

**FINAL**

# **Long-Term Groundwater Monitoring Plan**

**AT&T Alascom King Salmon Earth Station**

**State Airport Road**

**King Salmon, Alaska, 99613**

**AT&T GLC AK0344**

**ADEC Hazard ID 2819, File No. 2569.38.007**

*Prepared for*

**AT&T Alascom**

505 East Bluff Drive MP189

Anchorage, Alaska 99501

*Prepared by*

Geosyntec Consultants, Inc.

3003 Minnesota Drive, Ste 302

Anchorage, Alaska 99503

Project Number: PNG0967B

August 2024

**FINAL**

# **Long-Term Groundwater Monitoring Plan**

**AT&T Alascom King Salmon Earth Station**

**State Airport Road**

**King Salmon, Alaska**

**AT&T GLC AK0344**

**ADEC Hazard ID 2819, File No. 2569.38.007**

*Prepared for*

**AT&T Alascom**

505 East Bluff Drive MP189  
Anchorage, Alaska 99501

*Prepared by*

Geosyntec Consultants, Inc.  
3003 Minnesota Drive, Ste 302  
Anchorage, Alaska 99503



---

Matt Faust, PG  
Senior Geologist



---

Ben Martich, QEP  
Senior Principal

Project Number: PNG0967B

August 2024

## TABLE OF CONTENTS

1.	INTRODUCTION AND BACKGROUND .....	1
1.1	Site Description .....	1
1.2	Regional Hydrogeology .....	1
1.3	Site Hydrogeology.....	2
1.4	Site Environmental History .....	2
1.4.1	Site Characterization .....	2
1.4.2	Corrective Action .....	3
1.4.3	Groundwater Characterization .....	4
1.5	Purpose and Objectives .....	4
1.6	Regulatory Summary.....	4
2.	CONCEPTUAL SITE MODEL .....	5
2.1	Sources and Release Mechanisms .....	5
2.2	Transport Mechanisms .....	5
2.3	Nature and Extent of Impacts to Media.....	5
2.3.1	Soil.....	5
2.3.2	Groundwater.....	5
2.3.3	Soil Gas .....	6
2.3.4	Surface Water and Sediment .....	6
2.4	Potential Exposure Pathways and Receptors.....	6
2.5	Contaminants of Potential Concern.....	7
2.6	Project Action Levels .....	7
3.	LONG TERM GROUNDWATER MONITORING.....	9
3.1	Current Monitoring Well Network Status .....	9
3.2	Groundwater Monitoring.....	9
3.3	Monitoring Schedule .....	9
3.4	Field Procedures .....	10
3.4.1	Decontamination .....	11
3.4.2	Monitoring Well Maintenance .....	12
3.4.3	Monitoring Well Decommissioning.....	12
3.4.4	Investigation Derived Waste .....	13
4.	QUALITY ASSURANCE PROJECT PLAN .....	14
4.1	Personnel .....	14
4.2	Field Procedures.....	14
4.3	Equipment Calibration .....	14
4.4	Field Documentation .....	14

- 4.5 Laboratory Analyses.....15
- 4.6 Analytical Data Review.....15
- 4.7 Data Management.....17
- 5. STATISTICAL ANALYSIS .....18
  - 5.1 Analysis Software.....18
  - 5.2 Data Reduction, Outliers, Non-Detects, and Errors .....18
  - 5.3 Trend Analysis .....18
- 6. REPORTING.....19
- 7. DECISION RULES.....20
  - 7.1 Scenario 1: Non-Detect Groundwater Concentrations .....20
  - 7.2 Scenario 2: Decreasing Trend in Groundwater Concentrations .....20
  - 7.3 Scenario 3: Stable Trend in Groundwater Concentrations .....20
  - 7.4 Scenario 4: Increasing Trend in Groundwater Concentrations .....20
- 8. REFERENCES .....21

**LIST OF TABLES**

Table 2-1: Groundwater Project Action Levels ..... 7  
Table 3-1: Anticipated Monitoring Schedule ..... 10  
Table 3-2: Groundwater Sample Analytical Information ..... 11  
Table 4-1: Analytical Data Qualifiers ..... 16

**LIST OF FIGURES**

Figure 1: Site Location  
Figure 2: Site Map  
Figure 3: Soil Analytical Data

**LIST OF APPENDICES**

Appendix A: May 2024 Groundwater Monitoring Technical Memorandum  
Appendix B: ADEC Conceptual Site Model Human Health Scoping and Graphic and Ecoscoping Forms  
Appendix C: Example Field Forms

## ACRONYMS AND ABBREVIATIONS

%	percent
%R	percent recovery
µg/L	micrograms per liter
AAC	Alaska Administrative Code
ADEC	Alaska Department of Environmental Conservation
ADOT&PF	Alaska Department of Transportation and Public Facilities
AFS	Air Force Station
AST	aboveground storage tank
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and xylenes
COPC	contaminants of potential concern
CSM	conceptual site model
DO	dissolved oxygen
DRO	diesel-range organics
DTW	depth to water
EPA	U.S. Environmental Protection Agency
ESA	Environmental Site Assessment
Geosyntec	Geosyntec Consultants
GRO	gasoline-range organics
IC	institutional control
IDW	investigation-derived waste
KSES	King Salmon Earth Station
LOD	limit of detection
LOQ	limit of quantitation
LTGMP	long-term groundwater monitoring plan
LTM	long-term monitoring
mg/kg	milligrams per kilogram
ORP	oxygen reduction potential
PAH	polyaromatic hydrocarbon
PAL	project action level

PFAS	per- and polyfluoroalkyl substances
PVC	polyvinyl chloride
QC	quality control
RPD	relative percent difference
tech memo	technical memorandum
TOC	top-of-casing
VOC	volatile organic compound

## 1. INTRODUCTION AND BACKGROUND

Geosyntec Consultants, Inc. (Geosyntec) has prepared this Long-Term Groundwater Monitoring Plan (LTGMP) for the AT&T Alascom King Salmon Earth Station (KSES) former Power Building aboveground storage tank (AST) site located in King Salmon, Alaska (Figure 1).

Geosyntec previously completed corrective action at the AT&T Alascom KSES former Power Building AST in April and May 2023 (Geosyntec, 2023a) that included the removal of an estimated 302 cubic yards of diesel range organics (DRO)-impacted soil. Following corrective action, Geosyntec performed a groundwater characterization effort that included installation of five groundwater monitoring wells and two groundwater sampling events, the first in July 2023 and the second in May 2024 (Geosyntec, 2023b). The results of the May 2024 groundwater monitoring event have not been previously reported and are summarized in Appendix A of this LTGMP.

### 1.1 Site Description

The AT&T Alascom KSES (site) is in King Salmon, Alaska, adjacent to the King Salmon airport (Figure 1). The telecommunications station was decommissioned, and structures were removed in 2022. The property is owned by the Alaska Department of Transportation and Public Facilities (ADOT&PF), who intends to subdivide the property into new lease lots, with the potential for construction of up to three new airplane hangars.

The property is mostly level and covers approximately 0.8 acres (Figure 2). It is bounded to the north by King Salmon airport and to the south by Airport Road. It is unpaved and has no landscaping. Drainage of surface water at the site mostly infiltrates into the ground. Groundwater is present at approximately 6 to 11 feet below ground surface (bgs). The nearest surface water body to the site is the Naknek River, located approximately 1,200 feet southwest of the site (Figure 1).

Historically, four contiguous lots (Lots 5, 6, 7, and 8) were leased and occupied by AT&T Alascom. In approximately 2010, AT&T Alascom vacated Lots 7 and 8, but continued to occupy Lots 5 and 6. Remaining buildings and structures on Lots 5 and 6 were demolished in 2022. A water supply well located near the Power Building was also plugged and abandoned. At the time of soil removal activities conducted in 2023, no infrastructure remained in place.

### 1.2 Regional Hydrogeology

Three aquifers have been identified in the vicinity of the King Salmon Airport. They are (in order from shallowest to deepest): the A-Aquifer, the B-Aquifer, and the C-Aquifer (HydroGeoLogic, Inc., 2021).

The depth to the A-Aquifer, which is unconfined, ranges from the ground surface (where the aquifer daylights in communication with surface water bodies and wetlands) to as deep as 45 feet bgs in the northern portion of the former King Salmon Air Force Station (AFS) (located north of the King Salmon airport). The aquifer is present in lithologic units of sands and silty sands, locally



with lenses of gravel, and is generally up to 15 feet in saturated thickness. The groundwater flow direction of the A-Aquifer is typically towards topographic lows and surface water bodies.

At the bottom of the A-Aquifer is a zone of lower hydraulic conductivity referred to as the A-Aquitard. The A-Aquitard is composed of gravelly clayey silt and sandy silt, and ranges from 7 to 22 feet in thickness.

The top of the B-Aquifer has been encountered at depths ranging from 50 to 80 feet bgs and ranges in thickness from 15 to 40 feet. The B-Aquifer is present in lithologic units of silty sands, sandy gravels, and silty sandy gravels. Reportedly, many residential drinking water wells in King Salmon are screened in this aquifer. The potentiometric surface of the B-Aquifer generally matches the A-Aquifer, indicating that the two aquifers are in hydrologic communication and that the A-Aquitard is likely discontinuous or “leaky”. The groundwater flow direction in the B-Aquifer is to the south, towards the Naknek River. The B-Aquitard underlies the B-Aquifer and has been found to range to 10 to 120 feet in thickness.

The C-Aquifer has been encountered at depths of approximately 200 feet bgs and is believed to be a confined aquifer. The former King Salmon AFS water supply wells are screened in the C-Aquifer. The thickness and groundwater flow direction of the C-Aquifer are unknown.

### **1.3 Site Hydrogeology**

Saturated soils have previously been encountered at depths of approximately 9.5 feet bgs in soil borings advanced on the site. Depth to water measured in monitoring wells ranged from 6 to 11 feet bgs and has been shown to vary by as much as 1.5 feet seasonally (Appendix A). The groundwater flow direction has been shown to vary slightly from the southwest or south, in the general direction of the Naknek River.

### **1.4 Site Environmental History**

#### **1.4.1 Site Characterization**

Detailed information about previous site characterization activities was presented in the Corrective Action Plan (Geosyntec, 2022). A summation of that information is presented below.

A Phase I Environmental Site Assessment (ESA) was completed in 1995. A Phase II ESA was completed in 1997 and identified petroleum contamination at the former 3,000-gallon AST near the Power Building. The Phase I and Phase II reports were not available for review but are referenced in the Soil Remediation Construction Completion Report (Alta Geosciences, Inc. [Alta], 2006). During the Phase II ESA, two soil borings were advanced, one to the west and one to the east of the AST. Soil samples were collected from 8 feet bgs in each boring and analyzed for DRO and benzene, toluene, ethylbenzene, and xylene (BTEX). DRO was detected at 550 and 2,600 milligrams per kilogram (mg/kg) and BTEX were below their detection limits. See the Corrective Action Plan (Geosyntec, 2022) for additional analytical results and further details.

