



SUBMITTED TO:
Alaska Department of
Environmental Conservation
610 University Avenue
Fairbanks, AK 99709



BY:
Shannon & Wilson, Inc.
2355 Hill Road
Fairbanks, AK 99709

(907) 479-0600
www.shannonwilson.com

FINAL

2020 GROUNDWATER INVESTIGATION
Six Mile Richardson Highway
NORTH POLE, ALASKA



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Submitted To: Alaska Department of Environmental Conservation
610 University Avenue
Fairbanks, AK 99709
Attn: Janice Wiegers

Subject: FINAL 2020 GROUNDWATER INVESTIGATION, SIX MILE RICHARDSON
HIGHWAY, NORTH POLE, ALASKA

Shannon & Wilson prepared this report as specified in our approved work plan dated January 7, 2020, and Alaska Department of Environmental Conservation (DEC) Notice to Proceed Number 200000195, dated September 3, 2019.

We appreciate the opportunity to be of service to you on this project. If you have questions concerning this report, or we may be of further service, please contact us.

Sincerely,

SHANNON & WILSON, INC.

This report was prepared and reviewed by:

Sheila Hinckley
Senior Environmental Scientist
Role: Project Manager

Mark Lockwood
Senior Associate, C.P.G
Role: Principle in Charge

AEF:SMH/msl

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ACRONYMS

bgs	below ground surface
COC	chain of custody
COV	coefficient of variation
CS	Contaminated Sites
CSM	conceptual site model
CUL	cleanup level
°C	degrees Celsius
DEC	Department of Environmental Conservation
DL	detection limit
FNSB	Fairbanks North Star Borough
LCS/LCSD	laboratory control sample/ laboratory control sample duplicate
LDRC	laboratory data review checklist
LOD	limit of detection
LOQ	limit of quantitation
MS/MSD	matrix spike/ matrix spike duplicate
µg/L	micrograms per liter
MAROS	Monitoring and Remediation Optimization System
QA/QC	quality assurance/quality control
RL	reporting limit
RPD	relative percent difference
SGS	SGS Environmental Services, Inc.
TCE	trichloroethane
VOC	volatile organic compound
Work Plan	<i>Six Mile Richardson Highway Groundwater Investigation Work Plan</i> (January 7, 2020)

1 INTRODUCTION

This report presents the results of groundwater investigation activities in North Pole, Alaska. The site was listed on the Alaska Department of Environmental Conservation (DEC) Contaminated Sites (CS) Database (DEC File No.100.38.112) after a trichloroethane (TCE) groundwater contaminant plume was discovered in the Six Mile Richardson Highway area in the early 1990s (Figure 1).

We conducted this work in general accordance with our *Six Mile Richardson Highway Groundwater Investigation Work Plan* (Work Plan), approved by DEC on January 7, 2020, and the DEC's October 2019 *Field Sampling Guidance*.

1.1 Project Purpose and Goals

The project purpose is to obtain current information on groundwater conditions at the site to determine if further monitoring and/or corrective actions may be necessary. Our goals were to sample select existing monitoring wells and use the information to assess local temporal trends in TCE attenuation.

1.2 Study Boundaries

The study boundary includes areas upgradient, downgradient, and encompassing the 2017 2.8 microgram per liter ($\mu\text{g/L}$) TCE plume (Figure 2).

1.3 Site Description

The Six Mile Richardson Highway TCE groundwater plume originates from several source areas and merges to form an area-wide plume. When discovered in 1995, the plume measured slightly over one mile long, up to 1,200 feet wide, and more than 100 feet deep. The site is located off the Richardson Highway near milepost 365, southeast of Fairbanks, Alaska (latitude 64.8026° north, longitude -147.5592° west).

The groundwater plume originates near Milepost 356 on the south side of the Richardson Highway and extends in a northwesterly direction across the highway to the Six Mile Village Subdivision. The plume area encompasses commercial properties and residential properties, including the Six Mile residential subdivision. The area is not served by public water or sewer service. Most businesses and residences have water wells and on-site wastewater treatment (septic tanks and leach fields). The magnitude and direction of the area's groundwater gradient shows little seasonal variability and its flow direction is generally to the northwest.

2 BACKGROUND

Shannon & Wilson's earliest work on the Six Mile Richardson Highway project began in 1988, to conduct assessments of potential source areas and groundwater modeling for remedial alternatives at the suspected source-area site. We have been evaluating the extent and behavior of the plume, sources areas, and regional and local trends in TCE attenuation since that time.

Following an intensive private-well search and sampling effort, public outreach, and initial plume-delineation effort, DEC initiated a long-term groundwater monitoring program in 1996 and included the annual sampling of private water wells and groundwater-monitoring wells through 2017. Between 1996-2017, the DEC provided and maintained water-treatment systems for residents with impacted private water wells. The DEC released new groundwater cleanup levels (CULs) in November 2016 and TCE was lowered from 5 µg/L to 2.8 µg/L. This updated concentration for TCE is used as the threshold for continued private well sampling and/or treatment system maintenance in the Six Mile plume area.

We performed several vapor intrusion investigations from 2011 through 2015 at residences and commercial properties within and downgradient of the plume. The vapor intrusion investigations focused on permanent buildings within 100 feet of the TCE contaminant plume.

We have conducted several interrelated investigations to assess risks to residential receptors and evaluate appropriate remedial measures including calculating cumulative risks at wells where multiple contaminants were present. Although we recognize vapor intrusion is not part of this scope of services, our 2015 *Soil-Gas Sampling Report* (revised submittal dated March 23, 2018) indicated a need for follow-up sampling at five locations where the most recent results exceeded residential or commercial target levels.

Groundwater results from a sampling event conducted in 2017 indicated TCE remained at detectable concentrations in all monitoring wells sampled, however over half of the wells in the monitoring network showed TCE concentrations were either decreasing or had no temporal trend.

3 FIELD ACTIVITIES

Our scope of services included assessing the condition of monitoring wells in the well network and making repairs as necessary, decommissioning one well (MW-8), and sampling the remaining wells for volatile organic compounds (VOCs). Shannon & Wilson

performed the well-condition assessment May 1-5, 2020, the well decommissioning on May 6, 2020, and monitoring-well sampling May 19-22, 2020.

We performed our field activities in general accordance with our *Work Plan* with the exception of deviations described in Section 4. The locations of monitoring wells sampled are presented in Figure 2; this figure also depicts TCE results for all sampled wells as well as results of other VOCs that exceeded their respective DEC CULs. Field notes and sampling logs are presented in Appendix B.

3.1 Monitoring Well Assessment and Repair

On May 1 and 5, 2020, Craig Beebe of the Shannon & Wilson Fairbanks office assessed the condition of twenty-five monitoring wells in the TCE plume. The integrity and condition of the well monuments and casings were observed to be good. We measured groundwater levels, total well depths, top-of-casing to ground surfaces, and checked for operational well locks. Damaged well plugs and locks were replaced during the assessment. The total well depths at monitoring well MW-5, MW-18, MW-19, and MW-32 measured greater than a one-foot difference from the expected total well depths, indicating sediment buildup or frost-jacking.

Prior to sampling, we redeveloped the abovementioned monitoring wells using an air diaphragm pump and surge block until we visually observed clear water in the wells (Appendix A, Photo 4). We observed clear development purge water at MW-19 and MW-32 indicating no need for further development. The purging rate at MW-32 during redevelopment activities exceeded the recharge rate of the well.

3.2 Monitoring Well Decommissioning

On May 6, 2020, we observed the decommissioning of monitoring well MW-8. We subcontracted GeoTek Alaska, Inc. to decommission the well. The 80-foot deep stick-up well MW-8 was constructed of a two-inch Schedule 40 PVC casing with a bottom cap, a 10-foot screen, and a 5-foot steel monument. Decommissioning activities were completed using a GeoProbe 6620 DT. We removed the steel monument then withdrew the well-casing/screen assembly of MW-8 from the ground which caused the hole to slough in to approximately 7.5 feet below ground surface (bgs). We backfilled the remainder of the borehole with bentonite chips to about 1-foot bgs followed by sand to the ground surface. The well casing was disposed of at the Fairbanks North Star Borough (FNSB) Solid Waste Facility.

We originally planned to decommission monitoring well MW-9; however, we could not locate the well; we believed the well was previously decommissioned. See Section 4 for deviations from the Work Plan.

3.3 Groundwater Sampling

We sampled 24 of the 29 existing monitoring wells in the Six Mile Richardson Highway area on May 19 through May 22, 2020. We collected twenty-seven groundwater samples in total, including field-duplicate samples at monitoring wells MW-35 and MW-17, and an equipment blank sample at monitoring well MW-32. Monitoring well sample locations are presented in Figure 2.

We measured depths to groundwater to a precision of 0.01 foot from the top of the well casings in each of the monitoring wells prior to sampling. We purged water from the wells using a battery-powered, portable stainless-steel submersible pump with new disposable tubing. Reusable sampling equipment was decontaminated prior to use and reuse at each monitoring well location.

Each well was purged at a rate of less than one gallon per minute, until a minimum of three well volumes were removed, or until water-quality parameters (temperature, conductivity, pH, dissolved oxygen, and oxidation/reduction potential) stabilized over three consecutive readings prior to sample collection. We measured water-quality parameters in the field using a YSI Professional Plus multiparameter, calibrated according to the manufacturers' instructions. We reduced the pump-flow rate to allow collection of water samples for VOC analysis into appropriate laboratory-prepared containers; we collected duplicate VOC samples for QA purposes immediately after filling the sample container for the primary sample. Field parameters are presented in Table 1 as recorded on our field logs, included in Appendix B.

3.4 Investigation Derived Waste Management

For locations where historical detections of TCE were less than the CUL of 2.8 µg/L and where trends were not increasing, we purged directly to the ground surface near the monitoring well without treatment of activated carbon absorption. We collected purge and rinse water from the remaining wells for treatment by granular activated carbon and discharge to the ground surface. Development purge water from MW-18 was drummed and held onsite in a 55-gallon drum until receipt of analytical results, which were less than DEC CULs; we subsequently discharged this water to the ground surface near the well. Other investigative derived waste such as nitrile gloves and pump tubing were disposed of at the FNSB landfill.

4 DEVIATIONS FROM THE WORK PLAN

Field activities for the May 2020 sampling event were conducted in accordance with the DEC approved Work Plan with the following exceptions:

- MW-8 was decommissioned instead of MW-9.
 - We were unable to locate MW-9 during the monitoring well assessment and according to the fleet manager of the onsite business, MW-9 was not discovered during the placement of a gravel pad in 2016, by the onsite business. It is assumed MW-9 was previously decommissioned some time prior to 2016 and mislabeled as the nearby well MW-8.
- Samples were analyzed by the most updated method Environmental Protection Agency 8260D instead of 8260C as presented in the Work Plan.

In our opinion, the above listed deviations have no effect on data quality or usability.

5 RESULTS

The SGS Environmental Services, Inc. (SGS) laboratory report and corresponding DEC laboratory data review checklist (LDRC) are provided in Appendix E. A QC and QA assessment of analytical results is presented in Appendix F.

The May 2020 analytical results are summarized in Table 2. Figure 2 depicts TCE results for all sampled wells and includes results of other VOCs exceeding their respective DEC CULs. A summary of historical detections for existing monitoring wells in the Six Mile Richardson Highway groundwater-monitoring network is presented in Table 3.

5.1 Data Quality Summary

Shannon & Wilson performed a QA/QC assessment of our sampling procedures and the laboratory report; this assessment is presented in Appendix F. By conducting our field activities in general accordance with our standard QA/QC procedures and the Work Plan, we consider the samples we collected representative of site conditions at the locations and times they were obtained. Based on our QA review, no datum was rejected as unusable due to QC failures, and our completeness goal of obtaining 85-percent useable data was met.

Our QA assessment in Appendix F identifies analytical results that were qualified due to QC failures reported by the laboratory. In our opinion, the data produced by SGS for this project are suitable for characterizing groundwater water quality at the locations sampled, with qualifications applied by Shannon & Wilson due to data affected by QC failures.

5.2 Analytical Summary

Six VOCs were detected in one or more project samples from the current sampling event (Table 2) and are overall consistent with historical results (Table 3). Analytical results do not exceed DEC CULs with the following exceptions:

- TCE from monitoring wells MW-17 and MW-19; and
- cis-1,2-dichloroethene from monitoring well MW-32.

The reported laboratory limits of detection (LODs) for the requested analytes were within sensitivity requirements with the exception of 1,2,3-trichloropropane.

We cannot assess whether this non-detect analyte is present at concentrations below the LOD but greater than the DEC CUL. Non-detect results where LODs exceed the DEC CUL is displayed in Table 2 in “**Bold**”.

5.3 TCE Distribution and Concentration Trends

We assessed the historical data sets at each 2020 sample location to evaluate temporal trends of TCE concentrations with time. We performed the assessment using the Mann-Kendall nonparametric trend analysis (as described in R.O. Gilbert, 1987, *Statistical Methods for Environmental Pollution Monitoring*, John Wiley & Sons, Inc., New York). A concentration trend was considered to be significantly increasing or decreasing if the probability of a false positive test was lower than 5 percent (i.e., p-value less than 0.05).

We evaluated concentration trends for TCE in groundwater samples using the Mann-Kendall statistical analysis in conjunction with a strategy employed by the Monitoring and Remediation Optimization System (MAROS) software developed by the Air Force Center for Engineering and the Environment. MAROS evaluation of concentration trends depend on the result of a Mann-Kendall trend analysis, coupled with information about the data set’s coefficient of variation (COV). The COV is defined as the ratio of a data set’s standard deviation to its mean. COV values less than or near one indicate that data form a relatively close group around the mean value; values larger than one indicate data exhibit a greater degree of scatter around the mean.

A statistically significant increasing or decreasing trend is identified by the Mann-Kendall analysis if the probability of a false-negative assessment is less than 5 percent (i.e., $p < 0.05$); MAROS refers to this condition as a “confidence in trend” above 95 percent. MAROS discriminates between “no trend” and a “stable” contaminant concentration by evaluating the COV of a given well’s data set. The MAROS decision matrix is presented in Exhibit 5-1.

Exhibit 5-1: MAROS Evaluation of Trends

Mann-Kendall Statistic	Confidence in Trend	Concentration Trend
$S > 0$	> 95 percent	Increasing
$S > 0$	90 - 95 percent	Probably Increasing
$S > 0$	< 90 percent	No Trend
$S \leq 0$	< 90 percent and $COV \geq 1$	No Trend
$S \leq 0$	< 90 percent and $COV < 1$	Stable
$S < 0$	90 - 95 percent	Probably Decreasing
$S < 0$	< 95 percent	Decreasing

The standard practice for this statistical analysis is to assign one value to all results below the reporting limit (RL), as long as it is below the lowest RL. For these statistical analyses, results below the RL were represented numerically by a value equal to the lowest analytical detection limit for each well’s data set. This approach is used for consistency with standard practice and to avoid erroneous identification of trends related to variations in the historical limits of detection.

TCE exhibits decreasing temporal trends at each monitoring well assessed in 2020, with the following exceptions:

- No trend is observed at monitoring well MW-38;
- Stable trends are observed at monitoring wells MW-15A, MW-29, and MW-39; and
- A probably decreasing trend is observed at MW-13.

TCE trends are presented in Table 4, alongside each well's most recent TCE concentration. Appendix D presents the input file generated by the software for performing the Mann-Kendall test and calculating the COV.

6 UPDATED CONCEPTUAL SITE MODEL

We previously completed a human-health conceptual site model (CSM) in 2006. In our CSM, we identified surface soil, subsurface soil, surface water, groundwater, and air as potentially affected media, either directly by the release or as a secondary source of exposure.

Based on our 2020 data, we have updated the CSM and included both the *Human Health Conceptual Site Model Scoping Form and Standardized Graphic* (Appendix C). The following is a summary of the updated CSM and the potential exposure media, transport mechanisms,

exposure pathways, and receptors it describes. Based on data collected during our 2020 groundwater monitoring activities, we did not identify additional exposure pathways.

6.1 Description of Potential Receptors

We consider residents, commercial/industrial workers, site visitors/trespassers, and construction workers to be current and future potential receptors. We also consider residents and workers at nearby properties with drinking water wells to be potential receptors. We do not consider farmers, or subsistence harvesters and consumers to be potential receptors at present.

6.2 Potential Exposure Pathways

Potential human exposure pathways include direct contact with contaminated soil, groundwater, or air; incidental soil or groundwater ingestion; dermal absorption of contaminants in groundwater; inhalation of volatile compounds in tap water; and inhalation of indoor and outdoor air.

6.3 Direct Contact with Soil

Soil ingestion is a potential direct-contact exposure pathway, as contaminants in surface soil (0 feet to 2 feet bgs) and/or subsurface soil (2 feet to 15 feet bgs) have been present at the site. Direct contact with potentially contaminated soil at the site via current or future excavation may result in ingestion of soil by residents, commercial workers, site visitors, trespassers, or construction workers.

6.4 Direct Contact with Groundwater

Dermal absorption and ingestion are potential direct-contact exposure pathways for groundwater. Commercial workers, site visitors, trespassers, or construction workers may be exposed to contaminated groundwater through dermal absorption or incidental ingestion during future excavation and construction projects. Additionally, private drinking water wells is a direct exposure pathway for groundwater.

6.5 Inhalation

Nearby commercial buildings and residences are located within 100 feet of the Six Mile plume and may potentially be at risk of vapor intrusion, based on previous vapor intrusion investigations resulting in contaminants of potential concern detections at levels greater than DEC target residential/commercial levels. In addition to potential exposure to indoor air, subsurface soil may be excavated and brought to the surface, potentially exposing receptors to volatile contaminants in outdoor air.

7 DISCUSSION

The 2020 sampling event provided additional long-term groundwater-monitoring data for monitoring wells in the Six Mile area. Analytical results for the current sampling event are overall consistent with historical data and are presented in Table 2 and Table 3, respectively.

A QA/QC review of the analytical results indicated a few instances where sensitivity, accuracy, and precision requirements were not met and affected the data quality. These data are considered usable with qualifications to the analytical results as defined in Appendix F. The overall data quality and usability are sufficient for reporting purposes.

Analytical results for the current sampling event are less than DEC CULs, with the exceptions listed below and discussed in Section 5.2:

- TCE was detected at concentrations exceeding its CUL in monitoring wells MW-17 and MW-19, both of which are located towards the upgradient end of the TCE plume.
- cis-1,2-dichloroethene was detected at a concentration exceeding its CUL in monitoring well MW-32, located near the upgradient limit of the TCE plume.

Since 1996, the TCE concentration at MW-17 has varied between 66 µg/L and 6.05 µg/L while the TCE concentration at MW-19 has varied between 12.7 µg/L and 2.87 µg/L. Since 2001, cis-1,2-dichloroethene has exceeded DEC CULs at MW-32, with a maximum concentration of 99.9 µg/L in 2009 and has been decreasing since. No other analytes were detected in exceedance of regulatory limits.

For the 23 wells where temporal trends could be assessed, our analysis showed TCE concentrations are stable, decreasing, or probably decreasing.

7.1 Recommendations

Our 2020 analytical results indicate TCE contamination remains near the southern limits of the TCE plume. Potential exposures to TCE is present downgradient from the likely TCE source areas via consumption of groundwater, as noted in previous reports. Based on the 2020 analytical results and overall project understanding, we recommend the following:

- Continued sampling efforts at MW-17, MW-19, and MW-32, until DEC CULs are reached;
- Reevaluate vapor intrusion sampling at locations where the most recent results exceeded residential or commercial target levels, as mentioned in Section 2;
- Decommission the upgradient monitoring well MW-23;

- Perform a regression analysis on all remaining monitoring wells to assess decay rates; and
- Redefine the TCE plume limits.

We additionally recommend the following as part of a monitoring well network and schedule, subsequent to the abovementioned recommended activities:

- Sample monitoring well clusters associated with the three wells listed above currently exceeding DEC CUL once every two years (MW-31, MW-32, MW-17, MW-27, MW-19, MW-20, MW-106, MW-107, and MW-108);
- Retain four downgradient and cross gradient monitoring well clusters (eight monitoring wells) for potential future sampling if contaminants in the monitoring wells listed above are shown to be increasing; and
- Decommission six monitoring well clusters (12 monitoring wells), where trends are decreasing and TCE has not been detected or not exceeded DEC CULs for several years if at all.

Table 5 presents our proposed monitoring well network and sampling schedule. Monitoring wells are presented in Table 5 by cluster in geographical order from the southern boundary of the TCE plume, to the farthest downgradient.

8 CLOSURE

This data report was prepared for the exclusive use of the DEC, in accordance with our scope of services. No other parties may rely upon our reports. The contents of this report should not be considered a warranty of site surface water conditions. We do not guarantee that regulatory agencies will reach the same conclusions as Shannon & Wilson.

Our observations and results are specific to locations, depths, and times noted in our field forms and are not a guarantee or warranty of conditions present at all areas of the site. No amount of sampling can precisely predict the characteristics, quality, or distribution of site conditions. Potential variation includes, but is not limited to:

- the passage of time or intervening causes (natural or manmade) that may result in changes to site conditions; and
- the concentrations of contaminants may change at any sampled or unsampled location in response to natural conditions, chemical reactions, and/or other events.

This report should not be used without our approval if any of the following occurs:

- Conditions change due to natural forces or human activity at or adjacent to the site.

- Assumptions stated in this report have changed.
- Project details change or new information becomes available that may affect our analyses, recommendations, or conclusions.
- Regulations or laws change such that our analyses, recommendations, or conclusions are affected.

If any of these occur, we should be retained to review the applicability of our analyses, recommendations, or conclusions. If conditions different from those described herein are encountered during the next sampling event, we will review these conditions and reconsider our recommendations and conclusions.

We conducted our services in a manner consistent with the level of care and skill ordinarily exercised by members of the environmental profession currently practicing in Alaska and under similar conditions as this project. We have prepared the document included at the end of this report Important Information about Your Environmental Report to assist you and others in understanding the use and limitations of this report.

Copies of documents that may be relied upon by our client are limited to the printed copies (also known as hard copies) signed or sealed by Shannon & Wilson. Text, data, or graphics files in electronic media format are furnished solely for the convenience of our client. Any conclusion or information obtained or derived from such electronic files shall be at the user's sole risk. If there is a discrepancy between the electronic files and the hard copies, the hard copies govern.

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When transferring documents in electronic media format, Shannon & Wilson does not make any representations as to long-term compatibility, usability, or readability of documents resulting from the use of software application packages, operating systems, or computer hardware differing from those used for the document's creation.

9 REFERENCES

- Alaska Administrative Code 18 AAC 75 Oil and Other Hazardous Substances Pollution Control, October 2018.
- Alaska Department of Environmental Conservation, Monitoring Well Guidance, September 2013.
- Alaska Department of Environmental Conservation, Site Characterization Work Plan and Reporting Guidance for Investigation of Contaminated Sites, March 7, 2017.
- Alaska Department of Environmental Conservation Field Sampling Guidance, October 2019.
- Alaska Department of Environmental Conservation, Minimum Quality Assurance Requirements for Sample Handling, Reports, and Laboratory Data, October 2019.
- Alaska Department of Environmental Conservation, Guidance on Developing Conceptual Site Models, January 2017.
- Environmental Protection Agency, On-line Tools for Site Assessment Calculation, available at: <https://www3.epa.gov/ceampubl/learn2model/part-two/onsite/gradient4plus-ns.html>
- Monitoring and Remediation Optimization System (MAROS) Software, HQ Air Force Center for Environmental Excellence, available at: <https://www.gsinet.com/en/software/free-software/monitoring-and-remediation-optimizationsystems-maros-version-3-0.html>
- Richard O. Gilbert, 1987, Statistical Methods for Environmental Pollution Monitoring, available at: www.swrcb.ca.gov › water_issues › programs › tmdl › docs
- Shannon & Wilson, Inc. Six Mile Richardson Highway Groundwater Investigation Work Plan, January 2020.

Table 1 - May 2020 Field Parameters

Sample Date	Monitoring Well	Well Type	Expected TWD † (ft)	Screen Length (ft)	2020 TWD (ft)	DTW from TOC (ft)	Groundwater-Quality Parameters						Purge Water Disposal	Well Location	Notes
							Temperature (°C)	DO (mg/L)	Conductivity (µS/cm)	pH (s.u.)	ORP (mV)	Clarity (visual)			
5/21/2020	MW-4	Stickup	76.59	10	75.57	7.49	4.0	0.36	212.2	7.43	-3.7	Clear	Ground	1491 Richardson	Good
5/21/2020	MW-5	Stickup	25.67	10	25.50	7.98	3.0	0.66	240.2	7.22	-53.7	Clear	Ground	1491 Richardson	Redeveloped and cut casing (0.28 feet).
—	MW-8	Stickup	80	10	80	—	—	—	—	—	—	—	—	1569 Davision St	decommissioned
5/20/2020	MW-13	Flushmount	48.90	10	48.90	5.45	3.4	0.17	324.8	7.15	-40.8	Clear	Ground	NW of 1366 Sloan (ROW)	Well thawed with 0.2 gallons of DI water
5/20/2020	MW-14	Flushmount	30	10	28.57	5.83	2.8	0.07	325.4	7.20	-35.3	Clear	GAC to Ground	NW of 1366 Sloan (ROW)	Well thawed with 0.2 gallons of DI water
5/20/2020	MW-15A	Stickup	77.10	5	76.89	6.32	4.2	0.19	210.7	7.42	-25.7	Clear	GAC to Ground	1430 Richardson	Good
5/20/2020	MW-16A	Stickup	23.40	10	23.25	6.40	3.1	0.15	243.3	7.33	-83.6	Clear	GAC to Ground	1430 Richardson	Good
5/21/2020	MW-17	Stickup	29.29	10	29.27	7.81	4.1	0.08	233.8	7.39	-96.5	Clear	GAC to Ground	1455 Richardson	Good
5/21/2020	MW-18	Stickup	29.50	10	26.31	8.44	3.5	9.33	223.7	7.36	-76.6	Clear	Drummed to Ground	1517 Lu Anne	Redeveloped
5/21/2020	MW-19	Stickup	82.98	10	81.95	9.93	4.2	0.12	211.4	7.50	-97.5	Clear	GAC to Ground	1455 Richardson	*Redeveloped
5/20/2020	MW-26	Stickup	32.81	10	32.75	9.25	3.5	0.10	276.8	7.24	-93.4	Clear	Ground	1455 Richardson	Good
5/21/2020	MW-27	Stickup	72.15	10	72.15	7.91	4.2	0.12	206.7	7.51	-66.5	Clear	Ground	1455 Richardson	Good
5/20/2020	MW-29	Stickup	72.13	10	72.75	8.91	4.3	0.10	211.6	7.49	-79.0	Clear	Ground	1455 Richardson	Good
5/20/2020	MW-30	Stickup	31.87	10	32.65	9.20	4.1	0.19	249.5	7.35	-83.8	Clear	GAC to Ground	1455 Richardson	Good
5/22/2020	MW-31	Stickup	71.15	10	71.70	9.91	4.6	0.31	208.1	7.44	-30.0	Clear	GAC to Ground	1491 Richardson	Good
5/22/2020	MW-32	Stickup	21.69	10	19.72	9.12	3.4	0.60	266.2	7.00	-43.4	Clear	GAC to Ground	1491 Richardson	*Redeveloped. Slow recharge well.
5/19/2020	MW-34	Flushmount	78.10	10	77.7	3.65	3.5	0.21	223.5	7.36	-80.1	Clear	GAC to Ground	1410 Richardson	Good
5/19/2020	MW-35	Flushmount	38.30	10	38.19	3.70	3.4	0.22	239.4	7.32	-67.3	Clear	GAC to Ground	1410 Richardson	Good
5/19/2020	MW-38	Stickup	39.15	10	39.18	6.86	3.0	0.15	254.7	7.21	-65.8	Clear	GAC to Ground	1335 Smithson (vacant)	Good
5/19/2020	MW-39	Stickup	27.95	10	27.57	6.38	2.1	0.12	252.9	7.23	-81.8	Clear	Ground	1335 Smithson (vacant)	Good
5/19/2020	MW-103	Stickup	12.90	5	12.81	7.65	2.2	3.72	289.4	6.78	98.6	Clear	Ground	869 Conley	Good
5/19/2020	MW-104	Stickup	22.86	5	22.73	7.22	2.4	0.10	292.5	7.23	-85.6	Clear	Ground	869 Conley	Good
5/19/2020	MW-105	Stickup	32.86	10	32.76	7.21	3.3	0.15	233.4	7.26	-63.6	Clear	Ground	869 Conley	Good
5/19/2020	MW-107	Flushmount	33.81	5	33.75	3.52	2.9	0.10	232.3	7.26	-41.7	Clear	Ground	1366 Sloan	Good
5/19/2020	MW-108	Flushmount	42.64	5	42.62	3.35	3.2	0.21	228.2	7.27	-24.7	Clear	Ground	1366 Sloan	Good

NOTES: Three consecutive readings for at least 5 of the 6 above listed water quality parameters were within stabilization criteria prior to sample collection.
 † Expected TWD obtained from most recent Monitoring Well Sampling Log prior to 2020.
 * Redevelopment attempted at locations with <1.0 foot difference between Expected TWD and 2020 Well Inspection TWD. Redevelopment not required. See field logs for further details.
 — not applicable

°C = degrees Celsius; DO = dissolved oxygen; DTW = depth to water; ft = feet; µS/cm = microSiemens per centimeter; mg/L = milligram per liter; mV = millivolt; ORP = oxidation-reduction potential; s.u. = standard units; TOC = top of casing; TWD = total well depth

Table 2 - 2020 Groundwater Monitoring Event Summary

Analyte	Cleanup	Units	MW-4	MW-5	MW-13	MW-14	MW-15A	MW-16A	MW-17	MW-117†	MW-18	MW-19	MW-26	MW-27	MW-29	MW-30	MW-31	MW-32	MW-34	MW-35	MW-135†	MW-38	MW-39	MW-103	MW-104	MW-105	MW-107	MW-108
	Level																											
cis-1,2-Dichloroethene	36	µg/L	<0.500	1.67	0.865 J	0.879 J	0.522 J	0.736 J	4.18	4.12	2.94	0.731 J	5.55	<0.500	<0.500	0.792 J	0.314 J	43.3	0.865 J	0.805 J	0.816 J	0.534 J	0.603 J	0.318 J	0.758 J	0.404 J	0.711 J	0.606 J
cis-1,3-Dichloropropene	4.7	µg/L	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250
Dibromochloromethane	8.7	µg/L	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250
Dibromomethane	8.3	µg/L	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
Dichlorodifluoromethane	200	µg/L	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
Ethylbenzene	15	µg/L	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
Hexachlorobutadiene	1.4	µg/L	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
Isopropylbenzene	450	µg/L	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
Methylene chloride	110	µg/L	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00
Methyl-t-butyl ether	140	µg/L	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00
Naphthalene	1.7	µg/L	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
n-Butylbenzene	1,000	µg/L	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
n-Propylbenzene	660	µg/L	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
o-Xylene	190	µg/L	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
P & M -Xylene	190	µg/L	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
p-Isopropyltoluene	—	µg/L	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
sec-Butylbenzene	2,000	µg/L	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
Styrene	1,200	µg/L	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
tert-Butylbenzene	690	µg/L	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
Tetrachloroethene	41	µg/L	<0.500	<0.500	<0.500	<0.500	0.319 J	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	0.346 J	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
Toluene	1,100	µg/L	<0.500	<0.500	<0.500	<0.500	<1.00 B*	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<1.00 B*	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
Total Xylenes	190	µg/L	<1.50	<1.50	<1.50	<1.50	<1.50	<1.50	<1.50	<1.50	<1.50	<1.50	<1.50	<1.50	<1.50	<1.50	<1.50	<1.50	<1.50	<1.50	<1.50	<1.50	<1.50	<1.50	<1.50	<1.50	<1.50	<1.50
trans-1,2-Dichloroethene	360	µg/L	<0.500	3.67	1.54	1.64	<0.500	0.613 J	2.36	2.38	2.32	0.455 J	4.99	0.339 J	<0.500	1.04	<0.500	2.44	1.56	0.703 J	0.717 J	0.640 J	0.801 J	<0.500	1.17	0.500 J	0.915 J	0.586 J
trans-1,3-Dichloropropene	4.7	µg/L	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
Trichloroethene	2.8	µg/L	0.660 J	1.33	0.473 J	0.507 J	1.86	2.49	6.00	6.05	1.30	2.87	1.98	0.840 J	0.509 J	1.92	1.94	2.04	0.496 J	2.44	2.43	0.899 J	0.781 J	0.381 J	0.674 J	1.02	1.76	2.02
Trichlorofluoromethane	5,200	µg/L	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
Trichlorotrifluoroethane	10,000	µg/L	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00
Vinyl acetate	410	µg/L	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00
Vinyl chloride	0.19	µg/L	<0.0750	<0.0750	<0.0750	<0.0750	<0.0750	<0.0750	<0.0750	<0.0750	<0.0750	<0.0750	<0.0750	<0.0750	<0.0750	<0.0750	<0.0750	<0.0750	<0.0750	<0.0750	<0.0750	<0.0750	<0.0750	<0.0750	<0.0750	<0.0750	<0.0750	<0.0750

NOTES:

- Results reported from SGS North America, Inc. work order 1209256, for VOCs by Method SW8260D
- MW-5 and MW-18 were redeveloped directly prior to sampling.
- Cleanup Level Alaska Department of Environmental Conservation (DEC) Cleanup Levels obtained from 18 AAC 75.341 Table C - Groundwater Cleanup Levels Table
- † Sample MW-117 is a field duplicate of MW-17 and sample MW-135 is a field duplicate of MW-35
- Not applicable; DEC groundwater-cleanup level not yet established
- < Analyte not detected; listed as less than the limit of detection (LOD) unless otherwise flagged due to quality-control failures.
- J Result is reported as an estimated concentration detected below the limit of quantitation (LOQ). Flag applied by the laboratory.
- B* Result is considered not detected due to potential bias identified in quality control samples. Flag applied by Shannon & Wilson, Inc. (*)
- <BOLD Reporting limit exceeds regulatory limit
- BOLD** Detected result exceeds DEC Groundwater Cleanup Level.

