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**July 2021 Groundwater Monitoring Report
Red Salmon Facility
Naknek, Alaska**

ADEC File Number: 2616.38.005

SLR Ref: 105.00151.21001

October 2021

**2021 Groundwater Monitoring Report
Red Salmon Facility
Naknek, Alaska**

Prepared for:

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This document has been prepared by SLR International Corporation. The material and data in this Report were prepared under the supervision and direction of the undersigned.



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EXECUTIVE SUMMARY

Field work was completed by SLR International Corporation (SLR) on July 30 and 31, 2021. Field activities included gauging depth to groundwater, installation of a well point beneath the Cold Storage Building, collection of groundwater samples for analytical test from the nine existing monitoring well network, and collection of surface water samples from two seeps located on the north side of the Cold Storage Building. A groundwater sample could not be collected at the well point beneath the Cold Storage Building due to insufficient water volume.

SLR measured depth to groundwater to the nearest 0.01 feet (ft) at all nine permanent monitoring wells. The groundwater elevations measured in August 2021 were consistent with previous summer and fall sampling events, but higher than those measured in March 2021. The March 2021 groundwater elevations were between 0.25 ft and 2 ft lower than those measured during the summer and fall, likely the result of the frozen ground and reduced recharge during the winter months.

Gasoline range organics (GRO) were detected in three of six primary groundwater samples. The reported concentrations ranged from 108 micrograms per liter ($\mu\text{g/L}$) to 168 $\mu\text{g/L}$. All report GRO detections were below the ADEC groundwater cleanup level of 2,200 $\mu\text{g/L}$.

Diesel range organics (DRO) were reported in groundwater samples in eight of nine samples with concentrations ranging from 258 $\mu\text{g/L}$ at MW-9 to 24,000 $\mu\text{g/L}$ at MW-1. Seven of the eight samples had reported DRO concentrations exceeding the ADEC groundwater cleanup level of 1,500 $\mu\text{g/L}$.

Residual range organics (RRO) were reported in seven groundwater samples with concentrations ranging from 196 $\mu\text{g/L}$ at MW-1 to 1,780 $\mu\text{g/L}$ at MW-2. Three groundwater samples, MW-2, MW-3 and MW-6, had reported RRP concentrations above the ADEC cleanup level of 1,100 $\mu\text{g/L}$.

One or more benzene, toluene, ethylbenzene, or xylenes (BTEX) compounds were reported in groundwater from monitoring wells MW-1, MW-2, and MW-8; however, all BTEX compound concentrations reported were below their respective ADEC groundwater cleanup levels.

The samples collected from MW-1 and MW-2 were analyzed for the full suite of petroleum related volatile organic compounds (VOCs) and polycyclic aromatic hydrocarbons (PAHs). In addition to BTEX, four VOCs, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 4-isopropyltoluene, and isopropylbenzene (Cumene), were reported at low concentrations below their respective ADEC cleanup levels. Naphthalene with reported concentrations at MW-1 and MW-2, 5.15 $\mu\text{g/L}$ and 19.7 $\mu\text{g/L}$, respectively, exceeded the ADEC groundwater cleanup level of 1.7 $\mu\text{g/L}$. Two PAHs, 1-methylnaphthalene and fluorene, were reported at low concentrations below their respective ADEC cleanup levels

Analytical results from samples collected in 2021 indicate that petroleum hydrocarbon concentrations in groundwater in spring of 2021 were generally consistent with concentrations measured in previous years during the late summer or fall.

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ACRONYMS

±	plus or minus
°C	degrees Celsius
AAC	Alaska Administrative Code
ADEC	Alaska Department of Environmental Conservation
AWQS	Alaska Water Quality Standards
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and total xylenes
COC	chain of custody
CSM	Conceptual Site Model
CY	cubic yards
DRO	diesel-range organics
EPA	United States Environmental Protection Agency
ft	feet
GRO	gasoline-range organics
LOD	limit of detection
LOQ	limit of quantitation
µg/l	micrograms per liter
mg/kg	milligrams per kilogram
ml	milliliters
ND	not detected
NPSI	North Pacific Seafoods Incorporated
PAH	polycyclic aromatic hydrocarbons
PID	photoionization detector
RRO	residual-range organics
SGS	SGS North America, Inc.
SIM	Selective Ion Monitoring
Site	Red Salmon Facility
SLR	SLR International Corporation
TAH	total aromatic hydrocarbons
TAqH	total aqueous hydrocarbons
VOC	volatile organic compound

1. INTRODUCTION

SLR International Corporation (SLR) was contracted by North Pacific Seafoods Incorporated (NPSI) to monitor groundwater impacts at the Red Salmon Facility (Site) located in Naknek, Alaska and identified by Alaska Department Environmental Conservation (ADEC) Hazard Identification Number 26421. This report provides a description of field activities conducted in July 2021 including groundwater analytical results and recommendations for future management of the Site.

1.1 PHYSICAL SETTING

The Site is located at Mile Marker 1.5 of the Alaska Peninsula Highway between the highway and the north shore of the tidally influenced Naknek River (Figure 1). The Site consists of multiple buildings used for fish processing, equipment storage, offices, and worker billeting. The Site was constructed on a south facing slope leading to the Naknek River. The measured depth to groundwater varies from approximately 1 to 2 feet (ft) below ground surface (bgs) in monitoring wells located nearest the river, to approximately 10 ft bgs in the upslope monitoring wells. The Site receives approximately 20 inches of annual precipitation.

1.2 PROJECT BACKGROUND

Petroleum hydrocarbon-impacted soil was first observed in spring 2014 near a former valve box adjacent to the Fisherman Gear Storage Building. The valve box was connected by above-ground piping to above-ground Bunker C storage tanks (Figure 2). The source for the impacted soil is believed to be releases of petroleum products from the inactive valve box. The valve box was dismantled and removed. The Bunker C fueling tanks were taken out of service many years ago and are mostly empty except for a small volume of residual product. When the spill was first observed in spring 2014, onsite NPSI personnel excavated visibly impacted soil from around the valve box and placed the excavated soil in fish totes for disposal. The impacted soil was shipped to the Lower 48 for disposal.

Since 2014, four additional releases have been identified in the vicinity of the Generator Building (Figure 1). Soil and groundwater investigations, as well as soil removal activities, have been completed at the Site to address environmental impacts of these releases. Investigation and remediation activities are summarized in the following sections.

1.2.1 2014 INVESTIGATION ACTIVITIES

SLR conducted subsurface investigation activities in the vicinity of the former valve box release adjacent to the Fisherman Gear Storage Building (Figure 1) in September 2014 (SLR, 2014). The investigation activities included:

- Excavating one test pit in the source area;
- Advancing 17 hand auger soil borings to delineate the lateral extent of contaminated soil;

- Collecting soil samples for field and/or laboratory analysis from each test pit and soil boring; and
- Collecting soil samples for disposal profiling.

The analytical results indicated that soil from the test pit and borings contained diesel range organics (DRO) concentrations that exceeded the ADEC Method Two soil cleanup level of 250 milligrams per kilogram (mg/kg) (SLR, 2014). None of the soil samples collected contained residual range organics (RRO) or polycyclic aromatic hydrocarbons (PAHs) concentrations greater than their respective ADEC Method Two soil cleanup levels.

1.2.2 2015 INVESTIGATION AND REMEDIATION ACTIVITIES

Based on the 2014 results, additional investigation and remediation activities were planned and completed in 2015 and included:

- Inspecting areas downslope of the Fisherman Gear Storage Building (Figure 2) to identify seeps and potential discharges to the Naknek River;
- Excavating and removing approximately 50 cubic yard (CY) of hydrocarbon impacted soil on the west side of the Fisherman Gear Storage Building;
- Collecting and analyzing confirmation samples from the excavation floor and side walls;
- Completing and sampling two step-out test pits north-northwest of the excavation area;
- Installing four groundwater monitoring wells (MW1 through MW4) upslope and downslope of the excavation area; and
- Groundwater and seep water sampling and analysis.

Results from soil confirmation samples reported DRO concentrations above the most stringent ADEC Method Two soil cleanup level (i.e., migration to groundwater) after the excavation work was completed (SLR, 2015a). Expansion of the excavation was halted once 50 CY of impacted soil had been removed due to limitations with storage and transportation, and consistent with the Work Plan (SLR, 2105b). Excavated soil was transported to Seattle, Washington via Alaska Marine Lines and then transported to CEMEX (now CADMAN) in Everett, Washington for final disposal.

Analytical results from the two test pits showed no hydrocarbon impacts approximately 50 and 160 ft north-northwest of the excavation. To the east-southeast, soil screening and analytical testing completed in 2014 delineated the extent of soil impacts to approximately 20- to 25-ft southeast of the Fisherman Gear Storage Building (SLR, 2014).

During excavation activities, vertical digging below the depth of the water table was not considered practical for source removal. Hydrocarbon impacts below the water table were assessed by groundwater and seep water sampling. Regenesys ORC[®], an oxygenated compound engineered to accelerate the biological attenuation of remaining petroleum hydrocarbon concentrations in groundwater, was spread across the floor of the excavation prior to backfilling as a treatment for impacted groundwater.

Three of four groundwater samples contained dissolved phase DRO concentrations exceeding ADEC groundwater cleanup levels. Analytical results from one of the seep water samples collected showed that, in addition to dissolved phase DRO, concentrations of RRO and benzene also exceeded ADEC groundwater cleanup levels (SLR, 2015a). The occurrence of dissolved phase benzene and RRO in the seep water was inconsistent with impacts reported in groundwater where benzene and RRO concentrations were below ADEC groundwater cleanup levels (SLR, 2015b).

1.2.3 2016 INVESTIGATION AND REMEDIATION ACTIVITIES

Based on the 2015 results, additional monitoring and remediation was implemented in 2016 as follows:

- Collection of seep water samples and analysis at Seep 1 and Seep 2 (Figure 2);
- Installation of a monitoring well (MW5) on the bank of the Naknek River beneath the Cold Storage Building;
- Groundwater sampling and analysis at five monitoring wells; and
- Removal of approximately five cubic yards of impacted soil from the Laundry Facility area.

Analytical results from the 2016 seep water samples were consistent with the 2015 results (SLR, 2016). Benzene exceeded ADEC groundwater cleanup levels and total aromatic hydrocarbon (TAH) and total aqueous hydrocarbon (TAqH) values exceeded Alaska Water Quality Standards (AWQS). The occurrence of dissolved phase benzene in the seep water was again inconsistent with the impacts reported for groundwater. The concentration of benzene in Seep 1 relative to the monitoring wells sampled suggested a potentially unique and localized source area for the impacts reported at Seep 1.

Similar to the 2015 results, DRO concentrations in groundwater from MW1 and MW2 (Figure 2) exceeded ADEC groundwater cleanup levels but were not detected (ND) in MW4. Benzene, toluene, ethylbenzene, and xylenes (BTEX) concentrations in MW1 and MW2 were only detected at low concentrations below the ADEC groundwater cleanup levels, and were ND at MW4. At MW5, low concentrations of DRO were detected, below the ADEC groundwater cleanup level, and all BTEX compound concentrations were ND.

Five cubic yards of soil excavated from the area near the Laundry Facility was transported to Seattle, Washington via Alaska Marine Lines and then transported to CEMEX (now CADMAN) in Everett, Washington for final disposal. Hydrocarbon impacted soil exceeding the ADEC Method Two soil cleanup levels and located beneath an active above ground fuel tank was left in place. Removing the soil below the tank safely without damaging existing infrastructure was not possible.

1.2.4 2017 INVESTIGATION AND REMEDIATION ACTIVITIES

SLR mobilized to the Site twice in 2017. The first mobilization occurred in May to investigate the extent of petroleum hydrocarbon-impacted soil associated with reported releases in April and May 2017, and to assess potential source areas associated with the existing fuel pipeline system (SLR, 2017a). The following activities were conducted between May 26 and May 29:

- Established a 40-ft by 100-ft square grid, with nodes on 10-ft centers, topographically downslope of the Generator Building as a guide for soil screening and sampling (Figure 2);
- Screened soil in-situ for the presence/absence of hydrocarbons at each grid node (49 points) using visual and olfactory observations and a photoionization detector (PID);
- Conducted additional headspace screening at grid node locations where in-situ PID readings were above background levels (1 part per million).
- Collected nine soil samples for laboratory analysis based on in-situ and headspace screening. Samples were selected from a range of PID results to assess a concentration range for hydrocarbon related compounds and delineate an area of impact;
- Created a preliminary map of fuel pipeline system identifying tanks, valves, couplings, and elbows; and
- Conducted in-situ and headspace screening at each valve, coupling, and elbow location using a PID to identify potential point sources.

In September 2017, SLR staff returned to the Site to evaluate the nature and extent of hydrocarbon impacts to soil and groundwater in the vicinity of the Fisherman Gear Storage Building, the Former Tank Farm, and the Generator Building (Figure 2), as well as to characterize impacts from the May 29, 2017 heating oil release (SLR, 2017b). In September 2017, the following activities were conducted at the Site:

- Completed 13 soil test pit/borings in the vicinity of the Fisherman Gear Storage Building, the Former Tank Farm, and the Generator Building;
- Field screened all soil samples for hydrocarbon impacts and submitted one sample from each of 12 soil test pit/borings for analytical testing;
- Completed four of the test pits downgradient of the Generator Building and Fisherman Gear storage Building as monitoring wells (MW6 to MW9);
- Collected groundwater samples from four new and five existing monitoring wells;
- Collected surface water from the two seeps;
- Analyzed all groundwater samples and surface water samples for hydrocarbon constituents; and
- Re-established and extended the 40 ft by 100 ft square grid with nodes on 10 ft centers created in May 2017 to 70 ft by 110 ft, conducted in-situ PID screening at all 76 nodes, collected 37 soil samples for PID heated headspace screening, and collected 10 soil samples for laboratory analysis of hydrocarbon-related compounds.

Soil results from test pits, borings, and grid sampling, showed concentrations of petroleum hydrocarbon constituents, DRO, GRO, RRO, BTEX, 1-methylnaphthalene, 2-methylnaphthalene, and/or naphthalene exceeding the most stringent ADEC Method Two soil cleanup levels in one

or more locations. Exceedances were within a limited area extending to the southeast from the Generator Building downslope to the Cold Storage Building.

Groundwater and seep water samples collected from wells MW-1 through MW-8 and seeps SW-1 and SW-2 delineate the boundaries of the dissolved phase petroleum hydrocarbon plume with concentrations of DRO, GRO, RRO, BTEX, and/or naphthalene exceeding ADEC cleanup levels at one or more well. The plume of impacted groundwater extends from the Generator Building to Cold Storage Building and is bound to the south by wells MW-4 and MW-9, to the east by well MW-5, and to the north by seep SW-2, well MW-6, and topography (i.e., hillside).

1.2.5 2018 ASSESSMENT ACTIVITIES

In 2018, one new monitoring well, MW-10, and three temporary wells, TW-1, TW-2, and TW3, were installed (Figure 2) to evaluate the upgradient and eastern limits of the dissolved phase contaminant plume. Concentrations of DRO, BTEX, and PAHs in groundwater samples collected at MW-10 were all below laboratory reporting limits and were designated non-detect (ND) (SLR, 2018). Similarly, the results from groundwater samples collected from temporary well points TW-1 and TW-2 during the 2018 event were ND. Temporary well TW-3 did not produce water and could not be sampled.

In 2018, the DRO concentrations reported at MW-4 and MW-9 represented historical highs and first-time exceedances of ADEC's groundwater cleanup levels (SLR, 2018). The DRO concentration reported for MW-9 in 2018 was inconsistent with historical results, groundwater flow patterns (i.e., MW-9 is located upgradient of known release areas), and nearby analytical results. As a result, ADEC requested that MW-9 be sampled twice in 2019, once following breakup in May and again as part of the annual sitewide monitoring event in September.

1.2.6 2019 GROUNDWATER MONITORING

SLR completed two rounds for groundwater sampling at the Red Salmon facility in 2019 (SLR, 2019a). Groundwater samples were collected at MW-9 in May, as requested by ADEC, and again in September during the annual sitewide monitoring event. Groundwater samples were collected at all nine permanent monitoring wells and at one temporary well point under the Cold Storage Building where monitoring well MW-5 had once been located.

In 2019, DRO concentrations in the vicinity of the Fisherman Gear Storage Building and former tank farm, MW-1, MW-2, and MW-4, increased relative to 2018 levels and exceeded the ADEC groundwater cleanup level at MW-1, MW-2, MW-3, MW-4, MW-5R, and MW-8. Benzene concentrations increased in 2019 relative to the 2018 levels and exceeded the ADEC groundwater cleanup level of 4.6 µg/L at monitoring wells MW-1, MW-2, and MW-7; however, at monitoring well MW-3 and MW-8, benzene concentrations decreased to below cleanup levels. The higher concentration of dissolved phase contaminants reported in 2019 were from the topographically lower area of the Site in the vicinity of the Fisherman Gear Storage Building.

1.2.7 2020 GROUNDWATER MONITORING

Groundwater and surface water samples were not collected during 2020 due to COVID-19 travel restriction in Alaska.

1.2.8 MARCH 2021 GROUNDWATER MONITORING

SLR completed a groundwater sampling event at the Red Salmon facility in March 2021. Groundwater samples were collected at six of nine permanent monitoring wells. The purpose of groundwater monitoring was to assess current hydrocarbon concentrations at the facility.

Groundwater elevations measured in March 2021 confirmed that groundwater flow is to the southeast toward the Naknek River, as has been previously reported (SLR, 2018 and SLR, 2019a). However, the depth to groundwater ranged from 0.25 ft to 2 ft lower than the 2019 fall sampling event. These differences are due to the low recharge resulting from winter conditions.

Analytical results from March 2021 were consistent with historical results from the previous fall sampling events, indicating that there is minimal temporal variation due to seasonal climate conditions (SLR, 2021a). Notable changes from fall 2019 include decreases in DRO concentrations at MW-1, MW-2, MW-4, and MW-8, as well as a lack of benzene exceedance at MW-1, MW-2, and MW-7.

1.3 OBJECTIVES AND SCOPE OF WORK

The objectives for July 2021 were to continue monitoring the extent of hydrocarbon impacts in groundwater. To satisfy the project objectives the following scope of work was proposed in 2021:

- Gauge all existing groundwater wells prior to sampling;
- Collect groundwater samples from all existing monitoring wells;
- Install a well point beneath the Cold Storage Building and collect a groundwater sample;
- Collect two surface water samples from known seeps; and
- Analyze all surface water and groundwater samples for petroleum hydrocarbon constituents.

2. REGULATORY CRITERIA

ADEC Method Two groundwater cleanup levels are specified in Title 18 of the Alaska Administrative Code (AAC), Chapter 75 (18 AAC 75) *Oil and Other Hazardous Substances Pollution Control* as amended through June 24, 2020 (ADEC, 2021).

The applicable groundwater cleanup levels for the Site are provided in Table C of 18 AAC 75.345 and are as follows:

- Benzene: 4.6 micrograms per liter ($\mu\text{g/l}$);
- Toluene: 1,100 $\mu\text{g/l}$;
- Ethylbenzene: 15 $\mu\text{g/l}$;
- Total xylenes: 190 $\mu\text{g/l}$;
- GRO: 2,200 $\mu\text{g/l}$;
- DRO: 1,500 $\mu\text{g/l}$;
- RRO: 1,100 $\mu\text{g/l}$; and
- PAHs (individual compound cleanup levels as specified in Table C).

For surface water collected from seeps, the AWQS for Designated Uses (18 AAC 70.020[b]) (ADEC, 2020) are applicable to the Site. The water quality standards for the applicable compounds analyzed are as follows:

- TAH: 10 $\mu\text{g/l}$
- TAqH: 15 $\mu\text{g/l}$

3. FIELD ACTIVITIES

Field work was completed by SLR on July 30 and 31, 2021. The SLR field lead met the requirements of “qualified environmental professionals” under 18 AAC 75.333. All field activities were completed consistent with the *2021 Groundwater Monitoring Work Plan* (Work Plan; SLR, 2021b) and the *ADEC Field Sampling Guidance* (ADEC, 2019). Field photos documenting field activities are provided in Appendix A.

3.1 GROUNDWATER GAUGING AND SAMPLING

Groundwater gauging was completed at nine permanent well locations. Groundwater samples were collected from each of the nine permanent well locations (Figure 2). Depth to groundwater was gauged using an electronic oil/water interface probe prior to sampling. All measurements were made to the nearest 0.01 ft and recorded on Groundwater Sampling Forms provided in Appendix B.

3.1.1 LOW-FLOW WELL SAMPLING METHODOLOGY

The low-stress, low-flow groundwater sampling method was used to collect samples at five of the nine wells, MW-2, MW-4, MW-7, MW-8, and MW-10. The low-flow groundwater sampling method requires purging at a low rate to maintain minimal drawdown (ADEC, 2019). The purge and sample method were used at the remaining four wells, MW-1, MW-3, MW-6, and MW-9. Monitoring wells MW-1, MW-3, MW-4, MW-7, MW-8, and MW-9 were sampled using a peristaltic pump and Teflon-lined tubing. Monitoring wells MW-2, MW-6, and MW-10 were sampled with a downhole monsoon pump. The purge and sample method required purging a well dry and allowing it to recharge to 80% of its pre-purge volume before sampling. The sampling equipment used at each well was documented on Groundwater Sampling Forms provided in Appendix B.

Water quality parameters were measured at regular intervals, approximately every 4 to 5 minutes during purging and were recorded on the Groundwater Sampling Forms. Purging was considered complete once water quality parameters and drawdown had stabilized after three successive discrete measurements. Parameters included the following:

- Temperature (°C), plus or minus (\pm) 3 percent (minimum of ± 0.2 °C);
- pH, ± 0.1 standard units;
- Specific conductance, ± 3 percent;
- Oxidation-reduction potential, ± 10 millivolts;
- Dissolved oxygen, ± 10 percent; and
- Turbidity, qualitative observations of visual clarity.

Water quality parameters and drawdown were recorded on Groundwater Sampling Forms, provided in Appendix B.

3.1.2 PURGE AND SAMPLE WELL SAMPLING METHODOLOGY

At monitoring wells MW-1, MW-3, MW-6, and MW-9, the water yield was insufficient to maintain continuous pumping without purging the well dry. In these cases, a sample was collected from the well after it was purged dry and had recharged to at least 80 percent of its pre-purge volume, if practicable. After sufficient recharge had occurred (up to 24 hours after purging dry), water was pumped directly into the sample containers without any additional purging.

3.2 SURFACE WATER SEEP SAMPLING

Two surface water samples were collected, one each from Seep 1 and Seep 2 (Figure 2). Samples were collected by filling a laboratory cleaned, non-preserved, amber bottle at the discharge point of each seep. Care was taken to minimize contact with vegetation and sediment. Water from the non-preserved bottle was transferred into preserved volatile organic analysis vials, and the non-preserved bottle was then topped off and capped. Seep conditions were noted in the field notebook and Seep Sampling Forms, provided in Appendix B.

3.3 SAMPLE MANAGEMENT

All water samples were labeled and placed into a chilled cooler under Chain of custody (COC) procedures before being transported to SGS in Anchorage. Sample and cooler temperatures were maintained between 0 °C and 6 °C throughout transport to the laboratory. Samples were handled and transported in a manner that maintained sample integrity and did not exceed specified holding times. Each sample and any accompanying trip blank(s) were documented on a COC form.

Information on the sample container labels was reviewed to verify that the information was consistent with information on the COC form and in the field notebook or field forms. The COC form was sealed in the sample cooler during transport to the laboratory. Each cooler was sealed with a signed custody seal for shipment. COC forms are provided as part of the laboratory deliverable provided in Appendix C.

3.4 ANALYTICAL SAMPLING PROGRAM

Groundwater samples collected at the Site were analyzed for the following constituents associated with petroleum hydrocarbons:

- GRO by Alaska Method AK101;
- DRO by Alaska Method AK102;
- RRO by Alaska Method AK103;
- BTEX by EPA Method 8260;
- Samples from MW-1 and MW-2, were analyzed for the full list of VOCs by EPA Method 8260; and
- Samples from MW-1 and MW-2, were analyzed for PAHs by EPA Method 8270-SIM.

Seep surface water samples collected at the Site were analyzed for the following constituents:

- GRO by Alaska Method AK101;
- DRO by Alaska Method AK102;
- RRO by Alaska Method AK103;
- BTEX by EPA Method 8260; and
- PAHs by EPA Method 8270-SIM.

The results of surface water analyses were used to calculate TAH and TAqH values using the methodology described below.

- The TAH value for each surface water sample was calculated by summing detected concentrations of BTEX. For compounds that were ND, the limit of detection (LOD) was used in place of the ND value in the summation.
- The TAqH value for each surface water sample was calculated by summing the calculated TAH value (or the LOD of the TAH value if it was ND) and the detected concentrations of PAHs. For compounds that were ND, the LOD was used in place of the ND value in the summation.

Total xylenes were calculated using the sum of p- and m-xylenes and o-xylene, or by the summation of LOD values for p and m-xylenes and o-xylene in place of any ND values.

3.5 FIELD NOTEBOOK

A field notebook was maintained on a daily basis to document field activities, including the collection of all samples. The field notebook contains the following information:

- Date and time that work commenced;
- Name and location of site;
- Dates and times of sample collection or event;
- Name(s) of SLR field personnel;
- Field observations such as weather conditions or issues that may have affected sample results;
- Explanations of any deviations from the Work Plan, with rationale for deviation; and
- Problems encountered and their resolution.

In addition to field notes, photographs were used to document site conditions and are contained in Appendix A.

3.6 QUALITY ASSURANCE AND QUALITY CONTROL

Field quality assurance and quality control was maintained by adhering to the 2021 Work Plan procedures. SLR personnel collecting samples printed their full name on any field sampling forms used during site work. Each sample was documented on a COC form and submitted to SGS.

Duplicate samples were collected to represent ten percent of the total samples collected.

SLR completed an ADEC Laboratory Data Review Checklist and a Quality Assurance Review in accordance with the ADEC Environmental Laboratory Data and Quality Assurance Requirements Technical Memorandum (ADEC, 2017a). The data were considered to be of good quality and met the requirement for investigation. No data were rejected, and all data were considered usable as qualified. The Quality Assurance Review, ADEC Laboratory Data Review Checklist, and the SGS Analytical Data Reports are provided in Appendix C.

3.7 CALIBRATION PROCEDURES

Field instruments were calibrated daily according to manufacturer specifications and periodically during sampling if instrument drift was suspected. Calibration was documented on a Calibration Log, provided in Appendix B.

3.8 DECONTAMINATION AND WASTE MANAGEMENT

Whenever possible, clean, single-use, disposable equipment was used to eliminate the need for decontamination. Reusable field equipment (e.g., oil/water interface probe) was decontaminated prior to use by washing with an Alconox® solution, rinsing with potable water, and rinsing with deionized water. The oil/water interface probe was washed between use at each well.

Disposable sampling material such as tubing, gloves, paper towels, etc. were disposed of using a garbage bag and placed in an appropriate receptacle at the Site. No hazardous waste was generated during this field effort.

3.9 WORK PLAN DEVIATIONS

Deviations from the Work Plan (SLR, 2021b) are noted here:

- Due to insufficient recharge no sample was collected from temporary well point MW-5R.
- Production Well #3 was not in use during the 2021 groundwater sampling event and therefore was not sampled.

4. INVESTIGATION RESULTS

The results from groundwater monitoring and seep sampling are described in the following sections. Fluid level gauging results are provided in Table 1. Groundwater analytical results from the 2021 sampling event are provided in the Table 2, and historical analytical results are provided in Table 3. Seep sample analytical results are provided in Table 4. All groundwater sample locations and DRO exceedances as well as relative groundwater elevation contours are shown on Figure 3.

4.1 GROUNDWATER GAUGING AND SAMPLING

Groundwater gauging and analytical results are discussed in the following sections.

4.1.1 GROUNDWATER GAUGING

SLR measured depth to groundwater to the nearest 0.01 ft at nine permanent monitoring wells. Relative groundwater elevations were calculated based on top of casing elevations determined by the level loop survey conducted in 2018 (SLR, 2018). Depth to groundwater and relative elevations are provided in Table 1. Relative groundwater elevations were used to generate a potentiometric map (Figure 3). Based on the August 2021 gauging event, groundwater flow is to the southeast toward the Naknek River. The gradient in the lower area of the Site between the Generator Building (MW-3) and Cold Storage Building (MW-2) is approximately 0.03 ft/ft.

The depths to groundwater measured in August 2021 ranged from 10.81 ft bgs at MW-10 to 4.12 ft bgs at MW-4, and were higher than those measured in March 2021. The lower groundwater elevations reported in March 2021 are attributed to winter conditions when the ground was still frozen and groundwater recharge was at a seasonal low. Depth to water measurements for 2019, March 2021, and July 2021 are provided in Table 1.

4.1.2 GROUNDWATER SAMPLING

In 2021, a total of nine primary groundwater samples and one duplicate sample were collected at the Site. The duplicate sample was collected from MW-1 and identified as RS-MW99-073121.

GRO was reported at concentrations above the limit of quantitation (LOQ) of 50 µg/L in three of nine primary groundwater samples: MW-1 at 141 µg/L; MW-2 at 108 µg/L; and MW-8 at 168 µg/L. All detectable GRO concentrations were below the ADEC groundwater cleanup level of 2,200 µg/L (Table 2).

DRO was reported at concentrations above the LOQ of 300 µg/L in seven of the nine groundwater samples: MW-1 at 24,000 µg/L, MW-2 at 4,870 µg/L, MW-3 at 3,880 µg/L, MW-4 at 2,370 µg/L, MW-6 at 1,660 µg/L, MW-7 at 1,640 µg/L, and MW-8 at 4,020 µg/L. The reported concentration of DRO at MW-9 of 258 µg/L was flagged as an estimated value between the LOQ and method detection limit. The DRO concentration at MW-10 was reported as non-detect (i.e., below the LOQ of 300 µg/L). All seven samples with reported DRO concentrations exceeding the LOQ also exceeded the ADEC groundwater cleanup level of 1,500 µg/L (Table 2).

RRO was reported with concentrations exceeding the LOQ of 250 µg/L in seven of nine samples: MW-1 at 196 µg/L, MW-2 at 1,780 µg/L, MW-3 at 1,110 µg/L, MW-4 at 710 µg/L, MW-6 at 1,380 µg/L, MW-7 at 494 µg/L, and MW-8 at 864 µg/L. Of these, three exceeded the ADEC groundwater cleanup level of 1,100 µg/L (Table 2).

One or more BTEX compounds were reported in groundwater above the LOQ from monitoring wells MW-1, MW-2, and MW-8; however, all BTEX compound concentrations reported were below their respective ADEC groundwater cleanup levels (Table 2). Historical BTEX results are provided in Table 3.

The groundwater sample collected from MW-1 and MW-2 were analyzed for the full suite of petroleum related VOCs and PAHs. VOCs and PAHs reported above the LOQ included, 1,3,5-trimethylbenzene, 4-isopropyltoluene, isopropylbenzene (cumene), n-propylbenzene, naphthalene, 1-methylnaphthalene, fluorene, and pyrene (Table 2). However, only naphthalene with reported concentrations of 5.15 µg/L and 19.7 µg/L at monitoring wells MW-1 and MW-2 respectively, exceeded the ADEC cleanup level of 1.7 µg/L. All other VOCs and PAHs exceeding to LOQ were reported below their respective ADEC cleanup level.

4.2 SEEP SAMPLING

Two surface water seep samples were collected, one each from Seep 1 and Seep 2 and analyzed for fuels, BTEX, and PAHs (Figures 2 and 3). TAH and TAqH values were calculated from the analytical results. TAH, TAqH, BTEX, and PAHs results were compared with the ADEC AWQS for freshwater (Table 4).

No individual BTEX constituent was report above LOQ (Table 4) and the TAH (sum of BTEX constituent concentrations) value from seep sample SW-1 and SW-1 were both below the AWQS of 10 µg/L.

The TAqH value from SW-1 and SW-2 were also below the AWQS of 15 µg/L although benzo[g,h,i]perylene, fluorene, and phenanthrene, were reported at very low concentrations. Additionally, DRO and RRO were reported in SW-2 at concentrations exceeding the ADEC groundwater cleanup levels (Table 4).

5. SUMMARY AND RECOMMENDATIONS

SLR completed a second round of groundwater sampling at the Red Salmon facility in 2021 on July 30 and 31. Groundwater samples were collected at nine permanent monitoring wells. Groundwater monitoring locations are shown on Figures 2 and 3. The purpose of groundwater monitoring was to assess current hydrocarbon concentrations at the facility.

5.1 GROUNDWATER

Groundwater elevations measured in August 2021 confirmed that groundwater flow is to the southeast toward the Naknek River (Figure 3) as has been previously reported (SLR, 2018 and SLR, 2019a, and SLR, 2021a).

Analytical results from August 2021 were generally consistent with historical results; however, reported DRO concentrations were overall higher in all wells except MW-9 and MW-10 where reported concentrations are typically below the LOQ. The DRO concentration at MW-6 was reported as exceeding the ADEC groundwater cleanup level for the first time, but this value was considered “tentatively” or “presumptively” identified as present and the associated numerical value is the estimated concentration in the sample between the LOQ and the method detection limit. This exceedance has not been confirmed and should be considered anomalous until additional sampling is conducted.

5.2 SURFACE WATER

Surface water results were inconsistent with previous sampling events. Water collected at Seep 1 had previously exceeded the AWQS for TAH and TAqH. However, during the 2021 sampling event TAH and TAqH results reported for both SW-1 and SW-2 were below AWQS. These results will need to be confirmed with additional monitoring.

5.3 CONCEPTUAL SITE MODEL

A conceptual site model (CSM) provides a way to describe how people, animals, and plants may come in contact with contaminants. Health risks to humans and the environment cannot exist unless chemicals detected at a given site can cause an adverse effect and come into contact with a human or ecological receptor. The presence of potentially complete pathways alone, however, does not imply the existence of unacceptable risks.

The Red Salmon CSM was initially prepared on October 25, 2018, following ADEC guidance (ADEC, 2017b) and presents exposure pathways for chemicals of potential concern, routes of migration, and potential current and future receptors. The Site CSM is reviewed after each sampling event and updated as needed. The current ADEC Human Health scoping forms and graphical representations of the CSM are provided in Appendix D.

There are no current permanent residents at the Red Salmon facility. The facility has restricted access which precludes recreational activities. There are two deep water production wells

upgradient of the excavation area that are occasionally used. The facility property is fully developed with gravel roads, gravel and concrete pads, and buildings. It is heavily used several months of the year. As a result, the facility provides little to no ecological habitat. The lack of habitat and presence of access restrictions eliminates any potential for subsistence activities. The only potential receptors at the facility are indoor and outdoor commercial workers, construction workers, site visitors, and trespassers.

One well, identified as Pump 3 (Figure 1), is located onsite west of the area of impacted groundwater. Pump 3 is operated only intermittently, when canning operations are running, and was not operational in 2021. The impacted groundwater at the Site is located between 0 and 15 ft bgs, while the screened interval of Pump 3 is significantly deeper (likely greater than 100 ft bgs). Drilling logs from other production wells at the Site report layers of high permeability (sands and gravels) are interbedded with layers of low permeability (silts and clays) throughout the boring. Given the presence of multiple aquitards and the depth of the screen, Pump 3, even when pumping, is likely too deep to have an impact on the shallow groundwater impacts.

Potential exposure media include groundwater, surface water, soil, and outdoor air. Potentially complete pathways include exposure to groundwater, surface water, soil, and indoor and outdoor air to site commercial workers, construction workers, and site visitors or trespassers.

5.4 RECOMMENDATIONS

SLR considers the current well network adequate for ongoing monitoring of the groundwater plume. Additional monitoring in fall of 2022 is recommended to confirm the results in 2021 and to continue monitoring the stability and extent of the plume. Additionally, future sampling events should include attempts to install and sample beneath the Cold Storage Building.

6. REFERENCES

- Alaska Department of Environmental Conservation (ADEC), 2021a. Alaska Administrative Code (18 AAC 75), Oil and Other Hazardous Substances Pollution Control, as amended through June 24.
- ADEC, 2020. 18 AAC 70, Water Quality Standards. March 5.
- ADEC, 2019. Field Sampling Guidance. October.
- ADEC, 2017a. Data Quality Objectives, Checklists, Quality Assurance Requirements for Laboratory Data, and Sample Handling. Technical Memorandum. March.
- ADEC, 2017b. Guidance on Developing Conceptual Site Models. January.
- SLR International Corporation (SLR), 2021a. 2021 Groundwater Monitoring Report, Red Salmon Facility, Naknek, Alaska. April.
- SLR, 2021b. 2021 Groundwater Monitoring Work Plan, Red Salmon Facility, Naknek, Alaska. June 21.
- SLR, 2019a. Groundwater Monitoring Report, Red Salmon Facility, Naknek, Alaska. October.
- SLR, 2019b. Groundwater Monitoring Work Plan, Red Salmon Facility, Naknek, Alaska. January 31.
- SLR, 2018. Soil and Groundwater Assessment Report, Red Salmon Facility, Naknek, Alaska. November.
- SLR, 2017a. Preliminary Assessment Report, Red Salmon Facility, Naknek, Alaska. August.
- SLR, 2017b. Soil and Groundwater Assessment Report, Red Salmon Facility, Naknek, Alaska, November.
- SLR, 2016. Soil and Groundwater Assessment and Remediation Report, Red Salmon Facility, Naknek, Alaska, November.
- SLR, 2015a. Soil and Groundwater Assessment and Remediation Report, Red Salmon Facility, Naknek, Alaska, November.
- SLR, 2015b. Soil and Groundwater Assessment and Remediation Work Plan, Red Salmon Facility, Naknek, Alaska, February.
- SLR, 2014. Subsurface Investigation Report, Red Salmon Facility, Naknek, Alaska, November.

LIMITATIONS

The services described in this work product were performed in accordance with generally accepted professional consulting principles and practices. No other representations or warranties, expressed or implied, are made. These services were performed consistent with our agreement with our client. This work product is intended solely for the use and information of our client unless otherwise noted. Any reliance on this work product by a third party is at such party's sole risk.

The purpose of an environmental assessment is to reasonably evaluate the potential for, or actual impact of, past practices on a given site area. As such, it is understood that a balance must be struck between a reasonable inquiry into the environmental issues and an appropriate level of analysis for each conceivable issue of potential concern. The following paragraphs discuss the assumptions and parameters under which such an opinion is rendered.

No investigation can be thorough enough to exclude the presence of hazardous materials at a given site. If hazardous conditions have not been identified during the assessment, it is not guaranteed that these materials are completely absent from the site. Such observations are the result of the services performed within the scope, practical limitations, and cost of the work performed.

FIGURES

- Figure 1 Site Location and Facility Map
- Figure 2 Groundwater Monitoring Well Map
- Figure 3 Groundwater Elevation and DRO Results



NOTES
 BASE AERIAL PHOTOGRAPH REFERENCED FROM AERO-METRIC, INC. TAKEN MAY 3, 2006.