The soil boring logs from the Phase II ESA did not indicate if groundwater was observed in the soil boring and no groundwater samples were collected. The site's water well was located approximately 30 feet northeast of the Power Building AST and a tap water sample was submitted for analysis during the 1997 investigation. Reportedly, no petroleum hydrocarbons were detected in the tap water sample.

During soil remediation activities associated with a former Garage Building on Lot 7 in 2005, two additional surface soil samples were collected on the north side of the emergency generator tank and pad near the Power Building. The samples were submitted to the laboratory for DRO analysis; DRO was not detected in either sample.

In February 2010, the Alaska Department of Environmental Conservation (ADEC) issued a decision document for the site, stating that the remaining contamination at the site did not pose an unacceptable risk to human health or the environment (ADEC, 2010). The site was given the designation of Cleanup Complete with Institutional Controls (ICs). This determination was subject to the following conditions:

- Land ownership or use changes must be reported to ADEC.
- A Notice of Residual Contamination was recorded on the ADEC database, documenting that there is contamination remaining on site.
- Any proposal to remove soil or groundwater from the site requires ADEC approval.
- If the Power Building is removed or the contaminated soil near the Power Building becomes accessible, the soil must be evaluated, and the contamination addressed.
- ADEC recommended periodic monitoring of the drinking water well for petroleum hydrocarbon contamination.
- The contaminated soil remaining on the site may not be moved or used in a manner that results in a violation of ADEC water quality standards.

#### **1.4.2 Corrective Action**

In fall of 2022, the Power Building and existing AST were removed as AT&T Alascom ended their lease on the property with ADOT&PF, triggering the requirement to evaluate and address the contaminated soil near the former AST.

In spring of 2023, Geosyntec oversaw excavation of an estimated 302 cubic yards of DRO-impacted soil from the Power Building AST area (see Figure 2; Geosyntec, 2023a). Sidewall confirmation samples were below ADEC cleanup levels except for one sample taken at the southwest corner of the excavation, which contained DRO at 347 mg/kg (exceeding the cleanup level of 250 mg/kg). Additional excavation of soil near this sample was not performed at the time as the area borders an easement with buried utilities. During excavation, field evidence indicated that soil impacts extended to the water table.

### 1.4.3 Groundwater Characterization

As the results of the corrective action indicated that soil impacts extended to the water table, Geosyntec performed groundwater characterization in July 2023 (Geosyntec, 2023b). Five groundwater monitoring wells were installed and developed (Figure 2). Groundwater samples were collected from each well and analyzed for gasoline range organics (GRO), DRO, petroleum-related volatile organic compounds (VOCs), and polyaromatic hydrocarbons (PAHs). Geosyntec also advanced one soil boring to the southwest of the former excavation to collect a soil sample to complete delineation of soil impacts. Results of the sampling effort indicated that:

- DRO soil contamination at the site has migrated to groundwater and impacted groundwater in the source area at concentrations that exceed ADEC cleanup levels.
- DRO groundwater contamination is delineated and has not migrated off site.
- The residual DRO soil contamination on the southwestern sidewall of the former excavation is fully delineated and extends less than 10 feet laterally from the excavation.

Geosyntec remobilized to KSES in May 2024 and collected a second ground of groundwater samples from the five monitoring wells on site and submitted the samples for laboratory analysis for GRO, DRO, VOCs, and PAHs. Results from this groundwater sampling event are presented in Appendix A.

## 1.5 Purpose and Objectives

The purpose of this document is to present the required elements of a LTGMP for the former KSES Power Building AST, including decision rules on when long-term monitoring (LTM) may be reduced or ended at the site.

The objective of LTM at the site is to establish trends for concentrations of contaminants of potential concern (COPC) in groundwater. These trends can be used to inform decisions that source removal and ongoing natural attenuation have reduced concentrations of COPCs to allow optimization of LTM in the near-term, and eventually the end of LTM and site closure with no ICs.

## 1.6 Regulatory Summary

The facility falls under regulatory requirements of ADEC for the presence of COPCs in soil around the former Power Building AST. The site was identified by ADEC in 1997 (File Number 2569.38.007) after real estate transactional due diligence activities.

The site was closed in 2010 by ADEC with a condition to notify ADEC if the Power Building was removed (ADEC, 2010). ADEC was notified in 2021 that AT&T planned to vacate the property in 2022 and has been engaged through corrective action and groundwater monitoring activities.

## 2. CONCEPTUAL SITE MODEL

The conceptual site model (CSM) for KSES Power Building AST has been updated from previously presented CSMs to accommodate the increased understanding of the site.

### 2.1 Sources and Release Mechanisms

The source of the petroleum hydrocarbon contamination near the Power Building is the former 3,000-gallon AST that was present at the site in 1997 and removed in 2002. This AST historically contained diesel that was used to fuel the generator in the Power Building. In 2002, the former 3,000-gallon AST was replaced with a double-walled 1,000-gallon AST. The former AST contents were released through leaks and spills prior to 1997, as determined during the 1997 Phase II site investigation. Given that soil contamination was never identified at depths shallower than 3 feet bgs indicates that the diesel release from the former AST system can be attributed to leaks from buried product piping directly to subsurface soil (Geosyntec, 2023a).

### 2.2 Transport Mechanisms

Petroleum hydrocarbons that leaked from buried product piping associated with the former 3,000-gallon AST were released into the subsurface and infiltrated subsurface soils. Contamination migrated laterally in the unsaturated zone as far as approximately 25 feet from the AST piping, and vertically to the groundwater table located at approximately 10 feet bgs. Upon reaching groundwater, the contamination appears to have remained confined to the vicinity of the former AST locations, as DRO has not been detected above project action limits (PALs – see Section 2.6) in downgradient wells MW-03 and MW-04.

### 2.3 Nature and Extent of Impacts to Media

#### 2.3.1 Soil

The majority of the DRO-impacted soil in the unsaturated zone was removed during the April-May 2023 removal action (Geosyntec, 2023a). Residual DRO-impacted soil exceeding the migration to groundwater cleanup level is present in a small and defined area on the southwestern sidewall of the 2023 excavation at a depth of approximately 7 feet bgs (Figure 3). Soil contamination exceeding the human health exposure pathway cleanup level is no longer present at the site.

#### 2.3.2 Groundwater

Groundwater was present at depths ranging from between approximately 6 to 9 feet bgs in July 2023 and from 8 to 11 feet bgs in May 2024. Groundwater samples collected at source area well MW-05 have exceeded the ADEC groundwater cleanup level for DRO and several PAHs, although the detection of PAHs is suspect due to their reported presence in a single sample. None of the other four wells (including wells located up, cross, and down-gradient from the source area) were found to contain concentrations of COPCs that exceed PALs (see Section 2.6). No groundwater samples collected from any of the wells exhibited VOCs or GRO at detectable concentrations

during either groundwater monitoring event. Thus, it appears that the extent of groundwater contamination is delineated and remains within 40 feet downgradient from the source area.

### 2.3.3 Soil Gas

No soil gas samples have been collected at the site. There have been no significant detections of VOCs in soil or groundwater at the site.

### 2.3.4 Surface Water and Sediment

There is no surface water or sediment in the vicinity of the site. As the extent of residual soil contamination is limited to subsurface soil at depths of approximately 7 feet bgs, impacts to precipitation or snow melt migrating overland would not occur. The nearest surface water body is the Naknek River, located approximately 0.2 mile to the south-southwest.

## 2.4 Potential Exposure Pathways and Receptors

Appendix B contains the ADEC CSM scoping forms summarizing the potential exposure pathways for receptors under current and future land use scenarios.

There are currently no full-time residents at the site. The lot is vacant; current human receptors could include the following:

- Visitors or trespassers.
- Construction workers, including remedial contractors.

If a new facility is constructed on the property by a future leaseholder, future human receptors could include commercial workers.

The following discusses potential exposure pathways for receptors.

Residual soil contamination in the unsaturated zone is present in a small area on the southwestern sidewall of the 2023 excavation in a depth interval from approximately 7 to 9.5 feet bgs (Figure 3). Concentrations of residual soil contamination slightly exceed the migration to groundwater cleanup level but not human health cleanup levels. Given the limited extent and relatively low concentrations of residual soil contamination, subsurface soil exposure pathways are considered insignificant. As surface soil contamination is not present, incidental ingestion of surface soils does not represent an exposure pathway for the receptors listed above. Dermal absorption exposure pathways are considered incomplete because contaminants evaluated for dermal exposure (those listed in Appendix B of ADEC CSM Guidance [ADEC, 2017]) are not present in soil at significant concentrations.

Groundwater is a complete pathway for receptors that interact with site groundwater. The uppermost aquifer (the A-Aquifer) has been demonstrated to be impacted on the site.

Surface water bodies, such as lakes, streams, or ponds, are not present in the vicinity of the site, and thus surface water and sediment are not considered exposure media for the site.

The Power Building was demolished in 2022 and there are currently no occupied buildings present. This is anticipated to change as future lease holders will likely construct hangars on the site. However, there have never been significant detections of VOCs in soil or groundwater at the site. Thus, the vapor intrusion pathway is considered incomplete.

COPCs are not present in shallow soil that could be taken up into biota. Thus, potential ecological risk is off-ramped.

Appendix B contains the ADEC Ecoscoping form.

## 2.5 Contaminants of Potential Concern

As the petroleum contaminant source was known to be a diesel AST, COPCs include DRO, GRO, petroleum-related VOCs, and PAHs, in accordance with Appendix F of the ADEC Field Sampling Guidance (ADEC, 2022). However, given that GRO and VOCs have not been detected in groundwater during either monitoring event performed to date, Geosyntec recommends that GRO and VOCs be excluded as COPCs for LTM.

## 2.6 Project Action Levels

ADEC regulations for site characterization (18 Alaska Administrative Code [AAC] 75.335(c)) require characterization of the extent of hazardous substances (ADEC, 2023). The regulations provide soil cleanup levels (18 AAC 75.341) and groundwater cleanup levels (18 AAC 75-345) for hazardous substances that are the basis for characterization.

Table 2-1 presents ADEC groundwater cleanup levels, or PALs, for COPCs identified for LTM (DRO and PAHs).

**Table 2-1: Groundwater Project Action Levels**

COPC	Groundwater Cleanup Level (µg/L)
DRO	1500
<b>PAHs</b>	
Acenaphthene	530
Acenaphthylene	260
Anthracene	43
Benzo(a)anthracene	0.30
Benzo(a)pyrene	0.25
Benzo(b)fluoranthene	2.5
Benzo(g,h,i)perylene	0.26
Benzo(k)fluoranthene	0.80
Chrysene	2.0
Dibenz(a,h)anthracene	0.034

<b>COPC</b>	<b>Groundwater Cleanup Level (µg/L)</b>
Fluoranthene	260
Fluorene	290
Indeno(1,2,3-c,d)pyrene	0.19
1-Methylnaphthalene	11
2-Methylnaphthalene	36
Naphthalene	1.7
Phenanthrene	170
Pyrene	120

**Key:**

µg/L = micrograms per liter  
DRO = diesel range organics

COPC = contaminant of potential concern  
PAH = polynuclear aromatic hydrocarbon

### 3. LONG TERM GROUNDWATER MONITORING

#### 3.1 Current Monitoring Well Network Status

There are currently five groundwater monitoring wells on the KSES site (Figure 2):

- MW-01 Located upgradient (north) of the source area.
- MW-02 Located cross gradient (east) of the source area.
- MW-03 Located cross or downgradient (west) of the source area.
- MW-04 Located downgradient (south) of the source area.
- MW-05 Located within the source area.