DEC = Alaska Department of Environmental Conservation; LOD = limit of detection; LOQ = limit of quantitation; µg/L = microgram per liter; VOC = volatile organic compound

Table 3 - Historical Summary of Groundwater Results (µg/L)

Analyte Type		Chlorinated Ethenes					Chlorinated Ethanes				Halomethanes				BTEX				VOCs		
Cleanup Level †		2.8	36	360	41	280	8,000	28	1.7	21,000	7.5	2.2	190	110	4.6	1,100	15	190	1.7	1,000	300
Monitoring Well	Sample Date	Trichloroethene (TCE)	cis-1,2-Dichloroethene (cDCE)	trans-1,2-Dichloroethene (tDCE)	Tetrachloroethene (PCE)	1,1-Dichloroethene (1,1-DCE)	1,1,1-Trichloroethane (TCA)	1,1-Dichloroethane (1,1-DCA)	1,2-Dichloroethane (1,2-DCA)	Chloroethane	Bromomethane	Chloroform	Chloromethane	Methylene Chloride (Dichloromethane)	Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene	n-Butylbenzene	1,2-Dichlorobenzene
		MW-4	12/20/1994	3.7	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50	<1.0	<0.50
8/12/1996	4.58		0.33	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<1.00	<1.00	<0.30	<0.50	<0.50	<0.20	<0.30	<0.20	<0.40	<0.20	<0.20	<0.20
11/22/1996	3.64		0.28	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<1.00	<1.00	<0.30	<0.50	<0.50	<0.20	<0.30	<0.20	<0.40	<0.20	<0.20	<0.20
11/22/1996(dup)	3.7		0.25	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<1.00	<1.00	<0.30	<0.50	<0.50	<0.20	<0.30	<0.20	<0.40	<0.20	<0.20	<0.20
3/13/1997	3.5		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50
7/28/1998	3.2		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50
8/23/1999	2.6		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.5 B	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50
8/25/2000	2.4		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	0.55	<0.50	<0.50
9/20/2001	2		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50
10/7/2004	1.57		<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<0.500	<1.00	<3.00	<1.00	<1.00	<5.00	<0.400	<1.00	<1.00	<3.00	<2.00	<1.00	<1.00
5/21/2020	0.660 J		<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.250	<0.500	<2.50	<0.500	<0.500	<5.00	<0.200	<0.500	<0.500	<1.50	<0.500	<0.500	<0.500
MW-5	12/20/1994	34 D	1.8	<0.50	<0.50	<0.50	3.6	0.83	<0.50	<0.50	<1.0	<0.50	<0.50	<1.0	0.71	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50
	8/12/1996	27.2	2.31	0.57	<0.20	0.22	2.25	0.73	<0.20	<1.00	<1.00	<0.30	<0.50	<0.50	0.66	<0.30	<0.20	<0.40	<0.20	<0.20	<0.20
	8/12/1996(dup)	27.2	2.43	0.58	<0.20	0.22	2.39	0.78	<0.20	<1.00	<1.00	<0.30	<0.50	<0.50	0.69	<0.30	<0.20	<0.40	<0.20	<0.20	<0.20
	11/22/1996	30.8	1.97	0.49	<0.20	<0.20	1.49	0.57	<0.20	<1.00	<1.00	<0.30	<0.50	<0.50	0.52 B	<0.30	<0.20	<0.40	<0.20	<0.50	<0.20
	3/13/1997	26	1.6	0.44 J	<0.50	<0.50	0.9	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.47 J	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50
	7/28/1998	23	1.8	0.52	<0.50	<0.50	0.96	0.93	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50
	8/12/1999	21	1.7	0.63	<0.50	<0.50	0.77	0.81	<0.50	<0.50	<0.50	<0.50	<0.50	0.66 B	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50
	8/12/1999(dup)	21	1.7	0.61	<0.50	<0.50	0.78	0.78	<0.50	<0.50	<0.50	<0.50	<0.50	2.2 B	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50
	8/29/2000	19	1.5	0.6	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50
	9/20/2001	17	1.7	0.77	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<0.50	<0.50	<0.50
	10/21/2003	14.2	1.59	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<1.00	<5.00	<0.400	<1.00	<1.00	<3.00	<2.00	<1.00	<1.00
	10/7/2004	11.9	1.64	1.27	<1.00	<1.00	<1.00	<1.00	<0.500	<1.00	<3.00	<1.00	<1.00	<5.00	<0.400	<1.00	<1.00	<3.00	<2.00	<1.00	<1.00
	4/27/2006	8.77	1.77	<1.00	<1.00	<1.00	<1.00	<1.00	<0.500	<1.00	<3.00	<1.00	<1.00	<5.00	<0.400	<1.00	<1.00	<3.00	<2.00	<1.00	<1.00
	2/20/2009	7.11	2.12	3.24	<1.00	<1.00	<1.00	<1.00	<0.500	<1.00	<3.00	<1.00	<1.00	<5.00	<0.400	<1.00	<1.00	<3.00	<2.00	<1.00	<1.00
	7/26/2011	4.73	2.28	4.05	<1.00	<1.00	<1.00	<1.00	<0.500	<1.00	<3.00	<1.00	<1.00	<5.00	<0.400	<1.00	<1.00	<3.00	<2.00	<1.00	<1.00
2/23/2017	1.53	2.05	4.41	0.979 J	<0.50	<0.50	<0.50	<0.25	<0.50	<2.5	<0.50	<0.5 J*	<2.5	<0.50	<0.20	<0.50	<1.5	<0.50	<0.50	<0.50	
2/23/2017(dup)	1.48	2.02	4.43	0.947 J	<0.50	<0.50	<0.50	<0.25	<0.50	<2.5	<0.50	<0.5 J*	<2.5	<0.50	<0.20	<0.50	<1.5	<0.50	<0.50	<0.50	
5/21/2020	1.33	1.67	3.67	<0.500	<0.500	<0.500	<0.500	<0.250	<0.500	<2.50	<0.500	<0.500	<5.00	<0.200	<0.500	<0.500	<1.50	<0.500	<0.500	<0.500	
MW-13	11/8/1995	1.7	0.61	<0.50	<0.50	<0.50	<0.50	0.95	<0.25	<0.50	<2.5	<0.50	<0.50	<2.5	31 D	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50
	8/19/1996	3.67	1.07	0.32	<0.20	<0.50	<0.50	1.71	<0.25	<0.50	<2.5	<0.50	<0.50	<2.5	63.3	<0.30	<0.50	<1.5	<0.50	<0.50	<0.50
	8/19/1996(dup)	3.84	1.1	0.31	<0.20	<0.50	<0.50	1.8	<0.25	<0.50	<2.5	<0.50	<0.50	<2.5	67.2	<0.30	<0.50	<1.5	<0.50	<0.50	<0.50
	11/19/1996	3.24	0.96	0.3	<0.20	<0.50	<0.50	1.7	<0.25	<0.50	<2.5	<0.50	<0.50	<2.5	57.6 B	<0.30	<0.50	<1.5	<0.50	<0.50	<0.50
	11/19/1996(dup)	3.55	1.08	0.31	<0.20	<0.50	<0.50	1.83	<0.25	<0.50	<2.5	<0.50	<0.50	<2.5	60.6 B	<0.30	<0.50	<1.5	<0.50	<0.50	<0.50
	5/15/1997	4.6	1.2	0.45 J	<0.50	<0.50	<0.50	2.3	<0.25	<0.50	<2.5	<0.50	<0.50	<2.5	43	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50
	10/11/1997	4.03	0.96 J	<1.0	<1.0	<0.50	<0.50	2.08	<0.25	<0.50	<2.5	<0.50	<1.0	<2.5	35.5	<1.0	<0.50	<1.5	<0.50	<0.50	<0.50
7/24/1998	4.2	1.1	<0.50	<0.50	<0.50	<0.50	2	<0.25	<0.50	<2.5	<0.50	<0.50	<2.5	15	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	

Table 3 - Historical Summary of Groundwater Results (µg/L)

Analyte Type		Chlorinated Ethenes					Chlorinated Ethanes				Halomethanes				BTEX				VOCs		
Cleanup Level †		2.8	36	360	41	280	8,000	28	1.7	21,000	7.5	2.2	190	110	4.6	1,100	15	190	1.7	1,000	300
Monitoring Well	Sample Date	Trichloroethene (TCE)	cis-1,2-Dichloroethene (cDCE)	trans-1,2-Dichloroethene (tDCE)	Tetrachloroethene (PCE)	1,1-Dichloroethene (1,1-DCE)	1,1,1-Trichloroethane (TCA)	1,1-Dichloroethane (1,1-DCA)	1,2-Dichloroethane (1,2-DCA)	Chloroethane	Bromomethane	Chloroform	Chloromethane	Methylene Chloride (Dichloromethane)	Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene	n-Butylbenzene	1,2-Dichlorobenzene
		MW-13 continued	8/13/1999	5.1	1.1	0.56	<0.50	<0.50	<0.50	1.9	<0.25	<0.50	<2.5	<0.50	<0.50	<2.5	4.9	<0.50	<0.50	<1.5	<0.50
9/8/2000	5.3		1.1	0.59	<0.50	<0.50	<0.50	1.9	<0.25	<0.50	<2.5	<0.50	<0.50	<2.5	2	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50
9/24/2001	5.6		1.3	0.77	<0.50	<0.50	<0.50	1.7	<0.25	<0.50	<2.5	<0.50	<0.50	<2.5	1.1	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50
9/26/2002	5.2		1.2	<1.0	<1.0	<0.50	<0.50	1.4	<0.25	<0.50	<2.5	<0.50	<1.0	<2.5	0.77	<1.0	<0.50	<1.5	<0.50	<0.50	<0.50
10/23/2003	5.52		1.25	1.09	<1.00	<0.50	<0.50	1.15	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	0.45	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
10/14/2004	5.19		1.15	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
10/14/2004(dup)	5.63		1.28	1	<1.00	<0.50	<0.50	1.01	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
4/13/2006	4.84		1	1.14	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
4/13/2006(dup)	5.18		1.05	1.25	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
8/20/2007	3.2		1.1	1.4	<1.0	<0.50	<0.50	0.48 J	<0.25	<0.50	<2.5	<0.50	<1.0	<2.5	<1.0	<1.0	<0.50	<1.5	<0.50	<0.50	<0.50
1/26/2009	3.08		1	1.4	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
7/28/2011	1.87		1.22	4.12	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
8/3/2012	1.72		1.07	1.89	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
10/16/2013	2.07		1.34	2.45	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
9/22/2014	1.1		0.990 J	1.73	<1.00	<0.50	<0.50	<0.500	<0.25	<0.50	<2.5	<0.50	0.520 J	<2.5	<0.200	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
9/22/2014(dup)	1.32	1.17	1.74	<1.00	<0.50	<0.50	<0.500	<0.25	<0.50	<2.5	<0.50	0.520 J	<2.5	<0.200	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50	
5/20/2020	0.473 J	0.865 J	1.54	<0.500	<0.500	<0.500	0.366 J	<0.250	<0.500	<2.50	<0.500	<0.500	<5.00	<0.200	<0.500	<0.500	<1.50	<0.500	<0.500	<0.500	
MW-14	11/8/1995	4.8	1.4	0.40 J	<0.50	<0.50	<0.50	2	<0.25	<0.50	<2.5	<0.50	<0.50	<2.5	110 D	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50
	8/19/1996	6.45	1.43	0.51	<0.20	<0.50	<0.50	2.37	<0.25	<0.50	<2.5	<0.50	<0.50	<2.5	99.7	<0.30	<0.50	<1.5	<0.50	<0.50	<0.50
	11/19/1996	6.69	1.39	0.53	<0.20	<0.50	<0.50	2.56	<0.25	<0.50	<2.5	<0.50	<0.50	<2.5	92.9 B	<0.30	<0.50	<1.5	<0.50	<0.50	<0.50
	5/15/1997	6.2	1.5	0.64	<0.50	<0.50	<0.50	2.6	<0.25	<0.50	<2.5	<0.50	<0.50	<2.5	48	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50
	10/11/1997	5.66	1.27	<1.0	<1.0	<0.50	<0.50	2.35	<0.25	<0.50	<2.5	<0.50	<1.0	<2.5	55.6	1.06	<0.50	<1.5	<0.50	<0.50	<0.50
	7/24/1998	6.4	1.4	0.66	<0.50	<0.50	<0.50	2.5	<0.25	<0.50	<2.5	<0.50	<0.50	<2.5	21	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50
	8/13/1999	6.2	1.3	0.7	<0.50	<0.50	<0.50	2.2	<0.25	<0.50	<2.5	<0.50	<0.50	<2.5	7.4	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50
	9/8/2000	6	1.3	0.76	<0.50	<0.50	<0.50	1.9	<0.25	<0.50	<2.5	<0.50	<0.50	<2.5	2.5	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50
	9/24/2001	5.5	1.5	0.93	<0.50	<0.50	<0.50	1.7	<0.25	<0.50	<2.5	<0.50	<0.50	<2.5	1.2	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50
	9/26/2002	4.8	1.3	1	<1.0	<0.50	<0.50	1.3	<0.25	<0.50	<2.5	<0.50	<1.0	<2.5	0.86	<1.0	<0.50	<1.5	<0.50	<0.50	<0.50
	10/23/2003	4.41	1.46	1.6	<1.00	<0.50	<0.50	1.2	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	0.56	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	10/15/2004	3.68	1.15	1.43	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	0.42	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	4/13/2006	3.53	1.38	2.07	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	5/20/2020	0.507 J	0.879 J	1.64	<0.500	<0.500	<0.500	0.399 J	<0.250	<0.500	<2.50	<0.500	<0.500	<5.00	<0.200	<0.500	<0.500	<1.50	<0.500	<0.500	<0.500
	MW-15A	8/20/2007	2.7	0.40 J	0.15 J	<1.0	<0.50	<0.50	0.11 J	<0.25	<0.50	<2.5	<0.50	0.18 J	<2.5	<1.0	0.097 J	<0.50	<1.5	<0.50	<0.50
1/27/2009		3.14	<1.00	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
7/27/2011		2.74	<1.00	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
10/15/2013		3.06	<1.00	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
9/22/2014		2.87	0.640 J	<0.500	<1.00	<0.50	<0.50	<0.500	<0.25	<0.50	<2.5	<0.50	0.790 J	<2.5	<0.200	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
5/20/2020	1.86	0.522 J	<0.500	0.319 J	<0.500	<0.500	<0.500	<0.250	<0.500	<2.50	<0.500	<0.500	<5.00	<0.200	<1.00 B*	<0.500	<1.50	<0.500	<0.500	<0.500	

Table 3 - Historical Summary of Groundwater Results (µg/L)

Monitoring Well	Sample Date	Chlorinated Ethenes					Chlorinated Ethanes				Halomethanes				BTEX				VOCs		
		2.8	36	360	41	280	8,000	28	1.7	21,000	7.5	2.2	190	110	4.6	1,100	15	190	1.7	1,000	300
		Trichloroethene (TCE)	cis-1,2-Dichloroethene (cDCE)	trans-1,2-Dichloroethene (tDCE)	Tetrachloroethene (PCE)	1,1-Dichloroethene (1,1-DCE)	1,1,1-Trichloroethane (TCA)	1,1-Dichloroethane (1,1-DCA)	1,2-Dichloroethane (1,2-DCA)	Chloroethane	Bromomethane	Chloroform	Chloromethane	Methylene Chloride (Dichloromethane)	Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene	n-Butylbenzene	1,2-Dichlorobenzene
MW-16A	8/20/2007	5.3	0.78 J	0.33 J	<1.0	<0.50	<0.50	0.54 J	<0.25	<0.50	<2.5	<0.50	<1.0	<2.5	<1.0	<1.0	<0.50	<1.5	<0.50	<0.50	<0.50
	1/27/2009	4.65	<1.00	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	7/27/2011	4.3	<1.00	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	10/15/2013	4.29	1.12	0.560 J	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	9/22/2014	3.81	0.850 J	0.490 J	<1.00	<0.50	<0.50	0.390 J	<0.25	<0.50	<2.5	<0.50	0.500 J	<2.5	<0.200	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	5/20/2020	2.49	0.736 J	0.613 J	<0.500	<0.500	<0.500	0.488 J	<0.250	<0.500	<2.50	<0.500	<0.500	<5.00	<0.200	<0.500	<0.500	<1.50	<0.500	<0.500	<0.500
MW-17	2/16/1996	66 D	4.2	0.88	<0.50	<0.50	<0.50	12	<0.25	<0.50	<2.5	<0.50	0.85	<2.5	1.1	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50
	8/13/1996	55.6	3.79	0.82	<0.20	<0.50	<0.50	11.9	<0.25	<0.50	<2.5	<0.50	<0.50	<2.5	1.1	<0.30	<0.50	<1.5	<0.50	<0.50	<0.50
	11/20/1996	58.2	3.94	0.71	<0.20	<0.50	<0.50	11.5	<0.25	<0.50	<2.5	<0.50	<0.50	<2.5	1.09	<0.30	<0.50	<1.5	<0.50	<0.50	<0.50
	3/4/1997	61	3.6	0.73	<0.50	<0.50	<0.50	9.2	<0.25	<0.50	<2.5	<0.50	<0.50	<2.5	0.91	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50
	7/28/1998	46	3.1	0.56	<0.50	<0.50	<0.50	12	<0.25	<0.50	<2.5	<0.50	<0.50	<2.5	0.7	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50
	8/4/1999	41	2.9	0.56	<0.50	<0.50	<0.50	11	<0.25	<0.50	<2.5	<0.50	<0.50	<2.5	0.59	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50
	8/30/2000	37	2.8	<0.50	<0.50	<0.50	<0.50	7.5	<0.25	<0.50	<2.5	<0.50	<0.50	<2.5	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50
	8/30/2000(dup)	38	2.9	<0.50	<0.50	<0.50	<0.50	8	<0.25	<0.50	<2.5	<0.50	<0.50	<2.5	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50
	9/25/2001	30	3	0.53	<0.50	<0.50	<0.50	4.8	<0.25	<0.50	<2.5	<0.50	<0.50	<2.5	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50
	9/25/2001(dup)	30	3.1	0.54	<0.50	<0.50	<0.50	4.8	<0.25	<0.50	<2.5	<0.50	<0.50	<2.5	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50
	10/20/2003	32	2.46	<1.00	<1.00	<0.50	<0.50	2.5	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	10/20/2003(dup)	32.2	2.35	<1.00	<1.00	<0.50	<0.50	2.29	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	4/27/2006	24.1	2.57	<1.00	<1.00	<0.50	<0.50	2.29	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	1/27/2009	18.3	2.5	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	1/27/2009(dup)	18.2	2.53	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	7/25/2011	16.6	3.03	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	7/25/2011(dup)	15.4	2.92	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
10/15/2013	14.8	4.07	1.27	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50	
5/21/2020	6.00	4.18	2.36	<0.500	<0.500	<0.500	<0.500	<0.250	<0.500	<2.50	<0.500	<0.500	<5.00	<0.200	<0.500	<0.500	<1.50	<0.500	<0.500	<0.500	
5/21/2020(dup)	6.05	4.12	2.38	<0.500	<0.500	<0.500	<0.500	<0.250	<0.500	<2.50	<0.500	<0.500	<5.00	<0.200	<0.500	<0.500	<1.50	<0.500	<0.500	<0.500	
MW-18	2/16/1996	31 D	1.9	0.46 J	<0.50	<0.50	<0.50	6.6	<0.25	<0.50	<2.5	<0.50	<0.50	<2.5	0.87	0.6	<0.50	<1.5	<0.50	<0.50	<0.50
	8/13/1996	29.6	2.2	0.46	<0.20	<0.50	<0.50	6.37	<0.25	<0.50	<2.5	<0.50	<0.50	<2.5	0.65	<0.30	<0.50	<1.5	<0.50	<0.50	<0.50
	11/20/1996	30	1.99	0.45	<0.20	<0.50	<0.50	5.62	<0.25	<0.50	<2.5	<0.50	<0.50	<2.5	0.6	<0.30	<0.50	<1.5	<0.50	<0.50	<0.50
	3/4/1997	28	1.7	0.40 J	<0.50	<0.50	<0.50	4.8	<0.25	<0.50	<2.5	<0.50	<0.50	<2.5	0.48 J	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50
	7/28/1998	21	1.6	<0.50	<0.50	<0.50	<0.50	6	<0.25	<0.50	<2.5	<0.50	<0.50	<2.5	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50
	7/28/1998(dup)	20	1.6	<0.50	<0.50	<0.50	<0.50	6.1	<0.25	<0.50	<2.5	<0.50	<0.50	<2.5	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50
	8/4/1999	19	1.4	<0.50	<0.50	<0.50	<0.50	5	<0.25	<0.50	<2.5	<0.50	<0.50	<2.5	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50
	9/5/2000	19	1.4	<0.50	<0.50	<0.50	<0.50	3.4	<0.25	<0.50	<2.5	<0.50	<0.50	<2.5	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50
	9/27/2001	16	1.5	<0.50	<0.50	<0.50	<0.50	2	<0.25	<0.50	<2.5	<0.50	<0.50	<2.5	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50
	10/22/2003	16.4	1.53	<1.00	<1.00	<0.50	<0.50	1.1	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	4/27/2006	9.21	1.04	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50

Table 3 - Historical Summary of Groundwater Results (µg/L)

Analyte Type		Chlorinated Ethenes					Chlorinated Ethanes				Halomethanes				BTEX				VOCs		
Cleanup Level †		2.8	36	360	41	280	8,000	28	1.7	21,000	7.5	2.2	190	110	4.6	1,100	15	190	1.7	1,000	300
Monitoring Well	Sample Date	Trichloroethene (TCE)	cis-1,2-Dichloroethene (cDCE)	trans-1,2-Dichloroethene (tDCE)	Tetrachloroethene (PCE)	1,1-Dichloroethene (1,1-DCE)	1,1,1-Trichloroethane (TCA)	1,1-Dichloroethane (1,1-DCA)	1,2-Dichloroethane (1,2-DCA)	Chloroethane	Bromomethane	Chloroform	Chloromethane	Methylene Chloride (Dichloromethane)	Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene	n-Butylbenzene	1,2-Dichlorobenzene
		MW-18 continued	2/20/2009	8.43	1.19	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50
7/26/2011	6.42		1.29	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
10/18/2013	6.30		<1.00	0.820 J	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
5/21/2020	1.3		2.94	2.32	<0.500	<0.500	<0.500	<0.500	<0.250	<0.500	<2.50	<0.500	<0.500	<5.00	<0.200	<0.500	<0.500	<1.50	<0.500	<0.500	<0.500
MW-19	2/16/1996	9.1	0.51	<0.50	<0.50	<0.50	<0.50	1.1	<0.25	<0.50	<2.5	<0.50	<0.50	<2.5	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50
	8/13/1996	12.7	0.69	<0.20	<0.20	<0.50	<0.50	1.27	<0.25	<0.50	<2.5	<0.50	<0.50	<2.5	0.25	<0.30	<0.50	<1.5	<0.50	<0.50	<0.50
	11/20/1996	10.7	0.58	<0.20	<0.20	<0.50	<0.50	1.25	<0.25	<0.50	<2.5	<0.50	<0.50	<2.5	0.22	<0.30	<0.50	<1.5	<0.50	<0.50	<0.50
	8/12/1999	8.8	0.55	<0.20	<0.20	<0.50	<0.50	1.3	<0.25	<0.50	<2.5	<0.50	<0.50	<2.5	<0.20	<0.30	<0.50	<1.5	<0.50	<0.50	<0.50
	8/25/2000	9.9	0.54	<0.50	<0.50	<0.50	<0.50	1.2	<0.25	<0.50	<2.5	<0.50	<0.50	<2.5	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50
	9/26/2001	8.7	0.58	<0.50	<0.50	<0.50	<0.50	0.7	<0.25	<0.50	<2.5	<0.50	<0.50	<2.5	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50
	9/24/2002	7.45	<1.00	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.500	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	10/6/2004	7.91	<1.00	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	4/27/2006	6.28	<1.00	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	4/27/2006(dup)	5.99	<1.00	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	1/27/2009	4.43	<1.00	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	7/25/2011	4.05	<1.00	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	2/23/2017	3.43	0.609 J	<0.50	2.28	<0.50	<0.50	<0.50	<0.25	<0.50	<2.5	<0.50	<0.5 J*	<2.5	<0.20	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50
	5/21/2020	2.87	0.731 J	0.455 J	<0.500	<0.500	<0.500	<0.500	<0.250	<0.500	<2.50	<0.500	<0.500	<5.00	<0.200	<0.500	<0.500	<1.50	<0.500	<0.500	<0.500
	MW-20	2/16/1996	3.5	1.1	0.97	<0.50	<0.50	<0.50	2	<0.25	<0.50	<2.5	<0.50	<0.50	<2.5	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50
2/16/1996(dup)		3.5	1.1	1	<0.50	<0.50	<0.50	2	<0.25	<0.50	<2.5	<0.50	<0.50	<2.5	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50
8/13/1996		4.17	1.47	1.1	<0.20	<0.50	<0.50	2.18	<0.25	<0.50	<2.5	<0.50	<0.50	<2.5	<0.20	<0.30	<0.50	<1.5	<0.50	<0.50	<0.50
8/13/1996(dup)		3.43	1.25	0.97	<0.20	<0.50	<0.50	2.01	<0.25	<0.50	<2.5	<0.50	<0.50	<2.5	<0.20	<0.30	<0.50	<1.5	<0.50	<0.50	<0.50
11/20/1996		3.2	1.17	0.9	<0.20	<0.50	<0.50	1.82	<0.25	<0.50	<2.5	<0.50	<0.50	<2.5	<0.20	<0.30	<0.50	<1.5	<0.50	<0.50	<0.50
8/5/1999		2.8	0.89	0.68	<0.20	<0.50	<0.50	0.81	<0.25	<0.50	<2.5	<0.50	<0.50	<2.5	<0.20	<0.30	<0.50	<1.5	<0.50	<0.50	<0.50
8/30/2000		2.8	0.8	0.71	<0.50	<0.50	<0.50	0.94	<0.25	<0.50	<2.5	<0.50	<0.50	<2.5	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50
MW-23	9/26/2001	2.6	0.92	0.71	<0.50	<0.50	<0.50	0.71	<0.25	<0.50	<2.5	<0.50	<0.50	<2.5	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50
	10/4/2004	1.72	<1.00	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	8/19/1999	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	6.2	<0.25	<0.50	<2.5	<0.50	<0.50	<2.5	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50
	8/23/2000	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	7.6	<0.25	<0.50	<2.5	<0.50	<0.50	<2.5	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50
MW-25	9/26/2001	3.2	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.25	<0.50	<2.5	<0.50	<0.50	<2.5	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50
	10/3/2002	2.61	<1.00	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.500	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	10/21/2003	3	<1.00	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	10/4/2004	2.49	<1.00	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
MW-26	4/14/2006	2.7	<1.00	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	9/26/2001	11	6.1	1.8	<0.50	<0.50	<0.50	5.6	<0.25	<0.50	<2.5	<0.50	<0.50	<2.5	0.79	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50
	9/18/2002	18.4	4.17	1.94	<1.00	<0.50	<0.50	4.45	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	0.52	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
9/18/2002(dup)	18.5	4.12	1.87	<1.00	<0.50	<0.50	4.36	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	0.52	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50	

Table 3 - Historical Summary of Groundwater Results (µg/L)

Analyte Type		Chlorinated Ethenes					Chlorinated Ethanes				Halomethanes				BTEX				VOCs		
Cleanup Level †		2.8	36	360	41	280	8,000	28	1.7	21,000	7.5	2.2	190	110	4.6	1,100	15	190	1.7	1,000	300
Monitoring Well	Sample Date	Trichloroethene (TCE)	cis-1,2-Dichloroethene (cDCE)	trans-1,2-Dichloroethene (tDCE)	Tetrachloroethene (PCE)	1,1-Dichloroethene (1,1-DCE)	1,1,1-Trichloroethane (TCA)	1,1-Dichloroethane (1,1-DCA)	1,2-Dichloroethane (1,2-DCA)	Chloroethane	Bromomethane	Chloroform	Chloromethane	Methylene Chloride (Dichloromethane)	Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene	n-Butylbenzene	1,2-Dichlorobenzene
		MW-26 continued	10/21/2003	14.9	2.82	1.43	<1.00	<0.50	<0.50	3.28	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50
10/4/2004	12.3		3.77	1.64	<1.00	<0.50	<0.50	2.85	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
4/14/2006	13.8		4.93	2.03	<1.00	<0.50	<0.50	2.5	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	0.41	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
8/19/2007	8.2		2.8	1.7	<1.0	<0.50	<0.50	0.68 J	<0.25	<0.50	<2.5	<0.50	<1.0	<2.5	0.35 J	<1.0	<0.50	<1.5	<0.50	<0.50	<0.50
8/19/2007(dup)	8.3		2.5	1.6	<1.0	<0.50	<0.50	0.56 J	<0.25	<0.50	<2.5	<0.50	<1.0	<2.5	0.38 J	<1.0	<0.50	<1.5	<0.50	<0.50	<0.50
1/27/2009	7.31		5.42	3.15	<1.00	<0.50	<0.50	1.10	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
7/26/2011	4.19		4.89	4.42	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
8/3/2012	3.2		4.89	4.89	<0.620	<0.50	<0.50	<0.620	<0.25	<0.50	<2.5	<0.50	<0.620	<2.5	<0.240	<0.620	<0.50	<1.5	<0.50	<0.50	<0.50
2/23/2017	1.94		7.67	6.13	1.55	<0.50	<0.50	<0.50	<0.25	<0.50	<2.5	<0.50	<0.5 J*	<2.5	0.157 J	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50
5/20/2020	1.98		5.55	4.99	<0.500	<0.500	<0.500	<0.500	<0.250	<0.500	<2.50	<0.500	<0.500	<5.00	0.138 J	<0.500	<0.500	<1.50	<0.500	<0.500	<0.500
MW-27	9/25/2001	3.4	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.25	<0.50	<2.5	<0.50	<0.50	<2.5	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50
	9/23/2002	2.69	<1.00	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.500	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	10/20/2003	2.85	<1.00	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	10/4/2004	1.76	<1.00	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	10/4/2004(dup)	1.84	<1.00	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
5/21/2020	0.840 J	<0.500	0.339 J	<0.500	<0.500	<0.500	<0.500	<0.250	<0.500	<2.50	<0.500	<0.500	<5.00	<0.200	<0.500	<0.500	<1.50	<0.500	<0.500	<0.500	
MW-28	9/25/2001	1.9	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.25	<0.50	<2.5	<0.50	<0.50	<2.5	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50
	9/23/2002	2.52	<1.00	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.500	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	10/22/2003	2.05	<1.00	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	10/4/2004	1.58	<1.00	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
MW-29	9/27/2001	1.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.25	<0.50	<2.5	<0.50	<0.50	<2.5	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50
	9/23/2002	1	<1.00	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.500	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	10/21/2003	<1.00	<1.00	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	10/7/2004	<1.00	<1.00	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
5/20/2020	0.509 J	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.250	<0.500	<2.50	<0.500	<0.500	<5.00	<0.200	<0.500	<0.500	<1.50	<0.500	<0.500	<0.500	
MW-30	9/27/2001	8.8	1	<0.50	<0.50	<0.50	<0.50	0.96	<0.25	<0.50	<2.5	<0.50	<0.50	<2.5	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50
	9/18/2002	7.48	<1.00	<1.00	<1.00	<0.50	<0.50	1.13	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.500	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	10/21/2003	10	1.07	<1.00	<1.00	<0.50	<0.50	1.41	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	10/7/2004	7.18	<1.00	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	4/14/2006	7.97	<1.00	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	8/19/2007	6.9	1.2	0.80 J	<1.0	<0.50	<0.50	0.34 J	<0.25	<0.50	<2.5	<0.50	<1.0	<2.5	<1.0	<1.0	<0.50	<1.5	<0.50	<0.50	<0.50
	1/27/2009	5.31	<1.00	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	7/26/2011	5.43	1.36	1.18	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	10/15/2013	5.68	2.06	1.92	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	10/15/2013(dup)	5.39	2.04	1.83	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
5/20/2020	1.92	0.792 J	1.04	<0.500	<0.500	<0.500	0.536 J	<0.250	<0.500	<2.50	<0.500	<0.500	<5.00	<0.200	<0.500	<0.500	<1.50	<0.500	<0.500	<0.500	

Table 3 - Historical Summary of Groundwater Results (µg/L)

Monitoring Well	Sample Date	Chlorinated Ethenes					Chlorinated Ethanes				Halomethanes				BTEX				VOCs		
		2.8	36	360	41	280	8,000	28	1.7	21,000	7.5	2.2	190	110	4.6	1,100	15	190	1.7	1,000	300
		Trichloro-ethene (TCE)	cis-1,2-Dichloroethene (cDCE)	trans-1,2-Dichloroethene (tDCE)	Tetrachloro-ethene (PCE)	1,1-Dichloroethene (1,1-DCE)	1,1,1-Trichloroethane (TCA)	1,1-Dichloroethane (1,1-DCA)	1,2-Dichloroethane (1,2-DCA)	Chloroethane	Bromomethane	Chloroform	Chloromethane	Methylene Chloride (Dichloromethane)	Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene	n-Butylbenzene	1,2-Dichloro-benzene
MW-31	9/20/2001	7.1	0.57	<0.50	<0.50	<0.50	<0.50	<0.50	<0.25	<0.50	<2.5	<0.50	<0.50	<2.5	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50
	9/19/2002	7.31	<1.00	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.500	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	10/23/2003	5.8	<1.00	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	10/11/2004	5.22	<1.00	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	10/19/2005	4.77	<1.00	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	10/19/2005(dup)	4.6	<1.00	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	4/27/2006	4.55	<1.00	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
5/22/2020	1.94	0.314 J	<0.500	0.346 J	<0.500	<0.500	<0.500	<0.250	<0.500	<2.50	<0.500	<0.500	<5.00	<0.200	<0.500	<0.500	<1.50	<0.500	<0.500	<0.500	
MW-32	9/20/2001	360	77	5.5	0.78	<0.50	<0.50	14	<0.25	<0.50	<2.5	<0.50	<0.50	<2.5	1.1	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50
	9/20/2001(dup)	380	77	5.5	0.78	<0.50	<0.50	14	<0.25	<0.50	<2.5	<0.50	<0.50	<2.5	1.1	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50
	9/19/2002	320	87.5	4.82	<1.00	<0.50	<0.50	10.5	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	0.79	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	10/21/2003	230	59.5	3.28	<1.00	<0.50	<0.50	5.63	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	0.52	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	10/11/2004	225	69.6	3.53	<1.00	<0.50	<0.50	3.01	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	10/19/2005	204	62.3	3.15	<1.00	<0.50	<0.50	2.76	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	4/27/2006	163	63.4	2.25	<1.00	<0.50	<0.50	1.54	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	2/20/2009	59.6	99.9	2.16	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	7/26/2011	27	61.4	1.39	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	10/18/2013	11.4	59.7	1.74	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
5/22/2020	2.04	43.3	2.44	<0.500	<0.500	<0.500	<0.500	<0.250	<0.500	<2.50	<0.500	<0.500	<5.00	<0.200	<0.500	<0.500	<1.50	<0.500	<0.500	<0.500	
MW-34	10/29/2003	8.02	<1.00	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	3.38	<0.50	<1.5	<0.50	<0.50	<0.50
	10/8/2004	6.72	<1.00	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	4/12/2006	6.96	<1.00	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	8/29/2006(dup)	6.37	<1.00	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	8/29/2006	6.4	<1.00	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	8/20/2007	5.2	0.68 J	0.28 J	<1.0	<0.50	<0.50	0.27 J	<0.25	<0.50	<2.5	<0.50	<1.0	<2.5	<1.0	<1.0	<0.50	<1.5	<0.50	<0.50	<0.50
	2/23/2009	5.55	<1.00	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	7/28/2011	4.69	<1.00	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	2/23/2017	3.55	0.954 J	0.547 J	4.45	<0.50	<0.50	<0.50	<0.25	<0.50	<2.5	<0.50	<0.5 J*	<2.5	<0.20	0.32 J	<0.50	<1.5	<0.50	<0.50	<0.50
5/19/2020	0.496 J	0.865 J	1.56	<0.500	<0.500	<0.500	0.411 J	<0.250	<0.500	<2.50	<0.500	<0.500	<5.00	<0.200	<0.500	<0.500	<1.50	<0.500	<0.500	<0.500	
MW-35	10/29/2003	9.2	<1.00	<1.00	<1.00	<0.50	<0.50	1.07	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	10/8/2004	8.59	<1.00	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	10/8/2004(dup)	8.64	<1.00	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	4/12/2006	10.2	<1.00	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	8/29/2006(dup)	9.06	1.03	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	8/20/2007	7.7	1.1	0.46 J	<1.0	<0.50	<0.50	0.43 J	<0.25	<0.50	<2.5	<0.50	<1.0	<2.5	<1.0	<1.0	<0.50	<1.5	<0.50	<0.50	<0.50
	2/23/2009	7.1	<1.00	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
7/28/2011	5.43	1.11	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50	

Table 3 - Historical Summary of Groundwater Results (µg/L)