FACILITY IDENTIFICATION

- 2 SPILL LOCATION
- ABOVE GROUND STORAGE TANK
- WATER WELL
- MONITORING WELL LOCATION
- TRANSFORMER
- 1 BUNK HOUSE
- 2 MESS HALL
- 3 OFFICE
- 4 STORAGE
- 5 WASTE OIL FACILITY
- 6 CANNERY
- 7 GENERATOR BUILDING
- 8 DAY TANK FOR GENERATOR
- 9 GAS PUMP
- 10 NIGHT WATCHMAN'S HOUSE
- 11 SUPERINTENDENT'S HOUSE
- 12 FISH PROCESSING
- 13 ICE HOUSE / FACILITIES
- 14 BOILERS
- 15 BOAT STORAGE
- 16 DUMP / SALVAGE
- 17 WATER TOWER
- 18 WATER TREATMENT
- 19 SHOWERS
- 20 TANK FARM
- 21 FORMER TANK FARM

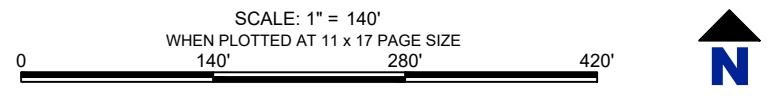
Site
 NORTH PACIFIC SEAFOODS, INC.
 RED SALMON FACILITY
 NAKNEK, ALASKA

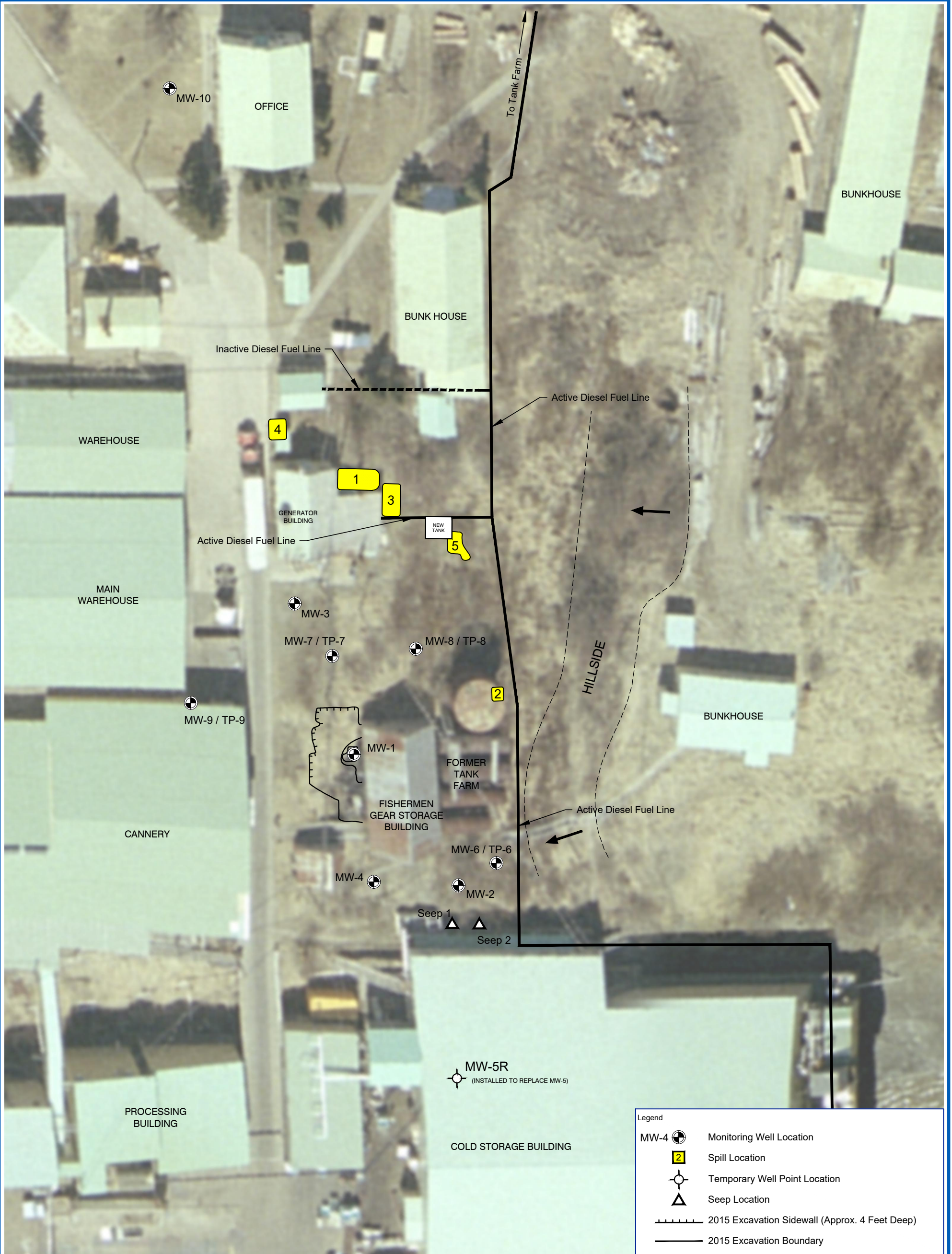
Report
 2021 GROUNDWATER MONITORING REPORT

Drawing
 SITE LOCATION MAP

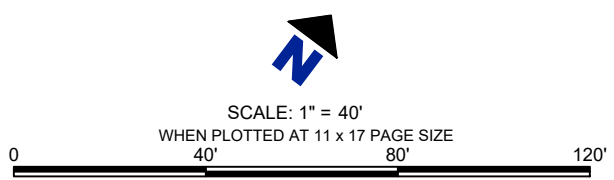
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File Name	F1 NPS Soil & GW WP_21	Project No.	105.00151.21001
			Fig. No. 1

THIS DRAWING IS FOR CONCEPTUAL PURPOSES ONLY. ACTUAL LOCATIONS MAY VARY AND NOT ALL STRUCTURES ARE SHOWN.





Legend	
MW-4	Monitoring Well Location
2	Spill Location
○	Temporary Well Point Location
▲	Seep Location
---	2015 Excavation Sidewall (Approx. 4 Feet Deep)
—	2015 Excavation Boundary



THIS DRAWING IS FOR CONCEPTUAL PURPOSES ONLY. ACTUAL LOCATIONS MAY VARY AND NOT ALL STRUCTURES ARE SHOWN.

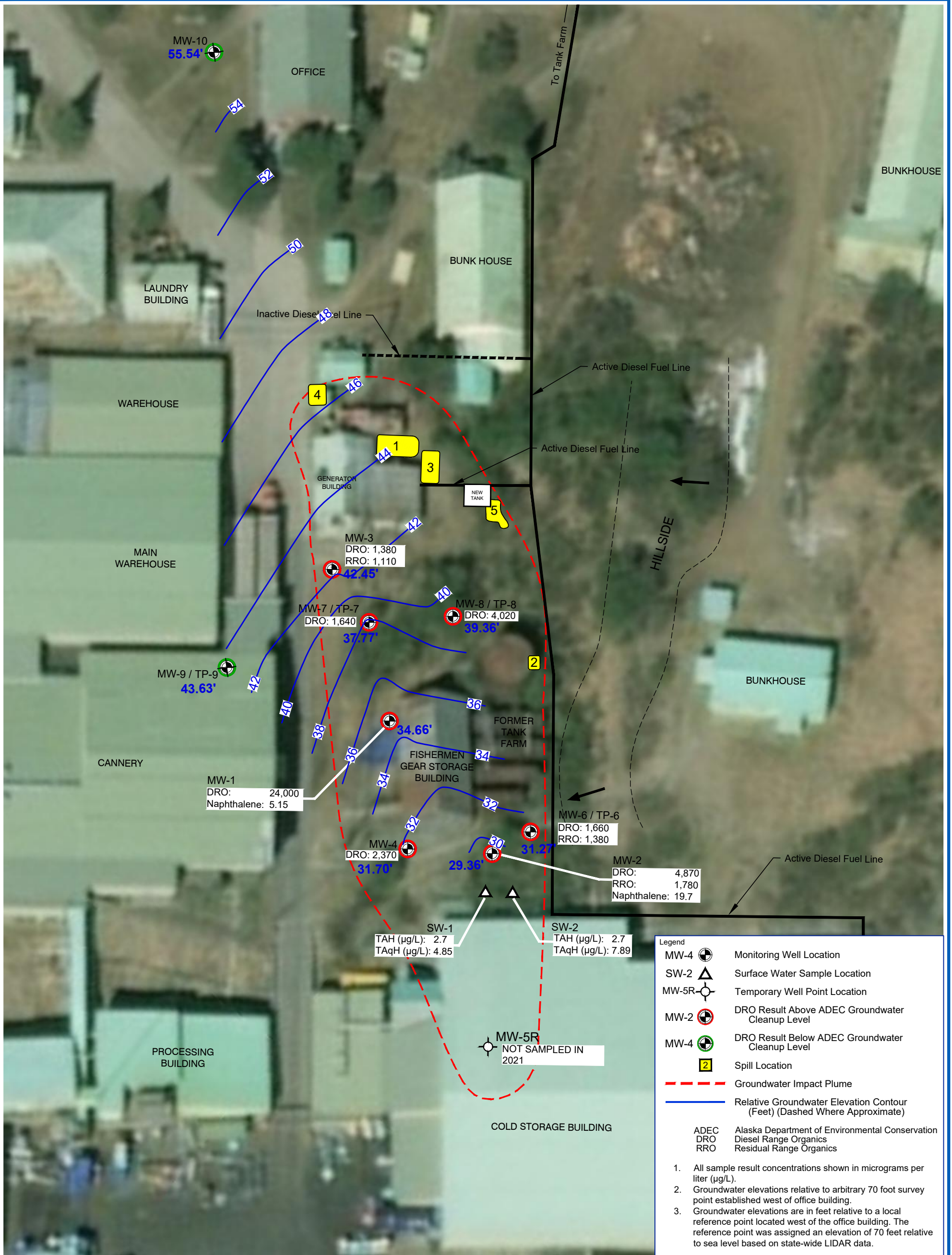


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Drawing
 WELL LOCATIONS

Date	April 2021	Scale	1" = 40 Feet	Fig. No.	2
File Name	F2 NPS Soil & GW RPT_21	Project No.	105.00151.21001		

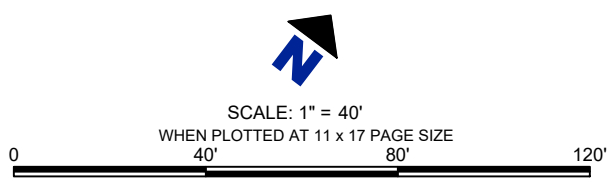


Legend

- MW-4 Monitoring Well Location
- SW-2 Surface Water Sample Location
- MW-5R Temporary Well Point Location
- MW-2 DRO Result Above ADEC Groundwater Cleanup Level
- MW-4 DRO Result Below ADEC Groundwater Cleanup Level
- 2 Spill Location
- Groundwater Impact Plume
- Relative Groundwater Elevation Contour (Feet) (Dashed Where Approximate)

ADEC Alaska Department of Environmental Conservation
DRO Diesel Range Organics
RRO Residual Range Organics

- All sample result concentrations shown in micrograms per liter (µg/L).
- Groundwater elevations relative to arbitrary 70 foot survey point established west of office building.
- Groundwater elevations are in feet relative to a local reference point located west of the office building. The reference point was assigned an elevation of 70 feet relative to sea level based on state-wide LIDAR data.



THIS DRAWING IS FOR CONCEPTUAL PURPOSES ONLY. ACTUAL LOCATIONS MAY VARY AND NOT ALL STRUCTURES ARE SHOWN.



Site
 NORTH PACIFIC SEAFOODS, INC.
 RED SALMON FACILITY
 NAKNEK, ALASKA

Report
 2021 GROUNDWATER MONITORING REPORT

Drawing
 2021 GROUNDWATER AND SURFACE WATER RESULTS

Date	October 2021	Scale	1" = 40 Feet	Fig. No.	3
File Name	F3 NPS Soil & GW RPT_21v2	Project No.	105.00151.21001		

TABLES

Table 1	Groundwater Elevations
Table 2	Groundwater Analytical Results
Table 3	Historical DRO and BTEX Results
Table 4	Surface Water Analytical Results

**Table 1 - 2021 Red Salmon Facility
Groundwater Elevations**

Well	Top of Casing Elevation ¹	DTW Measurement Sept 2019	Groundwater Elevation Sept 2019	DTW Measurement March 2021	Groundwater Elevation March 2021	DTW Measurement August 2021	Groundwater Elevation August 2021	August 2021 Analytical Sample ID
MW-1	40.16	4.83	35.33	6.90	33.26	5.50	34.66	RS-MW1-073121
MW-2	35.71	6.55	29.16	7.02	28.69	6.35	29.36	RS-MW2-073021
MW-3	51.85	9.62	42.23	9.85	42.00	9.40	42.45	RS-MW3-073121
MW-4	35.82	4.17	31.65	5.08	30.74	4.12	31.70	RS-MW4-073021
MW-5R	NM	NM	NM	NM	NM	5.70	No TOC	no sample
MW-6	36.98	5.71	31.27	6.60	30.38	5.71	31.27	RS-MW6-073021
MW-7	47.17	9.45	37.72	11.55	35.62	9.40	37.77	RS-MW7-073021
MW-8	44.21	4.87	39.34	4.45	39.76	4.85	39.36	RS-MW8-073021
MW-9	49.12	5.75	43.37	6.30	42.82	5.49	43.63	RS-MW9-073021
MW-10	66.35	10.82	55.53	NM	NM	10.81	55.54	RS-MW10-073021

Notes

1 - Well casings were surveyed using the level loop method with relative accuracy of 0.02 feet. The survey was not tied in to a known benchmark, however a temporary benchmark (Point 100) was established with an estimated elevation of 70 feet above mean sea level, based on lidar data.

2 - The original MW-5 was destroyed during the winter of 2017-2018 and MW-5R was established in the former location of MW-5 in 2019.

Abbreviations

DTW depth to water
 NM Not measured
 TOC top of casing

**Table 3 - 2021 Red Salmon Facility
Historical DRO and BTEX Results**

Analyte		DRO	Benzene	Toluene	Ethylbenzene	Xylenes
Groundwater Cleanup Level ¹ (µg/L)		1500	4.6	1100	15	190
Well ID	Sample Date	Result ² (µg/L)				
MW-01	8/3/2015	5490	4.39	6.33	7.16	60.1
MW-01	7/27/2016	11100	1.2	4.33	7.65	42.8
MW-01	9/5/2017	10400	5.42	9.58	4.35	34.8
MW-01	9/11/2018	3420	1.94	3.33	7.1	51.2
MW-01	9/6/2019	14100	5.08	0.44 J	5.33	19.1
MW-01	3/17/2021	12800	2.27	0.93 J	14	32.6
MW1	7/31/2021	24000	2.06	0.911 J	4.41	23.6
MW-02	8/3/2015	4020	1.56	ND	ND	1.25 J
MW-02	7/27/2016	2710	0.9	2.96	3.08	5.42
MW-02	9/4/2017	2490	0.17 J	0.51	2.03	4.05
MW-02	9/12/2018	1570	0.19 J	ND	2.01	5.84
MW-02	9/5/2019	5340	4.98	0.34 J	4.9	19.1
MW-02	3/17/2021	1860	0.53	ND	0.904 J	5.48
MW2	7/30/2021	4870	0.284 J	ND	1.01	4.66
MW-03	8/3/2015	3250	1.42	ND	ND	ND
MW-03	9/5/2017	2890	0.2 J	ND	ND	ND
MW-03	9/10/2018	2880	6.37	ND	0.89 J	1.26 J
MW-03	9/6/2019	1580	1.27	ND	ND	ND
MW3	7/31/2021	3880	ND	ND	ND	ND
MW-04	8/3/2015	422 J	ND	0.41 J	3.69	8.54
MW-04	7/27/2016	ND	ND	ND	ND	ND
MW-04	9/4/2017	841	1.43	ND	ND	ND
MW-04	9/11/2018	1620	ND	ND	ND	ND
MW-04	9/5/2019	2320	ND	ND	ND	ND
MW-04	3/17/2021	1680	ND	ND	ND	ND
MW4	7/30/2021	2370	ND	ND	ND	ND
MW-05	7/27/2016	422 J	ND	ND	ND	ND
MW-05	9/5/2017	970	ND	ND	ND	ND
MW-05		Destroyed 2018				
MW-5R ³	9/7/2019	1590	0.2 J,B	ND	ND	ND
MW-06	9/7/2017	823	ND	ND	ND	ND
MW-06	9/12/2018	472 J	ND	ND	ND	ND
MW-06	9/5/2019	395 J	ND	ND	ND	ND
MW-06	3/17/2021	641	ND	ND	ND	ND
MW6	7/30/2021	1660 J	ND	ND	ND	ND
MW-07	9/6/2017	1540	0.17 J	ND	ND	ND
MW-07	9/10/2018	2210	5.26	ND	ND	ND
MW-07	9/6/2019	608 J	10.1	ND	ND	ND
MW-07	3/17/2021	1290 Q-	ND	ND	ND	ND
MW7	7/30/2021	1640	ND	ND	ND	ND
MW-08	9/6/2017	1870	8.71	19.6	13.1	60.6
MW-08	9/14/2018	4120	28.2	0.38 J	7.9	61
MW-08	9/6/2019	3640	ND	ND	ND	ND
MW-08	3/17/2021	2930	1.64	ND	8.72	63.6
MW8	7/30/2021	4020	0.966	ND	2.97	31.3
MW-09	9/7/2017	912	ND	ND	ND	ND
MW-09	9/14/2018	7480	0.52	0.42 J	1.01	146
MW-09	5/1/2019	805	ND	ND	ND	ND
MW-09	9/7/2019	544 J	ND	ND	ND	ND
MW9	7/30/2021	258 J	ND	ND	ND	ND
MW-10	9/14/2018	ND	ND	ND	ND	ND
MW-10	9/6/2019	184 J	3.63	ND	3.61	32.3
MW10	7/30/2021	ND	ND	ND	ND	ND

Notes:

- 1 - ADEC Method Two Groundwater Cleanup Levels, 18 AAC 75.345, Table C (October 27, 2018).
- 2 - If a duplicate sample was collected, the higher of the two values is listed.
- 3 - The original MW-5 was destroyed during the winter of 2017-2018 and MW-5R was established in the former location of MW-5 in 2019.

Table 3 - 2021 Red Salmon Facility Historical DRO and BTEX Results

Abbreviations:

	Exceeds cleanup criteria	DRO	Diesel range organics
BTEX	benzene, toluene, ethylbenzene, and xylenes	LOQ	Limit of Quantitation
DL	Detection Limit	µg/L	micrograms per liter

Data Flags:

B	Associated blank detection, value is biased high.
J	Result is considered an estimated value because the level is below the laboratory LOQ, but above the DL.
ND	Analyte not detected
Q	Result is an estimated value. An additional "+" or "-" indicates a high or low bias, respectively

**Table 4 - 2021 Red Salmon Facility
Surface Water Analytical Results**

Compound in micrograms per liter (µg/L)	Screening Criteria		Sample Location ³						Trip Blank	
	Primary; 18 AAC 70, Water Quality Standards ¹	Reference Only: 18 AAC 75, Table C, Groundwater Cleanup Levels ²	Primary RS-SW1-073121 31-Jul-21 1214774001		Duplicate RS-SW99-073121 31-Jul-21 1214774003		RS-SW2-073121 31-Jul-21 1214774002		TRIP2-073021 30-Jul-21 1214774004	
			Conc. ⁴	Flag	Conc. ⁴	Flag	Conc. ⁴	Flag	Conc. ⁴	Flag
Fuels (AK101, 102, and 103)										
Gasoline Range Organics	--	2200	[50]	U	[50]	U	[50]	U	[50]	U
Diesel Range Organics	--	1500	747	=	675	=	14900	=	--	--
Residual Range Organics	--	1100	449	J	421	J	59500	=	--	--
BTEX (SW8260D)										
Benzene	--	4.6	[0.2]	U	[0.2]	U	[0.2]	U	[0.2]	U
Toluene	--	1100	[0.5]	U	[0.5]	U	[0.5]	U	[0.5]	U
Ethylbenzene	--	15	[0.5]	U	[0.5]	U	[0.5]	U	[0.5]	U
o-Xylene	--	--	[0.5]	U	[0.5]	U	[0.5]	U	[0.5]	U
P & M -Xylene	--	--	[1]	U	[1]	U	[1]	U	[1]	U
Xylenes (total) ⁵	--	190	[1.5]	U	[1.5]	U	[1.5]	U	[1.5]	U
Total BTEX ⁵ (TAH)	10	--	[2.7]	U	[2.7]	U	[2.7]	U	[2.7]	U
PAH SIM (SW8270D LV)										
1-Methylnaphthalene	--	11	[0.0232]	UJ	0.219	Q-	[0.266]	U	--	--
2-Methylnaphthalene	--	36	[0.0232]	UJ	[0.024]	UJ	[0.266]	U	--	--
Acenaphthene	--	530	0.094	Q-	0.24	Q-	[0.266]	U	--	--
Acenaphthylene	--	260	[0.0232]	UJ	[0.024]	UJ	[0.266]	U	--	--
Anthracene	--	43	[0.0232]	UJ	[0.024]	UJ	[0.266]	U	--	--
Benzo(a)Anthracene	--	0.3	[0.0232]	U	[0.024]	UJ	[0.266]	U	--	--
Benzo[a]pyrene	--	0.25	[0.00925]	U	[0.0096]	UJ	[0.107]	U	--	--
Benzo[b]Fluoranthene	--	2.5	[0.0232]	U	[0.024]	UJ	[0.266]	U	--	--
Benzo[g,h,i]perylene	--	0.26	[0.0232]	U	[0.024]	UJ	1.25 Q	=	--	--
Benzo[k]fluoranthene	--	0.8	[0.0232]	U	[0.024]	UJ	[0.266]	U	--	--
Chrysene	--	2	[0.0232]	U	[0.024]	UJ	[0.266]	U	--	--
Dibenzo[a,h]anthracene	--	0.25	[0.00925]	U	[0.0096]	UJ	[0.107]	U	--	--
Fluoranthene	--	260	[0.0232]	U	[0.024]	UJ	[0.266]	U	--	--
Fluorene	--	290	0.421	Q-	1.45	Q-	[0.266]	U	--	--
Indeno[1,2,3-c,d] pyrene	--	0.19	[0.0232]	U	[0.024]	UJ	[0.266]	U	--	--
Naphthalene	--	1.7	[0.0463]	UJ	[0.0481]	UJ	[0.53]	U	--	--
Phenanthrene	--	170	[0.0232]	UJ	0.157	Q-	[0.266]	U	--	--
Pyrene	--	120	[0.0232]	U	[0.024]	UJ	[0.266]	U	--	--
PAH	--	--	0.835	Q-	2.15	Q-	5.19	=	--	--
TAqH	15	--	3.54	Q-	4.85	Q-	7.89	=	--	--

Notes:

- 1 - This screening level corresponds to ADEC 18 AAC 70.020, March 5, 2020.
- 2 - This screening level corresponds to ADEC 18 AAC 75.345 Table C, October 27, 2018.
- 3 - The field sample identification number, date collected, and laboratory sample identification number are provided.
- 4 - For detected results, the sample result is listed in this column. For results of non-detect, the LOD is listed in [].
- 5 - Total values were the summation of detected compounds only. If compounds were not detected, then the highest LOD was listed.

Sample results above the screening level are shown shaded yellow to indicate exceedance of screening criteria.

Shaded green indicates that the LOD did not meet project cleanup levels.

Data Flags:

- = Analyte detected at concentration listed in column to the left.
- B Associated blank detection, value may be biased high.
- J Result is considered an estimated value because the level is below the laboratory LOQ, but above the DL.
- U Nondetect, LOD is in brackets in the concentration column.
- Q Result is an estimated value. An additional "+" or "-" indicates a high or low bias, respectively

Abbreviations:

- Not applicable or screening criteria does not exist for this compound
- AAC Alaska Administrative Code
- ADEC Alaska Department of Environmental Conservation
- BTEX benzene, toluene, ethylbenzene, and xylenes
- DL Detection Limit
- LOD Limit of Detection
- LOQ Limit of Quantitation
- LV low volume
- PAH polycyclic aromatic hydrocarbons
- SIM Selective Ion Monitoring
- TAH total aromatic hydrocarbons
- TAqH total aqueous hydrocarbons
- µg/L micrograms per liter

**APPENDIX A
PHOTOGRAPH LOG**

**2021 Groundwater Monitoring Report
Red Salmon Facility
Naknek, Alaska**

October 2021



Photo 1: Monitoring Well 5R



SITE PHOTOGRAPHS
July 2021

2021 Groundwater Monitoring Report
Red Salmon Facility, Naknek, Alaska

Job No: 105.00151.21001



Photo 2: Monitoring Well 6 sampling set up.



SITE PHOTOGRAPHS
July 2021

**2021 Groundwater Monitoring Report
Red Salmon Facility, Naknek, Alaska**

Job No: 105.00151.21001



Photo 3: Sampling at Monitoring Well 9.

APPENDIX B
FIELD NOTES AND FIELD FORMS

2021 Groundwater Monitoring Report
Red Salmon Facility
Naknek, Alaska

October 2021



SLR ALASKA TAILGATE SAFETY MEETING FORM

Section 1: General Information		
Date: 7/30/21	Time: 10:00	Project #: 105.00151.2100
Project Name: Red Salmon GW Sampling		
Project Location: <input checked="" type="checkbox"/> Remote <input type="checkbox"/> Urban <input type="checkbox"/> Other _____		
Type of Work: <input checked="" type="checkbox"/> Sampling <input type="checkbox"/> Excavation <input type="checkbox"/> Construction <input type="checkbox"/> Other (describe below)		
HSE Documents: <input checked="" type="checkbox"/> SLR HSEP <input type="checkbox"/> SLR JHA <input type="checkbox"/> Client H&S Plan <input type="checkbox"/> Client JHA/JSA <input type="checkbox"/> Work Permit		
<input type="checkbox"/> Other: _____ None (explain): _____		

Section 2: Task Description
<p>GW Sampling</p> <ul style="list-style-type: none"> - Slip, Trip, Falls - Long day planned - Possible rain

Section 3: Hazard Identification & Control (check all applicable)		
Environmental: <input checked="" type="checkbox"/> Remote Travel <input checked="" type="checkbox"/> Driving <input type="checkbox"/> Temperature Extremes <input type="checkbox"/> Wildlife (bears, moose, etc.) <input type="checkbox"/> Insects (mosquitoes, etc.) <input type="checkbox"/> Poisonous plants <input type="checkbox"/> Other: _____	Chemical Exposure Routes: <input type="checkbox"/> Ingestion <input checked="" type="checkbox"/> Inhalation <input type="checkbox"/> Dermal Contact Chemical Type <input checked="" type="checkbox"/> Hydrocarbon/VOC <input type="checkbox"/> Metals/PCB/PFAS <input type="checkbox"/> Other: _____	Physical: <input checked="" type="checkbox"/> Slip/trip/fall <input type="checkbox"/> Heavy Machinery <input type="checkbox"/> Classified (FRC) areas <input type="checkbox"/> Noise <input type="checkbox"/> Dust <input type="checkbox"/> Repetitive stress <input type="checkbox"/> Other: _____

Section 4: Personal Protective Equipment (check all applicable)		
General: <input checked="" type="checkbox"/> Safety Glasses (required) <input type="checkbox"/> Hardhat <input checked="" type="checkbox"/> Safety toe boots <input checked="" type="checkbox"/> Reflective clothing <input type="checkbox"/> Hearing protection <input type="checkbox"/> Arctic Gear (boot/jacket/pant) <input type="checkbox"/> Flame-resistant (FRC) outerwear	Gloves: <input checked="" type="checkbox"/> Nitrile (disposable) <input type="checkbox"/> Chemical resistant (e.g. neoprene) <input type="checkbox"/> Cut-resistant (e.g. Kevlar®) <input type="checkbox"/> Abrasion-resistant (e.g. leather) <input type="checkbox"/> Insulating (hot/cold) <input type="checkbox"/> Other: _____	Miscellaneous: <input type="checkbox"/> LEL/VOC/H ₂ S Monitor <input type="checkbox"/> Dust mask (N95) <input type="checkbox"/> ½ Face respirator <input type="checkbox"/> Fall protection <input type="checkbox"/> Bear Spray <input type="checkbox"/> Other: _____

ATTENDEES:					
Name	/	Signature	Name	/	Signature
Stan Flagel	/		MEGHAN DOTTEN	/	
	/			/	
	/			/	
	/			/	



SLR ALASKA TAILGATE SAFETY MEETING FORM

Section 1: General Information		
Date: 7/31/21	Time: 0728	Project #: 105.00151.21001
Project Name: Red Salmon GLO Sampling		
Project Location: Naknek, AK <input checked="" type="checkbox"/> Remote <input type="checkbox"/> Urban <input type="checkbox"/> Other _____		
Type of Work: <input checked="" type="checkbox"/> Sampling <input type="checkbox"/> Excavation <input type="checkbox"/> Construction <input type="checkbox"/> Other (describe below)		
HSE Documents: <input checked="" type="checkbox"/> SLR HSEP <input type="checkbox"/> SLR JHA <input type="checkbox"/> Client H&S Plan <input type="checkbox"/> Client JHA/JSA <input type="checkbox"/> Work Permit		
<input type="checkbox"/> Other: _____ None (explain): _____		

Section 2: Task Description
<p>GLO sampling, demobilization</p> <p>- Lifting - Driving</p> <p>- Slip, Trips + Falls</p>

Section 3: Hazard Identification & Control (check all applicable)		
Environmental: <input checked="" type="checkbox"/> Remote Travel <input checked="" type="checkbox"/> Driving <input type="checkbox"/> Temperature Extremes <input type="checkbox"/> Wildlife (bears, moose, etc.) <input type="checkbox"/> Insects (mosquitoes, etc.) <input type="checkbox"/> Poisonous plants <input type="checkbox"/> Other: _____	Chemical Exposure Routes: <input type="checkbox"/> Ingestion <input checked="" type="checkbox"/> Inhalation <input checked="" type="checkbox"/> Dermal Contact Chemical Type <input checked="" type="checkbox"/> Hydrocarbon/VOC <input type="checkbox"/> Metals/PCB/PFAS <input type="checkbox"/> Other: _____	Physical: <input checked="" type="checkbox"/> Slip/trip/fall <input type="checkbox"/> Heavy Machinery <input type="checkbox"/> Classified (FRC) areas <input type="checkbox"/> Noise <input type="checkbox"/> Dust <input type="checkbox"/> Repetitive stress <input type="checkbox"/> Other: _____

Section 4: Personal Protective Equipment (check all applicable)		
General: <input checked="" type="checkbox"/> Safety Glasses (required) <input checked="" type="checkbox"/> Hardhat <input checked="" type="checkbox"/> Safety toe boots <input checked="" type="checkbox"/> Reflective clothing <input type="checkbox"/> Hearing protection <input type="checkbox"/> Arctic Gear (boot/jacket/pant) <input type="checkbox"/> Flame-resistant (FRC) outerwear	Gloves: <input checked="" type="checkbox"/> Nitrile (disposable) <input type="checkbox"/> Chemical resistant (e.g. neoprene) <input type="checkbox"/> Cut-resistant (e.g. Kevlar®) <input type="checkbox"/> Abrasion-resistant (e.g. leather) <input type="checkbox"/> Insulating (hot/cold) <input type="checkbox"/> Other: _____	Miscellaneous: <input type="checkbox"/> LEL/VOC/H ₂ S Monitor <input type="checkbox"/> Dust mask (N95) <input type="checkbox"/> ½ Face respirator <input type="checkbox"/> Fall protection <input type="checkbox"/> Bear Spray <input type="checkbox"/> Other: _____

ATTENDEES:			
Name	Signature	Name	Signature
Star Flager		METHAN DUTTEN	

Star Fogel, Meghan Dotten
Weather: Overcast, light
rain, Temp 60°. Wind
calm

~~Safety~~ Meeting & Slip, trip,
Falls.

Organize work site. Calibrate
instruments.

set up @ MW-10.

finished MW-10 (had lunch ~12:00-12:30)

set up @ MW-3

MW-3 too little water; ~~set up @~~ ^{move to} MW-9 & will
return to grab samples later.

set up @ MW-9; swap to Perist Pump
due to ~~minimal~~ ~~short~~ short depth.

finished MW-9.

set up @ MW-6. Installed MW-5R well point.

trouble getting MW-6 samples.

Set up MW-5R.

Peri Pump Probs @ MW-5R; Return to finish MW-6
sample (Peri pump works, was tubing problems (→))

17:48 cont. set up MW-2

- Dinner -

18:57 began MW-2 sampling

19:15 finished MW-2.

→ returned to MW-5R; purge drilled well
[No SAMPLES] got PAH samples
from MW-2.

19:57 set up MW-4 → Well needs new plug

21:03 finished MW-4 capped w/duct tape

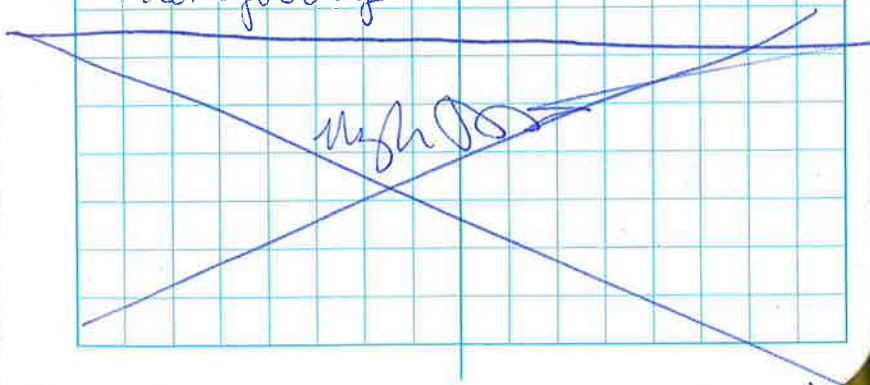
21:11 set up MW-7

21:47 finished MW-7

21:50 set up MW-8

22:17 finish MW-8

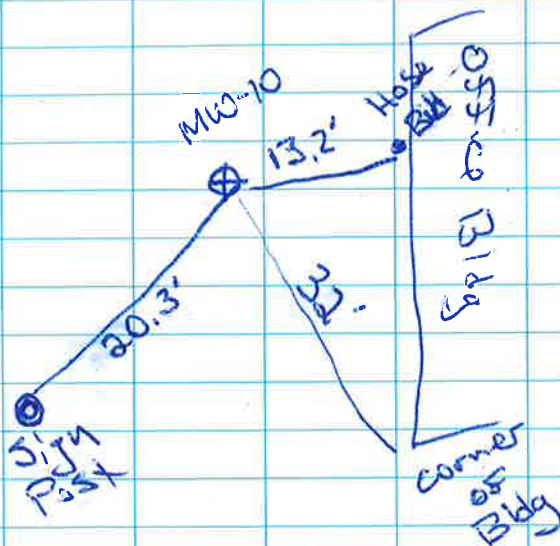
22:30 done for day



30 Stan Fligel + Meghan
Rotten
Weather - overcast, breezy
5 to 15 mph, Temp 55°F

Arrive at gear staging
area. Complete Tailgate
safety meeting. Calibrate
YSI

05 Swing ties to MW-10



Swing Ties MW-10
Hose Bib Handle - 13.2'
Sign Post - - - - 20.5
Corner of Office - - 32'
Bldg

- 8:20 set up MW-1, Duplicated sample
- 8:50 finish MW-1
- 9:25 return to MW-3 to get samples. Flow < 50ml, no parameters
- 9:56 completed MW-3 samples. Dug out Seep 1 & Seep 2 to be sampled.
- 10:28 Sample Seep 1, Duplicate sample
- 10:42 Sample Seep 2
- 11:12 MW-5R not sampled not enough water in well purges dug < 50ml
- 11:15 HCL is unused sample bottle neutralized with baking soda and DI water bottle were despresed of

with used disposable sampling supplies in site dumpster.

SO complete packing load vehicle. check out of lodging

o Head to ACE for shipping.

o A Gear and samples dropped off at ACE. flight to arrive by Monday 8/3

o Head to airport for flight back to Wc

~~Handwritten scribbles~~

Large empty grid area for notes.



Groundwater Sampling Form

Site/Client Name: <u>Red Salmon</u>	Well ID: <u>MW-1</u>
Project #: <u>105</u>	Sample ID: <u>RS-MW1-073121</u>
Sampled By: <u>S. Flagel & M. Dutton</u>	Sample Time: <u>8:45</u> Sample Date: <u>07/31/21</u>
Weather Conditions: <u>Rainy/overcast</u>	Duplicate ID: <u>RS-MW99-073121</u>
Sampling Method: <input checked="" type="checkbox"/> Low Flow <input type="checkbox"/> Other	MS/MSD <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Trip Blank Required: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Well Information	
Well Type: <input checked="" type="checkbox"/> Permanent <input type="checkbox"/> Temporary	Well Diameter: <u>2</u> in. Screen Interval: _____ ft BGS to _____ ft BGS
Well Condition: <input checked="" type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor (if fair or poor explain in Notes)	Stickup <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No; if yes, <u>3</u> ft above ground

Gauging/Purging Information	
Depth to Water (ft BTOC): <u>5.50</u>	Tubing/Pump Depth (ft. BTOC): <u>7.75</u>
Total Depth (ft BTOC): <u>9.59</u>	Purge Start Time (24-hr): <u>8:23</u>
Depth to Product (ft. BTOC): <u>-</u>	Purge End Time (24-hr): <u>8:41</u>
Product Thickness (ft): <u>-</u>	Total Purge Time (min): <u>18</u>

LOW FLOW: Max Draw Down = (Tubing Depth - Top of Screen Depth) _____ X 0.25 = _____ (ft); if screen interval is not known or water table is below top of screen, then use default value of 0.3 ft. 1 gal = 3.785L, 1L = 0.264 gal

Min. purge volume if required: purge volume (gal) = volume of water/ft _____ (gal/ft) X Water column thickness _____ (ft) X # of casing volumes _____ = _____ gal

Well Diameter - gal/ft	1" - 0.041 gal/ft	2" - 0.163 gal/ft	4" - 0.653 gal/ft	6" - 1.469 gal/ft
------------------------	-------------------	-------------------	-------------------	-------------------

Water Quality Parameters										
(Achieve stable parameters for 3 consecutive reading, 4 parameters if practical [each reading taken after pumping a minimum of 1 flow through cell volume])										
Time (24-hr)	Flow Rate (mL/minute)	Purge Volume (L or gal) (Circle one)	Temp (°C) (± 3%)	Specific Conductance (µS/cm²) (± 3%)	DO (mg/L) (± 10%)	pH (± 0.1)	ORP (mV) (± 10mV)	Turbidity (NTU) (± 10%, or <5 NTU)	DTW (ft BTOC)	Drawdown (ft) (Max _____ ft)
<u>8:20</u>									<u>5.50</u>	
<u>8:23</u>	<u>200</u>	<u>.25</u>	<u>10.45</u>	<u>783</u>	<u>.45</u>	<u>5.87</u>	<u>164.3</u>	<u>11.8</u>	<u>5.35</u>	
<u>8:28</u>	<u>200</u>	<u>.5</u>	<u>10.72</u>	<u>759</u>	<u>.47</u>	<u>6.01</u>	<u>148.3</u>	<u>8.25</u>	<u>5.60</u>	
<u>8:31</u>	<u>200</u>	<u>.75</u>	<u>11.2</u>	<u>750</u>	<u>.42</u>	<u>6.14</u>	<u>128.3</u>	<u>7.36</u>	<u>5.81</u>	
<u>8:34</u>	<u>200</u>	<u>1</u>	<u>11.59</u>	<u>755</u>	<u>.39</u>	<u>6.19</u>	<u>116.2</u>	<u>8.79</u>	<u>6.0</u>	
<u>8:37</u>	<u>175</u>	<u>1.25</u>	<u>11.95</u>	<u>756</u>	<u>.42</u>	<u>6.23</u>	<u>104.4</u>	<u>7.74</u>	<u>6.12</u>	
<u>8:41</u>	<u>175</u>	<u>1.5</u>	<u>12.04</u>	<u>761</u>	<u>.37</u>	<u>6.25</u>	<u>97.6</u>	<u>7.03</u>	<u>6.31</u>	
Parameter Stable (Check applicable)			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Sample Color: clear Sample Odor: app. hydrocarbon Sheen: yes

Analytical Sampling		
Analyses	Check Applicable	Comments
<u>GRO</u>	<input checked="" type="checkbox"/>	
<u>DKO/PKO</u>	<input checked="" type="checkbox"/>	
<u>TEX FULL VOC</u>	<input checked="" type="checkbox"/>	
<u>PAH</u>	<input checked="" type="checkbox"/>	

Notes: dedicated tubing

Equipment:
 Tubing: Polyethylene PFTE-Lined Other _____ O.D. 1/4" 3/8" 1/2" Left in well Yes No
 Pump/Bailer: peru pump Multi-Parameter Meter make/SN# YSI 566 14D104101
 W.L. Indicator: Solexist Int. Turbidity Meter (Make/SN#) SLR#1 Filtered Yes No Lot # _____
Purge Water Handling: Discharged to surface Containerized Treated (how?) GAC



Groundwater Sampling Form

Site/Client Name: <u>Red Salmon</u>	Well ID: <u>MW-2</u>
Project #: <u>105.00151.21001</u>	Sample ID: <u>RS-MW2-073021</u>
Sampled By: <u>S. Fligel & M. Dotten</u>	Sample Time: <u>18:57</u> Sample Date: <u>07/30/21</u>
Weather Conditions: <u>light sprinkle</u>	Duplicate ID:
Sampling Method: <input checked="" type="checkbox"/> Low Flow <input type="checkbox"/> Other _____	MS/MSD <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Trip Blank Required: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Well Information

Well Type: <input checked="" type="checkbox"/> Permanent <input type="checkbox"/> Temporary	Well Diameter: <u>2</u> in.	Screen Interval: _____ ft BGS to _____ ft BGS
Well Condition: <input checked="" type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor (if fair or poor explain in Notes)	Stickup <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No; if yes, <u>3</u> ft above ground	

Gauging/Purging Information

Depth to Water (ft BTOC): <u>6.35</u>	Tubing/Pump Depth (ft. BTOC): <u>7.5</u>
Total Depth (ft BTOC): <u>8.12</u>	Purge Start Time (24-hr) <u>18:30</u>
Depth to Product (ft. BTOC) <u>—</u>	Purge End Time (24-hr) <u>18:55</u>
Product Thickness (ft) <u>—</u>	Total Purge Time (min) <u>25</u>

LOW FLOW: Max Draw Down = (Tubing Depth - Top of Screen Depth) _____ X 0.25 = _____ (ft); if screen interval is not known or water table is below top of screen, then use default value of 0.3 ft. 1 gal = 3.785L, 1L = 0.264 gal

Min. purge volume if required: purge volume (gal) = volume of water/ft _____ (gal/ft) X Water column thickness _____ (ft) X # of casing volumes _____ = _____ gal

Well Diameter - gal/ft	1" - 0.041 gal/ft	2" - 0.163 gal/ft	4" - 0.653 gal/ft	6" - 1.469 gal/ft
------------------------	-------------------	-------------------	-------------------	-------------------

Water Quality Parameters

(Achieve stable parameters for 3 consecutive reading, 4 parameters if practical [each reading taken after pumping a minimum of 1 flow through cell volume])