The wells are flush mounts and were noted to be in good condition during the May 2024 sampling event.

#### 3.2 Groundwater Monitoring

The only monitoring well proposed for LTM is the source area well (MW-05). LTM is proposed for MW-05 for collection of COPC concentration data for trend analysis. Analytical data from the first two monitoring events has shown that groundwater at the other four wells has not exceeded PALs. Given that the release is presumed to have occurred prior to 1997 (Section 2.1), it is reasonable to assume that if contamination was to migrate off site it would have done so by now. Additionally, the bulk of contaminated soil was removed from the source area in 2023, which can be presumed to decrease migration to groundwater and further limit the potential for off-site migration.

As upgradient well MW-01, cross gradient well MW-02, and downgradient wells MW-03 and MW-04 are not proposed for continued monitoring, Geosyntec recommends that these four wells be decommissioned in accordance with ADEC's Monitoring Well Guidance (ADEC, 2013) to facilitate development of the lot by ADOT&PF.

Groundwater samples will be submitted to the project laboratory for analysis of DRO and PAHs. As GRO and VOCs have not been detected in groundwater samples collected at the site, they will not be included in future monitoring events.

#### 3.3 Monitoring Schedule

Annual sampling is proposed to continue until five data points have been collected at MW-05, which will allow for statistically valid trend analysis.

After five monitoring events, if trend analysis shows a stable or decreasing trend, sampling frequency will be reevaluated. Table 3-1 summarizes the anticipated monitoring schedule through the first five monitoring events. Each monitoring event will be followed by a brief technical memorandum (tech memo); reporting is detailed in Section 6. The tech memo following the fifth



monitoring event will present the results of trend analysis and include recommendations for changes to monitoring frequency.

**Table 3-1: Anticipated Monitoring Schedule**

Monitoring Event	Approximate Date
Third Monitoring Event	May 2025
Fourth Monitoring Event	May 2026
Fifth Monitoring Event	May 2027

### 3.4 Field Procedures

Groundwater samples will be collected utilizing low-flow sampling procedures in accordance with ADEC's Field Sampling Guidance (ADEC, 2022). Monitoring wells will be sampled using a submersible pump with a variable speed controller and dedicated tubing. Field parameters will be monitored during purging and sampling activities with a water quality meter. Other observation, including sheen or odors, will be documented. Purging details and observations will be recorded on a groundwater sampling form (Appendix C). The methodology for purging and sampling is summarized below:

- Measure water level and total depth in the well.
- Lower the pump and tubing slowly, to minimize disturbance, into the well to a depth within the screened interval.
- Start the pump at its lowest flow setting and slowly increase the flow until discharge occurs. Check water level. Adjust pump until there is little or no water level drawdown (less than 0.3 feet). If the minimal drawdown that can be achieved exceeds 0.3 feet, but remains stable, continue purging until indicator field parameters stabilize (described below).
- Monitor and record water level, pumping rate, and field parameters every three to five minutes during purging. The field parameters to be monitored are temperature, specific conductance, pH, oxidation reduction potential (ORP), and dissolved oxygen (DO). Measurements will be obtained using a flow-through cell.
- Water samples will be collected after three of the field parameters stabilized for three consecutive readings within the following limits:
  - pH units
  - 3 percent (%) for temperature
  - 3% for conductivity
  - 10 millivolts for ORP
  - 10% for DO

If stability of the parameters cannot be achieved, then removal of three casing volumes will be performed at which time sampling will commence. In the event the water level draw down cannot be maintained less than 0.3 feet and the monitoring well dewateres, the water samples will be collected as soon as the water level has recovered to approximately 80% of its original well volume.

Once purging is complete, water samples will be collected. Laboratory analytical samples will be collected using pre-labeled sample jars and preservative as required. The sample vials for volatile organic compounds will be filled first and must be filled slowly to prevent the entrapment of air bubbles, splashing, or agitation of the water. The vials will be filled completely such that a positive meniscus forms. The cap will then be secured, and the vial inverted, tapped firmly, and checked for the presence of air bubbles.

Table 3-2 contains the analytical methods, volumes, containers, and preservatives required for laboratory samples. Certified clean sample containers will be obtained from the laboratory. Sampling activities will be recorded on a field form (Appendix C).

**Table 3-2: Groundwater Sample Analytical Information**

Parameter(s)	Analysis Method	Sample Container	Preservation	Holding Time
DRO	AK102	(2) 250-milliliter amber glass bottles with Teflon-lined screw caps	HCl to pH <2, 0-6 °C	14 days to extraction / 40 days to analysis
PAHs	8270E-SIM	(2) 250-milliliter amber glass bottles with Teflon-lined screw caps	0-6 °C	7 days to extraction / 40 days to analysis

**Key:**

°C -- degrees Celsius

DRO – diesel range organics

HCl – hydrochloric acid

PAHs – polynuclear aromatic hydrocarbons

SIM – selected ion monitoring

### 3.4.1 Decontamination

When possible, disposable sampling and personal protective equipment will be used for field activities; however, some of the sampling equipment will be non-dedicated and will require decontamination between uses. Equipment anticipated for field decontamination includes, but is not limited to the following:

- Water level indicator
- Groundwater pump

The decontamination procedures for the groundwater pump will consist of the following:

- Submerging the pump in an Alconox solution and running the pump so that the solution goes through the pump.
- Submerging the pump in distilled water and running the pump so that the entire pump is rinsed.
- Drying the pump with paper towels.

The decontamination procedures for the water level indicator will consist of the following:

- Scrubbing the probe and the portion of the tape that was submerged in the well with an Alconox solution.
- Rinsing the probe and the portion of the tape that was submerged in the well with distilled water.
- Drying the probe with paper towels.

### 3.4.2 Monitoring Well Maintenance

During each monitoring event the condition of the monitoring wells will be evaluated. Field personnel will take representative photographs of any damaged wells or other problematic conditions. Observations of well condition will be made in the tech memos following each monitoring event, along with recommendations for any maintenance activities. Maintenance activities may be planned for the next monitoring event, or as a separate mobilization if deemed time critical.

Potential well maintenance activities include, but are not limited to:

- Replacement of well cover.
- Repair of concrete well monument.
- Replacement of well plug.
- Repair to top of polyvinyl chloride (PVC) casing.
- Redevelopment of well.
- Decommissioning (Section 3.4.3) and replacement of well, if necessary.

### 3.4.3 Monitoring Well Decommissioning

Monitoring wells MW-01, MW-02, MW-03, and MW-04 will be decommissioned in accordance with ADEC *Monitoring Well Guidance* (ADEC, 2013). The process for decommissioning includes attempting to knock out the bottom of the well casing and pulling the casing from the ground. After the casing has been pulled up so that the bottom is above the groundwater table, the casing should be used as a tremie pipe to emplace bentonite grout or pellets into the borehole from the

groundwater level to approximately 2 feet bgs. The casing and well monument should be removed from the site and properly disposed of, and the upper two feet of the borehole should be backfilled to match the surrounding ground surface.

If the casing cannot practically be removed from the ground, then it may be acceptable to fill the casing itself with bentonite to decommission the well. In this case, the casing would be cut off at a depth of approximately 2 feet bgs, and the upper two feet of casing and the well monument would be removed from the site and properly disposed of.

Well decommissioning procedures will be recorded and reported to ADEC in the annual tech memo.

#### **3.4.4 Investigation Derived Waste**

The field activities will generate liquid investigation-derived waste (IDW). Purge water and decontamination water will be contained in 55-gallon drums. It is anticipated that each monitoring event will produce no more than one drum of IDW. A waste profile has already been created for the IDW water from the site for previous monitoring events, including for petroleum contaminants and per- and polyfluorinated substances (PFAS). PFAS contamination is widespread and well documented in the A-Aquifer and is unrelated to KSES site activities.

Geosyntec will subcontract with a waste contractor to retrieve the drums from the site and transport and treat/dispose of the waste. Geosyntec will obtain approval from ADEC before transporting waste.

## 4. QUALITY ASSURANCE PROJECT PLAN

Various measures will be implemented during the LTM to assure and control data quality during the field effort, as described in the following sections.

### 4.1 Personnel

Individuals executing the field work will meet the definition of "qualified environmental professional" per 18 AAC 75.333(b).

### 4.2 Field Procedures

Fieldwork and laboratory analyses will be conducted in accordance with 18 AAC 75, associated ADEC guidance manuals, and the procedures described in this document.

### 4.3 Equipment Calibration

Equipment will be calibrated, maintained, and operated according to manufacturer recommendations. The water quality meter will be calibrated daily using calibration solutions for pH, conductivity, and ORP. Calibration of the turbidimeter (Hach 2100P) is recommended every three months and is handled by the vendor. The calibration check sheet from the vendor will be kept as a field record. Equipment calibration and calibration checks will be recorded on field forms (Appendix C).

### 4.4 Field Documentation

Field documentation will consist of the use of a field notebook and/or digital device, sample and waste identification labels, and photographs. A written record of field activities will be kept in a field logbook or secure digital device. Entries will be legible, written in waterproof ink, and contain accurate and inclusive documentation of field activities. The field notebook will include name(s) of field personnel, location and activities performed, date and times associated with activities performed, documentation of calibration, field observations, photograph information, and any additional information related to field activities. Errors or changes will be noted using a single line to cross out the entry and will be dated and initialed. The logbook will be maintained as part of the permanent record for the site. Field logbook entries will be dated and signed. Activities and observations to be noted in the logbook include the following:

- Name of author and date and time of entry
- Names and affiliations of personnel on-site
- Location of activity and site conditions
- Field observations and comments
- Documentation of instrument calibration
- Weather conditions

- Rationale for sampling locations and for any changes to sampling protocol
- Locations of site photographs
- Site sketches
- Health and safety comments

## 4.5 Laboratory Analyses

Groundwater samples for site characterization will be analyzed by SGS North America, Inc. in Anchorage Alaska, an ADEC-approved laboratory, for DRO and PAHs.

Samples must meet the holding time, temperature, and preservative requirements determined by the analytical method, as specified in Table 3-2. Laboratory quality control (QC) samples shall include method blanks, laboratory control samples and laboratory control duplicate samples, and surrogate spikes. Laboratory QC samples should be analyzed at a frequency of 1 per 20 samples or 1 per batch, whichever is a higher frequency. Relative percent differences (RPDs) and percent recoveries must meet the laboratory-specified tolerance per method and media, and ADEC data quality requirements. Laboratory equipment calibration and internal standards must be within the laboratory-specified tolerance.