Monitoring Well	Sample Date	Chlorinated Ethenes					Chlorinated Ethanes				Halomethanes				BTEX				VOCs		
		2.8	36	360	41	280	8,000	28	1.7	21,000	7.5	2.2	190	110	4.6	1,100	15	190	1.7	1,000	300
		Trichloroethene (TCE)	cis-1,2-Dichloroethene (cDCE)	trans-1,2-Dichloroethene (tDCE)	Tetrachloroethene (PCE)	1,1-Dichloroethene (1,1-DCE)	1,1,1-Trichloroethane (TCA)	1,1-Dichloroethane (1,1-DCA)	1,2-Dichloroethane (1,2-DCA)	Chloroethane	Bromomethane	Chloroform	Chloromethane	Methylene Chloride (Dichloromethane)	Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene	n-Butylbenzene	1,2-Dichlorobenzene
MW-35 continued	8/8/2012	5.4	<1.00	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	10/14/2013	5.9	1.07	0.820 J	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	5/19/2020	2.44	0.805 J	0.703 J	<0.500	<0.500	<0.500	0.444 J	<0.250	<0.500	<2.50	<0.500	<0.500	<5.00	<0.200	<0.500	<0.500	<1.50	<0.500	<0.500	<0.500
	5/19/2020(dup)	2.43	0.816 J	0.717 J	<0.500	<0.500	<0.500	0.439 J	<0.250	<0.500	<2.50	<0.500	<0.500	<5.00	<0.200	<0.500	<0.500	<1.50	<0.500	<0.500	<0.500
MW-38	10/14/2004	<1.00	<1.00	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	4/11/2006	<1.00	<1.00	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	8/30/2006(dup)	<1.00	<1.00	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	8/17/2007	1.2	0.91 J	0.63 J	0.11 J	<0.50	<0.50	0.64 J	<0.25	<0.50	<2.5	<0.50	<1.0	<2.5	0.14 J	<1.0	<0.50	<1.5	<0.50	<0.50	<0.50
	7/27/2011	1.4	<1.00	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	10/16/2013	1.28	1.03	0.940 J	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	9/22/2014	1.16	0.660 J	0.720 J	<1.00	<0.50	<0.50	0.510 J	<0.25	<0.50	<2.5	<0.50	0.660 J	<2.5	<0.200	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	5/19/2020	0.899 J	0.534 J	0.640 J	<0.500	<0.500	<0.500	0.395 J	<0.250	<0.500	<2.50	<0.500	<0.500	<5.00	<0.200	<1.00 B*	<0.500	<1.50	<0.500	<0.500	<0.500
	10/14/2004	<1.00	<1.00	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	4/11/2006	1.16	<1.00	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
MW-39	8/30/2006(dup)	1.31	<1.00	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	8/17/2007	0.92 J	0.96 J	0.28 J	<1.0	<0.50	<0.50	0.58 J	<0.25	<0.50	<2.5	<0.50	<1.0	<2.5	0.14 J	<1.0	<0.50	<1.5	<0.50	<0.50	<0.50
	7/27/2011	1.31	<1.00	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	10/16/2013	1.63	1.08	1.01	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	9/22/2014	1.09	0.870 J	0.910 J	<1.00	<0.50	<0.50	0.470 J	<0.25	<0.50	<2.5	<0.50	0.770 J	<2.5	0.140 J	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	5/19/2020	0.781 J	0.603 J	0.801 J	<0.500	<0.500	<0.500	0.390 J	<0.250	<0.500	<2.50	<0.500	<0.500	<5.00	<0.200	<0.500	<0.500	<1.50	<0.500	<0.500	<0.500
MW-103	10/24/1997	4.03	2.09	<1.0	<1.0	<0.50	<0.50	2.75	<0.25	<0.50	<2.5	<0.50	<1.0	<2.5	185	<1.0	<0.50	<1.5	<0.50	<0.50	<0.50
	6/23/1998	5	2.6	<1.0	<1.0	<0.50	<0.50	2.4	<0.25	<0.50	<2.5	<0.50	<1.0	<2.5	210	<1.0	<0.50	<1.5	<0.50	<0.50	<0.50
	8/11/1999	4.03	2.04	<1.0	<1.0	<0.50	<0.50	1.96	<0.25	<0.50	<2.5	<0.50	<1.0	<2.5	40.5	<1.0	<0.50	<1.5	<0.50	<0.50	<0.50
	8/24/2000	3.2	1.3	<0.50	<0.50	<0.50	<0.50	1.4	<0.25	<0.50	<2.5	<0.50	<0.50	<2.5	7.4	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50
	9/19/2001	4.2	1.8	0.93	<0.50	<0.50	<0.50	1.7	<0.25	<0.50	<2.5	<0.50	<0.50	<2.5	4.2	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50
	9/26/2002	3.6	1.4	<1.0	<1.0	<0.50	<0.50	1.5	<0.25	<0.50	<2.5	<0.50	<1.0	<2.5	1.7	<1.0	<0.50	<1.5	<0.50	<0.50	<0.50
	10/8/2004	3.25	1.38	1.43	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	0.8	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	7/28/2011	1.32	1.07	3.07	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<1.00	<2.5	0.56	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	2/22/2017	0.840 J	0.723 J	0.749 J	0.66 J	<0.50	<0.50	<0.50	<0.25	<0.50	<2.5	<0.50	<0.5 J*	<2.5	<0.20	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50
	5/19/2020	0.381 J	0.318 J	<0.500	<0.500	<0.500	<0.500	<0.500	<0.250	<0.500	<2.50	<0.500	<0.500	<5.00	<0.200	<0.500	<0.500	<1.50	<0.500	<0.500	<0.500
MW-104	8/6/1997	9.06	1.39	<1.0	<1.0	<0.50	<0.50	2.17	<0.25	<0.50	<2.5	<0.50	<0.5 J*	<2.5	82.2	<1.0	<0.50	<1.5	<0.50	<0.50	<0.50
	9/25/1997	9.44	1.53	<1.0	<1.0	<0.50	<0.50	2.26	<0.25	<0.50	<2.5	<0.50	<0.5 J*	<2.5	76.8	<1.0	<0.50	<1.5	<0.50	<0.50	<0.50
	10/24/1997	8.63	1.45	<1.0	<1.0	<0.50	<0.50	2.56	<0.25	<0.50	<2.5	<0.50	<0.5 J*	<2.5	62.3	<1.0	<0.50	<1.5	<0.50	<0.50	<0.50
	10/24/1997(dup)	8.6	1.48	<1.0	<1.0	<0.50	<0.50	2.68	<0.25	<0.50	<2.5	<0.50	<0.5 J*	<2.5	61.5	<1.0	<0.50	<1.5	<0.50	<0.50	<0.50
	6/23/1998	9.7	1.6	0.65	<1.0	<0.50	<0.50	<1.0	<0.25	<0.50	<2.5	<0.50	<0.5 J*	<2.5	25	<1.0	<0.50	<1.5	<0.50	<0.50	<0.50
	8/11/1999	7.42	1.22	<1.0	<1.0	<0.50	<0.50	1.61	<0.25	<0.50	<2.5	<0.50	<0.5 J*	<2.5	3.32	<1.0	<0.50	<1.5	<0.50	<0.50	<0.50
	8/24/2000	6.6	1.1	0.84	<0.50	<0.50	<0.50	1.5	<0.25	<0.50	<2.5	<0.50	<0.5 J*	<2.5	0.56	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50

Table 3 - Historical Summary of Groundwater Results (µg/L)

Analyte Type		Chlorinated Ethenes					Chlorinated Ethanes				Halomethanes				BTEX				VOCs			
Cleanup Level †		2.8	36	360	41	280	8,000	28	1.7	21,000	7.5	2.2	190	110	4.6	1,100	15	190	1.7	1,000	300	
Monitoring Well	Sample Date	Trichloroethene (TCE)	cis-1,2-Dichloroethene (cDCE)	trans-1,2-Dichloroethene (tDCE)	Tetrachloroethene (PCE)	1,1-Dichloroethene (1,1-DCE)	1,1,1-Trichloroethane (TCA)	1,1-Dichloroethane (1,1-DCA)	1,2-Dichloroethane (1,2-DCA)	Chloroethane	Bromomethane	Chloroform	Chloromethane	Methylene Chloride (Dichloromethane)	Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene	n-Butylbenzene	1,2-Dichlorobenzene	
		MW-104 continued	9/19/2001	6.4	1.5	1.2	<0.50	<0.50	<0.50	1.6	<0.25	<0.50	<2.5	<0.50	<0.5 J*	<2.5	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50
10/8/2004	3.63		1.11	1.39	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<0.5 J*	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50	
7/28/2011	1.32		1.2	3.41	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<0.5 J*	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50	
2/22/2017	0.991 J		0.899 J	1.35	1.91	<0.50	<0.50	0.409 J	<0.25	<0.50	<2.5	<0.50	<0.5 J*	<2.5	<0.20	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	
5/19/2020	0.674 J		0.758 J	1.17	<0.500	<0.500	<0.500	0.419 J	<0.250	<0.500	<2.50	<0.500	<0.500	<5.00	<0.200	<0.500	<0.500	<1.50	<0.500	<0.500	<0.500	
MW-105	10/24/1997	7.69	1.14	<1.0	<1.0	<0.50	<0.50	1.95	<0.25	<0.50	<2.5	<0.50	<0.5 J*	<2.5	<1.0	<1.0	<0.50	<1.5	<0.50	<0.50	<0.50	
	6/23/1998	8.8	1.2	0.62	<1.0	<0.50	<0.50	1.6	<0.25	<0.50	<2.5	<0.50	<0.5 J*	<2.5	<1.0	<1.0	<0.50	<1.5	<0.50	<0.50	<0.50	
	8/11/1999	6.69	1.05	<1.0	<1.0	<0.50	<0.50	1.28	<0.25	<0.50	<2.5	<0.50	<0.5 J*	<2.5	<1.0	<1.0	<0.50	<1.5	<0.50	<0.50	<0.50	
	8/24/2000	5.9	0.94	0.71	<0.50	<0.50	<0.50	1.2	<0.25	<0.50	<2.5	<0.50	<0.5 J*	<2.5	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	
	9/19/2001	5.2	1.1	0.97	<0.50	<0.50	<0.50	1.3	<0.25	<0.50	<2.5	<0.50	<0.5 J*	<2.5	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	
	10/8/2004	3.04	<1.00	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<0.5 J*	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50
	7/28/2011	1.59	<1.00	1.7	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<0.5 J*	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50
2/22/2017	1.3	0.466 J	0.53 J	1.58	<0.50	<0.50	0.415 J	<0.25	<0.50	<2.5	<0.50	<0.5 J*	<2.5	<0.20	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50	
5/19/2020	1.02	0.404 J	0.500 J	<0.500	<0.500	<0.500	0.435 J	<0.250	<0.500	<2.50	<0.500	<0.500	<5.00	<0.200	<0.500	<0.500	<1.50	<0.500	<0.500	<0.500	<0.500	
MW-106	10/23/1997	7.55	1.35	<1.0	<1.0	<0.50	<0.50	2.39	<0.25	<0.50	<2.5	<0.50	<0.5 J*	<2.5	31.3	<1.0	<0.50	<1.5	<0.50	<0.50	<0.50	
	6/24/1998	9.2	1.5	0.73	<1.0	<0.50	<0.50	2.3	<0.25	<0.50	<2.5	<0.50	<0.5 J*	<2.5	16	<1.0	<0.50	<1.5	<0.50	<0.50	<0.50	
	8/11/1999	7.23	1.26	<1.0	<1.0	<0.50	<0.50	1.71	<0.25	<0.50	<2.5	<0.50	<0.5 J*	<2.5	2.81	<1.0	<0.50	<1.5	<0.50	<0.50	<0.50	
	9/6/2000	7.4	1.4	1.1	<0.50	<0.50	<0.50	1.8	<0.25	<0.50	<2.5	<0.50	<0.5 J*	<2.5	0.76	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	
	9/21/2001	6.4	1.4	1.3	<0.50	<0.50	<0.50	1.6	<0.25	<0.50	<2.5	<0.50	<0.5 J*	<2.5	0.5	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	
	10/22/2003	4.36	1.42	2.09	<1.00	<0.50	<0.50	1.2	<0.25	<0.50	<2.5	<0.50	<0.5 J*	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50
	4/12/2006	2.22	1.43	1.96	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<0.5 J*	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50
MW-107	10/23/1997	6.28	1.23	<1.0	<1.0	<0.50	<0.50	2.45	<0.25	<0.50	<2.5	<0.50	<0.5 J*	<2.5	8.55	<1.0	<0.50	<1.5	<0.50	<0.50	<0.50	
	6/24/1998	8.9	1.4	0.54	<1.0	<0.50	<0.50	2.5	<0.25	<0.50	<2.5	<0.50	<0.5 J*	<2.5	6.5	<1.0	<0.50	<1.5	<0.50	<0.50	<0.50	
	8/11/1999	7.83	1.19	<1.0	<1.0	<0.50	<0.50	1.95	<0.25	<0.50	<2.5	<0.50	<0.5 J*	<2.5	1.13	<1.0	<0.50	<1.5	<0.50	<0.50	<0.50	
	9/7/2000	8.5	1.2	0.74	<0.50	<0.50	<0.50	2	<0.25	<0.50	<2.5	<0.50	<0.5 J*	<2.5	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	
	9/21/2001	7.5	1.3	0.9	<0.50	<0.50	<0.50	1.7	<0.25	<0.50	<2.5	<0.50	<0.5 J*	<2.5	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50	
	10/22/2003	6.75	1.19	1.19	<1.00	<0.50	<0.50	1.06	<0.25	<0.50	<2.5	<0.50	<0.5 J*	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50	
	10/22/2003(dup)	6.69	1.35	1.37	<1.00	<0.50	<0.50	1.17	<0.25	<0.50	<2.5	<0.50	<0.5 J*	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50	
	4/12/2006	6.88	1.06	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<0.5 J*	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50	<0.50
	8/17/2007	5.2	1.1	0.71 J	<1.0	<0.50	<0.50	0.52 J	<0.25	<0.50	<2.5	<0.50	<0.5 J*	<2.5	<1.0	<1.0	<0.50	<1.5	<0.50	<0.50	<0.50	
	1/26/2009	4.6	1.03	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<0.5 J*	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50	
7/27/2011	3.85	<1.00	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<0.5 J*	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50		
2/22/2017	2.2	0.784 J	0.912 J	4.33	<0.50	<0.50	0.385 J	<0.25	<0.50	<2.5	<0.50	<0.5 J*	<2.5	<0.20	0.426 J	<0.50	<1.5	<0.50	<0.50	<0.50		
5/19/2020	1.76	0.711 J	0.915 J	<0.500	<0.500	<0.500	0.415 J	<0.250	<0.500	<2.50	<0.500	<0.500	<5.00	<0.200	<0.500	<0.500	<1.50	<0.500	<0.500	<0.500		
MW-108	10/23/1997	7.64	1.25	<1.0	<1.0	<0.50	<0.50	2.57	<0.25	<0.50	<2.5	<0.50	<0.5 J*	<2.5	5.09	<1.0	<0.50	<1.5	<0.50	<0.50	<0.50	
	6/24/1998	10	1.4	<1.0	<1.0	<0.50	<0.50	2.4	<0.25	<0.50	<2.5	<0.50	<0.5 J*	<2.5	2.8	<1.0	<0.50	<1.5	<0.50	<0.50	<0.50	
	8/11/1999	9.12	1.17	<1.0	<1.0	<0.50	<0.50	1.96	<0.25	<0.50	<2.5	<0.50	<0.5 J*	<2.5	<1.0	<1.0	<0.50	<1.5	<0.50	<0.50	<0.50	

Table 3 - Historical Summary of Groundwater Results (µg/L)

Analyte Type		Chlorinated Ethenes					Chlorinated Ethanes				Halomethanes				BTEX				VOCs		
Cleanup Level †		2.8	36	360	41	280	8,000	28	1.7	21,000	7.5	2.2	190	110	4.6	1,100	15	190	1.7	1,000	300
Monitoring Well	Sample Date	Trichloroethene (TCE)	cis-1,2-Dichloroethene (cDCE)	trans-1,2-Dichloroethene (tDCE)	Tetrachloroethene (PCE)	1,1-Dichloroethene (1,1-DCE)	1,1,1-Trichloroethane (TCA)	1,1-Dichloroethane (1,1-DCA)	1,2-Dichloroethane (1,2-DCA)	Chloroethane	Bromomethane	Chloroform	Chloromethane	Methylene Chloride (Dichloromethane)	Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene	n-Butylbenzene	1,2-Dichlorobenzene
		MW-108 continued	8/11/1999(dup)	8.78	1.11	<1.0	<1.0	<0.50	<0.50	1.79	<0.25	<0.50	<2.5	<0.50	<0.5 J*	<2.5	<1.0	<1.0	<0.50	<1.5	<0.50
	9/6/2000	10	1.2	<0.50	<0.50	<0.50	<0.50	2.1	<0.25	<0.50	<2.5	<0.50	<0.5 J*	<2.5	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50
	9/6/2000(dup)	10	1.1	<0.50	<0.50	<0.50	<0.50	2.1	<0.25	<0.50	<2.5	<0.50	<0.5 J*	<2.5	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50
	9/28/2001	8.7	1.3	0.56	<0.50	<0.50	<0.50	1.8	<0.25	<0.50	<2.5	<0.50	<0.5 J*	<2.5	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50
	9/28/2001(dup)	8.6	1.3	0.52	<0.50	<0.50	<0.50	1.7	<0.25	<0.50	<2.5	<0.50	<0.5 J*	<2.5	<0.50	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50
	9/26/2002	8	1.1	<1.0	<1.0	<0.50	<0.50	1.5	<0.25	<0.50	<2.5	<0.50	<0.5 J*	<2.5	<0.50	<1.0	<0.50	<1.5	<0.50	<0.50	<0.50
	10/14/2004	6.38	<1.00	<1.00	<1.00	<0.50	<0.50	1.03	<0.25	<0.50	<2.5	<0.50	<0.5 J*	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	4/12/2006	7	<1.00	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<0.5 J*	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	1/26/2009	4.81	<1.00	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<0.5 J*	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	1/26/2009(dup)	4.83	<1.00	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<0.5 J*	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	7/27/2011	4.59	<1.00	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<0.5 J*	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	7/27/2011(dup)	4.52	<1.00	<1.00	<1.00	<0.50	<0.50	<1.00	<0.25	<0.50	<2.5	<0.50	<0.5 J*	<2.5	<0.400	<1.00	<0.50	<1.5	<0.50	<0.50	<0.50
	2/22/2017	2.36	0.694 J	0.583 J	4.9	<0.50	<0.50	0.357 J	<0.25	<0.50	<2.5	<0.50	<0.5 J*	<2.5	<0.20	<0.50	<0.50	<1.5	<0.50	<0.50	<0.50
	5/19/2020	2.02	0.606 J	0.586 J	<0.500	<0.500	<0.500	0.403 J	<0.250	<0.500	<2.50	<0.500	<0.500	<5.00	<0.200	<0.500	<0.500	<1.50	<0.500	<0.500	<0.500

NOTES: Historically detected analytes are presented.
 † Cleanup Level obtained from 18 AAC 75.341 Table C - Groundwater Cleanup Levels Table
BOLD Detected result exceeds DEC Groundwater Cleanup Level.
 < Analyte not detected; listed as less than the limit of detection (LOD) unless otherwise flagged due to quality-control failures.
 J Estimated concentration, detected greater than the detection limit (DL) and less than the limit of quantitation (LOQ). Flag applied by the laboratory.
 <J* Non-detected estimated concentration due to quality control failures. Flag applied by Shannon & Wilson, Inc.
 B Result is considered not detected due to potential bias identified in quality control samples. Flag applied by Shannon & Wilson, Inc. (*)
 D Secondary dilution required for result to fall within instrument calibration range.
 (dup) Field duplicate of preceding sample.

BTEX = benzene, toluene, ethylbenzene, and xylenes; DEC = Alaska Department of Environmental Conservation; LOD = limit of detection; LOQ = limit of quantitation; µg/L = microgram per liter; MW = monitoring well; VOC = volatile organic compound

Table 4 - TCE Trends and Concentrations

Monitoring Well	Well Screen Depth (feet)	Most Recent Sample Date	Most Recent TCE Concentration (µg/L)	2020 TCE Trend
MW-4	70-80	5/21/2020	0.660 J	Decreasing
MW-5	20-30	5/21/2020	1.33	Decreasing
MW-13	40-50	5/20/2020	0.473 J	Probably decreasing
MW-14	20-30	5/20/2020	0.507 J	Decreasing
MW-15A	70-75	5/20/2020	1.86	Stable
MW-16A	10-20	5/20/2020	2.49	Decreasing
MW-17	20-30	5/21/2020	6.05	Decreasing
MW-18	20-30	5/21/2020	1.3	Decreasing
MW-19	69-79	5/21/2020	2.87	Decreasing
MW-20	20-30	10/4/2004	1.72	N/A
MW-21*	18-28	8/19/1999	<0.50	Decommissioned in 2016
MW-23	4-14	8/23/2000	<0.50	N/A
MW-25	60-70	4/14/2006	2.7	N/A
MW-26	20-30	5/20/2020	1.98	Decreasing
MW-27	60-70	5/21/2020	0.840 J	Decreasing
MW-28	60-70	10/4/2004	1.58	N/A
MW-29	60-70	5/20/2020	0.509 J	Stable
MW-30	20-30	5/20/2020	1.92	Decreasing
MW-31	60-70	5/22/2020	1.94	Decreasing
MW-32	20-30	5/22/2020	2.04	Decreasing
MW-34	69-78	5/19/2020	0.496 J	Decreasing
MW-35	29-38	5/19/2020	2.44	Decreasing
MW-38	31-41	5/19/2020	0.899 J	No trend
MW-39	20-30	5/19/2020	0.781 J	Stable
MW-103	5-10	5/19/2020	0.381 J	Decreasing
MW-104	15-20	5/19/2020	0.674 J	Decreasing
MW-105	25-30	5/19/2020	1.02	Decreasing
MW-106	20-25	4/12/2006	2.22	N/A
MW-107	30-35	5/19/2020	1.76	Decreasing
MW-108	40-45	5/19/2020	2.02	Decreasing

NOTES:

The highest result of a primary and field duplicate sample pair are displayed.

All remaining on-site monitoring wells are displayed for convenience.

* Monitoring well decommissioned in 2016 by the Alaska Department of Transportation & Public Facilities, as approved by DEC.

N/A Temporal TCE trends not assessed in 2020 or previously.

Bold Concentration of TCE exceeds the DEC Groundwater Cleanup Level of 2.8 µg/L.

< Analyte not detected; listed as less than the LOD unless otherwise flagged due to quality-control failures.

J Result is reported at an estimated concentration detected between the DL and LOQ. Flag applied by the laboratory.

DEC = Alaska Department of Environmental Conservation; DL = detection limit; LOD = limit of detection; LOQ = limit of quantitation; µg/L = microgram per liter; TCE = trichloroethene

Table 5 - Monitoring Well Network and Schedule

Monitoring Well	Most Recent Sample Date and TCE Concentration (µg/L)		Sample Events ±	Date of Last TCE Result Exceeding CUL	TCE Temporal Trend (2020)	Recommended Sampling Schedule †	Monitoring Well Network Notes
MW-23	8/23/2000	<0.50	2	None	N/A	Decommission	Farthest upgradient well
MW-31	5/22/2020	1.94	7	2006	Decreasing	2 Years	—
MW-32	5/22/2020	2.04	10	2013	Decreasing		Current cis-1,2-dichloroethene exceedance
MW-4	5/21/2020	0.660 J	10	1998	Decreasing	Decommission Well Cluster	—
MW-5	5/21/2020	1.33	15	2011	Decreasing		—
MW-18	5/21/2020	1.3	14	2013	Decreasing	Decommission Well Cluster	—
MW-28	10/4/2004	1.58	4	None	N/A		—
MW-17	5/21/2020	6.05	14	2020	Decreasing	2 Years	Current TCE exceedance
MW-27	5/21/2020	0.840 J	5	2003	Decreasing		—
MW-29	5/20/2020	0.509 J	5	None	Stable	No Schedule	—
MW-30	5/20/2020	1.92	10	2013	Decreasing		—
MW-19	5/21/2020	2.87	13	2020	Decreasing	2 Years	Current TCE exceedance
MW-20	10/4/2004	1.72	7	2000	N/A		—
MW-25	4/14/2006	2.7	5	2003	N/A	No Schedule	—
MW-26	5/20/2020	1.98	11	2012	Decreasing		—
MW-15A	5/20/2020	1.86	6	2014	Stable	No Schedule	—
MW-16A	5/20/2020	2.49	6	2014	Decreasing		—
MW-34	5/19/2020	0.496 J	9	2017	Decreasing	No Schedule	—
MW-35	5/19/2020	2.44	9	2013	Decreasing		—
MW-103	5/19/2020	0.381 J	10	2004	Decreasing	Decommission Well Cluster	—
MW-104	5/19/2020	0.674 J	11	2004	Decreasing		—
MW-105	5/19/2020	1.02	9	2004	Decreasing		—

Table 5 - Monitoring Well Network and Schedule

Monitoring Well	Most Recent Sample Date and TCE Concentration (µg/L)	Sample Events ±	Date of Last TCE Result Exceeding CUL	TCE Temporal Trend (2020)	Recommended Sampling Schedule †	Monitoring Well Network Notes
MW-106	4/12/2006 2.22	7	2003	N/A	2 Years	Proposed farthest downgradient well cluster
MW-107	5/19/2020 1.76	12	2011	Decreasing		Proposed farthest downgradient well cluster
MW-108	5/19/2020 2.02	12	2011	Decreasing		Proposed farthest downgradient well cluster
MW-13	5/20/2020 0.473 J	20	2009	Probably decreasing	Decommission Well Cluster	—
MW-14	5/20/2020 0.507 J	14	2006	Decreasing		—
MW-38	5/19/2020 0.899 J	7	None	No trend	Decommission Well Cluster	—
MW-39	5/19/2020 0.781 J	7	None	Stable		—

- NOTES:
- The highest result of a primary and field duplicate sample pair are displayed.
 - ± Field duplicates are not included in the number of sampling events but were included for trend analysis calculations.
 - † Proposed Monitoring Well Network Schedule
 - None TCE concentrations for all sampling events are less than current DEC Cleanup Level
 - N/A Temporal TCE trends not assessed in 2020 or previously.
 - Bold** Concentration of TCE exceeds the DEC Groundwater Cleanup Level of 2.8 µg/L.
 - < Analyte not detected; listed as less than the LOD unless otherwise flagged due to quality-control failures.
 - J Result is reported at an estimated concentration detected between the DL and LOQ. Flag applied by the laboratory.

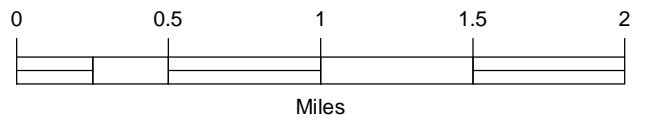
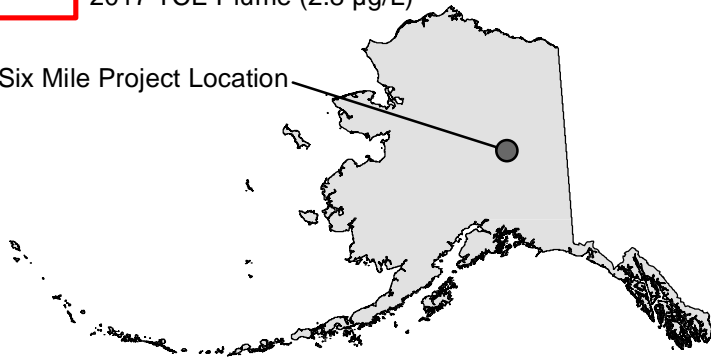
DEC = Alaska Department of Environmental Conservation; DL = detection limit; LOD = limit of detection; LOQ = limit of quantitation; µg/L = microgram per liter; TCE = trichloroethene



LEGEND

 2017 TCE Plume (2.8 µg/L)

Six Mile Project Location



Six Mile Richardson Highway
2020 Groundwater Investigation
North Pole, Alaska

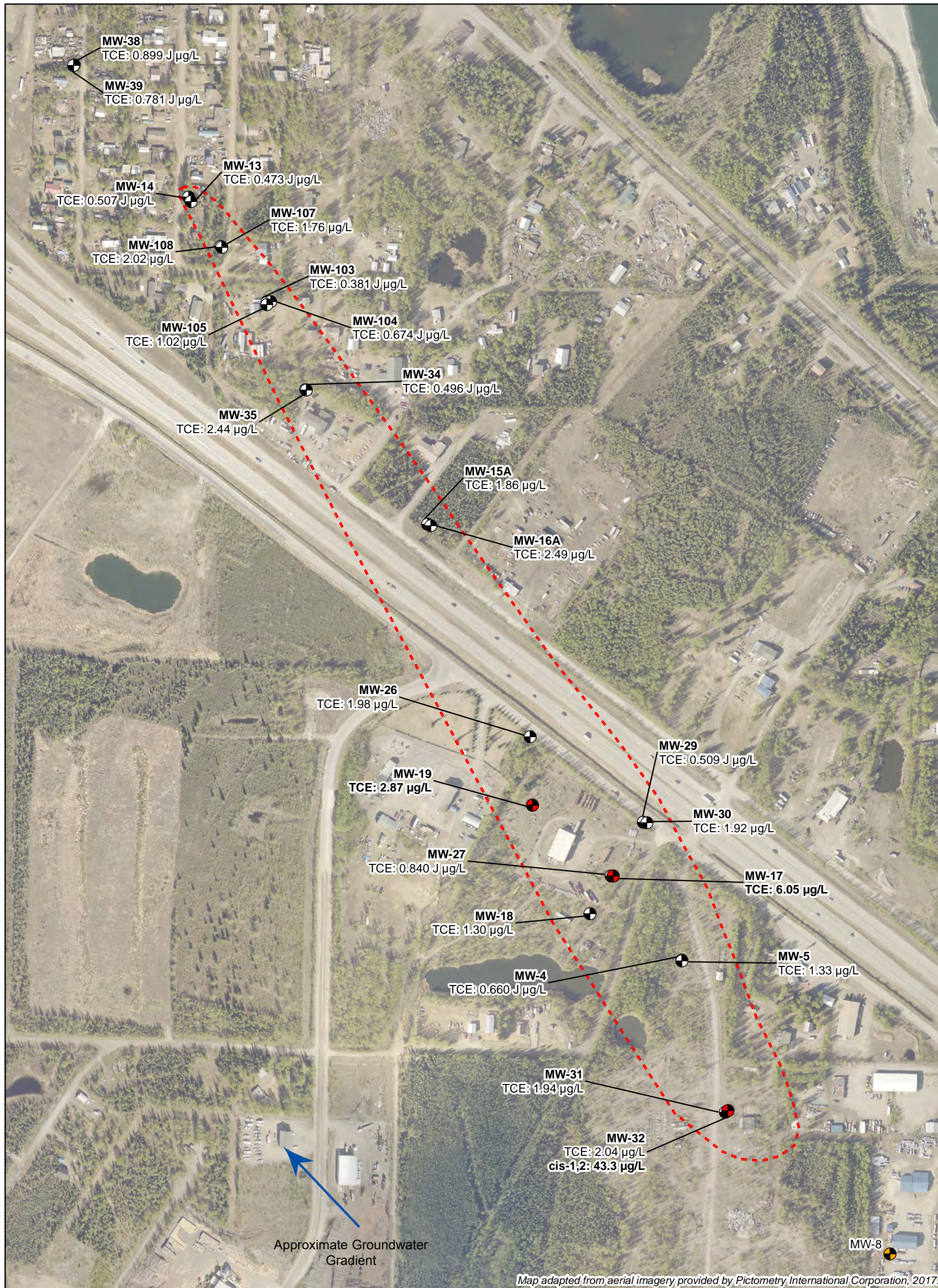
SITE VICINITY

March 2021

103822-003

 SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

Figure 1



Map adapted from aerial imagery provided by Pictometry International Corporation, 2017.

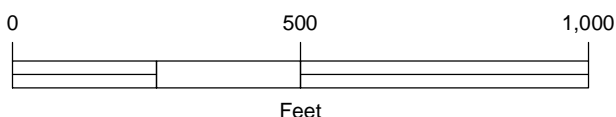
LEGEND

Monitoring Wells

- Decommissioned
- Results Less Than Cleanup Level
- Results Exceed Cleanup Level
- 2017 TCE Plume (2.8 µg/L)

Notes:
All locations are approximate.

TCE: Trichloroethene
 cis-1,2: cis-1,2-Dichloroethene
 µg/L: micrograms per liter
 J: estimated concentration
BOLD: Analyte exceeds cleanup level



Six Mile Richardson Highway 2020 Groundwater Investigation North Pole, Alaska	
2020 MONITORING WELL RESULTS	
July 2020	103822-003
SHANNON & WILSON, INC. <small>GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS</small>	
Figure 2	

Appendix A

Project Photographs

APPENDIX A: PROJECT PHOTOGRAPHS



Photo 1: Preparing to decommissioning MW-8 (pictured to the right) on May 6, 2020. Location of former MW-9 was within the gravel pad pictured in the background, per on-site fleet manager.



Photo 2: Decommissioning MW-8: constructed of 2-inch PVC casing to a depth of 80 feet, with a 5-foot steel stick-up monument.



Photo 3: Decommissioning activities complete at MW-8 in accordance with Section 6.2 of the Work Plan. Sand and bentonite filling remaining borehole in foreground.



Photo 4: Redeveloping MW-32 using an air diaphragm pump and surge block prior to sampling.



Photo 5: Location of MW-5 (left) and MW-4 (right) during inspections on May 1, 2020.

Appendix B

Field Forms

CONTENTS

- Field Notes
- Monitoring Well Sample Logs and Well Development Logs

FIELD ACTIVITIES DAILY LOG

Date 5/1/2020

Sheet 1 of 1

Project No. 103822-002

Project Name: Well Int G mile Groundwater Investigation

Field activity subject: Well Integrity Checks

Description of daily activities and events: 0830 - Load truck

0900 - Depart for site

0915 - Arrive on-site

Inspect Mw-26, Mw-29, Mw-30, Mw-17, Mw-18, Mw-27, Mw-19, Mw-4, Mw-5, Mw-31, Mw-32 & Mw-18.

1430 - Arrive @ Mw-09, Take photos @ GPS Point

1345 - Arrive @ Mw-16A - Inspect Mw-16A + Mw-15A

Inspect Mw-34 & Mw-35

17:15 - Depart for office

17:30 Arrive @ office

Visitors on site: Roosevelt Gray - lives on neighboring parcel to Mansfield.

was wanting contact info for County Mansfield

Changes from plans/specifications and other special orders and important decisions:

N/A

Weather conditions: Sunny, 67° F

Important telephone calls: N/A

Personnel on site: CAS

Signature: [Signature] Date: 5/1/2020

AEF 6-4-2020

FIELD ACTIVITIES DAILY LOG

Date 5/5/2020

Sheet 1 of 1

Project No. 103822-002

Project Name: Six Mile Richardson HW GW Investigation

Field activity subject: Well Integrity Inspections

Description of daily activities and events: 0945 - Pack Truck

10:00 - Depart office - Gas truck

10:45 - Arrive @ MW-107 & 108

complete inspections

11:45 - Arrive @ MW-103, 104 & 105

complete inspections

12:15 - Depart site

12:30 - Drop equipment off to RLW

12:45 - Arrive @ office unload, complete paperwork.

Visitors on site: N/A

Changes from plans/specifications and other special orders and important decisions:

N/A

Weather conditions: 65°F Sunny

Important telephone calls: N/A

Personnel on site: CAB

Signature: [Handwritten Signature]

Date: 5/5/2020

AEF 6-4-2020

FIELD ACTIVITIES DAILY LOG

Date 5/6/2020

Sheet 1 of 1

Project No. 103820-002

Project Name: 6 mile

Field activity subject: Well decommissioning

Description of daily activities and events: 1245 - Load Truck

13:45 - Depart office

14:00 - Arrive @ Samson property

- locate well - MW-8 - thought to be previously decommissioned.
- unable to locate MW-9.
- Kent Johnson present, states gravel pad for nearby structure was installed & graded in 2016. Did not uncover a well during construction. Well should be w/ in gravel pad.
- 60 feet to west of MW-8, a 6-inch steel casing is sticking out of the ground. top of casing sheered at ~~1.55~~ ^{1.55'} above ground surface. Total depth was 31.0' bgs. Water present @ approximately 9 ft.

- Decommission MW8

- Ice present @ 4.76' below top of casing
- Remove monument - 5.00' feet steel monument, no concrete
- Remove 80' of casing.
- Hole drilled into 7.5' feet bgs.
- Backfill w/ bentonite to 1' bgs
- Backfill from 1 to surface w/ sand
- Ice plug measured at 1.16'

1500 - Depart site

1515 - Arrive @ office, unpark.

Visitors on site: -

Changes from plans/specifications and other special orders and important decisions: Decommission MW-8 instead of MW-9. MW-9 is thought to be previously decommissioned but mislabeled as MW-8

Weather conditions:

Important telephone calls: SMH - Discuss MW-9 no longer existing. Decommission MW-8.

Personnel on site: CAB

Signature: [Handwritten Signature]

Date: 5/6/2020

AEF 6/4/2020

FIELD ACTIVITIES DAILY LOG

Date 5/19/2020

Sheet 1 of 1

Project No. 103822-002

Project Name: 6 Mile

Field activity subject: Monitoring Well Sampling

Description of daily activities and events: 0845 Calibrate YSI - Load Truck

955: Depart office

10:15 - Arrive on site

- Collect samples @ MW-38 & MW-39

1230 - Check MW-14 to determine if still frozen

1245 - collect samples @ MW-107 & MW-108

1405 - Collect samples @ MW-103, 104 & 105

1630 - Collect samples @ MW-39 & MW-35

1815 - Depart site

1830 - Arrive @ office, unload samples/YSI

Visitors on site: N/A

Changes from plans/specifications and other special orders and important decisions:

N/A

Weather conditions: Sunny 60-70°F

Important telephone calls: Speak with SMH about thawing MW-13/14

Personnel on site: CAB

Signature: [Handwritten Signature]

Date: 5/19/2020

AEF
6/4/2020

FIELD ACTIVITIES DAILY LOG

Date 5/20/2020

Sheet 1 of 1

Project No. 103822-002

Project Name: G Mile

Field activity subject: Monitoring Well Sampling

Description of daily activities and events: 0845 - Calibrate YSI / load truck

1010: Depart office

1030: Arrive on site - Thaw & Sample MW-13 & MW-14

1328: Collect sample @ MW-15A & MW-16A

1505: Collect sample @ MW-26

1611: Collect sample @ MW-29 & MW-30

1753: Depart site

1810: Arrive @ office, unload samples / YSI

Visitors on site: Roosevelt Gray @ MW-26. Expressed displeasure w/ DEC & Army Corp of Engineers' distrust

Changes from plans/specifications and other special orders and important decisions:

N/A

Weather conditions: Sunny 20°F

Important telephone calls: N/A

Personnel on site: CAB

Signature: [Handwritten Signature]

Date: 5/20/2020

AEF 6/4/2020

FIELD ACTIVITIES DAILY LOG

Date 5/21/2020

Sheet 1 of 1

Project No. 103822-000

Project Name: 6 Mile

Field activity subject: Monitoring well Redevelopment & Sampling

Description of daily activities and events: @845 - Calibrate YSI & load truck

1015 - Depart office

1030 - Arrive on site - Redevelop MW-5, collect samples @ MW-5 & MW-4

1300 - Arrive on Mansfield property
- Redevelop & sample MW-17 & MW-18
Collect sample @ MW-17 & MW-27

1825: Depart site

1840: Arrive @ office, unload samples / YSI

Visitors on site: Craig Mansfield

Changes from plans/specifications and other special orders and important decisions:

N/A

Weather conditions: Sunny - 70°F

Important telephone calls: Craig Mansfield about site access

Personnel on site: CAB/TMC

Signature: [Handwritten Signature]

Date: 5/21/2020

AEF
6/4/2020

FIELD ACTIVITIES DAILY LOG

Date 5/22/2020

Sheet 1 of 1

Project No. 103822-000

Project Name: 6 Mile

Field activity subject: Monitoring Well Redevelopment & Sampling

Description of daily activities and events: 0840 - Calibrate PSI / update paperwork

1015 - Depart office

1040 - Arrive on site

Attempt Redeveloping Mw-30. Recharge too slow.

Sample Mw-30

1245 - Motor on pump burned out. TMC retrieves new motor from office. CAB replaced motor & decan pump again.