Time (24-hr)	Flow Rate (mL/minute)	Purge Volume (L or gal) (Circle one)	Temp (°C) (± 3%)	Specific Conductance (µS/cm²) (± 3%)	DO (mg/L) (± 10%)	pH (± 0.1)	ORP (mV) (± 10mV)	Turbidity (NTU) (± 10%, or <5 NTU)	DTW (ft BTOC)	Drawdown (ft) (Max _____ ft)
<u>18:28</u>									<u>6.56</u>	
<u>18:30</u>	<u>100</u>	<u>.20</u>	<u>9.99</u>	<u>193</u>	<u>2.30</u>	<u>6.32</u>	<u>101.1</u>	<u>125</u>	<u>6.40</u>	
<u>18:35</u>	<u>200</u>	<u>.5</u>	<u>10.21</u>	<u>189</u>	<u>2.83</u>	<u>6.35</u>	<u>89.6</u>	<u>49.4</u>	<u>6.91</u>	
<u>18:39</u>	<u>200</u>	<u>.7</u>	<u>10.09</u>	<u>198</u>	<u>1.14</u>	<u>6.41</u>	<u>70.7</u>	<u>29.6</u>	<u>6.91</u>	
<u>18:44</u>	<u>400</u>	<u>1</u>	<u>9.66</u>	<u>202</u>	<u>.54</u>	<u>6.49</u>	<u>60.4</u>	<u>81.7</u>	<u>7.25</u>	
<u>18:47</u>	<u>400</u>	<u>1.25</u>	<u>9.03</u>	<u>192</u>	<u>.33</u>	<u>6.43</u>	<u>62.1</u>	<u>13.0</u>	<u>7.23</u>	
<u>18:51</u>	<u>200</u>	<u>1.5</u>	<u>9.12</u>	<u>191</u>	<u>.35</u>	<u>6.45</u>	<u>60.9</u>	<u>8.12</u>	<u>7.02</u>	
<u>18:55</u>	<u>400</u>	<u>2.00</u>	<u>9.37</u>	<u>196</u>	<u>.36</u>	<u>6.46</u>	<u>59.6</u>	<u>19.6</u>	<u>7.20</u>	
Parameter Stable (Check applicable) <u>sfv</u> <u>v</u> <u>v</u>										

Sample Color: <u>clear</u>	Sample Odor: <u>no</u>	Sheen: <u>slight sheen</u>
----------------------------	------------------------	----------------------------

Analytical Sampling

Analyses	Check Applicable	Comments
<u>Geo</u>	<input checked="" type="checkbox"/>	
<u>DPD/PP0</u>	<input checked="" type="checkbox"/>	
<u>BTEX Full VOCs</u>	<input checked="" type="checkbox"/>	
<u>PAH</u>	<input checked="" type="checkbox"/>	
<u>At 101</u>	<input checked="" type="checkbox"/>	
<u>At 102/103</u>	<input checked="" type="checkbox"/>	
<u>8260</u>	<input checked="" type="checkbox"/>	
<u>8270</u>	<input checked="" type="checkbox"/>	

Notes:

Equipment:

Tubing: Polyethylene PTFE-Lined Other _____ O.D. 1/4" 3/8" 1/2" Left in well Yes No

Pump/Bailer monsoon Multi-Parameter Meter make/SN# YSI 506 #14D104101

W.L. Indicator 0.1/water Turbidity Meter (Make/SN#) SLR#1 Filtered Yes No Lot # _____

Purge Water Handling: Discharged to surface Containerized Treated (how?) GAC



Groundwater Sampling Form

Site/Client Name: <u>Red Salmon</u>	Well ID: <u>MW-B</u>
Project #: <u>105.00151, 21001</u>	Sample ID: <u>RS MW3-073021</u> <u>MD</u>
Sampled By: <u>S. FLAGEL & M. DOTEN</u>	Sample Time: <u>10:30</u> Sample Date: <u>7/30/21</u>
Weather Conditions: <u>overcast; ~60°; calm winds</u>	Duplicate ID: <u>9:25</u> <u>7/31/21</u>
Sampling Method: <input checked="" type="checkbox"/> Low Flow <input type="checkbox"/> Other	MS/MSD <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Trip Blank Required: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Well Information	
Well Type: <input checked="" type="checkbox"/> Permanent <input type="checkbox"/> Temporary	Well Diameter: <u>2</u> in. Screen Interval: _____ ft BGS to _____ ft BGS
Well Condition: <input checked="" type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor (if fair or poor explain in Notes)	Stickup <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No; if yes, <u>3</u> ft above ground

Gauging/Purging Information	
Depth to Water (ft BTOC): <u>6.5</u> <u>9.4</u>	Tubing/Pump Depth (ft. BTOC): <u>9.5</u>
Total Depth (ft BTOC): <u>10.4</u>	Purge Start Time (24-hr): <u>13:43</u>
Depth to Product (ft. BTOC): _____	Purge End Time (24-hr): <u>N/A</u>
Product Thickness (ft): _____	Total Purge Time (min): <u><100ml</u>

LOW FLOW: Max Draw Down = (Tubing Depth - Top of Screen Depth) X 0.25 = _____ (ft); if screen interval is not known or water table is below top of screen, then use default value of 0.3 ft. 1 gal = 3.785L, 1L = 0.264 gal

Min. purge volume if required: purge volume (gal) = volume of water/ft (gal/ft) X Water column thickness (ft) X # of casing volumes = _____ gal

Well Diameter - gal/ft	1" - 0.041 gal/ft	2" - 0.163 gal/ft	4" - 0.653 gal/ft	6" - 1.469 gal/ft
------------------------	-------------------	-------------------	-------------------	-------------------

Water Quality Parameters										
(Achieve stable parameters for 3 consecutive reading, 4 parameters if practical [each reading taken after pumping a minimum of 1 flow through cell volume])										
Time (24-hr)	Flow Rate (mL/minute)	Purge Volume (L or gal Circle one)	Temp (°C) (± 3%)	Specific Conductance (µS/cm²) (± 3%)	DO (mg/L) (± 10%)	pH (± 0.1)	ORP (mV) (± 10mV)	Turbidity (NTU) (± 10%, or <5 NTU)	DTW (ft BTOC)	Drawdown (ft) (Max _____ ft)
<u>13:43</u>									<u>9.4</u>	
<p>parameters were not collected. Well recharge was too slow for purging. Well was purged dry after returning later on, after recharge, sample was collected. Only enough water to fill sample jars [none for parameters]</p>										
<u>7/31/21 09:25</u>	<u>40</u>								<u>9.78</u>	
Parameter Stable (Check applicable)										

Sample Color: slightly cloudy Sample Odor: N/A Sheen: N/A

Analytical Sampling		
Analyses	Check Applicable	Comments
<u>GRO A101</u>	<input checked="" type="checkbox"/>	
<u>PRO/PRO A101/03</u>	<input checked="" type="checkbox"/>	
<u>BTEX 8260</u>	<input checked="" type="checkbox"/>	

Notes: dedicated tubing (bladder pump). Returned 7/31/21 to get samples due to not being able to get them 7/30/21

Equipment:

Tubing: Polyethylene PFTE-Lined Other _____ O.D. 1/4" 3/8" 1/2" Left in well Yes No

Pump/Bailer: peristaltic Multi-Parameter Meter make/SN# YSI 566 14D104101

W.L. Indicator: Solinst #122 Turbidity Meter (Make/SN#) SLR #1 Filtered Yes No Lot # _____

Purge Water Handling: Discharged to surface Containerized Treated (how?) GAC



Groundwater Sampling Form

Site/Client Name: <u>Red Salmon</u>	Well ID: <u>MW-4</u>
Project #: <u>105.00151.21001</u>	Sample ID: <u>RS-MW4-073021</u>
Sampled By: <u>S. Flayel & M. Dotlen</u>	Sample Time: <u>20:51</u> Sample Date: <u>7/30/21</u>
Weather Conditions: <u>overcast; 26°; mild wind</u>	Duplicate ID:
Sampling Method: <input checked="" type="checkbox"/> Low Flow <input type="checkbox"/> Other	MS/MSD <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Trip Blank Required: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Well Information	
Well Type: <input checked="" type="checkbox"/> Permanent <input type="checkbox"/> Temporary	Well Diameter <u>2</u> in. Screen Interval: _____ ft BGS to _____ ft BGS
Well Condition: <input checked="" type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor (if fair or poor explain in Notes)	Stickup <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No, If yes, <u>3</u> ft above ground

Gauging/Purging Information	
Depth to Water (ft BTOC): <u>4.12</u>	Tubing/Pump Depth (ft. BTOC): <u>8.5</u>
Total Depth (ft BTOC): <u>10.49</u>	Purge Start Time (24-hr): <u>20:28</u>
Depth to Product (ft. BTOC) _____	Purge End Time (24-hr): <u>20:47</u>
Product Thickness (ft) _____	Total Purge Time (min) <u>19</u>

LOW FLOW: Max Draw Down = (Tubing Depth - Top of Screen Depth) _____ X 0.25 = _____ (ft); if screen interval is not known or water table is below top of screen, then use default value of 0.3 ft. 1 gal = 3.785L, 1L = 0.264 gal

Min. purge volume if required: purge volume (gal) = volume of water/ft _____ (gal/ft) X Water column thickness _____ (ft) X # of casing volumes _____ = _____ gal

Well Diameter - gal/ft	1" - 0.041 gal/ft	2" - 0.163 gal/ft	4" - 0.653 gal/ft	6" - 1.469 gal/ft
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Water Quality Parameters

(Achieve stable parameters for 3 consecutive reading, 4 parameters if practical [each reading taken after pumping a minimum of 1 flow through cell volume])

Time (24-hr)	Flow Rate (mL/minute)	Purge Volume (L or gal) (Circle one)	Temp (°C) (± 3%)	Specific Conductance (µS/cm²) (± 3%)	DO (mg/L) (± 10%)	pH (± 0.1)	ORP (mV) (± 10mV)	Turbidity (NTU) (± 10%, or <5 NTU)	DTW (ft BTOC)	Drawdown (ft) (Max _____ ft)
20:28 ^{MD} 20:08									4.12	
20:28	200	.25	9.93	269	.77	6.56	68.1	555	4.92	
20:36	150	.35	10.06	258	.77	6.54	64.7	244	5.24	
20:40	200	.5	10.28	254	.61	6.53	63.0	178	5.25	
20:44	200	.75	10.4	252	.70	6.53	62.0	105	5.26	
20:47	200	1	10.45	251	.70	6.53	61.6	94	5.26	
Parameter Stable (Check applicable)			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Sample Color: clear Sample Odor: N/A Sheen: slight sheen

Analytical Sampling		
Analyses	Check Applicable	Comments
GRO	<input checked="" type="checkbox"/>	<u>AK 101</u>
DRO/PRO	<input checked="" type="checkbox"/>	<u>AK 102/103</u>
BTEX	<input checked="" type="checkbox"/>	<u>8260</u>

Notes: Well needs new plug; capped w/ Duct tape. dedicated tubing (peri pump)

Equipment:

Tubing: Polyethylene PTFE-Lined Other _____ O.D. 1/4" 3/8" 1/2" Left in well Yes No

Pump/Bailer manitou Peri Pump Multi-Parameter Meter make/SN# YSI 566 14D104107

W.L. Indicator 21/water Turbidity Meter (Make/SN#) SCP #1 Filtered Yes No Lot # _____

Purge Water Handling: Discharged to surface Containerized Treated (how?) GAC



Groundwater Sampling Form

Site/Client Name: <u>Red Salmon</u>		Well ID: <u>MW-5R</u> ^{5R}								
Project #: <u>105.00157.2100.1</u>		Sample ID: RS-MW5R-073021 <u>no sample</u>								
Sampled By: <u>S Fligel & M Botter</u>		Sample Time: <u>N/A</u> Sample Date: <u>7/30/21</u>								
Weather Conditions: <u>overcast; 60°; mild wind</u>		Duplicate ID:								
Sampling Method: <input checked="" type="checkbox"/> Low Flow <input type="checkbox"/> Other		MS/MSD <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Trip Blank Required: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No								
Well Information										
Well Type: <input type="checkbox"/> Permanent <input checked="" type="checkbox"/> Temporary		Well Diameter: <u>2</u> in. Screen Interval: <u>7.29</u> ft BGS to <u>6.29</u> ft BGS								
Well Condition: <input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor (if fair or poor explain in Notes)		Stickup <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No; if yes, <u>3</u> ft above ground								
Gauging/Purging Information										
Depth to Water (ft BTOC): <u>5.70</u>		Tubing/Pump Depth (ft. BTOC): <u>6.2</u>								
Total Depth (ft BTOC): <u>7.29</u>		Purge Start Time (24-hr): <u>1655</u>								
Depth to Product (ft. BTOC)		Purge End Time (24-hr)								
Product Thickness (ft)		Total Purge Time (min)								
LOW FLOW: Max Draw Down = (Tubing Depth - Top of Screen Depth) <u> </u> X 0.25 <u> </u> (ft); if screen interval is not known or water table is below top of screen, then use default value of 0.3 ft. 1 gal = 3.785L, 1L = 0.264 gal										
Min. purge volume if required: purge volume (gal) = volume of water/ft <u> </u> (gal/ft) X Water column thickness <u> </u> (ft) X # of casing volumes <u> </u> = <u> </u> gal										
Well Diameter - gal/ft	1" - 0.041 gal/ft	2" - 0.163 gal/ft	4" - 0.653 gal/ft							
6" - 1.469 gal/ft										
Water Quality Parameters										
(Achieve stable parameters for 3 consecutive reading, 4 parameters if practical [each reading taken after pumping a minimum of 1 flow through cell volume])										
Time (24-hr)	Flow Rate (mL/minute)	Purge Volume (L or gal) (Circle one)	Temp (°C) (± 3%)	Specific Conductance (µS/cm²) (± 3%)	DO (mg/L) (± 10%)	pH (± 0.1)	ORP (mV) (± 10mV)	Turbidity (NTU) (± 10%, or <5 NTU)	DTW (ft BTOC)	Drawdown (ft) (Max <u> </u> ft)
<u>16:50</u>									<u>5.70</u>	
<u>18:45</u>									<u>5.30</u>	
Parameter Stable (Check applicable)										
Sample Color:			Sample Odor:				Sheen:			
Analytical Sampling										
Analyses					Check Applicable			Comments		
<u>GRO</u>								<u>no sample collected</u>		
<u>DRO/PRO</u>										
<u>BTEX</u>										
Notes: <u>well point installed. No sample - Purge dry after 500 ml discharge.</u>										
Equipment:										
Tubing: <input type="checkbox"/> Polyethylene <input checked="" type="checkbox"/> PTFE-Lined <input type="checkbox"/> Other		Multi-Parameter Meter make/SN# <u>N/A</u>		O.D. <input checked="" type="checkbox"/> 1/4" <input type="checkbox"/> 3/8" <input type="checkbox"/> 1/2"		Left in well <input type="checkbox"/> Yes <input type="checkbox"/> No				
Pump/Bailer <u>Peris Pump</u>		Filtered <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Lot #						
W.L. Indicator <u>Oil/Water</u>		Turbidity Meter (Make/SN#) <u>N/A</u>								
Purge Water Handling: <input type="checkbox"/> Discharged to surface <input type="checkbox"/> Containerized <input type="checkbox"/> Treated (how?) <u>N/A</u>										



Groundwater Sampling Form

Site/Client Name: <u>Rud Salmon</u>	Well ID: <u>MW-6</u>
Project #: <u>105.00151.2101</u>	Sample ID: <u>25-MW6-073021</u>
Sampled By: <u>S Fliegel & M. Dotlen</u>	Sample Time: <u>16:09</u> Sample Date: <u>7/30/21</u>
Weather Conditions: <u>overcast; ~60°; mild wind</u>	Duplicate ID:
Sampling Method: <input checked="" type="checkbox"/> Low Flow <input type="checkbox"/> Other _____	MS/MSD <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Trip Blank Required: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Well Information	
Well Type: <input checked="" type="checkbox"/> Permanent <input type="checkbox"/> Temporary	Well Diameter: <u>2</u> in. Screen Interval: _____ ft BGS to _____ ft BGS
Well Condition: <input checked="" type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor (if fair or poor explain in Notes)	Stickup <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No; If yes, <u>3</u> ft above ground

Gauging/Purging Information	
Depth to Water (ft BTOC): <u>5.71</u>	Tubing/Pump Depth (ft. BTOC): <u>8.3</u>
Total Depth (ft BTOC): <u>10.15</u>	Purge Start Time (24-hr) <u>15:32</u>
Depth to Product (ft. BTOC) <u>-</u>	Purge End Time (24-hr) <u>16:04</u>
Product Thickness (ft) <u>-</u>	Total Purge Time (min) <u>32</u>

LOW FLOW: Max Draw Down = (Tubing Depth - Top of Screen Depth) X 0.25 = _____ (ft); if screen interval is not known or water table is below top of screen, then use default value of 0.3 ft. **1 gal = 3.785L, 1L = 0.264 gal**

Min. purge volume if required: purge volume (gal) = volume of water/ft (gal/ft) X Water column thickness (ft) X # of casing volumes = _____ gal

Well Diameter - gal/ft	1" - 0.041 gal/ft	2" - 0.163 gal/ft	4" - 0.653 gal/ft	6" - 1.469 gal/ft
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Water Quality Parameters

(Achieve stable parameters for 3 consecutive reading, 4 parameters if practical [each reading taken after pumping a minimum of 1 flow through cell volume])

Time (24-hr)	Flow Rate (mL/minute)	Purge Volume (L or gal) (Circle one)	Temp (°C) (± 3%)	Specific Conductance (µS/cm²) (± 3%)	DO (mg/L) (± 10%)	pH (± 0.1)	ORP (mV) (± 10mV)	Turbidity (NTU) (± 10%, or <5 NTU)	DTW (ft BTOC)	Drawdown (ft) (Max _____ ft)
<u>15:28</u>									<u>5.71</u>	
<u>15:32</u>									<u>5.57</u>	
<u>15:36</u>	<u>200</u>	<u>.25</u>	<u>12.07</u>	<u>107</u>	<u>1.77</u>	<u>5.76</u>	<u>115</u>	<u>785</u>	<u>6.32</u>	
<u>15:40</u>	<u>175</u>	<u>.50</u>	<u>12.43</u>	<u>105</u>	<u>1.65</u>	<u>5.72</u>	<u>111.3</u>	<u>OR</u>	<u>7.10</u>	
<u>15:52</u>	<u>100</u>	<u>.75</u>	<u>12.82</u>	<u>119</u>	<u>1.85</u>	<u>5.82</u>	<u>106.3</u>	<u>OR</u>	<u>7.82</u>	
<u>16:00</u>	<u>200</u>	<u>.85</u>	<u>13.88</u>	<u>118</u>	<u>1.34</u>	<u>5.81</u>	<u>105.7</u>	<u>OR</u>	<u>8.45</u>	
Parameter Stable (Check applicable)										

Sample Color: <u>murky brownish orange</u>	Sample Odor: <u>None</u>	Sheen: <u>None</u>
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Analyses	Check Applicable	Comments
<u>GPO</u>	<input checked="" type="checkbox"/>	<u>AK 101</u>
<u>DRO/PRO</u>	<input checked="" type="checkbox"/>	<u>AK 102/103</u>
<u>BTEX</u>	<input checked="" type="checkbox"/>	<u>8260</u>

Notes: OR = out of range. low recharge. Pumping stopped for 5 minutes. Samples collected 4/7/21 expired -> all 3 GPO samples. Water level @ time of sampling: 7.92
Switched to Peri Pump 1/2 way through sampling. Needs new silicone tubing.

Equipment:
 Tubing: Polyethylene PFTE-Lined Other _____ O.D. 1/4" 3/8" 1/2" Left in well Yes No
 Pump/Bailer: monsoon/peri Multi-Parameter Meter make/SN# YSI 566# 14D 104101
 W.L. Indicator: Solinist 122 Turbidity Meter (Make/SN#) SLR-#1 Filtered Yes No Lot # _____
 Purge Water Handling: Discharged to surface Containerized Treated (how?) GAC



Groundwater Sampling Form

Site/Client Name: <u>Red Salmon</u>					Well ID: <u>MW-7</u>					
Project #: <u>105.00157.21001</u>					Sample ID: <u>MW-7 RS-MW7-073021</u>					
Sampled By: <u>S. Flouzel + M. Dotten</u>					Sample Time: <u>21:34</u>		Sample Date: <u>7/30/21</u>			
Weather Conditions: <u>overcast</u>					Duplicate ID: _____					
Sampling Method: <input checked="" type="checkbox"/> Low Flow <input type="checkbox"/> Other _____					MS/MSD <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Trip Blank Required: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No					
Well Information										
Well Type: <input checked="" type="checkbox"/> Permanent <input type="checkbox"/> Temporary			Well Diameter: <u>2</u> in.		Screen Interval: _____ ft BGS to _____ ft BGS					
Well Condition: <input type="checkbox"/> Good <input checked="" type="checkbox"/> Fair <input type="checkbox"/> Poor (if fair or poor explain in Notes)					Stickup <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No; If yes, <u>3</u> ft above ground					
Gauging/Purging Information										
Depth to Water (ft BTOC): <u>9.40</u> ^{MD}					Tubing/Pump Depth (ft. BTOC): <u>11</u>					
Total Depth (ft BTOC): <u>12.28</u>					Purge Start Time (24-hr) <u>21:21</u>					
Depth to Product (ft. BTOC) _____					Purge End Time (24-hr) <u>21:32</u>					
Product Thickness (ft) _____					Total Purge Time (min) <u>11</u>					
LOW FLOW: Max Draw Down = (Tubing Depth - Top of Screen Depth) _____ X 0.25 = _____ (ft); if screen interval is not known or water table is below top of screen, then use default value of 0.3 ft. 1 gal = 3.785L, 1L = 0.264 gal										
Min. purge volume if required: purge volume (gal) = volume of water/ft _____ (gal/ft) X Water column thickness _____ (ft) X # of casing volumes _____ = _____ gal										
Well Diameter - gal/ft		1" - 0.041 gal/ft		2" - 0.163 gal/ft		4" - 0.653 gal/ft		6" - 1.469 gal/ft		
Water Quality Parameters										
(Achieve stable parameters for 3 consecutive reading, 4 parameters if practical [each reading taken after pumping a minimum of 1 flow through cell volume])										
Time (24-hr)	Flow Rate (mL/minute)	Purge Volume (L or gal Circle one)	Temp (°C) (± 3%)	Specific Conductance (µS/cm²) (± 3%)	DO (mg/L) (± 10%)	pH (± 0.1)	ORP (mV) (± 10mV)	Turbidity (NTU) (± 10%, or <5 NTU)	DTW (ft BTOC)	Drawdown (ft) (Max _____ ft)
<u>21:24</u>									<u>9.40</u>	
<u>21:25</u>	<u>300</u>	<u>.25</u>	<u>7.93</u>	<u>164</u>	<u>1.79</u>	<u>6.16</u>	<u>80.3</u>	<u>58.8</u>	<u>9.59</u>	
<u>21:28</u>	<u>200</u>	<u>.4</u>	<u>7.98</u>	<u>164</u>	<u>1.72</u>	<u>6.12</u>	<u>80.4</u>	<u>30.3</u>	<u>9.59</u>	
<u>21:32</u>	<u>200</u>	<u>.6</u>	<u>7.94</u>	<u>163</u>	<u>1.91</u>	<u>6.12</u>	<u>79.9</u>	<u>21.2</u>	<u>9.60</u>	
Parameter Stable (Check applicable) <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>										
Sample Color: <u>clear</u>			Sample Odor: <u>none</u>			Sheen: <u>none</u>				
Analytical Sampling										
Analyses			Check Applicable			Comments				
<u>GPO AK101</u>										
<u>DRO/PRO AK101/103</u>										
<u>BTEX B2600</u>										
Notes: <u>dedicated tubing (peri pump) no silicone</u>										
Equipment:										
Tubing: <input type="checkbox"/> Polyethylene <input checked="" type="checkbox"/> PFTE-Lined <input type="checkbox"/> Other _____					O.D. <input checked="" type="checkbox"/> 1/4" <input type="checkbox"/> 3/8" <input type="checkbox"/> 1/2" Left in well <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No					
Pump/Bailer <u>peri pump</u>					Multi-Parameter Meter make/SN# <u>YS1566 #14D104107</u>					
W.L. Indicator <u>oil/water</u> Turbidity Meter (Make/SN#) <u>SLR#1</u>					Filtered <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Lot # _____					
Purge Water Handling: <input type="checkbox"/> Discharged to surface <input type="checkbox"/> Containerized <input checked="" type="checkbox"/> Treated (how?) <u>GAC</u>										



Groundwater Sampling Form

Site/Client Name: <u>Red Salmon</u>	Well ID: <u>MW-8</u>
Project #: <u>105.00151.21001</u>	Sample ID: <u>RS-MW8-073021</u>
Sampled By: <u>S. Fliegel + M. Dotten</u>	Sample Time: <u>22:10</u> Sample Date: <u>07/30/21</u>
Weather Conditions: <u>overcast</u>	Duplicate ID: _____
Sampling Method: <input checked="" type="checkbox"/> Low Flow <input type="checkbox"/> Other _____	MS/MSD <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Trip Blank Required: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Well Information	
Well Type: <input checked="" type="checkbox"/> Permanent <input type="checkbox"/> Temporary	Well Diameter: <u>2</u> in. Screen Interval: _____ ft BGS to _____ ft BGS
Well Condition: <input checked="" type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor (if fair or poor explain in Notes)	Stickup <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No; If yes, <u>3</u> ft above ground

Gauging/Purging Information	
Depth to Water (ft BTOC): <u>4.85</u>	Tubing/Pump Depth (ft. BTOC): <u>6.5</u>
Total Depth (ft BTOC): <u>8.63</u>	Purge Start Time (24-hr) <u>21:53</u>
Depth to Product (ft. BTOC) <u>-</u>	Purge End Time (24-hr) <u>22:08</u>
Product Thickness (ft) <u>-</u>	Total Purge Time (min) <u>16</u>

LOW FLOW: Max Draw Down = (Tubing Depth - Top of Screen Depth) _____ X 0.25 = _____ (ft); if screen interval is not known or water table is below top of screen, then use default value of 0.3 ft. 1 gal = 3.785L, 1L = 0.264 gal

Min. purge volume if required: purge volume (gal) = volume of water/ft _____ (gal/ft) X Water column thickness _____ (ft) X # of casing volumes _____ gal

Well Diameter - gal/ft	1" - 0.041 gal/ft	2" - 0.163 gal/ft	4" - 0.653 gal/ft	6" - 1.469 gal/ft
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Water Quality Parameters
(Achieve stable parameters for 3 consecutive reading, 4 parameters if practical [each reading taken after pumping a minimum of 1 flow through cell volume])

Time (24-hr)	Flow Rate (mL/minute)	Purge Volume (L or gal) (Circle one)	Temp (°C) (± 3%)	Specific Conductance (µS/cm²) (± 3%)	DO (mg/L) (± 10%)	pH (± 0.1)	ORP (mV) (± 10mV)	Turbidity (NTU) (± 10%, or <5 NTU)	DTW (ft BTOC)	Drawdown (ft) (Max. _____ ft)
<u>21:50</u>									<u>MD</u> <u>5.14</u>	<u>4.85</u>
<u>21:53</u>	<u>200</u>	<u>.1</u>	<u>9.91</u>	<u>281</u>	<u>.82</u>	<u>6.53</u>	<u>74.7</u>	<u>101</u>	<u>5.14</u>	
<u>21:59</u>	<u>200</u>	<u>.25</u>	<u>9.99</u>	<u>278</u>	<u>.70</u>	<u>6.37</u>	<u>70.1</u>	<u>79.3</u>	<u>5.21</u>	
<u>22:02</u>	<u>200</u>	<u>.5</u>	<u>10.02</u>	<u>277</u>	<u>.46</u>	<u>6.38</u>	<u>66.9</u>	<u>64.6</u>	<u>5.21</u>	
<u>22:05</u>	<u>200</u>	<u>.6</u>	<u>10.03</u>	<u>277</u>	<u>.56</u>	<u>6.38</u>	<u>64.7</u>	<u>28.9</u>	<u>5.21</u>	
<u>22:08</u>	<u>200</u>	<u>.7</u>	<u>10.02</u>	<u>279</u>	<u>.48</u>	<u>6.38</u>	<u>62.5</u>	<u>12.5</u>	<u>5.21</u>	
Parameter Stable (Check applicable)			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Sample Color: clear Sample Odor: like none Sheen: none

Analyses	Check Applicable	Comments
<u>GPO</u>		
<u>DROPPRO</u>		
<u>BTEX</u>		
<u>AK101</u>		
<u>AK 102/103</u>		
<u>82000</u>		

Notes: dedicated tubing

Equipment:
 Tubing: Polyethylene PTFE-Lined Other _____ O.D. 1/4" 3/8" 1/2" Left in well Yes No
 Pump/Bailer peri pump Multi-Parameter Meter make/SN# YSI 566# 14D104101
 W.L. Indicator oil/water Turbidity Meter (Make/SN#) SLR#1 Filtered Yes No Lot # _____
 Purge Water Handling: Discharged to surface Containerized Treated (how?) GAC



Groundwater Sampling Form

Site/Client Name: <u>Red Salmon</u>	Well ID: <u>MW-9</u>
Project #: <u>105.00151.21001</u>	Sample ID: <u>RS-MW9-073021</u>
Sampled By: <u>S. Fliegel & M. Dotter</u>	Sample Time: <u>14:31</u> Sample Date: <u>7/30/21</u>
Weather Conditions: <u>overcast; 46°; mild wind</u>	Duplicate ID: _____
Sampling Method: <input checked="" type="checkbox"/> Low Flow <input type="checkbox"/> Other _____	MS/MSD <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Trip Blank Required: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Well Information	
Well Type: <input checked="" type="checkbox"/> Permanent <input type="checkbox"/> Temporary	Well Diameter _____ in. Screen Interval: _____ ft BGS to _____ ft BGS
Well Condition: <input checked="" type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor (if fair or poor explain in Notes)	Stickup <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No, If yes, <u>3</u> ft above ground

Gauging/Purging Information	
Depth to Water (ft BTOC): <u>5.49</u>	Tubing/Pump Depth (ft. BTOC): <u>6.1</u>
Total Depth (ft BTOC): <u>6.7</u>	Purge Start Time (24-hr) <u>14:10</u>
Depth to Product (ft. BTOC) <u>—</u>	Purge End Time (24-hr) <u>14:27</u>
Product Thickness (ft) <u>—</u>	Total Purge Time (min) <u>17</u>

LOW FLOW: Max Draw Down = (Tubing Depth - Top of Screen Depth) _____ X 0.25 = _____ (ft); if screen interval is not known or water table is below top of screen, then use default value of 0.3 ft. **1 gal = 3.785L, 1L = 0.264 gal**

Min. purge volume if required: purge volume (gal) = volume of water/ft _____ (gal/ft) X Water column thickness _____ (ft) X # of casing volumes _____ = _____ gal			
Well Diameter - gal/ft	1" - 0.041 gal/ft	2" - 0.163 gal/ft	4" - 0.653 gal/ft 6" - 1.469 gal/ft

Water Quality Parameters

(Achieve stable parameters for 3 consecutive reading, 4 parameters if practical [each reading taken after pumping a minimum of 1 flow through cell volume])

Time (24-hr)	Flow Rate (mL/minute)	Purge Volume (L or gal) (Circle one)	Temp (°C) (± 3%)	Specific Conductance (µS/cm²) (± 3%)	DO (mg/L) (± 10%)	pH (± 0.1)	ORP (mV) (± 10mV)	Turbidity (NTU) (± 10%, or <5 NTU)	DTW (ft BTOC)	Drawdown (ft) (Max _____ ft)
<u>14:03</u>									<u>5.49</u>	
<u>14:10</u>	<u>75</u>	<u>4</u>	<u>9.2</u>	<u>170</u>	<u>7.1</u>	<u>6.15</u>	<u>149</u>	<u>293</u>	<u>6.29</u>	
<u>14:17</u>	<u>60</u>	<u>3</u>	<u>9.27</u>	<u>172</u>	<u>5.01</u>	<u>6.17</u>	<u>118.2</u>	<u>213</u>	<u>6.21</u>	
<u>14:22</u>	<u>60</u>	<u>35</u>	<u>9.15</u>	<u>174</u>	<u>7.55</u>	<u>6.19</u>	<u>113.8</u>	<u>116</u>	<u>6.21</u>	
<u>14:27</u>	<u>75</u>	<u>5</u>	<u>9.14</u>	<u>175</u>	<u>7.33</u>	<u>6.21</u>	<u>111.1</u>	<u>54.1</u>	<u>6.21</u>	
Parameter Stable (Check applicable) <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>										

Sample Color: <u>Slightly cloudy</u>	Sample Odor: <u>None</u>	Sheen: <u>None</u>
--------------------------------------	--------------------------	--------------------

Analytical Sampling		
Analyses	Check Applicable	Comments
<u>GRO</u>	<input checked="" type="checkbox"/>	<u>1K 101</u>
<u>DRO/PRO</u>	<input checked="" type="checkbox"/>	<u>1K 102/103</u>
<u>BTEX</u>	<input checked="" type="checkbox"/>	<u>B260</u>

Notes: saturated thickness, less than 2ft. downhole pump not used. Peri pump used instead. Dedicated tubing (Peri Pump)

Equipment:

Tubing: Polyethylene PTFE-Lined Other _____ O.D. 1/4" 3/8" 1/2" Left in well Yes No

Pump/Bailer: Peri Pump (Pegasus) Multi-Parameter Meter make/SN# YS1566# 14D104101

W.L. Indicator: Salmist #122 Turbidity Meter (Make/SN#) SLR #1 Filtered Yes No Lot # _____

Purge Water Handling: Discharged to surface Containerized Treated (how?) GAC



Groundwater Sampling Form

Site/Client Name: <u>Red Salmon</u>		Well ID: <u>MW-10</u>								
Project #: <u>105.00151.21001</u>		Sample ID: <u>P5-MW10-073021</u>								
Sampled By: <u>Stacy Fliegel & Meghan Ditten</u>		Sample Time: <u>12:50</u>	Sample Date: <u>7/30/21</u>							
Weather Conditions: <u>Overcast; calm winds; ~60°F</u>		Duplicate ID:								
Sampling Method: <input checked="" type="checkbox"/> Low Flow <input type="checkbox"/> Other _____		MS/MSD <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Trip Blank Required <input type="checkbox"/> Yes <input type="checkbox"/> No								
Well Information										
Well Type: <input checked="" type="checkbox"/> Permanent <input type="checkbox"/> Temporary		Well Diameter: <u>2</u> in.	Screen Interval: _____ ft BGS to _____ ft BGS							
Well Condition: <input checked="" type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor (if fair or poor explain in Notes)		Stickup <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No; if yes, _____ ft above ground								
Gauging/Purging Information										
Depth to Water (ft BTOC): <u>10.81</u>		Tubing/Pump Depth (ft. BTOC): <u>13</u>								
Total Depth (ft BTOC): <u>15.15</u>		Purge Start Time (24-hr) <u>12:28</u>								
Depth to Product (ft. BTOC) <u>NO PRODUCT</u>		Purge End Time (24-hr) <u>12:57</u>								
Product Thickness (ft) <u>N/A</u>		Total Purge Time (min) <u>29</u>								
LOW FLOW: Max Draw Down = (Tubing Depth - Top of Screen Depth) _____ X 0.25 = _____ (ft); if screen interval is not known or water table is below top of screen, then use default value of 0.3 ft. 1 gal = 3.785L, 1L = 0.264 gal										
Min. purge volume if required: purge volume (gal) = volume of water/ft _____ (gal/ft) X Water column thickness _____ (ft) X # of casing volumes _____ = _____ gal Well Diameter - gal/ft 1" - 0.041 gal/ft 2" - 0.163 gal/ft 4" - 0.653 gal/ft 6" - 1.469 gal/ft										
Water Quality Parameters										
(Achieve stable parameters for 3 consecutive reading, 4 parameters if practical [each reading taken after pumping a minimum of 1 flow through cell volume])										
Time (24-hr)	Flow Rate (mL/minute)	Purge Volume (L or gal) (Circle one)	Temp (°C) (± 3%)	Specific Conductance (µS/cm²) (± 3%)	DO (mg/L) (± 10%)	pH (± 0.1)	ORP (mV) (± 10mV)	Turbidity (NTU) (± 10%, or <5 NTU)	DTW (ft BTOC)	Drawdown (ft) (Max _____ ft)
<u>12:06</u>									<u>10.81</u>	
<u>12:28</u>	<u>500</u>	<u>1 gal</u>	<u>5.34</u>	<u>121</u>	<u>13.7</u>	<u>5.63</u>	<u>132</u>	<u>45.5</u>	<u>10.89</u>	<u>10.99</u>
<u>12:34</u>	<u>400</u>	<u>gal 1/2</u>	<u>5.84</u>	<u>117</u>	<u>12.29</u>	<u>5.7</u>	<u>132.8</u>	<u>36.8</u>	<u>10.95</u>	
<u>12:41</u>	<u>275</u>	<u>2 gal</u>	<u>5.75</u>	<u>115</u>	<u>11.98</u>	<u>5.94</u>	<u>131.1</u>	<u>36.4</u>	<u>10.91</u>	
<u>12:45</u>	<u>500</u>	<u>3</u>	<u>5.12</u>	<u>116</u>	<u>12.5</u>	<u>5.97</u>	<u>129.7</u>	<u>21.5</u>	<u>10.99</u>	
Parameter Stable (Check applicable) ✓ ✓ ✓										
Sample Color: <u>clear</u>			Sample Odor: <u>none</u>			Sheen: <u>none</u>				
Analytical Sampling										
Analyses				Check Applicable			Comments			
<u>GR0</u>				<input checked="" type="checkbox"/>			<u>AK 101</u>			
<u>DRO/RPO</u>				<input checked="" type="checkbox"/>			<u>AK 102/103</u>			
<u>BTEX</u>				<input checked="" type="checkbox"/>			<u>62600</u>			
Notes: <u>dedicated tubing (bladder pump)</u>										
Equipment:										
Tubing: <input type="checkbox"/> Polyethylene <input checked="" type="checkbox"/> PTFE-Lined <input type="checkbox"/> Other _____		O.D. <input type="checkbox"/> 1/4" <input checked="" type="checkbox"/> 3/8" <input type="checkbox"/> 1/2"		Left in well <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No						
Pump/Bailer <u>MONSIEUR</u>		Multi-Parameter Meter make/SN# <u>YS1 956 14D104101</u>								
W.L. Indicator <u>Solin.st# 122</u>		Turbidity Meter (Make/SN#) <u>SLR #1</u>		Filtered <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Lot # _____						
Purge Water Handling: <input type="checkbox"/> Discharged to surface <input type="checkbox"/> Containerized <input checked="" type="checkbox"/> Treated (how?) <u>GAC</u>										



Surface Water Sampling Form

Site/Client Name: <u>Red Salmon</u>		Location: <u>SW-1</u>	
Project #: <u>105.00151.21001</u>		Sample ID: <u>RS-SW1-073121</u>	
Sampled By: <u>S. Flajgel + M. Dutton</u>		Sample Time: <u>10:28</u>	Sample Date: <u>07/31/21</u>
Weather Conditions: <u>overcast, windy</u>		Duplicate ID: <u>RS-SW99-073121</u>	
Other: _____		MS/MSD <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Trip Blank Required: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Location Information			
Distance from Bank (ft): <u>N/A</u>	Depth of Water (ft): <u>4.5</u>	Flowing Water: <input type="checkbox"/> Rapid <input type="checkbox"/> Slow <input checked="" type="checkbox"/> Stagnant Pool	
Co-Located Sediment Sample: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	GPS Coordinates: Northing _____ Easting _____		
Sheen Test			
<input type="checkbox"/> No Sheen <input checked="" type="checkbox"/> Sheen Observed (circle type): <u>Biogenic (platey)</u> Other (describe) _____			
Water Quality Parameters			
Temp (°C): <u>NM</u>	Specific Conductance (µS/cm): <u>NM</u>	DO (mg/L): <u>NM</u>	ORP (mV): <u>NM</u>
		pH (std unit): <u>NM</u>	Turbidity (NTU): <u>NM</u>
		Color: <u>NM</u>	Odor: <u>NM</u>
Analytical Sampling			
Analyses	Number/Type of Bottle	Preservative/Comments	Analyses
GRO/BTEX	<u>40 mL x 3</u>	<u>HCL</u>	PAHs
DRO	<u>2 x 250 mL</u>	<u>HCL</u>	Total Metals
RRO			Dis. Metals
VOCs	<u>40 mL x 3</u>	<u>HCL</u>	
SVOCs			
Notes (indicate collection method): _____			
Equipment Used: Pump Type <u>N/A</u> Tubing (Type/Length) <u>N/A</u> Transfer Bottle <input checked="" type="checkbox"/>			
Multi-Parameter Meter (Make/SN#) <u>N/A</u> Turbidity Meter (Make/SN#) _____			
GPS Type: <u>N/A</u> Filter & Lot # <u>N/A</u>			

Site/Client Name: <u>Red Salmon</u>		Location: <u>SW-2</u>	
Project #: <u>105.00151.21001</u>		Sample ID: <u>RS-SW2-073121</u>	
Sampled By: <u>S. Flajgel + M. Dutton</u>		Sample Time: <u>10:48</u>	Sample Date: <u>07/31/21</u>
Weather Conditions: <u>overcast, windy</u>		Duplicate ID: _____	
Other: _____		MS/MSD <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Trip Blank Required: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Location Information			
Distance from Bank (ft): <u>N/A</u>	Depth of Water (ft): <u>2.5</u>	Flowing Water: <input type="checkbox"/> Rapid <input type="checkbox"/> Slow <input checked="" type="checkbox"/> Stagnant Pool	
Co-Located Sediment Sample: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	GPS Coordinates: Northing _____ Easting _____		
Sheen Test			
<input type="checkbox"/> No Sheen <input checked="" type="checkbox"/> Sheen Observed (circle type): <u>Biogenic (platey)</u> Other (describe) _____			
Water Quality Parameters			
Temp (°C): <u>NM</u>	Specific Conductance (µS/cm): <u>NM</u>	DO (mg/L): <u>NM</u>	ORP (mV): <u>NM</u>
		pH (std unit): <u>NM</u>	Turbidity (NTU): <u>NM</u>
		Color: <u>NM</u>	Odor: <u>NM</u>
Analytical Sampling			
Analyses	Number/Type of Bottle	Preservative/Comments	Analyses
GRO/BTEX	<u>40 mL x 3</u>	<u>HCL</u>	PAHs
DRO	<u>250 mL x 2</u>	<u>HCL</u>	Total Metals
RRO			Dis. Metals
VOCs	<u>40 mL x 3</u>	<u>HCL</u>	
SVOCs			
Notes (indicate collection method): _____			
Equipment Used: Pump Type <u>N/A</u> Tubing (Type/Length) <u>N/A</u> Transfer Bottle <input checked="" type="checkbox"/>			
Multi-Parameter Meter (Make/SN#) <u>N/A</u> Turbidity Meter (Make/SN#) <u>N/A</u>			
GPS Type: <u>N/A</u> Filter & Lot # <u>N/A</u>			

APPENDIX C
QUALITY ASSURANCE REPORT, ADEC CHECKLISTS, AND
LABORATORY DATA

2021 Groundwater Monitoring Report
Red Salmon Facility
Naknek, Alaska

October 2021

**LABORATORY DATA
QUALITY ASSURANCE REVIEW
NORTH PACIFIC SEAFOODS**

**2021 GROUNDWATER MONITORING
RED SALMON FACILITY
(NAKNEK, AK)**

September 2021

Prepared by: Jennifer McLean

SLR Project Number: 105.00151.21001
ADEC Number: 2616.38.005
Hazard ID: 26421

SLR International Corporation
2700 Gambell Street, Suite 200
Anchorage, AK 9950

ACRONYMS AND ABBREVIATIONS

°C	degrees Celsius
µg/L	micrograms per liter
AAC	Alaska Administrative Code
ADEC	Alaska Department of Environmental Conservation
AK	Alaska
BTEX	benzene, toluene, ethylbenzene, and xylenes
CCV	continuing calibration verification
COC	chain of custody
DL	detection limit
DRO	diesel range organics
EDD	electronic data deliverable
GRO	gasoline range organics
LCS	laboratory control sample
LCSD	laboratory control sample duplicate
LOD	limit of detection
LOQ	limit of quantitation
LV	low volume
MS	matrix spike
MSD	matrix spike duplicate
NA	not applicable
NFG	National Functional Guidelines
PAH	polycyclic aromatic hydrocarbons
PARCS	precision, accuracy, representativeness, comparability, and sensitivity
PDF	portable document format
QA	quality assurance
QAR	quality assurance review
QC	quality control
RPD	relative percent difference
RRO	residual range organics
SDG	sample delivery group
SGS	SGS North America, Inc.
SIM	selective ion monitoring
SLR	SLR International Corporation
SW	surface water
TAH	total aromatic hydrocarbons
TAqH	total aqueous hydrocarbons
USEPA	United States Environmental Protection Agency
VOCs	volatile organic compounds

Introduction

This report summarizes a review of analytical data for samples collected on July 30, 2021, and July 31, 2021 in support of the Red Salmon Facility groundwater monitoring. Samples were collected by SLR International Corporation (SLR). SGS North America, Inc (SGS) provided analytical support to the project. SGS maintains a current Alaska Department of Environmental Conservation (ADEC) Contaminated Sites approval number (17-021) for analytical methods of interest, as applicable. Table 1 provides a summary of the work order, sample receipt, analytical methods, and analytes.