Field quality control samples shall include blind field duplicates (1 per 10 samples). The allowable tolerance for field duplicates is a RPD of 30% for water samples.

## 4.6 Analytical Data Review

Laboratory performance and analytical results will be checked through a quality assurance review, which will include ADEC's Laboratory Data Review Checklist. The review will assess analytical quality through six data quality indicators: completeness, accuracy, precision, comparability, representativeness, and sensitivity. The requirements for the data quality indicators are:

1. Completeness: 95% per chemical.
2. Accuracy: Percent recoveries (%R) reported and within method or laboratory limits. For DRO, 50-150 %R for field samples and 60-120 %R for quality control samples.
3. Precision: RPD less than method or laboratory limits. For aqueous field duplicates the limit is <30%.
4. Comparability: Laboratory analytical methods were performed to specification and standard to allow for evaluation of field analytical data.
5. Representativeness: Field samples were extracted and analyzed in the laboratory according to specification and standard.
6. Sensitivity: Limits of quantification (LOQs) and limits of detection (LODs) are less than PALs.

The data review will identify data requiring qualifications and identify effects on data usability. Analytical results with qualifiers and anomalies contained in laboratory case narratives will be discussed in the ADEC Laboratory Data Review Checklists. The review will discuss any bias on the analytical results due to qualification.

Qualifiers to be applied to the analytical dataset, as appropriate, are provided in Table 4-1.

**Table 4-1: Analytical Data Qualifiers**

Qualifier	Application
J	The analyte was positively identified, but the associated result was less than the LOQ and greater than or equal to the detection limit.
B	The analyte was detected in the method blank or the trip blank above LOD, and the concentration in the sample did not exceed the blank concentration by a factor of 5 (factor of 10 for common laboratory contaminants acetone and methylene chloride).
QH	The analyte result is considered an estimated value biased high due to a quality control failure.
QL	The analyte result is considered an estimated value biased low due to a quality control failure.
QN	The analyte result is considered an estimated value with uncertain bias due to a quality control failure.
R	The result was rejected. A rejected result was not usable and therefore was deleted from the report.

**Key:**

LOD – Limit of Detection

LOQ – Limit of Quantitation

Qualification will not be required in the following circumstances:

1. Surrogate recoveries are outside QC limits for accuracy, and the sample was diluted by a factor of 5 or greater.
2. An analyte is detected in the method blank, but there is no detection in the sample.
3. Laboratory control sample/laboratory control sample duplicate RPDs or recoveries exceeded limits for precision or accuracy, respectively, and there is no detection in the sample(s).

Data may be rejected on the following grounds:

1. Initial calibration (per compound) criteria not met.
2. Continuing calibration (per compound) not verified.
3. Non-detects with the continuing calibration recovery less than laboratory-specified control limits.
4. Non-detects with the LCS recovery less than control limits for accuracy.
5. Any compound with LCS recovery less than 10 percent.

6. Missed holding times greater than two times the method-specified holding time.
7. Surrogate recovery of less than 10 percent and a dilution factor of 5 or less.

In some cases, data may not be rejected if the data is still useful. These decisions will be made on a case-by-case basis and a detailed explanation will be included in the data quality review.

## 4.7 Data Management

Data collected during LTM will include the following data types:

1. Field measurements from the water level indicator, water quality meter, and turbidimeter.
2. Analytical sample results.
3. Field notes and observations, including groundwater sampling forms.

Field notes and observations will be recorded in a field notebook and will be included as an attachment to the tech memos that will follow each monitoring event.

The remaining data will be compiled and stored in two project databases: (1) an ESRI ArcGIS file geodatabase and (2) a Microsoft Access database (or equivalent).

The geodatabase contains spatial information (points, lines, and/or polygons) from the project (collected during previous site activities), which includes horizontal survey locations of sample locations and excavation extents, geophysical survey results, and other site features and infrastructure.

The Access database will contain related tables to store text data for the project. These tables will include:

1. Location – including Location ID, horizontal coordinates, coordinate system, and survey quality and accuracy information.
2. Sample – including Sample ID, Location ID, sample date and time, and depth range.
3. Analytical – including Sample ID, analytical method, analyte, result value, result unit, detection and quantitation limits, and other relevant information reported by the analytical laboratory.
4. Field Measurements – including related Sample or Location ID, measurement type, date and time, and result.



## 5. STATISTICAL ANALYSIS

Geosyntec will perform statistical analysis to determine trends in dissolved-phase COPC concentrations at the KSES site.

### 5.1 Analysis Software

The following data reduction and statistical software packages will be used:

- Microsoft Access
- Microsoft Excel
- U.S. Environmental Protection Agency's (EPA's) ProUCL Version 5.2.0 (EPA, 2022) (or newer)

### 5.2 Data Reduction, Outliers, Non-Detects, and Errors

If more than one contaminant result is reported due to multiple analyses by a single method, the highest detected value will be used in the statistical analysis. This determination is made on a compound-specific basis. Any method-specific reporting requirements should also be followed.

When a field QC duplicate sample is collected the sample with the highest concentration of the analyte will be used in the statistical analysis. If the primary and field duplicate analytical results are both reported as non-detect the minimum MDL will be presented with the data qualification flag denoting the result as non-detect. If one of the duplicate results are reported as non-detect and the other is reported at a detectable concentration, the detected value will be used.

Potential discrepant or unusual data may occur due to inconsistent sampling, analytical methodology resulting in laboratory anomalies, or errors in the transcription of the data. If a field or laboratory error is confirmed, and the error makes the data suspect, ADEC will be informed of the error and a request will be made to remove the erroneous data. If the request for removal is granted, the data will be removed as outliers. If the request is denied, the data will be assumed to be true. If no error in the value can be documented, it will be assumed that the observation is true, but an extreme data point. The data point would not be altered or removed in this case. Statistical procedures provide a mechanism for determining when groundwater changes are significant and when they are within a normal, acceptable range.

### 5.3 Trend Analysis

After five monitoring events have been performed, and five data points are available for COPCs, Geosyntec will perform trend analysis. Geosyntec will prepare time-series plots and perform Mann-Kendall tests for each COPC with at least one detection using ProUCL software. Mann-Kendall is a non-parametric test for linear trend. Geosyntec will evaluate the results of the Mann-Kendall tests to determine whether there is an increasing or decreasing trend for each COPC, or whether concentrations are stable.

## 6. REPORTING

Following receipt of analytical data from each monitoring event, Geosyntec will prepare an annual tech memo presenting the results of the monitoring event. The contents of the tech memo will include, but may not be limited to:

- A narrative description of the work performed, including well decommissioning during years when it occurred.
- A description of the condition of each monitoring well remaining on-site, with photographs demonstrating problematic well conditions that may require maintenance.
- A description of analytical results in comparison to PALs and historical analytical results.
- Updated analytical results table presenting current and historical groundwater analytical data.
- A copy of the laboratory report.
- A completed ADEC Laboratory Data Review Checklist.
- Copies of field notes and field forms in an attachment.
- Photograph log representative of site conditions and activities.
- Figures.

The tech memo prepared following the fifth groundwater monitoring event will include presentation of trend analysis (Section 5) for COPCs with at least one detection in groundwater at the KSES site, and a recommendation for the path forward for the site (Section 7).

## 7. DECISION RULES

The following section presents the possible decisions that may occur following the fifth groundwater monitoring event in May 2027. The goal is to provide sufficient analytical data and statistical analysis to confidently and conservatively reduce the number of COPCs being monitored. When the one monitoring well proposed for LTM (MW-05) achieves either Scenarios 1, 2, or 3 below, then the combination of source removal in 2022 and ongoing natural attenuation is assumed to have achieved site cleanup sufficient for site closure with no ICs.

### 7.1 Scenario 1: Non-Detect Groundwater Concentrations

If a COPC has not been detected and the laboratory reporting limit has been less than the PAL for each monitoring event, then a recommendation to cease monitoring the COPC will be made.

### 7.2 Scenario 2: Decreasing Trend in Groundwater Concentrations

If statistical analysis shows a statistically significant decreasing trend (95% confidence) for a COPC, then a recommendation to cease monitoring the COPC will be made provided that the COPC concentration has been less than the PAL for the last two rounds of sampling. Otherwise, annual monitoring for the COPC will continue until either 1) the decreasing trend is maintained and two consecutive rounds with the COPC concentration less than the PAL has been achieved, or 2) a stable trend develops and three consecutive rounds with the COPC concentration less than the PAL has been achieved.

### 7.3 Scenario 3: Stable Trend in Groundwater Concentrations

If statistical analysis shows a stable trend for a COPC, then a recommendation to cease monitoring the COPC will be made provided that the COPC concentration has been less than the PAL for the last three rounds of sampling. Otherwise, annual monitoring for the COPC will continue until either 1) the stable trend is maintained and three consecutive rounds with the COPC concentration less than the PAL has been achieved, or 2) a decreasing trend develops and two consecutive rounds with the COPC concentration less than the PAL has been achieved.

### 7.4 Scenario 4: Increasing Trend in Groundwater Concentrations

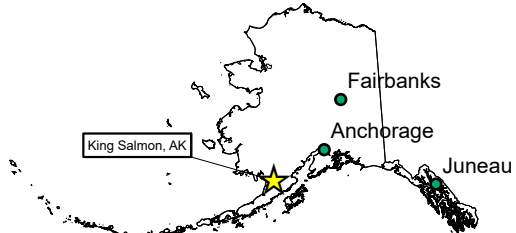
If statistical analysis shows an increasing trend for a COPC, then annual monitoring will continue until Scenarios 2 or 3 occur. Given that nearly all of the petroleum-impacted soil has been removed, this scenario is improbable and has been included in this plan merely for completeness of decision rules.

## 8. REFERENCES

- Alaska Department of Environmental Conservation (ADEC). 2010. *Decision Document; AT&T Alascom King Salmon Earth Station, Cleanup Complete – Institutional Controls*. Letter from Linda Nuechterlein, ADEC to Larry Bamberger, AT&T. February 9.
- ADEC. 2013. *Monitoring Well Guidance*. September.
- ADEC. 2017. *Guidance on Developing Conceptual Site Models*. January.
- ADEC. 2022. *Field Sampling Guidance*. Division of Spill Prevention and Response Contaminated Sites Program. January.
- ADEC. 2023. 18 AAC 75, *Oil and Other Hazardous Substances Pollution Control*. October 18.
- Alta. 2006. *Soils Remediation Construction Completion Report, King Salmon Earth Station, King Salmon, Alaska*. ADEC Site No. 1997250116701. August.
- Geosyntec Consultants (Geosyntec). 2022. *Corrective Action Plan, King Salmon Earth Station*. Prepared for AT&T Alascom. June.
- Geosyntec. 2023a. *Corrective Action Report, King Salmon Earth Station, State Airport Road, King Salmon, Alaska*. Prepared for AT&T Alascom. July.
- Geosyntec. 2023b. *Groundwater Characterization Report, King Salmon Earth Station, State Airport Road, King Salmon, Alaska*. Prepared for AT&T Alascom. November.
- HydroGeoLogic, Inc. 2021. *Final Site Inspection Addendum, Off-Base Drinking Water Site Inspection*. June.
- U.S. Environmental Protection Agency. 2022. *Pro UCL Version 5.2.0 User Guide, Statistical Software for Environmental Applications for Data Sets with and without Nondetect Observations*. June 14.

