time: 12/19/18 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **18-RT-35-GW**

Client Sample ID: **18-RT-35-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094008
Lab Project ID: 1187094

Collection Date: 12/12/18 19:20
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250 U		0.500	0.150	ug/L	1		12/20/18 00:30
1,1,1-Trichloroethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:30
1,1,2,2-Tetrachloroethane	0.250 U		0.500	0.150	ug/L	1		12/20/18 00:30
1,1,2-Trichloroethane	0.200 U		0.400	0.120	ug/L	1		12/20/18 00:30
1,1-Dichloroethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:30
1,1-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:30
1,1-Dichloropropene	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:30
1,2,3-Trichlorobenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:30
1,2,3-Trichloropropane	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:30
1,2,4-Trichlorobenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:30
1,2,4-Trimethylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:30
1,2-Dibromo-3-chloropropane	5.00 U		10.0	3.10	ug/L	1		12/20/18 00:30
1,2-Dibromoethane	0.0375 U		0.0750	0.0180	ug/L	1		12/20/18 00:30
1,2-Dichlorobenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:30
1,2-Dichloroethane	0.250 U		0.500	0.150	ug/L	1		12/20/18 00:30
1,2-Dichloropropane	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:30
1,3,5-Trimethylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:30
1,3-Dichlorobenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:30
1,3-Dichloropropane	0.250 U		0.500	0.150	ug/L	1		12/20/18 00:30
1,4-Dichlorobenzene	0.250 U		0.500	0.150	ug/L	1		12/20/18 00:30
2,2-Dichloropropane	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:30
2-Butanone (MEK)	5.00 U		10.0	3.10	ug/L	1		12/20/18 00:30
2-Chlorotoluene	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:30
2-Hexanone	5.00 U		10.0	3.10	ug/L	1		12/20/18 00:30
4-Chlorotoluene	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:30
4-Isopropyltoluene	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:30
4-Methyl-2-pentanone (MIBK)	5.00 U		10.0	3.10	ug/L	1		12/20/18 00:30
Benzene	0.200 U		0.400	0.120	ug/L	1		12/20/18 00:30
Bromobenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:30
Bromochloromethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:30
Bromodichloromethane	0.250 U		0.500	0.150	ug/L	1		12/20/18 00:30
Bromoform	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:30
Bromomethane	2.50 U		5.00	1.50	ug/L	1		12/20/18 00:30
Carbon disulfide	5.00 U		10.0	3.10	ug/L	1		12/20/18 00:30
Carbon tetrachloride	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:30
Chlorobenzene	0.560		0.500	0.150	ug/L	1		12/20/18 00:30
Chloroethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:30

Results of **18-RT-35-GW**

Client Sample ID: **18-RT-35-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094008
Lab Project ID: 1187094

Collection Date: 12/12/18 19:20
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:30
Chloromethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:30
cis-1,2-Dichloroethene	24.9		1.00	0.310	ug/L	1		12/20/18 00:30
cis-1,3-Dichloropropene	0.250 U		0.500	0.150	ug/L	1		12/20/18 00:30
Dibromochloromethane	0.250 U		0.500	0.150	ug/L	1		12/20/18 00:30
Dibromomethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:30
Dichlorodifluoromethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:30
Ethylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:30
Freon-113	5.00 U		10.0	3.10	ug/L	1		12/20/18 00:30
Hexachlorobutadiene	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:30
Isopropylbenzene (Cumene)	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:30
Methylene chloride	2.50 U		5.00	1.00	ug/L	1		12/20/18 00:30
Methyl-t-butyl ether	5.00 U		10.0	3.10	ug/L	1		12/20/18 00:30
Naphthalene	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:30
n-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:30
n-Propylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:30
o-Xylene	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:30
P & M -Xylene	1.00 U		2.00	0.620	ug/L	1		12/20/18 00:30
sec-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:30
Styrene	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:30
tert-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:30
Tetrachloroethene	1.76		1.00	0.310	ug/L	1		12/20/18 00:30
Toluene	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:30
trans-1,2-Dichloroethene	0.800 J		1.00	0.310	ug/L	1		12/20/18 00:30
trans-1,3-Dichloropropene	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:30
Trichloroethene	1.77		1.00	0.310	ug/L	1		12/20/18 00:30
Trichlorofluoromethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:30
Vinyl acetate	5.00 U		10.0	3.10	ug/L	1		12/20/18 00:30
Vinyl chloride	1.24		0.150	0.0500	ug/L	1		12/20/18 00:30
Xylenes (total)	1.50 U		3.00	1.00	ug/L	1		12/20/18 00:30
Surrogates								
1,2-Dichloroethane-D4 (surr)	107		81-118		%	1		12/20/18 00:30
4-Bromofluorobenzene (surr)	102		85-114		%	1		12/20/18 00:30
Toluene-d8 (surr)	101		89-112		%	1		12/20/18 00:30

Results of **18-RT-35-GW**

Client Sample ID: **18-RT-35-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094008
Lab Project ID: 1187094

Collection Date: 12/12/18 19:20
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS18633
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 12/20/18 00:30
Container ID: 1187094008-A

Prep Batch: VXX33640
Prep Method: SW5030B
Prep Date/Time: 12/19/18 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **18-RT-38-GW**

Client Sample ID: **18-RT-38-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094009
Lab Project ID: 1187094

Collection Date: 12/12/18 15:10
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250 U		0.500	0.150	ug/L	1		12/20/18 00:45
1,1,1-Trichloroethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:45
1,1,2,2-Tetrachloroethane	0.250 U		0.500	0.150	ug/L	1		12/20/18 00:45
1,1,2-Trichloroethane	0.200 U		0.400	0.120	ug/L	1		12/20/18 00:45
1,1-Dichloroethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:45
1,1-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:45
1,1-Dichloropropene	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:45
1,2,3-Trichlorobenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:45
1,2,3-Trichloropropane	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:45
1,2,4-Trichlorobenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:45
1,2,4-Trimethylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:45
1,2-Dibromo-3-chloropropane	5.00 U		10.0	3.10	ug/L	1		12/20/18 00:45
1,2-Dibromoethane	0.0375 U		0.0750	0.0180	ug/L	1		12/20/18 00:45
1,2-Dichlorobenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:45
1,2-Dichloroethane	0.250 U		0.500	0.150	ug/L	1		12/20/18 00:45
1,2-Dichloropropane	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:45
1,3,5-Trimethylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:45
1,3-Dichlorobenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:45
1,3-Dichloropropane	0.250 U		0.500	0.150	ug/L	1		12/20/18 00:45
1,4-Dichlorobenzene	0.250 U		0.500	0.150	ug/L	1		12/20/18 00:45
2,2-Dichloropropane	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:45
2-Butanone (MEK)	5.00 U		10.0	3.10	ug/L	1		12/20/18 00:45
2-Chlorotoluene	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:45
2-Hexanone	5.00 U		10.0	3.10	ug/L	1		12/20/18 00:45
4-Chlorotoluene	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:45
4-Isopropyltoluene	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:45
4-Methyl-2-pentanone (MIBK)	5.00 U		10.0	3.10	ug/L	1		12/20/18 00:45
Benzene	0.250 J		0.400	0.120	ug/L	1		12/20/18 00:45
Bromobenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:45
Bromochloromethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:45
Bromodichloromethane	0.250 U		0.500	0.150	ug/L	1		12/20/18 00:45
Bromoform	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:45
Bromomethane	2.50 U		5.00	1.50	ug/L	1		12/20/18 00:45
Carbon disulfide	5.00 U		10.0	3.10	ug/L	1		12/20/18 00:45
Carbon tetrachloride	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:45
Chlorobenzene	0.250 U		0.500	0.150	ug/L	1		12/20/18 00:45
Chloroethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:45

Results of **18-RT-38-GW**

Client Sample ID: **18-RT-38-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094009
Lab Project ID: 1187094

Collection Date: 12/12/18 15:10
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:45
Chloromethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:45
cis-1,2-Dichloroethene	281		10.0	3.10	ug/L	10		12/20/18 13:47
cis-1,3-Dichloropropene	0.250 U		0.500	0.150	ug/L	1		12/20/18 00:45
Dibromochloromethane	0.250 U		0.500	0.150	ug/L	1		12/20/18 00:45
Dibromomethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:45
Dichlorodifluoromethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:45
Ethylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:45
Freon-113	5.00 U		10.0	3.10	ug/L	1		12/20/18 00:45
Hexachlorobutadiene	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:45
Isopropylbenzene (Cumene)	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:45
Methylene chloride	2.50 U		5.00	1.00	ug/L	1		12/20/18 00:45
Methyl-t-butyl ether	5.00 U		10.0	3.10	ug/L	1		12/20/18 00:45
Naphthalene	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:45
n-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:45
n-Propylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:45
o-Xylene	0.550 J		1.00	0.310	ug/L	1		12/20/18 00:45
P & M -Xylene	1.10 J		2.00	0.620	ug/L	1		12/20/18 00:45
sec-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:45
Styrene	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:45
tert-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:45
Tetrachloroethene	36.4		1.00	0.310	ug/L	1		12/20/18 00:45
Toluene	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:45
trans-1,2-Dichloroethene	3.04		1.00	0.310	ug/L	1		12/20/18 00:45
trans-1,3-Dichloropropene	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:45
Trichloroethene	82.1		1.00	0.310	ug/L	1		12/20/18 00:45
Trichlorofluoromethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 00:45
Vinyl acetate	5.00 U		10.0	3.10	ug/L	1		12/20/18 00:45
Vinyl chloride	45.1		0.150	0.0500	ug/L	1		12/20/18 00:45
Xylenes (total)	1.65 J		3.00	1.00	ug/L	1		12/20/18 00:45
Surrogates								
1,2-Dichloroethane-D4 (surr)	105		81-118		%	1		12/20/18 00:45
4-Bromofluorobenzene (surr)	101		85-114		%	1		12/20/18 00:45
Toluene-d8 (surr)	100		89-112		%	1		12/20/18 00:45

Results of **18-RT-38-GW**

Client Sample ID: **18-RT-38-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094009
Lab Project ID: 1187094

Collection Date: 12/12/18 15:10
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS18633
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 12/20/18 00:45
Container ID: 1187094009-A

Prep Batch: VXX33640
Prep Method: SW5030B
Prep Date/Time: 12/19/18 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Analytical Batch: VMS18635
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 12/20/18 13:47
Container ID: 1187094009-A

Prep Batch: VXX33644
Prep Method: SW5030B
Prep Date/Time: 12/20/18 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **18-RT-39-GW**

Client Sample ID: **18-RT-39-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094010
Lab Project ID: 1187094

Collection Date: 12/13/18 12:00
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250 U		0.500	0.150	ug/L	1		12/20/18 01:00
1,1,1-Trichloroethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 01:00
1,1,2,2-Tetrachloroethane	0.250 U		0.500	0.150	ug/L	1		12/20/18 01:00
1,1,2-Trichloroethane	0.200 U		0.400	0.120	ug/L	1		12/20/18 01:00
1,1-Dichloroethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 01:00
1,1-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		12/20/18 01:00
1,1-Dichloropropene	0.500 U		1.00	0.310	ug/L	1		12/20/18 01:00
1,2,3-Trichlorobenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 01:00
1,2,3-Trichloropropane	0.500 U		1.00	0.310	ug/L	1		12/20/18 01:00
1,2,4-Trichlorobenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 01:00
1,2,4-Trimethylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 01:00
1,2-Dibromo-3-chloropropane	5.00 U		10.0	3.10	ug/L	1		12/20/18 01:00
1,2-Dibromoethane	0.0375 U		0.0750	0.0180	ug/L	1		12/20/18 01:00
1,2-Dichlorobenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 01:00
1,2-Dichloroethane	0.250 U		0.500	0.150	ug/L	1		12/20/18 01:00
1,2-Dichloropropane	0.630 J		1.00	0.310	ug/L	1		12/20/18 01:00
1,3,5-Trimethylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 01:00
1,3-Dichlorobenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 01:00
1,3-Dichloropropane	0.250 U		0.500	0.150	ug/L	1		12/20/18 01:00
1,4-Dichlorobenzene	0.250 U		0.500	0.150	ug/L	1		12/20/18 01:00
2,2-Dichloropropane	0.500 U		1.00	0.310	ug/L	1		12/20/18 01:00
2-Butanone (MEK)	5.00 U		10.0	3.10	ug/L	1		12/20/18 01:00
2-Chlorotoluene	0.500 U		1.00	0.310	ug/L	1		12/20/18 01:00
2-Hexanone	5.00 U		10.0	3.10	ug/L	1		12/20/18 01:00
4-Chlorotoluene	0.500 U		1.00	0.310	ug/L	1		12/20/18 01:00
4-Isopropyltoluene	0.500 U		1.00	0.310	ug/L	1		12/20/18 01:00
4-Methyl-2-pentanone (MIBK)	5.00 U		10.0	3.10	ug/L	1		12/20/18 01:00
Benzene	1.92		0.400	0.120	ug/L	1		12/20/18 01:00
Bromobenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 01:00
Bromochloromethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 01:00
Bromodichloromethane	0.250 U		0.500	0.150	ug/L	1		12/20/18 01:00
Bromoform	0.500 U		1.00	0.310	ug/L	1		12/20/18 01:00
Bromomethane	2.50 U		5.00	1.50	ug/L	1		12/20/18 01:00
Carbon disulfide	5.00 U		10.0	3.10	ug/L	1		12/20/18 01:00
Carbon tetrachloride	0.500 U		1.00	0.310	ug/L	1		12/20/18 01:00
Chlorobenzene	0.250 U		0.500	0.150	ug/L	1		12/20/18 01:00
Chloroethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 01:00

Results of **18-RT-39-GW**

Client Sample ID: **18-RT-39-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094010
Lab Project ID: 1187094

Collection Date: 12/13/18 12:00
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500 U		1.00	0.310	ug/L	1		12/20/18 01:00
Chloromethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 01:00
cis-1,2-Dichloroethene	3.19		1.00	0.310	ug/L	1		12/20/18 01:00
cis-1,3-Dichloropropene	0.250 U		0.500	0.150	ug/L	1		12/20/18 01:00
Dibromochloromethane	0.250 U		0.500	0.150	ug/L	1		12/20/18 01:00
Dibromomethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 01:00
Dichlorodifluoromethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 01:00
Ethylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 01:00
Freon-113	5.00 U		10.0	3.10	ug/L	1		12/20/18 01:00
Hexachlorobutadiene	0.500 U		1.00	0.310	ug/L	1		12/20/18 01:00
Isopropylbenzene (Cumene)	0.500 U		1.00	0.310	ug/L	1		12/20/18 01:00
Methylene chloride	2.50 U		5.00	1.00	ug/L	1		12/20/18 01:00
Methyl-t-butyl ether	5.00 U		10.0	3.10	ug/L	1		12/20/18 01:00
Naphthalene	0.500 U		1.00	0.310	ug/L	1		12/20/18 01:00
n-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 01:00
n-Propylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 01:00
o-Xylene	0.500 U		1.00	0.310	ug/L	1		12/20/18 01:00
P & M -Xylene	1.00 U		2.00	0.620	ug/L	1		12/20/18 01:00
sec-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 01:00
Styrene	0.500 U		1.00	0.310	ug/L	1		12/20/18 01:00
tert-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 01:00
Tetrachloroethene	0.500 U		1.00	0.310	ug/L	1		12/20/18 01:00
Toluene	1.52		1.00	0.310	ug/L	1		12/20/18 01:00
trans-1,2-Dichloroethene	15.1		1.00	0.310	ug/L	1		12/20/18 01:00
trans-1,3-Dichloropropene	0.500 U		1.00	0.310	ug/L	1		12/20/18 01:00
Trichloroethene	0.500 U		1.00	0.310	ug/L	1		12/20/18 01:00
Trichlorofluoromethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 01:00
Vinyl acetate	5.00 U		10.0	3.10	ug/L	1		12/20/18 01:00
Vinyl chloride	2.71		0.150	0.0500	ug/L	1		12/20/18 01:00
Xylenes (total)	1.50 U		3.00	1.00	ug/L	1		12/20/18 01:00
Surrogates								
1,2-Dichloroethane-D4 (surr)	105		81-118		%	1		12/20/18 01:00
4-Bromofluorobenzene (surr)	103		85-114		%	1		12/20/18 01:00
Toluene-d8 (surr)	101		89-112		%	1		12/20/18 01:00

Results of **18-RT-39-GW**

Client Sample ID: **18-RT-39-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094010
Lab Project ID: 1187094

Collection Date: 12/13/18 12:00
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS18633
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 12/20/18 01:00
Container ID: 1187094010-A

Prep Batch: VXX33640
Prep Method: SW5030B
Prep Date/Time: 12/19/18 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **18-RT-40-GW**

Client Sample ID: **18-RT-40-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094011
Lab Project ID: 1187094

Collection Date: 12/13/18 10:30
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		12/20/18 14:03
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:03
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		12/20/18 14:03
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		12/20/18 14:03
1,1-Dichloroethane	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:03
1,1-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:03
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:03
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:03
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:03
1,2,4-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:03
1,2,4-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:03
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		12/20/18 14:03
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		12/20/18 14:03
1,2-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:03
1,2-Dichloroethane	0.250	U	0.500	0.150	ug/L	1		12/20/18 14:03
1,2-Dichloropropane	0.600	J	1.00	0.310	ug/L	1		12/20/18 14:03
1,3,5-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:03
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:03
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		12/20/18 14:03
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		12/20/18 14:03
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:03
2-Butanone (MEK)	5.00	U	10.0	3.10	ug/L	1		12/20/18 14:03
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:03
2-Hexanone	5.00	U	10.0	3.10	ug/L	1		12/20/18 14:03
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:03
4-Isopropyltoluene	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:03
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		12/20/18 14:03
Benzene	1.49		0.400	0.120	ug/L	1		12/20/18 14:03
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:03
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:03
Bromodichloromethane	0.250	U	0.500	0.150	ug/L	1		12/20/18 14:03
Bromoform	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:03
Bromomethane	2.50	U	5.00	1.50	ug/L	1		12/20/18 14:03
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		12/20/18 14:03
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:03
Chlorobenzene	0.250	U	0.500	0.150	ug/L	1		12/20/18 14:03
Chloroethane	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:03

Results of **18-RT-40-GW**

Client Sample ID: **18-RT-40-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094011
Lab Project ID: 1187094

Collection Date: 12/13/18 10:30
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:03
Chloromethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:03
cis-1,2-Dichloroethene	22.8		1.00	0.310	ug/L	1		12/20/18 14:03
cis-1,3-Dichloropropene	0.250 U		0.500	0.150	ug/L	1		12/20/18 14:03
Dibromochloromethane	0.250 U		0.500	0.150	ug/L	1		12/20/18 14:03
Dibromomethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:03
Dichlorodifluoromethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:03
Ethylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:03
Freon-113	5.00 U		10.0	3.10	ug/L	1		12/20/18 14:03
Hexachlorobutadiene	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:03
Isopropylbenzene (Cumene)	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:03
Methylene chloride	2.50 U		5.00	1.00	ug/L	1		12/20/18 14:03
Methyl-t-butyl ether	5.00 U		10.0	3.10	ug/L	1		12/20/18 14:03
Naphthalene	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:03
n-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:03
n-Propylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:03
o-Xylene	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:03
P & M -Xylene	1.00 U		2.00	0.620	ug/L	1		12/20/18 14:03
sec-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:03
Styrene	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:03
tert-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:03
Tetrachloroethene	18.1		1.00	0.310	ug/L	1		12/20/18 14:03
Toluene	0.630 J		1.00	0.310	ug/L	1		12/20/18 14:03
trans-1,2-Dichloroethene	9.11		1.00	0.310	ug/L	1		12/20/18 14:03
trans-1,3-Dichloropropene	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:03
Trichloroethene	0.660 J		1.00	0.310	ug/L	1		12/20/18 14:03
Trichlorofluoromethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:03
Vinyl acetate	5.00 U		10.0	3.10	ug/L	1		12/20/18 14:03
Vinyl chloride	22.2		0.150	0.0500	ug/L	1		12/20/18 14:03
Xylenes (total)	1.50 U		3.00	1.00	ug/L	1		12/20/18 14:03
Surrogates								
1,2-Dichloroethane-D4 (surr)	103		81-118		%	1		12/20/18 14:03
4-Bromofluorobenzene (surr)	102		85-114		%	1		12/20/18 14:03
Toluene-d8 (surr)	101		89-112		%	1		12/20/18 14:03

Results of **18-RT-40-GW**

Client Sample ID: **18-RT-40-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094011
Lab Project ID: 1187094

Collection Date: 12/13/18 10:30
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS18635
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 12/20/18 14:03
Container ID: 1187094011-A

Prep Batch: VXX33644
Prep Method: SW5030B
Prep Date/Time: 12/20/18 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **18-RT-42-GW**

Client Sample ID: **18-RT-42-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094012
Lab Project ID: 1187094

Collection Date: 12/12/18 16:05
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		12/20/18 14:18
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:18
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		12/20/18 14:18
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		12/20/18 14:18
1,1-Dichloroethane	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:18
1,1-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:18
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:18
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:18
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:18
1,2,4-Trichlorobenzene	0.370	J	1.00	0.310	ug/L	1		12/20/18 14:18
1,2,4-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:18
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		12/20/18 14:18
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		12/20/18 14:18
1,2-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:18
1,2-Dichloroethane	0.250	U	0.500	0.150	ug/L	1		12/20/18 14:18
1,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:18
1,3,5-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:18
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:18
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		12/20/18 14:18
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		12/20/18 14:18
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:18
2-Butanone (MEK)	5.00	U	10.0	3.10	ug/L	1		12/20/18 14:18
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:18
2-Hexanone	5.00	U	10.0	3.10	ug/L	1		12/20/18 14:18
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:18
4-Isopropyltoluene	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:18
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		12/20/18 14:18
Benzene	0.200	U	0.400	0.120	ug/L	1		12/20/18 14:18
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:18
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:18
Bromodichloromethane	0.250	U	0.500	0.150	ug/L	1		12/20/18 14:18
Bromoform	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:18
Bromomethane	2.50	U	5.00	1.50	ug/L	1		12/20/18 14:18
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		12/20/18 14:18
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:18
Chlorobenzene	0.250	U	0.500	0.150	ug/L	1		12/20/18 14:18
Chloroethane	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:18

Results of **18-RT-42-GW**

Client Sample ID: **18-RT-42-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094012
Lab Project ID: 1187094

Collection Date: 12/12/18 16:05
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.400	J	1.00	0.310	ug/L	1		12/20/18 14:18
Chloromethane	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:18
cis-1,2-Dichloroethene	3.65		1.00	0.310	ug/L	1		12/20/18 14:18
cis-1,3-Dichloropropene	0.250	U	0.500	0.150	ug/L	1		12/20/18 14:18
Dibromochloromethane	0.250	U	0.500	0.150	ug/L	1		12/20/18 14:18
Dibromomethane	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:18
Dichlorodifluoromethane	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:18
Ethylbenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:18
Freon-113	5.00	U	10.0	3.10	ug/L	1		12/20/18 14:18
Hexachlorobutadiene	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:18
Isopropylbenzene (Cumene)	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:18
Methylene chloride	2.50	U	5.00	1.00	ug/L	1		12/20/18 14:18
Methyl-t-butyl ether	5.00	U	10.0	3.10	ug/L	1		12/20/18 14:18
Naphthalene	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:18
n-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:18
n-Propylbenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:18
o-Xylene	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:18
P & M -Xylene	1.00	U	2.00	0.620	ug/L	1		12/20/18 14:18
sec-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:18
Styrene	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:18
tert-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:18
Tetrachloroethene	178		1.00	0.310	ug/L	1		12/20/18 14:18
Toluene	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:18
trans-1,2-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:18
trans-1,3-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:18
Trichloroethene	9.74		1.00	0.310	ug/L	1		12/20/18 14:18
Trichlorofluoromethane	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:18
Vinyl acetate	5.00	U	10.0	3.10	ug/L	1		12/20/18 14:18
Vinyl chloride	0.0750	U	0.150	0.0500	ug/L	1		12/20/18 14:18
Xylenes (total)	1.50	U	3.00	1.00	ug/L	1		12/20/18 14:18
Surrogates								
1,2-Dichloroethane-D4 (surr)	99.6		81-118		%	1		12/20/18 14:18
4-Bromofluorobenzene (surr)	101		85-114		%	1		12/20/18 14:18
Toluene-d8 (surr)	103		89-112		%	1		12/20/18 14:18

Results of **18-RT-42-GW**

Client Sample ID: **18-RT-42-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094012
Lab Project ID: 1187094

Collection Date: 12/12/18 16:05
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS18635
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 12/20/18 14:18
Container ID: 1187094012-A

Prep Batch: VXX33644
Prep Method: SW5030B
Prep Date/Time: 12/20/18 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **18-RT-44-GW**

Client Sample ID: **18-RT-44-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094013
Lab Project ID: 1187094

Collection Date: 12/13/18 11:00
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250 U		0.500	0.150	ug/L	1		12/20/18 14:33
1,1,1-Trichloroethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:33
1,1,2,2-Tetrachloroethane	0.250 U		0.500	0.150	ug/L	1		12/20/18 14:33
1,1,2-Trichloroethane	0.200 U		0.400	0.120	ug/L	1		12/20/18 14:33
1,1-Dichloroethane	0.630 J		1.00	0.310	ug/L	1		12/20/18 14:33
1,1-Dichloroethene	0.320 J		1.00	0.310	ug/L	1		12/20/18 14:33
1,1-Dichloropropene	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:33
1,2,3-Trichlorobenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:33
1,2,3-Trichloropropane	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:33
1,2,4-Trichlorobenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:33
1,2,4-Trimethylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:33
1,2-Dibromo-3-chloropropane	5.00 U		10.0	3.10	ug/L	1		12/20/18 14:33
1,2-Dibromoethane	0.0375 U		0.0750	0.0180	ug/L	1		12/20/18 14:33
1,2-Dichlorobenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:33
1,2-Dichloroethane	0.250 U		0.500	0.150	ug/L	1		12/20/18 14:33
1,2-Dichloropropane	3.53		1.00	0.310	ug/L	1		12/20/18 14:33
1,3,5-Trimethylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:33
1,3-Dichlorobenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:33
1,3-Dichloropropane	0.250 U		0.500	0.150	ug/L	1		12/20/18 14:33
1,4-Dichlorobenzene	0.250 U		0.500	0.150	ug/L	1		12/20/18 14:33
2,2-Dichloropropane	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:33
2-Butanone (MEK)	4.07 J		10.0	3.10	ug/L	1		12/20/18 14:33
2-Chlorotoluene	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:33
2-Hexanone	5.00 U		10.0	3.10	ug/L	1		12/20/18 14:33
4-Chlorotoluene	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:33
4-Isopropyltoluene	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:33
4-Methyl-2-pentanone (MIBK)	5.00 U		10.0	3.10	ug/L	1		12/20/18 14:33
Benzene	0.200 U		0.400	0.120	ug/L	1		12/20/18 14:33
Bromobenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:33
Bromochloromethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:33
Bromodichloromethane	0.250 U		0.500	0.150	ug/L	1		12/20/18 14:33
Bromoform	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:33
Bromomethane	2.50 U		5.00	1.50	ug/L	1		12/20/18 14:33
Carbon disulfide	5.00 U		10.0	3.10	ug/L	1		12/20/18 14:33
Carbon tetrachloride	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:33
Chlorobenzene	0.250 U		0.500	0.150	ug/L	1		12/20/18 14:33
Chloroethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:33

Results of **18-RT-44-GW**

Client Sample ID: **18-RT-44-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094013
Lab Project ID: 1187094

Collection Date: 12/13/18 11:00
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:33
Chloromethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:33
cis-1,2-Dichloroethene	62.8		1.00	0.310	ug/L	1		12/20/18 14:33
cis-1,3-Dichloropropene	0.250 U		0.500	0.150	ug/L	1		12/20/18 14:33
Dibromochloromethane	0.250 U		0.500	0.150	ug/L	1		12/20/18 14:33
Dibromomethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:33
Dichlorodifluoromethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:33
Ethylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:33
Freon-113	5.00 U		10.0	3.10	ug/L	1		12/20/18 14:33
Hexachlorobutadiene	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:33
Isopropylbenzene (Cumene)	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:33
Methylene chloride	2.50 U		5.00	1.00	ug/L	1		12/20/18 14:33
Methyl-t-butyl ether	5.00 U		10.0	3.10	ug/L	1		12/20/18 14:33
Naphthalene	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:33
n-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:33
n-Propylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:33
o-Xylene	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:33
P & M -Xylene	1.00 U		2.00	0.620	ug/L	1		12/20/18 14:33
sec-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:33
Styrene	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:33
tert-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:33
Tetrachloroethene	1.45		1.00	0.310	ug/L	1		12/20/18 14:33
Toluene	0.370 J		1.00	0.310	ug/L	1		12/20/18 14:33
trans-1,2-Dichloroethene	1.99		1.00	0.310	ug/L	1		12/20/18 14:33
trans-1,3-Dichloropropene	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:33
Trichloroethene	0.770 J		1.00	0.310	ug/L	1		12/20/18 14:33
Trichlorofluoromethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:33
Vinyl acetate	5.00 U		10.0	3.10	ug/L	1		12/20/18 14:33
Vinyl chloride	205		0.750	0.250	ug/L	5		12/22/18 16:32
Xylenes (total)	1.50 U		3.00	1.00	ug/L	1		12/20/18 14:33
Surrogates								
1,2-Dichloroethane-D4 (surr)	102		81-118		%	1		12/20/18 14:33
4-Bromofluorobenzene (surr)	101		85-114		%	1		12/20/18 14:33
Toluene-d8 (surr)	101		89-112		%	1		12/20/18 14:33

Results of **18-RT-44-GW**

Client Sample ID: **18-RT-44-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094013
Lab Project ID: 1187094

Collection Date: 12/13/18 11:00
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS18635
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 12/20/18 14:33
Container ID: 1187094013-A

Prep Batch: VXX33644
Prep Method: SW5030B
Prep Date/Time: 12/20/18 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Analytical Batch: VMS18643
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 12/22/18 16:32
Container ID: 1187094013-A

Prep Batch: VXX33656
Prep Method: SW5030B
Prep Date/Time: 12/22/18 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **18-RT-47-GW**

Client Sample ID: **18-RT-47-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094014
Lab Project ID: 1187094

Collection Date: 12/13/18 13:15
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	25.0	U	50.0	15.0	ug/L	100		12/20/18 17:20
1,1,1-Trichloroethane	50.0	U	100	31.0	ug/L	100		12/20/18 17:20
1,1,2,2-Tetrachloroethane	25.0	U	50.0	15.0	ug/L	100		12/20/18 17:20
1,1,2-Trichloroethane	20.0	U	40.0	12.0	ug/L	100		12/20/18 17:20
1,1-Dichloroethane	50.0	U	100	31.0	ug/L	100		12/20/18 17:20
1,1-Dichloroethene	31.0	J	100	31.0	ug/L	100		12/20/18 17:20
1,1-Dichloropropene	50.0	U	100	31.0	ug/L	100		12/20/18 17:20
1,2,3-Trichlorobenzene	50.0	U	100	31.0	ug/L	100		12/20/18 17:20
1,2,3-Trichloropropane	50.0	U	100	31.0	ug/L	100		12/20/18 17:20
1,2,4-Trichlorobenzene	50.0	U	100	31.0	ug/L	100		12/20/18 17:20
1,2,4-Trimethylbenzene	50.0	U	100	31.0	ug/L	100		12/20/18 17:20
1,2-Dibromo-3-chloropropane	500	U	1000	310	ug/L	100		12/20/18 17:20
1,2-Dibromoethane	3.75	U	7.50	1.80	ug/L	100		12/20/18 17:20
1,2-Dichlorobenzene	50.0	U	100	31.0	ug/L	100		12/20/18 17:20
1,2-Dichloroethane	25.0	U	50.0	15.0	ug/L	100		12/20/18 17:20
1,2-Dichloropropane	65.0	J	100	31.0	ug/L	100		12/20/18 17:20
1,3,5-Trimethylbenzene	50.0	U	100	31.0	ug/L	100		12/20/18 17:20
1,3-Dichlorobenzene	50.0	U	100	31.0	ug/L	100		12/20/18 17:20
1,3-Dichloropropane	25.0	U	50.0	15.0	ug/L	100		12/20/18 17:20
1,4-Dichlorobenzene	25.0	U	50.0	15.0	ug/L	100		12/20/18 17:20
2,2-Dichloropropane	50.0	U	100	31.0	ug/L	100		12/20/18 17:20
2-Butanone (MEK)	1930		1000	310	ug/L	100		12/20/18 17:20
2-Chlorotoluene	50.0	U	100	31.0	ug/L	100		12/20/18 17:20
2-Hexanone	500	U	1000	310	ug/L	100		12/20/18 17:20
4-Chlorotoluene	50.0	U	100	31.0	ug/L	100		12/20/18 17:20
4-Isopropyltoluene	50.0	U	100	31.0	ug/L	100		12/20/18 17:20
4-Methyl-2-pentanone (MIBK)	500	U	1000	310	ug/L	100		12/20/18 17:20
Benzene	85.0		40.0	12.0	ug/L	100		12/20/18 17:20
Bromobenzene	50.0	U	100	31.0	ug/L	100		12/20/18 17:20
Bromochloromethane	50.0	U	100	31.0	ug/L	100		12/20/18 17:20
Bromodichloromethane	25.0	U	50.0	15.0	ug/L	100		12/20/18 17:20
Bromoform	50.0	U	100	31.0	ug/L	100		12/20/18 17:20
Bromomethane	250	U	500	150	ug/L	100		12/20/18 17:20
Carbon disulfide	500	U	1000	310	ug/L	100		12/20/18 17:20
Carbon tetrachloride	50.0	U	100	31.0	ug/L	100		12/20/18 17:20
Chlorobenzene	25.0	U	50.0	15.0	ug/L	100		12/20/18 17:20
Chloroethane	50.0	U	100	31.0	ug/L	100		12/20/18 17:20

Results of **18-RT-47-GW**

Client Sample ID: **18-RT-47-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094014
Lab Project ID: 1187094

Collection Date: 12/13/18 13:15
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	50.0	U	100	31.0	ug/L	100		12/20/18 17:20
Chloromethane	50.0	U	100	31.0	ug/L	100		12/20/18 17:20
cis-1,2-Dichloroethene	34300		1000	310	ug/L	1000		12/22/18 00:34
cis-1,3-Dichloropropene	25.0	U	50.0	15.0	ug/L	100		12/20/18 17:20
Dibromochloromethane	25.0	U	50.0	15.0	ug/L	100		12/20/18 17:20
Dibromomethane	50.0	U	100	31.0	ug/L	100		12/20/18 17:20
Dichlorodifluoromethane	50.0	U	100	31.0	ug/L	100		12/20/18 17:20
Ethylbenzene	50.0	U	100	31.0	ug/L	100		12/20/18 17:20
Freon-113	500	U	1000	310	ug/L	100		12/20/18 17:20
Hexachlorobutadiene	50.0	U	100	31.0	ug/L	100		12/20/18 17:20
Isopropylbenzene (Cumene)	50.0	U	100	31.0	ug/L	100		12/20/18 17:20
Methylene chloride	250	U	500	100	ug/L	100		12/20/18 17:20
Methyl-t-butyl ether	500	U	1000	310	ug/L	100		12/20/18 17:20
Naphthalene	50.0	U	100	31.0	ug/L	100		12/20/18 17:20
n-Butylbenzene	50.0	U	100	31.0	ug/L	100		12/20/18 17:20
n-Propylbenzene	50.0	U	100	31.0	ug/L	100		12/20/18 17:20
o-Xylene	50.0	U	100	31.0	ug/L	100		12/20/18 17:20
P & M -Xylene	100	U	200	62.0	ug/L	100		12/20/18 17:20
sec-Butylbenzene	50.0	U	100	31.0	ug/L	100		12/20/18 17:20
Styrene	50.0	U	100	31.0	ug/L	100		12/20/18 17:20
tert-Butylbenzene	50.0	U	100	31.0	ug/L	100		12/20/18 17:20
Tetrachloroethene	10600		100	31.0	ug/L	100		12/20/18 17:20
Toluene	34.0	J	100	31.0	ug/L	100		12/20/18 17:20
trans-1,2-Dichloroethene	477		100	31.0	ug/L	100		12/20/18 17:20
trans-1,3-Dichloropropene	50.0	U	100	31.0	ug/L	100		12/20/18 17:20
Trichloroethene	2550		100	31.0	ug/L	100		12/20/18 17:20
Trichlorofluoromethane	50.0	U	100	31.0	ug/L	100		12/20/18 17:20
Vinyl acetate	500	U	1000	310	ug/L	100		12/20/18 17:20
Vinyl chloride	676		15.0	5.00	ug/L	100		12/20/18 17:20
Xylenes (total)	150	U	300	100	ug/L	100		12/20/18 17:20
Surrogates								
1,2-Dichloroethane-D4 (surr)	97.7		81-118		%	100		12/20/18 17:20
4-Bromofluorobenzene (surr)	101		85-114		%	100		12/20/18 17:20
Toluene-d8 (surr)	100		89-112		%	100		12/20/18 17:20

Results of **18-RT-47-GW**

Client Sample ID: **18-RT-47-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094014
Lab Project ID: 1187094

Collection Date: 12/13/18 13:15
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS18642
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 12/22/18 00:34
Container ID: 1187094014-A

Prep Batch: VXX33655
Prep Method: SW5030B
Prep Date/Time: 12/21/18 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Analytical Batch: VMS18635
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 12/20/18 17:20
Container ID: 1187094014-A

Prep Batch: VXX33644
Prep Method: SW5030B
Prep Date/Time: 12/20/18 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **18-RT-48-GW**

Client Sample ID: **18-RT-48-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094017
Lab Project ID: 1187094

Collection Date: 12/13/18 13:40
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	12.5	U	25.0	7.50	ug/L	50		12/20/18 17:05
1,1,1-Trichloroethane	25.0	U	50.0	15.5	ug/L	50		12/20/18 17:05
1,1,2,2-Tetrachloroethane	12.5	U	25.0	7.50	ug/L	50		12/20/18 17:05
1,1,2-Trichloroethane	10.0	U	20.0	6.00	ug/L	50		12/20/18 17:05
1,1-Dichloroethane	25.0	U	50.0	15.5	ug/L	50		12/20/18 17:05
1,1-Dichloroethene	25.0	U	50.0	15.5	ug/L	50		12/20/18 17:05
1,1-Dichloropropene	25.0	U	50.0	15.5	ug/L	50		12/20/18 17:05
1,2,3-Trichlorobenzene	25.0	U	50.0	15.5	ug/L	50		12/20/18 17:05
1,2,3-Trichloropropane	25.0	U	50.0	15.5	ug/L	50		12/20/18 17:05
1,2,4-Trichlorobenzene	25.0	U	50.0	15.5	ug/L	50		12/20/18 17:05
1,2,4-Trimethylbenzene	25.0	U	50.0	15.5	ug/L	50		12/20/18 17:05
1,2-Dibromo-3-chloropropane	250	U	500	155	ug/L	50		12/20/18 17:05
1,2-Dibromoethane	1.88	U	3.75	0.900	ug/L	50		12/20/18 17:05
1,2-Dichlorobenzene	25.0	U	50.0	15.5	ug/L	50		12/20/18 17:05
1,2-Dichloroethane	12.5	U	25.0	7.50	ug/L	50		12/20/18 17:05
1,2-Dichloropropane	25.0	U	50.0	15.5	ug/L	50		12/20/18 17:05
1,3,5-Trimethylbenzene	25.0	U	50.0	15.5	ug/L	50		12/20/18 17:05
1,3-Dichlorobenzene	25.0	U	50.0	15.5	ug/L	50		12/20/18 17:05
1,3-Dichloropropane	12.5	U	25.0	7.50	ug/L	50		12/20/18 17:05
1,4-Dichlorobenzene	12.5	U	25.0	7.50	ug/L	50		12/20/18 17:05
2,2-Dichloropropane	25.0	U	50.0	15.5	ug/L	50		12/20/18 17:05
2-Butanone (MEK)	1130		500	155	ug/L	50		12/20/18 17:05
2-Chlorotoluene	25.0	U	50.0	15.5	ug/L	50		12/20/18 17:05
2-Hexanone	250	U	500	155	ug/L	50		12/20/18 17:05
4-Chlorotoluene	25.0	U	50.0	15.5	ug/L	50		12/20/18 17:05
4-Isopropyltoluene	25.0	U	50.0	15.5	ug/L	50		12/20/18 17:05
4-Methyl-2-pentanone (MIBK)	250	U	500	155	ug/L	50		12/20/18 17:05
Benzene	10.0	U	20.0	6.00	ug/L	50		12/20/18 17:05
Bromobenzene	25.0	U	50.0	15.5	ug/L	50		12/20/18 17:05
Bromochloromethane	25.0	U	50.0	15.5	ug/L	50		12/20/18 17:05
Bromodichloromethane	12.5	U	25.0	7.50	ug/L	50		12/20/18 17:05
Bromoform	25.0	U	50.0	15.5	ug/L	50		12/20/18 17:05
Bromomethane	125	U	250	75.0	ug/L	50		12/20/18 17:05
Carbon disulfide	250	U	500	155	ug/L	50		12/20/18 17:05
Carbon tetrachloride	25.0	U	50.0	15.5	ug/L	50		12/20/18 17:05
Chlorobenzene	12.5	U	25.0	7.50	ug/L	50		12/20/18 17:05
Chloroethane	25.0	U	50.0	15.5	ug/L	50		12/20/18 17:05

Results of **18-RT-48-GW**

Client Sample ID: **18-RT-48-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094017
Lab Project ID: 1187094

Collection Date: 12/13/18 13:40
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	25.0 U		50.0	15.5	ug/L	50		12/20/18 17:05
Chloromethane	25.0 U		50.0	15.5	ug/L	50		12/20/18 17:05
cis-1,2-Dichloroethene	4030		50.0	15.5	ug/L	50		12/22/18 00:19
cis-1,3-Dichloropropene	12.5 U		25.0	7.50	ug/L	50		12/20/18 17:05
Dibromochloromethane	12.5 U		25.0	7.50	ug/L	50		12/20/18 17:05
Dibromomethane	25.0 U		50.0	15.5	ug/L	50		12/20/18 17:05
Dichlorodifluoromethane	25.0 U		50.0	15.5	ug/L	50		12/20/18 17:05
Ethylbenzene	25.0 U		50.0	15.5	ug/L	50		12/20/18 17:05
Freon-113	250 U		500	155	ug/L	50		12/20/18 17:05
Hexachlorobutadiene	25.0 U		50.0	15.5	ug/L	50		12/20/18 17:05
Isopropylbenzene (Cumene)	25.0 U		50.0	15.5	ug/L	50		12/20/18 17:05
Methylene chloride	125 U		250	50.0	ug/L	50		12/20/18 17:05
Methyl-t-butyl ether	250 U		500	155	ug/L	50		12/20/18 17:05
Naphthalene	25.0 U		50.0	15.5	ug/L	50		12/20/18 17:05
n-Butylbenzene	25.0 U		50.0	15.5	ug/L	50		12/20/18 17:05
n-Propylbenzene	25.0 U		50.0	15.5	ug/L	50		12/20/18 17:05
o-Xylene	25.0 U		50.0	15.5	ug/L	50		12/20/18 17:05
P & M -Xylene	50.0 U		100	31.0	ug/L	50		12/20/18 17:05
sec-Butylbenzene	25.0 U		50.0	15.5	ug/L	50		12/20/18 17:05
Styrene	25.0 U		50.0	15.5	ug/L	50		12/20/18 17:05
tert-Butylbenzene	25.0 U		50.0	15.5	ug/L	50		12/20/18 17:05
Tetrachloroethene	22.5 J		50.0	15.5	ug/L	50		12/20/18 17:05
Toluene	25.0 U		50.0	15.5	ug/L	50		12/20/18 17:05
trans-1,2-Dichloroethene	38.5 J		50.0	15.5	ug/L	50		12/20/18 17:05
trans-1,3-Dichloropropene	25.0 U		50.0	15.5	ug/L	50		12/20/18 17:05
Trichloroethene	25.0 U		50.0	15.5	ug/L	50		12/20/18 17:05
Trichlorofluoromethane	25.0 U		50.0	15.5	ug/L	50		12/20/18 17:05
Vinyl acetate	250 U		500	155	ug/L	50		12/20/18 17:05
Vinyl chloride	1350		7.50	2.50	ug/L	50		12/20/18 17:05
Xylenes (total)	75.0 U		150	50.0	ug/L	50		12/20/18 17:05
Surrogates								
1,2-Dichloroethane-D4 (surr)	100		81-118		%	50		12/20/18 17:05
4-Bromofluorobenzene (surr)	101		85-114		%	50		12/20/18 17:05
Toluene-d8 (surr)	99.2		89-112		%	50		12/20/18 17:05

Results of **18-RT-48-GW**

Client Sample ID: **18-RT-48-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094017
Lab Project ID: 1187094

Collection Date: 12/13/18 13:40
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS18642
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 12/22/18 00:19
Container ID: 1187094017-A

Prep Batch: VXX33655
Prep Method: SW5030B
Prep Date/Time: 12/21/18 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Analytical Batch: VMS18635
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 12/20/18 17:05
Container ID: 1187094017-A

Prep Batch: VXX33644
Prep Method: SW5030B
Prep Date/Time: 12/20/18 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **18-RT-49-GW**

Client Sample ID: **18-RT-49-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094020
Lab Project ID: 1187094

Collection Date: 12/13/18 19:25
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		12/20/18 14:48
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:48
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		12/20/18 14:48
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		12/20/18 14:48
1,1-Dichloroethane	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:48
1,1-Dichloroethene	1.53		1.00	0.310	ug/L	1		12/20/18 14:48
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:48
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:48
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:48
1,2,4-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:48
1,2,4-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:48
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		12/20/18 14:48
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		12/20/18 14:48
1,2-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:48
1,2-Dichloroethane	0.250	U	0.500	0.150	ug/L	1		12/20/18 14:48
1,2-Dichloropropane	1.29		1.00	0.310	ug/L	1		12/20/18 14:48
1,3,5-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:48
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:48
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		12/20/18 14:48
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		12/20/18 14:48
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:48
2-Butanone (MEK)	25.9		10.0	3.10	ug/L	1		12/20/18 14:48
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:48
2-Hexanone	5.00	U	10.0	3.10	ug/L	1		12/20/18 14:48
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:48
4-Isopropyltoluene	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:48
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		12/20/18 14:48
Benzene	0.160	J	0.400	0.120	ug/L	1		12/20/18 14:48
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:48
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:48
Bromodichloromethane	0.250	U	0.500	0.150	ug/L	1		12/20/18 14:48
Bromoform	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:48
Bromomethane	2.50	U	5.00	1.50	ug/L	1		12/20/18 14:48
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		12/20/18 14:48
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:48
Chlorobenzene	0.250	U	0.500	0.150	ug/L	1		12/20/18 14:48
Chloroethane	0.500	U	1.00	0.310	ug/L	1		12/20/18 14:48

Results of **18-RT-49-GW**

Client Sample ID: **18-RT-49-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094020
Lab Project ID: 1187094

Collection Date: 12/13/18 19:25
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:48
Chloromethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:48
cis-1,2-Dichloroethene	987		10.0	3.10	ug/L	10		12/22/18 16:47
cis-1,3-Dichloropropene	0.250 U		0.500	0.150	ug/L	1		12/20/18 14:48
Dibromochloromethane	0.250 U		0.500	0.150	ug/L	1		12/20/18 14:48
Dibromomethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:48
Dichlorodifluoromethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:48
Ethylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:48
Freon-113	5.00 U		10.0	3.10	ug/L	1		12/20/18 14:48
Hexachlorobutadiene	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:48
Isopropylbenzene (Cumene)	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:48
Methylene chloride	2.50 U		5.00	1.00	ug/L	1		12/20/18 14:48
Methyl-t-butyl ether	5.00 U		10.0	3.10	ug/L	1		12/20/18 14:48
Naphthalene	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:48
n-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:48
n-Propylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:48
o-Xylene	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:48
P & M -Xylene	1.00 U		2.00	0.620	ug/L	1		12/20/18 14:48
sec-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:48
Styrene	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:48
tert-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:48
Tetrachloroethene	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:48
Toluene	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:48
trans-1,2-Dichloroethene	4.74		1.00	0.310	ug/L	1		12/20/18 14:48
trans-1,3-Dichloropropene	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:48
Trichloroethene	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:48
Trichlorofluoromethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 14:48
Vinyl acetate	5.00 U		10.0	3.10	ug/L	1		12/20/18 14:48
Vinyl chloride	165		1.50	0.500	ug/L	10		12/22/18 16:47
Xylenes (total)	1.50 U		3.00	1.00	ug/L	1		12/20/18 14:48
Surrogates								
1,2-Dichloroethane-D4 (surr)	99.9		81-118		%	1		12/20/18 14:48
4-Bromofluorobenzene (surr)	99.3		85-114		%	1		12/20/18 14:48
Toluene-d8 (surr)	100		89-112		%	1		12/20/18 14:48

Results of **18-RT-49-GW**

Client Sample ID: **18-RT-49-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094020
Lab Project ID: 1187094

Collection Date: 12/13/18 19:25
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS18635
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 12/20/18 14:48
Container ID: 1187094020-A

Prep Batch: VXX33644
Prep Method: SW5030B
Prep Date/Time: 12/20/18 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Analytical Batch: VMS18643
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 12/22/18 16:47
Container ID: 1187094020-A

Prep Batch: VXX33656
Prep Method: SW5030B
Prep Date/Time: 12/22/18 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **18-RT-50-GW**

Client Sample ID: **18-RT-50-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094021
Lab Project ID: 1187094

Collection Date: 12/13/18 18:40
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250 U		0.500	0.150	ug/L	1		12/20/18 15:03
1,1,1-Trichloroethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:03
1,1,2,2-Tetrachloroethane	0.250 U		0.500	0.150	ug/L	1		12/20/18 15:03
1,1,2-Trichloroethane	0.200 U		0.400	0.120	ug/L	1		12/20/18 15:03
1,1-Dichloroethane	11.1		1.00	0.310	ug/L	1		12/20/18 15:03
1,1-Dichloroethene	152		1.00	0.310	ug/L	1		12/20/18 15:03
1,1-Dichloropropene	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:03
1,2,3-Trichlorobenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:03
1,2,3-Trichloropropane	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:03
1,2,4-Trichlorobenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:03
1,2,4-Trimethylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:03
1,2-Dibromo-3-chloropropane	5.00 U		10.0	3.10	ug/L	1		12/20/18 15:03
1,2-Dibromoethane	0.0375 U		0.0750	0.0180	ug/L	1		12/20/18 15:03
1,2-Dichlorobenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:03
1,2-Dichloroethane	0.250 U		0.500	0.150	ug/L	1		12/20/18 15:03
1,2-Dichloropropane	121		1.00	0.310	ug/L	1		12/20/18 15:03
1,3,5-Trimethylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:03
1,3-Dichlorobenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:03
1,3-Dichloropropane	0.250 U		0.500	0.150	ug/L	1		12/20/18 15:03
1,4-Dichlorobenzene	0.250 U		0.500	0.150	ug/L	1		12/20/18 15:03
2,2-Dichloropropane	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:03
2-Butanone (MEK)	32.3		10.0	3.10	ug/L	1		12/20/18 15:03
2-Chlorotoluene	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:03
2-Hexanone	5.00 U		10.0	3.10	ug/L	1		12/20/18 15:03
4-Chlorotoluene	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:03
4-Isopropyltoluene	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:03
4-Methyl-2-pentanone (MIBK)	5.00 U		10.0	3.10	ug/L	1		12/20/18 15:03
Benzene	1.49		0.400	0.120	ug/L	1		12/20/18 15:03
Bromobenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:03
Bromochloromethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:03
Bromodichloromethane	0.250 U		0.500	0.150	ug/L	1		12/20/18 15:03
Bromoform	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:03
Bromomethane	2.50 U		5.00	1.50	ug/L	1		12/20/18 15:03
Carbon disulfide	5.00 U		10.0	3.10	ug/L	1		12/20/18 15:03
Carbon tetrachloride	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:03
Chlorobenzene	0.250 U		0.500	0.150	ug/L	1		12/20/18 15:03
Chloroethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:03

Results of **18-RT-50-GW**

Client Sample ID: **18-RT-50-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094021
Lab Project ID: 1187094

Collection Date: 12/13/18 18:40
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:03
Chloromethane	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:03
cis-1,2-Dichloroethene	167000		1000	310	ug/L	1000		12/22/18 17:46
cis-1,3-Dichloropropene	0.250	U	0.500	0.150	ug/L	1		12/20/18 15:03
Dibromochloromethane	0.250	U	0.500	0.150	ug/L	1		12/20/18 15:03
Dibromomethane	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:03
Dichlorodifluoromethane	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:03
Ethylbenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:03
Freon-113	5.00	U	10.0	3.10	ug/L	1		12/20/18 15:03
Hexachlorobutadiene	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:03
Isopropylbenzene (Cumene)	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:03
Methylene chloride	2.50	U	5.00	1.00	ug/L	1		12/20/18 15:03
Methyl-t-butyl ether	5.00	U	10.0	3.10	ug/L	1		12/20/18 15:03
Naphthalene	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:03
n-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:03
n-Propylbenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:03
o-Xylene	0.370	J	1.00	0.310	ug/L	1		12/20/18 15:03
P & M -Xylene	0.650	J	2.00	0.620	ug/L	1		12/20/18 15:03
sec-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:03
Styrene	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:03
tert-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:03
Tetrachloroethene	2960		100	31.0	ug/L	100		12/22/18 18:44
Toluene	1.40		1.00	0.310	ug/L	1		12/20/18 15:03
trans-1,2-Dichloroethene	548		100	31.0	ug/L	100		12/22/18 18:44
trans-1,3-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:03
Trichloroethene	988		100	31.0	ug/L	100		12/22/18 18:44
Trichlorofluoromethane	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:03
Vinyl acetate	5.00	U	10.0	3.10	ug/L	1		12/20/18 15:03
Vinyl chloride	34500		150	50.0	ug/L	1000		12/22/18 17:46
Xylenes (total)	1.02	J	3.00	1.00	ug/L	1		12/20/18 15:03
Surrogates								
1,2-Dichloroethane-D4 (surr)	96.8		81-118		%	1		12/20/18 15:03
4-Bromofluorobenzene (surr)	104		85-114		%	1		12/20/18 15:03
Toluene-d8 (surr)	105		89-112		%	1		12/20/18 15:03

Results of **18-RT-50-GW**

Client Sample ID: **18-RT-50-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094021
Lab Project ID: 1187094

Collection Date: 12/13/18 18:40
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS18635
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 12/20/18 15:03
Container ID: 1187094021-A

Prep Batch: VXX33644
Prep Method: SW5030B
Prep Date/Time: 12/20/18 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Analytical Batch: VMS18643
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 12/22/18 17:46
Container ID: 1187094021-A

Prep Batch: VXX33656
Prep Method: SW5030B
Prep Date/Time: 12/22/18 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Analytical Batch: VMS18643
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 12/22/18 18:44
Container ID: 1187094021-A

Prep Batch: VXX33656
Prep Method: SW5030B
Prep Date/Time: 12/22/18 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **18-RT-51-GW**

Client Sample ID: **18-RT-51-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094022
Lab Project ID: 1187094

Collection Date: 12/13/18 20:35
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		12/20/18 15:19
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:19
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		12/20/18 15:19
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		12/20/18 15:19
1,1-Dichloroethane	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:19
1,1-Dichloroethene	5.00	U	10.0	3.10	ug/L	10		12/22/18 18:15
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:19
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:19
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:19
1,2,4-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:19
1,2,4-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:19
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		12/20/18 15:19
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		12/20/18 15:19
1,2-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:19
1,2-Dichloroethane	0.250	U	0.500	0.150	ug/L	1		12/20/18 15:19
1,2-Dichloropropane	5.00	U	10.0	3.10	ug/L	10		12/22/18 18:15
1,3,5-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:19
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:19
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		12/20/18 15:19
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		12/20/18 15:19
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:19
2-Butanone (MEK)	50.0	U	100	31.0	ug/L	10		12/22/18 18:15
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:19
2-Hexanone	5.00	U	10.0	3.10	ug/L	1		12/20/18 15:19
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:19
4-Isopropyltoluene	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:19
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		12/20/18 15:19
Benzene	0.200	U	0.400	0.120	ug/L	1		12/20/18 15:19
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:19
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:19
Bromodichloromethane	0.250	U	0.500	0.150	ug/L	1		12/20/18 15:19
Bromoform	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:19
Bromomethane	2.50	U	5.00	1.50	ug/L	1		12/20/18 15:19
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		12/20/18 15:19
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:19
Chlorobenzene	0.250	U	0.500	0.150	ug/L	1		12/20/18 15:19
Chloroethane	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:19

Results of **18-RT-51-GW**

Client Sample ID: **18-RT-51-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094022
Lab Project ID: 1187094

Collection Date: 12/13/18 20:35
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:19
Chloromethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:19
cis-1,2-Dichloroethene	507		10.0	3.10	ug/L	10		12/22/18 18:15
cis-1,3-Dichloropropene	0.250 U		0.500	0.150	ug/L	1		12/20/18 15:19
Dibromochloromethane	0.250 U		0.500	0.150	ug/L	1		12/20/18 15:19
Dibromomethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:19
Dichlorodifluoromethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:19
Ethylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:19
Freon-113	5.00 U		10.0	3.10	ug/L	1		12/20/18 15:19
Hexachlorobutadiene	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:19
Isopropylbenzene (Cumene)	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:19
Methylene chloride	2.50 U		5.00	1.00	ug/L	1		12/20/18 15:19
Methyl-t-butyl ether	5.00 U		10.0	3.10	ug/L	1		12/20/18 15:19
Naphthalene	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:19
n-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:19
n-Propylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:19
o-Xylene	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:19
P & M -Xylene	1.00 U		2.00	0.620	ug/L	1		12/20/18 15:19
sec-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:19
Styrene	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:19
tert-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:19
Tetrachloroethene	4.20 J		10.0	3.10	ug/L	10		12/22/18 18:15
Toluene	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:19
trans-1,2-Dichloroethene	21.5		10.0	3.10	ug/L	10		12/22/18 18:15
trans-1,3-Dichloropropene	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:19
Trichloroethene	5.00 U		10.0	3.10	ug/L	10		12/22/18 18:15
Trichlorofluoromethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:19
Vinyl acetate	5.00 U		10.0	3.10	ug/L	1		12/20/18 15:19
Vinyl chloride	705		1.50	0.500	ug/L	10		12/22/18 18:15
Xylenes (total)	1.50 U		3.00	1.00	ug/L	1		12/20/18 15:19
Surrogates								
1,2-Dichloroethane-D4 (surr)	99.4		81-118		%	1		12/20/18 15:19
4-Bromofluorobenzene (surr)	98.3		85-114		%	1		12/20/18 15:19
Toluene-d8 (surr)	103		89-112		%	1		12/20/18 15:19

Results of **18-RT-51-GW**

Client Sample ID: **18-RT-51-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094022
Lab Project ID: 1187094

Collection Date: 12/13/18 20:35
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS18635
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 12/20/18 15:19
Container ID: 1187094022-A

Prep Batch: VXX33644
Prep Method: SW5030B
Prep Date/Time: 12/20/18 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Analytical Batch: VMS18643
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 12/22/18 18:15
Container ID: 1187094022-A

Prep Batch: VXX33656
Prep Method: SW5030B
Prep Date/Time: 12/22/18 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **18-RT-52-GW**

Client Sample ID: **18-RT-52-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094023
Lab Project ID: 1187094

Collection Date: 12/13/18 12:40
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		12/20/18 15:34
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:34
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		12/20/18 15:34
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		12/20/18 15:34
1,1-Dichloroethane	0.930	J	1.00	0.310	ug/L	1		12/22/18 15:19
1,1-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:34
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:34
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:34
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:34
1,2,4-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:34
1,2,4-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:34
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		12/20/18 15:34
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		12/20/18 15:34
1,2-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:34
1,2-Dichloroethane	0.250	U	0.500	0.150	ug/L	1		12/20/18 15:34
1,2-Dichloropropane	3.10		1.00	0.310	ug/L	1		12/22/18 15:19
1,3,5-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:34
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:34
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		12/20/18 15:34
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		12/20/18 15:34
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:34
2-Butanone (MEK)	49.1		10.0	3.10	ug/L	1		12/22/18 15:19
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:34
2-Hexanone	5.00	U	10.0	3.10	ug/L	1		12/20/18 15:34
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:34
4-Isopropyltoluene	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:34
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		12/20/18 15:34
Benzene	0.200	U	0.400	0.120	ug/L	1		12/20/18 15:34
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:34
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:34
Bromodichloromethane	0.250	U	0.500	0.150	ug/L	1		12/20/18 15:34
Bromoform	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:34
Bromomethane	2.50	U	5.00	1.50	ug/L	1		12/20/18 15:34
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		12/20/18 15:34
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:34
Chlorobenzene	0.250	U	0.500	0.150	ug/L	1		12/20/18 15:34
Chloroethane	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:34

Results of **18-RT-52-GW**

Client Sample ID: **18-RT-52-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094023
Lab Project ID: 1187094

Collection Date: 12/13/18 12:40
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:34
Chloromethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:34
cis-1,2-Dichloroethene	20.1		1.00	0.310	ug/L	1		12/22/18 15:19
cis-1,3-Dichloropropene	0.250 U		0.500	0.150	ug/L	1		12/20/18 15:34
Dibromochloromethane	0.250 U		0.500	0.150	ug/L	1		12/20/18 15:34
Dibromomethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:34
Dichlorodifluoromethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:34
Ethylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:34
Freon-113	5.00 U		10.0	3.10	ug/L	1		12/20/18 15:34
Hexachlorobutadiene	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:34
Isopropylbenzene (Cumene)	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:34
Methylene chloride	2.50 U		5.00	1.00	ug/L	1		12/20/18 15:34
Methyl-t-butyl ether	5.00 U		10.0	3.10	ug/L	1		12/20/18 15:34
Naphthalene	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:34
n-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:34
n-Propylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:34
o-Xylene	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:34
P & M -Xylene	1.00 U		2.00	0.620	ug/L	1		12/20/18 15:34
sec-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:34
Styrene	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:34
tert-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:34
Tetrachloroethene	23.0		1.00	0.310	ug/L	1		12/22/18 15:19
Toluene	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:34
trans-1,2-Dichloroethene	3.30		1.00	0.310	ug/L	1		12/22/18 15:19
trans-1,3-Dichloropropene	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:34
Trichloroethene	0.380 J		1.00	0.310	ug/L	1		12/22/18 15:19
Trichlorofluoromethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:34
Vinyl acetate	5.00 U		10.0	3.10	ug/L	1		12/20/18 15:34
Vinyl chloride	30.7		0.150	0.0500	ug/L	1		12/22/18 15:19
Xylenes (total)	1.50 U		3.00	1.00	ug/L	1		12/20/18 15:34
Surrogates								
1,2-Dichloroethane-D4 (surr)	99.5		81-118		%	1		12/20/18 15:34
4-Bromofluorobenzene (surr)	101		85-114		%	1		12/20/18 15:34
Toluene-d8 (surr)	101		89-112		%	1		12/20/18 15:34

Results of **18-RT-52-GW**

Client Sample ID: **18-RT-52-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094023
Lab Project ID: 1187094

Collection Date: 12/13/18 12:40
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS18643
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 12/22/18 15:19
Container ID: 1187094023-A

Prep Batch: VXX33656
Prep Method: SW5030B
Prep Date/Time: 12/22/18 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Analytical Batch: VMS18635
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 12/20/18 15:34
Container ID: 1187094023-A

Prep Batch: VXX33644
Prep Method: SW5030B
Prep Date/Time: 12/20/18 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **18-RT-78-GW**

Client Sample ID: **18-RT-78-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094024
Lab Project ID: 1187094

Collection Date: 12/14/18 09:50
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	25.0	U	50.0	15.0	ug/L	100		12/20/18 17:35
1,1,1-Trichloroethane	50.0	U	100	31.0	ug/L	100		12/20/18 17:35
1,1,2,2-Tetrachloroethane	25.0	U	50.0	15.0	ug/L	100		12/20/18 17:35
1,1,2-Trichloroethane	20.0	U	40.0	12.0	ug/L	100		12/20/18 17:35
1,1-Dichloroethane	50.0	U	100	31.0	ug/L	100		12/20/18 17:35
1,1-Dichloroethene	50.0	U	100	31.0	ug/L	100		12/20/18 17:35
1,1-Dichloropropene	50.0	U	100	31.0	ug/L	100		12/20/18 17:35
1,2,3-Trichlorobenzene	50.0	U	100	31.0	ug/L	100		12/20/18 17:35
1,2,3-Trichloropropane	50.0	U	100	31.0	ug/L	100		12/20/18 17:35
1,2,4-Trichlorobenzene	50.0	U	100	31.0	ug/L	100		12/20/18 17:35
1,2,4-Trimethylbenzene	50.0	U	100	31.0	ug/L	100		12/20/18 17:35
1,2-Dibromo-3-chloropropane	500	U	1000	310	ug/L	100		12/20/18 17:35
1,2-Dibromoethane	3.75	U	7.50	1.80	ug/L	100		12/20/18 17:35
1,2-Dichlorobenzene	50.0	U	100	31.0	ug/L	100		12/20/18 17:35
1,2-Dichloroethane	25.0	U	50.0	15.0	ug/L	100		12/20/18 17:35
1,2-Dichloropropane	32.0	J	100	31.0	ug/L	100		12/20/18 17:35
1,3,5-Trimethylbenzene	50.0	U	100	31.0	ug/L	100		12/20/18 17:35
1,3-Dichlorobenzene	50.0	U	100	31.0	ug/L	100		12/20/18 17:35
1,3-Dichloropropane	25.0	U	50.0	15.0	ug/L	100		12/20/18 17:35
1,4-Dichlorobenzene	25.0	U	50.0	15.0	ug/L	100		12/20/18 17:35
2,2-Dichloropropane	50.0	U	100	31.0	ug/L	100		12/20/18 17:35
2-Butanone (MEK)	961	J	1000	310	ug/L	100		12/20/18 17:35
2-Chlorotoluene	50.0	U	100	31.0	ug/L	100		12/20/18 17:35
2-Hexanone	500	U	1000	310	ug/L	100		12/20/18 17:35
4-Chlorotoluene	50.0	U	100	31.0	ug/L	100		12/20/18 17:35
4-Isopropyltoluene	50.0	U	100	31.0	ug/L	100		12/20/18 17:35
4-Methyl-2-pentanone (MIBK)	500	U	1000	310	ug/L	100		12/20/18 17:35
Benzene	20.0	U	40.0	12.0	ug/L	100		12/20/18 17:35
Bromobenzene	50.0	U	100	31.0	ug/L	100		12/20/18 17:35
Bromochloromethane	50.0	U	100	31.0	ug/L	100		12/20/18 17:35
Bromodichloromethane	25.0	U	50.0	15.0	ug/L	100		12/20/18 17:35
Bromoform	50.0	U	100	31.0	ug/L	100		12/20/18 17:35
Bromomethane	250	U	500	150	ug/L	100		12/20/18 17:35
Carbon disulfide	500	U	1000	310	ug/L	100		12/20/18 17:35
Carbon tetrachloride	50.0	U	100	31.0	ug/L	100		12/20/18 17:35
Chlorobenzene	25.0	U	50.0	15.0	ug/L	100		12/20/18 17:35
Chloroethane	50.0	U	100	31.0	ug/L	100		12/20/18 17:35

Results of **18-RT-78-GW**

Client Sample ID: **18-RT-78-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094024
Lab Project ID: 1187094

Collection Date: 12/14/18 09:50
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	50.0	U	100	31.0	ug/L	100		12/20/18 17:35
Chloromethane	50.0	U	100	31.0	ug/L	100		12/20/18 17:35
cis-1,2-Dichloroethene	15300		100	31.0	ug/L	100		12/20/18 17:35
cis-1,3-Dichloropropene	25.0	U	50.0	15.0	ug/L	100		12/20/18 17:35
Dibromochloromethane	25.0	U	50.0	15.0	ug/L	100		12/20/18 17:35
Dibromomethane	50.0	U	100	31.0	ug/L	100		12/20/18 17:35
Dichlorodifluoromethane	50.0	U	100	31.0	ug/L	100		12/20/18 17:35
Ethylbenzene	50.0	U	100	31.0	ug/L	100		12/20/18 17:35
Freon-113	500	U	1000	310	ug/L	100		12/20/18 17:35
Hexachlorobutadiene	50.0	U	100	31.0	ug/L	100		12/20/18 17:35
Isopropylbenzene (Cumene)	50.0	U	100	31.0	ug/L	100		12/20/18 17:35
Methylene chloride	250	U	500	100	ug/L	100		12/20/18 17:35
Methyl-t-butyl ether	500	U	1000	310	ug/L	100		12/20/18 17:35
Naphthalene	50.0	U	100	31.0	ug/L	100		12/20/18 17:35
n-Butylbenzene	50.0	U	100	31.0	ug/L	100		12/20/18 17:35
n-Propylbenzene	50.0	U	100	31.0	ug/L	100		12/20/18 17:35
o-Xylene	50.0	U	100	31.0	ug/L	100		12/20/18 17:35
P & M -Xylene	100	U	200	62.0	ug/L	100		12/20/18 17:35
sec-Butylbenzene	50.0	U	100	31.0	ug/L	100		12/20/18 17:35
Styrene	50.0	U	100	31.0	ug/L	100		12/20/18 17:35
tert-Butylbenzene	50.0	U	100	31.0	ug/L	100		12/20/18 17:35
Tetrachloroethene	35.0	J	100	31.0	ug/L	100		12/20/18 17:35
Toluene	50.0	U	100	31.0	ug/L	100		12/20/18 17:35
trans-1,2-Dichloroethene	43.0	J	100	31.0	ug/L	100		12/20/18 17:35
trans-1,3-Dichloropropene	50.0	U	100	31.0	ug/L	100		12/20/18 17:35
Trichloroethene	50.0	U	100	31.0	ug/L	100		12/20/18 17:35
Trichlorofluoromethane	50.0	U	100	31.0	ug/L	100		12/20/18 17:35
Vinyl acetate	500	U	1000	310	ug/L	100		12/20/18 17:35
Vinyl chloride	2540		15.0	5.00	ug/L	100		12/20/18 17:35
Xylenes (total)	150	U	300	100	ug/L	100		12/20/18 17:35
Surrogates								
1,2-Dichloroethane-D4 (surr)	99.6		81-118		%	100		12/20/18 17:35
4-Bromofluorobenzene (surr)	100		85-114		%	100		12/20/18 17:35
Toluene-d8 (surr)	101		89-112		%	100		12/20/18 17:35

Results of **18-RT-78-GW**

Client Sample ID: **18-RT-78-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094024
Lab Project ID: 1187094

Collection Date: 12/14/18 09:50
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS18635
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 12/20/18 17:35
Container ID: 1187094024-D

Prep Batch: VXX33644
Prep Method: SW5030B
Prep Date/Time: 12/20/18 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **18-RT-80A-GW**

Client Sample ID: **18-RT-80A-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094025
Lab Project ID: 1187094

Collection Date: 12/13/18 19:25
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	25.0	U	50.0	15.0	ug/L	100		12/20/18 17:51
1,1,1-Trichloroethane	50.0	U	100	31.0	ug/L	100		12/20/18 17:51
1,1,2,2-Tetrachloroethane	25.0	U	50.0	15.0	ug/L	100		12/20/18 17:51
1,1,2-Trichloroethane	20.0	U	40.0	12.0	ug/L	100		12/20/18 17:51
1,1-Dichloroethane	48.0	J	100	31.0	ug/L	100		12/20/18 17:51
1,1-Dichloroethene	197		100	31.0	ug/L	100		12/20/18 17:51
1,1-Dichloropropene	50.0	U	100	31.0	ug/L	100		12/20/18 17:51
1,2,3-Trichlorobenzene	50.0	U	100	31.0	ug/L	100		12/20/18 17:51
1,2,3-Trichloropropane	50.0	U	100	31.0	ug/L	100		12/20/18 17:51
1,2,4-Trichlorobenzene	50.0	U	100	31.0	ug/L	100		12/20/18 17:51
1,2,4-Trimethylbenzene	50.0	U	100	31.0	ug/L	100		12/20/18 17:51
1,2-Dibromo-3-chloropropane	500	U	1000	310	ug/L	100		12/20/18 17:51
1,2-Dibromoethane	3.75	U	7.50	1.80	ug/L	100		12/20/18 17:51
1,2-Dichlorobenzene	50.0	U	100	31.0	ug/L	100		12/20/18 17:51
1,2-Dichloroethane	25.0	U	50.0	15.0	ug/L	100		12/20/18 17:51
1,2-Dichloropropane	465		100	31.0	ug/L	100		12/20/18 17:51
1,3,5-Trimethylbenzene	50.0	U	100	31.0	ug/L	100		12/20/18 17:51
1,3-Dichlorobenzene	50.0	U	100	31.0	ug/L	100		12/20/18 17:51
1,3-Dichloropropane	25.0	U	50.0	15.0	ug/L	100		12/20/18 17:51
1,4-Dichlorobenzene	25.0	U	50.0	15.0	ug/L	100		12/20/18 17:51
2,2-Dichloropropane	50.0	U	100	31.0	ug/L	100		12/20/18 17:51
2-Butanone (MEK)	500	U	1000	310	ug/L	100		12/20/18 17:51
2-Chlorotoluene	50.0	U	100	31.0	ug/L	100		12/20/18 17:51
2-Hexanone	500	U	1000	310	ug/L	100		12/20/18 17:51
4-Chlorotoluene	50.0	U	100	31.0	ug/L	100		12/20/18 17:51
4-Isopropyltoluene	50.0	U	100	31.0	ug/L	100		12/20/18 17:51
4-Methyl-2-pentanone (MIBK)	500	U	1000	310	ug/L	100		12/20/18 17:51
Benzene	20.0	U	40.0	12.0	ug/L	100		12/20/18 17:51
Bromobenzene	50.0	U	100	31.0	ug/L	100		12/20/18 17:51
Bromochloromethane	50.0	U	100	31.0	ug/L	100		12/20/18 17:51
Bromodichloromethane	25.0	U	50.0	15.0	ug/L	100		12/20/18 17:51
Bromoform	50.0	U	100	31.0	ug/L	100		12/20/18 17:51
Bromomethane	250	U	500	150	ug/L	100		12/20/18 17:51
Carbon disulfide	500	U	1000	310	ug/L	100		12/20/18 17:51
Carbon tetrachloride	50.0	U	100	31.0	ug/L	100		12/20/18 17:51
Chlorobenzene	25.0	U	50.0	15.0	ug/L	100		12/20/18 17:51
Chloroethane	50.0	U	100	31.0	ug/L	100		12/20/18 17:51

Results of **18-RT-80A-GW**

Client Sample ID: **18-RT-80A-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094025
Lab Project ID: 1187094

Collection Date: 12/13/18 19:25
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	50.0	U	100	31.0	ug/L	100		12/20/18 17:51
Chloromethane	50.0	U	100	31.0	ug/L	100		12/20/18 17:51
cis-1,2-Dichloroethene	53600		1000	310	ug/L	1000		12/21/18 23:49
cis-1,3-Dichloropropene	25.0	U	50.0	15.0	ug/L	100		12/20/18 17:51
Dibromochloromethane	25.0	U	50.0	15.0	ug/L	100		12/20/18 17:51
Dibromomethane	50.0	U	100	31.0	ug/L	100		12/20/18 17:51
Dichlorodifluoromethane	50.0	U	100	31.0	ug/L	100		12/20/18 17:51
Ethylbenzene	50.0	U	100	31.0	ug/L	100		12/20/18 17:51
Freon-113	500	U	1000	310	ug/L	100		12/20/18 17:51
Hexachlorobutadiene	50.0	U	100	31.0	ug/L	100		12/20/18 17:51
Isopropylbenzene (Cumene)	50.0	U	100	31.0	ug/L	100		12/20/18 17:51
Methylene chloride	250	U	500	100	ug/L	100		12/20/18 17:51
Methyl-t-butyl ether	500	U	1000	310	ug/L	100		12/20/18 17:51
Naphthalene	50.0	U	100	31.0	ug/L	100		12/20/18 17:51
n-Butylbenzene	50.0	U	100	31.0	ug/L	100		12/20/18 17:51
n-Propylbenzene	50.0	U	100	31.0	ug/L	100		12/20/18 17:51
o-Xylene	50.0	U	100	31.0	ug/L	100		12/20/18 17:51
P & M -Xylene	100	U	200	62.0	ug/L	100		12/20/18 17:51
sec-Butylbenzene	50.0	U	100	31.0	ug/L	100		12/20/18 17:51
Styrene	50.0	U	100	31.0	ug/L	100		12/20/18 17:51
tert-Butylbenzene	50.0	U	100	31.0	ug/L	100		12/20/18 17:51
Tetrachloroethene	104000		1000	310	ug/L	1000		12/21/18 23:49
Toluene	50.0	U	100	31.0	ug/L	100		12/20/18 17:51
trans-1,2-Dichloroethene	190		100	31.0	ug/L	100		12/20/18 17:51
trans-1,3-Dichloropropene	50.0	U	100	31.0	ug/L	100		12/20/18 17:51
Trichloroethene	19300		100	31.0	ug/L	100		12/20/18 17:51
Trichlorofluoromethane	50.0	U	100	31.0	ug/L	100		12/20/18 17:51
Vinyl acetate	500	U	1000	310	ug/L	100		12/20/18 17:51
Vinyl chloride	2640		15.0	5.00	ug/L	100		12/20/18 17:51
Xylenes (total)	150	U	300	100	ug/L	100		12/20/18 17:51
Surrogates								
1,2-Dichloroethane-D4 (surr)	94.5		81-118		%	100		12/20/18 17:51
4-Bromofluorobenzene (surr)	99.7		85-114		%	100		12/20/18 17:51
Toluene-d8 (surr)	104		89-112		%	100		12/20/18 17:51

Results of **18-RT-80A-GW**

Client Sample ID: **18-RT-80A-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094025
Lab Project ID: 1187094

Collection Date: 12/13/18 19:25
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS18635
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 12/20/18 17:51
Container ID: 1187094025-A

Prep Batch: VXX33644
Prep Method: SW5030B
Prep Date/Time: 12/20/18 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Analytical Batch: VMS18642
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 12/21/18 23:49
Container ID: 1187094025-A

Prep Batch: VXX33655
Prep Method: SW5030B
Prep Date/Time: 12/21/18 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **18-RT-103-GW**

Client Sample ID: **18-RT-103-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094026
Lab Project ID: 1187094

Collection Date: 12/13/18 21:30
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	25.0	U	50.0	15.0	ug/L	100		12/20/18 18:06
1,1,1-Trichloroethane	50.0	U	100	31.0	ug/L	100		12/20/18 18:06
1,1,2,2-Tetrachloroethane	25.0	U	50.0	15.0	ug/L	100		12/20/18 18:06
1,1,2-Trichloroethane	20.0	U	40.0	12.0	ug/L	100		12/20/18 18:06
1,1-Dichloroethane	50.0	U	100	31.0	ug/L	100		12/20/18 18:06
1,1-Dichloroethene	50.0	U	100	31.0	ug/L	100		12/20/18 18:06
1,1-Dichloropropene	50.0	U	100	31.0	ug/L	100		12/20/18 18:06
1,2,3-Trichlorobenzene	50.0	U	100	31.0	ug/L	100		12/20/18 18:06
1,2,3-Trichloropropane	50.0	U	100	31.0	ug/L	100		12/20/18 18:06
1,2,4-Trichlorobenzene	50.0	U	100	31.0	ug/L	100		12/20/18 18:06
1,2,4-Trimethylbenzene	50.0	U	100	31.0	ug/L	100		12/20/18 18:06
1,2-Dibromo-3-chloropropane	500	U	1000	310	ug/L	100		12/20/18 18:06
1,2-Dibromoethane	3.75	U	7.50	1.80	ug/L	100		12/20/18 18:06
1,2-Dichlorobenzene	50.0	U	100	31.0	ug/L	100		12/20/18 18:06
1,2-Dichloroethane	25.0	U	50.0	15.0	ug/L	100		12/20/18 18:06
1,2-Dichloropropane	35.0	J	100	31.0	ug/L	100		12/20/18 18:06
1,3,5-Trimethylbenzene	50.0	U	100	31.0	ug/L	100		12/20/18 18:06
1,3-Dichlorobenzene	50.0	U	100	31.0	ug/L	100		12/20/18 18:06
1,3-Dichloropropane	25.0	U	50.0	15.0	ug/L	100		12/20/18 18:06
1,4-Dichlorobenzene	25.0	U	50.0	15.0	ug/L	100		12/20/18 18:06
2,2-Dichloropropane	50.0	U	100	31.0	ug/L	100		12/20/18 18:06
2-Butanone (MEK)	1740		1000	310	ug/L	100		12/20/18 18:06
2-Chlorotoluene	50.0	U	100	31.0	ug/L	100		12/20/18 18:06
2-Hexanone	500	U	1000	310	ug/L	100		12/20/18 18:06
4-Chlorotoluene	50.0	U	100	31.0	ug/L	100		12/20/18 18:06
4-Isopropyltoluene	50.0	U	100	31.0	ug/L	100		12/20/18 18:06
4-Methyl-2-pentanone (MIBK)	500	U	1000	310	ug/L	100		12/20/18 18:06
Benzene	45.0		40.0	12.0	ug/L	100		12/20/18 18:06
Bromobenzene	50.0	U	100	31.0	ug/L	100		12/20/18 18:06
Bromochloromethane	50.0	U	100	31.0	ug/L	100		12/20/18 18:06
Bromodichloromethane	25.0	U	50.0	15.0	ug/L	100		12/20/18 18:06
Bromoform	50.0	U	100	31.0	ug/L	100		12/20/18 18:06
Bromomethane	250	U	500	150	ug/L	100		12/20/18 18:06
Carbon disulfide	500	U	1000	310	ug/L	100		12/20/18 18:06
Carbon tetrachloride	50.0	U	100	31.0	ug/L	100		12/20/18 18:06
Chlorobenzene	25.0	U	50.0	15.0	ug/L	100		12/20/18 18:06
Chloroethane	50.0	U	100	31.0	ug/L	100		12/20/18 18:06

Results of **18-RT-103-GW**

Client Sample ID: **18-RT-103-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094026
Lab Project ID: 1187094

Collection Date: 12/13/18 21:30
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	50.0	U	100	31.0	ug/L	100		12/20/18 18:06
Chloromethane	50.0	U	100	31.0	ug/L	100		12/20/18 18:06
cis-1,2-Dichloroethene	18000		100	31.0	ug/L	100		12/20/18 18:06
cis-1,3-Dichloropropene	25.0	U	50.0	15.0	ug/L	100		12/20/18 18:06
Dibromochloromethane	25.0	U	50.0	15.0	ug/L	100		12/20/18 18:06
Dibromomethane	50.0	U	100	31.0	ug/L	100		12/20/18 18:06
Dichlorodifluoromethane	50.0	U	100	31.0	ug/L	100		12/20/18 18:06
Ethylbenzene	50.0	U	100	31.0	ug/L	100		12/20/18 18:06
Freon-113	500	U	1000	310	ug/L	100		12/20/18 18:06
Hexachlorobutadiene	50.0	U	100	31.0	ug/L	100		12/20/18 18:06
Isopropylbenzene (Cumene)	50.0	U	100	31.0	ug/L	100		12/20/18 18:06
Methylene chloride	250	U	500	100	ug/L	100		12/20/18 18:06
Methyl-t-butyl ether	500	U	1000	310	ug/L	100		12/20/18 18:06
Naphthalene	50.0	U	100	31.0	ug/L	100		12/20/18 18:06
n-Butylbenzene	50.0	U	100	31.0	ug/L	100		12/20/18 18:06
n-Propylbenzene	50.0	U	100	31.0	ug/L	100		12/20/18 18:06
o-Xylene	50.0	U	100	31.0	ug/L	100		12/20/18 18:06
P & M -Xylene	100	U	200	62.0	ug/L	100		12/20/18 18:06
sec-Butylbenzene	50.0	U	100	31.0	ug/L	100		12/20/18 18:06
Styrene	50.0	U	100	31.0	ug/L	100		12/20/18 18:06
tert-Butylbenzene	50.0	U	100	31.0	ug/L	100		12/20/18 18:06
Tetrachloroethene	7290		100	31.0	ug/L	100		12/20/18 18:06
Toluene	32.0	J	100	31.0	ug/L	100		12/20/18 18:06
trans-1,2-Dichloroethene	201		100	31.0	ug/L	100		12/20/18 18:06
trans-1,3-Dichloropropene	50.0	U	100	31.0	ug/L	100		12/20/18 18:06
Trichloroethene	2150		100	31.0	ug/L	100		12/20/18 18:06
Trichlorofluoromethane	50.0	U	100	31.0	ug/L	100		12/20/18 18:06
Vinyl acetate	500	U	1000	310	ug/L	100		12/20/18 18:06
Vinyl chloride	303		15.0	5.00	ug/L	100		12/20/18 18:06
Xylenes (total)	150	U	300	100	ug/L	100		12/20/18 18:06
Surrogates								
1,2-Dichloroethane-D4 (surr)	97.7		81-118		%	100		12/20/18 18:06
4-Bromofluorobenzene (surr)	99.9		85-114		%	100		12/20/18 18:06
Toluene-d8 (surr)	102		89-112		%	100		12/20/18 18:06

Results of **18-RT-103-GW**

Client Sample ID: **18-RT-103-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094026
Lab Project ID: 1187094

Collection Date: 12/13/18 21:30
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS18635
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 12/20/18 18:06
Container ID: 1187094026-A

Prep Batch: VXX33644
Prep Method: SW5030B
Prep Date/Time: 12/20/18 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **18-RT-FD1-GW**

Client Sample ID: **18-RT-FD1-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094027
Lab Project ID: 1187094

Collection Date: 12/13/18 06:00
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		12/20/18 15:49
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:49
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		12/20/18 15:49
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		12/20/18 15:49
1,1-Dichloroethane	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:49
1,1-Dichloroethene	1.71		1.00	0.310	ug/L	1		12/20/18 15:49
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:49
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:49
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:49
1,2,4-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:49
1,2,4-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:49
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		12/20/18 15:49
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		12/20/18 15:49
1,2-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:49
1,2-Dichloroethane	0.250	U	0.500	0.150	ug/L	1		12/20/18 15:49
1,2-Dichloropropane	1.26		1.00	0.310	ug/L	1		12/20/18 15:49
1,3,5-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:49
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:49
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		12/20/18 15:49
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		12/20/18 15:49
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:49
2-Butanone (MEK)	29.7		10.0	3.10	ug/L	1		12/20/18 15:49
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:49
2-Hexanone	5.00	U	10.0	3.10	ug/L	1		12/20/18 15:49
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:49
4-Isopropyltoluene	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:49
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		12/20/18 15:49
Benzene	0.180	J	0.400	0.120	ug/L	1		12/20/18 15:49
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:49
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:49
Bromodichloromethane	0.250	U	0.500	0.150	ug/L	1		12/20/18 15:49
Bromoform	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:49
Bromomethane	2.50	U	5.00	1.50	ug/L	1		12/20/18 15:49
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		12/20/18 15:49
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:49
Chlorobenzene	0.250	U	0.500	0.150	ug/L	1		12/20/18 15:49
Chloroethane	0.500	U	1.00	0.310	ug/L	1		12/20/18 15:49

Results of **18-RT-FD1-GW**

Client Sample ID: **18-RT-FD1-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094027
Lab Project ID: 1187094

Collection Date: 12/13/18 06:00
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:49
Chloromethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:49
cis-1,2-Dichloroethene	958		20.0	6.20	ug/L	20		12/22/18 17:02
cis-1,3-Dichloropropene	0.250 U		0.500	0.150	ug/L	1		12/20/18 15:49
Dibromochloromethane	0.250 U		0.500	0.150	ug/L	1		12/20/18 15:49
Dibromomethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:49
Dichlorodifluoromethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:49
Ethylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:49
Freon-113	5.00 U		10.0	3.10	ug/L	1		12/20/18 15:49
Hexachlorobutadiene	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:49
Isopropylbenzene (Cumene)	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:49
Methylene chloride	2.50 U		5.00	1.00	ug/L	1		12/20/18 15:49
Methyl-t-butyl ether	5.00 U		10.0	3.10	ug/L	1		12/20/18 15:49
Naphthalene	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:49
n-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:49
n-Propylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:49
o-Xylene	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:49
P & M -Xylene	1.00 U		2.00	0.620	ug/L	1		12/20/18 15:49
sec-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:49
Styrene	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:49
tert-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:49
Tetrachloroethene	0.540 J		1.00	0.310	ug/L	1		12/20/18 15:49
Toluene	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:49
trans-1,2-Dichloroethene	5.16		1.00	0.310	ug/L	1		12/20/18 15:49
trans-1,3-Dichloropropene	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:49
Trichloroethene	0.340 J		1.00	0.310	ug/L	1		12/20/18 15:49
Trichlorofluoromethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 15:49
Vinyl acetate	5.00 U		10.0	3.10	ug/L	1		12/20/18 15:49
Vinyl chloride	161		3.00	1.00	ug/L	20		12/22/18 17:02
Xylenes (total)	1.50 U		3.00	1.00	ug/L	1		12/20/18 15:49
Surrogates								
1,2-Dichloroethane-D4 (surr)	102		81-118		%	1		12/20/18 15:49
4-Bromofluorobenzene (surr)	100		85-114		%	1		12/20/18 15:49
Toluene-d8 (surr)	101		89-112		%	1		12/20/18 15:49

Results of **18-RT-FD1-GW**

Client Sample ID: **18-RT-FD1-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094027
Lab Project ID: 1187094

Collection Date: 12/13/18 06:00
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS18635
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 12/20/18 15:49
Container ID: 1187094027-A

Prep Batch: VXX33644
Prep Method: SW5030B
Prep Date/Time: 12/20/18 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Analytical Batch: VMS18643
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 12/22/18 17:02
Container ID: 1187094027-A

Prep Batch: VXX33656
Prep Method: SW5030B
Prep Date/Time: 12/22/18 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **18-RT-FD2-GW**

Client Sample ID: **18-RT-FD2-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094028
Lab Project ID: 1187094

Collection Date: 12/13/18 07:00
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		12/20/18 16:04
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:04
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		12/20/18 16:04
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		12/20/18 16:04
1,1-Dichloroethane	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:04
1,1-Dichloroethene	0.580	J	1.00	0.310	ug/L	1		12/20/18 16:04
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:04
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:04
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:04
1,2,4-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:04
1,2,4-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:04
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		12/20/18 16:04
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		12/20/18 16:04
1,2-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:04
1,2-Dichloroethane	0.250	U	0.500	0.150	ug/L	1		12/20/18 16:04
1,2-Dichloropropane	2.17		1.00	0.310	ug/L	1		12/20/18 16:04
1,3,5-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:04
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:04
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		12/20/18 16:04
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		12/20/18 16:04
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:04
2-Butanone (MEK)	17.0		10.0	3.10	ug/L	1		12/20/18 16:04
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:04
2-Hexanone	5.00	U	10.0	3.10	ug/L	1		12/20/18 16:04
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:04
4-Isopropyltoluene	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:04
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		12/20/18 16:04
Benzene	0.200	U	0.400	0.120	ug/L	1		12/20/18 16:04
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:04
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:04
Bromodichloromethane	0.250	U	0.500	0.150	ug/L	1		12/20/18 16:04
Bromoform	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:04
Bromomethane	2.50	U	5.00	1.50	ug/L	1		12/20/18 16:04
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		12/20/18 16:04
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:04
Chlorobenzene	0.250	U	0.500	0.150	ug/L	1		12/20/18 16:04
Chloroethane	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:04

Results of **18-RT-FD2-GW**

Client Sample ID: **18-RT-FD2-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094028
Lab Project ID: 1187094

Collection Date: 12/13/18 07:00
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500 U		1.00	0.310	ug/L	1		12/20/18 16:04
Chloromethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 16:04
cis-1,2-Dichloroethene	498		10.0	3.10	ug/L	10		12/22/18 18:30
cis-1,3-Dichloropropene	0.250 U		0.500	0.150	ug/L	1		12/20/18 16:04
Dibromochloromethane	0.250 U		0.500	0.150	ug/L	1		12/20/18 16:04
Dibromomethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 16:04
Dichlorodifluoromethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 16:04
Ethylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 16:04
Freon-113	5.00 U		10.0	3.10	ug/L	1		12/20/18 16:04
Hexachlorobutadiene	0.500 U		1.00	0.310	ug/L	1		12/20/18 16:04
Isopropylbenzene (Cumene)	0.500 U		1.00	0.310	ug/L	1		12/20/18 16:04
Methylene chloride	2.50 U		5.00	1.00	ug/L	1		12/20/18 16:04
Methyl-t-butyl ether	5.00 U		10.0	3.10	ug/L	1		12/20/18 16:04
Naphthalene	0.500 U		1.00	0.310	ug/L	1		12/20/18 16:04
n-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 16:04
n-Propylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 16:04
o-Xylene	0.500 U		1.00	0.310	ug/L	1		12/20/18 16:04
P & M -Xylene	1.00 U		2.00	0.620	ug/L	1		12/20/18 16:04
sec-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 16:04
Styrene	0.500 U		1.00	0.310	ug/L	1		12/20/18 16:04
tert-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 16:04
Tetrachloroethene	4.83		1.00	0.310	ug/L	1		12/20/18 16:04
Toluene	0.500 U		1.00	0.310	ug/L	1		12/20/18 16:04
trans-1,2-Dichloroethene	21.4		1.00	0.310	ug/L	1		12/20/18 16:04
trans-1,3-Dichloropropene	0.500 U		1.00	0.310	ug/L	1		12/20/18 16:04
Trichloroethene	1.02		1.00	0.310	ug/L	1		12/20/18 16:04
Trichlorofluoromethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 16:04
Vinyl acetate	5.00 U		10.0	3.10	ug/L	1		12/20/18 16:04
Vinyl chloride	679		1.50	0.500	ug/L	10		12/22/18 18:30
Xylenes (total)	1.50 U		3.00	1.00	ug/L	1		12/20/18 16:04
Surrogates								
1,2-Dichloroethane-D4 (surr)	98.9		81-118		%	1		12/20/18 16:04
4-Bromofluorobenzene (surr)	98.8		85-114		%	1		12/20/18 16:04
Toluene-d8 (surr)	101		89-112		%	1		12/20/18 16:04

Results of **18-RT-FD2-GW**

Client Sample ID: **18-RT-FD2-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094028
Lab Project ID: 1187094

Collection Date: 12/13/18 07:00
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS18635
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 12/20/18 16:04
Container ID: 1187094028-A

Prep Batch: VXX33644
Prep Method: SW5030B
Prep Date/Time: 12/20/18 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Analytical Batch: VMS18643
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 12/22/18 18:30
Container ID: 1187094028-A

Prep Batch: VXX33656
Prep Method: SW5030B
Prep Date/Time: 12/22/18 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **18-RT-FD3-GW**

Client Sample ID: **18-RT-FD3-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094029
Lab Project ID: 1187094

Collection Date: 12/13/18 08:00
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		12/20/18 16:20
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:20
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		12/20/18 16:20
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		12/20/18 16:20
1,1-Dichloroethane	10.5		1.00	0.310	ug/L	1		12/20/18 16:20
1,1-Dichloroethene	118		1.00	0.310	ug/L	1		12/20/18 16:20
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:20
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:20
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:20
1,2,4-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:20
1,2,4-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:20
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		12/20/18 16:20
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		12/20/18 16:20
1,2-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:20
1,2-Dichloroethane	0.250	U	0.500	0.150	ug/L	1		12/20/18 16:20
1,2-Dichloropropane	112		1.00	0.310	ug/L	1		12/20/18 16:20
1,3,5-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:20
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:20
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		12/20/18 16:20
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		12/20/18 16:20
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:20
2-Butanone (MEK)	26.6		10.0	3.10	ug/L	1		12/20/18 16:20
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:20
2-Hexanone	5.00	U	10.0	3.10	ug/L	1		12/20/18 16:20
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:20
4-Isopropyltoluene	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:20
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		12/20/18 16:20
Benzene	1.47		0.400	0.120	ug/L	1		12/20/18 16:20
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:20
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:20
Bromodichloromethane	0.250	U	0.500	0.150	ug/L	1		12/20/18 16:20
Bromoform	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:20
Bromomethane	2.50	U	5.00	1.50	ug/L	1		12/20/18 16:20
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		12/20/18 16:20
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:20
Chlorobenzene	0.250	U	0.500	0.150	ug/L	1		12/20/18 16:20
Chloroethane	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:20

Results of **18-RT-FD3-GW**

Client Sample ID: **18-RT-FD3-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094029
Lab Project ID: 1187094

Collection Date: 12/13/18 08:00
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:20
Chloromethane	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:20
cis-1,2-Dichloroethene	125000		1000	310	ug/L	1000		12/22/18 18:00
cis-1,3-Dichloropropene	0.250	U	0.500	0.150	ug/L	1		12/20/18 16:20
Dibromochloromethane	0.250	U	0.500	0.150	ug/L	1		12/20/18 16:20
Dibromomethane	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:20
Dichlorodifluoromethane	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:20
Ethylbenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:20
Freon-113	5.00	U	10.0	3.10	ug/L	1		12/20/18 16:20
Hexachlorobutadiene	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:20
Isopropylbenzene (Cumene)	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:20
Methylene chloride	2.50	U	5.00	1.00	ug/L	1		12/20/18 16:20
Methyl-t-butyl ether	5.00	U	10.0	3.10	ug/L	1		12/20/18 16:20
Naphthalene	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:20
n-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:20
n-Propylbenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:20
o-Xylene	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:20
P & M -Xylene	0.680	J	2.00	0.620	ug/L	1		12/20/18 16:20
sec-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:20
Styrene	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:20
tert-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:20
Tetrachloroethene	21.4		1.00	0.310	ug/L	1		12/20/18 16:20
Toluene	1.18		1.00	0.310	ug/L	1		12/20/18 16:20
trans-1,2-Dichloroethene	469		100	31.0	ug/L	100		12/22/18 18:59
trans-1,3-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:20
Trichloroethene	4.19		1.00	0.310	ug/L	1		12/20/18 16:20
Trichlorofluoromethane	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:20
Vinyl acetate	5.00	U	10.0	3.10	ug/L	1		12/20/18 16:20
Vinyl chloride	33300		150	50.0	ug/L	1000		12/22/18 18:00
Xylenes (total)	1.50	U	3.00	1.00	ug/L	1		12/20/18 16:20
Surrogates								
1,2-Dichloroethane-D4 (surr)	97.1		81-118		%	1		12/20/18 16:20
4-Bromofluorobenzene (surr)	109		85-114		%	1		12/20/18 16:20
Toluene-d8 (surr)	100		89-112		%	1		12/20/18 16:20

Results of **18-RT-FD3-GW**

Client Sample ID: **18-RT-FD3-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094029
Lab Project ID: 1187094

Collection Date: 12/13/18 08:00
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS18635
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 12/20/18 16:20
Container ID: 1187094029-A

Prep Batch: VXX33644
Prep Method: SW5030B
Prep Date/Time: 12/20/18 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Analytical Batch: VMS18643
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 12/22/18 18:00
Container ID: 1187094029-A

Prep Batch: VXX33656
Prep Method: SW5030B
Prep Date/Time: 12/22/18 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Analytical Batch: VMS18643
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 12/22/18 18:59
Container ID: 1187094029-A

Prep Batch: VXX33656
Prep Method: SW5030B
Prep Date/Time: 12/22/18 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **18-RT-TB-1**

Client Sample ID: **18-RT-TB-1**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094030
Lab Project ID: 1187094

Collection Date: 12/11/18 06:00
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		12/20/18 13:32
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		12/20/18 13:32
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		12/20/18 13:32
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		12/20/18 13:32
1,1-Dichloroethane	0.500	U	1.00	0.310	ug/L	1		12/20/18 13:32
1,1-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		12/20/18 13:32
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		12/20/18 13:32
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 13:32
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		12/20/18 13:32
1,2,4-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 13:32
1,2,4-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 13:32
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		12/20/18 13:32
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		12/20/18 13:32
1,2-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 13:32
1,2-Dichloroethane	0.250	U	0.500	0.150	ug/L	1		12/20/18 13:32
1,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		12/20/18 13:32
1,3,5-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 13:32
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 13:32
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		12/20/18 13:32
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		12/20/18 13:32
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		12/20/18 13:32
2-Butanone (MEK)	5.00	U	10.0	3.10	ug/L	1		12/20/18 13:32
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		12/20/18 13:32
2-Hexanone	5.00	U	10.0	3.10	ug/L	1		12/20/18 13:32
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		12/20/18 13:32
4-Isopropyltoluene	0.500	U	1.00	0.310	ug/L	1		12/20/18 13:32
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		12/20/18 13:32
Benzene	0.200	U	0.400	0.120	ug/L	1		12/20/18 13:32
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 13:32
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		12/20/18 13:32
Bromodichloromethane	0.250	U	0.500	0.150	ug/L	1		12/20/18 13:32
Bromoform	0.500	U	1.00	0.310	ug/L	1		12/20/18 13:32
Bromomethane	2.50	U	5.00	1.50	ug/L	1		12/20/18 13:32
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		12/20/18 13:32
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		12/20/18 13:32
Chlorobenzene	0.250	U	0.500	0.150	ug/L	1		12/20/18 13:32
Chloroethane	0.500	U	1.00	0.310	ug/L	1		12/20/18 13:32

Results of **18-RT-TB-1**

Client Sample ID: **18-RT-TB-1**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094030
Lab Project ID: 1187094

Collection Date: 12/11/18 06:00
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500 U		1.00	0.310	ug/L	1		12/20/18 13:32
Chloromethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 13:32
cis-1,2-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		12/20/18 13:32
cis-1,3-Dichloropropene	0.250 U		0.500	0.150	ug/L	1		12/20/18 13:32
Dibromochloromethane	0.250 U		0.500	0.150	ug/L	1		12/20/18 13:32
Dibromomethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 13:32
Dichlorodifluoromethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 13:32
Ethylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 13:32
Freon-113	5.00 U		10.0	3.10	ug/L	1		12/20/18 13:32
Hexachlorobutadiene	0.500 U		1.00	0.310	ug/L	1		12/20/18 13:32
Isopropylbenzene (Cumene)	0.500 U		1.00	0.310	ug/L	1		12/20/18 13:32
Methylene chloride	2.50 U		5.00	1.00	ug/L	1		12/20/18 13:32
Methyl-t-butyl ether	5.00 U		10.0	3.10	ug/L	1		12/20/18 13:32
Naphthalene	0.500 U		1.00	0.310	ug/L	1		12/20/18 13:32
n-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 13:32
n-Propylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 13:32
o-Xylene	0.500 U		1.00	0.310	ug/L	1		12/20/18 13:32
P & M -Xylene	1.00 U		2.00	0.620	ug/L	1		12/20/18 13:32
sec-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 13:32
Styrene	0.500 U		1.00	0.310	ug/L	1		12/20/18 13:32
tert-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 13:32
Tetrachloroethene	0.500 U		1.00	0.310	ug/L	1		12/20/18 13:32
Toluene	0.500 U		1.00	0.310	ug/L	1		12/20/18 13:32
trans-1,2-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		12/20/18 13:32
trans-1,3-Dichloropropene	0.500 U		1.00	0.310	ug/L	1		12/20/18 13:32
Trichloroethene	0.500 U		1.00	0.310	ug/L	1		12/20/18 13:32
Trichlorofluoromethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 13:32
Vinyl acetate	5.00 U		10.0	3.10	ug/L	1		12/20/18 13:32
Vinyl chloride	0.0750 U		0.150	0.0500	ug/L	1		12/20/18 13:32
Xylenes (total)	1.50 U		3.00	1.00	ug/L	1		12/20/18 13:32
Surrogates								
1,2-Dichloroethane-D4 (surr)	104		81-118		%	1		12/20/18 13:32
4-Bromofluorobenzene (surr)	103		85-114		%	1		12/20/18 13:32
Toluene-d8 (surr)	102		89-112		%	1		12/20/18 13:32

Results of **18-RT-TB-1**

Client Sample ID: **18-RT-TB-1**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094030
Lab Project ID: 1187094

Collection Date: 12/11/18 06:00
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS18635
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 12/20/18 13:32
Container ID: 1187094030-A

Prep Batch: VXX33644
Prep Method: SW5030B
Prep Date/Time: 12/20/18 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **18-RT-EB1-GW**

Client Sample ID: **18-RT-EB1-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094031
Lab Project ID: 1187094

Collection Date: 12/13/18 08:00
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		12/20/18 16:35
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:35
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		12/20/18 16:35
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		12/20/18 16:35
1,1-Dichloroethane	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:35
1,1-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:35
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:35
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:35
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:35
1,2,4-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:35
1,2,4-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:35
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		12/20/18 16:35
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		12/20/18 16:35
1,2-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:35
1,2-Dichloroethane	0.250	U	0.500	0.150	ug/L	1		12/20/18 16:35
1,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:35
1,3,5-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:35
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:35
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		12/20/18 16:35
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		12/20/18 16:35
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:35
2-Butanone (MEK)	5.00	U	10.0	3.10	ug/L	1		12/20/18 16:35
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:35
2-Hexanone	5.00	U	10.0	3.10	ug/L	1		12/20/18 16:35
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:35
4-Isopropyltoluene	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:35
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		12/20/18 16:35
Benzene	0.200	U	0.400	0.120	ug/L	1		12/20/18 16:35
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:35
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:35
Bromodichloromethane	0.250	U	0.500	0.150	ug/L	1		12/20/18 16:35
Bromoform	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:35
Bromomethane	2.50	U	5.00	1.50	ug/L	1		12/20/18 16:35
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		12/20/18 16:35
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:35
Chlorobenzene	0.250	U	0.500	0.150	ug/L	1		12/20/18 16:35
Chloroethane	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:35

Results of **18-RT-EB1-GW**

Client Sample ID: **18-RT-EB1-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094031
Lab Project ID: 1187094

Collection Date: 12/13/18 08:00
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.820	J	1.00	0.310	ug/L	1		12/20/18 16:35
Chloromethane	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:35
cis-1,2-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		12/22/18 15:34
cis-1,3-Dichloropropene	0.250	U	0.500	0.150	ug/L	1		12/20/18 16:35
Dibromochloromethane	0.250	U	0.500	0.150	ug/L	1		12/20/18 16:35
Dibromomethane	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:35
Dichlorodifluoromethane	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:35
Ethylbenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:35
Freon-113	5.00	U	10.0	3.10	ug/L	1		12/20/18 16:35
Hexachlorobutadiene	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:35
Isopropylbenzene (Cumene)	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:35
Methylene chloride	2.50	U	5.00	1.00	ug/L	1		12/20/18 16:35
Methyl-t-butyl ether	5.00	U	10.0	3.10	ug/L	1		12/20/18 16:35
Naphthalene	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:35
n-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:35
n-Propylbenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:35
o-Xylene	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:35
P & M -Xylene	1.00	U	2.00	0.620	ug/L	1		12/20/18 16:35
sec-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:35
Styrene	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:35
tert-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:35
Tetrachloroethene	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:35
Toluene	0.720	J	1.00	0.310	ug/L	1		12/20/18 16:35
trans-1,2-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		12/22/18 15:34
trans-1,3-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:35
Trichloroethene	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:35
Trichlorofluoromethane	0.500	U	1.00	0.310	ug/L	1		12/20/18 16:35
Vinyl acetate	5.00	U	10.0	3.10	ug/L	1		12/20/18 16:35
Vinyl chloride	0.0750	U	0.150	0.0500	ug/L	1		12/22/18 15:34
Xylenes (total)	1.50	U	3.00	1.00	ug/L	1		12/20/18 16:35
Surrogates								
1,2-Dichloroethane-D4 (surr)	100		81-118		%	1		12/20/18 16:35
4-Bromofluorobenzene (surr)	98.3		85-114		%	1		12/20/18 16:35
Toluene-d8 (surr)	102		89-112		%	1		12/20/18 16:35

Results of **18-RT-EB1-GW**

Client Sample ID: **18-RT-EB1-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094031
Lab Project ID: 1187094

Collection Date: 12/13/18 08:00
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS18643
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 12/22/18 15:34
Container ID: 1187094031-A

Prep Batch: VXX33656
Prep Method: SW5030B
Prep Date/Time: 12/22/18 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Analytical Batch: VMS18635
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 12/20/18 16:35
Container ID: 1187094031-A

Prep Batch: VXX33644
Prep Method: SW5030B
Prep Date/Time: 12/20/18 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **18-RT-EB2-GW**

Client Sample ID: **18-RT-EB2-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094032
Lab Project ID: 1187094

Collection Date: 12/14/18 08:00
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250 U		0.500	0.150	ug/L	1		12/20/18 16:50
1,1,1-Trichloroethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 16:50
1,1,2,2-Tetrachloroethane	0.250 U		0.500	0.150	ug/L	1		12/20/18 16:50
1,1,2-Trichloroethane	0.200 U		0.400	0.120	ug/L	1		12/20/18 16:50
1,1-Dichloroethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 16:50
1,1-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		12/20/18 16:50
1,1-Dichloropropene	0.500 U		1.00	0.310	ug/L	1		12/20/18 16:50
1,2,3-Trichlorobenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 16:50
1,2,3-Trichloropropane	0.500 U		1.00	0.310	ug/L	1		12/20/18 16:50
1,2,4-Trichlorobenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 16:50
1,2,4-Trimethylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 16:50
1,2-Dibromo-3-chloropropane	5.00 U		10.0	3.10	ug/L	1		12/20/18 16:50
1,2-Dibromoethane	0.0375 U		0.0750	0.0180	ug/L	1		12/20/18 16:50
1,2-Dichlorobenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 16:50
1,2-Dichloroethane	0.250 U		0.500	0.150	ug/L	1		12/20/18 16:50
1,2-Dichloropropane	0.500 U		1.00	0.310	ug/L	1		12/20/18 16:50
1,3,5-Trimethylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 16:50
1,3-Dichlorobenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 16:50
1,3-Dichloropropane	0.250 U		0.500	0.150	ug/L	1		12/20/18 16:50
1,4-Dichlorobenzene	0.250 U		0.500	0.150	ug/L	1		12/20/18 16:50
2,2-Dichloropropane	0.500 U		1.00	0.310	ug/L	1		12/20/18 16:50
2-Butanone (MEK)	5.00 U		10.0	3.10	ug/L	1		12/20/18 16:50
2-Chlorotoluene	0.500 U		1.00	0.310	ug/L	1		12/20/18 16:50
2-Hexanone	5.00 U		10.0	3.10	ug/L	1		12/20/18 16:50
4-Chlorotoluene	0.500 U		1.00	0.310	ug/L	1		12/20/18 16:50
4-Isopropyltoluene	0.500 U		1.00	0.310	ug/L	1		12/20/18 16:50
4-Methyl-2-pentanone (MIBK)	5.00 U		10.0	3.10	ug/L	1		12/20/18 16:50
Benzene	0.200 U		0.400	0.120	ug/L	1		12/20/18 16:50
Bromobenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 16:50
Bromochloromethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 16:50
Bromodichloromethane	0.250 U		0.500	0.150	ug/L	1		12/20/18 16:50
Bromoform	0.500 U		1.00	0.310	ug/L	1		12/20/18 16:50
Bromomethane	2.50 U		5.00	1.50	ug/L	1		12/20/18 16:50
Carbon disulfide	5.00 U		10.0	3.10	ug/L	1		12/20/18 16:50
Carbon tetrachloride	0.500 U		1.00	0.310	ug/L	1		12/20/18 16:50
Chlorobenzene	0.250 U		0.500	0.150	ug/L	1		12/20/18 16:50
Chloroethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 16:50

Results of **18-RT-EB2-GW**

Client Sample ID: **18-RT-EB2-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094032
Lab Project ID: 1187094

Collection Date: 12/14/18 08:00
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500 U		1.00	0.310	ug/L	1		12/20/18 16:50
Chloromethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 16:50
cis-1,2-Dichloroethene	1.47		1.00	0.310	ug/L	1		12/22/18 15:49
cis-1,3-Dichloropropene	0.250 U		0.500	0.150	ug/L	1		12/20/18 16:50
Dibromochloromethane	0.250 U		0.500	0.150	ug/L	1		12/20/18 16:50
Dibromomethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 16:50
Dichlorodifluoromethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 16:50
Ethylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 16:50
Freon-113	5.00 U		10.0	3.10	ug/L	1		12/20/18 16:50
Hexachlorobutadiene	0.500 U		1.00	0.310	ug/L	1		12/20/18 16:50
Isopropylbenzene (Cumene)	0.500 U		1.00	0.310	ug/L	1		12/20/18 16:50
Methylene chloride	2.50 U		5.00	1.00	ug/L	1		12/20/18 16:50
Methyl-t-butyl ether	5.00 U		10.0	3.10	ug/L	1		12/20/18 16:50
Naphthalene	0.500 U		1.00	0.310	ug/L	1		12/20/18 16:50
n-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 16:50
n-Propylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 16:50
o-Xylene	0.500 U		1.00	0.310	ug/L	1		12/20/18 16:50
P & M -Xylene	1.00 U		2.00	0.620	ug/L	1		12/20/18 16:50
sec-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 16:50
Styrene	0.500 U		1.00	0.310	ug/L	1		12/20/18 16:50
tert-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		12/20/18 16:50
Tetrachloroethene	0.500 U		1.00	0.310	ug/L	1		12/20/18 16:50
Toluene	0.500 U		1.00	0.310	ug/L	1		12/20/18 16:50
trans-1,2-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		12/20/18 16:50
trans-1,3-Dichloropropene	0.500 U		1.00	0.310	ug/L	1		12/20/18 16:50
Trichloroethene	0.500 U		1.00	0.310	ug/L	1		12/20/18 16:50
Trichlorofluoromethane	0.500 U		1.00	0.310	ug/L	1		12/20/18 16:50
Vinyl acetate	5.00 U		10.0	3.10	ug/L	1		12/20/18 16:50
Vinyl chloride	0.0750 U		0.150	0.0500	ug/L	1		12/22/18 15:49
Xylenes (total)	1.50 U		3.00	1.00	ug/L	1		12/20/18 16:50
Surrogates								
1,2-Dichloroethane-D4 (surr)	101		81-118		%	1		12/20/18 16:50
4-Bromofluorobenzene (surr)	99.7		85-114		%	1		12/20/18 16:50
Toluene-d8 (surr)	102		89-112		%	1		12/20/18 16:50

Results of **18-RT-EB2-GW**

Client Sample ID: **18-RT-EB2-GW**
Client Project ID: **20301.005.01 River Terrace**
Lab Sample ID: 1187094032
Lab Project ID: 1187094

Collection Date: 12/14/18 08:00
Received Date: 12/17/18 16:43
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS18643
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 12/22/18 15:49
Container ID: 1187094032-A

Prep Batch: VXX33656
Prep Method: SW5030B
Prep Date/Time: 12/22/18 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Analytical Batch: VMS18635
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 12/20/18 16:50
Container ID: 1187094032-A

Prep Batch: VXX33644
Prep Method: SW5030B
Prep Date/Time: 12/20/18 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Method Blank

Blank ID: MB for HBN 1789945 [VXX/33639]
Blank Lab ID: 1492246

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1187094001, 1187094002, 1187094003

Results by **SW8260C**

Parameter	Results	LOQ/CL	DL	Units
1,1,1,2-Tetrachloroethane	0.250U	0.500	0.150	ug/L
1,1,1-Trichloroethane	0.500U	1.00	0.310	ug/L
1,1,2,2-Tetrachloroethane	0.250U	0.500	0.150	ug/L
1,1,2-Trichloroethane	0.200U	0.400	0.120	ug/L
1,1-Dichloroethane	0.500U	1.00	0.310	ug/L
1,1-Dichloroethene	0.500U	1.00	0.310	ug/L
1,1-Dichloropropene	0.500U	1.00	0.310	ug/L
1,2,3-Trichlorobenzene	0.500U	1.00	0.310	ug/L
1,2,3-Trichloropropane	0.500U	1.00	0.310	ug/L
1,2,4-Trichlorobenzene	0.500U	1.00	0.310	ug/L
1,2,4-Trimethylbenzene	0.500U	1.00	0.310	ug/L
1,2-Dibromo-3-chloropropane	5.00U	10.0	3.10	ug/L
1,2-Dibromoethane	0.0375U	0.0750	0.0180	ug/L
1,2-Dichlorobenzene	0.500U	1.00	0.310	ug/L
1,2-Dichloroethane	0.250U	0.500	0.150	ug/L
1,2-Dichloropropane	0.500U	1.00	0.310	ug/L
1,3,5-Trimethylbenzene	0.500U	1.00	0.310	ug/L
1,3-Dichlorobenzene	0.500U	1.00	0.310	ug/L
1,3-Dichloropropane	0.250U	0.500	0.150	ug/L
1,4-Dichlorobenzene	0.250U	0.500	0.150	ug/L
2,2-Dichloropropane	0.500U	1.00	0.310	ug/L
2-Butanone (MEK)	5.00U	10.0	3.10	ug/L
2-Chlorotoluene	0.500U	1.00	0.310	ug/L
2-Hexanone	5.00U	10.0	3.10	ug/L
4-Chlorotoluene	0.500U	1.00	0.310	ug/L
4-Isopropyltoluene	0.500U	1.00	0.310	ug/L
4-Methyl-2-pentanone (MIBK)	5.00U	10.0	3.10	ug/L
Benzene	0.200U	0.400	0.120	ug/L
Bromobenzene	0.500U	1.00	0.310	ug/L
Bromochloromethane	0.500U	1.00	0.310	ug/L
Bromodichloromethane	0.250U	0.500	0.150	ug/L
Bromoform	0.500U	1.00	0.310	ug/L
Bromomethane	2.50U	5.00	1.50	ug/L
Carbon disulfide	5.00U	10.0	3.10	ug/L
Carbon tetrachloride	0.500U	1.00	0.310	ug/L
Chlorobenzene	0.250U	0.500	0.150	ug/L
Chloroethane	0.500U	1.00	0.310	ug/L
Chloroform	0.500U	1.00	0.310	ug/L

Method Blank

Blank ID: MB for HBN 1789945 [VXX/33639]
Blank Lab ID: 1492246

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1187094001, 1187094002, 1187094003

Results by **SW8260C**

Parameter	Results	LOQ/CL	DL	Units
Chloromethane	0.500U	1.00	0.310	ug/L
cis-1,2-Dichloroethene	0.500U	1.00	0.310	ug/L
cis-1,3-Dichloropropene	0.250U	0.500	0.150	ug/L
Dibromochloromethane	0.250U	0.500	0.150	ug/L
Dibromomethane	0.500U	1.00	0.310	ug/L
Dichlorodifluoromethane	0.500U	1.00	0.310	ug/L
Ethylbenzene	0.500U	1.00	0.310	ug/L
Freon-113	5.00U	10.0	3.10	ug/L
Hexachlorobutadiene	0.500U	1.00	0.310	ug/L
Isopropylbenzene (Cumene)	0.500U	1.00	0.310	ug/L
Methylene chloride	2.50U	5.00	1.00	ug/L
Methyl-t-butyl ether	5.00U	10.0	3.10	ug/L
Naphthalene	0.500U	1.00	0.310	ug/L
n-Butylbenzene	0.500U	1.00	0.310	ug/L
n-Propylbenzene	0.500U	1.00	0.310	ug/L
o-Xylene	0.500U	1.00	0.310	ug/L
P & M -Xylene	1.00U	2.00	0.620	ug/L
sec-Butylbenzene	0.500U	1.00	0.310	ug/L
Styrene	0.500U	1.00	0.310	ug/L
tert-Butylbenzene	0.500U	1.00	0.310	ug/L
Tetrachloroethene	0.500U	1.00	0.310	ug/L
Toluene	0.500U	1.00	0.310	ug/L
trans-1,2-Dichloroethene	0.500U	1.00	0.310	ug/L
trans-1,3-Dichloropropene	0.500U	1.00	0.310	ug/L
Trichloroethene	0.500U	1.00	0.310	ug/L
Trichlorofluoromethane	0.500U	1.00	0.310	ug/L
Vinyl acetate	5.00U	10.0	3.10	ug/L
Vinyl chloride	0.0750U	0.150	0.0500	ug/L
Xylenes (total)	1.50U	3.00	1.00	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	104	81-118		%
4-Bromofluorobenzene (surr)	101	85-114		%
Toluene-d8 (surr)	99.8	89-112		%

SGS North America Inc.
200 West Potter Drive Anchorage, AK 95518
t 907.562.2343 f 907.561.5301 www.us.sgs.com

Method Blank

Blank ID: MB for HBN 1789945 [VXX/33639]
Blank Lab ID: 1492246

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1187094001, 1187094002, 1187094003

Results by **SW8260C**

Parameter	Results	LOQ/CL	DL	Units

Batch Information

Analytical Batch: VMS18632
Analytical Method: SW8260C
Instrument: Agilent 7890-75MS
Analyst: FDR
Analytical Date/Time: 12/19/2018 9:19:00AM

Prep Batch: VXX33639
Prep Method: SW5030B
Prep Date/Time: 12/18/2018 12:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Leaching Blank

Blank ID: LB for HBN 1789868 [TCLP/9858]
Blank Lab ID: 1491927

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1187094001, 1187094002, 1187094003