- Sample Mw-31

1445 - Depart office

1500 - Arrive @ office. Complete paperwork

1515 - Drop samples at lab & return to office

Visitors on site: N/A

Changes from plans/specifications and other special orders and important decisions:

Replace pump motor

Weather conditions: Partly Cloudy, 70's F

Important telephone calls: To SMH asking about pump motor or to use additional

Personnel on site: CAB, TMC

Signature: [Handwritten signatures]

Date: 5/22/2020

AEF 6/4/2020

SAMPLE COLLECTION LOG

Project Number: 103822-002 Location: 6 Mile Richardson Highway Page 1 of 2
 Date: 5/19/2020 - 5/22/2020
 Sampler: CAB

Sample Number	Location	Date	Sample Time	Depth Interval (ft)		Matrix Type	Sampling Method	Sample Type	PID Reading	Analyses
				top	bottom					
MW-38	MW-38	5/19/2020	1108			GW	G	ES		VOCs
MW-39	MW-39		1153							
MW-108	MW-108		1317							
MW-107	MW-107		1350							
MW-103	MW-103		1502							
MW-105	MW-105		1534							
MW-104	MW-104		1604							
MW-34	MW-34		1709							
MW-35	MW-35		1752							
MW-135	MW-135		1742					FD		
MW-13	MW-13	5/20/2020	1144					ES		
MW-14	MW-14		1244							
MW-15A	MW-15A		1401							
MW-16A	MW-16A		1439							
MW-26	MW-26		1539							
MW-29	MW-29		1645							
MW-30	MW-30		1727							
MW-5	MW-5	5/22/2020	1141							
MW-4	MW-4		1225							
MW-19	MW-19		1425							
MW-18	MW-18		1620							
MW-27	MW-27		1724							
MW-17	MW-17		1801							
MW-117	MW-117		1751					FD		
MW-32	MW-32	5/22/2020	1203					ES		
EB-32	MW-32		1213					EB		

Matrix Type	Sampling Method	Sample Type
AR Air	B Bailor/Coliwas	ES Environmental sample
GW Groundwater	D Drill cuttings	ER Equipment rinsate
PR Product	G Grab sampling	EB Field blank <i>Equipment Blank</i>
SB Subsurf. soil	H Hand auger	FD Field duplicate
SE Sediment	L Tube liner	FM Field measurement
SG Sludge	P Pump (liquid)	FR Field replicate
SS Surface soil	SS Split spoon	MD Matrix spike duplicate
SW Surface water	T Shelby tube	MS Matrix spike duplicate
WR Water	V Vacuum (gas)	TB Trip blank
	W Wipe sampling	

MONITORING WELL SAMPLING LOG

Owner/Client Alaska Department of Environmental Conservation
 Location Six-Mile Richardson Highway
 Sampling Personnel LAB/TMC
 Weather Conditions Sunny Air Temp. (°F) 70

Project No. 103822-002
 Date 5/24/2020
 Well MW-4
 Time started 1148
 Time completed 1238

Sample No. MW-4 Time 1025
 Duplicate — Time —
 Equipment Blank — Time —

Pump Hurricane
 Pumping Start 1202
 Purge Rate (gal./min.) 0.5
 Pumping End 1225
 Pump Set Depth Below MP (ft.) 70'
 Tubing (ft.) 75

Diameter and Type of Casing 2" PUC
 Approximate Total Depth of Well Below MP (ft.) —
 Measured Total Depth of Well Below MP (ft.) 75.57
 Depth to Water Below MP (ft.) 7.49
 Depth to Ice (if frozen) Below MP (ft.) —
 Feet of Water in Well 68.08
 Gallons per foot 0.17
 Gallons in Well 11.58
 Purge Water Volume (gal.) 11.5
 Purge Water Disposal GAC or Purge to Ground

Monument Condition Good

Casing Condition Good

Measuring Point (MP): Top of Casing (TOC)

Monument type: Stickup / Flushmount
 Measurement method: Rod & level / Tape measure

Top-of-casing to monument (ft.) +0.23
 Monument to ground surface (ft.) 2.24

- Lock present and operational
- Well No. legible on outside of well
- Evidence of frost-jacking? (explain if checked) N/A

Notes — Well located at 1491 Richardson Hwy

WELL CASING VOLUMES

Diameter of Well [ID-inches]	CMT	1¼	2	3	4	6	8
Gallons per lineal foot	0.000253	0.08	0.17	0.38	0.66	1.5	2.6

AEF
6-5-2020

Well No. MW-4

WELL DEVELOPMENT LOG

Owner-Client ADEC Well No. MW-5
 Location 6 mile Project No 103822
 Weather Sunny 75 Date 5/21/2020
 Development Personnel CAB/TMC

Diameter and Type of Casing: 2" PVC
 Total Depth of Well **Before** Development (feet below top of casing): 25.09
 Depth to Water **Before** Development (feet below top of casing): 7.98
 Depth to Screen Top and Bottom (from Construction Log): Top: 5.67 Bottom: 25.67

Development Details

Feet of water in well 17.11 Time pumping started 1050
 Gallons per foot 0.17 Flow rate (gal/min) 6
 Gallons in well 2.9 Flow-rate measurement method: Measured
 Surge method Diaphragm Time pumping ended 1102
 Pump used Diaphragm Gallons Pumped 72
 Tubing used (ft) 35 Disposal: Purge to ground

Depth to Water **After** Development (feet below top of casing): 7.98
 Total Depth of Well **After** Development (feet below top of casing): 25.50

Observations

Time	Water Clarity (Visual)	Time	Water Clarity (Visual)
1050	Turbid		
1054	Very turbid		
1057	Turbid		
1059	Slightly turbid		
1102	Clear		

NOTES: _____

WELL CASING VOLUMES

Diameter of Well [ID-inches]	1 1/4	2	3	4	6	8
Gallons per lineal foot	0.08	0.17	0.38	0.66	1.5	2.6

AEF
6-5-2020

MONITORING WELL SAMPLING LOG

Owner/Client Alaska Department of Environmental Conservation
 Location Six-Mile Richardson Highway
 Sampling Personnel CAB/TML
 Weather Conditions Sunny Air Temp. (°F) 70

Project No. 103822-002
 Date 5/21/2020
 Well MW-5
 Time started 1112
 Time completed 1148

Sample No. MW-5 Time 1141
 Duplicate — Time —
 Equipment Blank — Time —

Pump Hurricane
 Pumping Start 1050 - Development 1126
 Purge Rate (gal./min.) 0.5
 Pumping End 1141

Diameter and Type of Casing 2" PVC
 Approximate Total Depth of Well Below MP (ft.) —
 Measured Total Depth of Well Below MP (ft.) 25.50
 Depth to Water Below MP (ft.) 7.98
 Depth to Ice (if frozen) Below MP (ft.) —
 Feet of Water in Well 17.52
 Gallons per foot 0.17
 Gallons in Well 2.98
 Purge Water Volume (gal.) 7.5 + 7.2
 Purge Water Disposal GAC or Purge to Ground

Pump Set Depth Below MP (ft.) 20
 Tubing (ft.) 30

Monument Condition Good

Casing Condition Good

Measuring Point (MP): Top of Casing (TOC)

Monument type: Stickup / Flushmount
 Measurement method: Rod & level / Tape measure

Top-of-casing to monument (ft.) +0.36
 Monument to ground surface (ft.) 2.70

- Lock present and operational
- Well No. legible on outside of well
- Evidence of frost-jacking? (explain if checked) Casing moved up 0.1' 0.28' removed

Notes 72 gallons purged for redevelopment
0.28' casing removed
well located at 1491 Richardson Hwy

WELL CASING VOLUMES

Diameter of Well [ID-inches]	CMT	1¼	2	3	4	6	8
Gallons per lineal foot	0.000253	0.08	0.17	0.38	0.66	1.5	2.6

AEF
0-5-2020

Well No.
MW-5

MONITORING WELL SAMPLING LOG

Owner/Client Alaska Department of Environmental Conservation
 Location Six-Mile Richardson Highway
 Sampling Personnel CAB
 Weather Conditions Sunny Air Temp. (°F) 60°

Project No. 103822-002
 Date 5/20/2020
 Well MW-13
 Time started 1030
 Time completed 1152

Sample No. MW-13 Time 1144
 Duplicate - Time -
 Equipment Blank - Time -

Pump Hurricane
 Pumping Start 1121
 Purge Rate (gal./min.) 0.5
 Pumping End 1144

Diameter and Type of Casing 2" PVC
 Approximate Total Depth of Well Below MP (ft.) ~50
 Measured Total Depth of Well Below MP (ft.) 48.90
 Depth to Water Below MP (ft.) 5.45
 Depth to Ice (if frozen) Below MP (ft.) 7.43
 Feet of Water in Well 43.45
 Gallons per foot 0.17
 Gallons in Well 7.39
 Purge Water Volume (gal.) ~10.5
 Purge Water Disposal GAC or Purge to Ground

Pump Set Depth Below MP (ft.) ~45
 Tubing (ft.) 50

Monument Condition Good

Casing Condition Good

Measuring Point (MP): Top of Casing (TOC)

Monument type: Stickup / Flushmount
 Measurement method: Rod & level / Tape measure

Top-of-casing to monument (ft.) 0.56
 Monument to ground surface (ft.) Flush

- Lock present and operational
- Well No. legible on outside of well Inside
- Evidence of frost-jacking? (explain if checked) N/A

Notes Well thawed @ 10:59 - used 0.2 gal distilled
Well located in right of way

WELL CASING VOLUMES

Diameter of Well [ID-inches]	CMT	1 1/4	2	3	4	6	8
Gallons per lineal foot	0.000253	0.08	0.17	0.38	0.66	1.5	2.6

*ABF
6-5-2020*

Well No. MW-13

MONITORING WELL SAMPLING LOG

Owner/Client Alaska Department of Environmental Conservation
 Location Six-Mile Richardson Highway
 Sampling Personnel CAS
 Weather Conditions Sunny Air Temp. (°F) 65

Project No. 103822-002
 Date 5/20/2020
 Well MW-14
 Time started 1153
 Time completed 1306

Sample No. MW-14 Time 1244
 Duplicate - Time -
 Equipment Blank - Time -

Pump Hurricane
 Pumping Start 1220
 Purge Rate (gal./min.) 0.40, 250.5
 Pumping End 1244

Diameter and Type of Casing 2" PVC
 Approximate Total Depth of Well Below MP (ft.) ~ 30
 Measured Total Depth of Well Below MP (ft.) 28.57
 Depth to Water Below MP (ft.) 5.83
 Depth to Ice (if frozen) Below MP (ft.) 7.26, 7.46
 Feet of Water in Well 22.79
 Gallons per foot 0.17
 Gallons in Well 3.87
 Purge Water Volume (gal.) 12
 Purge Water Disposal GAC or Purge to Ground

Pump Set Depth Below MP (ft.) ~ 25
 Tubing (ft.) 30

Monument Condition Good

Casing Condition Good

Measuring Point (MP): Top of Casing (TOC)

Monument type: Stickup / Flushmount
 Measurement method: Rod & level / Tape measure

Top-of-casing to monument (ft.) 0.30
 Monument to ground surface (ft.) Flush

- Lock present and operational
- Well No. legible on ~~outside~~ Inside N/A
- Evidence of frost-jacking? (explain if checked) N/A

Notes Thawed @ 12:11 used 0.2 gal distilled
Well located in right-of-way

WELL CASING VOLUMES

Diameter of Well [ID-inches]	CMT	1¼	2	3	4	6	8
Gallons per lineal foot	0.000253	0.08	0.17	0.38	0.66	1.5	2.6

AEF
6-5-2020

Well No.
MW-14

MONITORING WELL SAMPLING LOG

Owner/Client Alaska Department of Environmental Conservation
 Location Six-Mile Richardson Highway
 Sampling Personnel CAB
 Weather Conditions Sunny Air Temp. (°F) 70

Project No. 103822-002
 Date 5/20/2020
 Well MW-15A
 Time started 1328
 Time completed 1415

Sample No. MW-15A Time 1401
 Duplicate - Time -
 Equipment Blank - Time -

Pump Hurricane Diameter and Type of Casing 2" PVC
 Pumping Start 1345 Approximate Total Depth of Well Below MP (ft.) 76.95
 Purge Rate (gal./min.) ~0.5 Measured Total Depth of Well Below MP (ft.) 76.89
 Pumping End 1401 Depth to Water Below MP (ft.) 6.32
 Pump Set Depth Below MP (ft.) ~72.5 Depth to Ice (if frozen) Below MP (ft.) -
 Tubing (ft.) 80 Feet of Water in Well 70.57
 Gallons per foot 0.17
 Gallons in Well 12
 Purge Water Volume (gal.) ~7.5
 Purge Water Disposal GAC or Purge to Ground

Monument Condition Good
 Casing Condition Good

Measuring Point (MP): Top of Casing (TOC)

Monument type: Stickup / Flushmount
 Measurement method: Rod & level / Tape measure

Top-of-casing to monument (ft.) 0.38
 Monument to ground surface (ft.) 2.95

- Lock present and operational
- Well No. legible on outside of well
- Evidence of frost-jacking? (explain if checked) N/A

Notes - Well located at 1430 Richardson Hwy

WELL CASING VOLUMES

Diameter of Well [ID-inches]	CMT	1 1/4	2	3	4	6	8
Gallons per lineal foot	0.000253	0.08	0.17	0.38	0.66	1.5	2.6

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6-5-2020

Well No.
MW-15A

MONITORING WELL SAMPLING LOG

Owner/Client Alaska Department of Environmental Conservation
 Location Six-Mile Richardson Highway
 Sampling Personnel LAB
 Weather Conditions Sunny Air Temp. (°F) 70

Project No. 103822-002
 Date 5/20/2020
 Well MW-16A
 Time started 1415
 Time completed 1455

Sample No. MW-16A Time 1439
 Duplicate — Time —
 Equipment Blank — Time —

Pump Hurricane
 Pumping Start 1422
 Purge Rate (gal./min.) 0.5
 Pumping End 1439

Diameter and Type of Casing 2" PVC
 Approximate Total Depth of Well Below MP (ft.) 23.38
 Measured Total Depth of Well Below MP (ft.) 23.25
 Depth to Water Below MP (ft.) 6.90
 Depth to Ice (if frozen) Below MP (ft.) —
 Feet of Water in Well 16.85
 Gallons per foot 0.17
 Gallons in Well 2.87
 Purge Water Volume (gal.) ~8.5
 Purge Water Disposal GAC or Purge to Ground

Pump Set Depth Below MP (ft.) 19
 Tubing (ft.) 25

Monument Condition Good

Casing Condition Good

Measuring Point (MP): Top of Casing (TOC)

Monument type: Stickup / Flushmount
 Measurement method: Rod & level / Tape measure

Top-of-casing to monument (ft.) 0.69
 Monument to ground surface (ft.) 3.25

- Lock present and operational
- Well No. legible on outside of well
- Evidence of frost-jacking? (explain if checked) N/A

Notes — well located at 1430 Richardson Hwy

WELL CASING VOLUMES

Diameter of Well [ID-inches]	CMT	1¼	2	3	4	6	8
Gallons per lineal foot	0.000253	0.08	0.17	0.38	0.66	1.5	2.6

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6-5-2020*

Well No. MW-16A

MONITORING WELL SAMPLING LOG

Owner/Client Alaska Department of Environmental Conservation
 Location Six-Mile Richardson Highway
 Sampling Personnel CAB
 Weather Conditions Cloudy Air Temp. (°F) 65

Project No. 103822-002
 Date 5/21/2020
 Well MW-17
 Time started 1734
 Time completed 1825

Sample No. MW-17 Time 1801
 Duplicate MW-117 Time 1751
 Equipment Blank - Time -

Pump Hurricane
 Pumping Start 1742
 Purge Rate (gal./min.) 0.5
 Pumping End 1801

Diameter and Type of Casing 2" PVC
 Approximate Total Depth of Well Below MP (ft.) 29.21
 Measured Total Depth of Well Below MP (ft.) 29.24
 Depth to Water Below MP (ft.) ~~3.81~~ 2.81
 Depth to Ice (if frozen) Below MP (ft.) -
 Feet of Water in Well 20.46 21.46
 Gallons per foot 0.17
 Gallons in Well 3.65
 Purge Water Volume (gal.) ~~8.43~~ 9.5
 Purge Water Disposal GAC or Purge to Ground

Pump Set Depth Below MP (ft.) 24
 Tubing (ft.) 30

Monument Condition Good

Casing Condition Good

Measuring Point (MP): Top of Casing (TOC)

Monument type: Stickup / Flushmount
 Measurement method: Rod & level / Tape measure

Top-of-casing to monument (ft.) 0.09
 Monument to ground surface (ft.) ~~29.27~~ 3.50

- Lock present and operational
- Well No. legible on outside of well
- Evidence of frost-jacking? (explain if checked) N/A

Notes - well located at 1455 Richardson Hwy

WELL CASING VOLUMES

Diameter of Well [ID-inches]	CMT	1 1/4	2	3	4	6	8
Gallons per lineal foot	0.000253	0.08	0.17	0.38	0.66	1.5	2.6

AEF
6-5-2020

Well No.
MW-17

WELL DEVELOPMENT LOG

Owner-Client ADEC Well No. MW-18
 Location 6 mile Project No. 103822-002
 Weather Sunny 70 Date 5/21/2020
 Development Personnel CAB TMC

Diameter and Type of Casing: 2" PVC
 Total Depth of Well **Before** Development (feet below top of casing): 25.95
 Depth to Water **Before** Development (feet below top of casing): 8.45
 Depth to Screen Top and Bottom (from Construction Log): Top: 15.99 Bottom: 25.99

Development Details

Feet of water in well 17.5 Time pumping started 1534
 Gallons per foot 0.17 Flow rate (gal/min) 4.17
 Gallons in well 2.98 Flow-rate measurement method: Measured
 Surge method Diaphragm
 Pump used Diaphragm Time pumping ended 1540
 Tubing used (ft) 75 Gallons Pumped 25
 Disposal: NRC/USECology * See sample log note

Depth to Water **After** Development (feet below top of casing): 8.44
 Total Depth of Well **After** Development (feet below top of casing): 26.31

Observations

Time	Water Clarity (Visual)	Time	Water Clarity (Visual)
1534	Clear		
1536	Very turbid		
1538	Slightly turbid		
1540	Clear		

NOTES: _____

WELL CASING VOLUMES

Diameter of Well [ID-inches]	1 1/4	2	3	4	6	8
Gallons per lineal foot	0.08	0.17	0.38	0.66	1.5	2.6

MONITORING WELL SAMPLING LOG

Owner/Client Alaska Department of Environmental Conservation
 Location Six-Mile Richardson Highway
 Sampling Personnel CAB
 Weather Conditions Sunny Air Temp. (°F) 78

Project No. 103822-002
 Date 5/21/2020
 Well MW-18
 Time started 1549
 Time completed 1642

Sample No. MW-18 Time 1620
 Duplicate - Time -
 Equipment Blank - Time -

Pump Hurricane
 Pumping Start 1604
 Purge Rate (gal./min.) 0.5
 Pumping End 1620

Diameter and Type of Casing 2" PVC
 Approximate Total Depth of Well Below MP (ft.) 25.99
 Measured Total Depth of Well Below MP (ft.) 26.31
 Depth to Water Below MP (ft.) 8.44
 Depth to Ice (if frozen) Below MP (ft.) -
 Feet of Water in Well 17.87
 Gallons per foot 0.17
 Gallons in Well 3.04
 Purge Water Volume (gal.) 8+25=33*

Pump Set Depth Below MP (ft.) 21
 Tubing (ft.) 30

Purge Water Disposal GAC or Purge to Ground -NRC*

Monument Condition Good

Casing Condition Good

Measuring Point (MP): Top of Casing (TOC)

Monument type: Stickup / Flushmount
 Measurement method: Rod & level / Tape measure

Top-of-casing to monument (ft.) 0.13
 Monument to ground surface (ft.) 3.89

- Lock present and operational
- Well No. legible on outside of well
- Evidence of frost-jacking? (explain if checked) N/A

Notes 25 gallons purged prior to sampling

* Drummed development and purge water. Dispose through NRC/USEPA ecology; or hold for results and (purge to ground if results are less than DEC cleanup levels, or GAC to ground if results exceed DEC cleanup levels).
Well located at 1517 Lu Anne.

WELL CASING VOLUMES

Diameter of Well [ID-inches]	CMT	1/4	2	3	4	6	8
Gallons per lineal foot	0.000253	0.08	0.17	0.38	0.66	1.5	2.6

AEF
6-5-2020

Well No.

MW-18

WELL DEVELOPMENT LOG

Owner-Client DEC Well No. MW-19
 Location 6 Mile Project No. 103822-002
 Weather Sunny 70°F Date 5/21/2019
 Development Personnel CAB, TMC

Diameter and Type of Casing: 2" PVC
 Total Depth of Well **Before** Development (feet below top of casing): 81.95
 Depth to Water **Before** Development (feet below top of casing): 9.95
 Depth to Screen Top and Bottom (from Construction Log): Top: 82.5? Bottom: 82.5?

Development Details

Feet of water in well 72 Time pumping started 1325
 Gallons per foot 0.17 Flow rate (gal/min) 7.5
 Gallons in well 12.24 Flow-rate measurement method: Measured
 Surge method Diaphragm Time pumping ended 1327
 Pump used Diaphragm Gallons Pumped 15
 Tubing used (ft) 85 Disposal: NRC GAC

Depth to Water **After** Development (feet below top of casing): 9.93
 Total Depth of Well **After** Development (feet below top of casing): 81.95

Observations

Time	Water Clarity (Visual)	Time	Water Clarity (Visual)
<u>1325</u>	<u>Clear</u>		
<u>1327</u>	<u>Clear</u>		

NOTES: Development water clear, and no change to total well depth (no sediment to remove)

WELL CASING VOLUMES

Diameter of Well [ID-inches]	1 1/4	2	3	4	6	8
Gallons per lineal foot	0.08	<u>0.17</u>	0.38	0.66	1.5	2.6

AEF 6-5-2020

MONITORING WELL SAMPLING LOG

Owner/Client Alaska Department of Environmental Conservation
 Location Six-Mile Richardson Highway
 Sampling Personnel CAB
 Weather Conditions Sunny Air Temp. (°F) 70°

Project No. 103822-002
 Date 5/21/2020
 Well MW-19
 Time started 1340
 Time completed 1505

Sample No. MW-19 Time 1425
 Duplicate — Time —
 Equipment Blank — Time —

Pump Horricup
 Pumping Start 1359
 Purge Rate (gal./min.) 0.5
 Pumping End 1425
 Pump Set Depth Below MP (ft.) 77
 Tubing (ft.) 82

Diameter and Type of Casing 2" PVC
 Approximate Total Depth of Well Below MP (ft.) —
 Measured Total Depth of Well Below MP (ft.) 81.95
 Depth to Water Below MP (ft.) 9.93
 Depth to Ice (if frozen) Below MP (ft.) —
 Feet of Water in Well 72.02
 Gallons per foot 0.17
 Gallons in Well 12.24
 Purge Water Volume (gal.) 13 + 15 = 28
 Purge Water Disposal GAC or Purge to Ground

Monument Condition Good

Casing Condition Good

Measuring Point (MP): Top of Casing (TOC)

Monument type: Stickup / Flushmount
 Measurement method: Rod & level / Tape measure

Top-of-casing to monument (ft.) 0.19
 Monument to ground surface (ft.) 2.88

- Lock present and operational
- Well No. legible on outside of well
- Evidence of frost-jacking? (explain if checked) N/A

Notes 15 gallons purged for redevelopment
well located at 1455 Richardson Hwy

WELL CASING VOLUMES

Diameter of Well [ID-inches]	CMT	1¼	2	3	4	6	8
Gallons per lineal foot	0.000253	0.08	0.17	0.38	0.66	1.5	2.6

AEF
6-5-2020

Well No.
MW-19

MONITORING WELL SAMPLING LOG

Owner/Client Alaska Department of Environmental Conservation
 Location Six-Mile Richardson Highway
 Sampling Personnel CAB
 Weather Conditions Sunny Air Temp. (°F) 70

Project No. 103822-002
 Date 5/20/2024
 Well MW-26
 Time started 1505
 Time completed 1604

Sample No. MW-26 Time 1549
 Duplicate — Time —
 Equipment Blank — Time —

Pump Hurricane
 Pumping Start 15:24
 Purge Rate (gal./min.) 0.5
 Pumping End 1545

Diameter and Type of Casing 2" PVC
 Approximate Total Depth of Well Below MP (ft.) 32.76
 Measured Total Depth of Well Below MP (ft.) 32.75
 Depth to Water Below MP (ft.) 9.25
 Depth to Ice (if frozen) Below MP (ft.) —
 Feet of Water in Well 23.5
 Gallons per foot 0.17
 Gallons in Well 4
 Purge Water Volume (gal.) 12.5
 Purge Water Disposal GAC or Purge to Ground

Pump Set Depth Below MP (ft.) 27
 Tubing (ft.) 35

Monument Condition Good

Casing Condition Good

Measuring Point (MP): Top of Casing (TOC)

Monument type: Stickup / Flushmount
 Measurement method: Rod & level / Tape measure

Top-of-casing to monument (ft.) 0.36
 Monument to ground surface (ft.) 3.15

- Lock present and operational
- Well No. legible on outside of well Inside N/A
- Evidence of frost-jacking? (explain if checked) —

Notes - well located at 1455 Richardson Hwy

WELL CASING VOLUMES

Diameter of Well [ID-inches]	CMT	1 1/4	2	3	4	6	8
Gallons per lineal foot	0.000253	0.08	0.17	0.38	0.66	1.5	2.6

AEF
6-5-2020

Well No.
MW-26

MONITORING WELL SAMPLING LOG

Owner/Client Alaska Department of Environmental Conservation
 Location Six-Mile Richardson Highway
 Sampling Personnel CAB
 Weather Conditions Partly cloudy Air Temp. (°F) 65

Project No. 103822-002
 Date 5/21/2020
 Well MW-27
 Time started 1655
 Time completed 1734

Sample No. MW-27 Time 1724
 Duplicate — Time —
 Equipment Blank — Time —

Pump Hurricane
 Pumping Start 1704
 Purge Rate (gal./min.) 0.5
 Pumping End 1724
 Pump Set Depth Below MP (ft.) 68
 Tubing (ft.) 75

Diameter and Type of Casing 2" PVC
 Approximate Total Depth of Well Below MP (ft.) 72.95
 Measured Total Depth of Well Below MP (ft.) 72.15
 Depth to Water Below MP (ft.) 7.91
 Depth to Ice (if frozen) Below MP (ft.) —
 Feet of Water in Well 64.24
 Gallons per foot 0.17
 Gallons in Well 10.92
 Purge Water Volume (gal.) ~~5.88~~ 10
 Purge Water Disposal GAC or Purge to Ground

Monument Condition Good
 Casing Condition Good

Measuring Point (MP): Top of Casing (TOC)

Monument type: Stickup / Plushmount
 Measurement method: Rod & level / Tape measure

Top-of-casing to monument (ft.) 0.56
 Monument to ground surface (ft.) 2.82

- Lock present and operational
- Well No. legible on outside of well
- Evidence of frost-jacking? (explain if checked) N/A

Notes - Well located at 1455 Richardson Hwy

WELL CASING VOLUMES

Diameter of Well [ID-inches]	CMT	1 1/4	2	3	4	6	8
Gallons per lineal foot	0.000253	0.08	0.17	0.38	0.66	1.5	2.6

AEF
6-5-2020

Well No.
MW-27

MONITORING WELL SAMPLING LOG

Owner/Client Alaska Department of Environmental Conservation Project No. 103822-002
 Location Six-Mile Richardson Highway Date 5/20/2020
 Sampling Personnel CAD Well MW-29
 Weather Conditions Sunny Air Temp. (°F) 70° Time started 1611
Time completed 1655

Sample No. MW-29 Time 1645
 Duplicate = Time =
 Equipment Blank = Time =

Pump Hurricane Diameter and Type of Casing 2" PVC
 Pumping Start 1623 Approximate Total Depth of Well Below MP (ft.) 71.81
 Purge Rate (gal./min.) 0.5 Measured Total Depth of Well Below MP (ft.) 72.75
 Pumping End 1645 Depth to Water Below MP (ft.) 8.91
 Pump Set Depth Below MP (ft.) 68 Depth to Ice (if frozen) Below MP (ft.) =
 Tubing (ft.) 75 Feet of Water in Well 63.84
 Gallons per foot 0.17
 Gallons in Well 10.86
 Purge Water Volume (gal.) 11
 Purge Water Disposal GAC or Purge to Ground

Monument Condition Good
 Casing Condition Good

Measuring Point (MP): Top of Casing (TOC) Monument type: Stickup / Flushmount
 Measurement method: Rod & level / Tape measure

Top-of-casing to monument (ft.) 0.28
 Monument to ground surface (ft.) 2.55

- Lock present and operational
- Well No. legible on outside of well
- Evidence of frost-jacking? (explain if checked) N/A

Notes - Well located at 1455 Richardson Hwy

WELL CASING VOLUMES

Diameter of Well [ID-inches]	CMT	1 1/4	2	3	4	6	8
Gallons per lineal foot	0.000253	0.08	0.17	0.38	0.66	1.5	2.6

AEF
 6-5-2020

Well No.
MW-29

MONITORING WELL SAMPLING LOG

Owner/Client Alaska Department of Environmental Conservation
 Location Six-Mile Richardson Highway
 Sampling Personnel CAB
 Weather Conditions Sunny Air Temp. (°F) 70

Project No. 103822-002
 Date 5/20/2020
 Well MW-30
 Time started 1655
 Time completed 1753

Sample No. MW-30 Time 1727
 Duplicate — Time —
 Equipment Blank — Time —

Pump Hurricane
 Pumping Start 1705
 Purge Rate (gal./min.) 0.5
 Pumping End 1727

Diameter and Type of Casing 2" PVC
 Approximate Total Depth of Well Below MP (ft.) 31.86
 Measured Total Depth of Well Below MP (ft.) 32.65
 Depth to Water Below MP (ft.) 9.20
 Depth to Ice (if frozen) Below MP (ft.) —
 Feet of Water in Well 23.45
 Gallons per foot 0.17
 Gallons in Well 4
 Purge Water Volume (gal.) 11
 Purge Water Disposal GAC or Purge to Ground

Pump Set Depth Below MP (ft.) 27
 Tubing (ft.) 32

Monument Condition Good

Casing Condition Good

Measuring Point (MP): Top of Casing (TOC)

Monument type: Stickup / Flushmount
 Measurement method: Rod & level / Tape measure

Top-of-casing to monument (ft.) 0.39
 Monument to ground surface (ft.) 2.65

- Lock present and operational
- Well No. legible on outside of well
- Evidence of frost-jacking? (explain if checked) N/A

Notes - well located at 1455 Richardson Hwy

WELL CASING VOLUMES

Diameter of Well [ID-inches]	CMT	1¼	2	3	4	6	8
Gallons per lineal foot	0.000253	0.08	0.17	0.38	0.66	1.5	2.6

*AEF
6-5-2020*

Well No. MW-30

MONITORING WELL SAMPLING LOG

Owner/Client Alaska Department of Environmental Conservation
 Location Six-Mile Richardson Highway
 Sampling Personnel CAD
 Weather Conditions Partly Cloudy Air Temp. (°F) 65

Project No. 103822-002
 Date 5/22/2020
 Well MW-31
 Time started 1235
 Time completed 1445

Sample No. MW-31 Time 1418
 Duplicate — Time —
 Equipment Blank — Time —

Pump Horriem Diameter and Type of Casing 2" PVC
 Pumping Start 1245 - Resumed @ 1354 Approximate Total Depth of Well Below MP (ft.) 70.77
 Purge Rate (gal./min.) 0.25 Measured Total Depth of Well Below MP (ft.) 71.70
 Pumping End 1418 Depth to Water Below MP (ft.) 9.91
 Pump Set Depth Below MP (ft.) 66.5 Depth to Ice (if frozen) Below MP (ft.) —
 Tubing (ft.) 75 Feet of Water in Well 61.79
 Gallons per foot 0.17
 Gallons in Well 10.50
 Purge Water Volume (gal.) 6
 Purge Water Disposal GAC or Purge to Ground

Monument Condition Good
 Casing Condition Good

Measuring Point (MP): Top of Casing (TOC) Monument type: Stickup / Flushmount
 Measurement method: Rod & level / Tape measure

Top-of-casing to monument (ft.) 0.26
 Monument to ground surface (ft.) 4.0

- Lock present and operational
- Well No. legible on outside of well
- Evidence of frost-jacking? (explain if checked) N/A

Notes Motor on pump burned out @ 1245 - ¹³³⁵ Replaced motor & decomed pump again
Well located at 1491 Richardson Hwy

WELL CASING VOLUMES

Diameter of Well [ID-inches]	CMT	1¼	2	3	4	6	8
Gallons per lineal foot	0.000253	0.08	0.17	0.38	0.66	1.5	2.6

AEF
6-5-2020

Well No.
MW-31

WELL DEVELOPMENT LOG

Owner-Client ADEC Well No. MW-32
 Location 6 Mile Project No. 103822-002
 Weather Sunny 65 Date 5/22/2020
 Development Personnel CAB/TMC

Diameter and Type of Casing: 2" PVC
 Total Depth of Well **Before** Development (feet below top of casing): 19.72'
 Depth to Water **Before** Development (feet below top of casing): 9.12
 Depth to Screen Top and Bottom (from Construction Log): Top: 21.69 Bottom: 21.69 ?