# FIGURES





**Site Location**  
 King Salmon Earth Station  
 King Salmon, Alaska

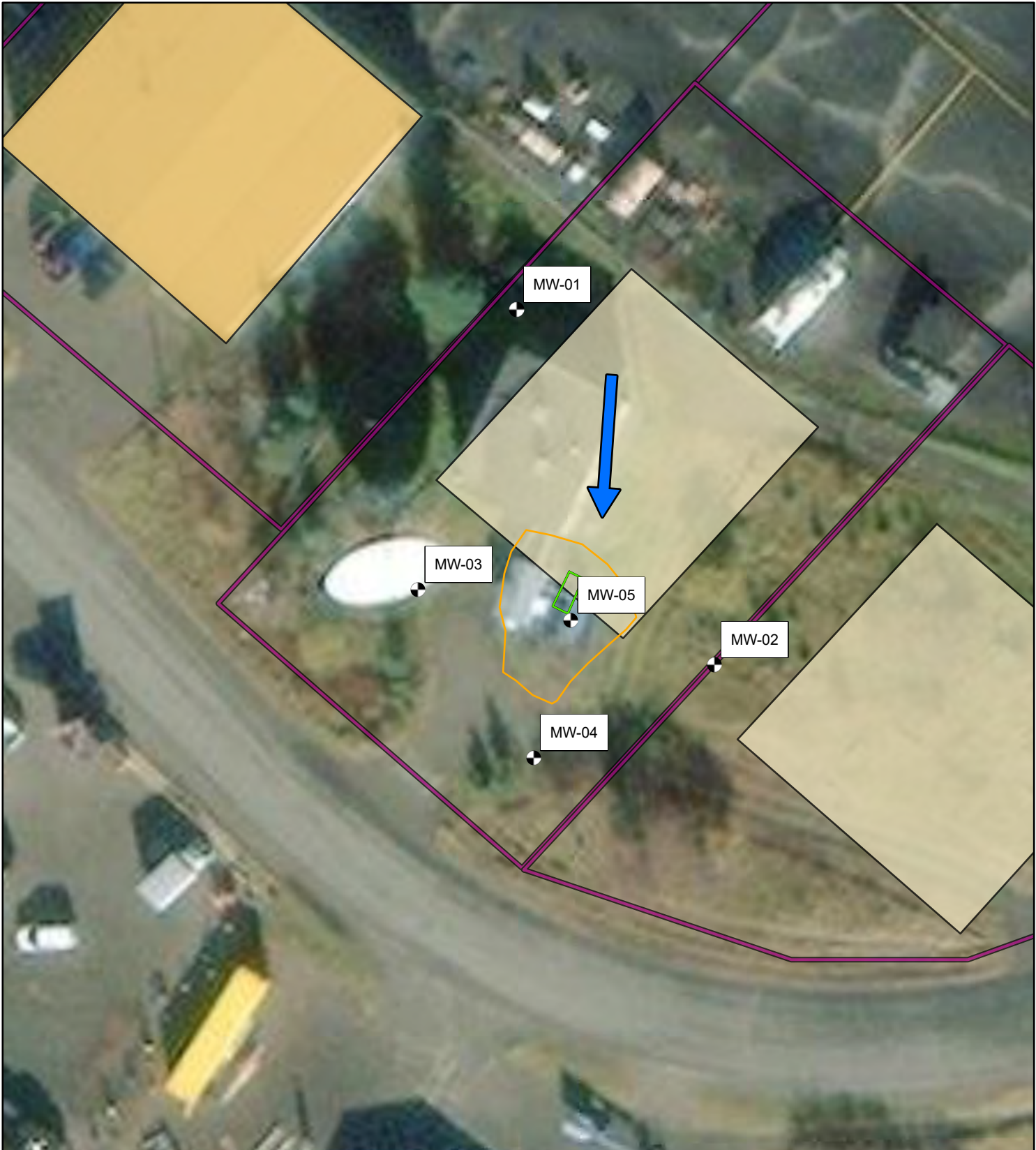
**Geosyntec**  
 consultants

PNG0967B








July 2024

**Figure**  
**1**





**Legend**

-  Monitoring Wells
-  Former 3000-gallon AST
-  Groundwater Flow Direction
-  New Lot Boundaries
-  Existing Building Footprint
-  Proposed Building Footprint
-  Excavation Extent



**Site Map**

King Salmon Earth Station  
King Salmon, Alaska

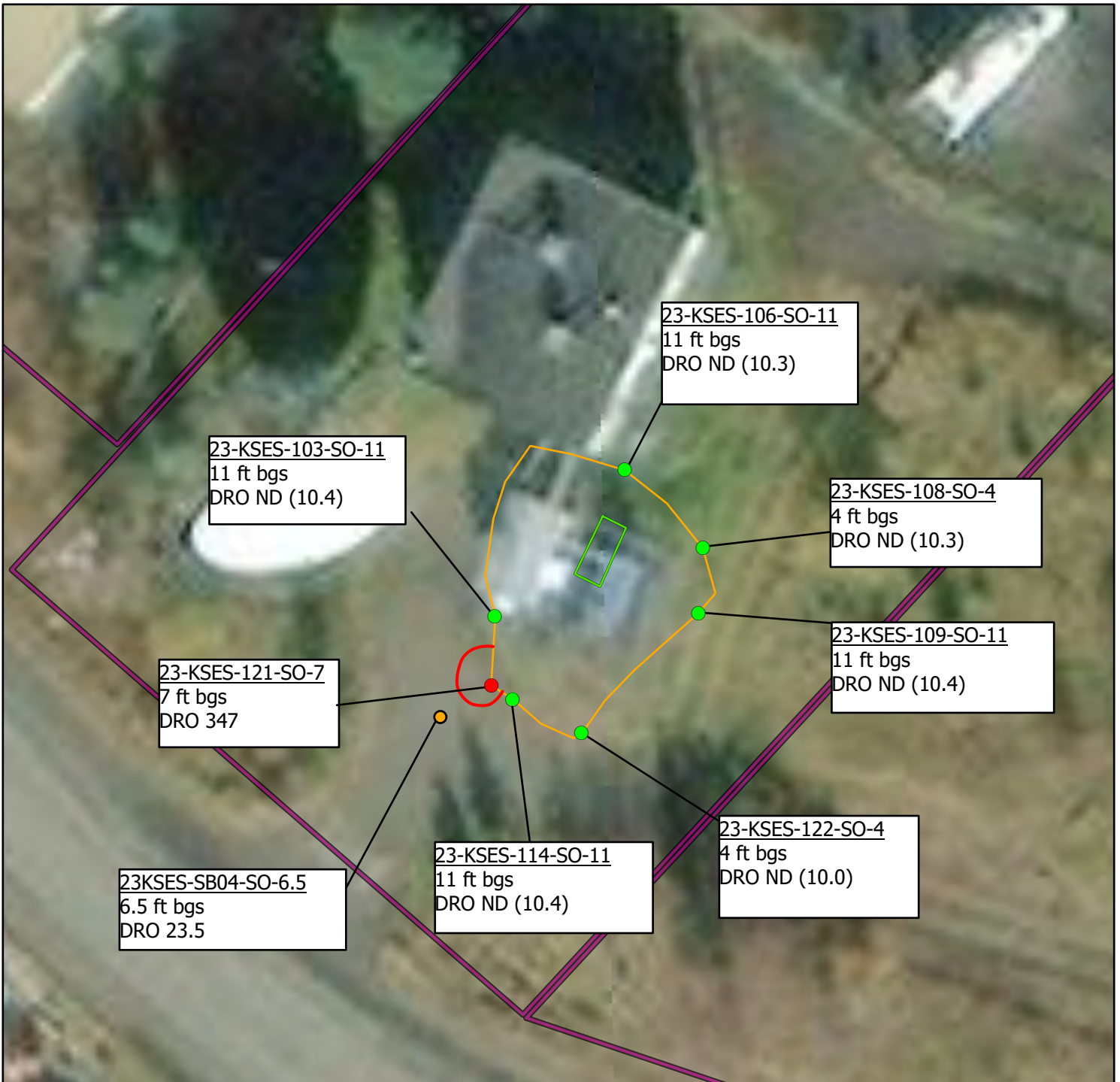


**Figure**

**2**

PNG0967B

June 2024



ADEC DRO Cleanup Level: 250 mg/kg

Definitions:  
 ND = not detected (reporting limit in parentheses)  
 DRO = diesel range organics

**Legend**

- Soil Boring
- Former 3000-gallon AST
- Extent of Residual DRO Soil Contamination Exceeding ADEC Cleanup Levels
- ▭ Excavation Extent
- ▭ Lot Boundaries
- Sidewall Sample Location
  - Below ADEC Cleanup Levels
  - Exceeds ADEC Cleanup Levels

0 40 Feet

**Soil Analytical Data**

King Salmon Earth Station  
King Salmon, Alaska

**Geosyntec**  
consultants

PNG0967 June 2024

**Figure 3**



**APPENDIX A**  
**May 2024 Groundwater Monitoring**  
**Technical Memorandum**

DRAFT FINAL

8 July 2024

AT&T Alascom  
505 East Bluff Drive MP189  
Anchorage, Alaska 99501  
ATTN: Jana Lee

Subject: May 2024 Groundwater Monitoring Event  
AT&T Alascom King Salmon Earth Station, King Salmon, Alaska  
AT&T GLC AK0344  
ADEC Hazard ID 2819, File No. 2569.38.007

Dear Ms. Lee:

Geosyntec Consultants Inc. (Geosyntec) has prepared this technical memorandum (tech memo) to present the results of the May 2024 groundwater monitoring event at the King Salmon Earth Station (KSES) former Power Building aboveground storage tank (AST) site located in King Salmon, Alaska (Figure A1).

Geosyntec previously completed corrective action at the AT&T Alascom KSES former Power Building AST in April and May 2023 (Geosyntec, 2023a) that included the removal of an estimated 302 cubic yards of diesel range organics (DRO)-impacted soil. Following corrective action, Geosyntec performed a groundwater characterization effort that included installation and sampling of five groundwater monitoring wells (Geosyntec, 2023c).

### **Work Completed**

Geosyntec mobilized to KSES in May 2024 to perform a second round of groundwater monitoring for the site. Geosyntec measured depth to water and collected groundwater samples at the five wells on site (Figure A2) on 10 May in accordance with the Work Plan Addendum (Geosyntec, 2023b). Samples were submitted to the project laboratory (SGS North America, Inc. in Anchorage, Alaska) for analysis for gasoline range organics (GRO), DRO, volatile organic compounds (VOCs), and polyaromatic hydrocarbons (PAHs).

