SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

May 24, 2018

Fairweather, LLC
301 Calista Court
Anchorage, Alaska 99518

Attn: Mr. Guy Miyagishima

**RE: QUARTERLY GROUNDWATER MONITORING, 151 WEST 100th AVENUE, ANCHORAGE, ALASKA; *ADEC FILE NO. 2100.38.539***

This report presents the results of Shannon & Wilson's four quarterly groundwater monitoring events conducted at 151 West 100th Avenue, Anchorage, Alaska. Site plans showing the project site and surrounding area is included as Figures 1.1 through 1.4. The property is identified by the Alaska Department of Environmental Conservation (ADEC) as File No. 2100.38.539.

The groundwater monitoring activities were conducted in accordance with our April 6, 2017 work plan, which was approved by Mr. Robert Weimer of the ADEC on April 26, 2017 via email.

## BACKGROUND

During geotechnical explorations conducted by Shannon & Wilson in November 2012, petroleum-impacted soil was identified at the site. Shannon & Wilson conducted additional site activities in March 2013. As part of the activities, eight borings/temporary groundwater monitoring wells were advanced/installed and sampled. Diesel range organics (DRO) and benzene were detected in several of the borings at concentrations exceeding the ADEC cleanup levels. Concentrations of gasoline range organics (GRO) (maximum of 4.82 milligrams per liter [mg/L]) and benzene (maximum of 1.40 mg/L) were also detected in the groundwater at concentrations exceeding the current ADEC Table C cleanup levels.

Shannon & Wilson conducted an interim removal action at the site in November and December 2014, which included excavating soil, constructing an on-site landfarm, stockpiling potentially clean overburden soil, and collecting screening and analytical soil samples from the stockpiles and excavation. Soil samples collected from the limits of the final excavation did not contain GRO, DRO, toluene, ethylbenzene, xylenes, or polynuclear aromatic hydrocarbons (PAHs) at concentrations greater than ADEC Method Two cleanup levels. Benzene was detected at a concentration (0.0705 milligrams per kilogram [mg/kg]) greater than the current ADEC cleanup

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level of 0.022 mg/kg in one sample (Sample EX2SW12) collected from the south sidewall of the excavation, at a depth of approximately 11 to 12 feet below ground surface (bgs).

Of the approximately 2,250 cubic yards (cy) of excavated soil, approximately 1,320 cy of potentially impacted soil were placed in the on-site landfarm and about 930 cy of clean overburden soil were stockpiled, sampled, and subsequently used to backfill the excavation. During backfilling, Oxygen Release Compound (ORC) Advanced® was placed in the base of the excavation. Following sampling and with ADEC approval, the landfarmed material was used to backfill the remainder of the excavation.

In May 2016, three borings (Borings B30, B31, and B32) were advanced in the vicinity of the former excavation. Boring B30 was located within the former excavation at the approximate location of Sample EX2SW12, where benzene had been detected at a concentration exceeding the ADEC Method Two cleanup level. Analysis of a soil sample collected from Boring B30 detected 0.0349 mg/kg benzene, which exceeds the ADEC Method Two cleanup level. The borings were completed as groundwater Monitoring Wells MW30, MW31, and MW32. Analysis of a groundwater sample collected from Well MW30 in May 2016 detected 0.0231 mg/L benzene which exceeds the ADEC cleanup level of 0.0046 mg/L. Other tested analytes were either not detected or measured at concentrations below the ADEC cleanup levels in the remaining soil and groundwater samples. The excavation limits and monitoring wells are shown on Figure 1.

In a letter dated February 8, 2017, Mr. Robert Weimer of the ADEC requested quarterly groundwater sampling of the three on-site wells. In this context, the current project purpose is to progress towards a cleanup complete designation from the ADEC. The objective is to comply with the ADEC's letter requesting quarterly groundwater monitoring for one year.

## FIELD ACTIVITIES

The quarterly groundwater monitoring activities were conducted by Shannon & Wilson on May 11, August 22, and November 1, 2017; and February 22, 2018. The project consisted of recording depth to water measurements, collecting groundwater samples, managing investigation-derived waste (IDW), and reporting to ADEC. Field notes are provided in Attachment 1.

Groundwater Elevations and Flow Direction

Depth to groundwater was measured in each on-site groundwater monitoring well (Wells MW-30, MW-31, and MW-32) during each quarterly sampling event using an electronic water-level indicator. Measurements were taken with respect to the top of the well casings and depths were determined to an accuracy of 0.01 foot. The water-level indicator was decontaminated prior to insertion in each well. The May, August, and November 2017, and February 2018 water levels are listed in Tables 1.1 through 1.4, respectively.

Groundwater elevations were calculated using the water level measurements recording during each sampling event and the surveyed well elevations measured on May 18, 2016. Groundwater flow direction during the May and November 2017, and February 2018 sampling events was towards the southwest; and the August 2017 sampling event was towards the west/northwest. The groundwater flow direction for each sampling event is presented on Figures 1.1 through 1.4. The surveyed well elevations and corresponding groundwater elevations are listed in Tables 1.1 through 1.4.

Groundwater Monitoring Well Sampling

The samples were collected using low-flow techniques to reduce the effects of stagnant well casing water on chemical concentrations and to obtain a groundwater sample that is representative of the surrounding water-bearing formation. The wells were purged and sampled with a submersible pump and disposable tubing. The submersible pump was placed within the top 1 foot of the groundwater column. A pump rate was adjusted with the goal of limiting the sustained water drawdown to a maximum of 0.3 foot (typical pump rate of 0.1 to 0.5 liter per minute).

Water quality parameters (pH, temperature, specific conductance, and turbidity) and purge volume were recorded and monitored during the process. Purging was considered complete when at least one well volume was removed and all four of the following stabilization criteria were met over three successive readings: pH within 0.1 unit, temperature within 3 percent (minimum 0.2 degree Celsius), specific conductance within 3 percent, and turbidity within 10 percent or three consecutive readings of less than 10 nephelometric turbidity units (NTU). During the May 2017 sampling event, water quality parameters did not stabilize within one hour of purging for Well MW30. Therefore, the well was sampled after one well volume was removed and the well recovered to at least 80 percent of the pre-purge volume. The final water quality parameters are listed on Tables 1.1 through 1.4. Analytical groundwater samples were

collected in decreasing order of volatility by transferring water directly from the in-well submersible pump tubing into laboratory-supplied containers.

## LABORATORY ANALYSES

The groundwater samples were delivered to SGS North America Inc. (SGS) using chain-of-custody procedures. The samples were analyzed for DRO by Alaska Method (AK) 102, volatile organic compounds (VOCs) by Environmental Protection Agency (EPA) Method 8260C, and PAHs by EPA Method 8270D selective ion method (SIM). One trip blank sample accompanied the analytical sample containers from and to the laboratory during each sampling event, and was tested for VOCs by EPA Method 8260C. The laboratory reports are provided in Attachment 2.

## DISCUSSION OF ANALYTICAL RESULTS

The reported contaminant concentrations in the groundwater were compared to the cleanup levels listed in Table C of 18 Alaska Administrative Code (AAC) 75.345 (November 2017). The cleanup levels and analytical results for the quarterly sampling events are provided in Tables 2.1 through 2.4. A summary of the historical groundwater results are provided in Table 3.

During the August 2017 and February 2018 sampling events, benzene was detected in the primary and duplicate samples collected from Well MW-30 at maximum concentrations 0.0128 mg/L and 0.0103 mg/L, respectively, which are greater than the ADEC Table C cleanup level of 0.0046 mg/L. The samples collected during the May and November 2017 sampling events contained a maximum of 0.00416 mg/L, which is less than the applicable ADEC Table C cleanup level. The remaining analytes were either not detected, or were measured at concentrations less than the applicable ADEC Table C cleanup levels.

## QUALITY ASSURANCE SUMMARY

SGS follows on-going quality assurance/quality control (QC) procedures to evaluate conformance to applicable ADEC data quality objectives (DQO). Internal laboratory controls to assess data quality for this project include surrogates, method blanks, matrix spike/matrix spike duplicates (MS/MSD), and laboratory control sample/laboratory control sample duplicates (LCS/LCSD) to determine precision, accuracy, and matrix bias. If a DQO was not met, the project laboratory provides a report specific note identifying the problem in the Case Narrative section of their Laboratory Analysis Reports (See Attachment 2).

One groundwater field duplicate set was collected during each quarterly sampling event to assess precision of the sampling and analysis process using the calculated relative percent difference

(RPD). The RPD for DRO between the field primary/duplicates for August and November 2017 were greater than the recommended DQO of 30 percent. For both samples, the DRO result is less than the ADEC cleanup levels.

One laboratory-supplied trip blank accompanied the sample containers during transport to and from the project during each quarterly sampling event. There were no detections in the trip blanks, indicating that the samples were not cross contaminated by these compounds during the sample handling, storage, or testing process.

Shannon & Wilson reviewed the SGS deliverables and completed the ADEC's Laboratory Data Review Checklist (LDRC) for each data package which are included in Attachment 2. Quality control discrepancies and the impact to data quality/usability are described in further detail in the LDRC. In our opinion, no non-conformances that would adversely impact data usability for the objectives of this project were noted. Based on this quality assurance summary, we find the project data to be complete and usable to support the intended data uses.

## INVESTIGATION DERIVED WASTE

Investigation derived waste (IDW) from this project consisted of purge and decontamination water from each quarterly event containerized in labeled 55-gallon drums. Following the review of this report, with ADEC approval, purge and decontamination water from the quarterly sampling events will be transported off-site by NRC Alaska, Inc. (NRC) for disposal.

## CONCLUSIONS/RECOMMENDATIONS

During initial site characterization activities conducted in 2012 and 2013 petroleum-impacted soil and groundwater was documented at the site. An interim removal action, consisting of excavating approximately 2,250 cubic yards soil, was conducted in 2014. Approximately 1,320 cy of potentially impacted soil were placed in an on-site landfarm and about 930 cy of clean overburden soil were stockpiled, sampled, and subsequently used to backfill the excavation. During backfilling, ORC Advanced® was placed in the base of the excavation to treat groundwater. Analysis of one soil sample (Sample EX2SW12) collected from the final limits of the excavation detected benzene at a concentration (0.0705 mg/kg) exceeding the ADEC Method Two cleanup level.

In May 2016 three soil borings, completed as monitoring wells, were advanced in the vicinity of the former excavation. Boring B30 was advanced in the location of Sample EX2SW12. Analysis of a soil sample collected from Boring B30 detected 0.0349 mg/kg benzene. Although

greater than the ADEC Method Two cleanup level, the concentration of benzene at this location decreased approximately 50 percent between 2014 and 2016.

Benzene concentrations detected in the groundwater samples collected from Monitoring Well MW-30 during the August 2017 and February 2018 sampling events exceed the ADEC Table C cleanup level. Groundwater samples collected during the May and November 2017 sampling events did not detect contaminant concentrations, including benzene, in excess of the applicable cleanup levels. Monitoring Wells MW-31 and MW-32 are located downgradient, with respect to groundwater flow direction, of the former excavation and Well MW-30. Benzene has not been detected in the groundwater samples collected from either well. Therefore, the extent of benzene contamination has been delineated and appears localized to the vicinity of Well MW-30. In addition, when detected during two of the four quarterly sampling events, benzene was only slightly above ADEC Table C cleanup levels, and benzene contaminant concentrations have reduced significantly since 2013.

As a result of the cleanup activities and the current soil and groundwater sample results, we recommend requesting a Cleanup Complete designation for the site from the ADEC.

## CLOSURE/LIMITATIONS

This report was prepared for the exclusive use of our clients and their representatives in the study of this site. The findings we have presented within this report are based on the limited sampling and analyses that we conducted. The sampling and analyses performed can provide you with only our professional judgment as to the environmental characteristics of this site, and in no way guarantees that an agency or its staff will reach the same conclusions as Shannon & Wilson, Inc. The data presented in this report should be considered representative of the time of our assessment activities. Changes in site conditions can occur over time, due to natural forces or human activity. In addition, changes in government codes, regulations, or laws may occur. Because of such changes beyond our control, our observations and interpretations may need to be revised.

Shannon & Wilson has prepared the documents in Attachment 3, “Important Information About Your Geotechnical/Environmental Report”, to assist you and others in understanding the use and limitations of our reports. You are advised that various state and federal agencies (ADEC, EPA, etc.) may require the reporting of this information. Shannon & Wilson does not assume the responsibility for reporting these findings and therefore has not, and will not, disclose the results of this study, except with your permission or as required by law.

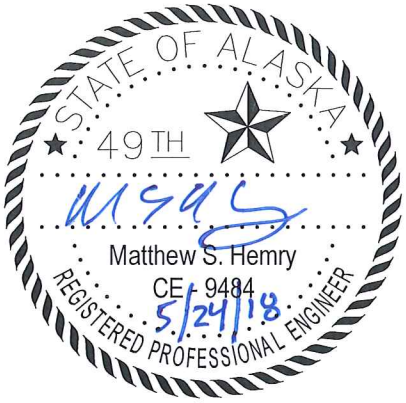
SHANNON & WILSON, INC.

We appreciate the opportunity to be of service. Please call the undersigned at (907) 561-2120 with questions or comments concerning this report.

Sincerely,

**SHANNON & WILSON, INC.**

Dan P. McMahon
Associate




Matthew S. Hemry, P.E.
Vice President

Encl: Tables 1.1 through 1.4, Table 2.1 through 2.4, and Table 3
Figures 1.1 through 1.4
Attachments 1, 2, and 3

**TABLE 1.1**
**MAY 2017 GROUNDWATER SAMPLING LOG**

| | Monitoring Well Number | | |
|---|---|---|---|
| | **MW30** | **MW31** | **MW32** |
| **Water Level Measurement Data** | | | |
| Date Water Level Measured | 5/11/2017 | 5/11/2017 | 5/11/2017 |
| Time Water Level Measured | 10:50 | 10:45 | 10:40 |
| Surveyed TOC Elevation (ft) | 100.95 | 99.79 | 99.81 |
| Measured Depth to Water (ft below TOC) | 7.43 | 6.67 | 7.29 |
| Water Level Elevation (ft) | 93.52 | 93.12 | 92.52 |
| **Purging/Sampling Data** | | | |
| Date Sampled | 5/11/2017 | 5/11/2017 | 5/11/2017 |
| Time Sampled | 14:20 | 13:10 | 11:50 |
| Measured Depth to Water (ft below TOC) | 7.43 | 6.67 | 7.29 |
| Total Depth of Well (ft below TOC) | 19.35 | 18.65 | 19.13 |
| Water Column in Well (ft) | 11.92 | 11.98 | 11.84 |
| Gallons per Foot | 0.16 | 0.16 | 0.16 |
| Water Column Volume (gallons) | 1.91 | 1.92 | 1.89 |
| Total Volume Pumped (gallons) | 2.0 | 2.4 | 2.4 |
| Sampling Method | Submersible Pump | Submersible Pump | Submersible Pump |
| Diameter of Well Casing | 2-inch | 2-inch | 2-inch |
| **Water Quality Data** | | | |
| Temperature ($^{o}$C) | 9.31 | 6.64 | 5.73 |
| Specific Conductance (µS/cm) | 1,379 | 1,297 | 910 |
| pH (Standard Units) | 6.97 | 7.02 | 6.87 |
| Turbidity (NTU) | 20.90 | 19.42 | 19.97 |
| **Remarks** | Duplicate Sample MW40 | | |

Notes: Water quality parameters were measured with a YSI 556 water quality instrument and Hach Turbidimeter.
Well survey conducted by Shannon & Wilson on May 18, 2016 using a temporary benchmark elevation of 100.00 feet.

- = not applicable or not tested for this parameter
TOC = top of casing
$^{o}$C = degrees Celsius
ft = feet
µS/cm = microsiemens per centimeter
mg/L = milligrams per liter
NTU = nephelometric turbidity units

**TABLE 1.2**
**AUGUST 2017 GROUNDWATER SAMPLING LOG**

| | Monitoring Well Number | | |
|---|---|---|---|
| | **MW30** | **MW31** | **MW32** |
| **Water Level Measurement Data** | | | |
| Date Water Level Measured | 8/22/2017 | 8/22/2017 | 8/22/2017 |
| Time Water Level Measured | 10:29 | 10:25 | 10:34 |
| Surveyed TOC Elevation (ft) | 100.95 | 99.79 | 99.81 |
| Measured Depth to Water (ft below TOC) | 3.94 | 3.84 | 3.32 |
| Water Level Elevation (ft) | 97.01 | 95.95 | 96.49 |
| **Purging/Sampling Data** | | | |
| Date Sampled | 8/22/2017 | 8/22/2017 | 8/22/2017 |
| Time Sampled | 13:42 | 12:02 | 16:12 |
| Measured Depth to Water (ft below TOC) | 3.94 | 3.84 | 3.32 |
| Total Depth of Well (ft below TOC) | 19.32 | 18.62 | 19.10 |
| Water Column in Well (ft) | 15.38 | 14.78 | 15.78 |
| Gallons per Foot | 0.16 | 0.16 | 0.16 |
| Water Column Volume (gallons) | 2.46 | 2.36 | 2.52 |
| Total Volume Pumped (gallons) | 2.6 | 2.6 | 2.6 |
| Sampling Method | Submersible Pump | Submersible Pump | Submersible Pump |
| Diameter of Well Casing | 2-inch | 2-inch | 2-inch |
| **Water Quality Data** | | | |
| Temperature ($^{o}$C) | 14.3 | 13.9 | 14.1 |
| Specific Conductance (µS/cm) | 1,386 | 1,423 | 607 |
| pH (Standard Units) | 6.19 | 6.18 | 6.76 |
| Turbidity (NTU) | 8.53 | 5.14 | 1.42 |
| **Remarks** | Duplicate Sample MW40 | | |

Notes: Water quality parameters were measured with a YSI 556 water quality instrument and Hach Turbidimeter.
Well survey conducted by Shannon & Wilson on May 18, 2016 using a temporary benchmark elevation of 100.00 feet.

TOC = top of casing
$^{o}$C = degrees Celsius
ft = feet
µS/cm = microsiemens per centimeter
mg/L = milligrams per liter
NTU = nephelometric turbidity units

**TABLE 1.3**
**NOVEMBER 2017 GROUNDWATER SAMPLING LOG**

| | Monitoring Well Number | | |
|---|---|---|---|
| | **MW30** | **MW31** | **MW32** |
| **Water Level Measurement Data** | | | |
| Date Water Level Measured | 11/1/2017 | 11/1/2017 | 11/1/2017 |
| Time Water Level Measured | 11:28 | 11:20 | 11:34 |
| Surveyed TOC Elevation (ft) | 100.95 | 99.79 | 99.81 |
| Measured Depth to Water (ft below TOC) | 2.48 | 2.53 | 2.96 |
| Water Level Elevation (ft) | 98.47 | 97.26 | 96.85 |
| **Purging/Sampling Data** | | | |
| Date Sampled | 11/1/2017 | 11/1/2017 | 11/1/2017 |
| Time Sampled | 14:30 | 13:02 | 15:58 |
| Measured Depth to Water (ft below TOC) | 2.48 | 2.53 | 2.96 |
| Total Depth of Well (ft below TOC) | 19.32 | 18.62 | 19.10 |
| Water Column in Well (ft) | 16.84 | 16.09 | 16.14 |
| Gallons per Foot | 0.16 | 0.16 | 0.16 |
| Water Column Volume (gallons) | 2.69 | 2.57 | 2.58 |
| Total Volume Pumped (gallons) | 3.6 | 2.6 | 3.2 |
| Sampling Method | Submersible Pump | Submersible Pump | Submersible Pump |
| Diameter of Well Casing | 2-inch | 2-inch | 2-inch |
| **Water Quality Data** | | | |
| Temperature ($^{o}$C) | 7.7 | 6.5 | 8.3 |
| Specific Conductance (µS/cm) | 1,740 | 1,087 | 682 |
| pH (Standard Units) | 6.56 | 6.57 | 6.96 |
| Turbidity (NTU) | 18.56 | 4.17 | 1.60 |
| **Remarks** | Duplicate Sample MW40 | | |

Notes: Water quality parameters were measured with a YSI 556 water quality instrument and Hach Turbidimeter.
Well survey conducted by Shannon & Wilson on May 18, 2016 using a temporary benchmark elevation of 100.00 feet.

TOC = top of casing
$^{o}$C = degrees Celsius
ft = feet
µS/cm = microsiemens per centimeter
NTU = nephelometric turbidity units

**TABLE 1.4**
**FEBRUARY 2018 GROUNDWATER SAMPLING LOG**

| | Monitoring Well Number | | |
|---|---|---|---|
| | **MW30** | **MW31** | **MW32** |
| **Water Level Measurement Data** | | | |
| Date Water Level Measured | 2/22/2018 | 2/22/2018 | 2/22/2018 |
| Time Water Level Measured | 10:30 | 9:58 | 9:30 |
| Surveyed TOC Elevation (ft) | 100.95 | 99.79 | 99.81 |
| Measured Depth to Water (ft below TOC) | 8.58 | 9.25 | 9.71 |
| Water Level Elevation (ft) | 92.37 | 90.54 | 90.10 |
| **Purging/Sampling Data** | | | |
| Date Sampled | 2/22/2018 | 2/22/2018 | 2/22/2018 |
| Time Sampled | 14:45 | 13:03 | 11:45 |
| Measured Depth to Water (ft below TOC) | 8.58 | 9.25 | 9.71 |
| Total Depth of Well (ft below TOC) | 19.31 | 18.65 | 19.20 |
| Water Column in Well (ft) | 10.73 | 9.40 | 9.49 |
| Gallons per Foot | 0.16 | 0.16 | 0.16 |
| Water Column Volume (gallons) | 1.72 | 1.50 | 1.52 |
| Total Volume Pumped (gallons) | 2.2 | 2.0 | 2.0 |
| Sampling Method | Submersible Pump | Submersible Pump | Submersible Pump |
| Diameter of Well Casing | 2-inch | 2-inch | 2-inch |
| **Water Quality Data** | | | |
| Temperature ($^{o}$C) | 2.6 | 1.7 | 1.2 |
| Specific Conductance (µS/cm) | 1,382 | 1,210 | 728 |
| pH (Standard Units) | 6.95 | 6.80 | 7.51 |
| Turbidity (NTU) | 9.09 | 24.98 | 9.10 |
| **Remarks** | Duplicate Sample MW40 | | |

Notes: Water quality parameters were measured with a Hanna water quality instrument and MicroTPW Turbidimeter.
Well survey conducted by Shannon & Wilson on May 18, 2016 using a temporary benchmark elevation of 100.00 feet.

- \- = not applicable or not tested for this parameter
- TOC = top of casing
- $^{o}$C = degrees Celsius
- ft = feet
- µS/cm = microsiemens per centimeter
- mg/L = milligrams per liter
- NTU = nephelometric turbidity units

# TABLE 2.1
# SUMMARY OF MAY 2017 WATER ANALYTICAL RESULTS

| Parameter Tested | Method* | Cleanup Level (mg/L)** | Sample ID Number^ and Water Depth in Feet BTOC (See Table 1.1 and Figure 1.1) | | | | |
|---|---|---|---|---|---|---|---|
| | | | Monitoring Well | | | | Trip Blank |
| | | | MW30 7.43 | MW40~ 7.43 | MW31 6.67 | MW32 7.29 | WTB1 - |
| Diesel Range Organics (DRO) - mg/L | AK 102 | 1.5 | <0.588 B | <0.577 B | **0.644 B** | <0.588 B | - |
| Volitle Organic Compounds (VOCs) | | | | | | | |
| Benzene - mg/L | EPA 8260C | 0.0046 | **0.00416** | **0.00414** | <0.000200 | <0.000200 | <0.000200 |
| Toluene - mg/L | EPA 8260C | 1.1 | **0.000460 J** | **0.000460 J** | **0.000350 J** | <0.000500 | <0.000500 |
| Ethylbenzene - mg/L | EPA 8260C | 0.015 | <0.000500 | <0.000500 | <0.000500 | <0.000500 | <0.000500 |
| Xylenes (total) - mg/L | EPA 8260C | 0.19 | <0.00150 | <0.00150 | <0.00150 | <0.00150 | <0.00150 |
| 1,2-Dichloroethane - mg/L | EPA 8260C | 0.0017 | <0.000250 | **0.000170 J** | <0.000250 | <0.000250 | <0.000250 |
| Dichlorodifluoromethane - mg/L | EPA 8260C | 0.20 | <0.000500 | <0.000500 | **0.0168** | **0.176** | <0.000500 |
| Other VOCs - mg/L | EPA 8260C | Various | ND | ND | ND | ND | ND |
| Polynuclear Aromatic Hydrocarbons (PAH) | | | | | | | |
| 1-Methylnaphthalene - mg/L | EPA 8270D SIM | 0.011 | **0.0000376 J** | **0.0000224 J** | **0.0000154 J** | <0.0000245 | - |
| 2-Methylnaphthalene - mg/L | EPA 8270D SIM | 0.036 | **0.0000350 J** | **0.0000239 J** | <0.0000252 | <0.0000245 | - |
| Benzo[a]pyrene - mg/L | EPA 8270D SIM | 0.000034 | <0.00000945 | <0.00000925 | <0.0000101 | **0.00000831 J** | - |
| Dibenzo[a,h]anthracene - mg/L | EPA 8270D SIM | 0.000034 | **0.0000109 J** | <0.00000925 | <0.0000101 | <0.00000980 | - |
| Phenanthrene - mg/L | EPA 8270D SIM | 0.170 | **0.0000201 J** | <0.0000232 | **0.0000181 J** | <0.0000245 | - |
| Other PAHs - mg/L | EPA 8270D SIM | Various | ND | ND | ND | ND | - |

Notes:

| | |
|---|---|
| * | = See Attachment 2 for compounds tested, methods, and laboratory reporting limits |
| ** | = Groundwater cleanup levels are listed in Table C, 18 AAC 75.345 (January 2017) |
| ^ | = Sample ID number preceded by "17755-" on the chain of custody form |
| mg/L | = Milligrams per liter |
| <0.00150 | = Analyte not detected; laboratory limit of detection of 0.00150 mg/L |
| **0.00416** | = Analyte detected |
| - | = Not applicable or sample not tested for this analyte |
| ~ | = Field duplicate of preceding sample |
| **J** | = Estimated concentration less than the limit of quantitation. See the SGS laboratory report for more details. |
| BTOC | = Below Top of Casing |
| ND | = Not detected |
| SIM | = Selective Ion Method |

# TABLE 2.2
# SUMMARY OF AUGUST 2017 WATER ANALYTICAL RESULTS

| Parameter Tested | Method* | Cleanup Level (mg/L)** | Sample ID Number^ and Water Depth in Feet BTOC (See Table 1.2 and Figure 1.2) | | | | |
|---|---|---|---|---|---|---|---|
| | | | Monitoring Well | | | | Trip Blank |
| | | | MW30 | MW40~ | MW31 | MW32 | WTB1 |
| | | | 3.94 | 3.94 | 3.84 | 3.32 | - |
| Diesel Range Organics (DRO) - mg/L | AK 102 | 1.5 | **0.313 J, E** | **0.665 E** | **0.802** | <0.294 | - |
| Volitle Organic Compounds (VOCs) | | | | | | | |
| Benzene - mg/L | EPA 8260C | 0.0046 | **0.0124** | **0.0128** | <0.000200 | <0.000200 | <0.000200 |
| Toluene - mg/L | EPA 8260C | 1.1 | <0.000500 | <0.000500 | <0.000500 | <0.000500 | <0.000500 |
| Ethylbenzene - mg/L | EPA 8260C | 0.015 | <0.000500 | <0.000500 | <0.000500 | <0.000500 | <0.000500 |
| Xylenes (total) - mg/L | EPA 8260C | 0.19 | <0.00150 | <0.00150 | <0.00150 | <0.00150 | <0.00150 |
| 1,2-Dichloroethane - mg/L | EPA 8260C | 0.0017 | **0.000190 J** | **0.000190 J** | <0.000250 | <0.000250 | <0.000250 |
| Dichlorodifluoromethane - mg/L | EPA 8260C | 0.20 | <0.000500 | <0.000500 | **0.00447** | **0.0177** | <0.000500 |
| Trichlorofluoromethane - mg/L | EPA 8260C | 5.2 | <0.000500 | <0.000500 | <0.000500 | **0.000420 J** | <0.000500 |
| Other VOCs - mg/L | EPA 8260C | Various | ND | ND | ND | ND | ND |
| Polynuclear Aromatic Hydrocarbons (PAH) | | | | | | | |
| 1-Methylnaphthalene - mg/L | EPA 8270D SIM | 0.011 | **0.000102** | **0.000103** | <0.0000245 | <0.0000245 | - |
| 2-Methylnaphthalene - mg/L | EPA 8270D SIM | 0.036 | **0.0000802** | **0.0000814** | <0.0000245 | <0.0000245 | - |
| Naphthalene - mg/L | EPA 8270D SIM | 1.0 | **0.0000785 J** | **0.0000808 J** | <0.0000490 | <0.0000490 | - |
| Other PAHs - mg/L | EPA 8270D SIM | Various | ND | ND | ND | ND | - |

Notes:

| | |
|---|---|
| * | = See Attachment 2 for compounds tested, methods, and laboratory reporting limits |
| ** | = Groundwater cleanup levels are listed in Table C, 18 AAC 75.345 (January 2017) |
| ^ | = Sample ID number preceded by "17755-" on the chain of custody form |
| mg/L | = Milligrams per liter |
| <0.000500 | = Analyte not detected; laboratory limit of detection of 0.00050 mg/L |
| **0.313** | = Analyte detected |
| **0.0124** | = Reported concentration exceeds the applicable ADEC cleanup level |
| - | = Not applicable or sample not tested for this analyte |
| ~ | = Field duplicate of preceding sample |
| **J** | = Estimated concentration less than the limit of quantitation. See the SGS laboratory report for more details. |
| **E** | = Result is an estimate due to a primary/field duplicate sample pair relative percent difference (RPD) failure. |
| BTOC | = Below Top of Casing |
| ND | = Not detected |
| SIM | = Selective Ion Method |

# TABLE 2.3
# SUMMARY OF NOVEMBER 2017 WATER ANALYTICAL RESULTS

| Parameter Tested | Method* | Cleanup Level (mg/L)** | Sample ID Number^ and Water Depth in Feet BTOC or Sample Date (See Table 1.3 and Figure 1.3) | | | | |
|---|---|---|---|---|---|---|---|
| | | | Monitoring Wells | | | | Trip Blank |
| | | | MW30 2.48 | MW40~ 2.48 | MW31 2.53 | MW32 2.96 | TB 11/1/2017 |
| Diesel Range Organics (DRO) - mg/L | AK 102 | 1.5 | **0.958 E** | **0.623 E** | **0.794** | **0.206 J** | - |
| Volitle Organic Compounds (VOCs) | | | | | | | |
| Benzene - mg/L | EPA 8260C | 0.0046 | **0.00174** | **0.00178** | <0.000200 | <0.000200 | <0.000200 |
| Toluene - mg/L | EPA 8260C | 1.1 | <0.000500 | <0.000500 | <0.000500 | <0.000500 | <0.000500 |
| Ethylbenzene - mg/L | EPA 8260C | 0.015 | <0.000500 | <0.000500 | <0.000500 | <0.000500 | <0.000500 |
| Xylenes (total) - mg/L | EPA 8260C | 0.19 | <0.00150 | <0.00150 | <0.00150 | <0.00150 | <0.00150 |
| Dichlorodifluoromethane - mg/L | EPA 8260C | 0.20 | <0.000500 | <0.000500 | **0.00106** | **0.0225** | <0.000500 |
| Trichlorofluoromethane - mg/L | EPA 8260C | 5.2 | <0.000500 | <0.000500 | <0.000500 | **0.000550 J** | <0.000500 |
| Other VOCs - mg/L | EPA 8260C | Various | ND | ND | ND | ND | ND |
| Polynuclear Aromatic Hydrocarbons (PAH) | | | | | | | |
| 1-Methylnaphthalene - mg/L | EPA 8270D SIM | 0.011 | **0.0000221 J** | **0.0000200 J** | <0.0000240 | <0.0000250 | - |
| 2-Methylnaphthalene - mg/L | EPA 8270D SIM | 0.036 | **0.0000208 J** | **0.0000155 J** | <0.0000240 | <0.0000250 | - |
| Other PAHs - mg/L | EPA 8270D SIM | Various | ND | ND | ND | ND | - |

Notes:

| | |
|---|---|
| * | = See Attachment 2 for compounds tested, methods, and laboratory reporting limits |
| ** | = Groundwater cleanup levels are listed in Table C, 18 AAC 75.345 (October 2017) |
| ^ | = Sample ID number preceded by "17755-" on the chain of custody form |
| mg/L | = Milligrams per liter |
| <0.000500 | = Analyte not detected; laboratory limit of detection of 0.000500 mg/L |
| **0.00174** | = Analyte detected |
| - | = Not applicable or sample not tested for this analyte |
| ~ | = Field duplicate of preceding sample |
| **J** | = Estimated concentration less than the limit of quantitation. See the SGS laboratory report for more details. |
| **E** | = Result is an estimate due to a primary/field duplicate sample pair relative percent difference (RPD) failure. |
| BTOC | = Below Top of Casing |
| ND | = Not detected |
| SIM | = Selective Ion Method |

# TABLE 2.4
## SUMMARY OF FEBRUARY 2018 WATER ANALYTICAL RESULTS

| Parameter Tested | Method* | Cleanup Level (mg/L)** | Sample ID Number^ and Water Depth in Feet BTOC or Sample Date (See Table 1.4 and Figure 1.4) | | | | |
|---|---|---|---|---|---|---|---|
| | | | Monitoring Well | | | | Trip Blank |
| | | | MW30 8.58 | MW40~ 8.58 | MW31 9.25 | MW32 9.71 | WTB4 2/22/2018 |
| Diesel Range Organics (DRO) - mg/L | AK 102 | 1.5 | **0.530 J** | **0.413 J** | **0.558 J** | <0.310 | - |
| Volitle Organic Compounds (VOCs) | | | | | | | |
| Benzene - mg/L | EPA 8260C | 0.0046 | **0.0103** | **0.0100** | <0.000200 | <0.000200 | <0.000200 |
| Toluene - mg/L | EPA 8260C | 1.1 | <0.000500 | <0.000500 | <0.000500 | <0.000500 | <0.000500 |
| Ethylbenzene - mg/L | EPA 8260C | 0.015 | <0.000500 | <0.000500 | <0.000500 | <0.000500 | <0.000500 |
| Xylenes (total) - mg/L | EPA 8260C | 0.19 | <0.00150 | <0.00150 | <0.00150 | <0.00150 | <0.00150 |
| Dichlorodifluoromethane - mg/L | EPA 8260C | 0.20 | <0.000500 | <0.000500 | **0.00119** | **0.0496** | <0.000500 |
| 2-Butanone (MEK) - mg/L | EPA 8260C | 5,600 | <0.00500 | <0.00500 | **0.00432 J** | <0.00500 | <0.00500 |
| Trichlorofluoromethane - mg/L | EPA 8260C | 5.2 | <0.000500 | <0.000500 | <0.000500 | **0.000590 J** | <0.000500 |
| Other VOCs - mg/L | EPA 8260C | Various | ND | ND | ND | ND | ND |
| Polynuclear Aromatic Hydrocarbons (PAH) - mg/L | EPA 8270D SIM | Various | ND | ND | ND | ND | - |

Notes:

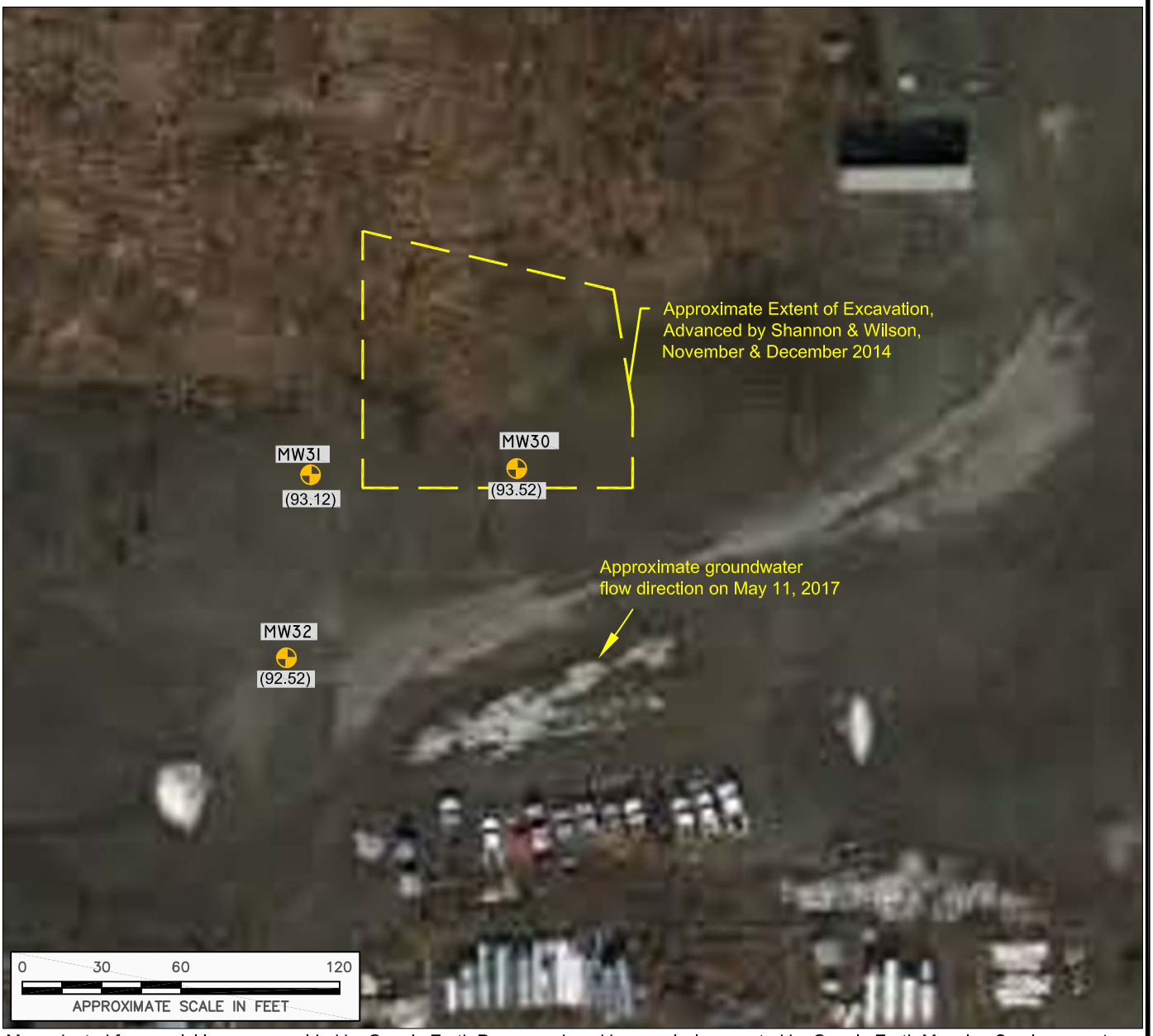
| | |
|---|---|
| * | = See Attachment 2 for compounds tested, methods, and laboratory reporting limits |
| ** | = Groundwater cleanup levels are listed in Table C, 18 AAC 75.345 (November 2017) |
| ^ | = Sample ID number preceded by "17755-" on the chain of custody form |
| mg/L | = Milligrams per liter |
| <0.00150 | = Analyte not detected; laboratory limit of detection of 0.00150 mg/L |
| **0.00119** | = Analyte detected |
| **0.0103** | = Analyte concentration exceeds ADEC cleanup level |
| - | = Not applicable or sample not tested for this analyte |
| ~ | = Field duplicate of preceding sample |
| **J** | = Estimated concentration less than the limit of quantitation. See the SGS laboratory report for more details. |
| BTOC | = Below Top of Casing |
| ND | = Not detected |

**TABLE 3**
**HISTORICAL GROUNDWATER DATA**

| Monitoring Well | Date | Groundwater Depth^ (feet) | Parameter Tested and Cleanup Level (mg/L)^^ | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | GRO 2.2 | DRO 1.5 | Benzene 0.0046 | Toluene 1.1 | Ethylbenzene 0.015 | Xylenes 0.19 |
| MW30 | 5/16/2016* | 4.92 | **0.0818 J** | **1.29** | **0.0231** | **0.000440 J** | **0.000370 J** | <0.00150 |
| | 5/11/2017* | 7.43 | - | <0.588 B | **0.00416** | **0.000460 J** | <0.000500 | <0.00150 |
| | 8/22/2017 * | 3.94 | - | **0.665** | **0.0128** | <0.000500 | <0.000500 | <0.00150 |
| | 11/1/2017* | 2.48 | - | **0.958 E** | **0.00178** | <0.000500 | <0.000500 | <0.00150 |
| | 2/22/2018* | 8.58 | - | **0.530 J** | **0.0103** | <0.000500 | <0.000500 | <0.00150 |
| MW31 | 5/16/2016 | 5.90 | <0.0500 | **0.296 J** | <0.000250 | <0.000500 | <0.000500 | <0.00150 |
| | 5/11/2017 | 6.67 | - | **0.644 B** | <0.000200 | **0.000460 J** | <0.000500 | <0.00150 |
| | 8/22/2017 | 3.84 | - | **0.802** | <0.000200 | <0.000500 | <0.000500 | <0.00150 |
| | 11/1/2017 | 2.53 | - | **0.794** | <0.000200 | <0.000500 | <0.000500 | <0.00150 |
| | 2/22/2018 | 9.25 | - | **0.558 J** | <0.000200 | <0.000500 | <0.000500 | <0.00150 |
| MW32 | 5/16/2016 | 6.31 | <0.0500 | **0.195 J** | <0.000250 | <0.000500 | <0.000500 | <0.00150 |
| | 5/11/2017 | 7.29 | - | <0.588 B | <0.000200 | <0.000500 | <0.000500 | <0.00150 |
| | 8/22/2017 | 3.32 | - | <0.294 | <0.000200 | <0.000500 | <0.000500 | <0.00150 |
| | 11/1/2017 | 2.96 | - | **0.206 J** | <0.000200 | <0.000500 | <0.000500 | <0.00150 |
| | 2/22/2018 | 9.71 | - | <0.310 | <0.000200 | <0.000500 | <0.000500 | <0.00150 |

Notes:

^ = Depth of static groundwater level below the top of casing
^^ = Groundwater cleanup levels based on 18 AAC 75.345 Table C, 18 AAC 75 (November 2017)
**-** = Not applicable or sample not tested for this parameter
***** = The highest concentration from a primary/duplicate sample set
**1.29** = Analyte detected
**0.0231** = Reported concentration exceeds the applicable ADEC cleanup level
<0.0500 = Analyte not detected; laboratory reporting limit of 0.0500 mg/L
mg/L = Milligrams per liter
**J** = Concentration is an estimate less than the laboratory limit of quantitation (LOQ).
**B** = Compound detected in method blank at an estimated concentration.




Map adapted from aerial imagery provided by Google Earth Pro, reproduced by permission granted by Google Earth Mapping Service.

N

## LEGEND

| | |
|---|---|
| MW30 | Approximate Location of Monitoring Well MW30, advanced by Shannon & Wilson on May 13, 2016. |
| (92.52) | Approximate groundwater elevation based on May 11, 2017 water level measurements and May 18, 2016 well casing elevation survey by Shannon & Wilson. |

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**MAY 2017 SITE PLAN**

May 2018 32-1-17755-002

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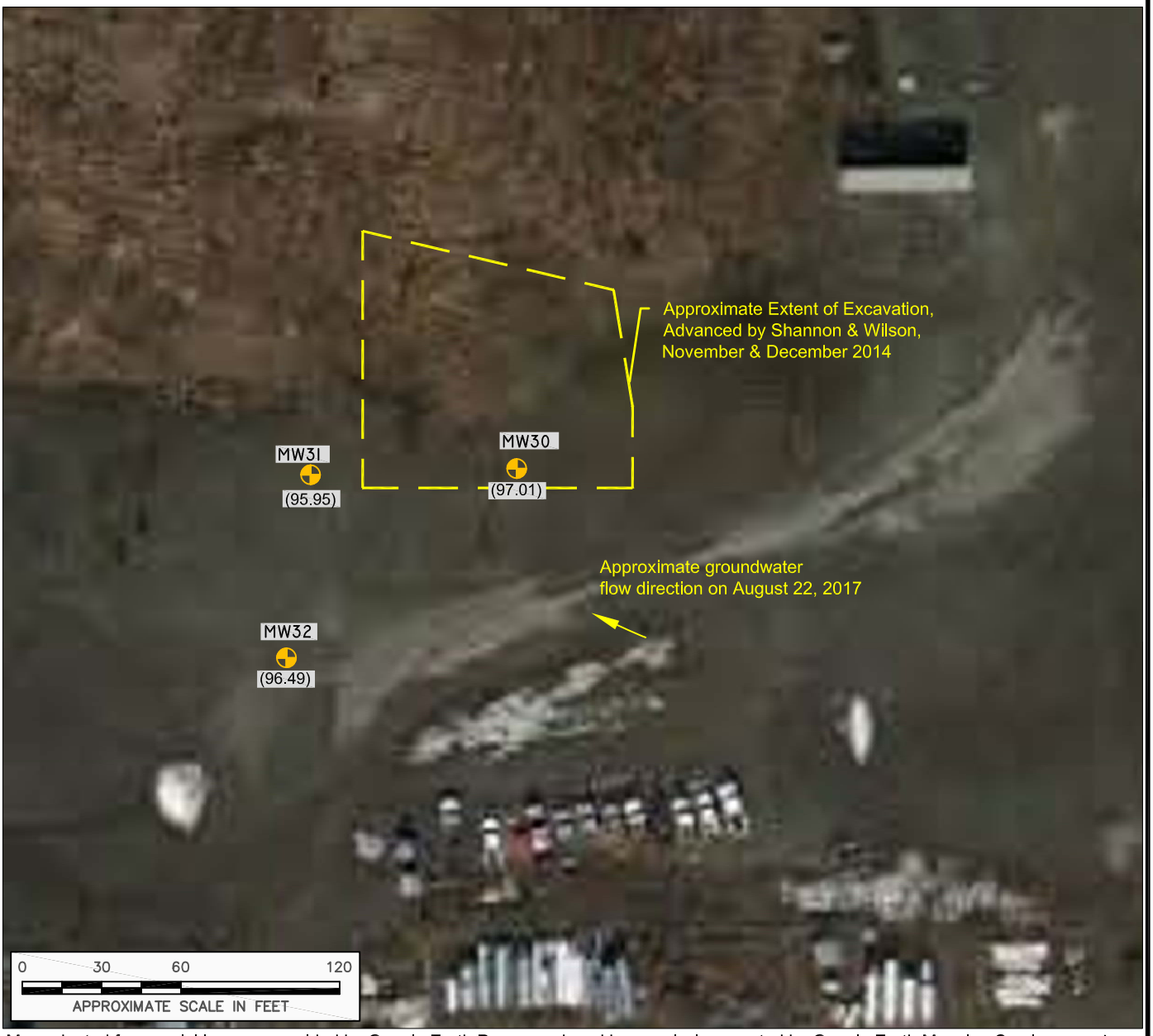
**FIG. 1.1**

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N

## LEGEND

| | |
|---|---|
| MW30 | Approximate Location of Monitoring Well MW30, advanced by Shannon & Wilson on May 13, 2016. |
| (97.01) | Approximate groundwater elevation based on August 22, 2017 water level measurements and May 18, 2017 well casing elevation survey by Shannon & Wilson. |

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# AUGUST 2017 SITE PLAN

May 2018 32-1-17755-002

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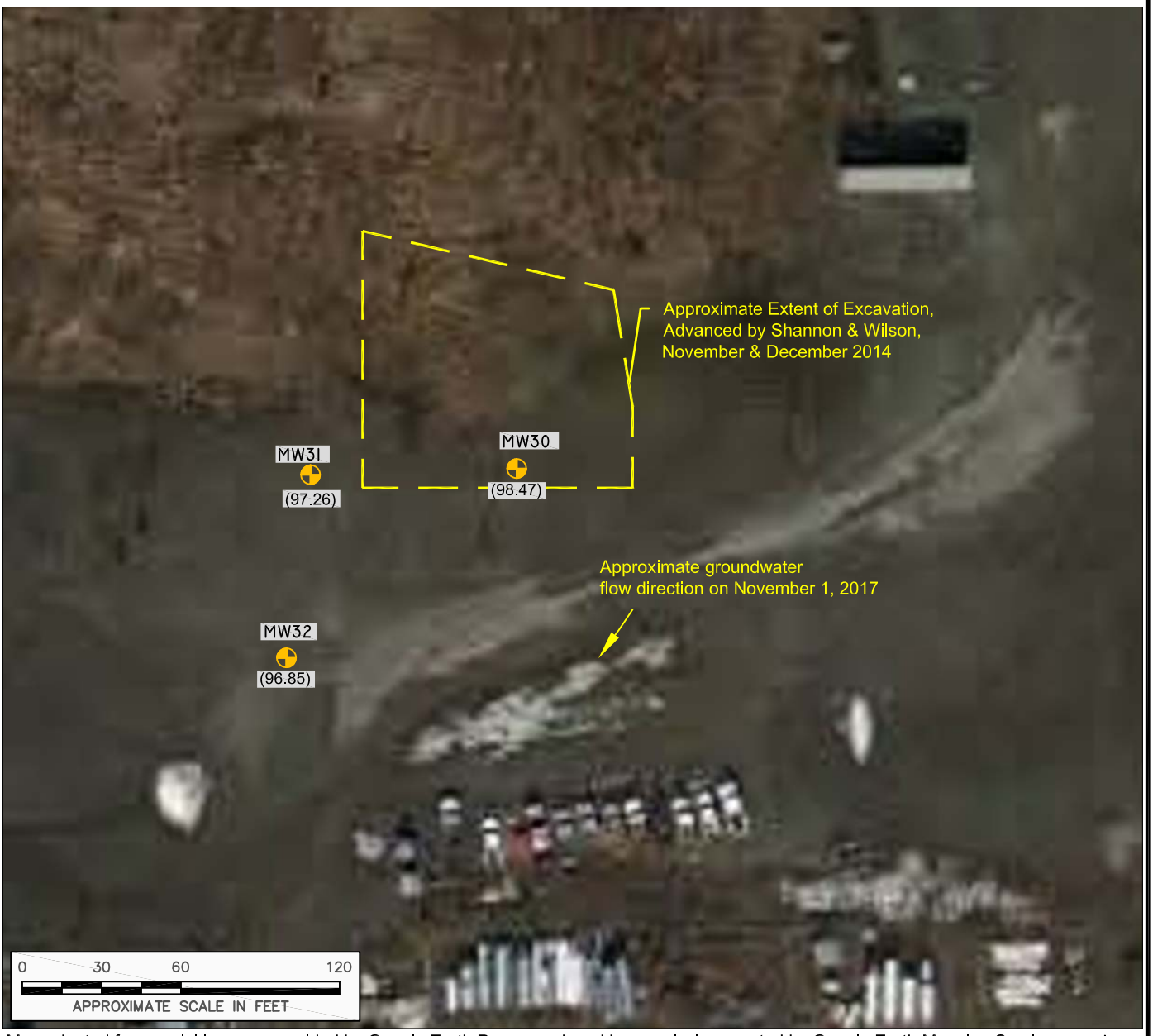
FIG. 1.2

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N

## LEGEND

| | |
|---|---|
| MW30 | Approximate Location of Monitoring Well MW30, advanced by Shannon & Wilson on May 13, 2016. |
| (98.47) | Approximate groundwater elevation based on November 1, 2017 water level measurements and May 18, 2016 well casing elevation survey by Shannon & Wilson. |

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**NOVEMBER 2017 SITE PLAN**

May 2018 32-1-17755-002

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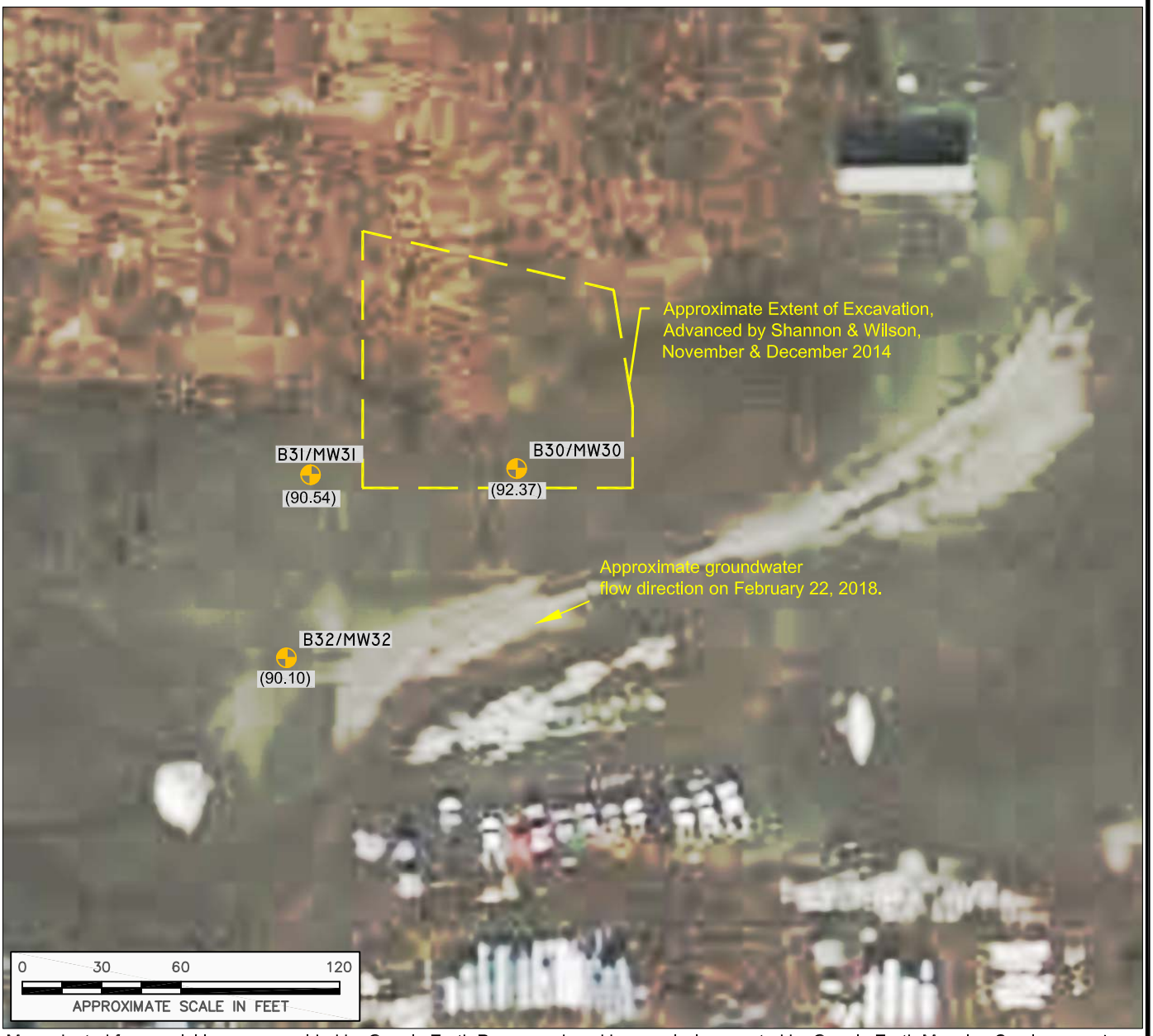
**FIG. 1.3**

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N

## LEGEND

| | |
|---|---|
| B30/MW30 | Approximate Location of Boring/Monitoring Well B30/MW30, advanced by Shannon & Wilson on May 13, 2016 |
| (92.37) | Approximate groundwater elevation based on February 22, 2018 water level measurements and May 18, 2016 well casing elevation survey by Shannon & Wilson. |

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# FEBRUARY 2018 SITE PLAN

May 2018 32-1-17755-002

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FIG. 1.4

# ATTACHMENT 1

## FIELD NOTES

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# LOW-FLOW WATER SAMPLING LOG

Job No: 17755-002 Location: 151 W, 100 Weather: CLEAR 55°F
Well No.: MW30
Date: 5/11/17 Time Started: 1320 Time Completed: 1435
Develop Date: — Develop End Time: — (24 hour break)

## INITIAL GROUNDWATER LEVEL DATA

Time of Depth Measurement: 1050 Date of Depth Measurement: 5/11/17
Measuring Point (MP): Top of PVC Casing / Top of Steel Protective Casing / Other: _____
Diameter of Casing: 2" Well Screen Interval: —
Total Depth of Well Below MP: 19.35 Product Thickness, if noted: —
Depth-to-Water (DTW) Below MP: 7.43
Water Column in Well: 11.92 (Total Depth of Well Below MP - DTW Below MP)
Gallons per foot: 0.16
Gallons in Well: 1.91 (Water Column in Well x Gallons per foot)

## PURGING DATA

Date Purged: 5/11/17 Time Started: 1325 Time Completed: 1415
Three Well Volumes: 5.73 (Gallons in Well x 3)
Gallons Purged: 2.0 Depth of Pump (~~generally 2 ft from bottom~~): top 1'
Max. Drawdown (generally 0.3 ft): 0.3 Pump Rate: 0.2 L/min
Well Purged Dry: Yes ☐ No ☒ (If yes, use Well Purged Dry Log)

| Time: | Gallons: | Pump Rate (L/min): | DTW (ft BMP): | Drawdown (ft): | Temp: (°C) | Sp. Cond.: (uS/cm) | DO: (mg/L) | pH: (S.U.) | ORP: (mV) | Turb: (NTU) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1330 | 0.2 | 0.2 | — | — | 8.54 | 1360 | — | 6.89 | — | 19.91 |
| 1335 | 0.4 | ↓ | — | — | 9.25 | 1366 | — | 6.90 | — | 26.07 |
| 1340 | 0.6 | ↓ | 7.73 | 0.30 | 9.28 | 1370 | — | 6.91 | — | 34.76 |
| 1345 | 0.8 | ↓ | — | — | 9.30 | 1372 | — | 6.92 | — | 29.64 |
| 1350 | 1.0 | ↓ | — | — | 9.29 | 1373 | — | 6.95 | — | 27.35 |
| 1355 | 1.2 | ↓ | 7.73 | 0.30 | 9.29 | 1375 | — | 6.95 | — | 19.38 |

## SAMPLING DATA

Odor: None Color: CLEAR
Sample Designation: 17755-MW30 Time / Date: 1420 5/11/17
QC Sample Designation: 17755-MW40 Time / Date: 1500 5/11/17
QA Sample Designation: — Time / Date: —
Evacuation Method: Submersible Pump / Other: _____
Sampling Method: Submersible Pump / Other: _____
Water Quality Instruments Used/Manufacturer/Model Number YSI 556 Turbidimeter
Calibration Info (Time, Ranges, etc) YSI 556
Remarks: _____
Sampling Personnel: JAKE TANCI

WELL CASING VOLUMES (GAL/FT): 1" = 0.04 2" = 0.16 4" = 0.65
ANNULAR SPACE VOLUME (GAL/FT): 4" casing and 2" well = 0.23

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# LOW-FLOW WATER SAMPLING LOG

Continued from previous page

Job No: 17755-002 Location: 157 W. 100 Site: FAIRWEATHER
Well No.: MW30
Date: 5/11/17

| Time: | Gallons: | Pump Rate (L/min): | DTW (ft BMP): | Drawdown (ft): | Temp: (°C) | Sp. Cond (uS/cm) | DO (mg/L) | pH: (S.U.) | ORP: (mV) | Turb: (NTU) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1400 | 1.4 | 0.2 | - | - | 9.30 | 1375 | - | 6.96 | - | 22.03 |
| 1405 | 1.6 | ↓ | - | - | 9.32 | 1377 | - | 6.96 | - | 21.82 |
| 1410 | 1.8 | ↓ | 7.73 | 0.30 | 9.31 | 1377 | - | 6.98 | - | 21.64 |
| 1415 | 2.0 | ↓ | - | - | 9.31 | 1379 | - | 6.97 | - | 20.90 |
| 1420 | Sample time | | - | - | | | | | | |
| 1500 | Duplicate sample time | | | | | | | | | |

| | Interval (minutes) | Pump Rate (mL/min): | Drawdown (ft): | Temp: (°C) | Sp. Cond.: (uS/cm) | DO (mg/L) | pH: (S.U.) | ORP: (mV) | Turb: (NTU) |
|---|---|---|---|---|---|---|---|---|---|
| ADEC (May 2010) | 3 to 5 | 100 to 150 | <0.0328 | ±3% or ±0.2 | ±3% | ±10% | ±0.1 | ±10 | ±10% |
| EPA (Jan. 2010) | 5 | 50 | <0.3 | ±3% | ±3% | ±10% | ±0.1 | ±10 | ±10% or <5 NTU |

EPA guidance requires all parameters to stabilize for 3 consecutive readings before sampling. If not stable within 2 hours, collect sample.
ADEC guidance requires 3 parameters (4 if using temperature) to stabilize for 3 consecutive readings before sampling.

Shannon & Wilson, Inc.

# LOW-FLOW WATER SAMPLING LOG

Job No: 17755-002 Location: 151 W. 100 Weather: CLEAR 55°F
Well No.: MW31
Date: 5/11/17 Time Started: 1200 Time Completed: 1310
Develop Date: — Develop End Time: — (24 hour break)

## INITIAL GROUNDWATER LEVEL DATA

Time of Depth Measurement: 1045 Date of Depth Measurement: 5/11/17
Measuring Point (MP): Top of PVC Casing / Top of Steel Protective Casing / Other: _____
Diameter of Casing: 2" Well Screen Interval: —
Total Depth of Well Below MP: 18.65 Product Thickness, if noted: —
Depth-to-Water (DTW) Below MP: 6.67
Water Column in Well: 11.98 (Total Depth of Well Below MP - DTW Below MP)
Gallons per foot: 0.16
Gallons in Well: 1.92 (Water Column in Well x Gallons per foot)

## PURGING DATA

Date Purged: 5/11/17 Time Started: 1205 Time Completed: 1305
Three Well Volumes: 5.76 (Gallons in Well x 3)
Gallons Purged: 2.4 Depth of Pump (~~generally 2 ft from bottom~~): top 1'
Max. Drawdown (generally 0.3 ft): 0.03 Pump Rate: 0.2 L/min
Well Purged Dry: Yes ☐ No ☒ (If yes, use Well Purged Dry Log)

| Time: | Gallons: | Pump Rate (L/min): | DTW (ft BMP): | Drawdown (ft): | Temp: (°C) | Sp. Cond.: (uS/cm) | DO: (mg/L) | pH: (S.U.) | ORP: (mV) | Turb: (NTU) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1210 | 0.2 | 0.2 | — | — | 5.90 | 1152 | — | 6.55 | — | 29.35 |
| 1215 | 0.4 | ↑ | — | — | 6.51 | 1187 | — | 6.78 | — | 29.83 |
| 1220 | 0.6 | | 6.70 | 0.03 | 6.60 | 1200 | — | 6.77 | — | 27.30 |
| 1225 | 0.8 | | — | — | 6.60 | 1212 | — | 6.79 | — | 24.14 |
| 1230 | 1.0 | | — | — | 6.62 | 1229 | — | 6.87 | — | 23.55 |
| 1235 | 1.2 | ↓ | 6.70 | 0.03 | 6.63 | 1248 | — | 6.89 | — | 20.42 |

## SAMPLING DATA

Odor: NONE Color: CLEAR
Sample Designation: 17755-MW31 Time / Date: 1310 5/11/17
QC Sample Designation: — Time / Date: —
QA Sample Designation: — Time / Date: —
Evacuation Method: Submersible Pump / Other: _____
Sampling Method: Submersible Pump / Other: _____
Water Quality Instruments Used/Manufacturer/Model Number YSI 556 Turbidi meter
Calibration Info (Time, Ranges, etc) YSI 556
Remarks: _____
Sampling Personnel: JAKE TRACY

WELL CASING VOLUMES (GAL/FT): 1" = 0.04 2" = 0.16 4" = 0.65
ANNULAR SPACE VOLUME (GAL/FT): 4" casing and 2" well = 0.23

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# LOW-FLOW WATER SAMPLING LOG

Continued from previous page

Job No: 17755-002 Location: #51 W 100 Site: FAIRWEATHER

Well No.: MW 31

Date: 5/11/17

| Time: | Gallons: | Pump Rate (L/min): | DTW (ft BMP): | Drawdown (ft): | Temp: (°C) | Sp. Cond (uS/cm) | DO (mg/L) | pH: (S.U.) | ORP: (mV) | Turb: (NTU) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1240 | 1.4 | 0.2 | - | - | 6.63 | 1280 | - | 7.00 | - | 21.92 |
| 1245 | 1.6 | \| | - | - | 6.64 | 1295 | - | 7.03 | - | 27.57 |
| 1250 | 1.8 | \| | 6.70 | 0.03 | 6.63 | 1298 | - | 7.04 | - | 24.36 |
| 1255 | 2.0 | \| | - | - | 6.62 | 1296 | - | 7.04 | - | 20.68 |
| 1300 | 2.2 | \| | - | - | 6.63 | 1297 | - | 7.03 | - | 18.79 |
| 1305 | 2.4 | ↓ | 6.70 | 0.03 | 6.64 | 1297 | - | 7.02 | - | 19.42 |
| 1310 | Sample | Time | | | | | | | | |
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| | Interval (minutes) | Pump Rate (mL/min): | Drawdown (ft): | Temp: (°C) | Sp. Cond.: (uS/cm) | DO (mg/L) | pH: (S.U.) | ORP: (mV) | Turb: (NTU) |
|---|---|---|---|---|---|---|---|---|---|
| **ADEC (May 2010)** | 3 to 5 | 100 to 150 | <0.0328 | ±3% or ±0.2 | ±3% | ±10% | ±0.1 | ±10 | ±10% |
| **EPA (Jan. 2010)** | 5 | 50 | <0.3 | ±3% | ±3% | ±10% | ±0.1 | ±10 | ±10% or <5 NTU |

EPA guidance requires all parameters to stabilize for 3 consecutive readings before sampling. If not stable within 2 hours, collect sample.