Results by **SW8260C**

Parameter	Results	LOQ/CL	DL	Units
1,1-Dichloroethene	25.0U	50.0	15.5	ug/L
1,2-Dichloroethane	12.5U	25.0	7.50	ug/L
1,4-Dichlorobenzene	12.5U	25.0	7.50	ug/L
2-Butanone (MEK)	250U	500	155	ug/L
Benzene	10.0U	20.0	6.00	ug/L
Carbon tetrachloride	25.0U	50.0	15.5	ug/L
Chlorobenzene	12.5U	25.0	7.50	ug/L
Chloroform	25.0U	50.0	15.5	ug/L
Hexachlorobutadiene	25.0U	50.0	15.5	ug/L
Tetrachloroethene	25.0U	50.0	15.5	ug/L
Trichloroethene	25.0U	50.0	15.5	ug/L
Vinyl chloride	3.75U	7.50	2.50	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	106	81-118		%
4-Bromofluorobenzene (surr)	103	85-114		%
Toluene-d8 (surr)	101	89-112		%

Batch Information

Analytical Batch: VMS18632
Analytical Method: SW8260C
Instrument: Agilent 7890-75MS
Analyst: FDR
Analytical Date/Time: 12/19/2018 11:22:00AM

Prep Batch: VXX33639
Prep Method: SW5030B
Prep Date/Time: 12/18/2018 12:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

SGS North America Inc.
200 West Potter Drive Anchorage, AK 95518
t 907.562.2343 f 907.561.5301 www.us.sgs.com

Blank Spike Summary

Blank Spike ID: LCS for HBN 1187094 [VXX33639]
Blank Spike Lab ID: 1492247
Date Analyzed: 12/19/2018 09:34

Spike Duplicate ID: LCSD for HBN 1187094 [VXX33639]
Spike Duplicate Lab ID: 1492248
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1187094001, 1187094002, 1187094003

Results by **SW8260C**

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
1,1,1,2-Tetrachloroethane	30	32.1	107	30	30.8	103	(78-124)	4.30	(< 20)
1,1,1-Trichloroethane	30	32.8	109	30	33.9	113	(74-131)	3.30	(< 20)
1,1,2,2-Tetrachloroethane	30	30.6	102	30	31.3	104	(71-121)	2.20	(< 20)
1,1,2-Trichloroethane	30	31.1	104	30	30.1	100	(80-119)	3.50	(< 20)
1,1-Dichloroethane	30	31.3	104	30	32.5	108	(77-125)	3.80	(< 20)
1,1-Dichloroethene	30	32.6	109	30	34.0	113	(71-131)	4.20	(< 20)
1,1-Dichloropropene	30	33.2	111	30	33.8	113	(79-125)	1.80	(< 20)
1,2,3-Trichlorobenzene	30	28.9	96	30	29.2	97	(69-129)	1.00	(< 20)
1,2,3-Trichloropropane	30	30.4	101	30	31.6	105	(73-122)	3.90	(< 20)
1,2,4-Trichlorobenzene	30	30.8	103	30	30.9	103	(69-130)	0.07	(< 20)
1,2,4-Trimethylbenzene	30	32.8	109	30	32.8	109	(79-124)	0.12	(< 20)
1,2-Dibromo-3-chloropropane	30	28.8	96	30	30.2	101	(62-128)	4.70	(< 20)
1,2-Dibromoethane	30	30.0	100	30	29.1	97	(77-121)	3.20	(< 20)
1,2-Dichlorobenzene	30	31.5	105	30	31.1	104	(80-119)	1.40	(< 20)
1,2-Dichloroethane	30	30.9	103	30	32.1	107	(73-128)	3.80	(< 20)
1,2-Dichloropropane	30	32.3	108	30	32.9	110	(78-122)	1.70	(< 20)
1,3,5-Trimethylbenzene	30	33.5	112	30	33.4	111	(75-124)	0.39	(< 20)
1,3-Dichlorobenzene	30	32.0	107	30	32.0	107	(80-119)	0.03	(< 20)
1,3-Dichloropropane	30	31.6	105	30	30.1	100	(80-119)	4.80	(< 20)
1,4-Dichlorobenzene	30	31.9	106	30	32.3	108	(79-118)	1.10	(< 20)
2,2-Dichloropropane	30	34.1	114	30	35.2	117	(60-139)	3.10	(< 20)
2-Butanone (MEK)	90	82.7	92	90	93.1	103	(56-143)	11.80	(< 20)
2-Chlorotoluene	30	33.1	110	30	32.7	109	(79-122)	1.50	(< 20)
2-Hexanone	90	88.3	98	90	95.0	106	(57-139)	7.30	(< 20)
4-Chlorotoluene	30	32.8	109	30	32.7	109	(78-122)	0.24	(< 20)
4-Isopropyltoluene	30	33.9	113	30	33.9	113	(77-127)	0.03	(< 20)
4-Methyl-2-pentanone (MIBK)	90	91.4	102	90	101	112	(67-130)	10.20	(< 20)
Benzene	30	31.8	106	30	32.1	107	(79-120)	0.97	(< 20)
Bromobenzene	30	31.4	105	30	32.3	108	(80-120)	2.70	(< 20)
Bromochloromethane	30	30.7	102	30	32.4	108	(78-123)	5.30	(< 20)
Bromodichloromethane	30	31.9	106	30	33.1	110	(79-125)	3.70	(< 20)
Bromoform	30	31.6	105	30	31.1	104	(66-130)	1.60	(< 20)
Bromomethane	30	31.1	104	30	35.1	117	(53-141)	12.00	(< 20)
Carbon disulfide	45	47.8	106	45	50.1	111	(64-133)	4.70	(< 20)

Blank Spike Summary

Blank Spike ID: LCS for HBN 1187094 [VXX33639]
Blank Spike Lab ID: 1492247
Date Analyzed: 12/19/2018 09:34

Spike Duplicate ID: LCSD for HBN 1187094 [VXX33639]
Spike Duplicate Lab ID: 1492248
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1187094001, 1187094002, 1187094003

Results by **SW8260C**

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Carbon tetrachloride	30	33.0	110	30	34.0	113	(72-136)	2.90	(< 20)
Chlorobenzene	30	30.5	102	30	30.0	100	(82-118)	1.80	(< 20)
Chloroethane	30	26.5	88	30	27.5	92	(60-138)	3.70	(< 20)
Chloroform	30	29.7	99	30	30.8	103	(79-124)	3.70	(< 20)
Chloromethane	30	31.0	103	30	32.4	108	(50-139)	4.50	(< 20)
cis-1,2-Dichloroethene	30	31.2	104	30	32.7	109	(78-123)	4.40	(< 20)
cis-1,3-Dichloropropene	30	32.7	109	30	33.4	111	(75-124)	2.10	(< 20)
Dibromochloromethane	30	31.5	105	30	29.9	100	(74-126)	5.10	(< 20)
Dibromomethane	30	31.0	103	30	32.5	108	(79-123)	4.70	(< 20)
Dichlorodifluoromethane	30	32.3	108	30	33.1	110	(32-152)	2.50	(< 20)
Ethylbenzene	30	32.6	109	30	32.1	107	(79-121)	1.40	(< 20)
Freon-113	45	49.9	111	45	52.0	116	(70-136)	4.30	(< 20)
Hexachlorobutadiene	30	33.2	111	30	32.8	109	(66-134)	1.10	(< 20)
Isopropylbenzene (Cumene)	30	34.1	114	30	33.5	112	(72-131)	1.80	(< 20)
Methylene chloride	30	31.2	104	30	32.7	109	(74-124)	4.70	(< 20)
Methyl-t-butyl ether	45	47.0	104	45	48.6	108	(71-124)	3.30	(< 20)
Naphthalene	30	29.5	98	30	30.1	100	(61-128)	2.00	(< 20)
n-Butylbenzene	30	34.1	114	30	33.4	111	(75-128)	2.00	(< 20)
n-Propylbenzene	30	32.8	109	30	33.6	112	(76-126)	2.50	(< 20)
o-Xylene	30	32.7	109	30	32.2	107	(78-122)	1.70	(< 20)
P & M -Xylene	60	65.7	110	60	64.5	108	(80-121)	1.90	(< 20)
sec-Butylbenzene	30	34.1	114	30	33.8	113	(77-126)	0.80	(< 20)
Styrene	30	33.0	110	30	33.5	112	(78-123)	1.40	(< 20)
tert-Butylbenzene	30	34.2	114	30	32.9	110	(78-124)	3.80	(< 20)
Tetrachloroethene	30	32.6	109	30	31.0	103	(74-129)	5.10	(< 20)
Toluene	30	30.0	100	30	28.9	96	(80-121)	3.70	(< 20)
trans-1,2-Dichloroethene	30	32.2	107	30	33.2	111	(75-124)	3.20	(< 20)
trans-1,3-Dichloropropene	30	32.7	109	30	31.9	106	(73-127)	2.60	(< 20)
Trichloroethene	30	32.1	107	30	32.5	108	(79-123)	1.30	(< 20)
Trichlorofluoromethane	30	30.6	102	30	31.8	106	(65-141)	3.80	(< 20)
Vinyl acetate	30	31.5	105	30	32.6	109	(54-146)	3.40	(< 20)
Vinyl chloride	30	32.0	107	30	33.9	113	(58-137)	5.50	(< 20)
Xylenes (total)	90	98.4	109	90	96.7	107	(79-121)	1.80	(< 20)

Blank Spike Summary

Blank Spike ID: LCS for HBN 1187094 [VXX33639]
Blank Spike Lab ID: 1492247
Date Analyzed: 12/19/2018 09:34

Spike Duplicate ID: LCSD for HBN 1187094 [VXX33639]
Spike Duplicate Lab ID: 1492248
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1187094001, 1187094002, 1187094003

Results by **SW8260C**

	Blank Spike (%)			Spike Duplicate (%)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Surrogates									
1,2-Dichloroethane-D4 (surr)	30	97.6	98	30	103	103	(81-118)	5.20	
4-Bromofluorobenzene (surr)	30	100	100	30	102	102	(85-114)	2.10	
Toluene-d8 (surr)	30	100	100	30	98.4	98	(89-112)	1.80	

Batch Information

Analytical Batch: **VMS18632**
Analytical Method: **SW8260C**
Instrument: **Agilent 7890-75MS**
Analyst: **FDR**

Prep Batch: **VXX33639**
Prep Method: **SW5030B**
Prep Date/Time: **12/18/2018 00:00**
Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

SGS North America Inc.
200 West Potter Drive Anchorage, AK 95518
t 907.562.2343 f 907.561.5301 www.us.sgs.com

Matrix Spike Summary

Original Sample ID: 1492249
MS Sample ID: 1492250 MS
MSD Sample ID: 1492251 MSD

Analysis Date: 12/19/2018 13:54
Analysis Date: 12/19/2018 16:11
Analysis Date: 12/19/2018 16:26
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1187094001, 1187094002, 1187094003

Results by **SW8260C**

		Matrix Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
1,1,1,2-Tetrachloroethane	0.250U	30.0	32.2	107	30.0	31.8	106	78-124	1.40	(< 20)
1,1,1-Trichloroethane	0.500U	30.0	33	110	30.0	32.9	110	74-131	0.36	(< 20)
1,1,2,2-Tetrachloroethane	0.250U	30.0	32.3	108	30.0	32.6	109	71-121	1.10	(< 20)
1,1,2-Trichloroethane	0.200U	30.0	32.6	109	30.0	31.9	106	80-119	2.10	(< 20)
1,1-Dichloroethane	0.500U	30.0	31.8	106	30.0	32.1	107	77-125	0.75	(< 20)
1,1-Dichloroethene	0.500U	30.0	32.5	108	30.0	32.5	108	71-131	0.18	(< 20)
1,1-Dichloropropene	0.500U	30.0	33.2	111	30.0	33.3	111	79-125	0.24	(< 20)
1,2,3-Trichlorobenzene	0.500U	30.0	30.4	101	30.0	32.1	107	69-129	5.40	(< 20)
1,2,3-Trichloropropane	0.500U	30.0	32.3	108	30.0	32.7	109	73-122	1.20	(< 20)
1,2,4-Trichlorobenzene	0.500U	30.0	30.2	101	30.0	31.3	104	69-130	3.50	(< 20)
1,2,4-Trimethylbenzene	0.500U	30.0	33.5	112	30.0	33.9	113	79-124	1.20	(< 20)
1,2-Dibromo-3-chloropropane	5.00U	30.0	32	107	30.0	32.2	107	62-128	0.59	(< 20)
1,2-Dibromoethane	0.0375U	30.0	30.6	102	30.0	30.4	101	77-121	0.69	(< 20)
1,2-Dichlorobenzene	0.500U	30.0	31.3	104	30.0	32.1	107	80-119	2.50	(< 20)
1,2-Dichloroethane	0.250U	30.0	31.9	106	30.0	32.0	107	73-128	0.38	(< 20)
1,2-Dichloropropane	0.500U	30.0	32.8	109	30.0	33.0	110	78-122	0.55	(< 20)
1,3,5-Trimethylbenzene	0.500U	30.0	33.1	110	30.0	33.8	113	75-124	2.30	(< 20)
1,3-Dichlorobenzene	0.500U	30.0	32	107	30.0	32.3	108	80-119	1.10	(< 20)
1,3-Dichloropropane	0.250U	30.0	32.6	109	30.0	32.4	108	80-119	0.80	(< 20)
1,4-Dichlorobenzene	0.250U	30.0	32	107	30.0	32.2	107	79-118	0.59	(< 20)
2,2-Dichloropropane	0.500U	30.0	31.7	106	30.0	32.2	107	60-139	1.30	(< 20)
2-Butanone (MEK)	5.00U	90.0	101	112	90.0	98.2	109	56-143	2.70	(< 20)
2-Chlorotoluene	0.500U	30.0	32.8	109	30.0	33.6	112	79-122	2.60	(< 20)
2-Hexanone	5.00U	90.0	102	114	90.0	100	111	57-139	2.10	(< 20)
4-Chlorotoluene	0.500U	30.0	32.2	107	30.0	33.8	113	78-122	4.80	(< 20)
4-Isopropyltoluene	0.500U	30.0	33.5	112	30.0	33.7	112	77-127	0.60	(< 20)
4-Methyl-2-pentanone (MIBK)	5.00U	90.0	103	114	90.0	102	113	67-130	0.82	(< 20)
Benzene	0.200U	30.0	32.1	107	30.0	33.6	112	79-120	4.50	(< 20)
Bromobenzene	0.500U	30.0	32.1	107	30.0	32.1	107	80-120	0.03	(< 20)
Bromochloromethane	0.500U	30.0	31.5	105	30.0	31.7	106	78-123	0.66	(< 20)
Bromodichloromethane	0.250U	30.0	32.5	108	30.0	32.8	109	79-125	0.86	(< 20)
Bromoform	0.500U	30.0	32.1	107	30.0	31.0	103	66-130	3.50	(< 20)
Bromomethane	2.50U	30.0	29.7	99	30.0	31.9	106	53-141	7.30	(< 20)
Carbon disulfide	5.00U	45.0	46.5	103	45.0	46.3	103	64-133	0.39	(< 20)
Carbon tetrachloride	0.500U	30.0	33.1	110	30.0	33.4	111	72-136	0.96	(< 20)
Chlorobenzene	0.250U	30.0	31.5	105	30.0	31.0	103	82-118	1.60	(< 20)
Chloroethane	0.500U	30.0	26.7	89	30.0	27.6	92	60-138	3.30	(< 20)

SGS North America Inc.
200 West Potter Drive Anchorage, AK 95518
t 907.562.2343 f 907.561.5301 www.us.sgs.com

Matrix Spike Summary

Original Sample ID: 1492249
MS Sample ID: 1492250 MS
MSD Sample ID: 1492251 MSD

Analysis Date: 12/19/2018 13:54
Analysis Date: 12/19/2018 16:11
Analysis Date: 12/19/2018 16:26
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1187094001, 1187094002, 1187094003

Results by **SW8260C**

		Matrix Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Chloroform	0.500U	30.0	30.1	100	30.0	30.4	101	79-124	0.83	(< 20)
Chloromethane	0.500U	30.0	30	100	30.0	30.9	103	50-139	2.80	(< 20)
cis-1,2-Dichloroethene	0.500U	30.0	31.7	106	30.0	32.1	107	78-123	1.20	(< 20)
cis-1,3-Dichloropropene	0.250U	30.0	32.5	108	30.0	33.1	110	75-124	2.00	(< 20)
Dibromochloromethane	0.250U	30.0	31.9	106	30.0	31.7	106	74-126	0.47	(< 20)
Dibromomethane	0.500U	30.0	32	107	30.0	32.3	108	79-123	0.72	(< 20)
Dichlorodifluoromethane	0.600J	30.0	31.4	103	30.0	31.4	103	32-152	0.10	(< 20)
Ethylbenzene	0.500U	30.0	34.1	114	30.0	33.5	112	79-121	1.90	(< 20)
Freon-113	5.00U	45.0	49.3	110	45.0	49.6	110	70-136	0.55	(< 20)
Hexachlorobutadiene	0.500U	30.0	29.3	98	30.0	31.1	104	66-134	6.10	(< 20)
Isopropylbenzene (Cumene)	0.500U	30.0	35	117	30.0	34.4	115	72-131	1.70	(< 20)
Methylene chloride	2.50U	30.0	31.4	105	30.0	31.5	105	74-124	0.22	(< 20)
Methyl-t-butyl ether	5.00U	45.0	48.7	108	45.0	48.7	108	71-124	0.08	(< 20)
Naphthalene	0.500U	30.0	32	107	30.0	34.0	113	61-128	6.30	(< 20)
n-Butylbenzene	0.500U	30.0	32.4	108	30.0	33.3	111	75-128	2.90	(< 20)
n-Propylbenzene	0.500U	30.0	33.6	112	30.0	34.4	115	76-126	2.50	(< 20)
o-Xylene	0.500U	30.0	33.5	112	30.0	33.3	111	78-122	0.54	(< 20)
P & M -Xylene	1.00U	60.0	67.9	113	60.0	67.3	112	80-121	0.99	(< 20)
sec-Butylbenzene	0.500U	30.0	33.5	112	30.0	34.2	114	77-126	2.00	(< 20)
Styrene	0.500U	30.0	33.9	113	30.0	34.4	115	78-123	1.40	(< 20)
tert-Butylbenzene	0.500U	30.0	32.9	110	30.0	34.1	114	78-124	3.70	(< 20)
Tetrachloroethene	0.500U	30.0	32.4	108	30.0	31.8	106	74-129	2.10	(< 20)
Toluene	0.500U	30.0	30.4	101	30.0	30.0	100	80-121	1.40	(< 20)
trans-1,2-Dichloroethene	0.500U	30.0	32.1	107	30.0	32.3	108	75-124	0.71	(< 20)
trans-1,3-Dichloropropene	0.500U	30.0	33.3	111	30.0	32.7	109	73-127	1.90	(< 20)
Trichloroethene	0.500U	30.0	32.2	107	30.0	32.6	109	79-123	1.00	(< 20)
Trichlorofluoromethane	5.75	30.0	35.6	100	30.0	36.3	102	65-141	1.90	(< 20)
Vinyl acetate	5.00U	30.0	31	103	30.0	30.8	103	54-146	0.87	(< 20)
Vinyl chloride	0.0750U	30.0	31.5	105	30.0	31.7	106	58-137	0.82	(< 20)
Xylenes (total)	1.50U	90.0	101	113	90.0	101	112	79-121	0.84	(< 20)
Surrogates										
1,2-Dichloroethane-D4 (surr)		30.0	30	100	30.0	29.7	99	81-118	1.10	
4-Bromofluorobenzene (surr)		30.0	30.3	101	30.0	29.9	100	85-114	1.20	
Toluene-d8 (surr)		30.0	30.5	102	30.0	29.5	98	89-112	3.30	

SGS North America Inc.
200 West Potter Drive Anchorage, AK 95518
t 907.562.2343 f 907.561.5301 www.us.sgs.com

Matrix Spike Summary

Original Sample ID: 1492249
MS Sample ID: 1492250 MS
MSD Sample ID: 1492251 MSD

QC for Samples: 1187094001, 1187094002, 1187094003

Analysis Date:
Analysis Date: 12/19/2018 16:11
Analysis Date: 12/19/2018 16:26
Matrix: Water (Surface, Eff., Ground)

Results by **SW8260C**

		Matrix Spike (%)			Spike Duplicate (%)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL

Batch Information

Analytical Batch: VMS18632
Analytical Method: SW8260C
Instrument: Agilent 7890-75MS
Analyst: FDR
Analytical Date/Time: 12/19/2018 4:11:00PM

Prep Batch: VXX33639
Prep Method: Volatiles Extraction 8240/8260 FULL
Prep Date/Time: 12/18/2018 12:00:00AM
Prep Initial Wt./Vol.: 5.00mL
Prep Extract Vol: 5.00mL

SGS North America Inc.
200 West Potter Drive Anchorage, AK 95518
t 907.562.2343 f 907.561.5301 www.us.sgs.com

Method Blank

Blank ID: MB for HBN 1789947 [VXX/33640]
Blank Lab ID: 1492254

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1187094004, 1187094005, 1187094006, 1187094007, 1187094008, 1187094009, 1187094010

Results by **SW8260C**

Parameter	Results	LOQ/CL	DL	Units
1,1,1,2-Tetrachloroethane	0.250U	0.500	0.150	ug/L
1,1,1-Trichloroethane	0.500U	1.00	0.310	ug/L
1,1,2,2-Tetrachloroethane	0.250U	0.500	0.150	ug/L
1,1,2-Trichloroethane	0.200U	0.400	0.120	ug/L
1,1-Dichloroethane	0.500U	1.00	0.310	ug/L
1,1-Dichloroethene	0.500U	1.00	0.310	ug/L
1,1-Dichloropropene	0.500U	1.00	0.310	ug/L
1,2,3-Trichlorobenzene	0.500U	1.00	0.310	ug/L
1,2,3-Trichloropropane	0.500U	1.00	0.310	ug/L
1,2,4-Trichlorobenzene	0.500U	1.00	0.310	ug/L
1,2,4-Trimethylbenzene	0.500U	1.00	0.310	ug/L
1,2-Dibromo-3-chloropropane	5.00U	10.0	3.10	ug/L
1,2-Dibromoethane	0.0375U	0.0750	0.0180	ug/L
1,2-Dichlorobenzene	0.500U	1.00	0.310	ug/L
1,2-Dichloroethane	0.250U	0.500	0.150	ug/L
1,2-Dichloropropane	0.500U	1.00	0.310	ug/L
1,3,5-Trimethylbenzene	0.500U	1.00	0.310	ug/L
1,3-Dichlorobenzene	0.500U	1.00	0.310	ug/L
1,3-Dichloropropane	0.250U	0.500	0.150	ug/L
1,4-Dichlorobenzene	0.250U	0.500	0.150	ug/L
2,2-Dichloropropane	0.500U	1.00	0.310	ug/L
2-Butanone (MEK)	5.00U	10.0	3.10	ug/L
2-Chlorotoluene	0.500U	1.00	0.310	ug/L
2-Hexanone	5.00U	10.0	3.10	ug/L
4-Chlorotoluene	0.500U	1.00	0.310	ug/L
4-Isopropyltoluene	0.500U	1.00	0.310	ug/L
4-Methyl-2-pentanone (MIBK)	5.00U	10.0	3.10	ug/L
Benzene	0.200U	0.400	0.120	ug/L
Bromobenzene	0.500U	1.00	0.310	ug/L
Bromochloromethane	0.500U	1.00	0.310	ug/L
Bromodichloromethane	0.250U	0.500	0.150	ug/L
Bromoform	0.500U	1.00	0.310	ug/L
Bromomethane	2.50U	5.00	1.50	ug/L
Carbon disulfide	5.00U	10.0	3.10	ug/L
Carbon tetrachloride	0.500U	1.00	0.310	ug/L
Chlorobenzene	0.250U	0.500	0.150	ug/L
Chloroethane	0.500U	1.00	0.310	ug/L
Chloroform	0.500U	1.00	0.310	ug/L

Method Blank

Blank ID: MB for HBN 1789947 [VXX/33640]
Blank Lab ID: 1492254

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1187094004, 1187094005, 1187094006, 1187094007, 1187094008, 1187094009, 1187094010

Results by **SW8260C**

Parameter	Results	LOQ/CL	DL	Units
Chloromethane	0.500U	1.00	0.310	ug/L
cis-1,2-Dichloroethene	0.500U	1.00	0.310	ug/L
cis-1,3-Dichloropropene	0.250U	0.500	0.150	ug/L
Dibromochloromethane	0.250U	0.500	0.150	ug/L
Dibromomethane	0.500U	1.00	0.310	ug/L
Dichlorodifluoromethane	0.500U	1.00	0.310	ug/L
Ethylbenzene	0.500U	1.00	0.310	ug/L
Freon-113	5.00U	10.0	3.10	ug/L
Hexachlorobutadiene	0.500U	1.00	0.310	ug/L
Isopropylbenzene (Cumene)	0.500U	1.00	0.310	ug/L
Methylene chloride	2.50U	5.00	1.00	ug/L
Methyl-t-butyl ether	5.00U	10.0	3.10	ug/L
Naphthalene	0.500U	1.00	0.310	ug/L
n-Butylbenzene	0.500U	1.00	0.310	ug/L
n-Propylbenzene	0.500U	1.00	0.310	ug/L
o-Xylene	0.500U	1.00	0.310	ug/L
P & M -Xylene	1.00U	2.00	0.620	ug/L
sec-Butylbenzene	0.500U	1.00	0.310	ug/L
Styrene	0.500U	1.00	0.310	ug/L
tert-Butylbenzene	0.500U	1.00	0.310	ug/L
Tetrachloroethene	0.500U	1.00	0.310	ug/L
Toluene	0.500U	1.00	0.310	ug/L
trans-1,2-Dichloroethene	0.500U	1.00	0.310	ug/L
trans-1,3-Dichloropropene	0.500U	1.00	0.310	ug/L
Trichloroethene	0.500U	1.00	0.310	ug/L
Trichlorofluoromethane	0.500U	1.00	0.310	ug/L
Vinyl acetate	5.00U	10.0	3.10	ug/L
Vinyl chloride	0.0750U	0.150	0.0500	ug/L
Xylenes (total)	1.50U	3.00	1.00	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	106	81-118		%
4-Bromofluorobenzene (surr)	100	85-114		%
Toluene-d8 (surr)	103	89-112		%

Method Blank

Blank ID: MB for HBN 1789947 [VXX/33640]
Blank Lab ID: 1492254

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1187094004, 1187094005, 1187094006, 1187094007, 1187094008, 1187094009, 1187094010

Results by **SW8260C**

Parameter	Results	LOQ/CL	DL	Units

Batch Information

Analytical Batch: VMS18633
Analytical Method: SW8260C
Instrument: Agilent 7890-75MS
Analyst: FDR
Analytical Date/Time: 12/19/2018 6:12:00PM

Prep Batch: VXX33640
Prep Method: SW5030B
Prep Date/Time: 12/19/2018 12:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1187094 [VXX33640]
Blank Spike Lab ID: 1492255
Date Analyzed: 12/19/2018 18:27

Spike Duplicate ID: LCSD for HBN 1187094 [VXX33640]
Spike Duplicate Lab ID: 1492256
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1187094004, 1187094005, 1187094006, 1187094007, 1187094008, 1187094009, 1187094010

Results by **SW8260C**

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
1,1,1,2-Tetrachloroethane	30	32.5	108	30	32.1	107	(78-124)	1.30	(< 20)
1,1,1-Trichloroethane	30	32.3	108	30	32.0	107	(74-131)	0.96	(< 20)
1,1,2,2-Tetrachloroethane	30	31.4	105	30	31.5	105	(71-121)	0.38	(< 20)
1,1,2-Trichloroethane	30	31.9	106	30	31.5	105	(80-119)	1.40	(< 20)
1,1-Dichloroethane	30	31.2	104	30	30.9	103	(77-125)	0.97	(< 20)
1,1-Dichloroethene	30	32.2	107	30	31.6	105	(71-131)	1.90	(< 20)
1,1-Dichloropropene	30	33.0	110	30	32.4	108	(79-125)	1.90	(< 20)
1,2,3-Trichlorobenzene	30	30.5	102	30	30.9	103	(69-129)	1.20	(< 20)
1,2,3-Trichloropropane	30	31.2	104	30	31.4	105	(73-122)	0.48	(< 20)
1,2,4-Trichlorobenzene	30	30.5	102	30	30.7	102	(69-130)	0.69	(< 20)
1,2,4-Trimethylbenzene	30	32.1	107	30	33.0	110	(79-124)	2.80	(< 20)
1,2-Dibromo-3-chloropropane	30	29.6	99	30	31.1	104	(62-128)	4.70	(< 20)
1,2-Dibromoethane	30	30.3	101	30	30.5	102	(77-121)	0.66	(< 20)
1,2-Dichlorobenzene	30	31.1	104	30	31.5	105	(80-119)	1.40	(< 20)
1,2-Dichloroethane	30	31.1	104	30	30.4	101	(73-128)	2.30	(< 20)
1,2-Dichloropropane	30	32.2	107	30	31.9	106	(78-122)	0.97	(< 20)
1,3,5-Trimethylbenzene	30	33.1	110	30	33.0	110	(75-124)	0.15	(< 20)
1,3-Dichlorobenzene	30	31.6	105	30	32.1	107	(80-119)	1.60	(< 20)
1,3-Dichloropropane	30	31.7	106	30	31.6	105	(80-119)	0.44	(< 20)
1,4-Dichlorobenzene	30	31.2	104	30	32.0	107	(79-118)	2.30	(< 20)
2,2-Dichloropropane	30	31.0	103	30	30.7	102	(60-139)	1.10	(< 20)
2-Butanone (MEK)	90	92.2	102	90	89.6	100	(56-143)	2.90	(< 20)
2-Chlorotoluene	30	32.3	108	30	32.8	109	(79-122)	1.50	(< 20)
2-Hexanone	90	95.6	106	90	92.8	103	(57-139)	2.90	(< 20)
4-Chlorotoluene	30	32.0	107	30	32.4	108	(78-122)	1.40	(< 20)
4-Isopropyltoluene	30	33.3	111	30	33.5	112	(77-127)	0.54	(< 20)
4-Methyl-2-pentanone (MIBK)	90	98.6	110	90	95.9	107	(67-130)	2.80	(< 20)
Benzene	30	32.4	108	30	31.4	105	(79-120)	3.10	(< 20)
Bromobenzene	30	31.4	105	30	31.8	106	(80-120)	1.30	(< 20)
Bromochloromethane	30	31.1	104	30	30.7	102	(78-123)	1.10	(< 20)
Bromodichloromethane	30	32.0	107	30	31.4	105	(79-125)	1.90	(< 20)
Bromoform	30	31.1	104	30	31.2	104	(66-130)	0.29	(< 20)
Bromomethane	30	30.6	102	30	31.2	104	(53-141)	1.90	(< 20)
Carbon disulfide	45	46.8	104	45	45.7	102	(64-133)	2.50	(< 20)

Blank Spike Summary

Blank Spike ID: LCS for HBN 1187094 [VXX33640]
Blank Spike Lab ID: 1492255
Date Analyzed: 12/19/2018 18:27

Spike Duplicate ID: LCSD for HBN 1187094 [VXX33640]
Spike Duplicate Lab ID: 1492256
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1187094004, 1187094005, 1187094006, 1187094007, 1187094008, 1187094009, 1187094010

Results by **SW8260C**

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Carbon tetrachloride	30	32.7	109	30	32.2	107	(72-136)	1.70	(< 20)
Chlorobenzene	30	30.6	102	30	30.4	101	(82-118)	0.59	(< 20)
Chloroethane	30	26.1	87	30	26.4	88	(60-138)	1.10	(< 20)
Chloroform	30	29.9	100	30	29.4	98	(79-124)	1.90	(< 20)
Chloromethane	30	28.6	95	30	30.0	100	(50-139)	5.00	(< 20)
cis-1,2-Dichloroethene	30	31.2	104	30	30.9	103	(78-123)	0.77	(< 20)
cis-1,3-Dichloropropene	30	32.2	107	30	31.8	106	(75-124)	1.30	(< 20)
Dibromochloromethane	30	31.2	104	30	31.5	105	(74-126)	0.86	(< 20)
Dibromomethane	30	31.5	105	30	31.1	104	(79-123)	1.40	(< 20)
Dichlorodifluoromethane	30	29.9	100	30	30.1	100	(32-152)	0.57	(< 20)
Ethylbenzene	30	32.9	110	30	32.4	108	(79-121)	1.70	(< 20)
Freon-113	45	49.1	109	45	48.0	107	(70-136)	2.20	(< 20)
Hexachlorobutadiene	30	32.1	107	30	32.4	108	(66-134)	1.20	(< 20)
Isopropylbenzene (Cumene)	30	34.0	113	30	32.6	109	(72-131)	4.50	(< 20)
Methylene chloride	30	30.7	102	30	30.5	102	(74-124)	0.88	(< 20)
Methyl-t-butyl ether	45	47.3	105	45	47.0	104	(71-124)	0.68	(< 20)
Naphthalene	30	30.9	103	30	31.9	106	(61-128)	3.50	(< 20)
n-Butylbenzene	30	33.2	111	30	33.6	112	(75-128)	1.30	(< 20)
n-Propylbenzene	30	33.1	110	30	33.0	110	(76-126)	0.30	(< 20)
o-Xylene	30	32.6	109	30	32.6	109	(78-122)	0.06	(< 20)
P & M -Xylene	60	65.4	109	60	65.1	109	(80-121)	0.43	(< 20)
sec-Butylbenzene	30	33.6	112	30	33.8	113	(77-126)	0.59	(< 20)
Styrene	30	33.5	112	30	32.6	109	(78-123)	2.90	(< 20)
tert-Butylbenzene	30	32.7	109	30	33.5	112	(78-124)	2.20	(< 20)
Tetrachloroethene	30	31.9	106	30	31.7	106	(74-129)	0.47	(< 20)
Toluene	30	29.9	100	30	29.6	99	(80-121)	0.91	(< 20)
trans-1,2-Dichloroethene	30	31.8	106	30	31.3	104	(75-124)	1.60	(< 20)
trans-1,3-Dichloropropene	30	32.2	107	30	32.3	108	(73-127)	0.28	(< 20)
Trichloroethene	30	32.0	107	30	31.4	105	(79-123)	1.90	(< 20)
Trichlorofluoromethane	30	29.9	100	30	29.5	98	(65-141)	1.30	(< 20)
Vinyl acetate	30	31.8	106	30	31.4	105	(54-146)	1.10	(< 20)
Vinyl chloride	30	30.6	102	30	30.6	102	(58-137)	0.00	(< 20)
Xylenes (total)	90	98.0	109	90	97.7	109	(79-121)	0.27	(< 20)

SGS North America Inc.
200 West Potter Drive Anchorage, AK 95518
t 907.562.2343 f 907.561.5301 www.us.sgs.com

Blank Spike Summary

Blank Spike ID: LCS for HBN 1187094 [VXX33640]
Blank Spike Lab ID: 1492255
Date Analyzed: 12/19/2018 18:27

Spike Duplicate ID: LCSD for HBN 1187094 [VXX33640]
Spike Duplicate Lab ID: 1492256
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1187094004, 1187094005, 1187094006, 1187094007, 1187094008, 1187094009, 1187094010

Results by **SW8260C**

	Blank Spike (%)			Spike Duplicate (%)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Surrogates									
1,2-Dichloroethane-D4 (surr)	30	98.7	99	30	97.4	97	(81-118)	1.30	
4-Bromofluorobenzene (surr)	30	99.8	100	30	99.7	100	(85-114)	0.10	
Toluene-d8 (surr)	30	99.9	100	30	100	100	(89-112)	0.40	

Batch Information

Analytical Batch: **VMS18633**
Analytical Method: **SW8260C**
Instrument: **Agilent 7890-75MS**
Analyst: **FDR**

Prep Batch: **VXX33640**
Prep Method: **SW5030B**
Prep Date/Time: **12/19/2018 00:00**
Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

Method Blank

Blank ID: MB for HBN 1789987 [VXX/33644]
Blank Lab ID: 1492383

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1187094009, 1187094011, 1187094012, 1187094013, 1187094014, 1187094017, 1187094020, 1187094021, 1187094022, 1187094023, 1187094024, 1187094025, 1187094026, 1187094027, 1187094028, 1187094029, 1187094030, 1187094031, 1187094032

Results by **SW8260C**

Parameter	Results	LOQ/CL	DL	Units
1,1,1,2-Tetrachloroethane	0.250U	0.500	0.150	ug/L
1,1,1-Trichloroethane	0.500U	1.00	0.310	ug/L
1,1,2,2-Tetrachloroethane	0.250U	0.500	0.150	ug/L
1,1,2-Trichloroethane	0.200U	0.400	0.120	ug/L
1,1-Dichloroethane	0.500U	1.00	0.310	ug/L
1,1-Dichloroethene	0.500U	1.00	0.310	ug/L
1,1-Dichloropropene	0.500U	1.00	0.310	ug/L
1,2,3-Trichlorobenzene	0.500U	1.00	0.310	ug/L
1,2,3-Trichloropropane	0.500U	1.00	0.310	ug/L
1,2,4-Trichlorobenzene	0.500U	1.00	0.310	ug/L
1,2,4-Trimethylbenzene	0.500U	1.00	0.310	ug/L
1,2-Dibromo-3-chloropropane	5.00U	10.0	3.10	ug/L
1,2-Dibromoethane	0.0375U	0.0750	0.0180	ug/L
1,2-Dichlorobenzene	0.500U	1.00	0.310	ug/L
1,2-Dichloroethane	0.250U	0.500	0.150	ug/L
1,2-Dichloropropane	0.500U	1.00	0.310	ug/L
1,3,5-Trimethylbenzene	0.500U	1.00	0.310	ug/L
1,3-Dichlorobenzene	0.500U	1.00	0.310	ug/L
1,3-Dichloropropane	0.250U	0.500	0.150	ug/L
1,4-Dichlorobenzene	0.250U	0.500	0.150	ug/L
2,2-Dichloropropane	0.500U	1.00	0.310	ug/L
2-Butanone (MEK)	5.00U	10.0	3.10	ug/L
2-Chlorotoluene	0.500U	1.00	0.310	ug/L
2-Hexanone	5.00U	10.0	3.10	ug/L
4-Chlorotoluene	0.500U	1.00	0.310	ug/L
4-Isopropyltoluene	0.500U	1.00	0.310	ug/L
4-Methyl-2-pentanone (MIBK)	5.00U	10.0	3.10	ug/L
Benzene	0.200U	0.400	0.120	ug/L
Bromobenzene	0.500U	1.00	0.310	ug/L
Bromochloromethane	0.500U	1.00	0.310	ug/L
Bromodichloromethane	0.250U	0.500	0.150	ug/L
Bromoform	0.500U	1.00	0.310	ug/L
Bromomethane	2.50U	5.00	1.50	ug/L
Carbon disulfide	5.00U	10.0	3.10	ug/L
Carbon tetrachloride	0.500U	1.00	0.310	ug/L
Chlorobenzene	0.250U	0.500	0.150	ug/L
Chloroethane	0.500U	1.00	0.310	ug/L
Chloroform	0.500U	1.00	0.310	ug/L

Method Blank

Blank ID: MB for HBN 1789987 [VXX/33644]
Blank Lab ID: 1492383

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1187094009, 1187094011, 1187094012, 1187094013, 1187094014, 1187094017, 1187094020, 1187094021, 1187094022, 1187094023, 1187094024, 1187094025, 1187094026, 1187094027, 1187094028, 1187094029, 1187094030, 1187094031, 1187094032

Results by **SW8260C**

Parameter	Results	LOQ/CL	DL	Units
Chloromethane	0.500U	1.00	0.310	ug/L
cis-1,2-Dichloroethene	0.500U	1.00	0.310	ug/L
cis-1,3-Dichloropropene	0.250U	0.500	0.150	ug/L
Dibromochloromethane	0.250U	0.500	0.150	ug/L
Dibromomethane	0.500U	1.00	0.310	ug/L
Dichlorodifluoromethane	0.500U	1.00	0.310	ug/L
Ethylbenzene	0.500U	1.00	0.310	ug/L
Freon-113	5.00U	10.0	3.10	ug/L
Hexachlorobutadiene	0.500U	1.00	0.310	ug/L
Isopropylbenzene (Cumene)	0.500U	1.00	0.310	ug/L
Methylene chloride	2.50U	5.00	1.00	ug/L
Methyl-t-butyl ether	5.00U	10.0	3.10	ug/L
Naphthalene	0.500U	1.00	0.310	ug/L
n-Butylbenzene	0.500U	1.00	0.310	ug/L
n-Propylbenzene	0.500U	1.00	0.310	ug/L
o-Xylene	0.500U	1.00	0.310	ug/L
P & M -Xylene	1.00U	2.00	0.620	ug/L
sec-Butylbenzene	0.500U	1.00	0.310	ug/L
Styrene	0.500U	1.00	0.310	ug/L
tert-Butylbenzene	0.500U	1.00	0.310	ug/L
Tetrachloroethene	0.500U	1.00	0.310	ug/L
Toluene	0.500U	1.00	0.310	ug/L
trans-1,2-Dichloroethene	0.500U	1.00	0.310	ug/L
trans-1,3-Dichloropropene	0.500U	1.00	0.310	ug/L
Trichloroethene	0.500U	1.00	0.310	ug/L
Trichlorofluoromethane	0.500U	1.00	0.310	ug/L
Vinyl acetate	5.00U	10.0	3.10	ug/L
Vinyl chloride	0.0750U	0.150	0.0500	ug/L
Xylenes (total)	1.50U	3.00	1.00	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	103	81-118		%
4-Bromofluorobenzene (surr)	101	85-114		%
Toluene-d8 (surr)	102	89-112		%

Method Blank

Blank ID: MB for HBN 1789987 [VXX/33644]
Blank Lab ID: 1492383

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1187094009, 1187094011, 1187094012, 1187094013, 1187094014, 1187094017, 1187094020, 1187094021, 1187094022, 1187094023, 1187094024, 1187094025, 1187094026, 1187094027, 1187094028, 1187094029, 1187094030, 1187094031, 1187094032

Results by **SW8260C**

Parameter	Results	LOQ/CL	DL	Units

Batch Information

Analytical Batch: VMS18635
Analytical Method: SW8260C
Instrument: Agilent 7890-75MS
Analyst: FDR
Analytical Date/Time: 12/20/2018 11:51:00AM

Prep Batch: VXX33644
Prep Method: SW5030B
Prep Date/Time: 12/20/2018 12:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1187094 [VXX33644]
Blank Spike Lab ID: 1492384
Date Analyzed: 12/20/2018 12:06

Spike Duplicate ID: LCSD for HBN 1187094 [VXX33644]
Spike Duplicate Lab ID: 1492385
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1187094009, 1187094011, 1187094012, 1187094013, 1187094014, 1187094017, 1187094020, 1187094021, 1187094022, 1187094023, 1187094024, 1187094025, 1187094026, 1187094027, 1187094028, 1187094029, 1187094030, 1187094031, 1187094032

Results by **SW8260C**

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
1,1,1,2-Tetrachloroethane	30	31.3	104	30	31.0	103	(78-124)	0.96	(< 20)
1,1,1-Trichloroethane	30	31.5	105	30	31.4	105	(74-131)	0.29	(< 20)
1,1,2,2-Tetrachloroethane	30	30.2	101	30	30.8	103	(71-121)	1.90	(< 20)
1,1,2-Trichloroethane	30	30.8	103	30	31.5	105	(80-119)	2.10	(< 20)
1,1-Dichloroethane	30	30.9	103	30	30.7	102	(77-125)	0.81	(< 20)
1,1-Dichloroethene	30	31.1	104	30	31.5	105	(71-131)	1.20	(< 20)
1,1-Dichloropropene	30	32.2	107	30	32.2	107	(79-125)	0.06	(< 20)
1,2,3-Trichlorobenzene	30	31.9	106	30	32.3	108	(69-129)	1.40	(< 20)
1,2,3-Trichloropropane	30	29.8	99	30	30.7	102	(73-122)	3.10	(< 20)
1,2,4-Trichlorobenzene	30	32.1	107	30	32.6	109	(69-130)	1.80	(< 20)
1,2,4-Trimethylbenzene	30	32.2	107	30	32.5	108	(79-124)	0.84	(< 20)
1,2-Dibromo-3-chloropropane	30	30.2	101	30	29.9	100	(62-128)	1.10	(< 20)
1,2-Dibromoethane	30	29.6	99	30	30.1	100	(77-121)	1.80	(< 20)
1,2-Dichlorobenzene	30	30.7	102	30	31.0	103	(80-119)	0.97	(< 20)
1,2-Dichloroethane	30	29.9	100	30	30.0	100	(73-128)	0.17	(< 20)
1,2-Dichloropropane	30	31.9	106	30	31.7	106	(78-122)	0.88	(< 20)
1,3,5-Trimethylbenzene	30	32.5	108	30	33.0	110	(75-124)	1.50	(< 20)
1,3-Dichlorobenzene	30	31.1	104	30	31.7	106	(80-119)	2.00	(< 20)
1,3-Dichloropropane	30	31.4	105	30	31.8	106	(80-119)	1.60	(< 20)
1,4-Dichlorobenzene	30	30.6	102	30	31.7	106	(79-118)	3.40	(< 20)
2,2-Dichloropropane	30	32.2	107	30	31.8	106	(60-139)	1.10	(< 20)
2-Butanone (MEK)	90	90.3	100	90	85.6	95	(56-143)	5.30	(< 20)
2-Chlorotoluene	30	31.8	106	30	32.4	108	(79-122)	1.80	(< 20)
2-Hexanone	90	91.8	102	90	89.6	100	(57-139)	2.50	(< 20)
4-Chlorotoluene	30	31.7	106	30	32.0	107	(78-122)	1.00	(< 20)
4-Isopropyltoluene	30	33.0	110	30	33.1	110	(77-127)	0.57	(< 20)
4-Methyl-2-pentanone (MIBK)	90	97.8	109	90	94.7	105	(67-130)	3.20	(< 20)
Benzene	30	31.4	105	30	31.0	103	(79-120)	1.20	(< 20)
Bromobenzene	30	30.9	103	30	31.5	105	(80-120)	2.10	(< 20)
Bromochloromethane	30	29.9	100	30	30.1	100	(78-123)	0.73	(< 20)
Bromodichloromethane	30	31.0	103	30	30.9	103	(79-125)	0.32	(< 20)
Bromoform	30	30.4	101	30	30.8	103	(66-130)	1.30	(< 20)
Bromomethane	30	28.8	96	30	32.3	108	(53-141)	11.40	(< 20)
Carbon disulfide	45	46.1	102	45	46.6	104	(64-133)	1.20	(< 20)

Blank Spike Summary

Blank Spike ID: LCS for HBN 1187094 [VXX33644]
Blank Spike Lab ID: 1492384
Date Analyzed: 12/20/2018 12:06

Spike Duplicate ID: LCSD for HBN 1187094 [VXX33644]
Spike Duplicate Lab ID: 1492385
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1187094009, 1187094011, 1187094012, 1187094013, 1187094014, 1187094017, 1187094020, 1187094021, 1187094022, 1187094023, 1187094024, 1187094025, 1187094026, 1187094027, 1187094028, 1187094029, 1187094030, 1187094031, 1187094032

Results by **SW8260C**

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Carbon tetrachloride	30	31.9	106	30	31.7	106	(72-136)	0.85	(< 20)
Chlorobenzene	30	29.6	99	30	29.7	99	(82-118)	0.07	(< 20)
Chloroethane	30	27.0	90	30	26.9	90	(60-138)	0.19	(< 20)
Chloroform	30	28.9	96	30	28.8	96	(79-124)	0.28	(< 20)
Chloromethane	30	33.4	111	30	35.2	117	(50-139)	5.50	(< 20)
cis-1,2-Dichloroethene	30	30.4	101	30	30.5	102	(78-123)	0.43	(< 20)
cis-1,3-Dichloropropene	30	31.9	106	30	32.4	108	(75-124)	1.50	(< 20)
Dibromochloromethane	30	30.8	103	30	31.3	104	(74-126)	1.60	(< 20)
Dibromomethane	30	30.4	101	30	30.6	102	(79-123)	0.75	(< 20)
Dichlorodifluoromethane	30	35.9	120	30	36.8	123	(32-152)	2.50	(< 20)
Ethylbenzene	30	32.0	107	30	31.5	105	(79-121)	1.70	(< 20)
Freon-113	45	47.9	106	45	48.3	107	(70-136)	0.96	(< 20)
Hexachlorobutadiene	30	33.2	111	30	34.5	115	(66-134)	3.80	(< 20)
Isopropylbenzene (Cumene)	30	32.4	108	30	32.8	109	(72-131)	1.20	(< 20)
Methylene chloride	30	30.2	101	30	30.4	101	(74-124)	0.92	(< 20)
Methyl-t-butyl ether	45	47.1	105	45	47.4	105	(71-124)	0.51	(< 20)
Naphthalene	30	31.9	106	30	33.4	111	(61-128)	4.60	(< 20)
n-Butylbenzene	30	33.0	110	30	33.5	112	(75-128)	1.60	(< 20)
n-Propylbenzene	30	32.6	109	30	32.7	109	(76-126)	0.37	(< 20)
o-Xylene	30	31.8	106	30	31.9	106	(78-122)	0.38	(< 20)
P & M -Xylene	60	62.9	105	60	63.7	106	(80-121)	1.20	(< 20)
sec-Butylbenzene	30	33.6	112	30	33.1	110	(77-126)	1.70	(< 20)
Styrene	30	31.7	106	30	31.9	106	(78-123)	0.50	(< 20)
tert-Butylbenzene	30	32.7	109	30	33.0	110	(78-124)	0.76	(< 20)
Tetrachloroethene	30	31.9	106	30	31.5	105	(74-129)	1.20	(< 20)
Toluene	30	29.2	97	30	29.3	98	(80-121)	0.38	(< 20)
trans-1,2-Dichloroethene	30	30.8	103	30	31.1	104	(75-124)	1.10	(< 20)
trans-1,3-Dichloropropene	30	31.9	106	30	32.6	109	(73-127)	2.00	(< 20)
Trichloroethene	30	31.2	104	30	30.9	103	(79-123)	1.20	(< 20)
Trichlorofluoromethane	30	29.7	99	30	29.7	99	(65-141)	0.24	(< 20)
Vinyl acetate	30	32.0	107	30	32.4	108	(54-146)	1.30	(< 20)
Vinyl chloride	30	32.9	110	30	34.0	113	(58-137)	3.20	(< 20)
Xylenes (total)	90	94.7	105	90	95.6	106	(79-121)	0.96	(< 20)

Blank Spike Summary

Blank Spike ID: LCS for HBN 1187094 [VXX33644]
Blank Spike Lab ID: 1492384
Date Analyzed: 12/20/2018 12:06

Spike Duplicate ID: LCSD for HBN 1187094 [VXX33644]
Spike Duplicate Lab ID: 1492385
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1187094009, 1187094011, 1187094012, 1187094013, 1187094014, 1187094017, 1187094020, 1187094021, 1187094022, 1187094023, 1187094024, 1187094025, 1187094026, 1187094027, 1187094028, 1187094029, 1187094030, 1187094031, 1187094032

Results by **SW8260C**

	Blank Spike (%)			Spike Duplicate (%)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Surrogates									
1,2-Dichloroethane-D4 (surr)	30	96.3	96	30	97	97	(81-118)	0.72	
4-Bromofluorobenzene (surr)	30	99.5	100	30	99.5	100	(85-114)	0.03	
Toluene-d8 (surr)	30	99.7	100	30	102	102	(89-112)	2.30	

Batch Information

Analytical Batch: **VMS18635**
Analytical Method: **SW8260C**
Instrument: **Agilent 7890-75MS**
Analyst: **FDR**

Prep Batch: **VXX33644**
Prep Method: **SW5030B**
Prep Date/Time: **12/20/2018 00:00**
Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

SGS North America Inc.
200 West Potter Drive Anchorage, AK 95518
t 907.562.2343 f 907.561.5301 www.us.sgs.com

Matrix Spike Summary

Original Sample ID: 1492386
MS Sample ID: 1492387 MS
MSD Sample ID: 1492388 MSD

Analysis Date: 12/20/2018 17:05
Analysis Date: 12/20/2018 18:36
Analysis Date: 12/20/2018 18:51
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1187094009, 1187094011, 1187094012, 1187094013, 1187094014, 1187094017, 1187094020, 1187094021, 1187094022, 1187094023, 1187094024, 1187094025, 1187094026, 1187094027, 1187094028, 1187094029, 1187094030, 1187094031, 1187094032

Results by **SW8260C**

		Matrix Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
1,1,1,2-Tetrachloroethane	12.5U	1500	1620	108	1500	1620	108	78-124	0.15	(< 20)
1,1,1-Trichloroethane	25.0U	1500	1630	109	1500	1660	110	74-131	1.60	(< 20)
1,1,2,2-Tetrachloroethane	12.5U	1500	1540	103	1500	1630	109	71-121	5.50	(< 20)
1,1,2-Trichloroethane	10.0U	1500	1630	109	1500	1620	108	80-119	0.43	(< 20)
1,1-Dichloroethane	25.0U	1500	1610	108	1500	1620	108	77-125	0.59	(< 20)
1,1-Dichloroethene	25.0U	1500	1680	112	1500	1690	113	71-131	0.56	(< 20)
1,1-Dichloropropene	25.0U	1500	1660	111	1500	1680	112	79-125	0.93	(< 20)
1,2,3-Trichlorobenzene	25.0U	1500	1660	111	1500	1770	118	69-129	6.20	(< 20)
1,2,3-Trichloropropane	25.0U	1500	1550	103	1500	1630	109	73-122	4.80	(< 20)
1,2,4-Trichlorobenzene	25.0U	1500	1660	111	1500	1710	114	69-130	3.20	(< 20)
1,2,4-Trimethylbenzene	25.0U	1500	1650	110	1500	1680	112	79-124	1.90	(< 20)
1,2-Dibromo-3-chloropropane	250U	1500	1530	102	1500	1650	110	62-128	7.00	(< 20)
1,2-Dibromoethane	1.88U	1500	1560	104	1500	1570	105	77-121	0.80	(< 20)
1,2-Dichlorobenzene	25.0U	1500	1590	106	1500	1620	108	80-119	2.00	(< 20)
1,2-Dichloroethane	12.5U	1500	1520	101	1500	1560	104	73-128	2.60	(< 20)
1,2-Dichloropropane	25.0U	1500	1650	110	1500	1680	112	78-122	1.50	(< 20)
1,3,5-Trimethylbenzene	25.0U	1500	1670	112	1500	1710	114	75-124	2.00	(< 20)
1,3-Dichlorobenzene	25.0U	1500	1620	108	1500	1650	110	80-119	2.10	(< 20)
1,3-Dichloropropane	12.5U	1500	1640	109	1500	1630	109	80-119	0.77	(< 20)
1,4-Dichlorobenzene	12.5U	1500	1610	107	1500	1650	110	79-118	2.90	(< 20)
2,2-Dichloropropane	25.0U	1500	1520	101	1500	1560	104	60-139	2.50	(< 20)
2-Butanone (MEK)	1130	4500	5570	99	4500	5910	106	56-143	5.90	(< 20)
2-Chlorotoluene	25.0U	1500	1630	109	1500	1640	110	79-122	0.58	(< 20)
2-Hexanone	250U	4500	4550	101	4500	4850	108	57-139	6.30	(< 20)
4-Chlorotoluene	25.0U	1500	1630	109	1500	1650	110	78-122	1.20	(< 20)
4-Isopropyltoluene	25.0U	1500	1640	109	1500	1720	114	77-127	4.40	(< 20)
4-Methyl-2-pentanone (MIBK)	250U	4500	4910	109	4500	5260	117	67-130	6.90	(< 20)
Benzene	10.0U	1500	1660	111	1500	1650	110	79-120	1.00	(< 20)
Bromobenzene	25.0U	1500	1620	108	1500	1670	111	80-120	2.90	(< 20)
Bromochloromethane	25.0U	1500	1600	106	1500	1640	109	78-123	2.50	(< 20)
Bromodichloromethane	12.5U	1500	1610	107	1500	1650	110	79-125	2.70	(< 20)
Bromoform	25.0U	1500	1550	103	1500	1600	107	66-130	3.30	(< 20)
Bromomethane	125U	1500	1470	98	1500	1640	109	53-141	10.90	(< 20)
Carbon disulfide	250U	2250	2400	107	2250	2450	109	64-133	1.90	(< 20)
Carbon tetrachloride	25.0U	1500	1650	110	1500	1680	112	72-136	1.80	(< 20)
Chlorobenzene	12.5U	1500	1570	105	1500	1570	105	82-118	0.32	(< 20)
Chloroethane	25.0U	1500	1400	94	1500	1430	95	60-138	1.80	(< 20)

SGS North America Inc.
200 West Potter Drive Anchorage, AK 95518
t 907.562.2343 f 907.561.5301 www.us.sgs.com

Matrix Spike Summary

Original Sample ID: 1492386
MS Sample ID: 1492387 MS
MSD Sample ID: 1492388 MSD

Analysis Date: 12/20/2018 17:05
Analysis Date: 12/20/2018 18:36
Analysis Date: 12/20/2018 18:51
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1187094009, 1187094011, 1187094012, 1187094013, 1187094014, 1187094017, 1187094020, 1187094021, 1187094022, 1187094023, 1187094024, 1187094025, 1187094026, 1187094027, 1187094028, 1187094029, 1187094030, 1187094031, 1187094032

Results by **SW8260C**

		Matrix Spike (ug/L)				Spike Duplicate (ug/L)					
Parameter	Sample	Spike	Result	Rec (%)		Spike	Result	Rec (%)		CL	RPD (%)	RPD CL
Chloroform	25.0U	1500	1500	100		1500	1530	102		79-124	1.90	(< 20)
Chloromethane	25.0U	1500	1890	126		1500	1920	128		50-139	1.50	(< 20)
cis-1,2-Dichloroethene	5070	1500	5450	25	*	1500	5560	33	*	78-123	2.10	(< 20)
cis-1,3-Dichloropropene	12.5U	1500	1640	109		1500	1690	113		75-124	2.90	(< 20)
Dibromochloromethane	12.5U	1500	1610	107		1500	1610	107		74-126	0.03	(< 20)
Dibromomethane	25.0U	1500	1590	106		1500	1640	110		79-123	3.20	(< 20)
Dichlorodifluoromethane	25.0U	1500	1810	120		1500	1820	121		32-152	0.80	(< 20)
Ethylbenzene	25.0U	1500	1700	113		1500	1670	112		79-121	1.30	(< 20)
Freon-113	250U	2250	2470	110		2250	2570	114		70-136	4.00	(< 20)
Hexachlorobutadiene	25.0U	1500	1670	111		1500	1650	110		66-134	0.69	(< 20)
Isopropylbenzene (Cumene)	25.0U	1500	1710	114		1500	1690	113		72-131	1.60	(< 20)
Methylene chloride	125U	1500	1610	107		1500	1630	109		74-124	1.70	(< 20)
Methyl-t-butyl ether	250U	2250	2440	109		2250	2510	112		71-124	2.80	(< 20)
Naphthalene	25.0U	1500	1660	111		1500	1800	120		61-128	8.10	(< 20)
n-Butylbenzene	25.0U	1500	1630	109		1500	1660	110		75-128	1.50	(< 20)
n-Propylbenzene	25.0U	1500	1660	111		1500	1640	109		76-126	1.20	(< 20)
o-Xylene	25.0U	1500	1670	112		1500	1660	111		78-122	0.75	(< 20)
P & M -Xylene	50.0U	3000	3330	111		3000	3330	111		80-121	0.14	(< 20)
sec-Butylbenzene	25.0U	1500	1690	113		1500	1720	115		77-126	2.00	(< 20)
Styrene	25.0U	1500	1730	115		1500	1730	115		78-123	0.32	(< 20)
tert-Butylbenzene	25.0U	1500	1680	112		1500	1710	114		78-124	2.20	(< 20)
Tetrachloroethene	22.5J	1500	1690	111		1500	1670	110		74-129	1.30	(< 20)
Toluene	25.0U	1500	1530	102		1500	1510	101		80-121	1.20	(< 20)
trans-1,2-Dichloroethene	38.5J	1500	1670	109		1500	1690	110		75-124	1.20	(< 20)
trans-1,3-Dichloropropene	25.0U	1500	1630	108		1500	1620	108		73-127	0.12	(< 20)
Trichloroethene	25.0U	1500	1640	110		1500	1660	111		79-123	1.20	(< 20)
Trichlorofluoromethane	25.0U	1500	1550	103		1500	1600	107		65-141	3.10	(< 20)
Vinyl acetate	250U	1500	1590	106		1500	1670	111		54-146	4.90	(< 20)
Vinyl chloride	1350	1500	2910	104		1500	3020	111		58-137	3.70	(< 20)
Xylenes (total)	75.0U	4500	5010	111		4500	4990	111		79-121	0.34	(< 20)
Surrogates												
1,2-Dichloroethane-D4 (surr)		1500	1400	94		1500	1430	95		81-118	1.90	
4-Bromofluorobenzene (surr)		1500	1490	99		1500	1520	101		85-114	1.80	
Toluene-d8 (surr)		1500	1520	101		1500	1500	100		89-112	1.20	

SGS North America Inc.
200 West Potter Drive Anchorage, AK 95518
t 907.562.2343 f 907.561.5301 www.us.sgs.com
Member of SGS Group

Matrix Spike Summary

Original Sample ID: 1492386
MS Sample ID: 1492387 MS
MSD Sample ID: 1492388 MSD

Analysis Date:
Analysis Date: 12/20/2018 18:36
Analysis Date: 12/20/2018 18:51
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1187094009, 1187094011, 1187094012, 1187094013, 1187094014, 1187094017, 1187094020, 1187094021, 1187094022, 1187094023, 1187094024, 1187094025, 1187094026, 1187094027, 1187094028, 1187094029, 1187094030, 1187094031, 1187094032

Results by **SW8260C**

		Matrix Spike (%)			Spike Duplicate (%)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL

Batch Information

Analytical Batch: VMS18635
Analytical Method: SW8260C
Instrument: Agilent 7890-75MS
Analyst: FDR
Analytical Date/Time: 12/20/2018 6:36:00PM

Prep Batch: VXX33644
Prep Method: Volatiles Extraction 8240/8260 FULL
Prep Date/Time: 12/20/2018 12:00:00AM
Prep Initial Wt./Vol.: 5.00mL
Prep Extract Vol: 5.00mL

Billable Matrix Spike Summary

Original Sample ID: 1187094014
MS Sample ID: 1187094015 BMS
MSD Sample ID: 1187094016 BMSD

Analysis Date: 12/20/2018 17:20
Analysis Date: 12/20/2018 19:06
Analysis Date: 12/20/2018 19:21
Matrix: Water (Surface, Eff., Ground)

QC for Samples:

Results by **SW8260C**

		Matrix Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
1,1,1,2-Tetrachloroethane	25.0U	3000	3260	109	3000	3160	105	78-124	3.10	(< 20)
1,1,1-Trichloroethane	50.0U	3000	3280	109	3000	3240	108	74-131	1.40	(< 20)
1,1,2,2-Tetrachloroethane	25.0U	3000	3120	104	3000	3090	103	71-121	1.10	(< 20)
1,1,2-Trichloroethane	20.0U	3000	3190	106	3000	3170	106	80-119	0.47	(< 20)
1,1-Dichloroethane	50.0U	3000	3220	107	3000	3170	106	77-125	1.30	(< 20)
1,1-Dichloroethene	31.0J	3000	3510	116	3000	3460	114	71-131	1.50	(< 20)
1,1-Dichloropropene	50.0U	3000	3370	112	3000	3310	110	79-125	1.70	(< 20)
1,2,3-Trichlorobenzene	50.0U	3000	3500	117	3000	3460	115	69-129	1.10	(< 20)
1,2,3-Trichloropropane	50.0U	3000	3160	105	3000	3140	105	73-122	0.57	(< 20)
1,2,4-Trichlorobenzene	50.0U	3000	3380	113	3000	3420	114	69-130	1.20	(< 20)
1,2,4-Trimethylbenzene	50.0U	3000	3400	113	3000	3290	110	79-124	3.40	(< 20)
1,2-Dibromo-3-chloropropane	500U	3000	3150	105	3000	3230	108	62-128	2.60	(< 20)
1,2-Dibromoethane	3.75U	3000	3110	104	3000	3120	104	77-121	0.19	(< 20)
1,2-Dichlorobenzene	50.0U	3000	3230	108	3000	3150	105	80-119	2.60	(< 20)
1,2-Dichloroethane	25.0U	3000	3020	101	3000	2960	99	73-128	1.90	(< 20)
1,2-Dichloropropane	65.0J	3000	3410	111	3000	3330	109	78-122	2.40	(< 20)
1,3,5-Trimethylbenzene	50.0U	3000	3400	113	3000	3290	110	75-124	3.20	(< 20)
1,3-Dichlorobenzene	50.0U	3000	3310	110	3000	3180	106	80-119	4.20	(< 20)
1,3-Dichloropropane	25.0U	3000	3230	108	3000	3200	107	80-119	0.90	(< 20)
1,4-Dichlorobenzene	25.0U	3000	3280	109	3000	3180	106	79-118	3.30	(< 20)
2,2-Dichloropropane	50.0U	3000	3000	100	3000	2950	98	60-139	1.80	(< 20)
2-Butanone (MEK)	1930	9000	10800	99	9000	11800	109	56-143	8.10	(< 20)
2-Chlorotoluene	50.0U	3000	3340	111	3000	3160	105	79-122	5.70	(< 20)
2-Hexanone	500U	9000	9530	106	9000	10000	111	57-139	4.90	(< 20)
4-Chlorotoluene	50.0U	3000	3320	111	3000	3190	106	78-122	4.00	(< 20)
4-Isopropyltoluene	50.0U	3000	3450	115	3000	3380	113	77-127	2.30	(< 20)
4-Methyl-2-pentanone (MIBK)	500U	9000	9870	110	9000	10200	113	67-130	3.10	(< 20)
Benzene	85.0	3000	3410	111	3000	3310	107	79-120	3.10	(< 20)
Bromobenzene	50.0U	3000	3300	110	3000	3180	106	80-120	3.90	(< 20)
Bromochloromethane	50.0U	3000	3160	105	3000	3090	103	78-123	2.20	(< 20)
Bromodichloromethane	25.0U	3000	3200	107	3000	3130	104	79-125	2.20	(< 20)
Bromoform	50.0U	3000	3150	105	3000	3150	105	66-130	0.00	(< 20)
Bromomethane	250U	3000	3470	116	3000	3540	118	53-141	2.00	(< 20)
Carbon disulfide	500U	4500	5100	113	4500	5010	111	64-133	1.80	(< 20)
Carbon tetrachloride	50.0U	3000	3330	111	3000	3270	109	72-136	1.50	(< 20)
Chlorobenzene	25.0U	3000	3170	106	3000	3060	102	82-118	3.30	(< 20)
Chloroethane	50.0U	3000	2910	97	3000	2820	94	60-138	3.30	(< 20)

SGS North America Inc.
200 West Potter Drive Anchorage, AK 95518
t 907.562.2343 f 907.561.5301 www.us.sgs.com

Billable Matrix Spike Summary

Original Sample ID: 1187094014
MS Sample ID: 1187094015 BMS
MSD Sample ID: 1187094016 BMSD

Analysis Date: 12/20/2018 17:20
Analysis Date: 12/20/2018 19:06
Analysis Date: 12/20/2018 19:21
Matrix: Water (Surface, Eff., Ground)

QC for Samples:

Results by **SW8260C**

		Matrix Spike (ug/L)				Spike Duplicate (ug/L)					
Parameter	Sample	Spike	Result	Rec (%)		Spike	Result	Rec (%)		CL	RPD (%)	RPD CL
Chloroform	50.0U	3000	2980	99		3000	2910	97		79-124	2.40	(< 20)
Chloromethane	50.0U	3000	3850	128		3000	3790	126		50-139	1.40	(< 20)
cis-1,3-Dichloropropene	25.0U	3000	3350	112		3000	3290	110		75-124	1.80	(< 20)
Dibromochloromethane	25.0U	3000	3200	107		3000	3150	105		74-126	1.40	(< 20)
Dibromomethane	50.0U	3000	3180	106		3000	3130	104		79-123	1.50	(< 20)
Dichlorodifluoromethane	50.0U	3000	3700	123		3000	3670	122		32-152	0.98	(< 20)
Ethylbenzene	50.0U	3000	3430	114		3000	3290	110		79-121	4.30	(< 20)
Freon-113	500U	4500	5210	116		4500	5090	113		70-136	2.40	(< 20)
Hexachlorobutadiene	50.0U	3000	3430	114		3000	3460	115		66-134	0.93	(< 20)
Isopropylbenzene (Cumene)	50.0U	3000	3460	115		3000	3400	113		72-131	2.00	(< 20)
Methylene chloride	250U	3000	3220	107		3000	3150	105		74-124	2.30	(< 20)
Methyl-t-butyl ether	500U	4500	4820	107		4500	4840	108		71-124	0.50	(< 20)
Naphthalene	50.0U	3000	3610	120		3000	3630	121		61-128	0.66	(< 20)
n-Butylbenzene	50.0U	3000	3380	113		3000	3310	110		75-128	2.00	(< 20)
n-Propylbenzene	50.0U	3000	3390	113		3000	3270	109		76-126	3.70	(< 20)
o-Xylene	50.0U	3000	3330	111		3000	3290	110		78-122	1.20	(< 20)
P & M -Xylene	100U	6000	6740	112		6000	6600	110		80-121	2.20	(< 20)
sec-Butylbenzene	50.0U	3000	3390	113		3000	3380	113		77-126	0.44	(< 20)
Styrene	50.0U	3000	3480	116		3000	3340	111		78-123	4.00	(< 20)
tert-Butylbenzene	50.0U	3000	3470	116		3000	3350	112		78-124	3.40	(< 20)
Tetrachloroethene	10600	3000	14900	144	*	3000	14700	137	*	74-129	1.30	(< 20)
Toluene	34.0J	3000	3120	103		3000	3000	99		80-121	3.80	(< 20)
trans-1,2-Dichloroethene	477	3000	3800	111		3000	3750	109		75-124	1.40	(< 20)
trans-1,3-Dichloropropene	50.0U	3000	3210	107		3000	3160	105		73-127	1.40	(< 20)
Trichloroethene	2550	3000	6010	115		3000	5860	110		79-123	2.60	(< 20)
Trichlorofluoromethane	50.0U	3000	3260	109		3000	3210	107		65-141	1.40	(< 20)
Vinyl acetate	500U	3000	3230	108		3000	3270	109		54-146	1.10	(< 20)
Vinyl chloride	676	3000	4300	121		3000	4380	123		58-137	1.70	(< 20)
Xylenes (total)	150U	9000	10100	112		9000	9880	110		79-121	1.90	(< 20)
Surrogates												
1,2-Dichloroethane-D4 (surr)		3000	2780	93		3000	2800	93		81-118	0.90	
4-Bromofluorobenzene (surr)		3000	2980	100		3000	2950	99		85-114	1.00	
Toluene-d8 (surr)		3000	3030	101		3000	3030	101		89-112	0.07	

Billable Matrix Spike Summary

Original Sample ID: 1187094014
MS Sample ID: 1187094015 BMS
MSD Sample ID: 1187094016 BMSD

QC for Samples:

Analysis Date:
Analysis Date: 12/20/2018 19:06
Analysis Date: 12/20/2018 19:21
Matrix: Water (Surface, Eff., Ground)

Results by **SW8260C**

		Matrix Spike (%)			Spike Duplicate (%)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL

Batch Information

Analytical Batch: VMS18635
Analytical Method: SW8260C
Instrument: Agilent 7890-75MS
Analyst: FDR
Analytical Date/Time: 12/20/2018 7:06:00PM

Prep Batch: VXX33644
Prep Method: Volatiles Extraction 8240/8260 FULL
Prep Date/Time: 12/20/2018 12:00:00AM
Prep Initial Wt./Vol.: 5.00mL
Prep Extract Vol: 5.00mL

Billable Matrix Spike Summary

Original Sample ID: 1187094017
MS Sample ID: 1187094018 BMS
MSD Sample ID: 1187094019 BMSD

Analysis Date: 12/20/2018 17:05
Analysis Date: 12/20/2018 18:36
Analysis Date: 12/20/2018 18:51
Matrix: Water (Surface, Eff., Ground)

QC for Samples:

Results by **SW8260C**

		Matrix Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
1,1,1,2-Tetrachloroethane	12.5U	1500	1620	108	1500	1620	108	78-124	0.15	(< 20)
1,1,1-Trichloroethane	25.0U	1500	1630	109	1500	1660	110	74-131	1.60	(< 20)
1,1,2,2-Tetrachloroethane	12.5U	1500	1540	103	1500	1630	109	71-121	5.50	(< 20)
1,1,2-Trichloroethane	10.0U	1500	1630	109	1500	1620	108	80-119	0.43	(< 20)
1,1-Dichloroethane	25.0U	1500	1610	108	1500	1620	108	77-125	0.59	(< 20)
1,1-Dichloroethene	25.0U	1500	1680	112	1500	1690	113	71-131	0.56	(< 20)
1,1-Dichloropropene	25.0U	1500	1660	111	1500	1680	112	79-125	0.93	(< 20)
1,2,3-Trichlorobenzene	25.0U	1500	1660	111	1500	1770	118	69-129	6.20	(< 20)
1,2,3-Trichloropropane	25.0U	1500	1550	103	1500	1630	109	73-122	4.80	(< 20)
1,2,4-Trichlorobenzene	25.0U	1500	1660	111	1500	1710	114	69-130	3.20	(< 20)
1,2,4-Trimethylbenzene	25.0U	1500	1650	110	1500	1680	112	79-124	1.90	(< 20)
1,2-Dibromo-3-chloropropane	250U	1500	1530	102	1500	1650	110	62-128	7.00	(< 20)
1,2-Dibromoethane	1.88U	1500	1560	104	1500	1570	105	77-121	0.80	(< 20)
1,2-Dichlorobenzene	25.0U	1500	1590	106	1500	1620	108	80-119	2.00	(< 20)
1,2-Dichloroethane	12.5U	1500	1520	101	1500	1560	104	73-128	2.60	(< 20)
1,2-Dichloropropane	25.0U	1500	1650	110	1500	1680	112	78-122	1.50	(< 20)
1,3,5-Trimethylbenzene	25.0U	1500	1670	112	1500	1710	114	75-124	2.00	(< 20)
1,3-Dichlorobenzene	25.0U	1500	1620	108	1500	1650	110	80-119	2.10	(< 20)
1,3-Dichloropropane	12.5U	1500	1640	109	1500	1630	109	80-119	0.77	(< 20)
1,4-Dichlorobenzene	12.5U	1500	1610	107	1500	1650	110	79-118	2.90	(< 20)
2,2-Dichloropropane	25.0U	1500	1520	101	1500	1560	104	60-139	2.50	(< 20)
2-Butanone (MEK)	1130	4500	5570	99	4500	5910	106	56-143	5.90	(< 20)
2-Chlorotoluene	25.0U	1500	1630	109	1500	1640	110	79-122	0.58	(< 20)
2-Hexanone	250U	4500	4550	101	4500	4850	108	57-139	6.30	(< 20)
4-Chlorotoluene	25.0U	1500	1630	109	1500	1650	110	78-122	1.20	(< 20)
4-Isopropyltoluene	25.0U	1500	1640	109	1500	1720	114	77-127	4.40	(< 20)
4-Methyl-2-pentanone (MIBK)	250U	4500	4910	109	4500	5260	117	67-130	6.90	(< 20)
Benzene	10.0U	1500	1660	111	1500	1650	110	79-120	1.00	(< 20)
Bromobenzene	25.0U	1500	1620	108	1500	1670	111	80-120	2.90	(< 20)
Bromochloromethane	25.0U	1500	1600	106	1500	1640	109	78-123	2.50	(< 20)
Bromodichloromethane	12.5U	1500	1610	107	1500	1650	110	79-125	2.70	(< 20)
Bromoform	25.0U	1500	1550	103	1500	1600	107	66-130	3.30	(< 20)
Bromomethane	125U	1500	1470	98	1500	1640	109	53-141	10.90	(< 20)
Carbon disulfide	250U	2250	2400	107	2250	2450	109	64-133	1.90	(< 20)
Carbon tetrachloride	25.0U	1500	1650	110	1500	1680	112	72-136	1.80	(< 20)
Chlorobenzene	12.5U	1500	1570	105	1500	1570	105	82-118	0.32	(< 20)
Chloroethane	25.0U	1500	1400	94	1500	1430	95	60-138	1.80	(< 20)

SGS North America Inc.
200 West Potter Drive Anchorage, AK 95518
t 907.562.2343 f 907.561.5301 www.us.sgs.com

Billable Matrix Spike Summary

Original Sample ID: 1187094017
MS Sample ID: 1187094018 BMS
MSD Sample ID: 1187094019 BMSD

Analysis Date: 12/20/2018 17:05
Analysis Date: 12/20/2018 18:36
Analysis Date: 12/20/2018 18:51
Matrix: Water (Surface, Eff., Ground)

QC for Samples:

Results by **SW8260C**

		Matrix Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Chloroform	25.0U	1500	1500	100	1500	1530	102	79-124	1.90	(< 20)
Chloromethane	25.0U	1500	1890	126	1500	1920	128	50-139	1.50	(< 20)
cis-1,3-Dichloropropene	12.5U	1500	1640	109	1500	1690	113	75-124	2.90	(< 20)
Dibromochloromethane	12.5U	1500	1610	107	1500	1610	107	74-126	0.03	(< 20)
Dibromomethane	25.0U	1500	1590	106	1500	1640	110	79-123	3.20	(< 20)
Dichlorodifluoromethane	25.0U	1500	1810	120	1500	1820	121	32-152	0.80	(< 20)
Ethylbenzene	25.0U	1500	1700	113	1500	1670	112	79-121	1.30	(< 20)
Freon-113	250U	2250	2470	110	2250	2570	114	70-136	4.00	(< 20)
Hexachlorobutadiene	25.0U	1500	1670	111	1500	1650	110	66-134	0.69	(< 20)
Isopropylbenzene (Cumene)	25.0U	1500	1710	114	1500	1690	113	72-131	1.60	(< 20)
Methylene chloride	125U	1500	1610	107	1500	1630	109	74-124	1.70	(< 20)
Methyl-t-butyl ether	250U	2250	2440	109	2250	2510	112	71-124	2.80	(< 20)
Naphthalene	25.0U	1500	1660	111	1500	1800	120	61-128	8.10	(< 20)
n-Butylbenzene	25.0U	1500	1630	109	1500	1660	110	75-128	1.50	(< 20)
n-Propylbenzene	25.0U	1500	1660	111	1500	1640	109	76-126	1.20	(< 20)
o-Xylene	25.0U	1500	1670	112	1500	1660	111	78-122	0.75	(< 20)
P & M -Xylene	50.0U	3000	3330	111	3000	3330	111	80-121	0.14	(< 20)
sec-Butylbenzene	25.0U	1500	1690	113	1500	1720	115	77-126	2.00	(< 20)
Styrene	25.0U	1500	1730	115	1500	1730	115	78-123	0.32	(< 20)
tert-Butylbenzene	25.0U	1500	1680	112	1500	1710	114	78-124	2.20	(< 20)
Tetrachloroethene	22.5J	1500	1690	111	1500	1670	110	74-129	1.30	(< 20)
Toluene	25.0U	1500	1530	102	1500	1510	101	80-121	1.20	(< 20)
trans-1,2-Dichloroethene	38.5J	1500	1670	109	1500	1690	110	75-124	1.20	(< 20)
trans-1,3-Dichloropropene	25.0U	1500	1630	108	1500	1620	108	73-127	0.12	(< 20)
Trichloroethene	25.0U	1500	1640	110	1500	1660	111	79-123	1.20	(< 20)
Trichlorofluoromethane	25.0U	1500	1550	103	1500	1600	107	65-141	3.10	(< 20)
Vinyl acetate	250U	1500	1590	106	1500	1670	111	54-146	4.90	(< 20)
Vinyl chloride	1350	1500	2910	104	1500	3020	111	58-137	3.70	(< 20)
Xylenes (total)	75.0U	4500	5010	111	4500	4990	111	79-121	0.34	(< 20)
Surrogates										
1,2-Dichloroethane-D4 (surr)		1500	1400	94	1500	1430	95	81-118	1.90	
4-Bromofluorobenzene (surr)		1500	1490	99	1500	1520	101	85-114	1.80	
Toluene-d8 (surr)		1500	1520	101	1500	1500	100	89-112	1.20	

SGS North America Inc.
200 West Potter Drive Anchorage, AK 95518
t 907.562.2343 f 907.561.5301 www.us.sgs.com

Billable Matrix Spike Summary

Original Sample ID: 1187094017
MS Sample ID: 1187094018 BMS
MSD Sample ID: 1187094019 BMSD

QC for Samples:

Analysis Date:
Analysis Date: 12/20/2018 18:36
Analysis Date: 12/20/2018 18:51
Matrix: Water (Surface, Eff., Ground)

Results by **SW8260C**

		Matrix Spike (%)			Spike Duplicate (%)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL

Batch Information

Analytical Batch: VMS18635
Analytical Method: SW8260C
Instrument: Agilent 7890-75MS
Analyst: FDR
Analytical Date/Time: 12/20/2018 6:36:00PM

Prep Batch: VXX33644
Prep Method: Volatiles Extraction 8240/8260 FULL
Prep Date/Time: 12/20/2018 12:00:00AM
Prep Initial Wt./Vol.: 5.00mL
Prep Extract Vol: 5.00mL

SGS North America Inc.
200 West Potter Drive Anchorage, AK 95518
t 907.562.2343 f 907.561.5301 www.us.sgs.com

Method Blank

Blank ID: MB for HBN 1790038 [VXX/33655]
Blank Lab ID: 1492684

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1187094014, 1187094017, 1187094025

Results by **SW8260C**

Parameter	Results	LOQ/CL	DL	Units
cis-1,2-Dichloroethene	0.360J	1.00	0.310	ug/L
Tetrachloroethene	0.500U	1.00	0.310	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	99.7	81-118		%
4-Bromofluorobenzene (surr)	101	85-114		%
Toluene-d8 (surr)	103	89-112		%

Batch Information

Analytical Batch: VMS18642
Analytical Method: SW8260C
Instrument: Agilent 7890-75MS
Analyst: FDR
Analytical Date/Time: 12/21/2018 5:04:00PM

Prep Batch: VXX33655
Prep Method: SW5030B
Prep Date/Time: 12/21/2018 12:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

SGS North America Inc.
200 West Potter Drive Anchorage, AK 95518
t 907.562.2343 f 907.561.5301 www.us.sgs.com

Blank Spike Summary

Blank Spike ID: LCS for HBN 1187094 [VXX33655]
Blank Spike Lab ID: 1492685
Date Analyzed: 12/21/2018 17:53

Spike Duplicate ID: LCSD for HBN 1187094 [VXX33655]
Spike Duplicate Lab ID: 1492686
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1187094014, 1187094017, 1187094025

Results by **SW8260C**

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
cis-1,2-Dichloroethene	30	32.1	107	30	32.9	110	(78-123)	2.60	(< 20)
Tetrachloroethene	30	32.2	107	30	32.4	108	(74-129)	0.40	(< 20)
Surrogates									
1,2-Dichloroethane-D4 (surr)	30	92	92	30	93.5	94	(81-118)	1.60	
4-Bromofluorobenzene (surr)	30	99.7	100	30	102	102	(85-114)	2.00	
Toluene-d8 (surr)	30	102	102	30	102	102	(89-112)	0.49	

Batch Information

Analytical Batch: **VMS18642**
Analytical Method: **SW8260C**
Instrument: **Agilent 7890-75MS**
Analyst: **FDR**

Prep Batch: **VXX33655**
Prep Method: **SW5030B**
Prep Date/Time: **12/21/2018 00:00**
Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

SGS North America Inc.
200 West Potter Drive Anchorage, AK 95518
t 907.562.2343 f 907.561.5301 www.us.sgs.com

Matrix Spike Summary

Original Sample ID: 1492687
MS Sample ID: 1492688 MS
MSD Sample ID: 1492689 MSD

Analysis Date: 12/22/2018 0:34
Analysis Date: 12/22/2018 1:20
Analysis Date: 12/22/2018 1:35
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1187094014, 1187094017, 1187094025

Results by **SW8260C**

		Matrix Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
cis-1,2-Dichloroethene	34300	30000	65900	105	30000	65800	105	78-123	0.15	(< 20)
Tetrachloroethene	9460	30000	43000	112	30000	43900	115	74-129	2.00	(< 20)
Surrogates										
1,2-Dichloroethane-D4 (surr)		30000	27200	91	30000	27100	90	81-118	0.40	
4-Bromofluorobenzene (surr)		30000	29600	99	30000	29300	98	85-114	1.00	
Toluene-d8 (surr)		30000	30600	102	30000	30600	102	89-112	0.00	

Batch Information

Analytical Batch: VMS18642
Analytical Method: SW8260C
Instrument: Agilent 7890-75MS
Analyst: FDR
Analytical Date/Time: 12/22/2018 1:20:00AM

Prep Batch: VXX33655
Prep Method: Volatiles Extraction 8240/8260 FULL
Prep Date/Time: 12/21/2018 12:00:00AM
Prep Initial Wt./Vol.: 5.00mL
Prep Extract Vol: 5.00mL

SGS North America Inc.
200 West Potter Drive Anchorage, AK 95518
t 907.562.2343 **f** 907.561.5301 www.us.sgs.com

Billable Matrix Spike Summary

Original Sample ID: 1187094014
MS Sample ID: 1187094015 BMS
MSD Sample ID: 1187094016 BMSD

QC for Samples:

Analysis Date: 12/22/2018 0:34
Analysis Date: 12/22/2018 1:20
Analysis Date: 12/22/2018 1:35
Matrix: Water (Surface, Eff., Ground)

Results by **SW8260C**

		Matrix Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
cis-1,2-Dichloroethene	34300	30000	65900	105	30000	65800	105	78-123	0.15	(< 20)

Batch Information

Analytical Batch: VMS18642
Analytical Method: SW8260C
Instrument: Agilent 7890-75MS
Analyst: FDR
Analytical Date/Time: 12/22/2018 1:20:00AM

Prep Batch: VXX33655
Prep Method: Volatiles Extraction 8240/8260 FULL
Prep Date/Time: 12/21/2018 12:00:00AM
Prep Initial Wt./Vol.: 5.00mL
Prep Extract Vol: 5.00mL

SGS North America Inc.
200 West Potter Drive Anchorage, AK 95518
t 907.562.2343 f 907.561.5301 www.us.sgs.com

Billable Matrix Spike Summary

Original Sample ID: 1187094017
MS Sample ID: 1187094018 BMS
MSD Sample ID: 1187094019 BMSD

QC for Samples:

Analysis Date: 12/22/2018 0:19
Analysis Date: 12/22/2018 0:50
Analysis Date: 12/22/2018 1:05
Matrix: Water (Surface, Eff., Ground)

Results by **SW8260C**

		Matrix Spike (ug/L)				Spike Duplicate (ug/L)					
Parameter	Sample	Spike	Result	Rec (%)		Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
cis-1,2-Dichloroethene	4030	1500	5080	70	*	1500	5310	85	78-123	4.30	(< 20)

Batch Information

Analytical Batch: VMS18642
Analytical Method: SW8260C
Instrument: Agilent 7890-75MS
Analyst: FDR
Analytical Date/Time: 12/22/2018 12:50:00AM

Prep Batch: VXX33655
Prep Method: Volatiles Extraction 8240/8260 FULL
Prep Date/Time: 12/21/2018 12:00:00AM
Prep Initial Wt./Vol.: 5.00mL
Prep Extract Vol: 5.00mL

SGS North America Inc.
200 West Potter Drive Anchorage, AK 95518
t 907.562.2343 f 907.561.5301 www.us.sgs.com

Method Blank

Blank ID: MB for HBN 1790040 [VXX/33656]
Blank Lab ID: 1492692

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1187094013, 1187094020, 1187094021, 1187094022, 1187094023, 1187094027, 1187094028, 1187094029, 1187094031, 1187094032

Results by **SW8260C**

Parameter	Results	LOQ/CL	DL	Units
1,1-Dichloroethane	0.500U	1.00	0.310	ug/L
1,1-Dichloroethene	0.500U	1.00	0.310	ug/L
1,2-Dichloropropane	0.500U	1.00	0.310	ug/L
2-Butanone (MEK)	5.00U	10.0	3.10	ug/L
cis-1,2-Dichloroethene	0.500U	1.00	0.310	ug/L
Tetrachloroethene	0.500U	1.00	0.310	ug/L
trans-1,2-Dichloroethene	0.500U	1.00	0.310	ug/L
Trichloroethene	0.500U	1.00	0.310	ug/L
Vinyl chloride	0.0750U	0.150	0.0500	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	98.7	81-118		%
4-Bromofluorobenzene (surr)	99.9	85-114		%
Toluene-d8 (surr)	97.8	89-112		%

Batch Information

Analytical Batch: VMS18643
Analytical Method: SW8260C
Instrument: VPA 780/5975 GC/MS
Analyst: FDR
Analytical Date/Time: 12/22/2018 12:50:00PM

Prep Batch: VXX33656
Prep Method: SW5030B
Prep Date/Time: 12/22/2018 12:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1187094 [VXX33656]
Blank Spike Lab ID: 1492693
Date Analyzed: 12/22/2018 13:22

Spike Duplicate ID: LCSD for HBN 1187094 [VXX33656]
Spike Duplicate Lab ID: 1492694
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1187094013, 1187094020, 1187094021, 1187094022, 1187094023, 1187094027, 1187094028, 1187094029, 1187094031, 1187094032

Results by **SW8260C**

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
1,1-Dichloroethane	30	29.5	98	30	28.9	96	(77-125)	2.00	(< 20)
1,1-Dichloroethene	30	30.0	100	30	29.2	97	(71-131)	2.80	(< 20)
1,2-Dichloropropane	30	30.9	103	30	30.0	100	(78-122)	3.00	(< 20)
2-Butanone (MEK)	90	83.3	93	90	81.7	91	(56-143)	1.90	(< 20)
cis-1,2-Dichloroethene	30	30.0	100	30	29.0	97	(78-123)	3.40	(< 20)
Tetrachloroethene	30	29.5	98	30	29.1	97	(74-129)	1.40	(< 20)
trans-1,2-Dichloroethene	30	29.7	99	30	28.9	96	(75-124)	2.60	(< 20)
Trichloroethene	30	29.2	97	30	28.8	96	(79-123)	1.40	(< 20)
Vinyl chloride	30	29.4	98	30	28.3	94	(58-137)	3.90	(< 20)
Surrogates									
1,2-Dichloroethane-D4 (surr)	30	96.6	97	30	96.5	97	(81-118)	0.17	
4-Bromofluorobenzene (surr)	30	99	99	30	100	100	(85-114)	1.40	
Toluene-d8 (surr)	30	96.2	96	30	96.4	96	(89-112)	0.24	

Batch Information

Analytical Batch: **VMS18643**
Analytical Method: **SW8260C**
Instrument: **VPA 780/5975 GC/MS**
Analyst: **FDR**

Prep Batch: **VXX33656**
Prep Method: **SW5030B**
Prep Date/Time: **12/22/2018 00:00**
Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

Nelson, Justin (Anchorage)

From: Rodney Guritz <rodney@arcticdataservices.com>
Sent: Tuesday, December 18, 2018 11:18 AM
To: Andrew Weller
Cc: Ryan Burich; Nelson, Justin (Anchorage)
Subject: Re: FW: 1187094 - Issues

Hi Justin,

Please proceed with all analyses. Use VOAs with the least headspace for VOC analysis, next-least headspace for RSK-175, and lastly MS/MSDs. Please do run MS/MSDs on project samples as planned - the headspace should not substantially affect MS/MSD recovery, since you will be spiking the samples right before running them. If any of this is unclear or you find you have more questions please call.
Ultimately, any results reported from analysis with headspace > 6 mm will need to be qualified as estimated, biased low during data validation, however the results may still provide useful information.

Thanks,
Rodney

Rodney Guritz - Principal Chemist

Arctic Data Services, LLC

302 Cushman Street, Suite 203
Fairbanks, Alaska 99701

Phone: 907-457-3147

Fax: 888-304-3147

www.arcticdataservices.com

rodney@arcticdataservices.com

We understand quality.

On Tue, Dec 18, 2018 at 11:03 AM Andrew Weller <aweller@ahtna.net> wrote:

Hey Rodney,

Can you read the email from Justin below and put in your two cents worth? These are all pretty hot wells.

I'm thinking to proceed with the analyses, but to not use the effervescent containers for MS/MSDs, rather to use non-site-MS/MSDs.

Thanks,

Andrew

From: Nelson, Justin (Anchorage) [mailto:Justin.Nelson@sgs.com]
Sent: Tuesday, December 18, 2018 10:14 AM
To: Andrew Weller <aweller@ahtna.net>; Ryan Burich <rburich@resconalaska.com>
Subject: 1187094 - Issues
Importance: High

Andrew/Ryan,

It looks like several of the wells sampled at River Terrace are effervescing post-sampling, and there are significant issues with headspace in the containers. Please let me know how to proceed with the following issues:

- **18-RT-47-GW**
  - 18 vials were provided, 1 has headspace <6mm, the rest would normally be flagged as "unusable". This is also the sample which the MS/MSD was requested.
  - I can either proceed with the containers with headspace, or cancel the analysis.
- **18-RT-48-GW**
  - 12 vials were provided, 5 have headspace <6mm, the rest would normally be flagged as "unusable". This sample requests an MS/MSD for VOC.
  - I have sufficient usable containers for analysis, but not for MS/MSD without using the containers with headspace. Please let me know whether you want me to perform the MS/MSD.
- 18-RT-50-GW
  - 6 vials were provided, 3 have headspace <6mm. I can use 1 container for RSK-175 analysis and 2 for VOC analysis, but if others are needed it will have to be from the containers with headspace.
- **18-RT-103-GW**
  - 6 vials were provided, 1 has headspace <6mm. I can use the good container for VOC analysis, but any VOC reruns and all RSK-175 analyses will need to come from containers with headspace.
- FD-3
  - 3 vials were provided, 1 has headspace <6mm. I can analyze for VOC with the good container, but any VOC reruns will need to come from containers with headspace.

Please let me know whether to proceed with analysis on the samples marked in **RED**, the others should be OK barring any reruns and additional headspace developing before analysis. Thanks!

If you decide to cancel and resample, I will send you to the field with unpreserved containers, to minimize the reactions of the water with the HCl. This reduces holding time to 7 days for VOC, but should prevent some of the gas development.

Justin A. Nelson
Environment, Health, and Safety

Client Service Manager

SGS North America Inc.
200 W. Potter Drive
Anchorage, AK 99518

Phone: (907) 562-2343

Direct: (907)550-3205
E-mail : Justin.Nelson@sgs.com

Feedback? env.alaska.feedback@sgs.com

SGS

S
CHAI

1187094

Locations Nationwide

Alaska	Maryland
New Jersey	New York
North Carolina	Indiana
West Virgina	Kentucky

www.us.sgs.com

Instructions: Sections 1 - 5 must be filled out. Omissions may delay the onset of analysis.

Section 1

CLIENT: Ahtna Engineering Services

CONTACT: Ryan Burich PHONE NO: 907-341-9305

PROJECT NAME: River Terrace PROJECT/ PWSID/ PERMIT#: 20301.005.01

REPORTS TO: aweller@ahtna.net (Andrew Weller) E-MAIL:

INVOICE TO: Ahtna Engineering Services QUOTE #: —

P.O. #: 02002257

Section 2

RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX/ MATRIX CODE	Section 3 # CONTAINERS	Type C = COMP G = GRAB MI = Multi Incremental Soils	Preservative: HCl — VOCs by SW8260C	Preservative: HCl — Dissolved Gases by RSK175	REMARKS/ LOC ID
1	A-C	18-RT-6A-GW	12/12/18	2100	GW	3	G	X		
2	A-C	18-RT-7-GW	12/12/18	1840	GW	3	G	X		
3	A-C	18-RT-9-GW	12/13/18	1045	GW	3	G	X		
4	A-C	18-RT-12-GW	12/12/18	1930	GW	3	G	X		
5	A-C	18-RT-16-GW	12/12/18	1410	GW	3	G	X		
6	A-C	18-RT-23-GW	12/12/18	1710	GW	3	G	X		
7	A-F	18-RT-25-GW	12/12/18	1640	GW	6	G	X	X	
8	A-C	18-RT-35-GW	12/12/18	1920	GW	3	G	X		
9	A-F	18-RT-38-GW	12/12/18	1510	GW	6	G	X	X	
10	A-C	18-RT-39-GW	12/13/18	1200	GW	3	G	X		

Section 5

	Date	Time	Received By:
Relinquished By: (1)	12/17/18	1643	
Relinquished By: (2)			
Relinquished By: (3)			
Relinquished By: (4)	12/17/18	1643	Received For Laboratory By: NSW

Section 4

DOD Project? Yes (No)

Cooler ID: _____

Data Deliverable Requirements: Level II

Requested Turnaround Time and/or Special Instructions: Standard TAT

Temp Blank °C: -0.5 D53

or Ambient [ ]

(See attached Sample Receipt Form)

Chain of Custody Seal: (Circle) HD

INTACT BROKEN (ABSENT)

(See attached Sample Receipt Form)

[ ] 200 W. Potter Drive Anchorage, AK 99518 Tel: (907) 562-2343 Fax: (907) 561-5301
[ ] 5500 Business Drive Wilmington, NC 28405 Tel: (910) 350-1903 Fax: (910) 350-1557

SGS

CHA 1187094

Locations Nationwide
Alaska Maryland
New Jersey New York
North Carolina Indiana
West Virgina Kentucky
www.us.sgs.com

Instructions: Sections 1 - 5 must be filled out.
Omissions may delay the onset of analysis.

Page 2 of 3

Section 1

CLIENT: Ahtna Environmental Services

CONTACT: Ryan Bunch PHONE NO: 907-341-9305

PROJECT NAME: River Terrace PROJECT/ PWSID/ PERMIT#: 20301.005.01

REPORTS TO: Andrew Weller E-MAIL: aweller@ahtna.net

INVOICE TO: Ahtna Engineering Services QUOTE #: —

P.O. #: 02002257

Section 2

RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX/ MATRIX CODE	Section 3 # CONTAINERS	Type C = COMP G = GRAB MI = Multi Incremental Soils	Preservative: HCl (VOCs by SW8260C)	Preservative: HCl (Dissolved Gases by RSK 175)	REMARKS/ LOC ID
11 A-C	18-RT-40-GW	12/13/18	1030	GW	3	G	X		
12 A-F	18-RT-42-GW	12/12/18	1605	GW	6	G	X	X	
13 A-C	18-RT-44-GW	12/13/18	1100	GW	3	G	X		
14 A-F	18-RT-47-GW	12/13/18	1315	GW	18	G	X	X	15 16 A-F MS/MSD (VOCs & Gases)
17 A-F	18-RT-48-GW	12/13/18	1340	GW	9	G	X	X	18 A-B 19 A-B Eqp MS/MSD (VOCs)
20 A-F	18-RT-49-GW	12/13/18	1925	GW	6	G	X	X	
21 A-F	18-RT-50-GW	12/13/18	1840	GW	6	G	X	X	
22 A-F	18-RT-51-GW	12/13/18	2035	GW	6	G	X	X	
23 A-C	18-RT-52-GW	12/13/18	1240	GW	3	G	X		
24 A-F	18-RT-78-GW	12/14/18	0950	GW	6	G	X	X	

Section 5

	Date	Time	
Relinquished By: (1)			Received By:
Relinquished By: (2)			Received By:
Relinquished By: (3)			Received By:
Relinquished By: (4)	12/14/18	1643	Received For Laboratory By:

Section 4

DOD Project? Yes (No)

Cooler ID: _____

Data Deliverable Requirements: Level II

Requested Turnaround Time and/or Special Instructions:
Standard TAT

Temp Blank °C: _____
or Ambient [ ]
(See attached Sample Receipt Form)

Chain of Custody Seal: (Circle)
INTACT BROKEN ABSENT
(See attached Sample Receipt Form)

[ ] 200 W. Potter Drive Anchorage, AK 99518 Tel: (907) 562-2343 Fax: (907) 561-5301
[ ] 5500 Business Drive Wilmington, NC 28405 Tel: (910) 350-1903 Fax: (910) 350-1557

SGS

SG CHAIN

1187094

Locations Nationwide

Alaska	Maryland
New Jersey	New York
North Carolina	Indiana
West Virgina	Kentucky

www.us.sgs.com

Instructions: Sections 1 - 5 must be filled out. Omissions may delay the onset of analysis.

Section 1

CLIENT: Ahtna Engineering Services

CONTACT: Ryan Burich PHONE NO: 907-341-9305

PROJECT NAME: River Terrace PROJECT/ PWSID/ PERMIT#: 20301.005.01

REPORTS TO: Andrew Weller E-MAIL: aweller@ahtna.net

INVOICE TO: Ahtna Engineering Services QUOTE #: —

P.O. #: 0200225?

Section 2

RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX/ MATRIX CODE	# CONTAINERS	Type C = COMP G = GRAB MI = Multi Incremental Soils	Preservative: HCl — VOCs by SW8260C	Preservative: HCl — Dissolved Gases by RSK175	REMARKS/ LOC ID
25	A-C	18-RT-80A-GW	12/13/18	1925	GW	3	G	X		
26	A-F	18-RT-103-GW	12/13/18	2130	GW	6	G	X	X	
27	A-F	18-RT-FD1-GW	12/13/18	0600	GW	6	G	X	X	
28	A-C	18-RT-FD2-GW	12/13/18	0700	GW	3	G	X		
29	A-C	18-RT-FD3-GW	12/13/18	0800	GW	3	G	X		
30	A-L	18-RT-TB-1	12/11/18	0600	NA	3	NA	X		Trip Blank
31	A-C	18-RT-EB1-GW	12/13/18	0900	GW	3	G	X		
32	A-C	18-RT-EB2-GW	12/14/18	0800	GW	3	G	X		

Section 5

	Date	Time	
Relinquished By: (1)			Received By:
Relinquished By: (2)			Received By:
Relinquished By: (3)			Received By:
Relinquished By: (4)	12/17/18	1643	Received For Laboratory By:

Section 4

DOD Project? Yes (No)

Cooler ID: _____

Data Deliverable Requirements: Level II

Requested Turnaround Time and/or Special Instructions: Standard TAT

Temp Blank °C: _____ or Ambient [ ] (See attached Sample Receipt Form)

Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT (See attached Sample Receipt Form)

[ ] 200 W. Potter Drive Anchorage, AK 99518 Tel: (907) 562-2343 Fax: (907) 561-5301
[ ] 5500 Business Drive Wilmington, NC 28405 Tel: (910) 350-1903 Fax: (910) 350-1557

e-Sample Receipt Form

SGS Workorder #: **1187094**

Review Criteria	Condition (Yes, No, N/A)	Exceptions Noted below
Chain of Custody / Temperature Requirements		N/A Exemption permitted if sampler hand carries/delivers.
Were Custody Seals intact? Note # & location	N/A	
COC accompanied samples?	Yes	
N/A **Exemption permitted if chilled & collected <8 hours ago, or for samples where chilling is not required		
Temperature blank compliant* (i.e., 0-6 °C after CF)?	Yes	Cooler ID: 1 @ -0.5 °C Therm. ID: D53
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
If >6°C, were samples collected <8 hours ago?	N/A	
If <0°C, were sample containers ice free?	Yes	
If samples received without a temperature blank, the "cooler temperature" will be documented in lieu of the temperature blank & "**COOLER TEMP**" will be noted to the right. In cases where neither a temp blank nor cooler temp can be obtained, note "ambient" or "chilled".		
Note: Identify containers received at non-compliant temperature . Use form FS-0029 if more space is needed.		
Holding Time / Documentation / Sample Condition Requirements		Note: Refer to form F-083 "Sample Guide" for specific holding times.
Were samples received within holding time?	Yes	
Do samples **match COC**** (i.e.,sample IDs,dates/times collected)?	Yes	
**Note: If times differ <1hr, record details & login per COC.		
Were analyses requested unambiguous? (i.e., method is specified for analyses with >1 option for analysis)	Yes	
		***Exemption permitted for metals (e.g,200.8/6020A).
Were proper containers (type/mass/volume/preservative***)used?	Yes	
Volatile / LL-Hg Requirements		
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?	Yes	See attached.
Were all water VOA vials free of headspace (i.e., bubbles ≤ 6mm)?	No	
Were all soil VOAs field extracted with MeOH+BFB?	N/A	

Note to Client: Any "No", answer above indicates non-compliance with standard procedures and may impact data quality.

Additional notes (if applicable):

Sample Containers and Preservatives

Container Id	Preservative	Container Condition	Container Id	Preservative	Container Condition
1187094001-A	HCL to pH < 2	OK	1187094014-C	HCL to pH < 2	BU
1187094001-B	HCL to pH < 2	OK	1187094014-D	HCL to pH < 2	BU
1187094001-C	HCL to pH < 2	OK	1187094014-E	HCL to pH < 2	BU
1187094002-A	HCL to pH < 2	OK	1187094014-F	HCL to pH < 2	BU
1187094002-B	HCL to pH < 2	OK	1187094015-A	HCL to pH < 2	BU
1187094002-C	HCL to pH < 2	OK	1187094015-B	HCL to pH < 2	BU
1187094003-A	HCL to pH < 2	OK	1187094015-C	HCL to pH < 2	BU
1187094003-B	HCL to pH < 2	OK	1187094015-D	HCL to pH < 2	BU
1187094003-C	HCL to pH < 2	OK	1187094015-E	HCL to pH < 2	BU
1187094004-A	HCL to pH < 2	OK	1187094015-F	HCL to pH < 2	BU
1187094004-B	HCL to pH < 2	OK	1187094016-A	HCL to pH < 2	BU
1187094004-C	HCL to pH < 2	OK	1187094016-B	HCL to pH < 2	BU
1187094005-A	HCL to pH < 2	OK	1187094016-C	HCL to pH < 2	BU
1187094005-B	HCL to pH < 2	OK	1187094016-D	HCL to pH < 2	BU
1187094005-C	HCL to pH < 2	OK	1187094016-E	HCL to pH < 2	BU
1187094006-A	HCL to pH < 2	OK	1187094016-F	HCL to pH < 2	BU
1187094006-B	HCL to pH < 2	OK	1187094017-A	HCL to pH < 2	OK
1187094006-C	HCL to pH < 2	OK	1187094017-B	HCL to pH < 2	OK
1187094007-A	HCL to pH < 2	OK	1187094017-C	HCL to pH < 2	BU
1187094007-B	HCL to pH < 2	OK	1187094017-D	HCL to pH < 2	OK
1187094007-C	HCL to pH < 2	OK	1187094017-E	HCL to pH < 2	OK
1187094007-D	HCL to pH < 2	OK	1187094018-A	HCL to pH < 2	OK
1187094007-E	HCL to pH < 2	OK	1187094018-B	HCL to pH < 2	BU
1187094007-F	HCL to pH < 2	OK	1187094019-A	HCL to pH < 2	BU
1187094008-A	HCL to pH < 2	OK	1187094019-B	HCL to pH < 2	BU
1187094008-B	HCL to pH < 2	OK	1187094019-C	HCL to pH < 2	BU
1187094008-C	HCL to pH < 2	OK	1187094019-D	HCL to pH < 2	BU
1187094009-A	HCL to pH < 2	OK	1187094019-E	HCL to pH < 2	BU
1187094009-B	HCL to pH < 2	OK	1187094020-A	HCL to pH < 2	OK
1187094009-C	HCL to pH < 2	OK	1187094020-B	HCL to pH < 2	OK
1187094009-D	HCL to pH < 2	OK	1187094020-C	HCL to pH < 2	OK
1187094009-E	HCL to pH < 2	OK	1187094020-D	HCL to pH < 2	OK
1187094009-F	HCL to pH < 2	OK	1187094020-E	HCL to pH < 2	OK
1187094010-A	HCL to pH < 2	OK	1187094020-F	HCL to pH < 2	OK
1187094010-B	HCL to pH < 2	OK	1187094021-A	HCL to pH < 2	OK
1187094010-C	HCL to pH < 2	OK	1187094021-B	HCL to pH < 2	OK
1187094011-A	HCL to pH < 2	OK	1187094021-C	HCL to pH < 2	BU
1187094011-B	HCL to pH < 2	OK	1187094021-D	HCL to pH < 2	OK
1187094011-C	HCL to pH < 2	OK	1187094021-E	HCL to pH < 2	BU
1187094012-A	HCL to pH < 2	OK	1187094021-F	HCL to pH < 2	BU
1187094012-B	HCL to pH < 2	OK	1187094022-A	HCL to pH < 2	OK
1187094012-C	HCL to pH < 2	OK	1187094022-B	HCL to pH < 2	OK
1187094012-D	HCL to pH < 2	OK	1187094022-C	HCL to pH < 2	OK
1187094012-E	HCL to pH < 2	OK	1187094022-D	HCL to pH < 2	OK
1187094012-F	HCL to pH < 2	OK	1187094022-E	HCL to pH < 2	OK
1187094013-A	HCL to pH < 2	OK	1187094022-F	HCL to pH < 2	OK
1187094013-B	HCL to pH < 2	OK	1187094023-A	HCL to pH < 2	OK
1187094013-C	HCL to pH < 2	OK	1187094023-B	HCL to pH < 2	OK
1187094014-A	HCL to pH < 2	OK	1187094023-C	HCL to pH < 2	OK
1187094014-B	HCL to pH < 2	BU	1187094024-A	HCL to pH < 2	OK

Container Id	Preservative	Container Condition	Container Id	Preservative	Container Condition
1187094024-B	HCL to pH < 2	OK			
1187094024-C	HCL to pH < 2	OK			
1187094024-D	HCL to pH < 2	OK			
1187094024-E	HCL to pH < 2	OK			
1187094024-F	HCL to pH < 2	OK			
1187094025-A	HCL to pH < 2	OK			
1187094025-B	HCL to pH < 2	OK			
1187094025-C	HCL to pH < 2	OK			
1187094026-A	HCL to pH < 2	OK			
1187094026-B	HCL to pH < 2	BU			
1187094026-C	HCL to pH < 2	BU			
1187094026-D	HCL to pH < 2	BU			
1187094026-E	HCL to pH < 2	BU			
1187094026-F	HCL to pH < 2	BU			
1187094027-A	HCL to pH < 2	OK			
1187094027-B	HCL to pH < 2	OK			
1187094027-C	HCL to pH < 2	OK			
1187094027-D	HCL to pH < 2	OK			
1187094027-E	HCL to pH < 2	OK			
1187094027-F	HCL to pH < 2	OK			
1187094028-A	HCL to pH < 2	OK			
1187094028-B	HCL to pH < 2	OK			
1187094028-C	HCL to pH < 2	OK			
1187094029-A	HCL to pH < 2	OK			
1187094029-B	HCL to pH < 2	BU			
1187094029-C	HCL to pH < 2	BU			
1187094030-A	HCL to pH < 2	OK			
1187094030-B	HCL to pH < 2	OK			
1187094030-C	HCL to pH < 2	OK			
1187094030-D	HCL to pH < 2	OK			
1187094030-E	HCL to pH < 2	OK			
1187094030-F	HCL to pH < 2	OK			
1187094030-G	HCL to pH < 2	OK			
1187094030-H	HCL to pH < 2	OK			
1187094030-I	HCL to pH < 2	OK			
1187094030-J	HCL to pH < 2	OK			
1187094030-K	HCL to pH < 2	OK			
1187094030-L	HCL to pH < 2	OK			
1187094031-A	HCL to pH < 2	OK			
1187094031-B	HCL to pH < 2	OK			
1187094031-C	HCL to pH < 2	OK			
1187094032-A	HCL to pH < 2	OK			
1187094032-B	HCL to pH < 2	OK			
1187094032-C	HCL to pH < 2	OK			

Container Id	Preservative	Container Condition	Container Id	Preservative	Container Condition

Container Condition Glossary

Containers for bacteriological, low level mercury and VOA vials are not opened prior to analysis and will be assigned condition code OK unless evidence indicates than an inappropriate container was submitted.

OK - The container was received at an acceptable pH for the analysis requested.
BU - The container was received with headspace greater than 6mm.
DM - The container was received damaged.
FR - The container was received frozen and not usable for Bacteria or BOD analyses.
IC - The container provided for microbiology analysis was not a laboratory-supplied, pre-sterilized container and therefore was not suitable for analysis.
PA - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt and the container is now at the correct pH. See the Sample Receipt Form for details on the amount and lot # of the preservative added.
PH - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt, but was insufficient to bring the container to the correct pH for the analysis requested. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

SGS North America, Inc

1187094

SGS Job Number: FA60383

Sampling Dates: 12/12/18 - 12/14/18

Report to:

SGS North America, Inc
200 W Potter Dr
Anchorage, AK 99518
julie.shumway@sgs.com

ATTN: Julie Shumway

Total number of pages in report: 26

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Caitlin Brice, M.S.
General Manager

Client Service contact: Andrea Colby 407-425-6700

Certifications: FL(E83510), LA(03051), KS(E-10327), IL(200063), NC(573), NJ(FL002), NY(12022), SC(96038001) DoD ELAP(ANAB L2229), AZ(AZ0806), CA(2937), TX(T104704404), PA(68-03573), VA(460177), AK, AR, IA, KY, MA, MS, ND, NH, NV, OK, OR, UT, WA, WV

Table of Contents

Sample Summary

SGS North America, Inc

1187094

Job No: FA60383

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
FA60383-1	12/12/18	16:40	JS	12/20/18	AQ	Ground Water	18-RT-25-GW
FA60383-2	12/12/18	15:10	JS	12/20/18	AQ	Ground Water	18-RT-38-GW
FA60383-3	12/12/18	16:05	JS	12/20/18	AQ	Ground Water	18-RT-42-GW
FA60383-4	12/13/18	13:15	JS	12/20/18	AQ	Ground Water	18-RT-47-GW
FA60383-4D	12/13/18	13:15	JS	12/20/18	AQ	Water Dup/MSD	18-RT-47-GW
FA60383-4S	12/13/18	13:15	JS	12/20/18	AQ	Water Matrix Spike	18-RT-47-GW
FA60383-5	12/13/18	13:40	JS	12/20/18	AQ	Ground Water	18-RT-48-GW
FA60383-6	12/13/18	19:25	JS	12/20/18	AQ	Ground Water	18-RT-49-GW
FA60383-7	12/13/18	18:40	JS	12/20/18	AQ	Ground Water	18-RT-50-GW
FA60383-8	12/13/18	20:35	JS	12/20/18	AQ	Ground Water	18-RT-51-GW
FA60383-9	12/14/18	09:50	JS	12/20/18	AQ	Ground Water	18-RT-78-GW
FA60383-10	12/13/18	21:30	JS	12/20/18	AQ	Ground Water	18-RT-103-GW
FA60383-11	12/13/18	06:00	JS	12/20/18	AQ	Ground Water	18-RT-FD1-GW

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client:	SGS North America, Inc	**Job No**	FA60383
Site:	1187094	**Report Date**	12/31/2018 5:45:04

11 Samples were collected between 12/12/2018 and 12/14/2018 and were received at SGS North America Inc - Orlando on 12/20/2018 properly preserved, at 3.2 Deg. C and intact. These samples received an SGS Orlando job number of FA60383. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section. Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

GC Volatiles By Method RSKSOP-147/175

Matrix: AQ **Batch ID:** GLL2343

All samples were analyzed within the recommended method holding time.

Sample(s) FA60383-4DUP, FA60383-4MS were used as the QC samples indicated.

All method blanks for this batch meet method specific criteria.

FA60383-4: Sample vial(s) contained bubbles greater than 6mm. Sample was not preserved to a ph < 2.

FA60383-5: Sample vial(s) contained bubbles greater than 6mm.

FA60383-7: Sample vial(s) contained bubbles greater than 6mm.

FA60383-9: Sample was not preserved to a pH < 2.

FA60383-10: Sample vial(s) contained bubbles greater than 6mm.

SGS Orlando certifies that this report meets the project requirements for analytical data produced for the samples as received at SGS Orlando and as stated on the COC. SGS Orlando certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the SGS Orlando Quality Manual except as noted above. This report is to be used in its entirety. SGS Orlando is not responsible for any assumptions of data quality if partial data packages are used.