Table 1 Sample Summary

SDG	Date Collected	Date Received by Laboratory	Temp. Blank	Matrix	Analytical Method	Analyte	Trip Blank ¹
1214771	7/30/2021 - 7/31/2021	8/2/2021	0.5°C	GW	AK101 AK102/103 SW8260D SW8260D SW8270D LV	GRO DRO/RRO BTEX VOCs PAH SIM	Required NA Required Required NA
1214774	7/31/2021	8/2/2021	0.4°C	SW	AK101 AK102/103 SW8260D SW8270D LV	GRO DRO/RRO BTEX (TAH) PAH SIM (TAqH)	Required NA Required NA

Notes:

1 – This type of sample requires a trip blank to be included in the cooler, with the trip blank noted on the chain of custody.

Acronyms:

AK – Alaska	BTEX – benzene, toluene, ethylbenzene, and xylenes
°C – degrees Celsius	DRO – diesel range organics
GRO – gasoline range organics	GW – groundwater
LV – low volume	NA – not applicable
PAH – polynuclear aromatic hydrocarbons	RRO – residual range organics
SDG – sample delivery group	SIM – selective ion monitoring
SW – surface water	TAH - total aromatic hydrocarbons
TAqH - total aqueous hydrocarbons	VOCs – volatile organic compounds

The laboratory final reports were presented as Level II deliverables and included documentation of the delivery group chain-of-custody (COC) and sample receipt condition. A Microsoft Access compatible electronic data deliverable (EDD) was also provided for each SDG. The portable document format (PDF) laboratory reports are provided electronically as **Attachment 2**.

Quality Assurance Program

A quality assurance (QA) program was followed for this project that addressed project administration, sampling, quality control (QC), and data review. SLR adhered to required and established sampling and COC protocols. The selected laboratory maintains an internal quality assurance program and standard operating procedures.

The analytical data was reviewed for consistency with the *2021 Groundwater Monitoring Work Plan, Red Salmon Facility, Naknek, Alaska* (SLR, 2021), ADEC Technical Memorandum *Minimum Quality Assurance Requirements for Sample Handling, Reports, and Laboratory Data* (ADEC, 2019), National Functional Guidelines (NFG, United States Environmental Protection Agency [USEPA], 2017), analytical method criteria, and laboratory criteria. An ADEC Laboratory Data Review Checklist was completed for the SDG and is included as Attachment 1. A review for any anomalies to the project requirements for precision, accuracy, representativeness, comparability and sensitivity (PARCS) are noted in this quality assurance review QAR, and any data qualifications discussed.

The data review included the following, as applicable:

- Reviewing COC records for completeness, signatures, and dates;
- Identifying any sample receipt or preservation anomalies that could impact data quality;
- Verifying that QC blanks (e.g., field blanks, equipment blanks, trip blanks, etc.) were properly prepared, identified, and analyzed;
- Evaluating whether laboratory reporting limits met project goals, reviewing calibration verification recoveries, to include confirming that the laboratory did not identify that any Continuing Calibration Verification (CCV) recoveries or other calibration related criteria were outside applicable acceptance limits;
- Verifying that surrogate analyses were within recovery acceptance limits;
- Verifying that Laboratory Control Samples (LCS), Laboratory Control Sample Duplicates (LCSD), Matrix Spikes (MS), and Matrix Spike Duplicates (MSD) were within recovery acceptance limits;
- Evaluating the result relative percent difference (RPD) between primary and duplicate field samples, LCS/LCSDs, and MS/MSDs; and
- Providing an overall assessment of laboratory data quality and qualifying sample results if necessary.

Data Qualifications

As part of this QAR, qualifiers were applied to datum as determined necessary based on specified criteria or professional judgement. In all cases, the basis for qualification and the applied data flag are discussed in this QAR. Table 2 provides a list of potential qualifiers (i.e., flags). These data flags were appended to the data as appropriate.

Table 2 Data Qualifiers

Lab Qualifier (Flag)	NFG Qualifier (Flag)	Equivalent Project Qualifier (Flag) ^{1,2}	Definition
U	U	U	The analyte was analyzed for, but was not detected above the Detection Limit (DL). This qualifier is appended by the laboratory.
J	NJ	J	The analyte has been “tentatively” or “presumptively” identified as present and the associated numerical value is the estimated concentration in the sample between the limit of quantitation (LOQ) and the DL. This qualifier is appended by the laboratory.
--	J	Q	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample, due to one or more laboratory quality control criteria failures (e.g., LCS recovery, surrogate spike recovery) or a matrix effect. Where applicable, a “+” or “-” was appended to indicate a high or low bias, respectively.
--	UJ	UJ	The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
--	R	R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
--	--	B, UB	Blank contamination: The analyte was positively identified in the blank (e.g., trip blank and/or method blank) associated with the sample and the concentration reported for the sample was less than five times that of the blank (ten times for metals and common laboratory contaminants methylene chloride and acetone). Where applicable, “U” was appended prior to the “B” to indicate the blank detection was greater than the sample detection or both the blank detection and sample detection were below the limit of detection (LOD), and the result is likely a false positive. The greater of the sample detection or LOD was reported as non-detect in brackets, and the result should be considered undetectable.

Notes:

1 - Flags were appended to the data where applicable. The table presents laboratory, NFG and project equivalent qualifiers.

2 - Only flags in **bold** were applicable and appended to data for this project.

A discussion of the project data quality relative to PARCS goals and summary of any anomalies or failures requiring data qualifiers follows.

Data Validation

Data Packages

The data packages were checked for transcription errors, omissions, or other anomalies. No issues were noted with regards to the data packages, except as noted below.

For SDGs 1214771 and 1214774

- The PDF laboratory reports included data for one benzene leaching blank (1214771) and two benzene leaching blanks (1214774) that were not applicable to any samples or QC for with this project. Data was not impacted.

Sample Receipt

The sample receipt documentation was checked for anomalies. Any issues with regards to the receipt of samples are noted below.

For SDG 1214771

- The first page of the two page COC noted two cooler receipt temperatures, 0.5°C and 0.2°C. The second page of the COC noted only the thermometer ID, with no temperatures. The Sample Receipt Form noted only the temperature of 0.5°C. It was verified with SLR personnel that only one cooler was delivered to SGS laboratory for groundwater samples. It was assumed that the 0.2°C was erroneously written on the first page of the COC. Data were not impacted.

For SDG 1214774

- The second of two containers provided for DRO/RRO for sample RS-SW1-073121 arrived at the laboratory with a cracked lid. Semi-volatile DRO/RRO analysis was not impacted. All data were usable without qualification.

Holding Times and Preservation

Samples were appropriately preserved and were submitted to SGS. All method holding times were satisfied for all samples, except as noted below.

For SDG 1214774

- For PAH SIM analysis, sample RS-SW1-073121 and field duplicate RS-SW99-073121 were both re-extracted past hold time due to low 2-methylnaphthalene-d10 surrogate recovery. For sample RS-SW1-073121, results confirmed, and the in-hold data was reported. The laboratory report does not indicate if the past hold time surrogate recovery was within acceptable limits. For sample RS-SW99-073121, the re-extracted results did not confirm the initial results, but the surrogate recovery was within acceptable limits. Both sets of data for sample RS-SW99-073121 were included in the laboratory report. The past hold time extract had higher results for four analytes associated with 2-methylnaphthalene-d10 surrogate. To err on the conservative, the higher of the two data sets for RS-SW99-073121 was reported with appropriate "Q-" or "UJ" flags for detections and non-detected values, to indicate a potential low bias due to extraction past hold time. Even with the highest result reported for PAH, the parent/field duplicate pair value for TAqH of 4.85 micrograms per liter (µg/L) was well below the applicable ADEC TAqH regulatory criteria of 15 µg/L. As such, data usability was not impacted. All data were usable as qualified.

Laboratory Method Blanks

Laboratory method blanks were analyzed at the appropriate frequencies. Except as noted below, all method blanks had results of non-detect (ND) below the limit of detection (LOD) and detection limit (DL). Sample detections within five times that of the associated blank were considered affected and were appropriately qualified.

For SDG 1214771

- For PAH SIM by Method SW8270D, phenanthrene was detected in the method blank between the LOD and limit of quantitation (LOQ). Since a high bias was indicated and all associated samples had results of ND for this analyte, no data were affected.

For SDG 1214774

- For PAH SIM by Method SW8270D, phenanthrene was detected in method blank 1627703 between the LOD and LOQ. Two of the three associated samples had results of non-detect for phenanthrene; therefore, data was not affected. The initial extract of sample RS-SW99-073121 had a phenanthrene result of 0.0292 J µg/L, below that of the method blank detection of 0.03 µg/L. Per NFG guidelines, where the blank detection was greater than the sample detection, the result is likely a false positive and the greater of the sample detection or LOD was reported as non-detect in brackets. The phenanthrene result for the initial analysis of sample SW99-073121 if reported should be flagged as [0.0292] UB µg/L. The result should be considered non-detect. The re-extract for this sample was reported by SLR; therefore, data usability was not impacted.
- For PAH SIM by Method SW8270D, phenanthrene was detected in method blank 1630847 between the DL and LOD. The only associated sample had a phenanthrene result greater than five times that of the blank; therefore, data was not affected. All data was usable without qualification.

Trip Blanks

Trip blanks were analyzed at the appropriate frequencies for VOCs by Method SW8260D, BTEX by SW8260D, and GRO by Method AK101. Analytes were not detected at or above the LOD or DL in any trip blanks.

For SDG 1214771

- For the trip blank, the sample date of the first sample collected was written on the COC, but no sample collection time nor analysis was indicated. The laboratory correctly analyzed the trip blank for GRO and full list VOCs and assigned a collection time matching that of the first sample. Data was not impacted.

Reporting Limits

For non-detectable results, LODs were compared to applicable regulatory criteria for the site. LODs for groundwater samples were compared to 18 Alaska Administrative Code (AAC) 75.345 Table C, *Groundwater Cleanup Levels* (ADEC, 2021). LODs for surface water samples were compared to 18 AAC 70.020, *Water Quality Standards* (ADEC, 2020). All analytes with results of non-detect had LODs at or below applicable regulatory criteria, except as discussed below.

For SDGs 1214771 and 1214774

- 1,2,3-Trichloropropane by Method SW8260D had LODs above ADEC cleanup levels for all samples. This was due to typical laboratory methodology limitations. For this compound it is not possible to state with certainty the absence of target analyte below the laboratory LOD, but above the ADEC cleanup level. 1,2,3-Trichloropropane data is limited in usability for that purpose. Data usability was considered minimally impacted, and all data were usable without qualification.

For SDG 1214774

- For Method SW8270D, the LOD for indeno[1,2,3-c,d] pyrene of 0.266 µg/L did not meet ADEC groundwater criteria of 0.19 µg/L due to necessary dilution due to the dark extract. Only 18 AAC 70 TAH and TAqH criteria are applicable to this surface water sample. Data usability was not impacted.

Continuing Calibration Verifications

CCVs were analyzed at the appropriate frequencies. CCV data was included only in the EDDs, not in the case narratives. All CCV recoveries were within acceptable limits.

Internal Standards

No internal standards were noted in the case narrative as being outside of acceptance limits. Internal standard performance was not otherwise presented in the report or in the electronic data deliverable. Internal standards criteria were considered met.

Surrogate Recovery Results

Surrogate analysis was performed at the required frequencies. Surrogate recoveries were within acceptable limits except as shown in Table 3, with associated qualifiers. Data were not qualified, when the sample was analyzed at a dilution of greater than five-fold, as surrogate may not accurately quantitate at such dilutions.

The re-extract of sample RS-SW99-073121 had a fluoranthene-d10 surrogate recovery of 49.5%, which rounds up to 50%, meeting the lower control limit of 50%. This recovery was considered within acceptable limits and was not shown in Table 3.

While surrogate recovery failures indicated low biases, the impact to data usability was minimal because all impacted results had either detected values well below ADEC criteria or ND results with LODs well below ADEC criteria. Data usability was not impacted.

Table 3 Surrogate Recovery Exceedances

Sample ID	Method	Analyte	Surrogate	Percent Rec. (%)	Rec. Limits (%)	Dil.	Flag
SDG 1214771 - GW							
RS-MW2-073021	SW8270D	All PAH SIM	Fluoranthene-d10	32	50-97	4	Q- or UJ ^{1,2}
			2-Methylnaphthalene-d10	21	42-86	4	Q- or UJ ^{1,2}
SDG1214774 - SW							
RS-SW1-073121	SW8270D	Various ²	2-Methylnaphthalene-d10	41	42-86	1	Q- or UJ ^{1,3,4}
RS-SW2-073121	SW8270D	All PAH SIM	Fluoranthene-d10	45	50-97	10	NA ⁵
RS-SW2-073121			2-Methylnaphthalene-d10	34	42-86		NA ⁵
RS-SW99-073121	SW8270D	Various ²	2-Methylnaphthalene-d10	29	42-86	1	Q- or UJ ^{1,3,6}

Notes:

- 1 - NFG surrogate recovery limits are 30-130%. Conservatively, the more stringent laboratory limits were used for flagging purposes. For detected values a "Q-" was appended, and for non-detects a "UJ" was assigned to affected data.
- 2 - The surrogate recovery exceedance was likely due in part to the four-fold dilution.
- 3 - The sample was re-extracted and re-analyzed past hold time. Analytes associated with this surrogate are 1-methylnaphthalene, 2-methylnaphthalene, acenaphthene, acenaphthylene, anthracene, fluorene, naphthalene, and phenanthrene.
- 4 - Sample results confirmed, and the in-hold data was reported.
- 5 - Data were not qualified, as the surrogate may not accurately quantitate at a ten-fold dilution.
- 6 - Data shown in this table was from the initial analysis of this sample. The re-extracted data (with higher reported results) was used by SLR for reporting purposes. If this data is reported, the flags noted should be applied.

Laboratory Control Samples and Laboratory Control Sample Duplicates

LCS and LCSDs were analyzed at the appropriate frequencies. All LCS/LCSD recoveries and RPDs were within acceptable limits.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Samples

MS and MSDs were analyzed at the appropriate frequencies. All MS/MSD recoveries or RPDs were within acceptable limits, except as noted below. Non-detect results were not impacted by RPD exceedances, as precision measures quantity, not presence or absence of an analyte.

For SDGs 1214771 and 1214774

- For PAH SIM by Method SW8270D, the MS/MSD for batch XXX45308 recovered below acceptable limits for several analytes. As the LCS established batch precision, only the parent sample, not from this project, was affected. No project data was impacted, and all data were usable without qualification.
- For PAH SIM by Method SW8270D, MS/MSD RPDs for several analytes exceeded the acceptable laboratory limit of 20% in batch XXX45308. Analytes with RPD exceedances were benzo(a)anthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[g,h,i]perylene, benzo[k]fluoranthene, chrysene, dibenzo[a,h]anthracene, indeno[1,2,3-c,d] pyrene, and naphthalene. Failing RPDs ranged from 22% to 49%. (It should be noted that the 2-methylnaphthalene surrogate recovery of 20.4% rounds to 20% and is considered within acceptable limits.) As there was no acceptable measure of laboratory precision for the impacted analytes, detected results in batch associated samples were impacted. Only benzo[g,h,i]perylene in sample RS-SW2-073121 had a detection for any impacted analytes. This data was flagged "Q" to indicate estimated with unknown bias. Since only 18 AAC 70 surface water criteria are applicable for the affected sample and the TAqH result well below the limit of 15 µg/L, data usability was not affected.

Field Duplicates

The field duplicate sample frequency is presented in Table 4. Parent sample and field duplicates are presented in Table 5. Field duplicate RPD exceedances are presented in Table 6 and Table 7. Data were qualified as shown in Tables 6 and 7, with associated samples noted in the footnotes. For all methods and analytes, the duplicate frequency satisfied the requirement of one per 10 samples or less per matrix and analyte. Field duplicates were submitted blind to the laboratory.

Non-detect results are not affected by field precision, as precision measures quantity, not presence or absence of an analyte. Regarding the parent/duplicate pairs shown in Tables 6 and 7, laboratory precision was established via an MS/MSD with acceptable RPDs for all impacted analytes; therefore, data were considered minimally impacted. Also, all affected data were well below applicable ADEC cleanup levels. For these reasons, all data were usable as qualified.

Parent sample/field duplicate pairs with both results below the LOQ were considered acceptable without qualification.

Table 4 Field Duplicate Count

Matrix	Number of Primary Samples	Number of Field Duplicates	Method	Analytes
GW	9	1	AK101	GRO
	9	1	AK 102/103	DRO/RRO
	7	0	SW8260D	BTEX
	2	1	SW8260D	VOCs
	2	1	SW8270D LV	PAH SIM
SW	2	1	AK101	GRO
	2	1	AK 102/103	DRO/RRO
	2	1	SW8260D	BTEX (TAH)
	2	1	SW8270D LV	PAH SIM

Table 5 Parent Samples and Field Duplicates

Parent Sample	Field Duplicate	All RPDs acceptable (Y/N)
RS-MW1-073121	RS-MW99-073121	N
RS-SW1-073121	RS-SW99-073121	N

Table 6 SDG 1214771 - Field Duplicate RPD Exceedances

Method SW8260D Analytes	Parent Sample: RS-MW1-073121 Result (µg/L)	Duplicate: RS-MW99-073121 Result (µg/L)	RPD (%)	Flag (Parent/Duplicate)	Cleanup Level (µg/L)
Fluorene	0.0846 J	0.14	49%	J/Q	290

Notes:

1 – Sample RS-MW99-073121 was qualified “Q” to indicate the result is an estimated value with an unknown bias. Sample RS-MW1-073121 was already “J” flagged as estimated due to the low level of detection. Additional qualification indicating estimated with unknown bias was not necessary. Associated sample RS-MW2-073121 had a fluorene result of ND, thus was not flagged.

Table 7 SDG 1214774 - Field Duplicate RPD Exceedances

Sample ID	Extraction Date	Method SW8270D Analyte	Result (µg/L)	Lab Flag	RPD	Flag
Comparison with Initial Extraction of RS-SW99-073121, Data Reported by Lab, Not Reported by SLR¹						
RS-SW1-073121	8/4/2021 14:27	Acenaphthene	0.094	=	37%	Q ⁻³
RS-SW99-073121	8/4/2021 14:27	Acenaphthene	0.0649	=		Q ⁻³
RS-SW1-073121	8/4/2021 14:27	Fluorene	0.421	=	56%	Q ⁻³
RS-SW99-073121	8/4/2021 14:27	Fluorene	0.236	=		Q ⁻³
Comparison with Re-Extraction of RS-SW99-073121, Data Reported by Lab and by SLR						
RS-SW1-073121	8/4/2021 14:27	1-Methylnaphthalene	[0.0232]	U	130%	NA
RS-SW99-073121	8/18/2021 13:00	1-Methylnaphthalene	0.219	=		Q ⁻⁴
RS-SW1-073121	8/4/2021 14:27	Acenaphthene	0.094	=	87%	Q ⁻³
RS-SW99-073121	8/18/2021 13:00	Acenaphthene	0.24	=		Q ⁻⁴
RS-SW1-073121	8/4/2021 14:27	Fluorene	0.421	=	110%	Q ⁻³
RS-SW99-073121	8/18/2021 13:00	Fluorene	1.45	=		Q ⁻⁴
RS-SW1-073121	8/4/2021 14:27	Phenanthrene	[0.0232]	U	109%	NA
RS-SW99-073121	8/18/2021 13:00	Phenanthrene	0.157	=		Q ⁻⁴

Notes:

1 – This data was not reported by SLR. It was only shown here for comparison purposes.

2 – Detected results above the LOQ would typically be qualified “Q” to indicate that the result is an estimated value with an unknown bias. Non-detect values are not affected by field precision. Sample RS-SW2-073121 was associated with this field duplicate pair but had results of non-detectable for all impacted analytes; therefore, data was not affected and was not qualified.

3 – This data were already flagged “Q-” due to low surrogate recovery. Conservatively, only the “Q-” flag was appended.

4 – This data were already flagged “Q-” due to analysis past hold time.

Laboratory Duplicate Samples

No laboratory duplicates were analyzed in association with these samples.

Overall Assessment

Precision, Accuracy, Representativeness, Comparability, and Sensitivity Summary

- Precision: Precision goals were met, except as noted in the MS/MSD and Field Duplicates sections.
- Accuracy: Accuracy goals were met, except as noted in the Surrogate Recovery and MS/MSD sections.
- Representativeness: Representativeness goals were met. The samples were collected from usual locations.
- Comparability: Comparability goals were met. The same laboratory and methods were used.
- Sensitivity: Sensitivity goals were met, except as noted in the Method Blanks and Reporting Limits sections.

LODs for 1,2,3-trichloropropane by Method SW8260D did not meet ADEC cleanup levels for all samples due to typical laboratory methodology limitations. For this compound it is not possible to state with certainty the absence of target analyte below the laboratory LOD, but above the ADEC cleanup level. Data usability was considered minimally impacted, and all data was usable without qualification.

Overall, this data were considered of good quality and acceptable for use with the noted qualifications and limitations. The data were 100% complete with respect to analysis. No data were rejected.

References

ADEC, 2019. Minimum Quality Assurance Requirements for Sample Handling, Reports, and Laboratory Data. Technical Memorandum. October.

ADEC, 2020. 18 AAC 70, Water Quality Standards. March 5.

ADEC, 2021. 18 AAC 75, Oil and Other Hazardous Substances Pollution Control. As amended through June 24.

SLR, 2021. 2021 Groundwater Monitoring Work Plan, Red Salmon Facility, Naknek, Alaska. June 21.

U.S. Environmental Protection Agency (USEPA), 2017. National Functional Guidelines for Superfund Organic Methods Data Review. January.

Attachments

Attachment 1 – ADEC Laboratory Data Review Checklists

Attachment 2 – Laboratory Deliverables

Attachment 1

ADEC Laboratory Data Review Checklists

Laboratory Data Review Checklist

Completed By:

Jennifer McLean

Title:

Associate Scientist

Date:

September 10, 2021

Consultant Firm:

SLR International Corporation

Laboratory Name:

SGS North America, Inc., Anchorage, Alaska

Laboratory Report Number:

1214774

Laboratory Report Date:

September 7, 2021

CS Site Name:

Red Salmon Groundwater Monitoring

ADEC File Number:

2616.38.005

Hazard Identification Number:

26421

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Laboratory Report Date:

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CS Site Name:

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Note: Any N/A or No box checked must have an explanation in the comments box.

1. Laboratory

a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?

Yes No N/A Comments:

All samples were submitted to and analyzed at SGS in Anchorage Alaska, CS #17-021.

b. If the samples were transferred to another “network” laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?

Yes No N/A Comments:

No samples were transferred.

2. Chain of Custody (CoC)

a. CoC information completed, signed, and dated (including released/received by)?

Yes No N/A Comments:

b. Correct analyses requested?

Yes No N/A Comments:

3. Laboratory Sample Receipt Documentation

a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?

Yes No N/A Comments:

b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

Yes No N/A Comments:

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c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

Yes No N/A Comments:

The second of two containers provided for DRO/RRO for sample RS-SW1-073121 arrived at the laboratory with a cracked lid. Semi-volatile DRO/RRO analysis was not impacted.

d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?

Yes No N/A Comments:

Noted in 3c.

e. Data quality or usability affected?

Comments:

Sample volume was not lost, sample integrity was not compromised, and all data were usable without qualification.

4. Case Narrative

a. Present and understandable?

Yes No N/A Comments:

b. Discrepancies, errors, or QC failures identified by the lab?

Yes No N/A Comments:

The PDF laboratory report included data for two benzene leaching blanks that are not applicable to any samples or QC for with this project. Data was not impacted.

c. Were all corrective actions documented?

Yes No N/A Comments:

Samples were re-extracted and re-analyzed past hold for PAH SIM. Refer to 6d.

d. What is the effect on data quality/usability according to the case narrative?

Comments:

Refer to 6d.

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5. Samples Results

a. Correct analyses performed/reported as requested on COC?

Yes No N/A Comments:

b. All applicable holding times met?

Yes No N/A Comments:

Hold Times: For PAH SIM analysis, sample RS-SW1-073121 and field duplicate RS-SW99-073121 were both re-extracted past hold time then re-analyzed due to low 2-methylnaphthalene-d10 surrogate recovery. For sample RS-SW1-073121, results confirmed, and the in-hold data was reported. For sample RS-SW99-073121, the re-extracted results did not confirm the initial results, but the surrogate recovery was within acceptable limits. Both sets of data for sample RS-SW99-073121 were included in the laboratory report. The past hold time extract had higher results for four analytes associated with 2-methylnaphthalene-d10 surrogate and higher LODs for ND results. To err on the conservative, the higher of the two sets of RS-SW99-073121 data was reported with a "Q-" flag to indicate a potential low bias due to extraction past hold time.

c. All soils reported on a dry weight basis?

Yes No N/A Comments:

Only water samples were analyzed.

d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project?

Yes No N/A Comments:

Reporting Limits: For Method SW8270D, the LOD for indeno[1,2,3-c,d] pyrene of 0.266 µg/L did not meet ADEC groundwater criteria of 0.19 µg/L due to necessary dilution due to the dark extract.

e. Data quality or usability affected?

Hold Times: Even with the highest result reported for PAH (thus the highest TAqH reported), the parent/duplicate pair result for TAqH of 4.85 micrograms per liter (µg/L) was well below the applicable ADEC TAqH regulatory criteria of 15 µg/L. As such, data usability was not impacted. All data were usable as qualified.

Reporting Limits: Only 18 AAC 70 criteria are applicable to this surface water sample, and the total TAqH result was well below the applicable criteria of 15 µg/L. Data usability was not impacted.

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6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

Yes No N/A Comments:

ii. All method blank results less than limit of quantitation (LOQ) or project specified objectives?

Yes No N/A Comments:

For PAH SIM by Method SW8270D, phenanthrene was detected in:

- 1 - one method blank between the LOD and LOQ, and
- 2 - another method blank between the DL and LOD.

iii. If above LOQ or project specified objectives, what samples are affected?

Comments:

- 1 – Two of the three associated samples had results of non-detect for phenanthrene; therefore, data was not affected. The initial extract of sample RS-SW99-073121 had a phenanthrene result of 0.0292 µg/L, below that of the method blank detection of 0.03 µg/L.
- 2 - Since a high bias was indicated and the only associated sample had a result of ND for this analyte, no data were affected.

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes No N/A Comments:

- 1 – Per NFG guidelines, where the blank detection was greater than the sample detection, the result is likely a false positive, thus the greater of the sample detection or LOD is reported as non-detect in brackets. The phenanthrene result for the initial analysis of sample SW99-073121 was flagged as [0.0292] UB µg/L. The result should be considered non-detect.
- 2 - No data was affected.

v. Data quality or usability affected?

Comments:

- 1 – The re-extract for this sample was reported; therefore, data usability was not impacted.
- 2 - No impact.

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

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

Yes No N/A Comments:

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

Yes No N/A Comments:

No inorganics were analyzed.

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

Yes No N/A Comments:

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? RPD reported from LCS/LCSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

Yes No N/A Comments:

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

Comments:

All recoveries and RPDs were within acceptable limits.

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes No N/A Comments:

All recoveries and RPDs were within acceptable limits.

vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

No impact.

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c. Matrix Spike/Matrix Spike Duplicate (MS/MSD)

Note: Leave blank if not required for project

- i. Organics – One MS/MSD reported per matrix, analysis and 20 samples?

Yes No N/A Comments:

- ii. Metals/Inorganics – one MS and one MSD reported per matrix, analysis and 20 samples?

Yes No N/A Comments:

No inorganics were analyzed.

- iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable?

Yes No N/A Comments:

For PAH SIM by Method SW8270D, the MS/MSD for batch XXX45308 recovered below acceptable limits for several analytes. As the LCS established batch precision, only the parent sample, not from this project, was affected. No project data was impacted, and all data were usable without qualification

- iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? RPD reported from MS/MSD, and or sample/sample duplicate.

Yes No N/A Comments:

For PAH SIM by Method SW8270D, several analytes had MS/MSD RPDs exceeding the acceptable laboratory limit of 20% in batch XXX45308. Analytes with RPD exceedances were benzo(a)anthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[g,h,i]perylene, benzo[k]fluoranthene, chrysene, dibenzo[a,h]anthracene, indeno[1,2,3-c,d] pyrene, and naphthalene. Exceeding RPDs ranged from 22% to 49%. (It should be noted that the 2-methylnaphthalene surrogate recovery of 20.4% rounds to 20% and is considered within acceptable limits).

- v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

As there was no acceptable measure of laboratory precision for the impacted analytes, batch associated samples RS-SW1-073121, and RS-SW2-073121 were impacted.

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vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes No N/A Comments:

Results of non-detect were not qualified due to precision failures. Only benzo[g,h,i]perylene in sample RS-SW2-073121 had a detection for the impacted analytes, therefore was qualified. The benzo[g,h,i]perylene result for sample RS-SW2-073121 was flagged "Q" to indicate estimated with unknown bias.

vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

The only flagged result was surface water, with no ADEC criteria for the impacted analyte, and a TAqH result well below the limit of 15 µg/L; therefore, data usability was not affected.

d. Surrogates – Organics Only or Isotope Dilution Analytes (IDA) – Isotope Dilution Methods Only

i. Are surrogate/IDA recoveries reported for organic analyses – field, QC and laboratory samples?

Yes No N/A Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods 50-150 %R for field samples and 60-120 %R for QC samples; all other analyses see the laboratory report pages)

Yes No N/A Comments:

For SW8270D, NFG surrogate recovery limits are 30-130%. Conservatively, the more stringent laboratory limits were used for flagging purposes.

Surrogate recovery exceedances (ranging from 29-45%) were:

- 1 - 2-Methylnaphthalene-d10 in sample RS-SW1-073121
- 2 - Fluoranthene-d10 and 2-methylnaphthalene in sample RS-SW2-073121
- 3 - 2-Methylnaphthalene-d10 in sample RS-SW99-073121

Also, it should be noted that the re-extract of sample RS-SW99-073121 had a fluoranthene-d10 surrogate recovery of 49.5%, which rounds up to 50%, meeting the lower control limit of 50%. This recovery was considered within acceptable limits.

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iii. Do the sample results with failed surrogate/IDA recoveries have data flags? If so, are the data flags clearly defined?

Yes No N/A Comments:

1 – RS-SW1-073121: The sample was re-extracted and re-analyzed past hold time. Surrogate recoveries confirmed, and the in-hold data was reported. Analytes associated with this surrogate are 1-methylnaphthalene, 2-methylnaphthalene, acenaphthene, acenaphthylene, anthracene, fluorene, naphthalene, and phenanthrene. For detected values a “Q-“ was appended, and for non-detects a “UJ” was assigned to impacted results.
2 – Sample RS-SW2-073121 was analyzed at a ten-fold dilution for PAH SIM due to the dark color of the extract. Data were not qualified, when the sample was analyzed at a dilution of greater than five-fold, as surrogate may not accurately quantitate at such dilutions.
3 - RS-SW99-073121: The sample was re-extracted and re-analyzed past hold time, with the re-extract reported. The re-extract was reported with qualifiers assigned in 5b.

iv. Data quality or usability affected?

Comments:

All impacted results had either detected values well below ADEC criteria or ND results with LODs well below ADEC criteria. Data usability was not impacted.

e. Trip Blanks

i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples? (If not, enter explanation below.)

Yes No N/A Comments:

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)

Yes No N/A Comments:

iii. All results less than LOQ and project specified objectives?

Yes No N/A Comments:

iv. If above LOQ or project specified objectives, what samples are affected?

Comments:

Not applicable.

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v. Data quality or usability affected?

Comments:

Data was not impacted.

f. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

Yes No N/A Comments:

ii. Submitted blind to lab?

Yes No N/A Comments:

RS-SW99-073121 was a duplicate of RS-SW1-073121.

iii. Precision – All relative percent differences (RPD) less than specified project objectives?
(Recommended: 30% water, 50% soil)

$$\text{RPD (\%)} = \text{Absolute value of: } \frac{(R_1 - R_2)}{((R_1 + R_2)/2)} \times 100$$

Where R_1 = Sample Concentration

R_2 = Field Duplicate Concentration

Yes No N/A Comments:

For PAH SIM, for the re-extracted data that was reported, analytes with failing RPDs were 1-methylnaphthalene (130%), acenaphthene (87%), fluorene (110%), and phenanthrene (109%).

iv. Data quality or usability affected? (Use the comment box to explain why or why not.)

Comments:

Detected results above the LOQ were qualified "Q" to indicate that the result is an estimated value with an unknown bias. Non-detect values are not impacted by field precision, as precision measures the quantity, not the presence or absence of an analyte. Sample RS-SW2-073121 was associated with this field duplicate pair but had results of non-detectable for all impacted analytes; therefore, data was not affected and was not qualified. As the TAqH result for this sample was well below the ADEC criteria of 15 ug/L, data usability was not impacted.

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g. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below)?

Yes No N/A Comments:

Dedicated or disposable equipment was used for the collection of all samples.

i. All results less than LOQ and project specified objectives?

Yes No N/A Comments:

Not applicable.

ii. If above LOQ or project specified objectives, what samples are affected?

Comments:

Not applicable.

iii. Data quality or usability affected?

Comments:

No impact.

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

Yes No N/A Comments:

Attachment 2

Laboratory Deliverable

(Data package)



Laboratory Report of Analysis

To: SLR Alaska-Anchorage
2700 Gambell Street, Suite 200
Anchorage, AK 99503
(907)222-1112

Corrected Report - Revision 1

This report has been revised to correct the Sample ID on sample 1214771004. No other changes have been made.
AD 08/25/21

Report Number: **1214771**

Client Project: **105.00151.21001 Red Salmon**

Dear Stan Flagel,

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 Alexandra 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.

Alexandra Daniel
Project Manager
Alexandra.Daniel@sgs.com

Date

Case Narrative

SGS Client: **SLR Alaska-Anchorage**
SGS Project: **1214771**
Project Name/Site: **105.00151.21001 Red Salmon**
Project Contact: **Stan Flagel**

Refer to sample receipt form for information on sample condition.

RS-MW1-073121 (1214771001) PS

8270D SIM - The PAH LOQs are elevated due to sample dilution. The sample was analyzed at a dilution due to high concentrations of non-target compounds.

RS-MW2-073021 (1214771002) PS

8270D SIM - PAH surrogate recoveries for fluoranthene-d10 and 2-methylnaphthalene-d10 do not meet QC criteria due to sample dilution.

8270D SIM - The PAH LOQs are elevated due to sample dilution. The sample was analyzed at a dilution due to high concentrations of non-target compounds.

RS-MW99-073121 (1214771010) PS

8270D SIM - The PAH LOQs are elevated due to sample dilution. The sample was analyzed at a dilution due to high concentrations of non-target compounds.

MB for HBN 1823448 [XXX/45308] (1627703) MB

8270D SIM - Phenanthrene is detect in the PAH method blank at less than the LOQ. Associated samples contain this analyte at less than the LOQ.

1214798010MS (1627705) MS

8270D SIM - PAH MS recoveries for multiple analytes do not meet QC criteria. Refer to the LCS for accuracy requirements.

1214798010MSD (1627706) MSD

8270D SIM - PAH MSD recoveries for multiple analytes do not meet QC criteria. Refer to the LCS for accuracy requirements.

8270D SIM - PAH MS/MSD RPD for multiple analytes does not meet QC criteria. These analytes are not detected above the LOQ in the parent sample.

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

Print Date: 08/25/2021 2:02:42PM

Laboratory Qualifiers

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

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

SGS maintains a formal Quality Assurance/Quality Control (QA/QC) program. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request. The laboratory certification numbers are AK00971 (DW Chemistry & Microbiology) & 17-021 (CS) for ADEC and 2944.01 for DOD ELAP/ISO17025 (RCRA methods: 1020B, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035A, 6020B, 7470A, 7471B, 8015C, 8021B, 8082A, 8260D, 8270D, 8270D-SIM, 9040C, 9045D, 9056A, 9060A, AK101 and AK102/103). SGS is only certified for the analytes listed on our Drinking Water Certification (DW methods: 200.8, 2130B, 2320B, 2510B, 300.0, 4500-CN-C,E, 4500-H-B, 4500-NO3-F, 4500-P-E and 524.2) and only those analytes will be reported to the State of Alaska for compliance. Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP and, when applicable, other regulatory authorities.