Development Details

Feet of water in well 9.32 Time pumping started 1059
 Gallons per foot 0.17 Flow rate (gal/min) 0.25
 Gallons in well 17.97 1.58 Flow-rate measurement method: Measured
 Surge method Diaphragm Time pumping ended 1101
 Pump used Diaphragm Gallons Pumped 0.5
 Tubing used (ft) 30' Disposal: GAC

Depth to Water **After** Development (feet below top of casing): 10.60 Following removal of tubing
 Total Depth of Well **After** Development (feet below top of casing): 19.72

Observations

Time	Water Clarity (Visual)	Time	Water Clarity (Visual)
11:01	Clear - well dry		

NOTES: Slow Recharge - 0.01 ft per 2 seconds

WELL CASING VOLUMES

Diameter of Well [ID-inches]	1 1/4	2	3	4	6	8
Gallons per lineal foot	0.08	0.17	0.38	0.66	1.5	2.6

MONITORING WELL SAMPLING LOG

Owner/Client Alaska Department of Environmental Conservation
 Location Six-Mile Richardson Highway
 Sampling Personnel CAS
 Weather Conditions Sunny Air Temp. (°F) 70

Project No. 103822-002
 Date 5/22/2020
 Well MW-32
 Time started 1125
 Time completed 1235

Sample No. MW-32 Time 1203
 Duplicate Time
 Equipment Blank EB-32 Time 1203

Pump Hurricane
 Pumping Start 1135
 Purge Rate (gal./min.) 0.25
 Pumping End 1203

Diameter and Type of Casing 2" PVC
 Approximate Total Depth of Well Below MP (ft.) 20.59
 Measured Total Depth of Well Below MP (ft.) 19.72
 Depth to Water Below MP (ft.) 9.12
 Depth to Ice (if frozen) Below MP (ft.)
 Feet of Water in Well 10.6
 Gallons per foot 0.17
 Gallons in Well 1.8
 Purge Water Volume (gal.) 5.5 + 0.5 = 6
 Purge Water Disposal GAC or Purge to Ground

Pump Set Depth Below MP (ft.) 17'
 Tubing (ft.) 30

Monument Condition Good

Casing Condition Good

Measuring Point (MP): Top of Casing (TOC)

Monument type: Stickup / Flushmount
 Measurement method: Rod & level / Tape measure

Top-of-casing to monument (ft.) 0.29
 Monument to ground surface (ft.) 3.17

- Lock present and operational
- Well No. legible on outside of well
- Evidence of frost-jacking? (explain if checked) N/A Previously w/it

Notes 'Had to wait for well to recharge before sampling
0.5 gallons purged prior to sampling
Well located at 1491 Richardson Hwy

WELL CASING VOLUMES

Diameter of Well [ID-inches]	CMT	1/4	2	3	4	6	8
Gallons per lineal foot	0.000253	0.08	0.17	0.38	0.66	1.5	2.6

AEF
6-5-2020

Well No.
MW-32

MONITORING WELL SAMPLING LOG

Owner/Client Alaska Department of Environmental Conservation
 Location Six-Mile Richardson Highway
 Sampling Personnel CAB
 Weather Conditions Sunny Air Temp. (°F) 60

Project No. 103822-002
 Date 5/19/2020
 Well MW-34
 Time started 1630
 Time completed 1730

Sample No. MW-34 Time 1707
 Duplicate - Time -
 Equipment Blank - Time -

Pump Hurricane
 Pumping Start 1553
 Purge Rate (gal./min.) 0.75
 Pumping End 1709

Diameter and Type of Casing 2" PVC
 Approximate Total Depth of Well Below MP (ft.) 77.75
 Measured Total Depth of Well Below MP (ft.) 77.70
 Depth to Water Below MP (ft.) 3.65
 Depth to Ice (if frozen) Below MP (ft.) -
 Feet of Water in Well 74.05
 Gallons per foot 0.17
 Gallons in Well 12.6
 Purge Water Volume (gal.) 42
 Purge Water Disposal GAC or Purge to Ground

Pump Set Depth Below MP (ft.) 274
 Tubing (ft.) 80

Monument Condition Good

Casing Condition Good

Measuring Point (MP): Top of Casing (TOC)

Monument type: Stickup / Flushmount
 Measurement method: Rod & level / Tape measure

Top-of-casing to monument (ft.) 0.42
 Monument to ground surface (ft.) Flush

- Lock present and operational
- Well No. legible on ~~outside~~ Inside of well
- Evidence of frost-jacking? (explain if checked) N/A

Notes - well located at 1410 Richardson Hwy

WELL CASING VOLUMES

Diameter of Well [ID-inches]	CMT	1 1/4	2	3	4	6	8
Gallons per lineal foot	0.000253	0.08	0.17	0.38	0.66	1.5	2.6

AEF
6-5-2020

Well No. MW-34

MONITORING WELL SAMPLING LOG

Owner/Client Alaska Department of Environmental Conservation
 Location Six-Mile Richardson Highway
 Sampling Personnel CSA
 Weather Conditions Sunny Air Temp. (°F) 60

Project No. 103822-002
 Date 5/19/2020
 Well MW-35
 Time started 1730
 Time completed 1815

Sample No. MW-35 Time 1750
 Duplicate MW-135 Time 1742
 Equipment Blank — Time —

Pump Hurricane P
 Pumping Start 1636 1736
 Purge Rate (gal./min.) 0.5
 Pumping End 1752

Diameter and Type of Casing 2" PVC
 Approximate Total Depth of Well Below MP (ft.) 38.26
 Measured Total Depth of Well Below MP (ft.) 38.19
 Depth to Water Below MP (ft.) 3.70
 Depth to Ice (if frozen) Below MP (ft.) —
 Feet of Water in Well 39.49
 Gallons per foot 0.17
 Gallons in Well 5.86
 Purge Water Volume (gal.) 18
 Purge Water Disposal GAC or Purge to Ground

Pump Set Depth Below MP (ft.) ~34
 Tubing (ft.) 40

Monument Condition Good

Casing Condition Good

Measuring Point (MP): Top of Casing (TOC)

Monument type: Stickup / Flushmount
 Measurement method: Rod & level / Tape measure

Top-of-casing to monument (ft.) 0.29
 Monument to ground surface (ft.) Flush

- Lock present and operational
- Well No. legible on outside of well Inside
- Evidence of frost-jacking? (explain if checked) N/A

Notes - Well located at 1410 Richardson Hwy

WELL CASING VOLUMES

Diameter of Well [ID-inches]	CMT	1 1/4	2	3	4	6	8
Gallons per lineal foot	0.000253	0.08	0.17	0.38	0.66	1.5	2.6

AGF
6-5-2020

Well No.
MW-35

MONITORING WELL SAMPLING LOG

Owner/Client Alaska Department of Environmental Conservation
 Location Six-Mile Richardson Highway
 Sampling Personnel CAB
 Weather Conditions Sunny Air Temp. (°F) 60's

Project No. 103822-002
 Date 5/19/2020
 Well MW-38
 Time started 10:15
 Time completed 11:17

Sample No. MW-38 Time 1108
 Duplicate — Time —
 Equipment Blank — Time —

Pump Hurricane
 Pumping Start 4:49 CAB 1049
 Purge Rate (gal./min.) ~0.35
 Pumping End 1108

Diameter and Type of Casing 2" PVC
 Approximate Total Depth of Well Below MP (ft.) 39.18
 Measured Total Depth of Well Below MP (ft.) 39.18
 Depth to Water Below MP (ft.) 6.86
 Depth to Ice (if frozen) Below MP (ft.) —
 Feet of Water in Well 32.32
 Gallons per foot 0.17
 Gallons in Well 5.5
 Purge Water Volume (gal.) ~6.5
 Purge Water Disposal GAC or Purge to Ground

Pump Set Depth Below MP (ft.) 35'
 Tubing (ft.) 50'

Monument Condition Good

Casing Condition Good

Measuring Point (MP): Top of Casing (TOC)

Monument type: Stickup / Flushmount
 Measurement method: Rod & level / Tape measure

Top-of-casing to monument (ft.) 0.72'
 Monument to ground surface (ft.) 3.35'

- Lock present and operational
- Well No. legible on outside of well
- Evidence of frost-jacking? (explain if checked) N/A

Notes = Well located on vacant property (1335 Smithsonian)

WELL CASING VOLUMES

Diameter of Well [ID-inches]	CMT	1¼	2	3	4	6	8
Gallons per lineal foot	0.000253	0.08	0.17	0.38	0.66	1.5	2.6

AEF
6/4/2020

Well No.
mw-38

MONITORING WELL SAMPLING LOG

Owner/Client Alaska Department of Environmental Conservation
 Location Six-Mile Richardson Highway
 Sampling Personnel CSB
 Weather Conditions Sunny Air Temp. (°F) 65°

Project No. 103822-002
 Date 5/19/2020
 Well MW-39
 Time started 1118
 Time completed 1210

Sample No. MW-39 Time 1153
 Duplicate — Time —
 Equipment Blank — Time —

Pump Hurricane
 Pumping Start 1130
 Purge Rate (gal./min.) ~0.35
 Pumping End 1153

Diameter and Type of Casing 2" PVC
 Approximate Total Depth of Well Below MP (ft.) 27.57
 Measured Total Depth of Well Below MP (ft.) 27.57
 Depth to Water Below MP (ft.) 6.38
 Depth to Ice (if frozen) Below MP (ft.) —
 Feet of Water in Well 21.19
 Gallons per foot 0.17
 Gallons in Well 3.6
 Purge Water Volume (gal.) 18.05
 Purge Water Disposal GAC or (Purge to Ground)

Pump Set Depth Below MP (ft.) ~25
 Tubing (ft.) 30

Monument Condition Good
 Casing Condition Good

Measuring Point (MP): Top of Casing (TOC)

Monument type: Stickup / Flushmount
 Measurement method: Rod & level / Tape measure

Top-of-casing to monument (ft.) 0.64
 Monument to ground surface (ft.) 2.8

- Lock present and operational
- Well No. legible on outside of well
- Evidence of frost-jacking? (explain if checked) NIT

Notes = well located at 1335 Smithson (vacant property)

WELL CASING VOLUMES

Diameter of Well [ID-inches]	CMT	1 1/4	2	3	4	6	8
Gallons per lineal foot	0.000253	0.08	0.17	0.38	0.66	1.5	2.6

AEF
6/4/2020

Well No.
MW-39

MONITORING WELL SAMPLING LOG

Owner/Client Alaska Department of Environmental Conservation
 Location Six-Mile Richardson Highway
 Sampling Personnel CAB
 Weather Conditions Sunny Air Temp. (°F) 65

Project No. 103822-002
 Date 5/14/2020
 Well MW-103
 Time started 1405
 Time completed 1507

Sample No. MW-103 Time 1502
 Duplicate — Time —
 Equipment Blank — Time —

Pump Hurricane
 Pumping Start 1432
 Purge Rate (gal./min.) 0.5
 Pumping End 1502

Diameter and Type of Casing 2" PVC
 Approximate Total Depth of Well Below MP (ft.) 12.84
 Measured Total Depth of Well Below MP (ft.) 12.81
 Depth to Water Below MP (ft.) 7.65
 Depth to Ice (if frozen) Below MP (ft.) —
 Feet of Water in Well 5.16
 Gallons per foot 0.17
 Gallons in Well 0.88
 Purge Water Volume (gal.) 15
 Purge Water Disposal GAC or Purge to Ground

Pump Set Depth Below MP (ft.) 40.5
 Tubing (ft.) 15

Monument Condition Good

Casing Condition Good

Measuring Point (MP): Top of Casing (TOC)

Monument type: Stickup / Flushmount
 Measurement method: Rod & level / Tape measure

Top-of-casing to monument (ft.) 0.57
 Monument to ground surface (ft.) 3.3

- Lock present and operational
- Well No. legible on outside of well
- Evidence of frost-jacking? (explain if checked) N/A

Notes - well located at 869 Conley

WELL CASING VOLUMES

Diameter of Well [ID-inches]	CMT	1¼	2	3	4	6	8
Gallons per lineal foot	0.000253	0.08	0.17	0.38	0.66	1.5	2.6

AEF
6/4/2020

Well No.
MW-103

MONITORING WELL SAMPLING LOG

Owner/Client Alaska Department of Environmental Conservation
 Location Six-Mile Richardson Highway
 Sampling Personnel CAD
 Weather Conditions Sunny Air Temp. (°F) 65°

Project No. 103822-002
 Date 5/19/2020
 Well MW-104
 Time started 1541
 Time completed 1615

Sample No. MW-104 Time 1604
 Duplicate — Time —
 Equipment Blank — Time —

Pump Hurricane
 Pumping Start 1549
 Purge Rate (gal./min.) 0.5
 Pumping End 1604
 Pump Set Depth Below MP (ft.) ~20
 Tubing (ft.) 25

Diameter and Type of Casing 2" PVC
 Approximate Total Depth of Well Below MP (ft.) 22.74
 Measured Total Depth of Well Below MP (ft.) 22.73
 Depth to Water Below MP (ft.) 7.22
 Depth to Ice (if frozen) Below MP (ft.) —
 Feet of Water in Well 15.51
 Gallons per foot 0.17
 Gallons in Well 2.64
 Purge Water Volume (gal.) 7.5
 Purge Water Disposal GAC or Purge to Ground

Monument Condition Good

Casing Condition Good

Measuring Point (MP): Top of Casing (TOC)

Monument type: Stickup / Flushmount
 Measurement method: Rod & level / Tape measure

Top-of-casing to monument (ft.) 0.40
 Monument to ground surface (ft.) 2.71

- Lock present and operational
- Well No. legible on outside of well
- Evidence of frost-jacking? (explain if checked) N/A

Notes - well located at 869 Conley

WELL CASING VOLUMES

Diameter of Well [ID-inches]	CMT	1¼	2	3	4	6	8
Gallons per lineal foot	0.000253	0.08	0.17	0.38	0.66	1.5	2.6

AEF
6-5-2020

Well No.
MW-104

MONITORING WELL SAMPLING LOG

Owner/Client Alaska Department of Environmental Conservation
 Location Six-Mile Richardson Highway
 Sampling Personnel CAB
 Weather Conditions Sunny Air Temp. (°F) 65°

Project No. 103822-002
 Date 5/18/2020
 Well MW-105
 Time started 507
 Time completed 1541

Sample No. MW-105 Time 1539
 Duplicate _____ Time _____
 Equipment Blank _____ Time _____

Pump Hurricane P
 Pumping Start 1518
 Purge Rate (gal./min.) 0.5
 Pumping End 1534

Diameter and Type of Casing 2" PVC
 Approximate Total Depth of Well Below MP (ft.) 32.76
 Measured Total Depth of Well Below MP (ft.) 32.76
 Depth to Water Below MP (ft.) 7.21
 Depth to Ice (if frozen) Below MP (ft.) -
 Feet of Water in Well 25.55
 Gallons per foot 0.17
 Gallons in Well 4.34
 Purge Water Volume (gal.) ~8
 Purge Water Disposal GAC or Purge to Ground

Pump Set Depth Below MP (ft.) 230
 Tubing (ft.) 35

Monument Condition Good
 Casing Condition Good

Measuring Point (MP): Top of Casing (TOC)

Monument type: Stickup / Flushmount
 Measurement method: Rod & level / Tape measure

Top-of-casing to monument (ft.) 0.45
 Monument to ground surface (ft.) 2.40

- Lock present and operational
- Well No. legible on outside of well
- Evidence of frost-jacking? (explain if checked) N/A

Notes - well located at 869 Conley

WELL CASING VOLUMES

Diameter of Well [ID-inches]	CMT	1¼	2	3	4	6	8
Gallons per lineal foot	0.000253	0.08	0.17	0.38	0.66	1.5	2.6

AEF
6-5-2020

Well No. MW-105

MONITORING WELL SAMPLING LOG

Owner/Client Alaska Department of Environmental Conservation
 Location Six-Mile Richardson Highway
 Sampling Personnel CAB
 Weather Conditions Sunny Air Temp. (°F) 65°

Project No. 103822-002
 Date 5/19/2020
 Well MW-107
 Time started 1325
 Time completed 1405

Sample No. MW-107 Time 13:50
 Duplicate _____ Time _____
 Equipment Blank _____ Time _____

Pump Hurricane
 Pumping Start 1330
 Purge Rate (gal./min.) 0.50
 Pumping End 1350

Diameter and Type of Casing 2" PVC
 Approximate Total Depth of Well Below MP (ft.) 33.77
 Measured Total Depth of Well Below MP (ft.) 33.75
 Depth to Water Below MP (ft.) 3.52
 Depth to Ice (if frozen) Below MP (ft.) _____
 Feet of Water in Well 30.23
 Gallons per foot 0.17
 Gallons in Well 5.14
 Purge Water Volume (gal.) ~100
 Purge Water Disposal GAC or Purge to Ground

Pump Set Depth Below MP (ft.) ~32
 Tubing (ft.) 435

Monument Condition Good

Casing Condition Good

Measuring Point (MP): Top of Casing (TOC)

Monument type: Stickup / Flushmount
 Measurement method: Rod & level / Tape measure

Top-of-casing to monument (ft.) 0.51
 Monument to ground surface (ft.) Flush

- Lock present and operational
- Well No. legible on outside of well Inside
- Evidence of frost-jacking? (explain if checked) N/A

Notes - well located at 1366 Stan

WELL CASING VOLUMES

Diameter of Well [ID-inches]	CMT	1/4	2	3	4	6	8
Gallons per lineal foot	0.000253	0.08	0.17	0.38	0.66	1.5	2.6

AEF
6/4/2020

Well No.
MW-107

MONITORING WELL SAMPLING LOG

Owner/Client Alaska Department of Environmental Conservation
 Location Six-Mile Richardson Highway
 Sampling Personnel CAB
 Weather Conditions Sunny Air Temp. (°F) 65°

Project No. 103822-002
 Date 5/19/2020
 Well MW-108
 Time started 1245
 Time completed 1325

Sample No. MW-108 Time 1317
 Duplicate — Time —
 Equipment Blank — Time —

Pump Horisane Diameter and Type of Casing 2" PVC
 Pumping Start 1158 Approximate Total Depth of Well Below MP (ft.) 42.66
 Purge Rate (gal./min.) 0.5 Measured Total Depth of Well Below MP (ft.) 42.62
 Pumping End 1317 Depth to Water Below MP (ft.) 3.35
 Pump Set Depth Below MP (ft.) ~41 Depth to Ice (if frozen) Below MP (ft.) —
 Tubing (ft.) 45 Feet of Water in Well 37.27
 Gallons per foot 0.17
 Gallons in Well 6.68
 Purge Water Volume (gal.) ~9.5
 Purge Water Disposal GAC or Purge to Ground

Monument Condition Good -
 Casing Condition Good

Measuring Point (MP): Top of Casing (TOC) Monument type: Stickup / Flushmount
 Measurement method: Rod & level / Tape measure

Top-of-casing to monument (ft.) 0.49
 Monument to ground surface (ft.) Flush

- Lock present and operational
- Well No. legible on outside of well - Inside
- Evidence of frost-jacking? (explain if checked) N/A

Notes - Well located at 1366 Sloan

WELL CASING VOLUMES

Diameter of Well [ID-inches]	CMT	1 1/4	2	3	4	6	8
Gallons per lineal foot	0.000253	0.08	0.17	0.38	0.66	1.5	2.6

AEF
6/4/2020

Well No.
MW-108

Appendix C

Conceptual Site Model

CONTENTS

- CSM Scoping Form
- CSM Graphic Form

Appendix A - Human Health Conceptual Site Model Scoping Form and Standardized Graphic

Site Name:

File Number:

Completed by:

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)*

- | | |
|--|--|
| <input type="checkbox"/> USTs | <input type="checkbox"/> Vehicles |
| <input type="checkbox"/> ASTs | <input type="checkbox"/> Landfills |
| <input type="checkbox"/> Dispensers/fuel loading racks | <input type="checkbox"/> Transformers |
| <input type="checkbox"/> Drums | <input checked="" type="checkbox"/> Other: <input type="text" value="multiple unknown sources"/> |

Release Mechanisms *(check potential release mechanisms at the site)*

- | | |
|---------------------------------|--|
| <input type="checkbox"/> Spills | <input type="checkbox"/> Direct discharge |
| <input type="checkbox"/> Leaks | <input type="checkbox"/> Burning |
| | <input checked="" type="checkbox"/> Other: <input type="text" value="unknown release mechanisms"/> |

Impacted Media *(check potentially-impacted media at the site)*

- | | |
|---|--|
| <input checked="" type="checkbox"/> Surface soil (0-2 feet bgs*) | <input checked="" type="checkbox"/> Groundwater |
| <input checked="" type="checkbox"/> Subsurface soil (>2 feet bgs) | <input type="checkbox"/> Surface water |
| <input checked="" type="checkbox"/> Air | <input type="checkbox"/> Biota |
| <input type="checkbox"/> Sediment | <input type="checkbox"/> Other: <input type="text"/> |

Receptors *(check receptors that could be affected by contamination at the site)*

- | | |
|--|--|
| <input checked="" type="checkbox"/> Residents (adult or child) | <input checked="" type="checkbox"/> Site visitor |
| <input checked="" type="checkbox"/> Commercial or industrial worker | <input checked="" type="checkbox"/> Trespasser |
| <input checked="" type="checkbox"/> Construction worker | <input type="checkbox"/> Recreational user |
| <input type="checkbox"/> Subsistence harvester (i.e. gathers wild foods) | <input type="checkbox"/> Farmer |
| <input type="checkbox"/> Subsistence consumer (i.e. eats wild foods) | <input type="checkbox"/> Other: <input type="text"/> |

* 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:

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:

Site COPC's are not listed in Appendix B with the exception of naphthalene, which has not been detected at the site.

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:

Downgradient private-well users.

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:

Incomplete

Comments:

Surface water bodies are not expected to be affected, and were not present during our 2020 field activities.

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:

The site is in an commercial and residential area. Analytes sampled for this project are not listed to bioaccumulate.

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:

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 contaminated 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:

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:

Future construction activities near the site may pose a potential groundwater pathway for commercial/construction workers or site visitors. The following groundwater sample analytes were detected in 2020 at concentrations exceeding DEC groundwater cleanup levels:

TCE from two monitoring wells and cis-1,2-dichloroethene in one monitoring well.

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:

Down gradient private-well users.

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 - PM₁₀). 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:

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:

4. Other Comments *(Provide other comments as necessary to support the information provided in this form.)*

[Empty rectangular box for providing other comments]

HUMAN HEALTH CONCEPTUAL SITE MODEL GRAPHIC FORM

Site: Six Mile Richardson Highway
Alaska Department of Environmental Conservation File No. 100.38.112

Completed By: Audrey Freeman / Shannon & Wilson, Inc.
 Date Completed: May 2020

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.
Media	Transport Mechanisms
<input checked="" type="checkbox"/> Surface Soil (0-2 ft bgs)	<input checked="" type="checkbox"/> Direct release to surface soil <i>check soil</i> <input checked="" type="checkbox"/> Migration to subsurface <i>check soil</i> <input checked="" type="checkbox"/> Migration to groundwater <i>check groundwater</i> <input checked="" type="checkbox"/> Volatilization <i>check air</i> <input type="checkbox"/> Runoff or erosion <i>check surface water</i> <input type="checkbox"/> Uptake by plants or animals <i>check biota</i> <input type="checkbox"/> Other (list): _____
<input checked="" type="checkbox"/> Subsurface Soil (2-15 ft bgs)	<input checked="" type="checkbox"/> Direct release to subsurface soil <i>check soil</i> <input checked="" type="checkbox"/> Migration to groundwater <i>check groundwater</i> <input checked="" type="checkbox"/> Volatilization <i>check air</i> <input type="checkbox"/> Uptake by plants or animals <i>check biota</i> <input type="checkbox"/> Other (list): _____
<input checked="" type="checkbox"/> Ground-water	<input checked="" type="checkbox"/> Direct release to groundwater <i>check groundwater</i> <input checked="" type="checkbox"/> Volatilization <i>check air</i> <input type="checkbox"/> Flow to surface water body <i>check surface water</i> <input type="checkbox"/> Flow to sediment <i>check sediment</i> <input type="checkbox"/> Uptake by plants or animals <i>check biota</i> <input type="checkbox"/> Other (list): _____
<input type="checkbox"/> Surface Water	<input type="checkbox"/> Direct release to surface water <i>check surface water</i> <input type="checkbox"/> Volatilization <i>check air</i> <input type="checkbox"/> Sedimentation <i>check sediment</i> <input type="checkbox"/> Uptake by plants or animals <i>check biota</i> <input type="checkbox"/> Other (list): _____
<input type="checkbox"/> Sediment	<input type="checkbox"/> Direct release to sediment <i>check sediment</i> <input type="checkbox"/> Resuspension, runoff, or erosion <i>check surface water</i> <input type="checkbox"/> Uptake by plants or animals <i>check biota</i> <input type="checkbox"/> Other (list): _____

(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.						
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
<input checked="" type="checkbox"/> soil	<input checked="" type="checkbox"/> Incidental Soil Ingestion <input checked="" type="checkbox"/> Dermal Absorption of Contaminants from Soil <input type="checkbox"/> Inhalation of Fugitive Dust				C/F			
<input checked="" type="checkbox"/> groundwater	<input checked="" type="checkbox"/> Ingestion of Groundwater <input checked="" type="checkbox"/> Dermal Absorption of Contaminants in Groundwater <input checked="" type="checkbox"/> Inhalation of Volatile Compounds in Tap Water	C/F	C/F	C/F	C/F			
<input checked="" type="checkbox"/> air	<input checked="" type="checkbox"/> Inhalation of Outdoor Air <input checked="" type="checkbox"/> Inhalation of Indoor Air <input type="checkbox"/> Inhalation of Fugitive Dust	C/F	C/F	C/F	C/F			
<input type="checkbox"/> surface water	<input type="checkbox"/> Ingestion of Surface Water <input type="checkbox"/> Dermal Absorption of Contaminants in Surface Water <input type="checkbox"/> Inhalation of Volatile Compounds in Tap Water							
<input type="checkbox"/> sediment	<input type="checkbox"/> Direct Contact with Sediment							
<input type="checkbox"/> biota	<input type="checkbox"/> Ingestion of Wild or Farmed Foods							

Appendix D

Trend Analysis Input File

APPENDIX D: TREND ANALYSIS INPUT FILE

Appendix D - Trend Analysis Input File

Location	SampleDate	TCE Concentration (µg/L)	TCE Detection †
MW-4	12/20/1994	3.7	1
MW-4	8/12/1996	4.58	1
MW-4	11/22/1996	3.7	1
MW-4	3/13/1997	3.5	1
MW-4	7/28/1998	3.2	1
MW-4	8/23/1999	2.6	1
MW-4	8/25/2000	2.4	1
MW-4	9/20/2001	2	1
MW-4	10/7/2004	1.57	1
MW-4	5/21/2020	0.66	1
MW-5	12/20/1994	34	1
MW-5	8/12/1996	27.2	1
MW-5	11/22/1996	30.8	1
MW-5	3/13/1997	26	1
MW-5	7/28/1998	23	1
MW-5	8/12/1999	21	1
MW-5	8/29/2000	19	1
MW-5	9/20/2001	17	1
MW-5	10/21/2003	14.2	1
MW-5	10/7/2004	11.9	1
MW-5	4/27/2006	8.77	1
MW-5	2/20/2009	7.11	1
MW-5	7/26/2011	4.73	1
MW-5	2/23/2017	1.53	1
MW-5	5/21/2020	1.33	1
MW-13	11/8/1995	1.7	1
MW-13	8/19/1996	3.84	1
MW-13	11/19/1996	3.55	1
MW-13	5/15/1997	4.6	1
MW-13	10/1/1997	4.03	1
MW-13	7/24/1998	4.2	1
MW-13	8/13/1999	5.1	1
MW-13	9/8/2000	5.3	1
MW-13	9/24/2001	5.6	1
MW-13	9/26/2002	5.2	1
MW-13	10/23/2003	5.52	1
MW-13	10/14/2004	5.63	1

Appendix D - Trend Analysis Input File

Location	SampleDate	TCE Concentration (µg/L)	TCE Detection †
MW-13	4/13/2006	5.18	1
MW-13	8/20/2007	3.2	1
MW-13	1/26/2009	3.08	1
MW-13	7/28/2011	1.87	1
MW-13	8/3/2012	1.72	1
MW-13	10/16/2013	2.07	1
MW-13	9/22/2014	1.32	1
MW-13	5/20/2020	0.473	1
MW-14	11/8/1995	4.8	1
MW-14	8/19/1996	6.45	1
MW-14	11/19/1996	6.69	1
MW-14	5/15/1997	6.2	1
MW-14	10/1/1997	5.66	1
MW-14	7/24/1998	6.4	1
MW-14	8/13/1999	6.2	1
MW-14	9/8/2000	6	1
MW-14	9/24/2001	5.5	1
MW-14	9/26/2002	4.8	1
MW-14	10/23/2003	4.41	1
MW-14	10/15/2004	3.68	1
MW-14	4/13/2006	3.53	1
MW-14	5/20/2020	0.507	1
MW-15A	8/20/2007	2.7	1
MW-15A	1/27/2009	3.14	1
MW-15A	7/27/2011	2.74	1
MW-15A	10/15/2013	3.06	1
MW-15A	9/22/2014	2.87	1
MW-15A	5/20/2020	1.86	1
MW-16A	8/20/2007	5.3	1
MW-16A	1/27/2009	4.65	1
MW-16A	7/27/2011	4.3	1
MW-16A	10/15/2013	4.29	1
MW-16A	9/22/2014	3.81	1
MW-16A	5/20/2020	2.49	1
MW-17	2/16/1996	66	1
MW-17	8/13/1996	55.6	1
MW-17	11/20/1996	58.2	1

Appendix D - Trend Analysis Input File

Location	SampleDate	TCE Concentration (µg/L)	TCE Detection †
MW-17	3/4/1997	61	1
MW-17	7/28/1998	46	1
MW-17	8/4/1999	41	1
MW-17	8/30/2000	38	1
MW-17	9/25/2001	30	1
MW-17	10/20/2003	32.2	1
MW-17	4/27/2006	24.1	1
MW-17	1/27/2009	18.3	1
MW-17	7/25/2011	16.6	1
MW-17	10/15/2013	14.8	1
MW-17	5/21/2020	6.05	1
MW-18	2/16/1996	31	1
MW-18	8/13/1996	29.6	1
MW-18	11/20/1996	30	1
MW-18	3/4/1997	28	1
MW-18	7/28/1998	21	1
MW-18	8/4/1999	19	1
MW-18	9/5/2000	19	1
MW-18	9/27/2001	16	1
MW-18	10/22/2003	16.4	1
MW-18	4/27/2006	9.21	1
MW-18	2/20/2009	8.43	1
MW-18	7/26/2011	6.42	1
MW-18	10/18/2013	6.3	1
MW-18	5/21/2020	1.3	1
MW-19	2/16/1996	9.1	1
MW-19	8/13/1996	12.7	1
MW-19	11/20/1996	10.7	1
MW-19	8/12/1999	8.8	1
MW-19	8/25/2000	9.9	1
MW-19	9/26/2001	8.7	1
MW-19	9/24/2002	7.45	1
MW-19	10/6/2004	7.91	1
MW-19	4/27/2006	6.28	1
MW-19	1/27/2009	4.43	1
MW-19	7/25/2011	4.05	1
MW-19	2/23/2017	3.43	1

Appendix D - Trend Analysis Input File

Location	SampleDate	TCE Concentration (µg/L)	TCE Detection †
MW-19	5/21/2020	2.87	1
MW-26	9/26/2001	11	1
MW-26	9/18/2002	18.5	1
MW-26	10/21/2003	14.9	1
MW-26	10/4/2004	12.3	1
MW-26	4/14/2006	13.8	1
MW-26	8/19/2007	8.3	1
MW-26	1/27/2009	7.31	1
MW-26	7/26/2011	4.19	1
MW-26	8/3/2012	3.2	1
MW-26	2/23/2017	1.94	1
MW-26	5/20/2020	1.98	1
MW-27	9/25/2001	3.4	1
MW-27	9/23/2002	2.69	1
MW-27	10/20/2003	2.85	1
MW-27	10/4/2004	1.84	1
MW-27	5/21/2020	0.84	1
MW-29	9/27/2001	1.1	1
MW-29	9/23/2002	1	1
MW-29	10/21/2003	1	0
MW-29	10/7/2004	1	0
MW-29	5/20/2020	0.509	1
MW-30	9/27/2001	8.8	1
MW-30	9/18/2002	7.48	1
MW-30	10/21/2003	10	1
MW-30	10/7/2004	7.18	1
MW-30	4/14/2006	7.97	1
MW-30	8/19/2007	6.9	1
MW-30	1/27/2009	5.31	1
MW-30	7/26/2011	5.43	1
MW-30	10/15/2013	5.68	1
MW-30	10/15/2013 (dup)	5.39	1
MW-30	5/20/2020	1.92	1
MW-31	9/20/2001	7.1	1
MW-31	9/19/2002	7.31	1
MW-31	10/23/2003	5.8	1
MW-31	10/11/2004	5.22	1

Appendix D - Trend Analysis Input File

Location	SampleDate	TCE Concentration (µg/L)	TCE Detection †
MW-31	10/19/2005	4.77	1
MW-31	10/19/2005 (dup)	4.6	1
MW-31	4/27/2006	4.55	1
MW-31	5/22/2020	1.94	1
MW-32	9/20/2001	380	1
MW-32	9/19/2002	320	1
MW-32	10/21/2003	230	1
MW-32	10/11/2004	225	1
MW-32	10/19/2005	204	1
MW-32	4/27/2006	163	1
MW-32	2/20/2009	59.6	1
MW-32	7/26/2011	27	1
MW-32	10/18/2013	11.4	1
MW-32	5/22/2020	2.04	1
MW-34	10/29/2003	8.02	1
MW-34	10/8/2004	6.72	1
MW-34	4/12/2006	6.96	1
MW-34	8/29/2006	6.4	1
MW-34	8/20/2007	5.2	1
MW-34	2/23/2009	5.55	1
MW-34	7/28/2011	4.69	1
MW-34	2/23/2017	3.55	1
MW-34	5/19/2020	0.496	1
MW-35	10/29/2003	9.2	1
MW-35	10/8/2004	8.64	1
MW-35	4/12/2006	10.2	1
MW-35	8/29/2006	9.06	1
MW-35	8/20/2007	7.7	1
MW-35	2/23/2009	7.1	1
MW-35	7/28/2011	5.43	1
MW-35	8/8/2012	5.4	1
MW-35	10/14/2013	5.9	1
MW-35	5/19/2020	2.44	1
MW-38	10/14/2004	1	0
MW-38	4/11/2006	1	0
MW-38	8/30/2006	1	0
MW-38	8/17/2007	1.2	1

Appendix D - Trend Analysis Input File

Location	SampleDate	TCE Concentration (µg/L)	TCE Detection †
MW-38	7/27/2011	1.4	1
MW-38	10/16/2013	1.28	1
MW-38	9/22/2014	1.16	1
MW-38	5/19/2020	0.899	1
MW-39	10/14/2004	1	0
MW-39	4/11/2006	1.16	1
MW-39	8/30/2006	1.31	1
MW-39	8/17/2007	0.92	1
MW-39	7/27/2011	1.31	1
MW-39	10/16/2013	1.63	1
MW-39	9/22/2014	1.09	1
MW-39	5/19/2020	0.781	1
MW-103	10/24/1997	4.03	1
MW-103	6/23/1998	5	1
MW-103	8/11/1999	4.03	1
MW-103	8/24/2000	3.2	1
MW-103	9/19/2001	4.2	1
MW-103	9/26/2002	3.6	1
MW-103	10/8/2004	3.25	1
MW-103	7/28/2011	1.32	1
MW-103	2/22/2017	0.84	1
MW-103	5/19/2020	0.381	1
MW-104	8/6/1997	9.06	1
MW-104	9/25/1997	9.44	1
MW-104	10/24/1997	8.63	1
MW-104	10/24/1997 (dup)	8.6	1
MW-104	6/23/1998	9.7	1
MW-104	8/11/1999	7.42	1
MW-104	8/24/2000	6.6	1
MW-104	9/19/2001	6.4	1
MW-104	10/8/2004	3.63	1
MW-104	7/28/2011	1.32	1
MW-104	2/22/2017	0.991	1
MW-104	5/19/2020	0.674	1
MW-105	10/24/1997	7.69	1
MW-105	6/23/1998	8.8	1
MW-105	8/11/1999	6.69	1

Appendix D - Trend Analysis Input File

Location	SampleDate	TCE Concentration (µg/L)	TCE Detection †
MW-105	8/24/2000	5.9	1
MW-105	9/19/2001	5.2	1
MW-105	10/8/2004	3.04	1
MW-105	7/28/2011	1.59	1
MW-105	2/22/2017	1.3	1
MW-105	5/19/2020	1.02	1
MW-107	10/23/1997	6.28	1
MW-107	6/24/1998	8.9	1
MW-107	8/11/1999	7.83	1
MW-107	9/7/2000	8.5	1
MW-107	9/21/2001	7.5	1
MW-107	10/22/2003	6.75	1
MW-107	10/22/2003 (dup)	6.69	1
MW-107	4/12/2006	6.88	1
MW-107	8/17/2007	5.2	1
MW-107	1/26/2009	4.6	1
MW-107	7/27/2011	3.85	1
MW-107	2/22/2017	2.2	1
MW-107	5/19/2020	1.76	1
MW-108	10/23/1997	7.64	1
MW-108	6/24/1998	10	1
MW-108	8/11/1999	9.12	1
MW-108	9/6/2000	10	1
MW-108	9/28/2001	8.7	1
MW-108	9/26/2002	8	1
MW-108	10/14/2004	6.38	1
MW-108	4/12/2006	7	1
MW-108	1/26/2009	4.83	1
MW-108	7/27/2011	4.59	1
MW-108	2/22/2017	2.36	1
MW-108	5/19/2020	2.02	1

Notes: Trichloroethene (TCE) concentration trend evaluated using the ProUCL version 5.1 EPA Software.

† A TCE detection is represented as "1" by ProUCL; a non-detection is represented as "0".

(dup) Field Duplicate of preceding sample.

µg/L microgram per liter

Appendix E

Laboratory Report and Corresponding LDRC

CONTENTS

- SGS WO 1209256
- Laboratory Data Review Checklist

Laboratory Report of Analysis

To: Shannon & Wilson-Fairbanks
2355 Hill Rd
Fairbanks, AK 99707

Report Number: **1209256**

Client Project: **103822-002 6 Mile**

Dear Sheila Hinckley,

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 Jennifer 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.

Stephen C. Ede



2020.06.01

09:36:04 -08'00'

Jennifer Dawkins
Project Manager
Jennifer.Dawkins@sgs.com

Date

Case Narrative

SGS Client: **Shannon & Wilson-Fairbanks**

SGS Project: **1209256**

Project Name/Site: **103822-002 6 Mile**

Project Contact: **Sheila Hinckley**

Refer to sample receipt form for information on sample condition.

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

Print Date: 06/01/2020 8:34:14AM

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, indemnification 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 & 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). SGS is only certified for the analytes listed on our Drinking Water Certification (DW methods: 200.8, 2130B, 2320B, 2510B, 300.0, 4500-CN-C,E, 4500-H-B, 4500-NO3-F, 4500-P-E and 524.2) and only those analytes will be reported to the State of Alaska for compliance. 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.