Narrative prepared by:

_____

Ariel Hartney, Client Services *(Signature on File)*

Summary of Hits

Job Number: FA60383
Account: SGS North America, Inc
Project: 1187094
Collected: 12/12/18 thru 12/14/18

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
FA60383-1	**18-RT-25-GW**					
Methane		27.0	0.50	0.25	ug/l	RSKSOP-147/175
Ethene		1.0	1.0	0.50	ug/l	RSKSOP-147/175
FA60383-2	**18-RT-38-GW**					
Methane		2830	5.0	2.5	ug/l	RSKSOP-147/175
Ethene		15.9	1.0	0.50	ug/l	RSKSOP-147/175
FA60383-3	**18-RT-42-GW**					
Methane		85.3	0.50	0.25	ug/l	RSKSOP-147/175
FA60383-4	**18-RT-47-GW**					
Methane [a]		1940	5.0	2.5	ug/l	RSKSOP-147/175
Ethane [a]		2.5	1.0	0.50	ug/l	RSKSOP-147/175
Ethene [a]		15.6	1.0	0.50	ug/l	RSKSOP-147/175
FA60383-5	**18-RT-48-GW**					
Methane [b]		9720	5.0	2.5	ug/l	RSKSOP-147/175
Ethene [b]		434	1.0	0.50	ug/l	RSKSOP-147/175
FA60383-6	**18-RT-49-GW**					
Methane		3850	5.0	2.5	ug/l	RSKSOP-147/175
Ethene		150	1.0	0.50	ug/l	RSKSOP-147/175
FA60383-7	**18-RT-50-GW**					
Methane [b]		15500	10	5.0	ug/l	RSKSOP-147/175
Ethene [b]		2390	1.0	0.50	ug/l	RSKSOP-147/175
FA60383-8	**18-RT-51-GW**					
Methane		3060	5.0	2.5	ug/l	RSKSOP-147/175
Ethene		1570	1.0	0.50	ug/l	RSKSOP-147/175
FA60383-9	**18-RT-78-GW**					
Methane [c]		19800	10	5.0	ug/l	RSKSOP-147/175
Ethane [c]		10.5	1.0	0.50	ug/l	RSKSOP-147/175
Ethene [c]		2610	1.0	0.50	ug/l	RSKSOP-147/175

Summary of Hits

Job Number: FA60383
Account: SGS North America, Inc
Project: 1187094
Collected: 12/12/18 thru 12/14/18

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
FA60383-10	**18-RT-103-GW**					
Methane [b]		1850	5.0	2.5	ug/l	RSKSOP-147/175
Ethane [b]		5.4	1.0	0.50	ug/l	RSKSOP-147/175
Ethene [b]		32.0	1.0	0.50	ug/l	RSKSOP-147/175
FA60383-11	**18-RT-FD1-GW**					
Methane		3810	5.0	2.5	ug/l	RSKSOP-147/175
Ethene		158	1.0	0.50	ug/l	RSKSOP-147/175

(a) Sample vial(s) contained bubbles greater than 6mm. Sample was not preserved to a ph < 2.
(b) Sample vial(s) contained bubbles greater than 6mm.
(c) Sample was not preserved to a pH < 2.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	18-RT-25-GW		
Lab Sample ID:	FA60383-1	**Date Sampled:**	12/12/18
Matrix:	AQ - Ground Water	**Date Received:**	12/20/18
Method:	RSKSOP-147/175	**Percent Solids:**	n/a
Project:	1187094		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	LL68287.D	1	12/21/18 10:05	KB	n/a	n/a	GLL2343
Run #2							

	Initial Volume	Headspace Volume	Volume Injected	Temperature
Run #1	38.0 ml	5.0 ml	500 ul	22 Deg. C
Run #2				

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
74-82-8	Methane	27.0	0.50	0.25	0.16	ug/l	
74-84-0	Ethane	0.50 U	1.0	0.50	0.32	ug/l	
74-85-1	Ethene	1.0	1.0	0.50	0.43	ug/l	

U = Not detected LOD = Limit of Detection
LOQ = Limit of Quantitation DL = Detection Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	18-RT-38-GW		
Lab Sample ID:	FA60383-2	**Date Sampled:**	12/12/18
Matrix:	AQ - Ground Water	**Date Received:**	12/20/18
Method:	RSKSOP-147/175	**Percent Solids:**	n/a
Project:	1187094		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	LL68288.D	1	12/21/18 10:14	KB	n/a	n/a	GLL2343
Run #2	LL68300.D	10	12/21/18 12:13	KB	n/a	n/a	GLL2343

	Initial Volume	Headspace Volume	Volume Injected	Temperature
Run #1	38.0 ml	5.0 ml	500 ul	22 Deg. C
Run #2	38.0 ml	5.0 ml	500 ul	22 Deg. C

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
74-82-8	Methane	2830 [a]	5.0	2.5	1.6	ug/l	
74-84-0	Ethane	0.50 U	1.0	0.50	0.32	ug/l	
74-85-1	Ethene	15.9	1.0	0.50	0.43	ug/l	

(a) Result is from Run# 2

U = Not detected LOD = Limit of Detection
LOQ = Limit of Quantitation DL = Detection Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	18-RT-42-GW		
Lab Sample ID:	FA60383-3	**Date Sampled:**	12/12/18
Matrix:	AQ - Ground Water	**Date Received:**	12/20/18
Method:	RSKSOP-147/175	**Percent Solids:**	n/a
Project:	1187094		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	LL68289.D	1	12/21/18 10:25	KB	n/a	n/a	GLL2343
Run #2							

	Initial Volume	Headspace Volume	Volume Injected	Temperature
Run #1	38.0 ml	5.0 ml	500 ul	22 Deg. C
Run #2				

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
74-82-8	Methane	85.3	0.50	0.25	0.16	ug/l	
74-84-0	Ethane	0.50 U	1.0	0.50	0.32	ug/l	
74-85-1	Ethene	0.50 U	1.0	0.50	0.43	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	18-RT-47-GW		
Lab Sample ID:	FA60383-4	**Date Sampled:**	12/13/18
Matrix:	AQ - Ground Water	**Date Received:**	12/20/18
Method:	RSKSOP-147/175	**Percent Solids:**	n/a
Project:	1187094		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	LL68286.D	1	12/21/18 09:56	KB	n/a	n/a	GLL2343
Run #2 [a]	LL68299.D	10	12/21/18 12:04	KB	n/a	n/a	GLL2343

	Initial Volume	Headspace Volume	Volume Injected	Temperature
Run #1	38.0 ml	5.0 ml	500 ul	22 Deg. C
Run #2	38.0 ml	5.0 ml	500 ul	22 Deg. C

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
74-82-8	Methane	1940 [b]	5.0	2.5	1.6	ug/l	
74-84-0	Ethane	2.5	1.0	0.50	0.32	ug/l	
74-85-1	Ethene	15.6	1.0	0.50	0.43	ug/l	

(a) Sample vial(s) contained bubbles greater than 6mm. Sample was not preserved to a ph < 2.
(b) Result is from Run# 2

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	18-RT-48-GW		
Lab Sample ID:	FA60383-5	**Date Sampled:**	12/13/18
Matrix:	AQ - Ground Water	**Date Received:**	12/20/18
Method:	RSKSOP-147/175	**Percent Solids:**	n/a
Project:	1187094		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	LL68290.D	1	12/21/18 10:34	KB	n/a	n/a	GLL2343
Run #2 [a]	LL68301.D	10	12/21/18 12:23	KB	n/a	n/a	GLL2343

	Initial Volume	Headspace Volume	Volume Injected	Temperature
Run #1	38.0 ml	5.0 ml	500 ul	22 Deg. C
Run #2	38.0 ml	5.0 ml	500 ul	22 Deg. C

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
74-82-8	Methane	9720 [b]	5.0	2.5	1.6	ug/l	
74-84-0	Ethane	0.50 U	1.0	0.50	0.32	ug/l	
74-85-1	Ethene	434	1.0	0.50	0.43	ug/l	

(a) Sample vial(s) contained bubbles greater than 6mm.
(b) Result is from Run# 2

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	18-RT-49-GW		
Lab Sample ID:	FA60383-6	**Date Sampled:**	12/13/18
Matrix:	AQ - Ground Water	**Date Received:**	12/20/18
Method:	RSKSOP-147/175	**Percent Solids:**	n/a
Project:	1187094		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	LL68291.D	1	12/21/18 10:41	KB	n/a	n/a	GLL2343
Run #2	LL68302.D	10	12/21/18 12:32	KB	n/a	n/a	GLL2343

	Initial Volume	Headspace Volume	Volume Injected	Temperature
Run #1	38.0 ml	5.0 ml	500 ul	22 Deg. C
Run #2	38.0 ml	5.0 ml	500 ul	22 Deg. C

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
74-82-8	Methane	3850 [a]	5.0	2.5	1.6	ug/l	
74-84-0	Ethane	0.50 U	1.0	0.50	0.32	ug/l	
74-85-1	Ethene	150	1.0	0.50	0.43	ug/l	

(a) Result is from Run# 2

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	18-RT-50-GW		
Lab Sample ID:	FA60383-7	**Date Sampled:**	12/13/18
Matrix:	AQ - Ground Water	**Date Received:**	12/20/18
Method:	RSKSOP-147/175	**Percent Solids:**	n/a
Project:	1187094		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	LL68294.D	1	12/21/18 11:16	KB	n/a	n/a	GLL2343
Run #2 [a]	LL68312.D	20	12/21/18 14:56	KB	n/a	n/a	GLL2343

	Initial Volume	Headspace Volume	Volume Injected	Temperature
Run #1	38.0 ml	5.0 ml	500 ul	22 Deg. C
Run #2	38.0 ml	5.0 ml	500 ul	22 Deg. C

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
74-82-8	Methane	15500 [b]	10	5.0	3.2	ug/l	
74-84-0	Ethane	0.50 U	1.0	0.50	0.32	ug/l	
74-85-1	Ethene	2390	1.0	0.50	0.43	ug/l	

(a) Sample vial(s) contained bubbles greater than 6mm.
(b) Result is from Run# 2

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	18-RT-51-GW		
Lab Sample ID:	FA60383-8	**Date Sampled:**	12/13/18
Matrix:	AQ - Ground Water	**Date Received:**	12/20/18
Method:	RSKSOP-147/175	**Percent Solids:**	n/a
Project:	1187094		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	LL68295.D	1	12/21/18 11:25	KB	n/a	n/a	GLL2343
Run #2	LL68306.D	10	12/21/18 13:09	KB	n/a	n/a	GLL2343

	Initial Volume	Headspace Volume	Volume Injected	Temperature
Run #1	38.0 ml	5.0 ml	500 ul	22 Deg. C
Run #2	38.0 ml	5.0 ml	500 ul	22 Deg. C

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
74-82-8	Methane	3060 [a]	5.0	2.5	1.6	ug/l	
74-84-0	Ethane	0.50 U	1.0	0.50	0.32	ug/l	
74-85-1	Ethene	1570	1.0	0.50	0.43	ug/l	

(a) Result is from Run# 2

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	18-RT-78-GW		
Lab Sample ID:	FA60383-9	**Date Sampled:**	12/14/18
Matrix:	AQ - Ground Water	**Date Received:**	12/20/18
Method:	RSKSOP-147/175	**Percent Solids:**	n/a
Project:	1187094		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	LL68296.D	1	12/21/18 11:33	KB	n/a	n/a	GLL2343
Run #2 [a]	LL68307.D	20	12/21/18 13:17	KB	n/a	n/a	GLL2343

	Initial Volume	Headspace Volume	Volume Injected	Temperature
Run #1	38.0 ml	5.0 ml	500 ul	22 Deg. C
Run #2	38.0 ml	5.0 ml	500 ul	22 Deg. C

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
74-82-8	Methane	19800 [b]	10	5.0	3.2	ug/l	
74-84-0	Ethane	10.5	1.0	0.50	0.32	ug/l	
74-85-1	Ethene	2610	1.0	0.50	0.43	ug/l	

(a) Sample was not preserved to a pH < 2.
(b) Result is from Run# 2

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	18-RT-103-GW		
Lab Sample ID:	FA60383-10	**Date Sampled:**	12/13/18
Matrix:	AQ - Ground Water	**Date Received:**	12/20/18
Method:	RSKSOP-147/175	**Percent Solids:**	n/a
Project:	1187094		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	LL68297.D	1	12/21/18 11:47	KB	n/a	n/a	GLL2343
Run #2 [a]	LL68308.D	10	12/21/18 13:25	KB	n/a	n/a	GLL2343

	Initial Volume	Headspace Volume	Volume Injected	Temperature
Run #1	38.0 ml	5.0 ml	500 ul	22 Deg. C
Run #2	38.0 ml	5.0 ml	500 ul	22 Deg. C

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
74-82-8	Methane	1850 [b]	5.0	2.5	1.6	ug/l	
74-84-0	Ethane	5.4	1.0	0.50	0.32	ug/l	
74-85-1	Ethene	32.0	1.0	0.50	0.43	ug/l	

(a) Sample vial(s) contained bubbles greater than 6mm.
(b) Result is from Run# 2

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	18-RT-FD1-GW		
Lab Sample ID:	FA60383-11	**Date Sampled:**	12/13/18
Matrix:	AQ - Ground Water	**Date Received:**	12/20/18
Method:	RSKSOP-147/175	**Percent Solids:**	n/a
Project:	1187094		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	LL68298.D	1	12/21/18 11:55	KB	n/a	n/a	GLL2343
Run #2	LL68309.D	10	12/21/18 13:34	KB	n/a	n/a	GLL2343

	Initial Volume	Headspace Volume	Volume Injected	Temperature
Run #1	38.0 ml	5.0 ml	500 ul	22 Deg. C
Run #2	38.0 ml	5.0 ml	500 ul	22 Deg. C

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
74-82-8	Methane	3810 [a]	5.0	2.5	1.6	ug/l	
74-84-0	Ethane	0.50 U	1.0	0.50	0.32	ug/l	
74-85-1	Ethene	158	1.0	0.50	0.43	ug/l	

(a) Result is from Run# 2

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

5

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

FA60383

SGS North America Inc.
CHAIN OF CUSTODY RECORD
REVIEWED

1187094

Locations Nationwide
Alaska Florida
New Jersey Colorado
Texas North Carolina
Virginia Louisiana
www.us.sgs.com

CLIENT:	SGS North America Inc. - Alaska Division	SGS Reference:	SGS Orlando, Fl
CONTACT:	Julie Shumway	PHONE NO:	(907) 562-2343
PROJECT NAME:	1187094	PWSID#:	
		NPDL#:	
REPORTS TO:		E-MAIL:	Julie.Shumway@sgs.com
INVOICE TO:		QUOTE #:	
	SGS - Alaska	P.O. #:	1187094

Additional Comments: All soils report out in dry weight unless otherwise requested.

Page 1 of 1

RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HHMM	MATRIX/ MATRIX	# CONTAINERS	Preservative Used: TYPE C = COMP G = GRAB Mild Incremental Soils	RSK-175 - methane, ethane, ethene				MS	MSD	SGS lab #	Location ID
1	18-RT-25-GW	12/12/2018	16:40	Water	3	GRAB	X						1187094007	
2	18-RT-38-GW	12/12/2018	15:10	Water	3	GRAB	X						1187094009	
3	18-RT-42-GW	12/12/2018	16:05	Water	3	GRAB	X						1187094012	
4	18-RT-47-GW	12/13/2018	13:15	Water	3	GRAB	X						1187094014	
4	18-RT-47-GW MS	12/13/2018	13:15	Water	3	GRAB	X				X		1187094015	
4	18-RT-47-GW MSD	12/13/2018	13:15	Water	3	GRAB	X					X	1187094016	
5	18-RT-48-GW	12/13/2018	13:40	Water	2	GRAB	X						1187094017	
6	18-RT-49-GW	12/13/2018	19:25	Water	3	GRAB	X						1187094020	
7	18-RT-50-GW	12/13/2018	18:40	Water	3	GRAB	X						1187094021	
8	18-RT-51-GW	12/13/2018	20:35	Water	3	GRAB	X						1187094022	
9	18-RT-78-GW	12/14/2018	9:50	Water	3	GRAB	X						1187094024	
10	18-RT-103-GW	12/13/2018	21:30	Water	3	GRAB	X						1187094026	
11	18-RT-FD1-GW	12/13/2018	6:00	Water	3	GRAB	X						1187094027	

Relinquished By:(1)	Date 12/19/18	Time 1003	Received By: Sp 12/20/18 UPS Fed Ex
Relinquished By: (2) Fed Ex UPS Sp 12/20/18	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received For Laboratory By: 1100 12/20/18

DOD Project? NO
Report to DL (J Flags)? YES
Report as DL/LOD/LOQ? YES
Cooler ID:

Data Deliverable Requirements:
Level 2 w/Excel EDD and SGS .xml

Requested Turnaround Time and-or Special Instructions:
Report all analyses for Soils/Waters in mg/L or mg/Kg, where possible

Temp Blank °C: 3.2 or Ambient [ ]

Chain of Custody Seal: (Circle)
INTACT BROKEN ABSENT

[X] 200 W. Potter Drive Anchorage, AK 99518 Tel: (907) 562-2343 Fax: (907) 561-5301
[ ] 5600 Business Drive Wilmington, NC 28405 Tel: (910) 350-1903 Fax: (910) 350-1557

http://www.sgs.com/terms_and_conditions.htm

3.2

1187094_RSK_12.19.18.xls

FA60383: Chain of Custody
Page 1 of 2

SGS Sample Receipt Summary

Job Number: FA60383 **Client:** SGS **Project:** 1187094

Date / Time Received: 12/20/2018 11:00:00 AM **Delivery Method:** FED EX **Airbill #'s:** 1002239972860003281100813386201567

Therm ID: IR 1; **Therm CF:** -0.2; **# of Coolers:** 1

Cooler Temps (Raw Measured) °C: Cooler 1: (3.4);

Cooler Temps (Corrected) °C: Cooler 1: (3.2);

Cooler Information	Y	or	N
1. Custody Seals Present	☑		☐
2. Custody Seals Intact	☑		☐
3. Temp criteria achieved	☑		☐
4. Cooler temp verification	IR Gun		
5. Cooler media	Ice (Bag)		

Trip Blank Information	Y	or	N	N/A
1. Trip Blank present / cooler	☐		☑	☐
2. Trip Blank listed on COC	☐		☑	☐

	W	or	S	N/A
3. Type Of TB Received	☐		☐	☑

Sample Information	Y	or	N	N/A
1. Sample labels present on bottles	☑		☐	
2. Samples preserved properly	☑		☐	
3. Sufficient volume/containers recvd for analysis:	☐		☑	
4. Condition of sample	Intact			
5. Sample recvd within HT	☑		☐	
6. Dates/Times/IDs on COC match Sample Label	☑		☐	
7. VOCs have headspace	☐		☑	☐
8. Bottles received for unspecified tests	☐		☑	
9. Compositing instructions clear	☐		☐	☑
10. Voa Soil Kits/Jars received past 48hrs?	☐		☐	☑
11. % Solids Jar received?	☐		☐	☑
12. Residual Chlorine Present?	☐		☐	☑

Misc. Information

Number of Encores: 25-Gram _____ 5-Gram _____ Number of 5035 Field Kits: _____ Number of Lab Filtered Metals: _____

Test Strip Lot #s: pH 0-3 230315 pH 10-12 219813A Other: (Specify) _____ _____

Residual Chlorine Test Strip Lot #: _____

Comments TWO VIALS FOR SAMPLE #1 AND 5.

SM001
Rev. Date 05/24/17

Technician: SHAYLAP Date: 12/20/2018 11:00:00 Reviewer: _____ Date: _____

FA60383: Chain of Custody
Page 2 of 2

GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: FA60383
Account: SGSAKA SGS North America, Inc
Project: 1187094

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GLL2343-MB	LL68283.D	1	12/21/18	KB	n/a	n/a	GLL2343

The QC reported here applies to the following samples: **Method:** RSKSOP-147/175

FA60383-1, FA60383-2, FA60383-3, FA60383-4, FA60383-5, FA60383-6, FA60383-7, FA60383-8, FA60383-9, FA60383-10, FA60383-11

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	ND	0.50	0.16	ug/l	
74-84-0	Ethane	ND	1.0	0.32	ug/l	
74-85-1	Ethene	ND	1.0	0.43	ug/l	

Blank Spike/Blank Spike Duplicate Summary

Job Number: FA60383
Account: SGSAKA SGS North America, Inc
Project: 1187094

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GLL2343-BS	LL68284.D	1	12/21/18	KB	n/a	n/a	GLL2343
GLL2343-BSD	LL68285.D	1	12/21/18	KB	n/a	n/a	GLL2343

The QC reported here applies to the following samples: **Method:** RSKSOP-147/175

FA60383-1, FA60383-2, FA60383-3, FA60383-4, FA60383-5, FA60383-6, FA60383-7, FA60383-8, FA60383-9, FA60383-10, FA60383-11

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
74-82-8	Methane	108	117	108	127	118	8	62-139/30
74-84-0	Ethane	219	230	105	250	114	8	67-141/30
74-85-1	Ethene	290	304	105	331	114	9	68-141/30

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FA60383
Account: SGSAKA SGS North America, Inc
Project: 1187094

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
FA60383-4MS [a]	LL68311.D	10	12/21/18	KB	n/a	n/a	GLL2343
FA60383-4 [a]	LL68286.D	1	12/21/18	KB	n/a	n/a	GLL2343
FA60383-4 [a]	LL68299.D	10	12/21/18	KB	n/a	n/a	GLL2343

The QC reported here applies to the following samples: **Method:** RSKSOP-147/175

FA60383-1, FA60383-2, FA60383-3, FA60383-4, FA60383-5, FA60383-6, FA60383-7, FA60383-8, FA60383-9, FA60383-10, FA60383-11

CAS No.	Compound	FA60383-4 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
74-82-8	Methane	1940 [b]		1080	3090	106	62-139
74-84-0	Ethane	2.5		2190	2150	98	67-141
74-85-1	Ethene	15.6		2900	2850	98	68-141

(a) Sample vial(s) contained bubbles greater than 6mm. Sample was not preserved to a ph < 2.
(b) Result is from Run #2.

* = Outside of Control Limits.

Duplicate Summary

Job Number: FA60383
Account: SGSAKA SGS North America, Inc
Project: 1187094

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
FA60383-4DUP [a]	LL68310.D	10	12/21/18	KB	n/a	n/a	GLL2343
FA60383-4 [a]	LL68286.D	1	12/21/18	KB	n/a	n/a	GLL2343
FA60383-4 [a]	LL68299.D	10	12/21/18	KB	n/a	n/a	GLL2343

The QC reported here applies to the following samples: **Method:** RSKSOP-147/175

FA60383-1, FA60383-2, FA60383-3, FA60383-4, FA60383-5, FA60383-6, FA60383-7, FA60383-8, FA60383-9, FA60383-10, FA60383-11

CAS No.	Compound	FA60383-4 ug/l	Q	DUP ug/l	Q	RPD	Limits
74-82-8	Methane	1940 [b]		2140		10	30
74-84-0	Ethane	2.5		ND		0	30
74-85-1	Ethene	15.6		15.5		12	30

(a) Sample vial(s) contained bubbles greater than 6mm. Sample was not preserved to a ph < 2.
(b) Result is from Run #2.

* = Outside of Control Limits.

SiREM
Leading Science · Lasting Solutions

130 Stone Rd. W
Guelph, ON N1G 3Z2
(519) 822-2265

Analytical Results

SiREM File Reference: S-5177

Client: Ahtna Environmental Inc.
Client Project Number: 20301.005.01
Date Samples Received: 21-Dec-18

Client Sample ID	Laboratory Sample ID	Client Sample Date	Total Organic Carbon	Total Iron	Dissolved Iron
			mg/L	mg/L	mg/L
18-RT-25-GW	18-2737	12-Dec-18	3	0.842	0.007
18-RT-38-GW	18-2738	12-Dec-18	2	1.43	0.813
18-RT-42-GW	18-2739	12-Dec-18	4	0.361	0.010
18-RT-47-GW	18-2740	13-Dec-18	128000	2660	2620
18-RT-48-GW	18-2741	13-Dec-18	416	105	27.8
18-RT-49-GW	18-2742	13-Dec-18	31	36.7	46.0
18-RT-50-GW	18-2743	13-Dec-18	59	6.64	4.33
18-RT-51-GW	18-2744	13-Dec-18	44	7.12	5.00
18-RT-78-GW	18-2745	14-Dec-18	3980	916	567
18-RT-103-GW	18-2746	13-Dec-18	157000	2910	2940
18-RT-FD1-GW	18-2747	13-Dec-18	39	128	84.8
18-RT-47-GW MS	18-2740 MS	13-Dec-18	97%	117%	107%
18-RT-47-GW MSD	18-2740 MSD	13-Dec-18	87%	89%	102%
		QL	1	0.002	0.002

Comments:
< - compound not detected, the associated value is the detection limit
% - percent
QL - quantitation limit
mg/L - milligram per liter

Analyst:

Kela Ashworth, B.Sc.
Laboratory Technician

Results approved:

Michael Healey, B.Sc.
Senior Laboratory Technician

Date:

22-Jan-19

SiREM
Leading Science · Lasting Solutions

130 Stone Rd. W
Guelph, ON N1G 3Z2
(519) 822-2265

Certificate of Analysis: Gene-Trac® *Dehalococcoides* Assay

Customer: Andrew Weller, Ahtna Environmental Inc.
Project: River Terrace
Customer Reference: 20301.005.01

SiREM Reference: S-5166
Report Date: 27-Dec-18
Data Files: iQ5B-DHCT-TM-QPCR-1613
iQ5B-DB-DHC-TM-QPCR-0940

Table 1a: Test Results

Sample ID	*Dehalococcoides* (Dhc)	
	Percent Dhc[1]	Enumeration/Liter[2]
18-RT-25-GW	0.002 - 0.006 %	3×10^{3}
18-RT-38-GW	0.04 - 0.1 %	4×10^{5}
18-RT-42-GW	0.001 - 0.004 %	6×10^{3}
18-RT-47-GW	0.02 - 0.07 %	2×10^{5}
18-RT-47-GW-MS	0.9 - 3 %	6×10^{9} T
18-RT-47-GW-MSD	0.8 - 2 %	5×10^{9} T
18-RT-48-GW	9 - 24 %	2×10^{9}
18-RT-49-GW	0.6 - 2 %	6×10^{7}
18-RT-50-GW	14 - 37 %	8×10^{8}
18-RT-51-GW	3 - 8 %	7×10^{7}
18-RT-78-GW	3 - 8 %	3×10^{6}
18-RT-103-GW	0.1 - 0.4 %	2×10^{6}
18-RT-FDI-GW	2 - 5 %	2×10^{8}

See final page for notes.

Analyst: Taylor Aris, B.Sc.
Laboratory Technician

Approved: Ximena Druar, B.Sc.
Genetic Testing Coordinator

SiREM
Leading Science · Lasting Solutions

130 Stone Rd. W
Guelph, ON N1G 3Z2
(519) 822-2265

Certificate of Analysis: Gene-Trac® Functional Gene Assay

Customer: Andrew Weller, Ahtna Environmental Inc.
Project: River Terrace
Customer Reference: 20301.005.01

SiREM Reference: S-5166
Report Date: 27-Dec-18
Data Files: iQ5A-FGA-QPCR-1065
iQ5A-DB-FGA-QPCR-0760

Table 1b: Test Results

Sample ID	VC Reductase (*vcrA*)		BAV1 VC Reductase (*bvcA*)		TCE Reductase (*tceA*)	
	Percent *vcrA* [3]	Gene Copies/Liter	Percent *bvcA* [3]	Gene Copies/Liter	Percent *tceA* [3]	Gene Copies/Liter
18-RT-25-GW	0.003 - 0.009 %	6×10^3	NA	3×10^3 U	NA	3×10^3 U
18-RT-38-GW	0.1 - 0.3 %	1×10^6	NA	3×10^3 U	NA	3×10^3 U
18-RT-42-GW	0.005 - 0.02 %	2×10^4	NA	3×10^3 U	NA	3×10^3 U
18-RT-47-GW	0.05 - 0.2 %	4×10^5	NA	1×10^4 U	NA	1×10^4 U
18-RT-48-GW	20 - 48 %	5×10^9	0.04 - 0.1 %	9×10^6	NA	6×10^3 U
18-RT-49-GW	1 - 3 %	1×10^8	0.07 - 0.2 %	6×10^6	NA	1×10^4 U
18-RT-50-GW	16 - 41 %	1×10^9	0.5 - 1 %	2×10^7	NA	4×10^3 U
18-RT-51-GW	6 - 17 %	1×10^8	0.08 - 0.2 %	2×10^6	NA	4×10^3 U
18-RT-78-GW	6 - 16 %	7×10^6	0.06 - 0.2 %	8×10^4	NA	6×10^3 U
18-RT-103-GW	0.4 - 1 %	8×10^6	0.0004 - 0.001 %	7×10^3 J	NA	1×10^4 U
18-RT-FDI-GW	2 - 5 %	3×10^8	0.05 - 0.1 %	7×10^6	NA	1×10^4 U

See final page for notes.

Analyst: Taylor Aris, B.Sc.
Laboratory Technician

Approved: Ximena Druar, B.Sc.
Genetic Testing Coordinator

Table 2.1: Detailed Test Parameters, Gene-Trac Test Reference S-5166

Customer Sample ID	18-RT-25-GW	18-RT-38-GW	18-RT-42-GW	18-RT-47-GW	18-RT-47-GW-MS
SiREM Dhc Test ID	DHC-16891	DHC-16892	DHC-16893	DHC-16894	DHC-16895
SiREM FGA Test ID	FGA-8758	FGA-8759	FGA-8760	FGA-8761	NA
Date Sampled [(4)]	12-Dec-18	12-Dec-18	12-Dec-18	13-Dec-18	13-Dec-18
Matrix	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Date Received [(4)]	17-Dec-18	17-Dec-18	17-Dec-18	17-Dec-18	17-Dec-18
Sample Temperature	2 ºC	2 ºC	2 ºC	2 ºC	2 ºC
Filtration Date [(4)]	18-Dec-18	18-Dec-18	18-Dec-18	18-Dec-18	18-Dec-18
Volume Used for DNA Extraction	500 mL	500 mL	500 mL	100 mL	100 mL
DNA Extraction Date	19-Dec-18	19-Dec-18	19-Dec-18	19-Dec-18	19-Dec-18
DNA Concentration in Sample (extractable)	375 ng/L (J)	1950 ng/L	849 ng/L	1650 ng/L (J)	1297500 ng/L (J)
PCR Amplifiable DNA	Detected	Detected	Detected	Detected	Detected
Dhc qPCR Date Analyzed	19-Dec-18	19-Dec-18	19-Dec-18	19-Dec-18	19-Dec-18
FGA qPCR Date Analyzed	20-Dec-18	20-Dec-18	20-Dec-18	20-Dec-18	NA
Laboratory Controls (see Tables 3 & 4)	Passed	Passed	Passed	Passed	Passed
Comments	- -	- -	- -	- -	[T]Sample spiked with 6×10^9 Dhc/L.

See final page for notes.

Table 2.2: Detailed Test Parameters, Gene-Trac Test Reference S-5166

Customer Sample ID	18-RT-47-GW-MSD	18-RT-48-GW	18-RT-49-GW	18-RT-50-GW	18-RT-51-GW
SiREM Dhc Test ID	DHC-16896	DHC-16897	DHC-16898	DHC-16899	DHC-16900
SiREM FGA Test ID	NA	FGA-8764	FGA-8765	FGA-8766	FGA-8767
Date Sampled [(4)]	13-Dec-18	13-Dec-18	13-Dec-18	13-Dec-18	13-Dec-18
Matrix	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
Date Received [(4)]	17-Dec-18	17-Dec-18	17-Dec-18	17-Dec-18	17-Dec-18
Sample Temperature	2 ºC	2 ºC	2 ºC	2 ºC	2 ºC
Filtration Date [(4)]	18-Dec-18	18-Dec-18	18-Dec-18	18-Dec-18	18-Dec-18
Volume Used for DNA Extraction	100 mL	200 mL	100 mL	300 mL	300 mL
DNA Extraction Date	19-Dec-18	19-Dec-18	19-Dec-18	19-Dec-18	19-Dec-18
DNA Concentration in Sample (extractable)	1327500 ng/L (J)	42638 ng/L	19485 ng/L	10608 ng/L	4638 ng/L
PCR Amplifiable DNA	Detected	Detected	Detected	Detected	Detected
Dhc qPCR Date Analyzed	19-Dec-18	19-Dec-18	19-Dec-18	19-Dec-18	19-Dec-18
FGA qPCR Date Analyzed	NA	20-Dec-18	20-Dec-18	20-Dec-18	20-Dec-18
Laboratory Controls (see Tables 3 & 4)	Passed	Passed	Passed	Passed	Passed
Comments	[T]Sample spiked with 6×10^9 Dhc/L.	- -	- -	- -	- -

See final page for notes.

Table 2.3: Detailed Test Parameters, Gene-Trac Test Reference S-5166

Customer Sample ID	18-RT-78-GW	18-RT-103-GW	18-RT-FDI-GW
SiREM Dhc Test ID	DHC-16901	DHC-16902	DHC-16903
SiREM FGA Test ID	FGA-8768	FGA-8769	FGA-8770
Date Sampled [(4)]	14-Dec-18	13-Dec-18	13-Dec-18
Matrix	Groundwater	Groundwater	Groundwater
Date Received [(4)]	17-Dec-18	17-Dec-18	17-Dec-18
Sample Temperature	2 ºC	2 ºC	2 ºC
Filtration Date [(4)]	18-Dec-18	18-Dec-18	18-Dec-18
Volume Used for DNA Extraction	200 mL	100 mL	100 mL
DNA Extraction Date	19-Dec-18	19-Dec-18	19-Dec-18
DNA Concentration in Sample (extractable)	233 ng/L (J)	3653 ng/L	27818 ng/L
PCR Amplifiable DNA	Detected	Detected	Detected
Dhc qPCR Date Analyzed	19-Dec-18	19-Dec-18	19-Dec-18
FGA qPCR Date Analyzed	20-Dec-18	20-Dec-18	20-Dec-18
Laboratory Controls (see Tables 3 & 4)	Passed	Passed	Passed
Comments	- -	- -	- -

See final page for notes.

Table 3: Gene-Trac Dhc Control Results, Test Reference S-5166

Laboratory Control	Analysis Date	Control Description	Spiked Dhc 16S rRNA Gene Copies per Liter	Recovered Dhc 16S rRNA Gene Copies per Liter	Comments
Positive Control Low Concentration	19-Dec-18	Genomic DNA (CSLD-1251)	3.0×10^6	2.5×10^6	Passed
Positive Control High Concentration	19-Dec-18	Genomic DNA (CSHD-1251)	2.9×10^8	2.8×10^8	Passed
Extraction Control	17-Dec-18	Extraction Control (KB-0640)	4.1×10^{10}	4.4×10^{10}	Passed
DNA Extraction Blank	19-Dec-18	Sterile Water (FB-3213)	0	2.6×10^3 U	Passed
Negative Control	19-Dec-18	Reagent Blank (TBDT-1210)	0	2.6×10^3 U	Passed

See final page for notes.

Table 4: Gene-Trac FGA Control Results, Test Reference S-5166

Laboratory Control	Analysis Date	Control Description	*vcrA*		*bvcA*		*tceA*		Comments
			Spiked Gene Copies per Liter	Recovered Gene Copies per Liter	Spiked Gene Copies per Liter	Recovered Gene Copies per Liter	Spiked Gene Copies per Liter	Recovered Gene Copies per Liter	
Positive Control Low Concentration	20-Dec-18	Genomic DNA (CSLF-0933)	1.4×10^7	1.0×10^7	4.9×10^6	3.6×10^6	7.4×10^7	1.1×10^8	Passed
Positive Control High Concentration	20-Dec-18	Genomic DNA (CSHF-0933)	1.4×10^9	7.5×10^8	5.1×10^8	3.4×10^8	8.9×10^9	8.9×10^9	Passed
DNA Extraction Blank	20-Dec-18	Sterile Water (FB-3213)	0	2.6×10^3 U	0	2.6×10^3 U	0	2.6×10^3 U	Passed
Negative Control	20-Dec-18	Reagent Blank (TBF-0904)	0	2.6×10^3 U	0	2.6×10^3 U	0	2.6×10^3 U	Passed

See final page for notes.

Notes:
Dhc = *Dehalococcoides*
vcrA = VC reductase
bvcA = BAV1 VC reductase
tceA = TCE reductase
FGA = functional gene assay
J The associated value is an estimated quantity between the method detection limit and quantitation limit.
U Not detected, associated value is the quantitation limit.
B Analyte was detected in the method blank within an order of magnitude of the test sample.
E Extracted genomic DNA was not detected in the sample.
I Sample inhibited the test reaction based on inability to PCR amplify extracted DNA with universal primers.
ng/L = nanograms per liter
mL = milliliter
NA = not applicable
ND = not detected
DNA = deoxyribonucleic acid
16S rRNA = 16S ribosomal ribonucleic acid
PCR = polymerase chain reaction
qPCR = quantitative PCR
°C = degrees Celsius

[1]Percent *Dehalococcoides* (Dhc) in microbial population. This value is calculated by dividing the number of Dhc 16S ribosomal ribonucleic acid (rRNA) gene copies by the total number of bacteria as estimated by the mass of DNA extracted from the sample. Range represents normal variation in Dhc enumeration.

[2]Based on quantification of Dhc 16S rRNA gene copies. Dhc are generally reported to contain one 16S rRNA gene copy per cell; therefore, this number is often interpreted to represent the number of Dhc cells present in the sample.

[3]Percent of functional gene in microbial population. This value is calculated by dividing the functional gene copies quantified by the total number of estimated prokaryotes in the sample (based on the total quantity of DNA extracted from the sample). A value of 100% would suggest that all microbes in the sample contain the gene.

[4]Samples are stabilized by freezing at -80 °C upon sample reception (field filters) or in-lab filtration (groundwater). Hold time not exceeded if sampling date is within 7 days of date received or filtration date.

[T]Matrix spike performed with 6×10^9 Dhc gene copies/L.

SiREM

Chain-of-Custody Form

siremlab.com

130 Stone Rd. W
Guelph, ON N1G 3Z2
(519) 822-2265

Lab # 5-5166

*Project Name: River Terrace	*Project #: 20301.005.01
*Project Manager: Andrew Weller	*Company: Ahtna Environmental Inc.
*Email Address: aweller@ahtna.net	
Address (Street): 1894 Marika Road, Suite 8	
City: Fairbanks / State/Province: AK / Country: USA	
*Phone #: 907 590 7979	
*Sampler's Signature: RJ—BP	*Sampler's Printed Name: Ryan Burich

Client Sample ID	Sampling Date	Sampling Time	Matrix	# of Containers	Gene-Trac DHC	Gene-Trac PSA (vcrA, tceA, bvcA, tceA)	Gene-Trac DHB	Gene-Trac DHG	Gene-Trac tceA	Volatile Fatty Acids	Dissolved Hydrocarbon gases	Treatability Study	Functional Genes			Other Information
18-RT-25-GW	12/12/18	1640	GW	1	X								X			
18-RT-38-GW	12/13/18	1510	GW	1	X								X			
18-RT-42-GW	12/12/18	1605	GW	1	X								X			
18-RT-47-GW	12/13/18	1315	GW	3	X								X			Extra Volume for MS/MSD
18-RT-48-GW	12/13/18	1340	GW	1	X								X			
18-RT-49-GW	12/13/18	1925	GW	1	X								X			* Analyze all samples
18-RT-50-GW	12/13/18	1840	GW	1	X								X			for Gene-Trac DHC,
18-RT-51-GW	12/13/18	2035	GW	1	X								X			including functional
18-RT-78-GW	12/14/18	0950	GW	1	X								X			genes.
18-RT-103-GW	12/13/18	2130	GW	1	X								X			

Billing Information

P.O. #: 02002258

*Bill To: Ahtna Environmental, Inc

Turnaround Time Requested

Normal ☒
Rush ☐

For Lab Use Only

Cooler Condition: GOOD

Cooler Temperature: 2 °C

Custody Seals: Yes ☒ No ☐

For Lab Use Only

Proposal #: _____

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Signature: RJ—BP	Signature:	Signature:	Signature:	Signature:	Signature:
Printed Name: Ryan Burich	Printed Name: D. Nespoli	Printed Name:	Printed Name:	Printed Name:	Printed Name:
Firm: Rescon Alaska	Firm: SUREX	Firm:	Firm:	Firm:	Firm:
Date/Time: 12/15/18 / 1445	Date/Time: Dec 17 '18 1:30pm	Date/Time:	Date/Time:	Date/Time:	Date/Time:

Distribution: White - return to Originator; Yellow - Lab Copy; Pink - Retained by Client

* Mandatory Fields

SiREM

Chain-of-Custody Form

siremlab.com

130 Stone Rd W
Guelph, ON N1G 3Z2
(519) 822-2265

Lab # 5-5166

*Project Name: River Terrace	*Project #: 20301.005.01
*Project Manager: Andrew Weller	*Company: Ahtna Environmental Inc.
*Email Address: aweller@ahtna.net	
Address (Street): 1896 Marika Road, Suite 8	
City: Fairbanks / State/Province: AK / Country: USA	
*Phone #: 907 590 7979	
*Sampler's Signature: Ryan Burich	*Sampler's Printed Name: Ryan Burich

Client Sample ID	Sampling Date	Sampling Time	Matrix	# of Containers	Gene-Trac DHC	Gene-Trac PCA (narA, bmoA, tcbA)	Gene-Trac DHB	Gene-Trac DHG	Gene-Trac tceA	Volatile Fatty Acids	Dissolved hydrocarbon gases	Treatability Study	Functional Genes			
18-RT-FD1-GW	12/13/18	0600	GW	1	X								X			
~~18-RT-18-RT-47-GW-MS~~	"	1315	GW	1												
~~18-RT-18-RT-47-GW-MSD~~	"	1315	GW	1												

Analysis

Preservative Key
0. None
1. HCl
2. Other
3. Other
4. Other
5. Other
6. Other

Other Information
* Analyze all samples for Gene Trac-DHC, including functional genes.

P.O. #	0200 2258
*Bill To	Ahtna Environmental, Inc

Turnaround Time Requested
Normal ☒
Rush ☐

For Lab Use Only
Cooler Condition: Good
Cooler Temperature: 2°C
Custody Seals: Yes ☒ No ☐

For Lab Use Only
Proposal #:

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Signature: Ryan Burich	Signature: [signature]	Signature:	Signature:	Signature:	Signature:
Printed Name: Ryan Burich	Printed Name: D. Nespoli	Printed Name:	Printed Name:	Printed Name:	Printed Name:
Firm: Research Alaska	Firm: SiREM	Firm:	Firm:	Firm:	Firm:
Date/Time: 12/15/18 / 1445	Date/Time: Dec 17 '18 1:30pm	Date/Time:	Date/Time:	Date/Time:	Date/Time:

Distribution: White - return to Originator; Yellow - Lab Copy; Pink - Retained by Client

* Mandatory Fields

SiREM
Leading Science · Lasting Solutions

130 Stone Rd. W
Guelph, ON N1G 3Z2
(519) 822-2265

Analytical Results

Client: Ahtna Environmental Inc.
Client Project Number: 20301.005.01
Date Samples Received: December 21, 2018
Date Samples Analyzed: January 2, 2019

SiREM File Reference: S-5177

Client Sample ID	SiREM Reference ID	Client Sample Date	Sample Dilution Factor	Lactate	Acetate	Propionate	Formate	Butyrate	Pyruvate
				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
18-RT-25-GW	18-2737	12-Dec-18	50	<0.39	<0.54	<0.31	<0.22	<0.41	<0.69
18-RT-38-GW	18-2738	12-Dec-18	50	<0.39	<0.54	<0.31	<0.22	<0.41	<0.69
18-RT-42-GW	18-2739	12-Dec-18	50	<0.39	<0.54	<0.31	<0.22	<0.41	<0.69
18-RT-47-GW	18-2740	13-Dec-18	5,000	6,292	2,413	3,361	<22	4,981	33
18-RT-48-GW	18-2741	13-Dec-18	1,000	<7.8	729	548	<4.4	22	14
18-RT-49-GW	18-2742	13-Dec-18	50	<0.39	69	7.8	<0.22	<0.41	<0.69
18-RT-50-GW	18-2743	13-Dec-18	50	<0.39	111	13	<0.22	<0.41	<0.69
18-RT-51-GW	18-2744	13-Dec-18	50	<0.39	83	11	<0.22	<0.41	<0.69
18-RT-78-GW	18-2745	14-Dec-18	5,000	<39	4,023	944	<22	2,739	<69
18-RT-103-GW	18-2746	13-Dec-18	5,000	9,783	2,496	4,202	<22	6,439	40
18-RT-FD1-GW	18-2747	13-Dec-18	50	<0.39	68	8.1	1.1	1.4	<0.69
18-RT-47-GW MS	18-2740 MS	13-Dec-18	--	99%	88%	88%	93%	84%	94%
18-RT-47-GW MSD	18-2740 MSD	13-Dec-18	--	97%	87%	87%	92%	88%	91%
			QL	0.39	0.54	0.31	0.22	0.41	0.69

Comments:
Method: Ion Chromatography
QL = Quantitation limit
J = associated value is estimated; compound positively detected at concentration below the QL
< = compound analysed for but not detected, associated value is QL. Sample QL is corrected for dilution.

Analyst:

Kela Ashworth, B.Sc.
Laboratory Technician

Results approved:

Michael Healey, B.Sc.
Laboratory Technician

Date:

18-Jan-19

Arctic Data Services LLC

302 Cushman St., Ste # 203
Fairbanks, AK 99701
907-457-3147

Date:	2/8/2019
Project name:	ADEC River Terrace Well Sampling
Laboratories:	SiREM Laboratories (SiREM) – Guelph, Ontario, CA SGS North America, Inc. (SGS) – Anchorage, AK
Sample Delivery Groups:	SiREM S-5166, S-5177 and SGS 1187094
Reviewed by:	Alex Thompson
Title:	Chemist
Final Review by:	Rodney Guritz
Title:	Principal Chemist

To: Mr. Andrew Weller
Ahtna Engineering Services
1896 Marika Road, Suite 8
Fairbanks, Alaska 99709

Data Quality Assessment

This letter summarizes the findings of a data quality assessment (DQA) conducted by Arctic Data Services, LLC (ADS) for the above-referenced project data. Precision, accuracy, sensitivity, representativeness, comparability, and completeness of the data was evaluated by reviewing laboratory-supplied quality assurance/quality control (QA/QC) information as well as conducting independent QA/QC checks on the data. A Stage 2A data validation was conducted in accordance with ADS's *Standard Operating Procedure for Stage 2A Data Validation* (2017). Stage 2A validation includes reviewing sample handling, custody, and sample-batch level QC information and applying data qualifiers to sample results affected by anomalies and QC failures, and summarizing the impacts to data quality. Instrument-level QC information is not reviewed. This validation meets the requirements of the Alaska Department of Environmental Conservation (ADEC) *Technical Memorandum on Data Quality Objectives, Checklists, Quality Assurance Requirements for Laboratory Data, and Sample Handling* (March 2017). In the absence of project-specific control limits or measurement quality objectives (MQOs), laboratory QC sample recoveries and relative percent differences (RPDs) were compared to laboratory control limits. Field-duplicate RPDs were compared to ADEC-recommended MQOs. Project action limits (PALs) varied across the site depending on the type/location of well sampled, and were based on the ADEC 18 AAC 75.341 Table C Groundwater cleanup levels (GCLs), or the record of decision (ROD) for the site. Reporting limits for all samples were compared to the most stringent PAL listed in Table 2-2 of the Work Plan for purposes of evaluating analytical sensitivity.

ADEC laboratory data review checklists were completed for each sample delivery group (SDG), and are attached to this DQA. A list of data affected by QA/QC anomalies is provided as the attached Table 1. Also attached is a summary of analytical sensitivity (Table 2), which lists results in which reporting limits exceed PALs. The following sections provide a summary of our findings for each QA/QC element reviewed; failures or anomalies that had no impact to data quality are discussed in the ADEC data review checklists, and are not further described herein.

Sample Analysis Summary

Analytical results for 27 groundwater samples (including 3 QC field duplicates, and 3 field QC samples) were reviewed. Project samples were submitted in a single SDG to SGS North America, Inc. in Anchorage, Alaska, for analysis of the following:

- Volatile Organic Compounds (VOCs) by EPA Method SW8260C, and
- Methane, ethane, and ethene by RSK-175 (analysis performed by SGS in Orlando, FL).

Additionally, select samples were submitted to SiREM laboratories in Guelph, Ontario in one SDG (reported in two laboratory work orders) for analysis of the following:

- Total and Dissolved Iron (Fe),
- Total Organic Carbon (TOC),
- *Dehalococcoides* and functional genes via SiREM GeneTrac Method, and
- Volatile fatty acids (VFA) via ion chromatography.

Analyses performed by SiREM are used for monitoring indicators of biodegradation and efficacy of bio-augmentation measures performed at the River Terrace site. QC information reported by SiREM was minimal, and QC samples (method blanks, laboratory control samples, etc.) were not reported for every analysis. Where reported, QC samples indicated adequate sensitivity, precision, and accuracy; any exceptions are described below. For additional information, refer to the ADEC checklist.

Sample Preservation, Handling, Custody, and Holding Times

Sample receipt forms were reviewed to check that samples were received in good condition, properly preserved, and within the required temperature range. Chain of custody forms were reviewed to confirm that custody was not breached during sample handling. Dates of sample collection, preparation, and analysis were compared to check that method holding times were not exceeded.

The following sample preservation, handling, custody, and/or holding time anomalies had affected project-sample data quality:

- **SGS 1187094.** A number of sample VOA vials were received with headspace or bubbles larger than 6mm. Additionally, a number of samples were received with pH greater than 2. The following summarizes sample condition for the affected project samples:

18-RT-47-GW	headspace > 6 mm; pH > 2
18-RT-48-GW	headspace > 6 mm
18-RT-78-GW	pH > 2

18-RT-80A-GW	pH > 2
18-RT-103-GW	headspace > 6 mm; pH > 2

Detected results for samples with headspace and/or outside-of-range pH are qualified with a 'J-' flag, indicating the results are estimated, biased low, due to potential loss of analyte. Non-detect results are qualified with a 'UJ' flag. Refer to the attached Table 1 for a full list of affected results. Caution is warranted when using results that are close to PALs, as they cannot rule out the potential presence of the analyte above cleanup levels.

Analytical Sensitivity

Analytical sensitivity was evaluated for VOC results by checking that limits of detection (LODs) were below relevant GCLs and the most stringent site-specific ROD cleanup levels for the site. A number of project sample reporting limits exceeded the most stringent PALs. Refer to the attached Table 2 for a list of affected results.

Data usability is limited for results where the LOD exceeded a relevant cleanup level or target level; it cannot be conclusively determined whether these analytes are present above the cleanup level but below the LOD. Results with LODs or RLs exceeding cleanup levels or target levels are identified in the attached Table 2.

Method Blanks and Trip Blanks

SGS analyzed and reported a method blank (MB) for each preparatory batch, to check for laboratory-based sample contamination. Additionally, trip blanks were submitted with project groundwater samples for VOC analysis, to check for cross-contamination of samples during sampling, shipment, or storage.

There were no detections in method blanks or trip blanks that affected project-sample data quality. Refer to individual checklists for further details.

Laboratory Control Samples and Matrix Spike Samples.

SGS analyzed and reported a laboratory control sample (LCS) for each preparatory batch, to assess laboratory extraction efficiency and analytical accuracy. In some cases, LCS duplicates (LCSDs) were used to assess analytical precision. LCS and LCSD recovery information and LCS/LCSD RPD information (where available) were reviewed. Additionally, a matrix spike (MS) and matrix spike duplicate (MSD) sample were submitted to both laboratories, to assess analytical accuracy and potential matrix interference.

There were no LCS/LCSD or MS/MSD recovery or RPD failures that affected project-sample data quality. Refer to individual checklists for details.

Surrogate Recovery

Samples submitted for analysis of organic compounds were spiked with analyte surrogates to evaluate extraction efficiency and to check for matrix interference. Surrogate recoveries were reviewed for each project sample and analysis.

There were no surrogate recovery failures affecting project-sample data quality.

Field Duplicates

Field duplicate samples were collected and submitted blind to the laboratory. The field-duplicate collection frequency met the required minimum frequency of 10% for groundwater samples. RPDs between field-duplicate results were calculated where at least one of the results was quantitatively detected (above the LOQ); where one results was not detected, the LOD or reporting limit was used in the calculation. The ADEC recommended MQO of 30% was used to evaluate field-duplicate precision for groundwater samples.

The following field-duplicate RPD failures were determined to have an effect on project-sample data quality:

- **SGS 1187094.** RPDs were calculated for field duplicate results using the LOD for non-detect results. Trichloroethene, 2-butanone, and 1,2-dichloropropane RPDs exceeded the MQO for duplicate pair 18-RT-FD2-GW and 18-RT-51-GW. Trichloroethene, and tetrachloroethene had RPDs exceeding the MQO for duplicate pair 18-RT-FD3-GW and 18-RT-50-GW. Results where the RPD exceeds MQOs will be qualified with a 'J' flag for detections and 'UJ' for non-detections (where one was detected above the LOQ), indicating the result is estimated, with an unknown direction of bias, due to poor analytical precision. The higher of field duplicate results should be used for project decision making purposes.

- **SiREM S-5177.** Formate and butyrate were detected in the duplicate, but not in the primary sample. RPDs for formate and butyrate exceeded the MQO of 30% in the duplicate pair, using the reporting limit for non-detect results. Detected results are qualified with a 'J' flag as estimated and non-detect results are qualified 'UJ' for the field duplicate pair.

- **SiREM S-5166**. RPDs for functional genes were all within MQOs, however RPDs for total *Dehalococcoides* (Dhc) for field duplicate pair 18-RT-49-GW and 18-RT-FD1-GW exceeded the 30% MQO. Results for Dhc in the primary and duplicate sample will be qualified with a 'J' flag, indicating the results are estimated, with no clear direction of bias.

Equipment Blanks

Two equipment blank samples were submitted and analyzed for VOCs by EPA Method 8260C, to assess possible contamination from reusable sampling equipment. We do not have detailed records of which samples were collected with which set of sampling equipment; detections in either equipment blank sample are conservatively considered to affect all project samples from the sampling event.

There were a number of equipment blank detections affecting project-sample data quality:

- **SGS 1187094**. cis-1,2-Dichloroethene (cDCE) was detected above the LOQ in EB sample 18-RT-EB2-GW. Chloroform and toluene were detected below the LOQ in EB sample 18-RT-EB1-GW. Project sample results are considered affected if the analytes detected in the blank are within 10 times the equipment blank concentration for groundwater samples. cDCE, toluene and chloroform were detected within 10 times the equipment blank concentration for a number of samples; refer to attached Table 1 for a full list of affected results. Affected results are qualified with a 'B' flag, indicating the result is estimated, biased high, and potentially attributable to sample contamination from reusable sampling equipment. Affected results within an order of magnitude of cleanup levels should be used with caution.

Other QC Anomalies

Review of instrument-level QC failures or other QC anomalies is outside the scope of this data quality assessment, except to the extent that the laboratory identifies a failure or anomaly in the case narrative. No instrument-level QC anomalies were identified in the course of our review. There were no other QC anomalies that affected data quality for this project.

Summary of Data Quality Indicators

The following sections summarize the findings of the above review with respect to the six data quality indicators: sensitivity, precision, accuracy, representativeness, comparability, and completeness.

Sensitivity

Sensitivity describes the ability of the sampling and analytical methodology to meet detection and/or quantitation limit objectives. Sensitivity was generally considered adequate for purposes of this project, with exceptions noted in Table 2. Reporting limits were compared to the most stringent PAL listed in Table 2-2 of the workplan only. Cases where an LOD exceeds this most-stringent PAL should be reviewed by the project team, as the most stringent PAL may not be applicable to specific sample locations, per the ROD. Results where the LOD exceeds the PAL should be used with caution, and should not be used to rule out the potential presence of the analyte above cleanup levels.

Precision

Precision is a measure of the reproducibility of repetitive measurements. Precision was evaluated based on laboratory QC-sample and field-duplicate sample RPDs. There were no laboratory QC sample RPD failures that affected project-sample data quality, however numerous field duplicate RPDs exceeded the MQO for a number of analytes. Overall impact to data usability is minor, however estimated results within an order of magnitude of cleanup levels should be used with caution. Overall precision is deemed acceptable for purposes of this project, with qualified data taken into account.

Accuracy

Accuracy is a measure of the correctness, or the closeness, between the true value and the quantity detected. Accuracy was evaluated based on analyte recoveries for laboratory QC samples and recovery of surrogate spikes for project samples. There were no surrogate or laboratory QC sample recovery failures identified in the course of our review. Accuracy is deemed acceptable for purposes of this project.

Representativeness

Representativeness describes the degree to which data accurately and precisely represent site characteristics. Representativeness is affected by factors such as sample frequency and matrix or contaminant heterogeneity, as well as analytical performance (including sensitivity, accuracy, and precision), sample preservation, handling, and holding times, and sample cross-contamination. Samples were collected in accordance with an ADEC-approved work plan, and data quality objectives were met for all analyses and reported results. A number of project-sample results were qualified due to sampling equipment-based contamination. These results are considered estimated, and are not wholly representative of on-site conditions. Refer to attached Table 1 for a full list of affected analytes Overall representativeness was deemed acceptable for purposes of this project.

Comparability

Comparability describes whether two data sets can be considered equivalent with respect to project goals. Comparability is affected by factors such as sampling methodology and analytical performance (including sensitivity, accuracy, and precision). Comparability was evaluated by checking that standard analytical methods were employed and analytical performance was acceptable. Project sample results are deemed generally comparable.

Completeness

Completeness describes the amount of valid data obtained from the sampling event(s). It is calculated as the percentage of usable measurements compared to the total number of measurements. The groundwater dataset is 100% complete, with no data rejected in the course of our review.

Conclusions and Limitations

Precision, accuracy, representativeness, comparability, and completeness were deemed acceptable, and the data are usable for the purposes of this project, as qualified. Results for analytes where LODs did not meet PALs should be identified in project reporting tables; these results should not be used to rule out the potential presence of these analytes above PALs.

Our review was based solely on information provided by the analytical laboratory in the laboratory reports for the SDGs reviewed. We did not review instrument-level QC elements, such as calibration verification or internal standard response, except to the extent that the laboratory identified instrument-level anomalies in the case narrative. We did not conduct independent validation of the data (e.g. recalculating results based on instrument responses) or review any raw chemical data (e.g. chromatograms).

Attachments:

Table 1	Summary of Qualified Data
Table 2	Analytical Sensitivity Summary
ADEC Data Review Checklists	SiREM S-1577 and S-1566 SGS 1187094

Table 1
Summary of Qualified Data
Data Quality Assessment
River Terrace Well Sampling

Lab	SDG	Sample ID	Matrix	Method	Analyte	Units	DL	LOD	LOQ	Result	Lab flags	Original Result	QC Flags	Note	Final Qualified Result
SGSA	1187094	18-RT-103-GW	Groundwater	8260C	1,1,1,2-Tetrachloroethane	µg/L	15	25	50			25.0 U	UJ	1, 2	25.0 UJ
SGSA	1187094	18-RT-103-GW	Groundwater	8260C	1,1,1-Trichloroethane	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-103-GW	Groundwater	8260C	1,1,2,2-Tetrachloroethane	µg/L	15	25	50			25.0 U	UJ	1, 2	25.0 UJ
SGSA	1187094	18-RT-103-GW	Groundwater	8260C	1,1,2-Trichloroethane	µg/L	12	20	40			20.0 U	UJ	1, 2	20.0 UJ
SGSA	1187094	18-RT-103-GW	Groundwater	8260C	1,1-Dichloroethane	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-103-GW	Groundwater	8260C	1,1-Dichloroethene	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-103-GW	Groundwater	8260C	1,1-Dichloropropene	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-103-GW	Groundwater	8260C	1,2,3-Trichlorobenzene	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-103-GW	Groundwater	8260C	1,2,3-Trichloropropane	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-103-GW	Groundwater	8260C	1,2,4-Trichlorobenzene	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-103-GW	Groundwater	8260C	1,2,4-Trimethylbenzene	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-103-GW	Groundwater	8260C	1,2-Dibromo-3-chloropropane	µg/L	310	500	1000			500 U	UJ	1, 2	500 UJ
SGSA	1187094	18-RT-103-GW	Groundwater	8260C	1,2-Dibromoethane	µg/L	1.8	3.75	7.5			3.75 U	UJ	1, 2	3.75 UJ
SGSA	1187094	18-RT-103-GW	Groundwater	8260C	1,2-Dichlorobenzene	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-103-GW	Groundwater	8260C	1,2-Dichloroethane	µg/L	15	25	50			25.0 U	UJ	1, 2	25.0 UJ
SGSA	1187094	18-RT-103-GW	Groundwater	8260C	1,2-Dichloropropane	µg/L	31	50	100	35	J	35.0 J	J-	1, 2	35.0 J-
SGSA	1187094	18-RT-103-GW	Groundwater	8260C	1,3,5-Trimethylbenzene	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-103-GW	Groundwater	8260C	1,3-Dichlorobenzene	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-103-GW	Groundwater	8260C	1,3-Dichloropropane	µg/L	15	25	50			25.0 U	UJ	1, 2	25.0 UJ
SGSA	1187094	18-RT-103-GW	Groundwater	8260C	1,4-Dichlorobenzene	µg/L	15	25	50			25.0 U	UJ	1, 2	25.0 UJ
SGSA	1187094	18-RT-103-GW	Groundwater	8260C	2,2-Dichloropropane	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-103-GW	Groundwater	8260C	2-Butanone (MEK)	µg/L	310	500	1000	1740		1740	J-	1, 2	1740 J-
SGSA	1187094	18-RT-103-GW	Groundwater	8260C	2-Chlorotoluene	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-103-GW	Groundwater	8260C	2-Hexanone	µg/L	310	500	1000			500 U	UJ	1, 2	500 UJ
SGSA	1187094	18-RT-103-GW	Groundwater	8260C	4-Chlorotoluene	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-103-GW	Groundwater	8260C	4-Isopropyltoluene	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-103-GW	Groundwater	8260C	4-Methyl-2-pentanone (MIBK)	µg/L	310	500	1000			500 U	UJ	1, 2	500 UJ
SGSA	1187094	18-RT-103-GW	Groundwater	8260C	Benzene	µg/L	12	20	40	45		45	J-	1, 2	45 J-
SGSA	1187094	18-RT-103-GW	Groundwater	8260C	Bromobenzene	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-103-GW	Groundwater	8260C	Bromochloromethane	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-103-GW	Groundwater	8260C	Bromodichloromethane	µg/L	15	25	50			25.0 U	UJ	1, 2	25.0 UJ
SGSA	1187094	18-RT-103-GW	Groundwater	8260C	Bromoform	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-103-GW	Groundwater	8260C	Bromomethane	µg/L	150	250	500			250 U	UJ	1, 2	250 UJ
SGSA	1187094	18-RT-103-GW	Groundwater	8260C	Carbon disulfide	µg/L	310	500	1000			500 U	UJ	1, 2	500 UJ
SGSA	1187094	18-RT-103-GW	Groundwater	8260C	Carbon tetrachloride	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-103-GW	Groundwater	8260C	Chlorobenzene	µg/L	15	25	50			25.0 U	UJ	1, 2	25.0 UJ

Table 1
Summary of Qualified Data
Data Quality Assessment
River Terrace Well Sampling

Lab	SDG	Sample ID	Matrix	Method	Analyte	Units	DL	LOD	LOQ	Result	Lab flags	Original Result	QC Flags	Note	Final Qualified Result
SGSA	1187094	18-RT-103-GW	Groundwater	8260C	Chloroethane	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-103-GW	Groundwater	8260C	Chloroform	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-103-GW	Groundwater	8260C	Chloromethane	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-103-GW	Groundwater	8260C	cis-1,2-Dichloroethene	µg/L	31	50	100	18000		18000	J-	1, 2	18000 J-
SGSA	1187094	18-RT-103-GW	Groundwater	8260C	cis-1,3-Dichloropropene	µg/L	15	25	50			25.0 U	UJ	1, 2	25.0 UJ
SGSA	1187094	18-RT-103-GW	Groundwater	8260C	Dibromochloromethane	µg/L	15	25	50			25.0 U	UJ	1, 2	25.0 UJ
SGSA	1187094	18-RT-103-GW	Groundwater	8260C	Dibromomethane	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-103-GW	Groundwater	8260C	Dichlorodifluoromethane	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-103-GW	Groundwater	8260C	Ethylbenzene	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-103-GW	Groundwater	8260C	Freon-113	µg/L	310	500	1000			500 U	UJ	1, 2	500 UJ
SGSA	1187094	18-RT-103-GW	Groundwater	8260C	Hexachlorobutadiene	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-103-GW	Groundwater	8260C	Isopropylbenzene (Cumene)	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-103-GW	Groundwater	8260C	Methylene chloride	µg/L	100	250	500			250 U	UJ	1, 2	250 UJ
SGSA	1187094	18-RT-103-GW	Groundwater	8260C	Methyl-t-butyl ether	µg/L	310	500	1000			500 U	UJ	1, 2	500 UJ
SGSA	1187094	18-RT-103-GW	Groundwater	8260C	Naphthalene	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-103-GW	Groundwater	8260C	n-Butylbenzene	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-103-GW	Groundwater	8260C	n-Propylbenzene	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-103-GW	Groundwater	8260C	o-Xylene	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-103-GW	Groundwater	8260C	P & M -Xylene	µg/L	62	100	200			100 U	UJ	1, 2	100 UJ
SGSA	1187094	18-RT-103-GW	Groundwater	8260C	sec-Butylbenzene	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-103-GW	Groundwater	8260C	Styrene	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-103-GW	Groundwater	8260C	tert-Butylbenzene	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-103-GW	Groundwater	8260C	Tetrachloroethene	µg/L	31	50	100	7290		7290	J-	1, 2	7290 J-
SGSA	1187094	18-RT-103-GW	Groundwater	8260C	Toluene	µg/L	31	50	100	32	J	32.0 J	J-, B	1, 2, 3	32.0 J B
SGSA	1187094	18-RT-103-GW	Groundwater	8260C	trans-1,2-Dichloroethene	µg/L	31	50	100	201		201	J-	1, 2	201 J-
SGSA	1187094	18-RT-103-GW	Groundwater	8260C	trans-1,3-Dichloropropene	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-103-GW	Groundwater	8260C	Trichloroethene	µg/L	31	50	100	2150		2150	J-	1, 2	2150 J-
SGSA	1187094	18-RT-103-GW	Groundwater	8260C	Trichlorofluoromethane	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-103-GW	Groundwater	8260C	Vinyl acetate	µg/L	310	500	1000			500 U	UJ	1, 2	500 UJ
SGSA	1187094	18-RT-103-GW	Groundwater	8260C	Vinyl chloride	µg/L	5	7.5	15	303		303	J-	1, 2	303 J-
SGSA	1187094	18-RT-103-GW	Groundwater	8260C	Xylenes (total)	µg/L	100	150	300			150 U	UJ	1, 2	150 UJ
SGSA	1187094	18-RT-12-GW	Groundwater	8260C	cis-1,2-Dichloroethene	µg/L	0.31	0.5	1	14.4		14.4	B	3	14.4 B
SGSA	1187094	18-RT-16-GW	Groundwater	8260C	cis-1,2-Dichloroethene	µg/L	0.31	0.5	1	7.45		7.45	B	3	7.45 B
SGSA	1187094	18-RT-16-GW	Groundwater	8260C	Toluene	µg/L	0.31	0.5	1	0.82	J	0.820 J	B	3	0.820 J B
SGSA	1187094	18-RT-23-GW	Groundwater	8260C	Chloroform	µg/L	0.31	0.5	1	1.1		1.1	B	3	1.10 B
SGSA	1187094	18-RT-25-GW	Groundwater	8260C	Chloroform	µg/L	0.31	0.5	1	0.68	J	0.680 J	B	3	0.680 J B

Table 1
Summary of Qualified Data
Data Quality Assessment
River Terrace Well Sampling

Lab	SDG	Sample ID	Matrix	Method	Analyte	Units	DL	LOD	LOQ	Result	Lab flags	Original Result	QC Flags	Note	Final Qualified Result
SGSA	1187094	18-RT-39-GW	Groundwater	8260C	cis-1,2-Dichloroethene	µg/L	0.31	0.5	1	3.19		3.19	B	3	3.19 B
SGSA	1187094	18-RT-39-GW	Groundwater	8260C	Toluene	µg/L	0.31	0.5	1	1.52		1.52	B	3	1.52 B
SGSA	1187094	18-RT-40-GW	Groundwater	8260C	Toluene	µg/L	0.31	0.5	1	0.63	J	0.630 J	B	3	0.630 J B
SGSA	1187094	18-RT-42-GW	Groundwater	8260C	Chloroform	µg/L	0.31	0.5	1	0.4	J	0.400 J	B	3	0.400 J B
SGSA	1187094	18-RT-42-GW	Groundwater	8260C	cis-1,2-Dichloroethene	µg/L	0.31	0.5	1	3.65		3.65	B	3	3.65 B
SGSA	1187094	18-RT-44-GW	Groundwater	8260C	Toluene	µg/L	0.31	0.5	1	0.37	J	0.370 J	B	3	0.370 J B
SGSA	1187094	18-RT-47-GW	Groundwater	8260C	1,1,1,2-Tetrachloroethane	µg/L	15	25	50			25.0 U	UJ	1, 2	25.0 UJ
SGSA	1187094	18-RT-47-GW	Groundwater	8260C	1,1,1-Trichloroethane	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-47-GW	Groundwater	8260C	1,1,2,2-Tetrachloroethane	µg/L	15	25	50			25.0 U	UJ	1, 2	25.0 UJ
SGSA	1187094	18-RT-47-GW	Groundwater	8260C	1,1,2-Trichloroethane	µg/L	12	20	40			20.0 U	UJ	1, 2	20.0 UJ
SGSA	1187094	18-RT-47-GW	Groundwater	8260C	1,1-Dichloroethane	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-47-GW	Groundwater	8260C	1,1-Dichloroethene	µg/L	31	50	100	31	J	31.0 J	J-	1, 2	31.0 J-
SGSA	1187094	18-RT-47-GW	Groundwater	8260C	1,1-Dichloropropene	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-47-GW	Groundwater	8260C	1,2,3-Trichlorobenzene	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-47-GW	Groundwater	8260C	1,2,3-Trichloropropane	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-47-GW	Groundwater	8260C	1,2,4-Trichlorobenzene	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-47-GW	Groundwater	8260C	1,2,4-Trimethylbenzene	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-47-GW	Groundwater	8260C	1,2-Dibromo-3-chloropropane	µg/L	310	500	1000			500 U	UJ	1, 2	500 UJ
SGSA	1187094	18-RT-47-GW	Groundwater	8260C	1,2-Dibromoethane	µg/L	1.8	3.75	7.5			3.75 U	UJ	1, 2	3.75 UJ
SGSA	1187094	18-RT-47-GW	Groundwater	8260C	1,2-Dichlorobenzene	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-47-GW	Groundwater	8260C	1,2-Dichloroethane	µg/L	15	25	50			25.0 U	UJ	1, 2	25.0 UJ
SGSA	1187094	18-RT-47-GW	Groundwater	8260C	1,2-Dichloropropane	µg/L	31	50	100	65	J	65.0 J	J-	1, 2	65.0 J-
SGSA	1187094	18-RT-47-GW	Groundwater	8260C	1,3,5-Trimethylbenzene	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-47-GW	Groundwater	8260C	1,3-Dichlorobenzene	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-47-GW	Groundwater	8260C	1,3-Dichloropropane	µg/L	15	25	50			25.0 U	UJ	1, 2	25.0 UJ
SGSA	1187094	18-RT-47-GW	Groundwater	8260C	1,4-Dichlorobenzene	µg/L	15	25	50			25.0 U	UJ	1, 2	25.0 UJ
SGSA	1187094	18-RT-47-GW	Groundwater	8260C	2,2-Dichloropropane	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-47-GW	Groundwater	8260C	2-Butanone (MEK)	µg/L	310	500	1000	1930		1930	J-	1, 2	1930 J-
SGSA	1187094	18-RT-47-GW	Groundwater	8260C	2-Chlorotoluene	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-47-GW	Groundwater	8260C	2-Hexanone	µg/L	310	500	1000			500 U	UJ	1, 2	500 UJ
SGSA	1187094	18-RT-47-GW	Groundwater	8260C	4-Chlorotoluene	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-47-GW	Groundwater	8260C	4-Isopropyltoluene	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-47-GW	Groundwater	8260C	4-Methyl-2-pentanone (MIBK)	µg/L	310	500	1000			500 U	UJ	1, 2	500 UJ
SGSA	1187094	18-RT-47-GW	Groundwater	8260C	Benzene	µg/L	12	20	40	85		85	J-	1, 2	85 J-
SGSA	1187094	18-RT-47-GW	Groundwater	8260C	Bromobenzene	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-47-GW	Groundwater	8260C	Bromochloromethane	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ

Table 1
Summary of Qualified Data
Data Quality Assessment
River Terrace Well Sampling

Lab	SDG	Sample ID	Matrix	Method	Analyte	Units	DL	LOD	LOQ	Result	Lab flags	Original Result	QC Flags	Note	Final Qualified Result
SGSA	1187094	18-RT-47-GW	Groundwater	8260C	Bromodichloromethane	µg/L	15	25	50			25.0 U	UJ	1, 2	25.0 UJ
SGSA	1187094	18-RT-47-GW	Groundwater	8260C	Bromoform	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-47-GW	Groundwater	8260C	Bromomethane	µg/L	150	250	500			250 U	UJ	1, 2	250 UJ
SGSA	1187094	18-RT-47-GW	Groundwater	8260C	Carbon disulfide	µg/L	310	500	1000			500 U	UJ	1, 2	500 UJ
SGSA	1187094	18-RT-47-GW	Groundwater	8260C	Carbon tetrachloride	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-47-GW	Groundwater	8260C	Chlorobenzene	µg/L	15	25	50			25.0 U	UJ	1, 2	25.0 UJ
SGSA	1187094	18-RT-47-GW	Groundwater	8260C	Chloroethane	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-47-GW	Groundwater	8260C	Chloroform	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-47-GW	Groundwater	8260C	Chloromethane	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-47-GW	Groundwater	8260C	cis-1,2-Dichloroethene	µg/L	310	500	1000	34300		34300	J-	1, 2	34300 J-
SGSA	1187094	18-RT-47-GW	Groundwater	8260C	cis-1,3-Dichloropropene	µg/L	15	25	50			25.0 U	UJ	1, 2	25.0 UJ
SGSA	1187094	18-RT-47-GW	Groundwater	8260C	Dibromochloromethane	µg/L	15	25	50			25.0 U	UJ	1, 2	25.0 UJ
SGSA	1187094	18-RT-47-GW	Groundwater	8260C	Dibromomethane	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-47-GW	Groundwater	8260C	Dichlorodifluoromethane	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-47-GW	Groundwater	8260C	Ethylbenzene	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-47-GW	Groundwater	8260C	Freon-113	µg/L	310	500	1000			500 U	UJ	1, 2	500 UJ
SGSA	1187094	18-RT-47-GW	Groundwater	8260C	Hexachlorobutadiene	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-47-GW	Groundwater	8260C	Isopropylbenzene (Cumene)	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-47-GW	Groundwater	8260C	Methylene chloride	µg/L	100	250	500			250 U	UJ	1, 2	250 UJ
SGSA	1187094	18-RT-47-GW	Groundwater	8260C	Methyl-t-butyl ether	µg/L	310	500	1000			500 U	UJ	1, 2	500 UJ
SGSA	1187094	18-RT-47-GW	Groundwater	8260C	Naphthalene	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-47-GW	Groundwater	8260C	n-Butylbenzene	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-47-GW	Groundwater	8260C	n-Propylbenzene	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-47-GW	Groundwater	8260C	o-Xylene	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-47-GW	Groundwater	8260C	P & M -Xylene	µg/L	62	100	200			100 U	UJ	1, 2	100 UJ
SGSA	1187094	18-RT-47-GW	Groundwater	8260C	sec-Butylbenzene	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-47-GW	Groundwater	8260C	Styrene	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-47-GW	Groundwater	8260C	tert-Butylbenzene	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-47-GW	Groundwater	8260C	Tetrachloroethene	µg/L	31	50	100	10600		10600	J-	1, 2	10600 J-
SGSA	1187094	18-RT-47-GW	Groundwater	8260C	Toluene	µg/L	31	50	100	34	J	34.0 J	J-, B	1, 2, 3	34.0 J B
SGSA	1187094	18-RT-47-GW	Groundwater	8260C	trans-1,2-Dichloroethene	µg/L	31	50	100	477		477	J-	1, 2	477 J-
SGSA	1187094	18-RT-47-GW	Groundwater	8260C	trans-1,3-Dichloropropene	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-47-GW	Groundwater	8260C	Trichloroethene	µg/L	31	50	100	2550		2550	J-	1, 2	2550 J-
SGSA	1187094	18-RT-47-GW	Groundwater	8260C	Trichlorofluoromethane	µg/L	31	50	100			50.0 U	UJ	1, 2	50.0 UJ
SGSA	1187094	18-RT-47-GW	Groundwater	8260C	Vinyl acetate	µg/L	310	500	1000			500 U	UJ	1, 2	500 UJ
SGSA	1187094	18-RT-47-GW	Groundwater	8260C	Vinyl chloride	µg/L	5	7.5	15	676		676	J-	1, 2	676 J-

Table 1
Summary of Qualified Data
Data Quality Assessment
River Terrace Well Sampling

Lab	SDG	Sample ID	Matrix	Method	Analyte	Units	DL	LOD	LOQ	Result	Lab flags	Original Result	QC Flags	Note	Final Qualified Result
SGSA	1187094	18-RT-47-GW	Groundwater	8260C	Xylenes (total)	µg/L	100	150	300			150 U	UJ	1, 2	150 UJ
SGSA	1187094	18-RT-48-GW	Groundwater	8260C	1,1,1,2-Tetrachloroethane	µg/L	7.5	12.5	25			12.5 U	UJ	1	12.5 UJ
SGSA	1187094	18-RT-48-GW	Groundwater	8260C	1,1,1-Trichloroethane	µg/L	15.5	25	50			25.0 U	UJ	1	25.0 UJ
SGSA	1187094	18-RT-48-GW	Groundwater	8260C	1,1,2,2-Tetrachloroethane	µg/L	7.5	12.5	25			12.5 U	UJ	1	12.5 UJ
SGSA	1187094	18-RT-48-GW	Groundwater	8260C	1,1,2-Trichloroethane	µg/L	6	10	20			10.0 U	UJ	1	10.0 UJ
SGSA	1187094	18-RT-48-GW	Groundwater	8260C	1,1-Dichloroethane	µg/L	15.5	25	50			25.0 U	UJ	1	25.0 UJ
SGSA	1187094	18-RT-48-GW	Groundwater	8260C	1,1-Dichloroethene	µg/L	15.5	25	50			25.0 U	UJ	1	25.0 UJ
SGSA	1187094	18-RT-48-GW	Groundwater	8260C	1,1-Dichloropropene	µg/L	15.5	25	50			25.0 U	UJ	1	25.0 UJ
SGSA	1187094	18-RT-48-GW	Groundwater	8260C	1,2,3-Trichlorobenzene	µg/L	15.5	25	50			25.0 U	UJ	1	25.0 UJ
SGSA	1187094	18-RT-48-GW	Groundwater	8260C	1,2,3-Trichloropropane	µg/L	15.5	25	50			25.0 U	UJ	1	25.0 UJ
SGSA	1187094	18-RT-48-GW	Groundwater	8260C	1,2,4-Trichlorobenzene	µg/L	15.5	25	50			25.0 U	UJ	1	25.0 UJ
SGSA	1187094	18-RT-48-GW	Groundwater	8260C	1,2,4-Trimethylbenzene	µg/L	15.5	25	50			25.0 U	UJ	1	25.0 UJ
SGSA	1187094	18-RT-48-GW	Groundwater	8260C	1,2-Dibromo-3-chloropropane	µg/L	155	250	500			250 U	UJ	1	250 UJ
SGSA	1187094	18-RT-48-GW	Groundwater	8260C	1,2-Dibromoethane	µg/L	0.9	1.88	3.75			1.88 U	UJ	1	1.88 UJ
SGSA	1187094	18-RT-48-GW	Groundwater	8260C	1,2-Dichlorobenzene	µg/L	15.5	25	50			25.0 U	UJ	1	25.0 UJ
SGSA	1187094	18-RT-48-GW	Groundwater	8260C	1,2-Dichloroethane	µg/L	7.5	12.5	25			12.5 U	UJ	1	12.5 UJ
SGSA	1187094	18-RT-48-GW	Groundwater	8260C	1,2-Dichloropropane	µg/L	15.5	25	50			25.0 U	UJ	1	25.0 UJ
SGSA	1187094	18-RT-48-GW	Groundwater	8260C	1,3,5-Trimethylbenzene	µg/L	15.5	25	50			25.0 U	UJ	1	25.0 UJ
SGSA	1187094	18-RT-48-GW	Groundwater	8260C	1,3-Dichlorobenzene	µg/L	15.5	25	50			25.0 U	UJ	1	25.0 UJ
SGSA	1187094	18-RT-48-GW	Groundwater	8260C	1,3-Dichloropropane	µg/L	7.5	12.5	25			12.5 U	UJ	1	12.5 UJ
SGSA	1187094	18-RT-48-GW	Groundwater	8260C	1,4-Dichlorobenzene	µg/L	7.5	12.5	25			12.5 U	UJ	1	12.5 UJ
SGSA	1187094	18-RT-48-GW	Groundwater	8260C	2,2-Dichloropropane	µg/L	15.5	25	50			25.0 U	UJ	1	25.0 UJ
SGSA	1187094	18-RT-48-GW	Groundwater	8260C	2-Butanone (MEK)	µg/L	155	250	500	1130		1130	J-	1	1130 J-
SGSA	1187094	18-RT-48-GW	Groundwater	8260C	2-Chlorotoluene	µg/L	15.5	25	50			25.0 U	UJ	1	25.0 UJ
SGSA	1187094	18-RT-48-GW	Groundwater	8260C	2-Hexanone	µg/L	155	250	500			250 U	UJ	1	250 UJ
SGSA	1187094	18-RT-48-GW	Groundwater	8260C	4-Chlorotoluene	µg/L	15.5	25	50			25.0 U	UJ	1	25.0 UJ
SGSA	1187094	18-RT-48-GW	Groundwater	8260C	4-Isopropyltoluene	µg/L	15.5	25	50			25.0 U	UJ	1	25.0 UJ
SGSA	1187094	18-RT-48-GW	Groundwater	8260C	4-Methyl-2-pentanone (MIBK)	µg/L	155	250	500			250 U	UJ	1	250 UJ
SGSA	1187094	18-RT-48-GW	Groundwater	8260C	Benzene	µg/L	6	10	20			10.0 U	UJ	1	10.0 UJ
SGSA	1187094	18-RT-48-GW	Groundwater	8260C	Bromobenzene	µg/L	15.5	25	50			25.0 U	UJ	1	25.0 UJ
SGSA	1187094	18-RT-48-GW	Groundwater	8260C	Bromochloromethane	µg/L	15.5	25	50			25.0 U	UJ	1	25.0 UJ
SGSA	1187094	18-RT-48-GW	Groundwater	8260C	Bromodichloromethane	µg/L	7.5	12.5	25			12.5 U	UJ	1	12.5 UJ
SGSA	1187094	18-RT-48-GW	Groundwater	8260C	Bromoform	µg/L	15.5	25	50			25.0 U	UJ	1	25.0 UJ
SGSA	1187094	18-RT-48-GW	Groundwater	8260C	Bromomethane	µg/L	75	125	250			125 U	UJ	1	125 UJ
SGSA	1187094	18-RT-48-GW	Groundwater	8260C	Carbon disulfide	µg/L	155	250	500			250 U	UJ	1	250 UJ
SGSA	1187094	18-RT-48-GW	Groundwater	8260C	Carbon tetrachloride	µg/L	15.5	25	50			25.0 U	UJ	1	25.0 UJ

Table 1
Summary of Qualified Data
Data Quality Assessment
River Terrace Well Sampling

Lab	SDG	Sample ID	Matrix	Method	Analyte	Units	DL	LOD	LOQ	Result	Lab flags	Original Result	QC Flags	Note	Final Qualified Result
SGSA	1187094	18-RT-48-GW	Groundwater	8260C	Chlorobenzene	µg/L	7.5	12.5	25			12.5 U	UJ	1	12.5 UJ
SGSA	1187094	18-RT-48-GW	Groundwater	8260C	Chloroethane	µg/L	15.5	25	50			25.0 U	UJ	1	25.0 UJ
SGSA	1187094	18-RT-48-GW	Groundwater	8260C	Chloroform	µg/L	15.5	25	50			25.0 U	UJ	1	25.0 UJ
SGSA	1187094	18-RT-48-GW	Groundwater	8260C	Chloromethane	µg/L	15.5	25	50			25.0 U	UJ	1	25.0 UJ
SGSA	1187094	18-RT-48-GW	Groundwater	8260C	cis-1,2-Dichloroethene	µg/L	15.5	25	50	4030		4030	J-	1	4030 J-
SGSA	1187094	18-RT-48-GW	Groundwater	8260C	cis-1,3-Dichloropropene	µg/L	7.5	12.5	25			12.5 U	UJ	1	12.5 UJ
SGSA	1187094	18-RT-48-GW	Groundwater	8260C	Dibromochloromethane	µg/L	7.5	12.5	25			12.5 U	UJ	1	12.5 UJ
SGSA	1187094	18-RT-48-GW	Groundwater	8260C	Dibromomethane	µg/L	15.5	25	50			25.0 U	UJ	1	25.0 UJ
SGSA	1187094	18-RT-48-GW	Groundwater	8260C	Dichlorodifluoromethane	µg/L	15.5	25	50			25.0 U	UJ	1	25.0 UJ
SGSA	1187094	18-RT-48-GW	Groundwater	8260C	Ethylbenzene	µg/L	15.5	25	50			25.0 U	UJ	1	25.0 UJ
SGSA	1187094	18-RT-48-GW	Groundwater	8260C	Freon-113	µg/L	155	250	500			250 U	UJ	1	250 UJ
SGSA	1187094	18-RT-48-GW	Groundwater	8260C	Hexachlorobutadiene	µg/L	15.5	25	50			25.0 U	UJ	1	25.0 UJ
SGSA	1187094	18-RT-48-GW	Groundwater	8260C	Isopropylbenzene (Cumene)	µg/L	15.5	25	50			25.0 U	UJ	1	25.0 UJ
SGSA	1187094	18-RT-48-GW	Groundwater	8260C	Methylene chloride	µg/L	50	125	250			125 U	UJ	1	125 UJ
SGSA	1187094	18-RT-48-GW	Groundwater	8260C	Methyl-t-butyl ether	µg/L	155	250	500			250 U	UJ	1	250 UJ
SGSA	1187094	18-RT-48-GW	Groundwater	8260C	Naphthalene	µg/L	15.5	25	50			25.0 U	UJ	1	25.0 UJ
SGSA	1187094	18-RT-48-GW	Groundwater	8260C	n-Butylbenzene	µg/L	15.5	25	50			25.0 U	UJ	1	25.0 UJ
SGSA	1187094	18-RT-48-GW	Groundwater	8260C	n-Propylbenzene	µg/L	15.5	25	50			25.0 U	UJ	1	25.0 UJ
SGSA	1187094	18-RT-48-GW	Groundwater	8260C	o-Xylene	µg/L	15.5	25	50			25.0 U	UJ	1	25.0 UJ
SGSA	1187094	18-RT-48-GW	Groundwater	8260C	P & M -Xylene	µg/L	31	50	100			50.0 U	UJ	1	50.0 UJ
SGSA	1187094	18-RT-48-GW	Groundwater	8260C	sec-Butylbenzene	µg/L	15.5	25	50			25.0 U	UJ	1	25.0 UJ
SGSA	1187094	18-RT-48-GW	Groundwater	8260C	Styrene	µg/L	15.5	25	50			25.0 U	UJ	1	25.0 UJ
SGSA	1187094	18-RT-48-GW	Groundwater	8260C	tert-Butylbenzene	µg/L	15.5	25	50			25.0 U	UJ	1	25.0 UJ
SGSA	1187094	18-RT-48-GW	Groundwater	8260C	Tetrachloroethene	µg/L	15.5	25	50	22.5	J	22.5 J	J-	1	22.5 J-
SGSA	1187094	18-RT-48-GW	Groundwater	8260C	Toluene	µg/L	15.5	25	50			25.0 U	UJ	1	25.0 UJ
SGSA	1187094	18-RT-48-GW	Groundwater	8260C	trans-1,2-Dichloroethene	µg/L	15.5	25	50	38.5	J	38.5 J	J-	1	38.5 J-
SGSA	1187094	18-RT-48-GW	Groundwater	8260C	trans-1,3-Dichloropropene	µg/L	15.5	25	50			25.0 U	UJ	1	25.0 UJ
SGSA	1187094	18-RT-48-GW	Groundwater	8260C	Trichloroethene	µg/L	15.5	25	50			25.0 U	UJ	1	25.0 UJ
SGSA	1187094	18-RT-48-GW	Groundwater	8260C	Trichlorofluoromethane	µg/L	15.5	25	50			25.0 U	UJ	1	25.0 UJ
SGSA	1187094	18-RT-48-GW	Groundwater	8260C	Vinyl acetate	µg/L	155	250	500			250 U	UJ	1	250 UJ
SGSA	1187094	18-RT-48-GW	Groundwater	8260C	Vinyl chloride	µg/L	2.5	3.75	7.5	1350		1350	J-	1	1350 J-
SGSA	1187094	18-RT-48-GW	Groundwater	8260C	Xylenes (total)	µg/L	50	75	150			75.0 U	UJ	1	75.0 UJ
SGSA	1187094	18-RT-50-GW	Groundwater	8260C	Tetrachloroethene	µg/L	31	50	100	2960		2960	J	4	2960 J
SGSA	1187094	18-RT-50-GW	Groundwater	8260C	Toluene	µg/L	0.31	0.5	1	1.4		1.4	B	3	1.4 B
SGSA	1187094	18-RT-50-GW	Groundwater	8260C	Trichloroethene	µg/L	31	50	100	988		988	J	4	988 J
SGSA	1187094	18-RT-51-GW	Groundwater	8260C	1,2-Dichloropropane	µg/L	3.1	5	10			5.00 U	UJ	4	5.00 UJ

Table 1
Summary of Qualified Data
Data Quality Assessment
River Terrace Well Sampling

Lab	SDG	Sample ID	Matrix	Method	Analyte	Units	DL	LOD	LOQ	Result	Lab flags	Original Result	QC Flags	Note	Final Qualified Result
SGSA	1187094	18-RT-51-GW	Groundwater	8260C	2-Butanone (MEK)	µg/L	31	50	100			50.0 U	UJ	4	50.0 UJ
SGSA	1187094	18-RT-51-GW	Groundwater	8260C	Trichloroethene	µg/L	3.1	5	10			5.00 U	UJ	4	5.00 UJ
SGSA	1187094	18-RT-6A-GW	Groundwater	8260C	cis-1,2-Dichloroethene	µg/L	0.31	0.5	1	4.3		4.3	B	3	4.3 B
SGSA	1187094	18-RT-78-GW	Groundwater	8260C	1,1,1,2-Tetrachloroethane	µg/L	15	25	50			25.0 U	UJ	2	25.0 UJ
SGSA	1187094	18-RT-78-GW	Groundwater	8260C	1,1,1-Trichloroethane	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-78-GW	Groundwater	8260C	1,1,2,2-Tetrachloroethane	µg/L	15	25	50			25.0 U	UJ	2	25.0 UJ
SGSA	1187094	18-RT-78-GW	Groundwater	8260C	1,1,2-Trichloroethane	µg/L	12	20	40			20.0 U	UJ	2	20.0 UJ
SGSA	1187094	18-RT-78-GW	Groundwater	8260C	1,1-Dichloroethane	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-78-GW	Groundwater	8260C	1,1-Dichloroethene	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-78-GW	Groundwater	8260C	1,1-Dichloropropene	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-78-GW	Groundwater	8260C	1,2,3-Trichlorobenzene	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-78-GW	Groundwater	8260C	1,2,3-Trichloropropane	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-78-GW	Groundwater	8260C	1,2,4-Trichlorobenzene	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-78-GW	Groundwater	8260C	1,2,4-Trimethylbenzene	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-78-GW	Groundwater	8260C	1,2-Dibromo-3-chloropropane	µg/L	310	500	1000			500 U	UJ	2	500 UJ
SGSA	1187094	18-RT-78-GW	Groundwater	8260C	1,2-Dibromoethane	µg/L	1.8	3.75	7.5			3.75 U	UJ	2	3.75 UJ
SGSA	1187094	18-RT-78-GW	Groundwater	8260C	1,2-Dichlorobenzene	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-78-GW	Groundwater	8260C	1,2-Dichloroethane	µg/L	15	25	50			25.0 U	UJ	2	25.0 UJ
SGSA	1187094	18-RT-78-GW	Groundwater	8260C	1,2-Dichloropropane	µg/L	31	50	100	32	J	32.0 J	J-	2	32.0 J-
SGSA	1187094	18-RT-78-GW	Groundwater	8260C	1,3,5-Trimethylbenzene	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-78-GW	Groundwater	8260C	1,3-Dichlorobenzene	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-78-GW	Groundwater	8260C	1,3-Dichloropropane	µg/L	15	25	50			25.0 U	UJ	2	25.0 UJ
SGSA	1187094	18-RT-78-GW	Groundwater	8260C	1,4-Dichlorobenzene	µg/L	15	25	50			25.0 U	UJ	2	25.0 UJ
SGSA	1187094	18-RT-78-GW	Groundwater	8260C	2,2-Dichloropropane	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-78-GW	Groundwater	8260C	2-Butanone (MEK)	µg/L	310	500	1000	961	J	961 J	J-	2	961 J-
SGSA	1187094	18-RT-78-GW	Groundwater	8260C	2-Chlorotoluene	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-78-GW	Groundwater	8260C	2-Hexanone	µg/L	310	500	1000			500 U	UJ	2	500 UJ
SGSA	1187094	18-RT-78-GW	Groundwater	8260C	4-Chlorotoluene	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-78-GW	Groundwater	8260C	4-Isopropyltoluene	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-78-GW	Groundwater	8260C	4-Methyl-2-pentanone (MIBK)	µg/L	310	500	1000			500 U	UJ	2	500 UJ
SGSA	1187094	18-RT-78-GW	Groundwater	8260C	Benzene	µg/L	12	20	40			20.0 U	UJ	2	20.0UJ
SGSA	1187094	18-RT-78-GW	Groundwater	8260C	Bromobenzene	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-78-GW	Groundwater	8260C	Bromochloromethane	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-78-GW	Groundwater	8260C	Bromodichloromethane	µg/L	15	25	50			25.0 U	UJ	2	25.0 UJ
SGSA	1187094	18-RT-78-GW	Groundwater	8260C	Bromoform	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-78-GW	Groundwater	8260C	Bromomethane	µg/L	150	250	500			250 U	UJ	2	250 UJ

Table 1
Summary of Qualified Data
Data Quality Assessment
River Terrace Well Sampling

Lab	SDG	Sample ID	Matrix	Method	Analyte	Units	DL	LOD	LOQ	Result	Lab flags	Original Result	QC Flags	Note	Final Qualified Result
SGSA	1187094	18-RT-78-GW	Groundwater	8260C	Carbon disulfide	µg/L	310	500	1000			500 U	UJ	2	500 UJ
SGSA	1187094	18-RT-78-GW	Groundwater	8260C	Carbon tetrachloride	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-78-GW	Groundwater	8260C	Chlorobenzene	µg/L	15	25	50			25.0 U	UJ	2	25.0 UJ
SGSA	1187094	18-RT-78-GW	Groundwater	8260C	Chloroethane	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-78-GW	Groundwater	8260C	Chloroform	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-78-GW	Groundwater	8260C	Chloromethane	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-78-GW	Groundwater	8260C	cis-1,2-Dichloroethene	µg/L	31	50	100	15300		15300	J-	2	15300 J-
SGSA	1187094	18-RT-78-GW	Groundwater	8260C	cis-1,3-Dichloropropene	µg/L	15	25	50			25.0 U	UJ	2	25.0 UJ
SGSA	1187094	18-RT-78-GW	Groundwater	8260C	Dibromochloromethane	µg/L	15	25	50			25.0 U	UJ	2	25.0 UJ
SGSA	1187094	18-RT-78-GW	Groundwater	8260C	Dibromomethane	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-78-GW	Groundwater	8260C	Dichlorodifluoromethane	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-78-GW	Groundwater	8260C	Ethylbenzene	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-78-GW	Groundwater	8260C	Freon-113	µg/L	310	500	1000			500 U	UJ	2	500 UJ
SGSA	1187094	18-RT-78-GW	Groundwater	8260C	Hexachlorobutadiene	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-78-GW	Groundwater	8260C	Isopropylbenzene (Cumene)	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-78-GW	Groundwater	8260C	Methylene chloride	µg/L	100	250	500			250 U	UJ	2	250 UJ
SGSA	1187094	18-RT-78-GW	Groundwater	8260C	Methyl-t-butyl ether	µg/L	310	500	1000			500 U	UJ	2	500 UJ
SGSA	1187094	18-RT-78-GW	Groundwater	8260C	Naphthalene	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-78-GW	Groundwater	8260C	n-Butylbenzene	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-78-GW	Groundwater	8260C	n-Propylbenzene	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-78-GW	Groundwater	8260C	o-Xylene	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-78-GW	Groundwater	8260C	P & M -Xylene	µg/L	62	100	200			100 U	UJ	2	100 UJ
SGSA	1187094	18-RT-78-GW	Groundwater	8260C	sec-Butylbenzene	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-78-GW	Groundwater	8260C	Styrene	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-78-GW	Groundwater	8260C	tert-Butylbenzene	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-78-GW	Groundwater	8260C	Tetrachloroethene	µg/L	31	50	100	35	J	35.0 J	J-	2	35.0 J-
SGSA	1187094	18-RT-78-GW	Groundwater	8260C	Toluene	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-78-GW	Groundwater	8260C	trans-1,2-Dichloroethene	µg/L	31	50	100	43	J	43.0 J	J-	2	43.0 J-
SGSA	1187094	18-RT-78-GW	Groundwater	8260C	trans-1,3-Dichloropropene	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-78-GW	Groundwater	8260C	Trichloroethene	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-78-GW	Groundwater	8260C	Trichlorofluoromethane	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-78-GW	Groundwater	8260C	Vinyl acetate	µg/L	310	500	1000			500 U	UJ	2	500 UJ
SGSA	1187094	18-RT-78-GW	Groundwater	8260C	Vinyl chloride	µg/L	5	7.5	15	2540		2540	J-	2	2540 J-
SGSA	1187094	18-RT-78-GW	Groundwater	8260C	Xylenes (total)	µg/L	100	150	300			150 U	UJ	2	150 UJ
SGSA	1187094	18-RT-7-GW	Groundwater	8260C	cis-1,2-Dichloroethene	µg/L	0.31	0.5	1	11.1		11.1	B	3	11.1 B
SGSA	1187094	18-RT-80A-GW	Groundwater	8260C	1,1,1,2-Tetrachloroethane	µg/L	15	25	50			25.0 U	UJ	2	25.0 UJ

Table 1
Summary of Qualified Data
Data Quality Assessment
River Terrace Well Sampling

Lab	SDG	Sample ID	Matrix	Method	Analyte	Units	DL	LOD	LOQ	Result	Lab flags	Original Result	QC Flags	Note	Final Qualified Result
SGSA	1187094	18-RT-80A-GW	Groundwater	8260C	1,1,1-Trichloroethane	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-80A-GW	Groundwater	8260C	1,1,2,2-Tetrachloroethane	µg/L	15	25	50			25.0 U	UJ	2	25.0 UJ
SGSA	1187094	18-RT-80A-GW	Groundwater	8260C	1,1,2-Trichloroethane	µg/L	12	20	40			20.0 U	UJ	2	20.0 UJ
SGSA	1187094	18-RT-80A-GW	Groundwater	8260C	1,1-Dichloroethane	µg/L	31	50	100	48	J	48.0 J	J	2	48.0 J
SGSA	1187094	18-RT-80A-GW	Groundwater	8260C	1,1-Dichloroethene	µg/L	31	50	100	197		197	J-	2	197 J-
SGSA	1187094	18-RT-80A-GW	Groundwater	8260C	1,1-Dichloropropene	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-80A-GW	Groundwater	8260C	1,2,3-Trichlorobenzene	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-80A-GW	Groundwater	8260C	1,2,3-Trichloropropane	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-80A-GW	Groundwater	8260C	1,2,4-Trichlorobenzene	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-80A-GW	Groundwater	8260C	1,2,4-Trimethylbenzene	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-80A-GW	Groundwater	8260C	1,2-Dibromo-3-chloropropane	µg/L	310	500	1000			500 U	UJ	2	500 UJ
SGSA	1187094	18-RT-80A-GW	Groundwater	8260C	1,2-Dibromoethane	µg/L	1.8	3.75	7.5			3.75 U	UJ	2	3.75 UJ
SGSA	1187094	18-RT-80A-GW	Groundwater	8260C	1,2-Dichlorobenzene	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-80A-GW	Groundwater	8260C	1,2-Dichloroethane	µg/L	15	25	50			25.0 U	UJ	2	25.0 UJ
SGSA	1187094	18-RT-80A-GW	Groundwater	8260C	1,2-Dichloropropane	µg/L	31	50	100	465		465	J-	2	465 J-
SGSA	1187094	18-RT-80A-GW	Groundwater	8260C	1,3,5-Trimethylbenzene	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-80A-GW	Groundwater	8260C	1,3-Dichlorobenzene	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-80A-GW	Groundwater	8260C	1,3-Dichloropropane	µg/L	15	25	50			25.0 U	UJ	2	25.0 UJ
SGSA	1187094	18-RT-80A-GW	Groundwater	8260C	1,4-Dichlorobenzene	µg/L	15	25	50			25.0 U	UJ	2	25.0 UJ
SGSA	1187094	18-RT-80A-GW	Groundwater	8260C	2,2-Dichloropropane	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-80A-GW	Groundwater	8260C	2-Butanone (MEK)	µg/L	310	500	1000			500 U	UJ	2	500 UJ
SGSA	1187094	18-RT-80A-GW	Groundwater	8260C	2-Chlorotoluene	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-80A-GW	Groundwater	8260C	2-Hexanone	µg/L	310	500	1000			500 U	UJ	2	500 UJ
SGSA	1187094	18-RT-80A-GW	Groundwater	8260C	4-Chlorotoluene	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-80A-GW	Groundwater	8260C	4-Isopropyltoluene	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-80A-GW	Groundwater	8260C	4-Methyl-2-pentanone (MIBK)	µg/L	310	500	1000			500 U	UJ	2	500 UJ
SGSA	1187094	18-RT-80A-GW	Groundwater	8260C	Benzene	µg/L	12	20	40			20.0 U	UJ	2	20.0 UJ
SGSA	1187094	18-RT-80A-GW	Groundwater	8260C	Bromobenzene	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-80A-GW	Groundwater	8260C	Bromochloromethane	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-80A-GW	Groundwater	8260C	Bromodichloromethane	µg/L	15	25	50			25.0 U	UJ	2	25.0 UJ
SGSA	1187094	18-RT-80A-GW	Groundwater	8260C	Bromoform	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-80A-GW	Groundwater	8260C	Bromomethane	µg/L	150	250	500			250 U	UJ	2	250 UJ
SGSA	1187094	18-RT-80A-GW	Groundwater	8260C	Carbon disulfide	µg/L	310	500	1000			500 U	UJ	2	500 UJ
SGSA	1187094	18-RT-80A-GW	Groundwater	8260C	Carbon tetrachloride	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-80A-GW	Groundwater	8260C	Chlorobenzene	µg/L	15	25	50			25.0 U	UJ	2	25.0 UJ
SGSA	1187094	18-RT-80A-GW	Groundwater	8260C	Chloroethane	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ

Table 1
Summary of Qualified Data
Data Quality Assessment
River Terrace Well Sampling

Lab	SDG	Sample ID	Matrix	Method	Analyte	Units	DL	LOD	LOQ	Result	Lab flags	Original Result	QC Flags	Note	Final Qualified Result
SGSA	1187094	18-RT-80A-GW	Groundwater	8260C	Chloroform	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-80A-GW	Groundwater	8260C	Chloromethane	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-80A-GW	Groundwater	8260C	cis-1,2-Dichloroethene	µg/L	310	500	1000	53600		53600	J-	2	53600 J-
SGSA	1187094	18-RT-80A-GW	Groundwater	8260C	cis-1,3-Dichloropropene	µg/L	15	25	50			25.0 U	UJ	2	25.0 UJ
SGSA	1187094	18-RT-80A-GW	Groundwater	8260C	Dibromochloromethane	µg/L	15	25	50			25.0 U	UJ	2	25.0 UJ
SGSA	1187094	18-RT-80A-GW	Groundwater	8260C	Dibromomethane	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-80A-GW	Groundwater	8260C	Dichlorodifluoromethane	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-80A-GW	Groundwater	8260C	Ethylbenzene	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-80A-GW	Groundwater	8260C	Freon-113	µg/L	310	500	1000			500 U	UJ	2	500 UJ
SGSA	1187094	18-RT-80A-GW	Groundwater	8260C	Hexachlorobutadiene	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-80A-GW	Groundwater	8260C	Isopropylbenzene (Cumene)	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-80A-GW	Groundwater	8260C	Methylene chloride	µg/L	100	250	500			250 U	UJ	2	250 UJ
SGSA	1187094	18-RT-80A-GW	Groundwater	8260C	Methyl-t-butyl ether	µg/L	310	500	1000			500 U	UJ	2	500 UJ
SGSA	1187094	18-RT-80A-GW	Groundwater	8260C	Naphthalene	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-80A-GW	Groundwater	8260C	n-Butylbenzene	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-80A-GW	Groundwater	8260C	n-Propylbenzene	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-80A-GW	Groundwater	8260C	o-Xylene	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-80A-GW	Groundwater	8260C	P & M -Xylene	µg/L	62	100	200			100 U	UJ	2	100 UJ
SGSA	1187094	18-RT-80A-GW	Groundwater	8260C	sec-Butylbenzene	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-80A-GW	Groundwater	8260C	Styrene	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-80A-GW	Groundwater	8260C	tert-Butylbenzene	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-80A-GW	Groundwater	8260C	Tetrachloroethene	µg/L	310	500	1000	104000		104000	J-	2	104000 J-
SGSA	1187094	18-RT-80A-GW	Groundwater	8260C	Toluene	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-80A-GW	Groundwater	8260C	trans-1,2-Dichloroethene	µg/L	31	50	100	190		190	J-	2	190 J-
SGSA	1187094	18-RT-80A-GW	Groundwater	8260C	trans-1,3-Dichloropropene	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-80A-GW	Groundwater	8260C	Trichloroethene	µg/L	31	50	100	19300		19300	J-	2	1930 J-
SGSA	1187094	18-RT-80A-GW	Groundwater	8260C	Trichlorofluoromethane	µg/L	31	50	100			50.0 U	UJ	2	50.0 UJ
SGSA	1187094	18-RT-80A-GW	Groundwater	8260C	Vinyl acetate	µg/L	310	500	1000			500 U	UJ	2	500 UJ
SGSA	1187094	18-RT-80A-GW	Groundwater	8260C	Vinyl chloride	µg/L	5	7.5	15	2640		2640	J-	2	2640 J-
SGSA	1187094	18-RT-80A-GW	Groundwater	8260C	Xylenes (total)	µg/L	100	150	300			150 U	UJ	2	150 UJ
SGSA	1187094	18-RT-9-GW	Groundwater	8260C	cis-1,2-Dichloroethene	µg/L	0.31	0.5	1	9.03		9.03	B	3	9.03 B
SGSA	1187094	18-RT-9-GW	Groundwater	8260C	Toluene	µg/L	0.31	0.5	1	0.68	J	0.680 J	B	3	0.680 J B
SGSA	1187094	18-RT-FD2-GW	Groundwater	8260C	1,2-Dichloropropane	µg/L	0.31	0.5	1	2.17		2.17	J	4	2.17 J
SGSA	1187094	18-RT-FD2-GW	Groundwater	8260C	2-Butanone (MEK)	µg/L	3.1	5	10	17		17	J	4	17.0 J
SGSA	1187094	18-RT-FD2-GW	Groundwater	8260C	Trichloroethene	µg/L	0.31	0.5	1	1.02		1.02	J	4	1.02 J
SGSA	1187094	18-RT-FD3-GW	Groundwater	8260C	Tetrachloroethene	µg/L	0.31	0.5	1	21.4		21.4	J	4	21.4 J

Table 1
Summary of Qualified Data
Data Quality Assessment
River Terrace Well Sampling

Lab	SDG	Sample ID	Matrix	Method	Analyte	Units	DL	LOD	LOQ	Result	Lab flags	Original Result	QC Flags	Note	Final Qualified Result
SGSA	1187094	18-RT-FD3-GW	Groundwater	8260C	Toluene	µg/L	0.31	0.5	1	1.18		1.18	B	3	1.18 B
SGSA	1187094	18-RT-FD3-GW	Groundwater	8260C	Trichloroethene	µg/L	0.31	0.5	1	4.19		4.19	J	4	4.19 J
SiREM	S-5166	18-RT-49-GW	Groundwater	GeneTrac	Dehaloccoides (Dhc)	enm/L	NA	NA	NA	6×10^7		6×10^7	J	4	6×10^7 J
SiREM	S-5177	18-RT-49-GW	Groundwater	IC - VFA	Butyrate	mg/L	NA	NA	0.41			< 0.41	UJ	4	0.41 UJ
SiREM	S-5177	18-RT-49-GW	Groundwater	IC - VFA	Formate	mg/L	NA	NA	0.22			< 0.22	UJ	4	0.22 UJ
SiREM	S-5167	18-RT-FD1-GW	Groundwater	GeneTrac	Dehaloccoides (Dhc)	enm/L	NA	NA	NA	2×10^8		2×10^8	J	4	2×10^8 J
SiREM	S-5177	18-RT-FD1-GW	Groundwater	IC - VFA	Butyrate	mg/L	NA	NA	0.41			1.4	J	4	1.4 J
SiREM	S-5177	18-RT-FD1-GW	Groundwater	IC - VFA	Formate	mg/L	NA	NA	0.22			1.1	J	4	1.1 J

Table 1
Summary of Qualified Data
Data Quality Assessment
River Terrace Well Sampling

Notes:

1 VOA vial contained headspace or bubbles larger than 6 mm
2 Sample was received and analyzed outside the acceptable pH range
3 Results were affected by sampling-equipment blank detections
4 Field duplicate RPD exceeds MQOs

IC	Ion Chromatography
VFA	Volatile Fatty Acids
enm/L	Enumeration per liter
µg/L	Micrograms per liter
mg/L	Milligrams per liter
SGSA	SGS North America, Inc. - Anchorage, Alaska
SiREM	SiREM Laboratories - Guelph, Ontario, Canada
DL	Detection Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
QC	Quality control

Data qualifiers:

J Result value is estimated; The analyte was detected below the LOQ, or is affected by a QC anomaly
J- Result value is estimated, biased low, due to a QC anomaly.
UJ Result value is estimated, biased low. The analyte was not detected.
B Result value is estimated, biased high, due to blank contamination.