ADEC guidance requires 3 parameters (4 if using temperature) to stabilize for 3 consecutive readings before sampling.

Shannon & Wilson, Inc.

# LOW-FLOW WATER SAMPLING LOG

Job No: 17755-002 Location: 151 W. 100TH Weather: CLEAR 50 °F
Well No.: MW32
Date: 5/11/17 Time Started: 1040 Time Completed: 1150
Develop Date: — Develop End Time: — (24 hour break)

## INITIAL GROUNDWATER LEVEL DATA

Time of Depth Measurement: 1040 Date of Depth Measurement: 5/11/17
Measuring Point (MP): (Top of PVC Casing) / Top of Steel Protective Casing / Other: _____
Diameter of Casing: _____ Well Screen Interval: —
Total Depth of Well Below MP: 19.13 Product Thickness, if noted: —
Depth-to-Water (DTW) Below MP: 7.29
Water Column in Well: 18.84 (Total Depth of Well Below MP - DTW Below MP)
Gallons per foot: 0.16
Gallons in Well: 1.90 (Water Column in Well x Gallons per foot)

## PURGING DATA

Date Purged: 5/11/17 Time Started: 1045 Time Completed: 1145
Three Well Volumes: 5.70 (Gallons in Well x 3)
Gallons Purged: 2.4 Depth of Pump (~~generally 2 ft from bottom~~): top 1'
Max. Drawdown (generally 0.3 ft): 0 Pump Rate: 0.2 L/min
Well Purged Dry: Yes ☐ No ☒ (If yes, use Well Purged Dry Log)

| Time: | Gallons: | Pump Rate (L/min): | DTW (ft BMP): | Drawdown (ft): | Temp: (°C) | Sp. Cond.: (uS/cm) | DO: (mg/L) | pH: (S.U.) | ORP: (mV) | Turb: (NTU) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1050 | 0.2 | 0.2 | — | — | 5.00 | 906 | — | 6.60 | — | 70.88 |
| 1055 | 0.4 | | — | — | 5.26 | 907 | — | 6.74 | — | 68.54 |
| 1100 | 0.6 | | 7.29 | 0 | 5.60 | 904 | — | 6.78 | — | 63.53 |
| 1105 | 0.8 | | — | — | 5.70 | 907 | — | 6.82 | — | 55.58 |
| 1110 | 1.0 | | — | — | 5.72 | 909 | — | 6.85 | — | 38.63 |
| 1115 | 1.2 | ↓ | 7.29 | 0 | 5.72 | 909 | — | 6.85 | — | 32.67 |

## SAMPLING DATA

Odor: None Color: CLEAR
Sample Designation: 17755-MW32 Time / Date: 1150 5/11/17
QC Sample Designation: — Time / Date: —
QA Sample Designation: — Time / Date: —
Evacuation Method: Submersible Pump / Other: _____
Sampling Method: Submersible Pump / Other: _____
Water Quality Instruments Used/Manufacturer/Model Number YSI 556 Turbidimeter
Calibration Info (Time, Ranges, etc) YSI 556
Remarks: Turbidity did not stabilize but > 1 well volume and 1 hr. effort expended.
Sampling Personnel: JCT

WELL CASING VOLUMES (GAL/FT): 1" = 0.04 2" = 0.16 4" = 0.65
ANNULAR SPACE VOLUME (GAL/FT): 4" casing and 2" well = 0.23

Shannon & Wilson, Inc.

# LOW-FLOW WATER SAMPLING LOG

Continued from previous page

Job No: 17755-002 Location: 151 W. 100TH Site: FAIRWEATHER

Well No.: MW32

Date: 5/11/17

| Time: | Gallons: | Pump Rate (L/min): | DTW (ft BMP): | Drawdown (ft): | Temp: (°C) | Sp. Cond (uS/cm) | DO (mg/L) | pH: (S.U.) | ORP: (mV) | Turb: (NTU) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1120 | 1.4 | 0.2 | - | - | 5.73 | 909 | - | 6.86 | - | 28.26 |
| 1125 | 1.6 | ↓ | - | - | 5.73 | 909 | - | 6.86 | - | 28.05 |
| 1130 | 1.8 | ↓ | 7.29 | 0 | 5.73 | 910 | - | 6.87 | - | 24.25 |
| 1135 | 2.0 | ↓ | - | - | 5.73 | 910 | - | 6.87 | - | 21.62 |
| 1140 | 2.2 | ↓ | - | - | 5.73 | 910 | - | 6.87 | - | 16.29 |
| 1145 | 2.4 | ↓ | 7.29 | 0 | 5.73 | 910 | - | 6.87 | - | 19.97 |
| 1150 | Sample | time | | | | | | | | |

| | Interval (minutes) | Pump Rate (mL/min): | Drawdown (ft): | Temp: (°C) | Sp. Cond.: (uS/cm) | DO (mg/L) | pH: (S.U.) | ORP: (mV) | Turb: (NTU) |
|---|---|---|---|---|---|---|---|---|---|
| **ADEC (May 2010)** | 3 to 5 | 100 to 150 | <0.0328 | ±3% or ±0.2 | ±3% | ±10% | ±0.1 | ±10 | ±10% |
| **EPA (Jan. 2010)** | 5 | 50 | <0.3 | ±3% | ±3% | ±10% | ±0.1 | ±10 | ±10% or <5 NTU |

EPA guidance requires all parameters to stabilize for 3 consecutive readings before sampling. If not stable within 2 hours, collect sample.
ADEC guidance requires 3 parameters (4 if using temperature) to stabilize for 3 consecutive readings before sampling.

# LOW-FLOW WATER SAMPLING LOG

Shannon & Wilson, Inc.

Job No: 32-1-17755-002 Location: 151 W. 100th AVE Weather: Partly cloudy 64°

Well No.: MW30

Date: 8/22/2017 Time Started: 12:30 Time Completed: 1450

Develop Date: — Develop End Time: — (24 hour break)

## INITIAL GROUNDWATER LEVEL DATA

Time of Depth Measurement: 10:29 Date of Depth Measurement: 8/22/2017

Measuring Point (MP): Top of PVC Casing / Top of Steel Protective Casing / Other: _____

Diameter of Casing: 2in Well Screen Interval: —

Total Depth of Well Below MP: 19.32 Product Thickness, if noted: —

Depth-to-Water (DTW) Below MP: 3.94

Water Column in Well: 15.38 (Total Depth of Well Below MP - DTW Below MP)

Gallons per foot: 0.16

Gallons in Well: 2.46 (Water Column in Well x Gallons per foot)

## PURGING DATA

Date Purged: 8/22/2017 Time Started: 12:35 Time Completed: 1429

Three Well Volumes: 7.38 (Gallons in Well x 3)

Gallons Purged: 2.6 Depth of Pump (~~generally 2 ft from bottom~~): Top 1'

Max. Drawdown (generally 0.3 ft): 0.3 Pump Rate: 0.2 L/MIN

Well Purged Dry: Yes ☐ No ☒ (If yes, use Well Purged Dry Log)

| Time: | Gallons: | Pump Rate (L/min): | DTW (ft BMP): | Drawdown (ft): | Temp: (°C) 3% | Sp. Cond.: (uS/cm) 3% | DO: (mg/L) | pH: (S.U.) .1 | ORP: (mV) | Turb: (NTU) 10% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1240 | 0.2 | 0.2 | — | — | 16.1 | 1382 | | 6.04 | | 54.03 |
| 1245 | 0.4 | 0.2 | 3.98 | 0.04 | 14.3 | 1385 | | 6.04 | | 36.13 |
| 1250 | 0.6 | \| | 4.16 | 0.22 | 14.3 | 1393 | | 6.14 | | 15.80 |
| 1255 | 0.8 | \| | 4.20 | 0.26 | 14.6 | 1392 | | 6.18 | | 14.94 |
| 1300 | 1.0 | 0.2 | — | — | 14.7 | 1395 | | 6.18 | | 17.20 |
| 1305 | 1.2 | 1 | 4.24 | 0.30 | 14.9 | 1392 | | 6.18 | | 12.20 |

## SAMPLING DATA

Odor: None Noted Color: Clear

Sample Designation: 17755-MW30 Time / Date: 1342 / 8/22/2017

QC Sample Designation: 17755-MW40 Time / Date: 1430 / 8/22/2017

QA Sample Designation: — Time / Date: —

Evacuation Method: Submersible Pump / Other: mini whale

Sampling Method: Submersible Pump / Other: mini whale

Water Quality Instruments Used/Manufacturer/Model Number Hann a Stick #2, turbidimeter #3

Calibration Info (Time, Ranges, etc) See 8/22/17 Field Notes

Remarks: Started clear, stayed clear, sampled clear
Slight Sheen Seen on purge water

Sampling Personnel: AJV

WELL CASING VOLUMES (GAL/FT): 1" = 0.04 2" = 0.16 4" = 0.65

ANNULAR SPACE VOLUME (GAL/FT): 4" casing and 2" well = 0.23

# LOW-FLOW WATER SAMPLING LOG

Shannon & Wilson, Inc.

Continued from previous page

Job No: 32-17755-002 Location: 151 W. 100th AVE Site: FAIRWEATHER

Well No.: MW30

Date: 8/22/17

| Time: | Gallons: | Pump Rate (L/min): | DTW (ft BMP): | Drawdown (ft): | Temp: (°C) 3% | Sp. Cond (uS/cm) 3% | DO (mg/L) | pH: (S.U.) .1 | ORP: (mV) | Turb: (NTU) 10% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1310 | 1.4 | 0.2 | 4.24 | 0.30 | 14.6 | 1392 | | 6.18 | | 11.31 |
| 1315 | 1.6 | | — | — | 15.0 | 1386 | | 6.21 | | 14.66 |
| 1320 | 1.8 | | — | — | 14.7 | 1396 | | 6.20 | | 13.85 |
| 1325 | 2.0 | | 4.22 | 0.28 | 14.6 | 1393 | | 6.19 | | 13.07 |
| 1330 | 2.2 | | — | — | 14.4 | 1396 | | 6.22 | | 19.54 |
| 1335 | 2.4 | | 4.23 | 0.29 | 14.6 | 1384 | | 6.19 | | 18.95 |
| 1340 | 2.6 | ↓ | 4.24 | 0.30 | 14.3 | 1386 | | 6.19 | | 8.53 |
| 1342 | Sample time | | | | | | | | | |
| 1430 | Duplicate Sample time | | | | | | | | | |

| | Interval (minutes) | Pump Rate (mL/min): | Drawdown (ft): | Temp: (°C) | Sp. Cond.: (uS/cm) | DO (mg/L) | pH: (S.U.) | ORP: (mV) | Turb: (NTU) |
|---|---|---|---|---|---|---|---|---|---|
| ADEC May 2010) | 3 to 5 | 100 to 150 | <0.0328 | ±3% or ±0.2 | ±3% | ±10% | ±0.1 | ±10 | ±10% |
| EPA Jan. 2010) | 5 | 50 | <0.3 | ±3% | ±3% | ±10% | ±0.1 | ±10 | ±10% or <5 NTU |

EPA guidance requires all parameters to stabilize for 3 consecutive readings before sampling. If not stable within 2 hours, collect sample.

ADEC guidance requires 3 parameters (4 if using temperature) to stabilize for 3 consecutive readings before sampling.

# LOW-FLOW WATER SAMPLING LOG

Shannon & Wilson, Inc.

Job No: 32-1-17755-002 Location: 151 W. 100th AVE Weather: Partly Sunny 60°

Well No.: MW31

Date: 8/22/2017 Time Started: 10:37 Time Completed: 1225

Develop Date: — Develop End Time: — (24 hour break)

## INITIAL GROUNDWATER LEVEL DATA

Time of Depth Measurement: 10:25 Date of Depth Measurement: 8/22/2017

Measuring Point (MP): (Top of PVC Casing) / Top of Steel Protective Casing / Other: _____

Diameter of Casing: 2in Well Screen Interval: —

Total Depth of Well Below MP: 18.62 Product Thickness, if noted: —

Depth-to-Water (DTW) Below MP: 3.84

Water Column in Well: 14.78 (Total Depth of Well Below MP - DTW Below MP)

Gallons per foot: 0.16

Gallons in Well: 2.36 (Water Column in Well x Gallons per foot)

## PURGING DATA

Date Purged: 8/22/2017 Time Started: 10:55 Time Completed: 1218

Three Well Volumes: 7.08 (Gallons in Well x 3)

Gallons Purged: 2.6 Depth of Pump (~~generally 2 ft from bottom~~): Top 1'

Max. Drawdown (generally 0.3 ft): 0.3ft Pump Rate: 0.2 L/MIN

Well Purged Dry: Yes ☐ No ☒ (If yes, use Well Purged Dry Log)

| Time: | Gallons: | Pump Rate (L/min): | DTW (ft BMP): | Drawdown (ft): | Temp: (°C) | Sp. Cond.: (uS/cm) | DO: (mg/L) | pH: (S.U.) | ORP: (mV) | Turb: (NTU) |
|---|---|---|---|---|---|---|---|---|---|---|
| 11:00 | 0.2 | 0.2 | — | — | 14.4 | 1406 | | 5.81 | | 2.43 |
| 11:05 | 0.4 | | — | — | 14.7 | 1399 | | 6.10 | | 2.12 |
| 11:10 | 0.6 | | 3.90 | 0.06 | 15.3 | 1393 | | 6.10 | | 7.46 |
| 11:15 | 0.8 | | — | — | 15.5 | 1380 | | 6.22 | | 6.49 |
| 11:20 | 1.0 | | 4.10 | 0.26 | 15.6 | 1363 | | 6.22 | | 9.40 |
| 11:25 | 1.2 | ↓ | — | — | 15.4 | 1380 | | 6.25 | | 8.34 |

## SAMPLING DATA

Odor: None Noted Color: Clear

Sample Designation: 17755-MW31 Time / Date: 1202 / 8/22/2017

QC Sample Designation: — Time / Date: —

QA Sample Designation: — Time / Date: _____

Evacuation Method: (Submersible Pump) / Other: mini whale

Sampling Method: (Submersible Pump) / Other: mini whale

Water Quality Instruments Used/Manufacturer/Model Number Hanna Stick #2, Turbidimeter #3

Calibration Info (Time, Ranges, etc) See 8/22/17 Field Notes for Calibration

Remarks: Started - Slight orange color, cleared up, sampled clear

Sampling Personnel: ADV

WELL CASING VOLUMES (GAL/FT): 1" = 0.04 (2" = 0.16) 4" = 0.65

ANNULAR SPACE VOLUME (GAL/FT): 4" casing and 2" well = 0.23

# LOW-FLOW WATER SAMPLING LOG

Shannon & Wilson, Inc.

Continued from previous page

Job No: 32-1-17755-002 Location: 151 West 100th AVE Site: FAIRWEATHER
Well No.: MW31
Date: 8/22/17

| Time: | Gallons: | Pump Rate (L/min): | DTW (ft BMP): | Drawdown (ft): | Temp: (°C) 3% | Sp. Cond (uS/cm) 3% | DO (mg/L) | pH: (S.U.) 0.1 | ORP: (mV) | Turb: (NTU) 10% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1130 | 1.4 | 0.2 | 4.13 | 0.29 | 15.4 | 1399 | | 6.25 | | 10.12 |
| 1135 | 1.6 | 0.2 | 4.14 | 0.30 | 15.3 | 1422 | | 6.26 | | 13.96 |
| 1140 | 1.8 | 0.2 | - | - | 15.4 | 1436 | | 6.27 | | 13.70 |
| 1145 | 2.0 | ↓ | 4.14 | 0.30 | 15.7 | 1432 | | 6.27 | | 6.37 |
| 1150 | 2.2 | | - | - | 14.3 | M12 | | 6.19 | | 5.47 |
| 1155 | 2.4 | ↓ | - | - | 14.1 | 1422 | | 6.18 | | 5.90 |
| 1200 | 2.6 | 0.2 | - | - | 13.9 | 1423 | | 6.18 | | 5.14 |
| 1202 | Sample time | | | | | | | | | |

| | Interval (minutes) | Pump Rate (mL/min): | Drawdown (ft): | Temp: (°C) | Sp. Cond.: (uS/cm) | DO (mg/L) | pH: (S.U.) | ORP: (mV) | Turb: (NTU) |
|---|---|---|---|---|---|---|---|---|---|
| ADEC May 2010) | 3 to 5 | 100 to 150 | <0.0328 | ±3% or ±0.2 | ±3% | ±10% | ±0.1 | ±10 | ±10% |
| EPA Jan. 2010) | 5 | 50 | <0.3 | ±3% | ±3% | ±10% | ±0.1 | ±10 | ±10% or <5 NTU |

EPA guidance requires all parameters to stabilize for 3 consecutive readings before sampling. If not stable within 2 hours, collect sample.
ADEC guidance requires 3 parameters (4 if using temperature) to stabilize for 3 consecutive readings before sampling.

# LOW-FLOW WATER SAMPLING LOG

Shannon & Wilson, Inc.

Job No: 32-1-17755-002 Location: 151 W. 100th AVE Weather: 68° Partly Cloudy

Well No.: MW32

Date: 8/22/2017 Time Started: 14:55 Time Completed: 1625

Develop Date: — Develop End Time: — (24 hour break)

## INITIAL GROUNDWATER LEVEL DATA

Time of Depth Measurement: 10:34 Date of Depth Measurement: 8/22/2017

Measuring Point (MP): ~~Top of PVC Casing~~ / Top of Steel Protective Casing / Other: _____

Diameter of Casing: 2 in Well Screen Interval: —

Total Depth of Well Below MP: 19.10 Product Thickness, if noted: —

Depth-to-Water (DTW) Below MP: 3.32

Water Column in Well: 15.78 (Total Depth of Well Below MP - DTW Below MP)

Gallons per foot: 0.16

Gallons in Well: 2.52 (Water Column in Well x Gallons per foot)

DTW 3.43

## PURGING DATA

Date Purged: 8/22/2017 Time Started: 15:08 Time Completed: 1617

Three Well Volumes: 7.56 (Gallons in Well x 3)

Gallons Purged: 2.6 Depth of Pump (~~generally 2 ft from bottom~~): Top 1'

Max. Drawdown (generally 0.3 ft): 0.3ft Pump Rate: 0.2 L/MIN

Well Purged Dry: Yes ☐ No ☑ (If yes, use Well Purged Dry Log)

| Time: | Gallons: | Pump Rate (L/min): | DTW (ft BMP): | Drawdown (ft): | Temp: (°C) 3% | Sp. Cond.: (uS/cm) 3% | DO: (mg/L) .1 | pH: (S.U.) | ORP: (mV) | Turb: (NTU) 10% |
|---|---|---|---|---|---|---|---|---|---|---|
| 15:10 | 0.2 | 0.2 | — | — | 14.4 | 327 | | 6.39 | | 49.36 |
| 15:15 | 0.4 | | 3.56 | 0.13 | 14.5 | 329 | | 6.31 | | 32.13 |
| 15:20 | 0.6 | | 3.60 | 0.28 | 14.8 | 392 | | 6.21 | | 21.38 |
| 15:25 | 0.8 | | — | — | 14.8 | 469 | | 6.17 | | 20.95 |
| 15:30 | 1.0 | | 3.58 | 0.26 | 14.1 | 559 | | 6.35 | | 5.02 |
| 15:35 | 1.2 | ↓ | 3.62 | 0.30 | 14.4 | 581 | | 6.57 | | 3.13 |

## SAMPLING DATA

Odor: None Noted Color: Clear

Sample Designation: 17755-MW32 Time / Date: 1612 / 8/22/17

QC Sample Designation: — Time / Date: —

QA Sample Designation: — Time / Date: —

Evacuation Method: Submersible Pump / Other: mini whale

Sampling Method: Submersible Pump / Other: mini whale

Water Quality Instruments Used/Manufacturer/Model Number Hanna stick #2, Turbidimeter #3

Calibration Info (Time, Ranges, etc) See 8/22/17 Field Notes

Remarks: Started Clear

Sampling Personnel: ADV

WELL CASING VOLUMES (GAL/FT): 1" = 0.04 2" = 0.16 4" = 0.65

ANNULAR SPACE VOLUME (GAL/FT): 4" casing and 2" well = 0.23

# LOW-FLOW WATER SAMPLING LOG

Shannon & Wilson, Inc.

Continued from previous page

Job No: 17755-002 Location: 151 W 100th AVE Site: FAIRWEATHER

Well No.: MW-32

Date: 8/22/17

| Time: | Gallons: | Pump Rate (L/min): | DTW (ft BMP): | Drawdown (ft): | Temp: (°C) 3% | Sp. Cond (uS/cm) 3% | DO (mg/L) | pH: (S.U.) .1 | ORP: (mV) | Turb: (NTU) 10% |
|---|---|---|---|---|---|---|---|---|---|---|
| 15:40 | 1.4 | 0.2 | 3.62 | 0.30 | 14.2 | 589 | | 6.66 | | 4.59 |
| 15:45 | 1.6 | | - | - | 13.9 | 598 | | 6.71 | | 11.89 |
| 15:50 | 1.8 | | 3.60 | 0.28 | 13.7 | 588 | | 6.73 | | 16.09 |
| 15:55 | 2.0 | | - | - | 13.7 | 598 | | 6.73 | | 3.17 |
| 16:00 | 2.2 | | - | - | 13.7 | 601 | | 6.73 | | 2.28 |
| 1605 | 2.4 | | 3.61 | 0.29 | 14.4 | 602 | | 6.76 | | 1.13 |
| 1610 | 2.6 | ↓ | - | - | 14.1 | 607 | | 6.76 | | 1.42 |
| 1612 | sample time | | | | | | | | | |

| | Interval (minutes) | Pump Rate (mL/min): | Drawdown (ft): | Temp: (°C) | Sp. Cond.: (uS/cm) | DO (mg/L) | pH: (S.U.) | ORP: (mV) | Turb: (NTU) |
|---|---|---|---|---|---|---|---|---|---|
| ADEC May 2010) | 3 to 5 | 100 to 150 | <0.0328 | ±3% or ±0.2 | ±3% | ±10% | ±0.1 | ±10 | ±10% |
| EPA Jan. 2010) | 5 | 50 | <0.3 | ±3% | ±3% | ±10% | ±0.1 | ±10 | ±10% or <5 NTU |

EPA guidance requires all parameters to stabilize for 3 consecutive readings before sampling. If not stable within 2 hours, collect sample.

ADEC guidance requires 3 parameters (4 if using temperature) to stabilize for 3 consecutive readings before sampling.

# LOW-FLOW WATER SAMPLING LOG

Shannon & Wilson, Inc.

Job No: 32-1-17755-002 Location: 151 W. 100th AVE Weather: 30° overcast

Well No.: MW30

Date: 11/1/2017 Time Started: 1335 Time Completed: 15:05

Develop Date: — Develop End Time: — (24 hour break)

## INITIAL GROUNDWATER LEVEL DATA

Time of Depth Measurement: 11:28 Date of Depth Measurement: 11/1/2017

Measuring Point (MP): (Top of PVC Casing) / Top of Steel Protective Casing / Other: _____

Diameter of Casing: 2 inch Well Screen Interval: —

Total Depth of Well Below MP: 19.32 Product Thickness, if noted: —

Depth-to-Water (DTW) Below MP: 2.48

Water Column in Well: 16.84 (Total Depth of Well Below MP - DTW Below MP)

Gallons per foot: ~~2.63~~ 0.16 ADV

Gallons in Well: 2.69 (Water Column in Well x Gallons per foot)

## PURGING DATA

Date Purged: 11/1/2017 Time Started: 1340 Time Completed: 14:50

Three Well Volumes: 8.08 (Gallons in Well x 3)

Gallons Purged: 3.6 Depth of Pump (~~generally 2 ft from bottom~~): Top 1' ~ 3.8

Max. Drawdown (generally 0.3 ft): 0.30 Pump Rate: 0.4 L/MIN

Well Purged Dry: Yes ☐ No ☒ (If yes, use Well Purged Dry Log)

| Time: | Gallons: | Pump Rate (L/min): | DTW (ft BMP): | Drawdown (ft): | Temp: (°C) | Sp. Cond.: (uS/cm) | DO: (mg/L) | pH: (S.U.) | ORP: (mV) | Turb: (NTU) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1345 | 0.4 | 0.4 | 2.72 | 0.24 | 7.3 | 1741 | | 6.86 | | 23.83 |
| 1350 | 0.8 | — | — | — | 7.2 | 1734 | | 6.67 | | 33.76 |
| 1355 | 1.2 | — | — | — | 7.1 | 1739 | | 6.64 | | 32.78 |
| 1400 | 1.6 | 0.4 | 2.74 | 0.26 | 7.1 | 1738 | | 6.63 | | 20.93 |
| 1405 | 2.0 | — | — | — | 7.2 | 1745 | | 6.56 | | 24.37 |
| 1410 | 2.4 | 0.4 | 2.76 | 0.28 | 7.5 | 1737 | ↓ | 6.57 | ↓ | 19.14 |

## SAMPLING DATA

Odor: None Noted Color: Clear

Sample Designation: 17755-MW30 Time / Date: 1430 / 11/1/2017

QC Sample Designation: 17755-MW40 Time / Date: 1530 / 11/1/2017

QA Sample Designation: — Time / Date: —

Evacuation Method: (Submersible Pump) Other: mini whale

Sampling Method: (Submersible Pump) Other: mini whale

Water Quality Instruments Used/Manufacturer/Model Number Hanna stick #2, Turbidimeter #2, WLI #8

Calibration Info (Time, Ranges, etc) See Field Notes

Remarks: Started clear, Stayed clear, Sampled clear

Sampling Personnel: ADV

WELL CASING VOLUMES (GAL/FT): 1" = 0.04 (2" = 0.16) 4" = 0.65

ANNULAR SPACE VOLUME (GAL/FT): 4" casing and 2" well = 0.23

# LOW-FLOW WATER SAMPLING LOG

Shannon & Wilson, Inc.

Continued from previous page

Job No: 32-1-17755-002 Location: 151 W. 100th AVE Site: FAIRWEATHER

Well No.: MW30

Date: 11/1/2017

| Time: | Gallons: | Pump Rate (L/min): | DTW (ft BMP): | Drawdown (ft): | Temp: (°C) | Sp. Cond (uS/cm) | DO (mg/L) | pH: (S.U.) | ORP: (mV) | Turb: (NTU) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1415 | 2.8 | 0.4 | 2.78 | 0.30 | 7.7 | 1740 | | 6.57 | | 19.01 |
| 1420 | 3.2 | – | – | – | 7.7 | 1740 | | 6.56 | | 18.92 |
| 1425 | 3.6 | – | – | – | 7.7 | 1740 | | 6.56 | | 18.56 |
| | All Parameters Stabilized + 1 Well Volume purged | | | | | | | | | |
| 1430 | Sample time | | | | | | | | | |
| 1530 | Dup Sample time | | | | | | | | | |

| | Interval (minutes) | Pump Rate (mL/min): | Drawdown (ft): | Temp: (°C) | Sp. Cond.: (uS/cm) | DO (mg/L) | pH: (S.U.) | ORP: (mV) | Turb: (NTU) |
|---|---|---|---|---|---|---|---|---|---|
| ADEC 1ay 2010) | 3 to 5 | 100 to 150 | <0.0328 | ±3% or ±0.2 | ±3% | ±10% | ±0.1 | ±10 | ±10% |
| EPA an. 2010) | 5 | 50 | <0.3 | ±3% | ±3% | ±10% | ±0.1 | ±10 | ±10% or <5 NTU |

EPA guidance requires all parameters to stabilize for 3 consecutive readings before sampling. If not stable within 2 hours, collect sample.

ADEC guidance requires 3 parameters (4 if using temperature) to stabilize for 3 consecutive readings before sampling.

# LOW-FLOW WATER SAMPLING LOG

Shannon & Wilson, Inc.

Job No: 32-1-17755-002 Location: 151 W. 100th AVE Weather: 30° overcast
Well No.: MW31
Date: 11/1/2017 Time Started: 11:38 Time Completed: 1330
Develop Date: — Develop End Time: — (24 hour break)

## INITIAL GROUNDWATER LEVEL DATA

Time of Depth Measurement: 11:20 Date of Depth Measurement: 11/1/2017
Measuring Point (MP): (Top of PVC Casing) / Top of Steel Protective Casing / Other: Top of PVC Casing
Diameter of Casing: 2 inch Well Screen Interval: —
Total Depth of Well Below MP: 18.62 Product Thickness, if noted: —
Depth-to-Water (DTW) Below MP: 2.53
Water Column in Well: 16.09 (Total Depth of Well Below MP - DTW Below MP)
Gallons per foot: 0.16
Gallons in Well: 2.6 (Water Column in Well x Gallons per foot)

## PURGING DATA

Date Purged: 11/1/2017 Time Started: 11:55 Time Completed: 1315
Three Well Volumes: 7.7 (Gallons in Well x 3)
Gallons Purged: 2.6 Depth of Pump (~~generally 2 ft from bottom~~): TOP 1' ~3.5
Max. Drawdown (generally 0.3 ft): 0.27 Pump Rate: 0.2L/MIN
Well Purged Dry: Yes ☐ No ☑ (If yes, use Well Purged Dry Log)

| Time: | Gallons: | Pump Rate (L/min): | DTW (ft BMP): | Drawdown (ft): | Temp: (°C) | Sp. Cond.: (uS/cm) | DO: (mg/L) | pH: (S.U.) | ORP: (mV) | Turb: (NTU) |
|---|---|---|---|---|---|---|---|---|---|---|
| 12:00 | 0.2 | 0.2 | 2.75 | 0.22 | 7.1 | 1038 | | 6.25 | | 6.91 |
| 12:05 | 0.4 | — | — | — | 7.2 | 1041 | | 6.27 | | 6.27 |
| 12:10 | 0.6 | 0.2 | — | — | 7.1 | 1049 | | 6.45 | | 6.01 |
| 12:15 | 0.8 | — | 2.80 | 0.27 | 7.0 | 1060 | | 6.46 | | 5.88 |
| 12:20 | 1.0 | — | — | — | 7.1 | 1061 | | 6.49 | | 5.77 |
| 12:25 | 1.2 | 0.2 | — | — | 7.0 | 1066 | ↓ | 6.49 | ↓ | 5.61 |

## SAMPLING DATA

Odor: None Noted Color: Clear
Sample Designation: 17755-MW31 Time / Date: 13:02 / 11/1/2017
QC Sample Designation: — Time / Date: —
QA Sample Designation: — Time / Date: —

Evacuation Method: (Submersible Pump) / Other: mini whale
Sampling Method: (Submersible Pump) / Other: mini whale
Water Quality Instruments Used/Manufacturer/Model Number Hanna stick #2, Turbidimeter #2, WLI #8
Calibration Info (Time, Ranges, etc) See Field Notes
Remarks: Started clear, stayed clear, sampled clear

Sampling Personnel: ADV

WELL CASING VOLUMES (GAL/FT): 1" = 0.04 (2" = 0.16) 4" = 0.65
ANNULAR SPACE VOLUME (GAL/FT): 4" casing and 2" well = 0.23

# LOW-FLOW WATER SAMPLING LOG

Shannon & Wilson, Inc.

Continued from previous page

Job No: 32-1-17755-002 Location: 151 W. 100th AVE Site: FAIRWEATHER
Well No.: MW31
Date: 11/1/2017

| Time: | Gallons: | Pump Rate (L/min): | DTW (ft BMP): | Drawdown (ft): | Temp: (°C) | Sp. Cond (uS/cm) | DO (mg/L) | pH: (S.U.) | ORP: (mV) | Turb: (NTU) |
|---|---|---|---|---|---|---|---|---|---|---|
| 12:30 | 1.4 | 0.2 | 2.82 | 0.29 | 6.6 | 1082 | | 6.54 | | 4.81 |
| 12:35 | 1.6 | - | - | - | 6.6 | 1083 | | 6.54 | | 4.28 |
| 12:40 | 1.8 | - | - | - | 6.6 | 1082 | | 6.55 | | 4.24 |
| 12:45 | 2.0 | 0.2 | 2.82 | 0.29 | 6.5 | 1081 | | 6.55 | | 5.79 |
| 12:50 | 2.2 | - | - | - | 6.5 | 1084 | | 6.56 | | 5.50 |
| 12:55 | 2.4 | - | - | - | 6.5 | 1086 | | 6.56 | | 5.18 |
| 13:00 | 2.6 | - | - | - | 6.5 | 1087 | | 6.57 | | 4.17 |
| | All Parameters stabilized + 1 well Volume purged | | | | | | | | | |
| 13:02 | Sample time | | | | | | | | | |

| | Interval (minutes) | Pump Rate (mL/min): | Drawdown (ft): | Temp: (°C) | Sp. Cond.: (uS/cm) | DO (mg/L) | pH: (S.U.) | ORP: (mV) | Turb: (NTU) |
|---|---|---|---|---|---|---|---|---|---|
| ADEC 1ay 2010) | 3 to 5 | 100 to 150 | <0.0328 | ±3% or ±0.2 | ±3% | ±10% | ±0.1 | ±10 | ±10% |
| EPA an. 2010) | 5 | 50 | <0.3 | ±3% | ±3% | ±10% | ±0.1 | ±10 | ±10% or <5 NTU |

EPA guidance requires all parameters to stabilize for 3 consecutive readings before sampling. If not stable within 2 hours, collect sample.
ADEC guidance requires 3 parameters (4 if using temperature) to stabilize for 3 consecutive readings before sampling.

# LOW-FLOW WATER SAMPLING LOG

Shannon & Wilson, Inc.

Job No: 32-1-17755-002 Location: 151 W. 100th AVE Weather: 30° overcast
Well No.: MW32
Date: 11/1/2017 Time Started: 15:10 Time Completed: 16:15
Develop Date: — Develop End Time: — (24 hour break)

## INITIAL GROUNDWATER LEVEL DATA

Time of Depth Measurement: 11:34 Date of Depth Measurement: 11/1/2017
Measuring Point (MP): (Top of PVC Casing) / Top of Steel Protective Casing / Other: _____
Diameter of Casing: 2 inch Well Screen Interval: —
Total Depth of Well Below MP: 19.10 Product Thickness, if noted: —
Depth-to-Water (DTW) Below MP: 2.96
Water Column in Well: 16.14 (Total Depth of Well Below MP - DTW Below MP)
Gallons per foot: 0.16
Gallons in Well: 2.60 (Water Column in Well x Gallons per foot)

## PURGING DATA

Date Purged: 11/1/2017 Time Started: 15:15 Time Completed: 16:08
Three Well Volumes: 7.75 (Gallons in Well x 3)
Gallons Purged: 3.2 Depth of Pump (~~generally 2 ft from bottom~~): Top 1' ~ 3.9
Max. Drawdown (generally 0.3 ft): 0.28 Pump Rate: 0.4 L/MIN
Well Purged Dry: Yes ☐ No ☒ (If yes, use Well Purged Dry Log)

| Time: | Gallons: | Pump Rate (L/min): | DTW (ft BMP): | Drawdown (ft): | Temp: (°C) | Sp. Cond.: (uS/cm) | DO: (mg/L) | pH: (S.U.) | ORP: (mV) | Turb: (NTU) |
|---|---|---|---|---|---|---|---|---|---|---|
| 15:20 | 0.4 | 0.4 | 3.20 | 0.24 | 8.1 | 709 | | 7.39 | | 12.51 |
| 15:25 | 0.8 | — | — | — | 8.2 | 702 | | 7.38 | | 5.02 |
| 15:30 | 1.2 | 0.4 | — | — | 8.2 | 702 | | 7.16 | | 4.22 |
| 15:35 | 1.6 | — | — | — | 8.3 | 685 | | 7.01 | | 4.24 |
| 15:40 | 2.0 | — | 3.22 | 0.26 | 8.3 | 685 | | 7.02 | | 0.76 |
| 15:45 | 2.4 | 0.4 | — | — | 8.3 | 683 | | 7.01 | | |

## SAMPLING DATA

Odor: None Noted Color: Clear
Sample Designation: 17755-MW32 Time / Date: 15:58 / 11/1/2017
QC Sample Designation: — Time / Date: —
QA Sample Designation: — Time / Date: —
Evacuation Method: (Submersible Pump) / Other: mini whale
Sampling Method: (Submersible Pump) / Other: mini whale
Water Quality Instruments Used/Manufacturer/Model Number Hanna stick #2, Turbidimeter #2, WLI #8
Calibration Info (Time, Ranges, etc) See field notes
Remarks: Started clear, stayed clear, sampled clear
Sampling Personnel: ADV

WELL CASING VOLUMES (GAL/FT): 1" = 0.04 (2" = 0.16) 4" = 0.65
ANNULAR SPACE VOLUME (GAL/FT): 4" casing and 2" well = 0.23

# LOW-FLOW WATER SAMPLING LOG

Shannon & Wilson, Inc.

Continued from previous page

Job No: 32-1-17755-002 Location: 151W. 100th AVE Site: FAIRWEATHER
Well No.: MW32
Date: 11/1/2017

| Time: | Gallons: | Pump Rate (L/min): | DTW (ft BMP): | Drawdown (ft): | Temp: (°C) | Sp. Cond (uS/cm) | DO (mg/L) | pH: (S.U.) | ORP: (mV) | Turb: (NTU) |
|---|---|---|---|---|---|---|---|---|---|---|
| 15:50 | 2.8 | 0.4 | 3.24 | 0.28 | 8.3 | 682 | | 6.97 | | 2.29 |
| 15:55 | 3.2 | - | — | — | 8.3 | 682 | ↓ | 6.96 | ↓ | 1.60 |
| | All Parameters Stabilized + 1 Well Volume purged | | | | | | | | | |
| 1558 | Sample time | | | | | | | | | |

| | Interval (minutes) | Pump Rate (mL/min): | Drawdown (ft): | Temp: (°C) | Sp. Cond.: (uS/cm) | DO (mg/L) | pH: (S.U.) | ORP: (mV) | Turb: (NTU) |
|---|---|---|---|---|---|---|---|---|---|
| ADEC (May 2010) | 3 to 5 | 100 to 150 | <0.0328 | ±3% or ±0.2 | ±3% | ±10% | ±0.1 | ±10 | ±10% |
| EPA (Jan. 2010) | 5 | 50 | <0.3 | ±3% | ±3% | ±10% | ±0.1 | ±10 | ±10% or <5 NTU |

EPA guidance requires all parameters to stabilize for 3 consecutive readings before sampling. If not stable within 2 hours, collect sample.
ADEC guidance requires 3 parameters (4 if using temperature) to stabilize for 3 consecutive readings before sampling.

# LOW-FLOW WATER SAMPLING LOG

Shannon & Wilson, Inc.

Job No: 32-1-17755-002 Location: 151 W 100th Ave Weather: 34°F, 6 mph winds

Well No.: MW30

Date: 2/22/2018 Time Started: 14:00 Time Completed: 15:30

Develop Date: — Develop End Time: — (24 hour break)

## INITIAL GROUNDWATER LEVEL DATA

Time of Depth Measurement: 10:30 Date of Depth Measurement: 2/22/2018

Measuring Point (MP): Top of PVC Casing / Top of Steel Protective Casing / Other: _____

Diameter of Casing: 2 in. Well Screen Interval: 4.35 - 19.05 ft.

Total Depth of Well Below MP: 19.31 Product Thickness, if noted: _____

Depth-to-Water (DTW) Below MP: 8.58

Water Column in Well: 10.73 (Total Depth of Well Below MP - DTW Below MP)

Gallons per foot: 0.16

Gallons in Well: 1.72 (Water Column in Well x Gallons per foot)

## PURGING DATA

Date Purged: 2/22/2018 Time Started: 14:10 Time Completed: 14:43

Three Well Volumes: 5.16 (Gallons in Well x 3)

Gallons Purged: 2.2 Depth of Pump (generally 2 ft from bottom): 9.58 ft.

Max. Drawdown (generally 0.3 ft): 0.26 Pump Rate: 0.3 L/min

Well Purged Dry: Yes ☐ No ☒ (If yes, use Well Purged Dry Log)

| Time: | Gallons: | Pump Rate (L/min): | DTW (ft BMP): | Drawdown (ft): | Temp: (°C) | Sp. Cond.: (uS/cm) | DO: (mg/L) | pH: (S.U.) | ORP: (mV) | Turb: (NTU) |
|---|---|---|---|---|---|---|---|---|---|---|
| 14:13 | 0.2 | 0.3 | 8.58 | 0.0 | 1.3 | 1400 | | 7.96 | | 21.88 |
| 14:16 | | | 8.63 | 0.05 | 1.8 | 1388 | | 7.53 | | 22.41 |
| 14:19 | | | 8.68 | 0.10 | 2.4 | 1381 | | 7.28 | | 23.06 |
| 14:22 | | | 8.72 | 0.14 | 2.5 | 1377 | | 7.21 | | 20.09 |
| 14:25 | | | 8.73 | 0.15 | 2.6 | 1377 | | 7.28 | | 21.93 |
| 14:28 | ↓ | ↓ | 8.76 | 0.18 | 2.6 | 1379 | | 7.01 | | 21.66 |

## SAMPLING DATA

Odor: none Color: opaque to clearish yellow

Sample Designation: 17755-MW30 Time / Date: 14:45 2/22/2018

QC Sample Designation: 17755-MW90 Time / Date: 15:00 2/22/2018

QA Sample Designation: — Time / Date: —

Evacuation Method: Submersible Pump / Other: _____

Sampling Method: Submersible Pump / Other: mini-whale

Water Quality Instruments Used/Manufacturer/Model Number Hanna #1, turbidimeter #2, OTW #8

Calibration Info (Time, Ranges, etc) See JJK 2/22/18 field notes

Remarks: Flushmount. >1 well volume purged. Top of water column is within screen interval.

Sampling Personnel: JJK

WELL CASING VOLUMES (GAL/FT): 1" = 0.04 2" = 0.16 4" = 0.65

ANNULAR SPACE VOLUME (GAL/FT): 4" casing and 2" well = 0.23

# LOW-FLOW WATER SAMPLING LOG

Shannon & Wilson, Inc.

Continued from previous page

Job No: 32-1-17755-002 Location: 151 W. 100th Ave Site: _____

Well No.: MW30

Date: 2/22/2018

| Time: | Gallons: | Pump Rate (L/min): | DTW (ft BMP): | Drawdown (ft): | Temp: (°C) | Sp. Cond (uS/cm) | DO (mg/L) | pH: (S.U.) | ORP: (mV) | Turb: (NTU) |
|---|---|---|---|---|---|---|---|---|---|---|
| 14:31 | 0.2 | 0.3 | 8.80 | 0.22 | 2.6 | 1380 | | 7.00 | | 20.33 |
| 14:34 | 0.2 | 0.3 | 8.82 | 0.24 | 2.6 | 1382 | | 6.95 | | 17.35 |
| 14:37 | 0.2 | 0.3 | 8.82 | 0.24 | 2.6 | 1381 | | 6.97 | | 9.81 |
| 14:40 | 0.2 | 0.3 | 8.83 | 0.25 | 2.6 | 1380 | | 6.97 | | 9.50 |
| 14:43 | 0.2 | 0.3 | 8.85 | 0.26 | 2.6 | 1382 | | 6.95 | | 9.09 |
| 14:45 Sample time - MW30 | | | | | | | | | | |
| 15:00 Duplicate time - MW40 | | | | | | | | | | |

| | Interval (minutes) | Pump Rate (mL/min): | Drawdown (ft): | Temp: (°C) | Sp. Cond.: (uS/cm) | DO (mg/L) | pH: (S.U.) | ORP: (mV) | Turb: (NTU) |
|---|---|---|---|---|---|---|---|---|---|
| ADEC May 2010) | 3 to 5 | 100 to 150 | <0.0328 | ±3% or ±0.2 | ±3% | ±10% | ±0.1 | ±10 | ±10% |
| EPA Jan. 2010) | 5 | 50 | <0.3 | ±3% | ±3% | ±10% | ±0.1 | ±10 | ±10% or <5 NTU |

EPA guidance requires all parameters to stabilize for 3 consecutive readings before sampling. If not stable within 2 hours, collect sample.

ADEC guidance requires 3 parameters (4 if using temperature) to stabilize for 3 consecutive readings before sampling.

# LOW-FLOW WATER SAMPLING LOG

Shannon & Wilson, Inc.

Job No: 32-1-17755-002 Location: 151 W. 100th ave Weather: 34°F, 6 mph winds

Well No.: MW31

Date: 2/22/2018 Time Started: 12:30 Time Completed: 13:45

Develop Date: — Develop End Time: — (24 hour break)

## INITIAL GROUNDWATER LEVEL DATA

Time of Depth Measurement: 9:58 Date of Depth Measurement: 2/22/2018

Measuring Point (MP): (Top of PVC Casing) / Top of Steel Protective Casing / Other:

Diameter of Casing: 2 inch Well Screen Interval: 3.61 - 18.31 ft.

Total Depth of Well Below MP: ~~18.65~~ 18.65 Product Thickness, if noted: —

Depth-to-Water (DTW) Below MP: ~~9.25~~ 9.25

Water Column in Well: 9.4 (Total Depth of Well Below MP - DTW Below MP)

Gallons per foot: 0.16

Gallons in Well: 1.5 (Water Column in Well x Gallons per foot)

## PURGING DATA

Date Purged: 2/22/2018 Time Started: 12:35 Time Completed: 13:02

Three Well Volumes: 4.5 (Gallons in Well x 3)

2.1 well volume — Gallons Purged: 2.0 Depth of Pump (generally 2 ft from bottom): 10.25 Feet

Max. Drawdown (generally 0.3 ft): 0.28 Pump Rate: 0.3 L/min

Well Purged Dry: Yes ☐ No ☒ (If yes, use Well Purged Dry Log)

| Time: | Gallons: | Pump Rate (L/min): | DTW (ft BMP): | Drawdown (ft): | Temp: (°C) 3%, 0.2 | Sp. Cond.: (uS/cm) 3% | DO: (mg/L) | pH: (S.U.) 0.1 | ORP: (mV) | Turb: (NTU) 10%, 0.5, <10 |
|---|---|---|---|---|---|---|---|---|---|---|
| 12:35 | 0.2 | 0.3 | ~~9.25~~ | ~~0.0~~ | 0.9 | 1231 | | 7.25 | | 56.92 |
| 12:38 | 0.2 | 0.3 | 9.29 | 0.04 | 1.3 | 1224 | | 6.97 | | 50.46 |
| 12:41 | 0.2 | 0.3 | 9.34 | 0.09 | 1.4 | 1204 | | 6.79 | | 61.21 |
| 12:44 | 0.2 | 0.3 | 9.38 | 0.13 | 1.6 | 1206 | | 6.78 | | 73.58 |
| 12:47 | 0.2 | 0.3 | 9.41 | 0.16 | 1.6 | 1180 | | 6.76 | | 54.83 |
| 12:50 | 0.2 | 0.3 | 9.45 | 0.20 | 1.5 | 1183 | | 6.76 | | 52.84 |

## SAMPLING DATA

Odor: mild sulfur odor Color: clear / slight yellow

Sample Designation: 17755-MW31 Time / Date: 13:03 2/22/2018

QC Sample Designation: 17755-MW31 Time / Date: —

QA Sample Designation: — Time / Date: —

Evacuation Method: (Submersible Pump) / Other: mini-whale

Sampling Method: (Submersible Pump) / Other: mini-whale

Water Quality Instruments Used/Manufacturer/Model Number Hanna #1, turbidimeter #2, DTW #8

Calibration Info (Time, Ranges, etc) See JJK 2/22/18 field notes

Remarks: Flushmount. (2 well volume.) Water column needs to be w/in screened interval during sampling.

Sampling Personnel: JJK

WELL CASING VOLUMES (GAL/FT): 1" = 0.04 (2" = 0.16) 4" = 0.65

ANNULAR SPACE VOLUME (GAL/FT): 4" casing and 2" well = 0.23

# LOW-FLOW WATER SAMPLING LOG

Shannon & Wilson, Inc.

Continued from previous page

Job No: 32-1-17755-002 Location: 151 W. 100th Ave Site: —

Well No.: MW31

Date: 2/22/18

| Time: | Gallons: | Pump Rate (L/min): | DTW (ft BMP): | Drawdown (ft): | Temp: (°C) | Sp. Cond (uS/cm) | DO (mg/L) | pH: (S.U.) | ORP: (mV) | Turb: (NTU) |
|---|---|---|---|---|---|---|---|---|---|---|
| 12:53 | 0.2 | 0.3 | 9.48 | 0.23 | 1.8 | 1220 | | 6.71 | | 30.61 |
| 12:56 | 0.2 | 0.3 | 9.49 | 0.24 | 1.8 | 1218 | | 6.79 | | 26.48 |
| 12:59 | 0.2 | 0.3 | 9.51 | 0.26 | 1.7 | 1215 | | 6.82 | | 25.82 |
| 13:02 | 0.2 | 0.3 | 9.53 | 0.28 | 1.7 | 1210 | | 6.80 | | 24.98 |
| SAMPLE TIME 13:03 | | | | | | | | | | |

| | Interval (minutes) | Pump Rate (mL/min): | Drawdown (ft): | Temp: (°C) | Sp. Cond.: (uS/cm) | DO (mg/L) | pH: (S.U.) | ORP: (mV) | Turb: (NTU) |
|---|---|---|---|---|---|---|---|---|---|
| ADEC May 2010) | 3 to 5 | 100 to 150 | <0.0328 | ±3% or ±0.2 | ±3% | ±10% | ±0.1 | ±10 | ±10% |
| EPA Jan. 2010) | 5 | 50 | <0.3 | ±3% | ±3% | ±10% | ±0.1 | ±10 | ±10% or <5 NTU |

EPA guidance requires all parameters to stabilize for 3 consecutive readings before sampling. If not stable within 2 hours, collect sample.

ADEC guidance requires 3 parameters (4 if using temperature) to stabilize for 3 consecutive readings before sampling.

# LOW-FLOW WATER SAMPLING LOG

Shannon & Wilson, Inc.

Job No: 32-1-17755-002 Location: 151 W. 100th Ave Weather: 34°F, 6 mph winds
Well No.: MW32
Date: 2/22/2018 Time Started: 9:30 Time Completed: 12:00
Develop Date: — Develop End Time: — (24 hour break)

## INITIAL GROUNDWATER LEVEL DATA

Time of Depth Measurement: 9:30 Date of Depth Measurement: 2/22/2018
Measuring Point (MP): ~~Top of PVC Casing~~ / Top of Steel Protective Casing / Other:
Diameter of Casing: 2 inch Well Screen Interval: 4.15-18.85
Total Depth of Well Below MP: 19.20 Product Thickness, if noted: —
Depth-to-Water (DTW) Below MP: 9.71
Water Column in Well: 9.49 (Total Depth of Well Below MP - DTW Below MP)
Gallons per foot: 0.16
Gallons in Well: 1.52 (Water Column in Well x Gallons per foot)

## PURGING DATA

Date Purged: 2/22/2018 Time Started: 11:10 Time Completed: 11:42
Three Well Volumes: 4.56 (Gallons in Well x 3)
2.1 well volume — Gallons Purged: 2.0 Depth of Pump (generally 2 ft from bottom): 10.71 feet
— Max. Drawdown (generally 0.3 ft): 0.29 Pump Rate: 0.3 L/min
Well Purged Dry: Yes ☐ No ☑ (If yes, use Well Purged Dry Log)

| Time: | Gallons: | Pump Rate (L/min): | DTW (ft BMP): | Drawdown (ft): | Temp: (°C) 3%, 0.2 | Sp. Cond.: (uS/cm) 3% | DO: (mg/L) | pH: (S.U.) 0.1 | ORP: (mV) | Turb: (NTU) 10% or <10 |
|---|---|---|---|---|---|---|---|---|---|---|
| 11:15 | 0.2 | 0.3 | 9.97 | 0.26 | 0.8 | 742 | | 6.83 | | 57.40 |
| 11:18 | 0.2 | 0.3 | 9.98 | 0.27 | 1.1 | 745 | | 6.95 | | 46.95 |
| 11:21 | 0.2 | 0.3 | 10.0 | 0.29 | 1.0 | 741 | | 7.10 | | 31.22 |
| 11:24 | 0.2 | 0.3 | 10.0 | 0.29 | 1.1 | 730 | | 7.08 | | 25.21 |
| 11:27 | 0.2 | 0.3 | 10.0 | 0.29 | 1.2 | 727 | | 7.43 | | 20.14 |
| 11:30 | 0.2 | 0.3 | 10.0 | 0.29 | 1.2 | 725 | | 7.48 | | 18.17 |
| 11:33 | 0.2 | 0.3 | 10.0 | 0.29 | 1.3 | 725 | | 7.49 | | 18.05 |

## SAMPLING DATA

Odor: None Color: Opaque
Sample Designation: 17755-002 Time / Date: 11:45 2/22/208
QC Sample Designation: — Time / Date: —
QA Sample Designation: — Time / Date: —

Evacuation Method: Submersible Pump / Other: mini-whale
Sampling Method: Submersible Pump / Other: mini-whale
Water Quality Instruments Used/Manufacturer/Model Number Hanna #1, turbidimeter #2, DTW #8
Calibration Info (Time, Ranges, etc) See JJK 2/22/18 field notes.
Remarks: Flushmount. 1 well volume. Water column needs to be w/in screened interval during sampling.
Sampling Personnel: JJK

WELL CASING VOLUMES (GAL/FT): 1" = 0.04 2" = 0.16 4" = 0.65
ANNULAR SPACE VOLUME (GAL/FT): 4" casing and 2" well = 0.23

# LOW-FLOW WATER SAMPLING LOG

Shannon & Wilson, Inc.

Continued from previous page

Job No: 17755-002 Location: 151 W. 100th Ave Site: —

Well No.: MW32

Date: 2/22/18

| Time: | Gallons: | Pump Rate (L/min): | DTW (ft BMP): | Drawdown (ft): | Temp: (°C) | Sp. Cond (uS/cm) | DO (mg/L) | pH: (S.U.) | ORP: (mV) | Turb: (NTU) |
|---|---|---|---|---|---|---|---|---|---|---|
| 11:36 | 0.2 | 0.3 | 10.0 | 0.29 | 1.3 | 729 | | 7.50 | | 9.81 |
| 11:39 | 0.2 | 0.3 | 10.0 | 0.29 | 1.2 | 727 | | 7.51 | | 9.22 |
| 11:42 | 0.2 | 0.3 | 10.0 | 0.29 | 1.2 | 728 | | 7.51 | | 9.16 |
| SAMPLE TIME 11:45 | | | | | | | | | | |

| | Interval (minutes) | Pump Rate (mL/min): | Drawdown (ft): | Temp: (°C) | Sp. Cond.: (uS/cm) | DO (mg/L) | pH: (S.U.) | ORP: (mV) | Turb: (NTU) |
|---|---|---|---|---|---|---|---|---|---|
| ADEC 1ay 2010) | 3 to 5 | 100 to 150 | <0.0328 | ±3% or ±0.2 | ±3% | ±10% | ±0.1 | ±10 | ±10% |
| EPA an. 2010) | 5 | 50 | <0.3 | ±3% | ±3% | ±10% | ±0.1 | ±10 | ±10% or <5 NTU |

EPA guidance requires all parameters to stabilize for 3 consecutive readings before sampling. If not stable within 2 hours, collect sample.

ADEC guidance requires 3 parameters (4 if using temperature) to stabilize for 3 consecutive readings before sampling.

# ATTACHMENT 2

# RESULTS OF ANALYTICAL TESTING BY SGS NORTH AMERICA INC. OF ANCHORAGE, ALASKA AND ADEC LABORATORY DATA REVIEW CHECKLISTS

**Laboratory Report of Analysis**

To: Shannon & Wilson, Inc.
5430 Fairbanks St. Suite 3
Anchorage, AK 99518
(907)561-2120

Report Number: **1172294**

Client Project: **17755-002 151 W 100**

Dear Jacob Tracy,

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 Victoria 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.

Victoria Pennick Date
Project Manager
Victoria.Pennick@sgs.com

Print Date: 05/23/2017 12:15:21PM

## Case Narrative

SGS Client: **Shannon & Wilson, Inc.**
SGS Project: **1172294**
Project Name/Site: **17755-002 151 W 100**
Project Contact: **Jacob Tracy**

Refer to sample receipt form for information on sample condition.

**17755-MW31 (1172294002) PS**

8260C - Surrogate recovery for 1,2-dichloroethane-D4 (122%) does not meet QC criteria. The associated analytes were not detected above the LOQ.

**17755-WTB1 (1172294005) TB**

8260C - Surrogate recovery for 1,2-dichloroethane-D4 (124%) does not meet QC criteria. the associated analytes were not detected above the LOQ.

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



SGS North America Inc.
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## Report of Manual Integrations

| Laboratory ID | Client Sample ID | Analytical Batch | Analyte | Reason |
|---|---|---|---|---|
| **8270D SIM LV (PAH)** | | | | |
| 1172294003 | 17755-MW32 | XMS10027 | Chrysene | BLC |

Manual Integration Reason Code Descriptions

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

All DRO/RRO analysis are integrated per SOP.



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## Laboratory Qualifiers

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

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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 | 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.