Sample Summary

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Collected</u>	<u>Received</u>	<u>Matrix</u>
MW-38	1209256001	05/19/2020	05/27/2020	Water (Surface, Eff., Ground)
MW-39	1209256002	05/19/2020	05/27/2020	Water (Surface, Eff., Ground)
MW-108	1209256003	05/19/2020	05/27/2020	Water (Surface, Eff., Ground)
MW-107	1209256004	05/19/2020	05/27/2020	Water (Surface, Eff., Ground)
MW-103	1209256005	05/19/2020	05/27/2020	Water (Surface, Eff., Ground)
MW-105	1209256006	05/19/2020	05/27/2020	Water (Surface, Eff., Ground)
MW-104	1209256007	05/19/2020	05/27/2020	Water (Surface, Eff., Ground)
MW-34	1209256008	05/19/2020	05/27/2020	Water (Surface, Eff., Ground)
MW-35	1209256009	05/19/2020	05/27/2020	Water (Surface, Eff., Ground)
MW-135	1209256010	05/19/2020	05/27/2020	Water (Surface, Eff., Ground)
MW-13	1209256011	05/20/2020	05/27/2020	Water (Surface, Eff., Ground)
MW-14	1209256012	05/20/2020	05/27/2020	Water (Surface, Eff., Ground)
MW-15A	1209256013	05/20/2020	05/27/2020	Water (Surface, Eff., Ground)
MW-16A	1209256014	05/20/2020	05/27/2020	Water (Surface, Eff., Ground)
MW-26	1209256015	05/20/2020	05/27/2020	Water (Surface, Eff., Ground)
MW-29	1209256016	05/20/2020	05/27/2020	Water (Surface, Eff., Ground)
MW-30	1209256017	05/20/2020	05/27/2020	Water (Surface, Eff., Ground)
MW-5	1209256018	05/21/2020	05/27/2020	Water (Surface, Eff., Ground)
MW-4	1209256019	05/21/2020	05/27/2020	Water (Surface, Eff., Ground)
MW-19	1209256020	05/21/2020	05/27/2020	Water (Surface, Eff., Ground)
MW-18	1209256021	05/21/2020	05/27/2020	Water (Surface, Eff., Ground)
MW-27	1209256022	05/21/2020	05/27/2020	Water (Surface, Eff., Ground)
MW-17	1209256023	05/21/2020	05/27/2020	Water (Surface, Eff., Ground)
MW-117	1209256024	05/21/2020	05/27/2020	Water (Surface, Eff., Ground)
MW-32	1209256025	05/22/2020	05/27/2020	Water (Surface, Eff., Ground)
EB-32	1209256026	05/22/2020	05/27/2020	Water (Surface, Eff., Ground)
MW-31	1209256027	05/22/2020	05/27/2020	Water (Surface, Eff., Ground)
Trip Blank	1209256028	05/19/2020	05/27/2020	Water (Surface, Eff., Ground)
Trip Blank	1209256029	05/19/2020	05/27/2020	Water (Surface, Eff., Ground)

Method
SW8260D

Method Description
Volatile Organic Compounds (W) FULL

Detectable Results Summary

Client Sample ID: **MW-38**
 Lab Sample ID: 1209256001

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
1,1-Dichloroethane	0.395J	ug/L
cis-1,2-Dichloroethene	0.534J	ug/L
Toluene	0.316J	ug/L
trans-1,2-Dichloroethene	0.640J	ug/L
Trichloroethene	0.899J	ug/L

Client Sample ID: **MW-39**
 Lab Sample ID: 1209256002

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
1,1-Dichloroethane	0.390J	ug/L
cis-1,2-Dichloroethene	0.603J	ug/L
trans-1,2-Dichloroethene	0.801J	ug/L
Trichloroethene	0.781J	ug/L

Client Sample ID: **MW-108**
 Lab Sample ID: 1209256003

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
1,1-Dichloroethane	0.403J	ug/L
cis-1,2-Dichloroethene	0.606J	ug/L
trans-1,2-Dichloroethene	0.586J	ug/L
Trichloroethene	2.02	ug/L

Client Sample ID: **MW-107**
 Lab Sample ID: 1209256004

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
1,1-Dichloroethane	0.415J	ug/L
cis-1,2-Dichloroethene	0.711J	ug/L
trans-1,2-Dichloroethene	0.915J	ug/L
Trichloroethene	1.76	ug/L

Client Sample ID: **MW-103**
 Lab Sample ID: 1209256005

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
cis-1,2-Dichloroethene	0.318J	ug/L
Trichloroethene	0.381J	ug/L

Client Sample ID: **MW-105**
 Lab Sample ID: 1209256006

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
1,1-Dichloroethane	0.435J	ug/L
cis-1,2-Dichloroethene	0.404J	ug/L
trans-1,2-Dichloroethene	0.500J	ug/L
Trichloroethene	1.02	ug/L

Client Sample ID: **MW-104**
 Lab Sample ID: 1209256007

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
1,1-Dichloroethane	0.419J	ug/L
cis-1,2-Dichloroethene	0.758J	ug/L
trans-1,2-Dichloroethene	1.17	ug/L
Trichloroethene	0.674J	ug/L

Detectable Results Summary

Client Sample ID: **MW-34**
 Lab Sample ID: 1209256008

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
1,1-Dichloroethane	0.411J	ug/L
cis-1,2-Dichloroethene	0.865J	ug/L
trans-1,2-Dichloroethene	1.56	ug/L
Trichloroethene	0.496J	ug/L

Client Sample ID: **MW-35**
 Lab Sample ID: 1209256009

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
1,1-Dichloroethane	0.444J	ug/L
cis-1,2-Dichloroethene	0.805J	ug/L
trans-1,2-Dichloroethene	0.703J	ug/L
Trichloroethene	2.44	ug/L

Client Sample ID: **MW-135**
 Lab Sample ID: 1209256010

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
1,1-Dichloroethane	0.439J	ug/L
cis-1,2-Dichloroethene	0.816J	ug/L
trans-1,2-Dichloroethene	0.717J	ug/L
Trichloroethene	2.43	ug/L

Client Sample ID: **MW-13**
 Lab Sample ID: 1209256011

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
1,1-Dichloroethane	0.366J	ug/L
cis-1,2-Dichloroethene	0.865J	ug/L
trans-1,2-Dichloroethene	1.54	ug/L
Trichloroethene	0.473J	ug/L

Client Sample ID: **MW-14**
 Lab Sample ID: 1209256012

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
1,1-Dichloroethane	0.399J	ug/L
cis-1,2-Dichloroethene	0.879J	ug/L
trans-1,2-Dichloroethene	1.64	ug/L
Trichloroethene	0.507J	ug/L

Client Sample ID: **MW-15A**
 Lab Sample ID: 1209256013

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
cis-1,2-Dichloroethene	0.522J	ug/L
Tetrachloroethene	0.319J	ug/L
Toluene	0.356J	ug/L
Trichloroethene	1.86	ug/L

Client Sample ID: **MW-16A**
 Lab Sample ID: 1209256014

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
1,1-Dichloroethane	0.488J	ug/L
cis-1,2-Dichloroethene	0.736J	ug/L
trans-1,2-Dichloroethene	0.613J	ug/L
Trichloroethene	2.49	ug/L

Detectable Results Summary

Client Sample ID: **MW-26**
 Lab Sample ID: 1209256015
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Benzene	0.138J	ug/L
cis-1,2-Dichloroethene	5.55	ug/L
trans-1,2-Dichloroethene	4.99	ug/L
Trichloroethene	1.98	ug/L

Client Sample ID: **MW-29**
 Lab Sample ID: 1209256016
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Trichloroethene	0.509J	ug/L

Client Sample ID: **MW-30**
 Lab Sample ID: 1209256017
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
1,1-Dichloroethane	0.536J	ug/L
cis-1,2-Dichloroethene	0.792J	ug/L
trans-1,2-Dichloroethene	1.04	ug/L
Trichloroethene	1.92	ug/L

Client Sample ID: **MW-5**
 Lab Sample ID: 1209256018
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
cis-1,2-Dichloroethene	1.67	ug/L
trans-1,2-Dichloroethene	3.67	ug/L
Trichloroethene	1.33	ug/L

Client Sample ID: **MW-4**
 Lab Sample ID: 1209256019
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Trichloroethene	0.660J	ug/L

Client Sample ID: **MW-19**
 Lab Sample ID: 1209256020
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
cis-1,2-Dichloroethene	0.731J	ug/L
trans-1,2-Dichloroethene	0.455J	ug/L
Trichloroethene	2.87	ug/L

Client Sample ID: **MW-18**
 Lab Sample ID: 1209256021
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
cis-1,2-Dichloroethene	2.94	ug/L
trans-1,2-Dichloroethene	2.32	ug/L
Trichloroethene	1.30	ug/L

Client Sample ID: **MW-27**
 Lab Sample ID: 1209256022
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
trans-1,2-Dichloroethene	0.339J	ug/L
Trichloroethene	0.840J	ug/L

Client Sample ID: **MW-17**
 Lab Sample ID: 1209256023
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
cis-1,2-Dichloroethene	4.18	ug/L
trans-1,2-Dichloroethene	2.36	ug/L
Trichloroethene	6.00	ug/L

Detectable Results Summary

Client Sample ID: **MW-117**
 Lab Sample ID: 1209256024
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
cis-1,2-Dichloroethene	4.12	ug/L
trans-1,2-Dichloroethene	2.38	ug/L
Trichloroethene	6.05	ug/L

Client Sample ID: **MW-32**
 Lab Sample ID: 1209256025
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
cis-1,2-Dichloroethene	43.3	ug/L
trans-1,2-Dichloroethene	2.44	ug/L
Trichloroethene	2.04	ug/L

Client Sample ID: **EB-32**
 Lab Sample ID: 1209256026
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Bromodichloromethane	0.201J	ug/L
Chloroform	0.327J	ug/L
Toluene	0.398J	ug/L

Client Sample ID: **MW-31**
 Lab Sample ID: 1209256027
Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
cis-1,2-Dichloroethene	0.314J	ug/L
Tetrachloroethene	0.346J	ug/L
Trichloroethene	1.94	ug/L



Results of MW-38

Client Sample ID: MW-38
Client Project ID: 103822-002 6 Mile
Lab Sample ID: 1209256001
Lab Project ID: 1209256

Collection Date: 05/19/20 11:08
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.

Print Date: 06/01/2020 8:34:20AM

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Results of MW-38

Client Sample ID: MW-38
Client Project ID: 103822-002 6 Mile
Lab Sample ID: 1209256001
Lab Project ID: 1209256

Collection Date: 05/19/20 11:08
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds like Chloroform, Benzene, and Toluene with their respective test results and detection limits.

Results of MW-38

Client Sample ID: **MW-38**
Client Project ID: **103822-002 6 Mile**
Lab Sample ID: 1209256001
Lab Project ID: 1209256

Collection Date: 05/19/20 11:08
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Batch Information

Analytical Batch: VMS19964
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 05/28/20 16:12
Container ID: 1209256001-A

Prep Batch: VXX35666
Prep Method: SW5030B
Prep Date/Time: 05/28/20 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of MW-39

Client Sample ID: MW-39
Client Project ID: 103822-002 6 Mile
Lab Sample ID: 1209256002
Lab Project ID: 1209256

Collection Date: 05/19/20 11:53
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



Results of MW-39

Client Sample ID: MW-39
Client Project ID: 103822-002 6 Mile
Lab Sample ID: 1209256002
Lab Project ID: 1209256

Collection Date: 05/19/20 11:53
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



Results of MW-39

Client Sample ID: **MW-39**
Client Project ID: **103822-002 6 Mile**
Lab Sample ID: 1209256002
Lab Project ID: 1209256

Collection Date: 05/19/20 11:53
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Batch Information

Analytical Batch: VMS19964
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 05/28/20 16:28
Container ID: 1209256002-A

Prep Batch: VXX35666
Prep Method: SW5030B
Prep Date/Time: 05/28/20 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of MW-108

Client Sample ID: MW-108
Client Project ID: 103822-002 6 Mile
Lab Sample ID: 1209256003
Lab Project ID: 1209256

Collection Date: 05/19/20 13:17
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



Results of MW-108

Client Sample ID: **MW-108**
 Client Project ID: **103822-002 6 Mile**
 Lab Sample ID: 1209256003
 Lab Project ID: 1209256

Collection Date: 05/19/20 13:17
 Received Date: 05/27/20 08:57
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Chloroform	0.500 U	1.00	0.310	ug/L	1		05/28/20 16:43
Chloromethane	0.500 U	1.00	0.310	ug/L	1		05/28/20 16:43
cis-1,2-Dichloroethene	0.606 J	1.00	0.310	ug/L	1		05/28/20 16:43
cis-1,3-Dichloropropene	0.250 U	0.500	0.150	ug/L	1		05/28/20 16:43
Dibromochloromethane	0.250 U	0.500	0.150	ug/L	1		05/28/20 16:43
Dibromomethane	0.500 U	1.00	0.310	ug/L	1		05/28/20 16:43
Dichlorodifluoromethane	0.500 U	1.00	0.310	ug/L	1		05/28/20 16:43
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		05/28/20 16:43
Freon-113	5.00 U	10.0	3.10	ug/L	1		05/28/20 16:43
Hexachlorobutadiene	0.500 U	1.00	0.310	ug/L	1		05/28/20 16:43
Isopropylbenzene (Cumene)	0.500 U	1.00	0.310	ug/L	1		05/28/20 16:43
Methylene chloride	5.00 U	10.0	3.10	ug/L	1		05/28/20 16:43
Methyl-t-butyl ether	5.00 U	10.0	3.10	ug/L	1		05/28/20 16:43
Naphthalene	0.500 U	1.00	0.310	ug/L	1		05/28/20 16:43
n-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		05/28/20 16:43
n-Propylbenzene	0.500 U	1.00	0.310	ug/L	1		05/28/20 16:43
o-Xylene	0.500 U	1.00	0.310	ug/L	1		05/28/20 16:43
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		05/28/20 16:43
sec-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		05/28/20 16:43
Styrene	0.500 U	1.00	0.310	ug/L	1		05/28/20 16:43
tert-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		05/28/20 16:43
Tetrachloroethene	0.500 U	1.00	0.310	ug/L	1		05/28/20 16:43
Toluene	0.500 U	1.00	0.310	ug/L	1		05/28/20 16:43
trans-1,2-Dichloroethene	0.586 J	1.00	0.310	ug/L	1		05/28/20 16:43
trans-1,3-Dichloropropene	0.500 U	1.00	0.310	ug/L	1		05/28/20 16:43
Trichloroethene	2.02	1.00	0.310	ug/L	1		05/28/20 16:43
Trichlorofluoromethane	0.500 U	1.00	0.310	ug/L	1		05/28/20 16:43
Vinyl acetate	5.00 U	10.0	3.10	ug/L	1		05/28/20 16:43
Vinyl chloride	0.0750 U	0.150	0.0500	ug/L	1		05/28/20 16:43
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		05/28/20 16:43
Surrogates							
1,2-Dichloroethane-D4 (surr)	109	81-118		%	1		05/28/20 16:43
4-Bromofluorobenzene (surr)	96.8	85-114		%	1		05/28/20 16:43
Toluene-d8 (surr)	98.1	89-112		%	1		05/28/20 16:43



Results of MW-108

Client Sample ID: **MW-108**
Client Project ID: **103822-002 6 Mile**
Lab Sample ID: 1209256003
Lab Project ID: 1209256

Collection Date: 05/19/20 13:17
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Batch Information

Analytical Batch: VMS19964
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 05/28/20 16:43
Container ID: 1209256003-A

Prep Batch: VXX35666
Prep Method: SW5030B
Prep Date/Time: 05/28/20 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of MW-107

Client Sample ID: MW-107
Client Project ID: 103822-002 6 Mile
Lab Sample ID: 1209256004
Lab Project ID: 1209256

Collection Date: 05/19/20 13:50
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



Results of MW-107

Client Sample ID: MW-107
Client Project ID: 103822-002 6 Mile
Lab Sample ID: 1209256004
Lab Project ID: 1209256

Collection Date: 05/19/20 13:50
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.

Results of MW-107

Client Sample ID: **MW-107**
Client Project ID: **103822-002 6 Mile**
Lab Sample ID: 1209256004
Lab Project ID: 1209256

Collection Date: 05/19/20 13:50
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Batch Information

Analytical Batch: VMS19964
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 05/28/20 16:58
Container ID: 1209256004-A

Prep Batch: VXX35666
Prep Method: SW5030B
Prep Date/Time: 05/28/20 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of MW-103

Client Sample ID: MW-103
Client Project ID: 103822-002 6 Mile
Lab Sample ID: 1209256005
Lab Project ID: 1209256

Collection Date: 05/19/20 15:02
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



Results of MW-103

Client Sample ID: MW-103
Client Project ID: 103822-002 6 Mile
Lab Sample ID: 1209256005
Lab Project ID: 1209256

Collection Date: 05/19/20 15:02
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.

Results of MW-103

Client Sample ID: **MW-103**
Client Project ID: **103822-002 6 Mile**
Lab Sample ID: 1209256005
Lab Project ID: 1209256

Collection Date: 05/19/20 15:02
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Batch Information

Analytical Batch: VMS19964
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 05/28/20 17:14
Container ID: 1209256005-A

Prep Batch: VXX35666
Prep Method: SW5030B
Prep Date/Time: 05/28/20 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of MW-105

Client Sample ID: MW-105
Client Project ID: 103822-002 6 Mile
Lab Sample ID: 1209256006
Lab Project ID: 1209256

Collection Date: 05/19/20 15:34
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



Results of MW-105

Client Sample ID: MW-105
Client Project ID: 103822-002 6 Mile
Lab Sample ID: 1209256006
Lab Project ID: 1209256

Collection Date: 05/19/20 15:34
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds like Chloroform, Benzene, and Toluene with their respective test results and detection limits.



Results of MW-105

Client Sample ID: **MW-105**
Client Project ID: **103822-002 6 Mile**
Lab Sample ID: 1209256006
Lab Project ID: 1209256

Collection Date: 05/19/20 15:34
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Batch Information

Analytical Batch: VMS19964
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 05/28/20 17:29
Container ID: 1209256006-A

Prep Batch: VXX35666
Prep Method: SW5030B
Prep Date/Time: 05/28/20 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of MW-104

Client Sample ID: MW-104
Client Project ID: 103822-002 6 Mile
Lab Sample ID: 1209256007
Lab Project ID: 1209256

Collection Date: 05/19/20 16:04
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



Results of MW-104

Client Sample ID: MW-104
Client Project ID: 103822-002 6 Mile
Lab Sample ID: 1209256007
Lab Project ID: 1209256

Collection Date: 05/19/20 16:04
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.

Results of MW-104

Client Sample ID: **MW-104**
Client Project ID: **103822-002 6 Mile**
Lab Sample ID: 1209256007
Lab Project ID: 1209256

Collection Date: 05/19/20 16:04
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Batch Information

Analytical Batch: VMS19964
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 05/28/20 17:45
Container ID: 1209256007-A

Prep Batch: VXX35666
Prep Method: SW5030B
Prep Date/Time: 05/28/20 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of MW-34

Client Sample ID: MW-34
Client Project ID: 103822-002 6 Mile
Lab Sample ID: 1209256008
Lab Project ID: 1209256

Collection Date: 05/19/20 17:09
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



Results of MW-34

Client Sample ID: MW-34
Client Project ID: 103822-002 6 Mile
Lab Sample ID: 1209256008
Lab Project ID: 1209256

Collection Date: 05/19/20 17:09
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



Results of MW-34

Client Sample ID: **MW-34**
Client Project ID: **103822-002 6 Mile**
Lab Sample ID: 1209256008
Lab Project ID: 1209256

Collection Date: 05/19/20 17:09
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Batch Information

Analytical Batch: VMS19964
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 05/28/20 18:00
Container ID: 1209256008-A

Prep Batch: VXX35666
Prep Method: SW5030B
Prep Date/Time: 05/28/20 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of MW-35

Client Sample ID: MW-35
Client Project ID: 103822-002 6 Mile
Lab Sample ID: 1209256009
Lab Project ID: 1209256

Collection Date: 05/19/20 17:52
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



Results of MW-35

Client Sample ID: MW-35
Client Project ID: 103822-002 6 Mile
Lab Sample ID: 1209256009
Lab Project ID: 1209256

Collection Date: 05/19/20 17:52
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



Results of MW-35

Client Sample ID: **MW-35**
Client Project ID: **103822-002 6 Mile**
Lab Sample ID: 1209256009
Lab Project ID: 1209256

Collection Date: 05/19/20 17:52
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Batch Information

Analytical Batch: VMS19964
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 05/28/20 18:16
Container ID: 1209256009-A

Prep Batch: VXX35666
Prep Method: SW5030B
Prep Date/Time: 05/28/20 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of MW-135

Client Sample ID: MW-135
Client Project ID: 103822-002 6 Mile
Lab Sample ID: 1209256010
Lab Project ID: 1209256

Collection Date: 05/19/20 17:42
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



Results of MW-135

Client Sample ID: MW-135
Client Project ID: 103822-002 6 Mile
Lab Sample ID: 1209256010
Lab Project ID: 1209256

Collection Date: 05/19/20 17:42
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.

Results of MW-135

Client Sample ID: **MW-135**
Client Project ID: **103822-002 6 Mile**
Lab Sample ID: 1209256010
Lab Project ID: 1209256

Collection Date: 05/19/20 17:42
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Batch Information

Analytical Batch: VMS19964
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 05/28/20 18:31
Container ID: 1209256010-A

Prep Batch: VXX35666
Prep Method: SW5030B
Prep Date/Time: 05/28/20 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of MW-13

Client Sample ID: MW-13
Client Project ID: 103822-002 6 Mile
Lab Sample ID: 1209256011
Lab Project ID: 1209256

Collection Date: 05/20/20 11:44
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.

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Results of MW-13

Client Sample ID: **MW-13**
 Client Project ID: **103822-002 6 Mile**
 Lab Sample ID: 1209256011
 Lab Project ID: 1209256

Collection Date: 05/20/20 11:44
 Received Date: 05/27/20 08:57
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Chloroform	0.500 U	1.00	0.310	ug/L	1		05/28/20 18:46
Chloromethane	0.500 U	1.00	0.310	ug/L	1		05/28/20 18:46
cis-1,2-Dichloroethene	0.865 J	1.00	0.310	ug/L	1		05/28/20 18:46
cis-1,3-Dichloropropene	0.250 U	0.500	0.150	ug/L	1		05/28/20 18:46
Dibromochloromethane	0.250 U	0.500	0.150	ug/L	1		05/28/20 18:46
Dibromomethane	0.500 U	1.00	0.310	ug/L	1		05/28/20 18:46
Dichlorodifluoromethane	0.500 U	1.00	0.310	ug/L	1		05/28/20 18:46
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		05/28/20 18:46
Freon-113	5.00 U	10.0	3.10	ug/L	1		05/28/20 18:46
Hexachlorobutadiene	0.500 U	1.00	0.310	ug/L	1		05/28/20 18:46
Isopropylbenzene (Cumene)	0.500 U	1.00	0.310	ug/L	1		05/28/20 18:46
Methylene chloride	5.00 U	10.0	3.10	ug/L	1		05/28/20 18:46
Methyl-t-butyl ether	5.00 U	10.0	3.10	ug/L	1		05/28/20 18:46
Naphthalene	0.500 U	1.00	0.310	ug/L	1		05/28/20 18:46
n-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		05/28/20 18:46
n-Propylbenzene	0.500 U	1.00	0.310	ug/L	1		05/28/20 18:46
o-Xylene	0.500 U	1.00	0.310	ug/L	1		05/28/20 18:46
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		05/28/20 18:46
sec-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		05/28/20 18:46
Styrene	0.500 U	1.00	0.310	ug/L	1		05/28/20 18:46
tert-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		05/28/20 18:46
Tetrachloroethene	0.500 U	1.00	0.310	ug/L	1		05/28/20 18:46
Toluene	0.500 U	1.00	0.310	ug/L	1		05/28/20 18:46
trans-1,2-Dichloroethene	1.54	1.00	0.310	ug/L	1		05/28/20 18:46
trans-1,3-Dichloropropene	0.500 U	1.00	0.310	ug/L	1		05/28/20 18:46
Trichloroethene	0.473 J	1.00	0.310	ug/L	1		05/28/20 18:46
Trichlorofluoromethane	0.500 U	1.00	0.310	ug/L	1		05/28/20 18:46
Vinyl acetate	5.00 U	10.0	3.10	ug/L	1		05/28/20 18:46
Vinyl chloride	0.0750 U	0.150	0.0500	ug/L	1		05/28/20 18:46
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		05/28/20 18:46
Surrogates							
1,2-Dichloroethane-D4 (surr)	108	81-118		%	1		05/28/20 18:46
4-Bromofluorobenzene (surr)	96.7	85-114		%	1		05/28/20 18:46
Toluene-d8 (surr)	99.1	89-112		%	1		05/28/20 18:46

Results of MW-13

Client Sample ID: **MW-13**
Client Project ID: **103822-002 6 Mile**
Lab Sample ID: 1209256011
Lab Project ID: 1209256

Collection Date: 05/20/20 11:44
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Batch Information

Analytical Batch: VMS19964
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 05/28/20 18:46
Container ID: 1209256011-A

Prep Batch: VXX35666
Prep Method: SW5030B
Prep Date/Time: 05/28/20 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of MW-14

Client Sample ID: MW-14
Client Project ID: 103822-002 6 Mile
Lab Sample ID: 1209256012
Lab Project ID: 1209256

Collection Date: 05/20/20 12:44
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.

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Results of MW-14

Client Sample ID: MW-14
Client Project ID: 103822-002 6 Mile
Lab Sample ID: 1209256012
Lab Project ID: 1209256

Collection Date: 05/20/20 12:44
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.

Results of MW-14

Client Sample ID: **MW-14**
Client Project ID: **103822-002 6 Mile**
Lab Sample ID: 1209256012
Lab Project ID: 1209256

Collection Date: 05/20/20 12:44
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Batch Information

Analytical Batch: VMS19964
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 05/28/20 19:02
Container ID: 1209256012-A

Prep Batch: VXX35666
Prep Method: SW5030B
Prep Date/Time: 05/28/20 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of MW-15A

Client Sample ID: MW-15A
Client Project ID: 103822-002 6 Mile
Lab Sample ID: 1209256013
Lab Project ID: 1209256

Collection Date: 05/20/20 14:01
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



Results of MW-15A

Client Sample ID: MW-15A
Client Project ID: 103822-002 6 Mile
Lab Sample ID: 1209256013
Lab Project ID: 1209256

Collection Date: 05/20/20 14:01
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



Results of MW-15A

Client Sample ID: **MW-15A**
Client Project ID: **103822-002 6 Mile**
Lab Sample ID: 1209256013
Lab Project ID: 1209256

Collection Date: 05/20/20 14:01
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Batch Information

Analytical Batch: VMS19964
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 05/28/20 19:17
Container ID: 1209256013-A

Prep Batch: VXX35666
Prep Method: SW5030B
Prep Date/Time: 05/28/20 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of MW-16A

Client Sample ID: MW-16A
Client Project ID: 103822-002 6 Mile
Lab Sample ID: 1209256014
Lab Project ID: 1209256

Collection Date: 05/20/20 14:39
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



Results of MW-16A

Client Sample ID: MW-16A
Client Project ID: 103822-002 6 Mile
Lab Sample ID: 1209256014
Lab Project ID: 1209256

Collection Date: 05/20/20 14:39
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



Results of MW-16A

Client Sample ID: **MW-16A**
Client Project ID: **103822-002 6 Mile**
Lab Sample ID: 1209256014
Lab Project ID: 1209256

Collection Date: 05/20/20 14:39
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Batch Information

Analytical Batch: VMS19964
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 05/28/20 19:32
Container ID: 1209256014-A

Prep Batch: VXX35666
Prep Method: SW5030B
Prep Date/Time: 05/28/20 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of MW-26

Client Sample ID: MW-26
Client Project ID: 103822-002 6 Mile
Lab Sample ID: 1209256015
Lab Project ID: 1209256

Collection Date: 05/20/20 15:49
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



Results of MW-26

Client Sample ID: MW-26
Client Project ID: 103822-002 6 Mile
Lab Sample ID: 1209256015
Lab Project ID: 1209256

Collection Date: 05/20/20 15:49
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



Results of MW-26

Client Sample ID: **MW-26**
Client Project ID: **103822-002 6 Mile**
Lab Sample ID: 1209256015
Lab Project ID: 1209256

Collection Date: 05/20/20 15:49
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Batch Information

Analytical Batch: VMS19964
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 05/28/20 19:48
Container ID: 1209256015-A

Prep Batch: VXX35666
Prep Method: SW5030B
Prep Date/Time: 05/28/20 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of MW-29

Client Sample ID: MW-29
Client Project ID: 103822-002 6 Mile
Lab Sample ID: 1209256016
Lab Project ID: 1209256

Collection Date: 05/20/20 16:45
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
1,1,1,2-Tetrachloroethane	0.250 U	0.500	0.150	ug/L	1		05/29/20 14:55
1,1,1-Trichloroethane	0.500 U	1.00	0.310	ug/L	1		05/29/20 14:55
1,1,2,2-Tetrachloroethane	0.250 U	0.500	0.150	ug/L	1		05/29/20 14:55
1,1,2-Trichloroethane	0.200 U	0.400	0.120	ug/L	1		05/29/20 14:55
1,1-Dichloroethane	0.500 U	1.00	0.310	ug/L	1		05/29/20 14:55
1,1-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		05/29/20 14:55
1,1-Dichloropropene	0.500 U	1.00	0.310	ug/L	1		05/29/20 14:55
1,2,3-Trichlorobenzene	0.500 U	1.00	0.310	ug/L	1		05/29/20 14:55
1,2,3-Trichloropropane	0.500 U	1.00	0.310	ug/L	1		05/29/20 14:55
1,2,4-Trichlorobenzene	0.500 U	1.00	0.310	ug/L	1		05/29/20 14:55
1,2,4-Trimethylbenzene	0.500 U	1.00	0.310	ug/L	1		05/29/20 14:55
1,2-Dibromo-3-chloropropane	5.00 U	10.0	3.10	ug/L	1		05/29/20 14:55
1,2-Dibromoethane	0.0375 U	0.0750	0.0180	ug/L	1		05/29/20 14:55
1,2-Dichlorobenzene	0.500 U	1.00	0.310	ug/L	1		05/29/20 14:55
1,2-Dichloroethane	0.250 U	0.500	0.150	ug/L	1		05/29/20 14:55
1,2-Dichloropropane	0.500 U	1.00	0.310	ug/L	1		05/29/20 14:55
1,3,5-Trimethylbenzene	0.500 U	1.00	0.310	ug/L	1		05/29/20 14:55
1,3-Dichlorobenzene	0.500 U	1.00	0.310	ug/L	1		05/29/20 14:55
1,3-Dichloropropane	0.250 U	0.500	0.150	ug/L	1		05/29/20 14:55
1,4-Dichlorobenzene	0.250 U	0.500	0.150	ug/L	1		05/29/20 14:55
2,2-Dichloropropane	0.500 U	1.00	0.310	ug/L	1		05/29/20 14:55
2-Butanone (MEK)	5.00 U	10.0	3.10	ug/L	1		05/29/20 14:55
2-Chlorotoluene	0.500 U	1.00	0.310	ug/L	1		05/29/20 14:55
2-Hexanone	5.00 U	10.0	3.10	ug/L	1		05/29/20 14:55
4-Chlorotoluene	0.500 U	1.00	0.310	ug/L	1		05/29/20 14:55
4-Isopropyltoluene	0.500 U	1.00	0.310	ug/L	1		05/29/20 14:55
4-Methyl-2-pentanone (MIBK)	5.00 U	10.0	3.10	ug/L	1		05/29/20 14:55
Benzene	0.200 U	0.400	0.120	ug/L	1		05/29/20 14:55
Bromobenzene	0.500 U	1.00	0.310	ug/L	1		05/29/20 14:55
Bromochloromethane	0.500 U	1.00	0.310	ug/L	1		05/29/20 14:55
Bromodichloromethane	0.250 U	0.500	0.150	ug/L	1		05/29/20 14:55
Bromoform	0.500 U	1.00	0.310	ug/L	1		05/29/20 14:55
Bromomethane	2.50 U	5.00	2.00	ug/L	1		05/29/20 14:55
Carbon disulfide	5.00 U	10.0	3.10	ug/L	1		05/29/20 14:55
Carbon tetrachloride	0.500 U	1.00	0.310	ug/L	1		05/29/20 14:55
Chlorobenzene	0.250 U	0.500	0.150	ug/L	1		05/29/20 14:55
Chloroethane	0.500 U	1.00	0.310	ug/L	1		05/29/20 14:55

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Results of MW-29

Client Sample ID: MW-29
Client Project ID: 103822-002 6 Mile
Lab Sample ID: 1209256016
Lab Project ID: 1209256

Collection Date: 05/20/20 16:45
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



Results of MW-29

Client Sample ID: **MW-29**
Client Project ID: **103822-002 6 Mile**
Lab Sample ID: 1209256016
Lab Project ID: 1209256

Collection Date: 05/20/20 16:45
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Batch Information

Analytical Batch: VMS19968
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 05/29/20 14:55
Container ID: 1209256016-A

Prep Batch: VXX35672
Prep Method: SW5030B
Prep Date/Time: 05/29/20 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of MW-30

Client Sample ID: MW-30
Client Project ID: 103822-002 6 Mile
Lab Sample ID: 1209256017
Lab Project ID: 1209256

Collection Date: 05/20/20 17:27
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



Results of MW-30

Client Sample ID: MW-30
Client Project ID: 103822-002 6 Mile
Lab Sample ID: 1209256017
Lab Project ID: 1209256

Collection Date: 05/20/20 17:27
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.

Results of MW-30

Client Sample ID: **MW-30**
Client Project ID: **103822-002 6 Mile**
Lab Sample ID: 1209256017
Lab Project ID: 1209256

Collection Date: 05/20/20 17:27
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Batch Information

Analytical Batch: VMS19968
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 05/29/20 15:10
Container ID: 1209256017-A

Prep Batch: VXX35672
Prep Method: SW5030B
Prep Date/Time: 05/29/20 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of MW-5

Client Sample ID: MW-5
Client Project ID: 103822-002 6 Mile
Lab Sample ID: 1209256018
Lab Project ID: 1209256

Collection Date: 05/21/20 11:41
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



Results of MW-5

Client Sample ID: MW-5
Client Project ID: 103822-002 6 Mile
Lab Sample ID: 1209256018
Lab Project ID: 1209256

Collection Date: 05/21/20 11:41
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



Results of MW-5

Client Sample ID: **MW-5**
Client Project ID: **103822-002 6 Mile**
Lab Sample ID: 1209256018
Lab Project ID: 1209256

Collection Date: 05/21/20 11:41
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Batch Information

Analytical Batch: VMS19968
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 05/29/20 15:26
Container ID: 1209256018-A

Prep Batch: VXX35672
Prep Method: SW5030B
Prep Date/Time: 05/29/20 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of MW-4

Client Sample ID: MW-4
Client Project ID: 103822-002 6 Mile
Lab Sample ID: 1209256019
Lab Project ID: 1209256

Collection Date: 05/21/20 12:25
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



Results of MW-4

Client Sample ID: MW-4
Client Project ID: 103822-002 6 Mile
Lab Sample ID: 1209256019
Lab Project ID: 1209256

Collection Date: 05/21/20 12:25
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



Results of MW-4

Client Sample ID: **MW-4**
Client Project ID: **103822-002 6 Mile**
Lab Sample ID: 1209256019
Lab Project ID: 1209256

Collection Date: 05/21/20 12:25
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Batch Information

Analytical Batch: VMS19968
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 05/29/20 15:41
Container ID: 1209256019-A

Prep Batch: VXX35672
Prep Method: SW5030B
Prep Date/Time: 05/29/20 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of MW-19

Client Sample ID: MW-19
Client Project ID: 103822-002 6 Mile
Lab Sample ID: 1209256020
Lab Project ID: 1209256

Collection Date: 05/21/20 14:25
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



Results of MW-19

Client Sample ID: MW-19
Client Project ID: 103822-002 6 Mile
Lab Sample ID: 1209256020
Lab Project ID: 1209256

Collection Date: 05/21/20 14:25
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



Results of MW-19

Client Sample ID: **MW-19**
Client Project ID: **103822-002 6 Mile**
Lab Sample ID: 1209256020
Lab Project ID: 1209256

Collection Date: 05/21/20 14:25
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Batch Information

Analytical Batch: VMS19968
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 05/29/20 15:56
Container ID: 1209256020-A

Prep Batch: VXX35672
Prep Method: SW5030B
Prep Date/Time: 05/29/20 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of MW-18

Client Sample ID: MW-18
Client Project ID: 103822-002 6 Mile
Lab Sample ID: 1209256021
Lab Project ID: 1209256

Collection Date: 05/21/20 16:20
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



Results of MW-18

Client Sample ID: **MW-18**
 Client Project ID: **103822-002 6 Mile**
 Lab Sample ID: 1209256021
 Lab Project ID: 1209256

Collection Date: 05/21/20 16:20
 Received Date: 05/27/20 08:57
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Chloroform	0.500 U	1.00	0.310	ug/L	1		05/29/20 16:12
Chloromethane	0.500 U	1.00	0.310	ug/L	1		05/29/20 16:12
cis-1,2-Dichloroethene	2.94	1.00	0.310	ug/L	1		05/29/20 16:12
cis-1,3-Dichloropropene	0.250 U	0.500	0.150	ug/L	1		05/29/20 16:12
Dibromochloromethane	0.250 U	0.500	0.150	ug/L	1		05/29/20 16:12
Dibromomethane	0.500 U	1.00	0.310	ug/L	1		05/29/20 16:12
Dichlorodifluoromethane	0.500 U	1.00	0.310	ug/L	1		05/29/20 16:12
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		05/29/20 16:12
Freon-113	5.00 U	10.0	3.10	ug/L	1		05/29/20 16:12
Hexachlorobutadiene	0.500 U	1.00	0.310	ug/L	1		05/29/20 16:12
Isopropylbenzene (Cumene)	0.500 U	1.00	0.310	ug/L	1		05/29/20 16:12
Methylene chloride	5.00 U	10.0	3.10	ug/L	1		05/29/20 16:12
Methyl-t-butyl ether	5.00 U	10.0	3.10	ug/L	1		05/29/20 16:12
Naphthalene	0.500 U	1.00	0.310	ug/L	1		05/29/20 16:12
n-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		05/29/20 16:12
n-Propylbenzene	0.500 U	1.00	0.310	ug/L	1		05/29/20 16:12
o-Xylene	0.500 U	1.00	0.310	ug/L	1		05/29/20 16:12
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		05/29/20 16:12
sec-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		05/29/20 16:12
Styrene	0.500 U	1.00	0.310	ug/L	1		05/29/20 16:12
tert-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		05/29/20 16:12
Tetrachloroethene	0.500 U	1.00	0.310	ug/L	1		05/29/20 16:12
Toluene	0.500 U	1.00	0.310	ug/L	1		05/29/20 16:12
trans-1,2-Dichloroethene	2.32	1.00	0.310	ug/L	1		05/29/20 16:12
trans-1,3-Dichloropropene	0.500 U	1.00	0.310	ug/L	1		05/29/20 16:12
Trichloroethene	1.30	1.00	0.310	ug/L	1		05/29/20 16:12
Trichlorofluoromethane	0.500 U	1.00	0.310	ug/L	1		05/29/20 16:12
Vinyl acetate	5.00 U	10.0	3.10	ug/L	1		05/29/20 16:12
Vinyl chloride	0.0750 U	0.150	0.0500	ug/L	1		05/29/20 16:12
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		05/29/20 16:12
Surrogates							
1,2-Dichloroethane-D4 (surr)	107	81-118		%	1		05/29/20 16:12
4-Bromofluorobenzene (surr)	97.7	85-114		%	1		05/29/20 16:12
Toluene-d8 (surr)	98.9	89-112		%	1		05/29/20 16:12