Table 2
Analytical Sensitivity Summary
Data Quality Assessment
River Terrace Well Sampling

Arctic Data Services, LLC

SDG	Sample ID	Matrix	Method	Analyte	CAS	Units	DL		LOD		LOQ		Lab Flag	PAL	PAL Source
1187094	18-RT-103-GW	Groundwater	8260C	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	15	*	25	*	50	*	ND	5.70	ADEC GCL
1187094	18-RT-103-GW	Groundwater	8260C	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	15	*	25	*	50	*	ND	0.760	ADEC GCL
1187094	18-RT-103-GW	Groundwater	8260C	1,1,2-Trichloroethane	79-00-5	µg/L	12	*	20	*	40	*	ND	0.400	ADEC GCL
1187094	18-RT-103-GW	Groundwater	8260C	1,1-Dichloroethane	75-34-3	µg/L	31	*	50	*	100	*	ND	28.0	ADEC GCL
1187094	18-RT-103-GW	Groundwater	8260C	1,2,3-Trichlorobenzene	87-61-6	µg/L	31	*	50	*	100	*	ND	7.00	ADEC GCL
1187094	18-RT-103-GW	Groundwater	8260C	1,2,3-Trichloropropane	96-18-4	µg/L	31	*	50	*	100	*	ND	0.0100	ADEC GCL
1187094	18-RT-103-GW	Groundwater	8260C	1,2,4-Trichlorobenzene	120-82-1	µg/L	31	*	50	*	100	*	ND	4.00	ADEC GCL
1187094	18-RT-103-GW	Groundwater	8260C	1,2,4-Trimethylbenzene	95-63-6	µg/L	31		50		100	*	ND	56.0	ADEC GCL
1187094	18-RT-103-GW	Groundwater	8260C	1,2-Dibromoethane	106-93-4	µg/L	1.8	*	3.75	*	7.5	*	ND	0.0700	ADEC GCL
1187094	18-RT-103-GW	Groundwater	8260C	1,2-Dichloroethane	107-06-2	µg/L	15	*	25	*	50	*	ND	1.70	ADEC GCL
1187094	18-RT-103-GW	Groundwater	8260C	1,3,5-Trimethylbenzene	108-67-8	µg/L	31		50		100	*	ND	60.0	ADEC GCL
1187094	18-RT-103-GW	Groundwater	8260C	1,4-Dichlorobenzene	106-46-7	µg/L	15	*	25	*	50	*	ND	4.80	ADEC GCL
1187094	18-RT-103-GW	Groundwater	8260C	2-Hexanone	591-78-6	µg/L	310	*	500	*	1000	*	ND	38.0	ADEC GCL
1187094	18-RT-103-GW	Groundwater	8260C	Bromobenzene	108-86-1	µg/L	31		50		100	*	ND	62.0	ADEC GCL
1187094	18-RT-103-GW	Groundwater	8260C	Bromodichloromethane	75-27-4	µg/L	15	*	25	*	50	*	ND	1.30	ADEC GCL
1187094	18-RT-103-GW	Groundwater	8260C	Bromoform	75-25-2	µg/L	31		50	*	100	*	ND	33.0	ADEC GCL
1187094	18-RT-103-GW	Groundwater	8260C	Bromomethane	74-83-9	µg/L	150	*	250	*	500	*	ND	8.00	ADEC GCL
1187094	18-RT-103-GW	Groundwater	8260C	Carbon disulfide	75-15-0	µg/L	310		500		1000	*	ND	810	ADEC GCL
1187094	18-RT-103-GW	Groundwater	8260C	Carbon tetrachloride	56-23-5	µg/L	31	*	50	*	100	*	ND	4.60	ADEC GCL
1187094	18-RT-103-GW	Groundwater	8260C	Chloroform	67-66-3	µg/L	31	*	50	*	100	*	ND	2.20	ADEC GCL
1187094	18-RT-103-GW	Groundwater	8260C	Dibromochloromethane	124-48-1	µg/L	15	*	25	*	50	*	ND	8.70	ADEC GCL
1187094	18-RT-103-GW	Groundwater	8260C	Ethylbenzene	100-41-4	µg/L	31	*	50	*	100	*	ND	15.0	ADEC GCL
1187094	18-RT-103-GW	Groundwater	8260C	Hexachlorobutadiene	87-68-3	µg/L	31	*	50	*	100	*	ND	1.00	ADEC GCL
1187094	18-RT-103-GW	Groundwater	8260C	Methylene chloride	75-09-2	µg/L	100		250	*	500	*	ND	110	ADEC GCL
1187094	18-RT-103-GW	Groundwater	8260C	Methyl-t-butyl ether	1634-04-4	µg/L	310	*	500	*	1000	*	ND	140	ADEC GCL
1187094	18-RT-103-GW	Groundwater	8260C	Naphthalene	91-20-3	µg/L	31	*	50	*	100	*	ND	2.00	ADEC GCL
1187094	18-RT-103-GW	Groundwater	8260C	Vinyl acetate	108-05-4	µg/L	310		500	*	1000	*	ND	410	ADEC GCL
1187094	18-RT-103-GW	Groundwater	8260C	Xylenes (total)	1330-20-7	µg/L	100		150		300	*	ND	190	ADEC GCL
1187094	18-RT-12-GW	Groundwater	8260C	1,2,3-Trichloropropane	96-18-4	µg/L	0.31	*	0.5	*	1	*	ND	0.00750	ADEC GCL
1187094	18-RT-16-GW	Groundwater	8260C	1,2,3-Trichloropropane	96-18-4	µg/L	0.31	*	0.5	*	1	*	ND	0.00750	ADEC GCL
1187094	18-RT-23-GW	Groundwater	8260C	1,2,3-Trichloropropane	96-18-4	µg/L	0.31	*	0.5	*	1	*	ND	0.00750	ADEC GCL
1187094	18-RT-25-GW	Groundwater	8260C	1,2,3-Trichloropropane	96-18-4	µg/L	0.31	*	0.5	*	1	*	ND	0.00750	ADEC GCL

Table 2
Analytical Sensitivity Summary
Data Quality Assessment
River Terrace Well Sampling

SDG	Sample ID	Matrix	Method	Analyte	CAS	Units	DL		LOD		LOQ		Lab Flag	PAL	PAL Source
1187094	18-RT-35-GW	Groundwater	8260C	1,2,3-Trichloropropane	96-18-4	µg/L	0.31	*	0.5	*	1	*	ND	0.00750	ADEC GCL
1187094	18-RT-38-GW	Groundwater	8260C	1,2,3-Trichloropropane	96-18-4	µg/L	0.31	*	0.5	*	1	*	ND	0.00750	ADEC GCL
1187094	18-RT-39-GW	Groundwater	8260C	1,2,3-Trichloropropane	96-18-4	µg/L	0.31	*	0.5	*	1	*	ND	0.00750	ADEC GCL
1187094	18-RT-40-GW	Groundwater	8260C	1,2,3-Trichloropropane	96-18-4	µg/L	0.31	*	0.5	*	1	*	ND	0.00750	ADEC GCL
1187094	18-RT-42-GW	Groundwater	8260C	1,2,3-Trichloropropane	96-18-4	µg/L	0.31	*	0.5	*	1	*	ND	0.00750	ADEC GCL
1187094	18-RT-44-GW	Groundwater	8260C	1,2,3-Trichloropropane	96-18-4	µg/L	0.31	*	0.5	*	1	*	ND	0.0100	ADEC GCL
1187094	18-RT-47-GW	Groundwater	8260C	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	15	*	25	*	50	*	ND	5.70	ADEC GCL
1187094	18-RT-47-GW	Groundwater	8260C	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	15	*	25	*	50	*	ND	0.760	ADEC GCL
1187094	18-RT-47-GW	Groundwater	8260C	1,1,2-Trichloroethane	79-00-5	µg/L	12	*	20	*	40	*	ND	0.400	ADEC GCL
1187094	18-RT-47-GW	Groundwater	8260C	1,1-Dichloroethane	75-34-3	µg/L	31	*	50	*	100	*	ND	28.0	ADEC GCL
1187094	18-RT-47-GW	Groundwater	8260C	1,2,3-Trichlorobenzene	87-61-6	µg/L	31	*	50	*	100	*	ND	7.00	ADEC GCL
1187094	18-RT-47-GW	Groundwater	8260C	1,2,3-Trichloropropane	96-18-4	µg/L	31	*	50	*	100	*	ND	0.0100	ADEC GCL
1187094	18-RT-47-GW	Groundwater	8260C	1,2,4-Trichlorobenzene	120-82-1	µg/L	31	*	50	*	100	*	ND	4.00	ADEC GCL
1187094	18-RT-47-GW	Groundwater	8260C	1,2,4-Trimethylbenzene	95-63-6	µg/L	31		50		100	*	ND	56.0	ADEC GCL
1187094	18-RT-47-GW	Groundwater	8260C	1,2-Dibromoethane	106-93-4	µg/L	1.8	*	3.75	*	7.5	*	ND	0.0700	ADEC GCL
1187094	18-RT-47-GW	Groundwater	8260C	1,2-Dichloroethane	107-06-2	µg/L	15	*	25	*	50	*	ND	1.70	ADEC GCL
1187094	18-RT-47-GW	Groundwater	8260C	1,3,5-Trimethylbenzene	108-67-8	µg/L	31		50		100	*	ND	60.0	ADEC GCL
1187094	18-RT-47-GW	Groundwater	8260C	1,4-Dichlorobenzene	106-46-7	µg/L	15	*	25	*	50	*	ND	4.80	ADEC GCL
1187094	18-RT-47-GW	Groundwater	8260C	2-Hexanone	591-78-6	µg/L	310	*	500	*	1000	*	ND	38.0	ADEC GCL
1187094	18-RT-47-GW	Groundwater	8260C	Bromobenzene	108-86-1	µg/L	31		50		100	*	ND	62.0	ADEC GCL
1187094	18-RT-47-GW	Groundwater	8260C	Bromodichloromethane	75-27-4	µg/L	15	*	25	*	50	*	ND	1.30	ADEC GCL
1187094	18-RT-47-GW	Groundwater	8260C	Bromoform	75-25-2	µg/L	31		50	*	100	*	ND	33.0	ADEC GCL
1187094	18-RT-47-GW	Groundwater	8260C	Bromomethane	74-83-9	µg/L	150	*	250	*	500	*	ND	8.00	ADEC GCL
1187094	18-RT-47-GW	Groundwater	8260C	Carbon disulfide	75-15-0	µg/L	310		500		1000	*	ND	810	ADEC GCL
1187094	18-RT-47-GW	Groundwater	8260C	Carbon tetrachloride	56-23-5	µg/L	31	*	50	*	100	*	ND	4.60	ADEC GCL
1187094	18-RT-47-GW	Groundwater	8260C	Chloroform	67-66-3	µg/L	31	*	50	*	100	*	ND	2.20	ADEC GCL
1187094	18-RT-47-GW	Groundwater	8260C	Dibromochloromethane	124-48-1	µg/L	15	*	25	*	50	*	ND	8.70	ADEC GCL
1187094	18-RT-47-GW	Groundwater	8260C	Ethylbenzene	100-41-4	µg/L	31	*	50	*	100	*	ND	15.0	ADEC GCL
1187094	18-RT-47-GW	Groundwater	8260C	Hexachlorobutadiene	87-68-3	µg/L	31	*	50	*	100	*	ND	1.00	ADEC GCL
1187094	18-RT-47-GW	Groundwater	8260C	Methylene chloride	75-09-2	µg/L	100		250	*	500	*	ND	110	ADEC GCL
1187094	18-RT-47-GW	Groundwater	8260C	Methyl-t-butyl ether	1634-04-4	µg/L	310	*	500	*	1000	*	ND	140	ADEC GCL
1187094	18-RT-47-GW	Groundwater	8260C	Naphthalene	91-20-3	µg/L	31	*	50	*	100	*	ND	2.00	ADEC GCL

Table 2
Analytical Sensitivity Summary
Data Quality Assessment
River Terrace Well Sampling

Arctic Data Services, LLC

SDG	Sample ID	Matrix	Method	Analyte	CAS	Units	DL		LOD		LOQ		Lab Flag	PAL	PAL Source
1187094	18-RT-47-GW	Groundwater	8260C	Vinyl acetate	108-05-4	µg/L	310		500	*	1000	*	ND	410	ADEC GCL
1187094	18-RT-47-GW	Groundwater	8260C	Xylenes (total)	1330-20-7	µg/L	100		150		300	*	ND	190	ADEC GCL
1187094	18-RT-48-GW	Groundwater	8260C	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	7.5	*	12.5	*	25	*	ND	5.70	ADEC GCL
1187094	18-RT-48-GW	Groundwater	8260C	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	7.5	*	12.5	*	25	*	ND	0.760	ADEC GCL
1187094	18-RT-48-GW	Groundwater	8260C	1,1,2-Trichloroethane	79-00-5	µg/L	6	*	10	*	20	*	ND	0.410	ADEC GCL
1187094	18-RT-48-GW	Groundwater	8260C	1,1-Dichloroethane	75-34-3	µg/L	15.5		25		50	*	ND	28.0	ADEC GCL
1187094	18-RT-48-GW	Groundwater	8260C	1,2,3-Trichlorobenzene	87-61-6	µg/L	15.5	*	25	*	50	*	ND	7.00	ADEC GCL
1187094	18-RT-48-GW	Groundwater	8260C	1,2,3-Trichloropropane	96-18-4	µg/L	15.5	*	25	*	50	*	ND	0.00750	ADEC GCL
1187094	18-RT-48-GW	Groundwater	8260C	1,2,4-Trichlorobenzene	120-82-1	µg/L	15.5	*	25	*	50	*	ND	4.00	ADEC GCL
1187094	18-RT-48-GW	Groundwater	8260C	1,2-Dibromoethane	106-93-4	µg/L	0.9	*	1.88	*	3.75	*	ND	0.0750	ADEC GCL
1187094	18-RT-48-GW	Groundwater	8260C	1,2-Dichloroethane	107-06-2	µg/L	7.5	*	12.5	*	25	*	ND	1.70	ADEC GCL
1187094	18-RT-48-GW	Groundwater	8260C	1,2-Dichloropropane	78-87-5	µg/L	15.5	*	25	*	50	*	ND	8.20	ADEC GCL
1187094	18-RT-48-GW	Groundwater	8260C	1,4-Dichlorobenzene	106-46-7	µg/L	7.5	*	12.5	*	25	*	ND	4.80	ADEC GCL
1187094	18-RT-48-GW	Groundwater	8260C	2-Hexanone	591-78-6	µg/L	155	*	250	*	500	*	ND	38.0	ADEC GCL
1187094	18-RT-48-GW	Groundwater	8260C	Benzene	71-43-2	µg/L	6	*	10	*	20	*	ND	4.60	ADEC GCL
1187094	18-RT-48-GW	Groundwater	8260C	Bromodichloromethane	75-27-4	µg/L	7.5	*	12.5	*	25	*	ND	1.30	ADEC GCL
1187094	18-RT-48-GW	Groundwater	8260C	Bromoform	75-25-2	µg/L	15.5		25		50	*	ND	33.0	ADEC GCL
1187094	18-RT-48-GW	Groundwater	8260C	Bromomethane	74-83-9	µg/L	75	*	125	*	250	*	ND	7.50	ADEC GCL
1187094	18-RT-48-GW	Groundwater	8260C	Carbon tetrachloride	56-23-5	µg/L	15.5	*	25	*	50	*	ND	4.60	ADEC GCL
1187094	18-RT-48-GW	Groundwater	8260C	Chloroform	67-66-3	µg/L	15.5	*	25	*	50	*	ND	2.20	ADEC GCL
1187094	18-RT-48-GW	Groundwater	8260C	Dibromochloromethane	124-48-1	µg/L	7.5		12.5	*	25	*	ND	8.70	ADEC GCL
1187094	18-RT-48-GW	Groundwater	8260C	Ethylbenzene	100-41-4	µg/L	15.5	*	25	*	50	*	ND	15.0	ADEC GCL
1187094	18-RT-48-GW	Groundwater	8260C	Hexachlorobutadiene	87-68-3	µg/L	15.5	*	25	*	50	*	ND	1.40	ADEC GCL
1187094	18-RT-48-GW	Groundwater	8260C	Methylene chloride	75-09-2	µg/L	50		125	*	250	*	ND	110	ADEC GCL
1187094	18-RT-48-GW	Groundwater	8260C	Methyl-t-butyl ether	1634-04-4	µg/L	155	*	250	*	500	*	ND	140	ADEC GCL
1187094	18-RT-48-GW	Groundwater	8260C	Naphthalene	91-20-3	µg/L	15.5	*	25	*	50	*	ND	1.70	ADEC GCL
1187094	18-RT-48-GW	Groundwater	8260C	Trichloroethene	79-01-6	µg/L	15.5	*	25	*	50	*	ND	2.80	ADEC GCL
1187094	18-RT-48-GW	Groundwater	8260C	Vinyl acetate	108-05-4	µg/L	155		250		500	*	ND	410	ADEC GCL
1187094	18-RT-49-GW	Groundwater	8260C	1,2,3-Trichloropropane	96-18-4	µg/L	0.31	*	0.5	*	1	*	ND	0.00750	ADEC GCL
1187094	18-RT-50-GW	Groundwater	8260C	1,2,3-Trichloropropane	96-18-4	µg/L	0.31	*	0.5	*	1	*	ND	0.00750	ADEC GCL
1187094	18-RT-51-GW	Groundwater	8260C	1,2,3-Trichloropropane	96-18-4	µg/L	0.31	*	0.5	*	1	*	ND	0.00750	ADEC GCL
1187094	18-RT-51-GW	Groundwater	8260C	1,2-Dichloropropane	78-87-5	µg/L	3.1		5		10	*	ND	8.20	ADEC GCL

Table 2
Analytical Sensitivity Summary
Data Quality Assessment
River Terrace Well Sampling

SDG	Sample ID	Matrix	Method	Analyte	CAS	Units	DL		LOD		LOQ		Lab Flag	PAL	PAL Source
1187094	18-RT-51-GW	Groundwater	8260C	Trichloroethene	79-01-6	µg/L	3.1	*	5	*	10	*	ND	2.80	ADEC GCL
1187094	18-RT-52-GW	Groundwater	8260C	1,2,3-Trichloropropane	96-18-4	µg/L	0.31	*	0.5	*	1	*	ND	0.00750	ADEC GCL
1187094	18-RT-6A-GW	Groundwater	8260C	1,2,3-Trichloropropane	96-18-4	µg/L	0.31	*	0.5	*	1	*	ND	0.00750	ADEC GCL
1187094	18-RT-78-GW	Groundwater	8260C	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	15	*	25	*	50	*	ND	5.70	ADEC GCL
1187094	18-RT-78-GW	Groundwater	8260C	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	15	*	25	*	50	*	ND	0.760	ADEC GCL
1187094	18-RT-78-GW	Groundwater	8260C	1,1,2-Trichloroethane	79-00-5	µg/L	12	*	20	*	40	*	ND	0.410	ADEC GCL
1187094	18-RT-78-GW	Groundwater	8260C	1,1-Dichloroethane	75-34-3	µg/L	31	*	50	*	100	*	ND	28.0	ADEC GCL
1187094	18-RT-78-GW	Groundwater	8260C	1,2,3-Trichlorobenzene	87-61-6	µg/L	31	*	50	*	100	*	ND	7.00	ADEC GCL
1187094	18-RT-78-GW	Groundwater	8260C	1,2,3-Trichloropropane	96-18-4	µg/L	31	*	50	*	100	*	ND	0.00750	ADEC GCL
1187094	18-RT-78-GW	Groundwater	8260C	1,2,4-Trichlorobenzene	120-82-1	µg/L	31	*	50	*	100	*	ND	4.00	ADEC GCL
1187094	18-RT-78-GW	Groundwater	8260C	1,2,4-Trimethylbenzene	95-63-6	µg/L	31		50		100	*	ND	56.0	ADEC GCL
1187094	18-RT-78-GW	Groundwater	8260C	1,2-Dibromoethane	106-93-4	µg/L	1.8	*	3.75	*	7.5	*	ND	0.0750	ADEC GCL
1187094	18-RT-78-GW	Groundwater	8260C	1,2-Dichloroethane	107-06-2	µg/L	15	*	25	*	50	*	ND	1.70	ADEC GCL
1187094	18-RT-78-GW	Groundwater	8260C	1,3,5-Trimethylbenzene	108-67-8	µg/L	31		50		100	*	ND	60.0	ADEC GCL
1187094	18-RT-78-GW	Groundwater	8260C	1,4-Dichlorobenzene	106-46-7	µg/L	15	*	25	*	50	*	ND	4.80	ADEC GCL
1187094	18-RT-78-GW	Groundwater	8260C	2-Hexanone	591-78-6	µg/L	310	*	500	*	1000	*	ND	38.0	ADEC GCL
1187094	18-RT-78-GW	Groundwater	8260C	Benzene	71-43-2	µg/L	12	*	20	*	40	*	ND	4.60	ADEC GCL
1187094	18-RT-78-GW	Groundwater	8260C	Bromobenzene	108-86-1	µg/L	31		50		100	*	ND	62.0	ADEC GCL
1187094	18-RT-78-GW	Groundwater	8260C	Bromodichloromethane	75-27-4	µg/L	15	*	25	*	50	*	ND	1.30	ADEC GCL
1187094	18-RT-78-GW	Groundwater	8260C	Bromoform	75-25-2	µg/L	31		50	*	100	*	ND	33.0	ADEC GCL
1187094	18-RT-78-GW	Groundwater	8260C	Bromomethane	74-83-9	µg/L	150	*	250	*	500	*	ND	7.50	ADEC GCL
1187094	18-RT-78-GW	Groundwater	8260C	Carbon disulfide	75-15-0	µg/L	310		500		1000	*	ND	810	ADEC GCL
1187094	18-RT-78-GW	Groundwater	8260C	Carbon tetrachloride	56-23-5	µg/L	31	*	50	*	100	*	ND	4.60	ADEC GCL
1187094	18-RT-78-GW	Groundwater	8260C	Chloroform	67-66-3	µg/L	31	*	50	*	100	*	ND	2.20	ADEC GCL
1187094	18-RT-78-GW	Groundwater	8260C	Dibromochloromethane	124-48-1	µg/L	15	*	25	*	50	*	ND	8.70	ADEC GCL
1187094	18-RT-78-GW	Groundwater	8260C	Ethylbenzene	100-41-4	µg/L	31	*	50	*	100	*	ND	15.0	ADEC GCL
1187094	18-RT-78-GW	Groundwater	8260C	Hexachlorobutadiene	87-68-3	µg/L	31	*	50	*	100	*	ND	1.40	ADEC GCL
1187094	18-RT-78-GW	Groundwater	8260C	Methylene chloride	75-09-2	µg/L	100		250	*	500	*	ND	110	ADEC GCL
1187094	18-RT-78-GW	Groundwater	8260C	Methyl-t-butyl ether	1634-04-4	µg/L	310	*	500	*	1000	*	ND	140	ADEC GCL
1187094	18-RT-78-GW	Groundwater	8260C	Naphthalene	91-20-3	µg/L	31	*	50	*	100	*	ND	1.70	ADEC GCL
1187094	18-RT-78-GW	Groundwater	8260C	Trichloroethene	79-01-6	µg/L	31	*	50	*	100	*	ND	2.80	ADEC GCL
1187094	18-RT-78-GW	Groundwater	8260C	Vinyl acetate	108-05-4	µg/L	310		500	*	1000	*	ND	410	ADEC GCL

Table 2
Analytical Sensitivity Summary
Data Quality Assessment
River Terrace Well Sampling

SDG	Sample ID	Matrix	Method	Analyte	CAS	Units	DL		LOD		LOQ		Lab Flag	PAL	PAL Source
1187094	18-RT-78-GW	Groundwater	8260C	Xylenes (total)	1330-20-7	µg/L	100		150		300	*	ND	190	ADEC GCL
1187094	18-RT-7-GW	Groundwater	8260C	1,2,3-Trichloropropane	96-18-4	µg/L	0.31	*	0.5	*	1	*	ND	0.00750	ADEC GCL
1187094	18-RT-80A-GW	Groundwater	8260C	1,1,1,2-Tetrachloroethane	630-20-6	µg/L	15	*	25	*	50	*	ND	5.70	ADEC GCL
1187094	18-RT-80A-GW	Groundwater	8260C	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	15	*	25	*	50	*	ND	0.760	ADEC GCL
1187094	18-RT-80A-GW	Groundwater	8260C	1,1,2-Trichloroethane	79-00-5	µg/L	12	*	20	*	40	*	ND	0.410	ADEC GCL
1187094	18-RT-80A-GW	Groundwater	8260C	1,2,3-Trichlorobenzene	87-61-6	µg/L	31	*	50	*	100	*	ND	7.00	ADEC GCL
1187094	18-RT-80A-GW	Groundwater	8260C	1,2,3-Trichloropropane	96-18-4	µg/L	31	*	50	*	100	*	ND	0.00750	ADEC GCL
1187094	18-RT-80A-GW	Groundwater	8260C	1,2,4-Trichlorobenzene	120-82-1	µg/L	31	*	50	*	100	*	ND	4.00	ADEC GCL
1187094	18-RT-80A-GW	Groundwater	8260C	1,2,4-Trimethylbenzene	95-63-6	µg/L	31		50		100	*	ND	56.0	ADEC GCL
1187094	18-RT-80A-GW	Groundwater	8260C	1,2-Dibromoethane	106-93-4	µg/L	1.8	*	3.75	*	7.5	*	ND	0.0750	ADEC GCL
1187094	18-RT-80A-GW	Groundwater	8260C	1,2-Dichloroethane	107-06-2	µg/L	15	*	25	*	50	*	ND	1.70	ADEC GCL
1187094	18-RT-80A-GW	Groundwater	8260C	1,3,5-Trimethylbenzene	108-67-8	µg/L	31		50		100	*	ND	60.0	ADEC GCL
1187094	18-RT-80A-GW	Groundwater	8260C	1,4-Dichlorobenzene	106-46-7	µg/L	15	*	25	*	50	*	ND	4.80	ADEC GCL
1187094	18-RT-80A-GW	Groundwater	8260C	2-Hexanone	591-78-6	µg/L	310	*	500	*	1000	*	ND	38.0	ADEC GCL
1187094	18-RT-80A-GW	Groundwater	8260C	Benzene	71-43-2	µg/L	12	*	20	*	40	*	ND	4.60	ADEC GCL
1187094	18-RT-80A-GW	Groundwater	8260C	Bromobenzene	108-86-1	µg/L	31		50		100	*	ND	62.0	ADEC GCL
1187094	18-RT-80A-GW	Groundwater	8260C	Bromodichloromethane	75-27-4	µg/L	15	*	25	*	50	*	ND	1.30	ADEC GCL
1187094	18-RT-80A-GW	Groundwater	8260C	Bromoform	75-25-2	µg/L	31		50	*	100	*	ND	33.0	ADEC GCL
1187094	18-RT-80A-GW	Groundwater	8260C	Bromomethane	74-83-9	µg/L	150	*	250	*	500	*	ND	7.50	ADEC GCL
1187094	18-RT-80A-GW	Groundwater	8260C	Carbon disulfide	75-15-0	µg/L	310		500		1000	*	ND	810	ADEC GCL
1187094	18-RT-80A-GW	Groundwater	8260C	Carbon tetrachloride	56-23-5	µg/L	31	*	50	*	100	*	ND	4.60	ADEC GCL
1187094	18-RT-80A-GW	Groundwater	8260C	Chloroform	67-66-3	µg/L	31	*	50	*	100	*	ND	2.20	ADEC GCL
1187094	18-RT-80A-GW	Groundwater	8260C	Dibromochloromethane	124-48-1	µg/L	15	*	25	*	50	*	ND	8.70	ADEC GCL
1187094	18-RT-80A-GW	Groundwater	8260C	Ethylbenzene	100-41-4	µg/L	31	*	50	*	100	*	ND	15.0	ADEC GCL
1187094	18-RT-80A-GW	Groundwater	8260C	Hexachlorobutadiene	87-68-3	µg/L	31	*	50	*	100	*	ND	1.40	ADEC GCL
1187094	18-RT-80A-GW	Groundwater	8260C	Methylene chloride	75-09-2	µg/L	100		250	*	500	*	ND	110	ADEC GCL
1187094	18-RT-80A-GW	Groundwater	8260C	Methyl-t-butyl ether	1634-04-4	µg/L	310	*	500	*	1000	*	ND	140	ADEC GCL
1187094	18-RT-80A-GW	Groundwater	8260C	Naphthalene	91-20-3	µg/L	31	*	50	*	100	*	ND	1.70	ADEC GCL
1187094	18-RT-80A-GW	Groundwater	8260C	Vinyl acetate	108-05-4	µg/L	310		500	*	1000	*	ND	410	ADEC GCL
1187094	18-RT-80A-GW	Groundwater	8260C	Xylenes (total)	1330-20-7	µg/L	100		150		300	*	ND	190	ADEC GCL
1187094	18-RT-9-GW	Groundwater	8260C	1,2,3-Trichloropropane	96-18-4	µg/L	0.31	*	0.5	*	1	*	ND	0.00750	ADEC GCL
1187094	18-RT-EB1-GW	Groundwater	8260C	1,2,3-Trichloropropane	96-18-4	µg/L	0.31	*	0.5	*	1	*	ND	0.00750	ADEC GCL

Table 2
Analytical Sensitivity Summary
Data Quality Assessment
River Terrace Well Sampling

SDG	Sample ID	Matrix	Method	Analyte	CAS	Units	DL		LOD		LOQ		Lab Flag	PAL	PAL Source
1187094	18-RT-EB2-GW	Groundwater	8260C	1,2,3-Trichloropropane	96-18-4	µg/L	0.31	*	0.5	*	1	*	ND	0.00750	ADEC GCL
1187094	18-RT-FD1-GW	Groundwater	8260C	1,2,3-Trichloropropane	96-18-4	µg/L	0.31	*	0.5	*	1	*	ND	0.00750	ADEC GCL
1187094	18-RT-FD2-GW	Groundwater	8260C	1,2,3-Trichloropropane	96-18-4	µg/L	0.31	*	0.5	*	1	*	ND	0.00750	ADEC GCL
1187094	18-RT-FD3-GW	Groundwater	8260C	1,2,3-Trichloropropane	96-18-4	µg/L	0.31	*	0.5	*	1	*	ND	0.00750	ADEC GCL
1187094	18-RT-TB-1	Groundwater	8260C	1,2,3-Trichloropropane	96-18-4	µg/L	0.31	*	0.5	*	1	*	ND	0.00750	ADEC GCL
1187094	18-RT-103-GW	Groundwater	8260C	1,1-Dichloroethene	75-35-4	µg/L	31	*	50	*	100	*	ND	7.00	ROD GCL
1187094	18-RT-48-GW	Groundwater	8260C	1,1-Dichloroethene	75-35-5	µg/L	15.5	*	25	*	50	*	ND	7.00	ROD GCL
1187094	18-RT-51-GW	Groundwater	8260C	1,1-Dichloroethene	75-35-6	µg/L	3.1		5		10	*	ND	7.00	ROD GCL
1187094	18-RT-78-GW	Groundwater	8260C	1,1-Dichloroethene	75-35-7	µg/L	31	*	50	*	100	*	ND	7.00	ROD GCL

Table 2
Analytical Sensitivity Summary
Data Quality Assessment
River Terrace Well Sampling

Notes

[1] Groundwater PALs are the most stringent from the following sources:

ADEC GCL Alaska Department of Environmental Conservation 18 AAC 75.345 Table C Groundwater Cleanup Levels (September 2018)

ROD GCL Record of Decision Groundwater Cleanup Levels from Table 2-2 of the *Groundwater Compliance and Performance Monitoring Plan* (Ahtna; December 2018)

µg/L	micrograms per kilogram
*	limit exceeds the PAL
CAS	Chemical Abstract Service number
DL	Detection Limit
LOQ	Limit of Quantitation
LOD	Limit of Detection
ND	Not Detected
PAL	Project Action Limit
SDG	Sample Delivery Group
NA	Not Applicable

Laboratory Data Review Checklist

Completed by:

Alex Thompson

Title:

Chemist

Date:

January 21, 2019

CS Report Name:

River Terrace Well Sampling

Report Date:

February 2019

Consultant Firm:

Arctic Data Services, LLC on behalf of Ahtna Engineering Services, LLC.

Laboratory Name:

SGS North America – Anchorage, AK

Laboratory Report Number:

1187094

ADEC File Number:

2333.38.014

Hazard Identification Number

1535

1. Laboratory

   a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?

   ☒Yes ☐No ☐NA Comments:

Samples were received by SGS North America in Anchorage, AK who performed VOC analysis via EPA Method 8260C. Samples were transferred to SGS North America in Orlando, FL where they were analyzed via method RSK-175.

   b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?

   ☐Yes ☐No ☒NA Comments:

SGS North America – Orlando, FL is an accredited and ADEC CS approved lab; however, analysis of dissolved gases methane, ethene, and ethane via the RSK-175 method does not fall under ADECs scope of approval for the laboratory.RSK-175 analysis is used for monitoring biodegradation purposes only, and does not require ADEC CS approval.

2. Chain of Custody (COC)

   a. COC information completed, signed, and dated (including released/received by)?

   ☒Yes ☐No ☐NA Comments:

   b. Correct analyses requested?

   ☒Yes ☐No ☐NA Comments:

3. Laboratory Sample Receipt Documentation

   a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?

   ☐Yes ☒No ☐NA Comments:

A single cooler was received by SGS Anchorage, below the acceptable temperature range at -0.5 ° C. The sample receipt form notes that no ice was present in any of the project sample containers, so data are not considered affected.

b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

☐Yes ☒No ☐NA Comments:

Samples were preserved with HCl. However, some samples were outside of the acceptable pH range; see below.

c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

☒Yes ☐No ☐NA Comments:

Samples were generally received in good condition, with no broken or leaking containers. However, a number of sample VOA vials were received with headspace or bubbles larger than 6mm. The laboratory proceeded with analysis at client's request.

d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?

☒Yes ☐No ☐NA Comments:

Headspace in VOA samples and outside-of-range temperature discrepancies were documented in the sample receipt form. Samples received outside of the acceptable pH range are documented in the case narrative. The following summarizes sample condition for affected project samples:

18-RT-47-GW	headspace > 6 mm; pH > 2
18-RT-48-GW	headspace > 6 mm
18-RT-78-GW	pH > 2
18-RT-80A-GW	pH > 2
18-RT-103-GW	headspace > 6 mm; pH > 2

e. Data quality or usability affected? (Please explain.)

Comments:

Results for samples received with headspace/bubbles or outside of pH range will be qualified with 'J-' flags for detected results, and 'UJ' for non-detect results, indicating the results are estimated, biased low, due to potential loss of analyte.
See Table 1 of the DQA for a full list of affected results.

4. Case Narrative

a. Present and understandable?

☒Yes ☐No ☐NA Comments:

b. Discrepancies, errors or QC failures identified by the lab?

☒Yes ☐No ☐NA Comments:

The laboratory documented a number of QC anomalies that are addressed in the following sections of the checklist. The laboratory did not document any instrument-level QC failures. Additionally, the case narrative notes a number of project samples were received with pH above two.

c. Were all corrective actions documented?

☐Yes ☐No ☒NA Comments:

No corrective actions were performed.

d. What is the effect on data quality/usability according to the case narrative?

Comments:

The case narrative makes no conclusions regarding data quality or usability.

5. Sample Results

a. Correct analyses performed/reported as requested on COC?

☒Yes ☐No ☐NA Comments:

b. All applicable holding times met?

☒Yes ☐No ☐NA Comments:

c. All soils reported on a dry weight basis?

☐Yes ☐No ☒NA Comments:

No soil samples were submitted for this project.

d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project?

☐Yes ☒No ☐NA Comments:

Project action limits (PALs) varied across the site depending on the type/location of well sampled. General cleanup levels for the site were the relevant ADEC 18 AAC 75.341 Table C groundwater cleanup levels (GCLs). There are additional site-specific and location-specific cleanup levels from the record of decision (ROD) for the site. LODs and LOQs for non-detect results were compared to the more stringent of ADEC GCLs and the most stringent ROD cleanup levels listed in Table 2-2 of the Work Plan.
There were a number of LODs that exceeded a relevant GCL or ROD cleanup level; refer to Table 2 of the DQA for details. Please note the most stringent ROD cleanup level may not be applicable to all samples collected. Refer also to report summary tables.

e. Data quality or usability affected?

Comments:

Data quality was affected as described above. In general, samples where select VOC LODs exceeded a GCL or ROD cleanup level contained high concentrations of other contaminants of concern, therefore the impact to data usability was minor.

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis, and 20 samples?

☒Yes ☐No ☐NA Comments:

ii. All method blank results less than limit of quantitation (LOQ)?

☒Yes ☐No ☐NA Comments:

However, cis-1,2-dichloroethene was detected below the LOQ in the method blank for 8260C water analysis preparatory batch VXX33655. cis-1,2-Dichloroethane was detected at concentrations much greater than 10 times the method blank in each project sample, so no data are considered affected.

iii. If above LOQ, what samples are affected?

Comments:

No sample results were affected; see above.

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

☐Yes ☐No ☒NA Comments:

See above.

v. Data quality and usability affected?

Comments:

Data quality and usability were not affected.

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

☒Yes ☐No ☐NA Comments:

An LCS and LCSD were analyzed for each preparatory batch. MS/MSDs were analyzed for each preparatory batch with the exception of 8260C batches VXX33640 and VXX33656. An LCS/LCSD and MS were analyzed for the subcontracted laboratory RSK-175 batch GLL2343.

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

☐Yes ☐No ☒NA Comments:

No metals/inorganic analyses were performed.

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

☐Yes ☒No ☐NA Comments:

LCS/LCSD recoveries were within control limits for all batches.
Recovery of tetrachlorothene was above control limits for the MS/MSD of sample 18-RT-47-GW, reported in 8260C prep batch VXX33644. However, the spiking concentration was less than the native analyte concentration, so results were not considered affected.

Recovery of cis-1,2-dichloroethene was below control limits for the MS/MSD of sample 18-RT-48-GW, reported in 8260C prep batch VXX33655. However, the spiking concentration was less than the native analyte concentration, so results were not considered affected.

MS and MSD recovery for cis-1,2-dichloroethene were below control limits for 8260C prep batch VXX33644, however the spiked parent sample was not a project sample, so no data are considered affected.

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

☒Yes ☐No ☐NA Comments:

v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

No sample results were affected; see above.

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

☐Yes ☐No ☒NA Comments:

Please see above.

vii. Data quality and usability affected? (Use comment box to explain.)

Comments:

Data quality and usability were not affected.

c. Surrogates – Organics Only

i. Are surrogate recoveries reported for organic analyses – field, QC and laboratory samples?

☒Yes ☐No ☐NA Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)

☒Yes ☐No ☐NA Comments:

All surrogates were recovered within laboratory control limits.

iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?

☐Yes ☐No ☒NA Comments:

No sample results were affected; see above.

iv. Data quality and usability affected? (Use comment box to explain.)

Comments:

Data quality and usability were not affected.

d. Trip blank – Volatile analyses only (GRO, BTEX, Volatile Chlorinated Solvents, etc.): Water and Soil

i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples? (If not, enter explanation below.)?

☒Yes ☐No ☐NA Comments:

One water trip blank, 18-RT-TB-1, was submitted with water samples for VOC analysis (8260C).

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)

☒Yes ☐No ☐NA Comments:

Samples were submitted in a single cooler.

iii. All results less than LOQ?

☒Yes ☐No ☐NA Comments:

No analytes were detected in the trip blank.

iv. If above LOQ, what samples are affected?

Comments:

No sample results were affected.

v. Data quality and usability affected?

Comments:

Data quality and usability were not affected.

e. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

☒Yes ☐No ☐NA Comments:

Three field duplicate samples were submitted in this work order. Sample 18-RT-FD1-GW was submitted as a field duplicate of 18-RT-49-GW. Sample 18-RT-FD2-GW was submitted as a field duplicate of 18-RT-51-GW. Sample 18-RT-FD3-GW was submitted as a field duplicate of 18-RT-50-GW.

ii. Submitted blind to lab?

☐Yes ☒No ☐NA Comments:

While not submitted blind per se (labelled -FD), there is no indication given as to the associated primary sample.

iii. Precision – All relative percent differences (RPD) less than specified DQOs?
(Recommended: 30% water, 50% soil)
RPD (%) = Absolute value of: (R1-R2) / ((R1+R2)/2) x 100
Where R1 = Sample Concentration
R2 = Field Duplicate Concentration

☐Yes ☒No ☐NA Comments:

RPDs were calculated for field duplicate results using the LOD for non-detect results. Trichloroethene, 2-butanone, and 1,2-dichloropropane RPDs exceeded the MQO for duplicate pair 18-RT-FD2-GW and 18-RT-51-GW. Trichloroethene, and tetrachloroethene had RPDs exceeding the MQO for duplicate pair 18-RT-FD3-GW and 18-RT-50-GW.

iv. Data quality and usability affected?

Comments:

Results where the RPD exceeds MQOs will be qualified with a 'J' flag for detections and 'UJ' for non detections for the primary and duplicate samples, indicating the results are estimated, with an unknown direction of bias. The higher of field duplicate results should be used for project decision making purposes.

f. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below.)

☒Yes ☐No ☐NA Comments:

Two equipment blank samples were submitted and analyzed for VOCs via EPA method 8260C.

i. All results less than LOQ?

☐Yes ☒No ☐NA Comments:

cis-1,2-Dichloroethene (cDCE) was detected above the LOQ in EB sample 18-RT-EB2-GW. Chloroform and toluene were detected below the LOQ in EB sample 18-RT-EB1-GW.

ii. If above LOQ, what samples are affected?

Comments:

Project sample results are considered affected if the analytes detected in the blank are within 10 times the equipment blank concentration for groundwater samples.
cDCE was detected within 10 times the equipment blank concentration in the following samples:
18-RT-6A-GW, 18-RT-9-GW, 18-RT-7-GW, 18-RT-12-GW, 18-RT-16-GW, 18-RT-39-GW, and 18-RT-42-GW.
Toluene was detected within 10 times the equipment blank concentration in the following samples:
18-RT-16-GW, 18-RT-39-GW, 18-RT-40-GW, 18-RT-44-GW, 18-RT-47-GW, 18-RT-50-GW and 18-RT-FD3-GW, 18-RT-9-GW.
Chloroform was detected within 10 times the equipment blank concentration in the following samples:
18-RT-42-GW, 18-RT-23-GW, 18-RT-9-GW and 18-RT-25-GW.
Affected results are qualified with a 'B' flag, indicating the result is estimated, attributable to sampling equipment contamination.

iii. Data quality and usability affected?

Comments:

Data quality is affected as described above; results where the affected analyte is detected around cleanup levels should be used with caution, as the results should be considered estimated.

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

☐Yes ☐No ☒NA Comments:

There were no laboratory-specific or other data flags/qualifiers.

Laboratory Data Review Checklist

Completed by:

Alex Thompson

Title:

Chemist

Date:

January 21, 2019

CS Report Name:

River Terrace Well Sampling

Report Date:

February 2019

Consultant Firm:

Arctic Data Services, LLC on behalf of Ahtna Engineering Services, LLC.

Laboratory Name:

SiRem – Guelph, Ontario

Laboratory Report Number:

S-5166, S-5177

ADEC File Number:

2333.38.014

Hazard Identification Number

1535

1. Laboratory

   a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?

   ☐Yes ☐No ☒NA Comments:

Samples were received by SiREM Laboratories in Guelph, Ontario. SiREM is not an ADEC CS approved laboratory. SiREM laboratories analyses were used for monitoring indicators of biodegradation at the River Terrace site. ADEC CS approval was not required for the analyses performed by SiREM.

   b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?

   ☐Yes ☐No ☒NA Comments:

All samples were received and analyzed by SiREM.

2. Chain of Custody (COC)

   a. COC information completed, signed, and dated (including released/received by)?

   ☒Yes ☐No ☐NA Comments:

   b. Correct analyses requested?

   ☒Yes ☐No ☐NA Comments:

3. Laboratory Sample Receipt Documentation

   a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?

   ☒Yes ☐No ☐NA Comments:

Two separate coolers were submitted to the laboratory. Both were received within the acceptable temperature range at 2 °C and 3 °C.

   b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

   ☐Yes ☐No ☒NA Comments:

No preservative was required.

c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

☒Yes ☐No ☐NA Comments:

Samples were received in good conditions.

d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?

☒Yes ☐No ☐NA Comments:

Samples labelled 18-RT-38-GW were incorrectly listed on the COC as 18-RT-36-GW. Additionally, sample 18-RT-FD1-GW had two bottles labelled as Total Iron with no bottles for Dissolved Iron. Correspondence between the laboratory and client confirmed the correct sample names, and analyses to be performed. For sample 18-RT-FD1-GW, the laboratory assigned the higher result to Total Iron, since the field-filtered dissolved iron should be a lower concentration.

e. Data quality or usability affected? (Please explain.)

Comments:

Data quality and usability were not consisered affected.

4. Case Narrative

a. Present and understandable?

☐Yes ☒No ☐NA Comments:

Genetic analysis results were reported in work order S-5166; TOC, Iron (Total & Dissolved), and volatile fatty acid (VFA) results were reported in work order S-5177. Case narratives were not provided in either report.

b. Discrepancies, errors or QC failures identified by the lab?

☐Yes ☐No ☒NA Comments:

See above.

c. Were all corrective actions documented?

☐Yes ☐No ☒NA Comments:

See above.

d. What is the effect on data quality/usability according to the case narrative?

Comments:

No case narrative was provided.

5. Sample Results

a. Correct analyses performed/reported as requested on COC?

☒Yes ☐No ☐NA Comments:

b. All applicable holding times met?

☒Yes ☐No ☐NA Comments:

Technical holding times do not exist for genetic analyses or VFA analysis. Genetic analyses were performed within 10 days of sample collection. VFA analysis was performed 21 days following sample collection. TOC and Iron analysese were performed 9 days following sample collection.

c. All soils reported on a dry weight basis?

☐Yes ☐No ☒NA Comments:

No soil samples were submitted for this project.

d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project?

☐Yes ☐No ☒NA Comments:

Results are to be used for monitoring bioaugmentation progress and efficiency. There are no applicable cleanup levels.

e. Data quality or usability affected?

Comments:

Data quality and usability were not affected.

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis, and 20 samples?

☐Yes ☐No ☒NA Comments:

The analyses reported were used for monitoring indicators of biodegradation at the River Terrace site. QC information reported by the laboratory was minimal, and method blanks were not reported for every analysis. Where reported, blank samples and negative controls did not suggest significant cross-contamination of samples.

ii. All method blank results less than limit of quantitation (LOQ)?

☐Yes ☐No ☒NA Comments:

See above.

iii. If above LOQ, what samples are affected?

Comments:

NA; see above.

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

☐Yes ☐No ☒NA Comments:

See above.

v. Data quality and usability affected?

Comments:

There were no QC anomalies that affected data quality. Data are considered usable for purposes of monitoring indicators of biodegradation.

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

☒Yes ☐No ☐NA Comments:

The analyses reported were used for monitoring indicators of biodegradation at the River Terrace site. QC information reported by the laboratory was minimal, and laboratory control samples were not reported for every analysis. Where reported, control samples indicated adequate analytical accuracy and precision. Where MS/MSD analyses were performed, recoveries and RPDs were within reasonable limits, however laboratory control limits were not always reported.

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

☐Yes ☐No ☒NA Comments:

No metals/inorganic analyses were performed.

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

☐Yes ☐No ☒NA Comments:

See above.

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

☐Yes ☐No ☒NA Comments:

See above.

v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

NA; see above.

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

☐Yes ☐No ☒NA Comments:

Please see above.

vii. Data quality and usability affected? (Use comment box to explain.)

Comments:

There were no QC anomalies that affected data quality. Data are considered usable for purposes of monitoring indicators of biodegradation.

c. Surrogates – Organics Only

i. Are surrogate recoveries reported for organic analyses – field, QC and laboratory samples?

☐Yes ☐No ☒NA Comments:

None of the performed analyses required the use of surrogates. No surrogates were analyzed or reviewed.

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)

☐Yes ☐No ☒NA Comments:

NA; see above.

iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?

☐Yes ☐No ☒NA Comments:

NA; see above.

iv. Data quality and usability affected? (Use comment box to explain.)

Comments:

Data quality and usability were not affected.

d. Trip blank – Volatile analyses only (GRO, BTEX, Volatile Chlorinated Solvents, etc.): Water and Soil

i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples? (If not, enter explanation below.)?

☐Yes ☐No ☒NA Comments:

No volatile organic analyses were performed, aside from the VFA analysis. No trip blanks were submitted, analyzed, or reported.

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)

☐Yes ☐No ☒NA Comments:

See above.

iii. All results less than LOQ?

☐Yes ☐No ☒NA Comments:

See above.

iv. If above LOQ, what samples are affected?

Comments:

No sample results were affected.

v. Data quality and usability affected?

Comments:

Data quality and usability were not affected.

e. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

☒Yes ☐No ☐NA Comments:

Sample 18-RT-FD1-GW was submitted as a field duplicate of sample 18-RT-49-GW.

ii. Submitted blind to lab?

☐Yes ☒No ☐NA Comments:

While not submitted blind per se, there was no indication given as to the associated primary sample.

iii. Precision – All relative percent differences (RPD) less than specified DQOs?
(Recommended: 30% water, 50% soil)
RPD (%) = Absolute value of: (R1-R2) / ((R1+R2)/2) x 100
Where R1 = Sample Concentration
R2 = Field Duplicate Concentration

☐Yes ☒No ☐NA Comments:

Formate and butyrate were detected in the duplicate, but not in the primary sample. RPDs for formate and butyrate exceeded the MQO of 30% in the duplicate pair, using the reporting limit for non-detect results. Detections are qualified with a 'J' flag as estimated and non-detect results are qualified 'UJ' for the field duplicate pair.
RPDs for functional genes were all within MQOs, however RPDs for total dehalococcoides (Dhc) of the field duplicate pair exceeded the MQO of 30%. Results for Dhc in the primary and duplicate sample will be qualified with a 'J' flag, indicating the results are estimated, with no clear direction of bias.

iv. Data quality and usability affected?

Comments:

Data quality is affected as described above. Data are considered usable for purposes of monitoring indicators of biodegradation, taking into account the estimated results.

f. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below.)

☐Yes ☐No ☒NA Comments:

Equipment blanks were not submitted, and were not required per the approved work plan.

i. All results less than LOQ?

☐Yes ☒No ☒NA Comments:

NA; see above.

ii. If above LOQ, what samples are affected?

Comments:

No samples were affected; see above.

iii. Data quality and usability affected?

Comments:

Data quality and usability were not affected.

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

☐Yes ☐No ☒NA Comments:

There were no laboratory-specific or other data flags/qualifiers.

APPENDIX F

HISTORICAL PERFORMANCE MONITORING DATA

(This Page Intentionally Left Blank)

River Terrace RV Park
Historical Performance Monitoring Results

Plume	Location	Sample ID	Date Sampled	Total Organic Carbon	Iron, total	Dissolved Iron	Manganese, total	Manganese, dissolved	Ethane	ethene	Methane	pH	Temp	Conductivity	Dissolved Oxygen	ORP
				(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)		˚C)	(µS)	(mg/L)	(mV)
Lower	L-100	13-RT-023-GW	10-Apr-13	571000	112000	108000	7470	7880	0.35	5.5	7800	5.0	3	0.876	0.49	75.2
Lower	L-100	10-RT-054-GW	12-May-10	25400000	1170000	1140000	71200	72400	<10	<10	420	5.3	5.57	4.895	1.27	-85.1
Lower	L-100	10-RT-096-GW	20-Oct-10	49100000	1710000	1100000	90000	65400	<7	<7	47	4.5	6.53	3.400	0.3	-77.6
Lower	L-100	12-RT-016-GW	09-May-12	417000	76100	70900	10400	9310	<10	<10	9250	5.8	7.74	2.079	0.1	126.4
Lower	L-100	14-RT-016-GW	22-Apr-14	12800	16100	14300	2930	2920	0.16	1.5	4600	6.8	7.4	0.300	0.25	-104
Lower	L-100	11-RT-007-GW	17-May-11	27700000	945000	875000	56000	40800	<2	<2	55	5.0	7.44	3.152	0.75	-128
Lower	L-101	12-RT-017-GW	08-May-12	37000000	2740000	2140000	229000	197000	<8	<8	107	7.2	13.33	7.653	1.18	1.8
Lower	L-101	11-RT-011-GW	17-May-11	---	---	---	---	---	---	---	---	7.1	6.78	1.306	1.06	-170
Lower	L-101	10-RT-097-GW	20-Oct-10	264000	48400	39000	2800	2870	---	---	---	7.4	6.78	1.001	0.48	-126.7
Lower	L-101	13-RT-024-GW	10-Apr-13	34000000	2980000	2390000	207000	205000	2.7	78	120	4.9	1.9	10.61	1.28	-76
Lower	L-101	14-RT-017-GW	23-Apr-14	15400000	5260000	4940000	181000	178000	2.1	79	90	5.8	5.5	6.425	0.22	-205.3
Lower	L-102	14-RT-019-GW	22-Apr-14	30700000	1640000	1580000	164000	194000	6.1	28	110	5.0	5.8	7.42	0.48	-119.1
Lower	L-103	14-RT-020-GW	23-Apr-14	17400000	4930000	4050000	293000	250000	3.8	14	640	5.1	4.4	4.466	1.23	-335.6
Lower	L-103	18-RT-103-GW	13-Dec-18	157000000	2910000	2940000	---	---	5.4	32	1850	5.48	4.98	---	0.22	-67
Lower	L-13	03-RT-008-GW	10-Mar-03	327000	---	68300	---	---	<10	<10	10600	6.44	3.7	.74		74.7
Lower	L-13	03-RT-037-GW	17-Jun-03	---	---	---	---	---	<10	18	15100	6.13	6.5	.697	0.47	22.7
Lower	L-78	11-RT-010-GW	17-May-11	---	---	---	---	---	---	---	---	5.0	7.03	12.11	1.5	-245
Lower	L-78	09-RT-074-GW	07-Oct-09	8060000	2000000	1550000	56600	44300	19	108	3030		6.66	5.12	0.68	-98.6
Lower	L-78	08-RT-010-GW	26-Jun-08	---	---	---	---	---	---	---	---	6.53	8.58	0.458	0.11	-22.1
Lower	L-78	08-RT-036-GW	18-Sep-08	10200000	2400000	1860000	76400	51500	20	46	2570	5.79	7.32	5.840	2.07	-125.2
Lower	L-78	12-RT-015-GW	09-May-12	127000000	3030000	2730000	193000	202000	<4	<4	21	5.6	11.75	7.728	1.43	152.5
Lower	L-78	13-RT-031-GW	09-Apr-13	21600000	3790000	4040000	136000	145000	8	180	2300	6.1	2.9	10.54	0.39	-162.9
Lower	L-78	14-RT-015-GW	23-Apr-14	15400000	5500000	6430000	120000	136000	2.2	110	1500	6.1	6.6	8.532	0.15	-147.7
Lower	L-78	18-RT-78-GW	14-Dec-18	3980000	916000	567000	---	---	10.5	2610	19800	6.4	4.99	---	0.74	-99.8
Lower	L-78	10-RT-095-GW	20-Oct-10	59700000	1490000	1750000	165000	411000	<7	8 VH	165	5.7	7.58	5.778	0.57	-152
Lower	L-78	10-RT-062-GW	13-May-10	---	---	---	---	---	---	---	---	6.1	6.29	5.304	0.68	-117.7
Lower	L-79	08-RT-011-GW	13-May-08	---	1920000	---	---	---	<6	<6	86	4.93	5.95	6.402	0.91	83.1
Lower (Phase II)	MW-10	10-RT-107-GW	21-Oct-10	---	---	---	---	---	---	---	---	6.3	8.01	0.347	0.27	-89
Lower (Phase II)	MW-10	04-RT-016-GW	30-Mar-04	94800	39300	41400	---	---	<10	<10	1720	6.21	1.78	0.208	1	-1.7
Lower (Phase II)	MW-10	04-RT-039-GW	08-Jun-04	23900	44900	42500	---	---	<13	<13	21000	6.20	5.09	0.314	0.53	-43.9
Lower (Phase II)	MW-10	04-RT-050-GW	29-Oct-04	34500	41100	42700	---	---	<7	<7	394	6.11	7.17	0.350	1.3	18.5
Lower (Phase II)	MW-10	05-RT-004-GW	24-Feb-05	16100	51600	46400	6510	6020 VJ	<10	<10	8370		4.12	0.321	0.71	-50
Lower (Phase II)	MW-10	05-RT-047-GW	11-Oct-05	50400	42700	47800	---	---	<10	<10	6060	5.95	8.12	0.560	0.44	-13.7
Lower (Phase II)	MW-10	06-RT-043-GW	13-Sep-06	---	---	---	---	---	---	---	---	5.70	7.52	0.487	0.4	12.8
Lower (Phase II)	MW-10	07-RT-037-GW	18-Sep-07	10900	6420	1450	---	---	<5	<5	20	6.14	9.71	0.162	0.7	22.4
Lower (Phase II)	MW-10	09-RT-088-GW	07-Oct-09	---	---	---	---	---	---	---	---		8.69	0.129	3.28	45.4
Lower (Phase II)	MW-10	12-RT-031-GW	10-May-12	---	---	---	---	---	---	---	---	8.7	5.25	0.586	1.11	84.9
Lower (Phase II)	MW-10	05-RT-033-GW	02-Jun-05	---	---	---	---	---	---	---	---	9.08	6.14	0.891	0.44	-138.3
Lower (Phase II)	MW-10	04-RT-005-GW	20-Jan-04	46700	80400	79200	8280	9180	<13	<13	14000	6.24	4.9	0.514	0.1	-48.1
Lower (Phase II)	MW-10	08-RT-054-GW	19-Sep-08	---	---	---	---	---	---	---	---	5.73	9.51	0.196	0.58	81.6
Lower (Phase II)	MW-10	01-RT-081-GW	25-Jun-01	---	---	---	---	---	---	---	---		5.9	.971	0.67	-56
Lower (Phase II)	MW-10	06-RT-010-GW	25-May-06	422000	203000	207000 VM	---	---	<10	<10	2850	6.38	5.14	1.310	1.06	-45.8
Lower (Phase II)	MW-10	00-RT-118-GW	28-Sep-00	---	---	---	---	---	---	---	---	6.67	7.2	.405	0.5	
Lower (Phase II)	MW-10	03-RT-118-GW	08-Oct-03	---	---	---	---	---	---	---	---	5.95	7.82	0.433		-18
Lower (Phase II)	MW-10	01-RT-048-GW	22-Mar-01	---	---	---	---	---	---	---	---	6.47	2.1	.839	1.08	-78
Lower (Phase II)	MW-10	01-RT-100-GW	16-Oct-01	4700000	410000	392000	31400	---	<10	<10	414	4.88	6.8	2.42	0.55	-13
Lower (Phase II)	MW-10	01-RT-140-GW	15-Jan-02	2210000	422000	401000	460000	---	<5	<5	475	4.5	5	.8	1.31	104
Lower (Phase II)	MW-10	00-RT-053-GW	07-Jun-00	9100	---	---	---	---	---	---	330	6.71	5.2	.385	0.69	
Lower (Phase II)	MW-10	02-RT-051-GW	19-Jun-02	---	---	---	---	---	---	---	---	5.58	6.3	1.6	0.33	54.1
Lower (Phase II)	MW-10	03-RT-044-GW	18-Jun-03	---	---	---	---	---	---	---	---	7.8	7.7	1.39	0.08	24.2
Lower (Phase II)	MW-10	02-RT-076-GW	26-Sep-02	---	---	---	---	---	---	---	---	5.66	8	0.755	0.68	34.6
Lower (Phase II)	MW-10	02-RT-120-GW	19-Dec-02	---	---	---	---	---	---	---	---	6.05	3.8	0.595	0.24	8
Lower (Phase II)	MW-10	03-RT-021-GW	11-Mar-03	---	---	---	---	---	---	---	---	6.45	3.8	.99	0.23	16
Lower (Phase II)	MW-10	02-RT-010-GW	13-Mar-02	---	---	---	---	---	---	---	---	6.10	3.5	2.98	0.55	
Lower (Phase II)	MW-10	01-RT-013-GW	10-Jan-01	---	---	---	---	---	---	---	---	6.61	4.6	1.07	5.15	-29
Lower	MW-12	14-RT-026-GW	24-Apr-14	---	---	---	---	---	---	---	---	5.6	3.2	0.675	4.6	88.8
Lower	MW-12	05-RT-014-GW	22-Feb-05	---	---	---	---	---	---	---	---	8.33	3.61	0.222	1.55	-33.6
Lower	MW-12	07-RT-038-GW	19-Sep-07	15500	424	332	---	---	<10	<10	<7	5.81	10.31	0.141	2.54	23.3
Lower	MW-12	08-RT-055-GW	19-Sep-08	---	---	---	---	---	---	---	---	5.73	10.51	0.199	0.39	111.5
Lower	MW-12	09-RT-089-GW	07-Oct-09	---	---	---	---	---	---	---	---		7.98	0.272	0.36	-30.5
Lower	MW-12	10-RT-108-GW	21-Oct-10	---	---	---	---	---	---	---	---	6.1	8.27	0.379	1.25	14.5
Lower	MW-12	13-RT-008-GW	09-Apr-13	---	---	---	---	---	---	---	---	6.1	1.7	0.451	1.89	83.6

River Terrace RV Park
Historical Performance Monitoring Results

Plume	Location	Sample ID	Date Sampled	Total Organic Carbon	Iron, total	Dissolved Iron	Manganese, total	Manganese, dissolved	Ethane	ethene	Methane	pH	Temp	Conductivity	Dissolved Oxygen	ORP
				(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)		˚C)	(µS)	(mg/L)	(mV)
Lower	MW-12	04-RT-072-GW	23-Oct-04	---	---	---	---	---	---	---	---	6.29	7.32	0.210	0.58	-23.3
Lower	MW-12	18-RT-12-GW	12-Dec-18	---	---	---	---	---	---	---	---	5.81	7.41	---	1.49	166.9
Lower	MW-12	12-RT-032-GW	10-May-12	---	---	---	---	---	---	---	---	8.5	3.45	0.443	0.32	85
Lower	MW-12	01-RT-120-GW	18-Oct-01	---	---	---	---	---	---	---	---	6.32	6.9	0.563	0.59	-4.7
Lower	MW-12	05-RT-059-GW	12-Oct-05	---	---	---	---	---	---	---	---	5.90	8.38	0.528	0.62	48.2
Lower	MW-12	04-RT-032-GW	08-Jun-04	---	---	---	---	---	---	---	---	6.15	4.95	0.265	0.81	-21.7
Lower	MW-12	00-RT-056-GW	08-Jun-00	8900	---	---	---	---	---	---	110	5.92	5.4	.199	0.95	
Lower	MW-12	01-RT-143-GW	16-Jan-02	---	---	---	---	---	---	---	---	6.02	2.6	0.389	1.92	6.5
Lower	MW-12	02-RT-007-GW	13-Mar-02	---	---	---	---	---	---	---	---	6.47	2.2	0.513	0.25	
Lower	MW-12	02-RT-052-GW	19-Jun-02	---	---	---	---	---	---	---	---	6.25	6.9	0.391	0.72	-15.9
Lower	MW-12	02-RT-078-GW	26-Sep-02	---	---	---	---	---	---	---	---	5.78	8.8	0.511	0.13	21.8
Lower	MW-12	02-RT-121-GW	19-Dec-02	---	---	---	---	---	---	---	---	6.22	4.5	0.503	0.65	-33.5
Lower	MW-12	03-RT-022-GW	11-Mar-03	---	---	---	---	---	---	---	---	6.47	3.7	.507	0.43	24.3
Lower	MW-12	03-RT-049-GW	18-Jun-03	---	---	---	---	---	---	---	---	7.32	7.3	.603	0.09	12
Lower	MW-12	03-RT-110-GW	08-Oct-03	---	---	---	---	---	---	---	---	6.08	7.7	0.533		-9
Upper	MW-16	18-RT-16-GW	12-Dec-18	---	---	---	---	---	---	---	---	6.42	7.27	---	0.38	-12.5
Upper	MW-16	09-RT-002-GW	05-May-09	114000	45900	60700	16300	21600	<13	35	18300	6.53	4.18	0.614		
Upper	MW-16	06-RT-008-GW	24-May-06	492000	109000	109000	---	---	<10	<10	10700	5.93	6.87	1.096	0.7	-16
Upper	MW-16	07-RT-002-GW	29-May-07	991000 VM	185000	176000	54300	53600	<10	16	9920	6.12	4.63	1.201	0.47	10.5
Upper	MW-16	07-RT-022-GW	20-Sep-07	376000	90900	90800	---	---	<6	14	6380	6.0	8.82	0.979	0.84	61.5
Upper	MW-16	08-RT-002-GW	13-May-08	135000	39800	44700	---	---	<10	27	13500	6.14	4.92	0.588	0.78	24.2
Upper	MW-16	08-RT-043-GW	19-Sep-08	---	---	---	---	---	---	---	---	6.05	7.12	0.643	0.76	-7.4
Upper	MW-16	05-RT-028-GW	03-Jun-05	---	---	---	---	---	---	---	---		6.31	0.726	0.37	-148.2
Upper	MW-16	09-RT-079-GW	08-Oct-09	---	---	---	---	---	---	---	---		7.28	0.377	0.56	-54.3
Upper	MW-16	10-RT-050-GW	14-May-10	14500	20900	21000	9810	10200	<10	28	11000	6.4	5.6	0.37	0.74	-55.3
Upper	MW-16	10-RT-081-GW	21-Oct-10	377000	157000	152000	53400	52100	<8	30	8420	6.2	6.82	0.812	0.59	-24.2
Upper	MW-16	12-RT-002-GW	09-May-12	203000	36700	40500	6730	8000	<10	15	8470	7.5	5.62	0.458	1.45	18.4
Upper	MW-16	13-RT-015-GW	11-Apr-13	2290000	381000	336000	41100	37900	0.26	13	4200	4.9	2.6	2.642	0.3	9.9
Upper	MW-16	16-RT-003-GW	27-Oct-16	---	---	---	---	---	---	---	---	8.0	6.9	0.310		-98.6
Upper	MW-16	05-RT-045-GW	12-Oct-05	45200	26400	27900	---	---	<10	<10	10200	6.18	8.16	0.549	0.42	-35.4
Upper	MW-16	04-RT-048-GW	30-Oct-04	114000	46300	47500	---	---	<10	<10	9390	5.76	8.08	0.463	0.81	100.5
Upper	MW-16	14-RT-002-GW	22-Apr-14	185000	49300	55300	10800	11700	0.27	7.4	3700	6.2	4.2	0.386	0.74	-43.1
Upper	MW-16	01-RT-008-GW	11-Jan-01	467000	28600	5290	15100	---	<10	<10	20	6.35	5.5	.680	0.29	-27
Upper	MW-16	04-RT-024-GW	08-Jun-04	321000	90200	98200	---	---	<13	<13	9150	5.51	7.32	0.720	0.73	29.8
Upper	MW-16	00-RT-136-GW	28-Nov-00	921000	7520	205	12300	11500	<10	<10	30	5.86	6.2	.741	1.65	
Upper	MW-16	01-RT-037-GW	08-Mar-01	215000	33000	10800	28400	27400	<20	<10	60	6.66	4.8	0.958	1.16	-51.9
Upper	MW-16	01-RT-071-GW	22-May-01	561000	45500	44000	31300	---	<4	<4	11	5.66	8.1	.299	0.81	54.8
Upper	MW-16	01-RT-095-GW	16-Oct-01	197000	34000	30000	29100	---	<10	<10	28	6.15	8.1	0.901	0.7	23.4
Upper	MW-16	01-RT-135-GW	16-Jan-02	125000	21900	21700	32700	---	<7	<7	168	6.46	5.4	.609	1.97	7.05
Upper	MW-16	02-RT-014-GW	13-Mar-02	---	---	---	---	---	---	---	---	5.43	5.2	0.838	0.35	
Upper	MW-16	02-RT-044-GW	18-Jun-02	906000	---	158000	---	---	<13	<13	4720	5.41	6.9	1.49	0.47	56.5
Upper	MW-16	00-RT-040-GW	07-Jun-00	4300	---	---	---	---	---	---	8.7	6.36	5.3	.400	1.53	
Upper	MW-16	00-RT-101-GW	27-Sep-00	3800	18400	<30	3630	---	<20	<20	<30	6.87	6.8	.41	2.25	
Upper	MW-16	02-RT-067-GW	27-Sep-02	120000	---	69200	---	---	<13	<13	3730	5.78	8	1.16	0.24	-26.1
Upper	MW-16	04-RT-013-GW	31-Mar-04	65800	32400	31900	---	---	<7	<7	8300	6.33	4.42	0.334	0.4	-18.5
Upper	MW-16	04-RT-002-GW	21-Jan-04	27700	22200	22200	13600	14500	<13	<13	12700	6.34	6.43	0.324	1.5	-23.5
Upper	MW-16	06-RT-030-GW	12-Sep-06	505000	75800	94400	---	---	<10	<10	6290	5.88	9.49	0.770	1.08	2.1
Upper	MW-16	03-RT-041-GW	18-Jun-03	357000	86000	131000	39600	50000	<10	<10	11100	6.44	6.5	1.2	0.2	52.1
Upper	MW-16	03-RT-011-GW	10-Mar-03	385000	---	73400	---	---	<10	<10	4810	6.21	4.8	1.12	0.32	840
Upper	MW-16	02-RT-109-GW	19-Dec-02	---	---	---	---	---	---	---	---	5.76	6.4	1.48	0.3	80.8
Lower	MW-20	05-RT-007-GW	24-Feb-05	18500	49900	62000	8680	10300 VJ	<10	17	4610		2.45	0.269	0.53	-7.1
Lower	MW-20	13-RT-010-GW	09-Apr-13	---	---	---	---	---	---	---	---	6.1	0.6	0.068	9	462
Lower	MW-20	07-RT-039-GW	19-Sep-07	11700	12600	10800	---	---	<7	<7	610	5.86	9.22	0.532	3.85	16.1
Lower	MW-20	05-RT-061-GW	11-Oct-05	---	---	---	---	---	---	---	---	5.91	8.12	0.456	0.7	20.2
Lower	MW-20	06-RT-016-GW	26-May-06	61300	120000	123000 VM	---	---	<10	42	3340	6.29	5.5	0.807	1.14	-4
Lower	MW-20	06-RT-049-GW	13-Sep-06	---	---	---	---	---	---	---	---	6.16	8.04	1.092	0.57	-39.6
Lower	MW-20	05-RT-021-GW	02-Jun-05	13300	53100	55700	---	---	<10	<10	1230	8.55	6.11	0.510	0.65	-66.3
Lower	MW-20	08-RT-017-GW	13-May-08	---	---	---	---	---	---	---	---	5.57	6.6	0.971	3.42	28.1
Lower	MW-20	08-RT-057-GW	19-Sep-08	---	---	---	---	---	---	---	---	5.67	10.42	0.420	0.48	87.9
Lower	MW-20	09-RT-090-GW	08-Oct-09	---	---	---	---	---	---	---	---		8.37	0.491	0.99	-5
Lower	MW-20	12-RT-033-GW	10-May-12	---	---	---	---	---	---	---	---	8.5	5.68	0.426	1.94	71.1
Lower	MW-20	04-RT-053-GW	29-Oct-04	31500	84900	100000	---	---	<7	<7	8800	6.11	6.32	0.477	1.05	98.5

River Terrace RV Park
Historical Performance Monitoring Results

Plume	Location	Sample ID	Date Sampled	Total Organic Carbon	Iron, total	Dissolved Iron	Manganese, total	Manganese, dissolved	Ethane	ethene	Methane	pH	Temp	Conductivity	Dissolved Oxygen	ORP
				(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)		˚C)	(µS)	(mg/L)	(mV)
Lower	MW-20	02-RT-124-GW	18-Dec-02	---	---	---	---	---	---	---	---	6.05	2.1	0.771	0.16	-39.9
Lower	MW-20	10-RT-109-GW	21-Oct-10	---	---	---	---	---	---	---	---	6.2	7.61	0.310	0.81	-80.9
Lower	MW-20	01-RT-126-GW	18-Oct-01	---	---	---	---	---	---	---	---	6.21	4.9	1.44	1.07	-5.6
Lower	MW-20	00-RT-044-GW	07-Jun-00	---	---	---	---	---	---	---	---	6.41	5.5	.276	1.38	
Lower	MW-20	03-RT-033-GW	17-Jun-03	18300	34600	48100	9710	10000	<15	<15	4480	6.5	6.4	.451	0.6	7.2
Lower	MW-20	01-RT-052-GW	22-Mar-01	---	---	---	---	---	---	---	---	6.17	1.9	.700		
Lower	MW-20	04-RT-026-GW	08-Jun-04	93800	166000	146000	---	---	<10	<10	6900	6.43	5.87	0.664	0.42	-94.8
Lower	MW-20	01-RT-149-GW	16-Jan-02	---	---	---	---	---	---	---	---	6.13	1.8	.287	4.92	6.6
Lower	MW-20	02-RT-004-GW	13-Mar-02	---	---	---	---	---	---	---	---	5.23	1.7	1.46	0.25	
Lower	MW-20	02-RT-005-GW	13-Mar-02	---	---	---	---	---	---	---	---	5.23	1.7	1.46	0.25	
Lower	MW-20	04-RT-017-GW	30-Mar-04	28400	73800	80500	---	---	<10	<10	296	6.53	0.77	0.117	0.4	-32.2
Lower	MW-20	02-RT-081-GW	26-Sep-02	---	---	---	---	---	---	---	---	5.87	9.1	0.678	0.25	-12.9
Lower	MW-20	03-RT-024-GW	11-Mar-03	---	---	---	---	---	---	---	---	6.52	1.9	.791	0.23	-0.6
Lower	MW-20	04-RT-006-GW	20-Jan-04	19000	44400	44000	8400	9200	<47	<47	16300	6.01	2.64	0.227	0.6	47.6
Lower	MW-20	02-RT-056-GW	18-Jun-02	---	---	---	---	---	---	---	---	6.37	8	1.09	0.26	-54.9
Lower	MW-20	01-RT-015-GW	11-Jan-01	---	---	---	---	---	---	---	---	6.2	3.2	1.24	1.17	69
Upper	MW-21	05-RT-030-GW	03-Jun-05	---	---	---	---	---	---	---	---		6.8	1.252	0.38	-176.9
Upper	MW-21	05-RT-062-GW	12-Oct-05	---	---	---	---	---	---	---	---	6.38	8.8	0.967	0.74	-73.8
Upper	MW-21	06-RT-050-GW	13-Sep-06	---	---	---	---	---	---	---	---	5.83	7.68	0.350	0.54	-12.7
Upper	MW-21	12-RT-021-GW	10-May-12	---	---	---	---	---	---	---	---	9.0	5.66	0.331	2.33	40.4
Upper	MW-21	07-RT-024-GW	20-Sep-07	8240	12100	11400	---	---	<6	<6	2030	6.60	8.43	0.424	0.53	-13.5
Upper	MW-21	09-RT-081-GW	08-Oct-09	---	---	---	---	---	---	---	---		7.01	0.361	0.56	-79.9
Upper	MW-21	10-RT-101-GW	22-Oct-10	---	---	---	---	---	---	---	---	6.2	7	0.358	1.64	-31.7
Upper	MW-21	04-RT-075-GW	22-Oct-04	---	---	---	---	---	---	---	---	6.57	8.19	0.631	0.4	-143.6
Upper	MW-21	01-RT-107-GW	17-Oct-01	---	---	---	---	---	---	---	---	6.97	6.1	0.876	0.54	-91.8
Upper	MW-21	08-RT-045-GW	20-Sep-08	---	---	---	---	---	---	---	---	6.29	7.21	0.314	0.79	-37.1
Upper	MW-21	00-RT-067-GW	09-Jun-00	---	---	---	---	---	---	---	---	7.16	4.8	.389	0.91	
Upper	MW-21	03-RT-100-GW	07-Oct-03	---	---	---	---	---	---	---	---	6.56	8.53	0.764		-160
Upper	MW-21	03-RT-065-GW	18-Jun-03	---	---	---	---	---	---	---	---	7.51	7.4	1.15	0.12	-12.5
Upper	MW-21	02-RT-092-GW	27-Sep-02	---	---	---	---	---	---	---	---	6.72	8.5	0.576	0.38	68.5
Upper	MW-21	01-RT-151-GW	16-Jan-02	---	---	---	---	---	---	---	---	6.63	5.1	.671	0.9	8.6
Upper	MW-21	01-RT-041-GW	22-Mar-01	---	---	---	---	---	---	---	---	6.73	3.6	.459	1.05	-108.7
Upper	MW-21	01-RT-023-GW	10-Jan-01	---	---	---	---	---	---	---	---	7.23	4.4	.988	6.4	165
Upper	MW-21	02-RT-050-GW	18-Jun-02	---	---	---	---	---	---	---	---	6.93	7	0.652	0.39	-104
Upper	MW-21	04-RT-031-GW	08-Jun-04	---	---	---	---	---	---	---	---	6.62	6.1	0.697	0.59	-107
Upper	MW-25	07-RT-003-GW	29-May-07	2520 VM	1400	890	6080	5580	<10	<10	150	6.49	3.87	0.257	1.88	45
Upper	MW-25	06-RT-031-GW	12-Sep-06	3260	7090	8050	---	---	<10	<10	1610	6.41	8.2	0.302	0.51	-31.3
Upper	MW-25	06-RT-009-GW	24-May-06	12100	10400	10500 VM	---	---	<10	<10	3310	6.21	5.33	0.38	0.91	28.3
Upper	MW-25	05-RT-046-GW	12-Oct-05	7660	12300	13200	---	---	<10	<10	641	6.22	8.16	0.495	1.07	-9.3
Upper	MW-25	07-RT-023-GW	18-Sep-07	2280	2160	694	---	---	<7	<7	159	6.26	7.76	0.177	0.43	89.6
Upper	MW-25	05-RT-003-GW	23-Feb-05	3900	6210	5960	8380	8550 VJ	<10	<10	840		3.98	0.205	1.35	-126.5
Upper	MW-25	10-RT-082-GW	21-Oct-10	1110	1900	1410	6050	6270	<8	<8	151	5.6	6.73	0.203	0.5	-0.3
Upper	MW-25	05-RT-029-GW	03-Jun-05	---	---	---	---	---	---	---	---		5.91	0.325	0.26	-170.1
Upper	MW-25	08-RT-044-GW	19-Sep-08	---	---	---	---	---	---	---	---	6.38	8.71	0.228	0.71	43.4
Upper	MW-25	09-RT-003-GW	05-May-09	1840	18800	<30	611	363	<10	<10	31 VJ	6.39	2.76	0.238		
Upper	MW-25	04-RT-049-GW	30-Oct-04	5200	10800	10200	---	---	<10	<10	2410	6.28	8.14	0.327	0.41	116.2
Upper	MW-25	10-RT-051-GW	14-May-10	1450	137	<100	1890	1810	<10	<10	65	6.4	5.06	0.17	0.72	51.8
Upper	MW-25	02-RT-108-GW	19-Dec-02	---	---	---	---	---	---	---	---	6.95	3.9	0.708	0.68	-30.6
Upper	MW-25	12-RT-023-GW	10-May-12	---	---	---	---	---	---	---	---	8.1	5.28	0.284	0.45	128.1
Upper	MW-25	13-RT-003-GW	11-Apr-13	---	---	---	---	---	---	---	---	6.3	2	0.253	0.87	87.7
Upper	MW-25	14-RT-022-GW	24-Apr-14	---	---	---	---	---	---	---	---	6.3	3.2	0.143	0.45	15.4
Upper	MW-25	16-RT-002-GW	27-Oct-16	---	---	---	---	---	---	---	---	8.5	7.1	0.173		-131
Upper	MW-25	09-RT-080-GW	08-Oct-09	---	---	---	---	---	---	---	---		8.33	0.197	1.42	-13
Upper	MW-25	01-RT-133-GW	16-Jan-02	160000	4030	3650	38800	---	<2	<2	5	6.97	2.1	.82	1.61	8.94
Upper	MW-25	18-RT-25-GW	12-Dec-18	3000	842	7	---	---	<0.50	1	27	6.33	6.02	---	2.87	146.8
Upper	MW-25	00-RT-068-GW	09-Jun-00	---	---	---	---	---	---	---	---	6.51	4.7	.338	5.9	
Upper	MW-25	00-RT-126-GW	29-Sep-00	---	---	---	---	---	---	---	---	6.17	6.8	.44	5	
Upper	MW-25	01-RT-020-GW	10-Jan-01	---	---	---	---	---	---	---	---	6.46	5.1	.344	2.72	269
Upper	MW-25	01-RT-022-GW	10-Jan-01	---	---	---	---	---	---	---	---	6.46	5.1	.344	2.72	269
Upper	MW-25	01-RT-042-GW	22-Mar-01	---	---	---	---	---	---	---	---	6.60	2.8	.422	1.9	86.8
Upper	MW-25	03-RT-042-GW	18-Jun-03	20400	---	10000	---	16200	<10	<10	2920	6.81	5.8	.47	0.04	-9
Upper	MW-25	01-RT-109-GW	17-Oct-01	---	---	---	---	---	---	---	---	6.67	7	1.16	0.54	-0.7

River Terrace RV Park
Historical Performance Monitoring Results

Plume	Location	Sample ID	Date Sampled	Total Organic Carbon	Iron, total	Dissolved Iron	Manganese, total	Manganese, dissolved	Ethane	ethene	Methane	pH	Temp	Conductivity	Dissolved Oxygen	ORP
				(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)		˚C)	(µS)	(mg/L)	(mV)
Upper	MW-25	04-RT-033-GW	08-Jun-04	---	---	---	---	---	---	---	---	6.77	6.8	0.221	0.45	-69.1
Upper	MW-25	02-RT-016-GW	13-Mar-02	---	---	---	---	---	---	---	---	5.74	2.9	1.22	0.6	
Upper	MW-25	02-RT-017-GW	13-Mar-02	---	---	---	---	---	---	---	---	5.74	2.9	1.22		
Upper	MW-25	02-RT-049-GW	18-Jun-02	69500	---	4980	---	---	<10	<10	52	7.03	6.5	0.557	0.42	-59.6
Upper	MW-25	02-RT-071-GW	27-Sep-02	96900	---	12500	---	---	<10	<10	1110	6.65	8.1	0.860	0.25	-13.6
Upper	MW-25	03-RT-013-GW	11-Mar-03	---	---	---	---	---	---	---	---	6.9	4.1	.697	0.04	0
Upper	MW-25	04-RT-003-GW	21-Jan-04	5800	11100	11100	13800	15200	<10	<10	2590	6.69	5.46	0.317	0.6	-70.7
Upper	MW-25	04-RT-014-GW	31-Mar-04	13200	12900	12700	---	---	<14	<14	3360	6.81	2.78	0.275	0.2	-53.9
Upper	MW-25	01-RT-077-GW	25-Jun-01	---	---	---	---	---	---	---	---	8.8	7.4	.462	0.6	132
Upper	MW-25	08-RT-003-GW	13-May-08	3460	752	298	---	---	<14	28	1140	8.69	3.47	0.287	1.33	11.8
Lower	MW-26	05-RT-064-GW	12-Oct-05	---	---	---	---	---	---	---	---	6.28	10.84	0.071	6.9	61.6
Lower	MW-26	00-RT-059-GW	08-Jun-00	---	---	---	---	---	---	---	---	6.78	6.5	.130	0.81	
Lower	MW-26	01-RT-115-GW	17-Oct-01	---	---	---	---	---	---	---	---	6.83	7.6	.133	0.66	52.9
Lower	MW-26	04-RT-057-GW	30-Oct-04	2300	15500	247	---	---	<10	<10	<7	6.29	8.33	0.049	8.74	168
Lower	MW-26	06-RT-053-GW	13-Sep-06	---	---	---	---	---	---	---	---	6.15	12.14	0.072	9.15	115.2
Lower	MW-26	08-RT-059-GW	18-Sep-08	---	---	---	---	---	---	---	---	6.06	11.46	0.142	7.55	73.9
Lower	MW-26	10-RT-113-GW	21-Oct-10	---	---	---	---	---	---	---	---	6.4	8.41	0.129	5.2	-48.4
Lower	MW-26	13-RT-005-GW	10-Apr-13	---	---	---	---	---	---	---	---	6.8	2	0.439	1.52	36.9
Lower	MW-26	14-RT-024-GW	22-Apr-14	---	---	---	---	---	---	---	---	6.4	4.9	0.110	7.1	13.4
Lower	MW-26	16-RT-004-GW	27-Oct-16	---	---	---	---	---	---	---	---	8.7	7	0.080		-101
Lower	MW-26	02-RT-085-GW	26-Sep-02	---	---	---	---	---	---	---	---	6.8	10.4	0.051	6.33	102.9
Lower	MW-35	12-RT-034-GW	10-May-12	---	---	---	---	---	---	---	---	8.6	3.21	0.325	1.2	74.7
Lower	MW-35	18-RT-35-GW	12-Dec-18	---	---	---	---	---	---	---	---	6.41	3.99	---	2.04	94.1
Lower	MW-35	13-RT-006-GW	09-Apr-13	---	---	---	---	---	---	---	---	5.0	1.8	0.397	0.66	81.1
Lower	MW-35	10-RT-110-GW	21-Oct-10	---	---	---	---	---	---	---	---	6.0	6.95	0.235	0.38	-44.6
Lower	MW-35	09-RT-091-GW	08-Oct-09	---	---	---	---	---	---	---	---		7.59	0.208	0.41	2.9
Lower	MW-35	08-RT-060-GW	20-Sep-08	---	---	---	---	---	---	---	---	6.04	8.36	0.282	0.61	58.9
Lower	MW-35	07-RT-040-GW	20-Sep-07	11800	7650	6300	---	---	<14	<14	56	6.05	8.73	0.258	0.82	78.2
Lower	MW-35	07-RT-014-GW	31-May-07	---	---	---	---	---	---	---	---	5.93	2.76	0.333	2.67	65.9
Lower	MW-35	01-RT-118-GW	18-Oct-01	---	---	---	---	---	---	---	---	6.33	7	0.348	1.49	36.9
Lower	MW-35	16-RT-005-GW	27-Oct-16	---	---	---	---	---	---	---	---	6.4	7.2	0.232		-189
Lower	MW-35	06-RT-055-GW	13-Sep-06	---	---	---	---	---	---	---	---	6.00	9.79	0.291	0.63	36
Lower	MW-35	00-RT-074-GW	09-Jun-00	---	---	---	---	---	---	---	---	6.4	8.2	.281	2.05	
Lower	MW-35	02-RT-089-GW	26-Sep-02	---	---	---	---	---	---	---	---	5.63	9.1	0.262	0.47	5.86
Lower	MW-35	03-RT-113-GW	08-Oct-03	---	---	---	---	---	---	---	---	5.92	8.49	0.334		26
Lower	MW-35	04-RT-081-GW	23-Oct-04	---	---	---	---	---	---	---	---	6.08	7.21	0.240	0.48	51.8
Lower	MW-35	05-RT-065-GW	12-Oct-05	---	---	---	---	---	---	---	---	5.76	8.53	0.381	0.32	42.7
Lower	MW-35	06-RT-022-GW	25-May-06	---	---	---	---	---	---	---	---	6.17	4.9	0.486	2.53	27.8
Upper	MW-36	04-RT-012-GW	31-Mar-04	12900	7840	8590	---	---	<10	<10	1450	6.55	4.54	0.114	0.3	-29
Upper	MW-36	09-RT-078-GW	08-Oct-09	---	---	---	---	---	---	---	---		8.43	0.137	0.56	-29.1
Upper	MW-36	05-RT-044-GW	11-Oct-05	120000	19500	23400	---	---	<13	<13	4810	6.00	9.43	0.454	0.21	-20.3
Upper	MW-36	04-RT-047-GW	30-Oct-04	27900	14900	14800	---	---	<14	<14	139	5.91	9.2	0.186	1.11	51.1
Upper	MW-36	05-RT-001-GW	23-Feb-05	6400	12000	11400	4150	4450 VJ	<8	<8	2500		5.71	0.392	0.39	-123.2
Upper	MW-36	05-RT-027-GW	03-Jun-05	---	---	---	---	---	---	---	---		7.3	0.21	0.36	-132.9
Upper	MW-36	04-RT-023-GW	08-Jun-04	7200	8040	7140	---	---	<10	<10	1090	6.35	7.1	0.124	0.56	-30.9
Upper	MW-36	06-RT-007-GW	24-May-06	13600	11800	11600 VM	---	---	<7	15	6360	6.35	7.76	0.234	0.88	-33
Upper	MW-36	06-RT-029-GW	12-Sep-06	10400	3130	3510	---	---	<10	<10	437	6.13	9.75	0.155	2.37	15.5
Upper	MW-36	07-RT-021-GW	20-Sep-07	103000	104000	19700	---	---	<10	13	3980	6.34	9.52	0.270	0.88	27
Upper	MW-36	09-RT-001-GW	05-May-09	60600	13500	16900	3170	3400	<10	13	4020	6.59	5.09	0.255		
Upper	MW-36	04-RT-001-GW	21-Jan-04	122000	42200	44600	15100	17200	<14	<14	9060	6.08	7.25	0.501	0.2	10.8
Upper	MW-36	01-RT-035-GW	08-Mar-01	394000	111000	25800	17300	14200	<20	<20	40	5.92	6.3	.654	1.4	-59
Upper	MW-36	08-RT-042-GW	18-Sep-08	---	---	---	---	---	---	---	---	6.14	8.74	0.165	1.2	14.8
Upper	MW-36	03-RT-092-GW	07-Oct-03	97400	22600	24200	8320	9140	<10	<10	7560	5.93	9.23	0.475		-99
Upper	MW-36	03-RT-040-GW	17-Jun-03	156000	34400	37000	11000	11000	<10	<10	7430	5.99	7.4	.441	0.06	16.6
Upper	MW-36	03-RT-012-GW	10-Mar-03	71400	---	13100	---	---	<10	<10	257	6.43	3.9	.295	0.44	-6.7
Upper	MW-36	02-RT-110-GW	19-Dec-02	---	---	---	---	---	---	---	---	6.19	6.2	0.607	0.09	-10.5
Upper	MW-36	02-RT-068-GW	27-Sep-02	443000	---	29600	---	---	<10	<10	1850	5.22	9.2	0.367	0.27	67
Upper	MW-36	02-RT-045-GW	18-Jun-02	388000	---	24100	---	---	<10	<10	1270	5.07	8.6	0.324	0.47	7
Upper	MW-36	02-RT-015-GW	13-Mar-02	---	---	---	---	---	---	---	---	6.32	5.4	0.885	0.1	
Upper	MW-36	01-RT-136-GW	16-Jan-02	661000	57100	54400	32700	---	<4	<4	688	5.36	5.8	.592	2.65	5.43
Upper	MW-36	10-RT-049-GW	14-May-10	10100	4280	4690	1340	1440	<10	<10	<7	6.4	6	0.133	0.98	-55.5
Upper	MW-36	01-RT-073-GW	22-May-01	37700	189000	11700	7000	---	<5	<5	31	6.68	6.9	.215	0.86	-20

River Terrace RV Park
Historical Performance Monitoring Results

Plume	Location	Sample ID	Date Sampled	Total Organic Carbon	Iron, total	Dissolved Iron	Manganese, total	Manganese, dissolved	Ethane	ethene	Methane	pH	Temp	Conductivity	Dissolved Oxygen	ORP
				(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)		˚C)	(µS)	(mg/L)	(mV)
Upper	MW-36	08-RT-001-GW	13-May-08	47500	18200	20400	---	---	<10	14	6480	7.49	5.86	0.305	0.82	41.4
Upper	MW-36	01-RT-009-GW	11-Jan-01	1160000	274000	40200	27400	---	<5	<5	20	5.57	6.6	.950	0.54	-68
Upper	MW-36	00-RT-138-GW	28-Nov-00	127000	79300	3420	6560	4210	<10	<10	10	6.38	7.8	.35	0.45	
Upper	MW-36	00-RT-103-GW	27-Sep-00	8900	235000	34	6200 VJ	---	<10	<10	20	6.91	8.2	.289	1	
Upper	MW-36	01-RT-096-GW	16-Oct-01	187000	192000	97600	64800	---	<10	<10	86	5.2	8.6	1.4	0.61	81.6
Upper	MW-36	12-RT-001-GW	09-May-12	5510	5200	4970	4110	4040	<10	<10	1930	4.7	6.13	0.259	0.09	80.8
Upper	MW-36	13-RT-016-GW	11-Apr-13	12500	5320	5430	6640	6740	<0.23	3.6	1200	6.5	3.2	0.249	0.66	-64.2
Upper	MW-36	14-RT-001-GW	22-Apr-14	4510	4310	4080	4270	4180	0.14	5.8	3200	6.5	5.9	0.216	0.27	-79.2
Upper	MW-36	10-RT-080-GW	20-Oct-10	47700	6000	5740	2910	2970	<10	<10	4060	6.2	7.64	0.236	0.98	-28.6
Upper	MW-36	07-RT-001-GW	30-May-07	50900 VM	18800	19700	8670	8800	<8	16	5540	6.78	5.52	0.289	2.42	-42.4
Upper	MW-37	00-RT-137-GW	28-Nov-00	3050000	26300	3850	21000	23800	<10	<10	50	5.72	7.2	1.14	0.49	
Upper	MW-37	01-RT-094-GW	16-Oct-01	198000	104000	52400	28000	---	<10	<10	168	6.1	7.9	1.23	0.71	6.4
Upper	MW-37	01-RT-072-GW	22-May-01	862000	48800	25600	29900	---	<2	<2	19	5.62	5.9	.88	1.35	33.2
Upper	MW-37	01-RT-007-GW	11-Jan-01	2670000	77300	10200	36300	---	<4	<4	50	5.77	6	1.21	0.64	-126
Upper	MW-37	01-RT-134-GW	16-Jan-02	262000	24000	24100	32200	---	<3	<3	133	6.4	5.6	.682	1.54	6.55
Upper	MW-37	00-RT-102-GW	27-Sep-00	4600	48000	<30	3700	---	<20	<20	40	7.13	7.2	.446	1.75	
Upper	MW-37	01-RT-036-GW	08-Mar-01	1060000	44900	27600	46300	50800	<10	<10	80	5.74	5.3	1.87	1.55	-10.5
Upper	MW-38	07-RT-025-GW	20-Sep-07	10500	13400	12100	---	---	<10	15	2610	6.68	7.69	0.377	0.37	-15.8
Upper	MW-38	05-RT-031-GW	03-Jun-05	---	---	---	---	---	---	---	---		5.76	0.562	0.28	-157.8
Upper	MW-38	06-RT-023-GW	26-May-06	---	---	---	---	---	---	---	---	6.61	5.52	0.619	0.64	-55.8
Upper	MW-38	06-RT-056-GW	12-Sep-06	---	---	---	---	---	---	---	---	7.12	9.2	0.490	0.3	-137.1
Upper	MW-38	07-RT-015-GW	30-May-07	---	---	---	---	---	---	---	---	7.22	4.01	0.524	0.82	-41.6
Upper	MW-38	08-RT-046-GW	19-Sep-08	---	---	---	---	---	---	---	---	7.17	6.78	0.563	0.62	-96.4
Upper	MW-38	09-RT-082-GW	08-Oct-09	---	---	---	---	---	---	---	---		7.03	0.565	0.45	-129.8
Upper	MW-38	10-RT-102-GW	22-Oct-10	---	---	---	---	---	---	---	---	7.3	6.63	0.688	0.37	-132.1
Upper	MW-38	04-RT-034-GW	09-Jun-04	---	---	---	---	---	---	---	---	6.48	6.03	0.355	0.67	-84.7
Upper	MW-38	13-RT-004-GW	11-Apr-13	---	---	---	---	---	---	---	---	5.4	1.2	0.842	0.41	-8.8
Upper	MW-38	04-RT-082-GW	22-Oct-04	---	---	---	---	---	---	---	---	7.2	7.59	0.383	0.69	-152.4
Upper	MW-38	14-RT-023-GW	22-Apr-14	---	---	---	---	---	---	---	---	7.2	5.8	0.809	0.15	-170.8
Upper	MW-38	18-RT-38-GW	12-Dec-18	2000	1430	813	---	---	<0.50	15.9	2830	7.27	6.13	---	0.42	29.2
Upper	MW-38	12-RT-024-GW	10-May-12	---	---	---	---	---	---	---	---	9.7	4.79	0.517	0.2	-21.3
Upper	MW-38	01-RT-006-GW	11-Jan-01	5000	73800	360	2790	---	<3	<3	3	6.76	5.4	.483	0.97	-75
Upper	MW-38	05-RT-066-GW	12-Oct-05	---	---	---	---	---	---	---	---	6.36	8.14	0.527	0.34	-57
Upper	MW-38	03-RT-067-GW	18-Jun-03	---	---	---	---	---	---	---	---	8.45	6	.583	0.11	-32.9
Upper	MW-38	00-RT-135-GW	28-Nov-00	27100	15000	72	723	91	<20	<20	9	6.42	6.3	.346	2.3	
Upper	MW-38	01-RT-038-GW	08-Mar-01	3800	115000	82	3590	474	<10	<10	10	7.35	4.7	.547	1.5	79.5
Upper	MW-38	01-RT-070-GW	22-May-01	62800	10100	970	12600	---	<1	<1	6	6.86	5.1	.59	1.59	83.3
Upper	MW-38	01-RT-093-GW	16-Oct-01	53500	18000	4330	16400	---	<10	<10	125	7.09	7.2	0.666	1.15	-30.1
Upper	MW-38	01-RT-132-GW	16-Jan-02	29400	5180	5410	15000	---	<4	<4	42	6.95	4.9	.501	0.8	7.46
Upper	MW-38	02-RT-013-GW	13-Mar-02	---	---	---	---	---	---	---	---	5.76	4.3	0.733	0.4	
Upper	MW-38	02-RT-043-GW	18-Jun-02	208000	---	22500	---	---	<13	<13	630	6.54	7.3	0.754	0.67	-36.9
Upper	MW-38	02-RT-066-GW	27-Sep-02	19700	---	9350	---	---	<13	<13	421	6.58	8.2	0.533	0.24	-80.2
Upper	MW-38	02-RT-111-GW	19-Dec-02	---	---	---	---	---	---	---	---	6.77	6.1	0.665	0.54	26
Upper	MW-38	03-RT-014-GW	11-Mar-03	---	---	---	---	---	---	---	---	6.85	4.8	.714	0.18	500
Upper	MW-38	00-RT-100-GW	27-Sep-00	5200	17800	<30	492	---	<20	<20	<10	7.21	6.7	.366	11	
Lower	MW-39	06-RT-003-GW	08-Mar-06	28300	70400	65800	6760	7010	<10	94	8080	5.54	3.98	0.644	0.65	55.4
Lower	MW-39	09-RT-008-GW	06-May-09	10200	52100	29300	7850	7500	<10	14	3290	6.34	4.26	1.11		
Lower	MW-39	06-RT-014-GW	24-May-06	627000	242000	234000 VM	---	---	<10	208	9870	5.83	5.33	0.798	0.72	-9.9
Lower	MW-39	05-RT-051-GW	11-Oct-05	104000	42800	43000	---	---	<10	31	2680	5.82	9.04	0.566	0.56	-37.3
Lower	MW-39	07-RT-006-GW	30-May-07	529000 VM	248000	226000	26700	24600	<7	65	11000	6.57	5.42	2.901	0.79	-23.7
Lower	MW-39	07-RT-033-GW	18-Sep-07	1260000	429000	386000	---	---	<7	68	7770	5.70	6.68	1.346	0.74	-6.2
Lower	MW-39	08-RT-006-GW	12-May-08	172000	114000	120000	---	---	<10	33	10900	6.83	5.1	1.003	0.94	23.2
Lower	MW-39	08-RT-032-GW	17-Sep-08	46300	91200	89000	9940	9700	<10	45	9660	6.04	7.8	0.624	1.15	-36.3
Lower	MW-39	09-RT-067-GW	06-Oct-09	138000	119000	105000	10500	9470	<7	98	7960		6.39	0.571	1.58	-41.7
Lower	MW-39	10-RT-042-GW	12-May-10	1280000	373000	395000	29500	33800	<10	60	9730	5.5	4.78	1.271	0.4	-9.9
Lower	MW-39	18-RT-39-GW	13-Dec-18	---	---	---	---	---	---	---	---	6.2	6.43	---	0.4	-48.3
Lower	MW-39	16-RT-008-GW	27-Oct-16	---	---	---	---	---	---	---	---	6.5	6.6	0.589		-62.5
Lower	MW-39	14-RT-006-GW	23-Apr-14	42700	207000	209000	17600	17800	0.094	15	1800	6.3	5.2	0.868	0.36	-49.4
Lower	MW-39	13-RT-020-GW	09-Apr-13	86300	176000	159000	13800	13800	0.13	69	6400	6.1	2.6	1.294	1.45	-37.2
Lower	MW-39	10-RT-086-GW	20-Oct-10	163000	323000	327000	24200	25900	<10	40	8400	6.4	6.05	1.972	2.8	-32.1
Lower	MW-39	02-RT-063-GW	27-Sep-02	57200	---	48300	---	---	<10	<10	8610	6.23	7.6	1.17	0.62	-3.76
Lower	MW-39	12-RT-006-GW	08-May-12	70700	87300	80800	8980	8210	<10	48	14500	6.6	8.26	0.716	0.1	58

River Terrace RV Park
Historical Performance Monitoring Results

Plume	Location	Sample ID	Date Sampled	Total Organic Carbon	Iron, total	Dissolved Iron	Manganese, total	Manganese, dissolved	Ethane	ethene	Methane	pH	Temp	Conductivity	Dissolved Oxygen	ORP
				(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)		˚C)	(µS)	(mg/L)	(mV)
Lower	MW-39	01-RT-092-GW	16-Oct-01	743000	354000	117000	16800	---	<8	<8	3630	5.14	7.2	1.347	0.64	3
Lower	MW-39	05-RT-023-GW	02-Jun-05	64300	101000	61600	---	---	<10	126	3290		5.72	0.715	0.53	-300.3
Lower	MW-39	01-RT-074-GW	22-May-01	10300	157000	326	4200	---	<6	<6	557	6.57	8.3	.16	0.87	6.8
Lower	MW-39	01-RT-034-GW	08-Mar-01	16600	284000	1230	7600	1470	<5	<5	14	6.23	5.7	.293	1.14	98.2
Lower	MW-39	01-RT-005-GW	11-Jan-01	8500	113000	3040	4230	---	<10	<10	80	6.31	6.1	.318	1.63	29.1
Lower	MW-39	00-RT-134-GW	28-Nov-00	33500	382000	1160	12600	2610	<20	<20	30	6.26	6.6	.459	5.44	
Lower	MW-39	00-RT-106-GW	27-Sep-00	12600	146000	3640	4720	---	<20	<20	1620	6.41	8.5	.287	1.25	
Lower	MW-39	06-RT-035-GW	11-Sep-06	143000	51900	55000	---	---	<10	54	13400	5.85	8.07	0.424	0.32	-3.4
Lower	MW-39	02-RT-104-GW	18-Dec-02	75100	---	64400	---	---	<6	<6	4460	6.29	5	0.820	0.38	-6.5
Lower	MW-39	05-RT-009-GW	23-Feb-05	44700	89700	88400	7460	7430 VJ	<10	67	14400		5.25	0.449	0.72	-113
Lower	MW-39	03-RT-027-GW	11-Mar-03	---	---	---	---	---	---	---	---	6.54	5.2	.902	0.31	6.98
Lower	MW-39	03-RT-039-GW	17-Jun-03	27200	71600	61600	7580	7400	<10	<10	6520	6.3	6.3	.72	0.13	-6.9
Lower	MW-39	04-RT-008-GW	21-Jan-04	23900	59800	60200	5500	6680	<10	<10	10700	6.22	6.1	0.412	0.15	-49.3
Lower	MW-39	04-RT-019-GW	31-Mar-04	88900	112000	57500	---	---	<10	44	3420	6.32	3.31	0.394	0.6	-28.7
Lower	MW-39	01-RT-131-GW	15-Jan-02	119000	51200	50500	9240	---	<21	<21	7620	5.4	5	.38	0.78	28.9
Lower	MW-39	04-RT-028-GW	08-Jun-04	80500	67800	72800	---	---	<10	16	8160	6.20	5.44	0.408		-41.3
Lower	MW-39	04-RT-055-GW	29-Oct-04	98300	47400	46300	---	---	<10	36	9930	6.00	7.82	0.384	1.35	-18.6
Lower	MW-39	03-RT-003-GW	04-Feb-03	258000	---	85500	---	---	<8	<8	2980	6.75	5.7	1.02	0.67	-8.6
Lower	MW-40	08-RT-007-GW	12-May-08	228000	180000	189000	---	---	<10	108	12500	7.21	4.49	0.769	1.05	5.4
Lower	MW-40	07-RT-034-GW	19-Sep-07	46900	169000	158000	---	---	<10	72	8490	6.33	6.84	0.625	0.57	-63.7
Lower	MW-40	07-RT-007-GW	30-May-07	119000 VM	144000	130000	17400	15700	<6	61	7950	6.48	3.98	1.135	0.88	-19.3
Lower	MW-40	06-RT-036-GW	12-Sep-06	109000	81300	99800	---	---	<14	155	11800	6.02	5.95	0.315	0.43	-25.6
Lower	MW-40	06-RT-015-GW	25-May-06	104000	95300	96000 VM	---	---	<13	78	7870	6.16	5.11	0.817	1.42	-8.8
Lower	MW-40	08-RT-033-GW	17-Sep-08	55900	142000	145000	9690	9540	<10	90	12400	6.11	6.16	0.627	1.29	-55
Lower	MW-40	05-RT-052-GW	12-Oct-05	66300	159000	172000	---	---	<14	140	10600	6.01	7.22	0.931	0.28	-33.7
Lower	MW-40	13-RT-021-GW	09-Apr-13	23100	79300	74100	9630	9220	0.43	62	5600	6.3	2.3	0.754	0.51	-55
Lower	MW-40	06-RT-004-GW	08-Mar-06	68800	173000	166000	14200	14000	<10	77	8430	6.20	4.76	0.986	0.25	-32.4
Lower	MW-40	09-RT-009-GW	06-May-09	23800	129000	118000	17400	14000	<14	72	4380	6.32	3.99	1.153		
Lower	MW-40	09-RT-068-GW	07-Oct-09	58400	128000	107000	9770	8390	<10	21	5960		5.66	0.341	0.43	-33.5
Lower	MW-40	10-RT-043-GW	13-May-10	67200 VJ	88300	93100	12200	12800	<10	45	8940	6.3	4.47	0.365	0.6	-27.2
Lower	MW-40	18-RT-40-GW	13-Dec-18	---	---	---	---	---	---	---	---	6.87	5.12	---	1.89	0.3
Lower	MW-40	12-RT-007-GW	07-May-12	22900	47100	52000	5680	6200	<10	33	7640	6.8	4.58	0.279	0.79	72.9
Lower	MW-40	14-RT-007-GW	23-Apr-14	26600	120000	128000	14300	15300	0.17	16	2500	6.3	4.9	0.601	0.4	-66.3
Lower	MW-40	05-RT-024-GW	02-Jun-05	262000	218000	200000	---	---	<13	125	10500	7.34	5.34	1.221	0.37	-125.5
Lower	MW-40	04-RT-009-GW	21-Jan-04	232000	222000	230000	24000	27600	10	67	12200	6.11	5.56	0.841	0.1	-62.3
Lower	MW-40	10-RT-087-GW	20-Oct-10	77400	85600	86400	6530	7020	<10	10	4020	6.9	6.83	0.286	0.25	-130.8
Lower	MW-40	01-RT-075-GW	22-May-01	170000	106000	60500	15500	---	<2	<2	1290	6.03	6.7	.477	0.47	-22.1
Lower	MW-40	00-RT-108-GW	27-Sep-00	19600	241000	3320	6660	---	<20	<20	1010	6.36	6.8	.344	0.75	
Lower	MW-40	00-RT-132-GW	28-Nov-00	628000	154000	103000	20100	19500	<20	<20	1370	5.59	6.6	0.91	0.61	
Lower	MW-40	04-RT-029-GW	08-Jun-04	491000	290000	291000	---	---	<15	37	6420	6.00	5.06	0.858	0.32	-49.3
Lower	MW-40	01-RT-032-GW	08-Mar-01	475000	168000	108000	26600	27800	<20	<20	1720	5.53	4.8	1.06	0.89	39.2
Lower	MW-40	05-RT-010-GW	24-Feb-05	224000	225000	212000	22800	21400 VJ	<10	143	10300		4.41	0.714	0.73	-81.8
Lower	MW-40	01-RT-090-GW	16-Oct-01	1720000	464000	396000	66800	---	<10	<10	3040	5.4	6	2.0	0.76	10.4
Lower	MW-40	01-RT-130-GW	15-Jan-02	1730000	513000	512000	99000	---	<3	<3	1380	5.58	4.8	2.11	1.03	55.6
Lower	MW-40	02-RT-042-GW	19-Jun-02	1270000	---	422000	---	---	<10	<10	6090	5.44	5.6	2.12	0.2	26.8
Lower	MW-40	02-RT-103-GW	18-Dec-02	648000	---	304000	---	---	<17	<17	7020	5.96	3.5	1.18	0.19	-52.6
Lower	MW-40	03-RT-002-GW	04-Feb-03	537000	---	254000	---	---	<10	<10	8940	6.37	5.5	1.59	0.21	46
Lower	MW-40	03-RT-028-GW	11-Mar-03	---	---	---	---	---	---	---	---	5.86	4.9	1.60	0.59	52.8
Lower	MW-40	03-RT-035-GW	17-Jun-03	397000	183000	167000	37000	31000	<10	<10	13300	6.31	5.5	1.18	0.51	31.5
Lower	MW-40	04-RT-020-GW	30-Mar-04	404000	197000	205000	---	---	<6	10	9790	6.13	1.79	0.659	0.8	-19.2
Lower	MW-40	04-RT-056-GW	29-Oct-04	231000	247000	241000	---	---	<10	39	3170	5.93	7.13	0.880	0.56	24.2
Lower	MW-40	02-RT-064-GW	27-Sep-02	344000	---	170000	---	---	<13	<13	6150	5.89	7.3	.737	0.66	6.09
Lower	MW-40	01-RT-002-GW	11-Jan-01	598000	160000	121000	26500	---	<20	<20	1190	5.52	6.5	1.08	4.38	95
Upper	MW-42	14-RT-003-GW	22-Apr-14	5130	3420	3510	1200	1300	<0.24	6.5	300	6.4	5.1	0.135	1.6	-122.4
Upper	MW-42	08-RT-004-GW	13-May-08	16800	5830	6580	---	---	<10	18	3170	7.10	7.16	0.281	0.81	6
Upper	MW-42	08-RT-048-GW	18-Sep-08	---	---	---	---	---	---	---	---	6.31	8.69	0.208	0.68	76.9
Upper	MW-42	09-RT-004-GW	05-May-09	60000	15000	12000	2130	2010	<13	13	2590	6.02	5.66	0.289		
Upper	MW-42	09-RT-083-GW	08-Oct-09	---	---	---	---	---	---	---	---		8.31	0.198	0.54	-8.9
Upper	MW-42	10-RT-052-GW	14-May-10	5260	1150	813	619	620	<10	<10	372	6.4	6.14	0.199	0.78	14.8
Upper	MW-42	10-RT-083-GW	18-Oct-10	3210	2630	2780	822	886	<10	<10	2030	6.2	7.94	0.126	0.41	-190.4
Upper	MW-42	12-RT-003-GW	09-May-12	4440	1810	1500	1340	1260	<10	<10	631	4.4	5.89	0.164	1.6	73.5
Upper	MW-42	18-RT-42-GW	12-Dec-18	4000	361	10	---	---	<0.50	<0.50	85.3	6.4	8.69	---	4.62	79.5

River Terrace RV Park
Historical Performance Monitoring Results

Plume	Location	Sample ID	Date Sampled	Total Organic Carbon	Iron, total	Dissolved Iron	Manganese, total	Manganese, dissolved	Ethane	ethene	Methane	pH	Temp	Conductivity	Dissolved Oxygen	ORP
				(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)		˚C)	(µS)	(mg/L)	(mV)
Upper	MW-42	07-RT-026-GW	20-Sep-07	18500	5680	4990	---	---	<8	<8	1650	6.38	9.01	0.266	0.59	88.5
Upper	MW-42	02-RT-099-GW	02-Nov-02	252000	---	5010	---	---	<15	<15	23	6.34	9.7	0.56		44.9
Upper	MW-42	13-RT-017-GW	11-Apr-13	19700	9800	10200	3790	4180	<0.23	6.4	1300	6.6	2.9	0.267	0.48	-62.9
Upper	MW-42	03-RT-097-GW	07-Oct-03	---	---	---	---	---	---	---	---	6.26	9.47	0.419		-109
Upper	MW-42	03-RT-030-GW	11-Mar-03	---	---	---	---	---	---	---	---	6.12	6.9	0.321	0.05	1
Upper	MW-42	07-RT-016-GW	30-May-07	---	---	---	---	---	---	---	---	6.60	6.07	0.429	0.68	-5.6
Upper	MW-42	03-RT-069-GW	18-Jun-03	---	---	---	---	---	---	---	---	7.29	7.9	31	0.85	-18.2
Upper	MW-42	04-RT-035-GW	09-Jun-04	---	---	---	---	---	---	---	---	6.21	7.41	0.237	0.83	-45.5
Upper	MW-42	04-RT-084-GW	22-Oct-04	---	---	---	---	---	---	---	---	6.56	8.6	0.196	0.69	-119
Upper	MW-42	05-RT-032-GW	03-Jun-05	---	---	---	---	---	---	---	---		8.17	0.326	0.31	-159.9
Upper	MW-42	05-RT-067-GW	12-Oct-05	---	---	---	---	---	---	---	---	6.19	9.6	0.287	0.23	-32.9
Upper	MW-42	06-RT-024-GW	26-May-06	---	---	---	---	---	---	---	---	5.88	7.27	0.370	0.43	18.1
Upper	MW-42	06-RT-058-GW	12-Sep-06	---	---	---	---	---	---	---	---	6.09	9.88	0.314	0.53	9.9
Upper	MW-42	02-RT-112-GW	19-Dec-02	---	---	---	---	---	---	---	---	6.54	7.4	.392	0.24	-15.5
Lower	MW-44	18-RT-44-GW	13-Dec-18	---	---	---	---	---	---	---	---	7.41	5.44	---	0.28	-114.7
Lower	MW-44	09-RT-069-GW	06-Oct-09	15600	3680	2450	409	347	<10	665	2660		5.95	0.512	0.44	-132.2
Lower	MW-44	08-RT-008-GW	12-May-08	5630	1130	417	---	---	<10	47	140	7.51	5.3	0.438	1.17	31.9
Lower	MW-44	08-RT-034-GW	17-Sep-08	---	3120	2750	496	477	<10	977	3190	7.59	7.07	0.807	0.38	-179.8
Lower	MW-44	09-RT-010-GW	06-May-09	13200	3790	3860	446	459	<13	1010	5200	6.21	4.3	0.395		
Lower	MW-44	10-RT-044-GW	12-May-10	11000	2980	1340	411	375	<10	670	9460	7.0	5.77	0.662	0.21	-73.2
Lower	MW-44	10-RT-088-GW	20-Oct-10	5520	4040	2750	483	469	<10	663	10700	7.6	4.63	1.166	0.58	-55.5
Lower	MW-44	12-RT-008-GW	08-May-12	64500	7500	6930	822	787	<10	2220	7990	7.2	8	1.652	0.07	-15.3
Lower	MW-44	13-RT-018-GW	09-Apr-13	14400	4980	4350	675	591	0.19	660	4600	7.0	3	1.218	0.26	-51.2
Lower	MW-44	16-RT-009-GW	27-Oct-16	---	---	---	---	---	---	---	---	6.2	7.3	0.682		-24.1
Lower	MW-44	06-RT-037-GW	12-Sep-06	4650	990	310	---	---	<10	<10	337	7.43	7.49	0.246	0.31	-109.8
Lower	MW-44	14-RT-008-GW	23-Apr-14	50000	4180	1790	401	381	0.21	1900	6000	7.1	4.1	0.122	0.82	-25.8
Lower	MW-44	02-RT-105-GW	18-Dec-02	20600	---	657	---	---	<10	<10	312	7.67	4.7	0.811	2.5	200.6
Lower	MW-44	07-RT-035-GW	18-Sep-07	36500	2380	<30	---	---	<10	812	2980	7.3	6.42	1.051	0.63	45.1
Lower	MW-44	02-RT-100-GW	02-Nov-02	59300	---	554	---	---	<10	<10	300	7.97	6.9	0.910		32
Lower	MW-44	07-RT-009-GW	30-May-07	27300	11200	1280	2490	214	<8	118	828	7.89	6.03	0.825	1.09	-157.7
Lower	MW-44	03-RT-029-GW	11-Mar-03	---	---	---	---	---	---	---	---	8.37	5.5	.736	7.65	7
Lower	MW-44	03-RT-052-GW	19-Jun-03	---	---	---	---	---	---	---	---	8.92	6.9	.621	2.02	89
Lower	MW-44	04-RT-042-GW	08-Jun-04	---	---	---	---	---	---	---	---	7.33	6.18	0.253	2.39	-45.8
Lower	MW-44	04-RT-058-GW	29-Oct-04	10200	502	340	---	---	<15	<15	1350	7.88	6.69	0.466	0.82	54.2
Lower	MW-44	05-RT-037-GW	03-Jun-05	---	---	---	---	---	---	---	---	8.78	6.18	0.758	0.9	-185.2
Lower	MW-44	05-RT-053-GW	12-Oct-05	13200	13400	60	---	---	<10	<10	289	7.83	6.23	0.461	0.34	-102.8
Lower	MW-44	06-RT-005-GW	07-Mar-06	14500	1550	1610	262	332	<13	<13	1010	7.82	5.08	0.666	0.3	37
Lower	MW-44	06-RT-017-GW	24-May-06	8180	1790	650 VM	---	---	<10	<10	437	7.43	7.12	0.419	0.58	-96.2
Lower	MW-45	03-RT-093-GW	09-Oct-03	8800	94500	1020	1880	97	<10	<10	114	8.3	6.99	0.616		-68
Lower	MW-45	04-RT-043-GW	08-Jun-04	---	---	---	---	---	---	---	---	7.77	5.62	0.445	0.17	-111.9
Lower	MW-45	04-RT-059-GW	29-Oct-04	8600	652	314	---	---	<10	<10	<7	7.79	6.31	0.468	0.55	-9.1
Lower	MW-45	05-RT-038-GW	03-Jun-05	---	---	---	---	---	---	---	---		5.96	0.785	0.26	-229.6
Lower	MW-45	06-RT-039-GW	12-Sep-06	8080	---	---	---	---	---	---	---	7.58	5.82	0.443	2.64	-27.8
Lower	MW-45	12-RT-035-GW	09-May-12	---	---	---	---	---	---	---	---	8.3	6.13	0.949	0.31	32.4
Lower	MW-45	13-RT-011-GW	09-Apr-13	---	---	---	---	---	---	---	---	7.8	3.3	0.776	0.18	-120.9
Lower	MW-46	06-RT-040-GW	12-Sep-06	11600	---	---	---	---	---	---	---	7.44	6.04	0.425	0.42	-59.9
Lower	MW-46	12-RT-036-GW	09-May-12	---	---	---	---	---	---	---	---	4.1	5.36	0.414	0.14	91.8
Lower	MW-46	04-RT-044-GW	08-Jun-04	---	---	---	---	---	---	---	---	6.95	6.02	0.111	1.97	-31.9
Lower	MW-46	04-RT-060-GW	29-Oct-04	7600	9030	215	---	---	<10	<10	148	7.60	6.65	0.304	3.26	66.2
Lower	MW-46	05-RT-039-GW	03-Jun-05	---	---	---	---	---	---	---	---	8.68	7.81	0.219	0.58	-209.7
Lower	MW-47	14-RT-009-GW	23-Apr-14	5050000	10100000	1680000	81900	127000	0.64	8.2	820	6.5	5.4	0.365	0.3	-106.9
Lower	MW-47	18-RT-47-GW	13-Dec-18	128000000	2660000	2620000	---	---	2.5	15.6	1940	5.46	4.41	---	0.39	-70.7
Lower	MW-47	13-RT-025-GW	10-Apr-13	6070000	896000	915000	89800	89800	0.72	14	3200	5.6	3.5	2.136	1.35	50.9
Lower	MW-47	12-RT-009-GW	08-May-12	9390000	2500000	2460000	273000	273000	<7	21	2620	5.8	10.2	6.294	0.05	4.7
Lower	MW-47	11-RT-001-GW	17-May-11	5800000	1130000	1140000	176000	87300	<10	41	8450	5.6	7.28	5.795	0.68	-40.9
Lower	MW-47	10-RT-089-GW	19-Oct-10	2150000	960000	1960000	128000	282000	<6	14	4520	5.4	5.59	3.398	0.33	-49.5
Lower	MW-47	10-RT-045-GW	11-May-10	3220000	698000	754000	79900	116000	<10	23	6780	5.7	5.83	2.137	1.37	-94.2
Lower	MW-47	09-RT-011-GW	06-May-09	1310000	383000	388000	74900	74600	<10	<10	7660	6.19	4.86	3.579		
Lower	MW-47	08-RT-035-GW	17-Sep-08	970000	425000	329000	72800	53900	<8	<8	7470	6.07	8.04	2.429	1.9	-44.8
Lower	MW-47	08-RT-009-GW	12-May-08	550000	266000	328000	---	---	<10	<10	8370	6.98	4.41	1.912	1.43	13.4
Lower	MW-47	07-RT-036-GW	19-Sep-07	826000	287000	309000	---	---	<8	<8	10300	6.25	8.53	2.062	0.66	-68.4
Lower	MW-47	06-RT-038-GW	04-Oct-06	238000	66900	62700	---	---	<10	<10	11000	6.35	7.87	0.866	1.41	-54.3

River Terrace RV Park
Historical Performance Monitoring Results

Plume	Location	Sample ID	Date Sampled	Total Organic Carbon	Iron, total	Dissolved Iron	Manganese, total	Manganese, dissolved	Ethane	ethene	Methane	pH	Temp	Conductivity	Dissolved Oxygen	ORP
				(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)		˚C)	(µS)	(mg/L)	(mV)
Lower	MW-47	07-RT-010-GW	30-May-07	648000 VM	267000	216000	39300	33500	<8	14	9930	6.88	6.66	3.351	0.82	-74.9
Lower	MW-47	09-RT-070-GW	06-Oct-09	1090000	469000	376000	78500	65100	<10	<10	7210		6.65	2.1	0.47	-97.1
Lower	MW-48	10-RT-090-GW	19-Oct-10	374000	68600	58500	8170	7650	<10	12	2120	6.3	7.35	0.126	0.49	-148.7
Lower	MW-48	18-RT-48-GW	13-Dec-18	416000	105000	27800	---	---	<0.50	434	9720	8.72	5.67	---	1.94	-58.6
Lower	MW-48	16-RT-010-GW	26-Oct-16	---	---	---	---	---	---	---	---	7.4	6.5	4.85		-94
Lower	MW-48	14-RT-010-GW	22-Apr-14	1730000	164000	53900	21400	8020	1.2	9.1	3300	6.0	5.2	4.033	1.7	-84.3
Lower	MW-48	13-RT-026-GW	10-Apr-13	323000	286	26200	16.6	4290	2.4	5.6	2400	5.7	3.2	1.450	0.67	-0.2
Lower	MW-48	09-RT-043-GW	17-Aug-09	---	---	---	---	---	---	---	---	7.43	8.08	0.46	1.54	-86.3
Lower	MW-48	11-RT-002-GW	18-May-11	699000	75800	86600	9710	11500	<10	11	2140	5.7	5.28	1.496	0.88	17.9
Lower	MW-48	10-RT-046-GW	12-May-10	476000	59000	57900	8030	8680	<10	10	1910	5.6	6.23	0.468	0.21	5.2
Lower	MW-48	09-RT-071-GW	06-Oct-09	3100000	262000	207000	28300	26100	27	39	1220		6.9	3.9	0.4	152.1
Lower	MW-48	12-RT-010-GW	08-May-12	820000	93300	75400	15200	14300	9	17	4130	5.6	7.34	1.928	0.05	50.6
Lower	MW-49	13-RT-027-GW	10-Apr-13	138000	2400	2240	725	641	0.56	1100	12000	6.4	3.4	4.842	1.3	-82.1
Lower	MW-49	10-RT-091-GW	19-Oct-10	603000	43300	29100	22400	21600	43	98	12100	6.4	6.26	3.040	0.14	-155.7
Lower	MW-49	18-RT-49-GW	13-Dec-18	39000	128000	84800	---	---	<0.50	150	3850	6.3	5.67	---	1.9	25.6
Lower	MW-49	16-RT-011-GW	26-Oct-16	---	---	---	---	---	---	---	---	6.5	6.9	2.998		-91
Lower	MW-49	14-RT-011-GW	23-Apr-14	1310000	153000	147000	29800	29700	0.57	510	5500	6.8	5.3	3.506	0.78	-84.5
Lower	MW-49	11-RT-003-GW	18-May-11	801000	6160	63800	2680	23600	8	28	9730	6.5	6.4	3.773	0.62	-127
Lower	MW-49	10-RT-047-GW	13-May-10	796000	56500	26300	23500	18800	64	114	9280	6.6	5.7	2.693	0.64	-78.7
Lower	MW-49	09-RT-072-GW	06-Oct-09	395000	1830	1440	6250	5370	62	72	2810		6.24	1.34	0.4	-88.6
Lower	MW-49	09-RT-044-GW	17-Aug-09	---	---	---	---	---	---	---	---	7.34	8.7	0.72	4.28	-102.4
Lower	MW-49	12-RT-011-GW	09-May-12	1060000	150000	92200	35900	29000	<8	36	11300	8.5	5.12	5.466	0.86	-31.1
Lower (Phase II)	MW-4A	01-RT-097-GW	15-Oct-01	118000	167000	20500	12500	---	<8	<8	390	5.64	8.6	0.673	5.93	-37.7
Lower (Phase II)	MW-4A	04-RT-004-GW	20-Jan-04	38700	19400	22400	8100	11000	<15	<15	1600	6.14	5.81	0.377	0.2	-54.2
Lower (Phase II)	MW-4A	03-RT-034-GW	17-Jun-03	6900	15100	14200	6000	5980	<10	<10	536	6.28	6.3	.449	0.23	14.4
Lower (Phase II)	MW-4A	03-RT-015-GW	11-Mar-03	---	---	---	---	---	---	---	---	5.85	4	.243	0.15	49.3
Lower (Phase II)	MW-4A	02-RT-115-GW	19-Dec-02	---	---	---	---	---	---	---	---	6.13	5.5	.554	0.24	8.01
Lower (Phase II)	MW-4A	02-RT-065-GW	27-Sep-02	17300	---	18000	---	---	<14	<14	713	6.22	8.6	0.496	0.42	34.2
Lower (Phase II)	MW-4A	02-RT-048-GW	19-Jun-02	23700	---	19700	---	---	<10	<10	275	6.26	7	0.376	0.5	-2.6
Lower (Phase II)	MW-4A	01-RT-139-GW	15-Jan-02	101000	25100	22400	11600	---	<4	<4	88	6.34	5	.409	1.25	-7.5
Lower (Phase II)	MW-4A	05-RT-005-GW	23-Feb-05	13300	22500	27700	10600	11800 VJ	<10	<10	9310		5.39	0.389	0.96	-108
Lower (Phase II)	MW-4A	01-RT-080-GW	25-Jun-01	---	---	---	---	---	---	---	---		7.4	.228	0.47	169
Lower (Phase II)	MW-4A	01-RT-047-GW	22-Mar-01	---	---	---	---	---	---	---	---	6.05	2.9	.215	2.14	113.9
Lower (Phase II)	MW-4A	02-RT-012-GW	13-Mar-02	---	---	---	---	---	---	---	---	6.42	4.3	0.607	0	
Lower (Phase II)	MW-4A	04-RT-015-GW	31-Mar-04	723000	72400	73900	---	---	<10	<10	551	6.05	3.91	0.552	0.2	-0.3
Lower (Phase II)	MW-4A	04-RT-051-GW	29-Oct-04	239000	76600	81800	---	---	<10	<10	5960	5.90	8.25	0.576	0.51	-46.3
Lower (Phase II)	MW-4A	01-RT-019-GW	10-Jan-01	---	---	---	---	---	---	---	---	6.21	5.2	.364	0.47	253
Lower (Phase II)	MW-4A	06-RT-011-GW	25-May-06	11900	33100	30900 VM	---	---	<10	<10	3010	6.00	4.68	1.306	0.75	22.5
Lower (Phase II)	MW-4A	07-RT-027-GW	18-Sep-07	11600 VM	11700	13700	---	---	<10	<10	2470	6.4	7.55	0.752	0.66	-38.3
Lower (Phase II)	MW-4A	08-RT-016-GW	13-May-08	---	---	---	---	---	---	---	---	4.64	3.85	0.632	0.58	26.5
Lower (Phase II)	MW-4A	08-RT-030-GW	17-Sep-08	3510	5330	5220	5760	5670	<13	<13	6170	6.27	9.75	0.63	0.54	10.4
Lower (Phase II)	MW-4A	09-RT-084-GW	07-Oct-09	---	---	---	---	---	---	---	---		9.05	0.494	0.32	24.4
Lower (Phase II)	MW-4A	10-RT-103-GW	21-Oct-10	---	---	---	---	---	---	---	---	5.8	8.48	0.533	1.09	78.2
Lower (Phase II)	MW-4A	12-RT-027-GW	09-May-12	---	---	---	---	---	---	---	---	6.6	6.16	0.365	0.38	150.3
Lower (Phase II)	MW-4A	13-RT-036-GW	10-Apr-13	---	---	---	---	---	---	---	---	6.1	0.5	.081	7.8	81.9
Lower (Phase II)	MW-4A	05-RT-048-GW	11-Oct-05	50700	44000	44500	---	---	<10	<10	1520	5.90	8.32	0.664	0.53	-27.3
Lower (Phase II)	MW-4A	04-RT-036-GW	08-Jun-04	293000	61200	63800	---	---	<10	<10	1230	5.78	5.48	0.486	1	7.8
Lower (Phase II)	MW-4A	00-RT-119-GW	28-Sep-00	---	---	---	---	---	---	---	---	6.2	9.1	.24	2.7	
Lower (Phase II)	MW-4A	06-RT-044-GW	12-Sep-06	---	---	---	---	---	---	---	---	5.66	7.27	0.547	0.42	56.3
Lower (Phase II)	MW-4A	01-RT-017-GW	10-Jan-01	---	---	---	---	---	---	---	---	6.21	5.2	.364	0.47	253
Lower (Phase II)	MW-4A	00-RT-048-GW	07-Jun-00	9100	---	---	---	---	---	---	100	6.16	5.8	.203	0.8	
Lower	MW-5	00-RT-054-GW	07-Jun-00	---	---	---	---	---	---	---	---	6.39	8.1	.14	6.28	
Lower	MW-5	08-RT-050-GW	20-Sep-08	---	---	---	---	---	---	---	---	5.77	8.61	0.198	0.69	47.8
Lower	MW-5	07-RT-028-GW	20-Sep-07	9080	15700	2290	---	---	<10	<10	77	5.76	8.77	0.142	2.35	101.2
Lower	MW-5	06-RT-045-GW	13-Sep-06	---	---	---	---	---	---	---	---	5.65	10.62	0.214	0.93	71.4
Lower	MW-5	04-RT-068-GW	23-Oct-04	---	---	---	---	---	---	---	---	6.17	6.8	0.122	3.62	37.4
Lower	MW-5	03-RT-115-GW	08-Oct-03	---	---	---	---	---	---	---	---	5.60	8.56	0.157		174
Lower	MW-5	02-RT-073-GW	26-Sep-02	---	---	---	---	---	---	---	---	5.60	9.3	0.154	0.39	80.7
Lower	MW-5	01-RT-119-GW	18-Oct-01	---	---	---	---	---	---	---	---	6.23	5.2	0.315	0.89	9.8
Lower	MW-50	13-RT-028-GW	10-Apr-13	14800	36100	11200	1100	538	4.9	87	770	7.0	3.7	1.365	0.69	-25.8
Lower	MW-50	09-RT-073-GW	06-Oct-09	20000	838	<100	99	67	34	88	1120		6.33	0.672	0.41	-147.7
Lower	MW-50	09-RT-045-GW	17-Aug-09	---	---	---	---	---	---	---	---	8.2	8.21	0.646	8.43	0.7