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## Sample Summary

| Client Sample ID | Lab Sample ID | Collected | Received | Matrix |
|---|---|---|---|---|
| 17755-MW30 | 1172294001 | 05/11/2017 | 05/11/2017 | Water (Surface, Eff., Ground) |
| 17755-MW31 | 1172294002 | 05/11/2017 | 05/11/2017 | Water (Surface, Eff., Ground) |
| 17755-MW32 | 1172294003 | 05/11/2017 | 05/11/2017 | Water (Surface, Eff., Ground) |
| 17755-MW40 | 1172294004 | 05/11/2017 | 05/11/2017 | Water (Surface, Eff., Ground) |
| 17755-WTB1 | 1172294005 | 05/11/2017 | 05/11/2017 | Water (Surface, Eff., Ground) |

| Method | Method Description |
|---|---|
| 8270D SIM LV (PAH) | 8270 PAH SIM GC/MS Liq/Liq ext. LV |
| AK102 | DRO Low Volume (W) |
| SW8260C | Volatile Organic Compounds (W) FULL |



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## Detectable Results Summary

Client Sample ID: **17755-MW30**
Lab Sample ID: 1172294001

| | Parameter | Result | Units |
|---|---|---|---|
| **Polynuclear Aromatics GC/MS** | 1-Methylnaphthalene | 0.0376J | ug/L |
| | 2-Methylnaphthalene | 0.0350J | ug/L |
| | Dibenzo[a,h]anthracene | 0.0109J | ug/L |
| | Phenanthrene | 0.0201J | ug/L |
| **Semivolatile Organic Fuels** | Diesel Range Organics | 0.574J | mg/L |
| **Volatile GC/MS** | Benzene | 4.16 | ug/L |
| | Toluene | 0.460J | ug/L |

Client Sample ID: **17755-MW31**
Lab Sample ID: 1172294002

| | Parameter | Result | Units |
|---|---|---|---|
| **Polynuclear Aromatics GC/MS** | 1-Methylnaphthalene | 0.0154J | ug/L |
| | Phenanthrene | 0.0181J | ug/L |
| **Semivolatile Organic Fuels** | Diesel Range Organics | 0.644 | mg/L |
| **Volatile GC/MS** | Dichlorodifluoromethane | 16.8 | ug/L |
| | Toluene | 0.350J | ug/L |

Client Sample ID: **17755-MW32**
Lab Sample ID: 1172294003

| | Parameter | Result | Units |
|---|---|---|---|
| **Polynuclear Aromatics GC/MS** | Benzo[a]pyrene | 0.00831J | ug/L |
| **Semivolatile Organic Fuels** | Diesel Range Organics | 0.337J | mg/L |
| **Volatile GC/MS** | Dichlorodifluoromethane | 176 | ug/L |

Client Sample ID: **17755-MW40**
Lab Sample ID: 1172294004

| | Parameter | Result | Units |
|---|---|---|---|
| **Polynuclear Aromatics GC/MS** | 1-Methylnaphthalene | 0.0224J | ug/L |
| | 2-Methylnaphthalene | 0.0239J | ug/L |
| **Semivolatile Organic Fuels** | Diesel Range Organics | 0.548J | mg/L |
| **Volatile GC/MS** | 1,2-Dichloroethane | 0.170J | ug/L |
| | Benzene | 4.14 | ug/L |
| | Toluene | 0.460J | ug/L |



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## Results of **17755-MW30**

Client Sample ID: **17755-MW30**
Client Project ID: **17755-002 151 W 100**
Lab Sample ID: 1172294001
Lab Project ID: 1172294

Collection Date: 05/11/17 14:20
Received Date: 05/11/17 16:11
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

## Results by **Polynuclear Aromatics GC/MS**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| 1-Methylnaphthalene | 0.0376 | J | 0.0472 | 0.0142 | ug/L | 1 | | 05/18/17 19:08 |
| 2-Methylnaphthalene | 0.0350 | J | 0.0472 | 0.0142 | ug/L | 1 | | 05/18/17 19:08 |
| Acenaphthene | 0.0236 | U | 0.0472 | 0.0142 | ug/L | 1 | | 05/18/17 19:08 |
| Acenaphthylene | 0.0236 | U | 0.0472 | 0.0142 | ug/L | 1 | | 05/18/17 19:08 |
| Anthracene | 0.0236 | U | 0.0472 | 0.0142 | ug/L | 1 | | 05/18/17 19:08 |
| Benzo(a)Anthracene | 0.0236 | U | 0.0472 | 0.0142 | ug/L | 1 | | 05/18/17 19:08 |
| Benzo[a]pyrene | 0.00945 | U | 0.0189 | 0.00585 | ug/L | 1 | | 05/18/17 19:08 |
| Benzo[b]Fluoranthene | 0.0236 | U | 0.0472 | 0.0142 | ug/L | 1 | | 05/18/17 19:08 |
| Benzo[g,h,i]perylene | 0.0236 | U | 0.0472 | 0.0142 | ug/L | 1 | | 05/18/17 19:08 |
| Benzo[k]fluoranthene | 0.0236 | U | 0.0472 | 0.0142 | ug/L | 1 | | 05/18/17 19:08 |
| Chrysene | 0.0236 | U | 0.0472 | 0.0142 | ug/L | 1 | | 05/18/17 19:08 |
| Dibenzo[a,h]anthracene | 0.0109 | J | 0.0189 | 0.00585 | ug/L | 1 | | 05/18/17 19:08 |
| Fluoranthene | 0.0236 | U | 0.0472 | 0.0142 | ug/L | 1 | | 05/18/17 19:08 |
| Fluorene | 0.0236 | U | 0.0472 | 0.0142 | ug/L | 1 | | 05/18/17 19:08 |
| Indeno[1,2,3-c,d] pyrene | 0.0236 | U | 0.0472 | 0.0142 | ug/L | 1 | | 05/18/17 19:08 |
| Naphthalene | 0.0471 | U | 0.0943 | 0.0292 | ug/L | 1 | | 05/18/17 19:08 |
| Phenanthrene | 0.0201 | J | 0.0472 | 0.0142 | ug/L | 1 | | 05/18/17 19:08 |
| Pyrene | 0.0236 | U | 0.0472 | 0.0142 | ug/L | 1 | | 05/18/17 19:08 |
| **Surrogates** | | | | | | | | |
| 2-Fluorobiphenyl (surr) | 87.4 | | 53-106 | | % | 1 | | 05/18/17 19:08 |
| Terphenyl-d14 (surr) | 88.1 | | 58-132 | | % | 1 | | 05/18/17 19:08 |

## Batch Information

Analytical Batch: XMS10027
Analytical Method: 8270D SIM LV (PAH)
Analyst: ARS
Analytical Date/Time: 05/18/17 19:08
Container ID: 1172294001-F

Prep Batch: XXX37335
Prep Method: SW3520C
Prep Date/Time: 05/12/17 10:03
Prep Initial Wt./Vol.: 265 mL
Prep Extract Vol: 1 mL

## Results of **17755-MW30**

Client Sample ID: **17755-MW30**
Client Project ID: **17755-002 151 W 100**
Lab Sample ID: 1172294001
Lab Project ID: 1172294

Collection Date: 05/11/17 14:20
Received Date: 05/11/17 16:11
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

## Results by **Semivolatile Organic Fuels**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics | 0.574 | J | 0.588 | 0.176 | mg/L | 1 | | 05/17/17 10:55 |
| **Surrogates** | | | | | | | | |
| 5a Androstane (surr) | 69.3 | | 50-150 | | % | 1 | | 05/17/17 10:55 |

## Batch Information

Analytical Batch: XFC13336
Analytical Method: AK102
Analyst: FDR
Analytical Date/Time: 05/17/17 10:55
Container ID: 1172294001-D

Prep Batch: XXX37349
Prep Method: SW3520C
Prep Date/Time: 05/16/17 09:38
Prep Initial Wt./Vol.: 255 mL
Prep Extract Vol: 1 mL

Results of **17755-MW30**

Client Sample ID: **17755-MW30**
Client Project ID: **17755-002 151 W 100**
Lab Sample ID: 1172294001
Lab Project ID: 1172294

Collection Date: 05/11/17 14:20
Received Date: 05/11/17 16:11
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 05/12/17 17:03 |
| 1,1,1-Trichloroethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:03 |
| 1,1,2,2-Tetrachloroethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 05/12/17 17:03 |
| 1,1,2-Trichloroethane | 0.200 | U | 0.400 | 0.120 | ug/L | 1 | | 05/12/17 17:03 |
| 1,1-Dichloroethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:03 |
| 1,1-Dichloroethene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:03 |
| 1,1-Dichloropropene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:03 |
| 1,2,3-Trichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:03 |
| 1,2,3-Trichloropropane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:03 |
| 1,2,4-Trichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:03 |
| 1,2,4-Trimethylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:03 |
| 1,2-Dibromo-3-chloropropane | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 05/12/17 17:03 |
| 1,2-Dibromoethane | 0.0375 | U | 0.0750 | 0.0180 | ug/L | 1 | | 05/12/17 17:03 |
| 1,2-Dichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:03 |
| 1,2-Dichloroethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 05/12/17 17:03 |
| 1,2-Dichloropropane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:03 |
| 1,3,5-Trimethylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:03 |
| 1,3-Dichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:03 |
| 1,3-Dichloropropane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 05/12/17 17:03 |
| 1,4-Dichlorobenzene | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 05/12/17 17:03 |
| 2,2-Dichloropropane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:03 |
| 2-Butanone (MEK) | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 05/12/17 17:03 |
| 2-Chlorotoluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:03 |
| 2-Hexanone | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 05/12/17 17:03 |
| 4-Chlorotoluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:03 |
| 4-Isopropyltoluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:03 |
| 4-Methyl-2-pentanone (MIBK) | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 05/12/17 17:03 |
| Benzene | 4.16 | | 0.400 | 0.120 | ug/L | 1 | | 05/12/17 17:03 |
| Bromobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:03 |
| Bromochloromethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:03 |
| Bromodichloromethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 05/12/17 17:03 |
| Bromoform | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:03 |
| Bromomethane | 2.50 | U | 5.00 | 1.50 | ug/L | 1 | | 05/12/17 17:03 |
| Carbon disulfide | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 05/12/17 17:03 |
| Carbon tetrachloride | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:03 |
| Chlorobenzene | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 05/12/17 17:03 |
| Chloroethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:03 |

Print Date: 05/23/2017 12:15:28PM

J flagging is activated

Results of **17755-MW30**

Client Sample ID: **17755-MW30**
Client Project ID: **17755-002 151 W 100**
Lab Sample ID: 1172294001
Lab Project ID: 1172294

Collection Date: 05/11/17 14:20
Received Date: 05/11/17 16:11
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| Chloroform | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:03 |
| Chloromethane | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:03 |
| cis-1,2-Dichloroethene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:03 |
| cis-1,3-Dichloropropene | 0.250 U | | 0.500 | 0.150 | ug/L | 1 | | 05/12/17 17:03 |
| Dibromochloromethane | 0.250 U | | 0.500 | 0.150 | ug/L | 1 | | 05/12/17 17:03 |
| Dibromomethane | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:03 |
| Dichlorodifluoromethane | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:03 |
| Ethylbenzene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:03 |
| Freon-113 | 5.00 U | | 10.0 | 3.10 | ug/L | 1 | | 05/12/17 17:03 |
| Hexachlorobutadiene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:03 |
| Isopropylbenzene (Cumene) | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:03 |
| Methylene chloride | 2.50 U | | 5.00 | 1.00 | ug/L | 1 | | 05/12/17 17:03 |
| Methyl-t-butyl ether | 5.00 U | | 10.0 | 3.10 | ug/L | 1 | | 05/12/17 17:03 |
| Naphthalene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:03 |
| n-Butylbenzene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:03 |
| n-Propylbenzene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:03 |
| o-Xylene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:03 |
| P & M -Xylene | 1.00 U | | 2.00 | 0.620 | ug/L | 1 | | 05/12/17 17:03 |
| sec-Butylbenzene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:03 |
| Styrene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:03 |
| tert-Butylbenzene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:03 |
| Tetrachloroethene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:03 |
| Toluene | 0.460 J | | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:03 |
| trans-1,2-Dichloroethene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:03 |
| trans-1,3-Dichloropropene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:03 |
| Trichloroethene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:03 |
| Trichlorofluoromethane | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:03 |
| Vinyl acetate | 5.00 U | | 10.0 | 3.10 | ug/L | 1 | | 05/12/17 17:03 |
| Vinyl chloride | 0.0750 U | | 0.150 | 0.0500 | ug/L | 1 | | 05/12/17 17:03 |
| Xylenes (total) | 1.50 U | | 3.00 | 1.00 | ug/L | 1 | | 05/12/17 17:03 |
| **Surrogates** | | | | | | | | |
| 1,2-Dichloroethane-D4 (surr) | 109 | | 81-118 | | % | 1 | | 05/12/17 17:03 |
| 4-Bromofluorobenzene (surr) | 94.9 | | 85-114 | | % | 1 | | 05/12/17 17:03 |
| Toluene-d8 (surr) | 101 | | 89-112 | | % | 1 | | 05/12/17 17:03 |

Print Date: 05/23/2017 12:15:28PM

J flagging is activated

Results of **17755-MW30**

Client Sample ID: **17755-MW30**
Client Project ID: **17755-002 151 W 100**
Lab Sample ID: 1172294001
Lab Project ID: 1172294

Collection Date: 05/11/17 14:20
Received Date: 05/11/17 16:11
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

**Batch Information**

Analytical Batch: VMS16723
Analytical Method: SW8260C
Analyst: TJT
Analytical Date/Time: 05/12/17 17:03
Container ID: 1172294001-A

Prep Batch: VXX30492
Prep Method: SW5030B
Prep Date/Time: 05/12/17 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **17755-MW31**

Client Sample ID: **17755-MW31**
Client Project ID: **17755-002 151 W 100**
Lab Sample ID: 1172294002
Lab Project ID: 1172294

Collection Date: 05/11/17 13:10
Received Date: 05/11/17 16:11
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Polynuclear Aromatics GC/MS**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| 1-Methylnaphthalene | 0.0154 | J | 0.0504 | 0.0151 | ug/L | 1 | | 05/18/17 19:29 |
| 2-Methylnaphthalene | 0.0252 | U | 0.0504 | 0.0151 | ug/L | 1 | | 05/18/17 19:29 |
| Acenaphthene | 0.0252 | U | 0.0504 | 0.0151 | ug/L | 1 | | 05/18/17 19:29 |
| Acenaphthylene | 0.0252 | U | 0.0504 | 0.0151 | ug/L | 1 | | 05/18/17 19:29 |
| Anthracene | 0.0252 | U | 0.0504 | 0.0151 | ug/L | 1 | | 05/18/17 19:29 |
| Benzo(a)Anthracene | 0.0252 | U | 0.0504 | 0.0151 | ug/L | 1 | | 05/18/17 19:29 |
| Benzo[a]pyrene | 0.0101 | U | 0.0202 | 0.00625 | ug/L | 1 | | 05/18/17 19:29 |
| Benzo[b]Fluoranthene | 0.0252 | U | 0.0504 | 0.0151 | ug/L | 1 | | 05/18/17 19:29 |
| Benzo[g,h,i]perylene | 0.0252 | U | 0.0504 | 0.0151 | ug/L | 1 | | 05/18/17 19:29 |
| Benzo[k]fluoranthene | 0.0252 | U | 0.0504 | 0.0151 | ug/L | 1 | | 05/18/17 19:29 |
| Chrysene | 0.0252 | U | 0.0504 | 0.0151 | ug/L | 1 | | 05/18/17 19:29 |
| Dibenzo[a,h]anthracene | 0.0101 | U | 0.0202 | 0.00625 | ug/L | 1 | | 05/18/17 19:29 |
| Fluoranthene | 0.0252 | U | 0.0504 | 0.0151 | ug/L | 1 | | 05/18/17 19:29 |
| Fluorene | 0.0252 | U | 0.0504 | 0.0151 | ug/L | 1 | | 05/18/17 19:29 |
| Indeno[1,2,3-c,d] pyrene | 0.0252 | U | 0.0504 | 0.0151 | ug/L | 1 | | 05/18/17 19:29 |
| Naphthalene | 0.0505 | U | 0.101 | 0.0313 | ug/L | 1 | | 05/18/17 19:29 |
| Phenanthrene | 0.0181 | J | 0.0504 | 0.0151 | ug/L | 1 | | 05/18/17 19:29 |
| Pyrene | 0.0252 | U | 0.0504 | 0.0151 | ug/L | 1 | | 05/18/17 19:29 |
| **Surrogates** | | | | | | | | |
| 2-Fluorobiphenyl (surr) | 71.5 | | 53-106 | | % | 1 | | 05/18/17 19:29 |
| Terphenyl-d14 (surr) | 67.4 | | 58-132 | | % | 1 | | 05/18/17 19:29 |

**Batch Information**

Analytical Batch: XMS10027
Analytical Method: 8270D SIM LV (PAH)
Analyst: ARS
Analytical Date/Time: 05/18/17 19:29
Container ID: 1172294002-F

Prep Batch: XXX37335
Prep Method: SW3520C
Prep Date/Time: 05/12/17 10:03
Prep Initial Wt./Vol.: 248 mL
Prep Extract Vol: 1 mL

Print Date: 05/23/2017 12:15:28PM

J flagging is activated

## Results of **17755-MW31**

Client Sample ID: **17755-MW31**
Client Project ID: **17755-002 151 W 100**
Lab Sample ID: 1172294002
Lab Project ID: 1172294

Collection Date: 05/11/17 13:10
Received Date: 05/11/17 16:11
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

## Results by **Semivolatile Organic Fuels**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics | 0.644 | | 0.588 | 0.176 | mg/L | 1 | | 05/17/17 11:05 |
| **Surrogates** | | | | | | | | |
| 5a Androstane (surr) | 74.4 | | 50-150 | | % | 1 | | 05/17/17 11:05 |

## Batch Information

Analytical Batch: XFC13336
Analytical Method: AK102
Analyst: FDR
Analytical Date/Time: 05/17/17 11:05
Container ID: 1172294002-D

Prep Batch: XXX37349
Prep Method: SW3520C
Prep Date/Time: 05/16/17 09:38
Prep Initial Wt./Vol.: 255 mL
Prep Extract Vol: 1 mL

Results of **17755-MW31**

Client Sample ID: **17755-MW31**
Client Project ID: **17755-002 151 W 100**
Lab Sample ID: 1172294002
Lab Project ID: 1172294

Collection Date: 05/11/17 13:10
Received Date: 05/11/17 16:11
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 05/12/17 17:21 |
| 1,1,1-Trichloroethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:21 |
| 1,1,2,2-Tetrachloroethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 05/12/17 17:21 |
| 1,1,2-Trichloroethane | 0.200 | U | 0.400 | 0.120 | ug/L | 1 | | 05/12/17 17:21 |
| 1,1-Dichloroethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:21 |
| 1,1-Dichloroethene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:21 |
| 1,1-Dichloropropene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:21 |
| 1,2,3-Trichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:21 |
| 1,2,3-Trichloropropane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:21 |
| 1,2,4-Trichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:21 |
| 1,2,4-Trimethylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:21 |
| 1,2-Dibromo-3-chloropropane | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 05/12/17 17:21 |
| 1,2-Dibromoethane | 0.0375 | U | 0.0750 | 0.0180 | ug/L | 1 | | 05/12/17 17:21 |
| 1,2-Dichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:21 |
| 1,2-Dichloroethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 05/12/17 17:21 |
| 1,2-Dichloropropane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:21 |
| 1,3,5-Trimethylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:21 |
| 1,3-Dichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:21 |
| 1,3-Dichloropropane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 05/12/17 17:21 |
| 1,4-Dichlorobenzene | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 05/12/17 17:21 |
| 2,2-Dichloropropane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:21 |
| 2-Butanone (MEK) | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 05/12/17 17:21 |
| 2-Chlorotoluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:21 |
| 2-Hexanone | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 05/12/17 17:21 |
| 4-Chlorotoluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:21 |
| 4-Isopropyltoluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:21 |
| 4-Methyl-2-pentanone (MIBK) | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 05/12/17 17:21 |
| Benzene | 0.200 | U | 0.400 | 0.120 | ug/L | 1 | | 05/12/17 17:21 |
| Bromobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:21 |
| Bromochloromethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:21 |
| Bromodichloromethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 05/12/17 17:21 |
| Bromoform | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:21 |
| Bromomethane | 2.50 | U | 5.00 | 1.50 | ug/L | 1 | | 05/12/17 17:21 |
| Carbon disulfide | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 05/12/17 17:21 |
| Carbon tetrachloride | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:21 |
| Chlorobenzene | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 05/12/17 17:21 |
| Chloroethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:21 |

Print Date: 05/23/2017 12:15:28PM

J flagging is activated

Results of **17755-MW31**

Client Sample ID: **17755-MW31**
Client Project ID: **17755-002 151 W 100**
Lab Sample ID: 1172294002
Lab Project ID: 1172294

Collection Date: 05/11/17 13:10
Received Date: 05/11/17 16:11
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| Chloroform | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:21 |
| Chloromethane | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:21 |
| cis-1,2-Dichloroethene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:21 |
| cis-1,3-Dichloropropene | 0.250 U | | 0.500 | 0.150 | ug/L | 1 | | 05/12/17 17:21 |
| Dibromochloromethane | 0.250 U | | 0.500 | 0.150 | ug/L | 1 | | 05/12/17 17:21 |
| Dibromomethane | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:21 |
| Dichlorodifluoromethane | 16.8 | | 1.00 | 0.310 | ug/L | 1 | | 05/22/17 19:04 |
| Ethylbenzene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:21 |
| Freon-113 | 5.00 U | | 10.0 | 3.10 | ug/L | 1 | | 05/12/17 17:21 |
| Hexachlorobutadiene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:21 |
| Isopropylbenzene (Cumene) | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:21 |
| Methylene chloride | 2.50 U | | 5.00 | 1.00 | ug/L | 1 | | 05/12/17 17:21 |
| Methyl-t-butyl ether | 5.00 U | | 10.0 | 3.10 | ug/L | 1 | | 05/12/17 17:21 |
| Naphthalene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:21 |
| n-Butylbenzene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:21 |
| n-Propylbenzene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:21 |
| o-Xylene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:21 |
| P & M -Xylene | 1.00 U | | 2.00 | 0.620 | ug/L | 1 | | 05/12/17 17:21 |
| sec-Butylbenzene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:21 |
| Styrene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:21 |
| tert-Butylbenzene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:21 |
| Tetrachloroethene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:21 |
| Toluene | 0.350 J | | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:21 |
| trans-1,2-Dichloroethene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:21 |
| trans-1,3-Dichloropropene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:21 |
| Trichloroethene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:21 |
| Trichlorofluoromethane | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:21 |
| Vinyl acetate | 5.00 U | | 10.0 | 3.10 | ug/L | 1 | | 05/12/17 17:21 |
| Vinyl chloride | 0.0750 U | | 0.150 | 0.0500 | ug/L | 1 | | 05/12/17 17:21 |
| Xylenes (total) | 1.50 U | | 3.00 | 1.00 | ug/L | 1 | | 05/12/17 17:21 |
| **Surrogates** | | | | | | | | |
| 1,2-Dichloroethane-D4 (surr) | 122 | * | 81-118 | | % | 1 | | 05/12/17 17:21 |
| 4-Bromofluorobenzene (surr) | 96 | | 85-114 | | % | 1 | | 05/12/17 17:21 |
| Toluene-d8 (surr) | 101 | | 89-112 | | % | 1 | | 05/12/17 17:21 |

Print Date: 05/23/2017 12:15:28PM

J flagging is activated

Results of **17755-MW31**

Client Sample ID: **17755-MW31**
Client Project ID: **17755-002 151 W 100**
Lab Sample ID: 1172294002
Lab Project ID: 1172294

Collection Date: 05/11/17 13:10
Received Date: 05/11/17 16:11
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

**Batch Information**

Analytical Batch: VMS16723
Analytical Method: SW8260C
Analyst: TJT
Analytical Date/Time: 05/12/17 17:21
Container ID: 1172294002-A

Prep Batch: VXX30492
Prep Method: SW5030B
Prep Date/Time: 05/12/17 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Analytical Batch: VMS16747
Analytical Method: SW8260C
Analyst: TJT
Analytical Date/Time: 05/22/17 19:04
Container ID: 1172294002-A

Prep Batch: VXX30532
Prep Method: SW5030B
Prep Date/Time: 05/22/17 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

## Results of **17755-MW32**

Client Sample ID: **17755-MW32**
Client Project ID: **17755-002 151 W 100**
Lab Sample ID: 1172294003
Lab Project ID: 1172294

Collection Date: 05/11/17 11:50
Received Date: 05/11/17 16:11
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

## Results by **Polynuclear Aromatics GC/MS**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| 1-Methylnaphthalene | 0.0245 | U | 0.0490 | 0.0147 | ug/L | 1 | | 05/18/17 19:50 |
| 2-Methylnaphthalene | 0.0245 | U | 0.0490 | 0.0147 | ug/L | 1 | | 05/18/17 19:50 |
| Acenaphthene | 0.0245 | U | 0.0490 | 0.0147 | ug/L | 1 | | 05/18/17 19:50 |
| Acenaphthylene | 0.0245 | U | 0.0490 | 0.0147 | ug/L | 1 | | 05/18/17 19:50 |
| Anthracene | 0.0245 | U | 0.0490 | 0.0147 | ug/L | 1 | | 05/18/17 19:50 |
| Benzo(a)Anthracene | 0.0245 | U | 0.0490 | 0.0147 | ug/L | 1 | | 05/18/17 19:50 |
| Benzo[a]pyrene | 0.00831 | J | 0.0196 | 0.00608 | ug/L | 1 | | 05/18/17 19:50 |
| Benzo[b]Fluoranthene | 0.0245 | U | 0.0490 | 0.0147 | ug/L | 1 | | 05/18/17 19:50 |
| Benzo[g,h,i]perylene | 0.0245 | U | 0.0490 | 0.0147 | ug/L | 1 | | 05/18/17 19:50 |
| Benzo[k]fluoranthene | 0.0245 | U | 0.0490 | 0.0147 | ug/L | 1 | | 05/18/17 19:50 |
| Chrysene | 0.0245 | U | 0.0490 | 0.0147 | ug/L | 1 | | 05/18/17 19:50 |
| Dibenzo[a,h]anthracene | 0.00980 | U | 0.0196 | 0.00608 | ug/L | 1 | | 05/18/17 19:50 |
| Fluoranthene | 0.0245 | U | 0.0490 | 0.0147 | ug/L | 1 | | 05/18/17 19:50 |
| Fluorene | 0.0245 | U | 0.0490 | 0.0147 | ug/L | 1 | | 05/18/17 19:50 |
| Indeno[1,2,3-c,d] pyrene | 0.0245 | U | 0.0490 | 0.0147 | ug/L | 1 | | 05/18/17 19:50 |
| Naphthalene | 0.0490 | U | 0.0980 | 0.0304 | ug/L | 1 | | 05/18/17 19:50 |
| Phenanthrene | 0.0245 | U | 0.0490 | 0.0147 | ug/L | 1 | | 05/18/17 19:50 |
| Pyrene | 0.0245 | U | 0.0490 | 0.0147 | ug/L | 1 | | 05/18/17 19:50 |
| **Surrogates** | | | | | | | | |
| 2-Fluorobiphenyl (surr) | 78.9 | | 53-106 | | % | 1 | | 05/18/17 19:50 |
| Terphenyl-d14 (surr) | 76.1 | | 58-132 | | % | 1 | | 05/18/17 19:50 |

## Batch Information

Analytical Batch: XMS10027
Analytical Method: 8270D SIM LV (PAH)
Analyst: ARS
Analytical Date/Time: 05/18/17 19:50
Container ID: 1172294003-F

Prep Batch: XXX37335
Prep Method: SW3520C
Prep Date/Time: 05/12/17 10:03
Prep Initial Wt./Vol.: 255 mL
Prep Extract Vol: 1 mL

Print Date: 05/23/2017 12:15:28PM

J flagging is activated

## Results of **17755-MW32**

Client Sample ID: **17755-MW32**
Client Project ID: **17755-002 151 W 100**
Lab Sample ID: 1172294003
Lab Project ID: 1172294

Collection Date: 05/11/17 11:50
Received Date: 05/11/17 16:11
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

## Results by **Semivolatile Organic Fuels**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics | 0.337 | J | 0.588 | 0.176 | mg/L | 1 | | 05/17/17 11:14 |
| **Surrogates** | | | | | | | | |
| 5a Androstane (surr) | 71.2 | | 50-150 | | % | 1 | | 05/17/17 11:14 |

## Batch Information

Analytical Batch: XFC13336
Analytical Method: AK102
Analyst: FDR
Analytical Date/Time: 05/17/17 11:14
Container ID: 1172294003-D

Prep Batch: XXX37349
Prep Method: SW3520C
Prep Date/Time: 05/16/17 09:38
Prep Initial Wt./Vol.: 255 mL
Prep Extract Vol: 1 mL

Results of **17755-MW32**

Client Sample ID: **17755-MW32**
Client Project ID: **17755-002 151 W 100**
Lab Sample ID: 1172294003
Lab Project ID: 1172294

Collection Date: 05/11/17 11:50
Received Date: 05/11/17 16:11
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 05/12/17 17:38 |
| 1,1,1-Trichloroethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:38 |
| 1,1,2,2-Tetrachloroethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 05/12/17 17:38 |
| 1,1,2-Trichloroethane | 0.200 | U | 0.400 | 0.120 | ug/L | 1 | | 05/12/17 17:38 |
| 1,1-Dichloroethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:38 |
| 1,1-Dichloroethene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:38 |
| 1,1-Dichloropropene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:38 |
| 1,2,3-Trichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:38 |
| 1,2,3-Trichloropropane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:38 |
| 1,2,4-Trichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:38 |
| 1,2,4-Trimethylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:38 |
| 1,2-Dibromo-3-chloropropane | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 05/12/17 17:38 |
| 1,2-Dibromoethane | 0.0375 | U | 0.0750 | 0.0180 | ug/L | 1 | | 05/12/17 17:38 |
| 1,2-Dichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:38 |
| 1,2-Dichloroethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 05/12/17 17:38 |
| 1,2-Dichloropropane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:38 |
| 1,3,5-Trimethylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:38 |
| 1,3-Dichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:38 |
| 1,3-Dichloropropane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 05/12/17 17:38 |
| 1,4-Dichlorobenzene | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 05/12/17 17:38 |
| 2,2-Dichloropropane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:38 |
| 2-Butanone (MEK) | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 05/12/17 17:38 |
| 2-Chlorotoluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:38 |
| 2-Hexanone | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 05/12/17 17:38 |
| 4-Chlorotoluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:38 |
| 4-Isopropyltoluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:38 |
| 4-Methyl-2-pentanone (MIBK) | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 05/12/17 17:38 |
| Benzene | 0.200 | U | 0.400 | 0.120 | ug/L | 1 | | 05/12/17 17:38 |
| Bromobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:38 |
| Bromochloromethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:38 |
| Bromodichloromethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 05/12/17 17:38 |
| Bromoform | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:38 |
| Bromomethane | 2.50 | U | 5.00 | 1.50 | ug/L | 1 | | 05/12/17 17:38 |
| Carbon disulfide | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 05/12/17 17:38 |
| Carbon tetrachloride | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:38 |
| Chlorobenzene | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 05/12/17 17:38 |
| Chloroethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:38 |

Print Date: 05/23/2017 12:15:28PM

J flagging is activated

Results of **17755-MW32**

Client Sample ID: **17755-MW32**
Client Project ID: **17755-002 151 W 100**
Lab Sample ID: 1172294003
Lab Project ID: 1172294

Collection Date: 05/11/17 11:50
Received Date: 05/11/17 16:11
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| Chloroform | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:38 |
| Chloromethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:38 |
| cis-1,2-Dichloroethene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:38 |
| cis-1,3-Dichloropropene | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 05/12/17 17:38 |
| Dibromochloromethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 05/12/17 17:38 |
| Dibromomethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:38 |
| Dichlorodifluoromethane | 176 | | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:38 |
| Ethylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:38 |
| Freon-113 | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 05/12/17 17:38 |
| Hexachlorobutadiene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:38 |
| Isopropylbenzene (Cumene) | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:38 |
| Methylene chloride | 2.50 | U | 5.00 | 1.00 | ug/L | 1 | | 05/12/17 17:38 |
| Methyl-t-butyl ether | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 05/12/17 17:38 |
| Naphthalene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:38 |
| n-Butylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:38 |
| n-Propylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:38 |
| o-Xylene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:38 |
| P & M -Xylene | 1.00 | U | 2.00 | 0.620 | ug/L | 1 | | 05/12/17 17:38 |
| sec-Butylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:38 |
| Styrene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:38 |
| tert-Butylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:38 |
| Tetrachloroethene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:38 |
| Toluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:38 |
| trans-1,2-Dichloroethene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:38 |
| trans-1,3-Dichloropropene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:38 |
| Trichloroethene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:38 |
| Trichlorofluoromethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:38 |
| Vinyl acetate | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 05/12/17 17:38 |
| Vinyl chloride | 0.0750 | U | 0.150 | 0.0500 | ug/L | 1 | | 05/12/17 17:38 |
| Xylenes (total) | 1.50 | U | 3.00 | 1.00 | ug/L | 1 | | 05/12/17 17:38 |
| **Surrogates** | | | | | | | | |
| 1,2-Dichloroethane-D4 (surr) | 104 | | 81-118 | | % | 1 | | 05/12/17 17:38 |
| 4-Bromofluorobenzene (surr) | 95.5 | | 85-114 | | % | 1 | | 05/12/17 17:38 |
| Toluene-d8 (surr) | 99.3 | | 89-112 | | % | 1 | | 05/12/17 17:38 |

Print Date: 05/23/2017 12:15:28PM

J flagging is activated

Results of **17755-MW32**

Client Sample ID: **17755-MW32**
Client Project ID: **17755-002 151 W 100**
Lab Sample ID: 1172294003
Lab Project ID: 1172294

Collection Date: 05/11/17 11:50
Received Date: 05/11/17 16:11
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

**Batch Information**

Analytical Batch: VMS16723
Analytical Method: SW8260C
Analyst: TJT
Analytical Date/Time: 05/12/17 17:38
Container ID: 1172294003-A

Prep Batch: VXX30492
Prep Method: SW5030B
Prep Date/Time: 05/12/17 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

## Results of **17755-MW40**

Client Sample ID: **17755-MW40**
Client Project ID: **17755-002 151 W 100**
Lab Sample ID: 1172294004
Lab Project ID: 1172294

Collection Date: 05/11/17 15:00
Received Date: 05/11/17 16:11
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

## Results by **Polynuclear Aromatics GC/MS**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| 1-Methylnaphthalene | 0.0224 | J | 0.0463 | 0.0139 | ug/L | 1 | | 05/18/17 20:10 |
| 2-Methylnaphthalene | 0.0239 | J | 0.0463 | 0.0139 | ug/L | 1 | | 05/18/17 20:10 |
| Acenaphthene | 0.0232 | U | 0.0463 | 0.0139 | ug/L | 1 | | 05/18/17 20:10 |
| Acenaphthylene | 0.0232 | U | 0.0463 | 0.0139 | ug/L | 1 | | 05/18/17 20:10 |
| Anthracene | 0.0232 | U | 0.0463 | 0.0139 | ug/L | 1 | | 05/18/17 20:10 |
| Benzo(a)Anthracene | 0.0232 | U | 0.0463 | 0.0139 | ug/L | 1 | | 05/18/17 20:10 |
| Benzo[a]pyrene | 0.00925 | U | 0.0185 | 0.00574 | ug/L | 1 | | 05/18/17 20:10 |
| Benzo[b]Fluoranthene | 0.0232 | U | 0.0463 | 0.0139 | ug/L | 1 | | 05/18/17 20:10 |
| Benzo[g,h,i]perylene | 0.0232 | U | 0.0463 | 0.0139 | ug/L | 1 | | 05/18/17 20:10 |
| Benzo[k]fluoranthene | 0.0232 | U | 0.0463 | 0.0139 | ug/L | 1 | | 05/18/17 20:10 |
| Chrysene | 0.0232 | U | 0.0463 | 0.0139 | ug/L | 1 | | 05/18/17 20:10 |
| Dibenzo[a,h]anthracene | 0.00925 | U | 0.0185 | 0.00574 | ug/L | 1 | | 05/18/17 20:10 |
| Fluoranthene | 0.0232 | U | 0.0463 | 0.0139 | ug/L | 1 | | 05/18/17 20:10 |
| Fluorene | 0.0232 | U | 0.0463 | 0.0139 | ug/L | 1 | | 05/18/17 20:10 |
| Indeno[1,2,3-c,d] pyrene | 0.0232 | U | 0.0463 | 0.0139 | ug/L | 1 | | 05/18/17 20:10 |
| Naphthalene | 0.0463 | U | 0.0926 | 0.0287 | ug/L | 1 | | 05/18/17 20:10 |
| Phenanthrene | 0.0232 | U | 0.0463 | 0.0139 | ug/L | 1 | | 05/18/17 20:10 |
| Pyrene | 0.0232 | U | 0.0463 | 0.0139 | ug/L | 1 | | 05/18/17 20:10 |
| **Surrogates** | | | | | | | | |
| 2-Fluorobiphenyl (surr) | 69.3 | | 53-106 | | % | 1 | | 05/18/17 20:10 |
| Terphenyl-d14 (surr) | 67.1 | | 58-132 | | % | 1 | | 05/18/17 20:10 |

## Batch Information

Analytical Batch: XMS10027
Analytical Method: 8270D SIM LV (PAH)
Analyst: ARS
Analytical Date/Time: 05/18/17 20:10
Container ID: 1172294004-F

Prep Batch: XXX37335
Prep Method: SW3520C
Prep Date/Time: 05/12/17 10:03
Prep Initial Wt./Vol.: 270 mL
Prep Extract Vol: 1 mL

## Results of **17755-MW40**

Client Sample ID: **17755-MW40**
Client Project ID: **17755-002 151 W 100**
Lab Sample ID: 1172294004
Lab Project ID: 1172294

Collection Date: 05/11/17 15:00
Received Date: 05/11/17 16:11
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

## Results by **Semivolatile Organic Fuels**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics | 0.548 | J | 0.577 | 0.173 | mg/L | 1 | | 05/17/17 11:24 |
| **Surrogates** | | | | | | | | |
| 5a Androstane (surr) | 65 | | 50-150 | | % | 1 | | 05/17/17 11:24 |

## Batch Information

Analytical Batch: XFC13336
Analytical Method: AK102
Analyst: FDR
Analytical Date/Time: 05/17/17 11:24
Container ID: 1172294004-D

Prep Batch: XXX37349
Prep Method: SW3520C
Prep Date/Time: 05/16/17 09:38
Prep Initial Wt./Vol.: 260 mL
Prep Extract Vol: 1 mL

Print Date: 05/23/2017 12:15:28PM

J flagging is activated

Results of **17755-MW40**

Client Sample ID: **17755-MW40**
Client Project ID: **17755-002 151 W 100**
Lab Sample ID: 1172294004
Lab Project ID: 1172294

Collection Date: 05/11/17 15:00
Received Date: 05/11/17 16:11
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 05/12/17 17:56 |
| 1,1,1-Trichloroethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:56 |
| 1,1,2,2-Tetrachloroethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 05/12/17 17:56 |
| 1,1,2-Trichloroethane | 0.200 | U | 0.400 | 0.120 | ug/L | 1 | | 05/12/17 17:56 |
| 1,1-Dichloroethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:56 |
| 1,1-Dichloroethene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:56 |
| 1,1-Dichloropropene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:56 |
| 1,2,3-Trichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:56 |
| 1,2,3-Trichloropropane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:56 |
| 1,2,4-Trichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:56 |
| 1,2,4-Trimethylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:56 |
| 1,2-Dibromo-3-chloropropane | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 05/12/17 17:56 |
| 1,2-Dibromoethane | 0.0375 | U | 0.0750 | 0.0180 | ug/L | 1 | | 05/12/17 17:56 |
| 1,2-Dichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:56 |
| 1,2-Dichloroethane | 0.170 | J | 0.500 | 0.150 | ug/L | 1 | | 05/12/17 17:56 |
| 1,2-Dichloropropane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:56 |
| 1,3,5-Trimethylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:56 |
| 1,3-Dichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:56 |
| 1,3-Dichloropropane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 05/12/17 17:56 |
| 1,4-Dichlorobenzene | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 05/12/17 17:56 |
| 2,2-Dichloropropane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:56 |
| 2-Butanone (MEK) | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 05/12/17 17:56 |
| 2-Chlorotoluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:56 |
| 2-Hexanone | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 05/12/17 17:56 |
| 4-Chlorotoluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:56 |
| 4-Isopropyltoluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:56 |
| 4-Methyl-2-pentanone (MIBK) | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 05/12/17 17:56 |
| Benzene | 4.14 | | 0.400 | 0.120 | ug/L | 1 | | 05/12/17 17:56 |
| Bromobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:56 |
| Bromochloromethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:56 |
| Bromodichloromethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 05/12/17 17:56 |
| Bromoform | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:56 |
| Bromomethane | 2.50 | U | 5.00 | 1.50 | ug/L | 1 | | 05/12/17 17:56 |
| Carbon disulfide | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 05/12/17 17:56 |
| Carbon tetrachloride | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:56 |
| Chlorobenzene | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 05/12/17 17:56 |
| Chloroethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:56 |

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J flagging is activated

Results of **17755-MW40**

Client Sample ID: **17755-MW40**
Client Project ID: **17755-002 151 W 100**
Lab Sample ID: 1172294004
Lab Project ID: 1172294

Collection Date: 05/11/17 15:00
Received Date: 05/11/17 16:11
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| Chloroform | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:56 |
| Chloromethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:56 |
| cis-1,2-Dichloroethene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:56 |
| cis-1,3-Dichloropropene | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 05/12/17 17:56 |
| Dibromochloromethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 05/12/17 17:56 |
| Dibromomethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:56 |
| Dichlorodifluoromethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:56 |
| Ethylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:56 |
| Freon-113 | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 05/12/17 17:56 |
| Hexachlorobutadiene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:56 |
| Isopropylbenzene (Cumene) | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:56 |
| Methylene chloride | 2.50 | U | 5.00 | 1.00 | ug/L | 1 | | 05/12/17 17:56 |
| Methyl-t-butyl ether | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 05/12/17 17:56 |
| Naphthalene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:56 |
| n-Butylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:56 |
| n-Propylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:56 |
| o-Xylene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:56 |
| P & M -Xylene | 1.00 | U | 2.00 | 0.620 | ug/L | 1 | | 05/12/17 17:56 |
| sec-Butylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:56 |
| Styrene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:56 |
| tert-Butylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:56 |
| Tetrachloroethene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:56 |
| Toluene | 0.460 | J | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:56 |
| trans-1,2-Dichloroethene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:56 |
| trans-1,3-Dichloropropene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:56 |
| Trichloroethene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:56 |
| Trichlorofluoromethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 17:56 |
| Vinyl acetate | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 05/12/17 17:56 |
| Vinyl chloride | 0.0750 | U | 0.150 | 0.0500 | ug/L | 1 | | 05/12/17 17:56 |
| Xylenes (total) | 1.50 | U | 3.00 | 1.00 | ug/L | 1 | | 05/12/17 17:56 |
| **Surrogates** | | | | | | | | |
| 1,2-Dichloroethane-D4 (surr) | 106 | | 81-118 | | % | 1 | | 05/12/17 17:56 |
| 4-Bromofluorobenzene (surr) | 94 | | 85-114 | | % | 1 | | 05/12/17 17:56 |
| Toluene-d8 (surr) | 101 | | 89-112 | | % | 1 | | 05/12/17 17:56 |

Print Date: 05/23/2017 12:15:28PM

J flagging is activated

Results of **17755-MW40**

Client Sample ID: **17755-MW40**
Client Project ID: **17755-002 151 W 100**
Lab Sample ID: 1172294004
Lab Project ID: 1172294

Collection Date: 05/11/17 15:00
Received Date: 05/11/17 16:11
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

**Batch Information**

Analytical Batch: VMS16723
Analytical Method: SW8260C
Analyst: TJT
Analytical Date/Time: 05/12/17 17:56
Container ID: 1172294004-A

Prep Batch: VXX30492
Prep Method: SW5030B
Prep Date/Time: 05/12/17 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **17755-WTB1**

Client Sample ID: **17755-WTB1**
Client Project ID: **17755-002 151 W 100**
Lab Sample ID: 1172294005
Lab Project ID: 1172294

Collection Date: 05/11/17 09:00
Received Date: 05/11/17 16:11
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 05/12/17 16:28 |
| 1,1,1-Trichloroethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 16:28 |
| 1,1,2,2-Tetrachloroethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 05/12/17 16:28 |
| 1,1,2-Trichloroethane | 0.200 | U | 0.400 | 0.120 | ug/L | 1 | | 05/12/17 16:28 |
| 1,1-Dichloroethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 16:28 |
| 1,1-Dichloroethene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 16:28 |
| 1,1-Dichloropropene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 16:28 |
| 1,2,3-Trichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 16:28 |
| 1,2,3-Trichloropropane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 16:28 |
| 1,2,4-Trichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 16:28 |
| 1,2,4-Trimethylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 16:28 |
| 1,2-Dibromo-3-chloropropane | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 05/12/17 16:28 |
| 1,2-Dibromoethane | 0.0375 | U | 0.0750 | 0.0180 | ug/L | 1 | | 05/12/17 16:28 |
| 1,2-Dichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 16:28 |
| 1,2-Dichloroethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 05/12/17 16:28 |
| 1,2-Dichloropropane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 16:28 |
| 1,3,5-Trimethylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 16:28 |
| 1,3-Dichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 16:28 |
| 1,3-Dichloropropane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 05/12/17 16:28 |
| 1,4-Dichlorobenzene | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 05/12/17 16:28 |
| 2,2-Dichloropropane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 16:28 |
| 2-Butanone (MEK) | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 05/12/17 16:28 |
| 2-Chlorotoluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 16:28 |
| 2-Hexanone | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 05/12/17 16:28 |
| 4-Chlorotoluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 16:28 |
| 4-Isopropyltoluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 16:28 |
| 4-Methyl-2-pentanone (MIBK) | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 05/12/17 16:28 |
| Benzene | 0.200 | U | 0.400 | 0.120 | ug/L | 1 | | 05/12/17 16:28 |
| Bromobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 16:28 |
| Bromochloromethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 16:28 |
| Bromodichloromethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 05/12/17 16:28 |
| Bromoform | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 16:28 |
| Bromomethane | 2.50 | U | 5.00 | 1.50 | ug/L | 1 | | 05/12/17 16:28 |
| Carbon disulfide | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 05/12/17 16:28 |
| Carbon tetrachloride | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 16:28 |
| Chlorobenzene | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 05/12/17 16:28 |
| Chloroethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 16:28 |

Print Date: 05/23/2017 12:15:28PM

J flagging is activated

Results of **17755-WTB1**

Client Sample ID: **17755-WTB1**
Client Project ID: **17755-002 151 W 100**
Lab Sample ID: 1172294005
Lab Project ID: 1172294

Collection Date: 05/11/17 09:00
Received Date: 05/11/17 16:11
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| Chloroform | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 16:28 |
| Chloromethane | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 16:28 |
| cis-1,2-Dichloroethene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 16:28 |
| cis-1,3-Dichloropropene | 0.250 U | | 0.500 | 0.150 | ug/L | 1 | | 05/12/17 16:28 |
| Dibromochloromethane | 0.250 U | | 0.500 | 0.150 | ug/L | 1 | | 05/12/17 16:28 |
| Dibromomethane | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 16:28 |
| Dichlorodifluoromethane | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 16:28 |
| Ethylbenzene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 16:28 |
| Freon-113 | 5.00 U | | 10.0 | 3.10 | ug/L | 1 | | 05/12/17 16:28 |
| Hexachlorobutadiene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 16:28 |
| Isopropylbenzene (Cumene) | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 16:28 |
| Methylene chloride | 2.50 U | | 5.00 | 1.00 | ug/L | 1 | | 05/12/17 16:28 |
| Methyl-t-butyl ether | 5.00 U | | 10.0 | 3.10 | ug/L | 1 | | 05/12/17 16:28 |
| Naphthalene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 16:28 |
| n-Butylbenzene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 16:28 |
| n-Propylbenzene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 16:28 |
| o-Xylene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 16:28 |
| P & M -Xylene | 1.00 U | | 2.00 | 0.620 | ug/L | 1 | | 05/12/17 16:28 |
| sec-Butylbenzene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 16:28 |
| Styrene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 16:28 |
| tert-Butylbenzene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 16:28 |
| Tetrachloroethene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 16:28 |
| Toluene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 16:28 |
| trans-1,2-Dichloroethene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 16:28 |
| trans-1,3-Dichloropropene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 16:28 |
| Trichloroethene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 16:28 |
| Trichlorofluoromethane | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 05/12/17 16:28 |
| Vinyl acetate | 5.00 U | | 10.0 | 3.10 | ug/L | 1 | | 05/12/17 16:28 |
| Vinyl chloride | 0.0750 U | | 0.150 | 0.0500 | ug/L | 1 | | 05/12/17 16:28 |
| Xylenes (total) | 1.50 U | | 3.00 | 1.00 | ug/L | 1 | | 05/12/17 16:28 |
| **Surrogates** | | | | | | | | |
| 1,2-Dichloroethane-D4 (surr) | 124 | * | 81-118 | | % | 1 | | 05/12/17 16:28 |
| 4-Bromofluorobenzene (surr) | 95.4 | | 85-114 | | % | 1 | | 05/12/17 16:28 |
| Toluene-d8 (surr) | 99.9 | | 89-112 | | % | 1 | | 05/12/17 16:28 |

Print Date: 05/23/2017 12:15:28PM

J flagging is activated

Results of **17755-WTB1**

Client Sample ID: **17755-WTB1**
Client Project ID: **17755-002 151 W 100**
Lab Sample ID: 1172294005
Lab Project ID: 1172294

Collection Date: 05/11/17 09:00
Received Date: 05/11/17 16:11
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

**Batch Information**

Analytical Batch: VMS16723
Analytical Method: SW8260C
Analyst: TJT
Analytical Date/Time: 05/12/17 16:28
Container ID: 1172294005-A

Prep Batch: VXX30492
Prep Method: SW5030B
Prep Date/Time: 05/12/17 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

## Method Blank

Blank ID: MB for HBN 1758648 [VXX/30492]
Blank Lab ID: 1384441

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1172294001, 1172294002, 1172294003, 1172294004, 1172294005

## Results by **SW8260C**

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

## Method Blank

Blank ID: MB for HBN 1758648 [VXX/30492]
Blank Lab ID: 1384441

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1172294001, 1172294002, 1172294003, 1172294004, 1172294005

Results by **SW8260C**

| Parameter | Results | LOQ/CL | DL | Units |
|---|---|---|---|---|
| Chloromethane | 0.500U | 1.00 | 0.310 | ug/L |
| cis-1,2-Dichloroethene | 0.500U | 1.00 | 0.310 | ug/L |
| cis-1,3-Dichloropropene | 0.250U | 0.500 | 0.150 | ug/L |
| Dibromochloromethane | 0.250U | 0.500 | 0.150 | ug/L |
| Dibromomethane | 0.500U | 1.00 | 0.310 | ug/L |
| Dichlorodifluoromethane | 0.500U | 1.00 | 0.310 | ug/L |
| Ethylbenzene | 0.500U | 1.00 | 0.310 | ug/L |
| Freon-113 | 5.00U | 10.0 | 3.10 | ug/L |
| Hexachlorobutadiene | 0.500U | 1.00 | 0.310 | ug/L |
| Isopropylbenzene (Cumene) | 0.500U | 1.00 | 0.310 | ug/L |
| Methylene chloride | 2.50U | 5.00 | 1.00 | ug/L |
| Methyl-t-butyl ether | 5.00U | 10.0 | 3.10 | ug/L |
| Naphthalene | 0.500U | 1.00 | 0.310 | ug/L |
| n-Butylbenzene | 0.500U | 1.00 | 0.310 | ug/L |
| n-Propylbenzene | 0.500U | 1.00 | 0.310 | ug/L |
| o-Xylene | 0.500U | 1.00 | 0.310 | ug/L |
| P & M -Xylene | 1.00U | 2.00 | 0.620 | ug/L |
| sec-Butylbenzene | 0.500U | 1.00 | 0.310 | ug/L |
| Styrene | 0.500U | 1.00 | 0.310 | ug/L |
| tert-Butylbenzene | 0.500U | 1.00 | 0.310 | ug/L |
| Tetrachloroethene | 0.500U | 1.00 | 0.310 | ug/L |
| Toluene | 0.500U | 1.00 | 0.310 | ug/L |
| trans-1,2-Dichloroethene | 0.500U | 1.00 | 0.310 | ug/L |
| trans-1,3-Dichloropropene | 0.500U | 1.00 | 0.310 | ug/L |
| Trichloroethene | 0.500U | 1.00 | 0.310 | ug/L |
| Trichlorofluoromethane | 0.500U | 1.00 | 0.310 | ug/L |
| Vinyl acetate | 5.00U | 10.0 | 3.10 | ug/L |
| Vinyl chloride | 0.0750U | 0.150 | 0.0500 | ug/L |
| Xylenes (total) | 1.50U | 3.00 | 1.00 | ug/L |
| **Surrogates** | | | | |
| 1,2-Dichloroethane-D4 (surr) | 106 | 81-118 | | % |
| 4-Bromofluorobenzene (surr) | 96.2 | 85-114 | | % |
| Toluene-d8 (surr) | 99.7 | 89-112 | | % |

## Method Blank

Blank ID: MB for HBN 1758648 [VXX/30492]
Blank Lab ID: 1384441

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1172294001, 1172294002, 1172294003, 1172294004, 1172294005

## Results by **SW8260C**

| Parameter | Results | LOQ/CL | DL | Units |
|---|---|---|---|---|

### Batch Information

Analytical Batch: VMS16723
Analytical Method: SW8260C
Instrument: VPA 780/5975 GC/MS
Analyst: TJT
Analytical Date/Time: 5/12/2017 10:42:00AM

Prep Batch: VXX30492
Prep Method: SW5030B
Prep Date/Time: 5/11/2017 6:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



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## Blank Spike Summary

Blank Spike ID: LCS for HBN 1172294 [VXX30492]
Blank Spike Lab ID: 1384442
Date Analyzed: 05/12/2017 11:00

Spike Duplicate ID: LCSD for HBN 1172294 [VXX30492]
Spike Duplicate Lab ID: 1384443
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1172294001, 1172294002, 1172294003, 1172294004, 1172294005

## Results by **SW8260C**

| | Blank Spike (ug/L) | | | Spike Duplicate (ug/L) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Parameter | Spike | Result | Rec (%) | Spike | Result | Rec (%) | CL | RPD (%) | RPD CL |
| 1,1,1,2-Tetrachloroethane | 30 | 27.3 | 91 | 30 | 27.4 | 91 | ( 78-124 ) | 0.40 | (< 20 ) |
| 1,1,1-Trichloroethane | 30 | 26.4 | 88 | 30 | 26.3 | 88 | ( 74-131 ) | 0.42 | (< 20 ) |
| 1,1,2,2-Tetrachloroethane | 30 | 25.7 | 86 | 30 | 24.4 | 81 | ( 71-121 ) | 5.20 | (< 20 ) |
| 1,1,2-Trichloroethane | 30 | 26.7 | 89 | 30 | 26.5 | 88 | ( 80-119 ) | 0.75 | (< 20 ) |
| 1,1-Dichloroethane | 30 | 25.0 | 84 | 30 | 29.6 | 99 | ( 77-125 ) | 16.80 | (< 20 ) |
| 1,1-Dichloroethene | 30 | 32.2 | 107 | 30 | 33.4 | 111 | ( 71-131 ) | 3.60 | (< 20 ) |
| 1,1-Dichloropropene | 30 | 26.6 | 89 | 30 | 26.4 | 88 | ( 79-125 ) | 0.76 | (< 20 ) |
| 1,2,3-Trichlorobenzene | 30 | 26.7 | 89 | 30 | 26.0 | 87 | ( 69-129 ) | 2.60 | (< 20 ) |
| 1,2,3-Trichloropropane | 30 | 26.6 | 89 | 30 | 25.2 | 84 | ( 73-122 ) | 5.10 | (< 20 ) |
| 1,2,4-Trichlorobenzene | 30 | 26.4 | 88 | 30 | 26.2 | 87 | ( 69-130 ) | 0.84 | (< 20 ) |
| 1,2,4-Trimethylbenzene | 30 | 27.6 | 92 | 30 | 27.5 | 92 | ( 79-124 ) | 0.15 | (< 20 ) |
| 1,2-Dibromo-3-chloropropane | 30 | 26.8 | 89 | 30 | 24.4 | 81 | ( 62-128 ) | 9.30 | (< 20 ) |
| 1,2-Dibromoethane | 30 | 27.9 | 93 | 30 | 27.3 | 91 | ( 77-121 ) | 2.10 | (< 20 ) |
| 1,2-Dichlorobenzene | 30 | 26.0 | 87 | 30 | 26.1 | 87 | ( 80-119 ) | 0.15 | (< 20 ) |
| 1,2-Dichloroethane | 30 | 24.9 | 83 | 30 | 24.5 | 82 | ( 73-128 ) | 1.60 | (< 20 ) |
| 1,2-Dichloropropane | 30 | 26.1 | 87 | 30 | 25.5 | 85 | ( 78-122 ) | 2.30 | (< 20 ) |
| 1,3,5-Trimethylbenzene | 30 | 27.3 | 91 | 30 | 27.4 | 91 | ( 75-124 ) | 0.59 | (< 20 ) |
| 1,3-Dichlorobenzene | 30 | 26.1 | 87 | 30 | 26.3 | 88 | ( 80-119 ) | 1.10 | (< 20 ) |
| 1,3-Dichloropropane | 30 | 26.6 | 89 | 30 | 26.4 | 88 | ( 80-119 ) | 0.60 | (< 20 ) |
| 1,4-Dichlorobenzene | 30 | 26.2 | 88 | 30 | 26.7 | 89 | ( 79-118 ) | 1.60 | (< 20 ) |
| 2,2-Dichloropropane | 30 | 25.5 | 85 | 30 | 25.8 | 86 | ( 60-139 ) | 1.20 | (< 20 ) |
| 2-Butanone (MEK) | 90 | 81.0 | 90 | 90 | 73.0 | 81 | ( 56-143 ) | 10.30 | (< 20 ) |
| 2-Chlorotoluene | 30 | 26.6 | 89 | 30 | 26.7 | 89 | ( 79-122 ) | 0.23 | (< 20 ) |
| 2-Hexanone | 90 | 81.7 | 91 | 90 | 76.1 | 85 | ( 57-139 ) | 7.10 | (< 20 ) |
| 4-Chlorotoluene | 30 | 26.7 | 89 | 30 | 26.8 | 90 | ( 78-122 ) | 0.41 | (< 20 ) |
| 4-Isopropyltoluene | 30 | 27.9 | 93 | 30 | 28.7 | 96 | ( 77-127 ) | 2.90 | (< 20 ) |
| 4-Methyl-2-pentanone (MIBK) | 90 | 80.7 | 90 | 90 | 75.0 | 83 | ( 67-130 ) | 7.30 | (< 20 ) |
| Benzene | 30 | 25.7 | 86 | 30 | 25.7 | 86 | ( 79-120 ) | 0.16 | (< 20 ) |
| Bromobenzene | 30 | 25.7 | 86 | 30 | 26.3 | 88 | ( 80-120 ) | 2.10 | (< 20 ) |
| Bromochloromethane | 30 | 26.7 | 89 | 30 | 26.6 | 89 | ( 78-123 ) | 0.15 | (< 20 ) |
| Bromodichloromethane | 30 | 26.3 | 88 | 30 | 26.0 | 87 | ( 79-125 ) | 1.10 | (< 20 ) |
| Bromoform | 30 | 28.1 | 94 | 30 | 27.4 | 91 | ( 66-130 ) | 2.60 | (< 20 ) |
| Bromomethane | 30 | 24.1 | 80 | 30 | 27.0 | 90 | ( 53-141 ) | 11.40 | (< 20 ) |
| Carbon disulfide | 45 | 47.6 | 106 | 45 | 49.0 | 109 | ( 64-133 ) | 3.00 | (< 20 ) |

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1172294 [VXX30492]
Blank Spike Lab ID: 1384442
Date Analyzed: 05/12/2017 11:00

Spike Duplicate ID: LCSD for HBN 1172294 [VXX30492]
Spike Duplicate Lab ID: 1384443
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1172294001, 1172294002, 1172294003, 1172294004, 1172294005

## Results by **SW8260C**

| | Blank Spike (ug/L) | | | Spike Duplicate (ug/L) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Parameter | Spike | Result | Rec (%) | Spike | Result | Rec (%) | CL | RPD (%) | RPD CL |
| Carbon tetrachloride | 30 | 27.6 | 92 | 30 | 27.0 | 90 | ( 72-136 ) | 2.00 | (< 20 ) |
| Chlorobenzene | 30 | 25.8 | 86 | 30 | 26.3 | 88 | ( 82-118 ) | 1.80 | (< 20 ) |
| Chloroethane | 30 | 25.4 | 85 | 30 | 30.0 | 100 | ( 60-138 ) | 16.70 | (< 20 ) |
| Chloroform | 30 | 25.5 | 85 | 30 | 25.4 | 85 | ( 79-124 ) | 0.59 | (< 20 ) |
| Chloromethane | 30 | 25.7 | 86 | 30 | 26.4 | 88 | ( 50-139 ) | 2.60 | (< 20 ) |
| cis-1,2-Dichloroethene | 30 | 25.6 | 85 | 30 | 25.2 | 84 | ( 78-123 ) | 1.50 | (< 20 ) |
| cis-1,3-Dichloropropene | 30 | 26.6 | 89 | 30 | 26.4 | 88 | ( 75-124 ) | 0.64 | (< 20 ) |
| Dibromochloromethane | 30 | 28.0 | 93 | 30 | 27.5 | 92 | ( 74-126 ) | 1.60 | (< 20 ) |
| Dibromomethane | 30 | 25.4 | 85 | 30 | 25.4 | 85 | ( 79-123 ) | 0.00 | (< 20 ) |
| Dichlorodifluoromethane | 30 | 24.1 | 80 | 30 | 24.3 | 81 | ( 32-152 ) | 0.99 | (< 20 ) |
| Ethylbenzene | 30 | 27.1 | 90 | 30 | 27.3 | 91 | ( 79-121 ) | 0.55 | (< 20 ) |
| Freon-113 | 45 | 50.4 | 112 | 45 | 50.2 | 112 | ( 70-136 ) | 0.30 | (< 20 ) |
| Hexachlorobutadiene | 30 | 27.5 | 92 | 30 | 29.0 | 97 | ( 66-134 ) | 5.20 | (< 20 ) |
| Isopropylbenzene (Cumene) | 30 | 27.9 | 93 | 30 | 28.4 | 95 | ( 72-131 ) | 1.80 | (< 20 ) |
| Methylene chloride | 30 | 25.6 | 85 | 30 | 29.1 | 97 | ( 74-124 ) | 12.90 | (< 20 ) |
| Methyl-t-butyl ether | 45 | 38.1 | 85 | 45 | 43.8 | 97 | ( 71-124 ) | 14.00 | (< 20 ) |
| Naphthalene | 30 | 26.9 | 90 | 30 | 25.2 | 84 | ( 61-128 ) | 6.50 | (< 20 ) |
| n-Butylbenzene | 30 | 27.8 | 93 | 30 | 28.5 | 95 | ( 75-128 ) | 2.70 | (< 20 ) |
| n-Propylbenzene | 30 | 27.2 | 91 | 30 | 27.2 | 91 | ( 76-126 ) | 0.00 | (< 20 ) |
| o-Xylene | 30 | 27.3 | 91 | 30 | 27.1 | 90 | ( 78-122 ) | 0.85 | (< 20 ) |
| P & M -Xylene | 60 | 55.1 | 92 | 60 | 55.3 | 92 | ( 80-121 ) | 0.36 | (< 20 ) |
| sec-Butylbenzene | 30 | 27.7 | 93 | 30 | 27.8 | 93 | ( 77-126 ) | 0.36 | (< 20 ) |
| Styrene | 30 | 27.9 | 93 | 30 | 28.3 | 94 | ( 78-123 ) | 1.10 | (< 20 ) |
| tert-Butylbenzene | 30 | 27.5 | 92 | 30 | 28.1 | 94 | ( 78-124 ) | 2.10 | (< 20 ) |
| Tetrachloroethene | 30 | 27.4 | 91 | 30 | 27.5 | 92 | ( 74-129 ) | 0.58 | (< 20 ) |
| Toluene | 30 | 25.4 | 85 | 30 | 25.7 | 86 | ( 80-121 ) | 0.98 | (< 20 ) |
| trans-1,2-Dichloroethene | 30 | 25.4 | 85 | 30 | 30.0 | 100 | ( 75-124 ) | 16.70 | (< 20 ) |
| trans-1,3-Dichloropropene | 30 | 27.7 | 92 | 30 | 28.0 | 93 | ( 73-127 ) | 1.30 | (< 20 ) |
| Trichloroethene | 30 | 26.5 | 88 | 30 | 26.3 | 88 | ( 79-123 ) | 0.61 | (< 20 ) |
| Trichlorofluoromethane | 30 | 33.7 | 112 | 30 | 33.5 | 112 | ( 65-141 ) | 0.54 | (< 20 ) |
| Vinyl acetate | 30 | 26.6 | 89 | 30 | 25.8 | 86 | ( 54-146 ) | 3.20 | (< 20 ) |
| Vinyl chloride | 30 | 24.3 | 81 | 30 | 24.1 | 80 | ( 58-137 ) | 0.70 | (< 20 ) |
| Xylenes (total) | 90 | 82.4 | 92 | 90 | 82.4 | 92 | ( 79-121 ) | 0.04 | (< 20 ) |



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## Blank Spike Summary

Blank Spike ID: LCS for HBN 1172294 [VXX30492]
Blank Spike Lab ID: 1384442
Date Analyzed: 05/12/2017 11:00

Spike Duplicate ID: LCSD for HBN 1172294 [VXX30492]
Spike Duplicate Lab ID: 1384443
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1172294001, 1172294002, 1172294003, 1172294004, 1172294005

## Results by **SW8260C**

| | Blank Spike (%) | | | Spike Duplicate (%) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Parameter | Spike | Result | Rec (%) | Spike | Result | Rec (%) | CL | RPD (%) | RPD CL |
| **Surrogates** | | | | | | | | | |
| 1,2-Dichloroethane-D4 (surr) | 30 | 99.5 | 100 | 30 | 98.6 | 99 | ( 81-118 ) | 0.84 | |
| 4-Bromofluorobenzene (surr) | 30 | 97.9 | 98 | 30 | 98.6 | 99 | ( 85-114 ) | 0.78 | |
| Toluene-d8 (surr) | 30 | 99.5 | 100 | 30 | 100 | 100 | ( 89-112 ) | 0.60 | |

## Batch Information

Analytical Batch: **VMS16723**
Analytical Method: **SW8260C**
Instrument: **VPA 780/5975 GC/MS**
Analyst: **TJT**

Prep Batch: **VXX30492**
Prep Method: **SW5030B**
Prep Date/Time: **05/11/2017 06:00**
Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL



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## Method Blank

Blank ID: MB for HBN 1759473 [VXX/30532]
Blank Lab ID: 1385925

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1172294002

## Results by **SW8260C**

| Parameter | Results | LOQ/CL | DL | Units |
|---|---|---|---|---|
| Dichlorodifluoromethane | 0.500U | 1.00 | 0.310 | ug/L |
| **Surrogates** | | | | |
| 1,2-Dichloroethane-D4 (surr) | 101 | 81-118 | | % |
| 4-Bromofluorobenzene (surr) | 100 | 85-114 | | % |
| Toluene-d8 (surr) | 98.4 | 89-112 | | % |

## Batch Information

Analytical Batch: VMS16747
Analytical Method: SW8260C
Instrument: VSA Agilent GC/MS 7890B/5977A
Analyst: TJT
Analytical Date/Time: 5/22/2017 10:02:00AM

Prep Batch: VXX30532
Prep Method: SW5030B
Prep Date/Time: 5/22/2017 6:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



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## Blank Spike Summary

Blank Spike ID: LCS for HBN 1172294 [VXX30532]
Blank Spike Lab ID: 1385926
Date Analyzed: 05/22/2017 10:19