The field book from the May 2024 sampling event is included as Attachment A, groundwater sampling forms are included as Attachment B, and the laboratory analytical report is included as Attachment C. Geosyntec performed data validation, summarized below, including completion of a ADEC Laboratory Data Review Checklist (Attachment D).

## **Hydrology**

Depth to groundwater measured in wells across the site ranged from 11.04 feet below the top of casing (TOC) at MW-02 to 7.72 feet below TOC at MW-04. On average, depth to water was approximately 1.5 feet deeper than measured during the previous sampling event in July 2023 (Geosyntec, 2023c).

Figure A3 presents the groundwater contours calculated from the May 2024 monitoring event. The direction of groundwater flow was somewhat more southerly than in July 2023 (when the direction was towards the southwest), and the hydraulic gradient was approximately 0.007 feet/foot (measured from upgradient well MW-01 to downgradient well MW-04). This gradient is close to the 0.008 feet/foot calculated for July 2023 event.

Relative elevations of TOCs were not resurveyed during the May 2024 event. Note that it is possible for well casings to move vertically during the winter freeze/thaw cycle and it is recommended that the monitoring wells periodically be resurveyed to maintain confidence in calculated flow direction and gradient.

## **Data Quality Summary**

Geosyntec project chemist performed Stage 2A validation which included data verification and completeness checks of the electronic data to verify that data packages and electronic files included the requested information. The pertinent analytical data were reviewed, including the chain-of-custody and sample receipt records, laboratory case narratives, and laboratory data. The analytical results were provided by the laboratory as Level II deliverables.

Geosyntec chemist noted no quality control failures.

Overall, the data quality indicators of precision, accuracy, representativeness, completeness, comparability, and sensitivity were met. The data, as qualified, are usable for the purposes of the project objectives.

The laboratory analytical report is included as Attachment C and the completed ADEC Laboratory Data Review Checklist is included as Attachment D.

## **Analytical Results**

This section discusses analytical results for groundwater samples collected during the May 2024 groundwater monitoring event. Current and historical groundwater analytical data are summarized on Table A1 (appended to the back of this tech memo) and select analytical results from May 2024 are presented on Figure A4. The laboratory analytical report is included as Attachment C and the ADEC laboratory data review checklist is included as Attachment D.

Groundwater samples were collected from the five monitoring wells on site that were installed in July 2023; a blind field duplicate was collected from source area well MW-05. Analytical results show the primary and duplicate groundwater samples collected from source area well MW-05 slightly exceeded the PAL for DRO in groundwater (1.5 milligrams per liter [mg/L]) at concentrations of 1.56 and 1.62 mg/L. These concentrations are significantly lower than those measured in samples collected in July 2023, which were 10.7 and 13.8 mg/L for the duplicate pair (Geosyntec, 2023c). This may indicate that removal of the contaminated soil source area has already resulted in a decrease in the level of groundwater impacts.

However, several PAHs were reported at concentrations that slightly exceeded PALs in the duplicate sample collected at MW-05 (24KSES-MW06-GW) in May 2024. PAHs that exceeded PALs in sample 24KSES-MW06-GW include:

- Benzo(a)anthracene (concentration of 0.820 µg/L exceeding the PAL of 0.30 µg/L)
- Benzo(a)pyrene (concentration of 0.912 µg/L exceeding the PAL of 0.25 µg/L)
- Dibenzo(a,h)anthracene (concentration of 0.675 µg/L exceeding the PAL of 0.25 µg/L)
- Indeno(1,2,3-c,d)pyrene (concentration of 0.762 µg/L exceeding the PAL of 0.19 µg/L)

Notably, the PAHs that exceeded PALs in the MW-05 duplicate sample collected in May 2024 were not detected above PALs in any other groundwater samples collected at the site in 2023 and 2024, including the primary sample collected from MW-05 in 2024. Thus, the presence of PAHs at concentrations that exceed PALs in the MW-05 duplicate sample is suspect. Future sampling events will determine whether PAHs are consistently found to be present at MW-05.

Groundwater samples collected from the four other groundwater monitoring wells (including upgradient MW-01, cross gradient well MW-02, and down-gradient wells MW-03 and MW-04) were below PALs for COPCs. Thus, the extent of groundwater contamination remains delineated and does not appear to be migrating off site.

## **References**

Geosyntec Consultants (Geosyntec). 2023a. Corrective Action Report, King Salmon Earth Station, State Airport Road, King Salmon, Alaska. February.

Geosyntec. 2023b. Groundwater and Supplemental Soil Characterization, Work Plan Addendum, King Salmon Earth Station, King Salmon, Alaska. June 20.

Geosyntec. 2023c. Groundwater Characterization Report, King Salmon Earth Station, State Airport Road, King Salmon, Alaska. November.

**Signatures**

Matt Faust, PG  
Senior Geologist

Ben Martich, QEP  
Senior Principal

Figures:

Figure A1	Site Location
Figure A2	Site Map
Figure A3	May 2024 Groundwater Contours
Figure A4	May 2024 Groundwater Analytical Data

Tables:

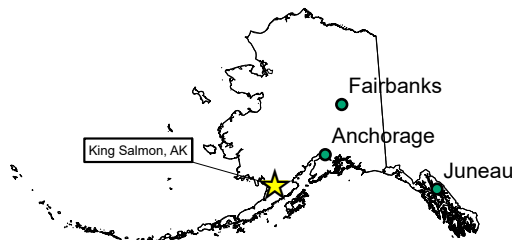
Table A1	Current and Historical Groundwater Analytical Data
----------	--

Attachments:

Attachment A	Field Book
Attachment B	Groundwater Sampling Forms
Attachment C	Laboratory Analytical Report
Attachment D	Laboratory Data Review Checklist

# Figures





**Site Location**  
King Salmon Earth Station  
King Salmon, Alaska

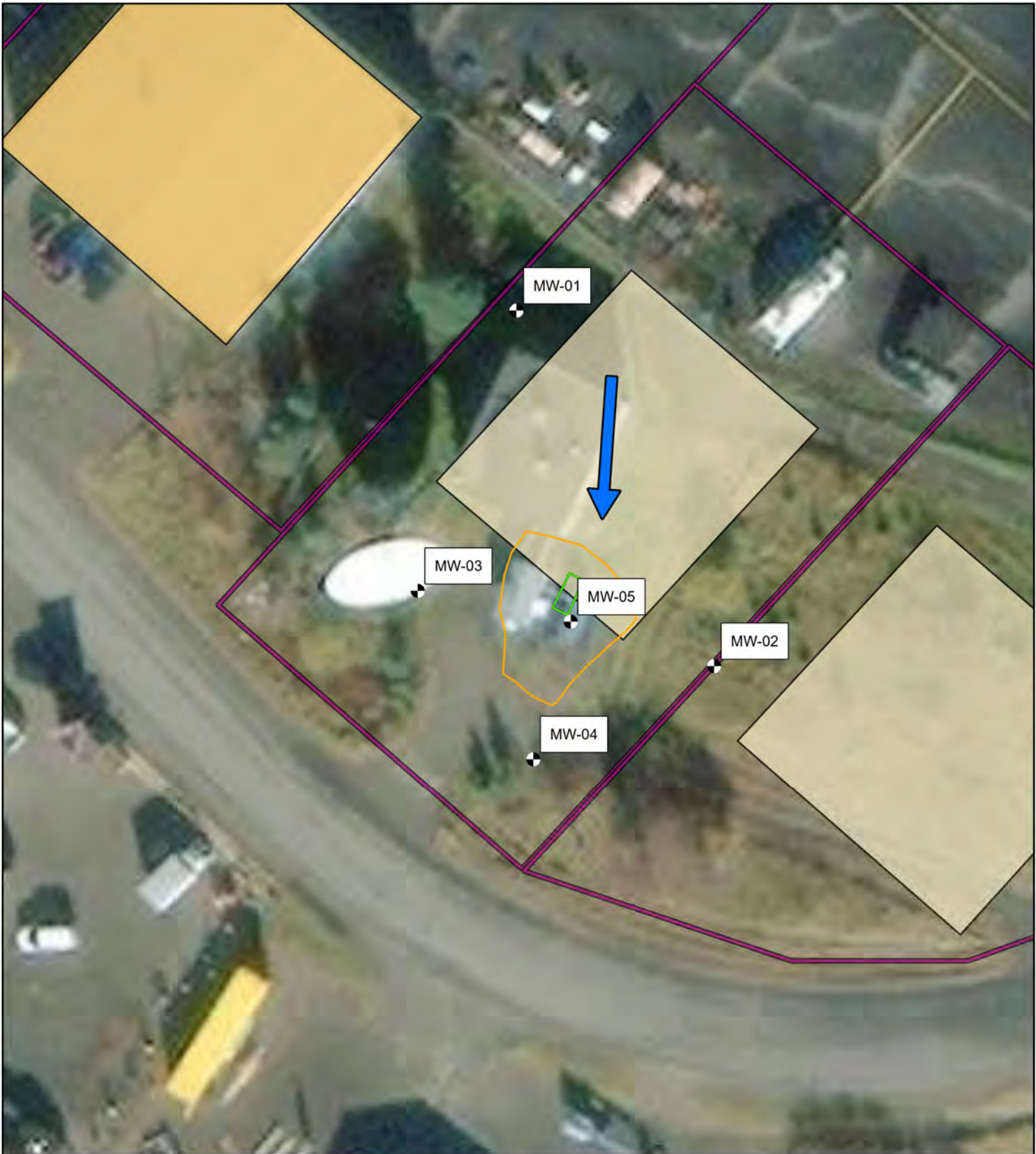
**Geosyntec**  
consultants

PNG0967B








July 2024

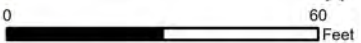
**Figure**  
**A1**





**Legend**

-  Monitoring Wells
-  Former 3000-gallon AST
-  Groundwater Flow Direction
-  New Lot Boundaries
-  Existing Building Footprint
-  Proposed Building Footprint
-  Excavation Extent



**Site Map**

King Salmon Earth Station  
King Salmon, Alaska



**Figure  
A2**

PNG0967B

June 2024





May 2024 water level elevations provided for each monitoring well are accurate only to a site specific datum. Elevations were calculated using a field survey of tops of casing for each well relative to MW-01, which was assigned an arbitrary elevation of 50.00 feet above mean sea level. Precise elevation above mean sea level is unknown.