River Terrace RV Park
Historical Performance Monitoring Results

Plume	Location	Sample ID	Date Sampled	Total Organic Carbon	Iron, total	Dissolved Iron	Manganese, total	Manganese, dissolved	Ethane	ethene	Methane	pH	Temp	Conductivity	Dissolved Oxygen	ORP
				(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)		˚C)	(µS)	(mg/L)	(mV)
Lower	MW-50	10-RT-048-GW	12-May-10	23800	626	<100	248	247	93	246	1980	7.9	6.33	0.836	0.4	-107.4
Lower	MW-50	10-RT-092-GW	20-Oct-10	29100	841	330	181	180	20	49	568	6.6	5.52	0.662	0.7	-156.3
Lower	MW-50	12-RT-012-GW	08-May-12	20600	3980	3660	818	760	43	244	3700	9.1	7.65	1.329	0.29	-56.5
Lower	MW-50	14-RT-012-GW	22-Apr-14	10600	2140	767	246	218	0.94	110	230	6.3	5.2	0.132	2.1	-33.4
Lower	MW-50	16-RT-012-GW	26-Oct-16	---	---	---	---	---	---	---	---	6.8	6.9	0.247		-56.5
Lower	MW-50	18-RT-50-GW	13-Dec-18	59000	6640	4330	---	---	<0.50	2390	15500	8.68	4.11	---	2.14	-71.7
Lower	MW-50	11-RT-004-GW	17-May-11	8850 VJ	1140	1650 VJ	366	487	46 VJ	130	1690	6.8	6.5	1.346	1.05	-99.8
Lower	MW-51	13-RT-029-GW	10-Apr-13	44600	4620	4190	909	804	1.3	590	2500	7.0	2.4	0.890	0.2	-69.4
Lower	MW-51	10-RT-093-GW	19-Oct-10	396000	1450	151	3670	3700	<10	14	1140	7.0	7	1.575	5.14	-103.8
Lower	MW-51	14-RT-013-GW	22-Apr-14	2640	1910	128	92.3	53.9	<0.24	1.3	2.2	6.4	5.2	0.051	3.1	27.1
Lower	MW-51	16-RT-013-GW	26-Oct-16	---	---	---	---	---	---	---	---	6.4	7.2	1.413		-96.2
Lower	MW-51	11-RT-005-GW	18-May-11	90900	6840	6520	1150	1170	<10	30	1690	7.0	5.94	1.599	0.75	-161
Lower	MW-51	18-RT-51-GW	13-Dec-18	44000	7120	5000	---	---	<0.50	1570	3060	6.92	5.33	---	4.75	47.7
Lower	MW-51	12-RT-013-GW	09-May-12	99900	12500	10100	2270	1820	<10	999	8660	5.2	5.17	1.230	0.28	120.9
Lower	MW-52	16-RT-014-GW	26-Oct-16	---	---	---	---	---	---	---	---	6.2	7.7	1.198		-90.2
Lower	MW-52	12-RT-014-GW	08-May-12	111000	937	657	414	395	<10	377	7300	10.9	7.64	0.875	0.21	-116
Lower	MW-52	18-RT-52-GW	13-Dec-18	---	---	---	---	---	---	---	---	11.09	3.54	---	1.9	-126.3
Lower	MW-52	13-RT-030-GW	10-Apr-13	848000	95600	83800	25200	24400	1.1	1000	8700	8.1	2.6	1.673	0.21	-84.2
Lower	MW-52	10-RT-094-GW	19-Oct-10	55500	2020	<100	201	167	<10	<10	201	7.6	6.37	0.637	0.24	-152.1
Lower	MW-52	11-RT-006-GW	17-May-11	14400	792	668	637	605	<4	4	1110	8.2	8.77	1.029	0.56	-168
Lower	MW-52	14-RT-014-GW	23-Apr-14	36700	2030	1690	246	243	0.2	310	3200	6.3	5.4	0.303	0.26	-20.7
Lower	MW-6	12-RT-004-GW	08-May-12	12000	49700	45600	7880	7380	<7	14	3230	8.8	5.4	0.315	0.65	3.9
Lower	MW-6	04-RT-025-GW	07-Jun-04	41300	125000	120000	---	---	<15	<15	6880	6.15	5.41	0.436	0.68	-73.2
Lower	MW-6	04-RT-052-GW	30-Oct-04	62300	160000	161000	---	---	<10	14	8320	5.84	7.12	0.641	0.99	199.9
Lower	MW-6	05-RT-006-GW	24-Feb-05	67000	124000	132000	26200	27700 VJ	<10	72	9900		2.78	0.441	0.79	-36.7
Lower	MW-6	06-RT-012-GW	25-May-06	27400	79700	71600 VM	---	---	<7	41	7590	6.17	4.3	0.628	0.47	-20.7
Lower	MW-6	05-RT-020-GW	02-Jun-05	31400	68900	105000	---	---	<10	48	4400		6.32	0.737	0.36	-131.7
Lower	MW-6	06-RT-033-GW	11-Sep-06	28400	79400	90300	---	---	<10	82	5150	5.39	8.27	0.442	0.79	-20.1
Lower	MW-6	04-RT-021-GW	29-Mar-04	82000	141000	158000	---	---	<6	<6	9670	6.33	1.93	0.002	0.6	-24.8
Lower	MW-6	16-RT-006-GW	27-Oct-16	---	---	---	---	---	---	---	---	5.5	6.9	0.375		-68
Lower	MW-6	13-RT-022-GW	11-Apr-13	25200	54200	50100	8140	8100	0.24	19	2600	6.0	2.4	0.588	1.2	-8.5
Lower	MW-6	10-RT-084-GW	20-Oct-10	8020	51200	54200	13800	14200	<10	57	4330	6.7	7.55	0.417	0.35	-89.6
Lower	MW-6	10-RT-040-GW	13-May-10	8000 VJ	61100	63700	13900	15200	<8	27	2750	6.5	2.78	0.384	0.94	-36.5
Lower	MW-6	09-RT-065-GW	07-Oct-09	13000	82200	70800	18700	16700	<10	62	21300		7.42	0.469	0.34	-49.7
Lower	MW-6	09-RT-005-GW	06-May-09	12000	104000	101000	22100	19900	<10	50	7650	6.24	2.49	0.842		
Lower	MW-6	08-RT-051-GW	19-Sep-08	---	---	---	---	---	---	---	---	6.05	8.51	0.525	0.35	5.8
Lower	MW-6	08-RT-018-GW	13-May-08	---	---	---	---	---	---	---	---	4.85	3.21	0.784	0.53	3.7
Lower	MW-6	07-RT-031-GW	19-Sep-07	59700	162000	147000	---	---	<10	33	6650	6.31	8.62	0.621	0.45	-58.2
Lower	MW-6	07-RT-004-GW	30-May-07	645000 VM	192000	173000	41600	37200	<10	51	8520	6.70	2.16	1.235	1.34	-41.4
Lower	MW-6	14-RT-004-GW	24-Apr-14	18700	81000	82800	10700	11300	0.086	11	1400	6.2	2.7	0.360	0.71	-81.6
Lower	MW-6	01-RT-001-GW	11-Jan-01	689000	219000	225000	38200	---	<20	<20	970	6.04	3.4	1.54	1.27	26.5
Lower	MW-6	04-RT-010-GW	20-Jan-04	48200	166000	158000	24000	26600	<14	<14	15600	6.24	3.81	0.512	0.8	-67.7
Lower	MW-6	02-RT-040-GW	19-Jun-02	552000	---	302000	---	---	<15	<15	8250	5.92	6.2	1.39	0.2	-4.1
Lower	MW-6	02-RT-002-GW	13-Mar-02	---	---	---	---	---	---	---	---	5.56	2.1	1.75	0.1	
Lower	MW-6	01-RT-128-GW	15-Jan-02	1010000	478000	478000	84600	---	<3	<3	4060	5.24	2.9	1.87	3.3	8.5
Lower	MW-6	01-RT-089-GW	16-Oct-01	1710000	632000	630000	92800	---	<8	<8	7000	6.05	6.7	3.02	0.78	-49.3
Lower	MW-6	02-RT-116-GW	18-Dec-02	---	---	---	---	---	---	---	---	5.90	3.7	1.19	0.18	-37.3
Lower	MW-6	01-RT-030-GW	08-Mar-01	397000	250000	223000	25200	27800	<20	<10	1130	6.28	2.9	1.20	0.84	-29.2
Lower	MW-6	00-RT-139-GW	28-Nov-00	---	---	---	---	---	---	---	---	6.36	4.9	1.08	0.6	
Lower	MW-6	00-RT-131-GW	28-Nov-00	435000	117000	116000	34100	37900	<20	<20	1310	6.36	4.9	1.08	0.6	
Lower	MW-6	00-RT-130-GW	28-Nov-00	435000	122000	114000	35800	38000	<10	<10	1010	6.36	4.9	1.08	0.6	
Lower	MW-6	00-RT-109-GW	27-Sep-00	20100	67300	3390	4950	---	<20	<20	1590	6.4	7.2	.303	4	
Lower	MW-6	00-RT-045-GW	07-Jun-00	20700	---	---	---	---	---	---	2800	6.39	5.3	.237	0.68	
Lower	MW-6	05-RT-049-GW	11-Oct-05	55700	103000	109000	---	---	<10	96	7130	6.07	9.14	0.757	0.45	-23.6
Lower	MW-6	02-RT-061-GW	27-Sep-02	654000	---	---	---	---	<15	<15	11400	6.04	8.7	1.71	0.22	-43.2
Lower	MW-6	03-RT-004-GW	04-Feb-03	475000	---	300000	---	---	<6	<6	9620	6.31	3.8	1.3	0.17	32.8
Lower	MW-6	03-RT-016-GW	11-Mar-03	---	---	---	---	---	---	---	---	6.21	3	1.39	0.48	19.9
Lower	MW-6	03-RT-032b-GW	17-Jun-03	129000	182000	194000	31200	33200	<10	<10	12000	6.48	5.8	1.00	0.32	-15.4
Lower	MW-6	01-RT-076-GW	22-May-01	145000	144000	54300	12400	---	<5	<5	1860	6.31	4.6	.535	0.35	-45.7
Lower	MW-7	02-RT-074-GW	26-Sep-02	---	---	---	---	---	---	---	---	6.02	8.7	0.783	0.25	-38.4
Lower	MW-7	00-RT-046-GW	07-Jun-00	21600	---	---	---	---	---	---	1900	6.22	5.4	.245	0.7	
Lower	MW-7	01-RT-016-GW	11-Jan-01	---	---	---	---	---	---	---	---	6.41	4	.691	1.38	-8.1

River Terrace RV Park
Historical Performance Monitoring Results

Plume	Location	Sample ID	Date Sampled	Total Organic Carbon	Iron, total	Dissolved Iron	Manganese, total	Manganese, dissolved	Ethane	ethene	Methane	pH	Temp	Conductivity	Dissolved Oxygen	ORP
				(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)		˚C)	(µS)	(mg/L)	(mV)
Lower	MW-7	01-RT-055-GW	22-Mar-01	---	---	---	---	---	---	---	---	6.38	3.7	.480	1.27	27.7
Lower	MW-7	01-RT-123-GW	18-Oct-01	---	---	---	---	---	---	---	---	6.13	6.9	1.22	0.8	-50.8
Lower	MW-7	05-RT-057-GW	12-Oct-05	---	---	---	---	---	---	---	---	6.02	8.29	0.799	0.32	-9.7
Lower	MW-7	18-RT-7-GW	12-Dec-18	---	---	---	---	---	---	---	---	7.31	4.15	---	0.3	-2.6
Lower	MW-7	12-RT-029-GW	10-May-12	---	---	---	---	---	---	---	---	8.9	4.44	0.404	0.5	29.3
Lower	MW-7	10-RT-105-GW	21-Oct-10	---	---	---	---	---	---	---	---	6.3	6.81	0.494	0.36	-83.8
Lower	MW-7	09-RT-086-GW	08-Oct-09	---	---	---	---	---	---	---	---		7.05	0.458	0.34	-52.5
Lower	MW-7	08-RT-052-GW	19-Sep-08	---	---	---	---	---	---	---	---	6.16	8.06	0.693	0.85	-18.5
Lower	MW-7	07-RT-029-GW	19-Sep-07	178000	180000	163000	---	---	<8	39	10700	6.33	8.32	0.841	0.4	-63.4
Lower	MW-7	02-RT-011-GW	14-Mar-02	---	---	---	---	---	---	---	---	5.81	4.5	2.82	0.15	
Lower	MW-7	06-RT-020-GW	25-May-06	---	---	---	---	---	---	---	---	6.75	4.49	0.554	0.58	-12.5
Lower	MW-7	01-RT-144-GW	16-Jan-02	---	---	---	---	---	---	---	---	6.21	2.6	.681	5	-33
Lower	MW-7	05-RT-036-GW	02-Jun-05	---	---	---	---	---	---	---	---	7.36	5.37	0.966	0.75	-93
Lower	MW-7	04-RT-069-GW	23-Oct-04	---	---	---	---	---	---	---	---	6.29	7.35	0.433	0.88	-36.8
Lower	MW-7	04-RT-037-GW	07-Jun-04	---	---	---	---	---	---	---	---	6.17	5.01	0.586	0.45	-92.5
Lower	MW-7	03-RT-120-GW	09-Oct-03	---	---	---	---	---	---	---	---	6.25	7.68	0.543		-90
Lower	MW-7	03-RT-046-GW	18-Jun-03	---	---	---	---	---	---	---	---	8.64	5.6	.610	0.26	13
Lower	MW-7	03-RT-019-GW	11-Mar-03	---	---	---	---	---	---	---	---	6.32	2.9	.793	0.76	38
Lower	MW-7	02-RT-117-GW	18-Dec-02	---	---	---	---	---	---	---	---	6.23	2.7	0.614	0.26	-38.2
Lower	MW-7	02-RT-053-GW	19-Jun-02	---	---	---	---	---	---	---	---	6.12	8	1.2	0.09	-24.5
Lower	MW-7	06-RT-032-GW	11-Sep-06	23500	55400	64100	---	---	<10	58	4580	6.26	8.24	0.449	0.59	-52.8
Lower	MW-8	04-RT-070-GW	23-Oct-04	---	---	---	---	---	---	---	---	6.45	7.39	0.362	0.47	-64.8
Lower	MW-8	06-RT-046-GW	13-Sep-06	---	---	---	---	---	---	---	---	6.38	7.04	0.890	0.52	-74.5
Lower	MW-8	03-RT-117-GW	08-Oct-03	---	---	---	---	---	---	---	---	6.36	7.92	0.718		-98
Lower	MW-8	12-RT-030-GW	10-May-12	---	---	---	---	---	---	---	---	9.4	4.96	1.067	0.16	3.5
Lower	MW-8	10-RT-106-GW	21-Oct-10	---	---	---	---	---	---	---	---	6.1	8.07	1.100	1.06	13.8
Lower	MW-8	09-RT-087-GW	08-Oct-09	---	---	---	---	---	---	---	---		8.59	0.264	0.38	24.2
Lower	MW-8	00-RT-052-GW	07-Jun-00	12700	---	---	---	---	---	---	1400	6.28	5.6	.287	0.5	
Lower	MW-8	07-RT-030-GW	19-Sep-07	19400	20000	18500	---	---	<10	<10	3170	6.13	8.74	0.268	2.06	-5.3
Lower	MW-8	05-RT-058-GW	12-Oct-05	---	---	---	---	---	---	---	---	5.95	8.07	0.534	0.38	-7.8
Lower	MW-8	05-RT-013-GW	22-Feb-05	---	---	---	---	---	---	---	---	8.72	3.65	0.638	0.58	-120.5
Lower	MW-8	04-RT-038-GW	07-Jun-04	---	---	---	---	---	---	---	---	6.67	6.18	0.359	0.5	-51.5
Lower	MW-8	01-RT-051-GW	22-Mar-01	---	---	---	---	---	---	---	---	5.96	2	.827		57.4
Lower	MW-8	03-RT-020-GW	11-Mar-03	---	---	---	---	---	---	---	---	6.26	3.3	1.63	0.34	27.9
Lower	MW-8	02-RT-119-GW	18-Dec-02	---	---	---	---	---	---	---	---	5.97	3.9	1.34	0.14	29.3
Lower	MW-8	02-RT-054-GW	19-Jun-02	---	---	---	---	---	---	---	---	5.86	6.9	1.48	0.17	-1.7
Lower	MW-8	02-RT-003-GW	13-Mar-02	---	---	---	---	---	---	---	---	5.08	2.6	2.52	0.2	
Lower	MW-8	01-RT-147-GW	16-Jan-02	---	---	---	---	---	---	---	---	5.91	2.9	1.58	2.06	6.46
Lower	MW-8	01-RT-124-GW	18-Oct-01	---	---	---	---	---	---	---	---	5.49	4.3	2.53	0.36	25.6
Lower	MW-8	03-RT-045-GW	18-Jun-03	---	---	---	---	---	---	---	---	8.32	6.6	1.46	0.11	18
Lower	MW-8	01-RT-014-GW	10-Jan-01	---	---	---	---	---	---	---	---	6.03	3.7	2.03	0.7	85
Lower	MW-8	08-RT-053-GW	19-Sep-08	---	---	---	---	---	---	---	---	6.02	9.97	0.437	0.44	12.8
Lower	MW-9	08-RT-005-GW	12-May-08	945000	271000	284000	---	---	<13	118	12100	6.44	3.69	0.901	1.54	74.6
Lower	MW-9	07-RT-032-GW	19-Sep-07	469000	170000	195000	---	---	<10	94	7760	5.54	6.16	0.846	1.18	-3.2
Lower	MW-9	07-RT-005-GW	30-May-07	2010000	444000	404000	43400	39700	<10	129	6070	5.74	4.5	1.937	1.04	61.4
Lower	MW-9	06-RT-034-GW	11-Sep-06	273000	90600	106000	---	---	<14	226	11600	5.77	6.6	0.656	0.67	-13.8
Lower	MW-9	06-RT-013-GW	25-May-06	130000	97800	97000 VM	---	---	<10	254	7490	5.98	6.29	0.842	0.63	33.8
Lower	MW-9	06-RT-002-GW	08-Mar-06	176000	133000	140000	14900	15800	<10	258	10500	5.94	4.34	1.129	0.29	22.5
Lower	MW-9	05-RT-022-GW	02-Jun-05	262000	134000	133000	---	---	<10	369	8670	7.56	5.23	1.001	0.68	-84.2
Lower	MW-9	18-RT-9-GW	13-Dec-18	---	---	---	---	---	---	---	---	7.52	5.72	---	1.7	-41.7
Lower	MW-9	05-RT-050-GW	11-Oct-05	263000	114000	122000	---	---	<10	329	9070	5.55	7.08	0.963	0.54	-11.7
Lower	MW-9	08-RT-031-GW	16-Sep-08	840000	237000	201000	19200	17000	<10	108	9680	5.08	6.3	0.95	2.02	73.8
Lower	MW-9	09-RT-007-GW	06-May-09	425000	155000	150000	15400	15000	<10	55	7270	5.43	4.1	1.214		
Lower	MW-9	09-RT-066-GW	05-Oct-09	185000 VJ	122000	110000	12800	11600	<8	61	9810	7.52	7.24	0.583	0.39	-18.6
Lower	MW-9	10-RT-041-GW	11-May-10	253000	122000	118000	14200	14400	<10	57	10600	5.9	4.84	0.537	0.16	1.9
Lower	MW-9	10-RT-085-GW	20-Oct-10	151000	122000 VJ	129000	11600 VJ	13600	<10	37	8210	5.4	5.61	0.321	0.46	-163.2
Lower	MW-9	12-RT-005-GW	08-May-12	34100	73400	71300	8670	8360	<10	65	13300	6.3	5.32	0.424	0.27	101.4
Lower	MW-9	13-RT-019-GW	09-Apr-13	68700	75800	77300	9940	10300	0.25	55	7000	6.1	3.5	0.979	0.24	-48
Lower	MW-9	05-RT-008-GW	24-Feb-05	451000	197000	187000	20700	20500 VJ	<10	349	13900		4.79	0.767	0.6	-51.5
Lower	MW-9	16-RT-007-GW	27-Oct-16	---	---	---	---	---	---	---	---	7.2	6.8	0.583		-36.2
Lower	MW-9	02-RT-041-GW	19-Jun-02	1310000	---	284000	---	---	<10	<10	1890	5.31	5.9	1.5	0.36	63.9
Lower	MW-9	14-RT-005-GW	23-Apr-14	98300	141000	136000	21400	20500	0.13	19	3200	6.8	4.2	0.994	0.71	-83

River Terrace RV Park
Historical Performance Monitoring Results

Plume	Location	Sample ID	Date Sampled	Total Organic Carbon	Iron, total	Dissolved Iron	Manganese, total	Manganese, dissolved	Ethane	ethene	Methane	pH	Temp	Conductivity	Dissolved Oxygen	ORP
				(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)		◦C)	(µS)	(mg/L)	(mV)
Lower	MW-9	02-RT-001-GW	13-Mar-02	---	---	---	---	---	---	---	---	6.02	2.1	1.10	0.4	
Lower	MW-9	00-RT-051-GW	07-Jun-00	19500	---	---	---	---	---	---	3100	6.43	5.2	.294	2.3	
Lower	MW-9	00-RT-107-GW	27-Sep-00	11200	28400	6520	5830	---	<20	<20	1290	6.38	7.2	.359	0.75	
Lower	MW-9	00-RT-133-GW	28-Nov-00	773000	185000	94100	44500	40800	<20	<10	1300	5.57	6.6	1.07	0.67	
Lower	MW-9	01-RT-003-GW	11-Jan-01	668000	264000	90200	47400	---	<10	<10	930	5.67	6.4	1.11	1.18	35.8
Lower	MW-9	01-RT-004-GW	11-Jan-01	634000	257000	90600	47400	---	<20	<20	1570	5.67	6.4	1.11	1.18	35.8
Lower	MW-9	01-RT-033-GW	08-Mar-01	635000	166000	75800	51600	45500	<10	<10	1050	5.57	5	1.01	1.32	48.9
Lower	MW-9	01-RT-068-GW	22-May-01	186000	142000	25900	22900	---	<1	<1	926 VJ	5.98	5.8	.437	0.82	6.4
Lower	MW-9	02-RT-102-GW	18-Dec-02	306000	---	137000	---	---	<10	<10	5470	5.86	5.1	0.753	0.35	0.4
Lower	MW-9	01-RT-129-GW	15-Jan-02	2580000	572000	604000	112000	---	<3	<3	1200	5.41	5.4	2.15	0.48	32.6
Lower	MW-9	04-RT-054-GW	29-Oct-04	695000	221000	228000	---	---	<13	160	8650	5.51	7.19	0.966	0.6	21.7
Lower	MW-9	02-RT-062-GW	27-Sep-02	374000	---	163000	---	---	<10	<10	10800	5.75	7.2	0.859	0.06	5.91
Lower	MW-9	03-RT-001-GW	04-Feb-03	223000	---	112000	---	---	<10	<10	8560	5.79	6	0.752	4.37	27.8
Lower	MW-9	03-RT-007-GW	10-Mar-03	400000	---	157000	---	---	<10	<10	6190	5.71	4.4	1.04	0.52	74.8
Lower	MW-9	03-RT-036-GW	17-Jun-03	83700	86200	112000	13200	13700	<16	<16	12400	6.23	5.7	.715	0.2	27.4
Lower	MW-9	03-RT-095-GW	08-Oct-03	---	---	---	---	---	---	---	---	6.02	6.93	0.925		-64
Lower	MW-9	04-RT-007-GW	21-Jan-04	444000	212000	234000	28000	30200	<16	112	12300	5.92	5.77	1.09	0.05	-70.6
Lower	MW-9	04-RT-018-GW	31-Mar-04	524000	204000	215000	---	---	<5	61	5970	5.91	4.11	0.873	0.2	7.1
Lower	MW-9	04-RT-027-GW	08-Jun-04	668000	233000	232000	---	---	<10	193	7640	5.61	4.96	0.979	0.6	7.6
Lower	MW-9	01-RT-091-GW	16-Oct-01	3100000	665000	624000	146000	---	<10	<10	3380	5.4	6.7	2.86	0.88	-11.1

µg/L = micrograms per liter
◦C = degress Celsius
µS = microsiemans
mg/L = milligrams per liter
mV = millivolts

(This Page Intentionally Left Blank)

APPENDIX G

CUMULATIVE CHLORINATED ETHENE GROUNDWATER SAMPLE RESULTS

(This Page Intentionally Left Blank)

Appendix E

July 1997- December 2018 Groundwater Analytical Data (ug/L) for Benzene, PCE, and PCE Degradation Products

River Terrace RV Park, Soldotna, Alaska

Location	Sample ID	Sample Type	Date Sampled	Benzene MCL=5; ACL= NA	Vinyl chloride MCL=2; ACL=2	1,1-DCE MCL=7; ACL=7	cis-1,2-DCE MCL=70; ACL=11,600	trans-1,2-DCE MCL=10; ACL=11,600	TCE MCL=5; ACL=21,900	PCE MCL=5; ACL=840
MW-1A	97RTGW502GW	Project Sample	7/18/1997	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW-1A	97RTGW503GW	QC Duplicate	7/18/1997	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW-1A	MW-1A	Project Sample	10/29/1997	<1	<1	<1	<1	<1	<1	<1
MW-1A	MW-1A	Project Sample	12/31/1997	<1	<1	<1	0.94 J	<1	<1	<1
MW-1A	MW-1A	Project Sample	6/29/1998	<1	<1	<1	<1	<1	<1	<1
MW-1A	MW-1B	QC Duplicate	6/29/1998	<1	<1	<1	<1	<1	<1	<1
MW-1A	MW-1A	Project Sample	10/20/1998	<1	<1	<1	<1	<1	<1	<1
MW-1A	99-RT-006-GW	Project Sample	7/8/1999	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW-1A	03-RT-057-GW	Project Sample	6/19/2003	<0.4	<1	<1	1.11	<1	4.3	25.9
MW-1A	03-RT-102-GW	Project Sample	10/7/2003	<0.4	<1	<1	<1	<1	<1	<1
MW-1A	04-RT-065-GW	Project Sample	10/22/2004	<0.4	<1	<1	<1	<1	<1	<1
MW-1C(deep)	97RTGW504GW	Project Sample	7/18/1997	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW-1C(deep)	MW-1C	Project Sample	4/23/1998	<1	<1	<1	<1	<1	<1	<1
MW-1C(deep)	MW-1C	Project Sample	6/29/1998	<1	<1	<1	<1	<1	<1	<1
MW-1C(deep)	MW-1C	Project Sample	10/20/1998	<1	<1	<1	<1	<1	<1	<1
MW-1C(deep)	MW-1C	Project Sample	4/16/1999	<1	<1	<	<1	<1	<1	<1
MW-1C(deep)	99-RT-007-GW	Project Sample	7/8/1999	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW-1C(deep)	03-RT-104-GW	Project Sample	10/8/2003	0.41	<1	<1	<1	<1	<1	<1
MW-1C (shallow)	03-RT-058-GW	Project Sample	6/19/2003	<0.4	<1	<1	<1	<1	<1	3.2
MW-2	97RTGW505GW	Project Sample	7/18/1997	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW-2	MW-2	Project Sample	10/28/1997	<1	<1	<1	<1	<1	<1	<1
MW-2	MW-2	Project Sample	4/23/1998	<1	<1	<1	<1	<1	<1	<1
MW-2	MW-2	Project Sample	6/29/1998	<1	<1	<1	<1	<1	<1	<1
MW-2	MW-2	Project Sample	10/19/1998	<1	<1	<1	<1	<1	<1	<1
MW-2	99-RT-009-GW	Project Sample	7/8/1999	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW-2	03-RT-059-GW	Project Sample	6/19/2003	<0.4	<1	<1	<1	<1	<1	2.06
MW-2	03-RT-106-GW	Project Sample	10/8/2003	<0.4	<1	<1	<1	<1	<1	<1
MW-3	97RTGW509GW	Project Sample	7/18/1997	<2 C,H	<2 C,H	<2 C,H	140 C,H	6 C,H	<2 C,H	6 C,H
MW-3A	MW-3A	Project Sample	8/2/1998	<1	<1	<1	<1	<1	<1	<1
MW-3A	MW-3A	Project Sample	10/19/1998	<1	<1	<1	<1	<1	<1	<1

Appendix E

July 1997- December 2018 Groundwater Analytical Data (ug/L) for Benzene, PCE, and PCE Degradation Products

River Terrace RV Park, Soldotna, Alaska

Location	Sample ID	Sample Type	Date Sampled	Benzene MCL=5; ACL= NA	Vinyl chloride MCL=2; ACL=2	1,1-DCE MCL=7; ACL=7	cis-1,2-DCE MCL=70; ACL=11,600	trans-1,2-DCE MCL=10; ACL=11,600	TCE MCL=5; ACL=21,900	PCE MCL=5; ACL=840
MW-3A	MW-3A	Project Sample	4/16/1999	<1	<1	<1	<1	<1	<1	<1
MW-3A	99-RT-004-GW	Project Sample	7/7/1999	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW-3A	99-RT-041-GW	Project Sample	10/26/1999	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1
MW-3A	99-RT-088-GW	Project Sample	12/14/1999	<1	<1	<1	<1	<1	<1	1.3
MW-3A	00-RT-028-GW	Project Sample	3/25/2000	<1	<1	<1 J	<1	<1	<1	1.4
MW-3A	00-RT-029-GW	QC Duplicate	3/25/2000	<1	<1	<1 J	<1	<1	<1	1.1
MW-3A	00-RT-030-GW	QA Duplicate	3/25/2000	<1	<2	<1	<1	<1	<1	<1
MW-3A	00-RT-060-GW	Project Sample	6/8/2000	<1	<2	<1	<1	<1	<1	3.6
MW-3A	01-RT-111-GW	Project Sample	10/17/2001	<0.7 J	<1 J	<1 J	<1 J	<1 J	<1 J	<1 J
MW-3A	02-RT-072-GW	Project Sample	9/26/2002	<1	<1	<1	<1	<1	<1	<1
MW-3A	04-RT-067-GW	Project Sample	10/23/2004	<0.4	<1	<1	<1	<1	<1	<1
MW-4	97RTGW513GW	Project Sample	7/22/1997	<50 C	<50 C	<50 C	87 C	<50 C	<50 C	1500 C
MW-4A	MW-4A	Project Sample	8/1/1998	7.56	<1	3.31	2380	23.6	432	3540
MW-4A	MW-14A	QC Duplicate	10/20/1998	5	<1	1	2300 D5,J,H	43	310 D5,J,H	2500 D5,J,H
MW-4A	MW-4A	Project Sample	10/20/1998	5	<1	<1	2300 D5,J,H	39	300 D5,J,H	2400 D5,J,H
MW-4A	MW-24	QC Duplicate	12/29/1998	7	<1	4	2500 D	44	350 D	2900 D
MW-4A	MW-4A	Project Sample	12/29/1998	6	<1	<1	2400 D	39	330 D	3000 D
MW-4A	MW-4A	Project Sample	4/15/1999	2.93	<1	<1	1120	12.3	235	1410
MW-4A	MW-4A replicate	QA Duplicate	4/15/1999	---	<	<	1300	14	280	2400
MW-4A	MW-4Aduplicate	QC Duplicate	4/15/1999	2.97	<1	<1	1140	11.9	238	1330
MW-4A	MW-4Aresample	Project Sample	5/10/1999	3.74	<1	1.04	1880	19.6	327	2300
MW-4A	99-RT-021-GW	Project Sample	7/9/1999	<5	<5	<5	1400	26	380	1900
MW-4A	99-RT-065-GW	Project Sample	10/28/1999	3.2	0.53	1.1	1600 J,H	33	250 J,H	1600 J,H
MW-4A	99-RT-100-GW	Project Sample	12/14/1999	<2	<2	<2	1000	<2	150	1200
MW-4A	00-RT-007-GW	Project Sample	3/24/2000	<1	<1 J	<1	300 J,H	13	71	510 J,H
MW-4A	00-RT-048-GW	Project Sample	6/7/2000	1	<2	<1	630	10	91	410
MW-4A	00-RT-049-GW	QC Duplicate	6/7/2000	<10	<20	<10	850	<10	160	1000
MW-4A	00-RT-050-GW	QA Duplicate	6/7/2000	1.2	<0.5	0.55	780	22	160	900
MW-4A	00-RT-119-GW	Project Sample	9/28/2000	<1	<2	<1	690 VJ	9.7	190	490
MW-4A	01-RT-018-GW	QC Duplicate	1/10/2001	<20	<20	<20	600	<20	140	530
MW-4A	01-RT-019-GW	QA Split	1/10/2001	---	<10	---	856	10	188	799
MW-4A	01-RT-017-GW	Project Sample	1/10/2001	<20	<20	<20	600	<20	140	530
MW-4A	01-RT-047-GW	Project Sample	3/22/2001	<2	<2	<2	649	33.6	114	969
MW-4A	01-RT-080-GW	Project Sample	6/25/2001	<2	<2	<2	638	8.43	102	623

Appendix E

July 1997- December 2018 Groundwater Analytical Data (ug/L) for Benzene, PCE, and PCE Degradation Products

River Terrace RV Park, Soldotna, Alaska

Location	Sample ID	Sample Type	Date Sampled	Benzene MCL=5; ACL= NA	Vinyl chloride MCL=2; ACL=2	1,1-DCE MCL=7; ACL=7	cis-1,2-DCE MCL=70; ACL=11,600	trans-1,2-DCE MCL=10; ACL=11,600	TCE MCL=5; ACL=21,900	PCE MCL=5; ACL=840
MW-4A	01-RT-097-GW	Project Sample	10/15/2001	---	<10	---	1310	<10	15.1	27.2
MW-4A	01-RT-098-GW	QC Duplicate	10/15/2001	---	<10	---	1270	<10	16.6	27.1
MW-4A	01-RT-099-GW	QA Split	10/15/2001	20 J,H	<10 J,H	<10 J,H	1370 J	<10 J,H	16.7 J,H	31 J,H
MW-4A	01-RT-139-GW	Project Sample	1/15/2002	---	<10	---	2290	16.6	68.9	54.6
MW-4A	02-RT-012-GW	Project Sample	3/13/2002	4.15	<2	4.31	3100	24	114	44.8
MW-4A	02-RT-048-GW	Project Sample	6/19/2002	<2 J	<2 J	<2 J	1180 J	9.32 J	59.4 J	38.3 J
MW-4A	02-RT-065-GW	Project Sample	9/27/2002	<1	<1	1.3	1300	10	180	100
MW-4A	02-RT-115-GW	Project Sample	12/19/2002	0.55	<1	<1	658	11.5	110	342
MW-4A	03-RT-015-GW	Project Sample	3/11/2003	<0.4	<1	<1	271	3.44	47.8	61.2
MW-4A	03-RT-034-GW	Project Sample	6/17/2003	---	<5	---	617	7.8	57.4	45
MW-4A	03RT-080-GW	Project Sample	9/18/2003	---	<5	---	950	8.2	139	116
MW-4A	04-RT-004-GW	Project Sample	1/20/2004	---	<1	---	1320	11.8	95.7	110
MW-4A	04-RT-015-GW	Project Sample	3/31/2004	---	<1	---	625	5.4	28.2	24.3
MW-4A	04-RT-036-GW	Project Sample	6/8/2004	---	<5	---	808	6.4	<5	<5
MW-4A	04-RT-030-GW	QC Duplicate	6/8/2004	---	<5	---	854	6.8	<5	<5
MW-4A	04-RT-051-GW	Project Sample	10/29/2004	---	1	---	798	7.1	22.3	8.1
MW-4A	05-RT-012-GW	QA Split	2/23/2005	0.4	1.55	<1	879	9.81	7.63 VJ	<1
MW-4A	05-RT-019-GW	QA Duplicate	2/23/2005	0.53	1.58	<1	906	8.93	21.6 VJ	2.76
MW-4A	05-RT-011-GW	QC Duplicate	2/23/2005	---	<5	---	979	7.3	21.8 VJ	<5
MW-4A	05-RT-005-GW	Project Sample	2/23/2005	---	1.2	---	970	9	4.8 VJ	<1
MW-4A	05-RT-048-GW	Project Sample	10/11/2005	---	<10	---	274 VM	<10	<10	<10
MW-4A	06-RT-011-GW	Project Sample	5/25/2006	---	2.1	---	395	4.8	2	<1
MW-4A	06-RT-044-GW	Project Sample	9/12/2006	<0.5	<0.5	<0.5	200	1.9	48	28
MW-4A	07-RT-027-GW	Project Sample	9/18/2007	---	<1	---	151	1.5	2.7	22.9
MW-4A	08-RT-016-GW	Project Sample	5/13/2008	<0.4	0.84	<1	98	1.63	50	41.2
MW-4A	08-RT-030-GW	Project Sample	9/17/2008	0.23	3.25 VJ	<1	312	2.92	25.5 VM	4.14
MW-4A	09-RT-084-GW	Project Sample	10/7/2009	<0.12	5.28	<0.31	243	3.32	3.78	7.9 VJ
MW-4A	10-RT-103-GW	Project Sample	10/21/2010	<0.12	4.17	<0.31	253	2.18	3.35	6.04
MW-4A	12-RT-041-GW	QC Duplicate	5/9/2012	<0.12	0.55	<0.31	18.1	<0.31	3.96 VJ	14.8
MW-4A	12-RT-027-GW	Project Sample	5/9/2012	<0.12 VH	0.61 VH	<0.31 VH	23.7 VH	0.41 VH	7.15 VH	15 VH
MW-4A	12-RT-020-GW	QA Split	5/9/2012	---	<1	---	21.6	<1	5.9	16.9
MW-4A	13-RT-032-GW	QC Duplicate	4/10/2013	<0.24	<0.62	<0.62	9.16 VR	<0.62	<0.62	2.1
MW-4A	13-RT-036-GW	Project Sample	4/10/2013	<0.24	<0.62	<0.62	<0.62	<0.62	<0.62	1.68
MW-5	97RTGW510GW	Project Sample	7/22/1997	<5 C,H	<5 C,H	<5 C,H	330 C,H	<5 C,H	26 C,H	18 C
MW-5	MW-5	Project Sample	10/28/1997	<1	<1	<1	74	1.11	3.8	4.15

Appendix E

July 1997- December 2018 Groundwater Analytical Data (ug/L) for Benzene, PCE, and PCE Degradation Products

River Terrace RV Park, Soldotna, Alaska

Location	Sample ID	Sample Type	Date Sampled	Benzene MCL=5; ACL= NA	Vinyl chloride MCL=2; ACL=2	1,1-DCE MCL=7; ACL=7	cis-1,2-DCE MCL=70; ACL=11,600	trans-1,2-DCE MCL=10; ACL=11,600	TCE MCL=5; ACL=21,900	PCE MCL=5; ACL=840
MW-5	MW-5	Project Sample	12/31/1997	<1	<1	<1	137	1.22	8.05	9.15
MW-5	MW-5	Project Sample	6/30/1998	<1	<1	<1	69.3	<1	6.48	10.4
MW-5	MW-5	Project Sample	12/28/1998	<1	<1	<1	73	2	5	18
MW-5	MW-5	Project Sample	4/15/1999	<1	<1	<1	58.9	<1	4.35	10.9
MW-5	99-RT-023-GW	Project Sample	7/10/1999	<0.5	<0.5	<0.5	120	4.2	14	31
MW-5	99-RT-102-GW	Project Sample	12/15/1999	<1	<1	<1	110	3.2	7.5	28
MW-5	00-RT-054-GW	Project Sample	6/7/2000	<1	<2	<1	37	<1	2.3	4.1 J
MW-5	00-RT-121-GW	Project Sample	9/29/2000	<1	<2	<1	100	<1	2.1	2.3
MW-5	01-RT-119-GW	Project Sample	10/18/2001	<2 J	<2 J	<2 J	84.3 J	<2 J	2.31 J	4.26 J
MW-5	02-RT-073-GW	Project Sample	9/26/2002	<2	<1	<2	210	<2	5	12
MW-5	03-RT-115-GW	Project Sample	10/8/2003	<0.4	<1	<1	290	<1	4.68	14.2
MW-5	04-RT-068-GW	Project Sample	10/23/2004	<0.4	2.2	<1	289	<1	3.1	4.06
MW-5	05-RT-056-GW	Project Sample	10/13/2005	<0.4	3.73	<1	205	<1	2.15	2.92
MW-5	06-RT-045-GW	Project Sample	9/13/2006	<0.5	0.68	<0.5	72	0.68	3.5	0.95
MW-5	07-RT-028-GW	Project Sample	9/20/2007	---	3.9 VH	---	57.7 VH	<1 VH	2.8 VH	2.8 VH
MW-5	08-RT-050-GW	Project Sample	9/20/2008	<0.4	<1	<1	22.4	<1	1.99	1.52
MW-5	13-RT-007-GW	Project Sample	4/10/2013	<0.24	<0.62	<0.62	9.64	<0.62	0.7	1.1
MW-6	97RTGW512GW	Project Sample	7/22/1997	<50 C	<50 C	<50 C	3400 C	<50 C	970 C	1900 C
MW-6	MW-6	Project Sample	10/28/1997	5.8	4.5	2.2	2500	36	450	380
MW-6	MW-15	QC Duplicate	10/28/1997	5.17	3.68	1.91	1400	34.4	246	198
MW-6	MW-6	Project Sample	12/31/1997	5.61	3.07	1.46	1820	22.5	305	183
MW-6	MW-15	QC Duplicate	12/31/1997	<10	<10	<10	851	19	303	179
MW-6	MW-6	Project Sample	4/23/1998	4.86	2.13	<1	792	20	238	139
MW-6	MW-15	QC Duplicate	4/23/1998	4.9	2.04	<1	792	20.1	250	165
MW-6	MW-6	Project Sample	6/29/1998	<1	<1	<1	536	14.8	195	87.5
MW-6	MW-6	Project Sample	10/21/1998	3	1	1	1700 D5,J,H	24	150	69
MW-6	MW-6	Project Sample	12/28/1998	2	2	1	1500 D	19	140	110
MW-6	MW-6	Project Sample	4/15/1999	3.37	2.85	1.62	1410	14.2	123	135
MW-6	99-RT-015-GW	QA Duplicate	7/8/1999	<100	<200	<100	1700	<100	270	240
MW-6	99-RT-013-GW	Project Sample	7/8/1999	<25	3 J,H	<25	1200	<25	210	180
MW-6	99-RT-014-GW	QC Duplicate	7/8/1999	<25	<25	<25	1200	<25	210	190
MW-6	99-RT-045-GW	Project Sample	10/26/1999	4	3.7	2.3	2200	22	400	980
MW-6	99-RT-104-GW	Project Sample	12/15/1999	<2	<2	<2	950	<10	180	560
MW-6	00-RT-035-GW	Project Sample	3/25/2000	2	1.5	<1 J	1300 J,H	22	180	660 J,H
MW-6	00-RT-045-GW	Project Sample	6/7/2000	1.8	<2	<1	930	9.7	180	330

Appendix E

July 1997- December 2018 Groundwater Analytical Data (ug/L) for Benzene, PCE, and PCE Degradation Products

River Terrace RV Park, Soldotna, Alaska

Location	Sample ID	Sample Type	Date Sampled	Benzene MCL=5; ACL= NA	Vinyl chloride MCL=2; ACL=2	1,1-DCE MCL=7; ACL=7	cis-1,2-DCE MCL=70; ACL=11,600	trans-1,2-DCE MCL=10; ACL=11,600	TCE MCL=5; ACL=21,900	PCE MCL=5; ACL=840
MW-6	00-RT-109-GW	Project Sample	9/27/2000	---	2.2	---	865	11.8	71.3	70.3
MW-6	00-RT-131-GW	QC Duplicate	11/28/2000	---	<5	---	2440	24.9	7.8	<5
MW-6	00-RT-139-GW	QA Duplicate	11/28/2000	3	2 VJ	1.9	1900	14	4.1	2.5
MW-6	00-RT-130-GW	Project Sample	11/28/2000	---	<5	---	2230	27.4	7.7	<5
MW-6	01-RT-001-GW	Project Sample	1/11/2001	---	3.1 VJ	---	1720	16.9	<10	14.9
MW-6	01-RT-039-GW	QA Split	3/8/2001	2.5 VJ	2.3 VJ	1.1 VJ	1100 VJ	15 VJ	0.83 VJ	1.3 VJ
MW-6	01-RT-030-GW	Project Sample	3/8/2001	---	<10	---	1330	13.9	<10	<10
MW-6	01-RT-031-GW	QC Duplicate	3/8/2001	---	<10	---	1280	14	<10	<10
MW-6	01-RT-076-GW	Project Sample	5/22/2001	---	<10	---	1390	12.1	<10	<10
MW-6	01-RT-089-GW	Project Sample	10/16/2001	---	<10	---	1710	<10	<10	<10
MW-6	01-RT-128-GW	Project Sample	1/15/2002	---	<10	---	1600	18.2	<10	<10
MW-6	02-RT-002-GW	Project Sample	3/13/2002	2.7	4.83	2.29	1770	15.8	2.33	<2
MW-6	02-RT-040-GW	Project Sample	6/19/2002	0.486 J	1.24 J	0.519 J	2010 J	3.89 J	<0.4 J	<0.4 J
MW-6	02-RT-061-GW	Project Sample	9/27/2002	2.7	6	2.3	2200	19	<1	<1
MW-6	02-RT-116-GW	Project Sample	12/18/2002	2.62	7.32	3.12	2280	25.3	<1	<1
MW-6	03-RT-004-GW	Project Sample	2/4/2003	---	<20	---	2750	22.6	<20	<20
MW-6	03-RT-017-GW	QC Duplicate	3/11/2003	3.5	17	3.98	3030	36	<1	<1
MW-6	03-RT-016-GW	Project Sample	3/11/2003	3.33	15.5	3.9	2870	43.3	<1	<1
MW-6	03-RT-018-GW	QA Split	3/11/2003	---	13.6	---	2940	30	<10	<10
MW-6	03-RT-032b-GW	Project Sample	6/17/2003	---	<25	---	1930	<25	<25	<25
MW-6	03RT-085-GW	Project Sample	9/19/2003	---	16.5	---	2230	24.4	<10	18.5
MW-6	04-RT-010-GW	Project Sample	1/20/2004	---	98.8	---	2740	28.6	<20	<20
MW-6	04-RT-021-GW	Project Sample	3/29/2004	---	148	---	2640	35.2	<1	<1
MW-6	04-RT-025-GW	Project Sample	6/7/2004	---	77.8	---	1440	15.7	<5	<5
MW-6	04-RT-052-GW	Project Sample	10/30/2004	---	439	---	1270	27.1	<1	<1
MW-6	05-RT-006-GW	Project Sample	2/24/2005	---	209	---	174	10.7	<1	<1
MW-6	05-RT-020-GW	Project Sample	6/2/2005	---	204	---	212	<1	<1	<1
MW-6	05-RT-049-GW	Project Sample	10/11/2005	---	25.4	---	58.4 VM	<5	<5	<5
MW-6	06-RT-019-GW	QA Split	5/25/2006	1.05	102	<1	62.1	3.04	<1	<1
MW-6	06-RT-012-GW	Project Sample	5/25/2006	---	98.8	---	68.9	3.6	<1	<1
MW-6	06-RT-033-GW	Project Sample	9/11/2006	---	16.6	---	32	2.9	<1	<1
MW-6	07-RT-004-GW	Project Sample	5/30/2007	---	12.9	---	10.1	3.3	<1	<1
MW-6	07-RT-031-GW	Project Sample	9/19/2007	---	9.2	---	20	2.6	1.3	<1
MW-6	08-RT-018-GW	Project Sample	5/13/2008	0.28	26.1	<1	22.1	3.72	0.32	<1
MW-6	08-RT-022-GW	QC Duplicate	5/13/2008	0.39	31.1	<1	24	3.78	0.37	<1
MW-6	08-RT-066-GW	QC Duplicate	9/19/2008	0.83	8.36	<1	8.74	2.29	0.46	<1

Appendix E

July 1997- December 2018 Groundwater Analytical Data (ug/L) for Benzene, PCE, and PCE Degradation Products

River Terrace RV Park, Soldotna, Alaska

Location	Sample ID	Sample Type	Date Sampled	Benzene MCL=5; ACL= NA	Vinyl chloride MCL=2; ACL=2	1,1-DCE MCL=7; ACL=7	cis-1,2-DCE MCL=70; ACL=11,600	trans-1,2-DCE MCL=10; ACL=11,600	TCE MCL=5; ACL=21,900	PCE MCL=5; ACL=840
MW-6	08-RT-051-GW	Project Sample	9/19/2008	0.95	8.89	<1	9.7	2.35	0.52	<1
MW-6	08-RT-041-GW	QA Split	9/19/2008	---	5.5 VJ	---	8	1.9	<1	<1
MW-6	09-RT-005-GW	Project Sample	5/6/2009	1.38	9.64	<1	8.63	2.46	0.32	<1
MW-6	09-RT-099-GW	QC Duplicate	10/7/2009	1.19	8.02	<0.31	7.9	2.16	<0.31	<0.31
MW-6	09-RT-065-GW	Project Sample	10/7/2009	1.11	7.72	<0.31	6.27	2.18	<0.31	<0.31
MW-6	10-RT-040-GW	Project Sample	5/13/2010	0.61	59.2 VJ	<0.31	39.9	4.27	0.59	<0.31
MW-6	10-RT-057-GW	QC Duplicate	5/13/2010	---	---	---	---	---	---	---
MW-6	10-RT-084-GW	Project Sample	10/20/2010	1.06	14	<0.31	9.89	4.27	0.67	0.41
MW-6	12-RT-004-GW	Project Sample	5/8/2012	0.39	14.9	<0.31	26.3	3.83	7.68	1.07
MW-6	13-RT-033-GW	QC Duplicate	4/11/2013	0.54	4.09	<0.62	9.84	3.33	3.37	2.68
MW-6	13-RT-022-GW	Project Sample	4/11/2013	0.62	4.87	<0.62	13.3	3.9	3.11	3.17
MW-6	14-RT-004-GW	Project Sample	4/24/2014	0.89	2.19	<0.5	9.61	5.21	<0.5	<0.5
MW-6	16-RT-006-GW	Project Sample	10/27/2016	0.85	7.02	<0.31	7.82	4.99	<0.31	<0.31
MW-6A	18-RT-6A-GW	Project Sample	12/11/2018	0.69	8.02	<0.5	4.3 B	4.47	<0.5	8.55
MW-7	97RTGW511GW	Project Sample	7/22/1997	<50 C	<50 C	<50 C	1700 C	<50 C	550 C	760 C
MW-7	MW-7	Project Sample	10/28/1997	1.9	1.2	1.11	693	11.1	350	770
MW-7	MW-7	Project Sample	12/31/1997	0.84 J	<1	<1	700	7.84	119	231
MW-7	MW-7	Project Sample	4/23/1998	1.82	<1	<1	591	10.9	132	169
MW-7	MW-7	Project Sample	6/30/1998	<1	<1	<1	625	<1	103	153
MW-7	MW-7	Project Sample	10/21/1998	2	<1	<1	1100 D5,J,H	15	73	230 D5,J,H
MW-7	MW-7	Project Sample	12/28/1998	1	<1	<1	820 D	10	62	120
MW-7	MW-7	Project Sample	4/16/1999	1.52	1.27	<1	869	6.6	51.7	166
MW-7	99-RT-017-GW	QC Duplicate	7/8/1999	<25	<25	<25	600	<25	36	130
MW-7	99-RT-018-GW	QA Duplicate	7/8/1999	<25	<50	<25	900	<25	51	180
MW-7	99-RT-016-GW	Project Sample	7/8/1999	<25	1 J,H	<25	630	<25	38	140
MW-7	99-RT-046-GW	Project Sample	10/26/1999	2.1	1.8	1.1	1100	11	90	440
MW-7	99-RT-103-GW	Project Sample	12/15/1999	<2	<2	<2	480	4.1	44	260
MW-7	00-RT-036-GW	Project Sample	3/25/2000	<1	<1	<1 J	670 J,H	14	57	450 J,H
MW-7	00-RT-046-GW	Project Sample	6/7/2000	<1	<2	<1	470	4.2	35	250
MW-7	00-RT-120-GW	Project Sample	9/28/2000	<1	<2	<1	430 VJ	3.9	18	88
MW-7	01-RT-016-GW	Project Sample	1/11/2001	1.3 J,H	2.3 H	1.2 J,H	390	8.5 H	2.5 H	6.2 H
MW-7	01-RT-056-GW	QA Split	3/7/2001	---	<5	---	364	5.4	<5	<5
MW-7	01-RT-055-GW	Project Sample	3/22/2001	<2	<2	<2	417	10.5	<2	1.49
MW-7	01-RT-088-GW	Project Sample	6/25/2001	<2	<2	<2	413	4.93	<2	<2

Appendix E

July 1997- December 2018 Groundwater Analytical Data (ug/L) for Benzene, PCE, and PCE Degradation Products

River Terrace RV Park, Soldotna, Alaska

Location	Sample ID	Sample Type	Date Sampled	Benzene MCL=5; ACL= NA	Vinyl chloride MCL=2; ACL=2	1,1-DCE MCL=7; ACL=7	cis-1,2-DCE MCL=70; ACL=11,600	trans-1,2-DCE MCL=10; ACL=11,600	TCE MCL=5; ACL=21,900	PCE MCL=5; ACL=840
MW-7	01-RT-123-GW	Project Sample	10/18/2001	<4 J	<4 J	<4 J	613 J	6.41 J	<4 J	<4 J
MW-7	01-RT-144-GW	Project Sample	1/16/2002	<10 J	<10 J	<10 J	440 J	8.66 J	<10 J	4.34 J
MW-7	01-RT-145-GW	QC Duplicate	1/16/2002	<10 J	<10 J	<10 J	441 J	7.28 J	<10 J	4.56 J
MW-7	01-RT-146-GW	QA Split	1/16/2002	---	<5 J,H	---	413 J,H	<5 J,H	<5 J,H	<5 J,H
MW-7	02-RT-011-GW	Project Sample	3/14/2002	<2	2.02	<2	644	6.35	<2	<2
MW-7	02-RT-053-GW	Project Sample	6/19/2002	<2 J	3.47 J	<2 J	1240 J	8.76 J	<2 J	<2 J
MW-7	02-RT-074-GW	Project Sample	9/26/2002	1.3	3.8	1.1	830	7.3	<1	<1
MW-7	02-RT-118-GW	QA Split	12/18/2002	---	3.6	---	807	8.1	1.7	<1
MW-7	02-RT-117-GW	Project Sample	12/18/2002	1.25	2.73	1.35	822	6.7	1.41	<1
MW-7	03-RT-019-GW	Project Sample	3/11/2003	2.06	6.33	1.4	1290	11.5	<1	<1
MW-7	03-RT-048-GW	QA Split	6/18/2003	---	<10	---	911	10.2	<10	<10
MW-7	03-RT-047-GW	QC Duplicate	6/18/2003	1.76	5.06	1.37	948	8.52	<1	<1
MW-7	03-RT-046-GW	Project Sample	6/18/2003	1.77	5.51	1.3	893	8.47	<1	<1
MW-7	03-RT-120-GW	Project Sample	10/9/2003	0.86	5.02	<1	972	5.83 J	<1	<1
MW-7	04-RT-037-GW	Project Sample	6/7/2004	2.61 VJ	108	1.1	1320	15.8	<1	<1
MW-7	04-RT-069-GW	Project Sample	10/23/2004	1.98	193	1.68	1140	10.7	1.03	<1
MW-7	05-RT-036-GW	Project Sample	6/2/2005	1.71	77.7	<1	367	6.74	<1	<1
MW-7	05-RT-057-GW	Project Sample	10/12/2005	1.77	76.7	<1	193	5.93	<1	<1
MW-7	06-RT-020-GW	Project Sample	5/25/2006	0.93	53.5	1.25	101	2.54	37	<1
MW-7	06-RT-028-GW	QC Duplicate	5/25/2006	0.99	62.8	1.36	99.3	2.66	36.7	<1
MW-7	06-RT-032-GW	Project Sample	9/11/2006	---	45	---	80.9	3.5	<1	<1
MW-7	07-RT-029-GW	Project Sample	9/19/2007	---	5.3	---	3.7	2	<1	<1
MW-7	08-RT-052-GW	Project Sample	9/19/2008	1.2	7.05	<1	10.1	3.03	<1	<1
MW-7	09-RT-086-GW	Project Sample	10/8/2009	1.23	3.87	<0.31	12.3	1.85	0.54	<0.31
MW-7	10-RT-105-GW	Project Sample	10/21/2010	1.3	9.22	<0.31	11.9	2.33	0.69	<0.31
MW-7	12-RT-029-GW	Project Sample	5/10/2012	0.84 VJ	8.51 VJ	<0.31	21.4 VJ	3.69 VJ	24.9 VJ	4.67
MW-7	18-RT-7-GW	Project Sample	12/12/2018	0.81	2.88	<0.5	11.1 B	3.31	5.36	16.9
MW-8	MW-8	Project Sample	8/2/1998	1.58	<1	<1	675	4.56	175	523
MW-8	MW-8	Project Sample	10/21/1998	3	<1	1	1900 D5,J,H	21	350 D5,J,H	960 D5,J,H
MW-8	MW-8	Project Sample	12/28/1998	2	<1	<1	1500 D	19	290 D	720 D
MW-8	MW-8	Project Sample	4/15/1999	1.05	<1	<1	1010	3.84	140	257
MW-8	99-RT-024-GW	Project Sample	7/10/1999	<2	<2	<2	850	6.4	210	330
MW-8	99-RT-062-GW	Project Sample	10/27/1999	0.6	<0.5	<0.5	650 J,H	3.7	76	150 J,H
MW-8	99-RT-105-GW	Project Sample	12/15/1999	<2	<2	<2	700	5.5	110	250
MW-8	00-RT-033-GW	Project Sample	3/25/2000	<1	<1	<1 J	870 J,H	16	130	270 J,H

Appendix E

July 1997- December 2018 Groundwater Analytical Data (ug/L) for Benzene, PCE, and PCE Degradation Products

River Terrace RV Park, Soldotna, Alaska

Location	Sample ID	Sample Type	Date Sampled	Benzene MCL=5; ACL= NA	Vinyl chloride MCL=2; ACL=2	1,1-DCE MCL=7; ACL=7	cis-1,2-DCE MCL=70; ACL=11,600	trans-1,2-DCE MCL=10; ACL=11,600	TCE MCL=5; ACL=21,900	PCE MCL=5; ACL=840
MW-8	00-RT-052-GW	Project Sample	6/7/2000	<10	<20	<10	970	<10	150	300
MW-8	00-RT-117-GW	Project Sample	9/28/2000	<1	<2	<1	940 VJ	6.5	170	230
MW-8	01-RT-014-GW	Project Sample	1/10/2001	1.7 J,H	3.7 H	1.8 J,H	1300	18 J	7.9 H	9.5 H
MW-8	01-RT-051-GW	Project Sample	3/22/2001	<2	<2	<2	772	25.7	<2	<2
MW-8	01-RT-084-GW	Project Sample	6/25/2001	<2	<2	<2	832	4.76	<2	2.39
MW-8	01-RT-124-GW	Project Sample	10/18/2001	<4 J	<4 J	<4 J	1290 J	8.76 J	20.2 J	<4 J
MW-8	01-RT-147-GW	Project Sample	1/16/2002	<2 J,H	1.71 J,H	<2 J,H	1150 J	5 J,H	32.2 J	8.45 J,H
MW-8	02-RT-003-GW	Project Sample	3/13/2002	<2	3.47	2.05	1500	12.6	62.9	17.4
MW-8	02-RT-054-GW	Project Sample	6/19/2002	<2 J	<2 J	<2 J	717 J	5.01 J	29.2 J	13.3 J
MW-8	02-RT-075-GW	Project Sample	9/26/2002	<1	1.3	<1	580	3.9	9.8	5.8
MW-8	02-RT-119-GW	Project Sample	12/18/2002	0.64	<1	<1	658	4.86	7.16	5.04
MW-8	03-RT-020-GW	Project Sample	3/11/2003	0.73	2.51	<1	746	4.56	1.78	1.25
MW-8	03-RT-045-GW	Project Sample	6/18/2003	<0.4	1.18	<1	338	2.86	<1	<1
MW-8	03-RT-117-GW	Project Sample	10/8/2003	<0.4	1.11	<1	259	1.75 J	<1	<1
MW-8	04-RT-038-GW	Project Sample	6/7/2004	0.74 VJ	<1	<1	196 VR	1.57	<1	<1
MW-8	04-RT-070-GW	Project Sample	10/23/2004	<0.4	<1	<1	208	1.38	<1	<1
MW-8	05-RT-013-GW	Project Sample	2/22/2005	<0.4	<1	<1	168	1.86	<1	<1
MW-8	05-RT-058-GW	Project Sample	10/12/2005	<0.4	<1	<1	209	1.63	<1	<1
MW-8	06-RT-021-GW	Project Sample	5/25/2006	<0.4	4.04	<1	327	2.8	<1	<1
MW-8	06-RT-046-GW	Project Sample	9/13/2006	<0.5	1.2	<0.5	140	1.3	1.2	2.6
MW-8	07-RT-030-GW	Project Sample	9/19/2007	---	1	---	94.9	<1	<1	3.2
MW-8	08-RT-053-GW	Project Sample	9/19/2008	<0.4	1.77	<1	100	1.25	1.31	1.75
MW-8	09-RT-087-GW	Project Sample	10/8/2009	<0.12	3.55	<0.31	94.3	1.04	1.87	2.56 VJ
MW-8	10-RT-106-GW	Project Sample	10/21/2010	<0.12	6.66	<0.31	88.4	0.99	1.86	0.86
MW-8	12-RT-030-GW	Project Sample	5/10/2012	<0.12	1.7 VJ	<0.31	16.1 VJ	0.33	0.79	<0.31
MW-9	MW-9	Project Sample	8/1/1998	3.31	1.72	<1	1080	15.6	148	199
MW-9	MW-9	Project Sample	10/20/1998	3	1	2	2000 D5,J,H	14	180	260 D5,J,H
MW-9	MW-9	Project Sample	12/28/1998	6	6	4	3600 D	39	520 D	680 D
MW-9	MW-9	Project Sample	4/15/1999	4.48	2.49	1.65	1270	9.1	199	910
MW-9	99-RT-020-GW	Project Sample	7/9/1999	4.2	3	<2	1500	11	220	690
MW-9	99-RT-060-GW	Project Sample	10/27/1999	4.1	2.6	1.6	1400 J,H	13	140 J,H	940 J,H
MW-9	99-RT-099-GW	Project Sample	12/14/1999	5.5	<2	<2	1300	12	290	1800
MW-9	00-RT-006-GW	Project Sample	3/24/2000	5.1	2.3 J	1.8	1600 J,H	17	250 J,H	1400 J,H
MW-9	00-RT-051-GW	Project Sample	6/7/2000	<10	<20	<10	1000	<10	230	1200
MW-9	00-RT-107-GW	Project Sample	9/27/2000	---	2.8	---	1140	7	345	2320

Appendix E

July 1997- December 2018 Groundwater Analytical Data (ug/L) for Benzene, PCE, and PCE Degradation Products

River Terrace RV Park, Soldotna, Alaska

Location	Sample ID	Sample Type	Date Sampled	Benzene MCL=5; ACL= NA	Vinyl chloride MCL=2; ACL=2	1,1-DCE MCL=7; ACL=7	cis-1,2-DCE MCL=70; ACL=11,600	trans-1,2-DCE MCL=10; ACL=11,600	TCE MCL=5; ACL=21,900	PCE MCL=5; ACL=840
MW-9	00-RT-133-GW	Project Sample	11/28/2000	---	<5	---	2900	25.9	150	113
MW-9	01-RT-004-GW	QC Duplicate	1/11/2001	---	<10	---	2130	15.2	92.1	90.6
MW-9	01-RT-010-GW	QA Split	1/11/2001	<50	<50	<50	1600	<50	<50	<50
MW-9	01-RT-003-GW	Project Sample	1/11/2001	---	<10	---	2260	15.6	99.1	95.3
MW-9	01-RT-033-GW	Project Sample	3/8/2001	---	<25	---	1570	<25	103	86.2
MW-9	01-RT-067-GW	QA Duplicate	5/22/2001	2.1	2.6	1.45	1260	8.19	5.02	22.6
MW-9	01-RT-068-GW	Project Sample	5/22/2001	---	<10	---	1580	13.5	<10	24.5
MW-9	01-RT-069-GW	QC Duplicate	5/22/2001	---	<10	---	1910	15.5	<10	29.9
MW-9	01-RT-091-GW	Project Sample	10/16/2001	---	<10	---	2050	<10	58.9	63.2
MW-9	01-RT-129-GW	Project Sample	1/15/2002	---	<10	---	2210	21.7	125	129
MW-9	02-RT-001-GW	Project Sample	3/13/2002	5.72	8.19	5.41	3280	20.8	326	588
MW-9	02-RT-041-GW	Project Sample	6/19/2002	3.54 J	9.51 J	3.24 J	2830 J	<200 J	<200 J	<200 J
MW-9	02-RT-062-GW	Project Sample	9/27/2002	3.3	7.1	2.7	2300	18	68	190
MW-9	02-RT-102-GW	Project Sample	12/18/2002	---	42.5	---	2670	30.2	7.9	21.9
MW-9	03-RT-001-GW	Project Sample	2/4/2003	---	30	---	3030	18.4 J	<20	17 J
MW-9	03-RT-007-GW	Project Sample	3/10/2003	---	66.2	---	3460	28.1	13.2	27.8
MW-9	03-RT-032a-GW	QA Split	3/12/2003	---	---	---	---	---	---	---
MW-9	03-RT-043-GW	QA Split	6/17/2003	---	---	---	---	---	---	---
MW-9	03-RT-036-GW	Project Sample	6/17/2003	---	171	---	2540	37.8	<20	40.8
MW-9	03RT-083-GW	Project Sample	9/19/2003	---	306	---	3150	38.3	<10	62.3
MW-9	03-RT-095-GW	Project Sample	10/8/2003	---	450	---	2980	28.3	<5	37.8
MW-9	04-RT-011-GW	QC Duplicate	1/21/2004	---	441	---	1460	30.5	<10	139
MW-9	04-RT-007-GW	Project Sample	1/21/2004	---	434	---	1460	34.8	4	160
MW-9	04-RT-018-GW	Project Sample	3/31/2004	---	413	---	2490	46.6	3.5	21.1
MW-9	04-RT-027-GW	Project Sample	6/8/2004	---	436	---	1260	24.8	<20	35.2
MW-9	04-RT-062-GW	QC Duplicate	10/29/2004	---	372	---	2070	38.6	10.3	15.9
MW-9	04-RT-054-GW	Project Sample	10/29/2004	---	358	---	1600	40.6	<1	4.7
MW-9	05-RT-008-GW	Project Sample	2/24/2005	---	176	---	844	<5	<5	<5
MW-9	05-RT-022-GW	Project Sample	6/2/2005	---	135	---	410	<1	<1	<1
MW-9	05-RT-025-GW	QC Duplicate	6/2/2005	---	140	---	361	<1	<1	<1
MW-9	05-RT-026-GW	QA Split	6/2/2005	3.18	103	<1	421	28.8 VJ	<1	<1
MW-9	05-RT-050-GW	Project Sample	10/11/2005	---	105	---	537 VM	18.9	<5	93.8
MW-9	05-RT-055-GW	QA Split	10/11/2005	2.54	113	<1	681	19.7	4.06	79.8
MW-9	06-RT-006-GW	QC Duplicate	3/8/2006	---	67.2	---	270	20.4	<1	<1
MW-9	06-RT-002-GW	Project Sample	3/8/2006	---	68.6	---	280	20	<1	<1
MW-9	06-RT-013-GW	Project Sample	5/25/2006	---	62.3	---	123	30.3	<1	<1

Appendix E

July 1997- December 2018 Groundwater Analytical Data (ug/L) for Benzene, PCE, and PCE Degradation Products

River Terrace RV Park, Soldotna, Alaska

Location	Sample ID	Sample Type	Date Sampled	Benzene MCL=5; ACL= NA	Vinyl chloride MCL=2; ACL=2	1,1-DCE MCL=7; ACL=7	cis-1,2-DCE MCL=70; ACL=11,600	trans-1,2-DCE MCL=10; ACL=11,600	TCE MCL=5; ACL=21,900	PCE MCL=5; ACL=840
MW-9	06-RT-034-GW	Project Sample	9/11/2006	---	98.3	---	594	15.8	<5	<5
MW-9	07-RT-005-GW	Project Sample	5/30/2007	---	152	---	544	35.2	34.4	33
MW-9	07-RT-012-GW	QA Split	5/30/2007	3.38	97.9 VJ	<1	476 VH	23.7 VJ	33.7	38.5
MW-9	07-RT-011-GW	QC Duplicate	5/30/2007	---	147	---	492	29.9	32.4	30.2
MW-9	07-RT-043-GW	QA Split	9/19/2007	0.73	88.4 VM	0.54	397 VM	11.9 VJ	8.23	5.29 VJ
MW-9	07-RT-041-GW	QC Duplicate	9/19/2007	---	108	---	529	21.2	9.2	8.3 VJ
MW-9	07-RT-032-GW	Project Sample	9/19/2007	---	85.5	---	536	16.7	<10	<10
MW-9	08-RT-015-GW	QA Split	5/12/2008	1.59	106	0.46	520	20.9	33.1	29.6
MW-9	08-RT-014-GW	QC Duplicate	5/12/2008	---	80.4	---	453	17	26.6	24.7
MW-9	08-RT-005-GW	Project Sample	5/12/2008	---	84.2	---	408	18	27.3	24.4
MW-9	08-RT-031-GW	Project Sample	9/16/2008	1.9	95	0.48	431	11.7	34.3 VM	39.1
MW-9	09-RT-007-GW	Project Sample	5/6/2009	2.52	47.1	0.48	240	15.7	16.7	13.8
MW-9	09-RT-013-GW	QC Duplicate	5/6/2009	---	---	---	---	---	---	---
MW-9	09-RT-018-GW	QC Duplicate	5/6/2009	2.36	44.7	<1	259	14.6	15.2	15.2
MW-9	09-RT-014-GW	QA Split	5/6/2009	---	49.3	---	224	14.8	17	14.7
MW-9	09-RT-097-GW	QC Duplicate	10/5/2009	2.19	38.2	<0.31	207	12.7	0.83	1.68 VJ
MW-9	09-RT-076-GW	QA Split	10/5/2009	---	25.4 VJ	---	149 VJ	9.3 VJ	<5	<5
MW-9	09-RT-066-GW	Project Sample	10/5/2009	2.07	38.7	<0.31	194	12.6	0.89	1.49 VJ
MW-9	09-RT-075-GW	QC Duplicate	10/5/2009	---	---	---	---	---	---	---
MW-9	10-RT-058-GW	QA Split	5/11/2010	---	37.6 VJ	---	173	15.1	<1	1.2
MW-9	10-RT-066-GW	QC Duplicate	5/11/2010	2.11	52.7 VJ	<0.31	256	15.2	4.11 VR	29.6 VR
MW-9	10-RT-041-GW	Project Sample	5/11/2010	2.08	56.8 VJ	<0.31	202	15	0.68	1.12
MW-9	10-RT-098-GW	QC Duplicate	10/20/2010	---	---	---	---	---	---	---
MW-9	10-RT-085-GW	Project Sample	10/20/2010	1.07	38.5	0.45	332	6.71	12.9	28.8
MW-9	12-RT-018-GW	QC Duplicate	5/8/2012	1.58	18.7	<0.31	24.3	10.5	1	1.72
MW-9	12-RT-005-GW	Project Sample	5/8/2012	1.61	19.2	<0.31	19.7	10.1	0.72	0.91
MW-9	13-RT-019-GW	Project Sample	4/9/2013	1.32	4.16	<0.62	17.2	6.25	<0.62	1.84
MW-9	14-RT-005-GW	Project Sample	4/23/2014	2.53	2.05	<0.5	7.47	8.52	<0.5	2.96
MW-9	16-RT-007-GW	Project Sample	10/27/2016	1.31	10.7	<0.31	68.5	6.36	<0.31	2.72
MW-9	18-RT-9-GW	Project Sample	12/13/2018	1.65	2.11	<0.5	9.03 B	6.53	0.53	15
MW-10	MW-10D	QC Duplicate	8/2/1998	1.31	<1	<1	356	<1	95	958
MW-10	MW-10	Project Sample	8/2/1998	1.19	<1	<1	275	<1	64	587
MW-10	MW-10	Project Sample	10/21/1998	<1	<1	<1	510 D5,J,H	9	110	1200 D5,J,H
MW-10	MW-10	Project Sample	12/28/1998	<1	<1	<1	510 D	4	69	410 D
MW-10	MW-10	Project Sample	4/15/1999	<1	<1	<1	209	<1	21.3	18.2

Appendix E

July 1997- December 2018 Groundwater Analytical Data (ug/L) for Benzene, PCE, and PCE Degradation Products

River Terrace RV Park, Soldotna, Alaska

Location	Sample ID	Sample Type	Date Sampled	Benzene MCL=5; ACL= NA	Vinyl chloride MCL=2; ACL=2	1,1-DCE MCL=7; ACL=7	cis-1,2-DCE MCL=70; ACL=11,600	trans-1,2-DCE MCL=10; ACL=11,600	TCE MCL=5; ACL=21,900	PCE MCL=5; ACL=840
MW-10	99-RT-022-GW	Project Sample	7/9/1999	1.3	0.7	<1	440	9.6	98	620
MW-10	99-RT-044-GW	Project Sample	10/26/1999	1	<0.5	<0.5	490	2.3	64	370
MW-10	99-RT-108-GW	Project Sample	12/15/1999	<2	<2	<2	470	3.4	85	970
MW-10	00-RT-032-GW	Project Sample	3/25/2000	1	<1	<1 J	590 J,H	22	88	420 J,H
MW-10	00-RT-053-GW	Project Sample	6/7/2000	<10	<20	<10	460	<10	82	610 J
MW-10	00-RT-118-GW	Project Sample	9/28/2000	1.1	<2	<1	460 VJ	<1	86	690
MW-10	01-RT-013-GW	Project Sample	1/10/2001	1.6 J,H	<2 H	1.3 J,H	780	4.9 H	24 H	31
MW-10	01-RT-050-GW	QA Split	3/7/2001	---	<10	---	1740	<10	13.9	<10
MW-10	01-RT-049-GW	QC Duplicate	3/22/2001	<2	<2	<2	974	25.3	21	12.5
MW-10	01-RT-048-GW	Project Sample	3/22/2001	<2	<2	<2	1020	40.3	26.2	21.5
MW-10	01-RT-050-GW	QA Split	3/22/2001	---	<10	---	816	<10	20.1	12.2
MW-10	01-RT-081-GW	Project Sample	6/25/2001	<2	---	<2	801	2.46	11.7	17.6
MW-10	01-RT-100-GW	Project Sample	10/16/2001	---	<10	---	954	<10	116	95.5
MW-10	01-RT-142-GW	QA Split	1/15/2002	1.5 J,H	2.22 J,H	1.16 J,H	858 J	<2 J,H	123 J	160 J
MW-10	01-RT-141-GW	QC Duplicate	1/15/2002	---	<10	---	1110	<10	187	172
MW-10	01-RT-140-GW	Project Sample	1/15/2002	---	<10	---	986	<10	135	144
MW-10	02-RT-010-GW	Project Sample	3/13/2002	2.71	3.47	<2	994	5.89	127	180
MW-10	02-RT-051-GW	Project Sample	6/19/2002	<2 J	<2 J	<2 J	724 J	3.11 J	58.1 J	34.7 J
MW-10	02-RT-076-GW	Project Sample	9/26/2002	<1	<1	<1	330	1.2	15	20
MW-10	02-RT-120-GW	Project Sample	12/19/2002	<0.4	<1	<1	363	1.57	1.25	1.69
MW-10	03-RT-021-GW	Project Sample	3/11/2003	0.4	1.69	<1	489	2	<1	<1
MW-10	03-RT-044-GW	Project Sample	6/18/2003	0.54	1.9	<1	443	1.79	<1	1
MW-10	03-RT-118-GW	Project Sample	10/8/2003	<0.4	<1	<1	115	<1	1.74	9.42
MW-10	03-RT-119-GW	QC Duplicate	10/8/2003	<0.4	<1	<1	181	<1	1.54	7.72
MW-10	04-RT-005-GW	Project Sample	1/20/2004	---	3.3	---	820	15.1	2.2	1.6
MW-10	04-RT-016-GW	Project Sample	3/30/2004	---	1.3	---	286	<1	1.9	2.4
MW-10	04-RT-039-GW	Project Sample	6/8/2004	---	1	---	258	1.1	<1	<1
MW-10	04-RT-050-GW	Project Sample	10/29/2004	---	<5	---	258	<5	<5	<5
MW-10	05-RT-004-GW	Project Sample	2/24/2005	---	<5	---	269	<5	<5	<5
MW-10	05-RT-033-GW	Project Sample	6/2/2005	<0.4	1.59	<1	359	<1	<1	<1
MW-10	05-RT-047-GW	Project Sample	10/11/2005	---	<1	---	159 VM	<1	<1	<1
MW-10	06-RT-010-GW	Project Sample	5/25/2006	---	1.8	---	339	1.2	<1	<1
MW-10	06-RT-043-GW	Project Sample	9/13/2006	<0.5	<0.5	<0.5	11	<0.5	2.6	9.9
MW-10	07-RT-037-GW	Project Sample	9/18/2007	---	<1	---	19.5	<1	<1	8.2
MW-10	08-RT-054-GW	Project Sample	9/19/2008	<0.4	<1	<1	1.18	<1	<1	10.5
MW-10	09-RT-088-GW	Project Sample	10/7/2009	<0.12	<0.31	<0.31	1.67	<0.31	0.36	7.2

Appendix E

July 1997- December 2018 Groundwater Analytical Data (ug/L) for Benzene, PCE, and PCE Degradation Products

River Terrace RV Park, Soldotna, Alaska

Location	Sample ID	Sample Type	Date Sampled	Benzene MCL=5; ACL= NA	Vinyl chloride MCL=2; ACL=2	1,1-DCE MCL=7; ACL=7	cis-1,2-DCE MCL=70; ACL=11,600	trans-1,2-DCE MCL=10; ACL=11,600	TCE MCL=5; ACL=21,900	PCE MCL=5; ACL=840
MW-10	10-RT-107-GW	Project Sample	10/21/2010	<0.12	<0.31	<0.31	10.1	<0.31	0.85	6.69
MW-10	12-RT-031-GW	Project Sample	5/10/2012	<0.12	<0.31	<0.31	3.81 VJ	<0.31	0.42	9.23
MW-11	MW-11	Project Sample	12/29/1998	<1	<1	<1	<1	<1	<1	1
MW-11	MW-11	Project Sample	4/15/1999	<1	<1	<1	<1	<1	<1	23.7
MW-11	99-RT-005-GW	Project Sample	7/7/1999	<0.5	<0.5	<0.5	0.7	<0.5	1.4	26
MW-11	99-RT-042-GW	Project Sample	10/26/1999	<0.5	<0.5	<0.5	<0.5	<0.5	1.9	46
MW-11	99-RT-092-GW	Project Sample	12/14/1999	<1	<1	<1	<1	<1	<1	34
MW-11	00-RT-005-GW	Project Sample	3/24/2000	<1	<1 J	<1	<1	<1	2.8	44
MW-11	00-RT-058-GW	Project Sample	6/8/2000	<1	<2	<1	<1	<1	5	48
MW-11	01-RT-112-GW	Project Sample	10/18/2001	<0.7 J	<1 J	<1 J	<1 J	<1 J	3.05 J	34.6 J
MW-11	02-RT-077-GW	Project Sample	9/26/2002	<1	<1	<1	16	<1	4.6	46
MW-11	04-RT-071-GW	Project Sample	10/23/2004	<0.4	<1	<1	31.7	<1	24	110
MW-12	MW-12	Project Sample	10/29/1998	<50	<100	<50	1500	<50	170	100
MW-12	MW-12	Project Sample	12/28/1998	<1	<1	<1	1100 D	9	89	110
MW-12	MW-12	Project Sample	4/15/1999	<1	<1	<1	575	1.92	99.2	78.9
MW-12	99-RT-025-GW	Project Sample	7/10/1999	<2	<2	<2	770	7.5	180	140
MW-12	99-RT-047-GW	Project Sample	10/26/1999	0.5	<0.5	<0.5	850	8.4	120	110
MW-12	99-RT-107-GW	Project Sample	12/15/1999	<2	<2	<2	460	3.6	79	98
MW-12	00-RT-034-GW	Project Sample	3/25/2000	<1	<1	<1 J	980 J,H	24	130	80
MW-12	00-RT-056-GW	Project Sample	6/8/2000	<10	<20	<10	480	<10	83	100 J
MW-12	00-RT-116-GW	QC Duplicate	9/28/2000	<1	<2	<1	780 VJ	<1	120	93
MW-12	00-RT-128-GW	QA Split	9/28/2000	<1	<1	<1	692	3.78	96.8 VJ	64.3 VJ
MW-12	00-RT-115-GW	Project Sample	9/28/2000	<1	<2	<1	750 VJ	<1	140	95
MW-12	01-RT-122-GW	QA Split	10/18/2001	---	<10	---	442	<10	<10	<10
MW-12	01-RT-121-GW	QC Duplicate	10/18/2001	<4 J	<4 J	<4 J	531 J	<4 J	<4 J	<4 J
MW-12	01-RT-120-GW	Project Sample	10/18/2001	<4 J	<4 J	<4 J	489 J	<4 J	<4 J	<4 J
MW-12	01-RT-143-GW	Project Sample	1/16/2002	<2 J	<2 J	<2 J	95 J	0.78 J	4.32 J	5.26 J
MW-12	02-RT-007-GW	Project Sample	3/13/2002	<1	<1	<1	71.4	<1	3.91	5.95
MW-12	02-RT-052-GW	Project Sample	6/19/2002	<2 J	<2 J	<2 J	298 J	<2 J	<2 J	<2 J
MW-12	02-RT-078-GW	Project Sample	9/26/2002	<1	<1	<1	550	2.3	2.3	<1
MW-12	02-RT-122-GW	QA Split	12/18/2002	---	<1	---	197	1.9	5.4	<1
MW-12	02-RT-121-GW	Project Sample	12/19/2002	<0.4	<1	<1	244	1.71	4.48	<1
MW-12	03-RT-022-GW	Project Sample	3/11/2003	<0.4	<1	<1	217	1.74	3.8	<1
MW-12	03-RT-049-GW	Project Sample	6/18/2003	<0.4	<1	<1	273 H	1.42	<1	<1

Appendix E
July 1997- December 2018 Groundwater Analytical Data (ug/L) for Benzene, PCE, and PCE Degradation Products
River Terrace RV Park, Soldotna, Alaska

Location	Sample ID	Sample Type	Date Sampled	Benzene MCL=5; ACL= NA	Vinyl chloride MCL=2; ACL=2	1,1-DCE MCL=7; ACL=7	cis-1,2-DCE MCL=70; ACL=11,600	trans-1,2-DCE MCL=10; ACL=11,600	TCE MCL=5; ACL=21,900	PCE MCL=5; ACL=840
MW-12	03-RT-110-GW	Project Sample	10/8/2003	<0.4	<1	<1	248	<1	5.2	<4
MW-12	04-RT-032-GW	Project Sample	6/8/2004	<0.4	<1	<1	189	1.17	<1	<1
MW-12	04-RT-072-GW	Project Sample	10/23/2004	<0.4	<1	<1	246	1.53	1.7	<1
MW-12	05-RT-014-GW	Project Sample	2/22/2005	<0.4	<1	<1	220	1.96	<1	<1
MW-12	05-RT-059-GW	Project Sample	10/12/2005	<0.4	<1	<1	262	1.96	2.81	<1
MW-12	07-RT-038-GW	Project Sample	9/19/2007	---	<1	---	<1	<1	<1	5.2
MW-12	08-RT-055-GW	Project Sample	9/19/2008	<0.4	<1	<1	2.7	<1	<1	4.19
MW-12	09-RT-089-GW	Project Sample	10/7/2009	<0.12	<0.31	<0.31	82.4	<0.31	3.65 VJ	3 VJ
MW-12	10-RT-108-GW	Project Sample	10/21/2010	<0.12	2.01	<0.31	84	0.9	3.23	2.95
MW-12	12-RT-032-GW	Project Sample	5/10/2012	<0.12	0.56	<0.31	18.6 VJ	<0.31	1.31 VJ	4.16
MW-12	13-RT-008-GW	Project Sample	4/9/2013	<0.24	3.09	<0.62	54.2	<0.62	1.99	1.62
MW-12	14-RT-026-GW	Project Sample	4/24/2014	<0.2	1.72	<0.5	28.2	0.36	1.91	2.17
MW-12	18-RT-12-GW	Project Sample	12/12/2018	<0.2	0.24	<0.5	14.4 B	<0.5	1.55	1.46
MW-13	MW-13	Project Sample	10/29/1998	<1	<2	<1	<1	<1	1.2	2.1
MW-13	MW-13	Project Sample	12/29/1998	<1	<1	<1	<1	<1	<1	18
MW-13	MW-13	Project Sample	4/15/1999	<1	<1	<1	8.63	<1	1.98	50.8
MW-13	99-RT-008-GW	Project Sample	7/8/1999	<1	<1	<1	13	<1	1.9	66
MW-13	99-RT-049-GW	Project Sample	10/26/1999	<0.5	<0.5	<0.5	44	<0.5	5.9	77
MW-13	99-RT-106-GW	Project Sample	12/15/1999	<1	<1	<1	14	<1	3.9	90
MW-13	00-RT-014-GW	Project Sample	3/24/2000	<1	<1	<1 J	86	4.4	13	140
MW-13	00-RT-057-GW	Project Sample	6/8/2000	<10	<20	<10	74	<10	12	130 J
MW-13	01-RT-012-GW	Project Sample	1/11/2001	<2	<2	<2	83	<2	18	120
MW-13	01-RT-046-GW	Project Sample	3/22/2001	<1	<1	<1	44.9	<1	7.61	54.7
MW-13	01-RT-083-GW	Project Sample	6/25/2001	<2	<2	<2	39.9	<2	6.05	63.2
MW-13	01-RT-125-GW	Project Sample	10/17/2001	<1.4 J	<2 J	<2 J	57 J	<2 J	10.4 J	77.3 J
MW-13	01-RT-148-GW	Project Sample	1/17/2002	<1 J	<1 J	<1 J	26.1 J	<1 J	6.29 J	46.9 J
MW-13	02-RT-008-GW	Project Sample	3/13/2002	<1	<1	<1	52.5	<1	10.5	74.1
MW-13	02-RT-055-GW	Project Sample	6/19/2002	<1 J	<1 J	<1 J	46.1 J	<1 J	9.2 J	40.4 J
MW-13	02-RT-079-GW	Project Sample	9/26/2002	<1	<1	<1	24	<1	5.2	34
MW-13	02-RT-123-GW	Project Sample	12/19/2002	<0.4	<1	<1	42.9	<1	6.83	39.6
MW-13	03-RT-023-GW	Project Sample	3/11/2003	<0.4	<1	<1	28	<1	4.82	30.7
MW-13	03-RT-050-GW	Project Sample	6/19/2003	<0.4	<1	<1	12.8	<1	3.84	22.4
MW-13	03-RT-109-GW	Project Sample	10/8/2003	<0.4	<1	<1	20.3	<1	4.79	37.1
MW-13	04-RT-040-GW	Project Sample	6/8/2004	<0.4	<1	<1	16.4	<1	3.74	26.8
MW-13	04-RT-073-GW	Project Sample	10/23/2004	<0.4	<1	<1	15.7	<1	4.38	20.5

Appendix E

July 1997- December 2018 Groundwater Analytical Data (ug/L) for Benzene, PCE, and PCE Degradation Products

River Terrace RV Park, Soldotna, Alaska

Location	Sample ID	Sample Type	Date Sampled	Benzene MCL=5; ACL= NA	Vinyl chloride MCL=2; ACL=2	1,1-DCE MCL=7; ACL=7	cis-1,2-DCE MCL=70; ACL=11,600	trans-1,2-DCE MCL=10; ACL=11,600	TCE MCL=5; ACL=21,900	PCE MCL=5; ACL=840
MW-13	05-RT-015-GW	Project Sample	2/22/2005	<0.4	<1	<1	20.7	<1	4.47	22.2
MW-14	MW-14	Project Sample	10/29/1998	<2	<4	<2	13	<2	13	88
MW-14	MW-14duplicate	QC Duplicate	10/29/1998	<2	<4	<2	13	<2	13	87
MW-14	MW-14	Project Sample	12/29/1998	<1	<1	<1	2	<1	2	21
MW-14	MW-14	Project Sample	4/16/1999	<1	<1	<1	1.05	<1	1.23	12.3
MW-14	99-RT-003-GW	Project Sample	7/7/1999	<1	<1	<1	9.2	<1	7.1	50
MW-14	99-RT-064-GW	Project Sample	10/28/1999	<0.5	<0.5	<0.5	5.6	<0.5	5.4	48
MW-14	99-RT-095-GW	Project Sample	12/14/1999	<1	<1	<1	2.6	<1	2.2	29
MW-14	00-RT-010-GW	Project Sample	3/24/2000	<1	<1	<1 J	1.2	<1	1	12
MW-14	00-RT-064-GW	Project Sample	6/9/2000	<1	<2	<1	1.1	<1	1.6	19
MW-14	00-RT-065-GW	QC Duplicate	6/9/2000	<1	<2	<1	1.9	<1	1.6	20
MW-14	00-RT-066-GW	QA Duplicate	6/9/2000	<0.5	<0.5	<0.5	2.8	<0.5	2.4	24
MW-14	00-RT-124-GW	Project Sample	9/29/2000	<1	<2	<1	<1	<1	1.5	19
MW-14	01-RT-024-GW	Project Sample	1/10/2001	<2	<2	<2	2 VJ	<2	<2	21
MW-14	01-RT-040-GW	Project Sample	3/22/2001	<1	<1	<1	1.75	<1	2.32	23.1
MW-14	01-RT-079-GW	Project Sample	6/25/2001	<1	<1	<1	1.92	<1	1.63	17.7
MW-14	01-RT-108-GW	Project Sample	10/17/2001	<0.7 J	<1 J	<1 J	<1 J	<1 J	<1 J	<1 J
MW-14	02-RT-091-GW	Project Sample	9/27/2002	<1	<1	<1	5.1	<1	2.8	21
MW-14	03-RT-101-GW	Project Sample	10/7/2003	<0.4	<1	<1	2.23	<1	<1	9.44
MW-15	99-RT-002-GW	Project Sample	7/7/1999	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW-15	99-RT-039-GW	Project Sample	10/26/1999	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW-15	00-RT-008-GW	Project Sample	3/24/2000	<1	<1 J	<1	<1	<1	<1	<1
MW-16	99-RT-001-GW	Project Sample	7/7/1999	<25	<25	<25	<25	<25	36	1000
MW-16	99-RT-031-GW	Project Sample	9/2/1999	<20	<20	<20	24	<20	92	5500
MW-16	99-RT-054-GW	QC Duplicate	10/27/1999	0.6	<0.5	<0.5	9.5	0.7	35	2200
MW-16	99-RT-053-GW	Project Sample	10/27/1999	0.7	<0.5	<0.5	9.3	0.7	37	2500
MW-16	99-RT-093-GW	Project Sample	12/14/1999	<1	<1	<1	11	<1	53	2400
MW-16	99-RT-094-GW	QC Duplicate	12/14/1999	<1	<1	<1	11	<1	49	2700
MW-16	00-RT-012-GW	Project Sample	3/24/2000	1.2	<1 J	<1	41	1.5	99	3400 J,H
MW-16	00-RT-040-GW	Project Sample	6/7/2000	<1	<2	<1	8.5	<1	37	1300
MW-16	00-RT-101-GW	Project Sample	9/27/2000	---	<1	---	17.6	<1	73.7	2450
MW-16	00-RT-136-GW	Project Sample	11/28/2000	---	<5	---	113	<5	968	3110
MW-16	01-RT-008-GW	Project Sample	1/11/2001	---	<10	---	578	10.8	889	60.7

Appendix E

July 1997- December 2018 Groundwater Analytical Data (ug/L) for Benzene, PCE, and PCE Degradation Products

River Terrace RV Park, Soldotna, Alaska

Location	Sample ID	Sample Type	Date Sampled	Benzene MCL=5; ACL= NA	Vinyl chloride MCL=2; ACL=2	1,1-DCE MCL=7; ACL=7	cis-1,2-DCE MCL=70; ACL=11,600	trans-1,2-DCE MCL=10; ACL=11,600	TCE MCL=5; ACL=21,900	PCE MCL=5; ACL=840
MW-16	01-RT-037-GW	Project Sample	3/8/2001	---	<5	---	1210	10.2	46	17.8
MW-16	01-RT-071-GW	Project Sample	5/22/2001	---	<10	---	2700	31.7	121	25.2
MW-16	01-RT-095-GW	Project Sample	10/16/2001	---	<5 J,H	---	476 J,H	<5 J,H	6 J,H	<5 J,H
MW-16	01-RT-135-GW	Project Sample	1/16/2002	---	<2 J,H	---	306 J,H	2.2 J,H	<2 J,H	3.9 J,H
MW-16	02-RT-014-GW	Project Sample	3/13/2002	<2	<2	<2	383	2.78	2.58	2.48
MW-16	02-RT-044-GW	Project Sample	6/18/2002	<2 J	<2 J	2.87 J	2410 J	15.7 J	25.3 J	12.8 J
MW-16	02-RT-067-GW	Project Sample	9/27/2002	1.2	1.1	1.6	1200	7	8.2	8.2
MW-16	02-RT-109-GW	Project Sample	12/19/2002	0.83	<1	1.22	864	<1	28.2	17.1
MW-16	03-RT-011-GW	Project Sample	3/10/2003	---	<10	---	681	<10	21.7	16.1
MW-16	03-RT-041-GW	Project Sample	6/18/2003	---	<10	---	635	<10	<10	<10
MW-16	03RT-078-GW	Project Sample	9/18/2003	---	<5	---	352	<5	<5	<5
MW-16	04-RT-002-GW	Project Sample	1/21/2004	---	1	---	380	3.7	1.3	2
MW-16	04-RT-013-GW	Project Sample	3/31/2004	---	1.9	---	557	5.6	<1	2.2
MW-16	04-RT-024-GW	Project Sample	6/8/2004	---	<5	---	844	5.6	<5	<5
MW-16	04-RT-064-GW	QA Split	10/30/2004	1.06	2.11	<1	1080	5.17	5.36	16.5
MW-16	04-RT-048-GW	Project Sample	10/30/2004	---	2.9	---	1040	7.9	<1	2.4
MW-16	05-RT-028-GW	Project Sample	6/3/2005	0.86	<2	<2	920	4.28	<2	<2
MW-16	05-RT-045-GW	Project Sample	10/12/2005	---	1.7	---	509 VM	4.1	1.6	1
MW-16	06-RT-008-GW	Project Sample	5/24/2006	---	36.6	---	115	5.5	<1	<1
MW-16	06-RT-030-GW	Project Sample	9/12/2006	---	22.8	---	271	<5	<5	30.6
MW-16	07-RT-002-GW	Project Sample	5/29/2007	---	78.9	---	422	5.8	8	9.8
MW-16	07-RT-022-GW	Project Sample	9/20/2007	---	37.8 VH	---	158 VH	2.6 VH	9.8 VH	12.6 VH
MW-16	08-RT-002-GW	Project Sample	5/13/2008	---	11.2	---	58.8	1.4	7.6	14.5
MW-16	08-RT-065-GW	QC Duplicate	9/19/2008	0.41	20.3	<1	58.7	1.84	4.59	5.19
MW-16	08-RT-043-GW	Project Sample	9/19/2008	0.31	21.7 VJ	<1	61.5	1.91	3.74	4.36
MW-16	09-RT-002-GW	Project Sample	5/5/2009	1.04	16.7	<1	35.9	3.15	1.92	1.04
MW-16	09-RT-079-GW	Project Sample	10/8/2009	0.68	7.62	<0.31	22.6	1.54	7.52 VB	2.35
MW-16	10-RT-050-GW	Project Sample	5/14/2010	0.59	6.1 VJ	<0.31	960	1.26	13.3	10.1
MW-16	10-RT-081-GW	Project Sample	10/21/2010	1	10.7	<0.31	18.6	2.13	11.5	9.99
MW-16	10-RT-099-GW	QA Split	10/21/2010	---	8.1	---	18.7	2.2	12.2	9.7
MW-16	12-RT-002-GW	Project Sample	5/9/2012	<0.12 VH	3.73 VH	<0.31 VH	13.8 VH	0.42 VH	7.76 VH	30.4 VH
MW-16	13-RT-034-GW	QC Duplicate	4/11/2013	0.86	31.7	<0.62	153 VJM	3.67	13.4	48
MW-16	13-RT-015-GW	Project Sample	4/11/2013	0.88	35.3	<0.62	297 VJM	3.93	13.4	47.7
MW-16	14-RT-002-GW	Project Sample	4/22/2014	0.35	8.03	<0.5	26.5	0.83	5.02	6.61
MW-16	16-RT-003-GW	Project Sample	10/27/2016	0.47	<0.31	<0.31	13.6	1.67	2.21	1.07
MW-16	18-RT-16-GW	Project Sample	12/12/2018	0.3	5.12	<0.5	7.45 B	1.62	2.97	3.78

Appendix E

July 1997- December 2018 Groundwater Analytical Data (ug/L) for Benzene, PCE, and PCE Degradation Products

River Terrace RV Park, Soldotna, Alaska

Location	Sample ID	Sample Type	Date Sampled	Benzene MCL=5; ACL= NA	Vinyl chloride MCL=2; ACL=2	1,1-DCE MCL=7; ACL=7	cis-1,2-DCE MCL=70; ACL=11,600	trans-1,2-DCE MCL=10; ACL=11,600	TCE MCL=5; ACL=21,900	PCE MCL=5; ACL=840
MW-17	99-RT-026-GW	Project Sample	7/10/1999	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW-17	99-RT-052-GW	Project Sample	10/27/1999	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW-17	00-RT-009-GW	Project Sample	3/24/2000	<1	<1 J	<1	<1	<1	<1	<1
MW-18	99-RT-027-GW	Project Sample	7/10/1999	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW-18	99-RT-048-GW	Project Sample	10/26/1999	<0.5	<0.5	<0.5	<0.5 J,H	<0.5	<0.5	<0.5
MW-18	00-RT-031-GW	Project Sample	3/25/2000	<1	<1	<1 J	<1	<1	<1	<1
MW-18	03-RT-105-GW	Project Sample	10/8/2003	<0.4	<1	<1	<1	<1	<0.1	<1
MW-19	99-RT-019-GW	Project Sample	7/9/1999	<2	<2	<2	1200	8.9	210	57
MW-19	99-RT-043-GW	Project Sample	10/26/1999	0.8	0.8	<0.5	650 J,H	7	100 J,H	54
MW-19	99-RT-098-GW	Project Sample	12/14/1999	<2	<2	<2	530	4.8	73	120
MW-19	00-RT-043-GW	Project Sample	6/7/2000	<1	<2	<1	390	2.6	84	49
MW-19	01-RT-113-GW	Project Sample	10/18/2001	<2.8 J	<4 J	<4 J	633 J	6.13 J	<4 J	<4 J
MW-19	02-RT-080-GW	Project Sample	9/26/2002	2	2.7	<1	550	8.6	16	24
MW-19	03-RT-114-GW	Project Sample	10/8/2003	0.84	2.06	<1	419	5.23	<50	83.5
MW-19	04-RT-074-GW	Project Sample	10/23/2004	0.9	1.23	<1	281	3.18	2.62	1.19
MW-19	04-RT-089-GW	QC Duplicate	10/23/2004	0.91	<1	<1	256	3.17	2.55	1.1
MW-19	05-RT-060-GW	Project Sample	10/12/2005	1.4	1.13	<1	326	3.73	<1	1.37
MW-19	05-RT-071-GW	QC Duplicate	10/12/2005	1.45	1.3	<1	310	3.54	<1	1.25
MW-19	06-RT-048-GW	Project Sample	9/13/2006	1.1	1.5	<0.5	240	4.1	8.9	2.6
MW-19	08-RT-056-GW	Project Sample	9/18/2008	1.83	2.17 VJ	<1	179	4.13	1.32	20.5
MW-19	10-RT-111-GW	Project Sample	10/21/2010	0.38	1.01	<0.31	92	1.39	11.8	33.8
MW-20	99-RT-010-GW	Project Sample	7/8/1999	<50	7.6 J,H	<50	3400	<50	680	700
MW-20	99-RT-012-GW	QA Duplicate	7/8/1999	<100	<200	<100	4600	<100	860	750
MW-20	99-RT-011-GW	QC Duplicate	7/8/1999	<50	<50	<50	3400	<50	710	630
MW-20	99-RT-061-GW	Project Sample	10/27/1999	3.4	3.3	2.4	2800 J,H	33	500 J,H	700 J,H
MW-20	99-RT-097-GW	QC Duplicate	12/14/1999	2.4	<2	<2	2300	25	400	670
MW-20	99-RT-096-GW	Project Sample	12/14/1999	2.3	<2	<2	2300	26	400	660
MW-20	00-RT-003-GW	Project Sample	3/24/2000	3.4	4.1	2.9 J	3800	64	700	640
MW-20	00-RT-044-GW	Project Sample	6/7/2000	3.9	4.5	2.6	3000	26	540	420
MW-20	00-RT-110-GW	Project Sample	9/27/2000	3.2	<2	<1	3100 VJ	30	370	200
MW-20	01-RT-015-GW	Project Sample	1/11/2001	2.6 H	7.3 H	3.4 H	2600	35 H	7 H	6 H
MW-20	01-RT-052-GW	Project Sample	3/22/2001	1.72	<2	<2	2270	69.8	3.44	3.57

Appendix E

July 1997- December 2018 Groundwater Analytical Data (ug/L) for Benzene, PCE, and PCE Degradation Products

River Terrace RV Park, Soldotna, Alaska

Location	Sample ID	Sample Type	Date Sampled	Benzene MCL=5; ACL= NA	Vinyl chloride MCL=2; ACL=2	1,1-DCE MCL=7; ACL=7	cis-1,2-DCE MCL=70; ACL=11,600	trans-1,2-DCE MCL=10; ACL=11,600	TCE MCL=5; ACL=21,900	PCE MCL=5; ACL=840
MW-20	01-RT-053-GW	QC Duplicate	3/22/2001	1.75	<2	<2	2630	43.5	2.69	2.66
MW-20	01-RT-054-GW	QA Split	3/22/2001	---	<10	---	2290	23.4	<10	<10
MW-20	01-RT-086-GW	QC Duplicate	6/25/2001	<2	5.09	2.53	2380	21.4	2.38	3.25
MW-20	01-RT-085-GW	Project Sample	6/25/2001	<2	5.3	2.36	2090	20.7	2.28	3.24
MW-20	01-RT-087-GW	QA Split	6/25/2001	1.83	4.57	2.31	2490	25.1	2.33	2.99
MW-20	01-RT-126-GW	Project Sample	10/18/2001	55.5 J,H	5.87 J,H	<10 J,H	2870 J	<10 J,H	<10 J,H	<10 J,H
MW-20	01-RT-149-GW	Project Sample	1/16/2002	0.836 J,H	1.32 J,H	<2 J,H	886 J	11.8 J	1.67 J,H	1.9 J,H
MW-20	02-RT-006-GW	QA Split	3/13/2002	1.76	<2	<1	2150	21.3	<1	<1
MW-20	02-RT-005-GW	QC Duplicate	3/13/2002	3.49	8.23	4.26	3100	41.3	<2	<2
MW-20	02-RT-004-GW	Project Sample	3/13/2002	3	6.87	3.23	4420 E	32	<2	<2
MW-20	02-RT-057-GW	QC Duplicate	6/18/2002	<2 J	4.53 J	<2 J	2220 J	16.8 J	<2 J	<2 J
MW-20	02-RT-058-GW	QA Split	6/18/2002	---	<10	---	1820	20.7	<10	<10
MW-20	02-RT-056-GW	Project Sample	6/18/2002	<2 J	3.85 J	<2 J	1770 J	12.7 J	<2 J	<2 J
MW-20	02-RT-082-GW	QC Duplicate	9/26/2002	1.1	3.6	1.1	1500	14	<1	<1
MW-20	02-RT-081-GW	Project Sample	9/26/2002	<1	3.2	<1	1300	12	<1	<1
MW-20	02-RT-083-GW	QA Split	9/26/2002	---	<10	---	1060	<10	<10	<10
MW-20	02-RT-124-GW	Project Sample	12/18/2002	1.7	5.1	1.51	2000	22.5	<1	<1
MW-20	03-RT-026-GW	QA Split	3/11/2003	---	<10	---	1210	18.5	<10	<10
MW-20	03-RT-024-GW	Project Sample	3/11/2003	1.15	4.39	<1	1090	16.4	<1	<1
MW-20	03-RT-025-GW	QC Duplicate	3/11/2003	1.17	4.58	<1	1210	18.3	<1	<1
MW-20	03-RT-033-GW	Project Sample	6/17/2003	---	<5	---	1260	18.6	<5	<5
MW-20	03RT-090-GW	Project Sample	9/19/2003	---	3.6	---	1020	15.5	3.3	14.1
MW-20	04-RT-006-GW	Project Sample	1/20/2004	---	---	---	---	---	---	---
MW-20	04-RT-006v-GW	Project Sample	1/21/2004	---	4	---	1050	16	1.6	1.4
MW-20	04-RT-017-GW	Project Sample	3/30/2004	---	3.3	---	895	12.9	<1	<1
MW-20	04-RT-022-GW	QC Duplicate	3/30/2004	---	3.4	---	943	12.3	<1	<1
MW-20	04-RT-026-GW	Project Sample	6/8/2004	---	<10	---	857	11.4	<10	<10
MW-20	04-RT-053-GW	Project Sample	10/29/2004	---	59.4	---	1560	22	6.5	32
MW-20	05-RT-007-GW	Project Sample	2/24/2005	---	248	---	898	5.6	7.6	<5
MW-20	05-RT-021-GW	Project Sample	6/2/2005	---	211	---	582	<1	<1	<1
MW-20	05-RT-061-GW	Project Sample	10/11/2005	0.8	113	<1	231	8.5	<1	<1
MW-20	06-RT-016-GW	Project Sample	5/26/2006	---	15.5	---	39.1	4.9	<1	<1
MW-20	06-RT-064-GW	QC Duplicate	9/13/2006	<0.5	4.3	<0.5	22	3.4	0.99	<0.5
MW-20	06-RT-049-GW	Project Sample	9/13/2006	<0.5	4.1	<0.5	22	3.5	1.1	<0.5
MW-20	07-RT-039-GW	Project Sample	9/19/2007	---	<1	---	6.1	<1	1.4	3.6
MW-20	08-RT-017-GW	Project Sample	5/13/2008	<0.4	3.73	<1	8.66	2.5	2.23	4.28

Appendix E

July 1997- December 2018 Groundwater Analytical Data (ug/L) for Benzene, PCE, and PCE Degradation Products

River Terrace RV Park, Soldotna, Alaska

Location	Sample ID	Sample Type	Date Sampled	Benzene MCL=5; ACL= NA	Vinyl chloride MCL=2; ACL=2	1,1-DCE MCL=7; ACL=7	cis-1,2-DCE MCL=70; ACL=11,600	trans-1,2-DCE MCL=10; ACL=11,600	TCE MCL=5; ACL=21,900	PCE MCL=5; ACL=840
MW-20	08-RT-057-GW	Project Sample	9/19/2008	<0.4	1.42	<1	10.1	0.77	1.32	3.49
MW-20	09-RT-006-GW	Project Sample	5/6/2009	0.24	2.43	<1	9.07	1.73	1.37	0.64
MW-20	09-RT-090-GW	Project Sample	10/8/2009	<0.12	6.21	<0.31	16.4	3.1	1.33	0.83 F
MW-20	10-RT-053-GW	Project Sample	5/13/2010	<0.12	5.73 VJ	<0.31	11.7	1.87	2.46	1.24
MW-20	10-RT-109-GW	Project Sample	10/21/2010	0.23	12.7	<0.31	24.6	2.85	1.65	0.91
MW-20	12-RT-033-GW	Project Sample	5/10/2012	0.21	12.3 VJ	<0.31	12.3 VJ	1.7 VJ	5.03 VJ	2.33
MW-20	13-RT-010-GW	Project Sample	4/9/2013	<0.24	<0.62	<0.62	2.12	<0.62	0.58	0.64
MW-21	99-RT-035-GW	QC Duplicate	9/3/1999	<1	<1	<1	210	2	78	330
MW-21	99-RT-034-GW	Project Sample	9/3/1999	<1	<1	<1	220	2	79	350
MW-21	99-RT-058-GW	Project Sample	10/27/1999	<0.5	<0.5	<0.5	160 H	2.3	50	170 J,H
MW-21	99-RT-085-GW	Project Sample	12/13/1999	<1	<1	<1	67	1.5	30	140
MW-21	00-RT-011-GW	Project Sample	3/24/2000	<1	<1 J	<1	57	<1	42	240 J,H
MW-21	00-RT-067-GW	Project Sample	6/9/2000	<1	<2	<1	42	<1	25	130
MW-21	00-RT-125-GW	Project Sample	9/29/2000	<1	<2	<1	29	<1	19	130
MW-21	01-RT-023-GW	Project Sample	1/10/2001	<2	<2	<2	36	<2	16	53
MW-21	01-RT-041-GW	Project Sample	3/22/2001	<1	<1	<1	45.2	<1	16.9	53.8
MW-21	01-RT-078-GW	Project Sample	6/25/2001	<2	<2	<2	73	<2	11.2	28.4
MW-21	01-RT-107-GW	Project Sample	10/17/2001	<0.7 J	<1 J	<1 J	73.9 J	<1 J	3.13 J	11 J
MW-21	01-RT-151-GW	Project Sample	1/16/2002	<1 J	<1 J	<1 J	104 J	0.788 J	3.16 J	8.57 J
MW-21	02-RT-050-GW	Project Sample	6/18/2002	<1 J	<1 J	<1 J	84.3 J	<1 J	2.95 J	11.3 J
MW-21	02-RT-092-GW	Project Sample	9/27/2002	<2	<1	<2	99	<2	9.5	32
MW-21	03-RT-065-GW	Project Sample	6/18/2003	<0.4	<1	<1	177	<1	13	45.7
MW-21	03-RT-100-GW	Project Sample	10/7/2003	<0.4	<1	<1	72.7	<1	3.64	21.4
MW-21	04-RT-031-GW	Project Sample	6/8/2004	<0.4	<1	<1	89.8	<1	1.24	1.26
MW-21	04-RT-045-GW	QC Duplicate	6/8/2004	<0.4	<1	<1	97.5	<1	1.46	1.43
MW-21	04-RT-075-GW	Project Sample	10/22/2004	<0.4	<1	<1	91.7	<1	3.22	7.36
MW-21	05-RT-030-GW	Project Sample	6/3/2005	<0.4	<1	<1	144	<1	14.6	27.5
MW-21	05-RT-062-GW	Project Sample	10/12/2005	<0.4	<1	<1	116	<1	<1	1.27
MW-21	06-RT-050-GW	Project Sample	9/13/2006	<0.5	<0.5	<0.5	170	<0.5	42	88
MW-21	07-RT-024-GW	Project Sample	9/20/2007	---	<1	---	121	<1	7.5	23.6
MW-21	08-RT-045-GW	Project Sample	9/20/2008	<0.4	<1	1.53	389	0.69	62.8	148
MW-21	09-RT-081-GW	Project Sample	10/8/2009	<0.12	0.34	1.1	341	0.54	6.95 VJ	9.2 F
MW-21	10-RT-101-GW	Project Sample	10/22/2010	<0.24	<0.62	0.86	549	1.44	23.9	47.7
MW-21	10-RT-119-GW	QC Duplicate	10/22/2010	0.17	0.31	1.01	575	1.5	27.7	55.5
MW-21	12-RT-021-GW	Project Sample	5/10/2012	<0.12	<0.31	<0.31	34.9 VJ	<0.31	18.6 VJ	38.1

Appendix E

July 1997- December 2018 Groundwater Analytical Data (ug/L) for Benzene, PCE, and PCE Degradation Products

River Terrace RV Park, Soldotna, Alaska

Location	Sample ID	Sample Type	Date Sampled	Benzene MCL=5; ACL= NA	Vinyl chloride MCL=2; ACL=2	1,1-DCE MCL=7; ACL=7	cis-1,2-DCE MCL=70; ACL=11,600	trans-1,2-DCE MCL=10; ACL=11,600	TCE MCL=5; ACL=21,900	PCE MCL=5; ACL=840
MW-22	99-RT-033-GW	Project Sample	9/2/1999	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	7.9
MW-22	99-RT-050-GW	Project Sample	10/26/1999	<0.5	<0.5	<0.5	<0.5	<0.5	0.84	18
MW-22	99-RT-084-GW	Project Sample	12/14/1999	<1	<1	<1	<1	<1	<1	6.4
MW-22	00-RT-023-GW	QA Duplicate	3/25/2000	<1	<2	<1	<1	<1	<1	5
MW-22	00-RT-021-GW	Project Sample	3/25/2000	<1	<1	<1 J	<1	<1	<1	4.7
MW-22	00-RT-022-GW	QC Duplicate	3/25/2000	<1	<1	<1 J	<1	<1	<1	4.3
MW-22	00-RT-071-GW	Project Sample	6/9/2000	<1	<2	<1	<1	<1	<1	4.6
MW-22	01-RT-101-GW	Project Sample	10/17/2001	<0.7 J	<1 J	<1 J	<1 J	<1 J	<1 J	2.61 J
MW-22	02-RT-093-GW	Project Sample	9/26/2002	<1	<1	<1	<1	<1	<1	2.6
MW-22	03-RT-066-GW	Project Sample	6/18/2003	<0.4	<1	<1	<1	<1	<1	1.3
MW-22	04-RT-076-GW	Project Sample	10/22/2004	<0.4	<1	<1	<1	<1	<1	<1
MW-23	99-RT-032-GW	Project Sample	9/2/1999	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	10
MW-23	99-RT-057-GW	Project Sample	10/27/1999	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	20
MW-23	99-RT-083-GW	Project Sample	12/14/1999	<1	<1	<1	<1	<1	<1	12
MW-23	00-RT-016-GW	Project Sample	3/25/2000	<1	<1	<1 J	<1	<1	<1	<1
MW-23	00-RT-017-GW	QC Duplicate	3/25/2000	<1	<1	<1 J	<1	<1	<1	12
MW-23	00-RT-018-GW	QA Duplicate	3/25/2000	<1	<2	<1	<1	<1	<1	11
MW-23	00-RT-072-GW	Project Sample	6/9/2000	<1	<2	<1	<1	<1	<1	13
MW-23	01-RT-102-GW	Project Sample	10/17/2001	<0.7 J	<1 J	<1 J	<1 J	<1 J	<1 J	10.5 J
MW-23	01-RT-104-GW	QC Duplicate	10/17/2001	<0.7 J	<1 J	<1 J	<1 J	<1 J	<1 J	10.8 J
MW-23	01-RT-105-GW	QA Split	10/17/2001	---	<1 J,H	---	<1 J,H	<1 J,H	<1 J,H	10.6 J,H
MW-23	02-RT-094-GW	Project Sample	9/26/2002	<1	<1	<1	65	<1	3.2	28
MW-23	03-RT-103-GW	Project Sample	10/7/2003	<0.4	<1	<1	<1	<1	<1	7.94
MW-23	04-RT-077-GW	Project Sample	10/22/2004	<0.4	<1	<1	<1	<1	<1	5.35
MW-23	06-RT-051-GW	Project Sample	9/13/2006	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	6.9
MW-23	10-RT-060-GW	Project Sample	5/13/2010	<0.12	<0.31	<0.31	<0.31	<0.31	<0.31	4.19
MW-23	12-RT-022-GW	Project Sample	5/10/2012	<0.12	<0.31	<0.31	<0.31	<0.31	0.33 VJ	17.8
MW-23	13-RT-001-GW	Project Sample	4/11/2013	<0.24	<0.62	<0.62	5.15	<0.62	0.81	18
MW-23	14-RT-021-GW	Project Sample	4/22/2014	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	4.12
MW-23	16-RT-001-GW	Project Sample	10/27/2016	<0.12	<0.31	<0.31	1.6	<0.31	<0.31	5.02
MW-23	18-RT-23-GW	Project Sample	12/12/2018	<0.2	<0.075	<0.5	<0.5	<0.5	<0.5	5.43
MW-24	99-RT-036-GW	Project Sample	9/3/1999	<1	<1	<1	390	2	50	57
MW-24	99-RT-040-GW	Project Sample	10/26/1999	<0.5	0.6	0.8	450	1.5	51	73

Appendix E

July 1997- December 2018 Groundwater Analytical Data (ug/L) for Benzene, PCE, and PCE Degradation Products

River Terrace RV Park, Soldotna, Alaska

Location	Sample ID	Sample Type	Date Sampled	Benzene MCL=5; ACL= NA	Vinyl chloride MCL=2; ACL=2	1,1-DCE MCL=7; ACL=7	cis-1,2-DCE MCL=70; ACL=11,600	trans-1,2-DCE MCL=10; ACL=11,600	TCE MCL=5; ACL=21,900	PCE MCL=5; ACL=840
MW-24	99-RT-090-GW	Project Sample	12/14/1999	<1	<1	<1	250	<1	41	79
MW-24	00-RT-004-GW	Project Sample	3/24/2000	<1	<1 J	<1	310 J,H	3.2	100	210 J,H
MW-24	00-RT-042-GW	Project Sample	6/7/2000	<1 J	<2 J	<1 J	250 J	<1 J	51 J	110 J
MW-24	01-RT-114-GW	Project Sample	10/18/2001	<2.8 J	<4 J	<4 J	319 J	<4 J	56.4 J	66.2 J
MW-24	02-RT-084-GW	Project Sample	9/26/2002	<1	<1	<1	260	<1	83	170
MW-24	03-RT-108-GW	Project Sample	10/9/2003	<0.4	<1	<1	222	<1	46.2	68.8
MW-24	05-RT-035-GW	Project Sample	6/3/2005	<0.4	<1	<1	360	<1	63.9	98.8
MW-24	05-RT-063-GW	Project Sample	10/12/2005	<0.4	<1	<1	288	<1	68.8	118
MW-24	06-RT-052-GW	Project Sample	9/13/2006	<0.5	<0.5	<0.5	230	<0.5	68	130
MW-24	08-RT-058-GW	Project Sample	9/18/2008	<0.4	<1	<1	69	0.56	49.4	192
MW-24	10-RT-112-GW	Project Sample	10/21/2010	<0.12	0.38	<0.31	153	<0.31	63	151
MW-25	99-RT-037-GW	Project Sample	9/3/1999	<2	<2	<2	16	<2	26	920
MW-25	99-RT-056-GW	QC Duplicate	10/27/1999	<0.5	<0.5	<0.5	4.6	<0.5	8.8	290 J,H
MW-25	99-RT-055-GW	Project Sample	10/27/1999	<0.5	<0.5	<0.5	4.4	<0.5	8.3	300 J,H
MW-25	99-RT-087-GW	QC Duplicate	12/14/1999	<1	<1	<1	7.9	<1	12	460
MW-25	99-RT-086-GW	Project Sample	12/14/1999	<1	<1	<1	8.4	<1	13	500
MW-25	00-RT-013-GW	Project Sample	3/24/2000	<1	<1 J	<1	11	<1	17	610 J,H
MW-25	00-RT-068-GW	Project Sample	6/9/2000	<1	<2	<1	7.1	<1	11	310
MW-25	00-RT-069-GW	QC Duplicate	6/9/2000	<1	<2	<1	6.7	<1	11	280
MW-25	00-RT-070-GW	QA Duplicate	6/9/2000	<0.5	<0.5	<0.5	6.4	<0.5	10	290
MW-25	00-RT-129-GW	QA Split	9/29/2000	<1	<1	<1	10	<1	14.9	395
MW-25	00-RT-126-GW	Project Sample	9/29/2000	<1	<2	<1	11	<1	18	540
MW-25	00-RT-127-GW	QC Duplicate	9/29/2000	<1	<2	<1	7.4	<1	16	500
MW-25	01-RT-022-GW	QA Split	1/10/2001	---	<10	---	72.8	<10	171	792
MW-25	01-RT-021-GW	QC Duplicate	1/10/2001	<20	<20	<20	57	<20	130	510
MW-25	01-RT-020-GW	Project Sample	1/10/2001	<20	<20	<20	58	<20	120	480
MW-25	01-RT-042-GW	Project Sample	3/22/2001	<2	<2	<2	284	7.93	84	425
MW-25	01-RT-077-GW	Project Sample	6/25/2001	<2	<2	<2	142	2.3	25.6	156
MW-25	01-RT-109-GW	Project Sample	10/17/2001	<1.4 J	<2 J	<2 J	801 J	4.23 J	10 J	17.9 J
MW-25	01-RT-133-GW	Project Sample	1/16/2002	---	<5 J,H	---	752 J,H	<5 J,H	<5 J,H	5.4 J,H
MW-25	02-RT-018-GW	QA Split	3/13/2002	1.15	<2	<1	804	4.12	2.21	3.7
MW-25	02-RT-016-GW	Project Sample	3/13/2002	<2	<2	<2	956	<2	2.28	3.22
MW-25	02-RT-017-GW	QC Duplicate	3/13/2002	<2	<2	<2	933	<2	2.49	4.07
MW-25	02-RT-049-GW	Project Sample	6/18/2002	<2 J	<2 J	<2 J	721 J	4.12 J	<2 J	2.89 J
MW-25	02-RT-071-GW	Project Sample	9/27/2002	1.3	1.3	1.5	980	6.2	<1	2.5

Appendix E

July 1997- December 2018 Groundwater Analytical Data (ug/L) for Benzene, PCE, and PCE Degradation Products

River Terrace RV Park, Soldotna, Alaska

Location	Sample ID	Sample Type	Date Sampled	Benzene MCL=5; ACL= NA	Vinyl chloride MCL=2; ACL=2	1,1-DCE MCL=7; ACL=7	cis-1,2-DCE MCL=70; ACL=11,600	trans-1,2-DCE MCL=10; ACL=11,600	TCE MCL=5; ACL=21,900	PCE MCL=5; ACL=840
MW-25	02-RT-108-GW	Project Sample	12/19/2002	0.66	<1	<1	796	<1	1.61	3.28
MW-25	03-RT-013-GW	Project Sample	3/11/2003	1.13	1.2	1.59	1320	9.82	<1	1.4
MW-25	03-RT-042-GW	Project Sample	6/18/2003	---	<10	---	563	<10	<10	<10
MW-25	03-RT-088-GW	Project Sample	9/18/2003	0.99 J	<1 J	1.19 J	765 J	13.9 J	<1 J	<1 J
MW-25	04-RT-003-GW	Project Sample	1/21/2004	---	1	---	867	7.9	4.1	<1
MW-25	04-RT-014-GW	Project Sample	3/31/2004	---	1.3	---	932	6.5	1.3	<1
MW-25	04-RT-046-GW	QC Duplicate	6/8/2004	0.4	<1	<1	325	1.93	<1	<1
MW-25	04-RT-033-GW	Project Sample	6/8/2004	<0.4	<1	<1	301	1.73	<1	<1
MW-25	04-RT-049-GW	Project Sample	10/30/2004	---	<1	---	1020	7	5	<1
MW-25	05-RT-003-GW	Project Sample	2/23/2005	---	<1	---	566	4.2	6.9	<1
MW-25	05-RT-029-GW	Project Sample	6/3/2005	<0.4	<1	<1	358	2.69	6.49	<1
MW-25	05-RT-046-GW	Project Sample	10/12/2005	---	1.8	---	1030 VM	9.2	<1	<1
MW-25	06-RT-009-GW	Project Sample	5/24/2006	---	48.5	---	949	<10	<10	<10
MW-25	06-RT-031-GW	Project Sample	9/12/2006	---	34.7	---	451	<5	<5	<5
MW-25	07-RT-003-GW	Project Sample	5/29/2007	---	12.4	---	137	1.1	5	7.9
MW-25	07-RT-023-GW	Project Sample	9/18/2007	---	14.2 VM	---	141	1.4	5.9	7
MW-25	08-RT-003-GW	Project Sample	5/13/2008	---	29.2	---	126	1.9	2.8	3.5
MW-25	08-RT-044-GW	Project Sample	9/19/2008	<0.4	26.8	<1	127	2.03	3.34	4.41
MW-25	09-RT-003-GW	Project Sample	5/5/2009	<0.4	0.42	<1	15.8	<1	1.9	9.66
MW-25	09-RT-080-GW	Project Sample	10/8/2009	0.32	11	<0.31	58.8	0.95	1.98 VB	8.94
MW-25	10-RT-051-GW	Project Sample	5/14/2010	0.18	10.1 VJ	<0.31	49.7	1.3	5.22	3.35
MW-25	10-RT-082-GW	Project Sample	10/21/2010	0.29	9.5 VJ	<0.31	84.8	1.26	8.46	8.76
MW-25	10-RT-100-GW	QA Split	10/21/2010	---	6.8 VJ	---	83.5	1.4	8.2	8.8
MW-25	12-RT-023-GW	Project Sample	5/10/2012	0.23	5	<0.31	43.4 VJM	0.93 VJ	11.8 VJ	11.1
MW-25	12-RT-042-GW	QC Duplicate	5/10/2012	0.25	6.52	<0.31	49.4 VM	1.25	13.4	10.8
MW-25	13-RT-003-GW	Project Sample	4/11/2013	<0.24	1.48	<0.62	37.2	0.53	6.61	6
MW-25	14-RT-022-GW	Project Sample	4/24/2014	0.268	3.2	<0.5	44	0.905	13.7	3.73
MW-25	16-RT-002-GW	Project Sample	10/27/2016	<0.12	12.3	<0.31	113 E	1.54	22	16.7
MW-25	18-RT-25-GW	Project Sample	12/12/2018	<0.2	1.4	<0.5	67.1	0.34	44.3	89.5
MW-26	99-RT-038-GW	Project Sample	9/3/1999	<0.5	<0.5	<0.5	160	4.4	19	93
MW-26	99-RT-059-GW	Project Sample	10/27/1999	<0.5	<0.5	<0.5	80	2.8	11	51
MW-26	99-RT-089-GW	Project Sample	12/14/1999	<1	<1	<1	710	22	40	200
MW-26	00-RT-059-GW	Project Sample	6/8/2000	<10	<20	<10	710 E	13	52	170
MW-26	01-RT-117-GW	QA Split	10/17/2001	---	<2 J,H	---	265 J,H	7.8 J,H	28.2 J,H	112 J,H
MW-26	01-RT-116-GW	QC Duplicate	10/17/2001	<4 J	<4 J	<4 J	344 J	9.72 J	31.4 J	107 J