Spike Duplicate ID: LCSD for HBN 1172294 [VXX30532]
Spike Duplicate Lab ID: 1385927
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1172294002

## Results by **SW8260C**

| | Blank Spike (ug/L) | | | Spike Duplicate (ug/L) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Parameter | Spike | Result | Rec (%) | Spike | Result | Rec (%) | CL | RPD (%) | RPD CL |
| Dichlorodifluoromethane | 30 | 28.8 | 96 | 30 | 29.0 | 97 | ( 32-152 ) | 0.73 | (< 20 ) |
| **Surrogates** | | | | | | | | | |
| 1,2-Dichloroethane-D4 (surr) | 30 | 99.8 | 100 | 30 | 101 | 101 | ( 81-118 ) | 1.60 | |
| 4-Bromofluorobenzene (surr) | 30 | 99.9 | 100 | 30 | 99.5 | 100 | ( 85-114 ) | 0.43 | |
| Toluene-d8 (surr) | 30 | 98.4 | 98 | 30 | 99.6 | 100 | ( 89-112 ) | 1.20 | |

## Batch Information

Analytical Batch: **VMS16747**
Analytical Method: **SW8260C**
Instrument: **VSA Agilent GC/MS 7890B/5977A**
Analyst: **TJT**

Prep Batch: **VXX30532**
Prep Method: **SW5030B**
Prep Date/Time: **05/22/2017 06:00**
Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL



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## Matrix Spike Summary

Original Sample ID: 1385928
MS Sample ID: 1385929 MS
MSD Sample ID: 1385930 MSD

QC for Samples: 1172294002

Analysis Date: 05/22/2017 21:06
Analysis Date: 05/22/2017 21:23
Analysis Date: 05/22/2017 21:41
Matrix: Water (Surface, Eff., Ground)

## Results by **SW8260C**

| | | Matrix Spike (ug/L) | | | Spike Duplicate (ug/L) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Parameter | Sample | Spike | Result | Rec (%) | Spike | Result | Rec (%) | CL | RPD (%) | RPD CL |
| Dichlorodifluoromethane | 50.0U | 3000 | 2900 | 97 | 3000 | 3070 | 102 | 32-152 | 5.80 | (< 20 ) |
| **Surrogates** | | | | | | | | | | |
| 1,2-Dichloroethane-D4 (surr) | | 3000 | 2980 | 99 | 3000 | 2960 | 99 | 81-118 | 0.44 | |
| 4-Bromofluorobenzene (surr) | | 3000 | 2980 | 99 | 3000 | 3010 | 100 | 85-114 | 0.93 | |
| Toluene-d8 (surr) | | 3000 | 2910 | 97 | 3000 | 2950 | 98 | 89-112 | 1.40 | |

## Batch Information

Analytical Batch: VMS16747
Analytical Method: SW8260C
Instrument: VSA Agilent GC/MS 7890B/5977A
Analyst: TJT
Analytical Date/Time: 5/22/2017 9:23:00PM

Prep Batch: VXX30532
Prep Method: Volatiles Extraction 8240/8260 FULL
Prep Date/Time: 5/22/2017 6:00:00AM
Prep Initial Wt./Vol.: 5.00mL
Prep Extract Vol: 5.00mL



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## Method Blank

Blank ID: MB for HBN 1758619 [XXX/37335]
Blank Lab ID: 1384312

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1172294001, 1172294002, 1172294003, 1172294004

## Results by **8270D SIM LV (PAH)**

| Parameter | Results | LOQ/CL | DL | Units |
|---|---|---|---|---|
| 1-Methylnaphthalene | 0.0250U | 0.0500 | 0.0150 | ug/L |
| 2-Methylnaphthalene | 0.0250U | 0.0500 | 0.0150 | ug/L |
| Acenaphthene | 0.0250U | 0.0500 | 0.0150 | ug/L |
| Acenaphthylene | 0.0250U | 0.0500 | 0.0150 | ug/L |
| Anthracene | 0.0250U | 0.0500 | 0.0150 | ug/L |
| Benzo(a)Anthracene | 0.0250U | 0.0500 | 0.0150 | ug/L |
| Benzo[a]pyrene | 0.0100U | 0.0200 | 0.00620 | ug/L |
| Benzo[b]Fluoranthene | 0.0250U | 0.0500 | 0.0150 | ug/L |
| Benzo[g,h,i]perylene | 0.0250U | 0.0500 | 0.0150 | ug/L |
| Benzo[k]fluoranthene | 0.0250U | 0.0500 | 0.0150 | ug/L |
| Chrysene | 0.0250U | 0.0500 | 0.0150 | ug/L |
| Dibenzo[a,h]anthracene | 0.0100U | 0.0200 | 0.00620 | ug/L |
| Fluoranthene | 0.0250U | 0.0500 | 0.0150 | ug/L |
| Fluorene | 0.0250U | 0.0500 | 0.0150 | ug/L |
| Indeno[1,2,3-c,d] pyrene | 0.0250U | 0.0500 | 0.0150 | ug/L |
| Naphthalene | 0.0500U | 0.100 | 0.0310 | ug/L |
| Phenanthrene | 0.0250U | 0.0500 | 0.0150 | ug/L |
| Pyrene | 0.0250U | 0.0500 | 0.0150 | ug/L |
| **Surrogates** | | | | |
| 2-Fluorobiphenyl (surr) | 92.7 | 53-106 | | % |
| Terphenyl-d14 (surr) | 94.2 | 58-132 | | % |

## Batch Information

Analytical Batch: XMS10027
Analytical Method: 8270D SIM LV (PAH)
Instrument: SVA Agilent 780/5975 GC/MS
Analyst: ARS
Analytical Date/Time: 5/18/2017 5:26:00PM

Prep Batch: XXX37335
Prep Method: SW3520C
Prep Date/Time: 5/12/2017 10:03:44AM
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL



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## Blank Spike Summary

Blank Spike ID: LCS for HBN 1172294 [XXX37335]
Blank Spike Lab ID: 1384313
Date Analyzed: 05/18/2017 17:46

Spike Duplicate ID: LCSD for HBN 1172294 [XXX37335]
Spike Duplicate Lab ID: 1384314
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1172294001, 1172294002, 1172294003, 1172294004

## Results by **8270D SIM LV (PAH)**

| | Blank Spike (ug/L) | | | Spike Duplicate (ug/L) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Parameter | Spike | Result | Rec (%) | Spike | Result | Rec (%) | CL | RPD (%) | RPD CL |
| 1-Methylnaphthalene | 2 | 1.76 | 88 | 2 | 1.66 | 83 | ( 41-115 ) | 5.80 | (< 20 ) |
| 2-Methylnaphthalene | 2 | 1.65 | 83 | 2 | 1.54 | 77 | ( 39-114 ) | 6.90 | (< 20 ) |
| Acenaphthene | 2 | 2.11 | 106 | 2 | 2.00 | 100 | ( 48-114 ) | 5.70 | (< 20 ) |
| Acenaphthylene | 2 | 1.74 | 87 | 2 | 1.63 | 82 | ( 35-121 ) | 6.70 | (< 20 ) |
| Anthracene | 2 | 1.80 | 90 | 2 | 1.68 | 84 | ( 53-119 ) | 6.50 | (< 20 ) |
| Benzo(a)Anthracene | 2 | 1.72 | 86 | 2 | 1.62 | 81 | ( 59-120 ) | 5.70 | (< 20 ) |
| Benzo[a]pyrene | 2 | 1.72 | 86 | 2 | 1.60 | 80 | ( 53-120 ) | 6.80 | (< 20 ) |
| Benzo[b]Fluoranthene | 2 | 1.73 | 86 | 2 | 1.61 | 80 | ( 53-126 ) | 7.20 | (< 20 ) |
| Benzo[g,h,i]perylene | 2 | 1.66 | 83 | 2 | 1.54 | 77 | ( 44-128 ) | 7.40 | (< 20 ) |
| Benzo[k]fluoranthene | 2 | 1.75 | 87 | 2 | 1.63 | 82 | ( 54-125 ) | 6.80 | (< 20 ) |
| Chrysene | 2 | 1.82 | 91 | 2 | 1.74 | 87 | ( 57-120 ) | 4.70 | (< 20 ) |
| Dibenzo[a,h]anthracene | 2 | 1.65 | 83 | 2 | 1.49 | 74 | ( 44-131 ) | 10.40 | (< 20 ) |
| Fluoranthene | 2 | 1.75 | 88 | 2 | 1.66 | 83 | ( 58-120 ) | 5.10 | (< 20 ) |
| Fluorene | 2 | 1.77 | 88 | 2 | 1.67 | 83 | ( 50-118 ) | 5.90 | (< 20 ) |
| Indeno[1,2,3-c,d] pyrene | 2 | 1.67 | 84 | 2 | 1.56 | 78 | ( 48-130 ) | 6.60 | (< 20 ) |
| Naphthalene | 2 | 1.70 | 85 | 2 | 1.61 | 80 | ( 43-114 ) | 5.70 | (< 20 ) |
| Phenanthrene | 2 | 1.72 | 86 | 2 | 1.62 | 81 | ( 53-115 ) | 6.20 | (< 20 ) |
| Pyrene | 2 | 1.82 | 91 | 2 | 1.72 | 86 | ( 53-121 ) | 5.10 | (< 20 ) |
| **Surrogates** | | | | | | | | | |
| 2-Fluorobiphenyl (surr) | 2 | 96.2 | 96 | 2 | 90.4 | 90 | ( 53-106 ) | 6.20 | |
| Terphenyl-d14 (surr) | 2 | 96.1 | 96 | 2 | 90.7 | 91 | ( 58-132 ) | 5.80 | |

## Batch Information

Analytical Batch: **XMS10027**
Analytical Method: **8270D SIM LV (PAH)**
Instrument: **SVA Agilent 780/5975 GC/MS**
Analyst: **ARS**

Prep Batch: **XXX37335**
Prep Method: **SW3520C**
Prep Date/Time: **05/12/2017 10:03**
Spike Init Wt./Vol.: 2 ug/L Extract Vol: 1 mL
Dupe Init Wt./Vol.: 2 ug/L Extract Vol: 1 mL



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## Method Blank

Blank ID: MB for HBN 1758968 [XXX/37349]
Blank Lab ID: 1384770

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1172294001, 1172294002, 1172294003, 1172294004

## Results by **AK102**

| Parameter | Results | LOQ/CL | DL | Units |
|---|---|---|---|---|
| Diesel Range Organics | 0.190J | 0.600 | 0.180 | mg/L |
| **Surrogates** | | | | |
| 5a Androstane (surr) | 93.8 | 60-120 | | % |

## Batch Information

Analytical Batch: XFC13336
Analytical Method: AK102
Instrument: Agilent 7890B R
Analyst: FDR
Analytical Date/Time: 5/17/2017 10:07:00AM

Prep Batch: XXX37349
Prep Method: SW3520C
Prep Date/Time: 5/16/2017 9:38:20AM
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL



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## Blank Spike Summary

Blank Spike ID: LCS for HBN 1172294 [XXX37349]
Blank Spike Lab ID: 1384771
Date Analyzed: 05/17/2017 10:16

Spike Duplicate ID: LCSD for HBN 1172294 [XXX37349]
Spike Duplicate Lab ID: 1384772
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1172294001, 1172294002, 1172294003, 1172294004

## Results by **AK102**

| | Blank Spike (mg/L) | | | Spike Duplicate (mg/L) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Parameter | Spike | Result | Rec (%) | Spike | Result | Rec (%) | CL | RPD (%) | RPD CL |
| Diesel Range Organics | 20 | 18.9 | 95 | 20 | 18.0 | 90 | ( 75-125 ) | 4.70 | (< 20 ) |
| **Surrogates** | | | | | | | | | |
| 5a Androstane (surr) | 0.4 | 95.3 | 95 | 0.4 | 92.2 | 92 | ( 60-120 ) | 3.30 | |

## Batch Information

Analytical Batch: **XFC13336**
Analytical Method: **AK102**
Instrument: **Agilent 7890B R**
Analyst: **FDR**

Prep Batch: **XXX37349**
Prep Method: **SW3520C**
Prep Date/Time: **05/16/2017 09:38**
Spike Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL
Dupe Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL



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1172294

# SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

# CHAIN OF CUSTODY RECORD

Page 1 of 1

Laboratory SGS
Attn: Tori


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Lake Oswego, OR 97035
(503) 223-6147

1321 Bannock Street, Suite 200
Denver, CO 80204
(303) 825-3800


**Analysis Parameters/Sample Container Description**
(include preservative if used)

| Sample Identity | Lab No. | Time | Date Sampled | Comp. | Grab | 8260B / VOCs | EPA 8260B | DRO | MRO | PAHs | EPA 8270D SIM | | | Total Number of Containers | Remarks/Matrix |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 17755 - MW30 | (1) A-G | 1420 | 5/11/17 | | X | X | X | X | X | | | | | 7 | Groundwater |
| MW31 | (2) A-G | 1310 | | | X | X | X | X | X | | | | | 7 | |
| MW32 | (3) A-G | 1150 | | | X | X | X | X | X | | | | | 7 | |
| MW40 | (4) A-G | 1500 | | | X | X | X | X | X | | | | | 7 | |
| WTB1 | (5) A-C | 900 | | | | X | | | | | | | | 1 | Trip Blank |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |

| Project Information | | Sample Receipt | |
|---|---|---|---|
| Project Number: | 17755-002 | Total Number of Containers | |
| Project Name: | Spar 151 MW 100 | COC Seals/Intact? Y/N/NA | |
| Contact: | Jake Tracy | Received Good Cond./Cold | 2.1 |
| Ongoing Project? | Yes ☒ No ☐ | Delivery Method: | #D26 |
| Sampler: | Jake Tracy | Hand Delivered (attach shipping bill, if any) | |

| Instructions | |
|---|---|
| Requested Turnaround Time: | Standard |
| Special Instructions: | |

| Relinquished By: 1. | Relinquished By: 2. | Relinquished By: 3. |
|---|---|---|
| Signature: Time: 1611 | Signature: Time: | Signature: Time: |
| Printed Name: Jake Tracy Date: 5/11/17 | Printed Name: Date: | Printed Name: Date: |
| Company: S&W | Company: | Company: |
| **Received By: 1.** | **Received By: 2.** | **Received By: 3.** |
| Signature: Time: | Signature: Time: | Signature: Time: 16:11 |
| Printed Name: Date: | Printed Name: Date: | Printed Name: Nicholas Wells Date: 5/11/17 |
| Company: | Company: | Company: SGS |

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report
Yellow - w/shipment - for consignee files
Pink - Shannon & Wilson - Job File

F-19-91/UR

43-0146

No. 30729

e-Sample Receipt Form

**SGS Workorder #:** **1172294**

| 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 | ABSENT |
| COC accompanied samples? | yes | |
| yes **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 @ 2.1 °C Therm. ID: D26 |
| | n/a | Cooler ID: @ °C Therm. ID: |
| | n/a | Cooler ID: @ °C Therm. ID: |
| | n/a | Cooler ID: @ °C Therm. ID: |
| | n/a | 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 | |
| If samples received without a temperature blank, the "cooler temperature" will be documented in lieu of the temperature blank & "**COOLER TEMP**" will be noted to the right. In cases where neither a temp blank nor cooler temp can be obtained, note "ambient" or "chilled". | | |
| Note: Identify containers received at non-compliant temperature . Use form FS-0029 if more space is needed. | | |
| **Holding Time / Documentation / Sample Condition Requirements** | | Note: Refer to form F-083 "Sample Guide" for specific holding times. |
| Were samples received within holding time? | yes | |
| Do samples **match COC**** (i.e.,sample IDs,dates/times collected)? **Note: If times differ <1hr, record details & login per COC. | yes | |
| Were analyses requested unambiguous? (i.e., method is specified for analyses with >1 option for analysis) | yes | |
| | n/a | ***Exemption permitted for metals (e.g,200.8/6020A). |
| Were proper containers (type/mass/volume/preservative***)used? | yes | |
| **Volatile / LL-Hg Requirements** | | |
| Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples? | yes | |
| 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):

## Sample Containers and Preservatives

| Container Id | Preservative | Container Condition | Container Id | Preservative | Container Condition |
|---|---|---|---|---|---|
| 1172294001-A | HCL to pH < 2 | OK | | | |
| 1172294001-B | HCL to pH < 2 | OK | | | |
| 1172294001-C | HCL to pH < 2 | OK | | | |
| 1172294001-D | HCL to pH < 2 | OK | | | |
| 1172294001-E | HCL to pH < 2 | OK | | | |
| 1172294001-F | No Preservative Required | OK | | | |
| 1172294001-G | No Preservative Required | OK | | | |
| 1172294002-A | HCL to pH < 2 | OK | | | |
| 1172294002-B | HCL to pH < 2 | OK | | | |
| 1172294002-C | HCL to pH < 2 | OK | | | |
| 1172294002-D | HCL to pH < 2 | OK | | | |
| 1172294002-E | HCL to pH < 2 | OK | | | |
| 1172294002-F | No Preservative Required | OK | | | |
| 1172294002-G | No Preservative Required | OK | | | |
| 1172294003-A | HCL to pH < 2 | OK | | | |
| 1172294003-B | HCL to pH < 2 | OK | | | |
| 1172294003-C | HCL to pH < 2 | OK | | | |
| 1172294003-D | HCL to pH < 2 | OK | | | |
| 1172294003-E | HCL to pH < 2 | OK | | | |
| 1172294003-F | No Preservative Required | OK | | | |
| 1172294003-G | No Preservative Required | OK | | | |
| 1172294004-A | HCL to pH < 2 | OK | | | |
| 1172294004-B | HCL to pH < 2 | OK | | | |
| 1172294004-C | HCL to pH < 2 | OK | | | |
| 1172294004-D | HCL to pH < 2 | OK | | | |
| 1172294004-E | HCL to pH < 2 | OK | | | |
| 1172294004-F | No Preservative Required | OK | | | |
| 1172294004-G | No Preservative Required | OK | | | |
| 1172294005-A | HCL to pH < 2 | OK | | | |
| 1172294005-B | HCL to pH < 2 | OK | | | |
| 1172294005-C | HCL to pH < 2 | OK | | | |

| Container Id | Preservative | Container Condition | Container Id | Preservative | Container Condition |
|---|---|---|---|---|---|

Container Condition Glossary

Containers for bacteriological, low level mercury and VOA vials are not opened prior to analysis and will be assigned condition code OK unless evidence indicates than an inappropriate container was submitted.

OK - The container was received at an acceptable pH for the analysis requested.
BU - The container was received with headspace greater than 6mm.
DM- The container was received damaged.
FR- The container was received frozen and not usable for Bacteria or BOD analyses.
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.

# LABORATORY DATA REVIEW CHECKLIST

**CS Report Name:** 151 West 100th Avenue, Anchorage, Alaska **Date:** June 2017

**Laboratory Report Date:** May 23, 2017

**Consultant Firm:** Shannon & Wilson, Inc.

**Completed by:** Jessa Tibbetts
**Title:** Environmental Scientist
**Laboratory Name:** SGS North America Inc.
**Work Order Number:** 1172294
**ADEC File Number:** 2100.38.539

(**NOTE**: ***NA*** = not applicable; Text in *italics* added by Shannon & Wilson, Inc.)

## 1. Laboratory

**a.** Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses? **Yes / No / NA (Please explain.)**
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 / NA**
Comments: *The samples were not transferred to another "network" laboratory or sub-contracted to an alternate laboratory.*

## 2. Chain of Custody (COC)

**a.** COC information completed, signed, and dated (including released/received by)?
**Yes / No / NA (Please explain.)**
Comments**:**

**b.** Correct analyses requested? **Yes / No / *NA* (Please explain.)**
Comments:

## 3. Laboratory Sample Receipt Documentation

**a.** Sample/cooler temperature documented and within range at receipt (4° ± 2° C)?
**Yes / No / NA (Please explain.)**
Comments: *The temperature blank had a temperature of 2.1°* C.

**b.** Sample preservation acceptable - acidified waters, Methanol-preserved VOC soil (GRO, BTEX, VOCs, etc.)? **Yes / No / NA (Please explain.)**
Comments:

**c.** Sample condition documented - broken, leaking (soil MeOH), zero headspace (VOC vials)? **Yes / No / NA (Please explain.)**
Comments:

**d.** If there were any discrepancies, were they documented (e.g., incorrect sample containers/preservation, sample temperatures outside range, insufficient sample size, missing samples)? **Yes / No / NA (Please explain.)**
Comments: *No discrepancies documented.*

**e.** Data quality or usability affected? **Yes / No (Please Explain.)**
Comments*: Data quality/usability are considered unaffected; see above.*

## 4. Case Narrative

**a.** Present and understandable? **Yes / No / NA (Please explain.)**
Comments:

**b.** Discrepancies, errors or QC failures noted by the lab? **Yes / No / NA (Please explain.)**
Comments: *The case narrative notes that:*

- *For Method EPA 8260C, surrogate recovery for 1,2-dichloroethane-D4 does not meet QC criteria for Samples MW31 (%122) and WTB1 (%124).*

**c.** Were corrective actions documented? **Yes / No / NA (Please explain.)**
Comments: *The case narrative does not discuss corrective actions taken.*

**d.** What is the effect on data quality/usability, according to the case narrative?
Comments: *The case narrative indicates that analytes associated with surrogate 1,2-dichloroethane-D4 were not detected in the project samples above the LOQ.*

## 5. Sample Results

**a.** Correct analyses performed/reported as requested on COC? **Yes / No / NA (Please explain.)**
Comments:

**b.** All applicable holding times met? **Yes / No / NA (Please explain.)**
Comments:

**c.** All soils reported on a dry-weight basis? **Yes / No / NA (Please explain.)**
Comments: *Soil samples were not collected as part of this project.*

**d.** Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project? **Yes / No / NA (Please explain.)**
Comments*: For all project samples, the LOQs and LODs for 1,2,3-trichloropropane are greater than the ADEC cleanup level.*

**e.** Data quality or usability affected? **(Please explain.)**
Comments: *There is a potential that ,2,3-trichloropropane is present at a concentration greater than the ADEC cleanup levels, but less than the LOQs. However, note that estimated (J-flagged) concentrations, less than the LOQs, were not detected in the project samples.*

## 6. QC Samples

### a. Method Blank

**i.** One method blank reported per matrix, analysis, and 20 samples?
**Yes / No / NA (Please explain.)**
Comments:

**ii.** All method blank results less than LOQ? **Yes / No / NA (Please explain.)**
Comments: *Although less than the LOQ, an estimated (J-flagged) concentration of DRO (0.190 mg/L) was detected in the method blank associated with Samples MW30, MW31, MW32, and MW40.*

**iii.** If above LOQ, what samples are affected?
Comments: *Samples MW30, MW31, MW32, and MW40 are considered affected by the method blank detection.*

**iv.** Do the affected sample(s) have data flags? **Yes / No / NA**
Comments: *The project samples associated with the method blank detection are considered affected when the reported sample concentration is within 10x the reported method blank concentration. If both the sample concentration and method blank concentrations are reported at levels less than the LOQ, the sample concentration is reported as non-detect at the LOQ and flagged "B." If the sample concentration is greater than 5x the method blank concentration and less than or equal to 10x the method blank concentration, the sample concentration is reported at the detected sample concentration.*

If so, are the data flags clearly defined? **Yes / No / NA**
Comments:

**v.** Data quality or usability affected? **(Please explain.)**
Comments: *Samples MW30. MW32, and MW40 contained an estimated concentration of DRO, and are reported as non-detect at the LOQ and flagged "B." Sample MW31 contained a concentration of DRO less than the ADEC cleanup level and is reported at the detected sample concentration and flagged "B". The DRO results are reported as non-detect or less than the ADEC cleanup level; therefore, the data are acceptable for the purposes of this report.*

**b. Laboratory Control Sample/Duplicate (LCS/LCSD)**

**i.** Organics - One LCS/LCSD reported per matrix, analysis, and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846) **Yes / No / *NA* (Please explain.)**
Comments:

**ii.** Metals/Inorganics - One LCS and one sample duplicate reported per matrix, analysis and 20 samples? **Yes / No / NA (Please explain.)**
Comments:

**iii.** Accuracy – All percent recoveries (%R) reported *and w*ithin method or laboratory limits? And project specified DQOs, if applicable. (AK petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages) **Yes / No / NA (Please explain.)**
Comments:

**iv.** Precision – All relative percent differences (RPDs) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages) **Yes / No / NA (Please explain.)**
Comments:

**v.** If %R or RPD is outside of acceptable limits, what samples are affected? ***NA***
Comments:

**vi.** Do the affected samples(s) have data flags? **Yes / No / NA**
Comments: *See above.*

If so, are the data flags clearly defined? **Yes / No / NA**
Comments: *See above.*

**vii.** Data quality or usability affected? Explain. ***NA***
Comments*: Data quality/usability are unaffected; see above.*

**c. Surrogates - Organics Only**

**i.** Are surrogate recoveries reported for organic analyses, field, QC, and laboratory samples? **Yes / No / NA (Please explain.)**
Comments:

**ii.** Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages) **Yes / No / NA (Please explain.)**
Comments: *Surrogate recovery for 1,2-dichloroethane-D4 does not meet QC criteria for Samples MW31 (%122) and WTB1 (%124).*

**iii.** Do the sample results with failed surrogate recoveries have data flags? **Yes / No / NA (Please explain.)**
Comments:

If so, are the data flags clearly defined? **Yes / No / NA**
Comments:

**iv.** Data quality or usability affected? Explain.
Comments: *The laboratory stated that analytes associated with the 2-dichloroethane-D4 surrogate were not detected above the LOQ, therefore the data quality/usability are considered unaffected.*

**d. Trip Blank** - Volatile analyses only (GRO, BTEX, VOCs, etc.)

**i.** One trip blank reported per matrix, analysis and cooler? **Yes / No / NA (Please explain.)**
Comments: *One trip blank (WTB1) was submitted to the lab with the samples.*

**ii.** Is the cooler used to transport the trip blank and volatile samples clearly indicated on the COC? **Yes / No / NA (Please explain if NA or no.)**
Comments: *Only one cooler was used to transport the samples.*

**iii.** All results less than LOQ? **Yes / No / NA (Please explain.)**
Comments:

**iv.** If above LOQ, what samples are affected? **NA**
Comments**:**

**v.** Data quality or usability affected? Explain.
Comments: *Data quality/usability are unaffected; see above.*

**e. Field Duplicate**

**i.** One field duplicate submitted per matrix, analysis and 10 project samples? **Yes / No / NA (Please explain.)**
Comments: *Sample MW40 is a duplicate of Sample MW30.*

**ii.** Were the field duplicates submitted blind to the lab? **Yes / No / NA (Please explain.)**
Comments*:*

**iii.** Precision – All relative percent differences (RPDs) less than specified DQOs? (Recommended: 30% for water, 50% for soil) **Yes / No / NA (Please explain.)**
Comments: *The RPDs for 1-Methylnaphthalene (50.67%) and 2-Methylnaphthalene (37.69%) were greater than the specified DQO.*

**iv.** Data quality or usability affected? Explain. ***NA***
Comments: *1-Methylnaphthalene and 2-Methylnaphthalene were detected in both the primary and duplicate samples at concentrations less than the applicable ADEC cleanup levels; therefore, the data are acceptable for the purposes of this report.*

**f. Decontamination or Equipment Blank** (if not applicable, a comment stating why must be entered below)
**Yes / No / NA (Please explain.)**
Comments: *A decontamination or equipment blank was not included in our ADEC-approved work plan.*

**i.** All results less than LOQ? **Yes / No / NA (Please explain.)**
Comments:

**ii.** If results are above LOQ, what samples are affected? ***NA***
Comments:

**iii.** Data quality or usability affected? Explain. ***NA***
Comments:

**7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab-specific, etc.)**

**a.** Are they defined and appropriate? **Yes / No / NA**
Comments: *Laboratory-specific flags are defined on page 4 of the SGS report.*

**Laboratory Report of Analysis**

To: Shannon & Wilson, Inc.
5430 Fairbanks St. Suite 3
Anchorage, AK 99518
(907)561-2120

Report Number: **1175926**

Client Project: **17755-002 151 W 100th Ave**

Dear Jacob Tracy,

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 Victoria 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.

Victoria Pennick Date
Project Manager
Victoria.Pennick@sgs.com



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

## Case Narrative

SGS Client: **Shannon & Wilson, Inc.**
SGS Project: **1175926**
Project Name/Site: **17755-002 151 W 100th Ave**
Project Contact: **Jacob Tracy**

Refer to sample receipt form for information on sample condition.

**LCSD for HBN 1767466 [VXX/3120 (1410001) LCSD**

8260C - LCS/LCSD RPDs for several analytes do not meet QC criteria. These analytes were not detected in associated samples. All other QC is within criteria; no further action was taken.

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



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## Laboratory Qualifiers

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

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

SGS maintains a formal Quality Assurance/Quality Control (QA/QC) program. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request. The laboratory certification numbers are AK00971 (DW Chemistry & Microbiology) & UST-005 (CS) for ADEC and 2944.01 for DOD ELAP/ISO17025 (RCRA methods: 1020B, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035A, 6020A, 7470A, 7471B, 8015C, 8021B, 8082A, 8260C, 8270D, 8270D-SIM, 9040C, 9045D, 9056A, 9060A, AK101 and AK102/103). Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP and, when applicable, other regulatory authorities.

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

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

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



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## Sample Summary

| Client Sample ID | Lab Sample ID | Collected | Received | Matrix |
|---|---|---|---|---|
| 17755-MW30 | 1175926001 | 08/22/2017 | 08/22/2017 | Water (Surface, Eff., Ground) |
| 17755-MW31 | 1175926002 | 08/22/2017 | 08/22/2017 | Water (Surface, Eff., Ground) |
| 17755-MW32 | 1175926003 | 08/22/2017 | 08/22/2017 | Water (Surface, Eff., Ground) |
| 17755-MW40 | 1175926004 | 08/22/2017 | 08/22/2017 | Water (Surface, Eff., Ground) |
| 17755-TB | 1175926005 | 08/22/2017 | 08/22/2017 | Water (Surface, Eff., Ground) |

| Method | Method Description |
|---|---|
| 8270D SIM LV (PAH) | 8270 PAH SIM GC/MS Liq/Liq ext. LV |
| AK102 | DRO Low Volume (W) |
| SW8260C | Volatile Organic Compounds (W) FULL |



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## Detectable Results Summary

Client Sample ID: **17755-MW30**
Lab Sample ID: 1175926001

| | Parameter | Result | Units |
|---|---|---|---|
| **Polynuclear Aromatics GC/MS** | 1-Methylnaphthalene | 0.102 | ug/L |
| | 2-Methylnaphthalene | 0.0802 | ug/L |
| | Naphthalene | 0.0785J | ug/L |
| **Semivolatile Organic Fuels** | Diesel Range Organics | 0.313J | mg/L |
| **Volatile GC/MS** | 1,2-Dichloroethane | 0.190J | ug/L |
| | Benzene | 12.4 | ug/L |

Client Sample ID: **17755-MW31**
Lab Sample ID: 1175926002

| | Parameter | Result | Units |
|---|---|---|---|
| **Semivolatile Organic Fuels** | Diesel Range Organics | 0.802 | mg/L |
| **Volatile GC/MS** | Dichlorodifluoromethane | 4.47 | ug/L |

Client Sample ID: **17755-MW32**
Lab Sample ID: 1175926003

| | Parameter | Result | Units |
|---|---|---|---|
| **Volatile GC/MS** | Dichlorodifluoromethane | 17.7 | ug/L |
| | Trichlorofluoromethane | 0.420J | ug/L |

Client Sample ID: **17755-MW40**
Lab Sample ID: 1175926004

| | Parameter | Result | Units |
|---|---|---|---|
| **Polynuclear Aromatics GC/MS** | 1-Methylnaphthalene | 0.103 | ug/L |
| | 2-Methylnaphthalene | 0.0814 | ug/L |
| | Naphthalene | 0.0808J | ug/L |
| **Semivolatile Organic Fuels** | Diesel Range Organics | 0.665 | mg/L |
| **Volatile GC/MS** | 1,2-Dichloroethane | 0.190J | ug/L |
| | Benzene | 12.8 | ug/L |



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

Results of **17755-MW30**

Client Sample ID: **17755-MW30**
Client Project ID: **17755-002 151 W 100th Ave**
Lab Sample ID: 1175926001
Lab Project ID: 1175926

Collection Date: 08/22/17 13:42
Received Date: 08/22/17 17:00
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Polynuclear Aromatics GC/MS**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| 1-Methylnaphthalene | 0.102 | | 0.0481 | 0.0144 | ug/L | 1 | | 08/23/17 23:25 |
| 2-Methylnaphthalene | 0.0802 | | 0.0481 | 0.0144 | ug/L | 1 | | 08/23/17 23:25 |
| Acenaphthene | 0.0240 | U | 0.0481 | 0.0144 | ug/L | 1 | | 08/23/17 23:25 |
| Acenaphthylene | 0.0240 | U | 0.0481 | 0.0144 | ug/L | 1 | | 08/23/17 23:25 |
| Anthracene | 0.0240 | U | 0.0481 | 0.0144 | ug/L | 1 | | 08/23/17 23:25 |
| Benzo(a)Anthracene | 0.0240 | U | 0.0481 | 0.0144 | ug/L | 1 | | 08/23/17 23:25 |
| Benzo[a]pyrene | 0.00960 | U | 0.0192 | 0.00596 | ug/L | 1 | | 08/23/17 23:25 |
| Benzo[b]Fluoranthene | 0.0240 | U | 0.0481 | 0.0144 | ug/L | 1 | | 08/23/17 23:25 |
| Benzo[g,h,i]perylene | 0.0240 | U | 0.0481 | 0.0144 | ug/L | 1 | | 08/23/17 23:25 |
| Benzo[k]fluoranthene | 0.0240 | U | 0.0481 | 0.0144 | ug/L | 1 | | 08/23/17 23:25 |
| Chrysene | 0.0240 | U | 0.0481 | 0.0144 | ug/L | 1 | | 08/23/17 23:25 |
| Dibenzo[a,h]anthracene | 0.00960 | U | 0.0192 | 0.00596 | ug/L | 1 | | 08/23/17 23:25 |
| Fluoranthene | 0.0240 | U | 0.0481 | 0.0144 | ug/L | 1 | | 08/23/17 23:25 |
| Fluorene | 0.0240 | U | 0.0481 | 0.0144 | ug/L | 1 | | 08/23/17 23:25 |
| Indeno[1,2,3-c,d] pyrene | 0.0240 | U | 0.0481 | 0.0144 | ug/L | 1 | | 08/23/17 23:25 |
| Naphthalene | 0.0785 | J | 0.0962 | 0.0298 | ug/L | 1 | | 08/23/17 23:25 |
| Phenanthrene | 0.0240 | U | 0.0481 | 0.0144 | ug/L | 1 | | 08/23/17 23:25 |
| Pyrene | 0.0240 | U | 0.0481 | 0.0144 | ug/L | 1 | | 08/23/17 23:25 |
| **Surrogates** | | | | | | | | |
| 2-Methylnaphthalene-d10 (surr) | 79 | | 47-106 | | % | 1 | | 08/23/17 23:25 |
| Fluoranthene-d10 (surr) | 75.2 | | 24-116 | | % | 1 | | 08/23/17 23:25 |

**Batch Information**

Analytical Batch: XMS10331
Analytical Method: 8270D SIM LV (PAH)
Analyst: DSD
Analytical Date/Time: 08/23/17 23:25
Container ID: 1175926001-F

Prep Batch: XXX38244
Prep Method: SW3520C
Prep Date/Time: 08/23/17 09:05
Prep Initial Wt./Vol.: 260 mL
Prep Extract Vol: 1 mL

Print Date: 09/06/2017 8:43:30AM

J flagging is activated

## Results of **17755-MW30**

Client Sample ID: **17755-MW30**
Client Project ID: **17755-002 151 W 100th Ave**
Lab Sample ID: 1175926001
Lab Project ID: 1175926

Collection Date: 08/22/17 13:42
Received Date: 08/22/17 17:00
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

## Results by **Semivolatile Organic Fuels**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics | 0.313 | J | 0.588 | 0.176 | mg/L | 1 | | 08/31/17 13:04 |
| **Surrogates** | | | | | | | | |
| 5a Androstane (surr) | 81 | | 50-150 | | % | 1 | | 08/31/17 13:04 |

## Batch Information

Analytical Batch: XFC13742
Analytical Method: AK102
Analyst: KMD
Analytical Date/Time: 08/31/17 13:04
Container ID: 1175926001-D

Prep Batch: XXX38253
Prep Method: SW3520C
Prep Date/Time: 08/24/17 08:24
Prep Initial Wt./Vol.: 255 mL
Prep Extract Vol: 1 mL

Results of **17755-MW30**

Client Sample ID: **17755-MW30**
Client Project ID: **17755-002 151 W 100th Ave**
Lab Sample ID: 1175926001
Lab Project ID: 1175926

Collection Date: 08/22/17 13:42
Received Date: 08/22/17 17:00
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 09/01/17 17:00 |
| 1,1,1-Trichloroethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:00 |
| 1,1,2,2-Tetrachloroethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 09/01/17 17:00 |
| 1,1,2-Trichloroethane | 0.200 | U | 0.400 | 0.120 | ug/L | 1 | | 09/01/17 17:00 |
| 1,1-Dichloroethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:00 |
| 1,1-Dichloroethene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:00 |
| 1,1-Dichloropropene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:00 |
| 1,2,3-Trichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:00 |
| 1,2,3-Trichloropropane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:00 |
| 1,2,4-Trichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:00 |
| 1,2,4-Trimethylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:00 |
| 1,2-Dibromo-3-chloropropane | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 09/01/17 17:00 |
| 1,2-Dibromoethane | 0.0375 | U | 0.0750 | 0.0180 | ug/L | 1 | | 09/01/17 17:00 |
| 1,2-Dichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:00 |
| 1,2-Dichloroethane | 0.190 | J | 0.500 | 0.150 | ug/L | 1 | | 09/01/17 17:00 |
| 1,2-Dichloropropane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:00 |
| 1,3,5-Trimethylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:00 |
| 1,3-Dichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:00 |
| 1,3-Dichloropropane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 09/01/17 17:00 |
| 1,4-Dichlorobenzene | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 09/01/17 17:00 |
| 2,2-Dichloropropane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:00 |
| 2-Butanone (MEK) | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 09/01/17 17:00 |
| 2-Chlorotoluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:00 |
| 2-Hexanone | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 09/01/17 17:00 |
| 4-Chlorotoluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:00 |
| 4-Isopropyltoluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:00 |
| 4-Methyl-2-pentanone (MIBK) | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 09/01/17 17:00 |
| Benzene | 12.4 | | 0.400 | 0.120 | ug/L | 1 | | 09/01/17 17:00 |
| Bromobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:00 |
| Bromochloromethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:00 |
| Bromodichloromethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 09/01/17 17:00 |
| Bromoform | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:00 |
| Bromomethane | 2.50 | U | 5.00 | 1.50 | ug/L | 1 | | 09/01/17 17:00 |
| Carbon disulfide | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 09/01/17 17:00 |
| Carbon tetrachloride | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:00 |
| Chlorobenzene | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 09/01/17 17:00 |
| Chloroethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:00 |

Results of **17755-MW30**

Client Sample ID: **17755-MW30**
Client Project ID: **17755-002 151 W 100th Ave**
Lab Sample ID: 1175926001
Lab Project ID: 1175926

Collection Date: 08/22/17 13:42
Received Date: 08/22/17 17:00
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| Chloroform | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:00 |
| Chloromethane | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:00 |
| cis-1,2-Dichloroethene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:00 |
| cis-1,3-Dichloropropene | 0.250 U | | 0.500 | 0.150 | ug/L | 1 | | 09/01/17 17:00 |
| Dibromochloromethane | 0.250 U | | 0.500 | 0.150 | ug/L | 1 | | 09/01/17 17:00 |
| Dibromomethane | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:00 |
| Dichlorodifluoromethane | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:00 |
| Ethylbenzene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:00 |
| Freon-113 | 5.00 U | | 10.0 | 3.10 | ug/L | 1 | | 09/01/17 17:00 |
| Hexachlorobutadiene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:00 |
| Isopropylbenzene (Cumene) | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:00 |
| Methylene chloride | 2.50 U | | 5.00 | 1.00 | ug/L | 1 | | 09/01/17 17:00 |
| Methyl-t-butyl ether | 5.00 U | | 10.0 | 3.10 | ug/L | 1 | | 09/01/17 17:00 |
| Naphthalene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:00 |
| n-Butylbenzene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:00 |
| n-Propylbenzene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:00 |
| o-Xylene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:00 |
| P & M -Xylene | 1.00 U | | 2.00 | 0.620 | ug/L | 1 | | 09/01/17 17:00 |
| sec-Butylbenzene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:00 |
| Styrene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:00 |
| tert-Butylbenzene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:00 |
| Tetrachloroethene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:00 |
| Toluene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:00 |
| trans-1,2-Dichloroethene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:00 |
| trans-1,3-Dichloropropene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:00 |
| Trichloroethene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:00 |
| Trichlorofluoromethane | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:00 |
| Vinyl acetate | 5.00 U | | 10.0 | 3.10 | ug/L | 1 | | 09/01/17 17:00 |
| Vinyl chloride | 0.0750 U | | 0.150 | 0.0500 | ug/L | 1 | | 09/01/17 17:00 |
| Xylenes (total) | 1.50 U | | 3.00 | 1.00 | ug/L | 1 | | 09/01/17 17:00 |
| **Surrogates** | | | | | | | | |
| 1,2-Dichloroethane-D4 (surr) | 105 | | 81-118 | | % | 1 | | 09/01/17 17:00 |
| 4-Bromofluorobenzene (surr) | 104 | | 85-114 | | % | 1 | | 09/01/17 17:00 |
| Toluene-d8 (surr) | 99.4 | | 89-112 | | % | 1 | | 09/01/17 17:00 |

Print Date: 09/06/2017 8:43:30AM

J flagging is activated

Results of **17755-MW30**

Client Sample ID: **17755-MW30**
Client Project ID: **17755-002 151 W 100th Ave**
Lab Sample ID: 1175926001
Lab Project ID: 1175926

Collection Date: 08/22/17 13:42
Received Date: 08/22/17 17:00
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

**Batch Information**

Analytical Batch: VMS17127
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 09/01/17 17:00
Container ID: 1175926001-A

Prep Batch: VXX31205
Prep Method: SW5030B
Prep Date/Time: 09/01/17 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

## Results of **17755-MW31**

Client Sample ID: **17755-MW31**
Client Project ID: **17755-002 151 W 100th Ave**
Lab Sample ID: 1175926002
Lab Project ID: 1175926

Collection Date: 08/22/17 12:02
Received Date: 08/22/17 17:00
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

## Results by **Polynuclear Aromatics GC/MS**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| 1-Methylnaphthalene | 0.0245 | U | 0.0490 | 0.0147 | ug/L | 1 | | 08/23/17 23:45 |
| 2-Methylnaphthalene | 0.0245 | U | 0.0490 | 0.0147 | ug/L | 1 | | 08/23/17 23:45 |
| Acenaphthene | 0.0245 | U | 0.0490 | 0.0147 | ug/L | 1 | | 08/23/17 23:45 |
| Acenaphthylene | 0.0245 | U | 0.0490 | 0.0147 | ug/L | 1 | | 08/23/17 23:45 |
| Anthracene | 0.0245 | U | 0.0490 | 0.0147 | ug/L | 1 | | 08/23/17 23:45 |
| Benzo(a)Anthracene | 0.0245 | U | 0.0490 | 0.0147 | ug/L | 1 | | 08/23/17 23:45 |
| Benzo[a]pyrene | 0.00980 | U | 0.0196 | 0.00608 | ug/L | 1 | | 08/23/17 23:45 |
| Benzo[b]Fluoranthene | 0.0245 | U | 0.0490 | 0.0147 | ug/L | 1 | | 08/23/17 23:45 |
| Benzo[g,h,i]perylene | 0.0245 | U | 0.0490 | 0.0147 | ug/L | 1 | | 08/23/17 23:45 |
| Benzo[k]fluoranthene | 0.0245 | U | 0.0490 | 0.0147 | ug/L | 1 | | 08/23/17 23:45 |
| Chrysene | 0.0245 | U | 0.0490 | 0.0147 | ug/L | 1 | | 08/23/17 23:45 |
| Dibenzo[a,h]anthracene | 0.00980 | U | 0.0196 | 0.00608 | ug/L | 1 | | 08/23/17 23:45 |
| Fluoranthene | 0.0245 | U | 0.0490 | 0.0147 | ug/L | 1 | | 08/23/17 23:45 |
| Fluorene | 0.0245 | U | 0.0490 | 0.0147 | ug/L | 1 | | 08/23/17 23:45 |
| Indeno[1,2,3-c,d] pyrene | 0.0245 | U | 0.0490 | 0.0147 | ug/L | 1 | | 08/23/17 23:45 |
| Naphthalene | 0.0490 | U | 0.0980 | 0.0304 | ug/L | 1 | | 08/23/17 23:45 |
| Phenanthrene | 0.0245 | U | 0.0490 | 0.0147 | ug/L | 1 | | 08/23/17 23:45 |
| Pyrene | 0.0245 | U | 0.0490 | 0.0147 | ug/L | 1 | | 08/23/17 23:45 |
| **Surrogates** | | | | | | | | |
| 2-Methylnaphthalene-d10 (surr) | 80.2 | | 47-106 | | % | 1 | | 08/23/17 23:45 |
| Fluoranthene-d10 (surr) | 77.9 | | 24-116 | | % | 1 | | 08/23/17 23:45 |

## Batch Information

Analytical Batch: XMS10331
Analytical Method: 8270D SIM LV (PAH)
Analyst: DSD
Analytical Date/Time: 08/23/17 23:45
Container ID: 1175926002-F

Prep Batch: XXX38244
Prep Method: SW3520C
Prep Date/Time: 08/23/17 09:05
Prep Initial Wt./Vol.: 255 mL
Prep Extract Vol: 1 mL

Print Date: 09/06/2017 8:43:30AM

J flagging is activated

Results of **17755-MW31**

Client Sample ID: **17755-MW31**
Client Project ID: **17755-002 151 W 100th Ave**
Lab Sample ID: 1175926002
Lab Project ID: 1175926

Collection Date: 08/22/17 12:02
Received Date: 08/22/17 17:00
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics | 0.802 | | 0.600 | 0.180 | mg/L | 1 | | 08/31/17 13:14 |
| **Surrogates** | | | | | | | | |
| 5a Androstane (surr) | 96.8 | | 50-150 | | % | 1 | | 08/31/17 13:14 |

**Batch Information**

Analytical Batch: XFC13742
Analytical Method: AK102
Analyst: KMD
Analytical Date/Time: 08/31/17 13:14
Container ID: 1175926002-D

Prep Batch: XXX38253
Prep Method: SW3520C
Prep Date/Time: 08/24/17 08:24
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL



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Results of **17755-MW31**

Client Sample ID: **17755-MW31**
Client Project ID: **17755-002 151 W 100th Ave**
Lab Sample ID: 1175926002
Lab Project ID: 1175926

Collection Date: 08/22/17 12:02
Received Date: 08/22/17 17:00
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 09/01/17 17:18 |
| 1,1,1-Trichloroethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:18 |
| 1,1,2,2-Tetrachloroethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 09/01/17 17:18 |
| 1,1,2-Trichloroethane | 0.200 | U | 0.400 | 0.120 | ug/L | 1 | | 09/01/17 17:18 |
| 1,1-Dichloroethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:18 |
| 1,1-Dichloroethene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:18 |
| 1,1-Dichloropropene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:18 |
| 1,2,3-Trichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:18 |
| 1,2,3-Trichloropropane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:18 |
| 1,2,4-Trichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:18 |
| 1,2,4-Trimethylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:18 |
| 1,2-Dibromo-3-chloropropane | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 09/01/17 17:18 |
| 1,2-Dibromoethane | 0.0375 | U | 0.0750 | 0.0180 | ug/L | 1 | | 09/01/17 17:18 |
| 1,2-Dichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:18 |
| 1,2-Dichloroethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 09/01/17 17:18 |
| 1,2-Dichloropropane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:18 |
| 1,3,5-Trimethylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:18 |
| 1,3-Dichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:18 |
| 1,3-Dichloropropane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 09/01/17 17:18 |
| 1,4-Dichlorobenzene | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 09/01/17 17:18 |
| 2,2-Dichloropropane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:18 |
| 2-Butanone (MEK) | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 09/01/17 17:18 |
| 2-Chlorotoluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:18 |
| 2-Hexanone | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 09/01/17 17:18 |
| 4-Chlorotoluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:18 |
| 4-Isopropyltoluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:18 |
| 4-Methyl-2-pentanone (MIBK) | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 09/01/17 17:18 |
| Benzene | 0.200 | U | 0.400 | 0.120 | ug/L | 1 | | 09/01/17 17:18 |
| Bromobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:18 |
| Bromochloromethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:18 |
| Bromodichloromethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 09/01/17 17:18 |
| Bromoform | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:18 |
| Bromomethane | 2.50 | U | 5.00 | 1.50 | ug/L | 1 | | 09/01/17 17:18 |
| Carbon disulfide | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 09/01/17 17:18 |
| Carbon tetrachloride | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:18 |
| Chlorobenzene | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 09/01/17 17:18 |
| Chloroethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:18 |

Print Date: 09/06/2017 8:43:30AM

J flagging is activated

Results of **17755-MW31**

Client Sample ID: **17755-MW31**
Client Project ID: **17755-002 151 W 100th Ave**
Lab Sample ID: 1175926002
Lab Project ID: 1175926

Collection Date: 08/22/17 12:02
Received Date: 08/22/17 17:00
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| Chloroform | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:18 |
| Chloromethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:18 |
| cis-1,2-Dichloroethene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:18 |
| cis-1,3-Dichloropropene | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 09/01/17 17:18 |
| Dibromochloromethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 09/01/17 17:18 |
| Dibromomethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:18 |
| Dichlorodifluoromethane | 4.47 | | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:18 |
| Ethylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:18 |
| Freon-113 | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 09/01/17 17:18 |
| Hexachlorobutadiene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:18 |
| Isopropylbenzene (Cumene) | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:18 |
| Methylene chloride | 2.50 | U | 5.00 | 1.00 | ug/L | 1 | | 09/01/17 17:18 |
| Methyl-t-butyl ether | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 09/01/17 17:18 |
| Naphthalene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:18 |
| n-Butylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:18 |
| n-Propylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:18 |
| o-Xylene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:18 |
| P & M -Xylene | 1.00 | U | 2.00 | 0.620 | ug/L | 1 | | 09/01/17 17:18 |
| sec-Butylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:18 |
| Styrene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:18 |
| tert-Butylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:18 |
| Tetrachloroethene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:18 |
| Toluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:18 |
| trans-1,2-Dichloroethene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:18 |
| trans-1,3-Dichloropropene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:18 |
| Trichloroethene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:18 |
| Trichlorofluoromethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:18 |
| Vinyl acetate | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 09/01/17 17:18 |
| Vinyl chloride | 0.0750 | U | 0.150 | 0.0500 | ug/L | 1 | | 09/01/17 17:18 |
| Xylenes (total) | 1.50 | U | 3.00 | 1.00 | ug/L | 1 | | 09/01/17 17:18 |
| **Surrogates** | | | | | | | | |
| 1,2-Dichloroethane-D4 (surr) | 104 | | 81-118 | | % | 1 | | 09/01/17 17:18 |
| 4-Bromofluorobenzene (surr) | 103 | | 85-114 | | % | 1 | | 09/01/17 17:18 |
| Toluene-d8 (surr) | 100 | | 89-112 | | % | 1 | | 09/01/17 17:18 |

Print Date: 09/06/2017 8:43:30AM

J flagging is activated

Results of **17755-MW31**

Client Sample ID: **17755-MW31**
Client Project ID: **17755-002 151 W 100th Ave**
Lab Sample ID: 1175926002
Lab Project ID: 1175926

Collection Date: 08/22/17 12:02
Received Date: 08/22/17 17:00
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

**Batch Information**

Analytical Batch: VMS17127
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 09/01/17 17:18
Container ID: 1175926002-A

Prep Batch: VXX31205
Prep Method: SW5030B
Prep Date/Time: 09/01/17 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



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## Results of **17755-MW32**

Client Sample ID: **17755-MW32**
Client Project ID: **17755-002 151 W 100th Ave**
Lab Sample ID: 1175926003
Lab Project ID: 1175926

Collection Date: 08/22/17 16:12
Received Date: 08/22/17 17:00
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

## Results by **Polynuclear Aromatics GC/MS**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| 1-Methylnaphthalene | 0.0245 | U | 0.0490 | 0.0147 | ug/L | 1 | | 08/24/17 00:06 |
| 2-Methylnaphthalene | 0.0245 | U | 0.0490 | 0.0147 | ug/L | 1 | | 08/24/17 00:06 |
| Acenaphthene | 0.0245 | U | 0.0490 | 0.0147 | ug/L | 1 | | 08/24/17 00:06 |
| Acenaphthylene | 0.0245 | U | 0.0490 | 0.0147 | ug/L | 1 | | 08/24/17 00:06 |
| Anthracene | 0.0245 | U | 0.0490 | 0.0147 | ug/L | 1 | | 08/24/17 00:06 |
| Benzo(a)Anthracene | 0.0245 | U | 0.0490 | 0.0147 | ug/L | 1 | | 08/24/17 00:06 |
| Benzo[a]pyrene | 0.00980 | U | 0.0196 | 0.00608 | ug/L | 1 | | 08/24/17 00:06 |
| Benzo[b]Fluoranthene | 0.0245 | U | 0.0490 | 0.0147 | ug/L | 1 | | 08/24/17 00:06 |
| Benzo[g,h,i]perylene | 0.0245 | U | 0.0490 | 0.0147 | ug/L | 1 | | 08/24/17 00:06 |
| Benzo[k]fluoranthene | 0.0245 | U | 0.0490 | 0.0147 | ug/L | 1 | | 08/24/17 00:06 |
| Chrysene | 0.0245 | U | 0.0490 | 0.0147 | ug/L | 1 | | 08/24/17 00:06 |
| Dibenzo[a,h]anthracene | 0.00980 | U | 0.0196 | 0.00608 | ug/L | 1 | | 08/24/17 00:06 |
| Fluoranthene | 0.0245 | U | 0.0490 | 0.0147 | ug/L | 1 | | 08/24/17 00:06 |
| Fluorene | 0.0245 | U | 0.0490 | 0.0147 | ug/L | 1 | | 08/24/17 00:06 |
| Indeno[1,2,3-c,d] pyrene | 0.0245 | U | 0.0490 | 0.0147 | ug/L | 1 | | 08/24/17 00:06 |
| Naphthalene | 0.0490 | U | 0.0980 | 0.0304 | ug/L | 1 | | 08/24/17 00:06 |
| Phenanthrene | 0.0245 | U | 0.0490 | 0.0147 | ug/L | 1 | | 08/24/17 00:06 |
| Pyrene | 0.0245 | U | 0.0490 | 0.0147 | ug/L | 1 | | 08/24/17 00:06 |
| **Surrogates** | | | | | | | | |
| 2-Methylnaphthalene-d10 (surr) | 85.3 | | 47-106 | | % | 1 | | 08/24/17 00:06 |
| Fluoranthene-d10 (surr) | 84.7 | | 24-116 | | % | 1 | | 08/24/17 00:06 |

## Batch Information

Analytical Batch: XMS10331
Analytical Method: 8270D SIM LV (PAH)
Analyst: DSD
Analytical Date/Time: 08/24/17 00:06
Container ID: 1175926003-F

Prep Batch: XXX38244
Prep Method: SW3520C
Prep Date/Time: 08/23/17 09:05
Prep Initial Wt./Vol.: 255 mL
Prep Extract Vol: 1 mL

Print Date: 09/06/2017 8:43:30AM

J flagging is activated

## Results of **17755-MW32**

Client Sample ID: **17755-MW32**
Client Project ID: **17755-002 151 W 100th Ave**
Lab Sample ID: 1175926003
Lab Project ID: 1175926

Collection Date: 08/22/17 16:12
Received Date: 08/22/17 17:00
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

## Results by **Semivolatile Organic Fuels**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics | 0.294 | U | 0.588 | 0.176 | mg/L | 1 | | 08/31/17 13:25 |
| **Surrogates** | | | | | | | | |
| 5a Androstane (surr) | 93.2 | | 50-150 | | % | 1 | | 08/31/17 13:25 |

## Batch Information

Analytical Batch: XFC13742
Analytical Method: AK102
Analyst: KMD
Analytical Date/Time: 08/31/17 13:25
Container ID: 1175926003-D

Prep Batch: XXX38253
Prep Method: SW3520C
Prep Date/Time: 08/24/17 08:24
Prep Initial Wt./Vol.: 255 mL
Prep Extract Vol: 1 mL

Results of **17755-MW32**

Client Sample ID: **17755-MW32**
Client Project ID: **17755-002 151 W 100th Ave**
Lab Sample ID: 1175926003
Lab Project ID: 1175926

Collection Date: 08/22/17 16:12
Received Date: 08/22/17 17:00
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 09/02/17 20:37 |
| 1,1,1-Trichloroethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/02/17 20:37 |
| 1,1,2,2-Tetrachloroethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 09/02/17 20:37 |
| 1,1,2-Trichloroethane | 0.200 | U | 0.400 | 0.120 | ug/L | 1 | | 09/02/17 20:37 |
| 1,1-Dichloroethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/02/17 20:37 |
| 1,1-Dichloroethene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/02/17 20:37 |
| 1,1-Dichloropropene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/02/17 20:37 |
| 1,2,3-Trichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/02/17 20:37 |
| 1,2,3-Trichloropropane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/02/17 20:37 |
| 1,2,4-Trichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/02/17 20:37 |
| 1,2,4-Trimethylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/02/17 20:37 |
| 1,2-Dibromo-3-chloropropane | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 09/02/17 20:37 |
| 1,2-Dibromoethane | 0.0375 | U | 0.0750 | 0.0180 | ug/L | 1 | | 09/02/17 20:37 |
| 1,2-Dichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/02/17 20:37 |
| 1,2-Dichloroethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 09/02/17 20:37 |
| 1,2-Dichloropropane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/02/17 20:37 |
| 1,3,5-Trimethylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/02/17 20:37 |
| 1,3-Dichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/02/17 20:37 |
| 1,3-Dichloropropane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 09/02/17 20:37 |
| 1,4-Dichlorobenzene | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 09/02/17 20:37 |
| 2,2-Dichloropropane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/02/17 20:37 |
| 2-Butanone (MEK) | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 09/02/17 20:37 |
| 2-Chlorotoluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/02/17 20:37 |
| 2-Hexanone | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 09/02/17 20:37 |
| 4-Chlorotoluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/02/17 20:37 |
| 4-Isopropyltoluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/02/17 20:37 |
| 4-Methyl-2-pentanone (MIBK) | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 09/02/17 20:37 |
| Benzene | 0.200 | U | 0.400 | 0.120 | ug/L | 1 | | 09/02/17 20:37 |
| Bromobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/02/17 20:37 |
| Bromochloromethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/02/17 20:37 |
| Bromodichloromethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 09/02/17 20:37 |
| Bromoform | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/02/17 20:37 |
| Bromomethane | 2.50 | U | 5.00 | 1.50 | ug/L | 1 | | 09/02/17 20:37 |
| Carbon disulfide | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 09/02/17 20:37 |
| Carbon tetrachloride | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/02/17 20:37 |
| Chlorobenzene | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 09/02/17 20:37 |
| Chloroethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/02/17 20:37 |

Print Date: 09/06/2017 8:43:30AM

J flagging is activated

Results of **17755-MW32**

Client Sample ID: **17755-MW32**
Client Project ID: **17755-002 151 W 100th Ave**
Lab Sample ID: 1175926003
Lab Project ID: 1175926

Collection Date: 08/22/17 16:12
Received Date: 08/22/17 17:00
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| Chloroform | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/02/17 20:37 |
| Chloromethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/02/17 20:37 |
| cis-1,2-Dichloroethene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/02/17 20:37 |
| cis-1,3-Dichloropropene | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 09/02/17 20:37 |
| Dibromochloromethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 09/02/17 20:37 |
| Dibromomethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/02/17 20:37 |
| Dichlorodifluoromethane | 17.7 | | 1.00 | 0.310 | ug/L | 1 | | 09/02/17 20:37 |
| Ethylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/02/17 20:37 |
| Freon-113 | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 09/02/17 20:37 |
| Hexachlorobutadiene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/02/17 20:37 |
| Isopropylbenzene (Cumene) | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/02/17 20:37 |
| Methylene chloride | 2.50 | U | 5.00 | 1.00 | ug/L | 1 | | 09/02/17 20:37 |
| Methyl-t-butyl ether | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 09/02/17 20:37 |
| Naphthalene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/02/17 20:37 |
| n-Butylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/02/17 20:37 |
| n-Propylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/02/17 20:37 |
| o-Xylene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/02/17 20:37 |
| P & M -Xylene | 1.00 | U | 2.00 | 0.620 | ug/L | 1 | | 09/02/17 20:37 |
| sec-Butylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/02/17 20:37 |
| Styrene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/02/17 20:37 |
| tert-Butylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/02/17 20:37 |
| Tetrachloroethene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/02/17 20:37 |
| Toluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/02/17 20:37 |
| trans-1,2-Dichloroethene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/02/17 20:37 |
| trans-1,3-Dichloropropene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/02/17 20:37 |
| Trichloroethene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/02/17 20:37 |
| Trichlorofluoromethane | 0.420 | J | 1.00 | 0.310 | ug/L | 1 | | 09/02/17 20:37 |
| Vinyl acetate | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 09/02/17 20:37 |
| Vinyl chloride | 0.0750 | U | 0.150 | 0.0500 | ug/L | 1 | | 09/02/17 20:37 |
| Xylenes (total) | 1.50 | U | 3.00 | 1.00 | ug/L | 1 | | 09/02/17 20:37 |
| **Surrogates** | | | | | | | | |
| 1,2-Dichloroethane-D4 (surr) | 105 | | 81-118 | | % | 1 | | 09/02/17 20:37 |
| 4-Bromofluorobenzene (surr) | 102 | | 85-114 | | % | 1 | | 09/02/17 20:37 |
| Toluene-d8 (surr) | 101 | | 89-112 | | % | 1 | | 09/02/17 20:37 |

Print Date: 09/06/2017 8:43:30AM

J flagging is activated

Results of **17755-MW32**

Client Sample ID: **17755-MW32**
Client Project ID: **17755-002 151 W 100th Ave**
Lab Sample ID: 1175926003
Lab Project ID: 1175926

Collection Date: 08/22/17 16:12
Received Date: 08/22/17 17:00
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

**Batch Information**

Analytical Batch: VMS17129
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 09/02/17 20:37
Container ID: 1175926003-A

Prep Batch: VXX31207
Prep Method: SW5030B
Prep Date/Time: 09/02/17 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

## Results of **17755-MW40**

Client Sample ID: **17755-MW40**
Client Project ID: **17755-002 151 W 100th Ave**
Lab Sample ID: 1175926004
Lab Project ID: 1175926

Collection Date: 08/22/17 14:30
Received Date: 08/22/17 17:00
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