Results of MW-18

Client Sample ID: **MW-18**
Client Project ID: **103822-002 6 Mile**
Lab Sample ID: 1209256021
Lab Project ID: 1209256

Collection Date: 05/21/20 16:20
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Batch Information

Analytical Batch: VMS19968
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 05/29/20 16:12
Container ID: 1209256021-A

Prep Batch: VXX35672
Prep Method: SW5030B
Prep Date/Time: 05/29/20 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of MW-27

Client Sample ID: MW-27
Client Project ID: 103822-002 6 Mile
Lab Sample ID: 1209256022
Lab Project ID: 1209256

Collection Date: 05/21/20 17:24
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



Results of MW-27

Client Sample ID: **MW-27**
 Client Project ID: **103822-002 6 Mile**
 Lab Sample ID: 1209256022
 Lab Project ID: 1209256

Collection Date: 05/21/20 17:24
 Received Date: 05/27/20 08:57
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Chloroform	0.500 U	1.00	0.310	ug/L	1		05/29/20 16:27
Chloromethane	0.500 U	1.00	0.310	ug/L	1		05/29/20 16:27
cis-1,2-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		05/29/20 16:27
cis-1,3-Dichloropropene	0.250 U	0.500	0.150	ug/L	1		05/29/20 16:27
Dibromochloromethane	0.250 U	0.500	0.150	ug/L	1		05/29/20 16:27
Dibromomethane	0.500 U	1.00	0.310	ug/L	1		05/29/20 16:27
Dichlorodifluoromethane	0.500 U	1.00	0.310	ug/L	1		05/29/20 16:27
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		05/29/20 16:27
Freon-113	5.00 U	10.0	3.10	ug/L	1		05/29/20 16:27
Hexachlorobutadiene	0.500 U	1.00	0.310	ug/L	1		05/29/20 16:27
Isopropylbenzene (Cumene)	0.500 U	1.00	0.310	ug/L	1		05/29/20 16:27
Methylene chloride	5.00 U	10.0	3.10	ug/L	1		05/29/20 16:27
Methyl-t-butyl ether	5.00 U	10.0	3.10	ug/L	1		05/29/20 16:27
Naphthalene	0.500 U	1.00	0.310	ug/L	1		05/29/20 16:27
n-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		05/29/20 16:27
n-Propylbenzene	0.500 U	1.00	0.310	ug/L	1		05/29/20 16:27
o-Xylene	0.500 U	1.00	0.310	ug/L	1		05/29/20 16:27
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		05/29/20 16:27
sec-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		05/29/20 16:27
Styrene	0.500 U	1.00	0.310	ug/L	1		05/29/20 16:27
tert-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		05/29/20 16:27
Tetrachloroethene	0.500 U	1.00	0.310	ug/L	1		05/29/20 16:27
Toluene	0.500 U	1.00	0.310	ug/L	1		05/29/20 16:27
trans-1,2-Dichloroethene	0.339 J	1.00	0.310	ug/L	1		05/29/20 16:27
trans-1,3-Dichloropropene	0.500 U	1.00	0.310	ug/L	1		05/29/20 16:27
Trichloroethene	0.840 J	1.00	0.310	ug/L	1		05/29/20 16:27
Trichlorofluoromethane	0.500 U	1.00	0.310	ug/L	1		05/29/20 16:27
Vinyl acetate	5.00 U	10.0	3.10	ug/L	1		05/29/20 16:27
Vinyl chloride	0.0750 U	0.150	0.0500	ug/L	1		05/29/20 16:27
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		05/29/20 16:27
Surrogates							
1,2-Dichloroethane-D4 (surr)	108	81-118		%	1		05/29/20 16:27
4-Bromofluorobenzene (surr)	97.5	85-114		%	1		05/29/20 16:27
Toluene-d8 (surr)	99.1	89-112		%	1		05/29/20 16:27



Results of MW-27

Client Sample ID: **MW-27**
Client Project ID: **103822-002 6 Mile**
Lab Sample ID: 1209256022
Lab Project ID: 1209256

Collection Date: 05/21/20 17:24
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Batch Information

Analytical Batch: VMS19968
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 05/29/20 16:27
Container ID: 1209256022-A

Prep Batch: VXX35672
Prep Method: SW5030B
Prep Date/Time: 05/29/20 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of MW-17

Client Sample ID: MW-17
Client Project ID: 103822-002 6 Mile
Lab Sample ID: 1209256023
Lab Project ID: 1209256

Collection Date: 05/21/20 18:01
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



Results of MW-17

Client Sample ID: MW-17
Client Project ID: 103822-002 6 Mile
Lab Sample ID: 1209256023
Lab Project ID: 1209256

Collection Date: 05/21/20 18:01
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



Results of MW-17

Client Sample ID: **MW-17**
Client Project ID: **103822-002 6 Mile**
Lab Sample ID: 1209256023
Lab Project ID: 1209256

Collection Date: 05/21/20 18:01
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Batch Information

Analytical Batch: VMS19968
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 05/29/20 16:43
Container ID: 1209256023-A

Prep Batch: VXX35672
Prep Method: SW5030B
Prep Date/Time: 05/29/20 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of MW-117

Client Sample ID: MW-117
Client Project ID: 103822-002 6 Mile
Lab Sample ID: 1209256024
Lab Project ID: 1209256

Collection Date: 05/21/20 17:51
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



Results of MW-117

Client Sample ID: MW-117
Client Project ID: 103822-002 6 Mile
Lab Sample ID: 1209256024
Lab Project ID: 1209256

Collection Date: 05/21/20 17:51
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



Results of MW-117

Client Sample ID: **MW-117**
Client Project ID: **103822-002 6 Mile**
Lab Sample ID: 1209256024
Lab Project ID: 1209256

Collection Date: 05/21/20 17:51
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Batch Information

Analytical Batch: VMS19968
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 05/29/20 16:58
Container ID: 1209256024-A

Prep Batch: VXX35672
Prep Method: SW5030B
Prep Date/Time: 05/29/20 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of MW-32

Client Sample ID: MW-32
Client Project ID: 103822-002 6 Mile
Lab Sample ID: 1209256025
Lab Project ID: 1209256

Collection Date: 05/22/20 12:03
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



Results of MW-32

Client Sample ID: MW-32
Client Project ID: 103822-002 6 Mile
Lab Sample ID: 1209256025
Lab Project ID: 1209256

Collection Date: 05/22/20 12:03
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



Results of MW-32

Client Sample ID: **MW-32**
Client Project ID: **103822-002 6 Mile**
Lab Sample ID: 1209256025
Lab Project ID: 1209256

Collection Date: 05/22/20 12:03
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Batch Information

Analytical Batch: VMS19968
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 05/29/20 17:13
Container ID: 1209256025-A

Prep Batch: VXX35672
Prep Method: SW5030B
Prep Date/Time: 05/29/20 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of **EB-32**

Client Sample ID: **EB-32**
Client Project ID: **103822-002 6 Mile**
Lab Sample ID: 1209256026
Lab Project ID: 1209256

Collection Date: 05/22/20 12:13
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
1,1,1,2-Tetrachloroethane	0.250 U	0.500	0.150	ug/L	1		05/29/20 17:29
1,1,1-Trichloroethane	0.500 U	1.00	0.310	ug/L	1		05/29/20 17:29
1,1,2,2-Tetrachloroethane	0.250 U	0.500	0.150	ug/L	1		05/29/20 17:29
1,1,2-Trichloroethane	0.200 U	0.400	0.120	ug/L	1		05/29/20 17:29
1,1-Dichloroethane	0.500 U	1.00	0.310	ug/L	1		05/29/20 17:29
1,1-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		05/29/20 17:29
1,1-Dichloropropene	0.500 U	1.00	0.310	ug/L	1		05/29/20 17:29
1,2,3-Trichlorobenzene	0.500 U	1.00	0.310	ug/L	1		05/29/20 17:29
1,2,3-Trichloropropane	0.500 U	1.00	0.310	ug/L	1		05/29/20 17:29
1,2,4-Trichlorobenzene	0.500 U	1.00	0.310	ug/L	1		05/29/20 17:29
1,2,4-Trimethylbenzene	0.500 U	1.00	0.310	ug/L	1		05/29/20 17:29
1,2-Dibromo-3-chloropropane	5.00 U	10.0	3.10	ug/L	1		05/29/20 17:29
1,2-Dibromoethane	0.0375 U	0.0750	0.0180	ug/L	1		05/29/20 17:29
1,2-Dichlorobenzene	0.500 U	1.00	0.310	ug/L	1		05/29/20 17:29
1,2-Dichloroethane	0.250 U	0.500	0.150	ug/L	1		05/29/20 17:29
1,2-Dichloropropane	0.500 U	1.00	0.310	ug/L	1		05/29/20 17:29
1,3,5-Trimethylbenzene	0.500 U	1.00	0.310	ug/L	1		05/29/20 17:29
1,3-Dichlorobenzene	0.500 U	1.00	0.310	ug/L	1		05/29/20 17:29
1,3-Dichloropropane	0.250 U	0.500	0.150	ug/L	1		05/29/20 17:29
1,4-Dichlorobenzene	0.250 U	0.500	0.150	ug/L	1		05/29/20 17:29
2,2-Dichloropropane	0.500 U	1.00	0.310	ug/L	1		05/29/20 17:29
2-Butanone (MEK)	5.00 U	10.0	3.10	ug/L	1		05/29/20 17:29
2-Chlorotoluene	0.500 U	1.00	0.310	ug/L	1		05/29/20 17:29
2-Hexanone	5.00 U	10.0	3.10	ug/L	1		05/29/20 17:29
4-Chlorotoluene	0.500 U	1.00	0.310	ug/L	1		05/29/20 17:29
4-Isopropyltoluene	0.500 U	1.00	0.310	ug/L	1		05/29/20 17:29
4-Methyl-2-pentanone (MIBK)	5.00 U	10.0	3.10	ug/L	1		05/29/20 17:29
Benzene	0.200 U	0.400	0.120	ug/L	1		05/29/20 17:29
Bromobenzene	0.500 U	1.00	0.310	ug/L	1		05/29/20 17:29
Bromochloromethane	0.500 U	1.00	0.310	ug/L	1		05/29/20 17:29
Bromodichloromethane	0.201 J	0.500	0.150	ug/L	1		05/29/20 17:29
Bromoform	0.500 U	1.00	0.310	ug/L	1		05/29/20 17:29
Bromomethane	2.50 U	5.00	2.00	ug/L	1		05/29/20 17:29
Carbon disulfide	5.00 U	10.0	3.10	ug/L	1		05/29/20 17:29
Carbon tetrachloride	0.500 U	1.00	0.310	ug/L	1		05/29/20 17:29
Chlorobenzene	0.250 U	0.500	0.150	ug/L	1		05/29/20 17:29
Chloroethane	0.500 U	1.00	0.310	ug/L	1		05/29/20 17:29

Print Date: 06/01/2020 8:34:20AM

J flagging is activated



Results of EB-32

Client Sample ID: EB-32
Client Project ID: 103822-002 6 Mile
Lab Sample ID: 1209256026
Lab Project ID: 1209256

Collection Date: 05/22/20 12:13
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.

Results of EB-32

Client Sample ID: **EB-32**
Client Project ID: **103822-002 6 Mile**
Lab Sample ID: 1209256026
Lab Project ID: 1209256

Collection Date: 05/22/20 12:13
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Batch Information

Analytical Batch: VMS19968
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 05/29/20 17:29
Container ID: 1209256026-A

Prep Batch: VXX35672
Prep Method: SW5030B
Prep Date/Time: 05/29/20 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of MW-31

Client Sample ID: MW-31
Client Project ID: 103822-002 6 Mile
Lab Sample ID: 1209256027
Lab Project ID: 1209256

Collection Date: 05/22/20 14:18
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



Results of MW-31

Client Sample ID: MW-31
Client Project ID: 103822-002 6 Mile
Lab Sample ID: 1209256027
Lab Project ID: 1209256

Collection Date: 05/22/20 14:18
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.

Results of MW-31

Client Sample ID: **MW-31**
Client Project ID: **103822-002 6 Mile**
Lab Sample ID: 1209256027
Lab Project ID: 1209256

Collection Date: 05/22/20 14:18
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Batch Information

Analytical Batch: VMS19968
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 05/29/20 17:44
Container ID: 1209256027-A

Prep Batch: VXX35672
Prep Method: SW5030B
Prep Date/Time: 05/29/20 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of Trip Blank

Client Sample ID: Trip Blank
Client Project ID: 103822-002 6 Mile
Lab Sample ID: 1209256028
Lab Project ID: 1209256

Collection Date: 05/19/20 11:08
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



Results of Trip Blank

Client Sample ID: **Trip Blank**
 Client Project ID: **103822-002 6 Mile**
 Lab Sample ID: 1209256028
 Lab Project ID: 1209256

Collection Date: 05/19/20 11:08
 Received Date: 05/27/20 08:57
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Chloroform	0.500 U	1.00	0.310	ug/L	1		05/28/20 15:26
Chloromethane	0.500 U	1.00	0.310	ug/L	1		05/28/20 15:26
cis-1,2-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		05/28/20 15:26
cis-1,3-Dichloropropene	0.250 U	0.500	0.150	ug/L	1		05/28/20 15:26
Dibromochloromethane	0.250 U	0.500	0.150	ug/L	1		05/28/20 15:26
Dibromomethane	0.500 U	1.00	0.310	ug/L	1		05/28/20 15:26
Dichlorodifluoromethane	0.500 U	1.00	0.310	ug/L	1		05/28/20 15:26
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		05/28/20 15:26
Freon-113	5.00 U	10.0	3.10	ug/L	1		05/28/20 15:26
Hexachlorobutadiene	0.500 U	1.00	0.310	ug/L	1		05/28/20 15:26
Isopropylbenzene (Cumene)	0.500 U	1.00	0.310	ug/L	1		05/28/20 15:26
Methylene chloride	5.00 U	10.0	3.10	ug/L	1		05/28/20 15:26
Methyl-t-butyl ether	5.00 U	10.0	3.10	ug/L	1		05/28/20 15:26
Naphthalene	0.500 U	1.00	0.310	ug/L	1		05/28/20 15:26
n-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		05/28/20 15:26
n-Propylbenzene	0.500 U	1.00	0.310	ug/L	1		05/28/20 15:26
o-Xylene	0.500 U	1.00	0.310	ug/L	1		05/28/20 15:26
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		05/28/20 15:26
sec-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		05/28/20 15:26
Styrene	0.500 U	1.00	0.310	ug/L	1		05/28/20 15:26
tert-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		05/28/20 15:26
Tetrachloroethene	0.500 U	1.00	0.310	ug/L	1		05/28/20 15:26
Toluene	0.500 U	1.00	0.310	ug/L	1		05/28/20 15:26
trans-1,2-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		05/28/20 15:26
trans-1,3-Dichloropropene	0.500 U	1.00	0.310	ug/L	1		05/28/20 15:26
Trichloroethene	0.500 U	1.00	0.310	ug/L	1		05/28/20 15:26
Trichlorofluoromethane	0.500 U	1.00	0.310	ug/L	1		05/28/20 15:26
Vinyl acetate	5.00 U	10.0	3.10	ug/L	1		05/28/20 15:26
Vinyl chloride	0.0750 U	0.150	0.0500	ug/L	1		05/28/20 15:26
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		05/28/20 15:26
Surrogates							
1,2-Dichloroethane-D4 (surr)	108	81-118		%	1		05/28/20 15:26
4-Bromofluorobenzene (surr)	97.6	85-114		%	1		05/28/20 15:26
Toluene-d8 (surr)	99.7	89-112		%	1		05/28/20 15:26



Results of Trip Blank

Client Sample ID: **Trip Blank**
Client Project ID: **103822-002 6 Mile**
Lab Sample ID: 1209256028
Lab Project ID: 1209256

Collection Date: 05/19/20 11:08
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Batch Information

Analytical Batch: VMS19964
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 05/28/20 15:26
Container ID: 1209256028-A

Prep Batch: VXX35666
Prep Method: SW5030B
Prep Date/Time: 05/28/20 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of Trip Blank

Client Sample ID: Trip Blank
Client Project ID: 103822-002 6 Mile
Lab Sample ID: 1209256029
Lab Project ID: 1209256

Collection Date: 05/19/20 11:08
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



Results of Trip Blank

Client Sample ID: **Trip Blank**
 Client Project ID: **103822-002 6 Mile**
 Lab Sample ID: 1209256029
 Lab Project ID: 1209256

Collection Date: 05/19/20 11:08
 Received Date: 05/27/20 08:57
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Chloroform	0.500 U	1.00	0.310	ug/L	1		05/28/20 15:42
Chloromethane	0.500 U	1.00	0.310	ug/L	1		05/28/20 15:42
cis-1,2-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		05/28/20 15:42
cis-1,3-Dichloropropene	0.250 U	0.500	0.150	ug/L	1		05/28/20 15:42
Dibromochloromethane	0.250 U	0.500	0.150	ug/L	1		05/28/20 15:42
Dibromomethane	0.500 U	1.00	0.310	ug/L	1		05/28/20 15:42
Dichlorodifluoromethane	0.500 U	1.00	0.310	ug/L	1		05/28/20 15:42
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		05/28/20 15:42
Freon-113	5.00 U	10.0	3.10	ug/L	1		05/28/20 15:42
Hexachlorobutadiene	0.500 U	1.00	0.310	ug/L	1		05/28/20 15:42
Isopropylbenzene (Cumene)	0.500 U	1.00	0.310	ug/L	1		05/28/20 15:42
Methylene chloride	5.00 U	10.0	3.10	ug/L	1		05/28/20 15:42
Methyl-t-butyl ether	5.00 U	10.0	3.10	ug/L	1		05/28/20 15:42
Naphthalene	0.500 U	1.00	0.310	ug/L	1		05/28/20 15:42
n-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		05/28/20 15:42
n-Propylbenzene	0.500 U	1.00	0.310	ug/L	1		05/28/20 15:42
o-Xylene	0.500 U	1.00	0.310	ug/L	1		05/28/20 15:42
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		05/28/20 15:42
sec-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		05/28/20 15:42
Styrene	0.500 U	1.00	0.310	ug/L	1		05/28/20 15:42
tert-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		05/28/20 15:42
Tetrachloroethene	0.500 U	1.00	0.310	ug/L	1		05/28/20 15:42
Toluene	0.500 U	1.00	0.310	ug/L	1		05/28/20 15:42
trans-1,2-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		05/28/20 15:42
trans-1,3-Dichloropropene	0.500 U	1.00	0.310	ug/L	1		05/28/20 15:42
Trichloroethene	0.500 U	1.00	0.310	ug/L	1		05/28/20 15:42
Trichlorofluoromethane	0.500 U	1.00	0.310	ug/L	1		05/28/20 15:42
Vinyl acetate	5.00 U	10.0	3.10	ug/L	1		05/28/20 15:42
Vinyl chloride	0.0750 U	0.150	0.0500	ug/L	1		05/28/20 15:42
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		05/28/20 15:42
Surrogates							
1,2-Dichloroethane-D4 (surr)	107	81-118		%	1		05/28/20 15:42
4-Bromofluorobenzene (surr)	99.4	85-114		%	1		05/28/20 15:42
Toluene-d8 (surr)	98.8	89-112		%	1		05/28/20 15:42



Results of Trip Blank

Client Sample ID: **Trip Blank**
Client Project ID: **103822-002 6 Mile**
Lab Sample ID: 1209256029
Lab Project ID: 1209256

Collection Date: 05/19/20 11:08
Received Date: 05/27/20 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Batch Information

Analytical Batch: VMS19964
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 05/28/20 15:42
Container ID: 1209256029-A

Prep Batch: VXX35666
Prep Method: SW5030B
Prep Date/Time: 05/28/20 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Method Blank

Blank ID: MB for HBN 1806953 [VXX/35666]
 Blank Lab ID: 1560730

Matrix: Water (Surface, Eff., Ground)

QC for Samples:

1209256001, 1209256002, 1209256003, 1209256004, 1209256005, 1209256006, 1209256007, 1209256008, 1209256009, 1209256010, 1209256011, 1209256012, 1209256013, 1209256014, 1209256015, 1209256028, 1209256029

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
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	2.00	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

Print Date: 06/01/2020 8:34:23AM

Method Blank

Blank ID: MB for HBN 1806953 [VXX/35666]
 Blank Lab ID: 1560730

Matrix: Water (Surface, Eff., Ground)

QC for Samples:

1209256001, 1209256002, 1209256003, 1209256004, 1209256005, 1209256006, 1209256007, 1209256008, 1209256009,
 1209256010, 1209256011, 1209256012, 1209256013, 1209256014, 1209256015, 1209256028, 1209256029

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
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	5.00U	10.0	3.10	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)	98.3	89-112		%



Method Blank

Blank ID: MB for HBN 1806953 [VXX/35666]
Blank Lab ID: 1560730

Matrix: Water (Surface, Eff., Ground)

QC for Samples:

1209256001, 1209256002, 1209256003, 1209256004, 1209256005, 1209256006, 1209256007, 1209256008, 1209256009, 1209256010, 1209256011, 1209256012, 1209256013, 1209256014, 1209256015, 1209256028, 1209256029

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
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Batch Information

Analytical Batch: VMS19964
Analytical Method: SW8260D
Instrument: Agilent 7890-75MS
Analyst: NRB
Analytical Date/Time: 5/28/2020 11:37:00AM

Prep Batch: VXX35666
Prep Method: SW5030B
Prep Date/Time: 5/28/2020 6:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 06/01/2020 8:34:23AM



Blank Spike Summary

Blank Spike ID: LCS for HBN 1209256 [VXX35666]
 Blank Spike Lab ID: 1560731
 Date Analyzed: 05/28/2020 13:03

Spike Duplicate ID: LCSD for HBN 1209256 [VXX35666]
 Spike Duplicate Lab ID: 1560732
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1209256001, 1209256002, 1209256003, 1209256004, 1209256005, 1209256006, 1209256007, 1209256008, 1209256009, 1209256010, 1209256011, 1209256012, 1209256013, 1209256014, 1209256015, 1209256028, 1209256029

Results by SW8260D

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
1,1,1,2-Tetrachloroethane	30	30.9	103	30	30.7	102	(78-124)	0.49	(< 20)
1,1,1-Trichloroethane	30	31.3	104	30	30.6	102	(74-131)	2.10	(< 20)
1,1,2,2-Tetrachloroethane	30	28.8	96	30	28.6	95	(71-121)	0.78	(< 20)
1,1,2-Trichloroethane	30	29.9	100	30	30.1	100	(80-119)	0.59	(< 20)
1,1-Dichloroethane	30	30.2	101	30	29.9	100	(77-125)	0.99	(< 20)
1,1-Dichloroethene	30	33.1	110	30	32.4	108	(71-131)	2.00	(< 20)
1,1-Dichloropropene	30	31.4	105	30	30.4	101	(79-125)	3.10	(< 20)
1,2,3-Trichlorobenzene	30	31.0	103	30	31.4	105	(69-129)	1.50	(< 20)
1,2,3-Trichloropropane	30	28.8	96	30	28.7	96	(73-122)	0.30	(< 20)
1,2,4-Trichlorobenzene	30	31.1	104	30	31.8	106	(69-130)	2.30	(< 20)
1,2,4-Trimethylbenzene	30	29.6	99	30	29.8	99	(79-124)	0.72	(< 20)
1,2-Dibromo-3-chloropropane	30	27.1	90	30	27.0	90	(62-128)	0.38	(< 20)
1,2-Dibromoethane	30	31.0	103	30	30.9	103	(77-121)	0.42	(< 20)
1,2-Dichlorobenzene	30	30.3	101	30	30.1	100	(80-119)	0.57	(< 20)
1,2-Dichloroethane	30	29.9	100	30	29.5	98	(73-128)	1.10	(< 20)
1,2-Dichloropropane	30	30.6	102	30	30.4	101	(78-122)	0.87	(< 20)
1,3,5-Trimethylbenzene	30	30.3	101	30	30.2	101	(75-124)	0.06	(< 20)
1,3-Dichlorobenzene	30	30.2	101	30	30.3	101	(80-119)	0.46	(< 20)
1,3-Dichloropropane	30	29.9	100	30	29.9	100	(80-119)	0.06	(< 20)
1,4-Dichlorobenzene	30	30.0	100	30	29.9	100	(79-118)	0.47	(< 20)
2,2-Dichloropropane	30	32.1	107	30	31.4	105	(60-139)	2.00	(< 20)
2-Butanone (MEK)	90	77.1	86	90	73.3	82	(56-143)	5.00	(< 20)
2-Chlorotoluene	30	29.5	99	30	29.3	98	(79-122)	0.77	(< 20)
2-Hexanone	90	80.9	90	90	80.1	89	(57-139)	1.10	(< 20)
4-Chlorotoluene	30	29.9	100	30	29.8	99	(78-122)	0.48	(< 20)
4-Isopropyltoluene	30	30.6	102	30	30.5	102	(77-127)	0.34	(< 20)
4-Methyl-2-pentanone (MIBK)	90	86.8	96	90	85.5	95	(67-130)	1.50	(< 20)
Benzene	30	30.3	101	30	29.7	99	(79-120)	2.10	(< 20)
Bromobenzene	30	30.3	101	30	30.1	100	(80-120)	0.60	(< 20)
Bromochloromethane	30	30.6	102	30	30.4	101	(78-123)	0.36	(< 20)
Bromodichloromethane	30	31.4	105	30	31.1	104	(79-125)	0.79	(< 20)
Bromoform	30	30.3	101	30	30.4	101	(66-130)	0.48	(< 20)
Bromomethane	30	24.7	82	30	26.0	87	(53-141)	5.10	(< 20)
Carbon disulfide	45	48.8	108	45	47.8	106	(64-133)	2.00	(< 20)

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1209256 [VXX35666]
 Blank Spike Lab ID: 1560731
 Date Analyzed: 05/28/2020 13:03

Spike Duplicate ID: LCSD for HBN 1209256 [VXX35666]
 Spike Duplicate Lab ID: 1560732
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1209256001, 1209256002, 1209256003, 1209256004, 1209256005, 1209256006, 1209256007, 1209256008, 1209256009, 1209256010, 1209256011, 1209256012, 1209256013, 1209256014, 1209256015, 1209256028, 1209256029

Results by SW8260D

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Carbon tetrachloride	30	31.4	105	30	30.7	102	(72-136)	2.40	(< 20)
Chlorobenzene	30	29.7	99	30	29.5	98	(82-118)	0.81	(< 20)
Chloroethane	30	36.1	120	30	34.9	116	(60-138)	3.50	(< 20)
Chloroform	30	30.3	101	30	30.0	100	(79-124)	1.00	(< 20)
Chloromethane	30	27.9	93	30	27.7	92	(50-139)	0.83	(< 20)
cis-1,2-Dichloroethene	30	30.7	102	30	30.4	101	(78-123)	1.00	(< 20)
cis-1,3-Dichloropropene	30	30.9	103	30	30.6	102	(75-124)	0.98	(< 20)
Dibromochloromethane	30	30.7	102	30	30.6	102	(74-126)	0.19	(< 20)
Dibromomethane	30	30.6	102	30	30.6	102	(79-123)	0.13	(< 20)
Dichlorodifluoromethane	30	32.9	110	30	32.3	108	(32-152)	1.80	(< 20)
Ethylbenzene	30	30.0	100	30	29.6	99	(79-121)	1.40	(< 20)
Freon-113	45	49.2	109	45	48.4	108	(70-136)	1.70	(< 20)
Hexachlorobutadiene	30	29.7	99	30	30.8	103	(66-134)	3.70	(< 20)
Isopropylbenzene (Cumene)	30	30.9	103	30	30.3	101	(72-131)	1.90	(< 20)
Methylene chloride	30	31.1	104	30	31.1	104	(74-124)	0.07	(< 20)
Methyl-t-butyl ether	45	46.7	104	45	46.8	104	(71-124)	0.16	(< 20)
Naphthalene	30	30.9	103	30	31.7	106	(61-128)	2.50	(< 20)
n-Butylbenzene	30	30.5	102	30	30.9	103	(75-128)	1.50	(< 20)
n-Propylbenzene	30	30.3	101	30	29.7	99	(76-126)	2.00	(< 20)
o-Xylene	30	29.3	98	30	28.9	96	(78-122)	1.40	(< 20)
P & M -Xylene	60	57.8	96	60	57.8	96	(80-121)	0.05	(< 20)
sec-Butylbenzene	30	30.3	101	30	29.5	99	(77-126)	2.40	(< 20)
Styrene	30	31.3	104	30	31.1	104	(78-123)	0.72	(< 20)
tert-Butylbenzene	30	29.9	100	30	29.8	99	(78-124)	0.25	(< 20)
Tetrachloroethene	30	31.2	104	30	30.4	101	(74-129)	2.60	(< 20)
Toluene	30	28.8	96	30	28.3	95	(80-121)	1.70	(< 20)
trans-1,2-Dichloroethene	30	31.0	103	30	30.5	102	(75-124)	1.90	(< 20)
trans-1,3-Dichloropropene	30	30.8	103	30	30.7	102	(73-127)	0.21	(< 20)
Trichloroethene	30	31.0	103	30	30.3	101	(79-123)	2.30	(< 20)
Trichlorofluoromethane	30	34.8	116	30	34.1	114	(65-141)	1.90	(< 20)
Vinyl acetate	30	32.8	109	30	32.7	109	(54-146)	0.41	(< 20)
Vinyl chloride	30	31.7	106	30	31.1	104	(58-137)	2.10	(< 20)
Xylenes (total)	90	87.2	97	90	86.7	96	(79-121)	0.51	(< 20)

Print Date: 06/01/2020 8:34:26AM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1209256 [VXX35666]
 Blank Spike Lab ID: 1560731
 Date Analyzed: 05/28/2020 13:03

Spike Duplicate ID: LCSD for HBN 1209256 [VXX35666]
 Spike Duplicate Lab ID: 1560732
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1209256001, 1209256002, 1209256003, 1209256004, 1209256005, 1209256006, 1209256007, 1209256008, 1209256009, 1209256010, 1209256011, 1209256012, 1209256013, 1209256014, 1209256015, 1209256028, 1209256029

Results by SW8260D

Parameter	Blank Spike (%)			Spike Duplicate (%)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Surrogates									
1,2-Dichloroethane-D4 (surr)	30	100	100	30	100	100	(81-118)	0.35	
4-Bromofluorobenzene (surr)	30	97.5	98	30	98.2	98	(85-114)	0.69	
Toluene-d8 (surr)	30	100	100	30	101	101	(89-112)	0.23	

Batch Information

Analytical Batch: **VMS19964**
 Analytical Method: **SW8260D**
 Instrument: **Agilent 7890-75MS**
 Analyst: **NRB**

Prep Batch: **VXX35666**
 Prep Method: **SW5030B**
 Prep Date/Time: **05/28/2020 06:00**
 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 1806999 [VXX/35672]
 Blank Lab ID: 1560942

Matrix: Water (Surface, Eff., Ground)

QC for Samples:

1209256016, 1209256017, 1209256018, 1209256019, 1209256020, 1209256021, 1209256022, 1209256023, 1209256024, 1209256025, 1209256026, 1209256027

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
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	2.00	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

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Method Blank

Blank ID: MB for HBN 1806999 [VXX/35672]
 Blank Lab ID: 1560942

Matrix: Water (Surface, Eff., Ground)

QC for Samples:

1209256016, 1209256017, 1209256018, 1209256019, 1209256020, 1209256021, 1209256022, 1209256023, 1209256024, 1209256025, 1209256026, 1209256027

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
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	5.00U	10.0	3.10	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)	99.2	85-114		%
Toluene-d8 (surr)	99.8	89-112		%



Method Blank

Blank ID: MB for HBN 1806999 [VXX/35672]
Blank Lab ID: 1560942

Matrix: Water (Surface, Eff., Ground)

QC for Samples:

1209256016, 1209256017, 1209256018, 1209256019, 1209256020, 1209256021, 1209256022, 1209256023, 1209256024, 1209256025, 1209256026, 1209256027

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
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Batch Information

Analytical Batch: VMS19968
Analytical Method: SW8260D
Instrument: Agilent 7890-75MS
Analyst: NRB
Analytical Date/Time: 5/29/2020 11:50:00AM

Prep Batch: VXX35672
Prep Method: SW5030B
Prep Date/Time: 5/29/2020 6:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 06/01/2020 8:34:28AM



Blank Spike Summary

Blank Spike ID: LCS for HBN 1209256 [VXX35672]
 Blank Spike Lab ID: 1560943
 Date Analyzed: 05/29/2020 12:06

Spike Duplicate ID: LCSD for HBN 1209256 [VXX35672]
 Spike Duplicate Lab ID: 1560944
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1209256016, 1209256017, 1209256018, 1209256019, 1209256020, 1209256021, 1209256022, 1209256023, 1209256024, 1209256025, 1209256026, 1209256027

Results by SW8260D

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
1,1,1,2-Tetrachloroethane	30	30.4	101	30	30.8	103	(78-124)	1.30	(< 20)
1,1,1-Trichloroethane	30	30.6	102	30	30.5	102	(74-131)	0.22	(< 20)
1,1,2,2-Tetrachloroethane	30	29.0	97	30	29.7	99	(71-121)	2.40	(< 20)
1,1,2-Trichloroethane	30	30.0	100	30	30.5	102	(80-119)	1.50	(< 20)
1,1-Dichloroethane	30	29.8	99	30	30.0	100	(77-125)	0.55	(< 20)
1,1-Dichloroethene	30	32.5	108	30	32.4	108	(71-131)	0.24	(< 20)
1,1-Dichloropropene	30	30.7	102	30	30.5	102	(79-125)	0.66	(< 20)
1,2,3-Trichlorobenzene	30	30.1	100	30	32.5	108	(69-129)	7.70	(< 20)
1,2,3-Trichloropropane	30	28.9	96	30	29.7	99	(73-122)	2.80	(< 20)
1,2,4-Trichlorobenzene	30	30.8	103	30	32.0	107	(69-130)	3.80	(< 20)
1,2,4-Trimethylbenzene	30	29.2	97	30	29.0	97	(79-124)	0.50	(< 20)
1,2-Dibromo-3-chloropropane	30	27.4	91	30	28.8	96	(62-128)	4.70	(< 20)
1,2-Dibromoethane	30	30.6	102	30	31.4	105	(77-121)	2.60	(< 20)
1,2-Dichlorobenzene	30	29.9	100	30	30.2	101	(80-119)	1.20	(< 20)
1,2-Dichloroethane	30	29.5	98	30	29.8	99	(73-128)	1.10	(< 20)
1,2-Dichloropropane	30	30.3	101	30	30.4	101	(78-122)	0.28	(< 20)
1,3,5-Trimethylbenzene	30	29.5	98	30	29.8	99	(75-124)	0.81	(< 20)
1,3-Dichlorobenzene	30	30.0	100	30	30.2	101	(80-119)	0.49	(< 20)
1,3-Dichloropropane	30	29.5	99	30	30.5	102	(80-119)	3.00	(< 20)
1,4-Dichlorobenzene	30	29.9	100	30	30.2	101	(79-118)	0.88	(< 20)
2,2-Dichloropropane	30	31.1	104	30	30.9	103	(60-139)	0.55	(< 20)
2-Butanone (MEK)	90	79.1	88	90	83.1	92	(56-143)	4.90	(< 20)
2-Chlorotoluene	30	29.8	99	30	29.5	99	(79-122)	0.71	(< 20)
2-Hexanone	90	80.6	90	90	84.9	94	(57-139)	5.20	(< 20)
4-Chlorotoluene	30	29.6	99	30	29.5	99	(78-122)	0.13	(< 20)
4-Isopropyltoluene	30	29.8	99	30	30.2	101	(77-127)	1.20	(< 20)
4-Methyl-2-pentanone (MIBK)	90	85.4	95	90	88.5	98	(67-130)	3.60	(< 20)
Benzene	30	29.8	99	30	30.0	100	(79-120)	0.79	(< 20)
Bromobenzene	30	30.2	101	30	30.3	101	(80-120)	0.26	(< 20)
Bromochloromethane	30	31.0	103	30	30.9	103	(78-123)	0.11	(< 20)
Bromodichloromethane	30	30.9	103	30	31.2	104	(79-125)	0.69	(< 20)
Bromoform	30	30.1	100	30	30.6	102	(66-130)	1.70	(< 20)
Bromomethane	30	30.0	100	30	29.2	97	(53-141)	2.80	(< 20)
Carbon disulfide	45	48.3	107	45	48.1	107	(64-133)	0.39	(< 20)

Print Date: 06/01/2020 8:34:31AM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1209256 [VXX35672]
 Blank Spike Lab ID: 1560943
 Date Analyzed: 05/29/2020 12:06