Appendix E
July 1997- December 2018 Groundwater Analytical Data (ug/L) for Benzene, PCE, and PCE Degradation Products
River Terrace RV Park, Soldotna, Alaska

Location	Sample ID	Sample Type	Date Sampled	Benzene MCL=5; ACL= NA	Vinyl chloride MCL=2; ACL=2	1,1-DCE MCL=7; ACL=7	cis-1,2-DCE MCL=70; ACL=11,600	trans-1,2-DCE MCL=10; ACL=11,600	TCE MCL=5; ACL=21,900	PCE MCL=5; ACL=840
MW-26	01-RT-115-GW	Project Sample	10/17/2001	<8 J	<8 J	<8 J	297 J	<8 J	59.8 J	73 J
MW-26	02-RT-085-GW	Project Sample	9/26/2002	<1	<1	<1	53	2	11	68
MW-26	02-RT-086-GW	QC Duplicate	9/26/2002	<1	<1	<1	53	1.9	11	68
MW-26	02-RT-087-GW	QA Split	9/26/2002	---	<1	---	52.3	<1	13.2	86.4
MW-26	03-RT-087-GW	Project Sample	9/18/2003	<0.4 J	<1 J	---	231 J	10.4 J	31.3 J	124 J
MW-26	04-RT-057-GW	Project Sample	10/30/2004	---	<1	---	44.2	2	9.3	72.3
MW-26	05-RT-064-GW	Project Sample	10/12/2005	<0.4	<1	<1	44.8	1.85	8.84	56.9
MW-26	06-RT-053-GW	Project Sample	9/13/2006	<0.5	<0.5	<0.5	56	2.5	13	78
MW-26	08-RT-059-GW	Project Sample	9/18/2008	<0.4	<1	<1	148	5.48	23.7	135
MW-26	10-RT-113-GW	Project Sample	10/21/2010	<0.12	<0.31	<0.31	192	5.8	31.5	148
MW-26	13-RT-005-GW	Project Sample	4/10/2013	<0.24	0.86	<0.62	262	<6.2	24.4	146
MW-26	14-RT-024-GW	Project Sample	4/22/2014	<0.2	<0.5	<0.5	175	3.51	26	134
MW-26	14-RT-032-GW	QC Duplicate	4/22/2014	<20	<50	<50	75.7	<50	<50	<50
MW-26	16-RT-004-GW	Project Sample	10/27/2016	<0.12	<0.31	<0.31	100 E	1.85	18.9	133 E
MW-27	99-RT-077-GW	Project Sample	11/8/1999	<0.5	<0.5	<0.5	1.7	<0.5	0.8	1.1
MW-27	99-RT-091-GW	Project Sample	12/14/1999	<1	<1	<1	1.3	<1	<1	<1
MW-27	00-RT-027-GW	Project Sample	3/25/2000	<1	<1	<1 J	3.2	<1	1.3	<1
MW-27A	00-RT-075-GW	Project Sample	6/9/2000	<1	<2	<1	11	<1	7.4	2.5
MW-27A	00-RT-113-GW	Project Sample	9/28/2000	<1	<2	<1	22	<1	6.4	<1
MW-27A	01-RT-011-GW	Project Sample	1/11/2001	<2	<2	<2	55	<2	38	26
MW-27A	01-RT-045-GW	Project Sample	3/22/2001	<1	<1	<1	31.1	<1	19.6	15
MW-27A	01-RT-082-GW	Project Sample	6/25/2001	<1	<1	<1	28.9	<1	18.6	4.39
MW-27A	01-RT-127-GW	Project Sample	10/17/2001	<0.7 J	<1 J	<1 J	19.3 J	<1 J	4.43 J	<1 J
MW-27A	01-RT-150-GW	Project Sample	1/17/2002	<1 J	<1 J	<1 J	17.7 J	<1 J	2.46 J	0.696 J
MW-27A	02-RT-009-GW	Project Sample	3/13/2002	<1	<1	<1	8.46	<1	3.64	<1
MW-27A	02-RT-059-GW	Project Sample	6/19/2002	<2 J	<0.2 J	<0.2 J	20.4 J	<0.2 J	8.78 J	1.6 J
MW-27A	02-RT-088-GW	Project Sample	9/26/2002	<1	<1	<1	16	<1	2.1	<1
MW-27A	03-RT-051-GW	Project Sample	6/19/2003	<0.4	<1	<1	10.7	<1	8.03	1.77
MW-28	99-RT-069-GW	Project Sample	11/2/1999	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW-29	99-RT-074-GW	Project Sample	11/8/1999	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	6.6
MW-29	99-RT-075-GW	QC Duplicate	11/8/1999	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	11
MW-29	99-RT-081-GW	Project Sample	12/14/1999	<1	<1	<1	<1	<1	<1	12

Appendix E

July 1997- December 2018 Groundwater Analytical Data (ug/L) for Benzene, PCE, and PCE Degradation Products

River Terrace RV Park, Soldotna, Alaska

Location	Sample ID	Sample Type	Date Sampled	Benzene MCL=5; ACL= NA	Vinyl chloride MCL=2; ACL=2	1,1-DCE MCL=7; ACL=7	cis-1,2-DCE MCL=70; ACL=11,600	trans-1,2-DCE MCL=10; ACL=11,600	TCE MCL=5; ACL=21,900	PCE MCL=5; ACL=840
MW-29	00-RT-019-GW	Project Sample	3/25/2000	<1	<1	<1 J	<1	<1	<1	9.6
MW-29	00-RT-041-GW	Project Sample	6/7/2000	<1	<2	<1	<1	<1	<1	12
MW-29	01-RT-103-GW	Project Sample	10/17/2001	<0.7 J	<1 J	<1 J	<1 J	<1 J	<1 J	7.83 J
MW-29	02-RT-097-GW	Project Sample	9/26/2002	<1	<1	<1	<1	<1	<1	14
MW-29	04-RT-079-GW	Project Sample	10/22/2004	<0.4	<1	<1	<1	<1	<1	8.68
MW-29	06-RT-054-GW	Project Sample	9/13/2006	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	8.9
MW-29	10-RT-061-GW	Project Sample	5/14/2010	<0.12	<0.31	<0.31	1.07	<0.31	0.47	6.87
MW-30	99-RT-076-GW	Project Sample	11/8/1999	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW-30	99-RT-079-GW	Project Sample	12/14/1999	<1	<1	<1	<1	<1	<1	<1
MW-30	00-RT-026-GW	Project Sample	3/25/2000	<1	<1	<1 J	<1	<1	<1	<1
MW-30	00-RT-063-GW	Project Sample	6/9/2000	<1	---	<1	<1	<1	<1	<1
MW-30	03-RT-062-GW	Project Sample	6/19/2003	<0.4	<1	<1	<1	<1	<1	<1
MW-31	99-RT-073-GW	Project Sample	11/8/1999	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.6
MW-31	99-RT-080-GW	Project Sample	12/14/1999	<1	<1	<1	<1	<1	<1	2
MW-31	00-RT-025-GW	Project Sample	3/25/2000	<1	<1	<1 J	<1	<1	<1	1.6
MW-31	00-RT-062-GW	Project Sample	6/9/2000	<1	<2	<1	<1	<1	<1	2.5
MW-31	00-RT-123-GW	Project Sample	9/28/2000	<1	<2	<1	<1	<1	<1	3
MW-31	01-RT-106-GW	Project Sample	10/17/2001	<0.7 J	<1 J	<1 J	<1 J	<1 J	<1 J	2.12 J
MW-31	02-RT-098-GW	Project Sample	9/27/2002	<1	<1	<1	<1	<1	<1	1.1
MW-31	03-RT-063-GW	Project Sample	6/19/2003	<0.4	<1	<1	<1	<1	<1	1.27
MW-31	04-RT-080-GW	Project Sample	10/22/2004	<0.4	<1	<1	<1	<1	<1	<1
MW-32	99-RT-072-GW	Project Sample	11/8/1999	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW-32	99-RT-082-GW	Project Sample	12/13/1999	<1	<1	<1	<1	<1	<1	<1
MW-32	00-RT-020-GW	Project Sample	3/25/2000	<1	<1	<1 J	<1	<1	<1	<1
MW-32	00-RT-073-GW	Project Sample	6/9/2000	<10	<2	<1	<1	<1	<1	<1
MW-34	00-RT-001-GW	Project Sample	1/14/2000	<1	<1	<1	<1	<1	<1	<1
MW-34	00-RT-002-GW	QC Duplicate	1/14/2000	<1	<1	<1	<1	<1	<1	<1
MW-34	00-RT-024-GW	Project Sample	3/25/2000	<1	<1	<1 J	<1	<1	<1	<1
MW-34	00-RT-061-GW	Project Sample	6/9/2000	<1	---	<1	<1	<1	<1	<1
MW-34	03-RT-064-GW	Project Sample	6/19/2003	<0.4	<1	<1	<1	<1	<1	<1
MW-34	03-RT-086-GW	Project Sample	9/18/2003	<0.4 J	<1 J	---	<1 J	<1 J	<1 J	<1 J

Appendix E

July 1997- December 2018 Groundwater Analytical Data (ug/L) for Benzene, PCE, and PCE Degradation Products

River Terrace RV Park, Soldotna, Alaska

Location	Sample ID	Sample Type	Date Sampled	Benzene MCL=5; ACL= NA	Vinyl chloride MCL=2; ACL=2	1,1-DCE MCL=7; ACL=7	cis-1,2-DCE MCL=70; ACL=11,600	trans-1,2-DCE MCL=10; ACL=11,600	TCE MCL=5; ACL=21,900	PCE MCL=5; ACL=840
MW-35	00-RT-074-GW	Project Sample	6/9/2000	<1	<2	<1	210 E	2.8	2.2	1.6
MW-35	00-RT-122-GW	Project Sample	9/28/2000	<1	<2	<1	210 VJ	1.9	1.7	<1
MW-35	01-RT-118-GW	Project Sample	10/18/2001	<4 J	<4 J	<4 J	197 J	<4 J	<4 J	<4 J
MW-35	02-RT-089-GW	Project Sample	9/26/2002	<2	<1	<2	160	<2	3.3	<2
MW-35	03-RT-113-GW	Project Sample	10/8/2003	<0.4	<1	<1	86.9	1.47	---	2.55
MW-35	04-RT-081-GW	Project Sample	10/23/2004	<0.4	2.42	<1	403	2.31	2.79	<1
MW-35	05-RT-065-GW	Project Sample	10/12/2005	<0.4	<1	<1	247	1.75	3.16	1.1
MW-35	06-RT-022-GW	Project Sample	5/25/2006	<0.4	17	<1	306	6.27	1.81	1.18
MW-35	06-RT-055-GW	Project Sample	9/13/2006	<0.5	12	<0.5	290	3.4	2.2	1.1
MW-35	07-RT-014-GW	Project Sample	5/31/2007	<0.4	14.3	<1	189 J,H	6.35 VJ	1.2	0.68 F
MW-35	07-RT-020-GW	QC Duplicate	5/31/2007	<0.4	11.2	<1	328 VJ	3.75 VJ	1.27	0.97 F
MW-35	07-RT-040-GW	Project Sample	9/20/2007	---	3.5	---	208	2.5	2	1.2
MW-35	08-RT-060-GW	Project Sample	9/20/2008	<0.4	6.41	0.32	294	3.07	1.51	1.65
MW-35	09-RT-091-GW	Project Sample	10/8/2009	<0.12	2.8	<0.31	203	2.23	2.23	1.51 VJ
MW-35	10-RT-110-GW	Project Sample	10/21/2010	<0.12	3.48	<0.31	208	2.5	2.16	1.92
MW-35	12-RT-034-GW	Project Sample	5/10/2012	0.3	11.8 VJ	<0.31	67.9	3.5 VJ	1.17 VJ	0.66
MW-35	13-RT-006-GW	Project Sample	4/9/2013	<0.24	8.94	<0.62	142	2.59	1.38	0.92
MW-35	14-RT-028-GW	Project Sample	4/24/2014	<0.2	<0.5	<0.5	73.3	1.53	0.7	0.7
MW-35	16-RT-005-GW	Project Sample	10/27/2016	<0.12	2.58	<0.31	49.3	<0.31	1.88	<0.31
MW-35	18-RT-35-GW	Project Sample	12/12/2018	<0.2	1.24	<0.5	24.9	0.8	1.77	1.76
MW-36	00-RT-103-GW	Project Sample	9/27/2000	---	<1	---	27.2	<1	209 VJ	3420
MW-36	00-RT-104-GW	QC Duplicate	9/27/2000	---	<1	---	28	<1	205 VJ	3230
MW-36	00-RT-105-GW	QA Duplicate	9/27/2000	2	<2	<1	25	<1	170	3600
MW-36	00-RT-138-GW	Project Sample	11/28/2000	---	<5	---	842	30.8	1710	2880
MW-36	01-RT-009-GW	Project Sample	1/11/2001	---	<10	---	1480	28.5	604	198
MW-36	01-RT-035-GW	Project Sample	3/8/2001	---	<50	---	3990	87.5	1000	628
MW-36	01-RT-073-GW	Project Sample	5/22/2001	---	<25	---	1640	28.5	390	3090
MW-36	01-RT-096-GW	Project Sample	10/16/2001	---	<10	---	1170	<10	26.3	<10
MW-36	01-RT-136-GW	Project Sample	1/16/2002	---	<10	---	1330	<10	36.5	18.9
MW-36	01-RT-137-GW	QC Duplicate	1/16/2002	---	<10	---	1330	<10	39	16.6
MW-36	01-RT-138-GW	QA Split	1/16/2002	<2 J,H	<2 J,H	2.29 J,H	1420 J	14.6 J	41.5 J	24.4 J
MW-36	02-RT-015-GW	Project Sample	3/13/2002	<2	<2	2.53	1170	<2	7.76	5.25
MW-36	02-RT-045-GW	Project Sample	6/18/2002	<2 J	<2 J	2.92 J	3340 J	28 J	23.9 J	7.38 J
MW-36	02-RT-046-GW	QC Duplicate	6/18/2002	<2 J	<2 J	2.37 J	2650 J	23.8 J	27 J	7.32 J
MW-36	02-RT-047-GW	QA Split	6/18/2002	---	<10	---	2610	24.9	21.2	<10

Appendix E

July 1997- December 2018 Groundwater Analytical Data (ug/L) for Benzene, PCE, and PCE Degradation Products

River Terrace RV Park, Soldotna, Alaska

Location	Sample ID	Sample Type	Date Sampled	Benzene MCL=5; ACL= NA	Vinyl chloride MCL=2; ACL=2	1,1-DCE MCL=7; ACL=7	cis-1,2-DCE MCL=70; ACL=11,600	trans-1,2-DCE MCL=10; ACL=11,600	TCE MCL=5; ACL=21,900	PCE MCL=5; ACL=840
MW-36	02-RT-068-GW	Project Sample	9/27/2002	<1	<1	<1	810	5.4	370	320
MW-36	02-RT-070-GW	QA Split	9/27/2002	---	<10	---	727	<10	415	346
MW-36	02-RT-069-GW	QC Duplicate	9/27/2002	<1	<1	<1	800	5.4	380	310
MW-36	02-RT-110-GW	Project Sample	12/19/2002	<0.4	<1	<1	716	<1	4.43	2.81
MW-36	03-RT-012-GW	Project Sample	3/10/2003	---	<10	---	969	<10	<10	<10
MW-36	03-RT-040-GW	Project Sample	6/17/2003	---	<10	---	2220	27.3	21.7	26
MW-36	03-RT-092-GW	Project Sample	10/7/2003	---	<1	---	901	8.2	68.6	41
MW-36	04-RT-001-GW	Project Sample	1/21/2004	---	1.3	---	717	5.8	<1	1.3
MW-36	04-RT-012-GW	Project Sample	3/31/2004	---	<1	---	484	4.7	<1	1.9
MW-36	04-RT-023-GW	Project Sample	6/8/2004	---	<5	---	1620	17.4	7.3	10.1
MW-36	04-RT-047-GW	Project Sample	10/30/2004	---	<1	---	1330	13.6	9.8	6
MW-36	05-RT-001-GW	Project Sample	2/23/2005	---	<5	---	914	8.2	<5	8.9
MW-36	05-RT-027-GW	Project Sample	6/3/2005	<0.8	<2	<2	1850	13.7	82.2	8.28
MW-36	05-RT-043-GW	QC Duplicate	6/3/2005	<0.8	<2	<2	1970	14.7	61.6	8.14
MW-36	05-RT-044-GW	Project Sample	10/11/2005	---	6.6	---	636 VM	5.9	<1	<1
MW-36	06-RT-007-GW	Project Sample	5/24/2006	---	93.6	---	547	7.6	<1	<1
MW-36	06-RT-029-GW	Project Sample	9/12/2006	---	<10	---	139	<10	110	414
MW-36	07-RT-001-GW	Project Sample	5/30/2007	---	29.1	---	257	<5	23.1	8.3
MW-36	07-RT-021-GW	Project Sample	9/20/2007	---	18	---	339	<5	62.7	54.3
MW-36	07-RT-042-GW	QC Duplicate	9/20/2007	---	18.8	---	337	<5	64.1	62.6
MW-36	07-RT-044-GW	QA Split	9/20/2007	<0.4	12.6 VJ	<1	251	0.69 VM	50	33.5 VJ
MW-36	08-RT-001-GW	Project Sample	5/13/2008	---	64.1	---	202	4.4	24.4	25.4
MW-36	08-RT-064-GW	QC Duplicate	9/18/2008	<0.4	1.7 VJ	<1	30.4	<1	26.8	70
MW-36	08-RT-042-GW	Project Sample	9/18/2008	<0.4	0.77 VJ	<1	27.2 VM	<1	26.9 VM	71.7
MW-36	08-RT-040-GW	QA Split	9/18/2008	---	1.5	---	32.5	<1	<1 VJ	95.6 VJ
MW-36	09-RT-001-GW	Project Sample	5/5/2009	0.35	34.3	<1	221	1.71	37.7	98.9
MW-36	09-RT-078-GW	Project Sample	10/8/2009	0.94	55.8	<0.31	192	3.04	77.2	125
MW-36	10-RT-049-GW	Project Sample	5/14/2010	0.13	32.3 VJ	<0.31	207	1.82	61.9	175
MW-36	10-RT-080-GW	Project Sample	10/20/2010	0.22	17.4	<0.31	168	1.2	42.6	51.6
MW-36	12-RT-001-GW	Project Sample	5/9/2012	<0.12	4.38	<0.31	85.5	0.46	9.35	1.81
MW-36	13-RT-016-GW	Project Sample	4/11/2013	<0.24	4.97	<0.62	41	<0.62	8.69	11.3
MW-36	14-RT-001-GW	Project Sample	4/22/2014	0.19	10.8	<0.5	355	<0.5	64.1	7.09
MW-37	00-RT-102-GW	Project Sample	9/27/2000	---	<1	---	19.1	<1	55.3	1910
MW-37	00-RT-137-GW	Project Sample	11/28/2000	---	<5	---	655	<5	1280	982
MW-37	01-RT-007-GW	Project Sample	1/11/2001	---	<10	---	1240	<10	462	314

Appendix E

July 1997- December 2018 Groundwater Analytical Data (ug/L) for Benzene, PCE, and PCE Degradation Products

River Terrace RV Park, Soldotna, Alaska

Location	Sample ID	Sample Type	Date Sampled	Benzene MCL=5; ACL= NA	Vinyl chloride MCL=2; ACL=2	1,1-DCE MCL=7; ACL=7	cis-1,2-DCE MCL=70; ACL=11,600	trans-1,2-DCE MCL=10; ACL=11,600	TCE MCL=5; ACL=21,900	PCE MCL=5; ACL=840
MW-37	01-RT-036-GW	Project Sample	3/8/2001	---	<10	---	1430	<10	219	209
MW-37	01-RT-072-GW	Project Sample	5/22/2001	---	<10	---	1530	16.2	144	53.3
MW-37	01-RT-094-GW	Project Sample	10/16/2001	---	<5 J,H	---	544 J,H	<5 J,H	8.6 J,H	7.5 J,H
MW-37	01-RT-134-GW	Project Sample	1/16/2002	---	<2 J,H	---	384 J,H	2.5 J,H	2.4 J,H	5.3 J,H
MW-38	00-RT-100-GW	Project Sample	9/27/2000	---	<1	---	3.3	<1	19.7	804
MW-38	00-RT-135-GW	Project Sample	11/28/2000	---	<5	---	16.3	<5	37.4	1210
MW-38	01-RT-006-GW	Project Sample	1/11/2001	---	<10	---	18.9	<10	54.1	226
MW-38	01-RT-038-GW	Project Sample	3/8/2001	---	<1	---	1.5	<1	17.9	178
MW-38	01-RT-070-GW	Project Sample	5/22/2001	---	<1	---	535	4.8	53.4	84.7
MW-38	01-RT-093-GW	Project Sample	10/16/2001	---	<1 J,H	---	117 J,H	<1 J,H	9.5 J,H	52.7 J,H
MW-38	01-RT-132-GW	Project Sample	1/16/2002	---	<1	---	82	<1	4.6	12.2
MW-38	02-RT-013-GW	Project Sample	3/13/2002	<2	<2	<2	91.1	<2	4.1	9.19
MW-38	02-RT-043-GW	Project Sample	6/18/2002	<2 J	<2 J	<2 J	635 J	3.19 J	2.18 J	2.52 J
MW-38	02-RT-066-GW	Project Sample	9/27/2002	<1	<1	<1	150	<1	14	53
MW-38	02-RT-111-GW	Project Sample	12/19/2002	<0.4	<1	<1	376	<1	4.94	5.69
MW-38	03-RT-014-GW	Project Sample	3/11/2003	<0.4	<1	<1	279	2.31	3.8	5.77
MW-38	03-RT-067-GW	Project Sample	6/18/2003	<0.4	<1	<1	182	1.05	3.67	3.49
MW-38	03RT-079-GW	Project Sample	9/18/2003	---	<1	---	159	1	4.6	6.3
MW-38	04-RT-034-GW	Project Sample	6/9/2004	<0.4	<1	<1	326	1	<1	1.05
MW-38	04-RT-082-GW	Project Sample	10/22/2004	<0.4	<1	<1	72.6	<1	1.6	2.12
MW-38	05-RT-031-GW	Project Sample	6/3/2005	<0.4	<1	<1	240	<1	1.86	1.83 VB
MW-38	05-RT-066-GW	Project Sample	10/12/2005	<0.4	<1	<1	141	<1	1.73	2.22
MW-38	06-RT-023-GW	Project Sample	5/26/2006	<0.4	1.69	<1	122	1.35	1.72	<1
MW-38	06-RT-056-GW	Project Sample	9/12/2006	<0.5	23	<0.5	260	2.2	5.5	14
MW-38	06-RT-063-GW	QC Duplicate	9/12/2006	<0.5	24	<0.5	250	2.3	5.7	14
MW-38	07-RT-015-GW	Project Sample	5/30/2007	<0.4	43.1	<1	89	3.22	3.28	6.05
MW-38	07-RT-025-GW	Project Sample	9/20/2007	---	4.5	---	35.2	1.3	1.2	1.4
MW-38	08-RT-046-GW	Project Sample	9/19/2008	<0.4	1.59	<1	4.77	<1	1.02	12.9
MW-38	09-RT-082-GW	Project Sample	10/8/2009	0.27	7.67	<0.31	21.8	1.72	<0.31	<0.31
MW-38	10-RT-102-GW	Project Sample	10/22/2010	<0.12	2.79	<0.31	3.61	<0.31	<0.31	<0.31
MW-38	12-RT-024-GW	Project Sample	5/10/2012	<0.12 VJ	12.4 VJ	<0.31	93.1	1.21 VJ	2.23 VJ	1.39
MW-38	13-RT-004-GW	Project Sample	4/11/2013	0.16	7.47	<0.62	27.4	1.39	5.97	1.14
MW-38	14-RT-023-GW	Project Sample	4/22/2014	0.193	16.5	<0.5	29	2.32	0.986	0.373
MW-38	14-RT-033-GW	QC Duplicate	4/22/2014	<20	<50	<50	61.6	<50	<50	<50
MW-38	18-RT-38-GW	Project Sample	12/12/2018	0.25	45.1	<0.5	281	3.04	82.1	36.4

Appendix E

July 1997- December 2018 Groundwater Analytical Data (ug/L) for Benzene, PCE, and PCE Degradation Products

River Terrace RV Park, Soldotna, Alaska

Location	Sample ID	Sample Type	Date Sampled	Benzene MCL=5; ACL= NA	Vinyl chloride MCL=2; ACL=2	1,1-DCE MCL=7; ACL=7	cis-1,2-DCE MCL=70; ACL=11,600	trans-1,2-DCE MCL=10; ACL=11,600	TCE MCL=5; ACL=21,900	PCE MCL=5; ACL=840
MW-39	00-RT-106-GW	Project Sample	9/27/2000	---	2.5	---	726	9	93.5	62.9
MW-39	00-RT-134-GW	Project Sample	11/28/2000	---	<5	---	594	5.2	81	36.4
MW-39	01-RT-005-GW	Project Sample	1/11/2001	---	<10	---	625	<10	74.4	27.6
MW-39	01-RT-034-GW	Project Sample	3/8/2001	---	<5	---	394	<5	41	30.6
MW-39	01-RT-074-GW	Project Sample	5/22/2001	---	<5	---	622	6	62.2	29.4
MW-39	01-RT-092-GW	Project Sample	10/16/2001	---	<20 J,H	---	2500 J,H	<20 J,H	31.8 J,H	<20 J,H
MW-39	01-RT-131-GW	Project Sample	1/15/2002	---	<20	---	1860	23.4	<20	<20
MW-39	02-RT-063-GW	Project Sample	9/27/2002	4.2	9.1	2.4	3400	36	7.4	6.3
MW-39	02-RT-104-GW	Project Sample	12/18/2002	---	6.5	---	2530	25.9	<5	16.4
MW-39	02-RT-107-GW	QA Split	12/18/2002	3.07	5.85	1.99	2950	28.5	1.78	18.7
MW-39	03-RT-003-GW	Project Sample	2/4/2003	---	<50	---	11400	39.5 J	<50	<50
MW-39	03-RT-006-GW	Pre-purge Sample	2/4/2003	---	<50	---	6720	50.5	<50	<50
MW-39	03-RT-027-GW	Project Sample	3/11/2003	4.58	12.7	4.06	4720	36.4	2.54	<1
MW-39	03-RT-039-GW	Project Sample	6/17/2003	---	<25	---	3830	39.5	<10	<10
MW-39	03RT-081-GW	Project Sample	9/18/2003	---	19.4	---	2360	22.4	<5	25
MW-39	04-RT-008-GW	Project Sample	1/21/2004	---	214	---	6370	74	<50	<50
MW-39	04-RT-019-GW	Project Sample	3/31/2004	---	456	---	3100	44.6	<1	<1
MW-39	04-RT-028-GW	Project Sample	6/8/2004	---	65.4	---	4230	56.5	<5	9.4
MW-39	04-RT-055-GW	Project Sample	10/29/2004	---	116	---	3590	81.8	<1	<1
MW-39	04-RT-061-GW	QC Duplicate	10/29/2004	---	120	---	3530	82.4	2.3	11.5
MW-39	05-RT-009-GW	Project Sample	2/23/2005	---	651	---	3550	61	<20	<20
MW-39	05-RT-023-GW	Project Sample	6/2/2005	---	460	---	1620	<1	<1	<1
MW-39	05-RT-051-GW	Project Sample	10/11/2005	---	226	---	2160 VM	53.2	<5	<5
MW-39	06-RT-003-GW	Project Sample	3/8/2006	---	255	---	3090	67.9	<5	11.4
MW-39	06-RT-014-GW	Project Sample	5/24/2006	---	435	---	1160 VH	55	<1	<1
MW-39	06-RT-035-GW	Project Sample	9/11/2006	---	158	---	1500	48.9	<10	<10
MW-39	07-RT-006-GW	Project Sample	5/30/2007	---	300	---	660	40	<1	<1
MW-39	07-RT-033-GW	Project Sample	9/18/2007	---	134	---	1820	64.1	<1	<1
MW-39	08-RT-006-GW	Project Sample	5/12/2008	---	174	---	888	45.5	<1	<1
MW-39	08-RT-032-GW	Project Sample	9/17/2008	4.39	216	0.71	1140	47.4	<1 VM	0.34
MW-39	09-RT-008-GW	Project Sample	5/6/2009	1.79	41.1	<1	330	14.4	0.32	2.11
MW-39	09-RT-067-GW	Project Sample	10/6/2009	4.19	187	0.39	902	43.8	0.81	1.55 VJ
MW-39	10-RT-042-GW	Project Sample	5/12/2010	4.92	132	<0.31	518	47.4	3.08	0.94
MW-39	10-RT-086-GW	Project Sample	10/20/2010	5.54	115	0.32	585	52.2	1.84	3.59
MW-39	10-RT-117-GW	QC Duplicate	10/20/2010	4.82	114	<0.62	589	46	1.64	3.64

Appendix E
July 1997- December 2018 Groundwater Analytical Data (ug/L) for Benzene, PCE, and PCE Degradation Products
River Terrace RV Park, Soldotna, Alaska

Location	Sample ID	Sample Type	Date Sampled	Benzene MCL=5; ACL= NA	Vinyl chloride MCL=2; ACL=2	1,1-DCE MCL=7; ACL=7	cis-1,2-DCE MCL=70; ACL=11,600	trans-1,2-DCE MCL=10; ACL=11,600	TCE MCL=5; ACL=21,900	PCE MCL=5; ACL=840
MW-39	12-RT-006-GW	Project Sample	5/8/2012	2.22	53.7	<0.31	<3.1	18.9	<0.31	<0.31
MW-39	13-RT-020-GW	Project Sample	4/9/2013	3.31	14.1	<0.62	25	34.1	<0.62	<0.62
MW-39	14-RT-006-GW	Project Sample	4/23/2014	2.56	4.55	<0.5	13.1	27.6	<0.5	<0.5
MW-39	16-RT-018-GW	QC Duplicate	10/27/2016	1.97	4.76 J	<0.31	6.47 J	16.6	<0.31	<0.31
MW-39	16-RT-008-GW	Project Sample	10/27/2016	2.38	9.16 J	<0.31	12.2 J	21.2	<0.31	<0.31
MW-39	18-RT-39-GW	Project Sample	12/13/2018	1.92	2.71	<0.5	3.19 B	15.1	<0.5	<0.5
MW-40	00-RT-108-GW	Project Sample	9/27/2000	---	2.6	---	1120	10.2	158	641
MW-40	00-RT-132-GW	Project Sample	11/28/2000	---	<5	---	1940	19.4	43	76.9
MW-40	01-RT-002-GW	Project Sample	1/11/2001	---	<10	---	2440	15.9	<10	52.9
MW-40	01-RT-032-GW	Project Sample	3/8/2001	---	<25	---	1270	<25	<25	30.5
MW-40	01-RT-075-GW	Project Sample	5/22/2001	---	<10	---	1540	13.4	<10	28.6
MW-40	01-RT-090-GW	Project Sample	10/16/2001	---	<10	---	1930	<10	64.1	39.4
MW-40	01-RT-130-GW	Project Sample	1/15/2002	---	<10	---	2330	22.1	75.2	43.3
MW-40	02-RT-042-GW	Project Sample	6/19/2002	0.993 J	2.41 J	0.999 J	2720 J	8.23 J	<0.4 J	<0.4 J
MW-40	02-RT-064-GW	Project Sample	9/27/2002	2	3.9	1.9	1600	11	100	470
MW-40	02-RT-103-GW	Project Sample	12/18/2002	---	24.3	---	2350	28.4	25.6	29.9
MW-40	03-RT-002-GW	Project Sample	2/4/2003	---	33.4	---	2860	24.6	68	27.6
MW-40	03-RT-028-GW	Project Sample	3/11/2003	4.95	53.4	4.41	3810	36.4	55.8	48.8
MW-40	03-RT-035-GW	Project Sample	6/17/2003	---	96.6	---	2690	33.9	70.9	35.8
MW-40	03RT-084-GW	Project Sample	9/19/2003	---	144	---	2760	30.5	45.6	31.1
MW-40	04-RT-009-GW	Project Sample	1/21/2004	---	363	---	2030	39.8	27	<20
MW-40	04-RT-020-GW	Project Sample	3/30/2004	---	173	---	2620	39.8	145	13.5
MW-40	04-RT-029-GW	Project Sample	6/8/2004	---	341	---	1810	36.8	12	26.8
MW-40	04-RT-056-GW	Project Sample	10/29/2004	---	235	---	1220	37.6	22.1	5.1
MW-40	05-RT-010-GW	Project Sample	2/24/2005	---	101	---	507	21.4	<5	<5
MW-40	05-RT-024-GW	Project Sample	6/2/2005	---	201	---	521	1.1	21.4	2.2
MW-40	05-RT-052-GW	Project Sample	10/12/2005	---	78.5	---	468 VM	15.7	<10	<10
MW-40	06-RT-004-GW	Project Sample	3/8/2006	---	57.2	---	118	13.1	<1	<1
MW-40	06-RT-015-GW	Project Sample	5/25/2006	---	43.5	---	144	13	<1	7.7
MW-40	06-RT-018-GW	QC Duplicate	5/25/2006	---	36	---	144	11	<10	<10
MW-40	06-RT-036-GW	Project Sample	9/12/2006	---	38.7	---	180	15.2	52.1	108
MW-40	06-RT-041-GW	QC Duplicate	9/12/2006	---	38.8	---	174	15.1	44.4	96.3
MW-40	06-RT-042-GW	QA Split	9/12/2006	1.5	28 VJ	<0.5	170	12	49	81
MW-40	07-RT-007-GW	Project Sample	5/30/2007	---	43.1	---	72.4	15.3	<1	<1
MW-40	07-RT-034-GW	Project Sample	9/19/2007	---	13.3	---	28.5	7.9	<1	3.2

Appendix E

July 1997- December 2018 Groundwater Analytical Data (ug/L) for Benzene, PCE, and PCE Degradation Products

River Terrace RV Park, Soldotna, Alaska

Location	Sample ID	Sample Type	Date Sampled	Benzene MCL=5; ACL= NA	Vinyl chloride MCL=2; ACL=2	1,1-DCE MCL=7; ACL=7	cis-1,2-DCE MCL=70; ACL=11,600	trans-1,2-DCE MCL=10; ACL=11,600	TCE MCL=5; ACL=21,900	PCE MCL=5; ACL=840
MW-40	08-RT-007-GW	Project Sample	5/12/2008	---	<1	---	3	<1	<1	<1
MW-40	08-RT-033-GW	Project Sample	9/17/2008	1.51	20.7 VJ	<1	44.4 VM	10	1.29 VM	12
MW-40	08-RT-039-GW	QC Duplicate	9/17/2008	---	---	---	---	---	---	---
MW-40	09-RT-009-GW	Project Sample	5/6/2009	1.9	9.4	<1	17.8	9.76	7.79	4.45
MW-40	09-RT-068-GW	Project Sample	10/7/2009	1.13	9.39	<0.31	33.2	6.52	1.27	12.1 VJ
MW-40	09-RT-077-GW	QA Split	10/7/2009	---	5.3 VJ	---	23 VJ	<5	<5	7.6
MW-40	09-RT-098-GW	QC Duplicate	10/7/2009	0.99	9.1	<0.31	35.9	5.07	1.3	7.45
MW-40	10-RT-043-GW	Project Sample	5/13/2010	1.28	17.6 VJ	<0.31	21.9	10.5	1.99	5.54
MW-40	10-RT-056-GW	QC Duplicate	5/13/2010	---	---	---	---	---	---	---
MW-40	10-RT-087-GW	Project Sample	10/20/2010	0.58	8.95	0.34	103	3.78	3.72	7.26
MW-40	10-RT-118-GW	QC Duplicate	10/20/2010	0.56	10.4	0.36	108	3.52	3.66	7
MW-40	12-RT-007-GW	Project Sample	5/7/2012	0.95	6.65	<0.31	12.2	7.06	11.5	41.4
MW-40	13-RT-021-GW	Project Sample	4/9/2013	1.08	2.48	<0.62	10.8	6.95	0.82	2.3
MW-40	14-RT-007-GW	Project Sample	4/23/2014	1.72	1.99	<0.5	3.99	15.4	<0.5	0.61
MW-40	18-RT-40-GW	Project Sample	12/13/2018	1.49	22.2	<0.5	22.8	9.11	0.66	18.1
MW-41	02-RT-106-GW	Project Sample	12/18/2002	---	<1	---	1.4	<1	1.2	94.3
MW-41	03-RT-068-GW	Project Sample	6/18/2003	<0.4	<1	<1	<1	<1	<1	21.5
MW-41	03-RT-111-GW	Project Sample	10/8/2003	<0.4	<1	<1	1.61	<1	1.75	157
MW-41	03-RT-112-GW	QC Duplicate	10/8/2003	<0.4	<1	<1	1.5	<1	1.44	149
MW-41	04-RT-083-GW	Project Sample	10/22/2004	<0.4	<1	<1	<1	<1	<1	28.8
MW-41	06-RT-057-GW	Project Sample	9/13/2006	<0.5	<0.5	<0.5	30	<0.5	12	160
MW-41	08-RT-047-GW	Project Sample	9/19/2008	<0.4	<1	<1	15.3	<1	9.18	94
MW-41	12-RT-025-GW	Project Sample	5/10/2012	<0.12	<0.31	<0.31 VJ	7.64 VJ	<0.31	4.64 VJ	137
MW-42	02-RT-099-GW	Project Sample	11/2/2002	---	<1	---	129	1.3	17.7	39.7
MW-42	02-RT-112-GW	Project Sample	12/19/2002	0.72	<1	<1	976	9.76	19.2	44.5
MW-42	03-RT-030-GW	Project Sample	3/11/2003	0.79	<1	1.51	940	12.9	43.8	69.4
MW-42	03-RT-069-GW	Project Sample	6/18/2003	0.81	<1	<1	355	3.67	11.6	23.1
MW-42	03-RT-070-GW	QC Duplicate	6/18/2003	0.87	<1	<1	387	3.75	10.8	20.5
MW-42	03-RT-071-GW	QA Split	6/18/2003	---	<1	---	373	5.1	18.5	32.9
MW-42	03-RT-097-GW	Project Sample	10/7/2003	2.57	<1	4.84	<1	<1	309	298
MW-42	04-RT-035-GW	Project Sample	6/9/2004	0.41	<1	<1	181	1.84	9.69	31.6
MW-42	04-RT-084-GW	Project Sample	10/22/2004	0.6	<1	<1	400	<1	35.5	15.6
MW-42	05-RT-032-GW	Project Sample	6/3/2005	0.41	<1	<1	93	1.37	21.3	23.1
MW-42	05-RT-067-GW	Project Sample	10/12/2005	0.49	<1	<1	634	7.39	21.3	127

Appendix E

July 1997- December 2018 Groundwater Analytical Data (ug/L) for Benzene, PCE, and PCE Degradation Products

River Terrace RV Park, Soldotna, Alaska

Location	Sample ID	Sample Type	Date Sampled	Benzene MCL=5; ACL= NA	Vinyl chloride MCL=2; ACL=2	1,1-DCE MCL=7; ACL=7	cis-1,2-DCE MCL=70; ACL=11,600	trans-1,2-DCE MCL=10; ACL=11,600	TCE MCL=5; ACL=21,900	PCE MCL=5; ACL=840
MW-42	06-RT-024-GW	Project Sample	5/26/2006	0.63	23	<1	472	5.53	14.9	41.9
MW-42	06-RT-058-GW	Project Sample	9/12/2006	<0.5	1.3	<0.5	140	1.3	5.8	13
MW-42	07-RT-016-GW	Project Sample	5/30/2007	0.14	18.3	<1	259 VH	3.06	10.9	27.9
MW-42	07-RT-026-GW	Project Sample	9/20/2007	---	1.1 VH	---	18 VH	<1 VH	7.3 VH	16.8 VH
MW-42	08-RT-004-GW	Project Sample	5/13/2008	---	59.4	---	241	2.4	11.2	1.7
MW-42	08-RT-048-GW	Project Sample	9/18/2008	<0.4	11.1 VJ	<1	48.5	0.69	57	194
MW-42	09-RT-004-GW	Project Sample	5/5/2009	0.92	52.5	<1	234	3.74	176	409
MW-42	09-RT-083-GW	Project Sample	10/8/2009	0.8	9.45	<0.31	25.3	1.57	11.1	27.7
MW-42	10-RT-052-GW	Project Sample	5/14/2010	<0.12	1.55 VJ	<0.31	12.6	<0.31	8.07	40.8
MW-42	10-RT-083-GW	Project Sample	10/18/2010	<0.12	6.63	<0.31	17.5	<0.31	2.84	17.3
MW-42	12-RT-003-GW	Project Sample	5/9/2012	<0.12 VJ	7.01 VJH	<0.31 VJH	60.7 VJH	0.62 VJH	16.1 VJH	48 VJH
MW-42	13-RT-017-GW	Project Sample	4/11/2013	0.46	18.3	<0.62	256	2.17	25.5	11.3
MW-42	14-RT-003-GW	Project Sample	4/22/2014	<0.2	7.95	<0.5	58.5	1.66	4.8	7
MW-42	14-RT-034-GW	QC Duplicate	4/22/2014	<20	<50	<50	180	<50	<50	141
MW-42	18-RT-42-GW	Project Sample	12/12/2018	<0.2	<0.075	<0.5	3.65 B	<0.5	9.74	178
MW-43	02-RT-101-GW	Project Sample	11/2/2002	---	<1	---	164	<1	24.6	48.2
MW-43	02-RT-113-GW	Project Sample	12/19/2002	<0.4	<1	<1	39.1	<1	7.38	57.4
MW-43	03-RT-031-GW	Project Sample	3/11/2003	<0.4	<1	<1	19.5	<1	5.18	65.8
MW-43	03-RT-072-GW	Project Sample	6/18/2003	<0.4	<1	<1	142	<1	11.9	36.8
MW-43	03-RT-098-GW	Project Sample	10/7/2003	<0.4	<1	<1	120	<1	16.2	45.6
MW-43	03-RT-099-GW	QC Duplicate	10/7/2003	<0.4	<1	<1	101	<1	15.7	41.1
MW-43	04-RT-085-GW	Project Sample	10/22/2004	<0.4	<1	<1	6.77	<1	5.28	69.4
MW-43	04-RT-088-GW	QC Duplicate	10/22/2004	<0.4	<1	<1	8.21	<1	6.05	71.2
MW-43	06-RT-059-GW	Project Sample	9/12/2006	<0.5	<0.5	<0.5	4.3	<0.5	4.4	58
MW-43	08-RT-049-GW	Project Sample	9/20/2008	<0.4	<1	<1	19.5	<1	5.89	20.2
MW-43	12-RT-026-GW	Project Sample	5/10/2012	<0.12	5.91 VJ	<0.31	42.2 VJ	<0.31	18.6 VJ	34.8
MW-44	02-RT-100-GW	Project Sample	11/2/2002	---	<10	---	556	<10	1480	31300
MW-44	02-RT-105-GW	Project Sample	12/18/2002	---	10.6	---	326	2.4	3170	19800
MW-44	03-RT-029-GW	Project Sample	3/11/2003	<2	9	15.5	147	<5	2390	29500
MW-44	03-RT-054-GW	QA Split	6/18/2003	---	<5	---	1750	9.6	5730	26300
MW-44	03-RT-053-GW	QC Duplicate	6/19/2003	0.61	9.86	17.4	1840	8.61	5440	23100
MW-44	03-RT-052-GW	Project Sample	6/19/2003	0.68	10.5	19	2180	9.01	5390	20600
MW-44	03RT-082-GW	Project Sample	9/18/2003	---	11.6	---	894	3.6	4970	18900
MW-44	03-RT-096-GW	Project Sample	10/8/2003	---	---	---	---	---	---	---

Appendix E
July 1997- December 2018 Groundwater Analytical Data (ug/L) for Benzene, PCE, and PCE Degradation Products
River Terrace RV Park, Soldotna, Alaska

Location	Sample ID	Sample Type	Date Sampled	Benzene MCL=5; ACL= NA	Vinyl chloride MCL=2; ACL=2	1,1-DCE MCL=7; ACL=7	cis-1,2-DCE MCL=70; ACL=11,600	trans-1,2-DCE MCL=10; ACL=11,600	TCE MCL=5; ACL=21,900	PCE MCL=5; ACL=840
MW-44	04-RT-042-GW	Project Sample	6/8/2004	0.69	8.3	10.1	1050	6.01	3740	15800
MW-44	04-RT-058-GW	Project Sample	10/29/2004	---	49.7	---	1760	9.9	4460	13500
MW-44	04-RT-063-GW	QA Split	10/29/2004	0.4	31.3	13.8	1510	7	3310	8160
MW-44	05-RT-037-GW	Project Sample	6/3/2005	<0.4	9.16	11	1160	2.56	3990	9250
MW-44	05-RT-053-GW	Project Sample	10/12/2005	---	14.7	---	1890 VM	<10	4570	11500
MW-44	06-RT-005-GW	Project Sample	3/7/2006	---	187	---	8080	104	3220	3530
MW-44	06-RT-017-GW	Project Sample	5/24/2006	---	45.6	---	6170 VH	28	720	416
MW-44	06-RT-037-GW	Project Sample	9/12/2006	---	<25	---	3990	<25	<25	26.5
MW-44	07-RT-009-GW	Project Sample	5/30/2007	---	1630	---	7500	84.4	34.8	26.2
MW-44	07-RT-035-GW	Project Sample	9/18/2007	---	5910	---	18600	88.5	3.6	1.8
MW-44	08-RT-008-GW	Project Sample	5/12/2008	---	393	---	1020	10.4	15.2	67.5
MW-44	08-RT-034-GW	Project Sample	9/17/2008	0.27	4340	11.1	6220	43.7	0.57 VM	0.88
MW-44	09-RT-010-GW	Project Sample	5/6/2009	<0.4	72.7 VJ	<1	104	8	1.61	5.04
MW-44	09-RT-069-GW	Project Sample	10/6/2009	<0.12	171 VJ	0.35	188	6.03	0.69	1.98 VJ
MW-44	10-RT-044-GW	Project Sample	5/12/2010	<0.12 VH	204 VH	0.67 VH	482 VH	5.16 VH	4.55 VH	11.8 VH
MW-44	10-RT-088-GW	Project Sample	10/20/2010	<0.12	609	0.8	380	4.37	0.46	0.85
MW-44	12-RT-008-GW	Project Sample	5/8/2012	<0.12	109	<0.31	131	11	<0.31	0.58
MW-44	13-RT-018-GW	Project Sample	4/9/2013	<0.24	<6.2	<0.62	87	1.4	0.73	1.1
MW-44	14-RT-008-GW	Project Sample	4/23/2014	<0.2	52.7	<0.5	41.9	5.78	0.91	1.78
MW-44	16-RT-009-GW	Project Sample	10/27/2016	<0.12	137	<0.31	231	1.82	<0.31	10.9
MW-44	18-RT-44-GW	Project Sample	12/13/2018	<0.2	205	0.32	62.8	1.99	0.77	1.45
MW-45	03-RT-093-GW	Project Sample	10/9/2003	---	<1	---	6.1	<1	2.5	<1
MW-45	04-RT-043-GW	Project Sample	6/8/2004	<0.4	<1	<1	2.32	<1	10.7	8.41
MW-45	04-RT-059-GW	Project Sample	10/29/2004	---	<1	---	1.7	<1	3.7	2.2
MW-45	05-RT-038-GW	Project Sample	6/3/2005	<0.4	<1	<1	4.89	<1	7.62	2.76
MW-45	06-RT-039-GW	Project Sample	9/12/2006	---	<1	---	2.4	<1	1.9	<1
MW-45	12-RT-035-GW	Project Sample	5/9/2012	<0.12 VH	8.04 VH	<0.31 VH	18.7 VH	0.72 VH	9.43 VH	0.58 VH
MW-45	13-RT-011-GW	Project Sample	4/9/2013	<0.24	0.92	<0.62	2.61	<0.62	2.52	0.47
MW-46	03-RT-094-GW	Project Sample	10/9/2003	---	<1	---	51.4	<1	<1	<1
MW-46	04-RT-044-GW	Project Sample	6/8/2004	<0.4	<1	<1	9.95 VH	<1	13.4 VH	73.6 VH
MW-46	04-RT-060-GW	Project Sample	10/29/2004	---	<1	---	10.1	<1	<1	3.9
MW-46	05-RT-039-GW	Project Sample	6/3/2005	<0.4	<1	<1	1.45	<1	<1	40.1
MW-46	06-RT-040-GW	Project Sample	9/12/2006	---	1.9	---	10.1	<1	<1	<1
MW-46	12-RT-036-GW	Project Sample	5/9/2012	<0.12 VH	1.32 VH	<0.31 VH	3.48 VH	<0.31 VH	<0.31 VH	0.59 VH

Appendix E

July 1997- December 2018 Groundwater Analytical Data (ug/L) for Benzene, PCE, and PCE Degradation Products

River Terrace RV Park, Soldotna, Alaska

Location	Sample ID	Sample Type	Date Sampled	Benzene MCL=5; ACL= NA	Vinyl chloride MCL=2; ACL=2	1,1-DCE MCL=7; ACL=7	cis-1,2-DCE MCL=70; ACL=11,600	trans-1,2-DCE MCL=10; ACL=11,600	TCE MCL=5; ACL=21,900	PCE MCL=5; ACL=840
MW-47	06-RT-038-GW	Project Sample	10/4/2006	---	71	---	18700	193	2270	16100
MW-47	07-RT-010-GW	Project Sample	5/30/2007	---	139	---	47700	777	<10	<10
MW-47	07-RT-036-GW	Project Sample	9/19/2007	---	142	---	45500	485	<10	<10
MW-47	08-RT-009-GW	Project Sample	5/12/2008	---	83.8	---	21400	260	<5	<5
MW-47	08-RT-035-GW	Project Sample	9/17/2008	73	165	27	40600	1330	1.1 VM	0.43
MW-47	09-RT-011-GW	Project Sample	5/6/2009	67.4	268 VJ	49.3	55900	490	48.4	1
MW-47	09-RT-019-GW	QC Duplicate	5/6/2009	68.9	256 VJ	47.9	62300	494	40.5	<10
MW-47	09-RT-070-GW	Project Sample	10/6/2009	67.9	413	30.4	32800	309	2.5	0.35 F
MW-47	10-RT-045-GW	Project Sample	5/11/2010	64.7	1980	32.3	38700 VH	410	232	55.3
MW-47	10-RT-089-GW	Project Sample	10/19/2010	86.6	2080	71.8	67700	612	2280	278
MW-47	11-RT-001-GW	Project Sample	5/17/2011	69.6	1430	35.4	34900	384	4140	1610
MW-47	12-RT-009-GW	Project Sample	5/8/2012	<60	370	37.2	34400	345	5120	4050
MW-47	13-RT-025-GW	Project Sample	4/10/2013	31 VH	304 VH	<62 VH	10900 VH	181 VH	1950 VH	3990 VH
MW-47	14-RT-009-GW	Project Sample	4/23/2014	11.5	112	7.24	6170	62.2	790	2500
MW-47	18-RT-47-GW	Project Sample	12/13/2018	85 J-	676 J-	31 J-	34300 J-	477 J-	2550 J-	10600 J-
MW-48	09-RT-043-GW	Project Sample	8/17/2009	<1.2	57.9	89.9	12100	42.9	16800	120000
MW-48	09-RT-071-GW	Project Sample	10/6/2009	3.23	128	73	23700	119	4090	333 VJ
MW-48	10-RT-046-GW	Project Sample	5/12/2010	0.24	16.5 VJ	7.31	3310	13.5	292 VJ	26 VJ
MW-48	10-RT-068-GW	QC Duplicate	5/12/2010	0.25	16.2	7.41	3100	14.2	617 VR	616 VR
MW-48	10-RT-090-GW	Project Sample	10/19/2010	<0.12	7.22 VJ	3.08	1220	6.78	7.39	2.78
MW-48	11-RT-002-GW	Project Sample	5/18/2011	0.52	54.1	39.2	14600	37.4	<620	30
MW-48	12-RT-010-GW	Project Sample	5/8/2012	1.35	<155	<155	31500	<155	4.57	3.42
MW-48	13-RT-026-GW	Project Sample	4/10/2013	1.29	17.1	16.5	4700	14.6	0.72	0.64
MW-48	14-RT-010-GW	Project Sample	4/22/2014	<20	<50	61.7	25400	70.7	<50	<50
MW-48	16-RT-010-GW	Project Sample	10/26/2016	<12	364	133	97400 E	196	350	<31
MW-48	18-RT-48-GW	Project Sample	12/13/2018	<10 UJ	1350 J-	<25 UJ	4030 J-	38.5 J-	<25 UJ	22.5 J-
MW-49	09-RT-044-GW	Project Sample	8/17/2009	<1.2	25.9	8.4	7660	17	309	986
MW-49	09-RT-046-GW	QC Duplicate	8/17/2009	<1.2	27.9	8.5	---	18	290	---
MW-49	09-RT-072-GW	Project Sample	10/6/2009	2.4	78.8 VJ	31.7	16300	73.9 VJ	1490	137 VJ
MW-49	10-RT-047-GW	Project Sample	5/13/2010	5.2	359 VJ	94	92900	203	<6.2	29.2
MW-49	10-RT-091-GW	Project Sample	10/19/2010	4.26 VH	314 VH	66.5 VH	63200 VH	120 VH	1.76 VH	0.93 VH
MW-49	11-RT-003-GW	Project Sample	5/18/2011	3.13	876	49.8	50700	96	5.25	2.65
MW-49	12-RT-011-GW	Project Sample	5/9/2012	<24	2700	<62	79300	94	<62	<62

Appendix E

July 1997- December 2018 Groundwater Analytical Data (ug/L) for Benzene, PCE, and PCE Degradation Products

River Terrace RV Park, Soldotna, Alaska

Location	Sample ID	Sample Type	Date Sampled	Benzene MCL=5; ACL= NA	Vinyl chloride MCL=2; ACL=2	1,1-DCE MCL=7; ACL=7	cis-1,2-DCE MCL=70; ACL=11,600	trans-1,2-DCE MCL=10; ACL=11,600	TCE MCL=5; ACL=21,900	PCE MCL=5; ACL=840
MW-49	13-RT-027-GW	Project Sample	4/10/2013	<0.24	109	<0.62	382	4.57	<0.62	<0.62
MW-49	14-RT-011-GW	Project Sample	4/23/2014	4.14	8390	31.2	37800	182	<10	14.8
MW-49	16-RT-011-GW	Project Sample	10/26/2016	<2.4	9720	34.4	50500	120	<6.2	<6.2
MW-49	18-RT-49-GW	Project Sample	12/13/2018	0.16	165	1.53	987	4.74	<0.5	<0.5
MW-49	18-RT-FD1-GW	QC Duplicate	12/13/2018	0.18	161	1.71	958	5.16	0.34	0.54
MW-50	09-RT-045-GW	Project Sample	8/17/2009	2.8	25.4	21.2	8840	44.1	2340	3550
MW-50	09-RT-073-GW	Project Sample	10/6/2009	3.7	81.6 VJ	115	12600	58.7	9360	44000 VJ
MW-50	10-RT-048-GW	Project Sample	5/12/2010	3.97	285	226	28900	67.5	26900	64400
MW-50	10-RT-059-GW	QA Split	5/12/2010	---	146 VJ	---	23000	52.5	20100	64900
MW-50	10-RT-067-GW	QC Duplicate	5/12/2010	3.65	294	246	30700	78	26100	73100
MW-50	10-RT-092-GW	Project Sample	10/20/2010	2.2	77	101	21400	45	17900	54700
MW-50	11-RT-009-GW	QA Split	5/17/2011	---	258 VJ	---	48800 VJ	219 VJ	6050 VJ	18000 VJ
MW-50	11-RT-004-GW	Project Sample	5/17/2011	1.82	354 VJ	114	117000 VJ	103 VJ	15500 VJ	38100 VJ
MW-50	11-RT-008-GW	QC Duplicate	5/17/2011	---	---	---	---	---	---	---
MW-50	12-RT-012-GW	Project Sample	5/8/2012	2.82	1180	261	3890	654	22.2	4.69
MW-50	13-RT-028-GW	Project Sample	4/10/2013	0.37	1400	38.2	19600	51	1080	2710
MW-50	14-RT-012-GW	Project Sample	4/22/2014	<4	1680	9.94	7440	28.6	81.8	128
MW-50	16-RT-012-GW	Project Sample	10/26/2016	<2.4	15800	41.8	47000	135	<6.2	<6.2
MW-50	18-RT-50-GW	Project Sample	12/13/2018	1.49	34500	152	167000	548	988 J	2960 J
MW-50	18-RT-FD3-GW	QC Duplicate	12/13/2018	1.47	33300	118	125000	469	4.19	21.4 J
MW-51	10-RT-093-GW	Project Sample	10/19/2010	1.53	184	196	79400	254	5200	59000
MW-51	11-RT-005-GW	Project Sample	5/18/2011	0.49	2220	53.9	30300	180	236	793
MW-51	12-RT-013-GW	Project Sample	5/9/2012	<24	11400	64	73600	256	<62	<62
MW-51	13-RT-029-GW	Project Sample	4/10/2013	0.13	3870	17.3	10500	49	2.54	4.73
MW-51	14-RT-013-GW	Project Sample	4/22/2014	<0.2	12.5	<0.5	34.6	0.655	0.749	5.81
MW-51	16-RT-013-GW	Project Sample	10/26/2016	0.41	11800 E	21.1	22200 E	394 E	<0.31	14.2
MW-51	16-RT-017-GW	QC Duplicate	10/26/2016	<12	9120	<31	11200 J	146 J	<31	<31
MW-51	18-RT-51-GW	Project Sample	12/13/2018	<0.2	705	<5	507	21.5	<5 UJ	4.2
MW-51	18-RT-FD2-GW	QC Duplicate	12/13/2018	<0.2	679	0.58	498	21.4	1.02 J	4.83
MW-52	10-RT-094-GW	Project Sample	10/19/2010	0.42	26.5	36.8	18200	81.8	2320	1410
MW-52	11-RT-006-GW	Project Sample	5/17/2011	<0.12	53.5	2.81	1130	5.05	1.75	2.78
MW-52	12-RT-014-GW	Project Sample	5/8/2012	<0.12	475	3.74	1220	8.71	<0.31	0.7
MW-52	13-RT-030-GW	Project Sample	4/10/2013	3.66	10900	23.1	30500	152	1.17	<0.62

Appendix E

July 1997- December 2018 Groundwater Analytical Data (ug/L) for Benzene, PCE, and PCE Degradation Products

River Terrace RV Park, Soldotna, Alaska

Location	Sample ID	Sample Type	Date Sampled	Benzene MCL=5; ACL= NA	Vinyl chloride MCL=2; ACL=2	1,1-DCE MCL=7; ACL=7	cis-1,2-DCE MCL=70; ACL=11,600	trans-1,2-DCE MCL=10; ACL=11,600	TCE MCL=5; ACL=21,900	PCE MCL=5; ACL=840
MW-52	14-RT-014-GW	Project Sample	4/23/2014	<0.2	2.74	<0.5	11.7	1.02	0.776	15.2
MW-52	16-RT-014-GW	Project Sample	10/26/2016	<0.12	20.8	<0.31	24.8	3.78	<0.31	1.15
MW-52	18-RT-52-GW	Project Sample	12/13/2018	<0.2	30.7	<0.5	20.1	3.3	0.38	23
L-13	03-RT-008-GW	Project Sample	3/10/2003	---	166	---	3040	42.2	<10	<10
L-13	03-RT-010-GW	QA Split	3/10/2003	3.81	193	3.05	3240	42.8	1.39	1.15
L-13	03-RT-037-GW	Project Sample	6/17/2003	---	599	---	3690	51.5	<10	<10
L-13	03-RT-074-GW	QA Split	6/17/2003	---	---	---	---	---	---	---
L-13	03-RT-077-GW	QA Split	6/17/2003	6.51	610	2.85	4360	<1	<1	<1
L-17	03-RT-076-GW	QA Split	6/17/2003	---	---	---	---	---	---	---
L-17	03-RT-038-GW	Project Sample	6/17/2003	---	11.6	---	1490	20.2	111	161
L-74	06-RT-076-GW	Project Sample	10/1/2006	1.16	4.89	1.8	1030	1.8	<310	700 F
L-75	06-RT-077-GW	Project Sample	10/1/2006	36.4	<620	51.3	39100	51.6	720 F	3860
L-76	06-RT-078-GW	Project Sample	10/1/2006	12.6	49.7	<620	700 F	<620	1740 F	139000 VH
L-76	06-RT-081-GW	QC Duplicate	10/1/2006	12.6	<620	<620	640	<620	1780 F	139000
L-78	08-RT-010-GW	Project Sample	6/26/2008	<20	44.5	32	7630	70.5	5800	12300
L-78	08-RT-036-GW	Project Sample	9/18/2008	1.3	208 VJ	64	14500	101 VJ	9620	22800
L-78	09-RT-020-GW	Project Sample	5/7/2009	<8	257 VJ	35.6	5520	39.2	3350	5900
L-78	09-RT-074-GW	Project Sample	10/7/2009	1.3	61.8	82.1 VJ	14300 VJ	107 VJ	5610	19600 VJ
L-78	10-RT-062-GW	Project Sample	5/13/2010	<12	1380 VJ	113	28400	160	9220	26100
L-78	10-RT-095-GW	Project Sample	10/20/2010	1.97 VH	66.3 VH	13.3 VH	5470 VH	16.1 VH	834 VH	21200 VH
L-78	11-RT-010-GW	Project Sample	5/17/2011	<120	570	<310	15100	<310	3090	8750
L-78	12-RT-015-GW	Project Sample	5/9/2012	<24	<62	<62	4040	<62	472	12700
L-78	13-RT-031-GW	Project Sample	4/9/2013	0.75 VH	1280 VH	38.5 VH	21800 VH	31 VH	3150 VH	6510 VH
L-78	14-RT-015-GW	Project Sample	4/23/2014	<20	1070	<50	19900	38.6	2560	4350
L-78	18-RT-78-GW	Project Sample	12/14/2018	<20 UJ	2540 J-	<50 UJ	15300 J-	43 J-	<50 UJ	35 J-
L-79	08-RT-011-GW	Project Sample	5/13/2008	---	13.4	---	1240	9.2	918	2710
L-80	08-RT-012-GW	Project Sample	5/13/2008	---	77.8	---	8850	68	4450	48900
L-80	08-RT-037-GW	Project Sample	9/18/2008	5.98	93.6 VJ	51.5	11700	60.9	3920	41300

Appendix E
July 1997- December 2018 Groundwater Analytical Data (ug/L) for Benzene, PCE, and PCE Degradation Products
River Terrace RV Park, Soldotna, Alaska

Location	Sample ID	Sample Type	Date Sampled	Benzene MCL=5; ACL= NA	Vinyl chloride MCL=2; ACL=2	1,1-DCE MCL=7; ACL=7	cis-1,2-DCE MCL=70; ACL=11,600	trans-1,2-DCE MCL=10; ACL=11,600	TCE MCL=5; ACL=21,900	PCE MCL=5; ACL=840
L-80	09-RT-021-GW	Project Sample	5/7/2009	5.4	138 VJ	46.2	11600	53.8	4150	13300
L-80	14-RT-018-GW	Project Sample	4/23/2014	<20	284	66.2	20000	41.6	3670	63500
L-80A	18-RT-80A-GW	Project Sample	12/13/2018	<20 UJ	2640 J-	197 J-	53600 J-	190 J-	19300 J-	104000 J-
L-81	08-RT-013-GW	Project Sample	6/26/2008	23.5	77	<50	11700	108	978	2950
L-81	08-RT-038-GW	Project Sample	9/18/2008	24	302	22	23100	184	490	480
L-81	09-RT-022-GW	Project Sample	5/7/2009	25.8	303 VJ	21	16600	156	761	791
L-93	09-RT-039-GW	Project Sample	8/15/2009	<1.2	11.7	4.5	1540	12.7	17.3	32.2
L-94	09-RT-040-GW	Project Sample	8/15/2009	<1.2	7.5	3.8	2390	16.6	265	201
L-96	09-RT-042-GW	Project Sample	8/15/2009	3.1	7.8	3.9	1890	20.4	261	6250
WP-2	02-RT-114-GW	Project Sample	12/18/2002	<4	<1	<1	<1	<1	<1	<1
SB-1(deep)	97RTGW506GW	Project Sample	7/18/1997	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
SB-1(deep)	SB-1 (D)	Project Sample	4/23/1998	<1	<1	<1	<1	<1	<1	<1
SB-1(deep)	SB-1 Deep	Project Sample	6/29/1998	<1	<1	<1	<1	<1	<1	<1
SB-1(deep)	SB-1 Deep	Project Sample	10/20/1998	<1	<1	<1	<1	<1	<1	<1
SB-1(deep)	03-RT-061-GW	Project Sample	6/19/2003	<0.4	<1	<1	<1	<1	5.11	39
SB-1(deep)	03-RT-107-GW	Project Sample	10/9/2003	1.07	<1	<1	<1	<1	<1	<1
SB-1(deep)	04-RT-066-GW	Project Sample	10/22/2004	<0.4	<1	<1	<1	<1	<1	<1
SB-1(shallow)	SB-1 (S)	Project Sample	4/23/1998	<1	<1	<1	<1	<1	<1	<1
SB-1(shallow)	SB-1 Shallow	Project Sample	6/30/1998	<1	<1	<1	<1	<1	<1	<1
SB-1(shallow)	SB-1 Shallow	Project Sample	10/20/1998	<1	<1	<1	<1	<1	<1	<1
SB-1(shallow)	SB-1 Shallow	Project Sample	4/16/1999	<1	<1	<1	<	<1	<1	<1
SB-1(shallow)	03-RT-060-GW	Project Sample	6/19/2003	<0.4	<1	<1	<1	<1	<1	<1
L-97	09-RT-047-GW	Project Sample	8/19/2009	0.82	7.33	0.56	395	1.57	7.85	25
L-98	09-RT-048-GW	Project Sample	8/19/2009	4.5	35.4	35.5	21600	41.9	1230	45500
L-99	09-RT-049-GW	Project Sample	8/19/2009	4.3	25	9.4	2120	<3.1	1070	13900

Appendix E
July 1997- December 2018 Groundwater Analytical Data (ug/L) for Benzene, PCE, and PCE Degradation Products
River Terrace RV Park, Soldotna, Alaska

Location	Sample ID	Sample Type	Date Sampled	Benzene MCL=5; ACL= NA	Vinyl chloride MCL=2; ACL=2	1,1-DCE MCL=7; ACL=7	cis-1,2-DCE MCL=70; ACL=11,600	trans-1,2-DCE MCL=10; ACL=11,600	TCE MCL=5; ACL=21,900	PCE MCL=5; ACL=840
L-100	09-RT-050-GW	Project Sample	8/19/2009	1.08	3.3	1.15	1350	6.43	163	128
L-100	09-RT-092-GW	Project Sample	10/7/2009	1.23	23.5	1.6	1870	7.2	121	93
L-100	10-RT-054-GW	Project Sample	5/12/2010	0.82 VH	16.5 J,H	1.17 VH	1200 VH	3.9 VH	65.7 VH	91.3 VH
L-100	10-RT-096-GW	Project Sample	10/20/2010	<2.4	18	<6.2	1700	7.6	225	110
L-100	11-RT-007-GW	Project Sample	5/17/2011	<12	50	<31	3010	<31	216	151
L-100	12-RT-016-GW	Project Sample	5/9/2012	<12	<31	<31	2450	<31	61	<31
L-100	13-RT-023-GW	Project Sample	4/10/2013	0.66	15.4	2.72	1720	17	38.8	17.5
L-100	13-RT-035-GW	QC Duplicate	4/10/2013	0.65	11.9	2.94	1690	16.7	42.3	19.6
L-100	14-RT-016-GW	Project Sample	4/22/2014	<20	<50	<50	1610	<50	88.6	47.5
L-101	09-RT-059-GW	Project Sample	8/19/2009	0.99	21.1	32.9	2730	16	8580	18700
L-101	09-RT-093-GW	Project Sample	10/7/2009	1.08	47.1	69.5	31200	197	5730	7100
L-101	10-RT-055-GW	Project Sample	5/12/2010	2.35 VH	33.1 J,H	27.9 VH	16700 VH	53.9 VH	4680 VH	57600 VH
L-101	10-RT-097-GW	Project Sample	10/20/2010	<2.4	83.6	87.4	55500	217	173	110
L-101	11-RT-011-GW	Project Sample	5/17/2011	<12	1440	82	54300	182	<31	<31
L-101	11-RT-012-GW	QC Duplicate	5/17/2011	<12	1530	86	61800	203	<31	<31
L-101	12-RT-017-GW	Project Sample	5/8/2012	<24	76	<62	28800	118	62	406
L-101	12-RT-019-GW	QA Split	5/8/2012	---	462 VR	---	27600	123	95.8	363
L-101	12-RT-040-GW	QC Duplicate	5/8/2012	<24	62	<62	26200	180	<62	344
L-101	13-RT-024-GW	Project Sample	4/10/2013	1.21 VH	1120 VH	29.8 VH	25200 VH	<62 VH	266 VH	582 VH
L-101	14-RT-017-GW	Project Sample	4/23/2014	<20	1470	<50	29800	98	337	644
L-102	14-RT-019-GW	Project Sample	4/22/2014	<20	375	88.4	36700	62.4	6600	61500
L-103	14-RT-020-GW	Project Sample	4/23/2014	30.1	317	36.6	24600	185	3050	8340
L-103	18-RT-103-GW	Project Sample	12/13/2018	45 J-	303 J-	<50 UJ	18000 J-	201 J-	2150 J-	7290 J-
Laundry Well	WSWell	Project Sample	10/29/1997	<1	<1	<0.5	1.07	<1	<1	<1
Laundry Well	WSWell	Project Sample	12/31/1997	<1	<1	<0.5	<1	<1	<1	<1
Laundry Well	Drinking Water Well	Project Sample	6/30/1998	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Laundry Well	DWW	Project Sample	12/29/1998	<5	<5	<5	<5	<5	<5	<5
Laundry Well	99-RT-063-GW	Project Sample	10/27/1999	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Laundry Well	00-RT-047-GW	Project Sample	7/7/2000	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Laundry Well	WSWell	Project Sample	6/20/2003	<0.5	<0.4	<0.5	<0.5	<0.5	<0.5	<0.5
Laundry Well	Space 79 Kitchen	Project Sample	11/29/2006	<0.5	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5

Appendix E

July 1997- December 2018 Groundwater Analytical Data (ug/L) for Benzene, PCE, and PCE Degradation Products

River Terrace RV Park, Soldotna, Alaska

Location	Sample ID	Sample Type	Date Sampled	Benzene MCL=5; ACL= NA	Vinyl chloride MCL=2; ACL=2	1,1-DCE MCL=7; ACL=7	cis-1,2-DCE MCL=70; ACL=11,600	trans-1,2-DCE MCL=10; ACL=11,600	TCE MCL=5; ACL=21,900	PCE MCL=5; ACL=840
Laundry Well	Drinking Water Well	Project Sample	12/20/2010	<0.5	<0.4	<0.5	<0.5	<0.5	<0.5	<0.5
River - MW-5	05-RT-040-GW	Project Sample	6/2/2005	<0.4	<1	<1	<1	<1	<1	<1
River - MW-5	05-RT-068-GW	Project Sample	10/12/2005	<0.4	<1	<1	<1	<1	<1	<1
River - MW-5	06-RT-025-GW	Project Sample	5/25/2006	<0.4	<1	<1	<1	<1	<1	<1
River - MW-5	06-RT-060-GW	Project Sample	9/13/2006	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
River - MW-5	07-RT-017-GW	Project Sample	5/30/2007	<0.4	<1	<1	<1	<1	<1 VM	<1 VM
River - MW-5	07-RT-045-GW	Project Sample	9/20/2007	<0.4	<1	<1	<1	<1	<1	<1
River - MW-5	07-RT-048-GW	QC Duplicate	9/20/2007	<0.4	<1	<1	<1	---	<1	<1
River - MW-5	08-RT-019-GW	Project Sample	5/13/2008	<0.4	<1	<1	<1	<1	<1	<1
River - MW-5	08-RT-061-GW	Project Sample	9/20/2008	<0.4	<1	<1	<1	<1	<1	<1
River - MW-5	09-RT-015-SW	Project Sample	5/7/2009	<0.4	<1	<1	<1	<1	<1	<1
River - MW-5	09-RT-094-GW	Project Sample	10/9/2009	<0.12	<0.31	<0.31	13.3	<0.31	1.66	0.91 VJ
River - MW-5	10-RT-063-GW	Project Sample	5/13/2010	<0.12	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31
River - MW-5	10-RT-114-GW	Project Sample	10/22/2010	<0.12	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31
River - MW-5	12-RT-037-GW	Project Sample	5/9/2012	<0.12 VH	<0.31 VH	<0.31 VH	0.4 VH	<0.31 VH	<0.31 VH	<0.31 VH
River - MW-5	14-RT-029-GW	Project Sample	4/23/2014	<0.2	<0.5	<0.5	0.32	<0.5	<0.5	<0.5
River - MW-6	99RTRVP004SW	Project Sample	5/19/1999	---	<0.02	---	15	0.081	1.9	2.5
River - MW-6	03-RT-055-GW	Project Sample	6/19/2003	<0.4	<1	<1	<1	<1	<1	<1
River - MW-6	03-RT-116-GW	Project Sample	10/8/2003	<0.4	<1	<1	<1	<1	<1	<1
River - MW-6	04-RT-001-SW	Project Sample	5/6/2004	---	<1	---	<1	<1	<1	<1
River - MW-6	04-RT-002-SW	Project Sample	5/6/2004	---	<1	---	<1	<1	<1	<1
River - MW-6	04-RT-041-GW	Project Sample	6/7/2004	<0.4	<1	<1	<1	<1	<1	<1
River - MW-6	05-RT-041-GW	Project Sample	6/2/2005	<0.4	<1	<1	<1	<1	<1	<1
River - MW-6	05-RT-069-GW	Project Sample	10/12/2005	<0.4	<1	<1	<1	<1	<1	<1
River - MW-6	06-RT-026-GW	Project Sample	5/25/2006	<0.4	<1	<1	<1	<1	<1	<1
River - MW-6	06-RT-061-GW	Project Sample	9/13/2006	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
River - MW-6	07-RT-018-GW	Project Sample	5/30/2007	<0.4	<1	<1	<1	<1	<1 VM	<1 VM
River - MW-6	07-RT-046-GW	Project Sample	9/20/2007	<0.4	<1	<1	<1	<1	<1	<1
River - MW-6	08-RT-020-GW	Project Sample	5/13/2008	<0.4	<1	<1	<1	<1	<1	<1
River - MW-6	08-RT-062-GW	Project Sample	9/20/2008	<0.4	<1	<1	<1	<1	<1	<1
River - MW-6	09-RT-016-SW	Project Sample	5/7/2009	<0.4	<1	<1	<1	<1	<1	<1
River - MW-6	09-RT-095-GW	Project Sample	10/9/2009	<0.12	<0.31	<0.31	5.17	<0.31	<0.31	<0.31
River - MW-6	10-RT-064-GW	Project Sample	5/13/2010	<0.12	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31
River - MW-6	10-RT-115-GW	Project Sample	10/22/2010	<0.12	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31

Appendix E
July 1997- December 2018 Groundwater Analytical Data (ug/L) for Benzene, PCE, and PCE Degradation Products
River Terrace RV Park, Soldotna, Alaska

Location	Sample ID	Sample Type	Date Sampled	Benzene MCL=5; ACL= NA	Vinyl chloride MCL=2; ACL=2	1,1-DCE MCL=7; ACL=7	cis-1,2-DCE MCL=70; ACL=11,600	trans-1,2-DCE MCL=10; ACL=11,600	TCE MCL=5; ACL=21,900	PCE MCL=5; ACL=840
River - MW-6	12-RT-038-GW	Project Sample	5/9/2012	<0.12 VH	<0.31 VH	<0.31 VH	<0.31 VH	<0.31 VH	<0.31 VH	<0.31 VH
River - MW-6	14-RT-030-GW	Project Sample	4/23/2014	<0.2	<0.5	<0.5	0.613	<0.5	<0.5	<0.5
River - MW-8	97-LTRP-202WA	Project Sample	5/14/1997	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
River - MW-8	99RTRVP003SW	Project Sample	5/19/1999	---	<0.02	---	2.8 E	<0.02	0.26	0.81
River - MW-8	05-RT-042-GW	Project Sample	6/2/2005	<0.4	<1	<1	<1	<1	<1	<1
River - MW-8	05-RT-070-GW	Project Sample	10/12/2005	<0.4	<1	<1	<1	<1	<1	<1
River - MW-8	06-RT-027-GW	Project Sample	5/25/2006	<0.4	<1	<1	<1	<1	<1	<1
River - MW-8	06-RT-062-GW	Project Sample	9/13/2006	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
River - MW-8	07-RT-019-GW	Project Sample	5/30/2007	<0.4	<1	<1	<1	<1	<1 VM	<1 VM
River - MW-8	07-RT-047-GW	Project Sample	9/20/2007	<0.4	<1	<1	<1	<1	<1	<1
River - MW-8	08-RT-021-GW	Project Sample	5/13/2008	<0.4	<1	<1	<1	<1	<1	<1
River - MW-8	08-RT-063-GW	Project Sample	9/20/2008	<0.4	<1	<1	<1	<1	<1	<1
River - MW-8	09-RT-017-SW	Project Sample	5/7/2009	<0.4	<1	<1	<1	<1	<1	<1
River - MW-8	09-RT-096-GW	Project Sample	10/9/2009	<0.12	<0.31	<0.31	2.84	<0.31	<0.31	<0.31
River - MW-8	10-RT-065-GW	Project Sample	5/13/2010	<0.12	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31
River - MW-8	10-RT-116-GW	Project Sample	10/22/2010	<0.12	<0.31	<0.31	<0.31	<0.31	<0.31	<0.31
River - MW-8	12-RT-039-GW	Project Sample	5/9/2012	<0.12 VH	<0.31 VH	<0.31 VH	0.31 VH	<0.31 VH	<0.31 VH	<0.31 VH
River - MW-8	14-RT-031-GW	Project Sample	4/23/2014	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
River - SD-11	99RTRVP005SW	Project Sample	5/19/1999	---	<0.02	---	<0.02	<0.02	<0.02	<0.02
River - SD-043	06-RT-046-PW	Project Sample	5/17/2006	<0.4	<1	<1	<1	<1	<1	<1
River - SD-035	06-RT-045-PW	Project Sample	5/17/2006	<0.4	<1	<1	<1	<1	<1	<1
River - SD-043	08-RT-046-PW	Project Sample	5/7/2008	<0.4	<1	<1	<1	<1	<1	<1
River - SD-035	08-RT-047-PW	Project Sample	5/7/2008	<0.4	<1	<1	<1	<1	<1	<1
River - SD-041	13-RT-046-PW	Project Sample	5/22/2013	<0.24	<0.62	<0.62	0.36	<0.62	<0.62	<0.62
River - SD-035	13-RT-045-PW	Project Sample	5/22/2013	<0.24	<0.62	<0.62	<0.62	<0.62	<0.62	<0.62
SD-004	04-RT-090-PW	Project Sample	11/24/2004	<0.4	<1	<1	38.2	<1	1.9	<1
SD-006	04-RT-091-PW	Project Sample	11/5/2004	<0.4	<1	<1	45.3	<1	2.69	2.19
SD-006	04-RT-100-PW	QC Duplicate	11/24/2004	<0.4	<1	<1	5.66	<1	1.35	1.42
SD-006	04-RT-101-PW	Project Sample	11/24/2004	<0.4	<1	<1	4.45	<1	1.25	1.41
SD-006	06-RT-006-PW	Project Sample	5/17/2006	0.45	21.3	<1	41.8 VJ	3.13	1.65	<1
SD-006	08-RT-006-PW	Project Sample	5/7/2008	<0.4	11.6 VJ	<1	23.6	1.13	1.55	0.68
SD-006	13-RT-006-PW	Project Sample	5/22/2013	0.25 VB	0.49	<0.62	4.22	0.34	1.09	1.15

Appendix E

July 1997- December 2018 Groundwater Analytical Data (ug/L) for Benzene, PCE, and PCE Degradation Products

River Terrace RV Park, Soldotna, Alaska

Location	Sample ID	Sample Type	Date Sampled	Benzene MCL=5; ACL= NA	Vinyl chloride MCL=2; ACL=2	1,1-DCE MCL=7; ACL=7	cis-1,2-DCE MCL=70; ACL=11,600	trans-1,2-DCE MCL=10; ACL=11,600	TCE MCL=5; ACL=21,900	PCE MCL=5; ACL=840
SD-007	04-RT-092-PW	Project Sample	11/5/2004	<0.4	4.48	<1	106	<1	2.02	<1
SD-007	04-RT-102-PW	Project Sample	11/24/2004	<0.4	<1	<1	6.08	<1	<1	<1
SD-007	06-RT-007-PW	Project Sample	5/17/2006	<0.4	4.24	<1	31.7 VJ	<1	1.6	<1
SD-007	13-RT-007-PW	Project Sample	5/23/2013	0.29 VB	2.05	<0.62	3.3	1.01	1.46	0.96
SD-008	06-RT-008-PW	Project Sample	5/17/2006	<0.4	9.58	<1	41.3 VJ	<1	<1	<1
SD-008	08-RT-008-PW	Project Sample	5/7/2008	<0.4	10.2 VJ	<1	25.1	3.4	0.35	<1
SD-008	13-RT-008-PW	Project Sample	5/23/2013	0.24 VB	<0.62	<0.62	3.03	0.38	1.43	0.56
SD-009	04-RT-094-PW	Project Sample	11/24/2004	<0.4	<1	<1	40.9	<1	<1	<1
SD-009	06-RT-009-PW	Project Sample	5/17/2006	<0.4	5.2	<1	49.1 VJ	<1	<1	<1
SD-009	08-RT-009-PW	Project Sample	5/7/2008	<0.4	2.54 VJ	<1	15.7	1.12	0.73	<1
SD-009	13-RT-009-PW	Project Sample	5/23/2013	0.32 VB	0.69	<0.62	5.65	0.64	1.21	<0.62
SD-010	04-RT-095-PW	Project Sample	11/24/2004	<0.4	<1	<1	53	<1	1.97	1.04
SD-010	06-RT-010-PW	Project Sample	5/17/2006	<0.4	<1	<1	23.3 VJ	<1	<1	<1
SD-010	13-RT-010-PW	Project Sample	5/23/2013	<0.24	<0.62	<0.62	2.17	<0.62	0.61	<0.62
SD-027	08-RT-027-PW	Project Sample	5/7/2008	<0.4	<1	<1	26	<1	3.91	8.92
SD-027	08-RT-048-PW	Project Sample	5/13/2008	<0.4	<1	<1	25.4	<1	4.29	8.15
SD-033	06-RT-033-PW	Project Sample	5/17/2006	<0.4	4.17	<1	13 VJ	<1	<1	<1
SD-033	08-RT-033-PW	Project Sample	5/7/2008	---	---	---	---	---	---	---
SD-033	08-RT-049-PW	Project Sample	5/13/2008	<0.4	7.33 VJ	<1	16.7	2.12	0.71	<1
SD-033	13-RT-033-PW	Project Sample	5/22/2013	0.28 VB	2.03	<0.62	3.2	0.88	0.82	<0.62
SD-035	06-RT-035-PW	Project Sample	5/17/2006	<0.4	6.77	<1	23.8 VJ	<1	<1	<1
SD-035	08-RT-035-PW	Project Sample	5/7/2008	<0.4	0.74	<1	4.12	0.52	<1	<1
SD-035	13-RT-035-PW	Project Sample	5/22/2013	0.25 VB	0.66	<0.62	1.58	0.38	0.8	<0.62
SD-037	06-RT-037-PW	Project Sample	5/17/2006	<0.4	7.11	<1	43.6 VJ	<1	<1	<1
SD-037	08-RT-037-PW	Project Sample	5/7/2008	0.14	3.86 VJ	<1	11.4	1.83	0.31	<1
SD-037	13-RT-037-PW	Project Sample	5/22/2013	0.28 VB	0.5	<0.62	1.64	0.42	<0.62	<0.62
SD-040	04-RT-098-PW	Project Sample	11/24/2004	<0.4	18.4	<1	321	3.23	1.03	<1

Appendix E

July 1997- December 2018 Groundwater Analytical Data (ug/L) for Benzene, PCE, and PCE Degradation Products

River Terrace RV Park, Soldotna, Alaska

Location	Sample ID	Sample Type	Date Sampled	Benzene MCL=5; ACL= NA	Vinyl chloride MCL=2; ACL=2	1,1-DCE MCL=7; ACL=7	cis-1,2-DCE MCL=70; ACL=11,600	trans-1,2-DCE MCL=10; ACL=11,600	TCE MCL=5; ACL=21,900	PCE MCL=5; ACL=840
SD-040	06-RT-040-PW	Project Sample	5/17/2006	<0.4	6.92	<1	40.9	1.1	1.07	<1
SD-040	06-RT-031-PW	QC Duplicate	5/17/2006	<0.4	6.1	<1	33 VJ	<1	<1	<1
SD-040	08-RT-040-PW	Project Sample	5/7/2008	---	---	---	---	---	---	---
SD-040	08-RT-031-PW	QC Duplicate	5/7/2008	---	---	---	---	---	---	---
SD-040	08-RT-050-PW	Project Sample	5/13/2008	<0.4	5.16 VJ	<1	20.5	1.63	3.35	<1
SD-040	08-RT-051-PW	QC Duplicate	5/13/2008	<0.4	6.26 VJ	<1	18.7	1.56	3.02	<1
SD-040	13-RT-031-PW	QC Duplicate	5/22/2013	0.27 VB	<0.62	<0.62	5.88	0.77	1.71	1.25
SD-040	13-RT-040-PW	Project Sample	5/22/2013	0.28 VB	1.45	<0.62	5.67	0.71	1.59	1.05
SD-041	04-RT-099-PW	Project Sample	11/24/2004	0.48	65.4	<1	353	4.39	<1	<1
SD-041	06-RT-032-PW	QC Duplicate	5/17/2006	<0.4	<1	<1	4.58	<1	<1	<1
SD-041	06-RT-041-PW	Project Sample	5/17/2006	<0.4	<1	<1	6.36 VJ	<1	<1	<1
SD-041	08-RT-032-PW	QC Duplicate	5/7/2008	<0.4	5.8 VJ	<1	21	3.12	0.59	<1
SD-041	08-RT-041-PW	Project Sample	5/7/2008	<0.4	5.72 VJ	<1	25	3.91	0.62	<1
SD-041	13-RT-041-PW	Project Sample	5/22/2013	0.35 VB	3.76	<0.62	9.12	1.58	4.17	0.63
SD-041	13-RT-032-PW	QC Duplicate	5/22/2013	0.35 VB	3.31	<0.62	8.55	1.43	3.7	0.64
SD-042	08-RT-042-PW	Project Sample	5/7/2008	<0.4	6.6 VJ	<1	23.6	1.96	1.24	<1
SD-042	13-RT-042-PW	Project Sample	5/22/2013	0.51 VB	4.93	<0.62	12.4	1.95	1.23	0.38
SD-043	06-RT-043-PW	Project Sample	5/17/2006	<0.4	2.24	<1	12.1 VJ	<1	<1	<1
SD-043	08-RT-043-PW	Project Sample	5/7/2008	<0.4	7.08 VJ	<1	21.7	4.11	0.36	<1
SD-043	13-RT-043-PW	Project Sample	5/23/2013	<0.24	<0.62	<0.62	<0.62	<0.62	<0.62	<0.62
SD-044	06-RT-044-PW	Project Sample	5/17/2006	<0.4	7.21	<1	24.9 VJ	<1	10.4	1.5
SD-044	13-RT-044-PW	Project Sample	5/23/2013	<0.24	<0.62	<0.62	<0.62	<0.62	<0.62	<0.62
SD-045	08-RT-045-PW	Project Sample	5/7/2008	<0.4	15.6 VJ	<1	28.4	2.01	0.65	<1
Outfall	97-LTRP-201-WA	Project Sample	5/14/1997	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	23
Outfall	002-WA SHBO	Project Sample	6/26/1997	<1	---	---	<3	---	<3	8.2
Outfall	99RTRVP002SW	QC Duplicate	5/19/1999	---	<0.02	---	0.18	<0.02	0.27	17
Outfall	99RTRVP001SW	Project Sample	5/19/1999	---	<0.02	---	0.18	<0.02	0.33	17
Outfall	KRBO SDOF	Project Sample	11/9/1999	<1	<1	<1	<1	<1	<1	6.69
Outfall	00-RT-015-GW	Project Sample	3/24/2000	<1	<1 J	<1	<1	<1	<1	1.2
Outfall	00-RT-038-GW	Project Sample	3/25/2000	<1	<1	<1 J	<1	<1	<1	2.2

Appendix E

July 1997- December 2018 Groundwater Analytical Data (ug/L) for Benzene, PCE, and PCE Degradation Products

River Terrace RV Park, Soldotna, Alaska

Location	Sample ID	Sample Type	Date Sampled	Benzene MCL=5; ACL= NA	Vinyl chloride MCL=2; ACL=2	1,1-DCE MCL=7; ACL=7	cis-1,2-DCE MCL=70; ACL=11,600	trans-1,2-DCE MCL=10; ACL=11,600	TCE MCL=5; ACL=21,900	PCE MCL=5; ACL=840
Outfall	00-RT-055-GW	Project Sample	6/8/2000	<1	<2	<1	<1	<1	<1	4 J
Outfall	00-RT-112-GW	Project Sample	9/28/2000	<1	<2	<1	<1	<1	<1	2.2
Outfall	01-RT-026-GW	Project Sample	1/10/2001	<2	<2	<2	<2	<2	<2	4.6
Outfall	01-RT-044-GW	Project Sample	3/22/2001	<1	<1	<1	1.65	<1	<1	2.76
Outfall	01-RT-065-WQ	Project Sample	5/21/2001	<1	<1	<1	2.48	<1	<1	1.88
Outfall	01-RT-110-GW	Project Sample	10/18/2001	<0.7 J	<1 J	<1 J	<1 J	<1 J	<1 J	<1 J
Outfall	02-RT-060-GW	Project Sample	6/19/2002	<0.2 J	<0.2 J	<0.2 J	3.95 J	<0.2 J	<0.2 J	0.35 J
Outfall	02-RT-090-GW	Project Sample	9/26/2002	<1	<1	<1	2.2	<1	<1	<1
Outfall	03-RT-056-GW	Project Sample	6/19/2003	<0.4	<1	<1	1.65	<1	<1	2.36
Outfall	04-RT-086-SW	Project Sample	10/22/2004	<0.4	<1	<1	2.84	<1	<1	<1
Outfall-Aeration O	00-RT-039-GW	Project Sample	6/6/2000	<1	<2	<1	<1	<1	<1	4.4
Outfall-Aeration O	00-RT-111-GW	Project Sample	9/27/2000	<1	<2	<1	<1	<1	<1	2
Outfall-Aeration O	01-RT-025-GW	Project Sample	1/11/2001	<2	<2	<2	<2	<2	<2	4.4

Notes:

J or VJ - Estimated Value ***H- Estimated result; the analysis was performed past the recommended hold time.***

C- The MRL is elevated because the sample required diluting.

D4, D5, and D6 - Value is from a 10 fold, 20 fold, and 50 fold diluted anlaysis, respectively

-- Analyte not included in performance monitoring analytical program

A qualified result for tetrachloroethene (PCE) was originally reported for the MW-28 project sample (99-RT-069-GW). The reported PCE result was suspected to be a carry-over from the analysis of a previous sample. There was insufficient sample volume for re-analysis; therefore, the third party sample result is reported for PCE.

Samples collected during the October 1997 sampling event (and the December 1997 Laundry well samples) were analyzed by EPA Methods 8260 and 524.2. The value reported for each analyte represents the maximum concentration detected between the two analyses.

The "Laundry Well" is completed in the deeper, confined aquifer.

"Outfall" refers to the Kenai River Bridge Outfall discharging from the storm sewer system adjacent to the RTRVP site. "Outfall - aeration on" refers to samples collected while an aeration system (installed in May 2000) was functioning in the storm sewer system. "Outfall" refers to samples collected either before the aeration system was installed or while the system was shut down. The aeration system has not functioned since March 2001.

Note, samples were collected from the outfall on 3/24/2000 and again on 3/25/2000, because the 3/24/2000 sample was collected during a rain storm event. The 3/25/2000 sample was collected to more accurately represent usual (non-storm event) conditions in the storm drain outfall.

(This Page Intentionally Left Blank)

APPENDIX H

MANN-KENDALL AND LINEAR REGRESSION WORKSHEETS FOR ALL PAST RESULTS

(This Page Intentionally Left Blank)

River Terrace RV Park
Cumulative Molar Sums

		Analyte	Tetrachloroethene (PCE)	Tetrachloroethene (PCE)	Trichloroethene (TCE)	Trichloroethene (TCE)	cis-1,2-Dichloroethene (cDCE)	cis-1,2-Dichloroethene (cDCE)	trans-1,2-Dichloroethene (tDCE)	trans-1,2-Dichloroethene (tDCE)	1,1-Dichloroethene (1,1-DCE)	1,1-Dichloroethene (1,1-DCE)	Vinyl Chloride	Vinyl Chloride	Molar Sum
		Units	µg/L	µmol/L	µg/L	µmol/L	µg/L	µmol/L	µg/L	µmol/L	µg/L	µmol/L	µg/L	µmol/L	µmol/L
Location ID	Sample ID	Date Sampled													
MW-6	00-RT-109-GW	9/27/2000	70.30	0.42	71.30	0.54	865.00	8.92	11.80	0.12	0.00	0.00	2.20	0.04	10.05
MW-6	01-RT-089-GW	10/16/2001	5.00	0.03	5.00	0.04	1710.00	17.64	0.50	0.01	0.00	0.00	5.00	0.08	17.79
MW-6	02-RT-061-GW	9/27/2002	0.50	0.00	0.50	0.00	2200.00	22.69	19.00	0.20	2.30	0.02	6.00	0.10	23.02
MW-6	03RT-085-GW	9/19/2003	18.50	0.11	5.00	0.04	2230.00	23.00	24.40	0.25	0.00	0.00	16.50	0.26	23.67
MW-6	04-RT-052-GW	10/30/2004	0.50	0.00	0.50	0.00	1270.00	13.10	27.10	0.28	0.00	0.00	439.00	7.02	20.41
MW-6	05-RT-049-GW	10/11/2005	0.25	0.00	2.50	0.02	58.40	0.60	0.25	0.00	0.00	0.00	25.40	0.41	1.03
MW-6	06-RT-033-GW	9/11/2006	0.50	0.00	0.50	0.00	32.00	0.33	2.90	0.03	0.00	0.00	16.60	0.27	0.63
MW-6	07-RT-031-GW	9/19/2007	0.50	0.00	1.30	0.01	20.00	0.21	2.60	0.03	0.00	0.00	9.20	0.15	0.39
MW-6	08-RT-051-GW	9/19/2008	0.50	0.00	0.52	0.00	9.70	0.10	2.35	0.02	0.50	0.01	8.89	0.14	0.28
MW-6	09-RT-099-GW	10/7/2009	0.16	0.00	0.16	0.00	7.90	0.08	2.18	0.02	0.16	0.00	8.02	0.13	0.24
MW-6	10-RT-084-GW	10/20/2010	0.21	0.00	0.67	0.01	9.89	0.10	4.27	0.04	0.16	0.00	14.00	0.22	0.38
MW-6	12-RT-004-GW	5/8/2012	1.07	0.01	7.68	0.06	26.30	0.27	3.83	0.04	0.16	0.00	14.90	0.24	0.62
MW-6	13-RT-022-GW	4/11/2013	3.17	0.02	3.37	0.03	13.30	0.14	3.90	0.04	0.31	0.00	4.87	0.08	0.30
MW-6	14-RT-004-GW	4/24/2014	0.25	0.00	0.25	0.00	9.61	0.10	5.21	0.05	0.25	0.00	2.19	0.04	0.19
MW-6	16-RT-006-GW	10/27/2016	0.16	0.00	0.16	0.00	7.82	0.08	4.99	0.05	0.16	0.00	7.02	0.11	0.25
MW-6A	18-RT-6A-GW	12/11/2018	8.55	0.05	0.25	0.00	4.30	0.04	4.47	0.05	0.25	0.00	8.02	0.13	0.27
MW-7	00-RT-120-GW	9/28/2000	**88.00**	0.53	18.00	0.14	430.00	4.44	3.90	0.04	0.50	0.01	1.00	0.02	5.16
MW-7	02-RT-074-GW	9/26/2002	**0.50**	0.00	0.50	0.00	830.00	8.56	7.30	0.08	1.10	0.01	3.80	0.06	8.72
MW-7	03-RT-120-GW	10/9/2003	**0.50**	0.00	0.50	0.00	972.00	10.03	5.83	0.06	0.50	0.01	5.02	0.08	10.18
MW-7	04-RT-069-GW	10/23/2004	**0.50**	0.00	1.03	0.01	1140.00	11.76	10.70	0.11	1.68	0.02	193.00	3.09	14.99
MW-7	05-RT-057-GW	10/12/2005	**0.50**	0.00	**0.50**	0.00	193.00	1.99	5.93	0.06	0.50	0.01	76.70	1.23	3.29
MW-7	06-RT-032-GW	9/11/2006	**0.50**	0.00	**0.50**	0.00	80.90	0.83	3.50	0.04	0.00	0.00	45.00	0.72	1.60
MW-7	07-RT-029-GW	9/19/2007	**0.50**	0.00	**0.50**	0.00	3.70	0.04	2.00	0.02	0.00	0.00	5.30	0.08	0.15
MW-7	08-RT-052-GW	9/19/2008	**0.50**	0.00	**0.50**	0.00	10.10	0.10	3.03	0.03	0.50	0.01	7.05	0.11	0.26
MW-7	09-RT-086-GW	10/8/2009	**0.16**	0.00	**0.54**	0.00	12.30	0.13	1.85	0.02	0.16	0.00	3.87	0.06	0.21
MW-7	10-RT-105-GW	10/21/2010	**0.16**	0.00	**0.69**	0.01	11.90	0.12	2.33	0.02	0.16	0.00	9.22	0.15	0.30
MW-7	12-RT-029-GW	5/10/2012	**4.67**	0.03	**24.90**	0.19	21.40	0.22	3.69	0.04	0.16	0.00	8.51	0.14	0.61
MW-7	18-RT-7-GW	12/12/2018	**16.90**	0.10	**5.36**	0.04	11.10	0.11	3.31	0.03	0.25	0.00	2.88	0.05	0.34
MW-9	00-RT-107-GW	9/27/2000	**2320.00**	13.99	**345.00**	2.63	1140.00	11.76	7.00	0.07	0.00	0.00	2.80	0.04	28.49
MW-9	01-RT-091-GW	10/16/2001	**63.20**	0.38	**58.90**	0.45	2050.00	21.15	5.00	0.05	0.00	0.00	5.00	0.08	22.11
MW-9	02-RT-062-GW	9/27/2002	**190.00**	1.15	**68.00**	0.52	2300.00	23.73	18.00	0.19	2.70	0.03	7.10	0.11	25.72
MW-9	03RT-083-GW	9/19/2003	**62.30**	0.38	**5.00**	0.04	3150.00	32.49	38.30	0.40	0.00	0.00	306.00	4.90	38.20
MW-9	04-RT-062-GW	10/29/2004	**15.90**	0.10	**10.30**	0.08	2070.00	21.35	40.60	0.42	0.00	0.00	372.00	5.95	27.90
MW-9	05-RT-050-GW	10/11/2005	**93.80**	0.57	**2.50**	0.02	537.00	5.54	18.90	0.19	0.00	0.00	105.00	1.68	8.00
MW-9	06-RT-034-GW	9/11/2006	**2.50**	0.02	**2.40**	0.02	594.00	6.13	15.80	0.16	0.00	0.00	98.30	1.57	7.90
MW-9	07-RT-041-GW	9/19/2007	**8.30**	0.05	**9.20**	0.07	536.00	5.53	21.20	0.22	0.00	0.00	108.00	1.73	7.60
MW-9	08-RT-031-GW	9/16/2008	**39.10**	0.24	**34.30**	0.26	**431.00**	4.45	11.70	0.12	0.48	0.00	95.00	1.52	6.59
MW-9	09-RT-097-GW	10/5/2009	**1.68**	0.01	**0.89**	0.01	**207.00**	2.14	12.70	0.13	0.16	0.00	38.70	0.62	2.90
MW-9	10-RT-085-GW	10/20/2010	**28.80**	0.17	**12.90**	0.10	**332.00**	3.42	6.71	0.07	0.45	0.00	38.50	0.62	4.39
MW-9	12-RT-018-GW	5/8/2012	**1.72**	0.01	**1.00**	0.01	**24.30**	0.25	10.50	0.11	0.16	0.00	19.20	0.31	0.69
MW-9	13-RT-019-GW	4/9/2013	**1.84**	0.01	**0.31**	0.00	**17.20**	0.18	6.25	0.06	0.31	0.00	4.16	0.07	0.33
MW-9	14-RT-005-GW	4/23/2014	**2.96**	0.02	**0.25**	0.00	**7.47**	0.08	8.52	0.09	0.25	0.00	2.05	0.03	0.22
MW-9	16-RT-007-GW	10/27/2016	**2.72**	0.02	**0.16**	0.00	**68.50**	0.71	6.36	0.07	0.16	0.00	10.70	0.17	0.96
MW-9	18-RT-9-GW	12/13/2018	**15.00**	0.09	**0.53**	0.00	**9.03**	0.09	6.53	0.07	0.16	0.00	2.11	0.03	0.29
MW-12	00-RT-116-GW	9/28/2000	**95.00**	0.57	**140.00**	1.07	**780.00**	8.05	**0.50**	0.01	0.50	0.01	1.00	0.02	9.71
MW-12	01-RT-121-GW	10/18/2001	**2.00**	0.01	2.00	0.02	**531.00**	5.48	2.00	0.02	2.00	0.02	2.00	0.03	5.58
MW-12	02-RT-078-GW	9/26/2002	**0.50**	0.00	2.30	0.02	**550.00**	5.67	2.30	0.02	0.50	0.01	0.50	0.01	5.73
MW-12	03-RT-110-GW	10/8/2003	**2.00**	0.01	**5.20**	0.04	**248.00**	2.56	**0.50**	0.01	0.50	0.01	0.50	0.01	2.63
MW-12	04-RT-072-GW	10/23/2004	**0.50**	0.00	**1.70**	0.01	**246.00**	2.54	**1.53**	0.02	0.50	0.01	0.50	0.01	2.58
MW-12	05-RT-059-GW	10/12/2005	**0.50**	0.00	**2.81**	0.02	**262.00**	2.70	**1.96**	0.02	0.50	0.01	0.50	0.01	2.76
MW-12	07-RT-038-GW	9/19/2007	**5.20**	0.03	**0.50**	0.00	**0.50**	0.01	**0.50**	0.01	0.00	0.00	0.50	0.01	0.05
MW-12	08-RT-055-GW	9/19/2008	**4.19**	0.03	**0.50**	0.00	**2.70**	0.03	**0.50**	0.01	0.50	0.01	0.50	0.01	0.08
MW-12	09-RT-089-GW	10/7/2009	**3.00**	0.02	**3.65**	0.03	**82.40**	0.85	0.16	0.00	0.16	0.00	0.16	0.00	0.90
MW-12	10-RT-108-GW	10/21/2010	**2.95**	0.02	**3.23**	0.02	**84.00**	0.87	0.90	0.01	0.16	0.00	2.01	0.03	0.95
MW-12	12-RT-032-GW	5/10/2012	**4.16**	0.03	**1.31**	0.01	**18.60**	0.19	0.16	0.00	0.16	0.00	0.56	0.01	0.24
MW-12	13-RT-008-GW	4/9/2013	**1.62**	0.01	**1.99**	0.02	**54.20**	0.56	0.31	0.00	0.31	0.00	3.09	0.05	0.64
MW-12	14-RT-026-GW	4/24/2014	**2.17**	0.01	**1.91**	0.01	**28.20**	0.29	0.36	0.00	0.25	0.00	1.72	0.03	0.35
MW-12	18-RT-12-GW	12/12/2018	**1.46**	0.01	**1.55**	0.01	**14.40**	0.15	**0.25**	0.00	0.25	0.00	0.24	0.00	0.18
MW-16	00-RT-101-GW	9/27/2000	**2450.00**	14.77	**73.70**	0.56	**17.60**	0.18	**0.50**	0.01	0.00	0.00	0.50	0.01	15.53
MW-16	01-RT-095-GW	10/16/2001	**2.50**	0.02	**6.00**	0.05	**476.00**	4.91	**2.50**	0.03	0.00	0.00	2.50	0.04	5.04
MW-16	02-RT-067-GW	9/27/2002	**8.20**	0.05	8.20	0.06	1200.00	12.38	7.00	0.07	1.60	0.02	1.10	0.02	12.60
MW-16	03RT-078-GW	9/18/2003	**2.50**	0.02	2.50	0.02	352.00	3.63	2.50	0.03	0.00	0.00	0.25	0.00	3.70
MW-16	04-RT-048-GW	10/30/2004	**2.40**	0.01	**0.50**	0.00	**1040.00**	10.73	7.90	0.08	0.00	0.00	2.90	0.05	10.87
MW-16	05-RT-045-GW	10/12/2005	**1.00**	0.01	**1.60**	0.01	**509.00**	5.25	4.10	0.04	0.00	0.00	1.70	0.03	5.34
MW-16	07-RT-022-GW	9/20/2007	**12.60**	0.08	**9.80**	0.07	**158.00**	1.63	2.60	0.03	0.00	0.00	37.80	0.60	2.41
MW-16	08-RT-065-GW	9/19/2008	**5.19**	0.03	**4.59**	0.03	**61.50**	0.63	1.91	0.02	0.50	0.01	21.70	0.35	1.07
MW-16	09-RT-079-GW	10/8/2009	**2.35**	0.01	**7.52**	0.06	**22.60**	0.23	1.54	0.02	0.16	0.00	7.62	0.12	0.44
MW-16	10-RT-081-GW	10/21/2010	**9.99**	0.06	**11.50**	0.09	**18.60**	0.19	2.13	0.02	0.16	0.00	10.70	0.17	0.53
MW-16	12-RT-002-GW	5/9/2012	**30.40**	0.18	**7.76**	0.06	**13.80**	0.14	0.42	0.00	0.16	0.00	3.73	0.06	0.45
MW-16	13-RT-034-GW	4/11/2013	**48.00**	0.29	**13.40**	0.10	**297.00**	3.06	3.93	0.04	0.31	0.00	35.30	0.56	4.06
MW-16	14-RT-002-GW	4/22/2014	**6.61**	0.04	**5.02**	0.04	**26.50**	0.27	0.83	0.01	0.25	0.00	8.03	0.13	0.49
MW-16	16-RT-003-GW	10/27/2016	**1.07**	0.01	**2.21**	0.02	**13.60**	0.14	1.67	0.02	0.16	0.00	0.16	0.00	0.18
MW-16	18-RT-16-GW	12/12/2018	**3.78**	0.02	**2.97**	0.02	**7.45**	0.08	1.62	0.02	0.25	0.00	5.12	0.08	0.22

River Terrace RV Park
Cumulative Molar Sums

		Analyte	Tetrachloroethene (PCE)	Tetrachloroethene (PCE)	Trichloroethene (TCE)	Trichloroethene (TCE)	cis-1,2-Dichloroethene (cDCE)	cis-1,2-Dichloroethene (cDCE)	trans-1,2-Dichloroethene (tDCE)	trans-1,2-Dichloroethene (tDCE)	1,1-Dichloroethene (1,1-DCE)	1,1-Dichloroethene (1,1-DCE)	Vinyl Chloride	Vinyl Chloride	Molar Sum
		Units	µg/L	µmol/L	µg/L	µmol/L	µg/L	µmol/L	µg/L	µmol/L	µg/L	µmol/L	µg/L	µmol/L	µmol/L
Location ID	Sample ID	Date Sampled													
MW-23	01-RT-102-GW	10/17/2001	**10.80**	0.07	**0.50**	0.00	0.50	0.01	**0.50**	0.01	0.50	0.01	0.50	0.01	0.09
MW-23	02-RT-094-GW	9/26/2002	**28.00**	0.17	**3.20**	0.02	**65.00**	0.67	**0.50**	0.01	0.50	0.01	0.50	0.01	0.88
MW-23	03-RT-103-GW	10/7/2003	**7.94**	0.05	**0.50**	0.00	**0.50**	0.01	**0.50**	0.01	0.50	0.01	0.50	0.01	0.08
MW-23	04-RT-077-GW	10/22/2004	**5.35**	0.03	**0.50**	0.00	**0.50**	0.01	**0.50**	0.01	0.50	0.01	0.50	0.01	0.06
MW-23	06-RT-051-GW	9/13/2006	**6.90**	0.04	**0.25**	0.00	0.25	0.00	**0.25**	0.00	0.25	0.00	0.25	0.00	0.06
MW-23	10-RT-060-GW	5/13/2010	**4.19**	0.03	**0.16**	0.00	**0.16**	0.00	**0.16**	0.00	0.16	0.00	0.16	0.00	0.03
MW-23	12-RT-022-GW	5/10/2012	**17.80**	0.11	**0.33**	0.00	**0.16**	0.00	**0.16**	0.00	0.16	0.00	0.16	0.00	0.12
MW-23	13-RT-001-GW	4/11/2013	**18.00**	0.11	**0.81**	0.01	**5.15**	0.05	**0.31**	0.00	0.31	0.00	0.31	0.00	0.18
MW-23	14-RT-021-GW	4/22/2014	**4.12**	0.02	**0.25**	0.00	**0.25**	0.00	**0.25**	0.00	0.25	0.00	0.25	0.00	0.04
MW-23	16-RT-001-GW	10/27/2016	5.02	0.03	**0.16**	0.00	**1.60**	0.02	**0.16**	0.00	0.16	0.00	0.16	0.00	0.05
MW-23	18-RT-23-GW	12/12/2018	**5.43**	0.03	**0.25**	0.00	**0.25**	0.00	**0.25**	0.00	0.25	0.00	0.04	0.00	0.04
MW-25	00-RT-126-GW	9/29/2000	**540.00**	3.26	**18.00**	0.14	**11.00**	0.11	**0.50**	0.01	0.50	0.01	1.00	0.02	3.53
MW-25	01-RT-109-GW	10/17/2001	**17.90**	0.11	**10.00**	0.08	**801.00**	8.26	**4.23**	0.04	1.00	0.01	1.00	0.02	8.52
MW-25	02-RT-071-GW	9/27/2002	**2.50**	0.02	**0.50**	0.00	**980.00**	10.11	**6.20**	0.06	1.50	0.02	1.30	0.02	10.23
MW-25	03-RT-088-GW	9/18/2003	0.50	0.00	**0.50**	0.00	**765.00**	7.89	**13.90**	0.14	1.19	0.01	0.50	0.01	8.06
MW-25	04-RT-049-GW	10/30/2004	0.50	0.00	**5.00**	0.04	**1020.00**	10.52	**7.00**	0.07	0.00	0.00	0.50	0.01	10.64
MW-25	05-RT-046-GW	10/12/2005	**0.50**	0.00	**0.50**	0.00	**1030.00**	10.63	9.20	0.09	0.00	0.00	1.80	0.03	10.76
MW-25	06-RT-031-GW	9/12/2006	**2.50**	0.02	**2.50**	0.02	**451.00**	4.65	2.50	0.03	0.00	0.00	34.70	0.56	5.27
MW-25	07-RT-023-GW	9/18/2007	**7.00**	0.04	**5.90**	0.04	**141.00**	1.45	1.40	0.01	0.00	0.00	14.20	0.23	1.78
MW-25	08-RT-044-GW	9/19/2008	**4.41**	0.03	**3.34**	0.03	**127.00**	1.31	2.03	0.02	0.50	0.01	26.80	0.43	1.82
MW-25	09-RT-080-GW	10/8/2009	**8.94**	0.05	**1.98**	0.02	**58.80**	0.61	0.95	0.01	0.16	0.00	11.00	0.18	0.86
MW-25	10-RT-082-GW	10/21/2010	**8.76**	0.05	**8.46**	0.06	**84.80**	0.87	1.26	0.01	0.16	0.00	9.50	0.15	1.16
MW-25	12-RT-023-GW	5/10/2012	**11.10**	0.07	**13.40**	0.10	**49.40**	0.51	1.25	0.01	0.16	0.00	6.52	0.10	0.80
MW-25	13-RT-003-GW	4/11/2013	**6.00**	0.04	**6.61**	0.05	**37.20**	0.38	0.53	0.01	0.31	0.00	1.48	0.02	0.50
MW-25	14-RT-022-GW	4/24/2014	**3.73**	0.02	**13.70**	0.10	**44.00**	0.45	0.91	0.01	0.25	0.00	3.20	0.05	0.64
MW-25	16-RT-002-GW	10/27/2016	**16.70**	0.10	**22.00**	0.17	**113.00**	1.17	1.54	0.02	0.16	0.00	12.30	0.20	1.65
MW-25	18-RT-25-GW	12/12/2018	**89.50**	0.54	**44.30**	0.34	**67.10**	0.69	**0.34**	0.00	0.25	0.00	1.40	0.02	1.60
MW-35	01-RT-118-GW	10/18/2001	**2.00**	0.01	**2.00**	0.02	**197.00**	2.03	**2.00**	0.02	2.00	0.03	2.00	0.03	2.13
MW-35	02-RT-089-GW	9/26/2002	**1.00**	0.01	**3.30**	0.03	**160.00**	1.65	**1.00**	0.01	1.00	0.01	0.50	0.01	1.71
MW-35	03-RT-113-GW	10/8/2003	**2.55**	0.02	**0.00**	0.00	**86.90**	0.90	**1.47**	0.02	0.50	0.01	0.50	0.01	0.94
MW-35	04-RT-081-GW	10/23/2004	**0.50**	0.00	**2.79**	0.02	**403.00**	4.16	**2.31**	0.02	0.50	0.01	2.42	0.04	4.25
MW-35	05-RT-065-GW	10/12/2005	**1.10**	0.01	**3.16**	0.02	**247.00**	2.55	**1.75**	0.02	0.50	0.01	0.50	0.01	2.61
MW-35	06-RT-055-GW	9/13/2006	**1.10**	0.01	**2.20**	0.02	**290.00**	2.99	**3.40**	0.04	0.25	0.00	12.00	0.19	3.24
MW-35	07-RT-040-GW	9/20/2007	**1.20**	0.01	**2.00**	0.02	**208.00**	2.15	**2.50**	0.03	0.00	0.00	3.50	0.06	2.25
MW-35	08-RT-060-GW	9/20/2008	**1.65**	0.01	**1.51**	0.01	**294.00**	3.03	**3.07**	0.03	0.32	0.00	6.41	0.10	3.19
MW-35	09-RT-091-GW	10/8/2009	**1.51**	0.01	**2.23**	0.02	**203.00**	2.09	**2.23**	0.02	0.16	0.00	2.80	0.04	2.19
MW-35	10-RT-110-GW	10/21/2010	**1.92**	0.01	**2.16**	0.02	**208.00**	2.15	**2.50**	0.03	0.16	0.00	3.48	0.06	2.26
MW-35	12-RT-034-GW	5/10/2012	**0.66**	0.00	**1.17**	0.01	**67.90**	0.70	**3.50**	0.04	0.16	0.00	11.80	0.19	0.94
MW-35	13-RT-006-GW	4/9/2013	**0.92**	0.01	**1.38**	0.01	**142.00**	1.46	**2.59**	0.03	0.31	0.00	8.94	0.14	1.65
MW-35	14-RT-028-GW	4/24/2014	**0.70**	0.00	**0.70**	0.01	**73.30**	0.76	**1.53**	0.02	0.25	0.00	0.25	0.00	0.79
MW-35	16-RT-005-GW	10/27/2016	**0.16**	0.00	**1.88**	0.01	**49.30**	0.51	**0.16**	0.00	0.16	0.00	2.58	0.04	0.57
MW-35	18-RT-35-GW	12/12/2018	**1.76**	0.01	**1.77**	0.01	**24.90**	0.26	**0.80**	0.01	0.25	0.00	1.24	0.02	0.31
MW-38	00-RT-100-GW	9/27/2000	**804.00**	4.85	**19.70**	0.15	**3.30**	0.03	**0.50**	0.01	0.00	0.00	0.50	0.01	5.05
MW-38	01-RT-093-GW	10/16/2001	**52.70**	0.32	**9.50**	0.07	**117.00**	1.21	**0.50**	0.01	0.00	0.00	0.50	0.01	1.61
MW-38	02-RT-066-GW	9/27/2002	**53.00**	0.32	**14.00**	0.11	**150.00**	1.55	**0.50**	0.01	0.50	0.01	0.50	0.01	1.99
MW-38	03RT-079-GW	9/18/2003	**6.30**	0.04	**4.60**	0.04	**159.00**	1.64	**1.00**	0.01	0.00	0.00	0.50	0.01	1.73
MW-38	04-RT-082-GW	10/22/2004	**2.12**	0.01	**1.60**	0.01	**72.60**	0.75	**0.50**	0.01	0.50	0.01	0.50	0.01	0.79
MW-38	05-RT-066-GW	10/12/2005	**2.22**	0.01	**1.73**	0.01	**141.00**	1.45	**0.50**	0.01	0.50	0.01	0.50	0.01	1.50
MW-38	06-RT-063-GW	9/12/2006	**14.00**	0.08	**5.70**	0.04	**260.00**	2.68	**2.30**	0.02	0.25	0.00	24.00	0.38	3.22
MW-38	07-RT-025-GW	9/20/2007	**1.40**	0.01	**1.20**	0.01	**35.20**	0.36	**1.30**	0.01	0.00	0.00	4.50	0.07	0.47
MW-38	08-RT-046-GW	9/19/2008	**12.90**	0.08	**1.02**	0.01	**4.77**	0.05	**0.50**	0.01	0.50	0.01	1.59	0.03	0.17
MW-38	09-RT-082-GW	10/8/2009	**0.16**	0.00	**0.16**	0.00	**21.80**	0.22	**1.72**	0.02	0.16	0.00	7.67	0.12	0.37
MW-38	10-RT-102-GW	10/22/2010	**0.16**	0.00	**0.16**	0.00	**3.61**	0.04	**0.16**	0.00	0.16	0.00	2.79	0.04	0.09
MW-38	12-RT-024-GW	5/10/2012	**1.39**	0.01	**2.23**	0.02	**93.10**	0.96	**1.21**	0.01	0.16	0.00	12.40	0.20	1.20
MW-38	13-RT-004-GW	4/11/2013	**1.14**	0.01	**5.97**	0.05	**27.40**	0.28	**1.39**	0.01	0.31	0.00	7.47	0.12	0.47
MW-38	14-RT-023-GW	4/22/2014	**0.37**	0.00	**0.99**	0.01	**61.60**	0.64	**2.32**	0.02	0.25	0.00	16.50	0.26	0.94
MW-38	18-RT-38-GW	12/12/2018	**36.40**	0.22	**82.10**	0.62	**281.00**	2.90	**3.04**	0.03	0.25	0.00	45.10	0.72	4.50
MW-39	00-RT-106-GW	9/27/2000	**62.90**	0.38	**93.50**	0.71	**726.00**	7.49	**9.00**	0.09	0.00	0.00	2.50	0.04	8.71
MW-39	01-RT-092-GW	10/16/2001	**10.00**	0.06	**31.80**	0.24	**2500.00**	25.79	**10.00**	0.10	0.00	0.00	10.00	0.16	26.36
MW-39	02-RT-063-GW	9/27/2002	**6.30**	0.04	**7.40**	0.06	**3400.00**	35.07	**36.00**	0.37	2.40	0.02	9.10	0.15	35.71
MW-39	03RT-081-GW	9/18/2003	**25.00**	0.15	**2.50**	0.02	**2360.00**	24.35	**22.40**	0.23	0.00	0.00	19.40	0.31	25.06
MW-39	04-RT-055-GW	10/29/2004	**11.50**	0.07	**2.30**	0.02	**3590.00**	37.03	**82.40**	0.85	0.00	0.00	120.00	1.92	39.89
MW-39	05-RT-051-GW	10/11/2005	**2.50**	0.02	**2.50**	0.02	**2160.00**	22.28	**53.20**	0.55	0.00	0.00	226.00	3.62	26.48
MW-39	06-RT-035-GW	9/11/2006	**5.00**	0.03	**5.00**	0.04	**1500.00**	15.47	**48.90**	0.50	0.00	0.00	158.00	2.53	18.57
MW-39	07-RT-033-GW	9/18/2007	**0.50**	0.00	**0.50**	0.00	**1820.00**	18.77	**64.10**	0.66	0.00	0.00	134.00	2.14	21.59
MW-39	08-RT-032-GW	9/17/2008	**0.34**	0.00	**0.50**	0.00	**1140.00**	11.76	**47.40**	0.49	0.71	0.01	216.00	3.46	15.72
MW-39	09-RT-067-GW	10/6/2009	**1.55**	0.01	**0.81**	0.01	**902.00**	9.30	**43.80**	0.45	0.39	0.00	187.00	2.99	12.77
MW-39	10-RT-086-GW	10/20/2010	**3.64**	0.02	**1.84**	0.01	**589.00**	6.08	**52.20**	0.54	0.32	0.00	115.00	1.84	8.49
MW-39	12-RT-006-GW	5/8/2012	**0.16**	0.00	**0.16**	0.00	**1.55**	0.02	**18.90**	0.19	0.16	0.00	53.70	0.86	1.07
MW-39	13-RT-020-GW	4/9/2013	**0.31**	0.00	**0.31**	0.00	**25.00**	0.26	**34.10**	0.35	0.31	0.00	14.10	0.23	0.84
MW-39	14-RT-006-GW	4/23/2014	**0.25**	0.00	**0.26**	0.00	**13.10**	0.14	**27.60**	0.28	0.25	0.00	4.55	0.07	0.50
MW-39	16-RT-018-GW	10/27/2016	**0.155**	0.00	**0.155**	0.00	**12.2**	0.13	**21.2**	0.22	0.155	0.00	9.16	0.15	0.49
MW-39	18-RT-39-GW	12/13/2018	**0.25**	0.00	**0.25**	0.00	**3.19**	0.03	**15.10**	0.16	0.25	0.00	2.71	0.04	0.24
MW-40	00-RT-108-GW	9/27/2000	**641.00**	3.87	**158.00**	1.20	**1120.00**	11.55	**10.20**	0.11	0.00	0.00	2.60	0.04	16.77
MW-40	01-RT-090-GW	10/16/2001	**39.40**	0.24	**64.10**	0.49	**1930.00**	19.91	**5.00**	0.05	0.00	0.00	5.00	0.08	20.77
MW-40	02-RT-064-GW	9/27/2002	**470.00**	2.83	**100.00**	0.76	**1600.00**	16.51	**11.00**	0.11	1.90	0.02	3.90	0.06	20.30
MW-40	03RT-084-GW	9/19/2003	**31.10**	0.19	**45.60**	0.35	**2760.00**	28.47	**30.50**	0.31	0.00	0.00	144.00	2.30	31.63
MW-40	04-RT-056-GW	10/29/2004	**5.10**	0.03	**22.10**	0.17	**1220.00**	12.59	**37.60**	0.39	0.00	0.00	235.00	3.76	16.93
MW-40	05-RT-052-GW	10/12/2005	**5.00**	0.03	**5.00**	0.04	**468.00**	4.83	**15.70**	0.16	0.00	0.00	78.50	1.26	6.31
MW-40	06-RT-036-GW	9/12/2006	**108.00**	0.65	**52.10**	0.40	**180.00**	1.86	**15.20**	0.16	0.00	0.00	38.80	0.62	3.68
MW-40	07-RT-034-GW	9/19/2007	**3.20**	0.02	**0.50**	0.00	**28.50**	0.29	**7.90**	0.08	0.00	0.00	13.30	0.21	0.61
MW-40	08-RT-033-GW	9/17/2008	**12.00**	0.07	**1.29**	0.01	**44.40**	0.46	**10.00**	0.10	0.50	0.01	20.70	0.33	0.98
MW-40	09-RT-068-GW	10/7/2009	**12.10**	0.07	**1.30**	0.01	**35.90**	0.37	**6.52**	0.07	0.16	0.00	9.39	0.15	0.67
MW-40	10-RT-087-GW	10/20/2010	**7.26**	0.04	**3.72**	0.03	**108.00**	1.11	**3.78**	0.04	0.36	0.00	10.40	0.17	1.40
MW-40	12-RT-007-GW	5/7/2012	**41.40**	0.25	**11.50**	0.09	**12.20**	0.13	**7.06**	0.07	0.16	0.00	6.65	0.11	0.64
MW-40	13-RT-021-GW	4/9/2013	**2.30**	0.01	**0.82**	0.01	**10.80**	0.11	**6.95**	0.07	0.31	0.00	2.48	0.04	0.25
MW-40	14-RT-007-GW	4/23/2014	**0.61**	0.00	**0.25**	0.00	**3.99**	0.04	**15.40**	0.16	0.25	0.00	1.99	0.03	0.24
MW-40	18-RT-40-GW	12/13/2018	**18.10**	0.11	**0.66**	0.01	**22.80**	0.24	**9.11**	0.09	0.25	0.00	22.20	0.36	0.80
MW-42	02-RT-099-GW	11/2/2002	**39.70**	0.24	**17.70**	0.13	**129.00**	1.33	**1.30**	0.01	0.00	0.00	0.50	0.01	1.73
MW-42	03-RT-097-GW	10/7/2003	**298.00**	1.80	**309.00**	2.35	**0.50**	0.01	**0.50**	0.01	4.84	0.05	0.50	0.01	4.22
MW-42	04-RT-084-GW	10/22/2004	**15.60**	0.09	**35.50**	0.27	**400.00**	4.13	**0.50**	0.01	0.50	0.01	0.50	0.01	4.51
MW-42	05-RT-067-GW	10/12/2005	**127.00**	0.77	**21.30**	0.16	**634.00**	6.54	**7.39**	0.08	0.50	0.01	0.50	0.01	7.56
MW-42	06-RT-058-GW	9/12/2006	**13.00**	0.08	**5.80**	0.04	**140.00**	1.44	**1.30**	0.01	0.25	0.00	1.30	0.02	1.60
MW-42	07-RT-026-GW	9/20/2007	**16.80**	0.10	**7.30**	0.06	**18.00**	0.19	**0.50**	0.01	0.00	0.00	1.10	0.02	0.37
MW-42	08-RT-048-GW	9/18/2008	**194.00**	1.17	**57.00**	0.43	**48.50**	0.50	**0.69**	0.01	0.50	0.01	11.10	0.18	2.29
MW-42	09-RT-083-GW	10/8/2009	**27.70**	0.17	**11.10**	0.08	**25.30**	0.26	**1.57**	0.02	0.16	0.00	9.45	0.15	0.68
MW-42	10-RT-083-GW	10/18/2010	**17.30**	0.10	**2.84**	0.02	**17.50**	0.18	**0.16**	0.00	0.16	0.00	6.63	0.11	0.42
MW-42	12-RT-003-GW	5/9/2012	**48.00**	0.29	**16.10**	0.12	**60.70**	0.63	**0.31**	0.00	0.16	0.00	7.01	0.11	1.16
MW-42	13-RT-017-GW	4/11/2013	**11.30**	0.07	**25.50**	0.19	**256.00**	2.64	**2.17**	0.02	0.31	0.00	18.30	0.29	3.22
MW-42	14-RT-003-GW	4/22/2014	**7.00**	0.04	**4.80**	0.04	**58.50**	0.60	**1.66**	0.02	0.25	0.00	7.95	0.13	0.83
MW-42	18-RT-42-GW	12/12/2018	**178.00**	1.07	**9.74**	0.07	**3.65**	0.04	**0.25**	0.00	0.25	0.00	0.04	0.00	1.19