## Results by **Polynuclear Aromatics GC/MS**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| 1-Methylnaphthalene | 0.103 | | 0.0490 | 0.0147 | ug/L | 1 | | 08/24/17 00:26 |
| 2-Methylnaphthalene | 0.0814 | | 0.0490 | 0.0147 | ug/L | 1 | | 08/24/17 00:26 |
| Acenaphthene | 0.0245 | U | 0.0490 | 0.0147 | ug/L | 1 | | 08/24/17 00:26 |
| Acenaphthylene | 0.0245 | U | 0.0490 | 0.0147 | ug/L | 1 | | 08/24/17 00:26 |
| Anthracene | 0.0245 | U | 0.0490 | 0.0147 | ug/L | 1 | | 08/24/17 00:26 |
| Benzo(a)Anthracene | 0.0245 | U | 0.0490 | 0.0147 | ug/L | 1 | | 08/24/17 00:26 |
| Benzo[a]pyrene | 0.00980 | U | 0.0196 | 0.00608 | ug/L | 1 | | 08/24/17 00:26 |
| Benzo[b]Fluoranthene | 0.0245 | U | 0.0490 | 0.0147 | ug/L | 1 | | 08/24/17 00:26 |
| Benzo[g,h,i]perylene | 0.0245 | U | 0.0490 | 0.0147 | ug/L | 1 | | 08/24/17 00:26 |
| Benzo[k]fluoranthene | 0.0245 | U | 0.0490 | 0.0147 | ug/L | 1 | | 08/24/17 00:26 |
| Chrysene | 0.0245 | U | 0.0490 | 0.0147 | ug/L | 1 | | 08/24/17 00:26 |
| Dibenzo[a,h]anthracene | 0.00980 | U | 0.0196 | 0.00608 | ug/L | 1 | | 08/24/17 00:26 |
| Fluoranthene | 0.0245 | U | 0.0490 | 0.0147 | ug/L | 1 | | 08/24/17 00:26 |
| Fluorene | 0.0245 | U | 0.0490 | 0.0147 | ug/L | 1 | | 08/24/17 00:26 |
| Indeno[1,2,3-c,d] pyrene | 0.0245 | U | 0.0490 | 0.0147 | ug/L | 1 | | 08/24/17 00:26 |
| Naphthalene | 0.0808 | J | 0.0980 | 0.0304 | ug/L | 1 | | 08/24/17 00:26 |
| Phenanthrene | 0.0245 | U | 0.0490 | 0.0147 | ug/L | 1 | | 08/24/17 00:26 |
| Pyrene | 0.0245 | U | 0.0490 | 0.0147 | ug/L | 1 | | 08/24/17 00:26 |
| **Surrogates** | | | | | | | | |
| 2-Methylnaphthalene-d10 (surr) | 79.4 | | 47-106 | | % | 1 | | 08/24/17 00:26 |
| Fluoranthene-d10 (surr) | 76.9 | | 24-116 | | % | 1 | | 08/24/17 00:26 |

## Batch Information

Analytical Batch: XMS10331
Analytical Method: 8270D SIM LV (PAH)
Analyst: DSD
Analytical Date/Time: 08/24/17 00:26
Container ID: 1175926004-F

Prep Batch: XXX38244
Prep Method: SW3520C
Prep Date/Time: 08/23/17 09:05
Prep Initial Wt./Vol.: 255 mL
Prep Extract Vol: 1 mL

Print Date: 09/06/2017 8:43:30AM

J flagging is activated

## Results of **17755-MW40**

Client Sample ID: **17755-MW40**
Client Project ID: **17755-002 151 W 100th Ave**
Lab Sample ID: 1175926004
Lab Project ID: 1175926

Collection Date: 08/22/17 14:30
Received Date: 08/22/17 17:00
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

## Results by **Semivolatile Organic Fuels**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics | 0.665 | | 0.588 | 0.176 | mg/L | 1 | | 08/31/17 13:36 |
| **Surrogates** | | | | | | | | |
| 5a Androstane (surr) | 88.4 | | 50-150 | | % | 1 | | 08/31/17 13:36 |

## Batch Information

Analytical Batch: XFC13742
Analytical Method: AK102
Analyst: KMD
Analytical Date/Time: 08/31/17 13:36
Container ID: 1175926004-D

Prep Batch: XXX38253
Prep Method: SW3520C
Prep Date/Time: 08/24/17 08:24
Prep Initial Wt./Vol.: 255 mL
Prep Extract Vol: 1 mL

Results of **17755-MW40**

Client Sample ID: **17755-MW40**
Client Project ID: **17755-002 151 W 100th Ave**
Lab Sample ID: 1175926004
Lab Project ID: 1175926

Collection Date: 08/22/17 14:30
Received Date: 08/22/17 17:00
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 09/01/17 17:35 |
| 1,1,1-Trichloroethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:35 |
| 1,1,2,2-Tetrachloroethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 09/01/17 17:35 |
| 1,1,2-Trichloroethane | 0.200 | U | 0.400 | 0.120 | ug/L | 1 | | 09/01/17 17:35 |
| 1,1-Dichloroethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:35 |
| 1,1-Dichloroethene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:35 |
| 1,1-Dichloropropene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:35 |
| 1,2,3-Trichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:35 |
| 1,2,3-Trichloropropane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:35 |
| 1,2,4-Trichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:35 |
| 1,2,4-Trimethylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:35 |
| 1,2-Dibromo-3-chloropropane | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 09/01/17 17:35 |
| 1,2-Dibromoethane | 0.0375 | U | 0.0750 | 0.0180 | ug/L | 1 | | 09/01/17 17:35 |
| 1,2-Dichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:35 |
| 1,2-Dichloroethane | 0.190 | J | 0.500 | 0.150 | ug/L | 1 | | 09/01/17 17:35 |
| 1,2-Dichloropropane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:35 |
| 1,3,5-Trimethylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:35 |
| 1,3-Dichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:35 |
| 1,3-Dichloropropane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 09/01/17 17:35 |
| 1,4-Dichlorobenzene | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 09/01/17 17:35 |
| 2,2-Dichloropropane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:35 |
| 2-Butanone (MEK) | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 09/01/17 17:35 |
| 2-Chlorotoluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:35 |
| 2-Hexanone | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 09/01/17 17:35 |
| 4-Chlorotoluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:35 |
| 4-Isopropyltoluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:35 |
| 4-Methyl-2-pentanone (MIBK) | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 09/01/17 17:35 |
| Benzene | 12.8 | | 0.400 | 0.120 | ug/L | 1 | | 09/01/17 17:35 |
| Bromobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:35 |
| Bromochloromethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:35 |
| Bromodichloromethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 09/01/17 17:35 |
| Bromoform | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:35 |
| Bromomethane | 2.50 | U | 5.00 | 1.50 | ug/L | 1 | | 09/01/17 17:35 |
| Carbon disulfide | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 09/01/17 17:35 |
| Carbon tetrachloride | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:35 |
| Chlorobenzene | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 09/01/17 17:35 |
| Chloroethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:35 |

Print Date: 09/06/2017 8:43:30AM

J flagging is activated

Results of **17755-MW40**

Client Sample ID: **17755-MW40**
Client Project ID: **17755-002 151 W 100th Ave**
Lab Sample ID: 1175926004
Lab Project ID: 1175926

Collection Date: 08/22/17 14:30
Received Date: 08/22/17 17:00
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| Chloroform | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:35 |
| Chloromethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:35 |
| cis-1,2-Dichloroethene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:35 |
| cis-1,3-Dichloropropene | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 09/01/17 17:35 |
| Dibromochloromethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 09/01/17 17:35 |
| Dibromomethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:35 |
| Dichlorodifluoromethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:35 |
| Ethylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:35 |
| Freon-113 | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 09/01/17 17:35 |
| Hexachlorobutadiene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:35 |
| Isopropylbenzene (Cumene) | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:35 |
| Methylene chloride | 2.50 | U | 5.00 | 1.00 | ug/L | 1 | | 09/01/17 17:35 |
| Methyl-t-butyl ether | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 09/01/17 17:35 |
| Naphthalene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:35 |
| n-Butylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:35 |
| n-Propylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:35 |
| o-Xylene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:35 |
| P & M -Xylene | 1.00 | U | 2.00 | 0.620 | ug/L | 1 | | 09/01/17 17:35 |
| sec-Butylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:35 |
| Styrene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:35 |
| tert-Butylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:35 |
| Tetrachloroethene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:35 |
| Toluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:35 |
| trans-1,2-Dichloroethene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:35 |
| trans-1,3-Dichloropropene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:35 |
| Trichloroethene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:35 |
| Trichlorofluoromethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 17:35 |
| Vinyl acetate | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 09/01/17 17:35 |
| Vinyl chloride | 0.0750 | U | 0.150 | 0.0500 | ug/L | 1 | | 09/01/17 17:35 |
| Xylenes (total) | 1.50 | U | 3.00 | 1.00 | ug/L | 1 | | 09/01/17 17:35 |
| **Surrogates** | | | | | | | | |
| 1,2-Dichloroethane-D4 (surr) | 104 | | 81-118 | | % | 1 | | 09/01/17 17:35 |
| 4-Bromofluorobenzene (surr) | 104 | | 85-114 | | % | 1 | | 09/01/17 17:35 |
| Toluene-d8 (surr) | 99.4 | | 89-112 | | % | 1 | | 09/01/17 17:35 |

Print Date: 09/06/2017 8:43:30AM

J flagging is activated

Results of **17755-MW40**

Client Sample ID: **17755-MW40**
Client Project ID: **17755-002 151 W 100th Ave**
Lab Sample ID: 1175926004
Lab Project ID: 1175926

Collection Date: 08/22/17 14:30
Received Date: 08/22/17 17:00
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

**Batch Information**

Analytical Batch: VMS17127
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 09/01/17 17:35
Container ID: 1175926004-A

Prep Batch: VXX31205
Prep Method: SW5030B
Prep Date/Time: 09/01/17 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **17755-TB**

Client Sample ID: **17755-TB**
Client Project ID: **17755-002 151 W 100th Ave**
Lab Sample ID: 1175926005
Lab Project ID: 1175926

Collection Date: 08/22/17 10:00
Received Date: 08/22/17 17:00
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 09/01/17 15:15 |
| 1,1,1-Trichloroethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 15:15 |
| 1,1,2,2-Tetrachloroethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 09/01/17 15:15 |
| 1,1,2-Trichloroethane | 0.200 | U | 0.400 | 0.120 | ug/L | 1 | | 09/01/17 15:15 |
| 1,1-Dichloroethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 15:15 |
| 1,1-Dichloroethene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 15:15 |
| 1,1-Dichloropropene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 15:15 |
| 1,2,3-Trichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 15:15 |
| 1,2,3-Trichloropropane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 15:15 |
| 1,2,4-Trichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 15:15 |
| 1,2,4-Trimethylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 15:15 |
| 1,2-Dibromo-3-chloropropane | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 09/01/17 15:15 |
| 1,2-Dibromoethane | 0.0375 | U | 0.0750 | 0.0180 | ug/L | 1 | | 09/01/17 15:15 |
| 1,2-Dichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 15:15 |
| 1,2-Dichloroethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 09/01/17 15:15 |
| 1,2-Dichloropropane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 15:15 |
| 1,3,5-Trimethylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 15:15 |
| 1,3-Dichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 15:15 |
| 1,3-Dichloropropane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 09/01/17 15:15 |
| 1,4-Dichlorobenzene | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 09/01/17 15:15 |
| 2,2-Dichloropropane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 15:15 |
| 2-Butanone (MEK) | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 09/01/17 15:15 |
| 2-Chlorotoluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 15:15 |
| 2-Hexanone | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 09/01/17 15:15 |
| 4-Chlorotoluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 15:15 |
| 4-Isopropyltoluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 15:15 |
| 4-Methyl-2-pentanone (MIBK) | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 09/01/17 15:15 |
| Benzene | 0.200 | U | 0.400 | 0.120 | ug/L | 1 | | 09/01/17 15:15 |
| Bromobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 15:15 |
| Bromochloromethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 15:15 |
| Bromodichloromethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 09/01/17 15:15 |
| Bromoform | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 15:15 |
| Bromomethane | 2.50 | U | 5.00 | 1.50 | ug/L | 1 | | 09/01/17 15:15 |
| Carbon disulfide | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 09/01/17 15:15 |
| Carbon tetrachloride | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 15:15 |
| Chlorobenzene | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 09/01/17 15:15 |
| Chloroethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 15:15 |

Print Date: 09/06/2017 8:43:30AM

J flagging is activated

Results of **17755-TB**

Client Sample ID: **17755-TB**
Client Project ID: **17755-002 151 W 100th Ave**
Lab Sample ID: 1175926005
Lab Project ID: 1175926

Collection Date: 08/22/17 10:00
Received Date: 08/22/17 17:00
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| Chloroform | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 15:15 |
| Chloromethane | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 15:15 |
| cis-1,2-Dichloroethene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 15:15 |
| cis-1,3-Dichloropropene | 0.250 U | | 0.500 | 0.150 | ug/L | 1 | | 09/01/17 15:15 |
| Dibromochloromethane | 0.250 U | | 0.500 | 0.150 | ug/L | 1 | | 09/01/17 15:15 |
| Dibromomethane | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 15:15 |
| Dichlorodifluoromethane | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 15:15 |
| Ethylbenzene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 15:15 |
| Freon-113 | 5.00 U | | 10.0 | 3.10 | ug/L | 1 | | 09/01/17 15:15 |
| Hexachlorobutadiene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 15:15 |
| Isopropylbenzene (Cumene) | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 15:15 |
| Methylene chloride | 2.50 U | | 5.00 | 1.00 | ug/L | 1 | | 09/01/17 15:15 |
| Methyl-t-butyl ether | 5.00 U | | 10.0 | 3.10 | ug/L | 1 | | 09/01/17 15:15 |
| Naphthalene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 15:15 |
| n-Butylbenzene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 15:15 |
| n-Propylbenzene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 15:15 |
| o-Xylene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 15:15 |
| P & M -Xylene | 1.00 U | | 2.00 | 0.620 | ug/L | 1 | | 09/01/17 15:15 |
| sec-Butylbenzene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 15:15 |
| Styrene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 15:15 |
| tert-Butylbenzene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 15:15 |
| Tetrachloroethene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 15:15 |
| Toluene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 15:15 |
| trans-1,2-Dichloroethene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 15:15 |
| trans-1,3-Dichloropropene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 15:15 |
| Trichloroethene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 15:15 |
| Trichlorofluoromethane | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 09/01/17 15:15 |
| Vinyl acetate | 5.00 U | | 10.0 | 3.10 | ug/L | 1 | | 09/01/17 15:15 |
| Vinyl chloride | 0.0750 U | | 0.150 | 0.0500 | ug/L | 1 | | 09/01/17 15:15 |
| Xylenes (total) | 1.50 U | | 3.00 | 1.00 | ug/L | 1 | | 09/01/17 15:15 |
| **Surrogates** | | | | | | | | |
| 1,2-Dichloroethane-D4 (surr) | 103 | | 81-118 | | % | 1 | | 09/01/17 15:15 |
| 4-Bromofluorobenzene (surr) | 105 | | 85-114 | | % | 1 | | 09/01/17 15:15 |
| Toluene-d8 (surr) | 98.7 | | 89-112 | | % | 1 | | 09/01/17 15:15 |

Print Date: 09/06/2017 8:43:30AM

J flagging is activated

Results of **17755-TB**

Client Sample ID: **17755-TB**
Client Project ID: **17755-002 151 W 100th Ave**
Lab Sample ID: 1175926005
Lab Project ID: 1175926

Collection Date: 08/22/17 10:00
Received Date: 08/22/17 17:00
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

**Batch Information**

Analytical Batch: VMS17127
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 09/01/17 15:15
Container ID: 1175926005-A

Prep Batch: VXX31205
Prep Method: SW5030B
Prep Date/Time: 09/01/17 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



SGS North America Inc.
200 West Potter Drive Anchorage, AK 95518
**t** 907.562.2343 **f** 907.561.5301 www.us.sgs.com

## Method Blank

Blank ID: MB for HBN 1767377 [VXX/31205]
Blank Lab ID: 1409965

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1175926001, 1175926002, 1175926004, 1175926005

## Results by **SW8260C**

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

## Method Blank

Blank ID: MB for HBN 1767377 [VXX/31205]
Blank Lab ID: 1409965

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1175926001, 1175926002, 1175926004, 1175926005

## Results by **SW8260C**

| Parameter | Results | LOQ/CL | DL | Units |
|---|---|---|---|---|
| Chloromethane | 0.500U | 1.00 | 0.310 | ug/L |
| cis-1,2-Dichloroethene | 0.500U | 1.00 | 0.310 | ug/L |
| cis-1,3-Dichloropropene | 0.250U | 0.500 | 0.150 | ug/L |
| Dibromochloromethane | 0.250U | 0.500 | 0.150 | ug/L |
| Dibromomethane | 0.500U | 1.00 | 0.310 | ug/L |
| Dichlorodifluoromethane | 0.500U | 1.00 | 0.310 | ug/L |
| Ethylbenzene | 0.500U | 1.00 | 0.310 | ug/L |
| Freon-113 | 5.00U | 10.0 | 3.10 | ug/L |
| Hexachlorobutadiene | 0.500U | 1.00 | 0.310 | ug/L |
| Isopropylbenzene (Cumene) | 0.500U | 1.00 | 0.310 | ug/L |
| Methylene chloride | 2.50U | 5.00 | 1.00 | ug/L |
| Methyl-t-butyl ether | 5.00U | 10.0 | 3.10 | ug/L |
| Naphthalene | 0.500U | 1.00 | 0.310 | ug/L |
| n-Butylbenzene | 0.500U | 1.00 | 0.310 | ug/L |
| n-Propylbenzene | 0.500U | 1.00 | 0.310 | ug/L |
| o-Xylene | 0.500U | 1.00 | 0.310 | ug/L |
| P & M -Xylene | 1.00U | 2.00 | 0.620 | ug/L |
| sec-Butylbenzene | 0.500U | 1.00 | 0.310 | ug/L |
| Styrene | 0.500U | 1.00 | 0.310 | ug/L |
| tert-Butylbenzene | 0.500U | 1.00 | 0.310 | ug/L |
| Tetrachloroethene | 0.500U | 1.00 | 0.310 | ug/L |
| Toluene | 0.500U | 1.00 | 0.310 | ug/L |
| trans-1,2-Dichloroethene | 0.500U | 1.00 | 0.310 | ug/L |
| trans-1,3-Dichloropropene | 0.500U | 1.00 | 0.310 | ug/L |
| Trichloroethene | 0.500U | 1.00 | 0.310 | ug/L |
| Trichlorofluoromethane | 0.500U | 1.00 | 0.310 | ug/L |
| Vinyl acetate | 5.00U | 10.0 | 3.10 | ug/L |
| Vinyl chloride | 0.0750U | 0.150 | 0.0500 | ug/L |
| Xylenes (total) | 1.50U | 3.00 | 1.00 | ug/L |
| **Surrogates** | | | | |
| 1,2-Dichloroethane-D4 (surr) | 104 | 81-118 | | % |
| 4-Bromofluorobenzene (surr) | 106 | 85-114 | | % |
| Toluene-d8 (surr) | 98.6 | 89-112 | | % |

## Method Blank

Blank ID: MB for HBN 1767377 [VXX/31205]
Blank Lab ID: 1409965

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1175926001, 1175926002, 1175926004, 1175926005

## Results by **SW8260C**

| Parameter | Results | LOQ/CL | DL | Units |
|---|---|---|---|---|

### Batch Information

Analytical Batch: VMS17127
Analytical Method: SW8260C
Instrument: VSA Agilent GC/MS 7890B/5977A
Analyst: FDR
Analytical Date/Time: 9/1/2017 11:49:00AM

Prep Batch: VXX31205
Prep Method: SW5030B
Prep Date/Time: 9/1/2017 6:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



SGS North America Inc.
200 West Potter Drive Anchorage, AK 95518
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## Blank Spike Summary

Blank Spike ID: LCS for HBN 1175926 [VXX31205]
Blank Spike Lab ID: 1409966
Date Analyzed: 09/01/2017 13:19

Spike Duplicate ID: LCSD for HBN 1175926 [VXX31205]
Spike Duplicate Lab ID: 1409967
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1175926001, 1175926002, 1175926004, 1175926005

## Results by **SW8260C**

| | Blank Spike (ug/L) | | | Spike Duplicate (ug/L) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Parameter | Spike | Result | Rec (%) | Spike | Result | Rec (%) | CL | RPD (%) | RPD CL |
| 1,1,1,2-Tetrachloroethane | 30 | 29.7 | 99 | 30 | 29.4 | 98 | ( 78-124 ) | 1.10 | (< 20 ) |
| 1,1,1-Trichloroethane | 30 | 28.9 | 96 | 30 | 27.5 | 92 | ( 74-131 ) | 5.20 | (< 20 ) |
| 1,1,2,2-Tetrachloroethane | 30 | 29.2 | 97 | 30 | 29.4 | 98 | ( 71-121 ) | 0.78 | (< 20 ) |
| 1,1,2-Trichloroethane | 30 | 31.4 | 105 | 30 | 31.2 | 104 | ( 80-119 ) | 0.64 | (< 20 ) |
| 1,1-Dichloroethane | 30 | 27.8 | 93 | 30 | 26.6 | 89 | ( 77-125 ) | 4.40 | (< 20 ) |
| 1,1-Dichloroethene | 30 | 28.3 | 95 | 30 | 26.8 | 89 | ( 71-131 ) | 5.70 | (< 20 ) |
| 1,1-Dichloropropene | 30 | 30.0 | 100 | 30 | 28.7 | 96 | ( 79-125 ) | 4.60 | (< 20 ) |
| 1,2,3-Trichlorobenzene | 30 | 28.4 | 95 | 30 | 28.0 | 93 | ( 69-129 ) | 1.40 | (< 20 ) |
| 1,2,3-Trichloropropane | 30 | 29.2 | 97 | 30 | 29.9 | 100 | ( 73-122 ) | 2.40 | (< 20 ) |
| 1,2,4-Trichlorobenzene | 30 | 28.9 | 96 | 30 | 28.5 | 95 | ( 69-130 ) | 1.40 | (< 20 ) |
| 1,2,4-Trimethylbenzene | 30 | 29.1 | 97 | 30 | 29.0 | 97 | ( 79-124 ) | 0.34 | (< 20 ) |
| 1,2-Dibromo-3-chloropropane | 30 | 28.7 | 96 | 30 | 30.7 | 102 | ( 62-128 ) | 6.70 | (< 20 ) |
| 1,2-Dibromoethane | 30 | 30.2 | 101 | 30 | 30.5 | 102 | ( 77-121 ) | 0.79 | (< 20 ) |
| 1,2-Dichlorobenzene | 30 | 29.0 | 97 | 30 | 28.5 | 95 | ( 80-119 ) | 1.70 | (< 20 ) |
| 1,2-Dichloroethane | 30 | 27.0 | 90 | 30 | 26.2 | 87 | ( 73-128 ) | 3.00 | (< 20 ) |
| 1,2-Dichloropropane | 30 | 29.2 | 98 | 30 | 28.3 | 94 | ( 78-122 ) | 3.30 | (< 20 ) |
| 1,3,5-Trimethylbenzene | 30 | 28.8 | 96 | 30 | 28.8 | 96 | ( 75-124 ) | 0.07 | (< 20 ) |
| 1,3-Dichlorobenzene | 30 | 28.9 | 96 | 30 | 28.6 | 95 | ( 80-119 ) | 1.20 | (< 20 ) |
| 1,3-Dichloropropane | 30 | 31.3 | 104 | 30 | 31.1 | 104 | ( 80-119 ) | 0.42 | (< 20 ) |
| 1,4-Dichlorobenzene | 30 | 28.9 | 96 | 30 | 28.4 | 95 | ( 79-118 ) | 1.60 | (< 20 ) |
| 2,2-Dichloropropane | 30 | 31.3 | 104 | 30 | 28.7 | 96 | ( 60-139 ) | 8.50 | (< 20 ) |
| 2-Butanone (MEK) | 90 | 88.5 | 98 | 90 | 96.6 | 107 | ( 56-143 ) | 8.70 | (< 20 ) |
| 2-Chlorotoluene | 30 | 29.2 | 97 | 30 | 29.2 | 98 | ( 79-122 ) | 0.10 | (< 20 ) |
| 2-Hexanone | 90 | 89.9 | 100 | 90 | 100 | 112 | ( 57-139 ) | 11.10 | (< 20 ) |
| 4-Chlorotoluene | 30 | 28.7 | 96 | 30 | 28.3 | 95 | ( 78-122 ) | 1.10 | (< 20 ) |
| 4-Isopropyltoluene | 30 | 30.1 | 100 | 30 | 29.1 | 97 | ( 77-127 ) | 3.30 | (< 20 ) |
| 4-Methyl-2-pentanone (MIBK) | 90 | 87.6 | 97 | 90 | 94.0 | 104 | ( 67-130 ) | 7.00 | (< 20 ) |
| Benzene | 30 | 29.7 | 99 | 30 | 28.4 | 95 | ( 79-120 ) | 4.50 | (< 20 ) |
| Bromobenzene | 30 | 27.4 | 91 | 30 | 27.1 | 90 | ( 80-120 ) | 1.00 | (< 20 ) |
| Bromochloromethane | 30 | 28.3 | 94 | 30 | 27.4 | 91 | ( 78-123 ) | 3.10 | (< 20 ) |
| Bromodichloromethane | 30 | 28.9 | 96 | 30 | 27.8 | 93 | ( 79-125 ) | 3.70 | (< 20 ) |
| Bromoform | 30 | 31.3 | 104 | 30 | 31.3 | 104 | ( 66-130 ) | 0.10 | (< 20 ) |
| Bromomethane | 30 | 26.8 | 89 | 30 | 26.7 | 89 | ( 53-141 ) | 0.15 | (< 20 ) |
| Carbon disulfide | 45 | 42.5 | 94 | 45 | 40.0 | 89 | ( 64-133 ) | 6.10 | (< 20 ) |

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1175926 [VXX31205]
Blank Spike Lab ID: 1409966
Date Analyzed: 09/01/2017 13:19

Spike Duplicate ID: LCSD for HBN 1175926 [VXX31205]
Spike Duplicate Lab ID: 1409967
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1175926001, 1175926002, 1175926004, 1175926005

## Results by **SW8260C**

| | Blank Spike (ug/L) | | | Spike Duplicate (ug/L) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Parameter | Spike | Result | Rec (%) | Spike | Result | Rec (%) | CL | RPD (%) | RPD CL |
| Carbon tetrachloride | 30 | 30.1 | 100 | 30 | 28.5 | 95 | ( 72-136 ) | 5.60 | (< 20 ) |
| Chlorobenzene | 30 | 29.0 | 97 | 30 | 27.9 | 93 | ( 82-118 ) | 3.80 | (< 20 ) |
| Chloroethane | 30 | 27.0 | 90 | 30 | 27.4 | 91 | ( 60-138 ) | 1.40 | (< 20 ) |
| Chloroform | 30 | 27.3 | 91 | 30 | 26.1 | 87 | ( 79-124 ) | 4.50 | (< 20 ) |
| Chloromethane | 30 | 27.9 | 93 | 30 | 26.3 | 88 | ( 50-139 ) | 6.10 | (< 20 ) |
| cis-1,2-Dichloroethene | 30 | 27.8 | 93 | 30 | 26.7 | 89 | ( 78-123 ) | 4.00 | (< 20 ) |
| cis-1,3-Dichloropropene | 30 | 30.3 | 101 | 30 | 29.3 | 98 | ( 75-124 ) | 3.30 | (< 20 ) |
| Dibromochloromethane | 30 | 31.5 | 105 | 30 | 31.1 | 104 | ( 74-126 ) | 1.30 | (< 20 ) |
| Dibromomethane | 30 | 27.8 | 93 | 30 | 27.0 | 90 | ( 79-123 ) | 2.80 | (< 20 ) |
| Dichlorodifluoromethane | 30 | 28.6 | 95 | 30 | 27.3 | 91 | ( 32-152 ) | 4.80 | (< 20 ) |
| Ethylbenzene | 30 | 30.1 | 100 | 30 | 29.3 | 98 | ( 79-121 ) | 2.70 | (< 20 ) |
| Freon-113 | 45 | 43.9 | 98 | 45 | 41.4 | 92 | ( 70-136 ) | 5.70 | (< 20 ) |
| Hexachlorobutadiene | 30 | 29.3 | 98 | 30 | 26.6 | 89 | ( 66-134 ) | 9.70 | (< 20 ) |
| Isopropylbenzene (Cumene) | 30 | 30.0 | 100 | 30 | 30.1 | 100 | ( 72-131 ) | 0.63 | (< 20 ) |
| Methylene chloride | 30 | 27.5 | 92 | 30 | 26.6 | 89 | ( 74-124 ) | 3.20 | (< 20 ) |
| Methyl-t-butyl ether | 45 | 45.4 | 101 | 45 | 44.7 | 99 | ( 71-124 ) | 1.60 | (< 20 ) |
| Naphthalene | 30 | 29.4 | 98 | 30 | 30.2 | 101 | ( 61-128 ) | 2.70 | (< 20 ) |
| n-Butylbenzene | 30 | 29.9 | 100 | 30 | 28.6 | 96 | ( 75-128 ) | 4.30 | (< 20 ) |
| n-Propylbenzene | 30 | 28.8 | 96 | 30 | 28.2 | 94 | ( 76-126 ) | 2.20 | (< 20 ) |
| o-Xylene | 30 | 29.6 | 99 | 30 | 29.7 | 99 | ( 78-122 ) | 0.20 | (< 20 ) |
| P & M -Xylene | 60 | 60.0 | 100 | 60 | 59.4 | 99 | ( 80-121 ) | 0.94 | (< 20 ) |
| sec-Butylbenzene | 30 | 29.6 | 99 | 30 | 28.8 | 96 | ( 77-126 ) | 3.00 | (< 20 ) |
| Styrene | 30 | 30.6 | 102 | 30 | 30.6 | 102 | ( 78-123 ) | 0.16 | (< 20 ) |
| tert-Butylbenzene | 30 | 28.5 | 95 | 30 | 28.2 | 94 | ( 78-124 ) | 1.10 | (< 20 ) |
| Tetrachloroethene | 30 | 30.8 | 103 | 30 | 29.4 | 98 | ( 74-129 ) | 4.60 | (< 20 ) |
| Toluene | 30 | 29.2 | 97 | 30 | 27.8 | 93 | ( 80-121 ) | 4.60 | (< 20 ) |
| trans-1,2-Dichloroethene | 30 | 27.9 | 93 | 30 | 26.5 | 88 | ( 75-124 ) | 5.40 | (< 20 ) |
| trans-1,3-Dichloropropene | 30 | 29.5 | 98 | 30 | 28.8 | 96 | ( 73-127 ) | 2.30 | (< 20 ) |
| Trichloroethene | 30 | 29.8 | 99 | 30 | 28.6 | 95 | ( 79-123 ) | 4.10 | (< 20 ) |
| Trichlorofluoromethane | 30 | 30.0 | 100 | 30 | 28.6 | 95 | ( 65-141 ) | 5.10 | (< 20 ) |
| Vinyl acetate | 30 | 30.5 | 102 | 30 | 30.2 | 101 | ( 54-146 ) | 0.89 | (< 20 ) |
| Vinyl chloride | 30 | 28.1 | 94 | 30 | 27.0 | 90 | ( 58-137 ) | 4.00 | (< 20 ) |
| Xylenes (total) | 90 | 89.6 | 100 | 90 | 89.1 | 99 | ( 79-121 ) | 0.56 | (< 20 ) |



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## Blank Spike Summary

Blank Spike ID: LCS for HBN 1175926 [VXX31205]
Blank Spike Lab ID: 1409966
Date Analyzed: 09/01/2017 13:19

Spike Duplicate ID: LCSD for HBN 1175926 [VXX31205]
Spike Duplicate Lab ID: 1409967
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1175926001, 1175926002, 1175926004, 1175926005

## Results by **SW8260C**

| | Blank Spike (%) | | | Spike Duplicate (%) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Parameter | Spike | Result | Rec (%) | Spike | Result | Rec (%) | CL | RPD (%) | RPD CL |
| **Surrogates** | | | | | | | | | |
| 1,2-Dichloroethane-D4 (surr) | 30 | 96.2 | 96 | 30 | 94 | 94 | ( 81-118 ) | 2.30 | |
| 4-Bromofluorobenzene (surr) | 30 | 92.1 | 92 | 30 | 93.3 | 93 | ( 85-114 ) | 1.40 | |
| Toluene-d8 (surr) | 30 | 103 | 103 | 30 | 102 | 102 | ( 89-112 ) | 1.20 | |

## Batch Information

Analytical Batch: **VMS17127**
Analytical Method: **SW8260C**
Instrument: **VSA Agilent GC/MS 7890B/5977A**
Analyst: **FDR**

Prep Batch: **VXX31205**
Prep Method: **SW5030B**
Prep Date/Time: **09/01/2017 06:00**
Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL



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## Method Blank

Blank ID: MB for HBN 1767466 [VXX/31207]
Blank Lab ID: 1409999

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1175926003

Results by **SW8260C**

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

## Method Blank

Blank ID: MB for HBN 1767466 [VXX/31207]
Blank Lab ID: 1409999

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1175926003

## Results by **SW8260C**

| Parameter | Results | LOQ/CL | DL | Units |
|---|---|---|---|---|
| Chloromethane | 0.500U | 1.00 | 0.310 | ug/L |
| cis-1,2-Dichloroethene | 0.500U | 1.00 | 0.310 | ug/L |
| cis-1,3-Dichloropropene | 0.250U | 0.500 | 0.150 | ug/L |
| Dibromochloromethane | 0.250U | 0.500 | 0.150 | ug/L |
| Dibromomethane | 0.500U | 1.00 | 0.310 | ug/L |
| Dichlorodifluoromethane | 0.500U | 1.00 | 0.310 | ug/L |
| Ethylbenzene | 0.500U | 1.00 | 0.310 | ug/L |
| Freon-113 | 5.00U | 10.0 | 3.10 | ug/L |
| Hexachlorobutadiene | 0.500U | 1.00 | 0.310 | ug/L |
| Isopropylbenzene (Cumene) | 0.500U | 1.00 | 0.310 | ug/L |
| Methylene chloride | 2.50U | 5.00 | 1.00 | ug/L |
| Methyl-t-butyl ether | 5.00U | 10.0 | 3.10 | ug/L |
| Naphthalene | 0.500U | 1.00 | 0.310 | ug/L |
| n-Butylbenzene | 0.500U | 1.00 | 0.310 | ug/L |
| n-Propylbenzene | 0.500U | 1.00 | 0.310 | ug/L |
| o-Xylene | 0.500U | 1.00 | 0.310 | ug/L |
| P & M -Xylene | 1.00U | 2.00 | 0.620 | ug/L |
| sec-Butylbenzene | 0.500U | 1.00 | 0.310 | ug/L |
| Styrene | 0.500U | 1.00 | 0.310 | ug/L |
| tert-Butylbenzene | 0.500U | 1.00 | 0.310 | ug/L |
| Tetrachloroethene | 0.500U | 1.00 | 0.310 | ug/L |
| Toluene | 0.500U | 1.00 | 0.310 | ug/L |
| trans-1,2-Dichloroethene | 0.500U | 1.00 | 0.310 | ug/L |
| trans-1,3-Dichloropropene | 0.500U | 1.00 | 0.310 | ug/L |
| Trichloroethene | 0.500U | 1.00 | 0.310 | ug/L |
| Trichlorofluoromethane | 0.500U | 1.00 | 0.310 | ug/L |
| Vinyl acetate | 5.00U | 10.0 | 3.10 | ug/L |
| Vinyl chloride | 0.0750U | 0.150 | 0.0500 | ug/L |
| Xylenes (total) | 1.50U | 3.00 | 1.00 | ug/L |
| **Surrogates** | | | | |
| 1,2-Dichloroethane-D4 (surr) | 105 | 81-118 | | % |
| 4-Bromofluorobenzene (surr) | 105 | 85-114 | | % |
| Toluene-d8 (surr) | 102 | 89-112 | | % |

## Method Blank

Blank ID: MB for HBN 1767466 [VXX/31207]
Blank Lab ID: 1409999

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1175926003

## Results by **SW8260C**

| Parameter | Results | LOQ/CL | DL | Units |
|---|---|---|---|---|

### Batch Information

Analytical Batch: VMS17129
Analytical Method: SW8260C
Instrument: VSA Agilent GC/MS 7890B/5977A
Analyst: FDR
Analytical Date/Time: 9/2/2017 4:52:00PM

Prep Batch: VXX31207
Prep Method: SW5030B
Prep Date/Time: 9/2/2017 6:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



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## Blank Spike Summary

Blank Spike ID: LCS for HBN 1175926 [VXX31207]
Blank Spike Lab ID: 1410000
Date Analyzed: 09/02/2017 17:45

Spike Duplicate ID: LCSD for HBN 1175926 [VXX31207]
Spike Duplicate Lab ID: 1410001
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1175926003

## Results by **SW8260C**

| | Blank Spike (ug/L) | | | Spike Duplicate (ug/L) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Parameter | Spike | Result | Rec (%) | Spike | Result | Rec (%) | CL | RPD (%) | RPD CL |
| 1,1,1,2-Tetrachloroethane | 30 | 30.0 | 100 | 30 | 30.2 | 101 | ( 78-124 ) | 0.46 | (< 20 ) |
| 1,1,1-Trichloroethane | 30 | 29.6 | 99 | 30 | 27.1 | 90 | ( 74-131 ) | 8.80 | (< 20 ) |
| 1,1,2,2-Tetrachloroethane | 30 | 29.4 | 98 | 30 | 31.6 | 105 | ( 71-121 ) | 6.90 | (< 20 ) |
| 1,1,2-Trichloroethane | 30 | 30.9 | 103 | 30 | 31.9 | 106 | ( 80-119 ) | 3.10 | (< 20 ) |
| 1,1-Dichloroethane | 30 | 28.5 | 95 | 30 | 26.4 | 88 | ( 77-125 ) | 7.50 | (< 20 ) |
| 1,1-Dichloroethene | 30 | 28.4 | 95 | 30 | 26.0 | 87 | ( 71-131 ) | 9.00 | (< 20 ) |
| 1,1-Dichloropropene | 30 | 30.5 | 102 | 30 | 28.3 | 95 | ( 79-125 ) | 7.40 | (< 20 ) |
| 1,2,3-Trichlorobenzene | 30 | 28.9 | 96 | 30 | 31.9 | 106 | ( 69-129 ) | 10.20 | (< 20 ) |
| 1,2,3-Trichloropropane | 30 | 29.1 | 97 | 30 | 32.0 | 107 | ( 73-122 ) | 9.50 | (< 20 ) |
| 1,2,4-Trichlorobenzene | 30 | 29.6 | 99 | 30 | 30.9 | 103 | ( 69-130 ) | 4.20 | (< 20 ) |
| 1,2,4-Trimethylbenzene | 30 | 28.5 | 95 | 30 | 28.4 | 95 | ( 79-124 ) | 0.11 | (< 20 ) |
| 1,2-Dibromo-3-chloropropane | 30 | 29.1 | 97 | 30 | 36.0 | 120 | ( 62-128 ) | 21.00 | * (< 20 ) |
| 1,2-Dibromoethane | 30 | 29.8 | 99 | 30 | 31.5 | 105 | ( 77-121 ) | 5.70 | (< 20 ) |
| 1,2-Dichlorobenzene | 30 | 28.8 | 96 | 30 | 28.6 | 95 | ( 80-119 ) | 0.59 | (< 20 ) |
| 1,2-Dichloroethane | 30 | 27.1 | 90 | 30 | 26.1 | 87 | ( 73-128 ) | 3.90 | (< 20 ) |
| 1,2-Dichloropropane | 30 | 29.5 | 98 | 30 | 28.2 | 94 | ( 78-122 ) | 4.60 | (< 20 ) |
| 1,3,5-Trimethylbenzene | 30 | 28.5 | 95 | 30 | 28.7 | 96 | ( 75-124 ) | 0.56 | (< 20 ) |
| 1,3-Dichlorobenzene | 30 | 28.7 | 96 | 30 | 28.6 | 95 | ( 80-119 ) | 0.31 | (< 20 ) |
| 1,3-Dichloropropane | 30 | 31.1 | 104 | 30 | 31.5 | 105 | ( 80-119 ) | 1.40 | (< 20 ) |
| 1,4-Dichlorobenzene | 30 | 29.0 | 97 | 30 | 28.5 | 95 | ( 79-118 ) | 2.00 | (< 20 ) |
| 2,2-Dichloropropane | 30 | 31.1 | 104 | 30 | 27.9 | 93 | ( 60-139 ) | 10.70 | (< 20 ) |
| 2-Butanone (MEK) | 90 | 87.2 | 97 | 90 | 117 | 130 | ( 56-143 ) | 29.40 | * (< 20 ) |
| 2-Chlorotoluene | 30 | 29.5 | 98 | 30 | 28.6 | 95 | ( 79-122 ) | 3.10 | (< 20 ) |
| 2-Hexanone | 90 | 88.5 | 98 | 90 | 118 | 131 | ( 57-139 ) | 28.80 | * (< 20 ) |
| 4-Chlorotoluene | 30 | 28.5 | 95 | 30 | 27.7 | 92 | ( 78-122 ) | 3.00 | (< 20 ) |
| 4-Isopropyltoluene | 30 | 30.2 | 101 | 30 | 29.1 | 97 | ( 77-127 ) | 3.90 | (< 20 ) |
| 4-Methyl-2-pentanone (MIBK) | 90 | 88.1 | 98 | 90 | 108 | 120 | ( 67-130 ) | 20.30 | * (< 20 ) |
| Benzene | 30 | 30.0 | 100 | 30 | 28.5 | 95 | ( 79-120 ) | 5.00 | (< 20 ) |
| Bromobenzene | 30 | 27.8 | 93 | 30 | 27.7 | 92 | ( 80-120 ) | 0.54 | (< 20 ) |
| Bromochloromethane | 30 | 29.0 | 97 | 30 | 27.3 | 91 | ( 78-123 ) | 6.00 | (< 20 ) |
| Bromodichloromethane | 30 | 29.2 | 97 | 30 | 27.6 | 92 | ( 79-125 ) | 5.70 | (< 20 ) |
| Bromoform | 30 | 31.2 | 104 | 30 | 33.0 | 110 | ( 66-130 ) | 5.60 | (< 20 ) |
| Bromomethane | 30 | 31.2 | 104 | 30 | 25.6 | 86 | ( 53-141 ) | 19.70 | (< 20 ) |
| Carbon disulfide | 45 | 42.7 | 95 | 45 | 37.9 | 84 | ( 64-133 ) | 12.10 | (< 20 ) |

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1175926 [VXX31207]
Blank Spike Lab ID: 1410000
Date Analyzed: 09/02/2017 17:45

Spike Duplicate ID: LCSD for HBN 1175926 [VXX31207]
Spike Duplicate Lab ID: 1410001
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1175926003

## Results by **SW8260C**

| | Blank Spike (ug/L) | | | Spike Duplicate (ug/L) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Parameter | Spike | Result | Rec (%) | Spike | Result | Rec (%) | CL | RPD (%) | RPD CL |
| Carbon tetrachloride | 30 | 31.1 | 104 | 30 | 28.1 | 94 | ( 72-136 ) | 10.10 | (< 20 ) |
| Chlorobenzene | 30 | 29.1 | 97 | 30 | 28.4 | 95 | ( 82-118 ) | 2.40 | (< 20 ) |
| Chloroethane | 30 | 27.2 | 91 | 30 | 24.4 | 81 | ( 60-138 ) | 10.80 | (< 20 ) |
| Chloroform | 30 | 27.6 | 92 | 30 | 25.8 | 86 | ( 79-124 ) | 6.90 | (< 20 ) |
| Chloromethane | 30 | 27.7 | 92 | 30 | 23.9 | 80 | ( 50-139 ) | 14.50 | (< 20 ) |
| cis-1,2-Dichloroethene | 30 | 28.1 | 94 | 30 | 26.6 | 89 | ( 78-123 ) | 5.50 | (< 20 ) |
| cis-1,3-Dichloropropene | 30 | 30.3 | 101 | 30 | 29.2 | 97 | ( 75-124 ) | 3.60 | (< 20 ) |
| Dibromochloromethane | 30 | 31.1 | 104 | 30 | 31.6 | 105 | ( 74-126 ) | 1.60 | (< 20 ) |
| Dibromomethane | 30 | 28.2 | 94 | 30 | 27.2 | 91 | ( 79-123 ) | 3.80 | (< 20 ) |
| Dichlorodifluoromethane | 30 | 26.5 | 88 | 30 | 23.4 | 78 | ( 32-152 ) | 12.20 | (< 20 ) |
| Ethylbenzene | 30 | 30.4 | 101 | 30 | 29.7 | 99 | ( 79-121 ) | 2.40 | (< 20 ) |
| Freon-113 | 45 | 43.5 | 97 | 45 | 39.9 | 89 | ( 70-136 ) | 8.70 | (< 20 ) |
| Hexachlorobutadiene | 30 | 30.8 | 103 | 30 | 28.5 | 95 | ( 66-134 ) | 7.80 | (< 20 ) |
| Isopropylbenzene (Cumene) | 30 | 30.3 | 101 | 30 | 29.6 | 99 | ( 72-131 ) | 2.30 | (< 20 ) |
| Methylene chloride | 30 | 27.9 | 93 | 30 | 26.4 | 88 | ( 74-124 ) | 5.60 | (< 20 ) |
| Methyl-t-butyl ether | 45 | 44.8 | 100 | 45 | 45.7 | 102 | ( 71-124 ) | 1.90 | (< 20 ) |
| Naphthalene | 30 | 29.0 | 97 | 30 | 35.2 | 117 | ( 61-128 ) | 19.50 | (< 20 ) |
| n-Butylbenzene | 30 | 29.7 | 99 | 30 | 28.4 | 95 | ( 75-128 ) | 4.40 | (< 20 ) |
| n-Propylbenzene | 30 | 29.0 | 97 | 30 | 27.6 | 92 | ( 76-126 ) | 4.70 | (< 20 ) |
| o-Xylene | 30 | 30.3 | 101 | 30 | 29.7 | 99 | ( 78-122 ) | 1.90 | (< 20 ) |
| P & M -Xylene | 60 | 60.6 | 101 | 60 | 58.5 | 98 | ( 80-121 ) | 3.60 | (< 20 ) |
| sec-Butylbenzene | 30 | 29.9 | 100 | 30 | 28.2 | 94 | ( 77-126 ) | 5.90 | (< 20 ) |
| Styrene | 30 | 30.5 | 102 | 30 | 30.5 | 102 | ( 78-123 ) | 0.00 | (< 20 ) |
| tert-Butylbenzene | 30 | 29.3 | 98 | 30 | 27.8 | 93 | ( 78-124 ) | 5.30 | (< 20 ) |
| Tetrachloroethene | 30 | 30.0 | 100 | 30 | 29.8 | 99 | ( 74-129 ) | 0.60 | (< 20 ) |
| Toluene | 30 | 29.0 | 97 | 30 | 28.3 | 94 | ( 80-121 ) | 2.40 | (< 20 ) |
| trans-1,2-Dichloroethene | 30 | 28.6 | 95 | 30 | 26.6 | 89 | ( 75-124 ) | 7.10 | (< 20 ) |
| trans-1,3-Dichloropropene | 30 | 28.7 | 96 | 30 | 28.8 | 96 | ( 73-127 ) | 0.38 | (< 20 ) |
| Trichloroethene | 30 | 30.0 | 100 | 30 | 28.2 | 94 | ( 79-123 ) | 6.00 | (< 20 ) |
| Trichlorofluoromethane | 30 | 29.1 | 97 | 30 | 31.2 | 104 | ( 65-141 ) | 6.90 | (< 20 ) |
| Vinyl acetate | 30 | 29.5 | 99 | 30 | 31.2 | 104 | ( 54-146 ) | 5.40 | (< 20 ) |
| Vinyl chloride | 30 | 28.6 | 95 | 30 | 24.3 | 81 | ( 58-137 ) | 16.30 | (< 20 ) |
| Xylenes (total) | 90 | 90.9 | 101 | 90 | 88.2 | 98 | ( 79-121 ) | 3.00 | (< 20 ) |

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1175926 [VXX31207]
Blank Spike Lab ID: 1410000
Date Analyzed: 09/02/2017 17:45

Spike Duplicate ID: LCSD for HBN 1175926 [VXX31207]
Spike Duplicate Lab ID: 1410001
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1175926003

## Results by **SW8260C**

| | Blank Spike (%) | | | Spike Duplicate (%) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Parameter | Spike | Result | Rec (%) | Spike | Result | Rec (%) | CL | RPD (%) | RPD CL |
| **Surrogates** | | | | | | | | | |
| 1,2-Dichloroethane-D4 (surr) | 30 | 96.6 | 97 | 30 | 93.8 | 94 | ( 81-118 ) | 2.90 | |
| 4-Bromofluorobenzene (surr) | 30 | 92.7 | 93 | 30 | 94.3 | 94 | ( 85-114 ) | 1.70 | |
| Toluene-d8 (surr) | 30 | 101 | 101 | 30 | 103 | 103 | ( 89-112 ) | 1.90 | |

## Batch Information

Analytical Batch: **VMS17129**
Analytical Method: **SW8260C**
Instrument: **VSA Agilent GC/MS 7890B/5977A**
Analyst: **FDR**

Prep Batch: **VXX31207**
Prep Method: **SW5030B**
Prep Date/Time: **09/02/2017 06:00**
Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL



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## Method Blank

Blank ID: MB for HBN 1766768 [XXX/38244]
Blank Lab ID: 1407524

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1175926001, 1175926002, 1175926003, 1175926004

## Results by **8270D SIM LV (PAH)**

| Parameter | Results | LOQ/CL | DL | Units |
|---|---|---|---|---|
| 1-Methylnaphthalene | 0.0250U | 0.0500 | 0.0150 | ug/L |
| 2-Methylnaphthalene | 0.0250U | 0.0500 | 0.0150 | ug/L |
| Acenaphthene | 0.0250U | 0.0500 | 0.0150 | ug/L |
| Acenaphthylene | 0.0250U | 0.0500 | 0.0150 | ug/L |
| Anthracene | 0.0250U | 0.0500 | 0.0150 | ug/L |
| Benzo(a)Anthracene | 0.0250U | 0.0500 | 0.0150 | ug/L |
| Benzo[a]pyrene | 0.0100U | 0.0200 | 0.00620 | ug/L |
| Benzo[b]Fluoranthene | 0.0250U | 0.0500 | 0.0150 | ug/L |
| Benzo[g,h,i]perylene | 0.0250U | 0.0500 | 0.0150 | ug/L |
| Benzo[k]fluoranthene | 0.0250U | 0.0500 | 0.0150 | ug/L |
| Chrysene | 0.0250U | 0.0500 | 0.0150 | ug/L |
| Dibenzo[a,h]anthracene | 0.0100U | 0.0200 | 0.00620 | ug/L |
| Fluoranthene | 0.0250U | 0.0500 | 0.0150 | ug/L |
| Fluorene | 0.0250U | 0.0500 | 0.0150 | ug/L |
| Indeno[1,2,3-c,d] pyrene | 0.0250U | 0.0500 | 0.0150 | ug/L |
| Naphthalene | 0.0500U | 0.100 | 0.0310 | ug/L |
| Phenanthrene | 0.0250U | 0.0500 | 0.0150 | ug/L |
| Pyrene | 0.0250U | 0.0500 | 0.0150 | ug/L |
| **Surrogates** | | | | |
| 2-Methylnaphthalene-d10 (surr) | 82.5 | 47-106 | | % |
| Fluoranthene-d10 (surr) | 80.9 | 24-116 | | % |

## Batch Information

Analytical Batch: XMS10331
Analytical Method: 8270D SIM LV (PAH)
Instrument: SVA Agilent 780/5975 GC/MS
Analyst: DSD
Analytical Date/Time: 8/23/2017 9:01:00PM

Prep Batch: XXX38244
Prep Method: SW3520C
Prep Date/Time: 8/23/2017 9:05:57AM
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL



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200 West Potter Drive Anchorage, AK 95518
t 907.562.2343 f 907.561.5301 www.us.sgs.com

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1175926 [XXX38244]
Blank Spike Lab ID: 1407525
Date Analyzed: 08/23/2017 21:22

Spike Duplicate ID: LCSD for HBN 1175926 [XXX38244]
Spike Duplicate Lab ID: 1407526
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1175926001, 1175926002, 1175926003, 1175926004

## Results by **8270D SIM LV (PAH)**

| | Blank Spike (ug/L) | | | Spike Duplicate (ug/L) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Parameter | Spike | Result | Rec (%) | Spike | Result | Rec (%) | CL | RPD (%) | RPD CL |
| 1-Methylnaphthalene | 2 | 1.54 | 77 | 2 | 1.52 | 76 | ( 41-115 ) | 1.00 | (< 20 ) |
| 2-Methylnaphthalene | 2 | 1.40 | 70 | 2 | 1.39 | 69 | ( 39-114 ) | 0.93 | (< 20 ) |
| Acenaphthene | 2 | 1.90 | 95 | 2 | 1.89 | 94 | ( 48-114 ) | 0.71 | (< 20 ) |
| Acenaphthylene | 2 | 1.56 | 78 | 2 | 1.55 | 78 | ( 35-121 ) | 0.42 | (< 20 ) |
| Anthracene | 2 | 1.65 | 82 | 2 | 1.64 | 82 | ( 53-119 ) | 0.46 | (< 20 ) |
| Benzo(a)Anthracene | 2 | 1.54 | 77 | 2 | 1.56 | 78 | ( 59-120 ) | 1.30 | (< 20 ) |
| Benzo[a]pyrene | 2 | 1.59 | 79 | 2 | 1.59 | 80 | ( 53-120 ) | 0.34 | (< 20 ) |
| Benzo[b]Fluoranthene | 2 | 1.58 | 79 | 2 | 1.60 | 80 | ( 53-126 ) | 1.10 | (< 20 ) |
| Benzo[g,h,i]perylene | 2 | 1.58 | 79 | 2 | 1.61 | 80 | ( 44-128 ) | 1.50 | (< 20 ) |
| Benzo[k]fluoranthene | 2 | 1.55 | 77 | 2 | 1.55 | 78 | ( 54-125 ) | 0.57 | (< 20 ) |
| Chrysene | 2 | 1.60 | 80 | 2 | 1.61 | 81 | ( 57-120 ) | 0.46 | (< 20 ) |
| Dibenzo[a,h]anthracene | 2 | 1.60 | 80 | 2 | 1.64 | 82 | ( 44-131 ) | 2.60 | (< 20 ) |
| Fluoranthene | 2 | 1.52 | 76 | 2 | 1.54 | 77 | ( 58-120 ) | 1.80 | (< 20 ) |
| Fluorene | 2 | 1.60 | 80 | 2 | 1.58 | 79 | ( 50-118 ) | 0.87 | (< 20 ) |
| Indeno[1,2,3-c,d] pyrene | 2 | 1.58 | 79 | 2 | 1.60 | 80 | ( 48-130 ) | 1.10 | (< 20 ) |
| Naphthalene | 2 | 1.45 | 73 | 2 | 1.46 | 73 | ( 43-114 ) | 0.19 | (< 20 ) |
| Phenanthrene | 2 | 1.58 | 79 | 2 | 1.56 | 78 | ( 53-115 ) | 1.40 | (< 20 ) |
| Pyrene | 2 | 1.59 | 79 | 2 | 1.61 | 80 | ( 53-121 ) | 1.40 | (< 20 ) |
| **Surrogates** | | | | | | | | | |
| 2-Methylnaphthalene-d10 (surr) | 2 | 81.9 | 82 | 2 | 82.2 | 82 | ( 47-106 ) | 0.35 | |
| Fluoranthene-d10 (surr) | 2 | 83.5 | 84 | 2 | 84.6 | 85 | ( 24-116 ) | 1.30 | |

## Batch Information

Analytical Batch: **XMS10331**
Analytical Method: **8270D SIM LV (PAH)**
Instrument: **SVA Agilent 780/5975 GC/MS**
Analyst: **DSD**

Prep Batch: **XXX38244**
Prep Method: **SW3520C**
Prep Date/Time: **08/23/2017 09:05**
Spike Init Wt./Vol.: 2 ug/L Extract Vol: 1 mL
Dupe Init Wt./Vol.: 2 ug/L Extract Vol: 1 mL

Print Date: 09/06/2017 8:43:38AM

## Method Blank

Blank ID: MB for HBN 1766835 [XXX/38253]
Blank Lab ID: 1407751

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1175926001, 1175926002, 1175926003, 1175926004

## Results by **AK102**

| Parameter | Results | LOQ/CL | DL | Units |
|---|---|---|---|---|
| Diesel Range Organics | 0.300U | 0.600 | 0.180 | mg/L |
| **Surrogates** | | | | |
| 5a Androstane (surr) | 90.6 | 60-120 | | % |

## Batch Information

Analytical Batch: XFC13742
Analytical Method: AK102
Instrument: Agilent 7890B R
Analyst: KMD
Analytical Date/Time: 8/31/2017 12:22:00PM

Prep Batch: XXX38253
Prep Method: SW3520C
Prep Date/Time: 8/24/2017 8:24:36AM
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL



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200 West Potter Drive Anchorage, AK 95518
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## Blank Spike Summary

Blank Spike ID: LCS for HBN 1175926 [XXX38253]
Blank Spike Lab ID: 1407752
Date Analyzed: 08/31/2017 12:33

Spike Duplicate ID: LCSD for HBN 1175926 [XXX38253]
Spike Duplicate Lab ID: 1407753
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1175926001, 1175926002, 1175926003, 1175926004

## Results by **AK102**

| | Blank Spike (mg/L) | | | Spike Duplicate (mg/L) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Parameter | Spike | Result | Rec (%) | Spike | Result | Rec (%) | CL | RPD (%) | RPD CL |
| Diesel Range Organics | 20 | 18.2 | 91 | 20 | 18.7 | 94 | ( 75-125 ) | 2.80 | (< 20 ) |
| **Surrogates** | | | | | | | | | |
| 5a Androstane (surr) | 0.4 | 106 | 106 | 0.4 | 107 | 107 | ( 60-120 ) | 0.88 | |

## Batch Information

Analytical Batch: **XFC13742**
Analytical Method: **AK102**
Instrument: **Agilent 7890B R**
Analyst: **KMD**

Prep Batch: **XXX38253**
Prep Method: **SW3520C**
Prep Date/Time: **08/24/2017 08:24**
Spike Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL
Dupe Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL



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1175926

# SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

# CHAIN-OF-CUSTODY RECORD

Laboratory SGS Page 1 of 1
Attn: TORI

400 N. 34th Street, Suite 100
Seattle, WA 98103
(206) 632-8020

2043 Westport Center Drive
St. Louis, MO 63146-3564
(314) 699-9660

2705 Saint Andrews Loop, Suite A
Pasco, WA 99301-3378
(509) 946-6309

2355 Hill Road
Fairbanks, AK 99709
(907) 479-0600

5430 Fairbanks Street, Suite 3
Anchorage, AK 99518
(907) 561-2120

3990 Collins Way, Suite 100
Lake Oswego, OR 97035
(503) 223-6147

1321 Bannock Street, Suite 200
Denver, CO 80204
(303) 825-3800

**Analysis Parameters/Sample Container Description**
(include preservative if used)

| Sample Identity | Lab No. | Time | Date Sampled | Comp. | Grab | DRO/AK102 | VOCs/8260C | PAHs/8270D SIM | | | | Total Number of Containers | Remarks/Matrix |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 17755-MW30 | ① A-G | 1342 | 8/22/17 | | X | ✓ | ✓ | ✓ | | | | 7 | Groundwater |
| MW31 | ② A-G | 1202 | | | X | ✓ | ✓ | ✓ | | | | 7 | |
| MW32 | ③ A-G | 1612 | | | X | ✓ | ✓ | ✓ | | | | 7 | |
| MW40 | ④ A-G | 1430 | | | X | ✓ | ✓ | ✓ | | | | 7 | |
| TB | ⑤ A-C | 1000 | | | | | ✓ | | | | | 1 | Trip Blank |

| Project Information | | Sample Receipt | |
|---|---|---|---|
| Project Number: | 17755-002 | Total Number of Containers | |
| Project Name: | 151 W. 100th AVE | COC Seals/Intact? Y/N/(NA) | Hard |
| Contact: | JCT, ADV | Received Good Cond/(Cold) | 2.7 |
| Ongoing Project? | Yes ☒ No ☐ | Delivery Method: | D20 |
| Sampler: | ADV | (attach shipping bill, if any) | |

| Instructions | |
|---|---|
| Requested Turnaround Time: | STANDARD |
| Special Instructions: | |

| Relinquished By: 1. | Relinquished By: 2. | Relinquished By: 3. |
|---|---|---|
| Signature: Alena Voigt | Signature: | Signature: |
| Time: 16:39 | Time: | Time: |
| Printed Name: Alena Voigt | Printed Name: | Printed Name: |
| Date: 8/23/17 | Date: | Date: |
| Company: Shannon+Wilson | Company: | Company: |

| Received By: 1. | Received By: 2. | Received By: 3. |
|---|---|---|
| Signature: | Signature: | Signature: Annie Collie |
| Time: | Time: | Time: 1639 |
| Printed Name: | Printed Name: | Printed Name: Annie Collie |
| Date: | Date: | Date: 8/23/17 |
| Company: | Company: | Company: SGS |

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report
Yellow - w/shipment - for consignee files
Pink - Shannon & Wilson - Job File

F-19-91/UR

No. 30981

e-Sample Receipt Form

**SGS Workorder #:** **1175926**

| 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 | Absent |
| COC accompanied samples? | Yes | |
| N/A **Exemption permitted if chilled & collected <8 hours ago, or for samples where chilling is not required | | |
| Temperature blank compliant* (i.e., 0-6 °C after CF)? | Yes | Cooler ID: 1 @ 2.7 °C Therm. ID: D20 |
| | N/A | Cooler ID: @ °C Therm. ID: |
| | N/A | Cooler ID: @ °C Therm. ID: |
| | N/A | Cooler ID: @ °C Therm. ID: |
| | N/A | 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 | |
| If samples received without a temperature blank, the "cooler temperature" will be documented in lieu of the temperature blank & "**COOLER TEMP**" will be noted to the right. In cases where neither a temp blank nor cooler temp can be obtained, note "ambient" or "chilled". | | |
| Note: Identify containers received at non-compliant temperature . Use form FS-0029 if more space is needed. | | |
| **Holding Time / Documentation / Sample Condition Requirements** | | Note: Refer to form F-083 "Sample Guide" for specific holding times. |
| Were samples received within holding time? | Yes | |
| Do samples **match COC**** (i.e.,sample IDs,dates/times collected)? **Note: If times differ <1hr, record details & login per COC. | Yes | |
| Were analyses requested unambiguous? (i.e., method is specified for analyses with >1 option for analysis) | Yes | |
| | N/A | ***Exemption permitted for metals (e.g,200.8/6020A). |
| Were proper containers (type/mass/volume/preservative***)used? | Yes | |
| **Volatile / LL-Hg Requirements** | | |
| Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples? | Yes | |
| 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):

## Sample Containers and Preservatives

| Container Id | Preservative | Container Condition | Container Id | Preservative | Container Condition |
|---|---|---|---|---|---|
| 1175926001-A | HCL to pH < 2 | OK | | | |
| 1175926001-B | HCL to pH < 2 | OK | | | |
| 1175926001-C | HCL to pH < 2 | OK | | | |
| 1175926001-D | HCL to pH < 2 | OK | | | |
| 1175926001-E | HCL to pH < 2 | OK | | | |
| 1175926001-F | No Preservative Required | OK | | | |
| 1175926001-G | No Preservative Required | OK | | | |
| 1175926002-A | HCL to pH < 2 | OK | | | |
| 1175926002-B | HCL to pH < 2 | OK | | | |
| 1175926002-C | HCL to pH < 2 | OK | | | |
| 1175926002-D | HCL to pH < 2 | OK | | | |
| 1175926002-E | HCL to pH < 2 | OK | | | |
| 1175926002-F | No Preservative Required | OK | | | |
| 1175926002-G | No Preservative Required | OK | | | |
| 1175926003-A | HCL to pH < 2 | OK | | | |
| 1175926003-B | HCL to pH < 2 | OK | | | |
| 1175926003-C | HCL to pH < 2 | OK | | | |
| 1175926003-D | HCL to pH < 2 | OK | | | |
| 1175926003-E | HCL to pH < 2 | OK | | | |
| 1175926003-F | No Preservative Required | OK | | | |
| 1175926003-G | No Preservative Required | OK | | | |
| 1175926004-A | HCL to pH < 2 | OK | | | |
| 1175926004-B | HCL to pH < 2 | OK | | | |
| 1175926004-C | HCL to pH < 2 | OK | | | |
| 1175926004-D | HCL to pH < 2 | OK | | | |
| 1175926004-E | HCL to pH < 2 | OK | | | |
| 1175926004-F | No Preservative Required | OK | | | |
| 1175926004-G | No Preservative Required | OK | | | |
| 1175926005-A | HCL to pH < 2 | OK | | | |
| 1175926005-B | HCL to pH < 2 | OK | | | |
| 1175926005-C | HCL to pH < 2 | OK | | | |

| Container Id | Preservative | Container Condition | Container Id | Preservative | Container Condition |
|---|---|---|---|---|---|

Container Condition Glossary

Containers for bacteriological, low level mercury and VOA vials are not opened prior to analysis and will be assigned condition code OK unless evidence indicates than an inappropriate container was submitted.