Spike Duplicate ID: LCSD for HBN 1209256 [VXX35672]
 Spike Duplicate Lab ID: 1560944
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1209256016, 1209256017, 1209256018, 1209256019, 1209256020, 1209256021, 1209256022, 1209256023, 1209256024, 1209256025, 1209256026, 1209256027

Results by SW8260D

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Carbon tetrachloride	30	30.7	102	30	30.7	102	(72-136)	0.24	(< 20)
Chlorobenzene	30	29.2	97	30	29.3	98	(82-118)	0.51	(< 20)
Chloroethane	30	38.5	128	30	34.2	114	(60-138)	11.80	(< 20)
Chloroform	30	30.1	100	30	30.1	100	(79-124)	0.14	(< 20)
Chloromethane	30	29.8	100	30	29.3	98	(50-139)	2.00	(< 20)
cis-1,2-Dichloroethene	30	30.2	101	30	30.5	102	(78-123)	0.75	(< 20)
cis-1,3-Dichloropropene	30	30.4	101	30	30.7	102	(75-124)	1.10	(< 20)
Dibromochloromethane	30	30.2	101	30	30.8	103	(74-126)	1.90	(< 20)
Dibromomethane	30	30.6	102	30	31.0	103	(79-123)	1.00	(< 20)
Dichlorodifluoromethane	30	34.7	116	30	33.5	112	(32-152)	3.50	(< 20)
Ethylbenzene	30	29.5	98	30	29.6	99	(79-121)	0.36	(< 20)
Freon-113	45	48.8	108	45	48.4	108	(70-136)	0.87	(< 20)
Hexachlorobutadiene	30	29.1	97	30	29.4	98	(66-134)	0.89	(< 20)
Isopropylbenzene (Cumene)	30	30.3	101	30	30.2	101	(72-131)	0.45	(< 20)
Methylene chloride	30	31.7	106	30	32.1	107	(74-124)	1.00	(< 20)
Methyl-t-butyl ether	45	46.0	102	45	47.6	106	(71-124)	3.40	(< 20)
Naphthalene	30	29.9	100	30	32.7	109	(61-128)	9.10	(< 20)
n-Butylbenzene	30	29.8	99	30	30.4	101	(75-128)	2.00	(< 20)
n-Propylbenzene	30	30.0	100	30	29.8	99	(76-126)	0.67	(< 20)
o-Xylene	30	28.4	95	30	29.1	97	(78-122)	2.30	(< 20)
P & M -Xylene	60	57.7	96	60	57.7	96	(80-121)	0.15	(< 20)
sec-Butylbenzene	30	30.1	100	30	30.0	100	(77-126)	0.11	(< 20)
Styrene	30	29.7	99	30	30.9	103	(78-123)	3.90	(< 20)
tert-Butylbenzene	30	29.6	99	30	29.3	98	(78-124)	0.80	(< 20)
Tetrachloroethene	30	30.3	101	30	30.0	100	(74-129)	1.00	(< 20)
Toluene	30	28.0	93	30	28.2	94	(80-121)	0.64	(< 20)
trans-1,2-Dichloroethene	30	30.6	102	30	30.7	102	(75-124)	0.42	(< 20)
trans-1,3-Dichloropropene	30	30.3	101	30	30.8	103	(73-127)	1.70	(< 20)
Trichloroethene	30	30.6	102	30	30.6	102	(79-123)	0.06	(< 20)
Trichlorofluoromethane	30	36.0	120	30	34.8	116	(65-141)	3.30	(< 20)
Vinyl acetate	30	33.3	111	30	34.5	115	(54-146)	3.60	(< 20)
Vinyl chloride	30	33.0	110	30	32.4	108	(58-137)	2.00	(< 20)
Xylenes (total)	90	86.2	96	90	86.8	96	(79-121)	0.65	(< 20)



Blank Spike Summary

Blank Spike ID: LCS for HBN 1209256 [VXX35672]
 Blank Spike Lab ID: 1560943
 Date Analyzed: 05/29/2020 12:06

Spike Duplicate ID: LCSD for HBN 1209256 [VXX35672]
 Spike Duplicate Lab ID: 1560944
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1209256016, 1209256017, 1209256018, 1209256019, 1209256020, 1209256021, 1209256022, 1209256023, 1209256024, 1209256025, 1209256026, 1209256027

Results by SW8260D

Parameter	Blank Spike (%)			Spike Duplicate (%)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Surrogates									
1,2-Dichloroethane-D4 (surr)	30	101	101	30	101	101	(81-118)	0.54	
4-Bromofluorobenzene (surr)	30	98.3	98	30	97.5	98	(85-114)	0.77	
Toluene-d8 (surr)	30	99.1	99	30	100	100	(89-112)	1.00	

Batch Information

Analytical Batch: **VMS19968**
 Analytical Method: **SW8260D**
 Instrument: **Agilent 7890-75MS**
 Analyst: **NRB**

Prep Batch: **VXX35672**
 Prep Method: **SW5030B**
 Prep Date/Time: **05/29/2020 06:00**
 Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
 Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

Print Date: 06/01/2020 8:34:31AM

1209256



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Fairbanks, AK 99709
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CH/



DIY RECORD

Laboratory SGS Page 1 of 3
Attn: _____

Analytical Methods (include preservative if used)

Profile: 362915

VOCs, Inert 8260

Total Number of Containers

Remarks/Matrix
Composition/Grab?
Sample Containers

Turn Around Time:

Normal Rush

Please Specify

Quote No:

J-Flags: Yes No

Sample Identity	Lab No.	Time	Date Sampled								Total Number of Containers	Remarks/Matrix Composition/Grab? Sample Containers
MW-38	(1AC)	1108	5/19/2000	X							3	Groundwater
MW-39	(2AC)	1153	↓	X							3	
MW-108	(3AC)	1317		X							3	
MW-107	(4AC)	1350		X							3	
MW-103	(5AC)	1500		X							3	
MW-105	(6AC)	1534		X							3	
MW-104	(7AC)	1604		X							3	
MW-34	(8AC)	1709		X							3	
MW-35	(9AC)	1752		X							3	
MW-135	(10AC)	1748		↓	X						3	

Project Information

Number: 103822-000

Name: G Mile

Contact: SMH

Ongoing Project? Yes No

Sampler: CAB

Sample Receipt

Total No. of Containers:

COC Seals/Intact? Y/N/NA

Received Good Cond./Cold

Temp: 6.0°C

Delivery Method:

Relinquished By: 1.

Signature: Craig Beede Time: 1515

Printed Name: Craig Beede Date: 5/27/20

Company: Shannon & Wilson, Inc

Relinquished By: 2.

Signature: Sen Veekens Time: 1540

Printed Name: Sen Veekens Date: 5/26/20

Company: SGS

Relinquished By: 3.

Signature: _____ Time: _____

Printed Name: _____ Date: _____

Company: _____

Notes:

Trip Blanks w/ samples throughout entire project

Received By: 1.

Signature: Sen Veekens Time: 1515

Printed Name: Sen Veekens Date: 5/28/20

Company: SGS

Received By: 2.

Signature: _____ Time: _____

Printed Name: _____ Date: _____

Company: _____

Received By: 3.

Signature: Michelle Albarran Time: 0857

Printed Name: Michelle Albarran Date: 5/27/20

Company: SGS

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report
Yellow - w/shipment - for consignee files
Pink - Shannon & Wilson - job file

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CHA

Y RECORD

Laboratory SGS Page 2 of 3
 Attn: _____

Analytical Methods (include preservative if used)

Turn Around Time:

Normal Rush

Please Specify

Quote No:

J-Flags: Yes No

VOCs Det 8260

Total Number of Containers

Sample Identity	Lab No.	Time	Date Sampled							Total Number of Containers	Remarks/Matrix Composition/Grab? Sample Containers
MW-13	(11AC)	1144	5/20/2020	x						3	Groundwater
MW-14	(12AC)	1244		x						3	
MW-15A	(13AC)	1401		x						3	
MW-16A	(14AC)	1439		x						3	
MW-26	(15AC)	1549		x						3	
MW-29	(16AC)	1645		x						3	
MW-30	(17AC)	1727		x						3	
MW-5	(18AC)	1141	5/21/2020	x						3	
MW-4	(19AC)	1225		x						3	
MW-19	(20AC)	1425		x						3	

Project Information

Number: 103822-002

Name: 6 Mile

Contact: SMH

Ongoing Project? Yes No

Sampler: CAB

Sample Receipt

Total No. of Containers: _____

COC Seals/Intact? Y/N/NA _____

Received Good Cond./Cold _____

Temp: 6.0

Delivery Method: _____

Relinquished By: 1.

Signature: _____ Time: 15:15

Printed Name: Craig Boote Date: 5/22/20

Company: Shannon & Wilson, Inc

Relinquished By: 2.

Signature: _____ Time: 15:30

Printed Name: Sen Dawkins Date: 5/26/20

Company: SGS

Relinquished By: 3.

Signature: _____ Time: _____

Printed Name: _____ Date: _____

Company: _____

Notes:

Received By: 1.

Signature: _____ Time: 15:15

Printed Name: Sen Dawkins Date: 5/22/20

Company: SGS

Received By: 2.

Signature: _____ Time: _____

Printed Name: _____ Date: _____

Company: _____

Received By: 3.

Signature: _____ Time: 08:57

Printed Name: Michelle Albarnon Date: 5/27/20

Company: SGS

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report
 Yellow - w/shipment - for consignee files
 Pink - Shannon & Wilson - job file

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CHAIN

RECORD

Laboratory SGS Page 3 of 3
 Attn: _____

Analytical Methods (include preservative if used)

Turn Around Time:

Normal Rush

Please Specify

Quote No:

J-Flags: Yes No

VOCs (M4) 8260

Total Number of Containers

Sample Identity	Lab No.	Time	Date Sampled									Remarks/Matrix Composition/Grab? Sample Containers	
MW-18	21AC	1620	5/21/2020	X								3	Groundwater
MW-27	22AC	1724	↓	X								3	
MW-17	23AC	1801	↓	X								3	
MW-117	24AC	1751	↓	X								3	
MW-32	25AC	1203	5/22/2020	X								3	
EB-32	26AC	1213	↓	X								3	
MW-31	27AC	1418	↓	X								3	
Trip Blank	28AC											3	Lab Provided
Trip Blank	29AC											3	Lab Provided

Project Information

Number: 103822-002

Name: 6 Mile

Contact: SMH

Ongoing Project? Yes No

Sampler: CAB

Sample Receipt

Total No. of Containers: _____

COC Seals/Intact? Y/N/NA _____

Received Good Cond./Cold _____

Temp: 6-0

Delivery Method: _____

Relinquished By: 1.

Signature: Craig Bede Time: 1515

Printed Name: Craig Bede Date: 5/22/20

Company: Shannon & Wilson Inc

Relinquished By: 2.

Signature: Sen Dawkins Time: 1530

Printed Name: Sen Dawkins Date: 5-22-20

Company: SGS

Relinquished By: 3.

Signature: _____ Time: _____

Printed Name: _____ Date: _____

Company: _____

Notes:

Received By: 1.

Signature: Sen Dawkins Time: 1515

Printed Name: Sen Dawkins Date: 5/22/20

Company: SGS

Received By: 2.

Signature: _____ Time: _____

Printed Name: _____ Date: _____

Company: _____

Received By: 3.

Signature: Michelle Alton Time: 0857

Printed Name: Michelle Alton Date: 5/27/20

Company: SGS

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report
 Yellow - w/shipment - for consignee files
 Pink - Shannon & Wilson - job file



e-Sample Receipt Form

SGS Workorder #:

1209256



1 2 0 9 2 5 6

Review Criteria	Condition (Yes, No, N/A)	Exceptions Noted below
Chain of Custody / Temperature Requirements		
Were Custody Seals intact? Note # & location	Yes	1F,1B
COC accompanied samples?	Yes	
DOD: Were samples received in COC corresponding coolers?	N/A	
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 @ 1.5 °C Therm. ID: D57
		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?	N/A	
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.		
***Note: If sample information on containers differs from COC, SGS will default to COC information		
Were analytical requests clear? (i.e., method is specified for analyses with multiple option for analysis (Ex: BTEX, Metals)	Yes	
Were proper containers (type/mass/volume/preservative***) used?	Yes	N/A ***Exemption permitted for metals (e.g,200.8/6020A).
Volatile / LL-Hg Requirements		
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?	Yes	
Were all water VOA vials free of headspace (i.e., bubbles ≤ 6mm)?	Yes	
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):		



e-Sample Receipt Form FBK

SGS Workorder #:

1209256

1209256

Review Criteria		Condition (Yes, No, N/A)	Exceptions Noted below	
Chain of Custody / Temperature Requirements			Yes	Exemption permitted if sampler hand carries/delivers.
Were Custody Seals intact? Note # & location		N/A		
COC accompanied samples?		Yes		
DOD: Were samples received in COC corresponding coolers?		N/A		
<input type="checkbox"/> **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 @ 6.0 °C	Therm. ID: D53
If samples received without a temperature blank, the "cooler temperature" will be documented instead & "COOLER TEMP" will be noted to the right. "ambient" or "chilled" will be noted if neither is available.			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?				
If <0°C, were sample containers ice free?				
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.		
Do samples match COC** (i.e., sample IDs, dates/times collected)?		N/C		
Note: If times differ <1hr, record details & login per COC. *Note: If sample information on containers differs from COC, SGS will default to COC information				
Were samples in good condition (no leaks/cracks/breakage)?		Yes		
Were analytical requests clear? (i.e., method is specified for analyses with multiple option for analysis (Ex: BTEX, Metals))		Yes		
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?		Yes		
Were all water VOA vials free of headspace (i.e., bubbles ≤ 6mm)?		N/C		
Were all soil VOAs field extracted with MeOH+BFB?		N/A		
For Rush/Short Hold Time, was RUSH/Short HT email sent?		N/A		
Note to Client: Any "No", answer above indicates non-compliance with standard procedures and may impact data quality.				
Additional notes (if applicable):				
SGS Profile #	362915		362915	



Sample Containers and Preservatives

<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>	<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>
1209256001-A	HCL to pH < 2	OK	1209256017-C	HCL to pH < 2	OK
1209256001-B	HCL to pH < 2	OK	1209256018-A	HCL to pH < 2	OK
1209256001-C	HCL to pH < 2	OK	1209256018-B	HCL to pH < 2	OK
1209256002-A	HCL to pH < 2	OK	1209256018-C	HCL to pH < 2	OK
1209256002-B	HCL to pH < 2	OK	1209256019-A	HCL to pH < 2	OK
1209256002-C	HCL to pH < 2	OK	1209256019-B	HCL to pH < 2	OK
1209256003-A	HCL to pH < 2	OK	1209256019-C	HCL to pH < 2	OK
1209256003-B	HCL to pH < 2	OK	1209256020-A	HCL to pH < 2	OK
1209256003-C	HCL to pH < 2	OK	1209256020-B	HCL to pH < 2	OK
1209256004-A	HCL to pH < 2	OK	1209256020-C	HCL to pH < 2	OK
1209256004-B	HCL to pH < 2	OK	1209256021-A	HCL to pH < 2	OK
1209256004-C	HCL to pH < 2	OK	1209256021-B	HCL to pH < 2	OK
1209256005-A	HCL to pH < 2	OK	1209256021-C	HCL to pH < 2	OK
1209256005-B	HCL to pH < 2	OK	1209256022-A	HCL to pH < 2	OK
1209256005-C	HCL to pH < 2	OK	1209256022-B	HCL to pH < 2	OK
1209256006-A	HCL to pH < 2	OK	1209256022-C	HCL to pH < 2	OK
1209256006-B	HCL to pH < 2	OK	1209256023-A	HCL to pH < 2	OK
1209256006-C	HCL to pH < 2	OK	1209256023-B	HCL to pH < 2	OK
1209256007-A	HCL to pH < 2	OK	1209256023-C	HCL to pH < 2	OK
1209256007-B	HCL to pH < 2	OK	1209256024-A	HCL to pH < 2	OK
1209256007-C	HCL to pH < 2	OK	1209256024-B	HCL to pH < 2	OK
1209256008-A	HCL to pH < 2	OK	1209256024-C	HCL to pH < 2	OK
1209256008-B	HCL to pH < 2	OK	1209256025-A	HCL to pH < 2	OK
1209256008-C	HCL to pH < 2	OK	1209256025-B	HCL to pH < 2	OK
1209256009-A	HCL to pH < 2	OK	1209256025-C	HCL to pH < 2	OK
1209256009-B	HCL to pH < 2	OK	1209256026-A	HCL to pH < 2	OK
1209256009-C	HCL to pH < 2	OK	1209256026-B	HCL to pH < 2	OK
1209256010-A	HCL to pH < 2	OK	1209256026-C	HCL to pH < 2	OK
1209256010-B	HCL to pH < 2	OK	1209256027-A	HCL to pH < 2	OK
1209256010-C	HCL to pH < 2	OK	1209256027-B	HCL to pH < 2	OK
1209256011-A	HCL to pH < 2	OK	1209256027-C	HCL to pH < 2	OK
1209256011-B	HCL to pH < 2	OK	1209256028-A	HCL to pH < 2	OK
1209256011-C	HCL to pH < 2	OK	1209256028-B	HCL to pH < 2	OK
1209256012-A	HCL to pH < 2	OK	1209256028-C	HCL to pH < 2	OK
1209256012-B	HCL to pH < 2	OK	1209256029-A	HCL to pH < 2	OK
1209256012-C	HCL to pH < 2	OK	1209256029-B	HCL to pH < 2	OK
1209256013-A	HCL to pH < 2	OK	1209256029-C	HCL to pH < 2	OK
1209256013-B	HCL to pH < 2	OK			
1209256013-C	HCL to pH < 2	OK			
1209256014-A	HCL to pH < 2	OK			
1209256014-B	HCL to pH < 2	OK			
1209256014-C	HCL to pH < 2	OK			
1209256015-A	HCL to pH < 2	OK			
1209256015-B	HCL to pH < 2	OK			
1209256015-C	HCL to pH < 2	OK			
1209256016-A	HCL to pH < 2	OK			
1209256016-B	HCL to pH < 2	OK			
1209256016-C	HCL to pH < 2	OK			
1209256017-A	HCL to pH < 2	OK			
1209256017-B	HCL to pH < 2	OK			

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 that 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.

NC- The container provided was not preserved or was under-preserved. The method does not allow for additional preservative added after collection.

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.

QN - Insufficient sample quantity provided.

Laboratory Data Review Checklist

Completed By:

Adam Wyborny

Title:

E.I.T.

Date:

06/02/2020

Consultant Firm:

Shannon and Wilson, Inc.

Laboratory Name:

SGS North America, Inc.

Laboratory Report Number:

1209256

Laboratory Report Date:

06/01/2020

CS Site Name:

103822-002 Six Mile

ADEC File Number:

100.38.112

Hazard Identification Number:

1209256

Laboratory Report Date:

06/01/2020

CS Site Name:

103822-002 Six Mile

Note: Any N/A or No box checked must have an explanation in the comments box.

1. Laboratory

a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?

Yes No N/A Comments:

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 N/A Comments:

All analyses were performed by SGS North America in Anchorage, AK. The SGS Anchorage laboratory maintains ADEC CS approval for the requested analyses.

2. Chain of Custody (CoC)

a. CoC information completed, signed, and dated (including released/received by)?

Yes No N/A Comments:

b. Correct analyses requested?

Yes No N/A Comments:

3. Laboratory Sample Receipt Documentation

a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?

Yes No N/A Comments:

b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

Yes No N/A Comments:

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Laboratory Report Date:

06/01/2020

CS Site Name:

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c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

Yes No N/A Comments:

The sample receipt form notes the samples arrived properly preserved and in good condition.

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 N/A Comments:

The sample receipt form does not note any sample handling or receipt discrepancies.

e. Data quality or usability affected?

Comments:

There was no effect on data quality/usability.

4. Case Narrative

a. Present and understandable?

Yes No N/A Comments:

b. Discrepancies, errors, or QC failures identified by the lab?

Yes No N/A Comments:

There were no discrepancies, errors, or QC failures documented by the laboratory.

c. Were all corrective actions documented?

Yes No N/A Comments:

Corrective actions were not required; see above.

d. What is the effect on data quality/usability according to the case narrative?

Comments:

There is no effect on data quality/usability documented in the case narrative.

1209256

Laboratory Report Date:

06/01/2020

CS Site Name:

103822-002 Six Mile

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

Yes No N/A Comments:

b. All applicable holding times met?

Yes No N/A Comments:

c. All soils reported on a dry weight basis?

Yes No N/A Comments:

Soil samples were not submitted with this work order.

d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project?

Yes No N/A Comments:

Reporting limits are below their respective DEC groundwater cleanup levels except for 1,2,3-trichloropropane.

e. Data quality or usability affected?

We cannot assess whether 1,2,3-trichloropropane is present in the field samples at concentrations greater than the DEC Groundwater Cleanup Level but less than the laboratory's limit of detection (LOD).

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

Yes No N/A Comments:

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Laboratory Report Date:

06/01/2020

CS Site Name:

103822-002 Six Mile

ii. All method blank results less than limit of quantitation (LOQ) or project specified objectives?

Yes No N/A Comments:

iii. If above LOQ or project specified objectives, what samples are affected?

Comments:

None; target analytes were not detected in the method blank samples.

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes No N/A Comments:

No samples are affected. Qualification of the data was not required.

v. Data quality or usability affected?

Comments:

The data quality/usability are not affected; see above.

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 N/A Comments:

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

Yes No N/A Comments:

Metals/inorganics analyses were not requested for these samples.

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

Yes No N/A Comments:

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Laboratory Report Date:

06/01/2020

CS Site Name:

103822-002 Six Mile

- iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? RPD reported from LCS/LCSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

Yes No N/A Comments:

- v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

None; analytical accuracy and precision were demonstrated to be within acceptable limits.

- vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes No N/A Comments:

No samples are affected. Qualification of the data is not required.

- vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

The data quality/usability are not affected.

- c. Matrix Spike/Matrix Spike Duplicate (MS/MSD)

Note: Leave blank if not required for project

- i. Organics – One MS/MSD reported per matrix, analysis and 20 samples?

Yes No N/A Comments:

MS/MSD samples were not reported as a part of this work order.

- ii. Metals/Inorganics – one MS and one MSD reported per matrix, analysis and 20 samples?

Yes No N/A Comments:

MS/MSD samples were not reported as a part of this work order.

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Laboratory Report Date:

06/01/2020

CS Site Name:

103822-002 Six Mile

- iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

Yes No N/A Comments:

MS/MSD samples were not reported as a part of this work order.

- iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? RPD reported from MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

Yes No N/A Comments:

MS/MSD samples were not reported as a part of this work order.

- v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

Not applicable, MS/MSD samples were not reported as a part of this work order.

- vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes No N/A Comments:

MS/MSD samples were not reported as a part of this work order.

- vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

Not applicable, MS/MSD samples were not reported as a part of this work order.

- d. Surrogates – Organics Only or Isotope Dilution Analytes (IDA) – Isotope Dilution Methods Only

- i. Are surrogate/IDA recoveries reported for organic analyses – field, QC and laboratory samples?

Yes No N/A Comments:

1209256

Laboratory Report Date:

06/01/2020

CS Site Name:

103822-002 Six Mile

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)

Yes No N/A Comments:

iii. Do the sample results with failed surrogate/IDA recoveries have data flags? If so, are the data flags clearly defined?

Yes No N/A Comments:

There were no surrogate recovery failures associated with this work order.

iv. Data quality or usability affected?

Comments:

The data quality/usability is not affected.

e. Trip Blanks

i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples? (If not, enter explanation below.)

Yes No N/A Comments:

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 N/A Comments:

All samples were transported in a single cooler with the trip blanks.

iii. All results less than LOQ and project specified objectives?

Yes No N/A Comments:

iv. If above LOQ or project specified objectives, what samples are affected?

Comments:

No samples are affected. Target analytes were not detected in the trip blank samples associated with this work order.

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v. Data quality or usability affected?

Comments:

The data quality/usability are not affected; see above.

f. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

Yes No N/A Comments:

ii. Submitted blind to lab?

Yes No N/A Comments:

The field duplicate samples *MW-17 / MW-117* and *MW-35 / MW-135* were submitted with this work order.

iii. Precision – All relative percent differences (RPD) less than specified project objectives? (Recommended: 30% water, 50% soil)

$$RPD (\%) = \text{Absolute value of: } \frac{(R_1 - R_2)}{((R_1 + R_2) / 2)} \times 100$$

Where R_1 = Sample Concentration
 R_2 = Field Duplicate Concentration

Yes No N/A Comments:

The relative precision demonstrated between the detected results of both sets of field-duplicate samples was within the recommended DQO of 30%.

iv. Data quality or usability affected? (Use the comment box to explain why or why not.)

Comments:

The data quality/usability are not affected; see above.

g. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below)?

Yes No N/A Comments:

The equipment blank sample *EB-32* was submitted with this sample set.

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i. All results less than LOQ and project specified objectives?

Yes No N/A Comments:

Bromodichloromethane, chloroform, and toluene were detected at estimated concentrations below the LOQ in the equipment blank sample.

ii. If above LOQ or project specified objectives, what samples are affected?

Comments:

Bromodichloromethane and chloroform were not detected in the project samples. Toluene was detected at estimated concentrations roughly equivalent to that of the equipment blank in samples *MW-15A* and *MW-38*.

iii. Data quality or usability affected?

Comments:

The estimated toluene results of samples *MW-15A* and *MW-38* may be due to analyte contributions from reusable sampling equipment. These results are assumed to be false-positives and flagged 'UB' at the LOQ.

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

Yes No N/A Comments:

There were no other flags/qualifiers required.

Appendix F

Quality Control and Quality Assurance Assessment Summary

OVERVIEW

QC/QA procedures assist in producing data of acceptable quality and reliability. We reviewed the analytical results for laboratory QC samples and conducted our own QA assessment for this project. We reviewed the chain of custody (COC) records and laboratory receipt forms to check that custody was not breached, sample-holding times were met, and the samples were kept chilled (between 0 degrees Celsius [°C] and 6 °C) during shipping. Our QA-review procedures allowed us to document the accuracy and precision of the analytical data, as well as check that the analyses were sufficiently sensitive to meet project-specific sensitivity requirements

Laboratory QC procedures included evaluating surrogate recovery, performing continuing calibration checks, and analyzing method blanks, laboratory control samples (LCS), and matrix spikes (MS) to assess accuracy and precision. LCS, LCS duplicate (LCSD), MS, MS duplicate (MSD), and surrogate recovery analyses were performed to evaluate the accuracy of the analytical process. Analytical precision was assessed by comparing the results of duplicate analyses performed on LCS/LCSD, MS/MSD, and duplicate-sample pairs.

QC procedures in the field included using single-use equipment to reduce the potential for sample cross-contamination. We used a new, clean pair of nitrile gloves when sampling at each sampling point. The laboratory report contains a case narrative and forms documenting sample-receipt conditions. Details regarding the results of our QA review are presented below. Refer to the laboratory reports and corresponding DEC LDRCs for additional information (Appendix E).

SAMPLE HANDLING

The samples were hand-delivered to the SGS receiving office in Fairbanks, Alaska. We completed COC forms, which were signed upon delivery to the SGS Fairbanks office. The samples were then repackaged by SGS and shipped to the SGS laboratory in Anchorage, Alaska. The SGS Fairbanks office noted samples were received in good condition and within the acceptable temperature range of 0 °C to 6 °C. The Sample Receipt Checklist noted that the project samples were received in good condition and properly preserved. There were no additional sample handling or receipt discrepancies noted by the laboratory; refer to the DEC LDRC for details (Appendix E).

ANALYTICAL SENSITIVITY

The laboratory's detection limit (DL) is the lowest analyte concentration that can be measured. The laboratory's limit of quantitation (LOQ) is the lowest analyte concentration

that can be routinely measured in the sampled matrix with confidence, the point at which a concentration is considered quantitative. Sample matrix, instrument performance, sample dilutions, and other factors may affect the DL and LOQ. Analytes may be present in samples at concentrations below the DL. In cases where analytes were not detected at concentrations above their DL, the analytical results are presented in our data-summary table with reference to their LODs. If the analyte is detected between the DL and the LOQ, its concentration is considered an estimate; in our tables and the laboratory data packet, this value is flagged with a 'J'. The flag is applied by the laboratory. The laboratory LOD for the requested analytes were sufficiently sensitive for reporting purposes for all analytes, with the exception of 1,2,3-trichloropropane.

To evaluate the potential for cross-contamination between samples or introduction of contamination from an outside source, laboratory-supplied trip blanks were carried with the samples in their cooler during sampling and shipping. Two trip blanks were analyzed as part of this sampling event for VOCs. Project analytes were not detected in the trip blank samples.

Laboratory method blanks were also analyzed in association with samples collected for this project to check for contributions to the analytical results possibly attributable to laboratory-based contamination. Project analytes were not detected in the method blank samples.

Reusable equipment was used in the collection of the samples for this work order; thus, collection of an equipment blank sample was necessary for this work order. Bromodichloromethane, chloroform, and toluene were detected at estimated concentrations below the LOQ in the equipment blank sample; however, bromodichloromethane and chloroform were not detected in the project samples. Toluene was detected at estimated concentrations roughly equivalent to that of the equipment blank in samples *MW-15A* and *MW-39*. The estimated toluene results may be due to analyte contributions from reusable sampling equipment; therefore, the results are assumed to be false-positives and are flagged 'B' at the LOQ.

ACCURACY

Accuracy refers to determining the correct analyte concentration and is a comparison between the measured value and a known or expected value. Laboratory analytical accuracy may be assessed through the analyte recoveries from LCS/LCSD analyses and MS/MSD analyses, and the recovery of analyte surrogates (for organic analytes) added to project samples. The LCS/LCSDs are spikes of known analyte concentrations added to a clean matrix; the MS/MSDs are spikes of known analyte concentrations in a matrix similar to field

samples. No MS/MSD samples were reported as a part of this work order. There were no LCS/LCSD or surrogate recovery discrepancies.

PRECISION

We collected field-duplicate samples at a frequency of approximately ten percent the total number of samples to evaluate the precision of analytical measurements and reproducibility of our sampling technique. Two duplicate samples were collected; one from monitoring well MW-17, and one from monitoring well MW-35. The field duplicate samples were submitted “blind” (i.e., the laboratory could not identify it as a duplicate) with a sample name of MW-117 and MW-135, respectively. The duplicates were analyzed by the same test methods as the original samples. To evaluate the precision of the data, we calculated the relative percent difference (RPD; difference between the sample and its duplicate divided by the mean of the two). RPDs can be evaluated only if the results of the analyses for both the primary sample and its duplicate are reported above the DL. The data quality objective for water samples’ RPD is 30 percent. Where concentrations were reported in both samples, we calculated the RPDs. The RPDs were within acceptance criteria,

Laboratory analytical precision can also be assessed by comparing the results of duplicate analyses performed on LCS/LCSD, MS/MSD, and laboratory-duplicate samples, and evaluating the associated RPDs. The data quality objective is 30 percent for the laboratory QC samples. The LCS/LCSD and laboratory-duplicate sample RPDs were within laboratory acceptance criteria.

DATA QUALITY SUMMARY

By conducting our field activities in general accordance with our standard QC/QA procedures, the samples we collected are considered representative of site conditions at the locations and times they were obtained. Based on our QA review, no datum was rejected as unusable due to QC failures, and our completeness goal of obtaining 90-percent useable data was met. In our opinion, the data produced by SGS laboratory for this project are suitable for characterizing groundwater quality at the locations sampled.

Important Information

About Your Environmental Report

IMPORTANT INFORMATION

CONSULTING SERVICES ARE PERFORMED FOR SPECIFIC PURPOSES AND FOR SPECIFIC CLIENTS.

Consultants prepare reports to meet the specific needs of specific individuals. A report prepared for a civil engineer may not be adequate for a construction contractor or even another civil engineer. Unless indicated otherwise, your consultant prepared your report expressly for you and expressly for the purposes you indicated. No one other than you should apply this report for its intended purpose without first conferring with the consultant. No party should apply this report for any purpose other than that originally contemplated without first conferring with the consultant.

THE CONSULTANT'S REPORT IS BASED ON PROJECT-SPECIFIC FACTORS.

A geotechnical/environmental report is based on a subsurface exploration plan designed to consider a unique set of project-specific factors. Depending on the project, these may include the general nature of the structure and property involved; its size and configuration; its historical use and practice; the location of the structure on the site and its orientation; other improvements such as access roads, parking lots, and underground utilities; and the additional risk created by scope-of-service limitations imposed by the client. To help avoid costly problems, ask the consultant to evaluate how any factors that change subsequent to the date of the report may affect the recommendations. Unless your consultant indicates otherwise, your report should not be used (1) when the nature of the proposed project is changed (for example, if an office building will be erected instead of a parking garage, or if a refrigerated warehouse will be built instead of an unrefrigerated one, or chemicals are discovered on or near the site); (2) when the size, elevation, or configuration of the proposed project is altered; (3) when the location or orientation of the proposed project is modified; (4) when there is a change of ownership; or (5) for application to an adjacent site. Consultants cannot accept responsibility for problems that may occur if they are not consulted after factors that were considered in the development of the report have changed.

SUBSURFACE CONDITIONS CAN CHANGE.

Subsurface conditions may be affected as a result of natural processes or human activity. Because a geotechnical/environmental report is based on conditions that existed at the time of subsurface exploration, construction decisions should not be based on a report whose adequacy may have been affected by time. Ask the consultant to advise if additional tests are desirable before construction starts; for example, groundwater conditions commonly vary seasonally.

Construction operations at or adjacent to the site and natural events such as floods, earthquakes, or groundwater fluctuations may also affect subsurface conditions and, thus, the continuing adequacy of a geotechnical/environmental report. The consultant should be kept apprised of any such events and should be consulted to determine if additional tests are necessary.

MOST RECOMMENDATIONS ARE PROFESSIONAL JUDGMENTS.

Site exploration and testing identifies actual surface and subsurface conditions only at those points where samples are taken. The data were extrapolated by your consultant, who then applied judgment to render an opinion about overall subsurface conditions. The actual interface between materials may be far more gradual or abrupt than your report indicates. Actual conditions in areas not sampled may differ from those predicted in your report. While nothing can be done to prevent such situations, you and your consultant can work together to help reduce their impacts. Retaining

your consultant to observe subsurface construction operations can be particularly beneficial in this respect.

A REPORT'S CONCLUSIONS ARE PRELIMINARY.

The conclusions contained in your consultant's report are preliminary, because they must be based on the assumption that conditions revealed through selective exploratory sampling are indicative of actual conditions throughout a site. Actual subsurface conditions can be discerned only during earthwork; therefore, you should retain your consultant to observe actual conditions and to provide conclusions. Only the consultant who prepared the report is fully familiar with the background information needed to determine whether or not the report's recommendations based on those conclusions are valid and whether or not the contractor is abiding by applicable recommendations. The consultant who developed your report cannot assume responsibility or liability for the adequacy of the report's recommendations if another party is retained to observe construction.

THE CONSULTANT'S REPORT IS SUBJECT TO MISINTERPRETATION.

Costly problems can occur when other design professionals develop their plans based on misinterpretation of a geotechnical/environmental report. To help avoid these problems, the consultant should be retained to work with other project design professionals to explain relevant geotechnical, geological, hydrogeological, and environmental findings, and to review the adequacy of their plans and specifications relative to these issues.

BORING LOGS AND/OR MONITORING WELL DATA SHOULD NOT BE SEPARATED FROM THE REPORT.

Final boring logs developed by the consultant are based upon interpretation of field logs (assembled by site personnel), field test results, and laboratory and/or office evaluation of field samples and data. Only final boring logs and data are customarily included in geotechnical/environmental reports. These final logs should not, under any circumstances, be redrawn for inclusion in architectural or other design drawings, because drafters may commit errors or omissions in the transfer process.

To reduce the likelihood of boring log or monitoring well misinterpretation, contractors should be given ready access to the complete geotechnical engineering/environmental report prepared or authorized for their use. If access is provided only to the report prepared for you, you should advise contractors of the report's limitations, assuming that a contractor was not one of the specific persons for whom the report was prepared, and that developing construction cost estimates was not one of the specific purposes for which it was prepared. While a contractor may gain important knowledge from a report prepared for another party, the contractor should discuss the report with your consultant and perform the additional or alternative work believed necessary to obtain the data specifically appropriate for construction cost estimating purposes. Some clients hold the mistaken impression that simply disclaiming responsibility for the accuracy of subsurface information always insulates them from attendant liability. Providing the best available information to contractors helps prevent costly construction problems and the adversarial attitudes that aggravate them to a disproportionate scale.

READ RESPONSIBILITY CLAUSES CLOSELY.

Because geotechnical/environmental engineering is based extensively on judgment and opinion, it is far less exact than other design disciplines. This situation has resulted in wholly unwarranted claims

being lodged against consultants. To help prevent this problem, consultants have developed a number of clauses for use in their contracts, reports, and other documents. These responsibility clauses are not exculpatory clauses designed to transfer the consultant's liabilities to other parties; rather, they are definitive clauses that identify where the consultant's responsibilities begin and end. Their use helps all parties involved recognize their individual responsibilities and take appropriate action. Some of these definitive clauses are likely to appear in your report, and you are encouraged to read them closely. Your consultant will be pleased to give full and frank answers to your questions.

The preceding paragraphs are based on information provided by the ASFE/Association of Engineering Firms Practicing in the Geosciences, Silver Spring, Maryland

IMPORTANT INFORMATION