River Terrace RV Park
Cumulative Molar Sums

		Analyte	Tetrachloroethene (PCE)	Tetrachloroethene (PCE)	Trichloroethene (TCE)	Trichloroethene (TCE)	cis-1,2-Dichloroethene (cDCE)	cis-1,2-Dichloroethene (cDCE)	trans-1,2-Dichloroethene (tDCE)	trans-1,2-Dichloroethene (tDCE)	1,1-Dichloroethene (1,1-DCE)	1,1-Dichloroethene (1,1-DCE)	Vinyl Chloride	Vinyl Chloride	Molar Sum
		Units	µg/L	µmol/L	µg/L	µmol/L	µg/L	µmol/L	µg/L	µmol/L	µg/L	µmol/L	µg/L	µmol/L	µmol/L
Location ID	Sample ID	Date Sampled													
MW-44	02-RT-100-GW	11/2/2002	**31300.00**	188.75	**1480.00**	11.26	**556.00**	5.74	**5.00**	0.05	0.00	0.00	5.00	0.08	205.88
MW-44	03RT-082-GW	9/18/2003	**18900.00**	113.97	**4970.00**	37.82	**894.00**	9.22	**3.60**	0.04	0.00	0.00	11.60	0.19	161.24
MW-44	04-RT-058-GW	10/29/2004	**13500.00**	81.41	**4460.00**	33.94	**1760.00**	18.16	**9.90**	0.10	13.80	0.14	49.70	0.80	134.55
MW-44	05-RT-053-GW	10/12/2005	**11500.00**	69.35	**4570.00**	34.78	**1890.00**	19.50	**5.00**	0.05	0.00	0.00	14.70	0.24	123.91
MW-44	08-RT-034-GW	9/17/2008	**0.88**	0.01	**0.57**	0.00	**6220.00**	64.16	**43.70**	0.45	11.10	0.11	4340.00	69.44	134.18
MW-44	09-RT-069-GW	10/6/2009	**1.98**	0.01	**0.69**	0.01	**188.00**	1.94	**6.03**	0.06	0.35	0.00	171.00	2.74	4.76
MW-44	10-RT-088-GW	10/20/2010	**0.85**	0.01	**0.46**	0.00	**380.00**	3.92	**4.37**	0.05	0.80	0.01	609.00	9.74	13.73
MW-44	12-RT-008-GW	5/8/2012	**0.58**	0.00	**0.16**	0.00	**131.00**	1.35	**11.00**	0.11	0.16	0.00	109.00	1.74	3.22
MW-44	13-RT-018-GW	4/9/2013	**1.10**	0.01	**0.73**	0.01	**87.00**	0.90	**1.40**	0.01	0.31	0.00	3.10	0.05	0.98
MW-44	14-RT-008-GW	4/23/2014	**1.78**	0.01	**0.91**	0.01	**41.90**	0.43	**5.78**	0.06	0.25	0.00	52.70	0.84	1.36
MW-44	16-RT-009-GW	10/27/2016	**10.90**	0.07	**0.16**	0.00	**231.00**	2.38	**1.82**	0.02	0.16	0.00	137.00	2.19	4.66
MW-44	18-RT-44-GW	12/13/2018	**1.45**	0.01	**0.77**	0.01	**62.80**	0.65	**1.99**	0.02	0.32	0.00	205.00	3.28	3.97
MW-47	06-RT-038-GW	10/4/2006	**16100.00**	97.09	**2270.00**	17.28	**18700.00**	192.91	**193.00**	1.99	0.00	0.00	71.00	1.14	310.40
MW-47	07-RT-036-GW	9/19/2007	**5.00**	0.03	**5.00**	0.04	**45500.00**	469.37	**485.00**	5.00	0.00	0.00	142.00	2.27	476.72
MW-47	08-RT-035-GW	9/17/2008	**0.43**	0.00	**1.10**	0.01	**40600.00**	418.82	**1330.00**	13.72	27.00	0.28	165.00	2.64	435.47
MW-47	09-RT-070-GW	10/6/2009	**0.35**	0.00	**2.50**	0.02	**32800.00**	338.36	**309.00**	3.19	30.40	0.31	413.00	6.61	348.49
MW-47	10-RT-089-GW	10/19/2010	**278.00**	1.68	**2280.00**	17.35	**67700.00**	698.38	**612.00**	6.31	71.80	0.74	2080.00	33.28	757.75
MW-47	11-RT-001-GW	5/17/2011	**1610.00**	9.71	**4140.00**	31.51	**34900.00**	360.02	**384.00**	3.96	35.40	0.37	1430.00	22.88	428.45
MW-47	12-RT-009-GW	5/8/2012	**4050.00**	24.42	**5120.00**	38.96	**34400.00**	354.87	**345.00**	3.56	37.20	0.38	370.00	5.92	428.12
MW-47	13-RT-025-GW	4/10/2013	**3990.00**	24.06	**1950.00**	14.84	**10900.00**	112.44	**181.00**	1.87	31.00	0.32	304.00	4.86	158.40
MW-47	14-RT-009-GW	4/23/2014	**2500.00**	15.08	**790.00**	6.01	**6170.00**	63.65	**62.20**	0.64	7.24	0.07	112.00	1.79	87.25
MW-47	18-RT-47-GW	12/13/2018	**10600.00**	63.92	**2550.00**	19.41	**34300.00**	353.83	**477.00**	4.92	31.00	0.32	676.00	10.82	453.22
MW-48	09-RT-071-GW	10/6/2009	**333.00**	2.01	**4090.00**	31.13	**23700.00**	244.49	**119.00**	1.23	73.00	0.75	128.00	2.05	281.65
MW-48	10-RT-090-GW	10/19/2010	**2.78**	0.02	**7.39**	0.06	**1220.00**	12.59	**6.78**	0.07	3.08	0.03	7.22	0.12	12.88
MW-48	11-RT-002-GW	5/18/2011	**30.00**	0.18	**310.00**	2.36	**14600.00**	150.61	**37.40**	0.39	39.20	0.40	54.10	0.87	154.81
MW-48	12-RT-010-GW	5/8/2012	**3.42**	0.02	**4.57**	0.03	**31500.00**	324.95	**77.50**	0.80	77.50	0.80	77.50	1.24	327.84
MW-48	13-RT-026-GW	4/10/2013	**0.64**	0.00	**0.72**	0.01	**4700.00**	48.48	**14.60**	0.15	16.50	0.17	17.10	0.27	49.09
MW-48	14-RT-010-GW	4/22/2014	**25.00**	0.15	**25.00**	0.19	**25400.00**	262.02	**70.70**	0.73	61.70	0.64	25.00	0.40	264.13
MW-48	16-RT-010-GW	10/26/2016	**15.50**	0.09	**350.00**	2.66	**97400.00**	1004.77	**196.00**	2.02	133.00	1.37	364.00	5.82	1016.74
MW-48	18-RT-48-GW	12/13/2018	**22.50**	0.14	**12.50**	0.10	**4030.00**	41.57	**38.50**	0.40	12.50	0.13	1350.00	21.60	63.93
MW-49	09-RT-072-GW	10/6/2009	**137.00**	0.83	**1490.00**	11.34	**16300.00**	168.15	**73.90**	0.76	31.70	0.33	78.80	1.26	182.66
MW-49	10-RT-091-GW	10/19/2010	**0.93**	0.01	**1.76**	0.01	**63200.00**	651.96	**120.00**	1.24	66.50	0.69	314.00	5.02	658.93
MW-49	11-RT-003-GW	5/18/2011	**2.65**	0.02	**5.25**	0.04	**50700.00**	523.01	**96.00**	0.99	49.80	0.51	876.00	14.02	538.59
MW-49	12-RT-011-GW	5/9/2012	**31.00**	0.19	**31.00**	0.24	**79300.00**	818.05	**94.00**	0.97	31.00	0.32	2700.00	43.20	862.96
MW-49	13-RT-027-GW	4/10/2013	**0.31**	0.00	**0.31**	0.00	**382.00**	3.94	**4.57**	0.05	0.31	0.00	109.00	1.74	5.74
MW-49	14-RT-011-GW	4/23/2014	**14.80**	0.09	**5.00**	0.04	**37800.00**	389.94	**182.00**	1.88	31.20	0.32	8390.00	134.24	526.51
MW-49	16-RT-011-GW	10/26/2016	**3.10**	0.02	**3.10**	0.02	**50500.00**	520.95	**120.00**	1.24	34.40	0.35	9720.00	155.52	678.11
MW-49	18-RT-49-GW	12/13/2018	**0.54**	0.00	**0.34**	0.00	**987**	10.18	**5.16**	0.05	1.71	0.02	165	2.64	12.90
MW-50	09-RT-073-GW	10/6/2009	**44000.00**	265.33	**9360.00**	71.23	**12600.00**	129.98	**58.70**	0.61	115.00	1.19	81.60	1.31	469.64
MW-50	10-RT-092-GW	10/20/2010	**54700.00**	329.86	**17900.00**	136.23	**21400.00**	220.76	**45.00**	0.46	101.00	1.04	77.00	1.23	689.58
MW-50	11-RT-004-GW	5/17/2011	**38100.00**	229.75	**15500.00**	117.96	**117000.00**	1206.96	**219.00**	2.26	114.00	1.18	354.00	5.66	1563.77
MW-50	12-RT-012-GW	5/8/2012	**4.69**	0.03	**22.20**	0.17	**3890.00**	40.13	**654.00**	6.75	261.00	2.69	1180.00	18.88	68.65
MW-50	13-RT-028-GW	4/10/2013	**2710.00**	16.34	**1080.00**	8.22	**19600.00**	202.19	**51.00**	0.53	38.20	0.39	1400.00	22.40	250.07
MW-50	14-RT-012-GW	4/22/2014	**128.00**	0.77	**81.80**	0.62	**7440.00**	76.75	**28.60**	0.30	9.94	0.10	1680.00	26.88	105.42
MW-50	16-RT-012-GW	10/26/2016	**3.10**	0.02	**3.10**	0.02	**47000.00**	484.85	**135.00**	1.39	41.80	0.43	15800.00	252.81	739.52
MW-50	18-RT-50-GW	12/13/2018	**2960.00**	17.85	**988.00**	7.52	**167000.00**	1722.75	**548.00**	5.65	152.00	1.57	34500.00	552.02	2307.36
MW-51	10-RT-093-GW	10/19/2010	**59000.00**	355.79	**5200.00**	39.57	**79400.00**	819.08	**254.00**	2.62	196.00	2.02	184.00	2.94	1222.03
MW-51	11-RT-005-GW	5/18/2011	**793.00**	4.78	**236.00**	1.80	**30300.00**	312.57	**180.00**	1.86	53.90	0.56	2220.00	35.52	357.08
MW-51	12-RT-013-GW	5/9/2012	**31.00**	0.19	**31.00**	0.24	**73600.00**	759.25	**256.00**	2.64	64.00	0.66	11400.00	182.41	945.38
MW-51	13-RT-029-GW	4/10/2013	**4.73**	0.03	**2.54**	0.02	**10500.00**	108.32	**49.00**	0.51	17.30	0.18	3870.00	61.92	170.97
MW-51	14-RT-013-GW	4/22/2014	**5.81**	0.04	**0.75**	0.01	**34.60**	0.36	**0.66**	0.01	0.25	0.00	12.50	0.20	0.61
MW-51	16-RT-013-GW	10/26/2016	**14.20**	0.09	**0.16**	0.00	**22200.00**	229.01	**394.00**	4.06	21.10	0.22	11800.00	188.81	422.19
MW-51	18-RT-51-GW	12/13/2018	**4.83**	0.03	**2.50**	0.02	**507.00**	5.23	**21.50**	0.22	2.50	0.03	705.00	11.28	16.81
L-78	08-RT-036-GW	9/18/2008	**22800.00**	137.49	**9620.00**	73.21	**14500.00**	149.58	**101.00**	1.04	64.00	0.66	208.00	3.33	365.31
L-78	09-RT-074-GW	10/7/2009	**19600.00**	118.19	**5610.00**	42.69	**14300.00**	147.52	**107.00**	1.10	82.10	0.85	61.80	0.99	311.34
L-78	10-RT-095-GW	10/20/2010	**21200.00**	127.84	**834.00**	6.35	**5470.00**	56.43	**16.10**	0.17	13.30	0.14	66.30	1.06	191.98
L-78	11-RT-010-GW	5/17/2011	**8750.00**	52.76	**3090.00**	23.52	**15100.00**	155.77	**155.00**	1.60	155.00	1.60	570.00	9.12	244.37
L-78	12-RT-015-GW	5/9/2012	**12700.00**	76.58	**472.00**	3.59	**4040.00**	41.68	**31.00**	0.32	31.00	0.32	31.00	0.50	122.99
L-78	13-RT-031-GW	4/9/2013	**6510.00**	39.26	**3150.00**	23.97	**21800.00**	224.89	**31.00**	0.32	38.50	0.40	1280.00	20.48	309.31
L-78	14-RT-015-GW	4/23/2014	**4350.00**	26.23	**2560.00**	19.48	**19900.00**	205.29	**38.60**	0.40	25.00	0.26	1070.00	17.12	268.78
L-78	18-RT-78-GW	12/14/2018	**35.00**	0.21	**25.00**	0.19	**15300.00**	157.83	**43.00**	0.44	25.00	0.26	2540.00	40.64	199.58
L-80	08-RT-037-GW	9/18/2008	**41300**	249.05	**3920**	29.83	**11700**	120.70	**60.9**	0.63	51.5	0.53	93.6	1.50	402.24
L-80	09-RT-021-GW	5/7/2009	**13300**	80.20	**4150**	31.58	**11600**	119.66	**53.8**	0.55	46.2	0.48	138	2.21	234.69
L-80	14-RT-018-GW	4/23/2014	**63500**	382.92	**3670**	27.93	**20000**	206.32	**41.6**	0.43	66.2	0.68	284	4.54	622.83
L-80A	18-RT-80A-GW	12/13/2018	**104000**	627.15	**19300**	146.88	**53600**	552.93	**190**	1.96	197	2.03	2640	42.24	1373.19

Notes:

Values shown in orange were not detected and are half the LOD or LOQ

Detected analytes are in **bold**.

Acronyms and Abbreviations:

µg/L = micrograms per liter

µmol/L = micromoles per liter

LOD = Limit of Detection

LOQ = Limit of Quantitation, Reporting Limit, Practical Quantification Limit

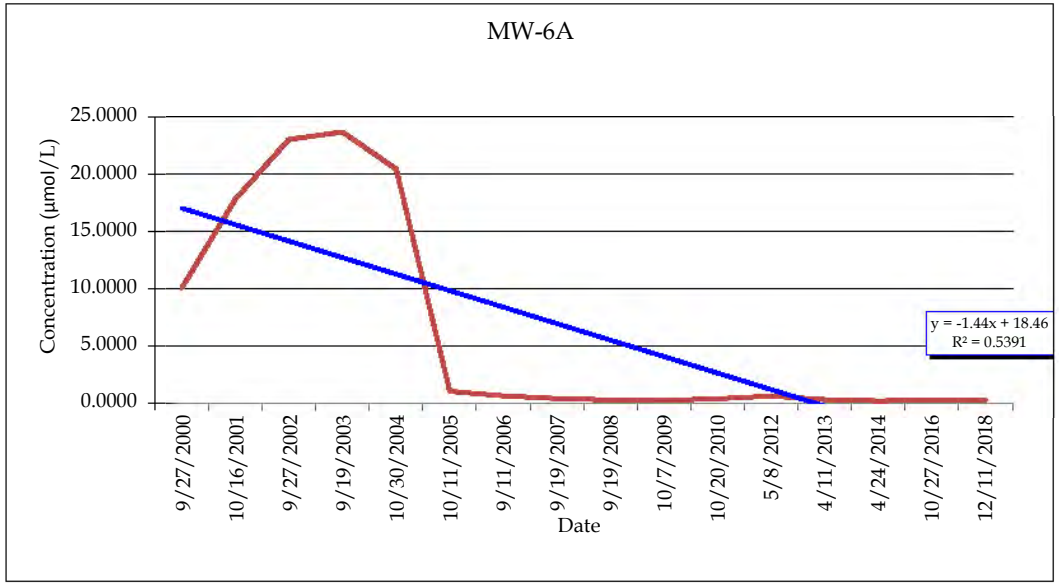
NA = The analyte was not used in the trend analysis for this well due to few historic detections

River Terrace RV Park
Mann-Kendall Test for Trend

Monitoring Well No.	**MW-6A**
Contaminant	**Molar Sum**

Monitoring Date:	9/27/2000	10/16/2001	9/27/2002	9/19/2003	10/30/2004	10/11/2005	9/11/2006	9/19/2007	9/19/2008	10/7/2009	10/20/2010	5/8/2012	4/11/2013	4/24/2014	10/27/2016	########	
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13	Event 14	Event 15	Event 16	
Concentration (µmol/L)	10.0467	17.7935	23.0175	23.6697	20.4118	1.0320	0.6325	0.3933	0.2787	0.2360	0.3780	0.6157	0.3033	0.1939	0.2482	0.2748	
Row 1: Compare to Event 1		1	1	1	1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-7
Row 2: Compare to Event 2			1	1	1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-8
Row 3: Compare to Event 3				1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-11
Row 4: Compare to Event 4					-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-12
Row 5: Compare to Event 5						-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-11
Row 6: Compare to Event 6							-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-10
Row 7: Compare to Event 7								-1	-1	-1	-1	-1	-1	-1	-1	-1	-9
Row 8: Compare to Event 8									-1	-1	-1	1	-1	-1	-1	-1	-6
Row 9: Compare to Event 9										-1	1	1	1	-1	-1	-1	-1
Row 10: Compare to Event 10											1	1	1	-1	1	1	4
Row 11: Compare to Event 11												1	-1	-1	-1	-1	-3
Row 12: Compare to Event 12													-1	-1	-1	-1	-4
Row 13: Compare to Event 13														-1	-1	-1	-3
Row 14: Compare to Event 14															1	1	2
Row 15: Compare to Event 15																1	1

Mann-Kendall Statistic (S) = Total	**-78**
Confidence Level	**>90%**
Coefficient of Variance (CV)	**1.50**



Trend Analysis	
Statistical Method	**Result**
Linear Regression	Possibly Decreasing
Mann-Kendall	Decreasing

Notes:
- A minimum of four (4) independent sampling events are required for the Mann-Kendall test to be valid.
- Non-detects are listed as 1/2 the value of the laboratory detection limit
- A negative S value with confidence > 90% indicates a decreasing concentration trend.
- A positive S value with confidence > 90% indicates an increasing concentration trend.
- A positive S value with confidence < 90% indicates that there is likely no concentration trend.
- A negative S value with confidence < 90% and CV > 1 indicates that there is likely no concentration trend.
- The closer to zero the CV is, the less variation in concentrations between sampling events.
- A CV < 1 indicates concentrations are stable regardless of trend.
- R^2 is calculated without testing the approximate normality of the data. Additionally, if sample size is < 8, the power of the linear regression is low.
- R^2 values between 0.5 and 0.8 indicate possible correlation, suggesting that there is possibly a trend.
- R^2 values greater than 0.8 indicate a correlation, suggesting that there is likely a trend.
- Effects of Coefficient of Variation based on Table 3.2 (AFCEE, 2000)

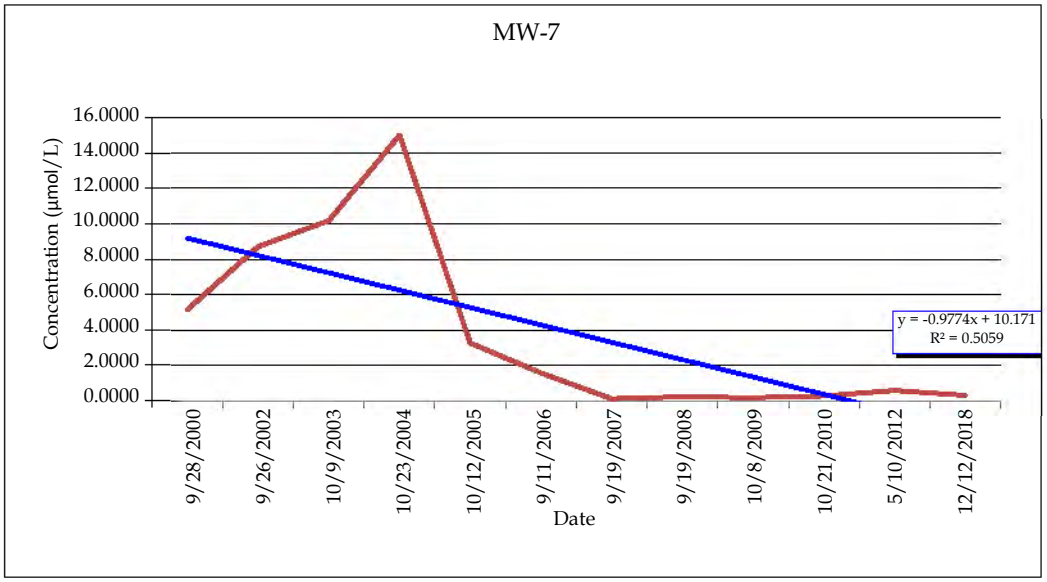
River Terrace RV Park
Mann-Kendall Test for Trend

Monitoring Well No.	**MW-7**
Contaminant	**Molar Sum**

Monitoring Date:	9/28/2000	9/26/2002	10/9/2003	10/23/2004	10/12/2005	9/11/2006	9/19/2007	9/19/2008	10/8/2009	10/21/2010	5/10/2012	12/12/2018
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12
Concentration (µmol/L)	5.1649	8.7164	10.1795	14.9868	3.2914	1.5975	0.1504	0.2602	0.2145	0.3021	0.6142	0.3400

Row 1: Compare to Event 1	1	1	1	-1	-1	-1	-1	-1	-1	-1	-1	-5
Row 2: Compare to Event 2		1	1	-1	-1	-1	-1	-1	-1	-1	-1	-6
Row 3: Compare to Event 3			1	-1	-1	-1	-1	-1	-1	-1	-1	-7
Row 4: Compare to Event 4				-1	-1	-1	-1	-1	-1	-1	-1	-8
Row 5: Compare to Event 5					-1	-1	-1	-1	-1	-1	-1	-7
Row 6: Compare to Event 6						-1	-1	-1	-1	-1	-1	-6
Row 7: Compare to Event 7							1	1	1	1	1	5
Row 8: Compare to Event 8								-1	1	1	1	2
Row 9: Compare to Event 9									1	1	1	3
Row 10: Compare to Event 10										1	1	2
Row 11: Compare to Event 11											-1	-1

Mann-Kendall Statistic (S) = Total	**-28**
Confidence Level	**>90%**
Coefficient of Variance (CV)	**1.30**



Trend Analysis	
Statistical Method	**Result**
Linear Regression	Possibly Decreasing
Mann-Kendall	Decreasing

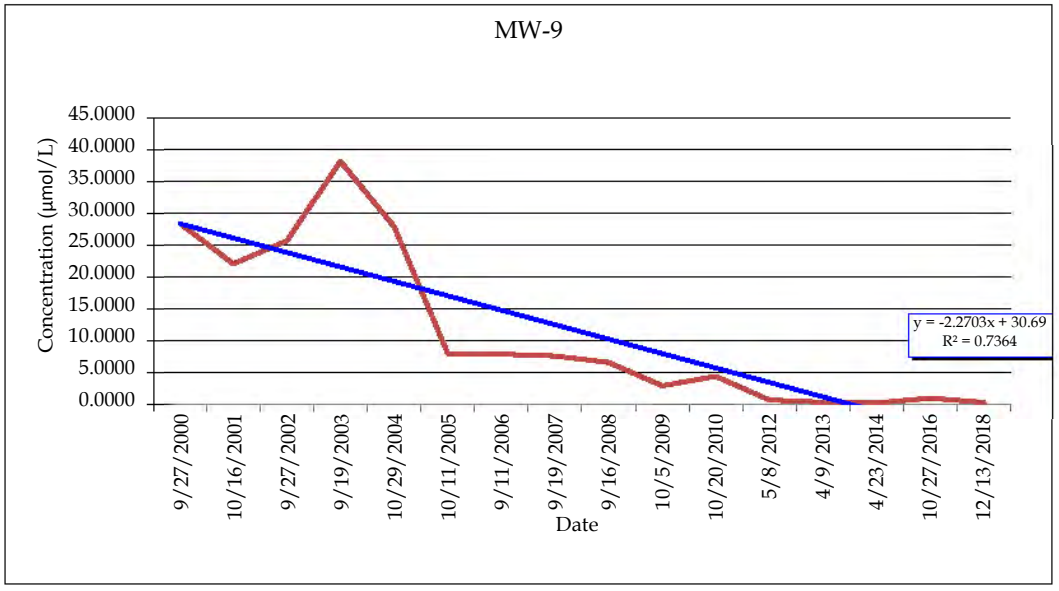
Notes:
- A minimum of four (4) independent sampling events are required for the Mann-Kendall test to be valid.
- Non-detects are listed as 1/2 the value of the laboratory detection limit
- A negative S value with confidence > 90% indicates a decreasing concentration trend.
- A positive S value with confidence > 90% indicates an increasing concentration trend.
- A positive S value with confidence < 90% indicates that there is likely no concentration trend.
- A negative S value with confidence < 90% and CV > 1 indicates that there is likely no concentration trend.
- The closer to zero the CV is, the less variation in concentrations between sampling events.
- A CV < 1 indicates concentrations are stable regardless of trend.
- R^2 is calculated without testing the approximate normality of the data. Additionally, if sample size is < 8, the power of the linear regression is low.
- R^2 values between 0.5 and 0.8 indicate possible correlation, suggesting that there is possibly a trend.
- R^2 values greater than 0.8 indicate a correlation, suggesting that there is likely a trend.
- Effects of Coefficient of Variation based on Table 3.2 (AFCEE, 2000)

River Terrace RV Park
Mann-Kendall Test for Trend

Monitoring Well No.	**MW-9**
Contaminant	**Molar Sum**

Monitoring Date:	9/27/2000	10/16/2001	9/27/2002	9/19/2003	10/29/2004	10/11/2005	9/11/2006	9/19/2007	9/16/2008	10/5/2009	10/20/2010	5/8/2012	4/9/2013	4/23/2014	10/27/2016	########	
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13	Event 14	Event 15	Event 16	
Concentration (µmol/L)	28.4929	22.1085	25.7169	38.2000	27.8991	7.9993	7.8968	7.5961	6.5887	2.9041	4.3866	0.6858	0.3251	0.2201	0.9626	0.2904	
Row 1: Compare to Event 1	-1	-1	1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-13
Row 2: Compare to Event 2		1	1	1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-8
Row 3: Compare to Event 3			1	1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-9
Row 4: Compare to Event 4				-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-12
Row 5: Compare to Event 5					-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-11
Row 6: Compare to Event 6						-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-10
Row 7: Compare to Event 7							-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-9
Row 8: Compare to Event 8								-1	-1	-1	-1	-1	-1	-1	-1	-1	-8
Row 9: Compare to Event 9									-1	-1	-1	-1	-1	-1	-1	-1	-7
Row 10: Compare to Event 10										1	-1	-1	-1	-1	-1	-1	-4
Row 11: Compare to Event 11											-1	-1	-1	-1	-1	-1	-5
Row 12: Compare to Event 12												-1	-1	-1	1	-1	-2
Row 13: Compare to Event 13													-1	-1	1	-1	-1
Row 14: Compare to Event 14															1	1	2
Row 15: Compare to Event 15																-1	-1

Mann-Kendall Statistic (S) = Total	**-98**
Confidence Level	**>90%**
Coefficient of Variance (CV)	**1.11**



Trend Analysis	
Statistical Method	**Result**
Linear Regression	Possibly Decreasing
Mann-Kendall	Decreasing

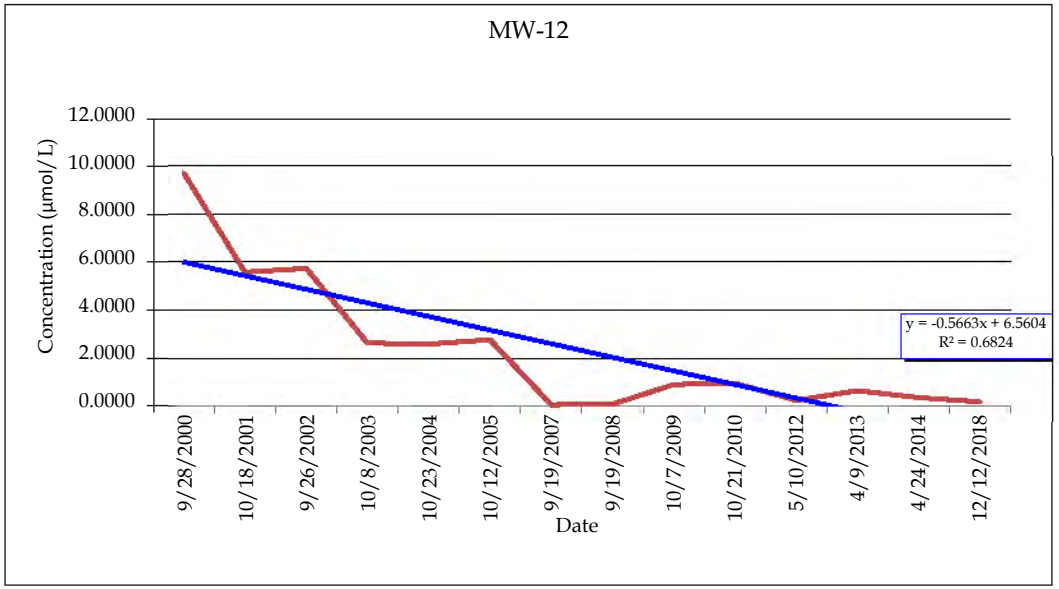
Notes:
- A minimum of four (4) independent sampling events are required for the Mann-Kendall test to be valid.
- Non-detects are listed as 1/2 the value of the laboratory detection limit
- A negative S value with confidence > 90% indicates a decreasing concentration trend.
- A positive S value with confidence > 90% indicates an increasing concentration trend.
- A positive S value with confidence < 90% indicates that there is likely no concentration trend.
- A negative S value with confidence < 90% and CV > 1 indicates that there is likely no concentration trend.
- The closer to zero the CV is, the less variation in concentrations between sampling events.
- A CV < 1 indicates concentrations are stable regardless of trend.
- R^2 is calculated without testing the approximate normality of the data. Additionally, if sample size is < 8, the power of the linear regression is low.
- R^2 values between 0.5 and 0.8 indicate possible correlation, suggesting that there is possibly a trend.
- R^2 values greater than 0.8 indicate a correlation, suggesting that there is likely a trend.
- Effects of Coefficient of Variation based on Table 3.2 (AFCEE, 2000)

River Terrace RV Park
Mann-Kendall Test for Trend

Monitoring Well No.	**MW-12**
Contaminant	**Molar Sum**

Monitoring Date:	9/28/2000	10/18/2001	9/26/2002	10/8/2003	10/23/2004	10/12/2005	9/19/2007	9/19/2008	10/7/2009	10/21/2010	5/10/2012	4/9/2013	4/24/2014	12/12/2018	
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13	Event 14	
Concentration (µmol/L)	9.7110	5.5783	5.7311	2.6283	2.5826	2.7605	0.0535	0.0752	0.9016	0.9519	0.2391	0.6399	0.3523	0.1781	
Row 1: Compare to Event 1		-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-13
Row 2: Compare to Event 2			1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-10
Row 3: Compare to Event 3				-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-11
Row 4: Compare to Event 4					-1	1	-1	-1	-1	-1	-1	-1	-1	-1	-8
Row 5: Compare to Event 5						1	-1	-1	-1	-1	-1	-1	-1	-1	-7
Row 6: Compare to Event 6							-1	-1	-1	-1	-1	-1	-1	-1	-8
Row 7: Compare to Event 7								1	1	1	1	1	1	1	7
Row 8: Compare to Event 8									1	1	1	1	1	1	6
Row 9: Compare to Event 9										1	-1	-1	-1	-1	-3
Row 10: Compare to Event 10											-1	-1	-1	-1	-4
Row 11: Compare to Event 11												1	1	-1	1
Row 12: Compare to Event 12													-1	-1	-2
Row 13: Compare to Event 13														-1	-1

Mann-Kendall Statistic (S) = Total	**-53**
Confidence Level	**>90%**
Coefficient of Variance (CV)	**1.24**



Trend Analysis	
Statistical Method	**Result**
Linear Regression	Possibly Decreasing
Mann-Kendall	Decreasing

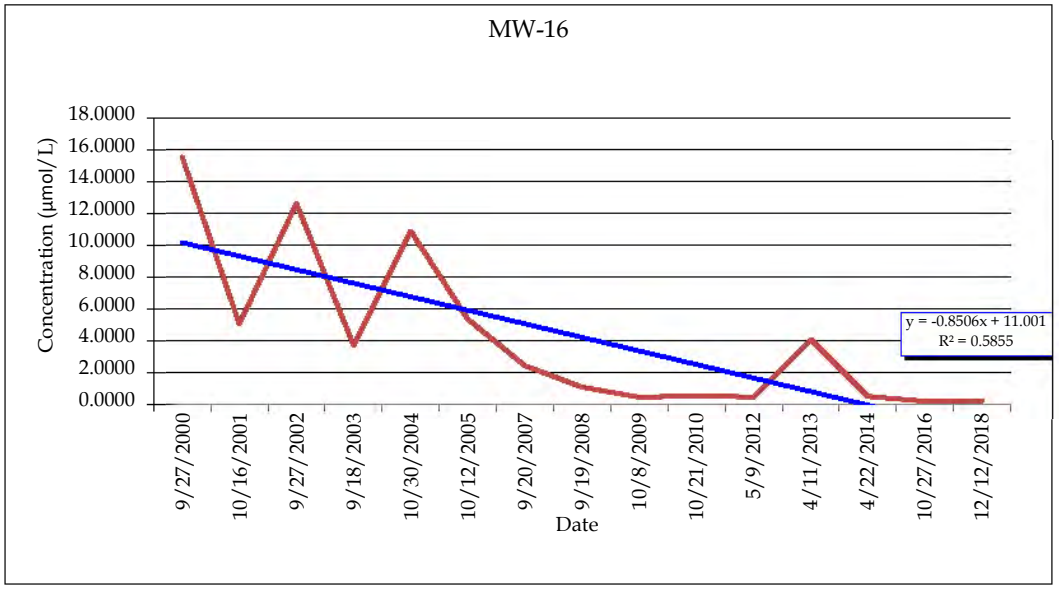
Notes:
- A minimum of four (4) independent sampling events are required for the Mann-Kendall test to be valid.
- Non-detects are listed as 1/2 the value of the laboratory detection limit
- A negative S value with confidence > 90% indicates a decreasing concentration trend.
- A positive S value with confidence > 90% indicates an increasing concentration trend.
- A positive S value with confidence < 90% indicates that there is likely no concentration trend.
- A negative S value with confidence < 90% and CV > 1 indicates that there is likely no concentration trend.
- The closer to zero the CV is, the less variation in concentrations between sampling events.
- A CV < 1 indicates concentrations are stable regardless of trend.
- R^2 is calculated without testing the approximate normality of the data. Additionally, if sample size is < 8, the power of the linear regression is low.
- R^2 values between 0.5 and 0.8 indicate possible correlation, suggesting that there is possibly a trend.
- R^2 values greater than 0.8 indicate a correlation, suggesting that there is likely a trend.
- Effects of Coefficient of Variation based on Table 3.2 (AFCEE, 2000)

River Terrace RV Park
Mann-Kendall Test for Trend

Monitoring Well No.	**MW-16**
Contaminant	**Molar Sum**

Monitoring Date:	9/27/2000	10/16/2001	9/27/2002	9/18/2003	10/30/2004	10/12/2005	9/20/2007	9/19/2008	10/8/2009	10/21/2010	5/9/2012	4/11/2013	4/22/2014	10/27/2016	12/12/2018	
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13	Event 14	Event 15	
Concentration (µmol/L)	15.5298	5.0369	12.5972	3.6951	10.8747	5.3385	2.4121	1.0727	0.4439	0.5344	0.4503	4.0638	0.4911	0.1849	0.2235	
Row 1: Compare to Event 1		-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-14
Row 2: Compare to Event 2			1	-1	1	1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-7
Row 3: Compare to Event 3				-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-12
Row 4: Compare to Event 4					1	1	-1	-1	-1	-1	-1	1	-1	-1	-1	-5
Row 5: Compare to Event 5						-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-10
Row 6: Compare to Event 6							-1	-1	-1	-1	-1	-1	-1	-1	-1	-9
Row 7: Compare to Event 7								-1	-1	-1	-1	1	-1	-1	-1	-6
Row 8: Compare to Event 8									-1	-1	-1	1	-1	-1	-1	-5
Row 9: Compare to Event 9										1	1	1	1	-1	-1	2
Row 10: Compare to Event 10											-1	1	-1	-1	-1	-3
Row 11: Compare to Event 11												1	1	-1	-1	0
Row 12: Compare to Event 12													-1	-1	-1	-3
Row 13: Compare to Event 13														-1	-1	-2
Row 14: Compare to Event 14															1	1

Mann-Kendall Statistic (S) = Total	**-73**
Confidence Level	**>90%**
Coefficient of Variance (CV)	**1.18**



Trend Analysis	
Statistical Method	**Result**
Linear Regression	Possibly Decreasing
Mann-Kendall	Decreasing

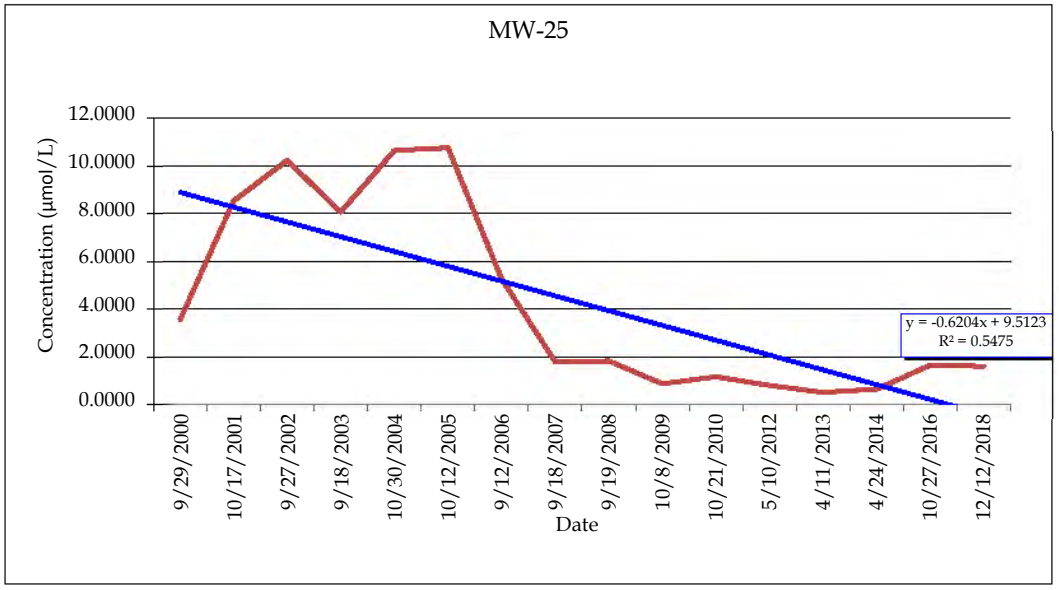
Notes:
- A minimum of four (4) independent sampling events are required for the Mann-Kendall test to be valid.
- Non-detects are listed as 1/2 the value of the laboratory detection limit
- A negative S value with confidence > 90% indicates a decreasing concentration trend.
- A positive S value with confidence > 90% indicates an increasing concentration trend.
- A positive S value with confidence < 90% indicates that there is likely no concentration trend.
- A negative S value with confidence < 90% and CV > 1 indicates that there is likely no concentration trend.
- The closer to zero the CV is, the less variation in concentrations between sampling events.
- A CV < 1 indicates concentrations are stable regardless of trend.
- R^2 is calculated without testing the approximate normality of the data. Additionally, if sample size is < 8, the power of the linear regression is low.
- R^2 values between 0.5 and 0.8 indicate possible correlation, suggesting that there is possibly a trend.
- R^2 values greater than 0.8 indicate a correlation, suggesting that there is likely a trend.
- Effects of Coefficient of Variation based on Table 3.2 (AFCEE, 2000)

River Terrace RV Park
Mann-Kendall Test for Trend

Monitoring Well No.	**MW-25**
Contaminant	**Molar Sum**

Monitoring Date:	9/29/2000	10/17/2001	9/27/2002	9/18/2003	10/30/2004	10/12/2005	9/12/2006	9/18/2007	9/19/2008	10/8/2009	10/21/2010	5/10/2012	4/11/2013	4/24/2014	10/27/2016	########	
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13	Event 14	Event 15	Event 16	
Concentration (µmol/L)	3.5331	8.5170	10.2287	8.0621	10.6435	10.7559	5.2676	1.7833	1.8170	0.8630	1.1586	0.7973	0.5026	0.6438	1.6481	1.5975	
Row 1: Compare to Event 1	1	1	1	1	1	1	1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-3
Row 2: Compare to Event 2		1	-1	1	1	1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-8
Row 3: Compare to Event 3			-1	1	1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-9
Row 4: Compare to Event 4				1	1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-8
Row 5: Compare to Event 5					1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-9
Row 6: Compare to Event 6						-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-10
Row 7: Compare to Event 7							-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-9
Row 8: Compare to Event 8								1	-1	-1	-1	-1	-1	-1	-1	-1	-6
Row 9: Compare to Event 9									-1	-1	-1	-1	-1	-1	-1	-1	-7
Row 10: Compare to Event 10										1	-1	-1	-1	-1	1	1	0
Row 11: Compare to Event 11											-1	-1	-1	-1	1	1	-1
Row 12: Compare to Event 12												-1	-1	-1	1	1	0
Row 13: Compare to Event 13													-1	1	1	1	3
Row 14: Compare to Event 14														1	1	1	2
Row 15: Compare to Event 15															1	-1	-1

Mann-Kendall Statistic (S) = Total	**-66**
Confidence Level	**>90%**
Coefficient of Variance (CV)	**0.94**



Trend Analysis	
Statistical Method	**Result**
Linear Regression	Possibly Decreasing
Mann-Kendall	Decreasing; Stable

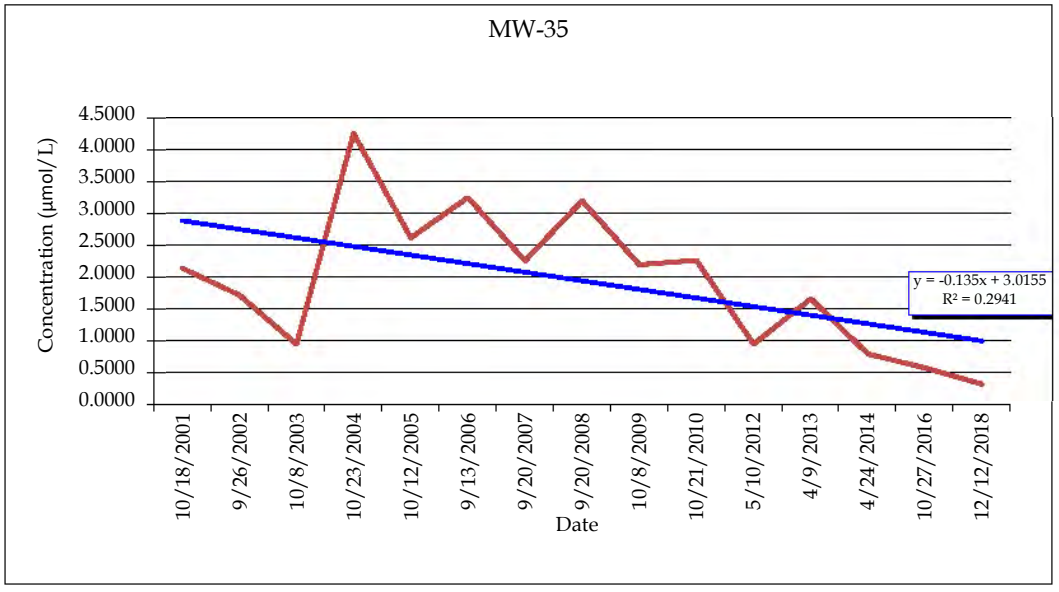
Notes:
- A minimum of four (4) independent sampling events are required for the Mann-Kendall test to be valid.
- Non-detects are listed as 1/2 the value of the laboratory detection limit
- A negative S value with confidence > 90% indicates a decreasing concentration trend.
- A positive S value with confidence > 90% indicates an increasing concentration trend.
- A positive S value with confidence < 90% indicates that there is likely no concentration trend.
- A negative S value with confidence < 90% and CV > 1 indicates that there is likely no concentration trend.
- The closer to zero the CV is, the less variation in concentrations between sampling events.
- A CV < 1 indicates concentrations are stable regardless of trend.
- R^2 is calculated without testing the approximate normality of the data. Additionally, if sample size is < 8, the power of the linear regression is low.
- R^2 values between 0.5 and 0.8 indicate possible correlation, suggesting that there is possibly a trend.
- R^2 values greater than 0.8 indicate a correlation, suggesting that there is likely a trend.
- Effects of Coefficient of Variation based on Table 3.2 (AFCEE, 2000)

River Terrace RV Park
Mann-Kendall Test for Trend

Monitoring Well No.	**MW-35**
Contaminant	**Molar Sum**

Monitoring Date:	10/18/2001	9/26/2002	10/8/2003	10/23/2004	10/12/2005	9/13/2006	9/20/2007	9/20/2008	10/8/2009	10/21/2010	5/10/2012	4/9/2013	4/24/2014	10/27/2016	12/12/2018	
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13	Event 14	Event 15	
Concentration (µmol/L)	2.1328	1.7103	0.9401	4.2493	2.6099	3.2446	2.2499	3.1918	2.1896	2.2568	0.9398	1.6539	0.7881	0.5683	0.3116	
Row 1: Compare to Event 1		-1	-1	1	1	1	1	1	1	1	-1	-1	-1	-1	-1	0
Row 2: Compare to Event 2			-1	1	1	1	1	1	1	1	-1	-1	-1	-1	-1	1
Row 3: Compare to Event 3				1	1	1	1	1	1	1	-1	1	-1	-1	-1	4
Row 4: Compare to Event 4					-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-11
Row 5: Compare to Event 5						1	-1	1	-1	-1	-1	-1	-1	-1	-1	-6
Row 6: Compare to Event 6							-1	-1	-1	-1	-1	-1	-1	-1	-1	-9
Row 7: Compare to Event 7								1	-1	1	-1	-1	-1	-1	-1	-4
Row 8: Compare to Event 8									-1	-1	-1	-1	-1	-1	-1	-7
Row 9: Compare to Event 9										1	-1	-1	-1	-1	-1	-4
Row 10: Compare to Event 10											-1	-1	-1	-1	-1	-5
Row 11: Compare to Event 11												1	-1	-1	-1	-2
Row 12: Compare to Event 12													-1	-1	-1	-3
Row 13: Compare to Event 13														-1	-1	-2
Row 14: Compare to Event 14															-1	-1

Mann-Kendall Statistic (S) = Total	**-49**
Confidence Level	**>90%**
Coefficient of Variance (CV)	**0.57**



Trend Analysis	
Statistical Method	**Result**
Linear Regression	No Trend
Mann-Kendall	Decreasing; Stable

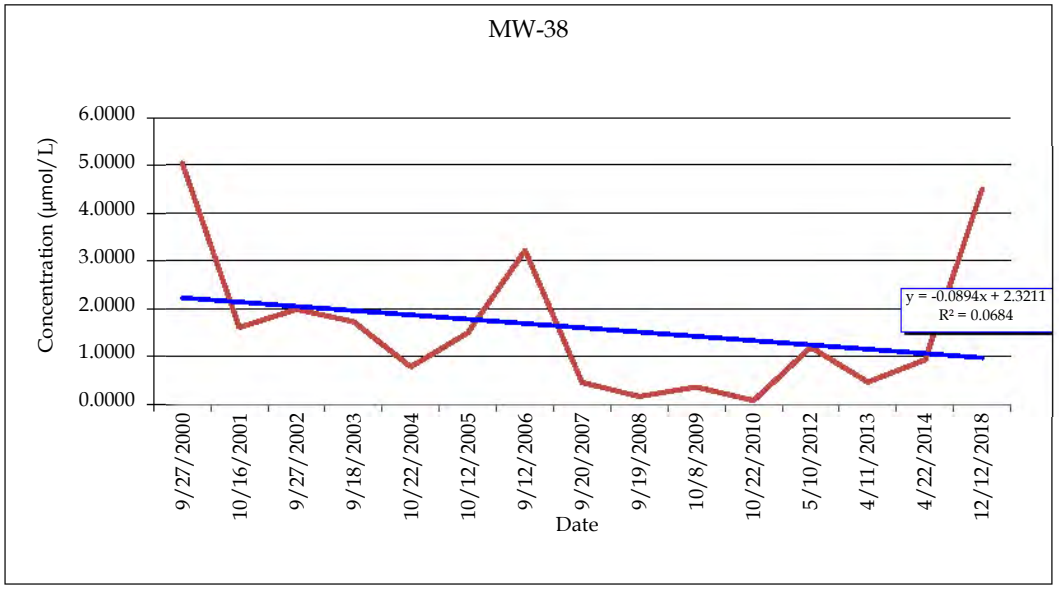
Notes:
- A minimum of four (4) independent sampling events are required for the Mann-Kendall test to be valid.
- Non-detects are listed as 1/2 the value of the laboratory detection limit
- A negative S value with confidence > 90% indicates a decreasing concentration trend.
- A positive S value with confidence > 90% indicates an increasing concentration trend.
- A positive S value with confidence < 90% indicates that there is likely no concentration trend.
- A negative S value with confidence < 90% and CV > 1 indicates that there is likely no concentration trend.
- The closer to zero the CV is, the less variation in concentrations between sampling events.
- A CV < 1 indicates concentrations are stable regardless of trend.
- R^2 is calculated without testing the approximate normality of the data. Additionally, if sample size is < 8, the power of the linear regression is low.
- R^2 values between 0.5 and 0.8 indicate possible correlation, suggesting that there is possibly a trend.
- R^2 values greater than 0.8 indicate a correlation, suggesting that there is likely a trend.
- Effects of Coefficient of Variation based on Table 3.2 (AFCEE, 2000)

River Terrace RV Park
Mann-Kendall Test for Trend

Monitoring Well No.	**MW-38**
Contaminant	**Molar Sum**

Monitoring Date:	9/27/2000	10/16/2001	9/27/2002	9/18/2003	10/22/2004	10/12/2005	9/12/2006	9/20/2007	9/19/2008	10/8/2009	10/22/2010	5/10/2012	4/11/2013	4/22/2014	12/12/2018	
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13	Event 14	Event 15	
Concentration (µmol/L)	5.0455	1.6102	1.9918	1.7315	0.7922	1.4994	3.2202	0.4661	0.1705	0.3691	0.0872	1.1982	0.4720	0.9357	4.4986	
Row 1: Compare to Event 1		-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-14
Row 2: Compare to Event 2			1	1	-1	-1	1	-1	-1	-1	-1	-1	-1	-1	1	-5
Row 3: Compare to Event 3				-1	-1	-1	1	-1	-1	-1	-1	-1	-1	-1	1	-8
Row 4: Compare to Event 4					-1	-1	1	-1	-1	-1	-1	-1	-1	-1	1	-7
Row 5: Compare to Event 5						1	1	-1	-1	-1	-1	1	-1	1	1	0
Row 6: Compare to Event 6							1	-1	-1	-1	-1	-1	-1	-1	1	-5
Row 7: Compare to Event 7								-1	-1	-1	-1	-1	-1	-1	1	-6
Row 8: Compare to Event 8									-1	-1	-1	1	1	1	1	1
Row 9: Compare to Event 9										1	-1	1	1	1	1	4
Row 10: Compare to Event 10											-1	1	1	1	1	3
Row 11: Compare to Event 11												1	1	1	1	4
Row 12: Compare to Event 12													-1	-1	1	-1
Row 13: Compare to Event 13														1	1	2
Row 14: Compare to Event 14															1	1

Mann-Kendall Statistic (S) = Total	**-31**
Confidence Level	**>90%**
Coefficient of Variance (CV)	**0.95**



Trend Analysis	
Statistical Method	**Result**
Linear Regression	No Trend
Mann-Kendall	Decreasing; Stable

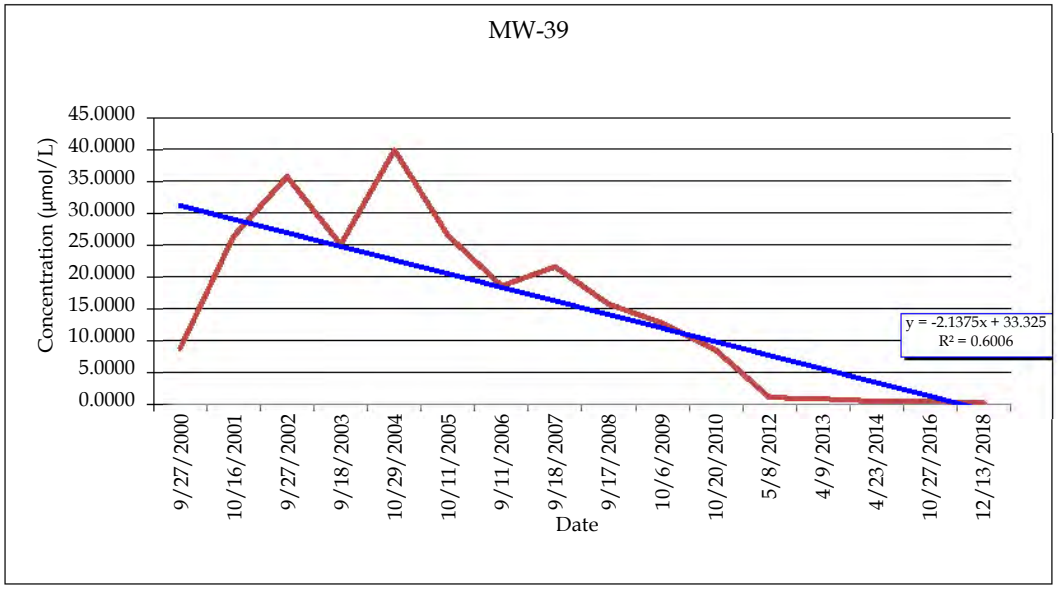
Notes:
- A minimum of four (4) independent sampling events are required for the Mann-Kendall test to be valid.
- Non-detects are listed as 1/2 the value of the laboratory detection limit
- A negative S value with confidence > 90% indicates a decreasing concentration trend.
- A positive S value with confidence > 90% indicates an increasing concentration trend.
- A positive S value with confidence < 90% indicates that there is likely no concentration trend.
- A negative S value with confidence < 90% and CV > 1 indicates that there is likely no concentration trend.
- The closer to zero the CV is, the less variation in concentrations between sampling events.
- A CV < 1 indicates concentrations are stable regardless of trend.
- R^2 is calculated without testing the approximate normality of the data. Additionally, if sample size is < 8, the power of the linear regression is low.
- R^2 values between 0.5 and 0.8 indicate possible correlation, suggesting that there is possibly a trend.
- R^2 values greater than 0.8 indicate a correlation, suggesting that there is likely a trend.
- Effects of Coefficient of Variation based on Table 3.2 (AFCEE, 2000)

River Terrace RV Park
Mann-Kendall Test for Trend

Monitoring Well No.	**MW-39**
Contaminant	**Molar Sum**

Monitoring Date:	9/27/2000	10/16/2001	9/27/2002	9/18/2003	10/29/2004	10/11/2005	9/11/2006	9/18/2007	9/17/2008	10/6/2009	10/20/2010	5/8/2012	4/9/2013	4/23/2014	10/27/2016	########	
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13	Event 14	Event 15	Event 16	
Concentration (µmol/L)	8.7130	26.3552	35.7100	25.0567	39.8909	26.4813	18.5745	21.5870	15.7184	12.7684	8.4939	1.0739	0.8427	0.4987	0.4948	0.2380	
Row 1: Compare to Event 1	1	1	1	1	1	1	1	1	1	-1	-1	-1	-1	-1	-1	-1	3
Row 2: Compare to Event 2		1	-1	1	1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-8
Row 3: Compare to Event 3			-1	1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-11
Row 4: Compare to Event 4				1	1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-8
Row 5: Compare to Event 5					-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-11
Row 6: Compare to Event 6						-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-10
Row 7: Compare to Event 7							1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-7
Row 8: Compare to Event 8								-1	-1	-1	-1	-1	-1	-1	-1	-1	-8
Row 9: Compare to Event 9									-1	-1	-1	-1	-1	-1	-1	-1	-7
Row 10: Compare to Event 10										-1	-1	-1	-1	-1	-1	-1	-6
Row 11: Compare to Event 11											-1	-1	-1	-1	-1	-1	-5
Row 12: Compare to Event 12												-1	-1	-1	-1	-1	-4
Row 13: Compare to Event 13													-1	-1	-1	-1	-3
Row 14: Compare to Event 14														-1	-1	-1	-2
Row 15: Compare to Event 15															-1	-1	-1

Mann-Kendall Statistic (S) = Total	**-88**
Confidence Level	**>90%**
Coefficient of Variance (CV)	**0.87**



Trend Analysis	
Statistical Method	**Result**
Linear Regression	Possibly Decreasing
Mann-Kendall	Decreasing; Stable

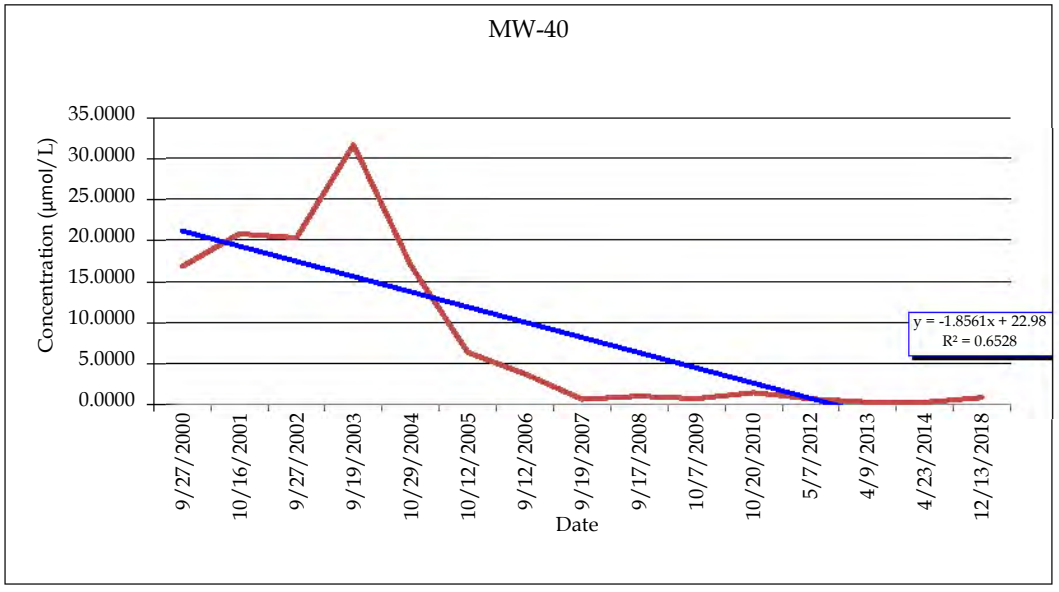
Notes:
- A minimum of four (4) independent sampling events are required for the Mann-Kendall test to be valid.
- Non-detects are listed as 1/2 the value of the laboratory detection limit
- A negative S value with confidence > 90% indicates a decreasing concentration trend.
- A positive S value with confidence > 90% indicates an increasing concentration trend.
- A positive S value with confidence < 90% indicates that there is likely no concentration trend.
- A negative S value with confidence < 90% and CV > 1 indicates that there is likely no concentration trend.
- The closer to zero the CV is, the less variation in concentrations between sampling events.
- A CV < 1 indicates concentrations are stable regardless of trend.
- R^2 is calculated without testing the approximate normality of the data. Additionally, if sample size is < 8, the power of the linear regression is low.
- R^2 values between 0.5 and 0.8 indicate possible correlation, suggesting that there is possibly a trend.
- R^2 values greater than 0.8 indicate a correlation, suggesting that there is likely a trend.
- Effects of Coefficient of Variation based on Table 3.2 (AFCEE, 2000)

River Terrace RV Park
Mann-Kendall Test for Trend

Monitoring Well No.	**MW-40**
Contaminant	**Molar Sum**

Monitoring Date:	9/27/2000	10/16/2001	9/27/2002	9/19/2003	10/29/2004	10/12/2005	9/12/2006	9/19/2007	9/17/2008	10/7/2009	10/20/2010	5/7/2012	4/9/2013	4/23/2014	12/13/2018	
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13	Event 14	Event 15	
Concentration (µmol/L)	16.7684	20.7666	20.2961	31.6251	16.9323	6.3140	3.6822	0.6114	0.9797	0.6723	1.3953	0.6439	0.2461	0.2400	0.8011	
Row 1: Compare to Event 1		1	1	1	1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-6
Row 2: Compare to Event 2			-1	1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-11
Row 3: Compare to Event 3				1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-10
Row 4: Compare to Event 4					-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-11
Row 5: Compare to Event 5						-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-10
Row 6: Compare to Event 6							-1	-1	-1	-1	-1	-1	-1	-1	-1	-9
Row 7: Compare to Event 7								-1	-1	-1	-1	-1	-1	-1	-1	-8
Row 8: Compare to Event 8									1	1	1	1	-1	-1	1	3
Row 9: Compare to Event 9										-1	1	-1	-1	-1	-1	-4
Row 10: Compare to Event 10											1	-1	-1	-1	1	-1
Row 11: Compare to Event 11												-1	-1	-1	-1	-4
Row 12: Compare to Event 12													-1	-1	1	-1
Row 13: Compare to Event 13														-1	1	0
Row 14: Compare to Event 14															1	1

Mann-Kendall Statistic (S) = Total	**-71**
Confidence Level	**>90%**
Coefficient of Variance (CV)	**1.26**



Trend Analysis	
Statistical Method	**Result**
Linear Regression	Possibly Decreasing
Mann-Kendall	Decreasing

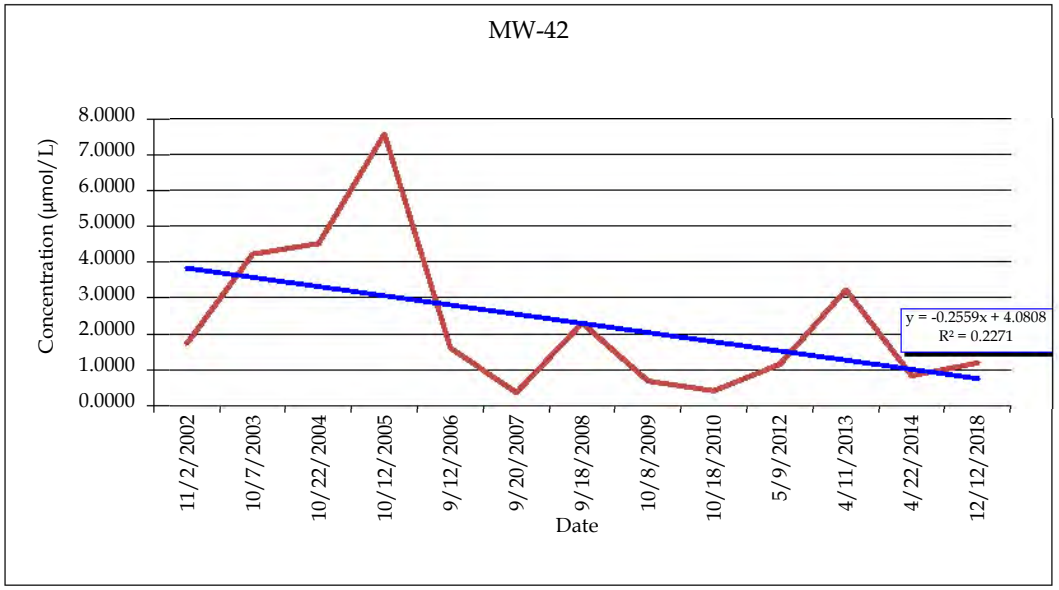
Notes:
- A minimum of four (4) independent sampling events are required for the Mann-Kendall test to be valid.
- Non-detects are listed as 1/2 the value of the laboratory detection limit
- A negative S value with confidence > 90% indicates a decreasing concentration trend.
- A positive S value with confidence > 90% indicates an increasing concentration trend.
- A positive S value with confidence < 90% indicates that there is likely no concentration trend.
- A negative S value with confidence < 90% and CV > 1 indicates that there is likely no concentration trend.
- The closer to zero the CV is, the less variation in concentrations between sampling events.
- A CV < 1 indicates concentrations are stable regardless of trend.
- R^2 is calculated without testing the approximate normality of the data. Additionally, if sample size is < 8, the power of the linear regression is low.
- R^2 values between 0.5 and 0.8 indicate possible correlation, suggesting that there is possibly a trend.
- R^2 values greater than 0.8 indicate a correlation, suggesting that there is likely a trend.
- Effects of Coefficient of Variation based on Table 3.2 (AFCEE, 2000)

River Terrace RV Park
Mann-Kendall Test for Trend

Monitoring Well No.	**MW-42**
Contaminant	**Molar Sum**

Monitoring Date:	11/2/2002	10/7/2003	10/22/2004	10/12/2005	9/12/2006	9/20/2007	9/18/2008	10/8/2009	10/18/2010	5/9/2012	4/11/2013	4/22/2014	12/12/2018	
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13	
Concentration (µmol/L)	1.7263	4.2169	4.5089	7.5576	1.6035	0.3653	2.2939	0.6815	0.4157	1.1551	3.2215	0.8291	1.1909	
Row 1: Compare to Event 1	1	1	1	-1	-1	1	-1	-1	-1	1	-1	-1	-2	
Row 2: Compare to Event 2		1	1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-7	
Row 3: Compare to Event 3			1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-8	
Row 4: Compare to Event 4				-1	-1	-1	-1	-1	-1	-1	-1	-1	-9	
Row 5: Compare to Event 5					-1	1	-1	-1	-1	1	-1	-1	-4	
Row 6: Compare to Event 6						1	1	1	1	1	1	1	7	
Row 7: Compare to Event 7							-1	-1	-1	1	-1	-1	-4	
Row 8: Compare to Event 8								-1	1	1	1	1	3	
Row 9: Compare to Event 9									1	1	1	1	4	
Row 10: Compare to Event 10										1	-1	1	1	
Row 11: Compare to Event 11											-1	-1	-2	
Row 12: Compare to Event 12												1	1	

Mann-Kendall Statistic (S) = Total	**-20**
Confidence Level	**<90%**
Coefficient of Variance (CV)	**0.91**



Trend Analysis	
Statistical Method	**Result**
Linear Regression	No Trend
Mann-Kendall	Likely No Trend; Stable

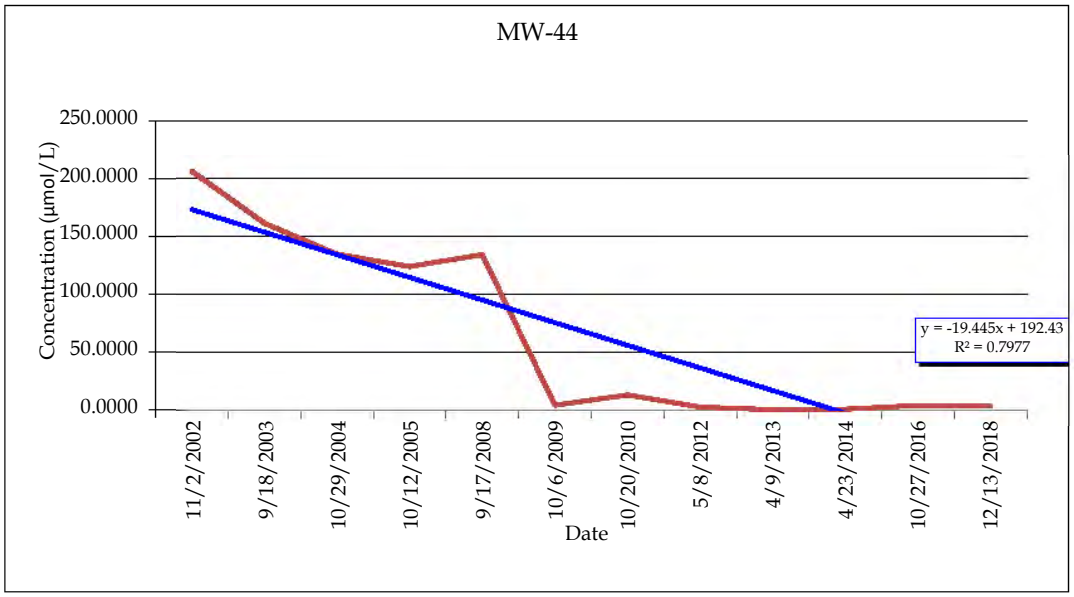
Notes:
- A minimum of four (4) independent sampling events are required for the Mann-Kendall test to be valid.
- Non-detects are listed as 1/2 the value of the laboratory detection limit
- A negative S value with confidence > 90% indicates a decreasing concentration trend.
- A positive S value with confidence > 90% indicates an increasing concentration trend.
- A positive S value with confidence < 90% indicates that there is likely no concentration trend.
- A negative S value with confidence < 90% and CV > 1 indicates that there is likely no concentration trend.
- The closer to zero the CV is, the less variation in concentrations between sampling events.
- A CV < 1 indicates concentrations are stable regardless of trend.
- R^2 is calculated without testing the approximate normality of the data. Additionally, if sample size is < 8, the power of the linear regression is low.
- R^2 values between 0.5 and 0.8 indicate possible correlation, suggesting that there is possibly a trend.
- R^2 values greater than 0.8 indicate a correlation, suggesting that there is likely a trend.
- Effects of Coefficient of Variation based on Table 3.2 (AFCEE, 2000)

River Terrace RV Park
Mann-Kendall Test for Trend

Monitoring Well No.	**MW-44**
Contaminant	**Molar Sum**

Monitoring Date:	11/2/2002	9/18/2003	10/29/2004	10/12/2005	9/17/2008	10/6/2009	10/20/2010	5/8/2012	4/9/2013	4/23/2014	10/27/2016	12/13/2018	
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	
Concentration (µmol/L)	205.8780	161.2407	134.5465	123.9112	134.1819	4.7585	13.7263	3.2152	0.9769	1.3553	4.6623	3.9664	
Row 1: Compare to Event 1		-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-11
Row 2: Compare to Event 2			-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-10
Row 3: Compare to Event 3				-1	-1	-1	-1	-1	-1	-1	-1	-1	-9
Row 4: Compare to Event 4					1	-1	-1	-1	-1	-1	-1	-1	-6
Row 5: Compare to Event 5						-1	-1	-1	-1	-1	-1	-1	-7
Row 6: Compare to Event 6							1	-1	-1	-1	-1	-1	-4
Row 7: Compare to Event 7								-1	-1	-1	-1	-1	-5
Row 8: Compare to Event 8									-1	-1	1	1	0
Row 9: Compare to Event 9										1	1	1	3
Row 10: Compare to Event 10											1	1	2
Row 11: Compare to Event 11												-1	-1

Mann-Kendall Statistic (S) = Total	**-48**
Confidence Level	**>90%**
Coefficient of Variance (CV)	**1.19**



Trend Analysis	
Statistical Method	**Result**
Linear Regression	Possibly Decreasing
Mann-Kendall	Decreasing

Notes:
- A minimum of four (4) independent sampling events are required for the Mann-Kendall test to be valid.
- Non-detects are listed as 1/2 the value of the laboratory detection limit
- A negative S value with confidence > 90% indicates a decreasing concentration trend.
- A positive S value with confidence > 90% indicates an increasing concentration trend.
- A positive S value with confidence < 90% indicates that there is likely no concentration trend.
- A negative S value with confidence < 90% and CV > 1 indicates that there is likely no concentration trend.
- The closer to zero the CV is, the less variation in concentrations between sampling events.
- A CV < 1 indicates concentrations are stable regardless of trend.
- R^2 is calculated without testing the approximate normality of the data. Additionally, if sample size is < 8, the power of the linear regression is low.
- R^2 values between 0.5 and 0.8 indicate possible correlation, suggesting that there is possibly a trend.
- R^2 values greater than 0.8 indicate a correlation, suggesting that there is likely a trend.
- Effects of Coefficient of Variation based on Table 3.2 (AFCEE, 2000)

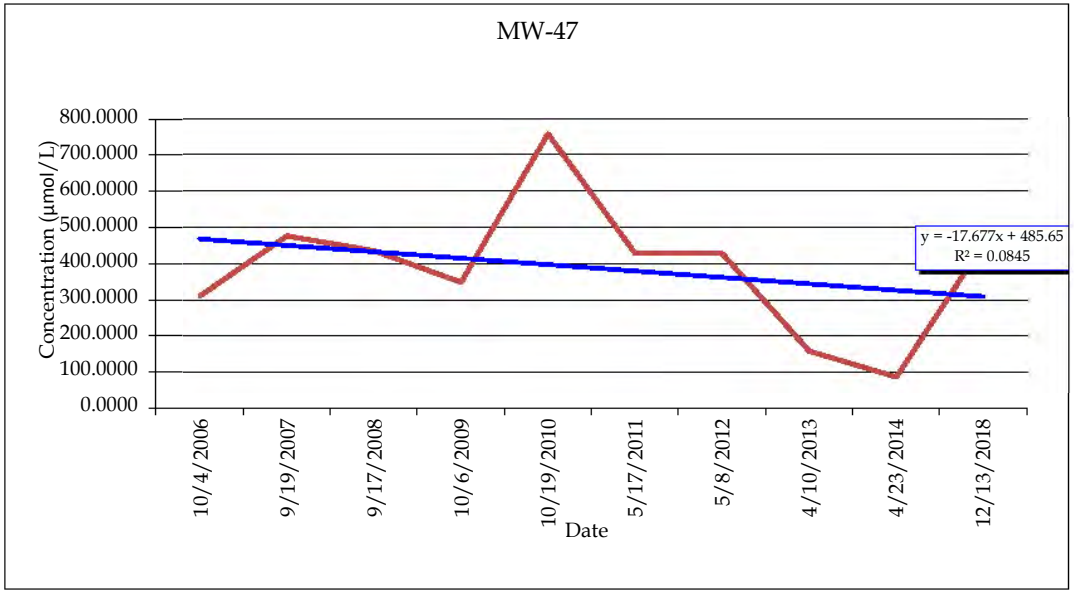
River Terrace RV Park
Mann-Kendall Test for Trend

Monitoring Well No.	**MW-47**
Contaminant	**Molar Sum**

Monitoring Date:	10/4/2006	9/19/2007	9/17/2008	10/6/2009	10/19/2010	5/17/2011	5/8/2012	4/10/2013	4/23/2014	12/13/2018
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10
Concentration (µmol/L)	310.3967	476.7156	435.4741	348.4912	757.7476	428.4467	428.1165	158.3951	87.2452	453.2185

Row 1: Compare to Event 1	1	1	1	1	1	1	-1	-1	1	5
Row 2: Compare to Event 2		-1	-1	1	-1	-1	-1	-1	-1	-6
Row 3: Compare to Event 3			-1	1	-1	-1	-1	-1	1	-3
Row 4: Compare to Event 4				1	1	1	-1	-1	1	2
Row 5: Compare to Event 5					-1	-1	-1	-1	-1	-5
Row 6: Compare to Event 6						-1	-1	-1	1	-2
Row 7: Compare to Event 7							-1	-1	1	-1
Row 8: Compare to Event 8								-1	1	0
Row 9: Compare to Event 9									1	1

Mann-Kendall Statistic (S) = Total	**-9**
Confidence Level	**<90%**
Coefficient of Variance (CV)	**0.47**



Trend Analysis	
Statistical Method	**Result**
Linear Regression	No Trend
Mann-Kendall	Likely No Trend; Stable

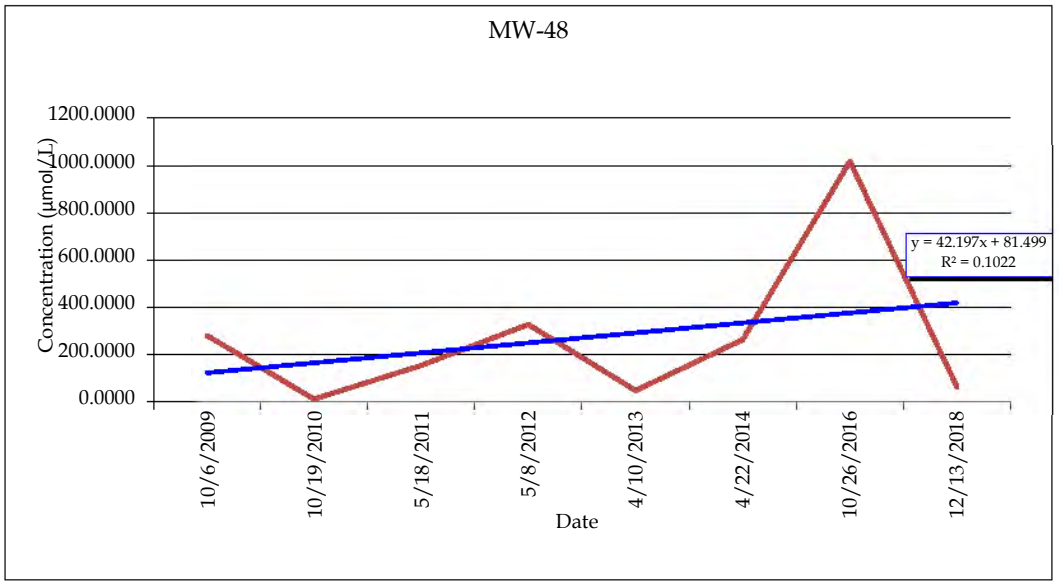
Notes:
- A minimum of four (4) independent sampling events are required for the Mann-Kendall test to be valid.
- Non-detects are listed as 1/2 the value of the laboratory detection limit
- A negative S value with confidence > 90% indicates a decreasing concentration trend.
- A positive S value with confidence > 90% indicates an increasing concentration trend.
- A positive S value with confidence < 90% indicates that there is likely no concentration trend.
- A negative S value with confidence < 90% and CV > 1 indicates that there is likely no concentration trend.
- The closer to zero the CV is, the less variation in concentrations between sampling events.
- A CV < 1 indicates concentrations are stable regardless of trend.
- R^2 is calculated without testing the approximate normality of the data. Additionally, if sample size is < 8, the power of the linear regression is low.
- R^2 values between 0.5 and 0.8 indicate possible correlation, suggesting that there is possibly a trend.
- R^2 values greater than 0.8 indicate a correlation, suggesting that there is likely a trend.
- Effects of Coefficient of Variation based on Table 3.2 (AFCEE, 2000)

River Terrace RV Park
Mann-Kendall Test for Trend

Monitoring Well No.	**MW-48**
Contaminant	**Molar Sum**

Monitoring Date:	10/6/2009	10/19/2010	5/18/2011	5/8/2012	4/10/2013	4/22/2014	10/26/2016	12/13/2018
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8
Concentration (µmol/L)	281.6493	12.8756	154.8077	327.8444	49.0884	264.1300	1016.7411	63.9306

Row 1: Compare to Event 1	-1	-1	1	-1	-1	1	-1	-3
Row 2: Compare to Event 2		1	1	1	1	1	1	6
Row 3: Compare to Event 3			1	-1	1	1	-1	1
Row 4: Compare to Event 4				-1	-1	1	-1	-2
Row 5: Compare to Event 5					1	1	1	3
Row 6: Compare to Event 6						1	-1	0
Row 7: Compare to Event 7							-1	-1



Mann-Kendall Statistic (S) = Total	**4**
Confidence Level	**<90%**
Coefficient of Variance (CV)	**1.19**

Trend Analysis	
Statistical Method	**Result**
Linear Regression	No Trend
Mann-Kendall	Likely No Trend

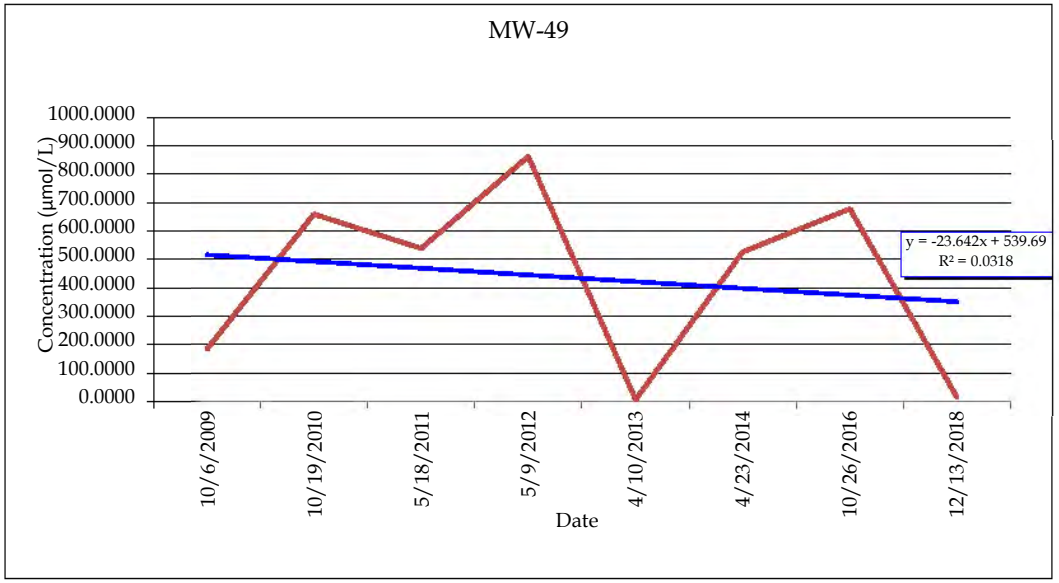
Notes:
- A minimum of four (4) independent sampling events are required for the Mann-Kendall test to be valid.
- Non-detects are listed as 1/2 the value of the laboratory detection limit
- A negative S value with confidence > 90% indicates a decreasing concentration trend.
- A positive S value with confidence > 90% indicates an increasing concentration trend.
- A positive S value with confidence < 90% indicates that there is likely no concentration trend.
- A negative S value with confidence < 90% and CV > 1 indicates that there is likely no concentration trend.
- The closer to zero the CV is, the less variation in concentrations between sampling events.
- A CV < 1 indicates concentrations are stable regardless of trend.
- R^2 is calculated without testing the approximate normality of the data. Additionally, if sample size is < 8, the power of the linear regression is low.
- R^2 values between 0.5 and 0.8 indicate possible correlation, suggesting that there is possibly a trend.
- R^2 values greater than 0.8 indicate a correlation, suggesting that there is likely a trend.
- Effects of Coefficient of Variation based on Table 3.2 (AFCEE, 2000)

River Terrace RV Park
Mann-Kendall Test for Trend

Monitoring Well No.	**MW-49**
Contaminant	**Molar Sum**

Monitoring Date:	10/6/2009	10/19/2010	5/18/2011	5/9/2012	4/10/2013	4/23/2014	10/26/2016	12/13/2018
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8
Concentration (µmol/L)	182.6645	658.9302	538.5911	862.9624	5.7393	526.5109	678.1116	12.8986

Row 1: Compare to Event 1	1	1	1	-1	1	1	-1	3
Row 2: Compare to Event 2		-1	1	-1	-1	1	-1	-2
Row 3: Compare to Event 3			1	-1	-1	1	-1	-1
Row 4: Compare to Event 4				-1	-1	-1	-1	-4
Row 5: Compare to Event 5					1	1	1	3
Row 6: Compare to Event 6						1	-1	0
Row 7: Compare to Event 7							-1	-1



Mann-Kendall Statistic (S) = Total	**-2**
Confidence Level	**<90%**
Coefficient of Variance (CV)	**0.75**

Trend Analysis	
Statistical Method	**Result**
Linear Regression	No Trend
Mann-Kendall	Likely No Trend; Stable

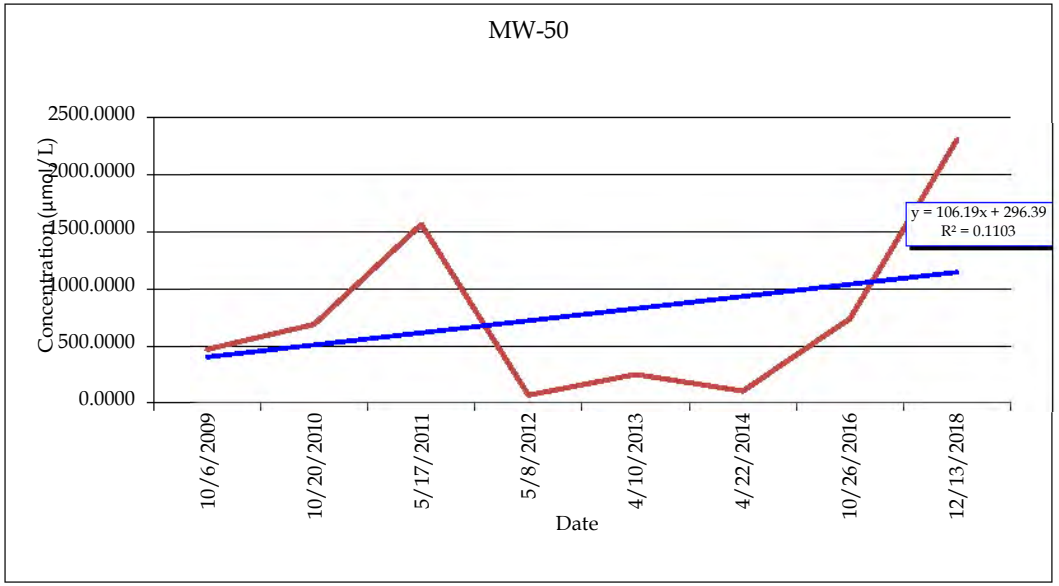
Notes:
- A minimum of four (4) independent sampling events are required for the Mann-Kendall test to be valid.
- Non-detects are listed as 1/2 the value of the laboratory detection limit
- A negative S value with confidence > 90% indicates a decreasing concentration trend.
- A positive S value with confidence > 90% indicates an increasing concentration trend.
- A positive S value with confidence < 90% indicates that there is likely no concentration trend.
- A negative S value with confidence < 90% and CV > 1 indicates that there is likely no concentration trend.
- The closer to zero the CV is, the less variation in concentrations between sampling events.
- A CV < 1 indicates concentrations are stable regardless of trend.
- R^2 is calculated without testing the approximate normality of the data. Additionally, if sample size is < 8, the power of the linear regression is low.
- R^2 values between 0.5 and 0.8 indicate possible correlation, suggesting that there is possibly a trend.
- R^2 values greater than 0.8 indicate a correlation, suggesting that there is likely a trend.
- Effects of Coefficient of Variation based on Table 3.2 (AFCEE, 2000)

River Terrace RV Park
Mann-Kendall Test for Trend

Monitoring Well No.	**MW-50**
Contaminant	**Molar Sum**

Monitoring Date:	10/6/2009	10/20/2010	5/17/2011	5/8/2012	4/10/2013	4/22/2014	10/26/2016	12/13/2018
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8
Concentration (µmol/L)	469.6423	689.5789	1563.7702	68.6455	250.0732	105.4229	739.5202	2307.3580

Row 1: Compare to Event 1	1	1	-1	-1	-1	1	1	1
Row 2: Compare to Event 2		1	-1	-1	-1	1	1	0
Row 3: Compare to Event 3			-1	-1	-1	-1	1	-3
Row 4: Compare to Event 4				1	1	1	1	4
Row 5: Compare to Event 5					-1	1	1	1
Row 6: Compare to Event 6						1	1	2
Row 7: Compare to Event 7							1	1



Mann-Kendall Statistic (S) = Total	**6**
Confidence Level	**<90%**
Coefficient of Variance (CV)	**1.01**

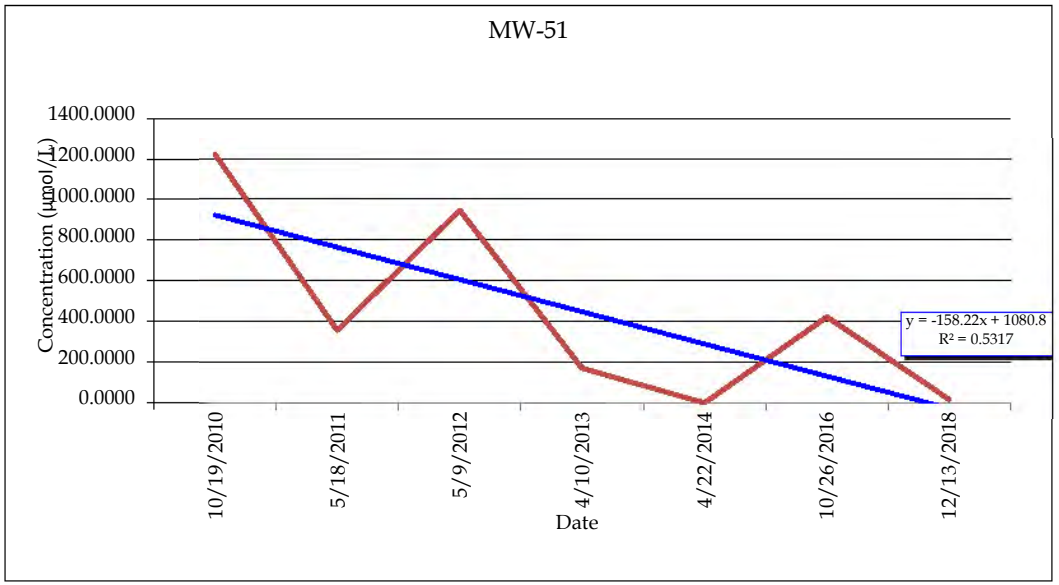
Trend Analysis	
Statistical Method	**Result**
Linear Regression	No Trend
Mann-Kendall	Likely No Trend

Notes:
- A minimum of four (4) independent sampling events are required for the Mann-Kendall test to be valid.
- Non-detects are listed as 1/2 the value of the laboratory detection limit
- A negative S value with confidence > 90% indicates a decreasing concentration trend.
- A positive S value with confidence > 90% indicates an increasing concentration trend.
- A positive S value with confidence < 90% indicates that there is likely no concentration trend.
- A negative S value with confidence < 90% and CV > 1 indicates that there is likely no concentration trend.
- The closer to zero the CV is, the less variation in concentrations between sampling events.
- A CV < 1 indicates concentrations are stable regardless of trend.
- R^2 is calculated without testing the approximate normality of the data. Additionally, if sample size is < 8, the power of the linear regression is low.
- R^2 values between 0.5 and 0.8 indicate possible correlation, suggesting that there is possibly a trend.
- R^2 values greater than 0.8 indicate a correlation, suggesting that there is likely a trend.
- Effects of Coefficient of Variation based on Table 3.2 (AFCEE, 2000)

River Terrace RV Park
Mann-Kendall Test for Trend

Monitoring Well No.	**MW-51**
Contaminant	**Molar Sum**

Monitoring Date:	10/19/2010	5/18/2011	5/9/2012	4/10/2013	4/22/2014	10/26/2016	12/13/2018	
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	
Concentration (µmol/L)	1222.0263	357.0830	945.3779	170.9704	0.6070	422.1873	16.8062	
Row 1: Compare to Event 1		-1	-1	-1	-1	-1	-1	-6
Row 2: Compare to Event 2			1	-1	-1	1	-1	-1
Row 3: Compare to Event 3				-1	-1	-1	-1	-4
Row 4: Compare to Event 4					-1	1	-1	-1
Row 5: Compare to Event 5						1	1	2
Row 6: Compare to Event 6							-1	-1



Mann-Kendall Statistic (S) = Total	**-11**
Confidence Level	**>90%**
Coefficient of Variance (CV)	**1.05**

Trend Analysis	
Statistical Method	**Result**
Linear Regression	Possibly Decreasing
Mann-Kendall	Decreasing

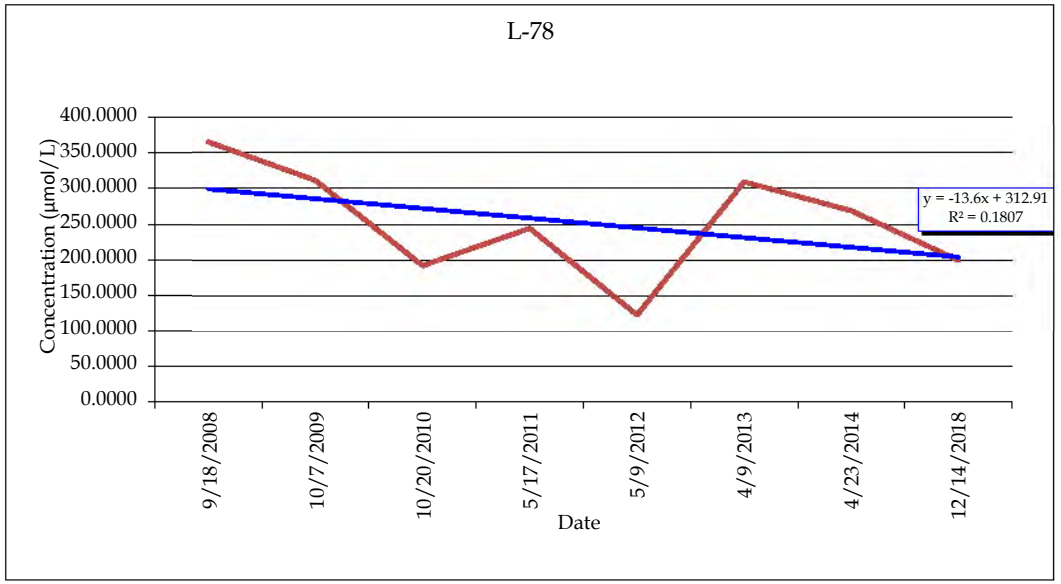
Notes:
- A minimum of four (4) independent sampling events are required for the Mann-Kendall test to be valid.
- Non-detects are listed as 1/2 the value of the laboratory detection limit
- A negative S value with confidence > 90% indicates a decreasing concentration trend.
- A positive S value with confidence > 90% indicates an increasing concentration trend.
- A positive S value with confidence < 90% indicates that there is likely no concentration trend.
- A negative S value with confidence < 90% and CV > 1 indicates that there is likely no concentration trend.
- The closer to zero the CV is, the less variation in concentrations between sampling events.
- A CV < 1 indicates concentrations are stable regardless of trend.
- R^2 is calculated without testing the approximate normality of the data. Additionally, if sample size is < 8, the power of the linear regression is low.
- R^2 values between 0.5 and 0.8 indicate possible correlation, suggesting that there is possibly a trend.
- R^2 values greater than 0.8 indicate a correlation, suggesting that there is likely a trend.
- Effects of Coefficient of Variation based on Table 3.2 (AFCEE, 2000)

River Terrace RV Park
Mann-Kendall Test for Trend

Monitoring Well No.	**L-78**
Contaminant	**Molar Sum**

Monitoring Date:	9/18/2008	10/7/2009	10/20/2010	5/17/2011	5/9/2012	4/9/2013	4/23/2014	12/14/2018
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8
Concentration (µmol/L)	365.3121	311.3439	191.9807	244.3687	122.9883	309.3133	268.7767	199.5769

Row 1: Compare to Event 1	-1	-1	-1	-1	-1	-1	-1	-7
Row 2: Compare to Event 2		-1	-1	-1	-1	-1	-1	-6
Row 3: Compare to Event 3			1	-1	1	1	1	3
Row 4: Compare to Event 4				-1	1	1	-1	0
Row 5: Compare to Event 5					1	1	1	3
Row 6: Compare to Event 6						-1	-1	-2
Row 7: Compare to Event 7							-1	-1



Mann-Kendall Statistic (S) = Total	**-10**
Confidence Level	**<90%**
Coefficient of Variance (CV)	**0.31**

Trend Analysis	
Statistical Method	**Result**
Linear Regression	No Trend
Mann-Kendall	Liklely No Trend; Stable

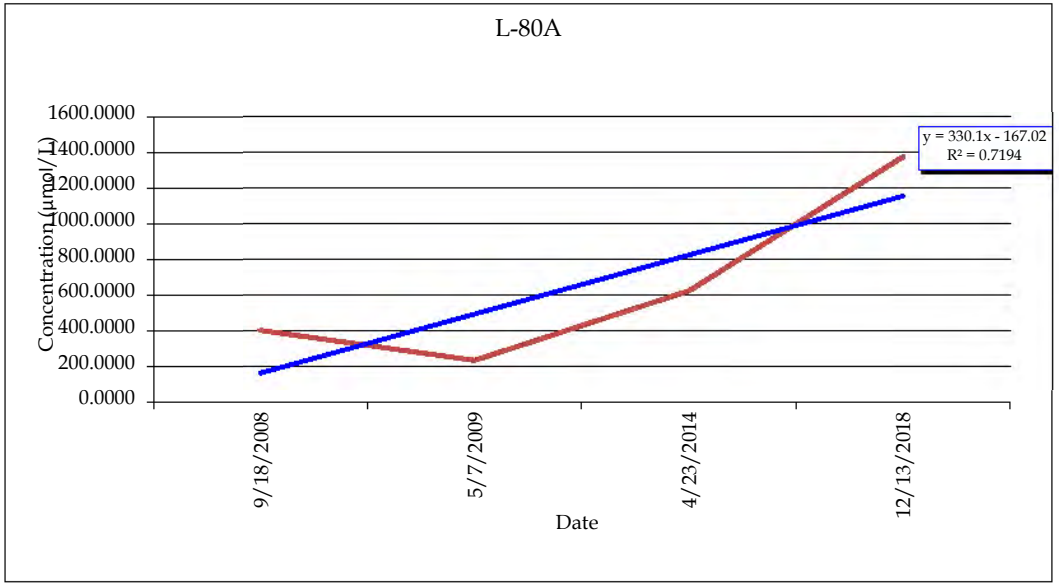
Notes:
- A minimum of four (4) independent sampling events are required for the Mann-Kendall test to be valid.
- Non-detects are listed as 1/2 the value of the laboratory detection limit
- A negative S value with confidence > 90% indicates a decreasing concentration trend.
- A positive S value with confidence > 90% indicates an increasing concentration trend.
- A positive S value with confidence < 90% indicates that there is likely no concentration trend.
- A negative S value with confidence < 90% and CV > 1 indicates that there is likely no concentration trend.
- The closer to zero the CV is, the less variation in concentrations between sampling events.
- A CV < 1 indicates concentrations are stable regardless of trend.
- R^2 is calculated without testing the approximate normality of the data. Additionally, if sample size is < 8, the power of the linear regression is low.
- R^2 values between 0.5 and 0.8 indicate possible correlation, suggesting that there is possibly a trend.
- R^2 values greater than 0.8 indicate a correlation, suggesting that there is likely a trend.
- Effects of Coefficient of Variation based on Table 3.2 (AFCEE, 2000)

River Terrace RV Park
Mann-Kendall Test for Trend

Monitoring Well No.	**L-80A**
Contaminant	**Molar Sum**

Monitoring Date:	9/18/2008	5/7/2009	4/23/2014	12/13/2018
	Event 1	Event 2	Event 3	Event 4
Concentration (µmol/L)	402.2356	234.6893	622.8259	1373.1923

Row 1: Compare to Event 1	-1	1	1	1
Row 2: Compare to Event 2		1	1	2
Row 3: Compare to Event 3			1	1

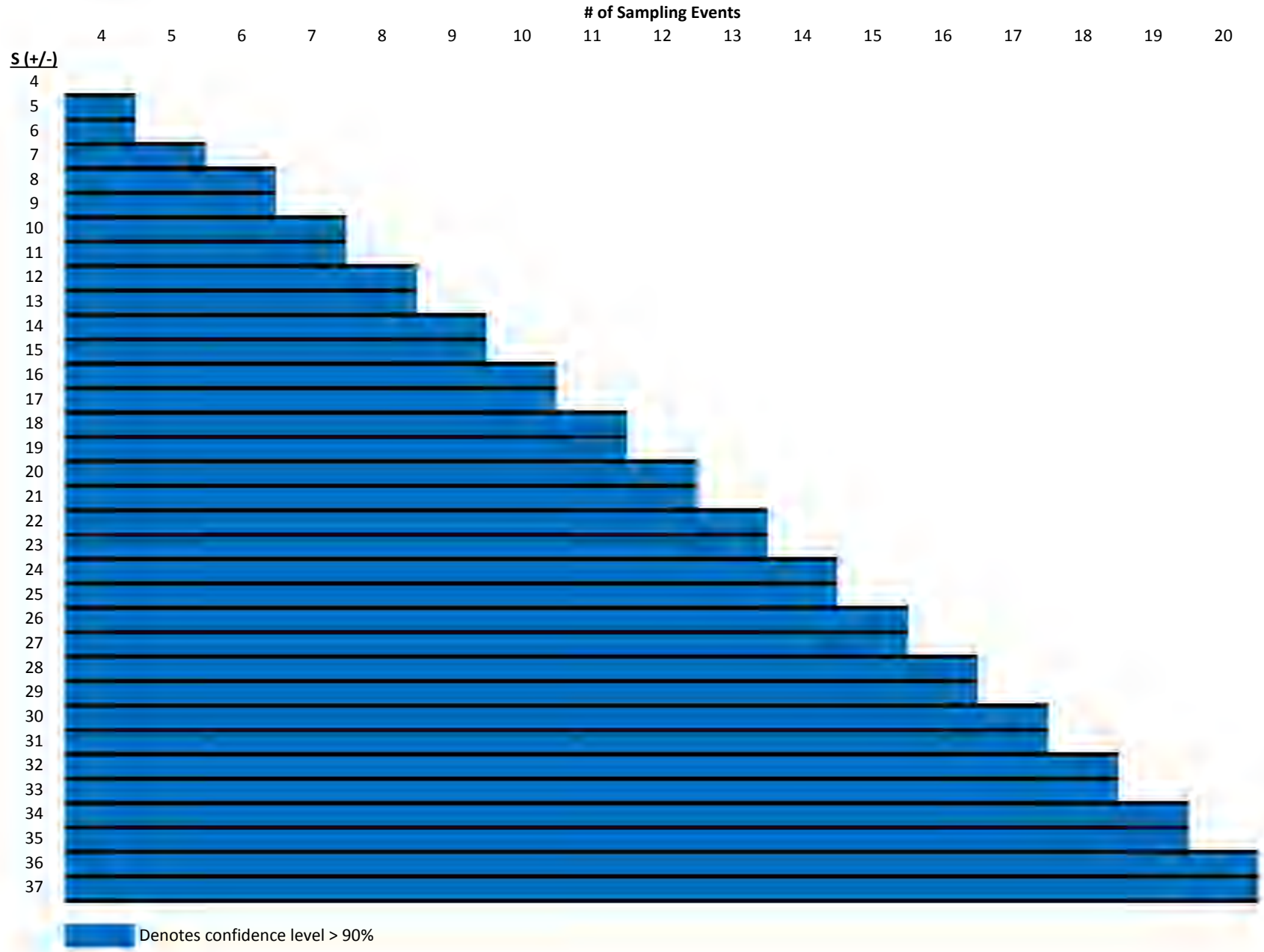


Mann-Kendall Statistic (S) = Total	**4**
Confidence Level	**<90%**
Coefficient of Variance (CV)	**0.76**

Trend Analysis	
Statistical Method	**Result**
Linear Regression	Possibly Increasing
Mann-Kendall	Liley No Trend

Notes:
- A minimum of four (4) independent sampling events are required for the Mann-Kendall test to be valid.
- Non-detects are listed as 1/2 the value of the laboratory detection limit
- A negative S value with confidence > 90% indicates a decreasing concentration trend.
- A positive S value with confidence > 90% indicates an increasing concentration trend.
- A positive S value with confidence < 90% indicates that there is likely no concentration trend.
- A negative S value with confidence < 90% and CV > 1 indicates that there is likely no concentration trend.
- The closer to zero the CV is, the less variation in concentrations between sampling events.
- A CV < 1 indicates concentrations are stable regardless of trend.
- R^2 is calculated without testing the approximate normality of the data. Additionally, if sample size is < 8, the power of the linear regression is low.
- R^2 values between 0.5 and 0.8 indicate possible correlation, suggesting that there is possibly a trend.
- R^2 values greater than 0.8 indicate a correlation, suggesting that there is likely a trend.
- Effects of Coefficient of Variation based on Table 3.2 (AFCEE, 2000)

Adopted from Figure 3-6 of Design and Monitoring Programs to Effectively Evaluate the Performance of Natural Attenuation (AFCEE, 2000)



(This Page Intentionally Left Blank)

APPENDIX I

MANN-KENDALL AND LINEAR REGRESSION WORKSHEETS FOR THE LAST FIVE SAMPLING EVENTS

(This Page Intentionally Left Blank)

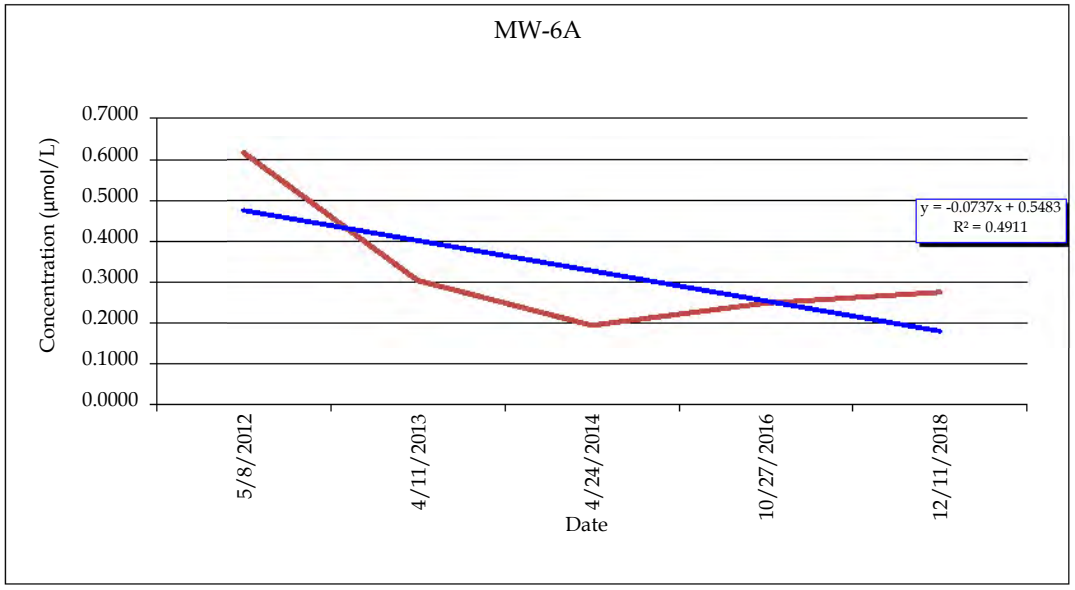
River Terrace RV Park
Mann-Kendall Test for Trend

Monitoring Well No.	**MW-6A**
Contaminant	**Molar Sum**

Monitoring Date:	5/8/2012	4/11/2013	4/24/2014	10/27/2016	12/11/2018											
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13	Event 14	Event 15	Event 16
Concentration (µmol/L)	0.6157	0.3033	0.1939	0.2482	0.2748											

Row 1: Compare to Event 1	-1	-1	-1	-1													-4
Row 2: Compare to Event 2		-1	-1	-1													-3
Row 3: Compare to Event 3			1	1													2
Row 4: Compare to Event 4				1													1
Row 5: Compare to Event 5																	0
Row 6: Compare to Event 6																	0
Row 7: Compare to Event 7																	0
Row 8: Compare to Event 8																	0
Row 9: Compare to Event 9																	0
Row 10: Compare to Event 10																	0
Row 11: Compare to Event 11																	0
Row 12: Compare to Event 12																	0
Row 13: Compare to Event 13																	0
Row 14: Compare to Event 14																	0
Row 15: Compare to Event 15																	0

Mann-Kendall Statistic (S) = Total	**-4**
Confidence Level	**<90%**
Coefficient of Variance (CV)	**0.51**



Trend Analysis	
Statistical Method	**Result**
Linear Regression	No Trend
Mann-Kendall	Likely No Trend, Stable

Notes:
- A minimum of four (4) independent sampling events are required for the Mann-Kendall test to be valid.
- Non-detects are listed as 1/2 the value of the laboratory detection limit.
- A negative S value with confidence > 90% indicates a decreasing concentration trend.
- A positive S value with confidence > 90% indicates an increasing concentration trend.
- Any S value with confidence < 90% indicates that there is likely no concentration trend.
- A CV < 1 indicates concentrations are stable regardless of trend.
- The closer to zero the CV is, the less variation in concentrations between sampling events.
- R^2 is calculated without testing the approximate normality of the data. Additionally, if sample size is < 8, the power of the linear regression is low.
- R^2 values between 0.5 and 0.8 indicate possible correlation, suggesting that there is possibly a trend.
- R^2 values greater than 0.8 indicate a correlation, suggesting that there is likely a trend.
- Effects of Coefficient of Variation based on Table 3.2 (AFCEE, 2000).

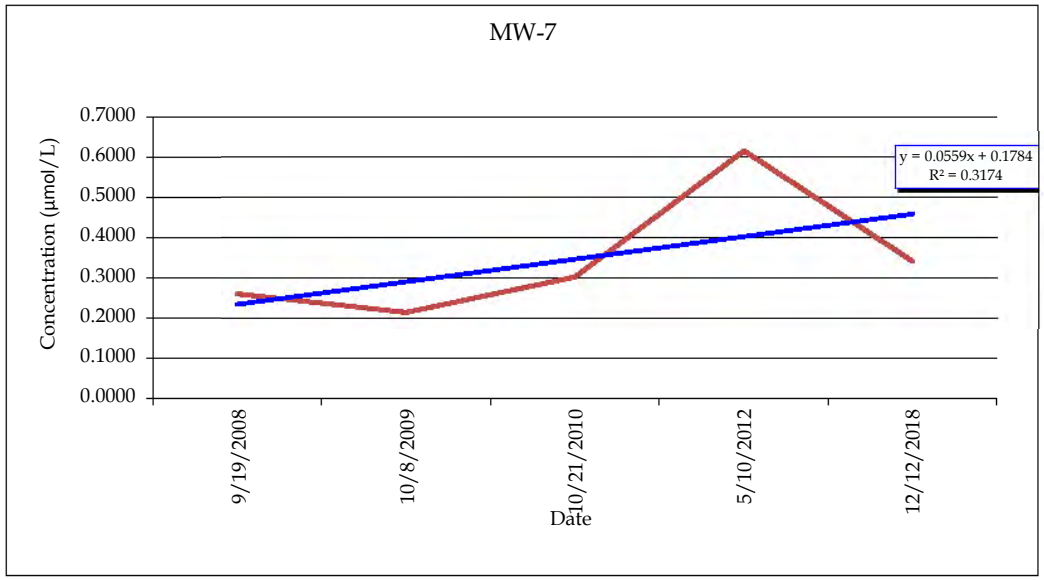
River Terrace RV Park
Mann-Kendall Test for Trend

Monitoring Well No.	**MW-7**
Contaminant	**Molar Sum**

Monitoring Date:	9/19/2008	10/8/2009	10/21/2010	5/10/2012	12/12/2018							
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12
Concentration (µmol/L)	0.2602	0.2145	0.3021	0.6142	0.3400							

Row 1: Compare to Event 1	-1	1	1	1									2
Row 2: Compare to Event 2		1	1	1									3
Row 3: Compare to Event 3			1	1									2
Row 4: Compare to Event 4				-1									-1
Row 5: Compare to Event 5													0
Row 6: Compare to Event 6													0
Row 7: Compare to Event 7													0
Row 8: Compare to Event 8													0
Row 9: Compare to Event 9													0
Row 10: Compare to Event 10													0
Row 11: Compare to Event 11													0

Mann-Kendall Statistic (S) = Total	**6**
Confidence Level	**<90%**
Coefficient of Variance (CV)	**0.45**



Trend Analysis	
Statistical Method	**Result**
Linear Regression	No Trend
Mann-Kendall	Likely No Trend, Stable

Notes:
- A minimum of four (4) independent sampling events are required for the Mann-Kendall test to be valid.
- Non-detects are listed as 1/2 the value of the laboratory detection limit.
- A negative S value with confidence > 90% indicates a decreasing concentration trend.
- A positive S value with confidence > 90% indicates an increasing concentration trend.
- Any S value with confidence < 90% indicates that there is likely no concentration trend.
- A CV < 1 indicates concentrations are stable regardless of trend.
- The closer to zero the CV is, the less variation in concentrations between sampling events.
- R^2 is calculated without testing the approximate normality of the data. Additionally, if sample size is < 8, the power of the linear regression is low.
- R^2 values between 0.5 and 0.8 indicate possible correlation, suggesting that there is possibly a trend.
- R^2 values greater than 0.8 indicate a correlation, suggesting that there is likely a trend.
- Effects of Coefficient of Variation based on Table 3.2 (AFCEE, 2000).