OK - The container was received at an acceptable pH for the analysis requested.
BU - The container was received with headspace greater than 6mm.
DM- The container was received damaged.
FR- The container was received frozen and not usable for Bacteria or BOD analyses.
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.

# LABORATORY DATA REVIEW CHECKLIST

**CS Report Name:** 151 West 100th Avenue, Anchorage, Alaska **Date:** June 2017

**Laboratory Report Date:** September 6, 2017

**Consultant Firm:** Shannon & Wilson, Inc.

**Completed by:** Dan McMahon
**Title:** Associate
**Laboratory Name:** SGS North America Inc.
**Work Order Number:** 1175926
**ADEC File Number:** 2100.38.539

(**NOTE**: ***NA*** = not applicable; Text in *italics* added by Shannon & Wilson, Inc.)

## 1. Laboratory

**a.** Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses? **Yes / No / NA (Please explain.)**
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 / NA**
Comments: *The samples were not transferred to another "network" laboratory or sub-contracted to an alternate laboratory.*

## 2. Chain of Custody (COC)

**a.** COC information completed, signed, and dated (including released/received by)?
**Yes / No / NA (Please explain.)**
Comments**:**

**b.** Correct analyses requested? **Yes / No / *NA* (Please explain.)**
Comments:

## 3. Laboratory Sample Receipt Documentation

**a.** Sample/cooler temperature documented and within range at receipt (0° to 6° C)?
**Yes / No / NA (Please explain.)**
Comments: *The temperature blank had a temperature of 2.7*° C.

**b.** Sample preservation acceptable - acidified waters, Methanol-preserved VOC soil (GRO, BTEX, VOCs, etc.)? **Yes / No / NA (Please explain.)**
Comments:

**c.** Sample condition documented - broken, leaking (soil MeOH), zero headspace (VOC vials)? **Yes / No / NA (Please explain.)**
Comments:

**d.** If there were any discrepancies, were they documented (e.g., incorrect sample containers/preservation, sample temperatures outside range, insufficient sample size, missing samples)? **Yes / No / NA (Please explain.)**
Comments: *No discrepancies documented.*

**e.** Data quality or usability affected? **Yes / No (Please Explain.)**
Comments*: Data quality/usability are considered unaffected; see above.*

## 4. Case Narrative

**a.** Present and understandable? **Yes / No / NA (Please explain.)**
Comments:

**b.** Discrepancies, errors or QC failures noted by the lab? **Yes / No / NA (Please explain.)**
Comments: *The case narrative notes that:*

- *LCS/LCSD RPDs for several analytes do not meet QC criteria. These analytes were not detected in associated samples. All other QC is within criteria; no further action was taken.*

**c.** Were corrective actions documented? **Yes / No / NA (Please explain.)**
Comments: *The case narrative does not discuss corrective actions taken.*

**d.** What is the effect on data quality/usability, according to the case narrative?
Comments: *See above.*

## 5. Sample Results

**a.** Correct analyses performed/reported as requested on COC? **Yes / No / NA (Please explain.)**
Comments:

**b.** All applicable holding times met? **Yes / No / NA (Please explain.)**
Comments:

**c.** All soils reported on a dry-weight basis? **Yes / No / NA (Please explain.)**
Comments: *Soil samples were not collected as part of this project.*

**d.** Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project? **Yes / No / NA (Please explain.)**
Comments*: For all project samples, the LOQs and LODs for 1,2,3-trichloropropane are greater than the ADEC cleanup level.*

**e.** Data quality or usability affected? **(Please explain.)**
Comments: *There is a potential that1 ,2,3-trichloropropane is present at a concentration greater than the ADEC cleanup levels, but less than the LOQs. However, note that estimated (J-flagged) concentrations, less than the LOQs, were not detected in the project samples.*

## 6. QC Samples

### a. Method Blank

**i.** One method blank reported per matrix, analysis, and 20 samples?
**Yes / No / NA (Please explain.)**
Comments:

**ii.** All method blank results less than LOQ? **Yes / No / NA (Please explain.)**
Comments:

**iii.** If above LOQ, what samples are affected?
Comments:

**iv.** Do the affected sample(s) have data flags? **Yes / No / NA**
Comments:

If so, are the data flags clearly defined? **Yes / No / NA**
Comments:

**v.** Data quality or usability affected? **(Please explain.)**
Comments:

### b. Laboratory Control Sample/Duplicate (LCS/LCSD)

**i.** Organics - One LCS/LCSD reported per matrix, analysis, and 20 samples?
(LCS/LCSD required per AK methods, LCS required per SW846) **Yes / No / *NA***
**(Please explain.)**
Comments:

**ii.** Metals/Inorganics - One LCS and one sample duplicate reported per matrix, analysis and 20 samples? **Yes / No / NA (Please explain.)**
Comments:

**iii.** Accuracy – All percent recoveries (%R) reported *and w*ithin method or laboratory limits? And project specified DQOs, if applicable. (AK petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages) **Yes / No / NA (Please explain.)**
Comments:

**iv.** Precision – All relative percent differences (RPDs) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages) **Yes / No / NA (Please explain.)**
Comments: *RPDs for four VOCs do not meet QC criteria.*

**v.** If %R or RPD is outside of acceptable limits, what samples are affected? ***NA***
Comments: *Sample MW32*

**vi.** Do the affected samples(s) have data flags? **Yes / No / NA**
Comments:

If so, are the data flags clearly defined? **Yes / No / NA**
Comments:

**vii.** Data quality or usability affected? Explain. ***NA***
Comments*: The VOCs with RPD exceedances were not detected in Sample MW32. Therefore, it is our opinion that data quality/usability are unaffected.*

**c. Surrogates - Organics Only**

**i.** Are surrogate recoveries reported for organic analyses, field, QC, and laboratory samples? **Yes / No / NA (Please explain.)**
Comments:

**ii.** Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages) **Yes / No / NA (Please explain.)**
Comments:

**iii.** Do the sample results with failed surrogate recoveries have data flags? **Yes / No / NA (Please explain.)**
Comments:

If so, are the data flags clearly defined? **Yes / No / NA**
Comments:

**iv.** Data quality or usability affected? Explain.
Comments:

**d. Trip Blank** - Volatile analyses only (GRO, BTEX, VOCs, etc.)

**i.** One trip blank reported per matrix, analysis and cooler? **Yes / No / NA (Please explain.)**
Comments: *One trip blank (TB) was submitted to the lab with the samples.*

**ii.** Is the cooler used to transport the trip blank and volatile samples clearly indicated on the COC? **Yes / No / NA (Please explain if NA or no.)**
Comments: *Only one cooler was used to transport the samples.*

**iii.** All results less than LOQ? **Yes / No / NA (Please explain.)**
Comments:

**iv.** If above LOQ, what samples are affected? **NA**
Comments**:**

**v.** Data quality or usability affected? Explain.
Comments: *Data quality/usability are unaffected.*

**e. Field Duplicate**

**i.** One field duplicate submitted per matrix, analysis and 10 project samples? **Yes / No / NA (Please explain.)**
Comments: *Sample MW40 is a duplicate of Sample MW30.*

**ii.** Were the field duplicates submitted blind to the lab? **Yes / No / NA (Please explain.)**
Comments*:*

**iii.** Precision – All relative percent differences (RPDs) less than specified DQOs? (Recommended: 30% for water, 50% for soil) **Yes / No / NA (Please explain.)**
Comments: *The RPD for DRO (72%) is greater than the specified DQO.*

**iv.** Data quality or usability affected? Explain. ***NA***
Comments: *DRO was detected in both the primary and duplicate samples at concentrations less than the applicable ADEC cleanup levels; therefore, the data are acceptable for the purposes of this report.*

**f. Decontamination or Equipment Blank** (if not applicable, a comment stating why must be entered below)
**Yes / No / NA (Please explain.)**
Comments: *A decontamination or equipment blank was not included in our ADEC-approved work plan.*

**i.** All results less than LOQ? **Yes / No / NA (Please explain.)**
Comments:

**ii.** If results are above LOQ, what samples are affected? ***NA***
Comments:

**iii.** Data quality or usability affected? Explain. ***NA***
Comments:

**7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab-specific, etc.)**

**a.** Are they defined and appropriate? **Yes / No / NA**

Comments: *Laboratory-specific flags are defined on Page 3 of the SGS report.*

**Laboratory Report of Analysis**

To: Shannon & Wilson, Inc.
5430 Fairbanks Street, Suite 3
Anchorage, AK 99518
907-561-2120

Report Number: **1179498**

Client Project: **32-1-17755-002 Fairweather**

Dear Alena Voigt,

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 Victoria 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.

Victoria Pennick Date
Project Manager
Victoria.Pennick@sgs.com

Print Date: 11/09/2017 5:32:21PM

## Case Narrative

SGS Client: **Shannon & Wilson, Inc.**
SGS Project: **1179498**
Project Name/Site: **32-1-17755-002 Fairweather**
Project Contact: **Alena Voigt**

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.



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

## Laboratory Qualifiers

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

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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 | 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.



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## Sample Summary

| Client Sample ID | Lab Sample ID | Collected | Received | Matrix |
|---|---|---|---|---|
| 17755-MW30 | 1179498001 | 11/01/2017 | 11/01/2017 | Water (Surface, Eff., Ground) |
| 17755-MW31 | 1179498002 | 11/01/2017 | 11/01/2017 | Water (Surface, Eff., Ground) |
| 17755-MW32 | 1179498003 | 11/01/2017 | 11/01/2017 | Water (Surface, Eff., Ground) |
| 17755-MW40 | 1179498004 | 11/01/2017 | 11/01/2017 | Water (Surface, Eff., Ground) |
| 17755-TB | 1179498005 | 11/01/2017 | 11/01/2017 | Water (Surface, Eff., Ground) |

| Method | Method Description |
|---|---|
| 8270D SIM LV (PAH) | 8270 PAH SIM GC/MS Liq/Liq ext. LV |
| AK102 | DRO Low Volume (W) |
| SW8260C | Volatile Organic Compounds (W) FULL |



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## Detectable Results Summary

Client Sample ID: **17755-MW30**
Lab Sample ID: 1179498001

| | Parameter | Result | Units |
|---|---|---|---|
| **Polynuclear Aromatics GC/MS** | 1-Methylnaphthalene | 0.0221J | ug/L |
| | 2-Methylnaphthalene | 0.0208J | ug/L |
| **Semivolatile Organic Fuels** | Diesel Range Organics | 0.958 | mg/L |
| **Volatile GC/MS** | Benzene | 1.74 | ug/L |

Client Sample ID: **17755-MW31**
Lab Sample ID: 1179498002

| | Parameter | Result | Units |
|---|---|---|---|
| **Semivolatile Organic Fuels** | Diesel Range Organics | 0.794 | mg/L |
| **Volatile GC/MS** | Dichlorodifluoromethane | 1.06 | ug/L |

Client Sample ID: **17755-MW32**
Lab Sample ID: 1179498003

| | Parameter | Result | Units |
|---|---|---|---|
| **Semivolatile Organic Fuels** | Diesel Range Organics | 0.206J | mg/L |
| **Volatile GC/MS** | Dichlorodifluoromethane | 22.5 | ug/L |
| | Trichlorofluoromethane | 0.550J | ug/L |

Client Sample ID: **17755-MW40**
Lab Sample ID: 1179498004

| | Parameter | Result | Units |
|---|---|---|---|
| **Polynuclear Aromatics GC/MS** | 1-Methylnaphthalene | 0.0200J | ug/L |
| | 2-Methylnaphthalene | 0.0155J | ug/L |
| **Semivolatile Organic Fuels** | Diesel Range Organics | 0.623 | mg/L |
| **Volatile GC/MS** | Benzene | 1.78 | ug/L |



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## Results of **17755-MW30**

Client Sample ID: **17755-MW30**
Client Project ID: **32-1-17755-002 Fairweather**
Lab Sample ID: 1179498001
Lab Project ID: 1179498

Collection Date: 11/01/17 14:30
Received Date: 11/01/17 16:36
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

## Results by **Polynuclear Aromatics GC/MS**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| 1-Methylnaphthalene | 0.0221 | J | 0.0463 | 0.0139 | ug/L | 1 | | 11/06/17 01:26 |
| 2-Methylnaphthalene | 0.0208 | J | 0.0463 | 0.0139 | ug/L | 1 | | 11/06/17 01:26 |
| Acenaphthene | 0.0232 | U | 0.0463 | 0.0139 | ug/L | 1 | | 11/06/17 01:26 |
| Acenaphthylene | 0.0232 | U | 0.0463 | 0.0139 | ug/L | 1 | | 11/06/17 01:26 |
| Anthracene | 0.0232 | U | 0.0463 | 0.0139 | ug/L | 1 | | 11/06/17 01:26 |
| Benzo(a)Anthracene | 0.0232 | U | 0.0463 | 0.0139 | ug/L | 1 | | 11/06/17 01:26 |
| Benzo[a]pyrene | 0.00925 | U | 0.0185 | 0.00574 | ug/L | 1 | | 11/06/17 01:26 |
| Benzo[b]Fluoranthene | 0.0232 | U | 0.0463 | 0.0139 | ug/L | 1 | | 11/06/17 01:26 |
| Benzo[g,h,i]perylene | 0.0232 | U | 0.0463 | 0.0139 | ug/L | 1 | | 11/06/17 01:26 |
| Benzo[k]fluoranthene | 0.0232 | U | 0.0463 | 0.0139 | ug/L | 1 | | 11/06/17 01:26 |
| Chrysene | 0.0232 | U | 0.0463 | 0.0139 | ug/L | 1 | | 11/06/17 01:26 |
| Dibenzo[a,h]anthracene | 0.00925 | U | 0.0185 | 0.00574 | ug/L | 1 | | 11/06/17 01:26 |
| Fluoranthene | 0.0232 | U | 0.0463 | 0.0139 | ug/L | 1 | | 11/06/17 01:26 |
| Fluorene | 0.0232 | U | 0.0463 | 0.0139 | ug/L | 1 | | 11/06/17 01:26 |
| Indeno[1,2,3-c,d] pyrene | 0.0232 | U | 0.0463 | 0.0139 | ug/L | 1 | | 11/06/17 01:26 |
| Naphthalene | 0.0463 | U | 0.0926 | 0.0287 | ug/L | 1 | | 11/06/17 01:26 |
| Phenanthrene | 0.0232 | U | 0.0463 | 0.0139 | ug/L | 1 | | 11/06/17 01:26 |
| Pyrene | 0.0232 | U | 0.0463 | 0.0139 | ug/L | 1 | | 11/06/17 01:26 |
| **Surrogates** | | | | | | | | |
| 2-Methylnaphthalene-d10 (surr) | 57.9 | | 47-106 | | % | 1 | | 11/06/17 01:26 |
| Fluoranthene-d10 (surr) | 58.8 | | 24-116 | | % | 1 | | 11/06/17 01:26 |

## Batch Information

Analytical Batch: XMS10533
Analytical Method: 8270D SIM LV (PAH)
Analyst: DSD
Analytical Date/Time: 11/06/17 01:26
Container ID: 1179498001-F

Prep Batch: XXX38788
Prep Method: SW3520C
Prep Date/Time: 11/02/17 08:02
Prep Initial Wt./Vol.: 270 mL
Prep Extract Vol: 1 mL

Print Date: 11/09/2017 5:32:24PM

J flagging is activated

## Results of **17755-MW30**

Client Sample ID: **17755-MW30**
Client Project ID: **32-1-17755-002 Fairweather**
Lab Sample ID: 1179498001
Lab Project ID: 1179498

Collection Date: 11/01/17 14:30
Received Date: 11/01/17 16:36
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

## Results by **Semivolatile Organic Fuels**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics | 0.958 | | 0.588 | 0.176 | mg/L | 1 | | 11/07/17 21:24 |
| **Surrogates** | | | | | | | | |
| 5a Androstane (surr) | 84.1 | | 50-150 | | % | 1 | | 11/07/17 21:24 |

## Batch Information

Analytical Batch: XFC13957
Analytical Method: AK102
Analyst: JMG
Analytical Date/Time: 11/07/17 21:24
Container ID: 1179498001-D

Prep Batch: XXX38810
Prep Method: SW3520C
Prep Date/Time: 11/07/17 07:51
Prep Initial Wt./Vol.: 255 mL
Prep Extract Vol: 1 mL



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Results of **17755-MW30**

Client Sample ID: **17755-MW30**
Client Project ID: **32-1-17755-002 Fairweather**
Lab Sample ID: 1179498001
Lab Project ID: 1179498

Collection Date: 11/01/17 14:30
Received Date: 11/01/17 16:36
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 11/08/17 18:54 |
| 1,1,1-Trichloroethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 18:54 |
| 1,1,2,2-Tetrachloroethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 11/08/17 18:54 |
| 1,1,2-Trichloroethane | 0.200 | U | 0.400 | 0.120 | ug/L | 1 | | 11/08/17 18:54 |
| 1,1-Dichloroethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 18:54 |
| 1,1-Dichloroethene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 18:54 |
| 1,1-Dichloropropene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 18:54 |
| 1,2,3-Trichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 18:54 |
| 1,2,3-Trichloropropane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 18:54 |
| 1,2,4-Trichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 18:54 |
| 1,2,4-Trimethylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 18:54 |
| 1,2-Dibromo-3-chloropropane | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 11/08/17 18:54 |
| 1,2-Dibromoethane | 0.0375 | U | 0.0750 | 0.0180 | ug/L | 1 | | 11/08/17 18:54 |
| 1,2-Dichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 18:54 |
| 1,2-Dichloroethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 11/08/17 18:54 |
| 1,2-Dichloropropane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 18:54 |
| 1,3,5-Trimethylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 18:54 |
| 1,3-Dichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 18:54 |
| 1,3-Dichloropropane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 11/08/17 18:54 |
| 1,4-Dichlorobenzene | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 11/08/17 18:54 |
| 2,2-Dichloropropane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 18:54 |
| 2-Butanone (MEK) | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 11/08/17 18:54 |
| 2-Chlorotoluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 18:54 |
| 2-Hexanone | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 11/08/17 18:54 |
| 4-Chlorotoluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 18:54 |
| 4-Isopropyltoluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 18:54 |
| 4-Methyl-2-pentanone (MIBK) | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 11/08/17 18:54 |
| Benzene | 1.74 | | 0.400 | 0.120 | ug/L | 1 | | 11/08/17 18:54 |
| Bromobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 18:54 |
| Bromochloromethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 18:54 |
| Bromodichloromethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 11/08/17 18:54 |
| Bromoform | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 18:54 |
| Bromomethane | 2.50 | U | 5.00 | 1.50 | ug/L | 1 | | 11/08/17 18:54 |
| Carbon disulfide | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 11/08/17 18:54 |
| Carbon tetrachloride | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 18:54 |
| Chlorobenzene | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 11/08/17 18:54 |
| Chloroethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 18:54 |

Print Date: 11/09/2017 5:32:24PM

J flagging is activated

Results of **17755-MW30**

Client Sample ID: **17755-MW30**
Client Project ID: **32-1-17755-002 Fairweather**
Lab Sample ID: 1179498001
Lab Project ID: 1179498

Collection Date: 11/01/17 14:30
Received Date: 11/01/17 16:36
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| Chloroform | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 18:54 |
| Chloromethane | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 18:54 |
| cis-1,2-Dichloroethene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 18:54 |
| cis-1,3-Dichloropropene | 0.250 U | | 0.500 | 0.150 | ug/L | 1 | | 11/08/17 18:54 |
| Dibromochloromethane | 0.250 U | | 0.500 | 0.150 | ug/L | 1 | | 11/08/17 18:54 |
| Dibromomethane | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 18:54 |
| Dichlorodifluoromethane | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 18:54 |
| Ethylbenzene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 18:54 |
| Freon-113 | 5.00 U | | 10.0 | 3.10 | ug/L | 1 | | 11/08/17 18:54 |
| Hexachlorobutadiene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 18:54 |
| Isopropylbenzene (Cumene) | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 18:54 |
| Methylene chloride | 2.50 U | | 5.00 | 1.00 | ug/L | 1 | | 11/08/17 18:54 |
| Methyl-t-butyl ether | 5.00 U | | 10.0 | 3.10 | ug/L | 1 | | 11/08/17 18:54 |
| Naphthalene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 18:54 |
| n-Butylbenzene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 18:54 |
| n-Propylbenzene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 18:54 |
| o-Xylene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 18:54 |
| P & M -Xylene | 1.00 U | | 2.00 | 0.620 | ug/L | 1 | | 11/08/17 18:54 |
| sec-Butylbenzene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 18:54 |
| Styrene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 18:54 |
| tert-Butylbenzene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 18:54 |
| Tetrachloroethene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 18:54 |
| Toluene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 18:54 |
| trans-1,2-Dichloroethene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 18:54 |
| trans-1,3-Dichloropropene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 18:54 |
| Trichloroethene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 18:54 |
| Trichlorofluoromethane | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 18:54 |
| Vinyl acetate | 5.00 U | | 10.0 | 3.10 | ug/L | 1 | | 11/08/17 18:54 |
| Vinyl chloride | 0.0750 U | | 0.150 | 0.0500 | ug/L | 1 | | 11/08/17 18:54 |
| Xylenes (total) | 1.50 U | | 3.00 | 1.00 | ug/L | 1 | | 11/08/17 18:54 |
| **Surrogates** | | | | | | | | |
| 1,2-Dichloroethane-D4 (surr) | 112 | | 81-118 | | % | 1 | | 11/08/17 18:54 |
| 4-Bromofluorobenzene (surr) | 108 | | 85-114 | | % | 1 | | 11/08/17 18:54 |
| Toluene-d8 (surr) | 94.6 | | 89-112 | | % | 1 | | 11/08/17 18:54 |

Print Date: 11/09/2017 5:32:24PM

J flagging is activated

Results of **17755-MW30**

Client Sample ID: **17755-MW30**
Client Project ID: **32-1-17755-002 Fairweather**
Lab Sample ID: 1179498001
Lab Project ID: 1179498

Collection Date: 11/01/17 14:30
Received Date: 11/01/17 16:36
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

**Batch Information**

Analytical Batch: VMS17428
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 11/08/17 18:54
Container ID: 1179498001-A

Prep Batch: VXX31691
Prep Method: SW5030B
Prep Date/Time: 11/08/17 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



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## Results of **17755-MW31**

Client Sample ID: **17755-MW31**
Client Project ID: **32-1-17755-002 Fairweather**
Lab Sample ID: 1179498002
Lab Project ID: 1179498

Collection Date: 11/01/17 13:02
Received Date: 11/01/17 16:36
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

## Results by **Polynuclear Aromatics GC/MS**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| 1-Methylnaphthalene | 0.0240 | U | 0.0481 | 0.0144 | ug/L | 1 | | 11/06/17 01:46 |
| 2-Methylnaphthalene | 0.0240 | U | 0.0481 | 0.0144 | ug/L | 1 | | 11/06/17 01:46 |
| Acenaphthene | 0.0240 | U | 0.0481 | 0.0144 | ug/L | 1 | | 11/06/17 01:46 |
| Acenaphthylene | 0.0240 | U | 0.0481 | 0.0144 | ug/L | 1 | | 11/06/17 01:46 |
| Anthracene | 0.0240 | U | 0.0481 | 0.0144 | ug/L | 1 | | 11/06/17 01:46 |
| Benzo(a)Anthracene | 0.0240 | U | 0.0481 | 0.0144 | ug/L | 1 | | 11/06/17 01:46 |
| Benzo[a]pyrene | 0.00960 | U | 0.0192 | 0.00596 | ug/L | 1 | | 11/06/17 01:46 |
| Benzo[b]Fluoranthene | 0.0240 | U | 0.0481 | 0.0144 | ug/L | 1 | | 11/06/17 01:46 |
| Benzo[g,h,i]perylene | 0.0240 | U | 0.0481 | 0.0144 | ug/L | 1 | | 11/06/17 01:46 |
| Benzo[k]fluoranthene | 0.0240 | U | 0.0481 | 0.0144 | ug/L | 1 | | 11/06/17 01:46 |
| Chrysene | 0.0240 | U | 0.0481 | 0.0144 | ug/L | 1 | | 11/06/17 01:46 |
| Dibenzo[a,h]anthracene | 0.00960 | U | 0.0192 | 0.00596 | ug/L | 1 | | 11/06/17 01:46 |
| Fluoranthene | 0.0240 | U | 0.0481 | 0.0144 | ug/L | 1 | | 11/06/17 01:46 |
| Fluorene | 0.0240 | U | 0.0481 | 0.0144 | ug/L | 1 | | 11/06/17 01:46 |
| Indeno[1,2,3-c,d] pyrene | 0.0240 | U | 0.0481 | 0.0144 | ug/L | 1 | | 11/06/17 01:46 |
| Naphthalene | 0.0481 | U | 0.0962 | 0.0298 | ug/L | 1 | | 11/06/17 01:46 |
| Phenanthrene | 0.0240 | U | 0.0481 | 0.0144 | ug/L | 1 | | 11/06/17 01:46 |
| Pyrene | 0.0240 | U | 0.0481 | 0.0144 | ug/L | 1 | | 11/06/17 01:46 |
| **Surrogates** | | | | | | | | |
| 2-Methylnaphthalene-d10 (surr) | 70.5 | | 47-106 | | % | 1 | | 11/06/17 01:46 |
| Fluoranthene-d10 (surr) | 72.2 | | 24-116 | | % | 1 | | 11/06/17 01:46 |

## Batch Information

Analytical Batch: XMS10533
Analytical Method: 8270D SIM LV (PAH)
Analyst: DSD
Analytical Date/Time: 11/06/17 01:46
Container ID: 1179498002-F

Prep Batch: XXX38788
Prep Method: SW3520C
Prep Date/Time: 11/02/17 08:02
Prep Initial Wt./Vol.: 260 mL
Prep Extract Vol: 1 mL

Print Date: 11/09/2017 5:32:24PM

J flagging is activated

Results of **17755-MW31**

Client Sample ID: **17755-MW31**
Client Project ID: **32-1-17755-002 Fairweather**
Lab Sample ID: 1179498002
Lab Project ID: 1179498

Collection Date: 11/01/17 13:02
Received Date: 11/01/17 16:36
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics | 0.794 | | 0.600 | 0.180 | mg/L | 1 | | 11/07/17 21:34 |
| **Surrogates** | | | | | | | | |
| 5a Androstane (surr) | 77 | | 50-150 | | % | 1 | | 11/07/17 21:34 |

**Batch Information**

Analytical Batch: XFC13957
Analytical Method: AK102
Analyst: JMG
Analytical Date/Time: 11/07/17 21:34
Container ID: 1179498002-D

Prep Batch: XXX38810
Prep Method: SW3520C
Prep Date/Time: 11/07/17 07:51
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Results of **17755-MW31**

Client Sample ID: **17755-MW31**
Client Project ID: **32-1-17755-002 Fairweather**
Lab Sample ID: 1179498002
Lab Project ID: 1179498

Collection Date: 11/01/17 13:02
Received Date: 11/01/17 16:36
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 11/08/17 19:10 |
| 1,1,1-Trichloroethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:10 |
| 1,1,2,2-Tetrachloroethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 11/08/17 19:10 |
| 1,1,2-Trichloroethane | 0.200 | U | 0.400 | 0.120 | ug/L | 1 | | 11/08/17 19:10 |
| 1,1-Dichloroethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:10 |
| 1,1-Dichloroethene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:10 |
| 1,1-Dichloropropene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:10 |
| 1,2,3-Trichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:10 |
| 1,2,3-Trichloropropane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:10 |
| 1,2,4-Trichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:10 |
| 1,2,4-Trimethylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:10 |
| 1,2-Dibromo-3-chloropropane | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 11/08/17 19:10 |
| 1,2-Dibromoethane | 0.0375 | U | 0.0750 | 0.0180 | ug/L | 1 | | 11/08/17 19:10 |
| 1,2-Dichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:10 |
| 1,2-Dichloroethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 11/08/17 19:10 |
| 1,2-Dichloropropane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:10 |
| 1,3,5-Trimethylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:10 |
| 1,3-Dichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:10 |
| 1,3-Dichloropropane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 11/08/17 19:10 |
| 1,4-Dichlorobenzene | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 11/08/17 19:10 |
| 2,2-Dichloropropane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:10 |
| 2-Butanone (MEK) | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 11/08/17 19:10 |
| 2-Chlorotoluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:10 |
| 2-Hexanone | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 11/08/17 19:10 |
| 4-Chlorotoluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:10 |
| 4-Isopropyltoluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:10 |
| 4-Methyl-2-pentanone (MIBK) | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 11/08/17 19:10 |
| Benzene | 0.200 | U | 0.400 | 0.120 | ug/L | 1 | | 11/08/17 19:10 |
| Bromobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:10 |
| Bromochloromethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:10 |
| Bromodichloromethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 11/08/17 19:10 |
| Bromoform | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:10 |
| Bromomethane | 2.50 | U | 5.00 | 1.50 | ug/L | 1 | | 11/08/17 19:10 |
| Carbon disulfide | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 11/08/17 19:10 |
| Carbon tetrachloride | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:10 |
| Chlorobenzene | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 11/08/17 19:10 |
| Chloroethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:10 |

Print Date: 11/09/2017 5:32:24PM

J flagging is activated

Results of **17755-MW31**

Client Sample ID: **17755-MW31**
Client Project ID: **32-1-17755-002 Fairweather**
Lab Sample ID: 1179498002
Lab Project ID: 1179498

Collection Date: 11/01/17 13:02
Received Date: 11/01/17 16:36
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| Chloroform | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:10 |
| Chloromethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:10 |
| cis-1,2-Dichloroethene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:10 |
| cis-1,3-Dichloropropene | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 11/08/17 19:10 |
| Dibromochloromethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 11/08/17 19:10 |
| Dibromomethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:10 |
| Dichlorodifluoromethane | 1.06 | | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:10 |
| Ethylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:10 |
| Freon-113 | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 11/08/17 19:10 |
| Hexachlorobutadiene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:10 |
| Isopropylbenzene (Cumene) | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:10 |
| Methylene chloride | 2.50 | U | 5.00 | 1.00 | ug/L | 1 | | 11/08/17 19:10 |
| Methyl-t-butyl ether | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 11/08/17 19:10 |
| Naphthalene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:10 |
| n-Butylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:10 |
| n-Propylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:10 |
| o-Xylene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:10 |
| P & M -Xylene | 1.00 | U | 2.00 | 0.620 | ug/L | 1 | | 11/08/17 19:10 |
| sec-Butylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:10 |
| Styrene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:10 |
| tert-Butylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:10 |
| Tetrachloroethene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:10 |
| Toluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:10 |
| trans-1,2-Dichloroethene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:10 |
| trans-1,3-Dichloropropene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:10 |
| Trichloroethene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:10 |
| Trichlorofluoromethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:10 |
| Vinyl acetate | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 11/08/17 19:10 |
| Vinyl chloride | 0.0750 | U | 0.150 | 0.0500 | ug/L | 1 | | 11/08/17 19:10 |
| Xylenes (total) | 1.50 | U | 3.00 | 1.00 | ug/L | 1 | | 11/08/17 19:10 |
| **Surrogates** | | | | | | | | |
| 1,2-Dichloroethane-D4 (surr) | 107 | | 81-118 | | % | 1 | | 11/08/17 19:10 |
| 4-Bromofluorobenzene (surr) | 106 | | 85-114 | | % | 1 | | 11/08/17 19:10 |
| Toluene-d8 (surr) | 97.9 | | 89-112 | | % | 1 | | 11/08/17 19:10 |

Print Date: 11/09/2017 5:32:24PM

J flagging is activated

Results of **17755-MW31**

Client Sample ID: **17755-MW31**
Client Project ID: **32-1-17755-002 Fairweather**
Lab Sample ID: 1179498002
Lab Project ID: 1179498

Collection Date: 11/01/17 13:02
Received Date: 11/01/17 16:36
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

**Batch Information**

Analytical Batch: VMS17428
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 11/08/17 19:10
Container ID: 1179498002-A

Prep Batch: VXX31691
Prep Method: SW5030B
Prep Date/Time: 11/08/17 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



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## Results of **17755-MW32**

Client Sample ID: **17755-MW32**
Client Project ID: **32-1-17755-002 Fairweather**
Lab Sample ID: 1179498003
Lab Project ID: 1179498

Collection Date: 11/01/17 15:58
Received Date: 11/01/17 16:36
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

## Results by **Polynuclear Aromatics GC/MS**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| 1-Methylnaphthalene | 0.0250 | U | 0.0500 | 0.0150 | ug/L | 1 | | 11/06/17 02:07 |
| 2-Methylnaphthalene | 0.0250 | U | 0.0500 | 0.0150 | ug/L | 1 | | 11/06/17 02:07 |
| Acenaphthene | 0.0250 | U | 0.0500 | 0.0150 | ug/L | 1 | | 11/06/17 02:07 |
| Acenaphthylene | 0.0250 | U | 0.0500 | 0.0150 | ug/L | 1 | | 11/06/17 02:07 |
| Anthracene | 0.0250 | U | 0.0500 | 0.0150 | ug/L | 1 | | 11/06/17 02:07 |
| Benzo(a)Anthracene | 0.0250 | U | 0.0500 | 0.0150 | ug/L | 1 | | 11/06/17 02:07 |
| Benzo[a]pyrene | 0.0100 | U | 0.0200 | 0.00620 | ug/L | 1 | | 11/06/17 02:07 |
| Benzo[b]Fluoranthene | 0.0250 | U | 0.0500 | 0.0150 | ug/L | 1 | | 11/06/17 02:07 |
| Benzo[g,h,i]perylene | 0.0250 | U | 0.0500 | 0.0150 | ug/L | 1 | | 11/06/17 02:07 |
| Benzo[k]fluoranthene | 0.0250 | U | 0.0500 | 0.0150 | ug/L | 1 | | 11/06/17 02:07 |
| Chrysene | 0.0250 | U | 0.0500 | 0.0150 | ug/L | 1 | | 11/06/17 02:07 |
| Dibenzo[a,h]anthracene | 0.0100 | U | 0.0200 | 0.00620 | ug/L | 1 | | 11/06/17 02:07 |
| Fluoranthene | 0.0250 | U | 0.0500 | 0.0150 | ug/L | 1 | | 11/06/17 02:07 |
| Fluorene | 0.0250 | U | 0.0500 | 0.0150 | ug/L | 1 | | 11/06/17 02:07 |
| Indeno[1,2,3-c,d] pyrene | 0.0250 | U | 0.0500 | 0.0150 | ug/L | 1 | | 11/06/17 02:07 |
| Naphthalene | 0.0500 | U | 0.100 | 0.0310 | ug/L | 1 | | 11/06/17 02:07 |
| Phenanthrene | 0.0250 | U | 0.0500 | 0.0150 | ug/L | 1 | | 11/06/17 02:07 |
| Pyrene | 0.0250 | U | 0.0500 | 0.0150 | ug/L | 1 | | 11/06/17 02:07 |
| **Surrogates** | | | | | | | | |
| 2-Methylnaphthalene-d10 (surr) | 57.9 | | 47-106 | | % | 1 | | 11/06/17 02:07 |
| Fluoranthene-d10 (surr) | 61.7 | | 24-116 | | % | 1 | | 11/06/17 02:07 |

## Batch Information

Analytical Batch: XMS10533
Analytical Method: 8270D SIM LV (PAH)
Analyst: DSD
Analytical Date/Time: 11/06/17 02:07
Container ID: 1179498003-F

Prep Batch: XXX38788
Prep Method: SW3520C
Prep Date/Time: 11/02/17 08:02
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Print Date: 11/09/2017 5:32:24PM

J flagging is activated

## Results of **17755-MW32**

Client Sample ID: **17755-MW32**
Client Project ID: **32-1-17755-002 Fairweather**
Lab Sample ID: 1179498003
Lab Project ID: 1179498

Collection Date: 11/01/17 15:58
Received Date: 11/01/17 16:36
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

## Results by **Semivolatile Organic Fuels**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics | 0.206 | J | 0.600 | 0.180 | mg/L | 1 | | 11/07/17 21:43 |
| **Surrogates** | | | | | | | | |
| 5a Androstane (surr) | 81.6 | | 50-150 | | % | 1 | | 11/07/17 21:43 |

## Batch Information

Analytical Batch: XFC13957
Analytical Method: AK102
Analyst: JMG
Analytical Date/Time: 11/07/17 21:43
Container ID: 1179498003-D

Prep Batch: XXX38810
Prep Method: SW3520C
Prep Date/Time: 11/07/17 07:51
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL



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Results of **17755-MW32**

Client Sample ID: **17755-MW32**
Client Project ID: **32-1-17755-002 Fairweather**
Lab Sample ID: 1179498003
Lab Project ID: 1179498

Collection Date: 11/01/17 15:58
Received Date: 11/01/17 16:36
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 11/08/17 19:42 |
| 1,1,1-Trichloroethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:42 |
| 1,1,2,2-Tetrachloroethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 11/08/17 19:42 |
| 1,1,2-Trichloroethane | 0.200 | U | 0.400 | 0.120 | ug/L | 1 | | 11/08/17 19:42 |
| 1,1-Dichloroethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:42 |
| 1,1-Dichloroethene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:42 |
| 1,1-Dichloropropene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:42 |
| 1,2,3-Trichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:42 |
| 1,2,3-Trichloropropane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:42 |
| 1,2,4-Trichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:42 |
| 1,2,4-Trimethylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:42 |
| 1,2-Dibromo-3-chloropropane | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 11/08/17 19:42 |
| 1,2-Dibromoethane | 0.0375 | U | 0.0750 | 0.0180 | ug/L | 1 | | 11/08/17 19:42 |
| 1,2-Dichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:42 |
| 1,2-Dichloroethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 11/08/17 19:42 |
| 1,2-Dichloropropane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:42 |
| 1,3,5-Trimethylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:42 |
| 1,3-Dichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:42 |
| 1,3-Dichloropropane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 11/08/17 19:42 |
| 1,4-Dichlorobenzene | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 11/08/17 19:42 |
| 2,2-Dichloropropane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:42 |
| 2-Butanone (MEK) | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 11/08/17 19:42 |
| 2-Chlorotoluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:42 |
| 2-Hexanone | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 11/08/17 19:42 |
| 4-Chlorotoluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:42 |
| 4-Isopropyltoluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:42 |
| 4-Methyl-2-pentanone (MIBK) | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 11/08/17 19:42 |
| Benzene | 0.200 | U | 0.400 | 0.120 | ug/L | 1 | | 11/08/17 19:42 |
| Bromobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:42 |
| Bromochloromethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:42 |
| Bromodichloromethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 11/08/17 19:42 |
| Bromoform | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:42 |
| Bromomethane | 2.50 | U | 5.00 | 1.50 | ug/L | 1 | | 11/08/17 19:42 |
| Carbon disulfide | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 11/08/17 19:42 |
| Carbon tetrachloride | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:42 |
| Chlorobenzene | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 11/08/17 19:42 |
| Chloroethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:42 |

Print Date: 11/09/2017 5:32:24PM

J flagging is activated

Results of **17755-MW32**

Client Sample ID: **17755-MW32**
Client Project ID: **32-1-17755-002 Fairweather**
Lab Sample ID: 1179498003
Lab Project ID: 1179498

Collection Date: 11/01/17 15:58
Received Date: 11/01/17 16:36
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| Chloroform | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:42 |
| Chloromethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:42 |
| cis-1,2-Dichloroethene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:42 |
| cis-1,3-Dichloropropene | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 11/08/17 19:42 |
| Dibromochloromethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 11/08/17 19:42 |
| Dibromomethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:42 |
| Dichlorodifluoromethane | 22.5 | | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:42 |
| Ethylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:42 |
| Freon-113 | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 11/08/17 19:42 |
| Hexachlorobutadiene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:42 |
| Isopropylbenzene (Cumene) | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:42 |
| Methylene chloride | 2.50 | U | 5.00 | 1.00 | ug/L | 1 | | 11/08/17 19:42 |
| Methyl-t-butyl ether | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 11/08/17 19:42 |
| Naphthalene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:42 |
| n-Butylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:42 |
| n-Propylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:42 |
| o-Xylene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:42 |
| P & M -Xylene | 1.00 | U | 2.00 | 0.620 | ug/L | 1 | | 11/08/17 19:42 |
| sec-Butylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:42 |
| Styrene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:42 |
| tert-Butylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:42 |
| Tetrachloroethene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:42 |
| Toluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:42 |
| trans-1,2-Dichloroethene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:42 |
| trans-1,3-Dichloropropene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:42 |
| Trichloroethene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:42 |
| Trichlorofluoromethane | 0.550 | J | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:42 |
| Vinyl acetate | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 11/08/17 19:42 |
| Vinyl chloride | 0.0750 | U | 0.150 | 0.0500 | ug/L | 1 | | 11/08/17 19:42 |
| Xylenes (total) | 1.50 | U | 3.00 | 1.00 | ug/L | 1 | | 11/08/17 19:42 |
| **Surrogates** | | | | | | | | |
| 1,2-Dichloroethane-D4 (surr) | 107 | | 81-118 | | % | 1 | | 11/08/17 19:42 |
| 4-Bromofluorobenzene (surr) | 104 | | 85-114 | | % | 1 | | 11/08/17 19:42 |
| Toluene-d8 (surr) | 99.6 | | 89-112 | | % | 1 | | 11/08/17 19:42 |

Print Date: 11/09/2017 5:32:24PM

J flagging is activated

Results of **17755-MW32**

Client Sample ID: **17755-MW32**
Client Project ID: **32-1-17755-002 Fairweather**
Lab Sample ID: 1179498003
Lab Project ID: 1179498

Collection Date: 11/01/17 15:58
Received Date: 11/01/17 16:36
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

**Batch Information**

Analytical Batch: VMS17428
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 11/08/17 19:42
Container ID: 1179498003-A

Prep Batch: VXX31691
Prep Method: SW5030B
Prep Date/Time: 11/08/17 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



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## Results of **17755-MW40**

Client Sample ID: **17755-MW40**
Client Project ID: **32-1-17755-002 Fairweather**
Lab Sample ID: 1179498004
Lab Project ID: 1179498

Collection Date: 11/01/17 15:30
Received Date: 11/01/17 16:36
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

## Results by **Polynuclear Aromatics GC/MS**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| 1-Methylnaphthalene | 0.0200 | J | 0.0472 | 0.0142 | ug/L | 1 | | 11/06/17 02:27 |
| 2-Methylnaphthalene | 0.0155 | J | 0.0472 | 0.0142 | ug/L | 1 | | 11/06/17 02:27 |
| Acenaphthene | 0.0236 | U | 0.0472 | 0.0142 | ug/L | 1 | | 11/06/17 02:27 |
| Acenaphthylene | 0.0236 | U | 0.0472 | 0.0142 | ug/L | 1 | | 11/06/17 02:27 |
| Anthracene | 0.0236 | U | 0.0472 | 0.0142 | ug/L | 1 | | 11/06/17 02:27 |
| Benzo(a)Anthracene | 0.0236 | U | 0.0472 | 0.0142 | ug/L | 1 | | 11/06/17 02:27 |
| Benzo[a]pyrene | 0.00945 | U | 0.0189 | 0.00585 | ug/L | 1 | | 11/06/17 02:27 |
| Benzo[b]Fluoranthene | 0.0236 | U | 0.0472 | 0.0142 | ug/L | 1 | | 11/06/17 02:27 |
| Benzo[g,h,i]perylene | 0.0236 | U | 0.0472 | 0.0142 | ug/L | 1 | | 11/06/17 02:27 |
| Benzo[k]fluoranthene | 0.0236 | U | 0.0472 | 0.0142 | ug/L | 1 | | 11/06/17 02:27 |
| Chrysene | 0.0236 | U | 0.0472 | 0.0142 | ug/L | 1 | | 11/06/17 02:27 |
| Dibenzo[a,h]anthracene | 0.00945 | U | 0.0189 | 0.00585 | ug/L | 1 | | 11/06/17 02:27 |
| Fluoranthene | 0.0236 | U | 0.0472 | 0.0142 | ug/L | 1 | | 11/06/17 02:27 |
| Fluorene | 0.0236 | U | 0.0472 | 0.0142 | ug/L | 1 | | 11/06/17 02:27 |
| Indeno[1,2,3-c,d] pyrene | 0.0236 | U | 0.0472 | 0.0142 | ug/L | 1 | | 11/06/17 02:27 |
| Naphthalene | 0.0471 | U | 0.0943 | 0.0292 | ug/L | 1 | | 11/06/17 02:27 |
| Phenanthrene | 0.0236 | U | 0.0472 | 0.0142 | ug/L | 1 | | 11/06/17 02:27 |
| Pyrene | 0.0236 | U | 0.0472 | 0.0142 | ug/L | 1 | | 11/06/17 02:27 |
| **Surrogates** | | | | | | | | |
| 2-Methylnaphthalene-d10 (surr) | 59.8 | | 47-106 | | % | 1 | | 11/06/17 02:27 |
| Fluoranthene-d10 (surr) | 63.1 | | 24-116 | | % | 1 | | 11/06/17 02:27 |

## Batch Information

Analytical Batch: XMS10533
Analytical Method: 8270D SIM LV (PAH)
Analyst: DSD
Analytical Date/Time: 11/06/17 02:27
Container ID: 1179498004-F

Prep Batch: XXX38788
Prep Method: SW3520C
Prep Date/Time: 11/02/17 08:02
Prep Initial Wt./Vol.: 265 mL
Prep Extract Vol: 1 mL

Print Date: 11/09/2017 5:32:24PM

J flagging is activated

## Results of **17755-MW40**

Client Sample ID: **17755-MW40**
Client Project ID: **32-1-17755-002 Fairweather**
Lab Sample ID: 1179498004
Lab Project ID: 1179498

Collection Date: 11/01/17 15:30
Received Date: 11/01/17 16:36
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

## Results by **Semivolatile Organic Fuels**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics | 0.623 | | 0.588 | 0.176 | mg/L | 1 | | 11/07/17 21:53 |
| **Surrogates** | | | | | | | | |
| 5a Androstane (surr) | 73.2 | | 50-150 | | % | 1 | | 11/07/17 21:53 |

## Batch Information

Analytical Batch: XFC13957
Analytical Method: AK102
Analyst: JMG
Analytical Date/Time: 11/07/17 21:53
Container ID: 1179498004-D

Prep Batch: XXX38810
Prep Method: SW3520C
Prep Date/Time: 11/07/17 07:51
Prep Initial Wt./Vol.: 255 mL
Prep Extract Vol: 1 mL

Results of **17755-MW40**

Client Sample ID: **17755-MW40**
Client Project ID: **32-1-17755-002 Fairweather**
Lab Sample ID: 1179498004
Lab Project ID: 1179498

Collection Date: 11/01/17 15:30
Received Date: 11/01/17 16:36
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 11/08/17 19:26 |
| 1,1,1-Trichloroethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:26 |
| 1,1,2,2-Tetrachloroethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 11/08/17 19:26 |
| 1,1,2-Trichloroethane | 0.200 | U | 0.400 | 0.120 | ug/L | 1 | | 11/08/17 19:26 |
| 1,1-Dichloroethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:26 |
| 1,1-Dichloroethene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:26 |
| 1,1-Dichloropropene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:26 |
| 1,2,3-Trichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:26 |
| 1,2,3-Trichloropropane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:26 |
| 1,2,4-Trichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:26 |
| 1,2,4-Trimethylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:26 |
| 1,2-Dibromo-3-chloropropane | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 11/08/17 19:26 |
| 1,2-Dibromoethane | 0.0375 | U | 0.0750 | 0.0180 | ug/L | 1 | | 11/08/17 19:26 |
| 1,2-Dichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:26 |
| 1,2-Dichloroethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 11/08/17 19:26 |
| 1,2-Dichloropropane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:26 |
| 1,3,5-Trimethylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:26 |
| 1,3-Dichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:26 |
| 1,3-Dichloropropane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 11/08/17 19:26 |
| 1,4-Dichlorobenzene | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 11/08/17 19:26 |
| 2,2-Dichloropropane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:26 |
| 2-Butanone (MEK) | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 11/08/17 19:26 |
| 2-Chlorotoluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:26 |
| 2-Hexanone | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 11/08/17 19:26 |
| 4-Chlorotoluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:26 |
| 4-Isopropyltoluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:26 |
| 4-Methyl-2-pentanone (MIBK) | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 11/08/17 19:26 |
| Benzene | 1.78 | | 0.400 | 0.120 | ug/L | 1 | | 11/08/17 19:26 |
| Bromobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:26 |
| Bromochloromethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:26 |
| Bromodichloromethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 11/08/17 19:26 |
| Bromoform | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:26 |
| Bromomethane | 2.50 | U | 5.00 | 1.50 | ug/L | 1 | | 11/08/17 19:26 |
| Carbon disulfide | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 11/08/17 19:26 |
| Carbon tetrachloride | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:26 |
| Chlorobenzene | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 11/08/17 19:26 |
| Chloroethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:26 |

Print Date: 11/09/2017 5:32:24PM

J flagging is activated

Results of **17755-MW40**

Client Sample ID: **17755-MW40**
Client Project ID: **32-1-17755-002 Fairweather**
Lab Sample ID: 1179498004
Lab Project ID: 1179498

Collection Date: 11/01/17 15:30
Received Date: 11/01/17 16:36
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| Chloroform | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:26 |
| Chloromethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:26 |
| cis-1,2-Dichloroethene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:26 |
| cis-1,3-Dichloropropene | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 11/08/17 19:26 |
| Dibromochloromethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 11/08/17 19:26 |
| Dibromomethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:26 |
| Dichlorodifluoromethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:26 |
| Ethylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:26 |
| Freon-113 | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 11/08/17 19:26 |
| Hexachlorobutadiene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:26 |
| Isopropylbenzene (Cumene) | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:26 |
| Methylene chloride | 2.50 | U | 5.00 | 1.00 | ug/L | 1 | | 11/08/17 19:26 |
| Methyl-t-butyl ether | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 11/08/17 19:26 |
| Naphthalene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:26 |
| n-Butylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:26 |
| n-Propylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:26 |
| o-Xylene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:26 |
| P & M -Xylene | 1.00 | U | 2.00 | 0.620 | ug/L | 1 | | 11/08/17 19:26 |
| sec-Butylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:26 |
| Styrene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:26 |
| tert-Butylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:26 |
| Tetrachloroethene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:26 |
| Toluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:26 |
| trans-1,2-Dichloroethene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:26 |
| trans-1,3-Dichloropropene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:26 |
| Trichloroethene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:26 |
| Trichlorofluoromethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 19:26 |
| Vinyl acetate | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 11/08/17 19:26 |
| Vinyl chloride | 0.0750 | U | 0.150 | 0.0500 | ug/L | 1 | | 11/08/17 19:26 |
| Xylenes (total) | 1.50 | U | 3.00 | 1.00 | ug/L | 1 | | 11/08/17 19:26 |
| **Surrogates** | | | | | | | | |
| 1,2-Dichloroethane-D4 (surr) | 108 | | 81-118 | | % | 1 | | 11/08/17 19:26 |
| 4-Bromofluorobenzene (surr) | 105 | | 85-114 | | % | 1 | | 11/08/17 19:26 |
| Toluene-d8 (surr) | 99.6 | | 89-112 | | % | 1 | | 11/08/17 19:26 |

Print Date: 11/09/2017 5:32:24PM

J flagging is activated

Results of **17755-MW40**

Client Sample ID: **17755-MW40**
Client Project ID: **32-1-17755-002 Fairweather**
Lab Sample ID: 1179498004
Lab Project ID: 1179498

Collection Date: 11/01/17 15:30
Received Date: 11/01/17 16:36
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

**Batch Information**

Analytical Batch: VMS17428
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 11/08/17 19:26
Container ID: 1179498004-A

Prep Batch: VXX31691
Prep Method: SW5030B
Prep Date/Time: 11/08/17 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



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Results of **17755-TB**

Client Sample ID: **17755-TB**
Client Project ID: **32-1-17755-002 Fairweather**
Lab Sample ID: 1179498005
Lab Project ID: 1179498

Collection Date: 11/01/17 12:00
Received Date: 11/01/17 16:36
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 11/08/17 17:34 |
| 1,1,1-Trichloroethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 17:34 |
| 1,1,2,2-Tetrachloroethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 11/08/17 17:34 |
| 1,1,2-Trichloroethane | 0.200 | U | 0.400 | 0.120 | ug/L | 1 | | 11/08/17 17:34 |
| 1,1-Dichloroethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 17:34 |
| 1,1-Dichloroethene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 17:34 |
| 1,1-Dichloropropene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 17:34 |
| 1,2,3-Trichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 17:34 |
| 1,2,3-Trichloropropane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 17:34 |
| 1,2,4-Trichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 17:34 |
| 1,2,4-Trimethylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 17:34 |
| 1,2-Dibromo-3-chloropropane | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 11/08/17 17:34 |
| 1,2-Dibromoethane | 0.0375 | U | 0.0750 | 0.0180 | ug/L | 1 | | 11/08/17 17:34 |
| 1,2-Dichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 17:34 |
| 1,2-Dichloroethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 11/08/17 17:34 |
| 1,2-Dichloropropane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 17:34 |
| 1,3,5-Trimethylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 17:34 |
| 1,3-Dichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 17:34 |
| 1,3-Dichloropropane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 11/08/17 17:34 |
| 1,4-Dichlorobenzene | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 11/08/17 17:34 |
| 2,2-Dichloropropane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 17:34 |
| 2-Butanone (MEK) | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 11/08/17 17:34 |
| 2-Chlorotoluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 17:34 |
| 2-Hexanone | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 11/08/17 17:34 |
| 4-Chlorotoluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 17:34 |
| 4-Isopropyltoluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 17:34 |
| 4-Methyl-2-pentanone (MIBK) | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 11/08/17 17:34 |
| Benzene | 0.200 | U | 0.400 | 0.120 | ug/L | 1 | | 11/08/17 17:34 |
| Bromobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 17:34 |
| Bromochloromethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 17:34 |
| Bromodichloromethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 11/08/17 17:34 |
| Bromoform | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 17:34 |
| Bromomethane | 2.50 | U | 5.00 | 1.50 | ug/L | 1 | | 11/08/17 17:34 |
| Carbon disulfide | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 11/08/17 17:34 |
| Carbon tetrachloride | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 17:34 |
| Chlorobenzene | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 11/08/17 17:34 |
| Chloroethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 17:34 |

Print Date: 11/09/2017 5:32:24PM

J flagging is activated

Results of **17755-TB**

Client Sample ID: **17755-TB**
Client Project ID: **32-1-17755-002 Fairweather**
Lab Sample ID: 1179498005
Lab Project ID: 1179498

Collection Date: 11/01/17 12:00
Received Date: 11/01/17 16:36
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| Chloroform | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 17:34 |
| Chloromethane | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 17:34 |
| cis-1,2-Dichloroethene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 17:34 |
| cis-1,3-Dichloropropene | 0.250 U | | 0.500 | 0.150 | ug/L | 1 | | 11/08/17 17:34 |
| Dibromochloromethane | 0.250 U | | 0.500 | 0.150 | ug/L | 1 | | 11/08/17 17:34 |
| Dibromomethane | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 17:34 |
| Dichlorodifluoromethane | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 17:34 |
| Ethylbenzene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 17:34 |
| Freon-113 | 5.00 U | | 10.0 | 3.10 | ug/L | 1 | | 11/08/17 17:34 |
| Hexachlorobutadiene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 17:34 |
| Isopropylbenzene (Cumene) | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 17:34 |
| Methylene chloride | 2.50 U | | 5.00 | 1.00 | ug/L | 1 | | 11/08/17 17:34 |
| Methyl-t-butyl ether | 5.00 U | | 10.0 | 3.10 | ug/L | 1 | | 11/08/17 17:34 |
| Naphthalene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 17:34 |
| n-Butylbenzene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 17:34 |
| n-Propylbenzene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 17:34 |
| o-Xylene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 17:34 |
| P & M -Xylene | 1.00 U | | 2.00 | 0.620 | ug/L | 1 | | 11/08/17 17:34 |
| sec-Butylbenzene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 17:34 |
| Styrene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 17:34 |
| tert-Butylbenzene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 17:34 |
| Tetrachloroethene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 17:34 |
| Toluene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 17:34 |
| trans-1,2-Dichloroethene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 17:34 |
| trans-1,3-Dichloropropene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 17:34 |
| Trichloroethene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 17:34 |
| Trichlorofluoromethane | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 11/08/17 17:34 |
| Vinyl acetate | 5.00 U | | 10.0 | 3.10 | ug/L | 1 | | 11/08/17 17:34 |
| Vinyl chloride | 0.0750 U | | 0.150 | 0.0500 | ug/L | 1 | | 11/08/17 17:34 |
| Xylenes (total) | 1.50 U | | 3.00 | 1.00 | ug/L | 1 | | 11/08/17 17:34 |
| **Surrogates** | | | | | | | | |
| 1,2-Dichloroethane-D4 (surr) | 108 | | 81-118 | | % | 1 | | 11/08/17 17:34 |
| 4-Bromofluorobenzene (surr) | 105 | | 85-114 | | % | 1 | | 11/08/17 17:34 |
| Toluene-d8 (surr) | 98.6 | | 89-112 | | % | 1 | | 11/08/17 17:34 |

Print Date: 11/09/2017 5:32:24PM

J flagging is activated

Results of **17755-TB**

Client Sample ID: **17755-TB**
Client Project ID: **32-1-17755-002 Fairweather**
Lab Sample ID: 1179498005
Lab Project ID: 1179498

Collection Date: 11/01/17 12:00
Received Date: 11/01/17 16:36
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

**Batch Information**

Analytical Batch: VMS17428
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 11/08/17 17:34
Container ID: 1179498005-A

Prep Batch: VXX31691
Prep Method: SW5030B
Prep Date/Time: 11/08/17 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



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## Method Blank

Blank ID: MB for HBN 1771832 [VXX/31691]
Blank Lab ID: 1424966

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1179498001, 1179498002, 1179498003, 1179498004, 1179498005

## Results by **SW8260C**

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

## Method Blank

Blank ID: MB for HBN 1771832 [VXX/31691]
Blank Lab ID: 1424966

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1179498001, 1179498002, 1179498003, 1179498004, 1179498005

## Results by **SW8260C**

| Parameter | Results | LOQ/CL | DL | Units |
|---|---|---|---|---|
| Chloromethane | 0.500U | 1.00 | 0.310 | ug/L |
| cis-1,2-Dichloroethene | 0.500U | 1.00 | 0.310 | ug/L |
| cis-1,3-Dichloropropene | 0.250U | 0.500 | 0.150 | ug/L |
| Dibromochloromethane | 0.250U | 0.500 | 0.150 | ug/L |
| Dibromomethane | 0.500U | 1.00 | 0.310 | ug/L |
| Dichlorodifluoromethane | 0.500U | 1.00 | 0.310 | ug/L |
| Ethylbenzene | 0.500U | 1.00 | 0.310 | ug/L |
| Freon-113 | 5.00U | 10.0 | 3.10 | ug/L |
| Hexachlorobutadiene | 0.500U | 1.00 | 0.310 | ug/L |
| Isopropylbenzene (Cumene) | 0.500U | 1.00 | 0.310 | ug/L |
| Methylene chloride | 2.50U | 5.00 | 1.00 | ug/L |
| Methyl-t-butyl ether | 5.00U | 10.0 | 3.10 | ug/L |
| Naphthalene | 0.500U | 1.00 | 0.310 | ug/L |
| n-Butylbenzene | 0.500U | 1.00 | 0.310 | ug/L |
| n-Propylbenzene | 0.500U | 1.00 | 0.310 | ug/L |
| o-Xylene | 0.500U | 1.00 | 0.310 | ug/L |
| P & M -Xylene | 1.00U | 2.00 | 0.620 | ug/L |
| sec-Butylbenzene | 0.500U | 1.00 | 0.310 | ug/L |
| Styrene | 0.500U | 1.00 | 0.310 | ug/L |
| tert-Butylbenzene | 0.500U | 1.00 | 0.310 | ug/L |
| Tetrachloroethene | 0.500U | 1.00 | 0.310 | ug/L |
| Toluene | 0.500U | 1.00 | 0.310 | ug/L |
| trans-1,2-Dichloroethene | 0.500U | 1.00 | 0.310 | ug/L |
| trans-1,3-Dichloropropene | 0.500U | 1.00 | 0.310 | ug/L |
| Trichloroethene | 0.500U | 1.00 | 0.310 | ug/L |
| Trichlorofluoromethane | 0.500U | 1.00 | 0.310 | ug/L |
| Vinyl acetate | 5.00U | 10.0 | 3.10 | ug/L |
| Vinyl chloride | 0.0750U | 0.150 | 0.0500 | ug/L |
| Xylenes (total) | 1.50U | 3.00 | 1.00 | ug/L |
| **Surrogates** | | | | |
| 1,2-Dichloroethane-D4 (surr) | 107 | 81-118 | | % |
| 4-Bromofluorobenzene (surr) | 107 | 85-114 | | % |
| Toluene-d8 (surr) | 98.8 | 89-112 | | % |

## Method Blank

Blank ID: MB for HBN 1771832 [VXX/31691]
Blank Lab ID: 1424966

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1179498001, 1179498002, 1179498003, 1179498004, 1179498005

## Results by **SW8260C**

| Parameter | Results | LOQ/CL | DL | Units |
|---|---|---|---|---|

### Batch Information

Analytical Batch: VMS17428
Analytical Method: SW8260C
Instrument: VSA Agilent GC/MS 7890B/5977A
Analyst: FDR
Analytical Date/Time: 11/8/2017 12:23:00PM

Prep Batch: VXX31691
Prep Method: SW5030B
Prep Date/Time: 11/8/2017 12:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



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## Blank Spike Summary

Blank Spike ID: LCS for HBN 1179498 [VXX31691]
Blank Spike Lab ID: 1424967
Date Analyzed: 11/08/2017 12:39

Spike Duplicate ID: LCSD for HBN 1179498 [VXX31691]
Spike Duplicate Lab ID: 1424968
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1179498001, 1179498002, 1179498003, 1179498004, 1179498005