**Legend**

- Monitoring Wells (with 5/2024 water level elevation)
- Soil Boring
- Former 3000-gallon AST
- Excavation Extent
- Lot Boundaries
- GW Contours 5/2024
- Groundwater Flow Direction

N  
0 60 Feet

**May 2024 Groundwater Contours**

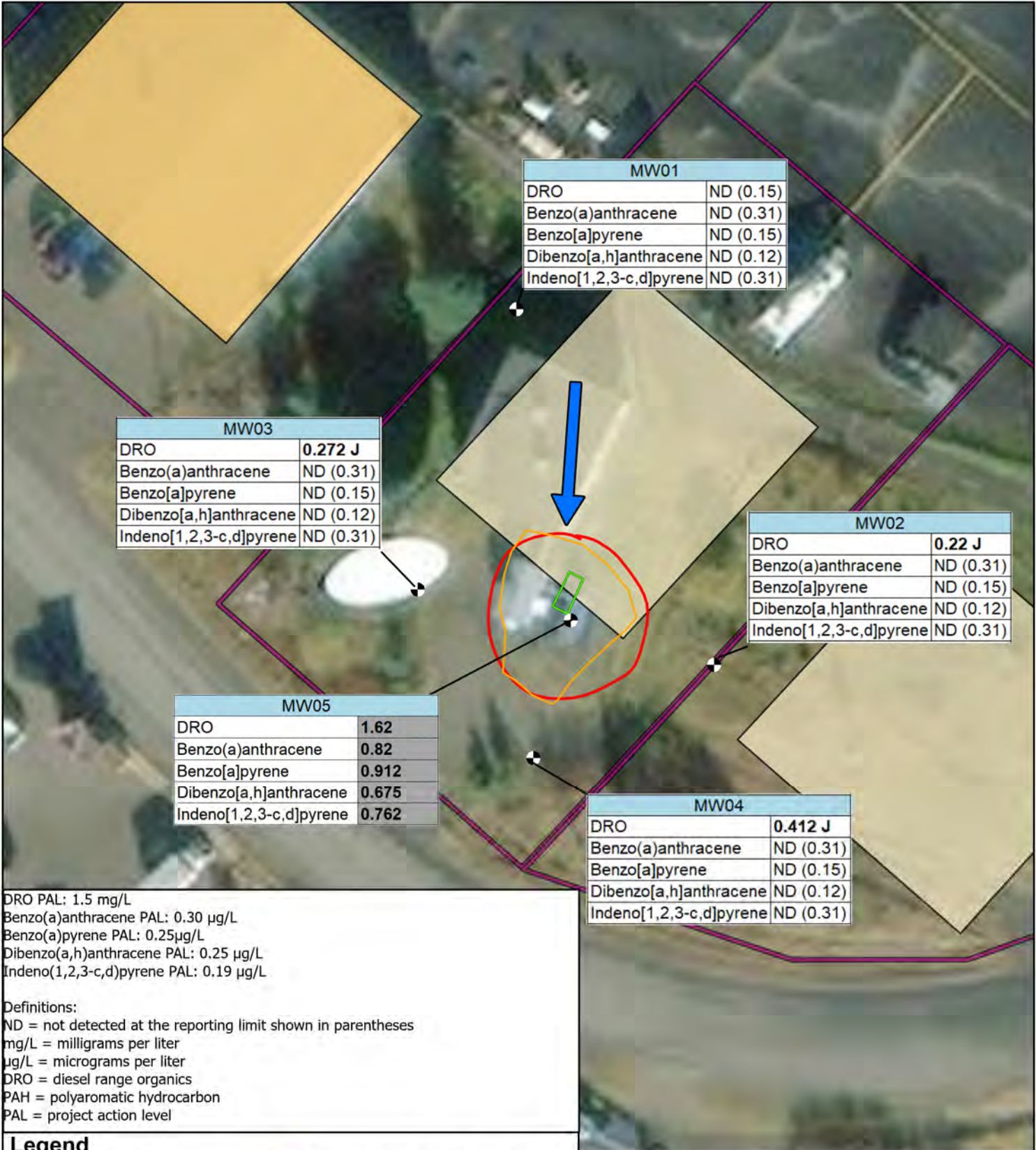
King Salmon Earth Station  
King Salmon, Alaska

**Geosyntec**  
consultants

PNG0967B      June 2024

**Figure A3**





MW01	
DRO	ND (0.15)
Benzo(a)anthracene	ND (0.31)
Benzo(a)pyrene	ND (0.15)
Dibenzo(a,h)anthracene	ND (0.12)
Indeno[1,2,3-c,d]pyrene	ND (0.31)

MW03	
DRO	<b>0.272 J</b>
Benzo(a)anthracene	ND (0.31)
Benzo(a)pyrene	ND (0.15)
Dibenzo(a,h)anthracene	ND (0.12)
Indeno[1,2,3-c,d]pyrene	ND (0.31)

MW02	
DRO	<b>0.22 J</b>
Benzo(a)anthracene	ND (0.31)
Benzo(a)pyrene	ND (0.15)
Dibenzo(a,h)anthracene	ND (0.12)
Indeno[1,2,3-c,d]pyrene	ND (0.31)

MW05	
DRO	<b>1.62</b>
Benzo(a)anthracene	<b>0.82</b>
Benzo(a)pyrene	<b>0.912</b>
Dibenzo(a,h)anthracene	<b>0.675</b>
Indeno[1,2,3-c,d]pyrene	<b>0.762</b>

MW04	
DRO	<b>0.412 J</b>
Benzo(a)anthracene	ND (0.31)
Benzo(a)pyrene	ND (0.15)
Dibenzo(a,h)anthracene	ND (0.12)
Indeno[1,2,3-c,d]pyrene	ND (0.31)

DRO PAL: 1.5 mg/L  
 Benzo(a)anthracene PAL: 0.30 µg/L  
 Benzo(a)pyrene PAL: 0.25µg/L  
 Dibenzo(a,h)anthracene PAL: 0.25 µg/L  
 Indeno(1,2,3-c,d)pyrene PAL: 0.19 µg/L

Definitions:  
 ND = not detected at the reporting limit shown in parentheses  
 mg/L = milligrams per liter  
 µg/L = micrograms per liter  
 DRO = diesel range organics  
 PAH = polyaromatic hydrocarbon  
 PAL = project action level

**Legend**

- Monitoring Wells
- Former 3000-gallon AST
- New Lot Boundaries
- Groundwater Flow Direction
- Existing Building Footprint
- Proposed Building Footprint
- Excavation Extent
- Extent of DRO and PAH Groundwater Contamination Exceeding ADEC Cleanup Levels

**Note:** bold values indicate detections while grey cells indicate exceeds PAL. When a location has a field duplicate, the highest value for each analyte is presented.