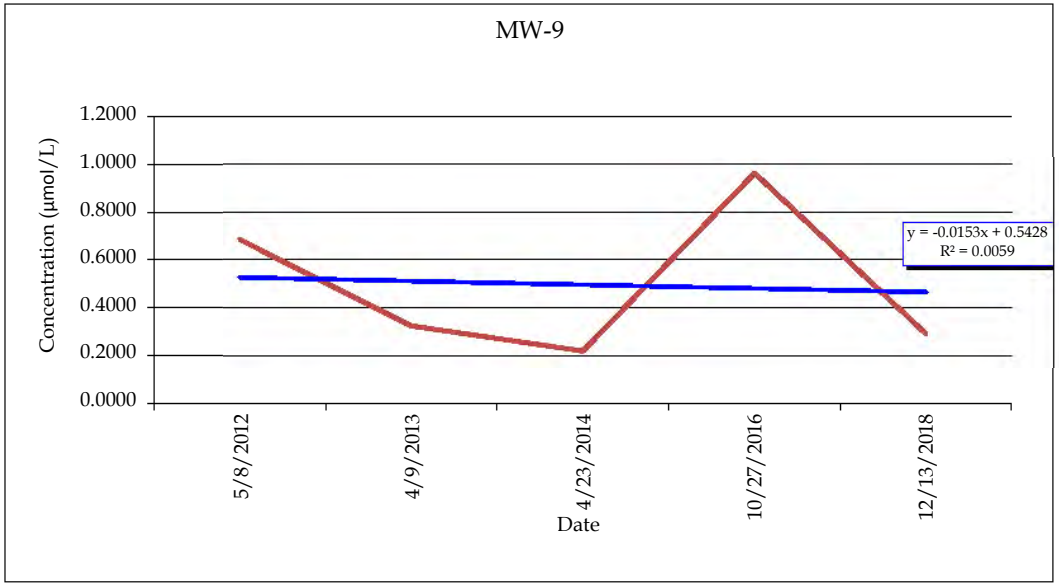
River Terrace RV Park
Mann-Kendall Test for Trend

Monitoring Well No.	**MW-9**
Contaminant	**Molar Sum**

Monitoring Date:	5/8/2012	4/9/2013	4/23/2014	10/27/2016	12/13/2018											
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13	Event 14	Event 15	Event 16
Concentration (µmol/L)	0.6858	0.3251	0.2201	0.9626	0.2904											

Row 1: Compare to Event 1	-1	-1	1	-1													-2
Row 2: Compare to Event 2		-1	1	-1													-1
Row 3: Compare to Event 3			1	1													2
Row 4: Compare to Event 4				-1													-1
Row 5: Compare to Event 5																	0
Row 6: Compare to Event 6																	0
Row 7: Compare to Event 7																	0
Row 8: Compare to Event 8																	0
Row 9: Compare to Event 9																	0
Row 10: Compare to Event 10																	0
Row 11: Compare to Event 11																	0
Row 12: Compare to Event 12																	0
Row 13: Compare to Event 13																	0
Row 14: Compare to Event 14																	0
Row 15: Compare to Event 15																	0

Mann-Kendall Statistic (S) = Total	**-2**
Confidence Level	**<90%**
Coefficient of Variance (CV)	**0.64**



Trend Analysis	
Statistical Method	**Result**
Linear Regression	No Trend
Mann-Kendall	Likely No Trend, Stable

Notes:
- A minimum of four (4) independent sampling events are required for the Mann-Kendall test to be valid.
- Non-detects are listed as 1/2 the value of the laboratory detection limit.
- A negative S value with confidence > 90% indicates a decreasing concentration trend.
- A positive S value with confidence > 90% indicates an increasing concentration trend.
- Any S value with confidence < 90% indicates that there is likely no concentration trend.
- A CV < 1 indicates concentrations are stable regardless of trend.
- The closer to zero the CV is, the less variation in concentrations between sampling events.
- R^2 is calculated without testing the approximate normality of the data. Additionally, if sample size is < 8, the power of the linear regression is low.
- R^2 values between 0.5 and 0.8 indicate possible correlation, suggesting that there is possibly a trend.
- R^2 values greater than 0.8 indicate a correlation, suggesting that there is likely a trend.
- Effects of Coefficient of Variation based on Table 3.2 (AFCEE, 2000).

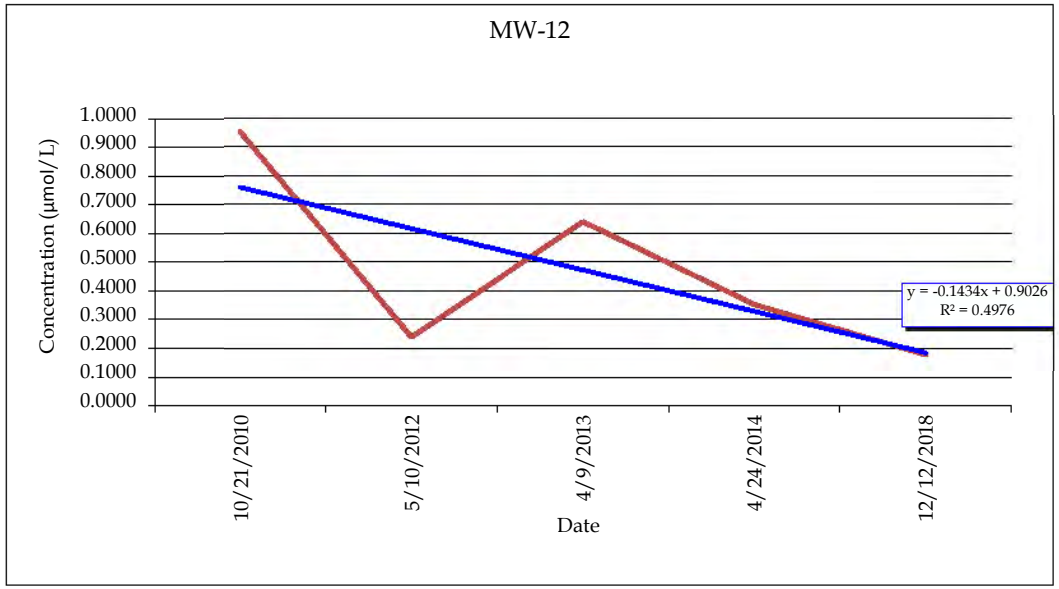
River Terrace RV Park
Mann-Kendall Test for Trend

Monitoring Well No.	**MW-12**
Contaminant	**Molar Sum**

Monitoring Date:	10/21/2010	5/10/2012	4/9/2013	4/24/2014	12/12/2018									
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13	Event 14
Concentration (µmol/L)	0.9519	0.2391	0.6399	0.3523	0.1781									

Row 1: Compare to Event 1	-1	-1	-1	-1											-4
Row 2: Compare to Event 2		1	1	-1											1
Row 3: Compare to Event 3			-1	-1											-2
Row 4: Compare to Event 4				-1											-1
Row 5: Compare to Event 5															0
Row 6: Compare to Event 6															0
Row 7: Compare to Event 7															0
Row 8: Compare to Event 8															0
Row 9: Compare to Event 9															0
Row 10: Compare to Event 10															0
Row 11: Compare to Event 11															0
Row 12: Compare to Event 12															0
Row 13: Compare to Event 13															0

Mann-Kendall Statistic (S) = Total	**-6**
Confidence Level	**<90%**
Coefficient of Variance (CV)	**0.68**



Trend Analysis	
Statistical Method	**Result**
Linear Regression	No Trend
Mann-Kendall	Likley No Trend, Stable

Notes:
- A minimum of four (4) independent sampling events are required for the Mann-Kendall test to be valid.
- Non-detects are listed as 1/2 the value of the laboratory detection limit.
- A negative S value with confidence > 90% indicates a decreasing concentration trend.
- A positive S value with confidence > 90% indicates an increasing concentration trend.
- Any S value with confidence < 90% indicates that there is likely no concentration trend.
- A CV < 1 indicates concentrations are stable regardless of trend.
- The closer to zero the CV is, the less variation in concentrations between sampling events.
- R^2 is calculated without testing the approximate normality of the data. Additionally, if sample size is < 8, the power of the linear regression is low.
- R^2 values between 0.5 and 0.8 indicate possible correlation, suggesting that there is possibly a trend.
- R^2 values greater than 0.8 indicate a correlation, suggesting that there is likely a trend.
- Effects of Coefficient of Variation based on Table 3.2 (AFCEE, 2000).

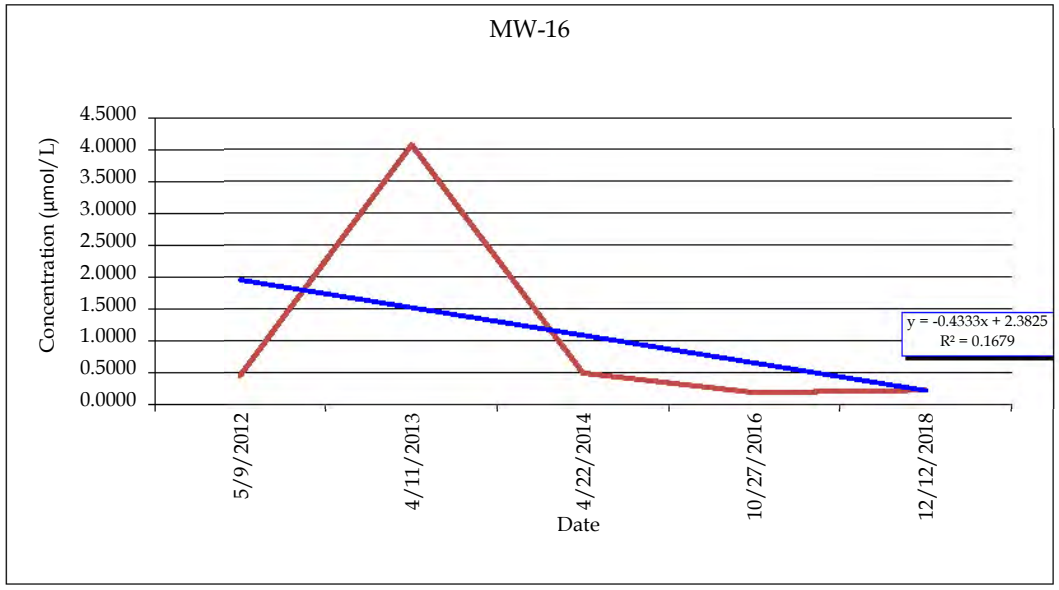
River Terrace RV Park
Mann-Kendall Test for Trend

Monitoring Well No.	**MW-16**
Contaminant	**Molar Sum**

Monitoring Date:	5/9/2012	4/11/2013	4/22/2014	10/27/2016	12/12/2018										
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13	Event 14	Event 15
Concentration (µmol/L)	0.4503	4.0638	0.4911	0.1849	0.2235										

Row 1: Compare to Event 1	1	1	-1	-1												0
Row 2: Compare to Event 2		-1	-1	-1												-3
Row 3: Compare to Event 3			-1	-1												-2
Row 4: Compare to Event 4				1												1
Row 5: Compare to Event 5																0
Row 6: Compare to Event 6																0
Row 7: Compare to Event 7																0
Row 8: Compare to Event 8																0
Row 9: Compare to Event 9																0
Row 10: Compare to Event 10																0
Row 11: Compare to Event 11																0
Row 12: Compare to Event 12																0
Row 13: Compare to Event 13																0
Row 14: Compare to Event 14																0

Mann-Kendall Statistic (S) = Total	**-4**
Confidence Level	**<90%**
Coefficient of Variance (CV)	**1.54**



Trend Analysis	
Statistical Method	**Result**
Linear Regression	No Trend
Mann-Kendall	Likely No Trend

Notes:
- A minimum of four (4) independent sampling events are required for the Mann-Kendall test to be valid.
- Non-detects are listed as 1/2 the value of the laboratory detection limit.
- A negative S value with confidence > 90% indicates a decreasing concentration trend.
- A positive S value with confidence > 90% indicates an increasing concentration trend.
- Any S value with confidence < 90% indicates that there is likely no concentration trend.
- A CV < 1 indicates concentrations are stable regardless of trend.
- The closer to zero the CV is, the less variation in concentrations between sampling events.
- R^2 is calculated without testing the approximate normality of the data. Additionally, if sample size is < 8, the power of the linear regression is low.
- R^2 values between 0.5 and 0.8 indicate possible correlation, suggesting that there is possibly a trend.
- R^2 values greater than 0.8 indicate a correlation, suggesting that there is likely a trend.
- Effects of Coefficient of Variation based on Table 3.2 (AFCEE, 2000).

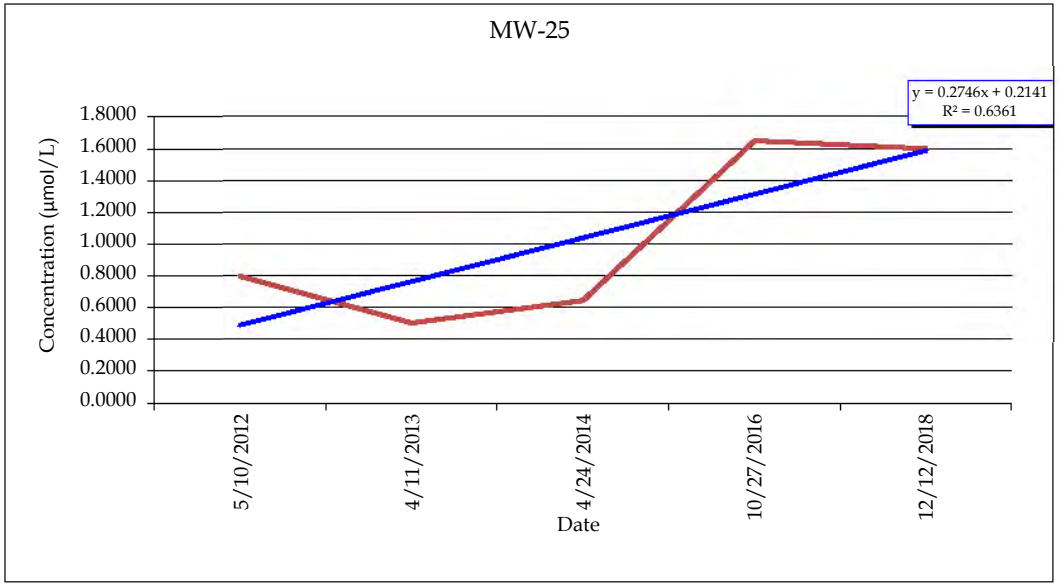
River Terrace RV Park
Mann-Kendall Test for Trend

Monitoring Well No.	**MW-25**
Contaminant	**Molar Sum**

Monitoring Date:	5/10/2012	4/11/2013	4/24/2014	10/27/2016	12/12/2018											
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13	Event 14	Event 15	Event 16
Concentration (µmol/L)	0.7973	0.5026	0.6438	1.6481	1.5975											

Row 1: Compare to Event 1	-1	-1	1	1													0
Row 2: Compare to Event 2		1	1	1													3
Row 3: Compare to Event 3			1	1													2
Row 4: Compare to Event 4				-1													-1
Row 5: Compare to Event 5																	0
Row 6: Compare to Event 6																	0
Row 7: Compare to Event 7																	0
Row 8: Compare to Event 8																	0
Row 9: Compare to Event 9																	0
Row 10: Compare to Event 10																	0
Row 11: Compare to Event 11																	0
Row 12: Compare to Event 12																	0
Row 13: Compare to Event 13																	0
Row 14: Compare to Event 14																	0
Row 15: Compare to Event 15																	0

Mann-Kendall Statistic (S) = Total	**4**
Confidence Level	**<90%**
Coefficient of Variance (CV)	**0.52**



Trend Analysis	
Statistical Method	**Result**
Linear Regression	Possibly Increasing
Mann-Kendall	Likely No Trend, Stable

Notes:
- A minimum of four (4) independent sampling events are required for the Mann-Kendall test to be valid.
- Non-detects are listed as 1/2 the value of the laboratory detection limit.
- A negative S value with confidence > 90% indicates a decreasing concentration trend.
- A positive S value with confidence > 90% indicates an increasing concentration trend.
- Any S value with confidence < 90% indicates that there is likely no concentration trend.
- A CV < 1 indicates concentrations are stable regardless of trend.
- The closer to zero the CV is, the less variation in concentrations between sampling events.
- R^2 is calculated without testing the approximate normality of the data. Additionally, if sample size is < 8, the power of the linear regression is low.
- R^2 values between 0.5 and 0.8 indicate possible correlation, suggesting that there is possibly a trend.
- R^2 values greater than 0.8 indicate a correlation, suggesting that there is likely a trend.
- Effects of Coefficient of Variation based on Table 3.2 (AFCEE, 2000).

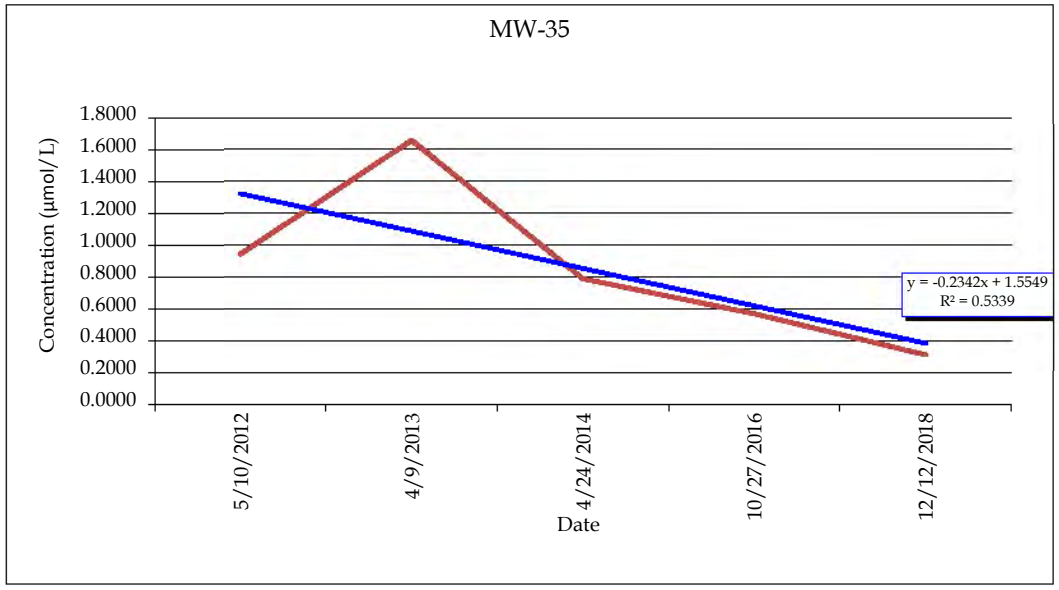
River Terrace RV Park
Mann-Kendall Test for Trend

Monitoring Well No. MW-35
Contaminant Molar Sum

Monitoring Date:	5/10/2012	4/9/2013	4/24/2014	10/27/2016	12/12/2018										
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13	Event 14	Event 15
Concentration (µmol/L)	0.9398	1.6539	0.7881	0.5683	0.3116										

Row 1: Compare to Event 1	1	-1	-1	-1												-2
Row 2: Compare to Event 2		-1	-1	-1												-3
Row 3: Compare to Event 3			-1	-1												-2
Row 4: Compare to Event 4				-1												-1
Row 5: Compare to Event 5																0
Row 6: Compare to Event 6																0
Row 7: Compare to Event 7																0
Row 8: Compare to Event 8																0
Row 9: Compare to Event 9																0
Row 10: Compare to Event 10																0
Row 11: Compare to Event 11																0
Row 12: Compare to Event 12																0
Row 13: Compare to Event 13																0
Row 14: Compare to Event 14																0

Mann-Kendall Statistic (S) = Total	**-8**
Confidence Level	**>90%**
Coefficient of Variance (CV)	**0.59**



Trend Analysis	
Statistical Method	**Result**
Linear Regression	Possibly Decreasing
Mann-Kendall	Decreasing, Stable

Notes:
- A minimum of four (4) independent sampling events are required for the Mann-Kendall test to be valid.
- Non-detects are listed as 1/2 the value of the laboratory detection limit.
- A negative S value with confidence > 90% indicates a decreasing concentration trend.
- A positive S value with confidence > 90% indicates an increasing concentration trend.
- Any S value with confidence < 90% indicates that there is likely no concentration trend.
- A CV < 1 indicates concentrations are stable regardless of trend.
- The closer to zero the CV is, the less variation in concentrations between sampling events.
- R^2 is calculated without testing the approximate normality of the data. Additionally, if sample size is < 8, the power of the linear regression is low.
- R^2 values between 0.5 and 0.8 indicate possible correlation, suggesting that there is possibly a trend.
- R^2 values greater than 0.8 indicate a correlation, suggesting that there is likely a trend.
- Effects of Coefficient of Variation based on Table 3.2 (AFCEE, 2000).

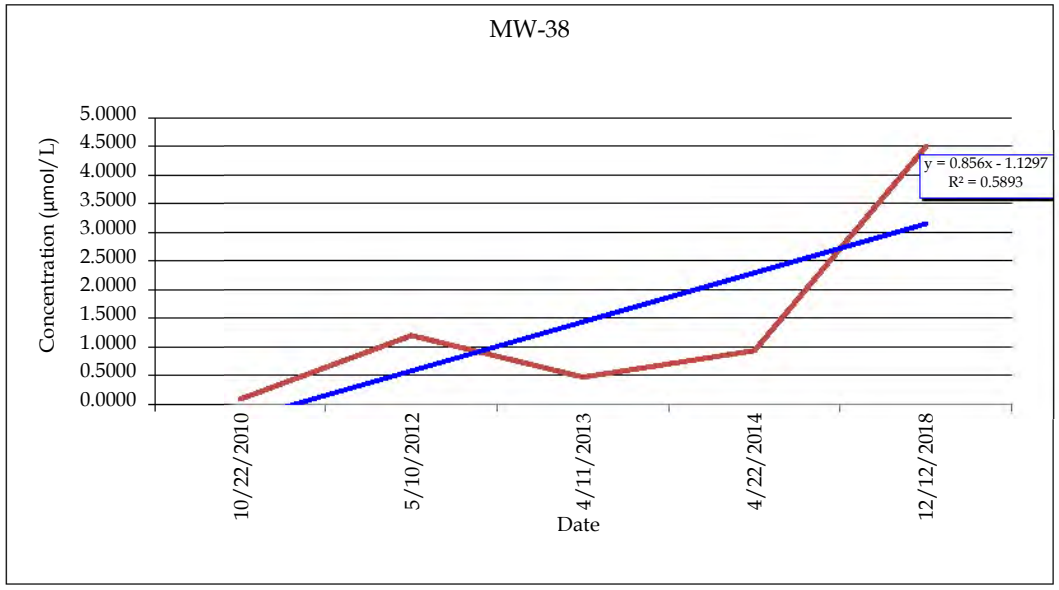
River Terrace RV Park
Mann-Kendall Test for Trend

Monitoring Well No.	**MW-38**
Contaminant	**Molar Sum**

Monitoring Date:	10/22/2010	5/10/2012	4/11/2013	4/22/2014	12/12/2018										
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13	Event 14	Event 15
Concentration (µmol/L)	0.0872	1.1982	0.4720	0.9357	4.4986										

Row 1: Compare to Event 1	1	1	1	1												4
Row 2: Compare to Event 2		-1	-1	1												-1
Row 3: Compare to Event 3			1	1												2
Row 4: Compare to Event 4				1												1
Row 5: Compare to Event 5																0
Row 6: Compare to Event 6																0
Row 7: Compare to Event 7																0
Row 8: Compare to Event 8																0
Row 9: Compare to Event 9																0
Row 10: Compare to Event 10																0
Row 11: Compare to Event 11																0
Row 12: Compare to Event 12																0
Row 13: Compare to Event 13																0
Row 14: Compare to Event 14																0

Mann-Kendall Statistic (S) = Total	**6**
Confidence Level	**<90%**
Coefficient of Variance (CV)	**1.23**



Trend Analysis	
Statistical Method	**Result**
Linear Regression	Possibly Increasing
Mann-Kendall	Likely No Trend

Notes:
- A minimum of four (4) independent sampling events are required for the Mann-Kendall test to be valid.
- Non-detects are listed as 1/2 the value of the laboratory detection limit.
- A negative S value with confidence > 90% indicates a decreasing concentration trend.
- A positive S value with confidence > 90% indicates an increasing concentration trend.
- Any S value with confidence < 90% indicates that there is likely no concentration trend.
- A CV < 1 indicates concentrations are stable regardless of trend.
- The closer to zero the CV is, the less variation in concentrations between sampling events.
- R^2 is calculated without testing the approximate normality of the data. Additionally, if sample size is < 8, the power of the linear regression is low.
- R^2 values between 0.5 and 0.8 indicate possible correlation, suggesting that there is possibly a trend.
- R^2 values greater than 0.8 indicate a correlation, suggesting that there is likely a trend.
- Effects of Coefficient of Variation based on Table 3.2 (AFCEE, 2000).

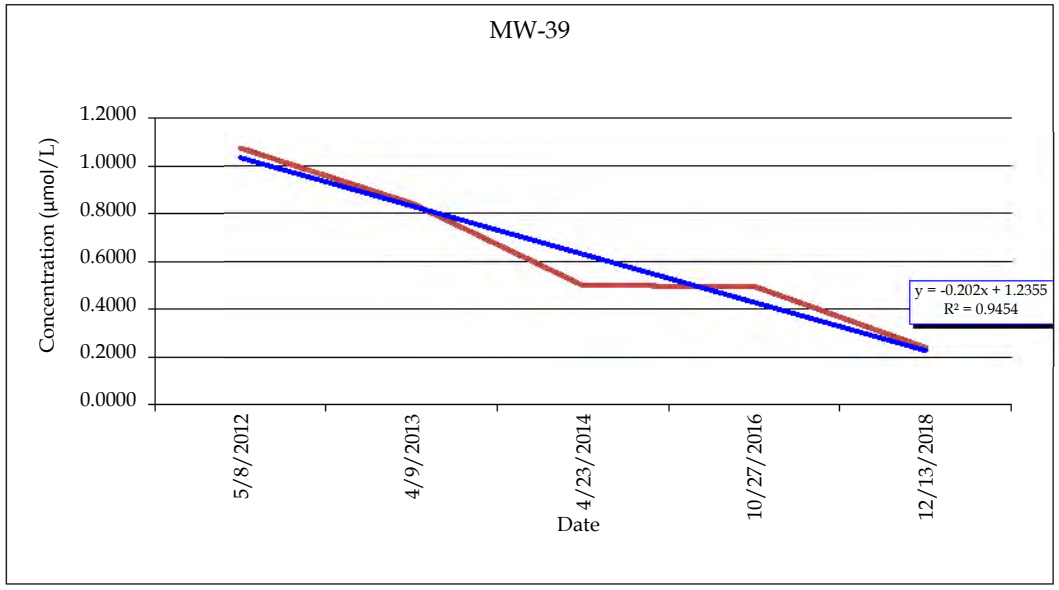
River Terrace RV Park
Mann-Kendall Test for Trend

Monitoring Well No. MW-39
Contaminant Molar Sum

Monitoring Date:	5/8/2012	4/9/2013	4/23/2014	10/27/2016	12/13/2018											
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13	Event 14	Event 15	Event 16
Concentration (µmol/L)	1.0739	0.8427	0.4987	0.4948	0.2380											

Row 1: Compare to Event 1	-1	-1	-1	-1													-4
Row 2: Compare to Event 2		-1	-1	-1													-3
Row 3: Compare to Event 3			-1	-1													-2
Row 4: Compare to Event 4				-1													-1
Row 5: Compare to Event 5																	0
Row 6: Compare to Event 6																	0
Row 7: Compare to Event 7																	0
Row 8: Compare to Event 8																	0
Row 9: Compare to Event 9																	0
Row 10: Compare to Event 10																	0
Row 11: Compare to Event 11																	0
Row 12: Compare to Event 12																	0
Row 13: Compare to Event 13																	0
Row 14: Compare to Event 14																	0
Row 15: Compare to Event 15																	0

Mann-Kendall Statistic (S) = Total	**-10**
Confidence Level	**>90%**
Coefficient of Variance (CV)	**0.52**



Trend Analysis	
Statistical Method	**Result**
Linear Regression	Decreasing
Mann-Kendall	Decreasing, Stable

Notes:
- A minimum of four (4) independent sampling events are required for the Mann-Kendall test to be valid.
- Non-detects are listed as 1/2 the value of the laboratory detection limit.
- A negative S value with confidence > 90% indicates a decreasing concentration trend.
- A positive S value with confidence > 90% indicates an increasing concentration trend.
- Any S value with confidence < 90% indicates that there is likely no concentration trend.
- A CV < 1 indicates concentrations are stable regardless of trend.
- The closer to zero the CV is, the less variation in concentrations between sampling events.
- R^2 is calculated without testing the approximate normality of the data. Additionally, if sample size is < 8, the power of the linear regression is low.
- R^2 values between 0.5 and 0.8 indicate possible correlation, suggesting that there is possibly a trend.
- R^2 values greater than 0.8 indicate a correlation, suggesting that there is likely a trend.
- Effects of Coefficient of Variation based on Table 3.2 (AFCEE, 2000).

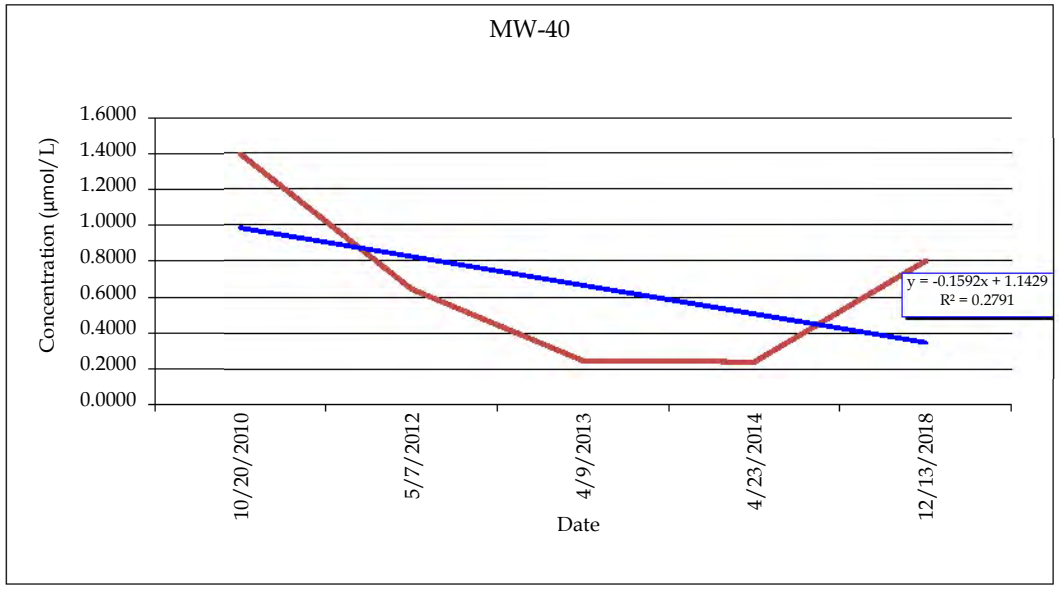
River Terrace RV Park
Mann-Kendall Test for Trend

Monitoring Well No.	**MW-40**
Contaminant	**Molar Sum**

Monitoring Date:	10/20/2010	5/7/2012	4/9/2013	4/23/2014	12/13/2018										
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13	Event 14	Event 15
Concentration (µmol/L)	1.3953	0.6439	0.2461	0.2400	0.8011										

Row 1: Compare to Event 1	-1	-1	-1	-1												-4
Row 2: Compare to Event 2		-1	-1	1												-1
Row 3: Compare to Event 3			-1	1												0
Row 4: Compare to Event 4				1												1
Row 5: Compare to Event 5																0
Row 6: Compare to Event 6																0
Row 7: Compare to Event 7																0
Row 8: Compare to Event 8																0
Row 9: Compare to Event 9																0
Row 10: Compare to Event 10																0
Row 11: Compare to Event 11																0
Row 12: Compare to Event 12																0
Row 13: Compare to Event 13																0
Row 14: Compare to Event 14																0

Mann-Kendall Statistic (S) = Total	**-4**
Confidence Level	**<90%**
Coefficient of Variance (CV)	**0.72**



Trend Analysis	
Statistical Method	**Result**
Linear Regression	No Trend
Mann-Kendall	Likley No Trend, Stable

Notes:
- A minimum of four (4) independent sampling events are required for the Mann-Kendall test to be valid.
- Non-detects are listed as 1/2 the value of the laboratory detection limit.
- A negative S value with confidence > 90% indicates a decreasing concentration trend.
- A positive S value with confidence > 90% indicates an increasing concentration trend.
- Any S value with confidence < 90% indicates that there is likely no concentration trend.
- A CV < 1 indicates concentrations are stable regardless of trend.
- The closer to zero the CV is, the less variation in concentrations between sampling events.
- R^2 is calculated without testing the approximate normality of the data. Additionally, if sample size is < 8, the power of the linear regression is low.
- R^2 values between 0.5 and 0.8 indicate possible correlation, suggesting that there is possibly a trend.
- R^2 values greater than 0.8 indicate a correlation, suggesting that there is likely a trend.
- Effects of Coefficient of Variation based on Table 3.2 (AFCEE, 2000).

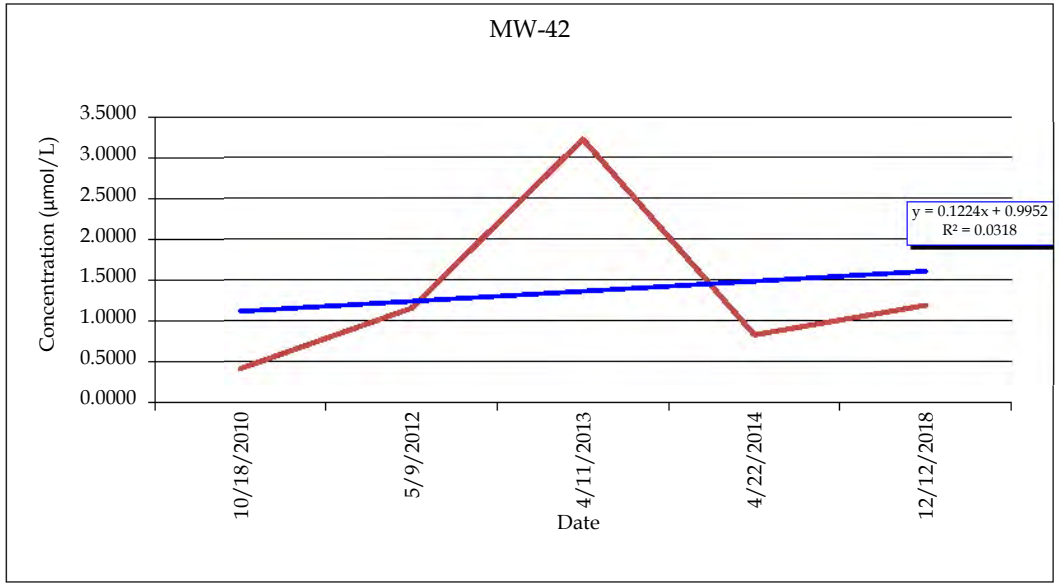
River Terrace RV Park
Mann-Kendall Test for Trend

Monitoring Well No.	**MW-42**
Contaminant	**Molar Sum**

Monitoring Date:	10/18/2010	5/9/2012	4/11/2013	4/22/2014	12/12/2018								
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13
Concentration (µmol/L)	0.4157	1.1551	3.2215	0.8291	1.1909								

Row 1: Compare to Event 1	1	1	1	1										4
Row 2: Compare to Event 2		1	-1	1										1
Row 3: Compare to Event 3			-1	-1										-2
Row 4: Compare to Event 4				1										1
Row 5: Compare to Event 5														0
Row 6: Compare to Event 6														0
Row 7: Compare to Event 7														0
Row 8: Compare to Event 8														0
Row 9: Compare to Event 9														0
Row 10: Compare to Event 10														0
Row 11: Compare to Event 11														0
Row 12: Compare to Event 12														0

Mann-Kendall Statistic (S) = Total	**4**
Confidence Level	**<90%**
Coefficient of Variance (CV)	**0.80**



Trend Analysis	
Statistical Method	**Result**
Linear Regression	No Trend
Mann-Kendall	No Trend, Stable

Notes:
- A minimum of four (4) independent sampling events are required for the Mann-Kendall test to be valid.
- Non-detects are listed as 1/2 the value of the laboratory detection limit.
- A negative S value with confidence > 90% indicates a decreasing concentration trend.
- A positive S value with confidence > 90% indicates an increasing concentration trend.
- Any S value with confidence < 90% indicates that there is likely no concentration trend.
- A CV < 1 indicates concentrations are stable regardless of trend.
- The closer to zero the CV is, the less variation in concentrations between sampling events.
- R^2 is calculated without testing the approximate normality of the data. Additionally, if sample size is < 8, the power of the linear regression is low.
- R^2 values between 0.5 and 0.8 indicate possible correlation, suggesting that there is possibly a trend.
- R^2 values greater than 0.8 indicate a correlation, suggesting that there is likely a trend.
- Effects of Coefficient of Variation based on Table 3.2 (AFCEE, 2000).

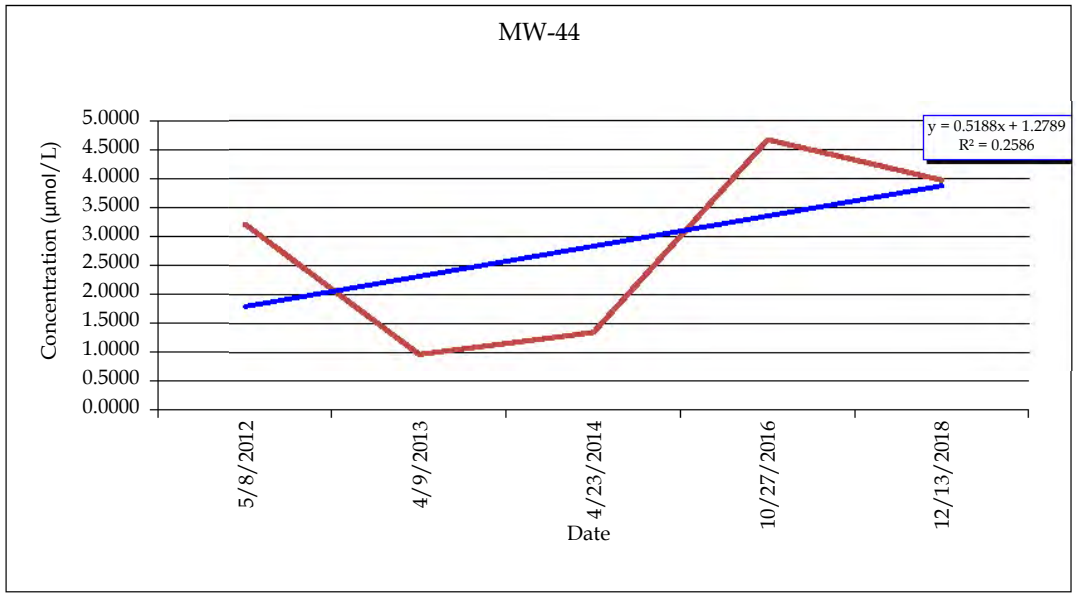
River Terrace RV Park
Mann-Kendall Test for Trend

Monitoring Well No.	**MW-44**
Contaminant	**Molar Sum**

Monitoring Date:	5/8/2012	4/9/2013	4/23/2014	10/27/2016	12/13/2018							
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12
Concentration (µmol/L)	3.2152	0.9769	1.3553	4.6623	3.9664							

Row 1: Compare to Event 1	-1	-1	1	1									0
Row 2: Compare to Event 2		1	1	1									3
Row 3: Compare to Event 3			1	1									2
Row 4: Compare to Event 4				-1									-1
Row 5: Compare to Event 5													0
Row 6: Compare to Event 6													0
Row 7: Compare to Event 7													0
Row 8: Compare to Event 8													0
Row 9: Compare to Event 9													0
Row 10: Compare to Event 10													0
Row 11: Compare to Event 11													0

Mann-Kendall Statistic (S) = Total	**4**
Confidence Level	**<90%**
Coefficient of Variance (CV)	**0.57**



Trend Analysis	
Statistical Method	**Result**
Linear Regression	No Trend
Mann-Kendall	Likely No Trend, Stable

Notes:
- A minimum of four (4) independent sampling events are required for the Mann-Kendall test to be valid.
- Non-detects are listed as 1/2 the value of the laboratory detection limit.
- A negative S value with confidence > 90% indicates a decreasing concentration trend.
- A positive S value with confidence > 90% indicates an increasing concentration trend.
- Any S value with confidence < 90% indicates that there is likely no concentration trend.
- A CV < 1 indicates concentrations are stable regardless of trend.
- The closer to zero the CV is, the less variation in concentrations between sampling events.
- R^2 is calculated without testing the approximate normality of the data. Additionally, if sample size is < 8, the power of the linear regression is low.
- R^2 values between 0.5 and 0.8 indicate possible correlation, suggesting that there is possibly a trend.
- R^2 values greater than 0.8 indicate a correlation, suggesting that there is likely a trend.
- Effects of Coefficient of Variation based on Table 3.2 (AFCEE, 2000).

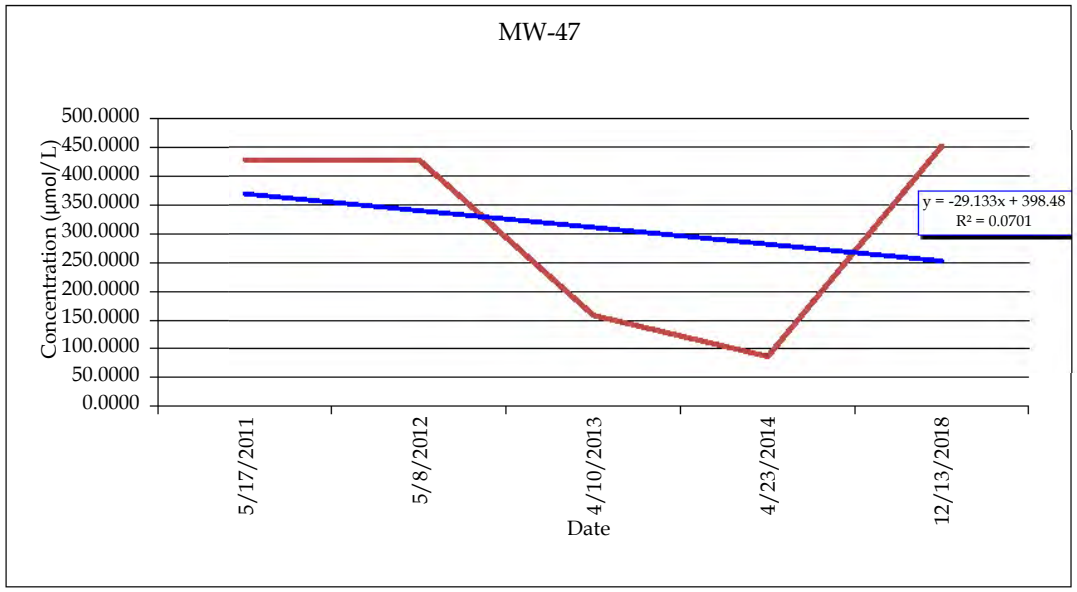
River Terrace RV Park
Mann-Kendall Test for Trend

Monitoring Well No.	**MW-47**
Contaminant	**Molar Sum**

Monitoring Date:	5/17/2011	5/8/2012	4/10/2013	4/23/2014	12/13/2018					
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10
Concentration (µmol/L)	428.4467	428.1165	158.3951	87.2452	453.2185					

Row 1: Compare to Event 1	-1	-1	-1	1							-2
Row 2: Compare to Event 2		-1	-1	1							-1
Row 3: Compare to Event 3			-1	1							0
Row 4: Compare to Event 4				1							1
Row 5: Compare to Event 5											0
Row 6: Compare to Event 6											0
Row 7: Compare to Event 7											0
Row 8: Compare to Event 8											0
Row 9: Compare to Event 9											0

Mann-Kendall Statistic (S) = Total	**-2**
Confidence Level	**<90%**
Coefficient of Variance (CV)	**0.56**



Trend Analysis	
Statistical Method	**Result**
Linear Regression	No Trend
Mann-Kendall	Likely No Trend, Stable

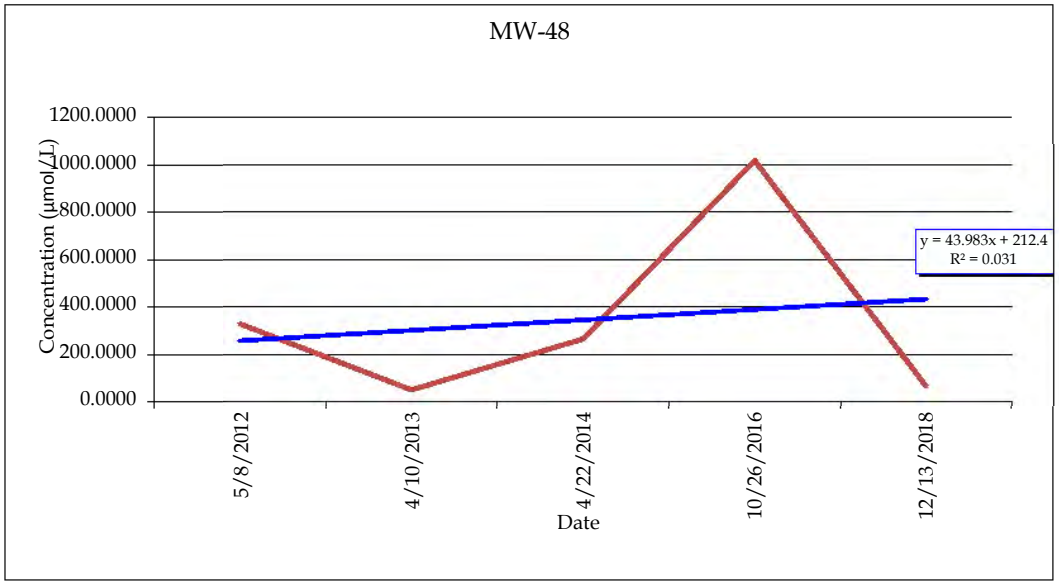
Notes:
- A minimum of four (4) independent sampling events are required for the Mann-Kendall test to be valid.
- Non-detects are listed as 1/2 the value of the laboratory detection limit.
- A negative S value with confidence > 90% indicates a decreasing concentration trend.
- A positive S value with confidence > 90% indicates an increasing concentration trend.
- Any S value with confidence < 90% indicates that there is likely no concentration trend.
- A CV < 1 indicates concentrations are stable regardless of trend.
- The closer to zero the CV is, the less variation in concentrations between sampling events.
- R^2 is calculated without testing the approximate normality of the data. Additionally, if sample size is < 8, the power of the linear regression is low.
- R^2 values between 0.5 and 0.8 indicate possible correlation, suggesting that there is possibly a trend.
- R^2 values greater than 0.8 indicate a correlation, suggesting that there is likely a trend.
- Effects of Coefficient of Variation based on Table 3.2 (AFCEE, 2000).

River Terrace RV Park
Mann-Kendall Test for Trend

Monitoring Well No.	**MW-48**
Contaminant	**Molar Sum**

Monitoring Date:	5/8/2012	4/10/2013	4/22/2014	10/26/2016	12/13/2018			
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8
Concentration (µmol/L)	327.8444	49.0884	264.1300	1016.7411	63.9306			

Row 1: Compare to Event 1	-1	-1	1	-1				-2
Row 2: Compare to Event 2		1	1	1				3
Row 3: Compare to Event 3			1	-1				0
Row 4: Compare to Event 4				-1				-1
Row 5: Compare to Event 5								0
Row 6: Compare to Event 6								0
Row 7: Compare to Event 7								0



Mann-Kendall Statistic (S) = Total	**0**
Confidence Level	**<90%**
Coefficient of Variance (CV)	**1.15**

Trend Analysis	
Statistical Method	**Result**
Linear Regression	No Trend
Mann-Kendall	Likely No Trend

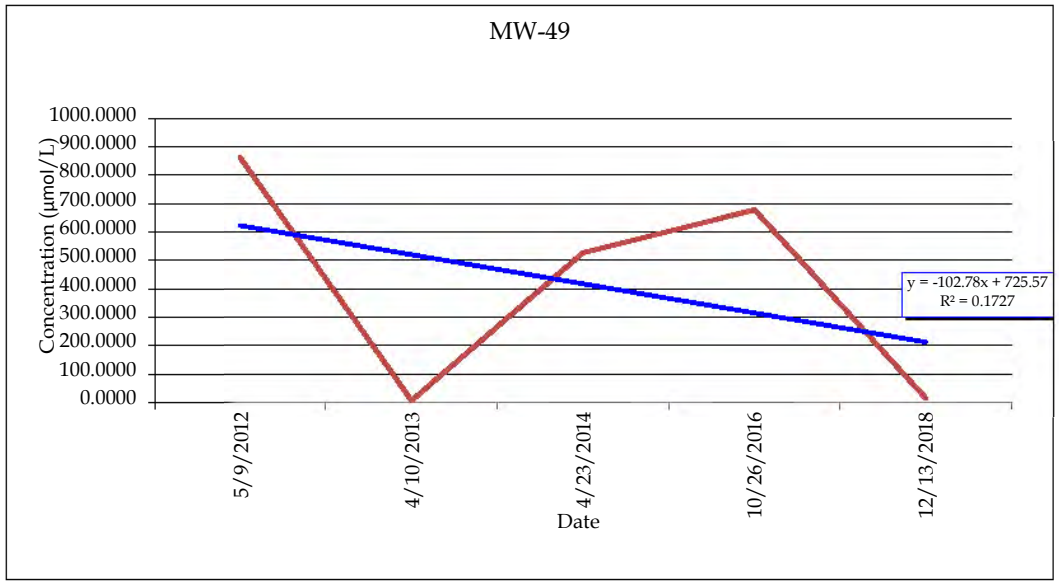
Notes:
- A minimum of four (4) independent sampling events are required for the Mann-Kendall test to be valid.
- Non-detects are listed as 1/2 the value of the laboratory detection limit.
- A negative S value with confidence > 90% indicates a decreasing concentration trend.
- A positive S value with confidence > 90% indicates an increasing concentration trend.
- Any S value with confidence < 90% indicates that there is likely no concentration trend.
- A CV < 1 indicates concentrations are stable regardless of trend.
- The closer to zero the CV is, the less variation in concentrations between sampling events.
- R^2 is calculated without testing the approximate normality of the data. Additionally, if sample size is < 8, the power of the linear regression is low.
- R^2 values between 0.5 and 0.8 indicate possible correlation, suggesting that there is possibly a trend.
- R^2 values greater than 0.8 indicate a correlation, suggesting that there is likely a trend.
- Effects of Coefficient of Variation based on Table 3.2 (AFCEE, 2000).

River Terrace RV Park
Mann-Kendall Test for Trend

Monitoring Well No.	**MW-49**
Contaminant	**Molar Sum**

Monitoring Date:	5/9/2012	4/10/2013	4/23/2014	10/26/2016	12/13/2018			
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8
Concentration (µmol/L)	862.9624	5.7393	526.5109	678.1116	12.8986			

Row 1: Compare to Event 1		-1	-1	-1	-1				-4
Row 2: Compare to Event 2			1	1	1				3
Row 3: Compare to Event 3				1	-1				0
Row 4: Compare to Event 4					-1				-1
Row 5: Compare to Event 5									0
Row 6: Compare to Event 6									0
Row 7: Compare to Event 7									0



Mann-Kendall Statistic (S) = Total	**-2**
Confidence Level	**<90%**
Coefficient of Variance (CV)	**0.94**

Trend Analysis	
Statistical Method	**Result**
Linear Regression	No Trend
Mann-Kendall	Likely No Trend, Stable

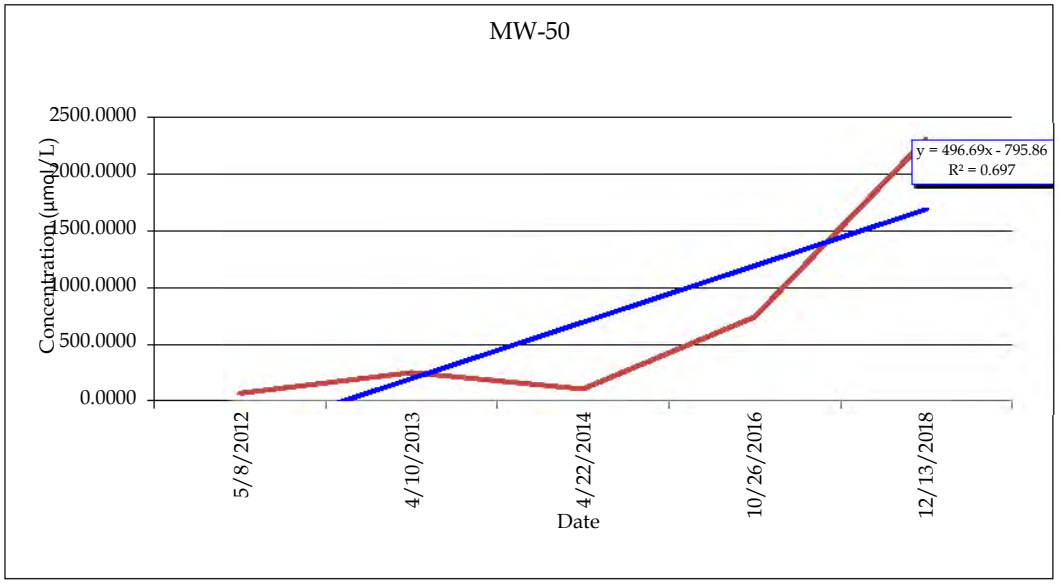
Notes:
- A minimum of four (4) independent sampling events are required for the Mann-Kendall test to be valid.
- Non-detects are listed as 1/2 the value of the laboratory detection limit.
- A negative S value with confidence > 90% indicates a decreasing concentration trend.
- A positive S value with confidence > 90% indicates an increasing concentration trend.
- Any S value with confidence < 90% indicates that there is likely no concentration trend.
- A CV < 1 indicates concentrations are stable regardless of trend.
- The closer to zero the CV is, the less variation in concentrations between sampling events.
- R^2 is calculated without testing the approximate normality of the data. Additionally, if sample size is < 8, the power of the linear regression is low.
- R^2 values between 0.5 and 0.8 indicate possible correlation, suggesting that there is possibly a trend.
- R^2 values greater than 0.8 indicate a correlation, suggesting that there is likely a trend.
- Effects of Coefficient of Variation based on Table 3.2 (AFCEE, 2000).

River Terrace RV Park
Mann-Kendall Test for Trend

Monitoring Well No.	**MW-50**
Contaminant	**Molar Sum**

Monitoring Date:	5/8/2012	4/10/2013	4/22/2014	10/26/2016	12/13/2018			
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8
Concentration (µmol/L)	68.6455	250.0732	105.4229	739.5202	2307.3580			

Row 1: Compare to Event 1	1	1	1	1				4
Row 2: Compare to Event 2		-1	1	1				1
Row 3: Compare to Event 3			1	1				2
Row 4: Compare to Event 4				1				1
Row 5: Compare to Event 5								0
Row 6: Compare to Event 6								0
Row 7: Compare to Event 7								0



Mann-Kendall Statistic (S) = Total	**8**
Confidence Level	**>90%**
Coefficient of Variance (CV)	**1.36**

Trend Analysis	
Statistical Method	**Result**
Linear Regression	Possibly Increasing
Mann-Kendall	Increasing

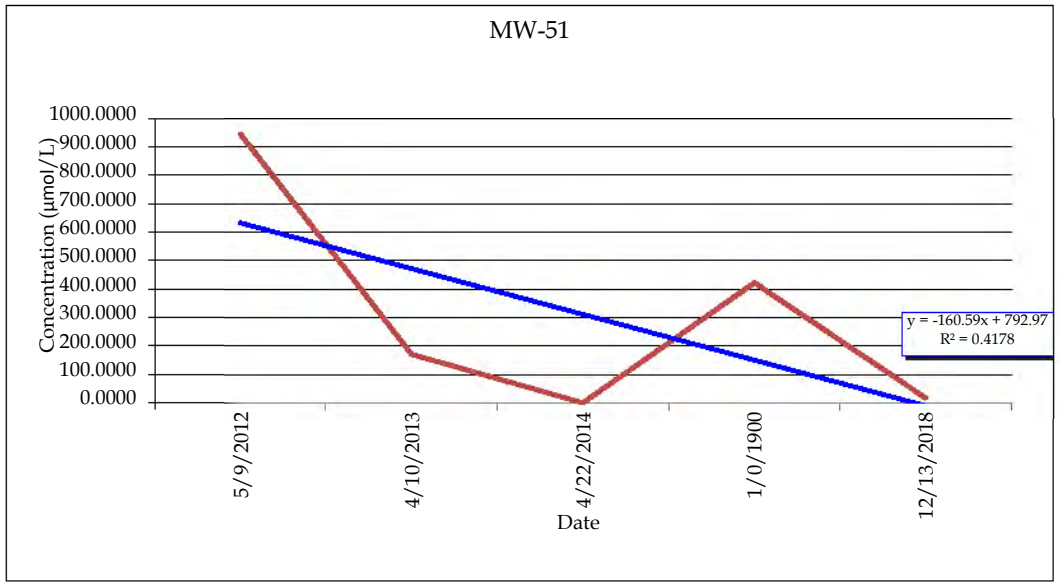
Notes:
- A minimum of four (4) independent sampling events are required for the Mann-Kendall test to be valid.
- Non-detects are listed as 1/2 the value of the laboratory detection limit.
- A negative S value with confidence > 90% indicates a decreasing concentration trend.
- A positive S value with confidence > 90% indicates an increasing concentration trend.
- Any S value with confidence < 90% indicates that there is likely no concentration trend.
- A CV < 1 indicates concentrations are stable regardless of trend.
- The closer to zero the CV is, the less variation in concentrations between sampling events.
- R^2 is calculated without testing the approximate normality of the data. Additionally, if sample size is < 8, the power of the linear regression is low.
- R^2 values between 0.5 and 0.8 indicate possible correlation, suggesting that there is possibly a trend.
- R^2 values greater than 0.8 indicate a correlation, suggesting that there is likely a trend.
- Effects of Coefficient of Variation based on Table 3.2 (AFCEE, 2000).

River Terrace RV Park
Mann-Kendall Test for Trend

Monitoring Well No.	**MW-51**
Contaminant	**Molar Sum**

Monitoring Date:	5/9/2012	4/10/2013	4/22/2014	1/0/1900	12/13/2018		
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7
Concentration (µmol/L)	945.3779	170.9704	0.6070	422.1873	16.8062		

Row 1: Compare to Event 1	-1	-1	-1	-1	-1			-4
Row 2: Compare to Event 2		-1	1	-1				-1
Row 3: Compare to Event 3			1	1				2
Row 4: Compare to Event 4				-1				-1
Row 5: Compare to Event 5								0
Row 6: Compare to Event 6								0



Mann-Kendall Statistic (S) = Total	**-4**
Confidence Level	**<90%**
Coefficient of Variance (CV)	**1.26**

Trend Analysis	
Statistical Method	**Result**
Linear Regression	No Trend
Mann-Kendall	Likely No Trend

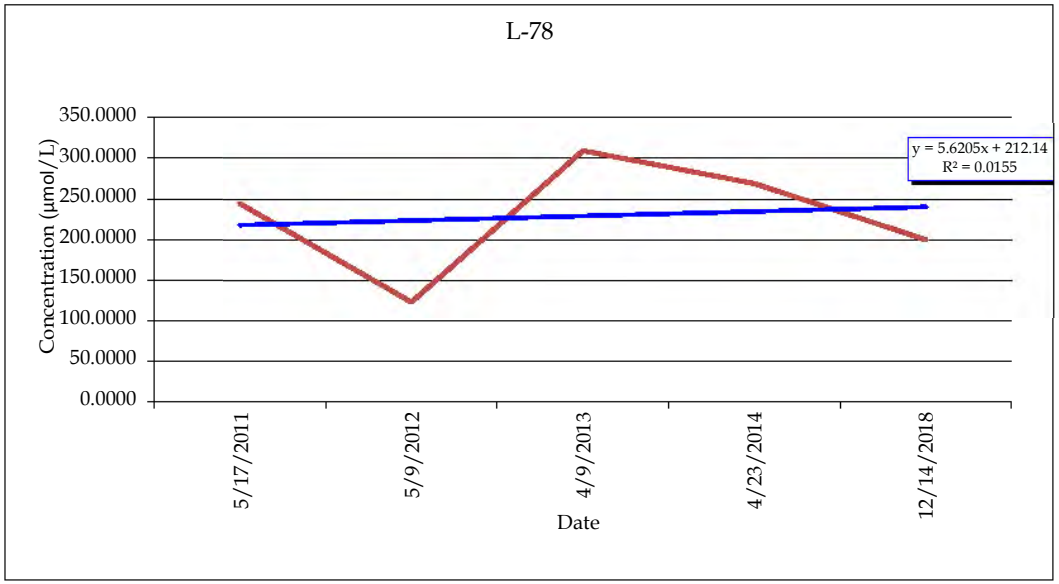
Notes:
- A minimum of four (4) independent sampling events are required for the Mann-Kendall test to be valid.
- Non-detects are listed as 1/2 the value of the laboratory detection limit.
- A negative S value with confidence > 90% indicates a decreasing concentration trend.
- A positive S value with confidence > 90% indicates an increasing concentration trend.
- Any S value with confidence < 90% indicates that there is likely no concentration trend.
- A CV < 1 indicates concentrations are stable regardless of trend.
- The closer to zero the CV is, the less variation in concentrations between sampling events.
- R^2 is calculated without testing the approximate normality of the data. Additionally, if sample size is < 8, the power of the linear regression is low.
- R^2 values between 0.5 and 0.8 indicate possible correlation, suggesting that there is possibly a trend.
- R^2 values greater than 0.8 indicate a correlation, suggesting that there is likely a trend.
- Effects of Coefficient of Variation based on Table 3.2 (AFCEE, 2000).

River Terrace RV Park
Mann-Kendall Test for Trend

Monitoring Well No.	**L-78**
Contaminant	**Molar Sum**

Monitoring Date:	5/17/2011	5/9/2012	4/9/2013	4/23/2014	12/14/2018			
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8
Concentration (µmol/L)	244.3687	122.9883	309.3133	268.7767	199.5769			

Row 1: Compare to Event 1	-1	1	1	-1				0
Row 2: Compare to Event 2		1	1	1				3
Row 3: Compare to Event 3			-1	-1				-2
Row 4: Compare to Event 4				-1				-1
Row 5: Compare to Event 5								0
Row 6: Compare to Event 6								0
Row 7: Compare to Event 7								0



Mann-Kendall Statistic (S) = Total	**0**
Confidence Level	**<90%**
Coefficient of Variance (CV)	**0.31**

Trend Analysis	
Statistical Method	**Result**
Linear Regression	No Trend
Mann-Kendall	No Trend, Stable

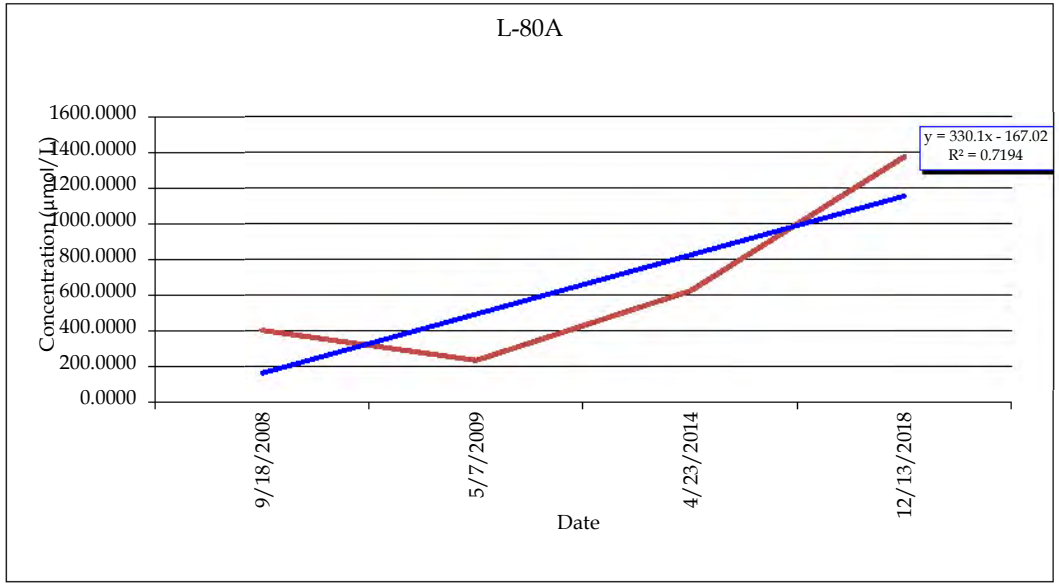
Notes:
- A minimum of four (4) independent sampling events are required for the Mann-Kendall test to be valid.
- Non-detects are listed as 1/2 the value of the laboratory detection limit.
- A negative S value with confidence > 90% indicates a decreasing concentration trend.
- A positive S value with confidence > 90% indicates an increasing concentration trend.
- Any S value with confidence < 90% indicates that there is likely no concentration trend.
- A CV < 1 indicates concentrations are stable regardless of trend.
- The closer to zero the CV is, the less variation in concentrations between sampling events.
- R^2 is calculated without testing the approximate normality of the data. Additionally, if sample size is < 8, the power of the linear regression is low.
- R^2 values between 0.5 and 0.8 indicate possible correlation, suggesting that there is possibly a trend.
- R^2 values greater than 0.8 indicate a correlation, suggesting that there is likely a trend.
- Effects of Coefficient of Variation based on Table 3.2 (AFCEE, 2000).

River Terrace RV Park
Mann-Kendall Test for Trend

Monitoring Well No.	**L-80A**
Contaminant	**Molar Sum**

Monitoring Date:	9/18/2008	5/7/2009	4/23/2014	12/13/2018
	Event 1	Event 2	Event 3	Event 4
Concentration (µmol/L)	402.2356	234.6893	622.8259	1373.1923

Row 1: Compare to Event 1	-1	1	1	1
Row 2: Compare to Event 2		1	1	2
Row 3: Compare to Event 3			1	1



Mann-Kendall Statistic (S) = Total	**4**
Confidence Level	**<90%**
Coefficient of Variance (CV)	**0.76**

Trend Analysis	
Statistical Method	**Result**
Linear Regression	Possibly Increasing
Mann-Kendall	Likely No Trend, Stable

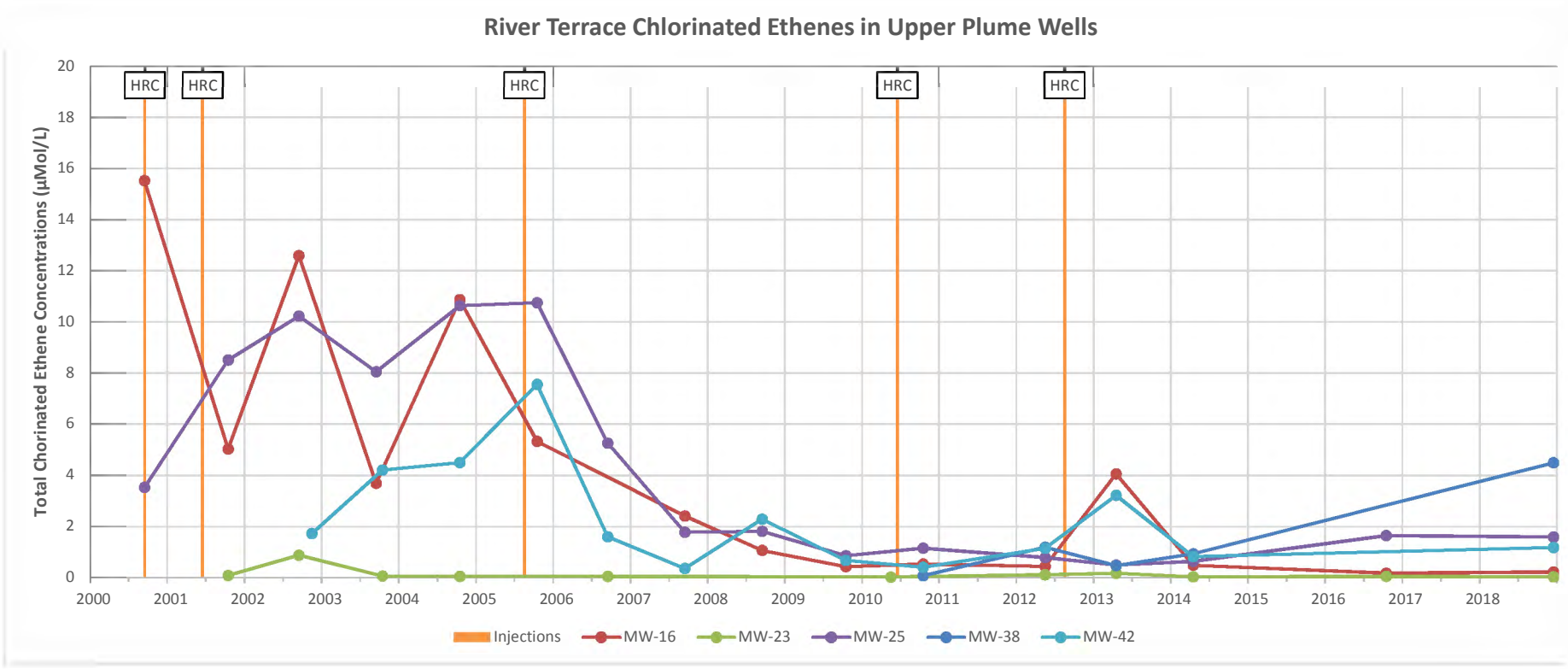
Notes:
- A minimum of four (4) independent sampling events are required for the Mann-Kendall test to be valid.
- Non-detects are listed as 1/2 the value of the laboratory detection limit.
- A negative S value with confidence > 90% indicates a decreasing concentration trend.
- A positive S value with confidence > 90% indicates an increasing concentration trend.
- Any S value with confidence < 90% indicates that there is likely no concentration trend.
- A CV < 1 indicates concentrations are stable regardless of trend.
- The closer to zero the CV is, the less variation in concentrations between sampling events.
- R^2 is calculated without testing the approximate normality of the data. Additionally, if sample size is < 8, the power of the linear regression is low.
- R^2 values between 0.5 and 0.8 indicate possible correlation, suggesting that there is possibly a trend.
- R^2 values greater than 0.8 indicate a correlation, suggesting that there is likely a trend.
- Effects of Coefficient of Variation based on Table 3.2 (AFCEE, 2000).

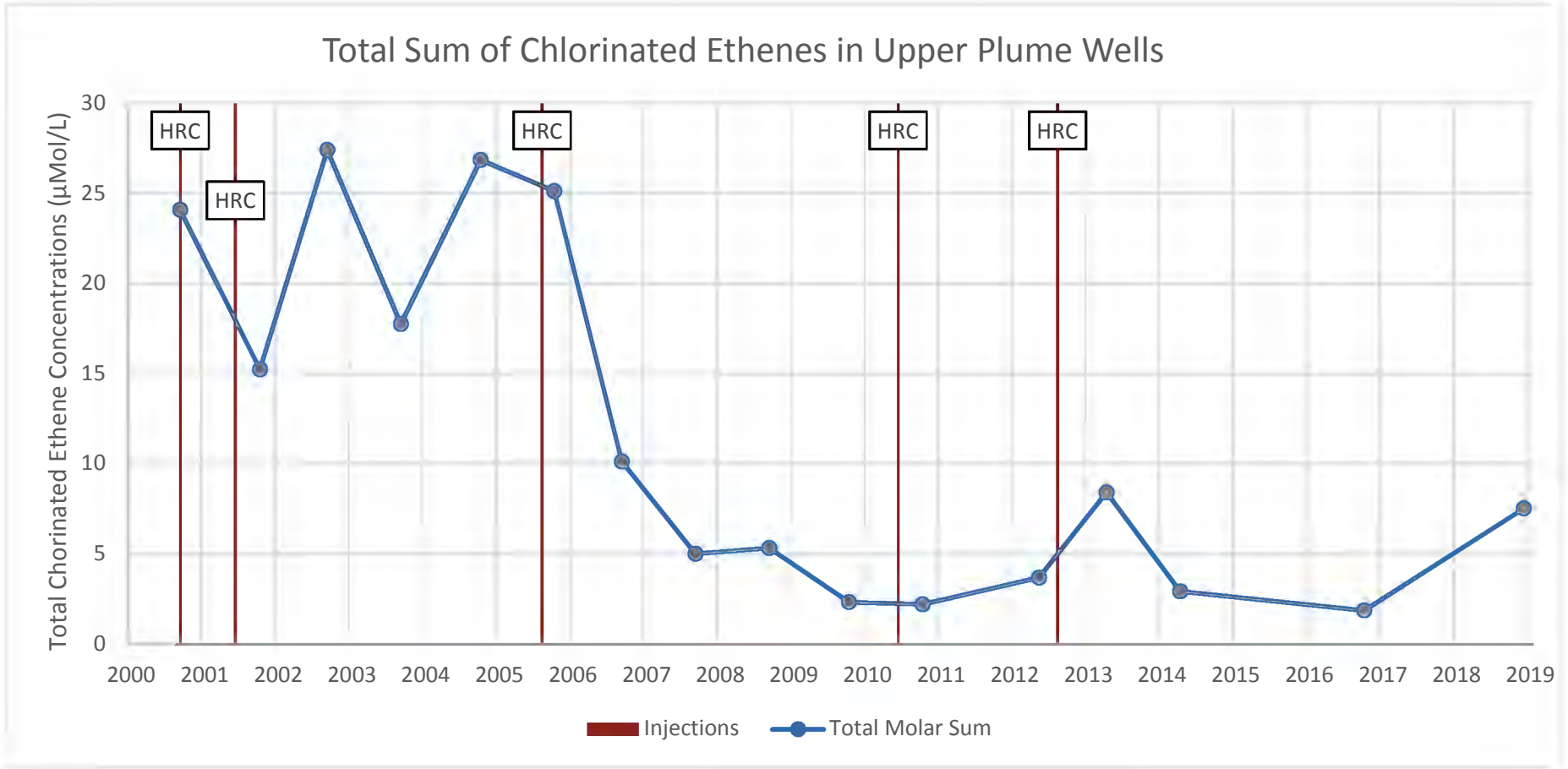
(This Page Intentionally Left Blank)

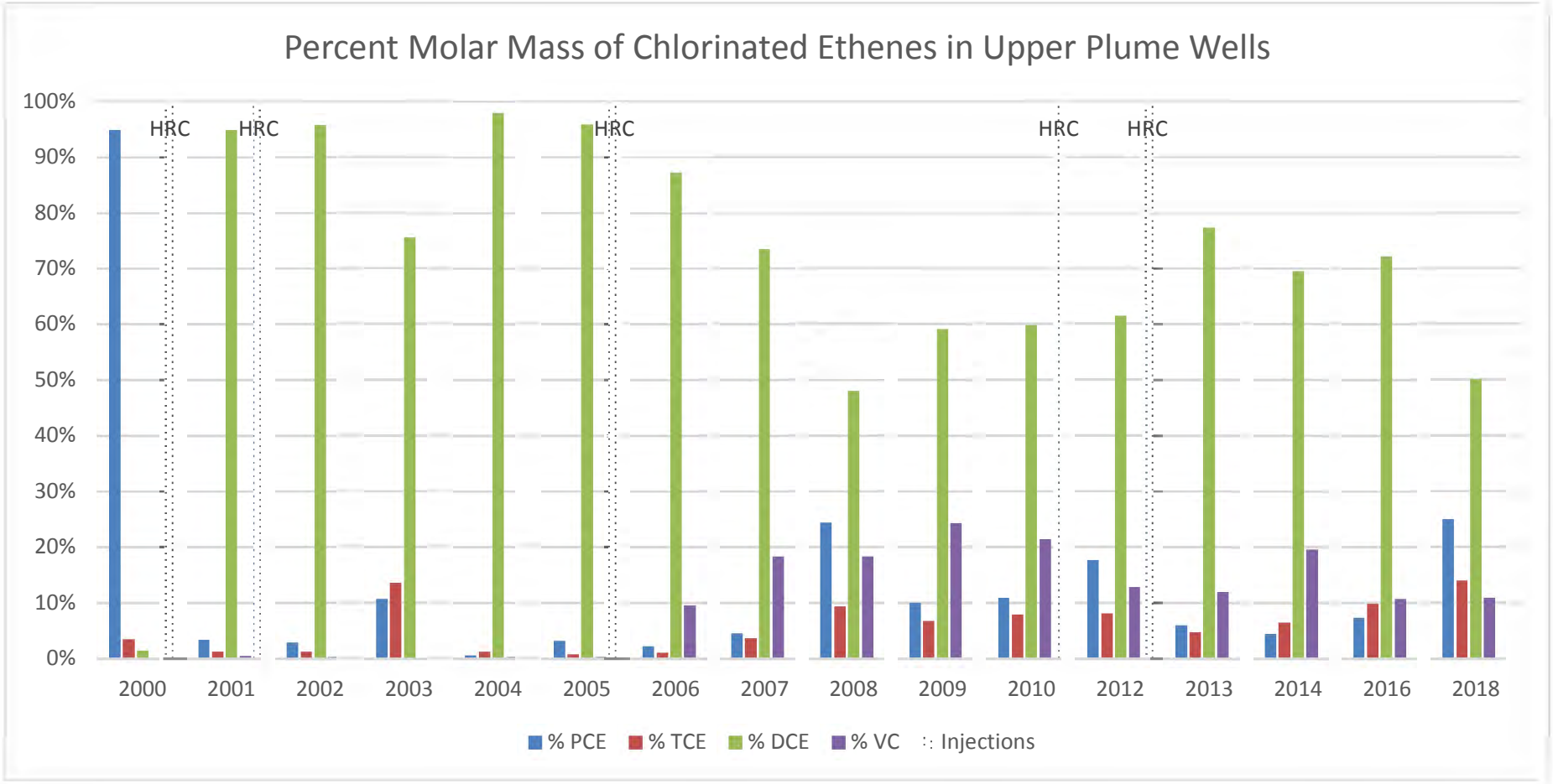
APPENDIX J

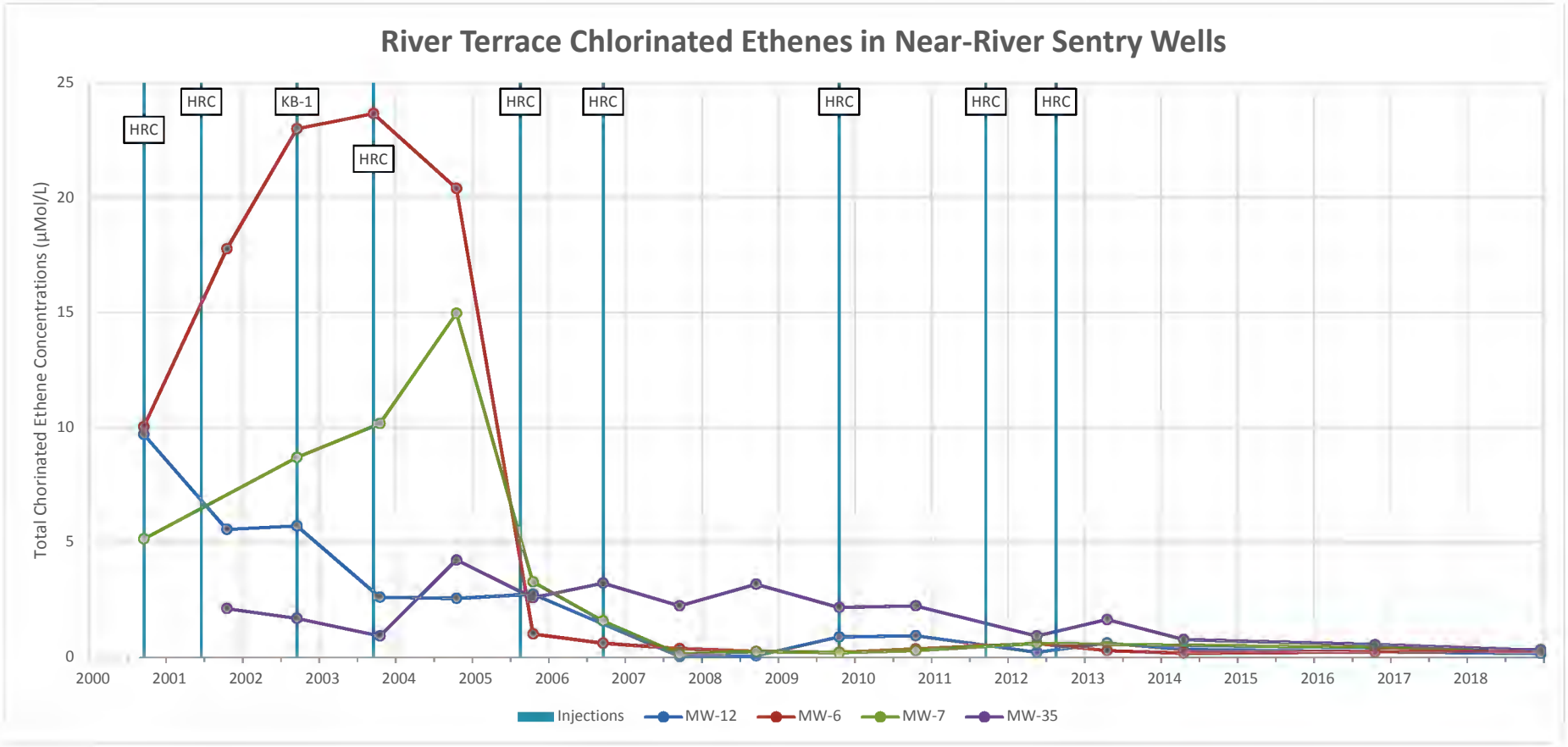
CHLORINATED ETHENES DISTRIBUTION IN UPPER PLUME AND LOWER PLUME NEAR-RIVER WELLS

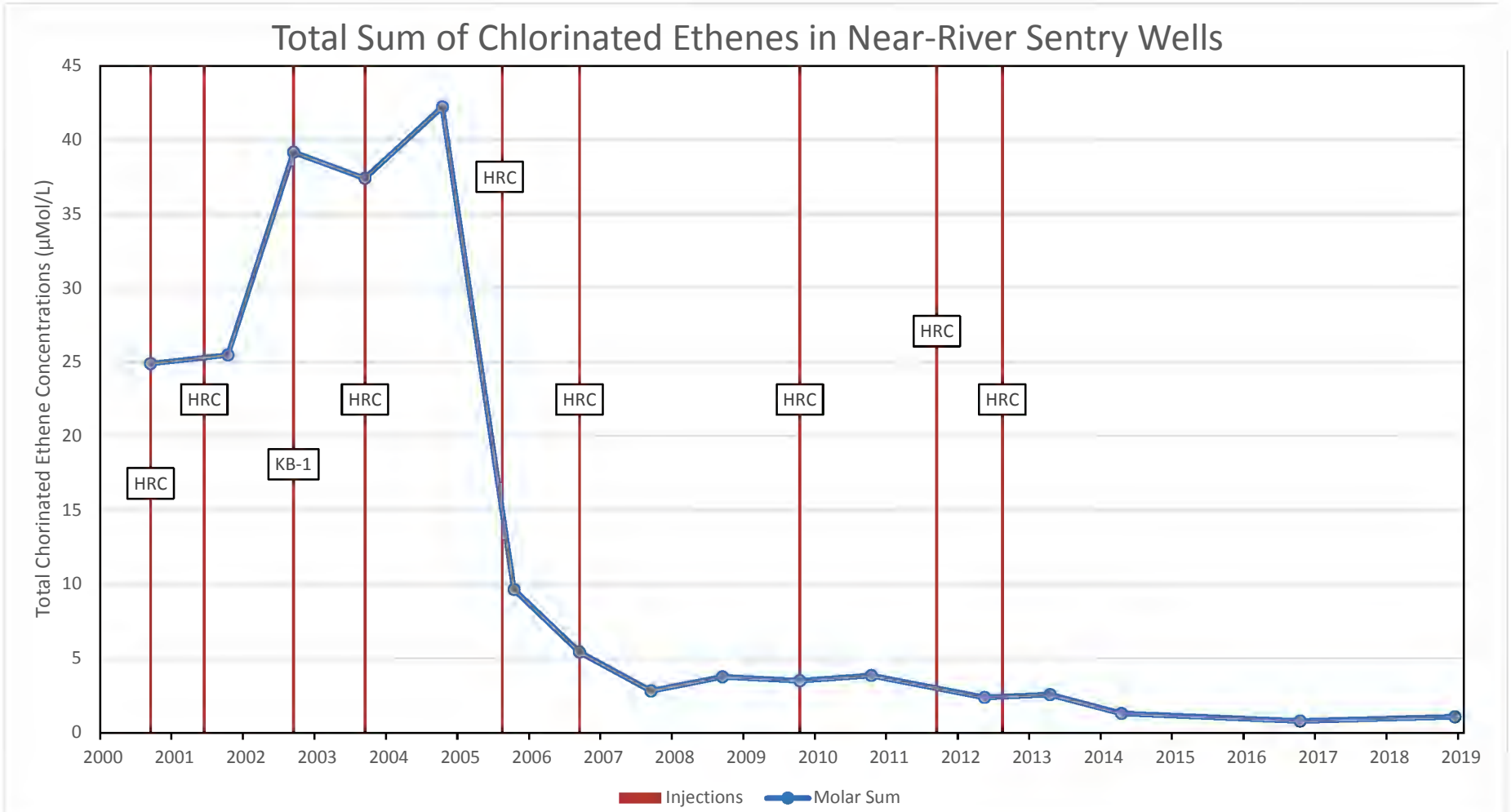
(This Page Intentionally Left Blank)

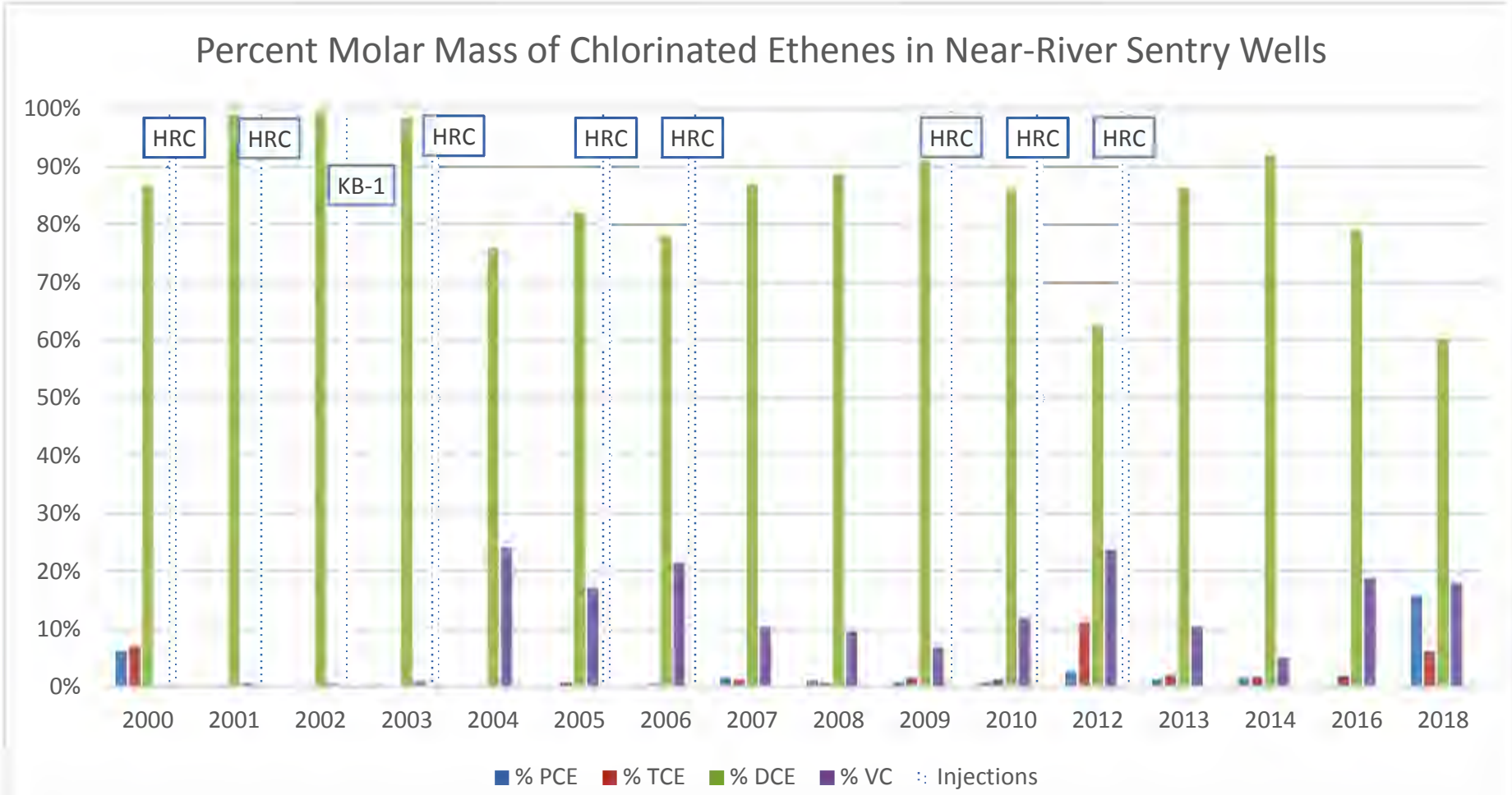

River Terrace Chlorinated Ethenes in Upper Plume Wells
Total Chorinated Ethene Concentrations (µMol/L)
HRC
HRC
HRC
HRC
HRC
0
2
4
6
8
10
12
14
16
18
20
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
Injections
MW-16
MW-23
MW-25
MW-38
MW-42

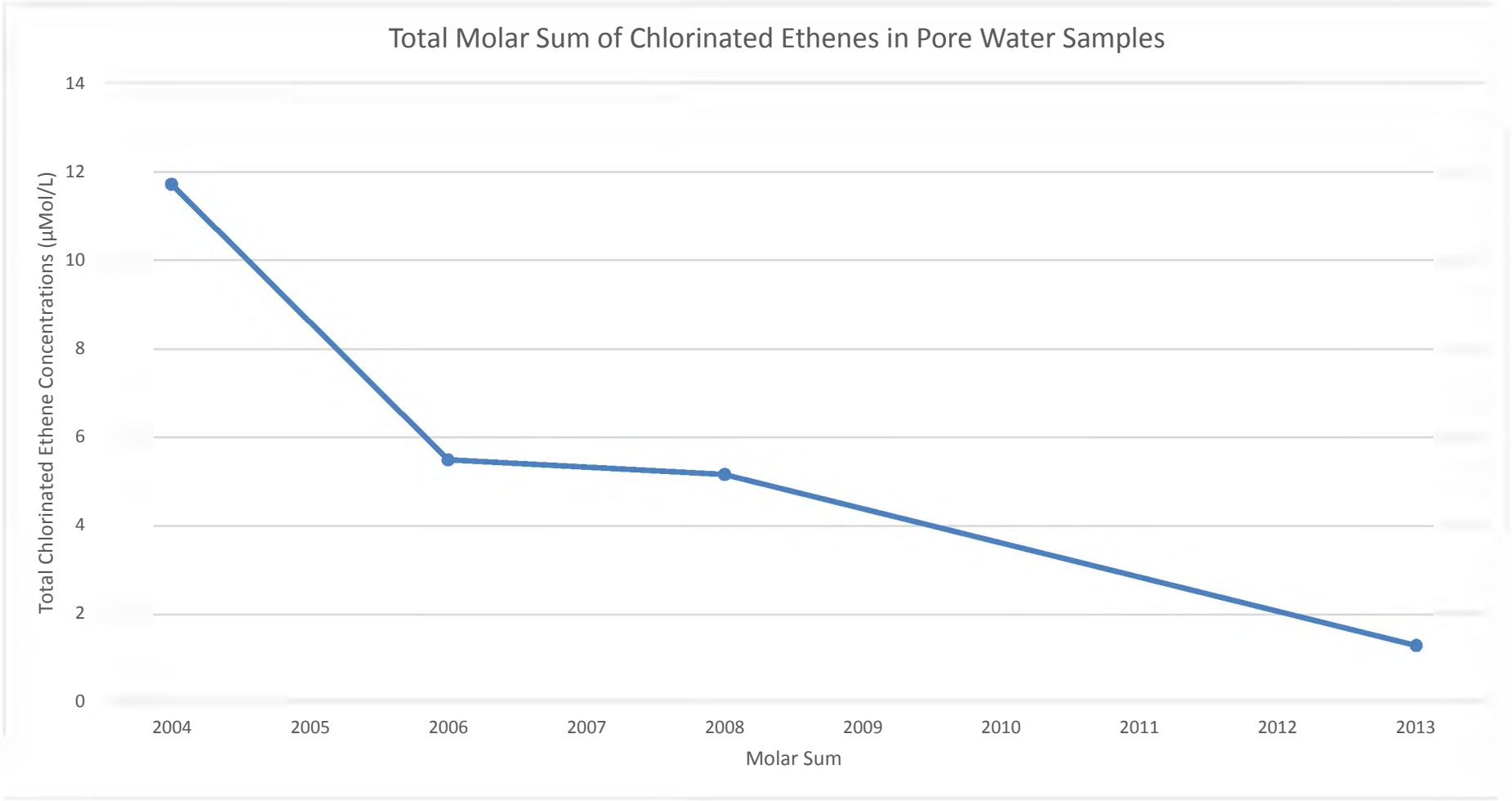

Total Sum of Chlorinated Ethenes in Upper Plume Wells
Total Chorinated Ethene Concentrations (µMol/L)
30
25
20
15
10
5
0
HRC
HRC
HRC
HRC
HRC
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
Injections
Total Molar Sum

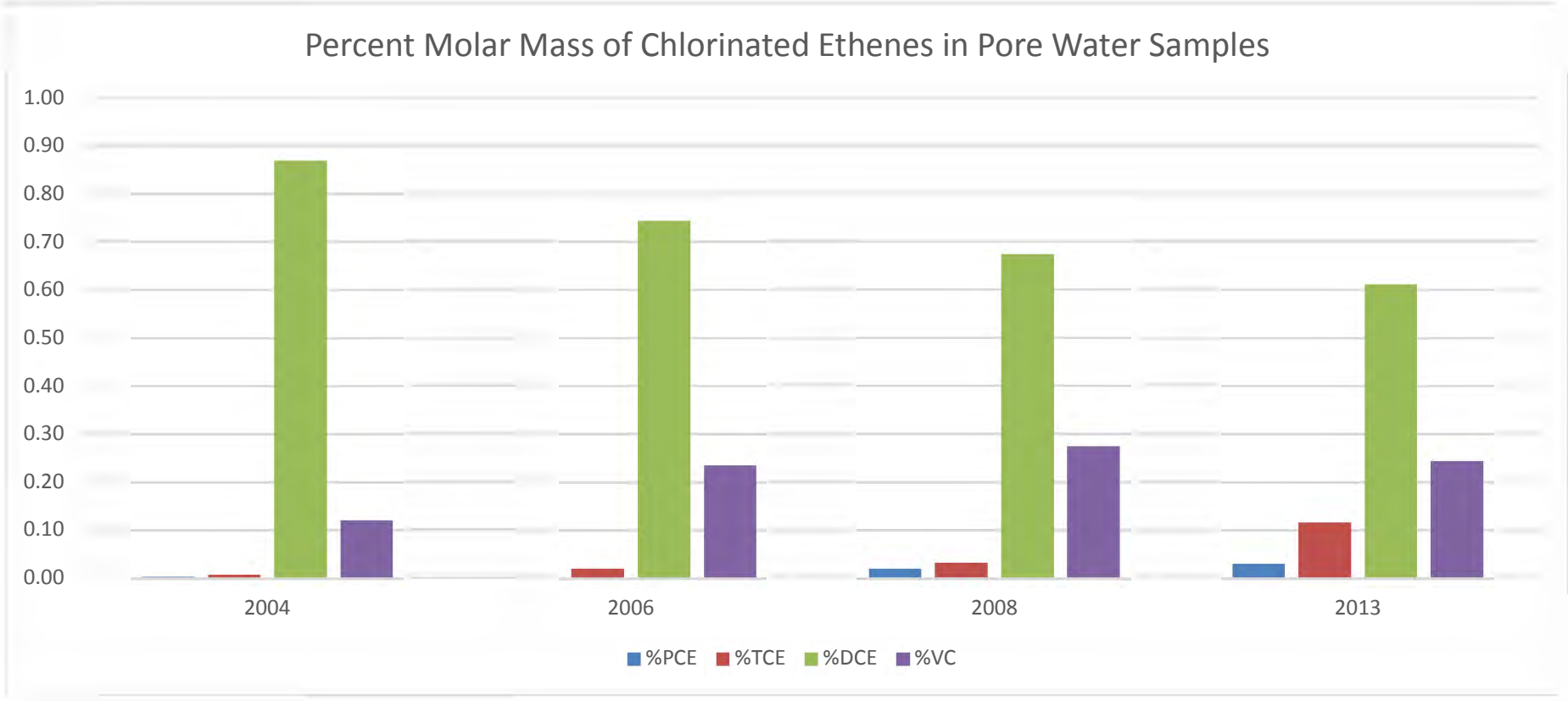

Percent Molar Mass of Chlorinated Ethenes in Upper Plume Wells
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
HRC
HRC
HRC
HRC
HRC
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2012
2013
2014
2016
2018
% PCE
% TCE
% DCE
% VC
Injections


River Terrace Chlorinated Ethenes in Near-River Sentry Wells
Total Chorinated Ethene Concentrations (µMol/L)
25
20
15
10
5
0
HRC
HRC
KB-1
HRC
HRC
HRC
HRC
HRC
HRC
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
Injections
MW-12
MW-6
MW-7
MW-35


Total Sum of Chlorinated Ethenes in Near-River Sentry Wells
Total Chorinated Ethene Concentrations (µMol/L)
45
40
35
30
25
20
15
10
5
0
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
HRC
HRC
KB-1
HRC
HRC
HRC
HRC
HRC
HRC
Injections
Molar Sum


Percent Molar Mass of Chlorinated Ethenes in Near-River Sentry Wells
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
HRC
HRC
KB-1
HRC
HRC
HRC
HRC
HRC
HRC
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2012
2013
2014
2016
2018
% PCE
% TCE
% DCE
% VC
Injections


Total Molar Sum of Chlorinated Ethenes in Pore Water Samples
Total Chlorinated Ethene Concentrations (µMol/L)
14
12
10
8
6
4
2
0
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
Molar Sum


Percent Molar Mass of Chlorinated Ethenes in Pore Water Samples
1.00
0.90
0.80
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00
2004
2006
2008
2013
%PCE
%TCE
%DCE
%VC

APPENDIX K

ADEC CONCEPTUAL SITE MODEL GRAPHIC AND SCOPING FORMS

(This Page Intentionally Left Blank)

Print Form

Appendix A - Human Health Conceptual Site Model Scoping Form and Standardized Graphic

Site Name: River Terrace RV Park

File Number: 2333.38.014

Completed by: Ryan Burich

Introduction

The form should be used to reach agreement with the Alaska Department of Environmental Conservation (DEC) about which exposure pathways should be further investigated during site characterization. From this information, summary text about the CSM and a graphic depicting exposure pathways should be submitted with the site characterization work plan and updated as needed in later reports.

General Instructions: Follow the italicized instructions in each section below.

1. General Information:

Sources *(check potential sources at the site)*

- ☐ USTs
- ☒ ASTs
- ☐ Dispensers/fuel loading racks
- ☒ Drums
- ☐ Vehicles
- ☐ Landfills
- ☐ Transformers
- ☐ Other:

Release Mechanisms *(check potential release mechanisms at the site)*

- ☒ Spills
- ☒ Leaks
- ☒ Direct discharge
- ☐ Burning
- ☐ Other:

Impacted Media *(check potentially-impacted media at the site)*

- ☒ Surface soil (0-2 feet bgs*)
- ☒ Subsurface soil (>2 feet bgs)
- ☒ Air
- ☒ Sediment
- ☒ Groundwater
- ☒ Surface water
- ☐ Biota
- ☐ Other:

Receptors *(check receptors that could be affected by contamination at the site)*

- ☒ Residents (adult or child)
- ☒ Commercial or industrial worker
- ☒ Construction worker
- ☒ Subsistence harvester (i.e. gathers wild foods)
- ☐ Subsistence consumer (i.e. eats wild foods)
- ☒ Site visitor
- ☒ Trespasser
- ☒ Recreational user
- ☐ Farmer
- ☐ Other:

* bgs - below ground surface

2. Exposure Pathways: *(The answers to the following questions will identify complete exposure pathways at the site. Check each box where the answer to the question is "yes".)*

a) Direct Contact -

1. Incidental Soil Ingestion

Are contaminants present or potentially present in surface soil between 0 and 15 feet below the ground surface? (Contamination at deeper depths may require evaluation on a site-specific basis.) ☒

If the box is checked, label this pathway complete: Complete

Comments:

COC's are potentially present in surface soil between 0 and 15 feet below ground surface in the upper plume area.

2. Dermal Absorption of Contaminants from Soil

Are contaminants present or potentially present in surface soil between 0 and 15 feet below the ground surface? (Contamination at deeper depths may require evaluation on a site specific basis.) ☐

Can the soil contaminants permeate the skin (see Appendix B in the guidance document)? ☐

If both boxes are checked, label this pathway complete: Incomplete

Comments:

None.

b) Ingestion -

1. Ingestion of Groundwater

Have contaminants been detected or are they expected to be detected in the groundwater, or are contaminants expected to migrate to groundwater in the future? ☒

Could the potentially affected groundwater be used as a current or future drinking water source? Please note, only leave the box unchecked if DEC has determined the groundwater is not a currently or reasonably expected future source of drinking water according to 18 AAC 75.350. ☒

If both boxes are checked, label this pathway complete: Complete

Comments:

COC's have been detected in groundwater samples collected onsite at concentrations that currently exceed ADEC Table C GCLs.

2. Ingestion of Surface Water

Have contaminants been detected or are they expected to be detected in surface water, or are contaminants expected to migrate to surface water in the future? ☒

Could potentially affected surface water bodies be used, currently or in the future, as a drinking water source? Consider both public water systems and private use (i.e., during residential, recreational or subsistence activities). ☒

If both boxes are checked, label this pathway complete: Complete

Comments:

PCE and vinyl chloride exceeded cleanup levels at near-river sentry wells MW-6A and MW-7. The Kenai River is proximal and hydraulically connected to these wells and is used for recreational purposes. Pore water and surface water should be investigated for the presence of site contaminants.

3. Ingestion of Wild and Farmed Foods

Is the site in an area that is used or reasonably could be used for hunting, fishing, or harvesting of wild or farmed foods? ☐

Do the site contaminants have the potential to bioaccumulate (see Appendix C in the guidance document)? ☐

Are site contaminants located where they would have the potential to be taken up into biota? (i.e. soil within the root zone for plants or burrowing depth for animals, in groundwater that could be connected to surface water, etc.) ☐

If all of the boxes are checked, label this pathway complete: Incomplete

Comments:

None.

c) Inhalation-

1. Inhalation of Outdoor Air

Are contaminants present or potentially present in surface soil between 0 and 15 feet below the ground surface? (Contamination at deeper depths may require evaluation on a site specific basis.) ☒

Are the contaminants in soil volatile (see Appendix D in the guidance document)? ☒

If both boxes are checked, label this pathway complete: Complete

Comments:

COCs may still be present in subsurface soils. As a results, this exposure pathway may require further evaluation.

2. Inhalation of Indoor Air

Are occupied buildings on the site or reasonably expected to be occupied or placed on the site in an area that could be affected by contaminant vapors? (within 30 horizontal or vertical feet of petroleum contaminated soil or groundwater; within 100 feet of non-petroleum contaminted soil or groundwater; or subject to "preferential pathways," which promote easy airflow like utility conduits or rock fractures) ☒

Are volatile compounds present in soil or groundwater (see Appendix D in the guidance document)? ☒

If both boxes are checked, label this pathway complete: Complete

Comments:

COC's are present in samples from groundwater monitoring wells proximal to the former dry cleaner building at concentrations exceeding GCLs and ACLs. Previous vapor intrusion evaluations showed risk is acceptable for the onsite building for their current usages. However, the vapor intrusion pathway may require further evaluation if building usae changes, significant changes are made to the buildings, or if additional structures are built on the property.

3. **Additional Exposure Pathways:** *(Although there are no definitive questions provided in this section, these exposure pathways should also be considered at each site. Use the guidelines provided below to determine if further evaluation of each pathway is warranted.)*

Dermal Exposure to Contaminants in Groundwater and Surface Water

Dermal exposure to contaminants in groundwater and surface water may be a complete pathway if:

- Climate permits recreational use of waters for swimming.
- Climate permits exposure to groundwater during activities, such as construction.
- Groundwater or surface water is used for household purposes, such as bathing or cleaning.

Generally, DEC groundwater cleanup levels in 18 AAC 75, Table C, are deemed protective of this pathway because dermal absorption is incorporated into the groundwater exposure equation for residential uses.

Check the box if further evaluation of this pathway is needed: ☒

Comments:

Review of analytical results from the 2018 groundwater monitoring event indicates tetrachloroethylene and vinyl chloride exceeded the modeled action level and groundwater cleanup level in samples collected from two of the near-river sentry wells (MW-6A and MW-7). Considering the Kenai River, which is utilized for recreational purposes, is proximal to these wells, and the contaminated groundwater at these locations is likely hydrologically connected to the surface water, further evaluation is warranted in the form of surface water, pore water, and/or sediment sampling.

Inhalation of Volatile Compounds in Tap Water

Inhalation of volatile compounds in tap water may be a complete pathway if:

- The contaminated water is used for indoor household purposes such as showering, laundering, and dish washing.
- The contaminants of concern are volatile (common volatile contaminants are listed in Appendix D in the guidance document.)

DEC groundwater cleanup levels in 18 AAC 75, Table C are protective of this pathway because the inhalation of vapors during normal household activities is incorporated into the groundwater exposure equation.

Check the box if further evaluation of this pathway is needed: ☒

Comments:

Further historical document evaluation may be necessary to determine if the existing, onsite Class A drinking water well is currently being utilized by onsite occupants and workers. If so, drinking water samples should be collected and analyzed for COCs.

Inhalation of Fugitive Dust

Inhalation of fugitive dust may be a complete pathway if:

- Nonvolatile compounds are found in the top 2 centimeters of soil. The top 2 centimeters of soil are likely to be dispersed in the wind as dust particles.
- Dust particles are less than 10 micrometers (Particulate Matter - PM_{10}). Particles of this size are called respirable particles and can reach the pulmonary parts of the lungs when inhaled.

DEC human health soil cleanup levels in Table B1 of 18 AAC 75 are protective of this pathway because the inhalation of particulates is incorporated into the soil exposure equation.

Check the box if further evaluation of this pathway is needed: ☐

Comments:

None.

Direct Contact with Sediment

This pathway involves people's hands being exposed to sediment, such as during some recreational, subsistence, or industrial activity. People then incidentally ingest sediment from normal hand-to-mouth activities. In addition, dermal absorption of contaminants may be of concern if the the contaminants are able to permeate the skin (see Appendix B in the guidance document). This type of exposure should be investigated if:

- Climate permits recreational activities around sediment.
- The community has identified subsistence or recreational activities that would result in exposure to the sediment, such as clam digging.

Generally, DEC direct contact soil cleanup levels in 18 AAC 75, Table B1, are assumed to be protective of direct contact with sediment.

Check the box if further evaluation of this pathway is needed: ☒

Comments:

The Kenai River, which is adjacent to the property, is used for recreational purposes (fishing, boating, canoeing, kayaking, and swimming). Considering PCE and vinyl chloride concentrations in groundwater samples collected from near-river sentry wells exceeded GCLs, sediment samples should be collected for COC analysis.

4. Other Comments *(Provide other comments as necessary to support the information provided in this form.)*

None.

HUMAN HEALTH CONCEPTUAL SITE MODEL GRAPHIC FORM

Site: River Terrace RV Park

Completed By: Ryan Burich

Date Completed: 18 March 2019

***Instructions**: Follow the numbered directions below. Do not consider contaminant concentrations or engineering/land use controls when describing pathways.*

(1) *Check the media that could be directly affected by the release.*

(2) *For each medium identified in (1), follow the top arrow and check possible transport mechanisms. Check additional media under (1) if the media acts as a secondary source.*

(3) *Check all exposure media identified in (2).*

(4) *Check all pathways that could be complete. The pathways identified in this column **must** agree with Sections 2 and 3 of the Human Health CSM Scoping Form.*

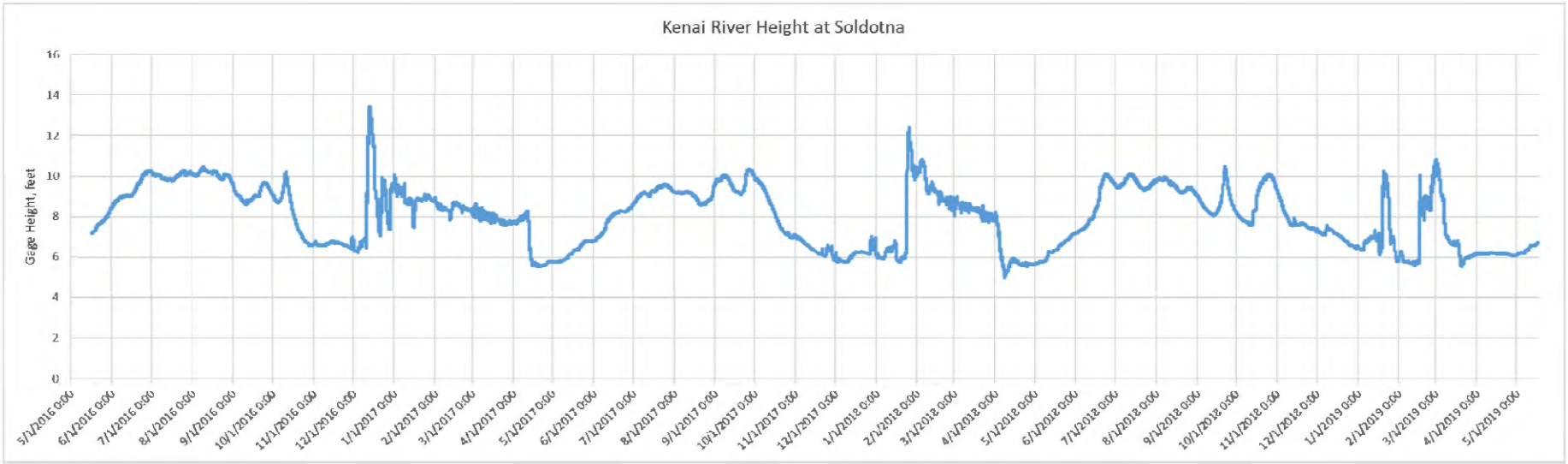
(5) *Identify the receptors potentially affected by each exposure pathway: Enter "C" for current receptors, "F" for future receptors, "C/F" for both current and future receptors, or "I" for insignificant exposure.*

Media	Transport Mechanisms	Exposure Media	Exposure Pathway/Route	Current & Future Receptors: Residents (adults or children)	Commercial or industrial workers	Site visitors, trespassers, or recreational users	Construction workers	Farmers or subsistence harvesters	Subsistence consumers	Other
☑ Surface Soil (0-2 ft bgs)	☑ Direct release to surface soil → check soil	☑ soil	☑ Incidental Soil Ingestion	C/F	C/F	C/F	C/F			
	☑ Migration to subsurface → check soil		☐ Dermal Absorption of Contaminants from Soil							
	☑ Migration to groundwater → check groundwater		☐ Inhalation of Fugitive Dust							
	☑ Volatilization → check air									
	☐ Runoff or erosion → check surface water									
	☐ Uptake by plants or animals → check biota									
	☐ Other (list):									
☑ Subsurface Soil (2-15 ft bgs)	☑ Direct release to subsurface soil → check soil	☑ groundwater	☑ Ingestion of Groundwater	C/F	C/F	C/F	C/F			
	☑ Migration to groundwater → check groundwater		☐ Dermal Absorption of Contaminants in Groundwater							
	☑ Volatilization → check air		☑ Inhalation of Volatile Compounds in Tap Water	C/F	C/F	C/F	C/F			
	☐ Uptake by plants or animals → check biota									
	☐ Other (list):									
☑ Ground-water	☑ Direct release to groundwater → check groundwater	☑ air	☑ Inhalation of Outdoor Air	C/F	C/F	C/F	C/F			
	☑ Volatilization → check air		☑ Inhalation of Indoor Air	C/F	C/F	C/F	C/F			
	☑ Flow to surface water body → check surface water		☐ Inhalation of Fugitive Dust							
	☑ Flow to sediment → check sediment									
	☐ Uptake by plants or animals → check biota									
	☐ Other (list):									
☐ Surface Water	☐ Direct release to surface water → check surface water	☑ surface water	☑ Ingestion of Surface Water	C/F	C/F	C/F	C/F			
	☐ Volatilization → check air		☐ Dermal Absorption of Contaminants in Surface Water							
	☐ Sedimentation → check sediment		☐ Inhalation of Volatile Compounds in Tap Water							
	☐ Uptake by plants or animals → check biota									
	☐ Other (list):									
☐ Sediment	☐ Direct release to sediment → check sediment	☑ sediment	☑ Direct Contact with Sediment	C/F	C/F	C/F	C/F	C/F		
	☐ Resuspension, runoff, or erosion → check surface water									
	☐ Uptake by plants or animals → check biota	☐ biota	☐ Ingestion of Wild or Farmed Foods							
	☐ Other (list):									

APPENDIX L

KENAI RIVER HYDROGRAPH AND SPRING/FALL STAGE HEIGHTS FOR LAST THREE YEARS

(This Page Intentionally Left Blank)


Kenai River Height at Soldotna
Gage Height, feet
16
14
12
10
8
6
4
2
0
5/1/2016 0:00
6/1/2016 0:00
7/1/2016 0:00
8/1/2016 0:00
9/1/2016 0:00
10/1/2016 0:00
11/1/2016 0:00
12/1/2016 0:00
1/1/2017 0:00
2/1/2017 0:00
3/1/2017 0:00
4/1/2017 0:00
5/1/2017 0:00
6/1/2017 0:00
7/1/2017 0:00
8/1/2017 0:00
9/1/2017 0:00
10/1/2017 0:00
11/1/2017 0:00
12/1/2017 0:00
1/1/2018 0:00
2/1/2018 0:00
3/1/2018 0:00
4/1/2018 0:00
5/1/2018 0:00
6/1/2018 0:00
7/1/2018 0:00
8/1/2018 0:00
9/1/2018 0:00
10/1/2018 0:00
11/1/2018 0:00
12/1/2018 0:00
1/1/2019 0:00
2/1/2019 0:00
3/1/2019 0:00
4/1/2019 0:00
5/1/2019 0:00

Spring Period	Stage Height (feet)	Fall Period	Stage Height (feet)
Did not download data from 4/1/16 to mid-May 2016	Did not download data from 4/1/16 to mid-May 2016	10/1/16 – 10/31/16	6.58 – 10.23
5/17/16 – 5/31/16	7.16 – 8.42	11/1/16 – 11/30/16	6.43 – 6.99
4/1/17 – 4/30/17	5.56 – 8.29	10/1/17 – 10/31/17	6.92 – 10.04
5/1/17 – 5/31/17	5.73 – 6.83	11/1/17 – 11/30/17	5.83 – 7.08
4/1/18 – 4/30/18	5.00 – 8.22	10/1/18 – 10/31/18	7.57 – 10.10
5/1/18 – 5/31/18	5.66 – 7.18	11/1/18 – 11/30/18	7.25 – 9.34
4/1/19 – 4/30/19	6.06 – 6.27		
5/1/19 – 5/17/19	6.10 – 6.74		

Spring Pore/Surface Water Sampling Date	Fall Pore/Surface Water Sampling Date
5/14/1997	10/8/2003
5/19/1999	11/24/2004
6/19/2003	10/12/2005
5/6/2004	9/13/2006
6/2/2005	9/20/2007
5/25/2006	9/20/2008
5/30/2007	10/9/2009
5/13/2008	10/22/2010
5/7/2009	No Sampling
5/13/2010	No Sampling
5/9/2012	No Sampling
5/21/2013	No Sampling

APPENDIX M

UPDATED RIVER TERRACE RV PARK MONITORING PROGRAM

(This Page Intentionally Left Blank)

River Terrace RV Park Groundwater Monitoring Program
Updated May 2019

Plume	Well	Total Depth (Feet)	Date Last Sampled	Recommended Sampling Frequency*	Sample Suite*	Rationale
Upper	MW-16	22	Dec-18	Annual	VOCs	Above on-site ACL for VC
Upper	MW-21	22	May-12	Every 3 years	VOCs	Consistently below ACLs, above GCLs, periodic sampling to confirm plume extent
Upper	MW-23	23	Dec-18	Every 3 years	VOCs	Consistently below ACLs, above GCLs, periodic sampling to confirm plume extent
Upper	MW-24	13.5	May-10	None	N/A	Consistently below ACLs, above GCLs, well in perched zone
Upper	MW-25	22	Dec-18	Annual	VOCs, Geo, Rem	Above off-site ACLs, historically sampled for Geo
Upper	MW-29	15	May-10	None	N/A	Consistently below ACLs, well in perched zone
Upper	MW-36	24	Apr-14	Annual	VOCs	VC above ACLs, above GCLs, historically sampled for Geo/REM, periodic sampling to confirm plume extent
Upper	MW-37	U	Jan-02	Every 3 years	VOCs	Adjacent to MW-16 so coverage provided, occasional sampling because VC close to on-site ACL
Upper	MW-38	24	Dec-18	Annual	VOCs, Geo, Rem	Above off-site ACL
Upper	MW-41	13.5	May-12	Every 3 years	VOCs	Consistently below ACLs, above GCLs, only well in perched zone in program, fluctuating concentrations
Upper	MW-42	24	Dec-18	Every 3 years	VOCs, Geo, Rem	Only last result below on-site VC ACL, historically sampled for Geo, sample periodically to confirm trend
Upper	MW-43	21	May-12	Every 3 years	VOCs	Consistently below ACLs except VC above on-site ACL in 2018, above GCLs, sample in 2019 and then occasionally to confirm
Lower, Till	MW-44	36	Dec-18	Every 3 years	VOCs	Above ACL for VC, periodic sampling because adjacent to L-78
Lower, Till	MW-45	35	Apr-13	None	N/A	Below ACLs, above GCLs
Lower, Till	MW-46	35	May-12	None	N/A	Below ACLs, above GCLs
Lower, Till	MW-47	35	Dec-18	Every 3 years	VOCs	Above ACLs
Lower, Till	MW-48	30	Dec-18	Every 3 years	VOCs, Geo, Rem	Above ACLs, historically sampled for Geo/Rem
Lower, Till	MW-49	33.5	Dec-18	Every 3 years	VOCs, Geo, Rem	Above ACLs, fluctuating concentrations, historically sampled for Geo/Rem
Lower, Till	MW-50	36	Dec-18	Every 3 years	VOCs, Geo, Rem	Above ACLs, historically sampled for Geo/Rem
Lower, Till	MW-51	30	Dec-18	None	N/A	Above ACLs, adequate well coverage in lower plume till
Lower, Till	MW-52	35	Dec-18	None	N/A	Above ACLs, adequate well coverage in lower plume till
Lower, Till	L-78	36	Dec-18	Every 3 years	VOCs, Geo, Rem	above ACLs, historically sampled for Geo/Rem
Lower, Till	L-80A	21	Dec-18	Every 3 years	VOCs	Above ACLs
Lower, Till	L-101	40	Apr-14	Every 3 years	VOCs	Above ACLs
Lower, Till	L-102	40	Apr-14	Every 3 years	VOCs	Above ACLs
Lower, Till	L-100	35	Apr-14	None	N/A	Above ACLs, adequate well coverage in lower plume till
Lower, Till	L-103	33	Dec-18	Every 3 years	VOCs, Geo, Rem	above ACLs, historically sampled for Geo/Rem
Lower, Unconfined	MW-3A	26.5	Oct-04	None	N/A	No recent detections
Lower, Unconfined	MW-4A	17	Apr-13	None	N/A	Recent detections below ACLs
Lower, Unconfined	MW-9	21.5	Dec-18	Every 2 years	VOCs, Geo, Rem	Above ACL for VC, historically sampled for Geo; MW-39, MW-9, and MW-40 form a transect from source area to river
Lower, Unconfined	MW-10	16.5	May-12	None	N/A	Recent detections below ACLs and GCLs
Lower, Unconfined	MW-19	16	Oct-10	Every 2 years	VOCs	Below ACLs, Above GCLs, last sampled in 2010, should sample again to confirm
Lower, Unconfined	MW-26	12	Oct-16	Every 2 years	VOCs	Below ACLs, above GCLs, periodic sampling to confirm
Lower, Unconfined	MW-39	22	Dec-18	Every 2 years	VOCs	VC consistently above ACL; MW-39, MW-9, and MW-40 form a transect from source area to river
Lower, Unconfined	MW-40	22	Dec-18	Every 2 years	VOCs, Geo, Rem	VC above ACL; historically sampled for Geo; MW-39, MW-9, and MW-40 form a transect from source area to river
Near-River Sentry	MW-5	12	Apr-13	Annual	VOCs	Recent detections below ACL and WQS, last sampled in 2012, should sample in 2019 to confirm
Near-River Sentry	MW-6/6A	11	Dec-18	Annual	VOCs, Geo	Above on-site ACL and modeled/eco off-site ACLs for VC
Near-River Sentry	MW-7	10	Dec-18	Annual	VOCs, Geo	Above modeled off-site PCE ACL and on-site VC ACL
Near-River Sentry	MW-8	12.5	May-12	Annual	VOCs	Above GCLs, located on perceived outer edge of flow path from source area
Near-River Sentry	MW-12	8	Dec-18	None	N/A	Vinyl chloride slightly above GCL
Near-River Sentry	MW-20	12	Apr-13	None	N/A	Last results in 2013 below ACLs, should sample in 2019 to confirm
Near-River Sentry	MW-35	7	Dec-18	Annual	VOCs	Above GCLs, located on perceived outer edge of flow path from source area
Pore Water	SD-009 off MW-7	N/A	May-13	If near-river sentry wells exceed modeled/eco off-site ACLs	VOCs	TCE, cDCE, tDCE, VC detected in 2013; downgradient coverage between source area and river
Pore Water	SD-040 off MW-20	N/A	May-13		VOCs	VC close to WQS, downgradient coverage between source area and river
Pore Water	SD-041 off MW-6	N/A	May-13		VOCs	VC above WQS, downgradient coverage between source area and river

* The recommended sampling frequency and sample suite will be updated as new sample results are received and evaluated.

ACL = Alternative Cleanup Level according to the 2000 Site Record of Decision

cDCE = cis-1,2-Dichloroethene

GCL = Groundwater Cleanup Level according to 18 AAC 75

Geo = Geochemical Parameters (total and dissolved iron and manganese, total organic carbon, dissolved gases)

N/A = Not Applicable

Rem = Remedial Parameters (volatile fatty acids, Dehalococcoides mccartyi populations, chlorinated ethene-degrading functional genes)

TCE = Trichloroethene

tDCE = trans-1,2-dichloroethene

U = Unavailable

VC = Vinyl Chloride

VOCs = Volatile Organic Compounds

WQS = Water Quality Standard according to 18 AAC 70

(This Page Intentionally Left Blank)