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

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

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

Sample Summary

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Collected</u>	<u>Received</u>	<u>Matrix</u>
RS-MW1-073121	1214771001	07/31/2021	08/02/2021	Water (Surface, Eff., Ground)
RS-MW2-073021	1214771002	07/30/2021	08/02/2021	Water (Surface, Eff., Ground)
RS-MW3-073121	1214771003	07/31/2021	08/02/2021	Water (Surface, Eff., Ground)
RS-MW4-073021	1214771004	07/30/2021	08/02/2021	Water (Surface, Eff., Ground)
RS-MW6-073021	1214771005	07/30/2021	08/02/2021	Water (Surface, Eff., Ground)
RS-MW7-073021	1214771006	07/30/2021	08/02/2021	Water (Surface, Eff., Ground)
RS-MW8-073021	1214771007	07/30/2021	08/02/2021	Water (Surface, Eff., Ground)
RS-MW9-073021	1214771008	07/30/2021	08/02/2021	Water (Surface, Eff., Ground)
RS-MW10-073021	1214771009	07/30/2021	08/02/2021	Water (Surface, Eff., Ground)
RS-MW99-073121	1214771010	07/31/2021	08/02/2021	Water (Surface, Eff., Ground)
TRIP1-073021	1214771011	07/30/2021	08/02/2021	Water (Surface, Eff., Ground)

<u>Method</u>	<u>Method Description</u>
8270D SIM LV (PAH)	8270 PAH SIM GC/MS LV
AK102	DRO/RRO Low Volume Water
AK103	DRO/RRO Low Volume Water
AK101	Gasoline Range Organics (W)
SW8260D	Volatile Organic Compounds (W)
SW8260D	Volatile Organic Compounds (W) FULL

Detectable Results Summary

Client Sample ID: **RS-MW1-073121**

Lab Sample ID: 1214771001

Polynuclear Aromatics GC/MS

Semivolatile Organic Fuels

Volatile Fuels

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Fluorene	0.0846J	ug/L
Diesel Range Organics	24.0	mg/L
Residual Range Organics	1.96	mg/L
Gasoline Range Organics	0.141	mg/L
1,2,4-Trimethylbenzene	9.15	ug/L
1,3,5-Trimethylbenzene	6.01	ug/L
4-Isopropyltoluene	1.37	ug/L
Benzene	1.93	ug/L
Ethylbenzene	4.17	ug/L
Isopropylbenzene (Cumene)	0.473J	ug/L
Naphthalene	5.15	ug/L
n-Propylbenzene	0.595J	ug/L
o-Xylene	11.4	ug/L
P & M -Xylene	10.1	ug/L
Toluene	0.836J	ug/L
Xylenes (total)	21.6	ug/L

Client Sample ID: **RS-MW2-073021**

Lab Sample ID: 1214771002

Polynuclear Aromatics GC/MS

Semivolatile Organic Fuels

Volatile Fuels

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
1-Methylnaphthalene	0.143J	ug/L
Pyrene	0.174J	ug/L
Diesel Range Organics	4.87	mg/L
Residual Range Organics	1.78	mg/L
Gasoline Range Organics	0.108	mg/L
1,2,4-Trimethylbenzene	30.2	ug/L
1,3,5-Trimethylbenzene	6.35	ug/L
4-Isopropyltoluene	3.34	ug/L
Benzene	0.284J	ug/L
Ethylbenzene	1.01	ug/L
Isopropylbenzene (Cumene)	3.75	ug/L
Naphthalene	19.7	ug/L
n-Propylbenzene	6.69	ug/L
o-Xylene	1.48	ug/L
P & M -Xylene	3.18	ug/L
sec-Butylbenzene	1.19	ug/L
Xylenes (total)	4.66	ug/L

Client Sample ID: **RS-MW3-073121**

Lab Sample ID: 1214771003

Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	3.88	mg/L
Residual Range Organics	1.11	mg/L

Client Sample ID: **RS-MW4-073021**

Lab Sample ID: 1214771004

Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	2.37	mg/L
Residual Range Organics	0.710	mg/L

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Detectable Results Summary

Client Sample ID: **RS-MW6-073021**

Lab Sample ID: 1214771005

Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	1.66J	mg/L
Residual Range Organics	1.38J	mg/L

Client Sample ID: **RS-MW7-073021**

Lab Sample ID: 1214771006

Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	1.64	mg/L
Residual Range Organics	0.494J	mg/L

Client Sample ID: **RS-MW8-073021**

Lab Sample ID: 1214771007

Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	4.02	mg/L
Residual Range Organics	0.864	mg/L

Volatile Fuels

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Gasoline Range Organics	0.168	mg/L
Benzene	0.966	ug/L
Ethylbenzene	2.97	ug/L
o-Xylene	14.0	ug/L
P & M -Xylene	17.3	ug/L
Xylenes (total)	31.3	ug/L

Client Sample ID: **RS-MW9-073021**

Lab Sample ID: 1214771008

Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	0.258J	mg/L

Client Sample ID: **RS-MW99-073121**

Lab Sample ID: 1214771010

Polynuclear Aromatics GC/MS

Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Fluorene	0.140	ug/L
Diesel Range Organics	23.8	mg/L
Residual Range Organics	2.08	mg/L

Volatile Fuels

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Gasoline Range Organics	0.139	mg/L
1,2,4-Trimethylbenzene	10.1	ug/L
1,3,5-Trimethylbenzene	6.59	ug/L
2-Hexanone	3.53J	ug/L
4-Isopropyltoluene	1.57	ug/L
Benzene	2.06	ug/L
Ethylbenzene	4.41	ug/L
Isopropylbenzene (Cumene)	0.520J	ug/L
Naphthalene	5.96	ug/L
n-Propylbenzene	0.635J	ug/L
o-Xylene	12.7	ug/L
P & M -Xylene	10.9	ug/L
Toluene	0.911J	ug/L
Xylenes (total)	23.6	ug/L



Results of **RS-MW1-073121**

Client Sample ID: **RS-MW1-073121**
Client Project ID: **105.00151.21001 Red Salmon**
Lab Sample ID: 1214771001
Lab Project ID: 1214771

Collection Date: 07/31/21 08:45
Received Date: 08/02/21 14:16
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Polynuclear Aromatics GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
1-Methylnaphthalene	0.0510 U	0.102	0.0306	ug/L	2		08/14/21 21:40
2-Methylnaphthalene	0.0510 U	0.102	0.0306	ug/L	2		08/14/21 21:40
Acenaphthene	0.0510 U	0.102	0.0306	ug/L	2		08/14/21 21:40
Acenaphthylene	0.0510 U	0.102	0.0306	ug/L	2		08/14/21 21:40
Anthracene	0.0510 U	0.102	0.0306	ug/L	2		08/14/21 21:40
Benzo(a)Anthracene	0.0510 U	0.102	0.0306	ug/L	2		08/14/21 21:40
Benzo[a]pyrene	0.0204 U	0.0408	0.0127	ug/L	2		08/14/21 21:40
Benzo[b]Fluoranthene	0.0510 U	0.102	0.0306	ug/L	2		08/14/21 21:40
Benzo[g,h,i]perylene	0.0510 U	0.102	0.0306	ug/L	2		08/14/21 21:40
Benzo[k]fluoranthene	0.0510 U	0.102	0.0306	ug/L	2		08/14/21 21:40
Chrysene	0.0510 U	0.102	0.0306	ug/L	2		08/14/21 21:40
Dibenzo[a,h]anthracene	0.0204 U	0.0408	0.0127	ug/L	2		08/14/21 21:40
Fluoranthene	0.0510 U	0.102	0.0306	ug/L	2		08/14/21 21:40
Fluorene	0.0846 J	0.102	0.0306	ug/L	2		08/14/21 21:40
Indeno[1,2,3-c,d] pyrene	0.0510 U	0.102	0.0306	ug/L	2		08/14/21 21:40
Naphthalene	0.102 U	0.204	0.0633	ug/L	2		08/14/21 21:40
Phenanthrene	0.0510 U	0.102	0.0306	ug/L	2		08/14/21 21:40
Pyrene	0.0510 U	0.102	0.0306	ug/L	2		08/14/21 21:40
Surrogates							
2-Methylnaphthalene-d10 (surr)	53.1	42-86		%	2		08/14/21 21:40
Fluoranthene-d10 (surr)	50.1	50-97		%	2		08/14/21 21:40

Batch Information

Analytical Batch: XMS12829
Analytical Method: 8270D SIM LV (PAH)
Analyst: LAW
Analytical Date/Time: 08/14/21 21:40
Container ID: 1214771001-C

Prep Batch: XXX45308
Prep Method: SW3535A
Prep Date/Time: 08/04/21 14:27
Prep Initial Wt./Vol.: 245 mL
Prep Extract Vol: 1 mL

Results of RS-MW1-073121

Client Sample ID: **RS-MW1-073121**
 Client Project ID: **105.00151.21001 Red Salmon**
 Lab Sample ID: 1214771001
 Lab Project ID: 1214771

Collection Date: 07/31/21 08:45
 Received Date: 08/02/21 14:16
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	24.0	0.625	0.188	mg/L	1		08/10/21 11:57
Surrogates							
5a Androstane (surr)	121	50-150		%	1		08/10/21 11:57

Batch Information

Analytical Batch: XFC16039
 Analytical Method: AK102
 Analyst: IVM
 Analytical Date/Time: 08/10/21 11:57
 Container ID: 1214771001-A

Prep Batch: XXX45329
 Prep Method: SW3520C
 Prep Date/Time: 08/06/21 15:05
 Prep Initial Wt./Vol.: 240 mL
 Prep Extract Vol: 1 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	1.96	0.521	0.156	mg/L	1		08/10/21 11:57
Surrogates							
n-Triacontane-d62 (surr)	116	50-150		%	1		08/10/21 11:57

Batch Information

Analytical Batch: XFC16039
 Analytical Method: AK103
 Analyst: IVM
 Analytical Date/Time: 08/10/21 11:57
 Container ID: 1214771001-A

Prep Batch: XXX45329
 Prep Method: SW3520C
 Prep Date/Time: 08/06/21 15:05
 Prep Initial Wt./Vol.: 240 mL
 Prep Extract Vol: 1 mL



Results of **RS-MW1-073121**

Client Sample ID: **RS-MW1-073121**
Client Project ID: **105.00151.21001 Red Salmon**
Lab Sample ID: 1214771001
Lab Project ID: 1214771

Collection Date: 07/31/21 08:45
Received Date: 08/02/21 14:16
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	0.141	0.100	0.0450	mg/L	1		08/06/21 01:58
Surrogates							
4-Bromofluorobenzene (surr)	85.9	50-150		%	1		08/06/21 01:58

Batch Information

Analytical Batch: VFC15751
Analytical Method: AK101
Analyst: MDT
Analytical Date/Time: 08/06/21 01:58
Container ID: 1214771001-E

Prep Batch: VXX37588
Prep Method: SW5030B
Prep Date/Time: 08/05/21 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of **RS-MW1-073121**

Client Sample ID: **RS-MW1-073121**
Client Project ID: **105.00151.21001 Red Salmon**
Lab Sample ID: 1214771001
Lab Project ID: 1214771

Collection Date: 07/31/21 08:45
Received Date: 08/02/21 14:16
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
1,1,1,2-Tetrachloroethane	0.250 U	0.500	0.150	ug/L	1		08/06/21 15:29
1,1,1-Trichloroethane	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:29
1,1,2,2-Tetrachloroethane	0.250 U	0.500	0.150	ug/L	1		08/06/21 15:29
1,1,2-Trichloroethane	0.200 U	0.400	0.120	ug/L	1		08/06/21 15:29
1,1-Dichloroethane	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:29
1,1-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:29
1,1-Dichloropropene	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:29
1,2,3-Trichlorobenzene	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:29
1,2,3-Trichloropropane	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:29
1,2,4-Trichlorobenzene	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:29
1,2,4-Trimethylbenzene	9.15	1.00	0.310	ug/L	1		08/06/21 15:29
1,2-Dibromo-3-chloropropane	5.00 U	10.0	3.10	ug/L	1		08/06/21 15:29
1,2-Dibromoethane	0.0375 U	0.0750	0.0180	ug/L	1		08/06/21 15:29
1,2-Dichlorobenzene	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:29
1,2-Dichloroethane	0.250 U	0.500	0.150	ug/L	1		08/06/21 15:29
1,2-Dichloropropane	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:29
1,3,5-Trimethylbenzene	6.01	1.00	0.310	ug/L	1		08/06/21 15:29
1,3-Dichlorobenzene	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:29
1,3-Dichloropropane	0.250 U	0.500	0.150	ug/L	1		08/06/21 15:29
1,4-Dichlorobenzene	0.250 U	0.500	0.150	ug/L	1		08/06/21 15:29
2,2-Dichloropropane	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:29
2-Butanone (MEK)	5.00 U	10.0	3.10	ug/L	1		08/06/21 15:29
2-Chlorotoluene	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:29
2-Hexanone	5.00 U	10.0	3.10	ug/L	1		08/06/21 15:29
4-Chlorotoluene	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:29
4-Isopropyltoluene	1.37	1.00	0.310	ug/L	1		08/06/21 15:29
4-Methyl-2-pentanone (MIBK)	5.00 U	10.0	3.10	ug/L	1		08/06/21 15:29
Benzene	1.93	0.400	0.120	ug/L	1		08/06/21 15:29
Bromobenzene	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:29
Bromochloromethane	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:29
Bromodichloromethane	0.250 U	0.500	0.150	ug/L	1		08/06/21 15:29
Bromoform	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:29
Bromomethane	2.50 U	5.00	2.00	ug/L	1		08/06/21 15:29
Carbon disulfide	5.00 U	10.0	3.10	ug/L	1		08/06/21 15:29
Carbon tetrachloride	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:29
Chlorobenzene	0.250 U	0.500	0.150	ug/L	1		08/06/21 15:29
Chloroethane	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:29

Print Date: 08/25/2021 2:02:50PM

J flagging is activated



Results of **RS-MW1-073121**

Client Sample ID: **RS-MW1-073121**
Client Project ID: **105.00151.21001 Red Salmon**
Lab Sample ID: 1214771001
Lab Project ID: 1214771

Collection Date: 07/31/21 08:45
Received Date: 08/02/21 14:16
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Chloroform	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:29
Chloromethane	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:29
cis-1,2-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:29
cis-1,3-Dichloropropene	0.250 U	0.500	0.150	ug/L	1		08/06/21 15:29
Dibromochloromethane	0.250 U	0.500	0.150	ug/L	1		08/06/21 15:29
Dibromomethane	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:29
Dichlorodifluoromethane	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:29
Ethylbenzene	4.17	1.00	0.310	ug/L	1		08/06/21 15:29
Freon-113	5.00 U	10.0	3.10	ug/L	1		08/06/21 15:29
Hexachlorobutadiene	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:29
Isopropylbenzene (Cumene)	0.473 J	1.00	0.310	ug/L	1		08/06/21 15:29
Methylene chloride	5.00 U	10.0	3.10	ug/L	1		08/06/21 15:29
Methyl-t-butyl ether	5.00 U	10.0	3.10	ug/L	1		08/06/21 15:29
Naphthalene	5.15	1.00	0.310	ug/L	1		08/06/21 15:29
n-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:29
n-Propylbenzene	0.595 J	1.00	0.310	ug/L	1		08/06/21 15:29
o-Xylene	11.4	1.00	0.310	ug/L	1		08/06/21 15:29
P & M -Xylene	10.1	2.00	0.620	ug/L	1		08/06/21 15:29
sec-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:29
Styrene	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:29
tert-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:29
Tetrachloroethene	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:29
Toluene	0.836 J	1.00	0.310	ug/L	1		08/06/21 15:29
trans-1,2-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:29
trans-1,3-Dichloropropene	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:29
Trichloroethene	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:29
Trichlorofluoromethane	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:29
Vinyl acetate	5.00 U	10.0	3.10	ug/L	1		08/06/21 15:29
Vinyl chloride	0.0750 U	0.150	0.0500	ug/L	1		08/06/21 15:29
Xylenes (total)	21.6	3.00	1.00	ug/L	1		08/06/21 15:29
Surrogates							
1,2-Dichloroethane-D4 (surr)	102	81-118		%	1		08/06/21 15:29
4-Bromofluorobenzene (surr)	100	85-114		%	1		08/06/21 15:29
Toluene-d8 (surr)	100	89-112		%	1		08/06/21 15:29

Results of RS-MW1-073121

Client Sample ID: **RS-MW1-073121**
Client Project ID: **105.00151.21001 Red Salmon**
Lab Sample ID: 1214771001
Lab Project ID: 1214771

Collection Date: 07/31/21 08:45
Received Date: 08/02/21 14:16
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Batch Information

Analytical Batch: VMS21031
Analytical Method: SW8260D
Analyst: JMG
Analytical Date/Time: 08/06/21 15:29
Container ID: 1214771001-H

Prep Batch: VXX37606
Prep Method: SW5030B
Prep Date/Time: 08/06/21 10:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of RS-MW2-073021

Client Sample ID: RS-MW2-073021
Client Project ID: 105.00151.21001 Red Salmon
Lab Sample ID: 1214771002
Lab Project ID: 1214771

Collection Date: 07/30/21 18:57
Received Date: 08/02/21 14:16
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Polynuclear Aromatics GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various polynuclear aromatic hydrocarbons and their surrogate compounds with associated quality and detection data.

Batch Information

Analytical Batch: XMS12829
Analytical Method: 8270D SIM LV (PAH)
Analyst: LAW
Analytical Date/Time: 08/14/21 22:01
Container ID: 1214771002-C

Prep Batch: XXX45308
Prep Method: SW3535A
Prep Date/Time: 08/04/21 14:27
Prep Initial Wt./Vol.: 260 mL
Prep Extract Vol: 1 mL



Results of **RS-MW2-073021**

Client Sample ID: **RS-MW2-073021**
Client Project ID: **105.00151.21001 Red Salmon**
Lab Sample ID: 1214771002
Lab Project ID: 1214771

Collection Date: 07/30/21 18:57
Received Date: 08/02/21 14:16
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	4.87	0.600	0.180	mg/L	1		08/10/21 12:07

Surrogates

5a Androstane (surr)	99.4	50-150		%	1		08/10/21 12:07
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Batch Information

Analytical Batch: XFC16039
Analytical Method: AK102
Analyst: IVM
Analytical Date/Time: 08/10/21 12:07
Container ID: 1214771002-A

Prep Batch: XXX45329
Prep Method: SW3520C
Prep Date/Time: 08/06/21 15:05
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	1.78	0.500	0.150	mg/L	1		08/10/21 12:07

Surrogates

n-Triacontane-d62 (surr)	104	50-150		%	1		08/10/21 12:07
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Batch Information

Analytical Batch: XFC16039
Analytical Method: AK103
Analyst: IVM
Analytical Date/Time: 08/10/21 12:07
Container ID: 1214771002-A

Prep Batch: XXX45329
Prep Method: SW3520C
Prep Date/Time: 08/06/21 15:05
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL



Results of **RS-MW2-073021**

Client Sample ID: **RS-MW2-073021**
Client Project ID: **105.00151.21001 Red Salmon**
Lab Sample ID: 1214771002
Lab Project ID: 1214771

Collection Date: 07/30/21 18:57
Received Date: 08/02/21 14:16
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	0.108	0.100	0.0450	mg/L	1		08/06/21 02:16
Surrogates							
4-Bromofluorobenzene (surr)	101	50-150		%	1		08/06/21 02:16

Batch Information

Analytical Batch: VFC15751
Analytical Method: AK101
Analyst: MDT
Analytical Date/Time: 08/06/21 02:16
Container ID: 1214771002-E

Prep Batch: VXX37588
Prep Method: SW5030B
Prep Date/Time: 08/05/21 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of **RS-MW2-073021**

Client Sample ID: **RS-MW2-073021**
Client Project ID: **105.00151.21001 Red Salmon**
Lab Sample ID: 1214771002
Lab Project ID: 1214771

Collection Date: 07/30/21 18:57
Received Date: 08/02/21 14:16
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
1,1,1,2-Tetrachloroethane	0.250 U	0.500	0.150	ug/L	1		08/06/21 15:44
1,1,1-Trichloroethane	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:44
1,1,2,2-Tetrachloroethane	0.250 U	0.500	0.150	ug/L	1		08/06/21 15:44
1,1,2-Trichloroethane	0.200 U	0.400	0.120	ug/L	1		08/06/21 15:44
1,1-Dichloroethane	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:44
1,1-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:44
1,1-Dichloropropene	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:44
1,2,3-Trichlorobenzene	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:44
1,2,3-Trichloropropane	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:44
1,2,4-Trichlorobenzene	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:44
1,2,4-Trimethylbenzene	30.2	1.00	0.310	ug/L	1		08/06/21 15:44
1,2-Dibromo-3-chloropropane	5.00 U	10.0	3.10	ug/L	1		08/06/21 15:44
1,2-Dibromoethane	0.0375 U	0.0750	0.0180	ug/L	1		08/06/21 15:44
1,2-Dichlorobenzene	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:44
1,2-Dichloroethane	0.250 U	0.500	0.150	ug/L	1		08/06/21 15:44
1,2-Dichloropropane	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:44
1,3,5-Trimethylbenzene	6.35	1.00	0.310	ug/L	1		08/06/21 15:44
1,3-Dichlorobenzene	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:44
1,3-Dichloropropane	0.250 U	0.500	0.150	ug/L	1		08/06/21 15:44
1,4-Dichlorobenzene	0.250 U	0.500	0.150	ug/L	1		08/06/21 15:44
2,2-Dichloropropane	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:44
2-Butanone (MEK)	5.00 U	10.0	3.10	ug/L	1		08/06/21 15:44
2-Chlorotoluene	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:44
2-Hexanone	5.00 U	10.0	3.10	ug/L	1		08/06/21 15:44
4-Chlorotoluene	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:44
4-Isopropyltoluene	3.34	1.00	0.310	ug/L	1		08/06/21 15:44
4-Methyl-2-pentanone (MIBK)	5.00 U	10.0	3.10	ug/L	1		08/06/21 15:44
Benzene	0.284 J	0.400	0.120	ug/L	1		08/06/21 15:44
Bromobenzene	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:44
Bromochloromethane	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:44
Bromodichloromethane	0.250 U	0.500	0.150	ug/L	1		08/06/21 15:44
Bromoform	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:44
Bromomethane	2.50 U	5.00	2.00	ug/L	1		08/06/21 15:44
Carbon disulfide	5.00 U	10.0	3.10	ug/L	1		08/06/21 15:44
Carbon tetrachloride	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:44
Chlorobenzene	0.250 U	0.500	0.150	ug/L	1		08/06/21 15:44
Chloroethane	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:44

Print Date: 08/25/2021 2:02:50PM

J flagging is activated



Results of **RS-MW2-073021**

Client Sample ID: **RS-MW2-073021**
Client Project ID: **105.00151.21001 Red Salmon**
Lab Sample ID: 1214771002
Lab Project ID: 1214771

Collection Date: 07/30/21 18:57
Received Date: 08/02/21 14:16
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Chloroform	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:44
Chloromethane	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:44
cis-1,2-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:44
cis-1,3-Dichloropropene	0.250 U	0.500	0.150	ug/L	1		08/06/21 15:44
Dibromochloromethane	0.250 U	0.500	0.150	ug/L	1		08/06/21 15:44
Dibromomethane	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:44
Dichlorodifluoromethane	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:44
Ethylbenzene	1.01	1.00	0.310	ug/L	1		08/06/21 15:44
Freon-113	5.00 U	10.0	3.10	ug/L	1		08/06/21 15:44
Hexachlorobutadiene	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:44
Isopropylbenzene (Cumene)	3.75	1.00	0.310	ug/L	1		08/06/21 15:44
Methylene chloride	5.00 U	10.0	3.10	ug/L	1		08/06/21 15:44
Methyl-t-butyl ether	5.00 U	10.0	3.10	ug/L	1		08/06/21 15:44
Naphthalene	19.7	1.00	0.310	ug/L	1		08/06/21 15:44
n-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:44
n-Propylbenzene	6.69	1.00	0.310	ug/L	1		08/06/21 15:44
o-Xylene	1.48	1.00	0.310	ug/L	1		08/06/21 15:44
P & M -Xylene	3.18	2.00	0.620	ug/L	1		08/06/21 15:44
sec-Butylbenzene	1.19	1.00	0.310	ug/L	1		08/06/21 15:44
Styrene	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:44
tert-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:44
Tetrachloroethene	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:44
Toluene	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:44
trans-1,2-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:44
trans-1,3-Dichloropropene	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:44
Trichloroethene	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:44
Trichlorofluoromethane	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:44
Vinyl acetate	5.00 U	10.0	3.10	ug/L	1		08/06/21 15:44
Vinyl chloride	0.0750 U	0.150	0.0500	ug/L	1		08/06/21 15:44
Xylenes (total)	4.66	3.00	1.00	ug/L	1		08/06/21 15:44
Surrogates							
1,2-Dichloroethane-D4 (surr)	104	81-118		%	1		08/06/21 15:44
4-Bromofluorobenzene (surr)	101	85-114		%	1		08/06/21 15:44
Toluene-d8 (surr)	99.8	89-112		%	1		08/06/21 15:44

Results of RS-MW2-073021

Client Sample ID: **RS-MW2-073021**
Client Project ID: **105.00151.21001 Red Salmon**
Lab Sample ID: 1214771002
Lab Project ID: 1214771

Collection Date: 07/30/21 18:57
Received Date: 08/02/21 14:16
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Batch Information

Analytical Batch: VMS21031
Analytical Method: SW8260D
Analyst: JMG
Analytical Date/Time: 08/06/21 15:44
Container ID: 1214771002-H

Prep Batch: VXX37606
Prep Method: SW5030B
Prep Date/Time: 08/06/21 10:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of **RS-MW3-073121**

Client Sample ID: **RS-MW3-073121**
Client Project ID: **105.00151.21001 Red Salmon**
Lab Sample ID: 1214771003
Lab Project ID: 1214771

Collection Date: 07/31/21 09:25
Received Date: 08/02/21 14:16
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	3.88	0.638	0.191	mg/L	1		08/10/21 12:17

Surrogates

5a Androstane (surr)	95.3	50-150		%	1		08/10/21 12:17
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Batch Information

Analytical Batch: XFC16039
Analytical Method: AK102
Analyst: IVM
Analytical Date/Time: 08/10/21 12:17
Container ID: 1214771003-A

Prep Batch: XXX45329
Prep Method: SW3520C
Prep Date/Time: 08/06/21 15:05
Prep Initial Wt./Vol.: 235 mL
Prep Extract Vol: 1 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	1.11	0.532	0.160	mg/L	1		08/10/21 12:17

Surrogates

n-Triacontane-d62 (surr)	102	50-150		%	1		08/10/21 12:17
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Batch Information

Analytical Batch: XFC16039
Analytical Method: AK103
Analyst: IVM
Analytical Date/Time: 08/10/21 12:17
Container ID: 1214771003-A

Prep Batch: XXX45329
Prep Method: SW3520C
Prep Date/Time: 08/06/21 15:05
Prep Initial Wt./Vol.: 235 mL
Prep Extract Vol: 1 mL



Results of **RS-MW3-073121**

Client Sample ID: **RS-MW3-073121**
Client Project ID: **105.00151.21001 Red Salmon**
Lab Sample ID: 1214771003
Lab Project ID: 1214771

Collection Date: 07/31/21 09:25
Received Date: 08/02/21 14:16
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	0.0500 U	0.100	0.0450	mg/L	1		08/06/21 02:34
Surrogates							
4-Bromofluorobenzene (surr)	88	50-150		%	1		08/06/21 02:34

Batch Information

Analytical Batch: VFC15751
Analytical Method: AK101
Analyst: MDT
Analytical Date/Time: 08/06/21 02:34
Container ID: 1214771003-C

Prep Batch: VXX37588
Prep Method: SW5030B
Prep Date/Time: 08/05/21 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of **RS-MW3-073121**

Client Sample ID: **RS-MW3-073121**
Client Project ID: **105.00151.21001 Red Salmon**
Lab Sample ID: 1214771003
Lab Project ID: 1214771

Collection Date: 07/31/21 09:25
Received Date: 08/02/21 14:16
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	0.200 U	0.400	0.120	ug/L	1		08/10/21 19:59
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		08/10/21 19:59
o-Xylene	0.500 U	1.00	0.310	ug/L	1		08/10/21 19:59
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		08/10/21 19:59
Toluene	0.500 U	1.00	0.310	ug/L	1		08/10/21 19:59
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		08/10/21 19:59

Surrogates

1,2-Dichloroethane-D4 (surr)	103	81-118		%	1		08/10/21 19:59
4-Bromofluorobenzene (surr)	106	85-114		%	1		08/10/21 19:59
Toluene-d8 (surr)	102	89-112		%	1		08/10/21 19:59

Batch Information

Analytical Batch: VMS21036
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 08/10/21 19:59
Container ID: 1214771003-F

Prep Batch: VXX37619
Prep Method: SW5030B
Prep Date/Time: 08/10/21 14:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of **RS-MW4-073021**

Client Sample ID: **RS-MW4-073021**
Client Project ID: **105.00151.21001 Red Salmon**
Lab Sample ID: 1214771004
Lab Project ID: 1214771

Collection Date: 07/30/21 20:51
Received Date: 08/02/21 14:16
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	2.37	0.638	0.191	mg/L	1		08/10/21 12:27

Surrogates

5a Androstane (surr)	98.4	50-150		%	1		08/10/21 12:27
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Batch Information

Analytical Batch: XFC16039
Analytical Method: AK102
Analyst: IVM
Analytical Date/Time: 08/10/21 12:27
Container ID: 1214771004-A

Prep Batch: XXX45329
Prep Method: SW3520C
Prep Date/Time: 08/06/21 15:05
Prep Initial Wt./Vol.: 235 mL
Prep Extract Vol: 1 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	0.710	0.532	0.160	mg/L	1		08/10/21 12:27

Surrogates

n-Triacontane-d62 (surr)	107	50-150		%	1		08/10/21 12:27
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Batch Information

Analytical Batch: XFC16039
Analytical Method: AK103
Analyst: IVM
Analytical Date/Time: 08/10/21 12:27
Container ID: 1214771004-A

Prep Batch: XXX45329
Prep Method: SW3520C
Prep Date/Time: 08/06/21 15:05
Prep Initial Wt./Vol.: 235 mL
Prep Extract Vol: 1 mL

Results of RS-MW4-073021

Client Sample ID: **RS-MW4-073021**
 Client Project ID: **105.00151.21001 Red Salmon**
 Lab Sample ID: 1214771004
 Lab Project ID: 1214771

Collection Date: 07/30/21 20:51
 Received Date: 08/02/21 14:16
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	0.0500 U	0.100	0.0450	mg/L	1		08/06/21 02:52
Surrogates							
4-Bromofluorobenzene (surr)	90.8	50-150		%	1		08/06/21 02:52

Batch Information

Analytical Batch: VFC15751
 Analytical Method: AK101
 Analyst: MDT
 Analytical Date/Time: 08/06/21 02:52
 Container ID: 1214771004-C

Prep Batch: VXX37588
 Prep Method: SW5030B
 Prep Date/Time: 08/05/21 06:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL



Results of **RS-MW4-073021**

Client Sample ID: **RS-MW4-073021**
Client Project ID: **105.00151.21001 Red Salmon**
Lab Sample ID: 1214771004
Lab Project ID: 1214771

Collection Date: 07/30/21 20:51
Received Date: 08/02/21 14:16
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	0.200 U	0.400	0.120	ug/L	1		08/10/21 20:14
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		08/10/21 20:14
o-Xylene	0.500 U	1.00	0.310	ug/L	1		08/10/21 20:14
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		08/10/21 20:14
Toluene	0.500 U	1.00	0.310	ug/L	1		08/10/21 20:14
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		08/10/21 20:14
Surrogates							
1,2-Dichloroethane-D4 (surr)	103	81-118		%	1		08/10/21 20:14
4-Bromofluorobenzene (surr)	104	85-114		%	1		08/10/21 20:14
Toluene-d8 (surr)	100	89-112		%	1		08/10/21 20:14

Batch Information

Analytical Batch: VMS21036
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 08/10/21 20:14
Container ID: 1214771004-F

Prep Batch: VXX37619
Prep Method: SW5030B
Prep Date/Time: 08/10/21 14:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of **RS-MW6-073021**

Client Sample ID: **RS-MW6-073021**
Client Project ID: **105.00151.21001 Red Salmon**
Lab Sample ID: 1214771005
Lab Project ID: 1214771

Collection Date: 07/30/21 16:09
Received Date: 08/02/21 14:16
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	1.66 J	3.00	0.900	mg/L	1		08/11/21 13:18

Surrogates

5a Androstane (surr)	81.2	50-150		%	1		08/11/21 13:18
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Batch Information

Analytical Batch: XFC16040
Analytical Method: AK102
Analyst: IVM
Analytical Date/Time: 08/11/21 13:18
Container ID: 1214771005-A

Prep Batch: XXX45345
Prep Method: SW3520C
Prep Date/Time: 08/09/21 16:41
Prep Initial Wt./Vol.: 50 mL
Prep Extract Vol: 1 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	1.38 J	2.50	0.750	mg/L	1		08/11/21 13:18

Surrogates

n-Triacontane-d62 (surr)	89.3	50-150		%	1		08/11/21 13:18
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Batch Information

Analytical Batch: XFC16040
Analytical Method: AK103
Analyst: IVM
Analytical Date/Time: 08/11/21 13:18
Container ID: 1214771005-A

Prep Batch: XXX45345
Prep Method: SW3520C
Prep Date/Time: 08/09/21 16:41
Prep Initial Wt./Vol.: 50 mL
Prep Extract Vol: 1 mL



Results of **RS-MW6-073021**

Client Sample ID: **RS-MW6-073021**
Client Project ID: **105.00151.21001 Red Salmon**
Lab Sample ID: 1214771005
Lab Project ID: 1214771

Collection Date: 07/30/21 16:09
Received Date: 08/02/21 14:16
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	0.0500 U	0.100	0.0450	mg/L	1		08/06/21 03:45
Surrogates							
4-Bromofluorobenzene (surr)	84.6	50-150		%	1		08/06/21 03:45

Batch Information

Analytical Batch: VFC15751
Analytical Method: AK101
Analyst: MDT
Analytical Date/Time: 08/06/21 03:45
Container ID: 1214771005-C

Prep Batch: VXX37588
Prep Method: SW5030B
Prep Date/Time: 08/05/21 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of RS-MW6-073021

Client Sample ID: **RS-MW6-073021**
 Client Project ID: **105.00151.21001 Red Salmon**
 Lab Sample ID: 1214771005
 Lab Project ID: 1214771

Collection Date: 07/30/21 16:09
 Received Date: 08/02/21 14:16
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	0.200 U	0.400	0.120	ug/L	1		08/10/21 20:29
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		08/10/21 20:29
o-Xylene	0.500 U	1.00	0.310	ug/L	1		08/10/21 20:29
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		08/10/21 20:29
Toluene	0.500 U	1.00	0.310	ug/L	1		08/10/21 20:29
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		08/10/21 20:29
Surrogates							
1,2-Dichloroethane-D4 (surr)	99.4	81-118		%	1		08/10/21 20:29
4-Bromofluorobenzene (surr)	103	85-114		%	1		08/10/21 20:29
Toluene-d8 (surr)	100	89-112		%	1		08/10/21 20:29

Batch Information

Analytical Batch: VMS21036
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 08/10/21 20:29
 Container ID: 1214771005-F

Prep Batch: VXX37619
 Prep Method: SW5030B
 Prep Date/Time: 08/10/21 14:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL



Results of **RS-MW7-073021**

Client Sample ID: **RS-MW7-073021**
Client Project ID: **105.00151.21001 Red Salmon**
Lab Sample ID: 1214771006
Lab Project ID: 1214771

Collection Date: 07/30/21 21:34
Received Date: 08/02/21 14:16
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	1.64	0.625	0.188	mg/L	1		08/10/21 12:37

Surrogates

5a Androstane (surr)	101	50-150		%	1		08/10/21 12:37
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Batch Information

Analytical Batch: XFC16039
Analytical Method: AK102
Analyst: IVM
Analytical Date/Time: 08/10/21 12:37
Container ID: 1214771006-A

Prep Batch: XXX45329
Prep Method: SW3520C
Prep Date/Time: 08/06/21 15:05
Prep Initial Wt./Vol.: 240 mL
Prep Extract Vol: 1 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	0.494 J	0.521	0.156	mg/L	1		08/10/21 12:37

Surrogates

n-Triacontane-d62 (surr)	110	50-150		%	1		08/10/21 12:37
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Batch Information

Analytical Batch: XFC16039
Analytical Method: AK103
Analyst: IVM
Analytical Date/Time: 08/10/21 12:37
Container ID: 1214771006-A

Prep Batch: XXX45329
Prep Method: SW3520C
Prep Date/Time: 08/06/21 15:05
Prep Initial Wt./Vol.: 240 mL
Prep Extract Vol: 1 mL



Results of **RS-MW7-073021**

Client Sample ID: **RS-MW7-073021**
Client Project ID: **105.00151.21001 Red Salmon**
Lab Sample ID: 1214771006
Lab Project ID: 1214771

Collection Date: 07/30/21 21:34
Received Date: 08/02/21 14:16
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	0.0500 U	0.100	0.0450	mg/L	1		08/06/21 04:03
Surrogates							
4-Bromofluorobenzene (surr)	87.4	50-150		%	1		08/06/21 04:03

Batch Information

Analytical Batch: VFC15751
Analytical Method: AK101
Analyst: MDT
Analytical Date/Time: 08/06/21 04:03
Container ID: 1214771006-C

Prep Batch: VXX37588
Prep Method: SW5030B
Prep Date/Time: 08/05/21 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of **RS-MW7-073021**

Client Sample ID: **RS-MW7-073021**
Client Project ID: **105.00151.21001 Red Salmon**
Lab Sample ID: 1214771006
Lab Project ID: 1214771

Collection Date: 07/30/21 21:34
Received Date: 08/02/21 14:16
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	0.200 U	0.400	0.120	ug/L	1		08/10/21 20:44
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		08/10/21 20:44
o-Xylene	0.500 U	1.00	0.310	ug/L	1		08/10/21 20:44
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		08/10/21 20:44
Toluene	0.500 U	1.00	0.310	ug/L	1		08/10/21 20:44
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		08/10/21 20:44
Surrogates							
1,2-Dichloroethane-D4 (surr)	103	81-118		%	1		08/10/21 20:44
4-Bromofluorobenzene (surr)	107	85-114		%	1		08/10/21 20:44
Toluene-d8 (surr)	99.6	89-112		%	1		08/10/21 20:44

Batch Information

Analytical Batch: VMS21036
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 08/10/21 20:44
Container ID: 1214771006-F

Prep Batch: VXX37619
Prep Method: SW5030B
Prep Date/Time: 08/10/21 14:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of **RS-MW8-073021**

Client Sample ID: **RS-MW8-073021**
Client Project ID: **105.00151.21001 Red Salmon**
Lab Sample ID: 1214771007
Lab Project ID: 1214771

Collection Date: 07/30/21 22:10
Received Date: 08/02/21 14:16
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	4.02	0.600	0.180	mg/L	1		08/10/21 12:47

Surrogates

5a Androstane (surr)	102	50-150		%	1		08/10/21 12:47
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Batch Information

Analytical Batch: XFC16039
Analytical Method: AK102
Analyst: IVM
Analytical Date/Time: 08/10/21 12:47
Container ID: 1214771007-A

Prep Batch: XXX45329
Prep Method: SW3520C
Prep Date/Time: 08/06/21 15:05
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	0.864	0.500	0.150	mg/L	1		08/10/21 12:47

Surrogates

n-Triacontane-d62 (surr)	109	50-150		%	1		08/10/21 12:47
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Batch Information

Analytical Batch: XFC16039
Analytical Method: AK103
Analyst: IVM
Analytical Date/Time: 08/10/21 12:47
Container ID: 1214771007-A

Prep Batch: XXX45329
Prep Method: SW3520C
Prep Date/Time: 08/06/21 15:05
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL



Results of **RS-MW8-073021**

Client Sample ID: **RS-MW8-073021**
Client Project ID: **105.00151.21001 Red Salmon**
Lab Sample ID: 1214771007
Lab Project ID: 1214771

Collection Date: 07/30/21 22:10
Received Date: 08/02/21 14:16
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	0.168	0.100	0.0450	mg/L	1		08/06/21 04:21
Surrogates							
4-Bromofluorobenzene (surr)	97.4	50-150		%	1		08/06/21 04:21

Batch Information

Analytical Batch: VFC15751
Analytical Method: AK101
Analyst: MDT
Analytical Date/Time: 08/06/21 04:21
Container ID: 1214771007-C

Prep Batch: VXX37588
Prep Method: SW5030B
Prep Date/Time: 08/05/21 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of RS-MW8-073021

Client Sample ID: **RS-MW8-073021**
 Client Project ID: **105.00151.21001 Red Salmon**
 Lab Sample ID: 1214771007
 Lab Project ID: 1214771

Collection Date: 07/30/21 22:10
 Received Date: 08/02/21 14:16
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	0.966	0.400	0.120	ug/L	1		08/10/21 21:29
Ethylbenzene	2.97	1.00	0.310	ug/L	1		08/10/21 21:29
o-Xylene	14.0	1.00	0.310	ug/L	1		08/10/21 21:29
P & M -Xylene	17.3	2.00	0.620	ug/L	1		08/10/21 21:29
Toluene	0.500 U	1.00	0.310	ug/L	1		08/10/21 21:29
Xylenes (total)	31.3	3.00	1.00	ug/L	1		08/10/21 21:29
Surrogates							
1,2-Dichloroethane-D4 (surr)	103	81-118		%	1		08/10/21 21:29
4-Bromofluorobenzene (surr)	103	85-114		%	1		08/10/21 21:29
Toluene-d8 (surr)	98.6	89-112		%	1		08/10/21 21:29

Batch Information

Analytical Batch: VMS21036
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 08/10/21 21:29
 Container ID: 1214771007-F

Prep Batch: VXX37619
 Prep Method: SW5030B
 Prep Date/Time: 08/10/21 14:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL



Results of **RS-MW9-073021**

Client Sample ID: **RS-MW9-073021**
Client Project ID: **105.00151.21001 Red Salmon**
Lab Sample ID: 1214771008
Lab Project ID: 1214771

Collection Date: 07/30/21 14:31
Received Date: 08/02/21 14:16
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	0.258 J	0.625	0.188	mg/L	1		08/10/21 12:56

Surrogates

5a Androstane (surr)	93.9	50-150		%	1		08/10/21 12:56
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Batch Information

Analytical Batch: XFC16039
Analytical Method: AK102
Analyst: IVM
Analytical Date/Time: 08/10/21 12:56
Container ID: 1214771008-A

Prep Batch: XXX45329
Prep Method: SW3520C
Prep Date/Time: 08/06/21 15:05
Prep Initial Wt./Vol.: 240 mL
Prep Extract Vol: 1 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	0.261 U	0.521	0.156	mg/L	1		08/10/21 12:56

Surrogates

n-Triacontane-d62 (surr)	104	50-150		%	1		08/10/21 12:56
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Batch Information