## Results by **SW8260C**

| | Blank Spike (ug/L) | | | Spike Duplicate (ug/L) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Parameter | Spike | Result | Rec (%) | Spike | Result | Rec (%) | CL | RPD (%) | RPD CL |
| 1,1,1,2-Tetrachloroethane | 30 | 28.3 | 94 | 30 | 28.6 | 95 | ( 78-124 ) | 1.00 | (< 20 ) |
| 1,1,1-Trichloroethane | 30 | 28.8 | 96 | 30 | 29.0 | 97 | ( 74-131 ) | 0.66 | (< 20 ) |
| 1,1,2,2-Tetrachloroethane | 30 | 32.3 | 108 | 30 | 31.0 | 103 | ( 71-121 ) | 4.00 | (< 20 ) |
| 1,1,2-Trichloroethane | 30 | 30.4 | 101 | 30 | 31.2 | 104 | ( 80-119 ) | 2.60 | (< 20 ) |
| 1,1-Dichloroethane | 30 | 26.7 | 89 | 30 | 27.0 | 90 | ( 77-125 ) | 0.97 | (< 20 ) |
| 1,1-Dichloroethene | 30 | 31.1 | 104 | 30 | 30.9 | 103 | ( 71-131 ) | 0.61 | (< 20 ) |
| 1,1-Dichloropropene | 30 | 31.2 | 104 | 30 | 31.2 | 104 | ( 79-125 ) | 0.06 | (< 20 ) |
| 1,2,3-Trichlorobenzene | 30 | 31.3 | 104 | 30 | 32.2 | 107 | ( 69-129 ) | 2.90 | (< 20 ) |
| 1,2,3-Trichloropropane | 30 | 31.4 | 105 | 30 | 30.6 | 102 | ( 73-122 ) | 2.50 | (< 20 ) |
| 1,2,4-Trichlorobenzene | 30 | 31.4 | 105 | 30 | 31.3 | 104 | ( 69-130 ) | 0.19 | (< 20 ) |
| 1,2,4-Trimethylbenzene | 30 | 29.9 | 100 | 30 | 29.9 | 100 | ( 79-124 ) | 0.00 | (< 20 ) |
| 1,2-Dibromo-3-chloropropane | 30 | 32.7 | 109 | 30 | 32.9 | 110 | ( 62-128 ) | 0.67 | (< 20 ) |
| 1,2-Dibromoethane | 30 | 29.4 | 98 | 30 | 30.1 | 100 | ( 77-121 ) | 2.40 | (< 20 ) |
| 1,2-Dichlorobenzene | 30 | 30.3 | 101 | 30 | 30.8 | 103 | ( 80-119 ) | 1.60 | (< 20 ) |
| 1,2-Dichloroethane | 30 | 30.1 | 100 | 30 | 30.2 | 101 | ( 73-128 ) | 0.27 | (< 20 ) |
| 1,2-Dichloropropane | 30 | 29.5 | 98 | 30 | 29.6 | 99 | ( 78-122 ) | 0.58 | (< 20 ) |
| 1,3,5-Trimethylbenzene | 30 | 31.0 | 103 | 30 | 31.1 | 104 | ( 75-124 ) | 0.42 | (< 20 ) |
| 1,3-Dichlorobenzene | 30 | 30.9 | 103 | 30 | 31.3 | 104 | ( 80-119 ) | 1.40 | (< 20 ) |
| 1,3-Dichloropropane | 30 | 30.6 | 102 | 30 | 31.3 | 104 | ( 80-119 ) | 2.30 | (< 20 ) |
| 1,4-Dichlorobenzene | 30 | 30.8 | 103 | 30 | 31.0 | 103 | ( 79-118 ) | 0.91 | (< 20 ) |
| 2,2-Dichloropropane | 30 | 29.1 | 97 | 30 | 29.4 | 98 | ( 60-139 ) | 1.10 | (< 20 ) |
| 2-Butanone (MEK) | 90 | 78.7 | 87 | 90 | 79.3 | 88 | ( 56-143 ) | 0.71 | (< 20 ) |
| 2-Chlorotoluene | 30 | 33.1 | 110 | 30 | 33.1 | 110 | ( 79-122 ) | 0.06 | (< 20 ) |
| 2-Hexanone | 90 | 86.0 | 96 | 90 | 84.9 | 94 | ( 57-139 ) | 1.30 | (< 20 ) |
| 4-Chlorotoluene | 30 | 32.4 | 108 | 30 | 32.9 | 110 | ( 78-122 ) | 1.70 | (< 20 ) |
| 4-Isopropyltoluene | 30 | 31.1 | 104 | 30 | 31.4 | 105 | ( 77-127 ) | 1.20 | (< 20 ) |
| 4-Methyl-2-pentanone (MIBK) | 90 | 81.3 | 90 | 90 | 78.6 | 87 | ( 67-130 ) | 3.40 | (< 20 ) |
| Benzene | 30 | 29.3 | 98 | 30 | 29.5 | 98 | ( 79-120 ) | 0.61 | (< 20 ) |
| Bromobenzene | 30 | 30.5 | 102 | 30 | 30.1 | 100 | ( 80-120 ) | 1.30 | (< 20 ) |
| Bromochloromethane | 30 | 27.7 | 92 | 30 | 27.9 | 93 | ( 78-123 ) | 0.58 | (< 20 ) |
| Bromodichloromethane | 30 | 29.8 | 99 | 30 | 30.0 | 100 | ( 79-125 ) | 0.74 | (< 20 ) |
| Bromoform | 30 | 28.9 | 96 | 30 | 29.8 | 99 | ( 66-130 ) | 2.90 | (< 20 ) |
| Bromomethane | 30 | 35.1 | 117 | 30 | 32.1 | 107 | ( 53-141 ) | 8.90 | (< 20 ) |
| Carbon disulfide | 45 | 49.7 | 110 | 45 | 49.5 | 110 | ( 64-133 ) | 0.36 | (< 20 ) |

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1179498 [VXX31691]
Blank Spike Lab ID: 1424967
Date Analyzed: 11/08/2017 12:39

Spike Duplicate ID: LCSD for HBN 1179498 [VXX31691]
Spike Duplicate Lab ID: 1424968
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1179498001, 1179498002, 1179498003, 1179498004, 1179498005

## Results by **SW8260C**

| | Blank Spike (ug/L) | | | Spike Duplicate (ug/L) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Parameter | Spike | Result | Rec (%) | Spike | Result | Rec (%) | CL | RPD (%) | RPD CL |
| Carbon tetrachloride | 30 | 29.9 | 100 | 30 | 30.2 | 101 | ( 72-136 ) | 0.83 | (< 20 ) |
| Chlorobenzene | 30 | 29.9 | 100 | 30 | 29.9 | 100 | ( 82-118 ) | 0.10 | (< 20 ) |
| Chloroethane | 30 | 33.0 | 110 | 30 | 33.6 | 112 | ( 60-138 ) | 1.90 | (< 20 ) |
| Chloroform | 30 | 27.2 | 91 | 30 | 27.4 | 91 | ( 79-124 ) | 0.77 | (< 20 ) |
| Chloromethane | 30 | 26.4 | 88 | 30 | 26.3 | 88 | ( 50-139 ) | 0.34 | (< 20 ) |
| cis-1,2-Dichloroethene | 30 | 26.4 | 88 | 30 | 26.8 | 89 | ( 78-123 ) | 1.60 | (< 20 ) |
| cis-1,3-Dichloropropene | 30 | 30.2 | 101 | 30 | 30.5 | 102 | ( 75-124 ) | 1.20 | (< 20 ) |
| Dibromochloromethane | 30 | 28.8 | 96 | 30 | 29.8 | 99 | ( 74-126 ) | 3.40 | (< 20 ) |
| Dibromomethane | 30 | 27.4 | 91 | 30 | 27.7 | 92 | ( 79-123 ) | 1.30 | (< 20 ) |
| Dichlorodifluoromethane | 30 | 25.6 | 85 | 30 | 25.4 | 85 | ( 32-152 ) | 0.67 | (< 20 ) |
| Ethylbenzene | 30 | 29.6 | 99 | 30 | 30.1 | 100 | ( 79-121 ) | 1.50 | (< 20 ) |
| Freon-113 | 45 | 47.9 | 106 | 45 | 47.7 | 106 | ( 70-136 ) | 0.42 | (< 20 ) |
| Hexachlorobutadiene | 30 | 31.4 | 105 | 30 | 31.5 | 105 | ( 66-134 ) | 0.35 | (< 20 ) |
| Isopropylbenzene (Cumene) | 30 | 31.7 | 106 | 30 | 33.1 | 110 | ( 72-131 ) | 4.30 | (< 20 ) |
| Methylene chloride | 30 | 28.5 | 95 | 30 | 28.8 | 96 | ( 74-124 ) | 1.20 | (< 20 ) |
| Methyl-t-butyl ether | 45 | 44.6 | 99 | 45 | 45.3 | 101 | ( 71-124 ) | 1.60 | (< 20 ) |
| Naphthalene | 30 | 30.7 | 102 | 30 | 31.6 | 105 | ( 61-128 ) | 3.00 | (< 20 ) |
| n-Butylbenzene | 30 | 32.2 | 107 | 30 | 31.9 | 106 | ( 75-128 ) | 0.87 | (< 20 ) |
| n-Propylbenzene | 30 | 33.2 | 111 | 30 | 33.7 | 112 | ( 76-126 ) | 1.60 | (< 20 ) |
| o-Xylene | 30 | 28.8 | 96 | 30 | 30.2 | 101 | ( 78-122 ) | 4.80 | (< 20 ) |
| P & M -Xylene | 60 | 58.0 | 97 | 60 | 60.6 | 101 | ( 80-121 ) | 4.40 | (< 20 ) |
| sec-Butylbenzene | 30 | 32.8 | 109 | 30 | 32.9 | 110 | ( 77-126 ) | 0.55 | (< 20 ) |
| Styrene | 30 | 31.6 | 105 | 30 | 32.9 | 110 | ( 78-123 ) | 4.00 | (< 20 ) |
| tert-Butylbenzene | 30 | 32.1 | 107 | 30 | 32.8 | 109 | ( 78-124 ) | 2.20 | (< 20 ) |
| Tetrachloroethene | 30 | 31.3 | 104 | 30 | 31.9 | 106 | ( 74-129 ) | 1.80 | (< 20 ) |
| Toluene | 30 | 29.9 | 100 | 30 | 30.0 | 100 | ( 80-121 ) | 0.50 | (< 20 ) |
| trans-1,2-Dichloroethene | 30 | 28.8 | 96 | 30 | 29.0 | 97 | ( 75-124 ) | 0.83 | (< 20 ) |
| trans-1,3-Dichloropropene | 30 | 29.5 | 98 | 30 | 30.6 | 102 | ( 73-127 ) | 3.60 | (< 20 ) |
| Trichloroethene | 30 | 29.7 | 99 | 30 | 29.6 | 99 | ( 79-123 ) | 0.27 | (< 20 ) |
| Trichlorofluoromethane | 30 | 29.9 | 100 | 30 | 30.1 | 100 | ( 65-141 ) | 0.57 | (< 20 ) |
| Vinyl acetate | 30 | 26.9 | 90 | 30 | 28.2 | 94 | ( 54-146 ) | 4.80 | (< 20 ) |
| Vinyl chloride | 30 | 29.7 | 99 | 30 | 29.5 | 98 | ( 58-137 ) | 0.78 | (< 20 ) |
| Xylenes (total) | 90 | 86.8 | 97 | 90 | 90.8 | 101 | ( 79-121 ) | 4.50 | (< 20 ) |



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## Blank Spike Summary

Blank Spike ID: LCS for HBN 1179498 [VXX31691]
Blank Spike Lab ID: 1424967
Date Analyzed: 11/08/2017 12:39

Spike Duplicate ID: LCSD for HBN 1179498 [VXX31691]
Spike Duplicate Lab ID: 1424968
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1179498001, 1179498002, 1179498003, 1179498004, 1179498005

## Results by **SW8260C**

| | Blank Spike (%) | | | Spike Duplicate (%) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Parameter | Spike | Result | Rec (%) | Spike | Result | Rec (%) | CL | RPD (%) | RPD CL |
| **Surrogates** | | | | | | | | | |
| 1,2-Dichloroethane-D4 (surr) | 30 | 94 | 94 | 30 | 94.9 | 95 | ( 81-118 ) | 1.00 | |
| 4-Bromofluorobenzene (surr) | 30 | 99.9 | 100 | 30 | 99.3 | 99 | ( 85-114 ) | 0.57 | |
| Toluene-d8 (surr) | 30 | 103 | 103 | 30 | 104 | 104 | ( 89-112 ) | 0.51 | |

## Batch Information

Analytical Batch: **VMS17428**
Analytical Method: **SW8260C**
Instrument: **VSA Agilent GC/MS 7890B/5977A**
Analyst: **FDR**

Prep Batch: **VXX31691**
Prep Method: **SW5030B**
Prep Date/Time: **11/08/2017 00:00**
Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL



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## Method Blank

Blank ID: MB for HBN 1771404 [XXX/38788]
Blank Lab ID: 1423751

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1179498001, 1179498002, 1179498003, 1179498004

## Results by **8270D SIM LV (PAH)**

| Parameter | Results | LOQ/CL | DL | Units |
|---|---|---|---|---|
| 1-Methylnaphthalene | 0.0250U | 0.0500 | 0.0150 | ug/L |
| 2-Methylnaphthalene | 0.0250U | 0.0500 | 0.0150 | ug/L |
| Acenaphthene | 0.0250U | 0.0500 | 0.0150 | ug/L |
| Acenaphthylene | 0.0250U | 0.0500 | 0.0150 | ug/L |
| Anthracene | 0.0250U | 0.0500 | 0.0150 | ug/L |
| Benzo(a)Anthracene | 0.0250U | 0.0500 | 0.0150 | ug/L |
| Benzo[a]pyrene | 0.0100U | 0.0200 | 0.00620 | ug/L |
| Benzo[b]Fluoranthene | 0.0250U | 0.0500 | 0.0150 | ug/L |
| Benzo[g,h,i]perylene | 0.0250U | 0.0500 | 0.0150 | ug/L |
| Benzo[k]fluoranthene | 0.0250U | 0.0500 | 0.0150 | ug/L |
| Chrysene | 0.0250U | 0.0500 | 0.0150 | ug/L |
| Dibenzo[a,h]anthracene | 0.0100U | 0.0200 | 0.00620 | ug/L |
| Fluoranthene | 0.0250U | 0.0500 | 0.0150 | ug/L |
| Fluorene | 0.0250U | 0.0500 | 0.0150 | ug/L |
| Indeno[1,2,3-c,d] pyrene | 0.0250U | 0.0500 | 0.0150 | ug/L |
| Naphthalene | 0.0500U | 0.100 | 0.0310 | ug/L |
| Phenanthrene | 0.0250U | 0.0500 | 0.0150 | ug/L |
| Pyrene | 0.0250U | 0.0500 | 0.0150 | ug/L |
| **Surrogates** | | | | |
| 2-Methylnaphthalene-d10 (surr) | 73.3 | 47-106 | | % |
| Fluoranthene-d10 (surr) | 75.2 | 24-116 | | % |

## Batch Information

Analytical Batch: XMS10533
Analytical Method: 8270D SIM LV (PAH)
Instrument: SVA Agilent 780/5975 GC/MS
Analyst: DSD
Analytical Date/Time: 11/5/2017 11:03:00PM

Prep Batch: XXX38788
Prep Method: SW3520C
Prep Date/Time: 11/2/2017 8:02:41AM
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL



SGS North America Inc.
200 West Potter Drive Anchorage, AK 95518
t 907.562.2343 f 907.561.5301 www.us.sgs.com

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1179498 [XXX38788]
Blank Spike Lab ID: 1423752
Date Analyzed: 11/05/2017 23:23

Spike Duplicate ID: LCSD for HBN 1179498 [XXX38788]
Spike Duplicate Lab ID: 1423753
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1179498001, 1179498002, 1179498003, 1179498004

## Results by **8270D SIM LV (PAH)**

| | Blank Spike (ug/L) | | | Spike Duplicate (ug/L) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Parameter | Spike | Result | Rec (%) | Spike | Result | Rec (%) | CL | RPD (%) | RPD CL |
| 1-Methylnaphthalene | 2 | 1.59 | 80 | 2 | 1.42 | 71 | ( 41-115 ) | 11.00 | (< 20 ) |
| 2-Methylnaphthalene | 2 | 1.47 | 74 | 2 | 1.31 | 65 | ( 39-114 ) | 11.80 | (< 20 ) |
| Acenaphthene | 2 | 1.57 | 78 | 2 | 1.39 | 70 | ( 48-114 ) | 11.60 | (< 20 ) |
| Acenaphthylene | 2 | 1.55 | 77 | 2 | 1.40 | 70 | ( 35-121 ) | 10.40 | (< 20 ) |
| Anthracene | 2 | 1.54 | 77 | 2 | 1.36 | 68 | ( 53-119 ) | 12.30 | (< 20 ) |
| Benzo(a)Anthracene | 2 | 1.62 | 81 | 2 | 1.47 | 74 | ( 59-120 ) | 9.90 | (< 20 ) |
| Benzo[a]pyrene | 2 | 1.36 | 68 | 2 | 1.19 | 60 | ( 53-120 ) | 13.30 | (< 20 ) |
| Benzo[b]Fluoranthene | 2 | 1.55 | 78 | 2 | 1.42 | 71 | ( 53-126 ) | 8.60 | (< 20 ) |
| Benzo[g,h,i]perylene | 2 | 1.18 | 59 | 2 | 1.08 | 54 | ( 44-128 ) | 9.50 | (< 20 ) |
| Benzo[k]fluoranthene | 2 | 1.58 | 79 | 2 | 1.42 | 71 | ( 54-125 ) | 10.30 | (< 20 ) |
| Chrysene | 2 | 1.69 | 85 | 2 | 1.53 | 77 | ( 57-120 ) | 10.20 | (< 20 ) |
| Dibenzo[a,h]anthracene | 2 | 1.04 | 52 | 2 | 0.973 | 49 | ( 44-131 ) | 6.20 | (< 20 ) |
| Fluoranthene | 2 | 1.71 | 86 | 2 | 1.53 | 76 | ( 58-120 ) | 11.30 | (< 20 ) |
| Fluorene | 2 | 1.57 | 79 | 2 | 1.42 | 71 | ( 50-118 ) | 10.50 | (< 20 ) |
| Indeno[1,2,3-c,d] pyrene | 2 | 1.18 | 59 | 2 | 1.08 | 54 | ( 48-130 ) | 9.30 | (< 20 ) |
| Naphthalene | 2 | 1.51 | 75 | 2 | 1.39 | 69 | ( 43-114 ) | 8.30 | (< 20 ) |
| Phenanthrene | 2 | 1.52 | 76 | 2 | 1.39 | 69 | ( 53-115 ) | 9.40 | (< 20 ) |
| Pyrene | 2 | 1.77 | 88 | 2 | 1.57 | 79 | ( 53-121 ) | 11.90 | (< 20 ) |
| **Surrogates** | | | | | | | | | |
| 2-Methylnaphthalene-d10 (surr) | 2 | 71.1 | 71 | 2 | 65.1 | 65 | ( 47-106 ) | 8.90 | |
| Fluoranthene-d10 (surr) | 2 | 75.1 | 75 | 2 | 68.6 | 69 | ( 24-116 ) | 9.00 | |

## Batch Information

Analytical Batch: **XMS10533**
Analytical Method: **8270D SIM LV (PAH)**
Instrument: **SVA Agilent 780/5975 GC/MS**
Analyst: **DSD**

Prep Batch: **XXX38788**
Prep Method: **SW3520C**
Prep Date/Time: **11/02/2017 08:02**
Spike Init Wt./Vol.: 2 ug/L Extract Vol: 1 mL
Dupe Init Wt./Vol.: 2 ug/L Extract Vol: 1 mL

Print Date: 11/09/2017 5:32:32PM

## Method Blank

Blank ID: MB for HBN 1771674 [XXX/38810]
Blank Lab ID: 1424475

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1179498001, 1179498002, 1179498003, 1179498004

## Results by **AK102**

| Parameter | Results | LOQ/CL | DL | Units |
|---|---|---|---|---|
| Diesel Range Organics | 0.300U | 0.600 | 0.180 | mg/L |
| **Surrogates** | | | | |
| 5a Androstane (surr) | 78.1 | 60-120 | | % |

## Batch Information

Analytical Batch: XFC13957
Analytical Method: AK102
Instrument: Agilent 7890B R
Analyst: JMG
Analytical Date/Time: 11/7/2017 8:54:00PM

Prep Batch: XXX38810
Prep Method: SW3520C
Prep Date/Time: 11/7/2017 7:51:18AM
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL



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200 West Potter Drive Anchorage, AK 95518
**t** 907.562.2343 **f** 907.561.5301 www.us.sgs.com

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1179498 [XXX38810]
Blank Spike Lab ID: 1424476
Date Analyzed: 11/07/2017 21:04

Spike Duplicate ID: LCSD for HBN 1179498 [XXX38810]
Spike Duplicate Lab ID: 1424477
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1179498001, 1179498002, 1179498003, 1179498004

## Results by **AK102**

| | Blank Spike (mg/L) | | | Spike Duplicate (mg/L) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Parameter | Spike | Result | Rec (%) | Spike | Result | Rec (%) | CL | RPD (%) | RPD CL |
| Diesel Range Organics | 20 | 16.7 | 84 | 20 | 19.4 | 97 | ( 75-125 ) | 14.60 | (< 20 ) |
| **Surrogates** | | | | | | | | | |
| 5a Androstane (surr) | 0.4 | 83.9 | 84 | 0.4 | 95.7 | 96 | ( 60-120 ) | 13.10 | |

## Batch Information

Analytical Batch: **XFC13957**
Analytical Method: **AK102**
Instrument: **Agilent 7890B R**
Analyst: **JMG**

Prep Batch: **XXX38810**
Prep Method: **SW3520C**
Prep Date/Time: **11/07/2017 07:51**
Spike Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL
Dupe Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL

Print Date: 11/09/2017 5:32:34PM

1179498

# SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

# CHAIN-OF-CUSTODY RECORD



Laboratory SGS
Attn: Justin

400 N. 34th Street, Suite 100
Seattle, WA 98103
(206) 632-8020

2355 Hill Road
Fairbanks, AK 99709
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1321 Bannock Street, Suite 200
Denver, CO 80204
(303) 825-3800

2705 Saint Andrews Loop, Suite A
Pasco, WA 99301-3378
(509) 946-6309

ARC

**Analysis Parameters/Sample Container Description**
(include preservative if used)

| Sample Identity | Lab No. 11/1/17 | Time | Date Sampled | Comp. | Grab | DRO/AK102 | VOCs/8260C | PAHs/8270D SIM | | | | Total Number of Containers | Remarks/Matrix |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 17755-MW30 | (1) A-G | 1430 | 11/1/17 | | ✓ | ✓ | ✓ | ✓ | | | | 7 | Groundwater |
| MW31 | (2) A-G | 1302 | ↓ | | ✓ | ✓ | ✓ | ✓ | | | | 7 | ↓ |
| MW32 | (3) A-G | 1558 | | | ✓ | ✓ | ✓ | ✓ | | | | 7 | |
| MW40 | (4) A-G | 1530 | | | ✓ | ✓ | ✓ | ✓ | | | | 7 | |
| TB | (5) A-C | 1200 | | | | | ✓ | | | | | 1 Box | Lab Supplied TB |

| Project Information | Sample Receipt |
|---|---|
| Project Number: 32-1-17755-002 | Total Number of Containers |
| Project Name: FAIRWEATHER | COC Seals/Intact? Y/N/NA: Hand |
| Contact: JCT, ADV | Received Good Cond./Cold: 1.9 |
| Ongoing Project? Yes ☑ No ☐ | Delivery Method: D20 |
| Sampler: ADV | (attach shipping bill, if any) |

| Instructions |
|---|
| Requested Turnaround Time: STANDARD |
| Special Instructions: |

| Relinquished By: 1. | Relinquished By: 2. | Relinquished By: 3. |
|---|---|---|
| Signature: Alena Voigt Time: 16:36 | Signature: Time: | Signature: Time: |
| Printed Name: Alena Voigt Date: 11/1/17 | Printed Name: Date: | Printed Name: Date: |
| Company: Shannon + Wilson | Company: | Company: |

| Received By: 1. | Received By: 2. | Received By: 3. |
|---|---|---|
| Signature: Time: | Signature: Time: | Signature: Time: 1630 |
| Printed Name: Date: | Printed Name: Date: | Printed Name: Annie Collie Date: 11/1/17 |
| Company: | Company: | Company: SGS |

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report
Yellow - w/shipment - for consignee files
Pink - Shannon & Wilson - Job File



F-19-91/UR

No. 35300

e-Sample Receipt Form

**SGS Workorder #:** **1179498**

| 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 | Hand delivered |
| COC accompanied samples? | Yes | |
| N/A **Exemption permitted if chilled & collected <8 hours ago, or for samples where chilling is not required | | |
| Temperature blank compliant* (i.e., 0-6 °C after CF)? | Yes | Cooler ID: 1 @ 4.9 °C Therm. ID: D20 |
| | | 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 | |
| If samples received without a temperature blank, the "cooler temperature" will be documented in lieu of the temperature blank & "**COOLER TEMP**" will be noted to the right. In cases where neither a temp blank nor cooler temp can be obtained, note "ambient" or "chilled". | | |
| Note: Identify containers received at non-compliant temperature . Use form FS-0029 if more space is needed. | | |
| **Holding Time / Documentation / Sample Condition Requirements** | | Note: Refer to form F-083 "Sample Guide" for specific holding times. |
| Were samples received within holding time? | Yes | |
| Do samples **match COC**** (i.e.,sample IDs,dates/times collected)? | Yes | |
| **Note: If times differ <1hr, record details & login per COC. | | |
| Were analyses requested unambiguous? (i.e., method is specified for analyses with >1 option for analysis) | Yes | |
| | | N/A ***Exemption permitted for metals (e.g,200.8/6020A). |
| Were proper containers (type/mass/volume/preservative***)used? | Yes | |
| **Volatile / LL-Hg Requirements** | | |
| Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples? | Yes | |
| 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):

## Sample Containers and Preservatives

| Container Id | Preservative | Container Condition | Container Id | Preservative | Container Condition |
|---|---|---|---|---|---|
| 1179498001-A | HCL to pH < 2 | OK | | | |
| 1179498001-B | HCL to pH < 2 | OK | | | |
| 1179498001-C | HCL to pH < 2 | OK | | | |
| 1179498001-D | HCL to pH < 2 | OK | | | |
| 1179498001-E | HCL to pH < 2 | OK | | | |
| 1179498001-F | No Preservative Required | OK | | | |
| 1179498001-G | No Preservative Required | OK | | | |
| 1179498002-A | HCL to pH < 2 | OK | | | |
| 1179498002-B | HCL to pH < 2 | OK | | | |
| 1179498002-C | HCL to pH < 2 | OK | | | |
| 1179498002-D | HCL to pH < 2 | OK | | | |
| 1179498002-E | HCL to pH < 2 | OK | | | |
| 1179498002-F | No Preservative Required | OK | | | |
| 1179498002-G | No Preservative Required | OK | | | |
| 1179498003-A | HCL to pH < 2 | OK | | | |
| 1179498003-B | HCL to pH < 2 | OK | | | |
| 1179498003-C | HCL to pH < 2 | OK | | | |
| 1179498003-D | HCL to pH < 2 | OK | | | |
| 1179498003-E | HCL to pH < 2 | OK | | | |
| 1179498003-F | No Preservative Required | OK | | | |
| 1179498003-G | No Preservative Required | OK | | | |
| 1179498004-A | HCL to pH < 2 | OK | | | |
| 1179498004-B | HCL to pH < 2 | OK | | | |
| 1179498004-C | HCL to pH < 2 | OK | | | |
| 1179498004-D | HCL to pH < 2 | OK | | | |
| 1179498004-E | HCL to pH < 2 | OK | | | |
| 1179498004-F | No Preservative Required | OK | | | |
| 1179498004-G | No Preservative Required | OK | | | |
| 1179498005-A | HCL to pH < 2 | OK | | | |
| 1179498005-B | HCL to pH < 2 | OK | | | |
| 1179498005-C | HCL to pH < 2 | OK | | | |

| Container Id | Preservative | Container Condition | Container Id | Preservative | Container Condition |
|---|---|---|---|---|---|

Container Condition Glossary

Containers for bacteriological, low level mercury and VOA vials are not opened prior to analysis and will be assigned condition code OK unless evidence indicates than an inappropriate container was submitted.

OK - The container was received at an acceptable pH for the analysis requested.
BU - The container was received with headspace greater than 6mm.
DM - The container was received damaged.
FR - The container was received frozen and not usable for Bacteria or BOD analyses.
IC - The container provided for microbiology analysis was not a laboratory-supplied, pre-sterilized container and therefore was not suitable for analysis.
PA - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt and the container is now at the correct pH. See the Sample Receipt Form for details on the amount and lot # of the preservative added.
PH - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt, but was insufficient to bring the container to the correct pH for the analysis requested. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

# LABORATORY DATA REVIEW CHECKLIST

**CS Report Name:** 151 West 100th Avenue, Anchorage, Alaska **Date:** November 2017

**Laboratory Report Date:** November 10, 2017

**Consultant Firm:** Shannon & Wilson, Inc.

**Completed by:** Alena Voigt
**Title:** Environmental Scientist
**Laboratory Name:** SGS North America Inc.
**Work Order Number:** 1179498
**ADEC File Number:** 2100.38.539

(**NOTE**: ***NA*** = not applicable; Text in *italics* added by Shannon & Wilson, Inc.)

## 1. Laboratory

**a.** Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses? **Yes / No / NA (Please explain.)**
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 / NA**
Comments: *The samples were not transferred to another "network" laboratory or sub-contracted to an alternate laboratory.*

## 2. Chain of Custody (COC)

**a.** COC information completed, signed, and dated (including released/received by)?
**Yes / No / NA (Please explain.)**
Comments**:**

**b.** Correct analyses requested? **Yes / No / *NA* (Please explain.)**
Comments:

## 3. Laboratory Sample Receipt Documentation

**a.** Sample/cooler temperature documented and within range at receipt (0° to 6° C)?
**Yes / No / NA (Please explain.)**
Comments: *The temperature blank had a temperature of 4.9*° C.

**b.** Sample preservation acceptable - acidified waters, Methanol-preserved VOC soil (GRO, BTEX, VOCs, etc.)? **Yes / No / NA (Please explain.)**
Comments:

**c.** Sample condition documented - broken, leaking (soil MeOH), zero headspace (VOC vials)? **Yes / No / NA (Please explain.)**
Comments:

**d.** If there were any discrepancies, were they documented (e.g., incorrect sample containers/preservation, sample temperatures outside range, insufficient sample size, missing samples)? **Yes / No / NA (Please explain.)**
Comments: *No discrepancies documented.*

**e.** Data quality or usability affected? **Yes / No (Please Explain.)**
Comments*:*

## 4. Case Narrative

**a.** Present and understandable? **Yes / No / NA (Please explain.)**
Comments:

**b.** Discrepancies, errors or QC failures noted by the lab? **Yes / No / NA (Please explain.)**
Comments:

**c.** Were corrective actions documented? **Yes / No / NA (Please explain.)**
Comments:

**d.** What is the effect on data quality/usability, according to the case narrative?
Comments:

## 5. Sample Results

**a.** Correct analyses performed/reported as requested on COC? **Yes / No / NA (Please explain.)**
Comments:

**b.** All applicable holding times met? **Yes / No / NA (Please explain.)**
Comments:

**c.** All soils reported on a dry-weight basis? **Yes / No / NA (Please explain.)**
Comments: *Soil samples were not collected as part of this project.*

**d.** Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project? **Yes / No / NA (Please explain.)**
Comments*: Results for the groundwater samples have an LOQ for 1,2,3-trichloropropane greater than the ADEC Table C groundwater cleanup level.*

**e.** Data quality or usability affected? **(Please explain.)**
Comments: *The groundwater data cannot be used to determine whether or not concentrations of 1,2,3-trichloropropane are present at concentrations less than the LOQ but greater than the ADEC Table C groundwater cleanup level.*

## 6. QC Samples

### a. Method Blank

**i.** One method blank reported per matrix, analysis, and 20 samples?
**Yes / No / NA (Please explain.)**
Comments:

**ii.** All method blank results less than LOQ? **Yes / No / NA (Please explain.)**
Comments:

**iii.** If above LOQ, what samples are affected?
Comments:

**iv.** Do the affected sample(s) have data flags? **Yes / No / NA**
Comments:

If so, are the data flags clearly defined? **Yes / No / NA**
Comments:

**v.** Data quality or usability affected? **(Please explain.)**
Comments:

### b. Laboratory Control Sample/Duplicate (LCS/LCSD)

**i.** Organics - One LCS/LCSD reported per matrix, analysis, and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846) **Yes / No / *NA* (Please explain.)**
Comments:

**ii.** Metals/Inorganics - One LCS and one sample duplicate reported per matrix, analysis and 20 samples? **Yes / No / NA (Please explain.)**
Comments:

**iii.** Accuracy – All percent recoveries (%R) reported *and w*ithin method or laboratory limits? And project specified DQOs, if applicable. (AK petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages) **Yes / No / NA (Please explain.)**
Comments:

**iv.** Precision – All relative percent differences (RPDs) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages) **Yes / No / NA (Please explain.)**
Comments:

**v.** If %R or RPD is outside of acceptable limits, what samples are affected? ***NA***
Comments:

**vi.** Do the affected samples(s) have data flags? **Yes / No / NA**
Comments:

If so, are the data flags clearly defined? **Yes / No / NA**
Comments:

**vii.** Data quality or usability affected? Explain. ***NA***
Comments:

**c. Surrogates - Organics Only**

**i.** Are surrogate recoveries reported for organic analyses, field, QC, and laboratory samples? **Yes / No / NA (Please explain.)**
Comments:

**ii.** Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages) **Yes / No / NA (Please explain.)**
Comments:

**iii.** Do the sample results with failed surrogate recoveries have data flags? **Yes / No / NA (Please explain.)**
Comments:

If so, are the data flags clearly defined? **Yes / No / NA**
Comments:

**iv.** Data quality or usability affected? Explain.
Comments:

**d. Trip Blank** - Volatile analyses only (GRO, BTEX, VOCs, etc.)

**i.** One trip blank reported per matrix, analysis and cooler? **Yes / No / NA (Please explain.)**
Comments: *One trip blank (TB) was submitted to the lab with the samples.*

**ii.** Is the cooler used to transport the trip blank and volatile samples clearly indicated on the COC? **Yes / No / NA (Please explain if NA or no.)**
Comments: *Only one cooler was used to transport the samples.*

**iii.** All results less than LOQ? **Yes / No / NA (Please explain.)**
Comments:

**iv.** If above LOQ, what samples are affected? **NA**
Comments:

**v.** Data quality or usability affected? Explain.
Comments:

**e. Field Duplicate**

**i.** One field duplicate submitted per matrix, analysis and 10 project samples?
**Yes / No / NA (Please explain.)**
Comments: *Sample MW40 is a duplicate of Sample MW30.*

**ii.** Were the field duplicates submitted blind to the lab? **Yes / No / NA (Please explain.)**
Comments*:*

**iii.** Precision – All relative percent differences (RPDs) less than specified DQOs? (Recommended: 30% for water, 50% for soil) **Yes / No / NA (Please explain.)**
Comments: *The RPD for DRO (45%) is greater than the specified DQO. The DRO results are flagged "E" on Table 2 to indicate estimated results.*

**iv.** Data quality or usability affected? Explain. ***NA***
Comments: *Although the RPD for DRO were outside QC criteria, the results are less than the applicable ADEC Table C cleanup level therefore; the data are acceptable for the purposes of this report.*

**f. Decontamination or Equipment Blank** (if not applicable, a comment stating why must be entered below)
**Yes / No / NA (Please explain.)**
Comments: *A decontamination or equipment blank was not included in our ADEC-approved work plan.*

**i.** All results less than LOQ? **Yes / No / NA (Please explain.)**
Comments:

**ii.** If results are above LOQ, what samples are affected? ***NA***
Comments:

**iii.** Data quality or usability affected? Explain. ***NA***
Comments:

**7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab-specific, etc.)**

**a.** Are they defined and appropriate? **Yes / No / NA**
Comments: *Laboratory-specific flags are defined on Page 3 of the SGS report.*

**Laboratory Report of Analysis**

To: Shannon & Wilson, Inc.
5430 Fairbanks Street Suite 3
Anchorage, AK 99518
(907)433-3226

Report Number: **1180748**

Client Project: **32-1-17755-002 Fairweather**

Dear Jake Kesler,

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 Jillian 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.

_____

Jillian Vlahovich Date
Project Manager
Jillian.Vlahovich@sgs.com



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

## Case Narrative

SGS Client: **Shannon & Wilson, Inc.**
SGS Project: **1180748**
Project Name/Site: **32-1-17755-002 Fairweather**
Project Contact: **Jake Kesler**

Refer to sample receipt form for information on sample condition.

**LCSD for HBN 1776845 [XXX/3909 (1435260) LCSD**

8270D SIM - PAH LCS/LCSD RPD for Dibenzo[a,h]anthracene (23.2) and Benzo[g,h,i]perylene (22) do not meet QC criteria. The associated sample concentrations for this analyte are less than the LOQ.

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



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

## Report of Manual Integrations

| Laboratory ID | Client Sample ID | Analytical Batch | Analyte | Reason |
|---|---|---|---|---|
| **8270D SIM LV (PAH)** | | | | |
| 1435260 | LCSD for HBN 1776845 [XXX/3909 | XMS10650 | Benzo[k]fluoranthene | RP |

Manual Integration Reason Code Descriptions

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

All DRO/RRO analysis are integrated per SOP.

Print Date: 02/28/2018 3:36:29PM

## Laboratory Qualifiers

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

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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). 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.



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## Sample Summary

| Client Sample ID | Lab Sample ID | Collected | Received | Matrix |
|---|---|---|---|---|
| 17755-MW30 | 1180748001 | 02/22/2018 | 02/22/2018 | Water (Surface, Eff., Ground) |
| 17755-MW40 | 1180748002 | 02/22/2018 | 02/22/2018 | Water (Surface, Eff., Ground) |
| 17755-MW31 | 1180748003 | 02/22/2018 | 02/22/2018 | Water (Surface, Eff., Ground) |
| 17755-MW32 | 1180748004 | 02/22/2018 | 02/22/2018 | Water (Surface, Eff., Ground) |
| 17755-WTB4 | 1180748005 | 02/22/2018 | 02/22/2018 | Water (Surface, Eff., Ground) |

| Method | Method Description |
|---|---|
| 8270D SIM LV (PAH) | 8270 PAH SIM GC/MS Liq/Liq ext. LV |
| AK102 | DRO Low Volume (W) |
| SW8260C | Volatile Organic Compounds (W) FULL |



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## Detectable Results Summary

Client Sample ID: **17755-MW30**
Lab Sample ID: 1180748001
**Semivolatile Organic Fuels**
**Volatile GC/MS**

| Parameter | Result | Units |
|---|---|---|
| Diesel Range Organics | 0.530J | mg/L |
| Benzene | 10.3 | ug/L |

Client Sample ID: **17755-MW40**
Lab Sample ID: 1180748002
**Semivolatile Organic Fuels**
**Volatile GC/MS**

| Parameter | Result | Units |
|---|---|---|
| Diesel Range Organics | 0.413J | mg/L |
| Benzene | 10.0 | ug/L |

Client Sample ID: **17755-MW31**
Lab Sample ID: 1180748003
**Semivolatile Organic Fuels**
**Volatile GC/MS**

| Parameter | Result | Units |
|---|---|---|
| Diesel Range Organics | 0.558J | mg/L |
| 2-Butanone (MEK) | 4.32J | ug/L |
| Dichlorodifluoromethane | 1.19 | ug/L |

Client Sample ID: **17755-MW32**
Lab Sample ID: 1180748004
**Volatile GC/MS**

| Parameter | Result | Units |
|---|---|---|
| Dichlorodifluoromethane | 49.6 | ug/L |
| Trichlorofluoromethane | 0.590J | ug/L |



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## Results of **17755-MW30**

Client Sample ID: **17755-MW30**
Client Project ID: **32-1-17755-002 Fairweather**
Lab Sample ID: 1180748001
Lab Project ID: 1180748

Collection Date: 02/22/18 14:45
Received Date: 02/22/18 16:37
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

## Results by **Polynuclear Aromatics GC/MS**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| 1-Methylnaphthalene | 0.0250 | U | 0.0500 | 0.0150 | ug/L | 1 | | 02/26/18 19:26 |
| 2-Methylnaphthalene | 0.0250 | U | 0.0500 | 0.0150 | ug/L | 1 | | 02/26/18 19:26 |
| Acenaphthene | 0.0250 | U | 0.0500 | 0.0150 | ug/L | 1 | | 02/26/18 19:26 |
| Acenaphthylene | 0.0250 | U | 0.0500 | 0.0150 | ug/L | 1 | | 02/26/18 19:26 |
| Anthracene | 0.0250 | U | 0.0500 | 0.0150 | ug/L | 1 | | 02/26/18 19:26 |
| Benzo(a)Anthracene | 0.0250 | U | 0.0500 | 0.0150 | ug/L | 1 | | 02/26/18 19:26 |
| Benzo[a]pyrene | 0.0100 | U | 0.0200 | 0.00620 | ug/L | 1 | | 02/26/18 19:26 |
| Benzo[b]Fluoranthene | 0.0250 | U | 0.0500 | 0.0150 | ug/L | 1 | | 02/26/18 19:26 |
| Benzo[g,h,i]perylene | 0.0250 | U | 0.0500 | 0.0150 | ug/L | 1 | | 02/26/18 19:26 |
| Benzo[k]fluoranthene | 0.0250 | U | 0.0500 | 0.0150 | ug/L | 1 | | 02/26/18 19:26 |
| Chrysene | 0.0250 | U | 0.0500 | 0.0150 | ug/L | 1 | | 02/26/18 19:26 |
| Dibenzo[a,h]anthracene | 0.0100 | U | 0.0200 | 0.00620 | ug/L | 1 | | 02/26/18 19:26 |
| Fluoranthene | 0.0250 | U | 0.0500 | 0.0150 | ug/L | 1 | | 02/26/18 19:26 |
| Fluorene | 0.0250 | U | 0.0500 | 0.0150 | ug/L | 1 | | 02/26/18 19:26 |
| Indeno[1,2,3-c,d] pyrene | 0.0250 | U | 0.0500 | 0.0150 | ug/L | 1 | | 02/26/18 19:26 |
| Naphthalene | 0.0500 | U | 0.100 | 0.0310 | ug/L | 1 | | 02/26/18 19:26 |
| Phenanthrene | 0.0250 | U | 0.0500 | 0.0150 | ug/L | 1 | | 02/26/18 19:26 |
| Pyrene | 0.0250 | U | 0.0500 | 0.0150 | ug/L | 1 | | 02/26/18 19:26 |
| **Surrogates** | | | | | | | | |
| 2-Methylnaphthalene-d10 (surr) | 71.9 | | 47-106 | | % | 1 | | 02/26/18 19:26 |
| Fluoranthene-d10 (surr) | 72.9 | | 24-116 | | % | 1 | | 02/26/18 19:26 |

## Batch Information

Analytical Batch: XMS10650
Analytical Method: 8270D SIM LV (PAH)
Analyst: DSD
Analytical Date/Time: 02/26/18 19:26
Container ID: 1180748001-C

Prep Batch: XXX39094
Prep Method: SW3520C
Prep Date/Time: 02/23/18 08:40
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Print Date: 02/28/2018 3:36:33PM

J flagging is activated

## Results of **17755-MW30**

Client Sample ID: **17755-MW30**
Client Project ID: **32-1-17755-002 Fairweather**
Lab Sample ID: 1180748001
Lab Project ID: 1180748

Collection Date: 02/22/18 14:45
Received Date: 02/22/18 16:37
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

## Results by **Semivolatile Organic Fuels**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics | 0.530 | J | 0.600 | 0.180 | mg/L | 1 | | 02/26/18 11:33 |
| **Surrogates** | | | | | | | | |
| 5a Androstane (surr) | 91.5 | | 50-150 | | % | 1 | | 02/26/18 11:33 |

## Batch Information

Analytical Batch: XFC14073
Analytical Method: AK102
Analyst: CMS
Analytical Date/Time: 02/26/18 11:33
Container ID: 1180748001-A

Prep Batch: XXX39093
Prep Method: SW3520C
Prep Date/Time: 02/23/18 08:40
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Print Date: 02/28/2018 3:36:33PM

J flagging is activated

Results of **17755-MW30**

Client Sample ID: **17755-MW30**
Client Project ID: **32-1-17755-002 Fairweather**
Lab Sample ID: 1180748001
Lab Project ID: 1180748

Collection Date: 02/22/18 14:45
Received Date: 02/22/18 16:37
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 02/26/18 14:08 |
| 1,1,1-Trichloroethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:08 |
| 1,1,2,2-Tetrachloroethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 02/26/18 14:08 |
| 1,1,2-Trichloroethane | 0.200 | U | 0.400 | 0.120 | ug/L | 1 | | 02/26/18 14:08 |
| 1,1-Dichloroethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:08 |
| 1,1-Dichloroethene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:08 |
| 1,1-Dichloropropene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:08 |
| 1,2,3-Trichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:08 |
| 1,2,3-Trichloropropane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:08 |
| 1,2,4-Trichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:08 |
| 1,2,4-Trimethylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:08 |
| 1,2-Dibromo-3-chloropropane | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 02/26/18 14:08 |
| 1,2-Dibromoethane | 0.0375 | U | 0.0750 | 0.0180 | ug/L | 1 | | 02/26/18 14:08 |
| 1,2-Dichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:08 |
| 1,2-Dichloroethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 02/26/18 14:08 |
| 1,2-Dichloropropane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:08 |
| 1,3,5-Trimethylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:08 |
| 1,3-Dichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:08 |
| 1,3-Dichloropropane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 02/26/18 14:08 |
| 1,4-Dichlorobenzene | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 02/26/18 14:08 |
| 2,2-Dichloropropane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:08 |
| 2-Butanone (MEK) | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 02/26/18 14:08 |
| 2-Chlorotoluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:08 |
| 2-Hexanone | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 02/26/18 14:08 |
| 4-Chlorotoluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:08 |
| 4-Isopropyltoluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:08 |
| 4-Methyl-2-pentanone (MIBK) | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 02/26/18 14:08 |
| Benzene | 10.3 | | 0.400 | 0.120 | ug/L | 1 | | 02/26/18 14:08 |
| Bromobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:08 |
| Bromochloromethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:08 |
| Bromodichloromethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 02/26/18 14:08 |
| Bromoform | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:08 |
| Bromomethane | 2.50 | U | 5.00 | 1.50 | ug/L | 1 | | 02/26/18 14:08 |
| Carbon disulfide | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 02/26/18 14:08 |
| Carbon tetrachloride | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:08 |
| Chlorobenzene | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 02/26/18 14:08 |
| Chloroethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:08 |

Print Date: 02/28/2018 3:36:33PM

J flagging is activated

Results of **17755-MW30**

Client Sample ID: **17755-MW30**
Client Project ID: **32-1-17755-002 Fairweather**
Lab Sample ID: 1180748001
Lab Project ID: 1180748

Collection Date: 02/22/18 14:45
Received Date: 02/22/18 16:37
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| Chloroform | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:08 |
| Chloromethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:08 |
| cis-1,2-Dichloroethene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:08 |
| cis-1,3-Dichloropropene | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 02/26/18 14:08 |
| Dibromochloromethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 02/26/18 14:08 |
| Dibromomethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:08 |
| Dichlorodifluoromethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:08 |
| Ethylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:08 |
| Freon-113 | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 02/26/18 14:08 |
| Hexachlorobutadiene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:08 |
| Isopropylbenzene (Cumene) | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:08 |
| Methylene chloride | 2.50 | U | 5.00 | 1.00 | ug/L | 1 | | 02/26/18 14:08 |
| Methyl-t-butyl ether | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 02/26/18 14:08 |
| Naphthalene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:08 |
| n-Butylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:08 |
| n-Propylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:08 |
| o-Xylene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:08 |
| P & M -Xylene | 1.00 | U | 2.00 | 0.620 | ug/L | 1 | | 02/26/18 14:08 |
| sec-Butylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:08 |
| Styrene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:08 |
| tert-Butylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:08 |
| Tetrachloroethene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:08 |
| Toluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:08 |
| trans-1,2-Dichloroethene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:08 |
| trans-1,3-Dichloropropene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:08 |
| Trichloroethene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:08 |
| Trichlorofluoromethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:08 |
| Vinyl acetate | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 02/26/18 14:08 |
| Vinyl chloride | 0.0750 | U | 0.150 | 0.0500 | ug/L | 1 | | 02/26/18 14:08 |
| Xylenes (total) | 1.50 | U | 3.00 | 1.00 | ug/L | 1 | | 02/26/18 14:08 |
| **Surrogates** | | | | | | | | |
| 1,2-Dichloroethane-D4 (surr) | 100 | | 81-118 | | % | 1 | | 02/26/18 14:08 |
| 4-Bromofluorobenzene (surr) | 102 | | 85-114 | | % | 1 | | 02/26/18 14:08 |
| Toluene-d8 (surr) | 97.6 | | 89-112 | | % | 1 | | 02/26/18 14:08 |

Print Date: 02/28/2018 3:36:33PM

J flagging is activated

Results of **17755-MW30**

Client Sample ID: **17755-MW30**
Client Project ID: **32-1-17755-002 Fairweather**
Lab Sample ID: 1180748001
Lab Project ID: 1180748

Collection Date: 02/22/18 14:45
Received Date: 02/22/18 16:37
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

**Batch Information**

Analytical Batch: VMS17615
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 02/26/18 14:08
Container ID: 1180748001-E

Prep Batch: VXX31970
Prep Method: SW5030B
Prep Date/Time: 02/26/18 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

## Results of **17755-MW40**

Client Sample ID: **17755-MW40**
Client Project ID: **32-1-17755-002 Fairweather**
Lab Sample ID: 1180748002
Lab Project ID: 1180748

Collection Date: 02/22/18 15:00
Received Date: 02/22/18 16:37
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

## Results by **Polynuclear Aromatics GC/MS**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| 1-Methylnaphthalene | 0.0250 | U | 0.0500 | 0.0150 | ug/L | 1 | | 02/26/18 19:46 |
| 2-Methylnaphthalene | 0.0250 | U | 0.0500 | 0.0150 | ug/L | 1 | | 02/26/18 19:46 |
| Acenaphthene | 0.0250 | U | 0.0500 | 0.0150 | ug/L | 1 | | 02/26/18 19:46 |
| Acenaphthylene | 0.0250 | U | 0.0500 | 0.0150 | ug/L | 1 | | 02/26/18 19:46 |
| Anthracene | 0.0250 | U | 0.0500 | 0.0150 | ug/L | 1 | | 02/26/18 19:46 |
| Benzo(a)Anthracene | 0.0250 | U | 0.0500 | 0.0150 | ug/L | 1 | | 02/26/18 19:46 |
| Benzo[a]pyrene | 0.0100 | U | 0.0200 | 0.00620 | ug/L | 1 | | 02/26/18 19:46 |
| Benzo[b]Fluoranthene | 0.0250 | U | 0.0500 | 0.0150 | ug/L | 1 | | 02/26/18 19:46 |
| Benzo[g,h,i]perylene | 0.0250 | U | 0.0500 | 0.0150 | ug/L | 1 | | 02/26/18 19:46 |
| Benzo[k]fluoranthene | 0.0250 | U | 0.0500 | 0.0150 | ug/L | 1 | | 02/26/18 19:46 |
| Chrysene | 0.0250 | U | 0.0500 | 0.0150 | ug/L | 1 | | 02/26/18 19:46 |
| Dibenzo[a,h]anthracene | 0.0100 | U | 0.0200 | 0.00620 | ug/L | 1 | | 02/26/18 19:46 |
| Fluoranthene | 0.0250 | U | 0.0500 | 0.0150 | ug/L | 1 | | 02/26/18 19:46 |
| Fluorene | 0.0250 | U | 0.0500 | 0.0150 | ug/L | 1 | | 02/26/18 19:46 |
| Indeno[1,2,3-c,d] pyrene | 0.0250 | U | 0.0500 | 0.0150 | ug/L | 1 | | 02/26/18 19:46 |
| Naphthalene | 0.0500 | U | 0.100 | 0.0310 | ug/L | 1 | | 02/26/18 19:46 |
| Phenanthrene | 0.0250 | U | 0.0500 | 0.0150 | ug/L | 1 | | 02/26/18 19:46 |
| Pyrene | 0.0250 | U | 0.0500 | 0.0150 | ug/L | 1 | | 02/26/18 19:46 |
| **Surrogates** | | | | | | | | |
| 2-Methylnaphthalene-d10 (surr) | 67.6 | | 47-106 | | % | 1 | | 02/26/18 19:46 |
| Fluoranthene-d10 (surr) | 69 | | 24-116 | | % | 1 | | 02/26/18 19:46 |

## Batch Information

Analytical Batch: XMS10650
Analytical Method: 8270D SIM LV (PAH)
Analyst: DSD
Analytical Date/Time: 02/26/18 19:46
Container ID: 1180748002-C

Prep Batch: XXX39094
Prep Method: SW3520C
Prep Date/Time: 02/23/18 08:40
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Print Date: 02/28/2018 3:36:33PM

J flagging is activated

## Results of **17755-MW40**

Client Sample ID: **17755-MW40**
Client Project ID: **32-1-17755-002 Fairweather**
Lab Sample ID: 1180748002
Lab Project ID: 1180748

Collection Date: 02/22/18 15:00
Received Date: 02/22/18 16:37
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

## Results by **Semivolatile Organic Fuels**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics | 0.413 | J | 0.600 | 0.180 | mg/L | 1 | | 02/26/18 11:42 |
| **Surrogates** | | | | | | | | |
| 5a Androstane (surr) | 79.4 | | 50-150 | | % | 1 | | 02/26/18 11:42 |

## Batch Information

Analytical Batch: XFC14073
Analytical Method: AK102
Analyst: CMS
Analytical Date/Time: 02/26/18 11:42
Container ID: 1180748002-A

Prep Batch: XXX39093
Prep Method: SW3520C
Prep Date/Time: 02/23/18 08:40
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Print Date: 02/28/2018 3:36:33PM

J flagging is activated

Results of **17755-MW40**

Client Sample ID: **17755-MW40**
Client Project ID: **32-1-17755-002 Fairweather**
Lab Sample ID: 1180748002
Lab Project ID: 1180748

Collection Date: 02/22/18 15:00
Received Date: 02/22/18 16:37
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 02/26/18 14:26 |
| 1,1,1-Trichloroethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:26 |
| 1,1,2,2-Tetrachloroethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 02/26/18 14:26 |
| 1,1,2-Trichloroethane | 0.200 | U | 0.400 | 0.120 | ug/L | 1 | | 02/26/18 14:26 |
| 1,1-Dichloroethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:26 |
| 1,1-Dichloroethene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:26 |
| 1,1-Dichloropropene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:26 |
| 1,2,3-Trichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:26 |
| 1,2,3-Trichloropropane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:26 |
| 1,2,4-Trichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:26 |
| 1,2,4-Trimethylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:26 |
| 1,2-Dibromo-3-chloropropane | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 02/26/18 14:26 |
| 1,2-Dibromoethane | 0.0375 | U | 0.0750 | 0.0180 | ug/L | 1 | | 02/26/18 14:26 |
| 1,2-Dichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:26 |
| 1,2-Dichloroethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 02/26/18 14:26 |
| 1,2-Dichloropropane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:26 |
| 1,3,5-Trimethylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:26 |
| 1,3-Dichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:26 |
| 1,3-Dichloropropane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 02/26/18 14:26 |
| 1,4-Dichlorobenzene | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 02/26/18 14:26 |
| 2,2-Dichloropropane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:26 |
| 2-Butanone (MEK) | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 02/26/18 14:26 |
| 2-Chlorotoluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:26 |
| 2-Hexanone | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 02/26/18 14:26 |
| 4-Chlorotoluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:26 |
| 4-Isopropyltoluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:26 |
| 4-Methyl-2-pentanone (MIBK) | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 02/26/18 14:26 |
| Benzene | 10.0 | | 0.400 | 0.120 | ug/L | 1 | | 02/26/18 14:26 |
| Bromobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:26 |
| Bromochloromethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:26 |
| Bromodichloromethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 02/26/18 14:26 |
| Bromoform | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:26 |
| Bromomethane | 2.50 | U | 5.00 | 1.50 | ug/L | 1 | | 02/26/18 14:26 |
| Carbon disulfide | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 02/26/18 14:26 |
| Carbon tetrachloride | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:26 |
| Chlorobenzene | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 02/26/18 14:26 |
| Chloroethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:26 |

Print Date: 02/28/2018 3:36:33PM

J flagging is activated

Results of **17755-MW40**

Client Sample ID: **17755-MW40**
Client Project ID: **32-1-17755-002 Fairweather**
Lab Sample ID: 1180748002
Lab Project ID: 1180748

Collection Date: 02/22/18 15:00
Received Date: 02/22/18 16:37
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| Chloroform | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:26 |
| Chloromethane | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:26 |
| cis-1,2-Dichloroethene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:26 |
| cis-1,3-Dichloropropene | 0.250 U | | 0.500 | 0.150 | ug/L | 1 | | 02/26/18 14:26 |
| Dibromochloromethane | 0.250 U | | 0.500 | 0.150 | ug/L | 1 | | 02/26/18 14:26 |
| Dibromomethane | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:26 |
| Dichlorodifluoromethane | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:26 |
| Ethylbenzene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:26 |
| Freon-113 | 5.00 U | | 10.0 | 3.10 | ug/L | 1 | | 02/26/18 14:26 |
| Hexachlorobutadiene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:26 |
| Isopropylbenzene (Cumene) | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:26 |
| Methylene chloride | 2.50 U | | 5.00 | 1.00 | ug/L | 1 | | 02/26/18 14:26 |
| Methyl-t-butyl ether | 5.00 U | | 10.0 | 3.10 | ug/L | 1 | | 02/26/18 14:26 |
| Naphthalene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:26 |
| n-Butylbenzene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:26 |
| n-Propylbenzene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:26 |
| o-Xylene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:26 |
| P & M -Xylene | 1.00 U | | 2.00 | 0.620 | ug/L | 1 | | 02/26/18 14:26 |
| sec-Butylbenzene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:26 |
| Styrene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:26 |
| tert-Butylbenzene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:26 |
| Tetrachloroethene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:26 |
| Toluene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:26 |
| trans-1,2-Dichloroethene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:26 |
| trans-1,3-Dichloropropene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:26 |
| Trichloroethene | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:26 |
| Trichlorofluoromethane | 0.500 U | | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:26 |
| Vinyl acetate | 5.00 U | | 10.0 | 3.10 | ug/L | 1 | | 02/26/18 14:26 |
| Vinyl chloride | 0.0750 U | | 0.150 | 0.0500 | ug/L | 1 | | 02/26/18 14:26 |
| Xylenes (total) | 1.50 U | | 3.00 | 1.00 | ug/L | 1 | | 02/26/18 14:26 |
| **Surrogates** | | | | | | | | |
| 1,2-Dichloroethane-D4 (surr) | 110 | | 81-118 | | % | 1 | | 02/26/18 14:26 |
| 4-Bromofluorobenzene (surr) | 101 | | 85-114 | | % | 1 | | 02/26/18 14:26 |
| Toluene-d8 (surr) | 94.9 | | 89-112 | | % | 1 | | 02/26/18 14:26 |

Print Date: 02/28/2018 3:36:33PM

J flagging is activated

Results of **17755-MW40**

Client Sample ID: **17755-MW40**
Client Project ID: **32-1-17755-002 Fairweather**
Lab Sample ID: 1180748002
Lab Project ID: 1180748

Collection Date: 02/22/18 15:00
Received Date: 02/22/18 16:37
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

**Batch Information**

Analytical Batch: VMS17615
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 02/26/18 14:26
Container ID: 1180748002-E

Prep Batch: VXX31970
Prep Method: SW5030B
Prep Date/Time: 02/26/18 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **17755-MW31**

Client Sample ID: **17755-MW31**
Client Project ID: **32-1-17755-002 Fairweather**
Lab Sample ID: 1180748003
Lab Project ID: 1180748

Collection Date: 02/22/18 13:03
Received Date: 02/22/18 16:37
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Polynuclear Aromatics GC/MS**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| 1-Methylnaphthalene | 0.0252 | U | 0.0504 | 0.0151 | ug/L | 1 | | 02/26/18 20:07 |
| 2-Methylnaphthalene | 0.0252 | U | 0.0504 | 0.0151 | ug/L | 1 | | 02/26/18 20:07 |
| Acenaphthene | 0.0252 | U | 0.0504 | 0.0151 | ug/L | 1 | | 02/26/18 20:07 |
| Acenaphthylene | 0.0252 | U | 0.0504 | 0.0151 | ug/L | 1 | | 02/26/18 20:07 |
| Anthracene | 0.0252 | U | 0.0504 | 0.0151 | ug/L | 1 | | 02/26/18 20:07 |
| Benzo(a)Anthracene | 0.0252 | U | 0.0504 | 0.0151 | ug/L | 1 | | 02/26/18 20:07 |
| Benzo[a]pyrene | 0.0101 | U | 0.0202 | 0.00625 | ug/L | 1 | | 02/26/18 20:07 |
| Benzo[b]Fluoranthene | 0.0252 | U | 0.0504 | 0.0151 | ug/L | 1 | | 02/26/18 20:07 |
| Benzo[g,h,i]perylene | 0.0252 | U | 0.0504 | 0.0151 | ug/L | 1 | | 02/26/18 20:07 |
| Benzo[k]fluoranthene | 0.0252 | U | 0.0504 | 0.0151 | ug/L | 1 | | 02/26/18 20:07 |
| Chrysene | 0.0252 | U | 0.0504 | 0.0151 | ug/L | 1 | | 02/26/18 20:07 |
| Dibenzo[a,h]anthracene | 0.0101 | U | 0.0202 | 0.00625 | ug/L | 1 | | 02/26/18 20:07 |
| Fluoranthene | 0.0252 | U | 0.0504 | 0.0151 | ug/L | 1 | | 02/26/18 20:07 |
| Fluorene | 0.0252 | U | 0.0504 | 0.0151 | ug/L | 1 | | 02/26/18 20:07 |
| Indeno[1,2,3-c,d] pyrene | 0.0252 | U | 0.0504 | 0.0151 | ug/L | 1 | | 02/26/18 20:07 |
| Naphthalene | 0.0505 | U | 0.101 | 0.0313 | ug/L | 1 | | 02/26/18 20:07 |
| Phenanthrene | 0.0252 | U | 0.0504 | 0.0151 | ug/L | 1 | | 02/26/18 20:07 |
| Pyrene | 0.0252 | U | 0.0504 | 0.0151 | ug/L | 1 | | 02/26/18 20:07 |
| **Surrogates** | | | | | | | | |
| 2-Methylnaphthalene-d10 (surr) | 61 | | 47-106 | | % | 1 | | 02/26/18 20:07 |
| Fluoranthene-d10 (surr) | 61.1 | | 24-116 | | % | 1 | | 02/26/18 20:07 |

**Batch Information**

Analytical Batch: XMS10650
Analytical Method: 8270D SIM LV (PAH)
Analyst: DSD
Analytical Date/Time: 02/26/18 20:07
Container ID: 1180748003-C

Prep Batch: XXX39094
Prep Method: SW3520C
Prep Date/Time: 02/23/18 08:40
Prep Initial Wt./Vol.: 248 mL
Prep Extract Vol: 1 mL

Print Date: 02/28/2018 3:36:33PM

J flagging is activated

## Results of **17755-MW31**

Client Sample ID: **17755-MW31**
Client Project ID: **32-1-17755-002 Fairweather**
Lab Sample ID: 1180748003
Lab Project ID: 1180748

Collection Date: 02/22/18 13:03
Received Date: 02/22/18 16:37
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

## Results by **Semivolatile Organic Fuels**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics | 0.558 | J | 0.610 | 0.183 | mg/L | 1 | | 02/26/18 11:52 |
| **Surrogates** | | | | | | | | |
| 5a Androstane (surr) | 95.6 | | 50-150 | | % | 1 | | 02/26/18 11:52 |

## Batch Information

Analytical Batch: XFC14073
Analytical Method: AK102
Analyst: CMS
Analytical Date/Time: 02/26/18 11:52
Container ID: 1180748003-A