Analytical Batch: XFC16039
Analytical Method: AK103
Analyst: IVM
Analytical Date/Time: 08/10/21 12:56
Container ID: 1214771008-A

Prep Batch: XXX45329
Prep Method: SW3520C
Prep Date/Time: 08/06/21 15:05
Prep Initial Wt./Vol.: 240 mL
Prep Extract Vol: 1 mL



Results of **RS-MW9-073021**

Client Sample ID: **RS-MW9-073021**
Client Project ID: **105.00151.21001 Red Salmon**
Lab Sample ID: 1214771008
Lab Project ID: 1214771

Collection Date: 07/30/21 14:31
Received Date: 08/02/21 14:16
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	0.0500 U	0.100	0.0450	mg/L	1		08/06/21 04:39
Surrogates							
4-Bromofluorobenzene (surr)	82.3	50-150		%	1		08/06/21 04:39

Batch Information

Analytical Batch: VFC15751
Analytical Method: AK101
Analyst: MDT
Analytical Date/Time: 08/06/21 04:39
Container ID: 1214771008-C

Prep Batch: VXX37588
Prep Method: SW5030B
Prep Date/Time: 08/05/21 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of **RS-MW9-073021**

Client Sample ID: **RS-MW9-073021**
Client Project ID: **105.00151.21001 Red Salmon**
Lab Sample ID: 1214771008
Lab Project ID: 1214771

Collection Date: 07/30/21 14:31
Received Date: 08/02/21 14:16
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	0.200 U	0.400	0.120	ug/L	1		08/10/21 20:59
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		08/10/21 20:59
o-Xylene	0.500 U	1.00	0.310	ug/L	1		08/10/21 20:59
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		08/10/21 20:59
Toluene	0.500 U	1.00	0.310	ug/L	1		08/10/21 20:59
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		08/10/21 20:59
Surrogates							
1,2-Dichloroethane-D4 (surr)	102	81-118		%	1		08/10/21 20:59
4-Bromofluorobenzene (surr)	105	85-114		%	1		08/10/21 20:59
Toluene-d8 (surr)	99.2	89-112		%	1		08/10/21 20:59

Batch Information

Analytical Batch: VMS21036
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 08/10/21 20:59
Container ID: 1214771008-F

Prep Batch: VXX37619
Prep Method: SW5030B
Prep Date/Time: 08/10/21 14:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of **RS-MW10-073021**

Client Sample ID: **RS-MW10-073021**
Client Project ID: **105.00151.21001 Red Salmon**
Lab Sample ID: 1214771009
Lab Project ID: 1214771

Collection Date: 07/30/21 12:50
Received Date: 08/02/21 14:16
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	0.300 U	0.600	0.180	mg/L	1		08/10/21 13:06

Surrogates

5a Androstane (surr)	93.6	50-150		%	1		08/10/21 13:06
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Batch Information

Analytical Batch: XFC16039
Analytical Method: AK102
Analyst: IVM
Analytical Date/Time: 08/10/21 13:06
Container ID: 1214771009-A

Prep Batch: XXX45329
Prep Method: SW3520C
Prep Date/Time: 08/06/21 15:05
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	0.250 U	0.500	0.150	mg/L	1		08/10/21 13:06

Surrogates

n-Triacontane-d62 (surr)	110	50-150		%	1		08/10/21 13:06
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Batch Information

Analytical Batch: XFC16039
Analytical Method: AK103
Analyst: IVM
Analytical Date/Time: 08/10/21 13:06
Container ID: 1214771009-A

Prep Batch: XXX45329
Prep Method: SW3520C
Prep Date/Time: 08/06/21 15:05
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL



Results of **RS-MW10-073021**

Client Sample ID: **RS-MW10-073021**
Client Project ID: **105.00151.21001 Red Salmon**
Lab Sample ID: 1214771009
Lab Project ID: 1214771

Collection Date: 07/30/21 12:50
Received Date: 08/02/21 14:16
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	0.0500 U	0.100	0.0450	mg/L	1		08/06/21 04:57
Surrogates							
4-Bromofluorobenzene (surr)	86.3	50-150		%	1		08/06/21 04:57

Batch Information

Analytical Batch: VFC15751
Analytical Method: AK101
Analyst: MDT
Analytical Date/Time: 08/06/21 04:57
Container ID: 1214771009-C

Prep Batch: VXX37588
Prep Method: SW5030B
Prep Date/Time: 08/05/21 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of RS-MW10-073021

Client Sample ID: **RS-MW10-073021**
 Client Project ID: **105.00151.21001 Red Salmon**
 Lab Sample ID: 1214771009
 Lab Project ID: 1214771

Collection Date: 07/30/21 12:50
 Received Date: 08/02/21 14:16
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	0.200 U	0.400	0.120	ug/L	1		08/10/21 21:14
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		08/10/21 21:14
o-Xylene	0.500 U	1.00	0.310	ug/L	1		08/10/21 21:14
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		08/10/21 21:14
Toluene	0.500 U	1.00	0.310	ug/L	1		08/10/21 21:14
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		08/10/21 21:14
Surrogates							
1,2-Dichloroethane-D4 (surr)	103	81-118		%	1		08/10/21 21:14
4-Bromofluorobenzene (surr)	105	85-114		%	1		08/10/21 21:14
Toluene-d8 (surr)	99.2	89-112		%	1		08/10/21 21:14

Batch Information

Analytical Batch: VMS21036
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 08/10/21 21:14
 Container ID: 1214771009-F

Prep Batch: VXX37619
 Prep Method: SW5030B
 Prep Date/Time: 08/10/21 14:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL



Results of **RS-MW99-073121**

Client Sample ID: **RS-MW99-073121**
Client Project ID: **105.00151.21001 Red Salmon**
Lab Sample ID: 1214771010
Lab Project ID: 1214771

Collection Date: 07/31/21 08:45
Received Date: 08/02/21 14:16
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Polynuclear Aromatics GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
1-Methylnaphthalene	0.0481 U	0.0962	0.0288	ug/L	2		08/14/21 22:22
2-Methylnaphthalene	0.0481 U	0.0962	0.0288	ug/L	2		08/14/21 22:22
Acenaphthene	0.0481 U	0.0962	0.0288	ug/L	2		08/14/21 22:22
Acenaphthylene	0.0481 U	0.0962	0.0288	ug/L	2		08/14/21 22:22
Anthracene	0.0481 U	0.0962	0.0288	ug/L	2		08/14/21 22:22
Benzo(a)Anthracene	0.0481 U	0.0962	0.0288	ug/L	2		08/14/21 22:22
Benzo[a]pyrene	0.0193 U	0.0385	0.0119	ug/L	2		08/14/21 22:22
Benzo[b]Fluoranthene	0.0481 U	0.0962	0.0288	ug/L	2		08/14/21 22:22
Benzo[g,h,i]perylene	0.0481 U	0.0962	0.0288	ug/L	2		08/14/21 22:22
Benzo[k]fluoranthene	0.0481 U	0.0962	0.0288	ug/L	2		08/14/21 22:22
Chrysene	0.0481 U	0.0962	0.0288	ug/L	2		08/14/21 22:22
Dibenzo[a,h]anthracene	0.0193 U	0.0385	0.0119	ug/L	2		08/14/21 22:22
Fluoranthene	0.0481 U	0.0962	0.0288	ug/L	2		08/14/21 22:22
Fluorene	0.140	0.0962	0.0288	ug/L	2		08/14/21 22:22
Indeno[1,2,3-c,d] pyrene	0.0481 U	0.0962	0.0288	ug/L	2		08/14/21 22:22
Naphthalene	0.0960 U	0.192	0.0596	ug/L	2		08/14/21 22:22
Phenanthrene	0.0481 U	0.0962	0.0288	ug/L	2		08/14/21 22:22
Pyrene	0.0481 U	0.0962	0.0288	ug/L	2		08/14/21 22:22
Surrogates							
2-Methylnaphthalene-d10 (surr)	47.3	42-86		%	2		08/14/21 22:22
Fluoranthene-d10 (surr)	53.8	50-97		%	2		08/14/21 22:22

Batch Information

Analytical Batch: XMS12829
Analytical Method: 8270D SIM LV (PAH)
Analyst: LAW
Analytical Date/Time: 08/14/21 22:22
Container ID: 1214771010-C

Prep Batch: XXX45308
Prep Method: SW3535A
Prep Date/Time: 08/04/21 14:27
Prep Initial Wt./Vol.: 260 mL
Prep Extract Vol: 1 mL



Results of **RS-MW99-073121**

Client Sample ID: **RS-MW99-073121**
Client Project ID: **105.00151.21001 Red Salmon**
Lab Sample ID: 1214771010
Lab Project ID: 1214771

Collection Date: 07/31/21 08:45
Received Date: 08/02/21 14:16
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	23.8	0.612	0.184	mg/L	1		08/10/21 13:16
Surrogates							
5a Androstane (surr)	109	50-150		%	1		08/10/21 13:16

Batch Information

Analytical Batch: XFC16039
Analytical Method: AK102
Analyst: IVM
Analytical Date/Time: 08/10/21 13:16
Container ID: 1214771010-A

Prep Batch: XXX45329
Prep Method: SW3520C
Prep Date/Time: 08/06/21 15:05
Prep Initial Wt./Vol.: 245 mL
Prep Extract Vol: 1 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	2.08	0.510	0.153	mg/L	1		08/10/21 13:16
Surrogates							
n-Triacontane-d62 (surr)	106	50-150		%	1		08/10/21 13:16

Batch Information

Analytical Batch: XFC16039
Analytical Method: AK103
Analyst: IVM
Analytical Date/Time: 08/10/21 13:16
Container ID: 1214771010-A

Prep Batch: XXX45329
Prep Method: SW3520C
Prep Date/Time: 08/06/21 15:05
Prep Initial Wt./Vol.: 245 mL
Prep Extract Vol: 1 mL



Results of **RS-MW99-073121**

Client Sample ID: **RS-MW99-073121**
Client Project ID: **105.00151.21001 Red Salmon**
Lab Sample ID: 1214771010
Lab Project ID: 1214771

Collection Date: 07/31/21 08:45
Received Date: 08/02/21 14:16
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	0.139	0.100	0.0450	mg/L	1		08/06/21 05:15
Surrogates							
4-Bromofluorobenzene (surr)	83.1	50-150		%	1		08/06/21 05:15

Batch Information

Analytical Batch: VFC15751
Analytical Method: AK101
Analyst: MDT
Analytical Date/Time: 08/06/21 05:15
Container ID: 1214771010-E

Prep Batch: VXX37588
Prep Method: SW5030B
Prep Date/Time: 08/05/21 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of **RS-MW99-073121**

Client Sample ID: **RS-MW99-073121**
Client Project ID: **105.00151.21001 Red Salmon**
Lab Sample ID: 1214771010
Lab Project ID: 1214771

Collection Date: 07/31/21 08:45
Received Date: 08/02/21 14:16
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
1,1,1,2-Tetrachloroethane	0.250 U	0.500	0.150	ug/L	1		08/06/21 15:59
1,1,1-Trichloroethane	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:59
1,1,2,2-Tetrachloroethane	0.250 U	0.500	0.150	ug/L	1		08/06/21 15:59
1,1,2-Trichloroethane	0.200 U	0.400	0.120	ug/L	1		08/06/21 15:59
1,1-Dichloroethane	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:59
1,1-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:59
1,1-Dichloropropene	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:59
1,2,3-Trichlorobenzene	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:59
1,2,3-Trichloropropane	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:59
1,2,4-Trichlorobenzene	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:59
1,2,4-Trimethylbenzene	10.1	1.00	0.310	ug/L	1		08/06/21 15:59
1,2-Dibromo-3-chloropropane	5.00 U	10.0	3.10	ug/L	1		08/06/21 15:59
1,2-Dibromoethane	0.0375 U	0.0750	0.0180	ug/L	1		08/06/21 15:59
1,2-Dichlorobenzene	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:59
1,2-Dichloroethane	0.250 U	0.500	0.150	ug/L	1		08/06/21 15:59
1,2-Dichloropropane	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:59
1,3,5-Trimethylbenzene	6.59	1.00	0.310	ug/L	1		08/06/21 15:59
1,3-Dichlorobenzene	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:59
1,3-Dichloropropane	0.250 U	0.500	0.150	ug/L	1		08/06/21 15:59
1,4-Dichlorobenzene	0.250 U	0.500	0.150	ug/L	1		08/06/21 15:59
2,2-Dichloropropane	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:59
2-Butanone (MEK)	5.00 U	10.0	3.10	ug/L	1		08/06/21 15:59
2-Chlorotoluene	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:59
2-Hexanone	3.53 J	10.0	3.10	ug/L	1		08/06/21 15:59
4-Chlorotoluene	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:59
4-Isopropyltoluene	1.57	1.00	0.310	ug/L	1		08/06/21 15:59
4-Methyl-2-pentanone (MIBK)	5.00 U	10.0	3.10	ug/L	1		08/06/21 15:59
Benzene	2.06	0.400	0.120	ug/L	1		08/06/21 15:59
Bromobenzene	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:59
Bromochloromethane	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:59
Bromodichloromethane	0.250 U	0.500	0.150	ug/L	1		08/06/21 15:59
Bromoform	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:59
Bromomethane	2.50 U	5.00	2.00	ug/L	1		08/06/21 15:59
Carbon disulfide	5.00 U	10.0	3.10	ug/L	1		08/06/21 15:59
Carbon tetrachloride	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:59
Chlorobenzene	0.250 U	0.500	0.150	ug/L	1		08/06/21 15:59
Chloroethane	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:59

Print Date: 08/25/2021 2:02:50PM

J flagging is activated



Results of **RS-MW99-073121**

Client Sample ID: **RS-MW99-073121**
Client Project ID: **105.00151.21001 Red Salmon**
Lab Sample ID: 1214771010
Lab Project ID: 1214771

Collection Date: 07/31/21 08:45
Received Date: 08/02/21 14:16
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Chloroform	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:59
Chloromethane	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:59
cis-1,2-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:59
cis-1,3-Dichloropropene	0.250 U	0.500	0.150	ug/L	1		08/06/21 15:59
Dibromochloromethane	0.250 U	0.500	0.150	ug/L	1		08/06/21 15:59
Dibromomethane	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:59
Dichlorodifluoromethane	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:59
Ethylbenzene	4.41	1.00	0.310	ug/L	1		08/06/21 15:59
Freon-113	5.00 U	10.0	3.10	ug/L	1		08/06/21 15:59
Hexachlorobutadiene	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:59
Isopropylbenzene (Cumene)	0.520 J	1.00	0.310	ug/L	1		08/06/21 15:59
Methylene chloride	5.00 U	10.0	3.10	ug/L	1		08/06/21 15:59
Methyl-t-butyl ether	5.00 U	10.0	3.10	ug/L	1		08/06/21 15:59
Naphthalene	5.96	1.00	0.310	ug/L	1		08/06/21 15:59
n-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:59
n-Propylbenzene	0.635 J	1.00	0.310	ug/L	1		08/06/21 15:59
o-Xylene	12.7	1.00	0.310	ug/L	1		08/06/21 15:59
P & M -Xylene	10.9	2.00	0.620	ug/L	1		08/06/21 15:59
sec-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:59
Styrene	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:59
tert-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:59
Tetrachloroethene	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:59
Toluene	0.911 J	1.00	0.310	ug/L	1		08/06/21 15:59
trans-1,2-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:59
trans-1,3-Dichloropropene	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:59
Trichloroethene	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:59
Trichlorofluoromethane	0.500 U	1.00	0.310	ug/L	1		08/06/21 15:59
Vinyl acetate	5.00 U	10.0	3.10	ug/L	1		08/06/21 15:59
Vinyl chloride	0.0750 U	0.150	0.0500	ug/L	1		08/06/21 15:59
Xylenes (total)	23.6	3.00	1.00	ug/L	1		08/06/21 15:59
Surrogates							
1,2-Dichloroethane-D4 (surr)	102	81-118		%	1		08/06/21 15:59
4-Bromofluorobenzene (surr)	101	85-114		%	1		08/06/21 15:59
Toluene-d8 (surr)	101	89-112		%	1		08/06/21 15:59

Results of **RS-MW99-073121**

Client Sample ID: **RS-MW99-073121**
Client Project ID: **105.00151.21001 Red Salmon**
Lab Sample ID: 1214771010
Lab Project ID: 1214771

Collection Date: 07/31/21 08:45
Received Date: 08/02/21 14:16
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS21031
Analytical Method: SW8260D
Analyst: JMG
Analytical Date/Time: 08/06/21 15:59
Container ID: 1214771010-H

Prep Batch: VXX37606
Prep Method: SW5030B
Prep Date/Time: 08/06/21 10:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of TRIP1-073021

Client Sample ID: **TRIP1-073021**
 Client Project ID: **105.00151.21001 Red Salmon**
 Lab Sample ID: 1214771011
 Lab Project ID: 1214771

Collection Date: 07/30/21 12:50
 Received Date: 08/02/21 14:16
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	0.0500 U	0.100	0.0450	mg/L	1		08/05/21 17:38
Surrogates							
4-Bromofluorobenzene (surr)	90.3	50-150		%	1		08/05/21 17:38

Batch Information

Analytical Batch: VFC15751
 Analytical Method: AK101
 Analyst: MDT
 Analytical Date/Time: 08/05/21 17:38
 Container ID: 1214771011-A

Prep Batch: VXX37587
 Prep Method: SW5030B
 Prep Date/Time: 08/05/21 06:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL



Results of TRIP1-073021

Client Sample ID: TRIP1-073021
Client Project ID: 105.00151.21001 Red Salmon
Lab Sample ID: 1214771011
Lab Project ID: 1214771

Collection Date: 07/30/21 12:50
Received Date: 08/02/21 14:16
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

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

Print Date: 08/25/2021 2:02:50PM

J flagging is activated



Results of TRIP1-073021

Client Sample ID: **TRIP1-073021**
 Client Project ID: **105.00151.21001 Red Salmon**
 Lab Sample ID: 1214771011
 Lab Project ID: 1214771

Collection Date: 07/30/21 12:50
 Received Date: 08/02/21 14:16
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Chloroform	0.500 U	1.00	0.310	ug/L	1		08/06/21 12:41
Chloromethane	0.500 U	1.00	0.310	ug/L	1		08/06/21 12:41
cis-1,2-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		08/06/21 12:41
cis-1,3-Dichloropropene	0.250 U	0.500	0.150	ug/L	1		08/06/21 12:41
Dibromochloromethane	0.250 U	0.500	0.150	ug/L	1		08/06/21 12:41
Dibromomethane	0.500 U	1.00	0.310	ug/L	1		08/06/21 12:41
Dichlorodifluoromethane	0.500 U	1.00	0.310	ug/L	1		08/06/21 12:41
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		08/06/21 12:41
Freon-113	5.00 U	10.0	3.10	ug/L	1		08/06/21 12:41
Hexachlorobutadiene	0.500 U	1.00	0.310	ug/L	1		08/06/21 12:41
Isopropylbenzene (Cumene)	0.500 U	1.00	0.310	ug/L	1		08/06/21 12:41
Methylene chloride	5.00 U	10.0	3.10	ug/L	1		08/06/21 12:41
Methyl-t-butyl ether	5.00 U	10.0	3.10	ug/L	1		08/06/21 12:41
Naphthalene	0.500 U	1.00	0.310	ug/L	1		08/06/21 12:41
n-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		08/06/21 12:41
n-Propylbenzene	0.500 U	1.00	0.310	ug/L	1		08/06/21 12:41
o-Xylene	0.500 U	1.00	0.310	ug/L	1		08/06/21 12:41
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		08/06/21 12:41
sec-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		08/06/21 12:41
Styrene	0.500 U	1.00	0.310	ug/L	1		08/06/21 12:41
tert-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		08/06/21 12:41
Tetrachloroethene	0.500 U	1.00	0.310	ug/L	1		08/06/21 12:41
Toluene	0.500 U	1.00	0.310	ug/L	1		08/06/21 12:41
trans-1,2-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		08/06/21 12:41
trans-1,3-Dichloropropene	0.500 U	1.00	0.310	ug/L	1		08/06/21 12:41
Trichloroethene	0.500 U	1.00	0.310	ug/L	1		08/06/21 12:41
Trichlorofluoromethane	0.500 U	1.00	0.310	ug/L	1		08/06/21 12:41
Vinyl acetate	5.00 U	10.0	3.10	ug/L	1		08/06/21 12:41
Vinyl chloride	0.0750 U	0.150	0.0500	ug/L	1		08/06/21 12:41
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		08/06/21 12:41
Surrogates							
1,2-Dichloroethane-D4 (surr)	103	81-118		%	1		08/06/21 12:41
4-Bromofluorobenzene (surr)	101	85-114		%	1		08/06/21 12:41
Toluene-d8 (surr)	102	89-112		%	1		08/06/21 12:41

Results of TRIP1-073021

Client Sample ID: **TRIP1-073021**
Client Project ID: **105.00151.21001 Red Salmon**
Lab Sample ID: 1214771011
Lab Project ID: 1214771

Collection Date: 07/30/21 12:50
Received Date: 08/02/21 14:16
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Batch Information

Analytical Batch: VMS21031
Analytical Method: SW8260D
Analyst: JMG
Analytical Date/Time: 08/06/21 12:41
Container ID: 1214771011-B

Prep Batch: VXX37606
Prep Method: SW5030B
Prep Date/Time: 08/06/21 10:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Method Blank

Blank ID: MB for HBN 1823607 [VXX/37587]

Blank Lab ID: 1628353

QC for Samples:

1214771011

Matrix: Water (Surface, Eff., Ground)

Results by AK101

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Gasoline Range Organics	0.0500U	0.100	0.0450	mg/L
Surrogates				
4-Bromofluorobenzene (surr)	83.9	50-150		%

Batch Information

Analytical Batch: VFC15751

Analytical Method: AK101

Instrument: Agilent 7890A PID/FID

Analyst: MDT

Analytical Date/Time: 8/5/2021 10:47:00AM

Prep Batch: VXX37587

Prep Method: SW5030B

Prep Date/Time: 8/5/2021 6:00:00AM

Prep Initial Wt./Vol.: 5 mL

Prep Extract Vol: 5 mL

Print Date: 08/25/2021 2:02:53PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1214771 [VXX37587]
 Blank Spike Lab ID: 1628354
 Date Analyzed: 08/05/2021 11:40

Spike Duplicate ID: LCSD for HBN 1214771 [VXX37587]
 Spike Duplicate Lab ID: 1628355
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1214771011

Results by AK101

Parameter	Blank Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Gasoline Range Organics	1.00	0.991	99	1.00	1.09	109	(60-120)	9.10	(< 20)

Surrogates

4-Bromofluorobenzene (surr)	0.0500		99	0.0500		104	(50-150)	4.30	
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Batch Information

Analytical Batch: **VFC15751**
 Analytical Method: **AK101**
 Instrument: **Agilent 7890A PID/FID**
 Analyst: **MDT**

Prep Batch: **VXX37587**
 Prep Method: **SW5030B**
 Prep Date/Time: **08/05/2021 06:00**
 Spike Init Wt./Vol.: 1.00 mg/L Extract Vol: 5 mL
 Dupe Init Wt./Vol.: 1.00 mg/L Extract Vol: 5 mL

Print Date: 08/25/2021 2:02:56PM

Method Blank

Blank ID: MB for HBN 1823608 [VXX/37588]
 Blank Lab ID: 1628356

Matrix: Water (Surface, Eff., Ground)

QC for Samples:

1214771001, 1214771002, 1214771003, 1214771004, 1214771005, 1214771006, 1214771007, 1214771008, 1214771009, 1214771010

Results by AK101

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Gasoline Range Organics	0.0500U	0.100	0.0450	mg/L
Surrogates				
4-Bromofluorobenzene (surr)	88.7	50-150		%

Batch Information

Analytical Batch: VFC15751
 Analytical Method: AK101
 Instrument: Agilent 7890A PID/FID
 Analyst: MDT
 Analytical Date/Time: 8/6/2021 12:11:00AM

Prep Batch: VXX37588
 Prep Method: SW5030B
 Prep Date/Time: 8/5/2021 6:00:00AM
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1214771 [VXX37588]
 Blank Spike Lab ID: 1628359
 Date Analyzed: 08/06/2021 03:28

Spike Duplicate ID: LCSD for HBN 1214771 [VXX37588]
 Spike Duplicate Lab ID: 1628360
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1214771001, 1214771002, 1214771003, 1214771004, 1214771005, 1214771006, 1214771007, 1214771008, 1214771009, 1214771010

Results by AK101

Parameter	Blank Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Gasoline Range Organics	1.00	0.998	100	1.00	1.02	102	(60-120)	2.30	(< 20)

Surrogates

4-Bromofluorobenzene (surr)	0.0500		93	0.0500		93	(50-150)	0.71	
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Batch Information

Analytical Batch: **VFC15751**
 Analytical Method: **AK101**
 Instrument: **Agilent 7890A PID/FID**
 Analyst: **MDT**

Prep Batch: **VXX37588**
 Prep Method: **SW5030B**
 Prep Date/Time: **08/05/2021 06:00**
 Spike Init Wt./Vol.: 1.00 mg/L Extract Vol: 5 mL
 Dupe Init Wt./Vol.: 1.00 mg/L Extract Vol: 5 mL



Method Blank

Blank ID: MB for HBN 1823791 [VXX/37606]

Blank Lab ID: 1628874

QC for Samples:

1214771001, 1214771002, 1214771010, 1214771011

Matrix: Water (Surface, Eff., Ground)

Results by SW8260D

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

Print Date: 08/25/2021 2:03:03PM

Method Blank

Blank ID: MB for HBN 1823791 [VXX/37606]

Blank Lab ID: 1628874

QC for Samples:

1214771001, 1214771002, 1214771010, 1214771011

Matrix: Water (Surface, Eff., Ground)

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Chloromethane	0.500U	1.00	0.310	ug/L
cis-1,2-Dichloroethene	0.500U	1.00	0.310	ug/L
cis-1,3-Dichloropropene	0.250U	0.500	0.150	ug/L
Dibromochloromethane	0.250U	0.500	0.150	ug/L
Dibromomethane	0.500U	1.00	0.310	ug/L
Dichlorodifluoromethane	0.500U	1.00	0.310	ug/L
Ethylbenzene	0.500U	1.00	0.310	ug/L
Freon-113	5.00U	10.0	3.10	ug/L
Hexachlorobutadiene	0.500U	1.00	0.310	ug/L
Isopropylbenzene (Cumene)	0.500U	1.00	0.310	ug/L
Methylene chloride	5.00U	10.0	3.10	ug/L
Methyl-t-butyl ether	5.00U	10.0	3.10	ug/L
Naphthalene	0.500U	1.00	0.310	ug/L
n-Butylbenzene	0.500U	1.00	0.310	ug/L
n-Propylbenzene	0.500U	1.00	0.310	ug/L
o-Xylene	0.500U	1.00	0.310	ug/L
P & M -Xylene	1.00U	2.00	0.620	ug/L
sec-Butylbenzene	0.500U	1.00	0.310	ug/L
Styrene	0.500U	1.00	0.310	ug/L
tert-Butylbenzene	0.500U	1.00	0.310	ug/L
Tetrachloroethene	0.500U	1.00	0.310	ug/L
Toluene	0.500U	1.00	0.310	ug/L
trans-1,2-Dichloroethene	0.500U	1.00	0.310	ug/L
trans-1,3-Dichloropropene	0.500U	1.00	0.310	ug/L
Trichloroethene	0.500U	1.00	0.310	ug/L
Trichlorofluoromethane	0.500U	1.00	0.310	ug/L
Vinyl acetate	5.00U	10.0	3.10	ug/L
Vinyl chloride	0.0750U	0.150	0.0500	ug/L
Xylenes (total)	1.50U	3.00	1.00	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	105	81-118		%
4-Bromofluorobenzene (surr)	102	85-114		%
Toluene-d8 (surr)	101	89-112		%

Print Date: 08/25/2021 2:03:03PM



Method Blank

Blank ID: MB for HBN 1823791 [VXX/37606]
Blank Lab ID: 1628874

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1214771001, 1214771002, 1214771010, 1214771011

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
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Batch Information

Analytical Batch: VMS21031
Analytical Method: SW8260D
Instrument: VPA 780/5975 GC/MS
Analyst: JMG
Analytical Date/Time: 8/6/2021 10:22:00AM

Prep Batch: VXX37606
Prep Method: SW5030B
Prep Date/Time: 8/6/2021 10:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 08/25/2021 2:03:03PM

Leaching Blank

Blank ID: LB for HBN 1823225 [TCLP/11308]
 Blank Lab ID: 1626662

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
 1214771001, 1214771002, 1214771010, 1214771011

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
1,1-Dichloroethene	25.0U	50.0	15.5	ug/L
1,2-Dichloroethane	12.5U	25.0	7.50	ug/L
1,4-Dichlorobenzene	12.5U	25.0	7.50	ug/L
2-Butanone (MEK)	250U	500	155	ug/L
Benzene	10.0U	20.0	6.00	ug/L
Carbon tetrachloride	25.0U	50.0	15.5	ug/L
Chlorobenzene	12.5U	25.0	7.50	ug/L
Chloroform	25.0U	50.0	15.5	ug/L
Hexachlorobutadiene	25.0U	50.0	15.5	ug/L
Tetrachloroethene	25.0U	50.0	15.5	ug/L
Trichloroethene	25.0U	50.0	15.5	ug/L
Vinyl chloride	25.0U	50.0	15.5	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	108	81-118		%
4-Bromofluorobenzene (surr)	98.4	85-114		%
Toluene-d8 (surr)	98.9	89-112		%

Batch Information

Analytical Batch: VMS21031
 Analytical Method: SW8260D
 Instrument: VPA 780/5975 GC/MS
 Analyst: JMG
 Analytical Date/Time: 8/6/2021 6:01:00PM

Prep Batch: VXX37606
 Prep Method: SW5030B
 Prep Date/Time: 8/6/2021 10:00:00AM
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1214771 [VXX37606]
 Blank Spike Lab ID: 1628875
 Date Analyzed: 08/06/2021 10:37

Spike Duplicate ID: LCSD for HBN 1214771 [VXX37606]
 Spike Duplicate Lab ID: 1628876
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1214771001, 1214771002, 1214771010, 1214771011

Results by SW8260D

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
1,1,1,2-Tetrachloroethane	30	31.3	104	30	30.3	101	(78-124)	3.40	(< 20)
1,1,1-Trichloroethane	30	30.2	101	30	29.5	98	(74-131)	2.40	(< 20)
1,1,2,2-Tetrachloroethane	30	29.8	99	30	28.7	96	(71-121)	3.80	(< 20)
1,1,2-Trichloroethane	30	30.5	102	30	29.1	97	(80-119)	4.90	(< 20)
1,1-Dichloroethane	30	29.4	98	30	28.4	95	(77-125)	3.30	(< 20)
1,1-Dichloroethene	30	30.4	101	30	30.4	101	(71-131)	0.24	(< 20)
1,1-Dichloropropene	30	30.5	102	30	29.8	99	(79-125)	2.10	(< 20)
1,2,3-Trichlorobenzene	30	31.3	104	30	29.6	99	(69-129)	5.70	(< 20)
1,2,3-Trichloropropane	30	30.1	100	30	28.4	95	(73-122)	5.60	(< 20)
1,2,4-Trichlorobenzene	30	31.7	106	30	30.3	101	(69-130)	4.60	(< 20)
1,2,4-Trimethylbenzene	30	30.8	103	30	30.5	102	(79-124)	0.92	(< 20)
1,2-Dibromo-3-chloropropane	30	30.5	102	30	28.2	94	(62-128)	7.70	(< 20)
1,2-Dibromoethane	30	31.6	105	30	29.7	99	(77-121)	6.20	(< 20)
1,2-Dichlorobenzene	30	29.5	98	30	28.8	96	(80-119)	2.10	(< 20)
1,2-Dichloroethane	30	28.9	97	30	27.6	92	(73-128)	4.80	(< 20)
1,2-Dichloropropane	30	30.2	101	30	28.9	97	(78-122)	4.30	(< 20)
1,3,5-Trimethylbenzene	30	30.9	103	30	30.2	101	(75-124)	2.10	(< 20)
1,3-Dichlorobenzene	30	29.9	100	30	29.3	98	(80-119)	1.80	(< 20)
1,3-Dichloropropane	30	30.6	102	30	29.1	97	(80-119)	5.10	(< 20)
1,4-Dichlorobenzene	30	29.5	98	30	29.1	97	(79-118)	1.20	(< 20)
2,2-Dichloropropane	30	30.6	102	30	29.8	99	(60-139)	2.70	(< 20)
2-Butanone (MEK)	90	86.9	97	90	76.7	85	(56-143)	12.50	(< 20)
2-Chlorotoluene	30	30.0	100	30	29.7	99	(79-122)	1.20	(< 20)
2-Hexanone	90	92.3	103	90	83.2	93	(57-139)	10.30	(< 20)
4-Chlorotoluene	30	30.0	100	30	29.6	99	(78-122)	1.40	(< 20)
4-Isopropyltoluene	30	31.5	105	30	31.0	103	(77-127)	1.80	(< 20)
4-Methyl-2-pentanone (MIBK)	90	94.9	105	90	85.4	95	(67-130)	10.50	(< 20)
Benzene	30	29.8	99	30	28.9	96	(79-120)	3.00	(< 20)
Bromobenzene	30	28.8	96	30	28.9	96	(80-120)	0.24	(< 20)
Bromochloromethane	30	29.6	99	30	28.4	95	(78-123)	3.90	(< 20)
Bromodichloromethane	30	30.9	103	30	29.7	99	(79-125)	3.90	(< 20)
Bromoform	30	32.1	107	30	29.9	100	(66-130)	7.10	(< 20)
Bromomethane	30	28.7	96	30	29.1	97	(53-141)	1.40	(< 20)
Carbon disulfide	45	46.3	103	45	47.2	105	(64-133)	1.90	(< 20)

Print Date: 08/25/2021 2:03:05PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1214771 [VXX37606]
 Blank Spike Lab ID: 1628875
 Date Analyzed: 08/06/2021 10:37

Spike Duplicate ID: LCSD for HBN 1214771 [VXX37606]
 Spike Duplicate Lab ID: 1628876
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1214771001, 1214771002, 1214771010, 1214771011

Results by SW8260D

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Carbon tetrachloride	30	30.8	103	30	30.3	101	(72-136)	1.50	(< 20)
Chlorobenzene	30	29.8	99	30	28.5	95	(82-118)	4.60	(< 20)
Chloroethane	30	33.0	110	30	33.5	112	(60-138)	1.40	(< 20)
Chloroform	30	29.1	97	30	28.2	94	(79-124)	3.30	(< 20)
Chloromethane	30	27.7	92	30	27.2	91	(50-139)	1.90	(< 20)
cis-1,2-Dichloroethene	30	28.9	97	30	27.9	93	(78-123)	3.60	(< 20)
cis-1,3-Dichloropropene	30	31.6	105	30	30.1	100	(75-124)	4.90	(< 20)
Dibromochloromethane	30	32.1	107	30	30.5	102	(74-126)	5.10	(< 20)
Dibromomethane	30	30.4	101	30	28.2	94	(79-123)	7.70	(< 20)
Dichlorodifluoromethane	30	26.9	90	30	26.4	88	(32-152)	1.90	(< 20)
Ethylbenzene	30	30.2	101	30	29.3	98	(79-121)	3.00	(< 20)
Freon-113	45	46.4	103	45	46.7	104	(70-136)	0.74	(< 20)
Hexachlorobutadiene	30	31.1	104	30	29.9	100	(66-134)	3.90	(< 20)
Isopropylbenzene (Cumene)	30	31.4	105	30	30.1	100	(72-131)	4.20	(< 20)
Methylene chloride	30	30.8	103	30	28.5	95	(74-124)	7.90	(< 20)
Methyl-t-butyl ether	45	48.6	108	45	43.9	98	(71-124)	10.20	(< 20)
Naphthalene	30	28.4	95	30	26.5	88	(61-128)	7.00	(< 20)
n-Butylbenzene	30	31.8	106	30	30.9	103	(75-128)	2.90	(< 20)
n-Propylbenzene	30	30.3	101	30	30.1	100	(76-126)	0.66	(< 20)
o-Xylene	30	30.3	101	30	29.3	98	(78-122)	3.20	(< 20)
P & M -Xylene	60	60.6	101	60	58.6	98	(80-121)	3.40	(< 20)
sec-Butylbenzene	30	31.1	104	30	30.7	102	(77-126)	1.50	(< 20)
Styrene	30	31.4	105	30	30.2	101	(78-123)	3.90	(< 20)
tert-Butylbenzene	30	30.3	101	30	30.1	100	(78-124)	0.72	(< 20)
Tetrachloroethene	30	30.2	101	30	29.6	99	(74-129)	2.20	(< 20)
Toluene	30	29.3	98	30	28.3	94	(80-121)	3.40	(< 20)
trans-1,2-Dichloroethene	30	31.1	104	30	28.8	96	(75-124)	7.60	(< 20)
trans-1,3-Dichloropropene	30	29.3	98	30	28.1	94	(73-127)	4.40	(< 20)
Trichloroethene	30	29.8	99	30	28.9	96	(79-123)	3.00	(< 20)
Trichlorofluoromethane	30	30.1	100	30	29.6	99	(65-141)	1.80	(< 20)
Vinyl acetate	30	28.9	96	30	26.6	89	(54-146)	8.30	(< 20)
Vinyl chloride	30	28.6	95	30	27.9	93	(58-137)	2.40	(< 20)
Xylenes (total)	90	90.8	101	90	87.9	98	(79-121)	3.30	(< 20)

Print Date: 08/25/2021 2:03:05PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1214771 [VXX37606]
 Blank Spike Lab ID: 1628875
 Date Analyzed: 08/06/2021 10:37

Spike Duplicate ID: LCSD for HBN 1214771 [VXX37606]
 Spike Duplicate Lab ID: 1628876
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1214771001, 1214771002, 1214771010, 1214771011

Results by SW8260D

Parameter	Blank Spike (%)			Spike Duplicate (%)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Surrogates									
1,2-Dichloroethane-D4 (surr)	30		101	30		96	(81-118)	5.00	
4-Bromofluorobenzene (surr)	30		99	30		100	(85-114)	0.13	
Toluene-d8 (surr)	30		101	30		101	(89-112)	0.45	

Batch Information

Analytical Batch: **VMS21031**
 Analytical Method: **SW8260D**
 Instrument: **VPA 780/5975 GC/MS**
 Analyst: **JMG**

Prep Batch: **VXX37606**
 Prep Method: **SW5030B**
 Prep Date/Time: **08/06/2021 10:00**
 Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
 Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

Method Blank

Blank ID: MB for HBN 1823913 [VXX/37619]
 Blank Lab ID: 1629327

Matrix: Water (Surface, Eff., Ground)

QC for Samples:

1214771003, 1214771004, 1214771005, 1214771006, 1214771007, 1214771008, 1214771009

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	0.200U	0.400	0.120	ug/L
Ethylbenzene	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
Toluene	0.500U	1.00	0.310	ug/L
Xylenes (total)	1.50U	3.00	1.00	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	103	81-118		%
4-Bromofluorobenzene (surr)	106	85-114		%
Toluene-d8 (surr)	99.7	89-112		%

Batch Information

Analytical Batch: VMS21036
 Analytical Method: SW8260D
 Instrument: Agilent 7890-75MS
 Analyst: NRB
 Analytical Date/Time: 8/10/2021 2:16:00PM

Prep Batch: VXX37619
 Prep Method: SW5030B
 Prep Date/Time: 8/10/2021 2:00:00PM
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Print Date: 08/25/2021 2:03:07PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1214771 [VXX37619]
 Blank Spike Lab ID: 1629328
 Date Analyzed: 08/10/2021 14:31

Spike Duplicate ID: LCSD for HBN 1214771 [VXX37619]
 Spike Duplicate Lab ID: 1629329
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1214771003, 1214771004, 1214771005, 1214771006, 1214771007, 1214771008, 1214771009

Results by SW8260D

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	30	31.3	104	30	30.1	100	(79-120)	3.70	(< 20)
Ethylbenzene	30	30.9	103	30	30.9	103	(79-121)	0.12	(< 20)
o-Xylene	30	30.8	103	30	30.6	102	(78-122)	0.75	(< 20)
P & M -Xylene	60	60.4	101	60	60.1	100	(80-121)	0.42	(< 20)
Toluene	30	31.0	103	30	30.1	100	(80-121)	2.80	(< 20)
Xylenes (total)	90	91.2	101	90	90.7	101	(79-121)	0.53	(< 20)
Surrogates									
1,2-Dichloroethane-D4 (surr)	30		99	30		97	(81-118)	2.50	
4-Bromofluorobenzene (surr)	30		103	30		104	(85-114)	0.59	
Toluene-d8 (surr)	30		101	30		99	(89-112)	1.60	

Batch Information

Analytical Batch: VMS21036
 Analytical Method: SW8260D
 Instrument: Agilent 7890-75MS
 Analyst: NRB

Prep Batch: VXX37619
 Prep Method: SW5030B
 Prep Date/Time: 08/10/2021 14:00
 Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
 Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL



Method Blank

Blank ID: MB for HBN 1823448 [XXX/45308]
Blank Lab ID: 1627703

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1214771001, 1214771002, 1214771010

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	0.0300J	0.0500	0.0150	ug/L
Pyrene	0.0250U	0.0500	0.0150	ug/L
Surrogates				
2-Methylnaphthalene-d10 (surr)	63.2	42-86		%
Fluoranthene-d10 (surr)	81.4	50-97		%

Batch Information

Analytical Batch: XMS12829
Analytical Method: 8270D SIM LV (PAH)
Instrument: Agilent GC 7890B/5977A SWA
Analyst: LAW
Analytical Date/Time: 8/14/2021 8:59:00PM

Prep Batch: XXX45308
Prep Method: SW3535A
Prep Date/Time: 8/4/2021 2:27:53PM
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Print Date: 08/25/2021 2:03:13PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1214771 [XXX45308]

Blank Spike Lab ID: 1627704

Date Analyzed: 08/14/2021 21:20

Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1214771001, 1214771002, 1214771010

Results by 8270D SIM LV (PAH)

Blank Spike (ug/L)

Parameter	Spike	Result	Rec (%)	CL
1-Methylnaphthalene	2	1.12	56	(41-115)
2-Methylnaphthalene	2	1.12	56	(39-114)
Acenaphthene	2	1.25	63	(48-114)
Acenaphthylene	2	1.27	64	(35-121)
Anthracene	2	1.32	66	(53-119)
Benzo(a)Anthracene	2	1.41	71	(59-120)
Benzo[a]pyrene	2	1.48	74	(53-120)
Benzo[b]Fluoranthene	2	1.46	73	(53-126)
Benzo[g,h,i]perylene	2	1.58	79	(44-128)
Benzo[k]fluoranthene	2	1.51	75	(54-125)
Chrysene	2	1.48	74	(57-120)
Dibenzo[a,h]anthracene	2	1.59	80	(44-131)
Fluoranthene	2	1.33	66	(58-120)
Fluorene	2	1.30	65	(50-118)
Indeno[1,2,3-c,d] pyrene	2	1.56	78	(48-130)
Naphthalene	2	1.14	57	(43-114)
Phenanthrene	2	1.31	65	(53-115)
Pyrene	2	1.33	67	(53-121)

Surrogates

2-Methylnaphthalene-d10 (surr)	2		55	(42-86)
Fluoranthene-d10 (surr)	2		68	(50-97)

Batch Information

Analytical Batch: XMS12829

Analytical Method: 8270D SIM LV (PAH)

Instrument: Agilent GC 7890B/5977A SWA

Analyst: LAW

Prep Batch: XXX45308

Prep Method: SW3535A

Prep Date/Time: 08/04/2021 14:27

Spike Init Wt./Vol.: 2 ug/L Extract Vol: 1 mL

Dupe Init Wt./Vol.: Extract Vol:

Matrix Spike Summary

Original Sample ID: 1214798010
 MS Sample ID: 1627705 MS
 MSD Sample ID: 1627706 MSD

Analysis Date: 08/15/2021 4:12
 Analysis Date: 08/15/2021 4:33
 Analysis Date: 08/15/2021 4:54
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1214771001, 1214771002, 1214771010

Results by 8270D SIM LV (PAH)

Parameter	Sample	Matrix Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
1-Methylnaphthalene	0.0232U	1.92	1.2	62	1.82	0.985	54	41-115	19.60	(< 20)
2-Methylnaphthalene	0.0232U	1.92	1.11	58	1.82	0.907	50	39-114	20.40	* (< 20)
Acenaphthene	0.0232U	1.92	1.26	66	1.82	1.04	57	48-114	19.40	(< 20)
Acenaphthylene	0.0232U	1.92	1.27	66	1.82	1.08	59	35-121	16.90	(< 20)
Anthracene	0.0232U	1.92	1.25	65	1.82	1.06	58	53-119	16.70	(< 20)
Benzo(a)Anthracene	0.0232U	1.92	1.12	58 *	1.82	0.800	44 *	59-120	33.60	* (< 20)
Benzo(a)pyrene	0.00925U	1.92	.765	40 *	1.82	0.465	26 *	53-120	48.80	* (< 20)
Benzo(b)Fluoranthene	0.0232U	1.92	1.06	55	1.82	0.733	40 *	53-126	36.50	* (< 20)
Benzo(g,h,i)perylene	0.0232U	1.92	.377	20 *	1.82	0.258	14 *	44-128	37.50	* (< 20)
Benzo(k)fluoranthene	0.0232U	1.92	.749	39 *	1.82	0.457	25 *	54-125	48.50	* (< 20)
Chrysene	0.0232U	1.92	.948	49 *	1.82	0.601	33 *	57-120	44.90	* (< 20)
Dibenzo(a,h)anthracene	0.00925U	1.92	.358	19 *	1.82	0.252	14 *	44-131	34.80	* (< 20)
Fluoranthene	0.0232U	1.92	1.38	72	1.82	1.13	62	58-120	19.60	(< 20)
Fluorene	0.0232U	1.92	1.3	68	1.82	1.11	61	50-118	15.60	(< 20)
Indeno[1,2,3-c,d] pyrene	0.0232U	1.92	.487	25 *	1.82	0.313	17 *	48-130	43.40	* (< 20)
Naphthalene	0.0463U	1.92	1.22	64	1.82	0.976	54	43-114	22.40	* (< 20)
Phenanthrene	0.0232U	1.92	1.26	65	1.82	1.09	60	53-115	14.00	(< 20)
Pyrene	0.0232U	1.92	1.38	72	1.82	1.15	63	53-121	18.20	(< 20)
Surrogates										
2-Methylnaphthalene-d10 (surr)		1.92	1.28	67	1.82	1.04	57	42-86	21.30	
Fluoranthene-d10 (surr)		1.92	1.43	75	1.82	1.21	67	50-97	17.00	

Batch Information

Analytical Batch: XMS12829
 Analytical Method: 8270D SIM LV (PAH)
 Instrument: Agilent GC 7890B/5977A SWA
 Analyst: LAW
 Analytical Date/Time: 8/15/2021 4:33:00AM

Prep Batch: XXX45308
 Prep Method: 3535 Solid Phase Ext for 8270 PAH SIM LV
 Prep Date/Time: 8/4/2021 2:27:53PM
 Prep Initial Wt./Vol.: 260.00mL
 Prep Extract Vol: 1.00mL



Method Blank

Blank ID: MB for HBN 1823661 [XXX/45329]
Blank Lab ID: 1628537

Matrix: Water (Surface, Eff., Ground)

QC for Samples:

1214771001, 1214771002, 1214771003, 1214771004, 1214771006, 1214771007, 1214771008, 1214771009, 1214771010

Results by AK102

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Diesel Range Organics	0.300U	0.600	0.180	mg/L
Surrogates				
5a Androstane (surr)	87.8	60-120		%

Batch Information

Analytical Batch: XFC16039
Analytical Method: AK102
Instrument: Agilent 7890B R
Analyst: IVM
Analytical Date/Time: 8/10/2021 11:28:00AM

Prep Batch: XXX45329
Prep Method: SW3520C
Prep Date/Time: 8/6/2021 3:05:52PM
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Print Date: 08/25/2021 2:03:18PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1214771 [XXX45329]
 Blank Spike Lab ID: 1628538
 Date Analyzed: 08/10/2021 11:38

Spike Duplicate ID: LCSD for HBN 1214771 [XXX45329]
 Spike Duplicate Lab ID: 1628539
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1214771001, 1214771002, 1214771003, 1214771004, 1214771006, 1214771007, 1214771008, 1214771009, 1214771010

Results by AK102

Parameter	Blank Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Diesel Range Organics	20	20.1	101	20	20.4	102	(75-125)	1.60	(< 20)

Surrogates

5a Androstane (surr)	0.4		102	0.4		107	(60-120)	4.60	
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Batch Information

Analytical Batch: **XFC16039**
 Analytical Method: **AK102**
 Instrument: **Agilent 7890B R**
 Analyst: **IVM**

Prep Batch: **XXX45329**
 Prep Method: **SW3520C**
 Prep Date/Time: **08/06/2021 15:05**
 Spike Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL
 Dupe Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL

Method Blank

Blank ID: MB for HBN 1823661 [XXX/45329]
 Blank Lab ID: 1628537

Matrix: Water (Surface, Eff., Ground)

QC for Samples:

1214771001, 1214771002, 1214771003, 1214771004, 1214771006, 1214771007, 1214771008, 1214771009, 1214771010

Results by AK103

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Residual Range Organics	0.250U	0.500	0.150	mg/L
Surrogates				
n-Triacontane-d62 (surr)	101	60-120		%

Batch Information

Analytical Batch: XFC16039
 Analytical Method: AK103
 Instrument: Agilent 7890B R
 Analyst: IVM
 Analytical Date/Time: 8/10/2021 11:28:00AM

Prep Batch: XXX45329
 Prep Method: SW3520C
 Prep Date/Time: 8/6/2021 3:05:52PM
 Prep Initial Wt./Vol.: 250 mL
 Prep Extract Vol: 1 mL

Print Date: 08/25/2021 2:03:23PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1214771 [XXX45329]
 Blank Spike Lab ID: 1628538
 Date Analyzed: 08/10/2021 11:38

Spike Duplicate ID: LCSD for HBN 1214771 [XXX45329]
 Spike Duplicate Lab ID: 1628539
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1214771001, 1214771002, 1214771003, 1214771004, 1214771006, 1214771007, 1214771008, 1214771009, 1214771010

Results by AK103

Parameter	Blank Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Residual Range Organics	20	20.5	103	20	20.6	103	(60-120)	0.22	(< 20)
Surrogates									
n-Triacontane-d62 (surr)	0.4		103	0.4		109	(60-120)	6.10	

Batch Information

Analytical Batch: **XFC16039**
 Analytical Method: **AK103**
 Instrument: **Agilent 7890B R**
 Analyst: **IVM**

Prep Batch: **XXX45329**
 Prep Method: **SW3520C**
 Prep Date/Time: **08/06/2021 15:05**
 Spike Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL
 Dupe Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL

Print Date: 08/25/2021 2:03:25PM

Method Blank

Blank ID: MB for HBN 1823761 [XXX/45345]

Blank Lab ID: 1628762

QC for Samples:

1214771005

Matrix: Water (Surface, Eff., Ground)

Results by AK102

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Diesel Range Organics	0.300U	0.600	0.180	mg/L
Surrogates				
5a Androstane (surr)	95.1	60-120		%

Batch Information

Analytical Batch: XFC16040

Analytical Method: AK102

Instrument: Agilent 7890B F

Analyst: IVM

Analytical Date/Time: 8/11/2021 12:09:00PM

Prep Batch: XXX45345

Prep Method: SW3520C

Prep Date/Time: 8/9/2021 4:41:59PM

Prep Initial Wt./Vol.: 250 mL

Prep Extract Vol: 1 mL

Print Date: 08/25/2021 2:03:27PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1214771 [XXX45345]
 Blank Spike Lab ID: 1628763
 Date Analyzed: 08/11/2021 12:19

Spike Duplicate ID: LCSD for HBN 1214771 [XXX45345]
 Spike Duplicate Lab ID: 1628764
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1214771005

Results by AK102

Parameter	Blank Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Diesel Range Organics	20	20.4	102	20	19.7	98	(75-125)	3.50	(< 20)
Surrogates									
5a Androstane (surr)	0.4		101	0.4		101	(60-120)	0.18	

Batch Information

Analytical Batch: **XFC16040**
 Analytical Method: **AK102**
 Instrument: **Agilent 7890B F**
 Analyst: **IVM**

Prep Batch: **XXX45345**
 Prep Method: **SW3520C**
 Prep Date/Time: **08/09/2021 16:41**
 Spike Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL
 Dupe Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL

Method Blank

Blank ID: MB for HBN 1823761 [XXX/45345]
 Blank Lab ID: 1628762

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
 1214771005

Results by AK103

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Residual Range Organics	0.250U	0.500	0.150	mg/L
Surrogates				
n-Triacontane-d62 (surr)	106	60-120		%

Batch Information

Analytical Batch: XFC16040
 Analytical Method: AK103
 Instrument: Agilent 7890B F
 Analyst: IVM
 Analytical Date/Time: 8/11/2021 12:09:00PM

Prep Batch: XXX45345
 Prep Method: SW3520C
 Prep Date/Time: 8/9/2021 4:41:59PM
 Prep Initial Wt./Vol.: 250 mL
 Prep Extract Vol: 1 mL

Print Date: 08/25/2021 2:03:32PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1214771 [XXX45345]
 Blank Spike Lab ID: 1628763
 Date Analyzed: 08/11/2021 12:19

Spike Duplicate ID: LCSD for HBN 1214771 [XXX45345]
 Spike Duplicate Lab ID: 1628764
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1214771005

Results by AK103

Parameter	Blank Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Residual Range Organics	20	21.2	106	20	21.1	105	(60-120)	0.83	(< 20)
Surrogates									
n-Triacontane-d62 (surr)	0.4		96	0.4		107	(60-120)	10.30	

Batch Information

Analytical Batch: **XFC16040**
 Analytical Method: **AK103**
 Instrument: **Agilent 7890B F**
 Analyst: **IVM**

Prep Batch: **XXX45345**
 Prep Method: **SW3520C**
 Prep Date/Time: **08/09/2021 16:41**
 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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CLIENT: SLR					Instructions: Sections 1 - 5 must be filled out. Omissions may delay the r										Page 1 of 2									
CONTACT: Stan Fligel					PHONE NO: 907-748-6287					Section 3					Pres		1214771							
PROJECT NAME: Red Salmon					PROJECT/PWSID/PERMIT#: 105.00151.21001					#					Type		C = COMP G = GRAB MI = Multi Incremental Soils							
REPORTS TO: Jen McLean Stan Fligel					E-MAIL: jmclean@slrconsulting.com sfligel@slrconsulting.com					CONTAINER					HCL		HCL							
INVOICE TO: Stan Fligel					QUOTE #:					P.O. #:					GRO AK101		DRO/PRO AK102/103		BTEX 8860		Full Vols 8260		PAH-SIM 8270	
RESERVED for lab use	SAMPLE IDENTIFICATION				DATE mm/dd/yy	TIME HH:MM	MATRIX/MATRIX CODE	#	CONTAINER	Type	GRO	AK101	DRO/PRO	AK102/103	BTEX 8860	Full Vols	8260	PAH-SIM	8270	REMARKS/LOC ID				
1A3	RS-MW1-073121				07/31/21	0845	W	10	G	X	X				X	X								
1A4	RS-MW2-073021				07/30/21	1857	W	10	G	X	X				X	X								
3A1	RS-MW3-073121				07/31/21	0925	W	10	G	X	X	X												
3A2	RS-MW4-073021				07/30/21	2051	W	10	G	X	X	X												
3A3	RS-MW6-073021				07/30/21	1609	W	10	G	X	X	X												
3A4	RS-MW7-073021				07/30/21	2134	W	10	G	X	X	X												
3A5	RS-MW8-073021				07/30/21	2210	W	10	G	X	X	X												
3A6	RS-MW9-073021				07/30/21	1431	W	10	G	X	X	X												
3A7	RS-MW10-073021				07/30/21	1250	W	10	G	X	X	X												
3A8	RS-MW99-073121				07/31/21	0845	W	10	G	X	X				X	X								
Relinquished By: (1) 1A2 1B Rose Hart			Date 08/02/21	Time 1417	Received By:					Section 4		DOD Project? Yes <input checked="" type="checkbox"/> No		Data Deliverable Requirements:										
Relinquished By: (2)			Date	Time	Received By:					Cooler ID:								Requested Turnaround Time and/or Special Instructions:						
Relinquished By: (3)			Date	Time	Received By:					Temp Blank °C: 023								Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT						
Relinquished By: (4)			Date 8/2/21	Time 1416	Received For Laboratory By:					(See attached Sample Receipt Form)								(See attached Sample Receipt Form)						

352267 0.5
2 0.2 0.2 0.2



SGS North America Inc.
CHAIN OF CUSTODY RECORD

Locations Nationwide
Alaska Maryland
New Jersey New York
North Carolina Indiana
West Virginia Kentucky
www.us.sgs.com

CLIENT: SLR				Instructions: Sections 1 - 5 must be filled out. Omissions may delay the onset of analysis.				Page <u>2</u> of <u>2</u>			
Section 1	CONTACT: Stan Flage PHONE NO: 907-748-6287			Section 3		Preservative					
	PROJECT NAME: Red Salmon			# C O N T A I N E R S	Type C = COMP G = GRAB M = Multi Incr- mental Soils	620 AK101	BTEX 82600				
	REPORTS TO: Jen McLean Stan Flage										
	INVOICE TO: Stan Flage										
PROJECT/ PWSID/ PERMIT#: 105.00151.21001											
E-MAIL:							REMARKS/ LOC ID				
QUOTE #:											
P.O. #:											
Section 2	RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX/ MATRIX CODE						
	(11)	TRIP1-073021	073021		W						
Section 5	Relinquished By: (1)		Date	Time	Received By:		Section 4 DOD Project? Yes <input checked="" type="checkbox"/> No		Data Deliverable Requirements:		
	Rose Hart		08/02/21	1417			Cooler ID: _____		Requested Turnaround Time and/or Special Instructions:		
	Relinquished By: (2)		Date	Time	Received By:						
	Relinquished By: (3)		Date	Time	Received By:		Temp Blank °C: <u>D23</u>		Chain of Custody Seal: (Circle)		
Relinquished By: (4)		Date	Time	Received For Laboratory By:		or Ambient []		<input checked="" type="radio"/> INTACT <input type="radio"/> BROKEN <input type="radio"/> ABSENT			
		8/2/21	1416			(See attached Sample Receipt Form)		(See attached Sample Receipt Form)			



e-Sample Receipt Form

SGS Workorder #:

1214771

1214771

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	Yes	
COC accompanied samples?	Yes	
DOD: Were samples received in COC corresponding coolers?	N/A	
N/A **Exemption permitted if chilled & collected <8 hours ago, or for samples where chilling is not required		
Temperature blank compliant* (i.e., 0-6 °C after CF)?	Yes	Cooler ID: 1 @ 0.5 °C Therm. ID: D23
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
*If >6°C, were samples collected <8 hours ago?	N/A	
If <0°C, were sample containers ice free?	N/A	
Note: Identify containers received at non-compliant temperature . Use form FS-0029 if more space is needed.		
Holding Time / Documentation / Sample Condition Requirements		Note: Refer to form F-083 "Sample Guide" for specific holding times.
Were samples received within holding time?	Yes	
Do samples match COC** (i.e., sample IDs, dates/times collected)?	Yes	
**Note: If times differ <1hr, record details & login per COC.		
***Note: If sample information on containers differs from COC, SGS will default to COC information		
Were analytical requests clear? (i.e., method is specified for analyses with multiple option for analysis (Ex: BTEX, Metals)	Yes	
Were proper containers (type/mass/volume/preservative***) used?	Yes	N/A ***Exemption permitted for metals (e.g, 200.8/6020B).
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

<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>	<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>
1214771001-A	HCL to pH < 2	OK	1214771006-F	HCL to pH < 2	OK
1214771001-B	HCL to pH < 2	OK	1214771006-G	HCL to pH < 2	OK
1214771001-C	HCL to pH < 2	OK	1214771006-H	HCL to pH < 2	OK
1214771001-D	HCL to pH < 2	OK	1214771007-A	HCL to pH < 2	OK
1214771001-E	HCL to pH < 2	OK	1214771007-B	HCL to pH < 2	OK
1214771001-F	HCL to pH < 2	OK	1214771007-C	HCL to pH < 2	OK
1214771001-G	HCL to pH < 2	OK	1214771007-D	HCL to pH < 2	OK
1214771001-H	HCL to pH < 2	OK	1214771007-E	HCL to pH < 2	OK
1214771001-I	HCL to pH < 2	OK	1214771007-F	HCL to pH < 2	OK
1214771001-J	HCL to pH < 2	OK	1214771007-G	HCL to pH < 2	OK
1214771002-A	HCL to pH < 2	OK	1214771007-H	HCL to pH < 2	OK
1214771002-B	HCL to pH < 2	OK	1214771008-A	HCL to pH < 2	OK
1214771002-C	HCL to pH < 2	OK	1214771008-B	HCL to pH < 2	OK
1214771002-D	HCL to pH < 2	OK	1214771008-C	HCL to pH < 2	OK
1214771002-E	HCL to pH < 2	OK	1214771008-D	HCL to pH < 2	OK
1214771002-F	HCL to pH < 2	OK	1214771008-E	HCL to pH < 2	OK
1214771002-G	HCL to pH < 2	OK	1214771008-F	HCL to pH < 2	OK
1214771002-H	HCL to pH < 2	OK	1214771008-G	HCL to pH < 2	OK
1214771002-I	HCL to pH < 2	OK	1214771008-H	HCL to pH < 2	OK
1214771002-J	HCL to pH < 2	OK	1214771009-A	HCL to pH < 2	OK
1214771003-A	HCL to pH < 2	OK	1214771009-B	HCL to pH < 2	OK
1214771003-B	HCL to pH < 2	OK	1214771009-C	HCL to pH < 2	OK
1214771003-C	HCL to pH < 2	OK	1214771009-D	HCL to pH < 2	OK
1214771003-D	HCL to pH < 2	OK	1214771009-E	HCL to pH < 2	OK
1214771003-E	HCL to pH < 2	OK	1214771009-F	HCL to pH < 2	OK
1214771003-F	HCL to pH < 2	OK	1214771009-G	HCL to pH < 2	OK
1214771003-G	HCL to pH < 2	OK	1214771009-H	HCL to pH < 2	OK
1214771003-H	HCL to pH < 2	OK	1214771010-A	HCL to pH < 2	OK
1214771004-A	HCL to pH < 2	OK	1214771010-B	HCL to pH < 2	OK
1214771004-B	HCL to pH < 2	OK	1214771010-C	HCL to pH < 2	OK
1214771004-C	HCL to pH < 2	OK	1214771010-D	HCL to pH < 2	OK
1214771004-D	HCL to pH < 2	OK	1214771010-E	HCL to pH < 2	OK
1214771004-E	HCL to pH < 2	OK	1214771010-F	HCL to pH < 2	OK
1214771004-F	HCL to pH < 2	OK	1214771010-G	HCL to pH < 2	OK
1214771004-G	HCL to pH < 2	OK	1214771010-H	HCL to pH < 2	OK
1214771004-H	HCL to pH < 2	OK	1214771010-I	HCL to pH < 2	OK
1214771005-A	HCL to pH < 2	OK	1214771010-J	HCL to pH < 2	OK
1214771005-B	HCL to pH < 2	OK	1214771011-A	HCL to pH < 2	OK
1214771005-C	HCL to pH < 2	OK	1214771011-B	HCL to pH < 2	OK
1214771005-D	HCL to pH < 2	OK	1214771011-C	HCL to pH < 2	OK
1214771005-E	HCL to pH < 2	OK			
1214771005-F	HCL to pH < 2	OK			
1214771005-G	HCL to pH < 2	OK			
1214771005-H	HCL to pH < 2	OK			
1214771006-A	HCL to pH < 2	OK			
1214771006-B	HCL to pH < 2	OK			
1214771006-C	HCL to pH < 2	OK			
1214771006-D	HCL to pH < 2	OK			
1214771006-E	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.

NC- The container provided was not preserved or was under-preserved. The method does not allow for additional preservative added after collection.

PA - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt and the container is now at the correct pH. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

PH - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt, but was insufficient to bring the container to the correct pH for the analysis requested. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

QN - Insufficient sample quantity provided.



Laboratory Report of Analysis

To: SLR Alaska-Anchorage
2700 Gambell Street, Suite 200
Anchorage, AK 99503
(907)222-1112

Report Number: **1214774**

Client Project: **105.00151.21001 Red Salmon**

Dear Stan Flagel,

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 Alexandra 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.

Alexandra Daniel
Project Manager
Alexandra.Daniel@sgs.com

Date

Case Narrative

SGS Client: **SLR Alaska-Anchorage**
SGS Project: **1214774**
Project Name/Site: **105.00151.21001 Red Salmon**
Project Contact: **Stan Flagel**

Refer to sample receipt form for information on sample condition.

RS-SW1-073121 (1214774001) PS

8270D SIM - PAH surrogate recovery for 2-methylnaphthalene-d10 does not meet QC criteria. Sample was re-extracted past 14 hold-time to confirm results. Re-analysis confirms original results. In-hold data is reported.

RS-SW2-073121 (1214774002) PS

8270D SIM - The PAH LOQs are elevated due to sample dilution. The sample was diluted due to the dark color of the extract.
8270D SIM - PAH surrogate recoveries for fluoranthene-d10 and 2-methylnaphthalene-d10 do not meet QC criteria due to sample dilution.

RS-SW99-073121 (1214774003) PS

8270D SIM - PAH surrogate recovery for 2-methylnaphthalene-d10 does not meet QC criteria. The sample was re-extracted outside of hold time and results do not confirm. Both sets of data are being reported.

MB for HBN 1823448 [XXX/45308] (1627703) MB

8270D SIM - Phenanthrene is detect in the PAH method blank at less than the LOQ. Associated samples contain this analyte at less than the LOQ.

1214798010MS (1627705) MS

8270D SIM - PAH MS recoveries for multiple analytes do not meet QC criteria. Refer to the LCS for accuracy requirements.

1214798010MSD (1627706) MSD

8270D SIM - PAH MSD recoveries for multiple analytes do not meet QC criteria. Refer to the LCS for accuracy requirements.
8270D SIM - PAH MS/MSD RPD for multiple analytes does not meet QC criteria. These analytes are not detected above the LOQ in the parent sample.

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

Report of Manual Integrations

<u>Laboratory ID</u>	<u>Client Sample ID</u>	<u>Analytical Batch</u>	<u>Analyte</u>	<u>Reason</u>
8270D SIM LV (PAH)				
1631511	CVC for HBN 1824432 [XMS/12840	XMS12840	Anthracene	RP
1631511	CVC for HBN 1824432 [XMS/12840	XMS12840	Phenanthrene	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.

Laboratory Qualifiers

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

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

SGS maintains a formal Quality Assurance/Quality Control (QA/QC) program. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request. The laboratory certification numbers are AK00971 (DW Chemistry & Microbiology) & 17-021 (CS) for ADEC and 2944.01 for DOD ELAP/ISO17025 (RCRA methods: 1020B, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035A, 6020B, 7470A, 7471B, 8015C, 8021B, 8082A, 8260D, 8270D, 8270D-SIM, 9040C, 9045D, 9056A, 9060A, AK101 and AK102/103). SGS is only certified for the analytes listed on our Drinking Water Certification (DW methods: 200.8, 2130B, 2320B, 2510B, 300.0, 4500-CN-C,E, 4500-H-B, 4500-NO3-F, 4500-P-E and 524.2) and only those analytes will be reported to the State of Alaska for compliance. Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP and, when applicable, other regulatory authorities.

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

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

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

Sample Summary

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Collected</u>	<u>Received</u>	<u>Matrix</u>
RS-SW1-073121	1214774001	07/31/2021	08/02/2021	Water (Surface, Eff., Ground)
RS-SW2-073121	1214774002	07/31/2021	08/02/2021	Water (Surface, Eff., Ground)
RS-SW99-073121	1214774003	07/31/2021	08/02/2021	Water (Surface, Eff., Ground)
TRIP2-073021	1214774004	07/30/2021	08/02/2021	Water (Surface, Eff., Ground)

<u>Method</u>	<u>Method Description</u>
8270D SIM LV (PAH)	8270 PAH SIM GC/MS LV
AK102	DRO/RRO Low Volume Water
AK103	DRO/RRO Low Volume Water
AK101	Gasoline Range Organics (W)
SW8260D	Volatile Organic Compounds (W)

Print Date: 09/07/2021 3:09:17PM

Detectable Results Summary

Client Sample ID: **RS-SW1-073121**

Lab Sample ID: 1214774001

Polynuclear Aromatics GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Acenaphthene	0.0940	ug/L
Fluorene	0.421	ug/L

Semivolatile Organic Fuels

Diesel Range Organics	0.747	mg/L
Residual Range Organics	0.449J	mg/L

Client Sample ID: **RS-SW2-073121**

Lab Sample ID: 1214774002

Polynuclear Aromatics GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Benzo[g,h,i]perylene	1.25	ug/L
Diesel Range Organics	14.9	mg/L
Residual Range Organics	59.5	mg/L

Semivolatile Organic Fuels

Client Sample ID: **RS-SW99-073121**

Lab Sample ID: 1214774003

Polynuclear Aromatics GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
1-Methylnaphthalene	0.219	ug/L
Acenaphthene	0.240	ug/L
Acenaphthene	0.0649	ug/L
Fluorene	0.236	ug/L
Fluorene	1.45	ug/L
Phenanthrene	0.157	ug/L
Phenanthrene	0.0292J	ug/L

Semivolatile Organic Fuels

Diesel Range Organics	0.675	mg/L
Residual Range Organics	0.421J	mg/L



Results of RS-SW1-073121

Client Sample ID: RS-SW1-073121
Client Project ID: 105.00151.21001 Red Salmon
Lab Sample ID: 1214774001
Lab Project ID: 1214774

Collection Date: 07/31/21 10:28
Received Date: 08/02/21 14:09
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Polynuclear Aromatics GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various PAHs like 1-Methylnaphthalene, 2-Methylnaphthalene, Acenaphthene, etc., with their respective values and analysis dates.

Batch Information

Analytical Batch: XMS12829
Analytical Method: 8270D SIM LV (PAH)
Analyst: LAW
Analytical Date/Time: 08/15/21 01:48
Container ID: 1214774001-C

Prep Batch: XXX45308
Prep Method: SW3535A
Prep Date/Time: 08/04/21 14:27
Prep Initial Wt./Vol.: 270 mL
Prep Extract Vol: 1 mL

Analytical Batch: XMS12840
Analytical Method: 8270D SIM LV (PAH)
Analyst: LAW
Analytical Date/Time: 08/18/21 19:57
Container ID: 1214774001-C

Prep Batch: XXX45308
Prep Method: SW3535A
Prep Date/Time: 08/04/21 14:27
Prep Initial Wt./Vol.: 270 mL
Prep Extract Vol: 1 mL



Results of **RS-SW1-073121**

Client Sample ID: **RS-SW1-073121**
Client Project ID: **105.00151.21001 Red Salmon**
Lab Sample ID: 1214774001
Lab Project ID: 1214774

Collection Date: 07/31/21 10:28
Received Date: 08/02/21 14:09
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	0.747	0.588	0.176	mg/L	1		08/10/21 13:26
Surrogates							
5a Androstane (surr)	97.7	50-150		%	1		08/10/21 13:26

Batch Information

Analytical Batch: XFC16039
Analytical Method: AK102
Analyst: IVM
Analytical Date/Time: 08/10/21 13:26
Container ID: 1214774001-A

Prep Batch: XXX45329
Prep Method: SW3520C
Prep Date/Time: 08/06/21 15:05
Prep Initial Wt./Vol.: 255 mL
Prep Extract Vol: 1 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	0.449 J	0.490	0.147	mg/L	1		08/10/21 13:26
Surrogates							
n-Triacontane-d62 (surr)	109	50-150		%	1		08/10/21 13:26

Batch Information

Analytical Batch: XFC16039
Analytical Method: AK103
Analyst: IVM
Analytical Date/Time: 08/10/21 13:26
Container ID: 1214774001-A

Prep Batch: XXX45329
Prep Method: SW3520C
Prep Date/Time: 08/06/21 15:05
Prep Initial Wt./Vol.: 255 mL
Prep Extract Vol: 1 mL

Results of RS-SW1-073121

Client Sample ID: **RS-SW1-073121**
 Client Project ID: **105.00151.21001 Red Salmon**
 Lab Sample ID: 1214774001
 Lab Project ID: 1214774

Collection Date: 07/31/21 10:28
 Received Date: 08/02/21 14:09
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	0.0500 U	0.100	0.0450	mg/L	1		08/06/21 05:50
Surrogates							
4-Bromofluorobenzene (surr)	84.2	50-150		%	1		08/06/21 05:50

Batch Information

Analytical Batch: VFC15751
 Analytical Method: AK101
 Analyst: MDT
 Analytical Date/Time: 08/06/21 05:50
 Container ID: 1214774001-H

Prep Batch: VXX37588
 Prep Method: SW5030B
 Prep Date/Time: 08/05/21 06:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL



Results of **RS-SW1-073121**

Client Sample ID: **RS-SW1-073121**
Client Project ID: **105.00151.21001 Red Salmon**
Lab Sample ID: 1214774001
Lab Project ID: 1214774

Collection Date: 07/31/21 10:28
Received Date: 08/02/21 14:09
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	0.200 U	0.400	0.120	ug/L	1		08/12/21 00:38
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		08/12/21 00:38
o-Xylene	0.500 U	1.00	0.310	ug/L	1		08/12/21 00:38
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		08/12/21 00:38
Toluene	0.500 U	1.00	0.310	ug/L	1		08/12/21 00:38
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		08/12/21 00:38
Surrogates							
1,2-Dichloroethane-D4 (surr)	107	81-118		%	1		08/12/21 00:38
4-Bromofluorobenzene (surr)	96.1	85-114		%	1		08/12/21 00:38
Toluene-d8 (surr)	99.7	89-112		%	1		08/12/21 00:38

Batch Information

Analytical Batch: VMS21042
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 08/12/21 00:38
Container ID: 1214774001-E

Prep Batch: VXX37630
Prep Method: SW5030B
Prep Date/Time: 08/11/21 19:30
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of RS-SW2-073121

Client Sample ID: RS-SW2-073121
Client Project ID: 105.00151.21001 Red Salmon
Lab Sample ID: 1214774002
Lab Project ID: 1214774

Collection Date: 07/31/21 10:42
Received Date: 08/02/21 14:09
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Polynuclear Aromatics GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various polynuclear aromatic hydrocarbons and their surrogate standards.

Batch Information

Analytical Batch: XMS12829
Analytical Method: 8270D SIM LV (PAH)
Analyst: LAW
Analytical Date/Time: 08/14/21 22:42
Container ID: 1214774002-C

Prep Batch: XXX45308
Prep Method: SW3535A
Prep Date/Time: 08/04/21 14:27
Prep Initial Wt./Vol.: 235 mL
Prep Extract Vol: 1 mL



Results of **RS-SW2-073121**

Client Sample ID: **RS-SW2-073121**
Client Project ID: **105.00151.21001 Red Salmon**
Lab Sample ID: 1214774002
Lab Project ID: 1214774

Collection Date: 07/31/21 10:42
Received Date: 08/02/21 14:09
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	14.9	5.77	1.73	mg/L	10		08/10/21 23:54
Surrogates							
5a Androstane (surr)	95.8	50-150		%	10		08/10/21 23:54

Batch Information

Analytical Batch: XFC16039
Analytical Method: AK102
Analyst: IVM
Analytical Date/Time: 08/10/21 23:54
Container ID: 1214774002-A

Prep Batch: XXX45329
Prep Method: SW3520C
Prep Date/Time: 08/06/21 15:05
Prep Initial Wt./Vol.: 260 mL
Prep Extract Vol: 1 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	59.5	4.81	1.44	mg/L	10		08/10/21 23:54
Surrogates							
n-Triacontane-d62 (surr)	103	50-150		%	10		08/10/21 23:54

Batch Information

Analytical Batch: XFC16039
Analytical Method: AK103
Analyst: IVM
Analytical Date/Time: 08/10/21 23:54
Container ID: 1214774002-A

Prep Batch: XXX45329
Prep Method: SW3520C
Prep Date/Time: 08/06/21 15:05
Prep Initial Wt./Vol.: 260 mL
Prep Extract Vol: 1 mL

Results of RS-SW2-073121

Client Sample ID: **RS-SW2-073121**
 Client Project ID: **105.00151.21001 Red Salmon**
 Lab Sample ID: 1214774002
 Lab Project ID: 1214774

Collection Date: 07/31/21 10:42
 Received Date: 08/02/21 14:09
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	0.0500 U	0.100	0.0450	mg/L	1		08/06/21 06:08
Surrogates							
4-Bromofluorobenzene (surr)	89	50-150		%	1		08/06/21 06:08

Batch Information

Analytical Batch: VFC15751
 Analytical Method: AK101
 Analyst: MDT
 Analytical Date/Time: 08/06/21 06:08
 Container ID: 1214774002-H

Prep Batch: VXX37588
 Prep Method: SW5030B
 Prep Date/Time: 08/05/21 06:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL



Results of **RS-SW2-073121**

Client Sample ID: **RS-SW2-073121**
Client Project ID: **105.00151.21001 Red Salmon**
Lab Sample ID: 1214774002
Lab Project ID: 1214774

Collection Date: 07/31/21 10:42
Received Date: 08/02/21 14:09
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	0.200 U	0.400	0.120	ug/L	1		08/11/21 23:54
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		08/11/21 23:54
o-Xylene	0.500 U	1.00	0.310	ug/L	1		08/11/21 23:54
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		08/11/21 23:54
Toluene	0.500 U	1.00	0.310	ug/L	1		08/11/21 23:54
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		08/11/21 23:54
Surrogates							
1,2-Dichloroethane-D4 (surr)	103	81-118		%	1		08/11/21 23:54
4-Bromofluorobenzene (surr)	98.8	85-114		%	1		08/11/21 23:54
Toluene-d8 (surr)	100	89-112		%	1		08/11/21 23:54

Batch Information

Analytical Batch: VMS21042
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 08/11/21 23:54
Container ID: 1214774002-E

Prep Batch: VXX37630
Prep Method: SW5030B
Prep Date/Time: 08/11/21 19:30
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of RS-SW99-073121

Client Sample ID: RS-SW99-073121
Client Project ID: 105.00151.21001 Red Salmon
Lab Sample ID: 1214774003
Lab Project ID: 1214774

Collection Date: 07/31/21 10:28
Received Date: 08/02/21 14:09
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Polynuclear Aromatics GC/MS

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

Surrogates

Print Date: 09/07/2021 3:09:21PM

J flagging is activated

Results of RS-SW99-073121

Client Sample ID: **RS-SW99-073121**
 Client Project ID: **105.00151.21001 Red Salmon**
 Lab Sample ID: 1214774003
 Lab Project ID: 1214774

Collection Date: 07/31/21 10:28
 Received Date: 08/02/21 14:09
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Polynuclear Aromatics GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
2-Methylnaphthalene-d10 (surr)	28.7	*	42-86		%	1		08/15/21 02:09
2-Methylnaphthalene-d10 (surr)	65.3		42-86		%	1		08/19/21 18:59
Fluoranthene-d10 (surr)	49.5	*	50-97		%	1		08/19/21 18:59
Fluoranthene-d10 (surr)	50.1		50-97		%	1		08/15/21 02:09

Batch Information

Analytical Batch: XMS12829
 Analytical Method: 8270D SIM LV (PAH)
 Analyst: LAW
 Analytical Date/Time: 08/15/21 02:09
 Container ID: 1214774003-C

Prep Batch: XXX45308
 Prep Method: SW3535A
 Prep Date/Time: 08/04/21 14:27
 Prep Initial Wt./Vol.: 265 mL
 Prep Extract Vol: 1 mL

Analytical Batch: XMS12836
 Analytical Method: 8270D SIM LV (PAH)
 Analyst: LAW
 Analytical Date/Time: 08/19/21 18:59
 Container ID: 1214774003-B

Prep Batch: XXX45402
 Prep Method: SW3535A
 Prep Date/Time: 08/18/21 13:00
 Prep Initial Wt./Vol.: 260 mL
 Prep Extract Vol: 1 mL



Results of **RS-SW99-073121**

Client Sample ID: **RS-SW99-073121**
Client Project ID: **105.00151.21001 Red Salmon**
Lab Sample ID: 1214774003
Lab Project ID: 1214774

Collection Date: 07/31/21 10:28
Received Date: 08/02/21 14:09
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	0.675	0.667	0.200	mg/L	1		08/10/21 13:36
Surrogates							
5a Androstane (surr)	93.9	50-150		%	1		08/10/21 13:36

Batch Information

Analytical Batch: XFC16039
Analytical Method: AK102
Analyst: IVM
Analytical Date/Time: 08/10/21 13:36
Container ID: 1214774003-A

Prep Batch: XXX45329
Prep Method: SW3520C
Prep Date/Time: 08/06/21 15:05
Prep Initial Wt./Vol.: 225 mL
Prep Extract Vol: 1 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	0.421 J	0.556	0.167	mg/L	1		08/10/21 13:36
Surrogates							
n-Triacontane-d62 (surr)	103	50-150		%	1		08/10/21 13:36

Batch Information

Analytical Batch: XFC16039
Analytical Method: AK103
Analyst: IVM
Analytical Date/Time: 08/10/21 13:36
Container ID: 1214774003-A

Prep Batch: XXX45329
Prep Method: SW3520C
Prep Date/Time: 08/06/21 15:05
Prep Initial Wt./Vol.: 225 mL
Prep Extract Vol: 1 mL

Results of RS-SW99-073121

Client Sample ID: **RS-SW99-073121**
 Client Project ID: **105.00151.21001 Red Salmon**
 Lab Sample ID: 1214774003
 Lab Project ID: 1214774

Collection Date: 07/31/21 10:28
 Received Date: 08/02/21 14:09
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	0.0500 U	0.100	0.0450	mg/L	1		08/06/21 06:26
Surrogates							
4-Bromofluorobenzene (surr)	86.7	50-150		%	1		08/06/21 06:26

Batch Information

Analytical Batch: VFC15751
 Analytical Method: AK101
 Analyst: MDT
 Analytical Date/Time: 08/06/21 06:26
 Container ID: 1214774003-G

Prep Batch: VXX37588
 Prep Method: SW5030B
 Prep Date/Time: 08/05/21 06:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL



Results of **RS-SW99-073121**

Client Sample ID: **RS-SW99-073121**
Client Project ID: **105.00151.21001 Red Salmon**
Lab Sample ID: 1214774003
Lab Project ID: 1214774