Prep Batch: XXX39093
Prep Method: SW3520C
Prep Date/Time: 02/23/18 08:40
Prep Initial Wt./Vol.: 246 mL
Prep Extract Vol: 1 mL

Print Date: 02/28/2018 3:36:33PM

J flagging is activated

Results of **17755-MW31**

Client Sample ID: **17755-MW31**
Client Project ID: **32-1-17755-002 Fairweather**
Lab Sample ID: 1180748003
Lab Project ID: 1180748

Collection Date: 02/22/18 13:03
Received Date: 02/22/18 16:37
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 02/26/18 14:43 |
| 1,1,1-Trichloroethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:43 |
| 1,1,2,2-Tetrachloroethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 02/26/18 14:43 |
| 1,1,2-Trichloroethane | 0.200 | U | 0.400 | 0.120 | ug/L | 1 | | 02/26/18 14:43 |
| 1,1-Dichloroethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:43 |
| 1,1-Dichloroethene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:43 |
| 1,1-Dichloropropene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:43 |
| 1,2,3-Trichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:43 |
| 1,2,3-Trichloropropane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:43 |
| 1,2,4-Trichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:43 |
| 1,2,4-Trimethylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:43 |
| 1,2-Dibromo-3-chloropropane | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 02/26/18 14:43 |
| 1,2-Dibromoethane | 0.0375 | U | 0.0750 | 0.0180 | ug/L | 1 | | 02/26/18 14:43 |
| 1,2-Dichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:43 |
| 1,2-Dichloroethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 02/26/18 14:43 |
| 1,2-Dichloropropane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:43 |
| 1,3,5-Trimethylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:43 |
| 1,3-Dichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:43 |
| 1,3-Dichloropropane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 02/26/18 14:43 |
| 1,4-Dichlorobenzene | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 02/26/18 14:43 |
| 2,2-Dichloropropane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:43 |
| 2-Butanone (MEK) | 4.32 | J | 10.0 | 3.10 | ug/L | 1 | | 02/26/18 14:43 |
| 2-Chlorotoluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:43 |
| 2-Hexanone | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 02/26/18 14:43 |
| 4-Chlorotoluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:43 |
| 4-Isopropyltoluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:43 |
| 4-Methyl-2-pentanone (MIBK) | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 02/26/18 14:43 |
| Benzene | 0.200 | U | 0.400 | 0.120 | ug/L | 1 | | 02/26/18 14:43 |
| Bromobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:43 |
| Bromochloromethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:43 |
| Bromodichloromethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 02/26/18 14:43 |
| Bromoform | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:43 |
| Bromomethane | 2.50 | U | 5.00 | 1.50 | ug/L | 1 | | 02/26/18 14:43 |
| Carbon disulfide | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 02/26/18 14:43 |
| Carbon tetrachloride | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:43 |
| Chlorobenzene | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 02/26/18 14:43 |
| Chloroethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:43 |

Print Date: 02/28/2018 3:36:33PM

J flagging is activated

Results of **17755-MW31**

Client Sample ID: **17755-MW31**
Client Project ID: **32-1-17755-002 Fairweather**
Lab Sample ID: 1180748003
Lab Project ID: 1180748

Collection Date: 02/22/18 13:03
Received Date: 02/22/18 16:37
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| Chloroform | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:43 |
| Chloromethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:43 |
| cis-1,2-Dichloroethene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:43 |
| cis-1,3-Dichloropropene | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 02/26/18 14:43 |
| Dibromochloromethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 02/26/18 14:43 |
| Dibromomethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:43 |
| Dichlorodifluoromethane | 1.19 | | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:43 |
| Ethylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:43 |
| Freon-113 | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 02/26/18 14:43 |
| Hexachlorobutadiene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:43 |
| Isopropylbenzene (Cumene) | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:43 |
| Methylene chloride | 2.50 | U | 5.00 | 1.00 | ug/L | 1 | | 02/26/18 14:43 |
| Methyl-t-butyl ether | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 02/26/18 14:43 |
| Naphthalene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:43 |
| n-Butylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:43 |
| n-Propylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:43 |
| o-Xylene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:43 |
| P & M -Xylene | 1.00 | U | 2.00 | 0.620 | ug/L | 1 | | 02/26/18 14:43 |
| sec-Butylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:43 |
| Styrene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:43 |
| tert-Butylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:43 |
| Tetrachloroethene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:43 |
| Toluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:43 |
| trans-1,2-Dichloroethene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:43 |
| trans-1,3-Dichloropropene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:43 |
| Trichloroethene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:43 |
| Trichlorofluoromethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 14:43 |
| Vinyl acetate | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 02/26/18 14:43 |
| Vinyl chloride | 0.0750 | U | 0.150 | 0.0500 | ug/L | 1 | | 02/26/18 14:43 |
| Xylenes (total) | 1.50 | U | 3.00 | 1.00 | ug/L | 1 | | 02/26/18 14:43 |
| **Surrogates** | | | | | | | | |
| 1,2-Dichloroethane-D4 (surr) | 105 | | 81-118 | | % | 1 | | 02/26/18 14:43 |
| 4-Bromofluorobenzene (surr) | 102 | | 85-114 | | % | 1 | | 02/26/18 14:43 |
| Toluene-d8 (surr) | 95.4 | | 89-112 | | % | 1 | | 02/26/18 14:43 |

Print Date: 02/28/2018 3:36:33PM

J flagging is activated

Results of **17755-MW31**

Client Sample ID: **17755-MW31**
Client Project ID: **32-1-17755-002 Fairweather**
Lab Sample ID: 1180748003
Lab Project ID: 1180748

Collection Date: 02/22/18 13:03
Received Date: 02/22/18 16:37
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

**Batch Information**

Analytical Batch: VMS17615
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 02/26/18 14:43
Container ID: 1180748003-E

Prep Batch: VXX31970
Prep Method: SW5030B
Prep Date/Time: 02/26/18 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **17755-MW32**

Client Sample ID: **17755-MW32**
Client Project ID: **32-1-17755-002 Fairweather**
Lab Sample ID: 1180748004
Lab Project ID: 1180748

Collection Date: 02/22/18 11:45
Received Date: 02/22/18 16:37
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Polynuclear Aromatics GC/MS**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| 1-Methylnaphthalene | 0.0256 | U | 0.0512 | 0.0154 | ug/L | 1 | | 02/26/18 20:27 |
| 2-Methylnaphthalene | 0.0256 | U | 0.0512 | 0.0154 | ug/L | 1 | | 02/26/18 20:27 |
| Acenaphthene | 0.0256 | U | 0.0512 | 0.0154 | ug/L | 1 | | 02/26/18 20:27 |
| Acenaphthylene | 0.0256 | U | 0.0512 | 0.0154 | ug/L | 1 | | 02/26/18 20:27 |
| Anthracene | 0.0256 | U | 0.0512 | 0.0154 | ug/L | 1 | | 02/26/18 20:27 |
| Benzo(a)Anthracene | 0.0256 | U | 0.0512 | 0.0154 | ug/L | 1 | | 02/26/18 20:27 |
| Benzo[a]pyrene | 0.0103 | U | 0.0205 | 0.00635 | ug/L | 1 | | 02/26/18 20:27 |
| Benzo[b]Fluoranthene | 0.0256 | U | 0.0512 | 0.0154 | ug/L | 1 | | 02/26/18 20:27 |
| Benzo[g,h,i]perylene | 0.0256 | U | 0.0512 | 0.0154 | ug/L | 1 | | 02/26/18 20:27 |
| Benzo[k]fluoranthene | 0.0256 | U | 0.0512 | 0.0154 | ug/L | 1 | | 02/26/18 20:27 |
| Chrysene | 0.0256 | U | 0.0512 | 0.0154 | ug/L | 1 | | 02/26/18 20:27 |
| Dibenzo[a,h]anthracene | 0.0103 | U | 0.0205 | 0.00635 | ug/L | 1 | | 02/26/18 20:27 |
| Fluoranthene | 0.0256 | U | 0.0512 | 0.0154 | ug/L | 1 | | 02/26/18 20:27 |
| Fluorene | 0.0256 | U | 0.0512 | 0.0154 | ug/L | 1 | | 02/26/18 20:27 |
| Indeno[1,2,3-c,d] pyrene | 0.0256 | U | 0.0512 | 0.0154 | ug/L | 1 | | 02/26/18 20:27 |
| Naphthalene | 0.0510 | U | 0.102 | 0.0318 | ug/L | 1 | | 02/26/18 20:27 |
| Phenanthrene | 0.0256 | U | 0.0512 | 0.0154 | ug/L | 1 | | 02/26/18 20:27 |
| Pyrene | 0.0256 | U | 0.0512 | 0.0154 | ug/L | 1 | | 02/26/18 20:27 |
| **Surrogates** | | | | | | | | |
| 2-Methylnaphthalene-d10 (surr) | 77.5 | | 47-106 | | % | 1 | | 02/26/18 20:27 |
| Fluoranthene-d10 (surr) | 80.9 | | 24-116 | | % | 1 | | 02/26/18 20:27 |

**Batch Information**

Analytical Batch: XMS10650
Analytical Method: 8270D SIM LV (PAH)
Analyst: DSD
Analytical Date/Time: 02/26/18 20:27
Container ID: 1180748004-C

Prep Batch: XXX39094
Prep Method: SW3520C
Prep Date/Time: 02/23/18 08:40
Prep Initial Wt./Vol.: 244 mL
Prep Extract Vol: 1 mL

Print Date: 02/28/2018 3:36:33PM

J flagging is activated

## Results of **17755-MW32**

Client Sample ID: **17755-MW32**
Client Project ID: **32-1-17755-002 Fairweather**
Lab Sample ID: 1180748004
Lab Project ID: 1180748

Collection Date: 02/22/18 11:45
Received Date: 02/22/18 16:37
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

## Results by **Semivolatile Organic Fuels**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics | 0.310 | U | 0.620 | 0.186 | mg/L | 1 | | 02/26/18 12:02 |
| **Surrogates** | | | | | | | | |
| 5a Androstane (surr) | 94.5 | | 50-150 | | % | 1 | | 02/26/18 12:02 |

## Batch Information

Analytical Batch: XFC14073
Analytical Method: AK102
Analyst: CMS
Analytical Date/Time: 02/26/18 12:02
Container ID: 1180748004-A

Prep Batch: XXX39093
Prep Method: SW3520C
Prep Date/Time: 02/23/18 08:40
Prep Initial Wt./Vol.: 242 mL
Prep Extract Vol: 1 mL

Print Date: 02/28/2018 3:36:33PM

J flagging is activated

Results of **17755-MW32**

Client Sample ID: **17755-MW32**
Client Project ID: **32-1-17755-002 Fairweather**
Lab Sample ID: 1180748004
Lab Project ID: 1180748

Collection Date: 02/22/18 11:45
Received Date: 02/22/18 16:37
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 02/26/18 15:01 |
| 1,1,1-Trichloroethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 15:01 |
| 1,1,2,2-Tetrachloroethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 02/26/18 15:01 |
| 1,1,2-Trichloroethane | 0.200 | U | 0.400 | 0.120 | ug/L | 1 | | 02/26/18 15:01 |
| 1,1-Dichloroethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 15:01 |
| 1,1-Dichloroethene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 15:01 |
| 1,1-Dichloropropene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 15:01 |
| 1,2,3-Trichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 15:01 |
| 1,2,3-Trichloropropane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 15:01 |
| 1,2,4-Trichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 15:01 |
| 1,2,4-Trimethylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 15:01 |
| 1,2-Dibromo-3-chloropropane | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 02/26/18 15:01 |
| 1,2-Dibromoethane | 0.0375 | U | 0.0750 | 0.0180 | ug/L | 1 | | 02/26/18 15:01 |
| 1,2-Dichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 15:01 |
| 1,2-Dichloroethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 02/26/18 15:01 |
| 1,2-Dichloropropane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 15:01 |
| 1,3,5-Trimethylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 15:01 |
| 1,3-Dichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 15:01 |
| 1,3-Dichloropropane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 02/26/18 15:01 |
| 1,4-Dichlorobenzene | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 02/26/18 15:01 |
| 2,2-Dichloropropane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 15:01 |
| 2-Butanone (MEK) | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 02/26/18 15:01 |
| 2-Chlorotoluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 15:01 |
| 2-Hexanone | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 02/26/18 15:01 |
| 4-Chlorotoluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 15:01 |
| 4-Isopropyltoluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 15:01 |
| 4-Methyl-2-pentanone (MIBK) | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 02/26/18 15:01 |
| Benzene | 0.200 | U | 0.400 | 0.120 | ug/L | 1 | | 02/26/18 15:01 |
| Bromobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 15:01 |
| Bromochloromethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 15:01 |
| Bromodichloromethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 02/26/18 15:01 |
| Bromoform | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 15:01 |
| Bromomethane | 2.50 | U | 5.00 | 1.50 | ug/L | 1 | | 02/26/18 15:01 |
| Carbon disulfide | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 02/26/18 15:01 |
| Carbon tetrachloride | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 15:01 |
| Chlorobenzene | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 02/26/18 15:01 |
| Chloroethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 15:01 |

Print Date: 02/28/2018 3:36:33PM

J flagging is activated

Results of **17755-MW32**

Client Sample ID: **17755-MW32**
Client Project ID: **32-1-17755-002 Fairweather**
Lab Sample ID: 1180748004
Lab Project ID: 1180748

Collection Date: 02/22/18 11:45
Received Date: 02/22/18 16:37
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| Chloroform | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 15:01 |
| Chloromethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 15:01 |
| cis-1,2-Dichloroethene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 15:01 |
| cis-1,3-Dichloropropene | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 02/26/18 15:01 |
| Dibromochloromethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 02/26/18 15:01 |
| Dibromomethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 15:01 |
| Dichlorodifluoromethane | 49.6 | | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 15:01 |
| Ethylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 15:01 |
| Freon-113 | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 02/26/18 15:01 |
| Hexachlorobutadiene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 15:01 |
| Isopropylbenzene (Cumene) | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 15:01 |
| Methylene chloride | 2.50 | U | 5.00 | 1.00 | ug/L | 1 | | 02/26/18 15:01 |
| Methyl-t-butyl ether | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 02/26/18 15:01 |
| Naphthalene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 15:01 |
| n-Butylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 15:01 |
| n-Propylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 15:01 |
| o-Xylene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 15:01 |
| P & M -Xylene | 1.00 | U | 2.00 | 0.620 | ug/L | 1 | | 02/26/18 15:01 |
| sec-Butylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 15:01 |
| Styrene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 15:01 |
| tert-Butylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 15:01 |
| Tetrachloroethene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 15:01 |
| Toluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 15:01 |
| trans-1,2-Dichloroethene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 15:01 |
| trans-1,3-Dichloropropene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 15:01 |
| Trichloroethene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 15:01 |
| Trichlorofluoromethane | 0.590 | J | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 15:01 |
| Vinyl acetate | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 02/26/18 15:01 |
| Vinyl chloride | 0.0750 | U | 0.150 | 0.0500 | ug/L | 1 | | 02/26/18 15:01 |
| Xylenes (total) | 1.50 | U | 3.00 | 1.00 | ug/L | 1 | | 02/26/18 15:01 |
| **Surrogates** | | | | | | | | |
| 1,2-Dichloroethane-D4 (surr) | 101 | | 81-118 | | % | 1 | | 02/26/18 15:01 |
| 4-Bromofluorobenzene (surr) | 101 | | 85-114 | | % | 1 | | 02/26/18 15:01 |
| Toluene-d8 (surr) | 97.5 | | 89-112 | | % | 1 | | 02/26/18 15:01 |

Print Date: 02/28/2018 3:36:33PM

J flagging is activated

Results of **17755-MW32**

Client Sample ID: **17755-MW32**
Client Project ID: **32-1-17755-002 Fairweather**
Lab Sample ID: 1180748004
Lab Project ID: 1180748

Collection Date: 02/22/18 11:45
Received Date: 02/22/18 16:37
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

**Batch Information**

Analytical Batch: VMS17615
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 02/26/18 15:01
Container ID: 1180748004-E

Prep Batch: VXX31970
Prep Method: SW5030B
Prep Date/Time: 02/26/18 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **17755-WTB4**

Client Sample ID: **17755-WTB4**
Client Project ID: **32-1-17755-002 Fairweather**
Lab Sample ID: 1180748005
Lab Project ID: 1180748

Collection Date: 02/22/18 11:00
Received Date: 02/22/18 16:37
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 02/26/18 13:18 |
| 1,1,1-Trichloroethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 13:18 |
| 1,1,2,2-Tetrachloroethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 02/26/18 13:18 |
| 1,1,2-Trichloroethane | 0.200 | U | 0.400 | 0.120 | ug/L | 1 | | 02/26/18 13:18 |
| 1,1-Dichloroethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 13:18 |
| 1,1-Dichloroethene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 13:18 |
| 1,1-Dichloropropene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 13:18 |
| 1,2,3-Trichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 13:18 |
| 1,2,3-Trichloropropane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 13:18 |
| 1,2,4-Trichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 13:18 |
| 1,2,4-Trimethylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 13:18 |
| 1,2-Dibromo-3-chloropropane | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 02/26/18 13:18 |
| 1,2-Dibromoethane | 0.0375 | U | 0.0750 | 0.0180 | ug/L | 1 | | 02/26/18 13:18 |
| 1,2-Dichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 13:18 |
| 1,2-Dichloroethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 02/26/18 13:18 |
| 1,2-Dichloropropane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 13:18 |
| 1,3,5-Trimethylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 13:18 |
| 1,3-Dichlorobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 13:18 |
| 1,3-Dichloropropane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 02/26/18 13:18 |
| 1,4-Dichlorobenzene | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 02/26/18 13:18 |
| 2,2-Dichloropropane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 13:18 |
| 2-Butanone (MEK) | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 02/26/18 13:18 |
| 2-Chlorotoluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 13:18 |
| 2-Hexanone | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 02/26/18 13:18 |
| 4-Chlorotoluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 13:18 |
| 4-Isopropyltoluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 13:18 |
| 4-Methyl-2-pentanone (MIBK) | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 02/26/18 13:18 |
| Benzene | 0.200 | U | 0.400 | 0.120 | ug/L | 1 | | 02/26/18 13:18 |
| Bromobenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 13:18 |
| Bromochloromethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 13:18 |
| Bromodichloromethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 02/26/18 13:18 |
| Bromoform | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 13:18 |
| Bromomethane | 2.50 | U | 5.00 | 1.50 | ug/L | 1 | | 02/26/18 13:18 |
| Carbon disulfide | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 02/26/18 13:18 |
| Carbon tetrachloride | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 13:18 |
| Chlorobenzene | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 02/26/18 13:18 |
| Chloroethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 13:18 |

Print Date: 02/28/2018 3:36:33PM

J flagging is activated

Results of **17755-WTB4**

Client Sample ID: **17755-WTB4**
Client Project ID: **32-1-17755-002 Fairweather**
Lab Sample ID: 1180748005
Lab Project ID: 1180748

Collection Date: 02/22/18 11:00
Received Date: 02/22/18 16:37
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

| Parameter | Result | Qual | LOQ/CL | DL | Units | DF | Allowable Limits | Date Analyzed |
|---|---|---|---|---|---|---|---|---|
| Chloroform | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 13:18 |
| Chloromethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 13:18 |
| cis-1,2-Dichloroethene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 13:18 |
| cis-1,3-Dichloropropene | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 02/26/18 13:18 |
| Dibromochloromethane | 0.250 | U | 0.500 | 0.150 | ug/L | 1 | | 02/26/18 13:18 |
| Dibromomethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 13:18 |
| Dichlorodifluoromethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 13:18 |
| Ethylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 13:18 |
| Freon-113 | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 02/26/18 13:18 |
| Hexachlorobutadiene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 13:18 |
| Isopropylbenzene (Cumene) | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 13:18 |
| Methylene chloride | 2.50 | U | 5.00 | 1.00 | ug/L | 1 | | 02/26/18 13:18 |
| Methyl-t-butyl ether | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 02/26/18 13:18 |
| Naphthalene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 13:18 |
| n-Butylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 13:18 |
| n-Propylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 13:18 |
| o-Xylene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 13:18 |
| P & M -Xylene | 1.00 | U | 2.00 | 0.620 | ug/L | 1 | | 02/26/18 13:18 |
| sec-Butylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 13:18 |
| Styrene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 13:18 |
| tert-Butylbenzene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 13:18 |
| Tetrachloroethene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 13:18 |
| Toluene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 13:18 |
| trans-1,2-Dichloroethene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 13:18 |
| trans-1,3-Dichloropropene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 13:18 |
| Trichloroethene | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 13:18 |
| Trichlorofluoromethane | 0.500 | U | 1.00 | 0.310 | ug/L | 1 | | 02/26/18 13:18 |
| Vinyl acetate | 5.00 | U | 10.0 | 3.10 | ug/L | 1 | | 02/26/18 13:18 |
| Vinyl chloride | 0.0750 | U | 0.150 | 0.0500 | ug/L | 1 | | 02/26/18 13:18 |
| Xylenes (total) | 1.50 | U | 3.00 | 1.00 | ug/L | 1 | | 02/26/18 13:18 |
| **Surrogates** | | | | | | | | |
| 1,2-Dichloroethane-D4 (surr) | 105 | | 81-118 | | % | 1 | | 02/26/18 13:18 |
| 4-Bromofluorobenzene (surr) | 103 | | 85-114 | | % | 1 | | 02/26/18 13:18 |
| Toluene-d8 (surr) | 97.9 | | 89-112 | | % | 1 | | 02/26/18 13:18 |

Print Date: 02/28/2018 3:36:33PM

J flagging is activated

Results of **17755-WTB4**

Client Sample ID: **17755-WTB4**
Client Project ID: **32-1-17755-002 Fairweather**
Lab Sample ID: 1180748005
Lab Project ID: 1180748

Collection Date: 02/22/18 11:00
Received Date: 02/22/18 16:37
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

**Batch Information**

Analytical Batch: VMS17615
Analytical Method: SW8260C
Analyst: FDR
Analytical Date/Time: 02/26/18 13:18
Container ID: 1180748005-A

Prep Batch: VXX31970
Prep Method: SW5030B
Prep Date/Time: 02/26/18 00:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

## Method Blank

Blank ID: MB for HBN 1776935 [VXX/31970]
Blank Lab ID: 1435554

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1180748001, 1180748002, 1180748003, 1180748004, 1180748005

## Results by **SW8260C**

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

## Method Blank

Blank ID: MB for HBN 1776935 [VXX/31970]
Blank Lab ID: 1435554

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1180748001, 1180748002, 1180748003, 1180748004, 1180748005

## Results by **SW8260C**

| Parameter | Results | LOQ/CL | DL | Units |
|---|---|---|---|---|
| Chloromethane | 0.500U | 1.00 | 0.310 | ug/L |
| cis-1,2-Dichloroethene | 0.500U | 1.00 | 0.310 | ug/L |
| cis-1,3-Dichloropropene | 0.250U | 0.500 | 0.150 | ug/L |
| Dibromochloromethane | 0.250U | 0.500 | 0.150 | ug/L |
| Dibromomethane | 0.500U | 1.00 | 0.310 | ug/L |
| Dichlorodifluoromethane | 0.500U | 1.00 | 0.310 | ug/L |
| Ethylbenzene | 0.500U | 1.00 | 0.310 | ug/L |
| Freon-113 | 5.00U | 10.0 | 3.10 | ug/L |
| Hexachlorobutadiene | 0.500U | 1.00 | 0.310 | ug/L |
| Isopropylbenzene (Cumene) | 0.500U | 1.00 | 0.310 | ug/L |
| Methylene chloride | 2.50U | 5.00 | 1.00 | ug/L |
| Methyl-t-butyl ether | 5.00U | 10.0 | 3.10 | ug/L |
| Naphthalene | 0.500U | 1.00 | 0.310 | ug/L |
| n-Butylbenzene | 0.500U | 1.00 | 0.310 | ug/L |
| n-Propylbenzene | 0.500U | 1.00 | 0.310 | ug/L |
| o-Xylene | 0.500U | 1.00 | 0.310 | ug/L |
| P & M -Xylene | 1.00U | 2.00 | 0.620 | ug/L |
| sec-Butylbenzene | 0.500U | 1.00 | 0.310 | ug/L |
| Styrene | 0.500U | 1.00 | 0.310 | ug/L |
| tert-Butylbenzene | 0.500U | 1.00 | 0.310 | ug/L |
| Tetrachloroethene | 0.500U | 1.00 | 0.310 | ug/L |
| Toluene | 0.500U | 1.00 | 0.310 | ug/L |
| trans-1,2-Dichloroethene | 0.500U | 1.00 | 0.310 | ug/L |
| trans-1,3-Dichloropropene | 0.500U | 1.00 | 0.310 | ug/L |
| Trichloroethene | 0.500U | 1.00 | 0.310 | ug/L |
| Trichlorofluoromethane | 0.500U | 1.00 | 0.310 | ug/L |
| Vinyl acetate | 5.00U | 10.0 | 3.10 | ug/L |
| Vinyl chloride | 0.0750U | 0.150 | 0.0500 | ug/L |
| Xylenes (total) | 1.50U | 3.00 | 1.00 | ug/L |
| **Surrogates** | | | | |
| 1,2-Dichloroethane-D4 (surr) | 101 | 81-118 | | % |
| 4-Bromofluorobenzene (surr) | 102 | 85-114 | | % |
| Toluene-d8 (surr) | 96.6 | 89-112 | | % |



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## Method Blank

Blank ID: MB for HBN 1776935 [VXX/31970]
Blank Lab ID: 1435554

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1180748001, 1180748002, 1180748003, 1180748004, 1180748005

Results by **SW8260C**

| Parameter | Results | LOQ/CL | DL | Units |
|---|---|---|---|---|

### Batch Information

Analytical Batch: VMS17615
Analytical Method: SW8260C
Instrument: VSA Agilent GC/MS 7890B/5977A
Analyst: FDR
Analytical Date/Time: 2/26/2018 8:51:00AM

Prep Batch: VXX31970
Prep Method: SW5030B
Prep Date/Time: 2/26/2018 12:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



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## Blank Spike Summary

Blank Spike ID: LCS for HBN 1180748 [VXX31970]
Blank Spike Lab ID: 1435555
Date Analyzed: 02/26/2018 09:07

Spike Duplicate ID: LCSD for HBN 1180748 [VXX31970]
Spike Duplicate Lab ID: 1435556
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1180748001, 1180748002, 1180748003, 1180748004, 1180748005

## Results by **SW8260C**

| | Blank Spike (ug/L) | | | Spike Duplicate (ug/L) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Parameter | Spike | Result | Rec (%) | Spike | Result | Rec (%) | CL | RPD (%) | RPD CL |
| 1,1,1,2-Tetrachloroethane | 30 | 32.0 | 107 | 30 | 31.9 | 106 | ( 78-124 ) | 0.22 | (< 20 ) |
| 1,1,1-Trichloroethane | 30 | 30.9 | 103 | 30 | 30.8 | 103 | ( 74-131 ) | 0.26 | (< 20 ) |
| 1,1,2,2-Tetrachloroethane | 30 | 31.2 | 104 | 30 | 30.4 | 101 | ( 71-121 ) | 2.50 | (< 20 ) |
| 1,1,2-Trichloroethane | 30 | 32.1 | 107 | 30 | 32.0 | 107 | ( 80-119 ) | 0.37 | (< 20 ) |
| 1,1-Dichloroethane | 30 | 29.5 | 98 | 30 | 29.5 | 98 | ( 77-125 ) | 0.03 | (< 20 ) |
| 1,1-Dichloroethene | 30 | 29.7 | 99 | 30 | 29.3 | 98 | ( 71-131 ) | 1.30 | (< 20 ) |
| 1,1-Dichloropropene | 30 | 32.3 | 108 | 30 | 32.4 | 108 | ( 79-125 ) | 0.15 | (< 20 ) |
| 1,2,3-Trichlorobenzene | 30 | 32.2 | 107 | 30 | 32.0 | 107 | ( 69-129 ) | 0.65 | (< 20 ) |
| 1,2,3-Trichloropropane | 30 | 30.4 | 101 | 30 | 29.5 | 98 | ( 73-122 ) | 3.00 | (< 20 ) |
| 1,2,4-Trichlorobenzene | 30 | 32.8 | 109 | 30 | 32.5 | 108 | ( 69-130 ) | 0.92 | (< 20 ) |
| 1,2,4-Trimethylbenzene | 30 | 31.7 | 106 | 30 | 31.6 | 105 | ( 79-124 ) | 0.25 | (< 20 ) |
| 1,2-Dibromo-3-chloropropane | 30 | 31.0 | 103 | 30 | 30.4 | 101 | ( 62-128 ) | 1.90 | (< 20 ) |
| 1,2-Dibromoethane | 30 | 31.5 | 105 | 30 | 31.7 | 106 | ( 77-121 ) | 0.76 | (< 20 ) |
| 1,2-Dichlorobenzene | 30 | 30.6 | 102 | 30 | 30.8 | 103 | ( 80-119 ) | 0.52 | (< 20 ) |
| 1,2-Dichloroethane | 30 | 27.5 | 92 | 30 | 27.3 | 91 | ( 73-128 ) | 0.77 | (< 20 ) |
| 1,2-Dichloropropane | 30 | 31.7 | 106 | 30 | 31.1 | 104 | ( 78-122 ) | 1.90 | (< 20 ) |
| 1,3,5-Trimethylbenzene | 30 | 31.7 | 106 | 30 | 31.8 | 106 | ( 75-124 ) | 0.22 | (< 20 ) |
| 1,3-Dichlorobenzene | 30 | 30.7 | 102 | 30 | 30.6 | 102 | ( 80-119 ) | 0.33 | (< 20 ) |
| 1,3-Dichloropropane | 30 | 32.2 | 107 | 30 | 32.2 | 107 | ( 80-119 ) | 0.25 | (< 20 ) |
| 1,4-Dichlorobenzene | 30 | 31.5 | 105 | 30 | 31.1 | 104 | ( 79-118 ) | 1.40 | (< 20 ) |
| 2,2-Dichloropropane | 30 | 31.1 | 104 | 30 | 30.7 | 102 | ( 60-139 ) | 1.20 | (< 20 ) |
| 2-Butanone (MEK) | 90 | 84.2 | 94 | 90 | 83.8 | 93 | ( 56-143 ) | 0.40 | (< 20 ) |
| 2-Chlorotoluene | 30 | 31.2 | 104 | 30 | 31.4 | 105 | ( 79-122 ) | 0.42 | (< 20 ) |
| 2-Hexanone | 90 | 89.9 | 100 | 90 | 90.0 | 100 | ( 57-139 ) | 0.07 | (< 20 ) |
| 4-Chlorotoluene | 30 | 31.5 | 105 | 30 | 31.2 | 104 | ( 78-122 ) | 1.10 | (< 20 ) |
| 4-Isopropyltoluene | 30 | 32.2 | 107 | 30 | 32.2 | 107 | ( 77-127 ) | 0.22 | (< 20 ) |
| 4-Methyl-2-pentanone (MIBK) | 90 | 96.6 | 107 | 90 | 96.3 | 107 | ( 67-130 ) | 0.24 | (< 20 ) |
| Benzene | 30 | 30.9 | 103 | 30 | 31.2 | 104 | ( 79-120 ) | 1.00 | (< 20 ) |
| Bromobenzene | 30 | 31.2 | 104 | 30 | 30.9 | 103 | ( 80-120 ) | 0.74 | (< 20 ) |
| Bromochloromethane | 30 | 29.6 | 99 | 30 | 29.2 | 97 | ( 78-123 ) | 1.40 | (< 20 ) |
| Bromodichloromethane | 30 | 31.2 | 104 | 30 | 31.0 | 103 | ( 79-125 ) | 0.48 | (< 20 ) |
| Bromoform | 30 | 31.7 | 106 | 30 | 31.2 | 104 | ( 66-130 ) | 1.50 | (< 20 ) |
| Bromomethane | 30 | 25.0 | 83 | 30 | 26.8 | 89 | ( 53-141 ) | 7.10 | (< 20 ) |
| Carbon disulfide | 45 | 43.8 | 97 | 45 | 43.5 | 97 | ( 64-133 ) | 0.78 | (< 20 ) |

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1180748 [VXX31970]
Blank Spike Lab ID: 1435555
Date Analyzed: 02/26/2018 09:07

Spike Duplicate ID: LCSD for HBN 1180748 [VXX31970]
Spike Duplicate Lab ID: 1435556
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1180748001, 1180748002, 1180748003, 1180748004, 1180748005

## Results by **SW8260C**

| | Blank Spike (ug/L) | | | Spike Duplicate (ug/L) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Parameter | Spike | Result | Rec (%) | Spike | Result | Rec (%) | CL | RPD (%) | RPD CL |
| Carbon tetrachloride | 30 | 32.3 | 108 | 30 | 32.1 | 107 | ( 72-136 ) | 0.62 | (< 20 ) |
| Chlorobenzene | 30 | 29.6 | 99 | 30 | 29.7 | 99 | ( 82-118 ) | 0.30 | (< 20 ) |
| Chloroethane | 30 | 25.6 | 85 | 30 | 25.1 | 84 | ( 60-138 ) | 1.70 | (< 20 ) |
| Chloroform | 30 | 28.8 | 96 | 30 | 28.5 | 95 | ( 79-124 ) | 1.20 | (< 20 ) |
| Chloromethane | 30 | 28.3 | 94 | 30 | 28.3 | 94 | ( 50-139 ) | 0.07 | (< 20 ) |
| cis-1,2-Dichloroethene | 30 | 29.5 | 98 | 30 | 29.3 | 98 | ( 78-123 ) | 0.61 | (< 20 ) |
| cis-1,3-Dichloropropene | 30 | 32.7 | 109 | 30 | 32.4 | 108 | ( 75-124 ) | 0.92 | (< 20 ) |
| Dibromochloromethane | 30 | 31.6 | 105 | 30 | 31.7 | 106 | ( 74-126 ) | 0.47 | (< 20 ) |
| Dibromomethane | 30 | 28.8 | 96 | 30 | 28.4 | 95 | ( 79-123 ) | 1.50 | (< 20 ) |
| Dichlorodifluoromethane | 30 | 30.4 | 101 | 30 | 30.5 | 102 | ( 32-152 ) | 0.39 | (< 20 ) |
| Ethylbenzene | 30 | 30.8 | 103 | 30 | 30.9 | 103 | ( 79-121 ) | 0.36 | (< 20 ) |
| Freon-113 | 45 | 42.6 | 95 | 45 | 42.6 | 95 | ( 70-136 ) | 0.09 | (< 20 ) |
| Hexachlorobutadiene | 30 | 33.1 | 110 | 30 | 33.1 | 110 | ( 66-134 ) | 0.00 | (< 20 ) |
| Isopropylbenzene (Cumene) | 30 | 30.6 | 102 | 30 | 31.3 | 104 | ( 72-131 ) | 2.10 | (< 20 ) |
| Methylene chloride | 30 | 29.3 | 98 | 30 | 29.1 | 97 | ( 74-124 ) | 0.82 | (< 20 ) |
| Methyl-t-butyl ether | 45 | 46.2 | 103 | 45 | 45.4 | 101 | ( 71-124 ) | 1.60 | (< 20 ) |
| Naphthalene | 30 | 32.6 | 109 | 30 | 33.2 | 111 | ( 61-128 ) | 1.80 | (< 20 ) |
| n-Butylbenzene | 30 | 32.5 | 108 | 30 | 32.4 | 108 | ( 75-128 ) | 0.49 | (< 20 ) |
| n-Propylbenzene | 30 | 31.6 | 105 | 30 | 31.9 | 106 | ( 76-126 ) | 1.10 | (< 20 ) |
| o-Xylene | 30 | 30.8 | 103 | 30 | 31.4 | 105 | ( 78-122 ) | 2.00 | (< 20 ) |
| P & M -Xylene | 60 | 61.4 | 102 | 60 | 61.9 | 103 | ( 80-121 ) | 0.79 | (< 20 ) |
| sec-Butylbenzene | 30 | 32.0 | 107 | 30 | 32.4 | 108 | ( 77-126 ) | 1.30 | (< 20 ) |
| Styrene | 30 | 31.1 | 104 | 30 | 31.3 | 104 | ( 78-123 ) | 0.51 | (< 20 ) |
| tert-Butylbenzene | 30 | 32.4 | 108 | 30 | 32.2 | 107 | ( 78-124 ) | 0.62 | (< 20 ) |
| Tetrachloroethene | 30 | 32.1 | 107 | 30 | 32.8 | 109 | ( 74-129 ) | 2.30 | (< 20 ) |
| Toluene | 30 | 29.9 | 100 | 30 | 30.1 | 100 | ( 80-121 ) | 0.53 | (< 20 ) |
| trans-1,2-Dichloroethene | 30 | 29.8 | 99 | 30 | 30.0 | 100 | ( 75-124 ) | 0.90 | (< 20 ) |
| trans-1,3-Dichloropropene | 30 | 32.2 | 107 | 30 | 32.4 | 108 | ( 73-127 ) | 0.65 | (< 20 ) |
| Trichloroethene | 30 | 31.2 | 104 | 30 | 31.2 | 104 | ( 79-123 ) | 0.16 | (< 20 ) |
| Trichlorofluoromethane | 30 | 27.2 | 91 | 30 | 27.0 | 90 | ( 65-141 ) | 0.67 | (< 20 ) |
| Vinyl acetate | 30 | 27.7 | 92 | 30 | 27.5 | 92 | ( 54-146 ) | 0.80 | (< 20 ) |
| Vinyl chloride | 30 | 28.7 | 96 | 30 | 28.8 | 96 | ( 58-137 ) | 0.42 | (< 20 ) |
| Xylenes (total) | 90 | 92.3 | 103 | 90 | 93.4 | 104 | ( 79-121 ) | 1.20 | (< 20 ) |



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## Blank Spike Summary

Blank Spike ID: LCS for HBN 1180748 [VXX31970]
Blank Spike Lab ID: 1435555
Date Analyzed: 02/26/2018 09:07

Spike Duplicate ID: LCSD for HBN 1180748 [VXX31970]
Spike Duplicate Lab ID: 1435556
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1180748001, 1180748002, 1180748003, 1180748004, 1180748005

## Results by **SW8260C**

| | Blank Spike (%) | | | Spike Duplicate (%) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Parameter | Spike | Result | Rec (%) | Spike | Result | Rec (%) | CL | RPD (%) | RPD CL |
| **Surrogates** | | | | | | | | | |
| 1,2-Dichloroethane-D4 (surr) | 30 | 92.6 | 93 | 30 | 91.9 | 92 | ( 81-118 ) | 0.83 | |
| 4-Bromofluorobenzene (surr) | 30 | 101 | 101 | 30 | 99.2 | 99 | ( 85-114 ) | 1.80 | |
| Toluene-d8 (surr) | 30 | 102 | 102 | 30 | 102 | 102 | ( 89-112 ) | 0.07 | |

## Batch Information

Analytical Batch: **VMS17615**
Analytical Method: **SW8260C**
Instrument: **VSA Agilent GC/MS 7890B/5977A**
Analyst: **FDR**

Prep Batch: **VXX31970**
Prep Method: **SW5030B**
Prep Date/Time: **02/26/2018 00:00**
Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL



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## Method Blank

Blank ID: MB for HBN 1776844 [XXX/39093]
Blank Lab ID: 1435255

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1180748001, 1180748002, 1180748003, 1180748004

## Results by **AK102**

| Parameter | Results | LOQ/CL | DL | Units |
|---|---|---|---|---|
| Diesel Range Organics | 0.300U | 0.600 | 0.180 | mg/L |
| **Surrogates** | | | | |
| 5a Androstane (surr) | 85.8 | 60-120 | | % |

## Batch Information

Analytical Batch: XFC14073
Analytical Method: AK102
Instrument: Agilent 7890B R
Analyst: CMS
Analytical Date/Time: 2/26/2018 10:54:00AM

Prep Batch: XXX39093
Prep Method: SW3520C
Prep Date/Time: 2/23/2018 8:40:20AM
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1180748 [XXX39093]
Blank Spike Lab ID: 1435256
Date Analyzed: 02/26/2018 11:03

Spike Duplicate ID: LCSD for HBN 1180748 [XXX39093]
Spike Duplicate Lab ID: 1435257
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1180748001, 1180748002, 1180748003, 1180748004

## Results by **AK102**

| | Blank Spike (mg/L) | | | Spike Duplicate (mg/L) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Parameter | Spike | Result | Rec (%) | Spike | Result | Rec (%) | CL | RPD (%) | RPD CL |
| Diesel Range Organics | 20 | 18.8 | 94 | 20 | 18.1 | 91 | ( 75-125 ) | 3.60 | (< 20 ) |
| **Surrogates** | | | | | | | | | |
| 5a Androstane (surr) | 0.4 | 103 | 103 | 0.4 | 99.7 | 100 | ( 60-120 ) | 3.70 | |

## Batch Information

Analytical Batch: **XFC14073**
Analytical Method: **AK102**
Instrument: **Agilent 7890B R**
Analyst: **CMS**

Prep Batch: **XXX39093**
Prep Method: **SW3520C**
Prep Date/Time: **02/23/2018 08:40**
Spike Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL
Dupe Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL



SGS North America Inc.
200 West Potter Drive Anchorage, AK 95518
t 907.562.2343 f 907.561.5301 www.us.sgs.com

## Method Blank

Blank ID: MB for HBN 1776845 [XXX/39094]
Blank Lab ID: 1435258

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1180748001, 1180748002, 1180748003, 1180748004

## Results by **8270D SIM LV (PAH)**

| Parameter | Results | LOQ/CL | DL | Units |
|---|---|---|---|---|
| 1-Methylnaphthalene | 0.0250U | 0.0500 | 0.0150 | ug/L |
| 2-Methylnaphthalene | 0.0250U | 0.0500 | 0.0150 | ug/L |
| Acenaphthene | 0.0250U | 0.0500 | 0.0150 | ug/L |
| Acenaphthylene | 0.0250U | 0.0500 | 0.0150 | ug/L |
| Anthracene | 0.0250U | 0.0500 | 0.0150 | ug/L |
| Benzo(a)Anthracene | 0.0250U | 0.0500 | 0.0150 | ug/L |
| Benzo[a]pyrene | 0.0100U | 0.0200 | 0.00620 | ug/L |
| Benzo[b]Fluoranthene | 0.0250U | 0.0500 | 0.0150 | ug/L |
| Benzo[g,h,i]perylene | 0.0250U | 0.0500 | 0.0150 | ug/L |
| Benzo[k]fluoranthene | 0.0250U | 0.0500 | 0.0150 | ug/L |
| Chrysene | 0.0250U | 0.0500 | 0.0150 | ug/L |
| Dibenzo[a,h]anthracene | 0.0100U | 0.0200 | 0.00620 | ug/L |
| Fluoranthene | 0.0250U | 0.0500 | 0.0150 | ug/L |
| Fluorene | 0.0250U | 0.0500 | 0.0150 | ug/L |
| Indeno[1,2,3-c,d] pyrene | 0.0250U | 0.0500 | 0.0150 | ug/L |
| Naphthalene | 0.0500U | 0.100 | 0.0310 | ug/L |
| Phenanthrene | 0.0250U | 0.0500 | 0.0150 | ug/L |
| Pyrene | 0.0250U | 0.0500 | 0.0150 | ug/L |
| **Surrogates** | | | | |
| 2-Methylnaphthalene-d10 (surr) | 76.6 | 47-106 | | % |
| Fluoranthene-d10 (surr) | 78.8 | 24-116 | | % |

## Batch Information

Analytical Batch: XMS10650
Analytical Method: 8270D SIM LV (PAH)
Instrument: SVA Agilent 780/5975 GC/MS
Analyst: DSD
Analytical Date/Time: 2/26/2018 6:24:00PM

Prep Batch: XXX39094
Prep Method: SW3520C
Prep Date/Time: 2/23/2018 8:40:18AM
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Print Date: 02/28/2018 3:36:41PM

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1180748 [XXX39094]
Blank Spike Lab ID: 1435259
Date Analyzed: 02/26/2018 18:45

Spike Duplicate ID: LCSD for HBN 1180748 [XXX39094]
Spike Duplicate Lab ID: 1435260
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1180748001, 1180748002, 1180748003, 1180748004

## Results by **8270D SIM LV (PAH)**

| | Blank Spike (ug/L) | | | Spike Duplicate (ug/L) | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Parameter | Spike | Result | Rec (%) | Spike | Result | Rec (%) | CL | RPD (%) | RPD CL |
| 1-Methylnaphthalene | 2 | 2.13 | 106 | 2 | 2.02 | 101 | ( 41-115 ) | 5.00 | (< 20 ) |
| 2-Methylnaphthalene | 2 | 1.98 | 99 | 2 | 1.88 | 94 | ( 39-114 ) | 4.80 | (< 20 ) |
| Acenaphthene | 2 | 2.02 | 101 | 2 | 1.90 | 95 | ( 48-114 ) | 6.50 | (< 20 ) |
| Acenaphthylene | 2 | 2.09 | 104 | 2 | 1.95 | 98 | ( 35-121 ) | 6.60 | (< 20 ) |
| Anthracene | 2 | 2.10 | 105 | 2 | 1.94 | 97 | ( 53-119 ) | 7.90 | (< 20 ) |
| Benzo(a)Anthracene | 2 | 2.11 | 106 | 2 | 1.94 | 97 | ( 59-120 ) | 8.60 | (< 20 ) |
| Benzo[a]pyrene | 2 | 1.78 | 89 | 2 | 1.61 | 81 | ( 53-120 ) | 10.20 | (< 20 ) |
| Benzo[b]Fluoranthene | 2 | 2.07 | 103 | 2 | 1.86 | 93 | ( 53-126 ) | 10.70 | (< 20 ) |
| Benzo[g,h,i]perylene | 2 | 1.49 | 75 | 2 | 1.20 | 60 | ( 44-128 ) | 22.00 * | (< 20 ) |
| Benzo[k]fluoranthene | 2 | 1.87 | 94 | 2 | 1.71 | 85 | ( 54-125 ) | 9.50 | (< 20 ) |
| Chrysene | 2 | 2.16 | 108 | 2 | 2.00 | 100 | ( 57-120 ) | 7.40 | (< 20 ) |
| Dibenzo[a,h]anthracene | 2 | 1.61 | 81 | 2 | 1.28 | 64 | ( 44-131 ) | 23.20 * | (< 20 ) |
| Fluoranthene | 2 | 2.19 | 110 | 2 | 2.01 | 101 | ( 58-120 ) | 8.50 | (< 20 ) |
| Fluorene | 2 | 2.08 | 104 | 2 | 1.94 | 97 | ( 50-118 ) | 6.90 | (< 20 ) |
| Indeno[1,2,3-c,d] pyrene | 2 | 1.61 | 80 | 2 | 1.34 | 67 | ( 48-130 ) | 18.10 | (< 20 ) |
| Naphthalene | 2 | 2.01 | 101 | 2 | 1.92 | 96 | ( 43-114 ) | 4.50 | (< 20 ) |
| Phenanthrene | 2 | 2.05 | 102 | 2 | 1.89 | 94 | ( 53-115 ) | 8.10 | (< 20 ) |
| Pyrene | 2 | 2.24 | 112 | 2 | 2.09 | 105 | ( 53-121 ) | 6.70 | (< 20 ) |
| **Surrogates** | | | | | | | | | |
| 2-Methylnaphthalene-d10 (surr) | 2 | 84.7 | 85 | 2 | 81.3 | 81 | ( 47-106 ) | 4.00 | |
| Fluoranthene-d10 (surr) | 2 | 90.9 | 91 | 2 | 86.5 | 87 | ( 24-116 ) | 4.90 | |

## Batch Information

Analytical Batch: **XMS10650**
Analytical Method: **8270D SIM LV (PAH)**
Instrument: **SVA Agilent 780/5975 GC/MS**
Analyst: **DSD**

Prep Batch: **XXX39094**
Prep Method: **SW3520C**
Prep Date/Time: **02/23/2018 08:40**
Spike Init Wt./Vol.: 2 ug/L Extract Vol: 1 mL
Dupe Init Wt./Vol.: 2 ug/L Extract Vol: 1 mL

Print Date: 02/28/2018 3:36:42PM

1180748

# SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

# CHAIN-OF-CUSTODY RECORD


400 N. 34th Street, Suite 100
Seattle, WA 98103
(206) 632-8020

2043 Westport Center Drive
St. Louis, MO 63146-3564
(314) 699-9660

2705 Saint Andrews Loop, Suite A
Pasco, WA 99301-3378
(509) 946-6309

2355 Hill Road
Fairbanks, AK 99709
(907) 479-0600

5430 Fairbanks Street, Suite 3
Anchorage, AK 99518
(907) 561-2120

3990 Collins Way, Suite 100
Lake Oswego, OR 97035
(503) 223-6147

1321 Bannock Street, Suite 200
Denver, CO 80204
(303) 825-3800


Page 1 of 1

Laboratory SGS

Attn: Jillian

**Analysis Parameters/Sample Container Description**
(include preservative if used)

| Sample Identity | Lab No. | Time | Date Sampled | Comp. | Grab | DRO AK102 | VOCs 8260C | PAHs 8270D SIM | | | | Total Number of Containers | Remarks/Matrix |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 17755-MW30 | (1) A-G | 14:45 | 2/22/18 | | X | X | X | X | | | | 7 | Groundwater |
| 17755-MW40 | (2) A-G | 15:00 | ↓ | | X | X | X | X | | | | 7 | ↓ |
| 17755-MW31 | (3) A-G | 13:03 | | | X | X | X | X | | | | 7 | |
| 17755-MW32 | (4) A-G | 11:45 | | | X | X | X | X | | | | 7 | |
| 17755-WTB4 | (5) A-C | 11:00 | ↓ | | | | X | | | | | 1 box | lab supplied TB |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |

| Project Information | | Sample Receipt | |
|---|---|---|---|
| Project Number: | 32-1-17755-002 | Total Number of Containers | |
| Project Name: | Fairweather | COC Seals/Intact? Y/N/NA | |
| Contact: | JCT, JJK | Received Good Cond./Cold | |
| Ongoing Project? | Yes ☑ No ☐ | Delivery Method: | |
| Sampler: | JJK | (attach shipping bill, if any) | |

| Instructions | |
|---|---|
| Requested Turnaround Time: | STANDARD |
| Special Instructions: | |

| Relinquished By: 1. | Relinquished By: 2. | Relinquished By: 3. |
|---|---|---|
| Signature: | Signature: | Signature: |
| Time: 16:38 | Time: | Time: |
| Printed Name: Jake Kesler | Printed Name: | Printed Name: |
| Date: 2/22/18 | Date: | Date: |
| Company: Shannon + Wilson | Company: | Company: |

| Received By: 1. | Received By: 2. | Received By: 3. |
|---|---|---|
| Signature: | Signature: | Signature: NDW |
| Time: | Time: | Time: 1637 |
| Printed Name: | Printed Name: | Printed Name: Nicole Warner |
| Date: | Date: | Date: 2/22/18 |
| Company: | Company: | Company: SGS |

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report
Yellow - w/shipment - for consignee files
Pink - Shannon & Wilson - Job File

40 of 43

F-19-91/UR

TB 3.1 D41
CS: n/a, hand-delivered

No. 35374

e-Sample Receipt Form

**SGS Workorder #:** **1180748**

| 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 | |
| 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 @ 3.1 °C Therm. ID: D41 |
| | n/a | Cooler ID: @ °C Therm. ID: |
| | n/a | Cooler ID: @ °C Therm. ID: |
| | n/a | Cooler ID: @ °C Therm. ID: |
| | n/a | 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 | |
| If samples received without a temperature blank, the "cooler temperature" will be documented in lieu of the temperature blank & "**COOLER TEMP**" will be noted to the right. In cases where neither a temp blank nor cooler temp can be obtained, note "ambient" or "chilled". | | |
| Note: Identify containers received at non-compliant temperature . Use form FS-0029 if more space is needed. | | |
| **Holding Time / Documentation / Sample Condition Requirements** | | Note: Refer to form F-083 "Sample Guide" for specific holding times. |
| Were samples received within holding time? | yes | |
| Do samples **match COC**** (i.e.,sample IDs,dates/times collected)? | yes | |
| **Note: If times differ <1hr, record details & login per COC. | | |
| Were analyses requested unambiguous? (i.e., method is specified for analyses with >1 option for analysis) | yes | |
| | n/a | ***Exemption permitted for metals (e.g,200.8/6020A). |
| Were proper containers (type/mass/volume/preservative***)used? | yes | |
| **Volatile / LL-Hg Requirements** | | |
| Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples? | yes | |
| 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):

## Sample Containers and Preservatives

| Container Id | Preservative | Container Condition | Container Id | Preservative | Container Condition |
|---|---|---|---|---|---|
| 1180748001-A | HCL to pH < 2 | OK | | | |
| 1180748001-B | HCL to pH < 2 | OK | | | |
| 1180748001-C | No Preservative Required | OK | | | |
| 1180748001-D | No Preservative Required | OK | | | |
| 1180748001-E | HCL to pH < 2 | OK | | | |
| 1180748001-F | HCL to pH < 2 | OK | | | |
| 1180748001-G | HCL to pH < 2 | OK | | | |
| 1180748002-A | HCL to pH < 2 | OK | | | |
| 1180748002-B | HCL to pH < 2 | OK | | | |
| 1180748002-C | No Preservative Required | OK | | | |
| 1180748002-D | No Preservative Required | OK | | | |
| 1180748002-E | HCL to pH < 2 | OK | | | |
| 1180748002-F | HCL to pH < 2 | OK | | | |
| 1180748002-G | HCL to pH < 2 | OK | | | |
| 1180748003-A | HCL to pH < 2 | OK | | | |
| 1180748003-B | HCL to pH < 2 | OK | | | |
| 1180748003-C | No Preservative Required | OK | | | |
| 1180748003-D | No Preservative Required | OK | | | |
| 1180748003-E | HCL to pH < 2 | OK | | | |
| 1180748003-F | HCL to pH < 2 | OK | | | |
| 1180748003-G | HCL to pH < 2 | OK | | | |
| 1180748004-A | HCL to pH < 2 | OK | | | |
| 1180748004-B | HCL to pH < 2 | OK | | | |
| 1180748004-C | No Preservative Required | OK | | | |
| 1180748004-D | No Preservative Required | OK | | | |
| 1180748004-E | HCL to pH < 2 | OK | | | |
| 1180748004-F | HCL to pH < 2 | OK | | | |
| 1180748004-G | HCL to pH < 2 | OK | | | |
| 1180748005-A | HCL to pH < 2 | OK | | | |
| 1180748005-B | HCL to pH < 2 | OK | | | |
| 1180748005-C | HCL to pH < 2 | OK | | | |

| Container Id | Preservative | Container Condition | Container Id | Preservative | Container Condition |
|---|---|---|---|---|---|

Container Condition Glossary

Containers for bacteriological, low level mercury and VOA vials are not opened prior to analysis and will be assigned condition code OK unless evidence indicates than an inappropriate container was submitted.

OK - The container was received at an acceptable pH for the analysis requested.
BU - The container was received with headspace greater than 6mm.
DM - The container was received damaged.
FR - The container was received frozen and not usable for Bacteria or BOD analyses.
IC - The container provided for microbiology analysis was not a laboratory-supplied, pre-sterilized container and therefore was not suitable for analysis.
PA - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt and the container is now at the correct pH. See the Sample Receipt Form for details on the amount and lot # of the preservative added.
PH - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt, but was insufficient to bring the container to the correct pH for the analysis requested. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

# LABORATORY DATA REVIEW CHECKLIST

**CS Report Name:** 151 West 100th Avenue, Anchorage, Alaska **Date:** April 2018

**Laboratory Report Date:** February 28, 2018

**Consultant Firm:** Shannon & Wilson, Inc.

**Completed by:** Jake Kesler
**Title:** Environmental Scientist
**Laboratory Name:** SGS North America Inc.
**Work Order Number:** 1180748
**ADEC File Number:** 2100.38.539

(**NOTE**: ***NA*** = not applicable; Text in *italics* added by Shannon & Wilson, Inc.)

## 1. Laboratory

**a.** Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses? **Yes / No / NA (Please explain.)**
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 / NA**
Comments: *The samples were not transferred to another "network" laboratory or sub-contracted to an alternate laboratory.*

## 2. Chain of Custody (COC)

**a.** COC information completed, signed, and dated (including released/received by)?
**Yes / No / NA (Please explain.)**
Comments**:**

**b.** Correct analyses requested? **Yes / No / *NA* (Please explain.)**
Comments:

## 3. Laboratory Sample Receipt Documentation

**a.** Sample/cooler temperature documented and within range at receipt (0° ± 6° C)?
**Yes / No / NA (Please explain.)**
Comments: *The temperature blank had a temperature of 3.1°* C.

**b.** Sample preservation acceptable - acidified waters, Methanol-preserved VOC soil (GRO, BTEX, VOCs, etc.)? **Yes / No / NA (Please explain.)**
Comments:

**c.** Sample condition documented - broken, leaking (soil MeOH), zero headspace (VOC vials)? **Yes / No / NA (Please explain.)**
Comments:

**d.** If there were any discrepancies, were they documented (e.g., incorrect sample containers/preservation, sample temperatures outside range, insufficient sample size, missing samples)? **Yes / No / NA (Please explain.)**
Comments: *No discrepancies documented.*

**e.** Data quality or usability affected? **Yes / No (Please Explain.)**
Comments*: Data quality/usability are considered unaffected; see above.*

## 4. Case Narrative

**a.** Present and understandable? **Yes / No / NA (Please explain.)**
Comments:

**b.** Discrepancies, errors or QC failures noted by the lab? **Yes / No / NA (Please explain.)**
Comments: *The case narrative notes that:*

- *PAH LCS/LCSD RPD for Dibenzo[a,h]anthracene (23.2) and Benzo[g,h,i]perylene (22) do not meet QC criteria. The associated sample concentrations for this analyte are less than the LOQ.*

**c.** Were corrective actions documented? **Yes / No / NA (Please explain.)**
Comments: *The case narrative does not discuss corrective actions taken.*

**d.** What is the effect on data quality/usability, according to the case narrative?
Comments: *The case narrative notes that the sample concentrations are less than the LOQ.*

## 5. Sample Results

**a.** Correct analyses performed/reported as requested on COC? **Yes / No / NA (Please explain.)**
Comments:

**b.** All applicable holding times met? **Yes / No / NA (Please explain.)**
Comments:

**c.** All soils reported on a dry-weight basis? **Yes / No / NA (Please explain.)**
Comments: *Soil samples were not collected as part of this project.*

**d.** Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project? **Yes / No / NA (Please explain.)**
Comments*: Results for the groundwater samples have an LOQ for 1,2,3-trichloropropane greater than the ADEC Table C groundwater cleanup level.*

**e.** Data quality or usability affected? **(Please explain.)**
Comments: *The groundwater data cannot be used to determine whether or not concentrations of 1,2,3-trichloropropane are present at concentrations less than the LOQ but greater than the ADEC Table C groundwater cleanup level.*

## 6. QC Samples

### a. Method Blank

**i.** One method blank reported per matrix, analysis, and 20 samples?
**Yes / No / NA (Please explain.)**
Comments:

**ii.** All method blank results less than LOQ? **Yes / No / NA (Please explain.)**
Comments:

**iii.** If above LOQ, what samples are affected?
Comments:

**iv.** Do the affected sample(s) have data flags? **Yes / No / NA**
Comments:

If so, are the data flags clearly defined? **Yes / No / NA**
Comments:

**v.** Data quality or usability affected? **(Please explain.)**
Comments:

### b. Laboratory Control Sample/Duplicate (LCS/LCSD)

**i.** Organics - One LCS/LCSD reported per matrix, analysis, and 20 samples?
(LCS/LCSD required per AK methods, LCS required per SW846) **Yes / No / *NA***
**(Please explain.)**
Comments:

**ii.** Metals/Inorganics - One LCS and one sample duplicate reported per matrix, analysis and 20 samples? **Yes / No / NA (Please explain.)**
Comments: *Metals/inorganics not analyzed for this project.*

**iii.** Accuracy – All percent recoveries (%R) reported *and w*ithin method or laboratory limits? And project specified DQOs, if applicable. (AK petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages) **Yes / No / NA (Please explain.)**
Comments:

**iv.** Precision – All relative percent differences (RPDs) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages) **Yes / No / NA (Please explain.)**
Comments: *The PAH LCS/LCSD RPD for Dibenzo[a,h]anthracene (23.2) and Benzo[g,h,i]perylene (22) do not meet QC criteria. The associated sample concentrations for this analyte are less than the LOQ.*

**v.** If %R or RPD is outside of acceptable limits, what samples are affected? ***NA***
Comments: *Each project sample.*

**vi.** Do the affected samples(s) have data flags? **Yes / No / NA**
Comments: *The associated sample concentrations for these analyte are less than the LOQs.*

If so, are the data flags clearly defined? **Yes / No / NA**
Comments: *See above.*

**vii.** Data quality or usability affected? Explain. ***NA***
Comments*: Data quality/usability are unaffected; see above.*

**c. Surrogates - Organics Only**

**i.** Are surrogate recoveries reported for organic analyses, field, QC, and laboratory samples? **Yes / No / NA (Please explain.)**
Comments:

**ii.** Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages) **Yes / No / NA (Please explain.)**
Comments:

**iii.** Do the sample results with failed surrogate recoveries have data flags? **Yes / No / NA (Please explain.)**
Comments:

If so, are the data flags clearly defined? **Yes / No / NA**
Comments:

**iv.** Data quality or usability affected? Explain.
Comments: *See above.*

**d. Trip Blank** - Volatile analyses only (GRO, BTEX, VOCs, etc.)

**i.** One trip blank reported per matrix, analysis and cooler? **Yes / No / NA (Please explain.)**
Comments: *One trip blank (WTB4) was submitted to the lab with the samples.*

**ii.** Is the cooler used to transport the trip blank and volatile samples clearly indicated on the COC? **Yes / No / NA (Please explain if NA or no.)**
Comments: *Only one cooler was used to transport the samples.*

**iii.** All results less than LOQ? **Yes / No / NA (Please explain.)**
Comments:

**iv.** If above LOQ, what samples are affected? **NA**
Comments**:**

**v.** Data quality or usability affected? Explain.
Comments: *Data quality/usability are unaffected; see above.*

**e. Field Duplicate**

**i.** One field duplicate submitted per matrix, analysis and 10 project samples?
**Yes / No / NA (Please explain.)**
Comments: *Sample MW40 is a duplicate of Sample MW30.*

**ii.** Were the field duplicates submitted blind to the lab? **Yes / No / NA (Please explain.)**
Comments*:*

**iii.** Precision – All relative percent differences (RPDs) less than specified DQOs?
(Recommended: 30% for water, 50% for soil) **Yes / No / NA (Please explain.)**
Comments:

**iv.** Data quality or usability affected? Explain. ***NA***
Comments:

**f. Decontamination or Equipment Blank** (if not applicable, a comment stating why must be entered below)
**Yes / No / NA (Please explain.)**
Comments: *A decontamination or equipment blank was not included in our ADEC-approved work plan.*

**i.** All results less than LOQ? **Yes / No / NA (Please explain.)**
Comments:

**ii.** If results are above LOQ, what samples are affected? ***NA***
Comments:

**iii.** Data quality or usability affected? Explain. ***NA***
Comments:

**7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab-specific, etc.)**

**a.** Are they defined and appropriate? **Yes / No / NA**
Comments: *Laboratory-specific flags are defined on page 4 of the SGS report.*

# ATTACHMENT 3

## IMPORTANT INFORMATION ABOUT YOUR

## GEOTECHNICAL/ENVIRONMENTAL REPORT

**SHANNON & WILSON, INC.**
Geotechnical and Environmental Consultants

Attachment to and part of Report 32-1-17755-002

Date: May 2018
To: Fairweather LLC
151 West 100th Avenue, Anchorage, Alaska

# IMPORTANT INFORMATION ABOUT YOUR GEOTECHNICAL/ENVIRONMENTAL REPORT

## 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 which 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