Collection Date: 07/31/21 10:28
Received Date: 08/02/21 14:09
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	0.200 U	0.400	0.120	ug/L	1		08/12/21 00:53
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		08/12/21 00:53
o-Xylene	0.500 U	1.00	0.310	ug/L	1		08/12/21 00:53
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		08/12/21 00:53
Toluene	0.500 U	1.00	0.310	ug/L	1		08/12/21 00:53
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		08/12/21 00:53
Surrogates							
1,2-Dichloroethane-D4 (surr)	106	81-118		%	1		08/12/21 00:53
4-Bromofluorobenzene (surr)	97.1	85-114		%	1		08/12/21 00:53
Toluene-d8 (surr)	98.5	89-112		%	1		08/12/21 00:53

Batch Information

Analytical Batch: VMS21042
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 08/12/21 00:53
Container ID: 1214774003-D

Prep Batch: VXX37630
Prep Method: SW5030B
Prep Date/Time: 08/11/21 19:30
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of TRIP2-073021

Client Sample ID: **TRIP2-073021**
 Client Project ID: **105.00151.21001 Red Salmon**
 Lab Sample ID: 1214774004
 Lab Project ID: 1214774

Collection Date: 07/30/21 10:28
 Received Date: 08/02/21 14:09
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	0.0500 U	0.100	0.0450	mg/L	1		08/05/21 17:56
Surrogates							
4-Bromofluorobenzene (surr)	91.1	50-150		%	1		08/05/21 17:56

Batch Information

Analytical Batch: VFC15751
 Analytical Method: AK101
 Analyst: MDT
 Analytical Date/Time: 08/05/21 17:56
 Container ID: 1214774004-A

Prep Batch: VXX37587
 Prep Method: SW5030B
 Prep Date/Time: 08/05/21 06:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Results of TRIP2-073021

Client Sample ID: **TRIP2-073021**
 Client Project ID: **105.00151.21001 Red Salmon**
 Lab Sample ID: 1214774004
 Lab Project ID: 1214774

Collection Date: 07/30/21 10:28
 Received Date: 08/02/21 14:09
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	0.200 U	0.400	0.120	ug/L	1		08/10/21 16:00
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		08/10/21 16:00
o-Xylene	0.500 U	1.00	0.310	ug/L	1		08/10/21 16:00
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		08/10/21 16:00
Toluene	0.500 U	1.00	0.310	ug/L	1		08/10/21 16:00
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		08/10/21 16:00
Surrogates							
1,2-Dichloroethane-D4 (surr)	103	81-118		%	1		08/10/21 16:00
4-Bromofluorobenzene (surr)	106	85-114		%	1		08/10/21 16:00
Toluene-d8 (surr)	99.6	89-112		%	1		08/10/21 16:00

Batch Information

Analytical Batch: VMS21036
 Analytical Method: SW8260D
 Analyst: NRB
 Analytical Date/Time: 08/10/21 16:00
 Container ID: 1214774004-B

Prep Batch: VXX37619
 Prep Method: SW5030B
 Prep Date/Time: 08/10/21 14:00
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL



Method Blank

Blank ID: MB for HBN 1823607 [VXX/37587]

Blank Lab ID: 1628353

QC for Samples:

1214774004

Matrix: Water (Surface, Eff., Ground)

Results by AK101

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Gasoline Range Organics	0.0500U	0.100	0.0450	mg/L
Surrogates				
4-Bromofluorobenzene (surr)	83.9	50-150		%

Batch Information

Analytical Batch: VFC15751

Analytical Method: AK101

Instrument: Agilent 7890A PID/FID

Analyst: MDT

Analytical Date/Time: 8/5/2021 10:47:00AM

Prep Batch: VXX37587

Prep Method: SW5030B

Prep Date/Time: 8/5/2021 6:00:00AM

Prep Initial Wt./Vol.: 5 mL

Prep Extract Vol: 5 mL

Print Date: 09/07/2021 3:09:23PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1214774 [VXX37587]
 Blank Spike Lab ID: 1628354
 Date Analyzed: 08/05/2021 11:40

Spike Duplicate ID: LCSD for HBN 1214774 [VXX37587]
 Spike Duplicate Lab ID: 1628355
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1214774004

Results by AK101

Parameter	Blank Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Gasoline Range Organics	1.00	0.991	99	1.00	1.09	109	(60-120)	9.10	(< 20)

Surrogates

4-Bromofluorobenzene (surr)	0.0500		99	0.0500		104	(50-150)	4.30	
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Batch Information

Analytical Batch: VFC15751
 Analytical Method: AK101
 Instrument: Agilent 7890A PID/FID
 Analyst: MDT

Prep Batch: VXX37587
 Prep Method: SW5030B
 Prep Date/Time: 08/05/2021 06:00
 Spike Init Wt./Vol.: 1.00 mg/L Extract Vol: 5 mL
 Dupe Init Wt./Vol.: 1.00 mg/L Extract Vol: 5 mL

Method Blank

Blank ID: MB for HBN 1823608 [VXX/37588]

Blank Lab ID: 1628356

QC for Samples:

1214774001, 1214774002, 1214774003

Matrix: Water (Surface, Eff., Ground)

Results by AK101

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Gasoline Range Organics	0.0500U	0.100	0.0450	mg/L
Surrogates				
4-Bromofluorobenzene (surr)	88.7	50-150		%

Batch Information

Analytical Batch: VFC15751

Analytical Method: AK101

Instrument: Agilent 7890A PID/FID

Analyst: MDT

Analytical Date/Time: 8/6/2021 12:11:00AM

Prep Batch: VXX37588

Prep Method: SW5030B

Prep Date/Time: 8/5/2021 6:00:00AM

Prep Initial Wt./Vol.: 5 mL

Prep Extract Vol: 5 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1214774 [VXX37588]
 Blank Spike Lab ID: 1628359
 Date Analyzed: 08/06/2021 03:28

Spike Duplicate ID: LCSD for HBN 1214774 [VXX37588]
 Spike Duplicate Lab ID: 1628360
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1214774001, 1214774002, 1214774003

Results by AK101

Parameter	Blank Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Gasoline Range Organics	1.00	0.998	100	1.00	1.02	102	(60-120)	2.30	(< 20)

Surrogates

4-Bromofluorobenzene (surr)	0.0500		93	0.0500		93	(50-150)	0.71	
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Batch Information

Analytical Batch: **VFC15751**
 Analytical Method: **AK101**
 Instrument: **Agilent 7890A PID/FID**
 Analyst: **MDT**

Prep Batch: **VXX37588**
 Prep Method: **SW5030B**
 Prep Date/Time: **08/05/2021 06:00**
 Spike Init Wt./Vol.: 1.00 mg/L Extract Vol: 5 mL
 Dupe Init Wt./Vol.: 1.00 mg/L Extract Vol: 5 mL

Method Blank

Blank ID: MB for HBN 1823913 [VXX/37619]
 Blank Lab ID: 1629327

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
 1214774004

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	0.200U	0.400	0.120	ug/L
Ethylbenzene	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
Toluene	0.500U	1.00	0.310	ug/L
Xylenes (total)	1.50U	3.00	1.00	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	103	81-118		%
4-Bromofluorobenzene (surr)	106	85-114		%
Toluene-d8 (surr)	99.7	89-112		%

Batch Information

Analytical Batch: VMS21036
 Analytical Method: SW8260D
 Instrument: Agilent 7890-75MS
 Analyst: NRB
 Analytical Date/Time: 8/10/2021 2:16:00PM

Prep Batch: VXX37619
 Prep Method: SW5030B
 Prep Date/Time: 8/10/2021 2:00:00PM
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1214774 [VXX37619]
 Blank Spike Lab ID: 1629328
 Date Analyzed: 08/10/2021 14:31

Spike Duplicate ID: LCSD for HBN 1214774 [VXX37619]
 Spike Duplicate Lab ID: 1629329
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1214774004

Results by SW8260D

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	30	31.3	104	30	30.1	100	(79-120)	3.70	(< 20)
Ethylbenzene	30	30.9	103	30	30.9	103	(79-121)	0.12	(< 20)
o-Xylene	30	30.8	103	30	30.6	102	(78-122)	0.75	(< 20)
P & M -Xylene	60	60.4	101	60	60.1	100	(80-121)	0.42	(< 20)
Toluene	30	31.0	103	30	30.1	100	(80-121)	2.80	(< 20)
Xylenes (total)	90	91.2	101	90	90.7	101	(79-121)	0.53	(< 20)
Surrogates									
1,2-Dichloroethane-D4 (surr)	30		99	30		97	(81-118)	2.50	
4-Bromofluorobenzene (surr)	30		103	30		104	(85-114)	0.59	
Toluene-d8 (surr)	30		101	30		99	(89-112)	1.60	

Batch Information

Analytical Batch: VMS21036
 Analytical Method: SW8260D
 Instrument: Agilent 7890-75MS
 Analyst: NRB

Prep Batch: VXX37619
 Prep Method: SW5030B
 Prep Date/Time: 08/10/2021 14:00
 Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
 Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

Method Blank

Blank ID: MB for HBN 1823986 [VXX/37630]

Blank Lab ID: 1629629

QC for Samples:

1214774001, 1214774002, 1214774003

Matrix: Water (Surface, Eff., Ground)

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	0.200U	0.400	0.120	ug/L
Ethylbenzene	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
Toluene	0.500U	1.00	0.310	ug/L
Xylenes (total)	1.50U	3.00	1.00	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	107	81-118		%
4-Bromofluorobenzene (surr)	98	85-114		%
Toluene-d8 (surr)	99.6	89-112		%

Batch Information

Analytical Batch: VMS21042
 Analytical Method: SW8260D
 Instrument: VPA 780/5975 GC/MS
 Analyst: NRB
 Analytical Date/Time: 8/11/2021 7:58:00PM

Prep Batch: VXX37630
 Prep Method: SW5030B
 Prep Date/Time: 8/11/2021 7:30:00PM
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Leaching Blank

Blank ID: LB for HBN 1823853 [TCLP/11332]
 Blank Lab ID: 1629095

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
 1214774001, 1214774002, 1214774003

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	10.0U	20.0	6.00	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	106	81-118		%
4-Bromofluorobenzene (surr)	98.6	85-114		%
Toluene-d8 (surr)	99.1	89-112		%

Batch Information

Analytical Batch: VMS21042
 Analytical Method: SW8260D
 Instrument: VPA 780/5975 GC/MS
 Analyst: NRB
 Analytical Date/Time: 8/11/2021 10:55:00PM

Prep Batch: VXX37630
 Prep Method: SW5030B
 Prep Date/Time: 8/11/2021 7:30:00PM
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Leaching Blank

Blank ID: LB for HBN 1823948 [TCLP/11335]
 Blank Lab ID: 1629421

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
 1214774001, 1214774002, 1214774003

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	10.0U	20.0	6.00	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	104	81-118		%
4-Bromofluorobenzene (surr)	99.5	85-114		%
Toluene-d8 (surr)	99.3	89-112		%

Batch Information

Analytical Batch: VMS21042
 Analytical Method: SW8260D
 Instrument: VPA 780/5975 GC/MS
 Analyst: NRB
 Analytical Date/Time: 8/11/2021 11:10:00PM

Prep Batch: VXX37630
 Prep Method: SW5030B
 Prep Date/Time: 8/11/2021 7:30:00PM
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1214774 [VXX37630]
 Blank Spike Lab ID: 1629630
 Date Analyzed: 08/11/2021 20:13

Spike Duplicate ID: LCSD for HBN 1214774 [VXX37630]
 Spike Duplicate Lab ID: 1629631
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1214774001, 1214774002, 1214774003

Results by SW8260D

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	30	32.4	108	30	32.0	107	(79-120)	1.30	(< 20)
Ethylbenzene	30	32.3	108	30	31.8	106	(79-121)	1.70	(< 20)
o-Xylene	30	32.8	109	30	32.1	107	(78-122)	2.10	(< 20)
P & M -Xylene	60	64.9	108	60	63.4	106	(80-121)	2.30	(< 20)
Toluene	30	31.4	105	30	30.9	103	(80-121)	1.70	(< 20)
Xylenes (total)	90	97.7	109	90	95.5	106	(79-121)	2.20	(< 20)
Surrogates									
1,2-Dichloroethane-D4 (surr)	30		101	30		99	(81-118)	2.00	
4-Bromofluorobenzene (surr)	30		98	30		96	(85-114)	1.30	
Toluene-d8 (surr)	30		99	30		99	(89-112)	0.27	

Batch Information

Analytical Batch: VMS21042
 Analytical Method: SW8260D
 Instrument: VPA 780/5975 GC/MS
 Analyst: NRB

Prep Batch: VXX37630
 Prep Method: SW5030B
 Prep Date/Time: 08/11/2021 19:30
 Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
 Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

Method Blank

Blank ID: MB for HBN 1823448 [XXX/45308]
 Blank Lab ID: 1627703

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
 1214774001, 1214774002, 1214774003

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	0.0300J	0.0500	0.0150	ug/L
Pyrene	0.0250U	0.0500	0.0150	ug/L
Surrogates				
2-Methylnaphthalene-d10 (surr)	63.2	42-86		%
Fluoranthene-d10 (surr)	81.4	50-97		%

Batch Information

Analytical Batch: XMS12829
 Analytical Method: 8270D SIM LV (PAH)
 Instrument: Agilent GC 7890B/5977A SWA
 Analyst: LAW
 Analytical Date/Time: 8/14/2021 8:59:00PM

Prep Batch: XXX45308
 Prep Method: SW3535A
 Prep Date/Time: 8/4/2021 2:27:53PM
 Prep Initial Wt./Vol.: 250 mL
 Prep Extract Vol: 1 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1214774 [XXX45308]

Blank Spike Lab ID: 1627704

Date Analyzed: 08/14/2021 21:20

Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1214774001, 1214774002, 1214774003

Results by 8270D SIM LV (PAH)

Blank Spike (ug/L)

Parameter	Spike	Result	Rec (%)	CL
1-Methylnaphthalene	2	1.12	56	(41-115)
2-Methylnaphthalene	2	1.12	56	(39-114)
Acenaphthene	2	1.25	63	(48-114)
Acenaphthylene	2	1.27	64	(35-121)
Anthracene	2	1.32	66	(53-119)
Benzo(a)Anthracene	2	1.41	71	(59-120)
Benzo[a]pyrene	2	1.48	74	(53-120)
Benzo[b]Fluoranthene	2	1.46	73	(53-126)
Benzo[g,h,i]perylene	2	1.58	79	(44-128)
Benzo[k]fluoranthene	2	1.51	75	(54-125)
Chrysene	2	1.48	74	(57-120)
Dibenzo[a,h]anthracene	2	1.59	80	(44-131)
Fluoranthene	2	1.33	66	(58-120)
Fluorene	2	1.30	65	(50-118)
Indeno[1,2,3-c,d] pyrene	2	1.56	78	(48-130)
Naphthalene	2	1.14	57	(43-114)
Phenanthrene	2	1.31	65	(53-115)
Pyrene	2	1.33	67	(53-121)

Surrogates

2-Methylnaphthalene-d10 (surr)	2		55	(42-86)
Fluoranthene-d10 (surr)	2		68	(50-97)

Batch Information

Analytical Batch: XMS12829

Analytical Method: 8270D SIM LV (PAH)

Instrument: Agilent GC 7890B/5977A SWA

Analyst: LAW

Prep Batch: XXX45308

Prep Method: SW3535A

Prep Date/Time: 08/04/2021 14:27

Spike Init Wt./Vol.: 2 ug/L Extract Vol: 1 mL

Dupe Init Wt./Vol.: Extract Vol:

Matrix Spike Summary

Original Sample ID: 1214798010
 MS Sample ID: 1627705 MS
 MSD Sample ID: 1627706 MSD

Analysis Date: 08/15/2021 4:12
 Analysis Date: 08/15/2021 4:33
 Analysis Date: 08/15/2021 4:54
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1214774001, 1214774002, 1214774003

Results by 8270D SIM LV (PAH)

Parameter	Sample	Matrix Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
1-Methylnaphthalene	0.0232U	1.92	1.2	62	1.82	0.985	54	41-115	19.60	(< 20)
2-Methylnaphthalene	0.0232U	1.92	1.11	58	1.82	0.907	50	39-114	20.40	* (< 20)
Acenaphthene	0.0232U	1.92	1.26	66	1.82	1.04	57	48-114	19.40	(< 20)
Acenaphthylene	0.0232U	1.92	1.27	66	1.82	1.08	59	35-121	16.90	(< 20)
Anthracene	0.0232U	1.92	1.25	65	1.82	1.06	58	53-119	16.70	(< 20)
Benzo(a)Anthracene	0.0232U	1.92	1.12	58	1.82	0.800	44	59-120	33.60	* (< 20)
Benzo(a)pyrene	0.00925U	1.92	.765	40	1.82	0.465	26	53-120	48.80	* (< 20)
Benzo(b)Fluoranthene	0.0232U	1.92	1.06	55	1.82	0.733	40	53-126	36.50	* (< 20)
Benzo(g,h,i)perylene	0.0232U	1.92	.377	20	1.82	0.258	14	44-128	37.50	* (< 20)
Benzo(k)fluoranthene	0.0232U	1.92	.749	39	1.82	0.457	25	54-125	48.50	* (< 20)
Chrysene	0.0232U	1.92	.948	49	1.82	0.601	33	57-120	44.90	* (< 20)
Dibenzo(a,h)anthracene	0.00925U	1.92	.358	19	1.82	0.252	14	44-131	34.80	* (< 20)
Fluoranthene	0.0232U	1.92	1.38	72	1.82	1.13	62	58-120	19.60	(< 20)
Fluorene	0.0232U	1.92	1.3	68	1.82	1.11	61	50-118	15.60	(< 20)
Indeno[1,2,3-c,d] pyrene	0.0232U	1.92	.487	25	1.82	0.313	17	48-130	43.40	* (< 20)
Naphthalene	0.0463U	1.92	1.22	64	1.82	0.976	54	43-114	22.40	* (< 20)
Phenanthrene	0.0232U	1.92	1.26	65	1.82	1.09	60	53-115	14.00	(< 20)
Pyrene	0.0232U	1.92	1.38	72	1.82	1.15	63	53-121	18.20	(< 20)
Surrogates										
2-Methylnaphthalene-d10 (surr)		1.92	1.28	67	1.82	1.04	57	42-86	21.30	
Fluoranthene-d10 (surr)		1.92	1.43	75	1.82	1.21	67	50-97	17.00	

Batch Information

Analytical Batch: XMS12829
 Analytical Method: 8270D SIM LV (PAH)
 Instrument: Agilent GC 7890B/5977A SWA
 Analyst: LAW
 Analytical Date/Time: 8/15/2021 4:33:00AM

Prep Batch: XXX45308
 Prep Method: 3535 Solid Phase Ext for 8270 PAH SIM LV
 Prep Date/Time: 8/4/2021 2:27:53PM
 Prep Initial Wt./Vol.: 260.00mL
 Prep Extract Vol: 1.00mL

Method Blank

Blank ID: MB for HBN 1823661 [XXX/45329]
 Blank Lab ID: 1628537

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
 1214774001, 1214774002, 1214774003

Results by AK102

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Diesel Range Organics	0.300U	0.600	0.180	mg/L
Surrogates				
5a Androstane (surr)	87.8	60-120		%

Batch Information

Analytical Batch: XFC16039
 Analytical Method: AK102
 Instrument: Agilent 7890B R
 Analyst: IVM
 Analytical Date/Time: 8/10/2021 11:28:00AM

Prep Batch: XXX45329
 Prep Method: SW3520C
 Prep Date/Time: 8/6/2021 3:05:52PM
 Prep Initial Wt./Vol.: 250 mL
 Prep Extract Vol: 1 mL

Print Date: 09/07/2021 3:09:52PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1214774 [XXX45329]
 Blank Spike Lab ID: 1628538
 Date Analyzed: 08/10/2021 11:38

Spike Duplicate ID: LCSD for HBN 1214774 [XXX45329]
 Spike Duplicate Lab ID: 1628539
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1214774001, 1214774002, 1214774003

Results by AK102

Parameter	Blank Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Diesel Range Organics	20	20.1	101	20	20.4	102	(75-125)	1.60	(< 20)
Surrogates									
5a Androstane (surr)	0.4		102	0.4		107	(60-120)	4.60	

Batch Information

Analytical Batch: **XFC16039**
 Analytical Method: **AK102**
 Instrument: **Agilent 7890B R**
 Analyst: **IVM**

Prep Batch: **XXX45329**
 Prep Method: **SW3520C**
 Prep Date/Time: **08/06/2021 15:05**
 Spike Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL
 Dupe Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL

Method Blank

Blank ID: MB for HBN 1823661 [XXX/45329]
 Blank Lab ID: 1628537

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
 1214774001, 1214774002, 1214774003

Results by AK103

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Residual Range Organics	0.250U	0.500	0.150	mg/L
Surrogates				
n-Triacontane-d62 (surr)	101	60-120		%

Batch Information

Analytical Batch: XFC16039
 Analytical Method: AK103
 Instrument: Agilent 7890B R
 Analyst: IVM
 Analytical Date/Time: 8/10/2021 11:28:00AM

Prep Batch: XXX45329
 Prep Method: SW3520C
 Prep Date/Time: 8/6/2021 3:05:52PM
 Prep Initial Wt./Vol.: 250 mL
 Prep Extract Vol: 1 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1214774 [XXX45329]
 Blank Spike Lab ID: 1628538
 Date Analyzed: 08/10/2021 11:38

Spike Duplicate ID: LCSD for HBN 1214774
 [XXX45329]
 Spike Duplicate Lab ID: 1628539
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1214774001, 1214774002, 1214774003

Results by AK103

Parameter	Blank Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Residual Range Organics	20	20.5	103	20	20.6	103	(60-120)	0.22	(< 20)
Surrogates									
n-Triacontane-d62 (surr)	0.4		103	0.4		109	(60-120)	6.10	

Batch Information

Analytical Batch: **XFC16039**
 Analytical Method: **AK103**
 Instrument: **Agilent 7890B R**
 Analyst: **IVM**

Prep Batch: **XXX45329**
 Prep Method: **SW3520C**
 Prep Date/Time: **08/06/2021 15:05**
 Spike Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL
 Dupe Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL

Method Blank

Blank ID: MB for HBN 1824290 [XXX/45402]
 Blank Lab ID: 1630847

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
 1214774003

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	0.0177J	0.0500	0.0150	ug/L
Pyrene	0.0250U	0.0500	0.0150	ug/L
Surrogates				
2-Methylnaphthalene-d10 (surr)	59.9	42-86		%
Fluoranthene-d10 (surr)	75.6	50-97		%

Batch Information

Analytical Batch: XMS12836
 Analytical Method: 8270D SIM LV (PAH)
 Instrument: SVA Agilent 780/5975 GC/MS
 Analyst: LAW
 Analytical Date/Time: 8/19/2021 6:18:00PM

Prep Batch: XXX45402
 Prep Method: SW3535A
 Prep Date/Time: 8/18/2021 1:00:13PM
 Prep Initial Wt./Vol.: 250 mL
 Prep Extract Vol: 1 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1214774 [XXX45402]

Blank Spike Lab ID: 1630848

Date Analyzed: 08/19/2021 18:38

Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1214774003

Results by 8270D SIM LV (PAH)

Blank Spike (ug/L)

Parameter	Spike	Result	Rec (%)	CL
1-Methylnaphthalene	2	1.20	60	(41-115)
2-Methylnaphthalene	2	1.14	57	(39-114)
Acenaphthene	2	1.34	67	(48-114)
Acenaphthylene	2	1.35	68	(35-121)
Anthracene	2	1.38	69	(53-119)
Benzo(a)Anthracene	2	1.39	70	(59-120)
Benzo[a]pyrene	2	1.46	73	(53-120)
Benzo[b]Fluoranthene	2	1.45	73	(53-126)
Benzo[g,h,i]perylene	2	1.58	79	(44-128)
Benzo[k]fluoranthene	2	1.50	75	(54-125)
Chrysene	2	1.43	72	(57-120)
Dibenzo[a,h]anthracene	2	1.58	79	(44-131)
Fluoranthene	2	1.43	72	(58-120)
Fluorene	2	1.39	70	(50-118)
Indeno[1,2,3-c,d] pyrene	2	1.54	77	(48-130)
Naphthalene	2	1.19	59	(43-114)
Phenanthrene	2	1.45	72	(53-115)
Pyrene	2	1.41	70	(53-121)

Surrogates

2-Methylnaphthalene-d10 (surr)	2		64	(42-86)
Fluoranthene-d10 (surr)	2		77	(50-97)

Batch Information

Analytical Batch: XMS12836

Analytical Method: 8270D SIM LV (PAH)

Instrument: SVA Agilent 780/5975 GC/MS

Analyst: LAW

Prep Batch: XXX45402

Prep Method: SW3535A

Prep Date/Time: 08/18/2021 13:00

Spike Init Wt./Vol.: 2 ug/L Extract Vol: 1 mL

Dupe Init Wt./Vol.: Extract Vol:

Matrix Spike Summary

Original Sample ID: 1632898
 MS Sample ID: 1631049 MS
 MSD Sample ID: 1631050 MSD

Analysis Date: 08/19/2021 19:19
 Analysis Date: 08/19/2021 19:40
 Analysis Date: 08/19/2021 20:00
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1214774003

Results by 8270D SIM LV (PAH)

Parameter	Sample	Matrix Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
1-Methylnaphthalene	0.0240U	1.96	1.14	58	2.00	1.23	62	41-115	7.40	(< 20)
2-Methylnaphthalene	0.0240U	1.96	1.1	56	2.00	1.20	60	39-114	8.90	(< 20)
Acenaphthene	0.0240U	1.96	1.26	64	2.00	1.37	68	48-114	7.90	(< 20)
Acenaphthylene	0.0240U	1.96	1.29	66	2.00	1.39	69	35-121	7.10	(< 20)
Anthracene	0.0240U	1.96	1.29	66	2.00	1.32	66	53-119	2.60	(< 20)
Benzo(a)Anthracene	0.0240U	1.96	1.27	65	2.00	1.25	63	59-120	1.70	(< 20)
Benzo(a)pyrene	0.00960U	1.96	1.37	70	2.00	1.35	68	53-120	1.40	(< 20)
Benzo(b)Fluoranthene	0.0240U	1.96	1.42	73	2.00	1.39	70	53-126	2.30	(< 20)
Benzo(g,h,i)perylene	0.0240U	1.96	1.5	76	2.00	1.47	73	44-128	2.00	(< 20)
Benzo(k)fluoranthene	0.0240U	1.96	1.38	70	2.00	1.36	68	54-125	1.20	(< 20)
Chrysene	0.0240U	1.96	1.34	68	2.00	1.32	66	57-120	1.10	(< 20)
Dibenzo(a,h)anthracene	0.00960U	1.96	1.51	77	2.00	1.48	74	44-131	1.90	(< 20)
Fluoranthene	0.0240U	1.96	1.27	65	2.00	1.27	64	58-120	0.37	(< 20)
Fluorene	0.0240U	1.96	1.33	68	2.00	1.37	69	50-118	2.80	(< 20)
Indeno[1,2,3-c,d] pyrene	0.0240U	1.96	1.46	74	2.00	1.44	72	48-130	1.60	(< 20)
Naphthalene	0.0481U	1.96	1.15	59	2.00	1.24	62	43-114	7.20	(< 20)
Phenanthrene	0.0272J	1.96	1.4	70	2.00	1.40	69	53-115	0.52	(< 20)
Pyrene	0.0240U	1.96	1.27	65	2.00	1.29	65	53-121	1.60	(< 20)
Surrogates										
2-Methylnaphthalene-d10 (surr)		1.96	1.15	59	2.00	1.30	65	42-86	12.30	
Fluoranthene-d10 (surr)		1.96	1.38	71	2.00	1.40	70	50-97	1.40	

Batch Information

Analytical Batch: XMS12836
 Analytical Method: 8270D SIM LV (PAH)
 Instrument: SVA Agilent 780/5975 GC/MS
 Analyst: LAW
 Analytical Date/Time: 8/19/2021 7:40:00PM

Prep Batch: XXX45402
 Prep Method: 3535 Solid Phase Ext for 8270 PAH SIM LV
 Prep Date/Time: 8/18/2021 1:00:13PM
 Prep Initial Wt./Vol.: 255.00mL
 Prep Extract Vol: 1.00mL



SGS North America Inc.
CHAIN OF CUSTODY RECORD

Locations Nationwide
Alaska Maryland
New Jersey New York
North Carolina Indiana
West Virginia Kentucky
www.us.sgs.com

#352267 SD

CLIENT: SLR					Instructions: Sections 1 - 5 must be filled out. Omissions may delay the onset of analysis.					Page 1 of 1		
CONTACT: Stan Fligel		PHONE NO: 907-748-6287			Section 3		Preservative					
PROJECT NAME: Red Salmon		PROJECT/ PWSID/ PERMIT#: 105.00151.21001			CONTAINER	Type C = COMP G = GRAB MI = Multi Incremental Soils	HCL	HCL	HCL	1214774		
REPORTS TO: Jen McLean Stan Fligel		E-MAIL: jmclean@sirconsulting.com sfligel@sirconsulting.com					GRO AK101	PRO/PRO AK102/103	BTEX B260	PAH-SIM B270		
INVOICE TO: Stan Fligel		QUOTE #: P.O. #:										
RESERVED for lab use		SAMPLE IDENTIFICATION		DATE mm/dd/yy			TIME HH:MM	MATRIX/MATRIX CODE				REMARKS/LOC ID
① AS		RS-SW1-073121		07/31/21	10:28	W	10	X	X	X	X	
② AS		RS-SW2-073121		07/31/21	10:42	W	10	X	X	X	X	
③ AS		RS-SW99-073121		07/31/21	10:28	W	9	X	X	X	X	Missing 2nd PAH
④ AS		TRIP2-073021		07/30/21		W	6	X		X		250 WP
Relinquished By: (1) Rose Hart		Date 08/02/21	Time 1409	Received By:		Section 4		DOD Project? Yes/No		Data Deliverable Requirements:		
Relinquished By: (2)		Date	Time	Received By:		Cooler ID:		Requested Turnaround Time and/or Special Instructions: Standard				
Relinquished By: (3)		Date	Time	Received By:		Temp Blank °C: 0.4 123		Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT				
Relinquished By: (4)		Date	Time	Received For Laboratory By:		(See attached Sample Receipt Form)		(See attached Sample Receipt Form)				



e-Sample Receipt Form

SGS Workorder #:

1214774

1214774

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	Yes	1F
COC accompanied samples?	Yes	
DOD: Were samples received in COC corresponding coolers?	N/A	
N/A **Exemption permitted if chilled & collected <8 hours ago, or for samples where chilling is not required		
Temperature blank compliant* (i.e., 0-6 °C after CF)?	Yes	Cooler ID: 1 @ 0.4 °C Therm. ID: D23
If samples received without a temperature blank, the "cooler temperature" will be documented instead & "COOLER TEMP" will be noted to the right. "ambient" or "chilled" will be noted if neither is available.		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
*If >6°C, were samples collected <8 hours ago?	N/A	
If <0°C, were sample containers ice free?	N/A	
Note: Identify containers received at non-compliant temperature . Use form FS-0029 if more space is needed.		
Holding Time / Documentation / Sample Condition Requirements		Note: Refer to form F-083 "Sample Guide" for specific holding times.
Were samples received within holding time?	Yes	
Do samples match COC** (i.e., sample IDs, dates/times collected)?	Yes	
**Note: If times differ <1hr, record details & login per COC.		
***Note: If sample information on containers differs from COC, SGS will default to COC information		
Were analytical requests clear? (i.e., method is specified for analyses with multiple option for analysis (Ex: BTEX, Metals)	Yes	
Were proper containers (type/mass/volume/preservative***) used?	No	N/A ***Exemption permitted for metals (e.g.200.8/6020A). sample 1B was received with a cracked lid.
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

<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>	<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>
1214774001-A	HCL to pH < 2	OK			
1214774001-B	HCL to pH < 2	OK			
1214774001-C	No Preservative Required	OK			
1214774001-D	No Preservative Required	OK			
1214774001-E	HCL to pH < 2	OK			
1214774001-F	HCL to pH < 2	OK			
1214774001-G	HCL to pH < 2	OK			
1214774001-H	HCL to pH < 2	OK			
1214774001-I	HCL to pH < 2	OK			
1214774001-J	HCL to pH < 2	OK			
1214774002-A	HCL to pH < 2	OK			
1214774002-B	HCL to pH < 2	OK			
1214774002-C	No Preservative Required	OK			
1214774002-D	No Preservative Required	OK			
1214774002-E	HCL to pH < 2	OK			
1214774002-F	HCL to pH < 2	OK			
1214774002-G	HCL to pH < 2	OK			
1214774002-H	HCL to pH < 2	OK			
1214774002-I	HCL to pH < 2	OK			
1214774002-J	HCL to pH < 2	OK			
1214774003-A	HCL to pH < 2	OK			
1214774003-B	HCL to pH < 2	OK			
1214774003-C	No Preservative Required	OK			
1214774003-D	HCL to pH < 2	OK			
1214774003-E	HCL to pH < 2	OK			
1214774003-F	HCL to pH < 2	OK			
1214774003-G	HCL to pH < 2	OK			
1214774003-H	HCL to pH < 2	OK			
1214774003-I	HCL to pH < 2	OK			
1214774004-A	HCL to pH < 2	OK			
1214774004-B	HCL to pH < 2	OK			
1214774004-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.

NC- The container provided was not preserved or was under-preserved. The method does not allow for additional preservative added after collection.

PA - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt and the container is now at the correct pH. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

PH - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt, but was insufficient to bring the container to the correct pH for the analysis requested. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

QN - Insufficient sample quantity provided.

**APPENDIX D
CONCEPTUAL SITE MODEL**

**2021 Groundwater Monitoring Report
Red Salmon Facility
Naknek, Alaska**

October 2021

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

Site Name:

File Number:

Completed by:

Introduction

The form should be used to reach agreement with the Alaska Department of Environmental Conservation (DEC) about which exposure pathways should be further investigated during site characterization. From this information, summary text about the CSM and a graphic depicting exposure pathways should be submitted with the site characterization work plan and updated as needed in later reports.

General Instructions: Follow the italicized instructions in each section below.

1. General Information:

Sources (*check potential sources at the site*)

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

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

- | | |
|---------------------------------|--|
| <input type="checkbox"/> Spills | <input type="checkbox"/> Direct discharge |
| <input type="checkbox"/> Leaks | <input type="checkbox"/> Burning |
| | <input type="checkbox"/> Other: <input type="text"/> |

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

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

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

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

* bgs - below ground surface

2. Exposure Pathways: *(The answers to the following questions will identify complete exposure pathways at the site. Check each box where the answer to the question is "yes".)*

a) Direct Contact -

1. Incidental Soil Ingestion

Are contaminants present or potentially present in surface soil between 0 and 15 feet below the ground surface? (Contamination at deeper depths may require evaluation on a site-specific basis.)

If the box is checked, label this pathway complete:

Comments:

2. Dermal Absorption of Contaminants from Soil

Are contaminants present or potentially present in surface soil between 0 and 15 feet below the ground surface? (Contamination at deeper depths may require evaluation on a site specific basis.)

Can the soil contaminants permeate the skin (see Appendix B in the guidance document)?

If both boxes are checked, label this pathway complete:

Comments:

b) Ingestion -

1. Ingestion of Groundwater

Have contaminants been detected or are they expected to be detected in the groundwater, or are contaminants expected to migrate to groundwater in the future?

Could the potentially affected groundwater be used as a current or future drinking water source? Please note, only leave the box unchecked if DEC has determined the groundwater is not a currently or reasonably expected future source of drinking water according to 18 AAC 75.350.

If both boxes are checked, label this pathway complete:

Comments:

2. Ingestion of Surface Water

Have contaminants been detected or are they expected to be detected in surface water, or are contaminants expected to migrate to surface water in the future?

Could potentially affected surface water bodies be used, currently or in the future, as a drinking water source? Consider both public water systems and private use (i.e., during residential, recreational or subsistence activities).

If both boxes are checked, label this pathway complete:

Comments:

3. Ingestion of Wild and Farmed Foods

Is the site in an area that is used or reasonably could be used for hunting, fishing, or harvesting of wild or farmed foods?

Do the site contaminants have the potential to bioaccumulate (see Appendix C in the guidance document)?

Are site contaminants located where they would have the potential to be taken up into biota? (i.e. soil within the root zone for plants or burrowing depth for animals, in groundwater that could be connected to surface water, etc.)

If all of the boxes are checked, label this pathway complete:

Comments:

c) Inhalation-

1. Inhalation of Outdoor Air

Are contaminants present or potentially present in surface soil between 0 and 15 feet below the ground surface? (Contamination at deeper depths may require evaluation on a site specific basis.)

Are the contaminants in soil volatile (see Appendix D in the guidance document)?

If both boxes are checked, label this pathway complete:

Comments:

2. Inhalation of Indoor Air

Are occupied buildings on the site or reasonably expected to be occupied or placed on the site in an area that could be affected by contaminant vapors? (within 30 horizontal or vertical feet of petroleum contaminated soil or groundwater; within 100 feet of non-petroleum contaminated soil or groundwater; or subject to "preferential pathways," which promote easy airflow like utility conduits or rock fractures)

Are volatile compounds present in soil or groundwater (see Appendix D in the guidance document)?

If both boxes are checked, label this pathway complete:

Comments:

3. Additional Exposure Pathways: *(Although there are no definitive questions provided in this section, these exposure pathways should also be considered at each site. Use the guidelines provided below to determine if further evaluation of each pathway is warranted.)*

Dermal Exposure to Contaminants in Groundwater and Surface Water

Dermal exposure to contaminants in groundwater and surface water may be a complete pathway if:

- Climate permits recreational use of waters for swimming.
- Climate permits exposure to groundwater during activities, such as construction.
- Groundwater or surface water is used for household purposes, such as bathing or cleaning.

Generally, DEC groundwater cleanup levels in 18 AAC 75, Table C, are deemed protective of this pathway because dermal absorption is incorporated into the groundwater exposure equation for residential uses.

Check the box if further evaluation of this pathway is needed:

Comments:

Inhalation of Volatile Compounds in Tap Water

Inhalation of volatile compounds in tap water may be a complete pathway if:

- The contaminated water is used for indoor household purposes such as showering, laundering, and dish washing.
- The contaminants of concern are volatile (common volatile contaminants are listed in Appendix D in the guidance document.)

DEC groundwater cleanup levels in 18 AAC 75, Table C are protective of this pathway because the inhalation of vapors during normal household activities is incorporated into the groundwater exposure equation.

Check the box if further evaluation of this pathway is needed:

Comments:

Inhalation of Fugitive Dust

Inhalation of fugitive dust may be a complete pathway if:

- Nonvolatile compounds are found in the top 2 centimeters of soil. The top 2 centimeters of soil are likely to be dispersed in the wind as dust particles.
- Dust particles are less than 10 micrometers (Particulate Matter - PM₁₀). Particles of this size are called respirable particles and can reach the pulmonary parts of the lungs when inhaled.

DEC human health soil cleanup levels in Table B1 of 18 AAC 75 are protective of this pathway because the inhalation of particulates is incorporated into the soil exposure equation.

Check the box if further evaluation of this pathway is needed:

Comments:

Direct Contact with Sediment

This pathway involves people's hands being exposed to sediment, such as during some recreational, subsistence, or industrial activity. People then incidentally ingest sediment from normal hand-to-mouth activities. In addition, dermal absorption of contaminants may be of concern if the the contaminants are able to permeate the skin (see Appendix B in the guidance document). This type of exposure should be investigated if:

- Climate permits recreational activities around sediment.
- The community has identified subsistence or recreational activities that would result in exposure to the sediment, such as clam digging.

Generally, DEC direct contact soil cleanup levels in 18 AAC 75, Table B1, are assumed to be protective of direct contact with sediment.

Check the box if further evaluation of this pathway is needed:

Comments:

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

HUMAN HEALTH CONCEPTUAL SITE MODEL GRAPHIC FORM

Site: _____

Completed By: _____

Date Completed: _____

Instructions: Follow the numbered directions below. Do not consider contaminant concentrations or engineering/land use controls when describing pathways.

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

(3) Exposure Media	(4) Exposure Pathway/Route	(5) Current & Future Receptors						
		Residents (adults or children)	Commercial or Industrial workers	Site visitors, trespassers, or recreational users	Construction workers	Farmers or subsistence harvesters	Subsistence consumers	Other
<input type="checkbox"/> soil	<input type="checkbox"/> Incidental Soil Ingestion							
	<input type="checkbox"/> Dermal Absorption of Contaminants from Soil							
	<input type="checkbox"/> Inhalation of Fugitive Dust							
<input type="checkbox"/> groundwater	<input type="checkbox"/> Ingestion of Groundwater							
	<input type="checkbox"/> Dermal Absorption of Contaminants in Groundwater							
	<input type="checkbox"/> Inhalation of Volatile Compounds in Tap Water							
<input type="checkbox"/> air	<input type="checkbox"/> Inhalation of Outdoor Air							
	<input type="checkbox"/> Inhalation of Indoor Air							
	<input type="checkbox"/> Inhalation of Fugitive Dust							
<input type="checkbox"/> surface water	<input type="checkbox"/> Ingestion of Surface Water							
	<input type="checkbox"/> Dermal Absorption of Contaminants in Surface Water							
	<input type="checkbox"/> Inhalation of Volatile Compounds in Tap Water							
<input type="checkbox"/> sediment	<input type="checkbox"/> Direct Contact with Sediment							
<input type="checkbox"/> biota	<input type="checkbox"/> Ingestion of Wild or Farmed Foods							