0 60 Feet

**May 2024 Groundwater Analytical Data**

King Salmon Earth Station  
King Salmon, Alaska

**Geosyntec** consultants

Figure **A4**

PNG0967B June 2024

# Tables

**Table A1 Current and Historical Groundwater Analytical Data  
King Salmon Earth Station**

Monitoring Well:			MW01		MW02		MW03		MW04		MW05													
Sample ID:	23KSES-MW01-GW		24KSES-MW01-GW		23KSES-MW02-GW		24KSES-MW02-GW		23KSES-MW03-GW		24KSES-MW03-GW		23KSES-MW04-GW		24KSES-MW04-GW		23KSES-MW05-GW		24KSES-MW05-GW		24KSES-MW06-GW			
Sample Date:	07/29/2023		05/09/2024		07/29/2023		05/09/2024		07/29/2023		05/10/2024		07/30/2023		05/10/2024		07/30/2023		07/30/2023		05/10/2024		05/10/2024	
Analyte	Units	PAL																Field Duplicate of 23KSES-MW05-GW			Field Duplicate of 24KSES-MW05-GW			
<b>PAHs (8270D SIM)</b>																								
1-Methylnaphthalene	µg/L	11	ND (0.0521)	ND (0.015)	ND (0.049)	ND (0.016)	ND (0.051)	ND (0.0167)	ND (0.049)	ND (0.0167)	ND (0.05)	<b>0.0582</b>	ND (0.016)	ND (0.0167)										
2-Methylnaphthalene	µg/L	36	<b>0.0225 J B</b>	ND (0.015)	<b>0.0239 J B</b>	ND (0.016)	<b>0.025 J B</b>	ND (0.0167)	<b>0.0208 J B</b>	ND (0.0167)	<b>0.0254 J B</b>	<b>0.0257 J B</b>	ND (0.016)	ND (0.0167)										
Acenaphthene	µg/L	530	ND (0.0521)	ND (0.015)	ND (0.049)	ND (0.016)	ND (0.051)	ND (0.0167)	ND (0.049)	ND (0.0167)	<b>0.142</b>	<b>0.122</b>	ND (0.016)	<b>0.114</b>										
Acenaphthylene	µg/L	260	ND (0.0521)	ND (0.015)	ND (0.049)	ND (0.016)	ND (0.051)	ND (0.0167)	ND (0.049)	ND (0.0167)	ND (0.05)	ND (0.05)	ND (0.016)	ND (0.0167)										
Anthracene	µg/L	43	ND (0.0521)	ND (0.015)	ND (0.049)	ND (0.016)	ND (0.051)	ND (0.0167)	ND (0.049)	ND (0.0167)	ND (0.05)	ND (0.05)	ND (0.016)	<b>0.893</b>										
Benzo(a)anthracene	µg/L	0.3	ND (0.0521)	ND (0.015)	<b>0.016 J B</b>	ND (0.016)	<b>0.0167 J B</b>	ND (0.0167)	ND (0.049)	ND (0.0167)	ND (0.05)	ND (0.05)	ND (0.016)	<b>0.82</b>										
Benzo(a)pyrene	µg/L	0.25	ND (0.0208)	ND (0.0062)	ND (0.0196)	ND (0.0066)	ND (0.0204)	ND (0.00689)	ND (0.0196)	ND (0.00689)	ND (0.02)	ND (0.02)	ND (0.0066)	<b>0.912</b>										
Benzo(b)fluoranthene	µg/L	2.5	ND (0.0521)	ND (0.015)	ND (0.049)	ND (0.016)	ND (0.051)	ND (0.0167)	ND (0.049)	ND (0.0167)	ND (0.05)	ND (0.05)	ND (0.016)	<b>0.6</b>										
Benzo(g,h,i)perylene	µg/L	0.26	ND (0.0521)	ND (0.015)	ND (0.049)	ND (0.016)	ND (0.051)	ND (0.0167)	ND (0.049)	ND (0.0167)	ND (0.05)	ND (0.05)	ND (0.016)	<b>0.115</b>										
Benzo(k)fluoranthene	µg/L	0.8	ND (0.0521)	ND (0.015)	ND (0.049)	ND (0.016)	ND (0.051)	ND (0.0167)	ND (0.049)	ND (0.0167)	ND (0.05)	ND (0.05)	ND (0.016)	<b>0.313</b>										
Chrysene	µg/L	2	ND (0.0521)	ND (0.015)	<b>0.0148 J</b>	ND (0.016)	<b>0.0169 J</b>	ND (0.0167)	ND (0.049)	ND (0.0167)	<b>0.0151 J</b>	ND (0.05)	ND (0.016)	<b>0.564</b>										
Dibenzo(a,h)anthracene	µg/L	0.25	R	ND (0.0062)	R	ND (0.0066)	R	ND (0.00689)	R	ND (0.00689)	R	R	ND (0.0066)	<b>0.675</b>										
Fluoranthene	µg/L	260	<b>0.0202 J B</b>	ND (0.015)	<b>0.0212 J B</b>	ND (0.016)	<b>0.0165 J B</b>	ND (0.0167)	<b>0.0169 J B</b>	ND (0.0167)	<b>0.0299 J B</b>	<b>0.0327 J B</b>	ND (0.016)	<b>0.993</b>										
Fluorene	µg/L	290	ND (0.0521)	ND (0.015)	ND (0.049)	ND (0.016)	ND (0.051)	ND (0.0167)	ND (0.049)	ND (0.0167)	ND (0.05)	ND (0.05)	ND (0.016)	<b>0.524</b>										
Indeno[1,2,3-c,d]pyrene	µg/L	0.19	ND (0.0521)	ND (0.015)	ND (0.049)	ND (0.016)	ND (0.051)	ND (0.0167)	ND (0.049)	ND (0.0167)	ND (0.05)	ND (0.05)	ND (0.016)	<b>0.762</b>										
Naphthalene	µg/L	1.7	ND (0.104)	ND (0.031)	ND (0.098)	ND (0.033)	ND (0.102)	ND (0.0344)	ND (0.098)	ND (0.0344)	ND (0.1)	ND (0.1)	ND (0.033)	ND (0.0344)										
Phenanthrene	µg/L	170	ND (0.104)	ND (0.031)	ND (0.098)	ND (0.033)	ND (0.102)	ND (0.0344)	ND (0.098)	ND (0.0344)	ND (0.1)	ND (0.1)	ND (0.033)	<b>0.926</b>										
Pyrene	µg/L	120	<b>0.0205 J B</b>	ND (0.015)	<b>0.0173 J B</b>	ND (0.016)	<b>0.0181 J B</b>	ND (0.0167)	<b>0.0152 J B</b>	ND (0.0167)	<b>0.0418 J B</b>	<b>0.0381 J B</b>	<b>0.0282 J</b>	<b>1.06</b>										
<b>GRO (AK101)</b>																								
Gasoline Range Organics	mg/L	2.2	ND (0.1)	ND (0.045)	<b>0.0961 J</b>	ND (0.045)	<b>0.0811 J</b>	ND (0.045)	<b>0.053 J</b>	ND (0.045)	<b>0.081 J QL</b>	<b>0.103</b>	ND (0.045)	ND (0.045)										
<b>DRO (AK102)</b>																								
Diesel Range Organics	mg/L	1.5	ND (0.659)	ND (0.217)	ND (0.612)	<b>0.22 J</b>	ND (0.659)	<b>0.272 J</b>	ND (0.612)	<b>0.412 J</b>	<b>13.8</b>	<b>10.7</b>	<b>1.56</b>	<b>1.62</b>										
<b>VOCs (SW8260D)</b>																								
1,2,4-Trimethylbenzene	µg/L	56	ND (1.0)	ND (0.31)	ND (1.0)	ND (0.31)	ND (1.0)	ND (0.31)	ND (1.0)	ND (0.31)	ND (1.0)	ND (1.0)	ND (0.31)	ND (0.31)										
1,2-Dibromoethane	µg/L	0.075	ND (0.075)	ND (0.018)	ND (0.075)	ND (0.018)	ND (0.075)	ND (0.018)	ND (0.075)	ND (0.018)	ND (0.075)	ND (0.075)	ND (0.018)	ND (0.018)										
1,2-Dichloroethane	µg/L	1.7	ND (0.5)	ND (0.2)	ND (0.5)	ND (0.2)	ND (0.5)	ND (0.2)	ND (0.5)	ND (0.2)	ND (0.5)	ND (0.5)	ND (0.2)	ND (0.2)										
1,3,5-Trimethylbenzene	µg/L	60	ND (1.0)	ND (0.31)	ND (1.0)	ND (0.31)	ND (1.0)	ND (0.31)	ND (1.0)	ND (0.31)	ND (1.0)	ND (1.0)	ND (0.31)	ND (0.31)										
Benzene	µg/L	4.6	ND (0.4)	ND (0.12)	ND (0.4)	ND (0.12)	ND (0.4)	ND (0.12)	ND (0.4)	ND (0.12)	ND (0.4)	ND (0.4)	ND (0.12)	ND (0.12)										
Cyclohexane	µg/L	13000	ND (1.0)	--	ND (1.0)	--	ND (1.0)	--	ND (1.0)	--	ND (1.0)	ND (1.0)	--	--										
Ethylbenzene	µg/L	15	ND (1.0)	ND (0.31)	ND (1.0)	ND (0.31)	ND (1.0)	ND (0.31)	ND (1.0)	ND (0.31)	ND (1.0)	ND (1.0)	ND (0.31)	ND (0.31)										
Isopropylbenzene (Cumene)	µg/L	450	ND (1.0)	ND (0.31)	ND (1.0)	ND (0.31)	ND (1.0)	ND (0.31)	ND (1.0)	ND (0.31)	ND (1.0)	ND (1.0)	ND (0.31)	ND (0.31)										
Methyl-t-butyl ether	µg/L	140	ND (10.0)	ND (3.1)	ND (10.0)	ND (3.1)	ND (10.0)	ND (3.1)	ND (10.0)	ND (3.1)	ND (10.0)	ND (10.0)	ND (3.1)	ND (3.1)										
Naphthalene	µg/L	1.7	ND (0.104)	ND (0.031)	ND (0.098)	ND (0.033)	ND (0.102)	ND (0.0344)	ND (0.098)	ND (0.0344)	ND (0.1)	ND (0.1)	ND (0.033)	ND (0.0344)										
Toluene	µg/L	1100	ND (1.0)	ND (0.31)	ND (1.0)	ND (0.31)	ND (1.0)	ND (0.31)	ND (1.0)	ND (0.31)	ND (1.0)	ND (1.0)	ND (0.31)	ND (0.31)										
Xylenes (total)	µg/L	190	ND (3.0)	ND (1.0)	ND (3.0)	ND (1.0)	ND (3.0)	ND (1.0)	ND (3.0)	ND (1.0)	ND (3.0)	ND (3.0)	ND (1.0)	ND (1.0)										
n-Butylbenzene	µg/L	1000	ND (1.0)	ND (0.31)	ND (1.0)	ND (0.31)	ND (1.0)	ND (0.31)	ND (1.0)	ND (0.31)	ND (1.0)	ND (1.0)	ND (0.31)	ND (0.31)										
n-Propylbenzene	µg/L	660	ND (1.0)	ND (0.31)	ND (1.0)	ND (0.31)	ND (1.0)	ND (0.31)	ND (1.0)	ND (0.31)	ND (1.0)	ND (1.0)	ND (0.31)	ND (0.31)										
n-hexane	µg/L	1500	ND (1.0)	--	ND (1.0)	--	ND (1.0)	--	ND (1.0)	--	ND (1.0)	ND (1.0)	--	--										
sec-Butylbenzene	µg/L	2000	ND (1.0)	ND (0.31)	ND (1.0)	ND (0.31)	ND (1.0)	ND (0.31)	ND (1.0)	ND (0.31)	ND (1.0)	ND (1.0)	ND (0.31)	ND (0.31)										
tert-Butylbenzene	µg/L	690	ND (1.0)	ND (0.31)	ND (1.0)	ND (0.31)	ND (1.0)	ND (0.31)	ND (1.0)	ND (0.31)	ND (1.0)	ND (1.0)	ND (0.31)	ND (0.31)										

Notes:

**Bold** text indicates a detected result

**Gray Shading** indicates an exceedance of the PAL

PALs are ADEC Groundwater Cleanup Levels from Table C of 18 AAC 75 (ADEC, 2024)

-- indicates not analyzed for

µg/L - micrograms per liter

mg/L - milligrams per liter

DRO - diesel range organics

GRO - gasoline range organics

J - The analyte was positively identified, but the associated result was less than the limit of quantitation (LOQ) and greater than or equal to the detection limit.

B - The analyte was detected in the method blank or the trip blank above the limit of detection (LOD), and the concentration in the sample did not exceed the blank concentration by a factor of 5 (factor of 10 for common laboratory contaminants acetone and methylene chloride).

QH - The analyte result is considered an estimated value biased high due to a quality control failure.

QL - The analyte result is considered an estimated value biased low due to a quality control failure.

QN - The analyte result is considered an estimated value with uncertain bias due to a quality control failure.

R - The result was rejected. A rejected result was not usable and therefore was deleted from the report.

LOD - limit of detection

mg/kg - milligrams per kilogram

PAHs - polynuclear aromatic hydrocarbons

PAL - project action level

ppm - parts per million

U - validation qualifier indicating the analyte was analyzed for but was not detected above the reported sample quantitation limit

VOCs - volatile organic compounds

**Attachment A**  
**Field Book**



0967B

9 May 2024<sup>13</sup>

1207 Landed in King Salmon  
Field team Molly & Emma  
of Biosyntec. Busy Airport  
lost bags so extra people here.  
Air cargo won't open for a while,  
picked up rental car & tried  
to check in.

1243 Visit site (no Air cargo still)  
Noticeable ruts in dirt at  
entrance. All well monuments  
appear in good condition  
Note mystery cut & exposed cable  
near MW01. Empty drum  
onsite, unclear who is owner,  
no label.

1300 TSM & layer up.

1310 head back to airport to  
check for Air Cargo since  
AK Air plane just took off.

13:30 Able to get gear from Air Cargo

1339 Arrived at Site. Begin  
to open wells to get  
synoptic WL

5/9/24

Emp

MW	DTW
MW01	9.96 ft
MW02	11.04 ft
MW03	<del>9.90</del> 9.90 ft
MW04	7.72 ft
MW05	10.10 ft

1411 Set up to sample at MW01

1417 Cal YSI. Used confidence

Soln. ORP in range

Will calibrate pH, conductivity,  
& DO.

pH 9.01 P/N 00654-00

Lot C0771301

pH 10.01 P/N 00654-08

Lot C0771379

Conductivity 1413  $\mu\text{S}/\text{cm}$

Lot 23A100569

~~9.9~~ Cal & DO

1514

1516 Beginn purging

1543 Take sample ~~26~~

24KSES - MO MW01 - GW

Ho. II ~~decon & move to MW02~~ ~~9.5~~

After filling a few VOAs,  
flow dropped abruptly

PN60967B

9 May 2024 15

Flow stopped. But water did not flow back into well. Considering sampling had begun + 2 gals Puroga (well vol @ ~.85 gal) increased flow controller to achieve same flow as prior and continued sampling  
sampling continued after well recharged.

~~11:51~~ set up at <sup>23</sup>

11:11 decon equipment

11:51 set up at MW-02

17:22 pump problems troubleshoot + talk to PM.

17:46 Tried new motor

17:47 Began purging MW-02

18:27 Take sample

24KSES-MW02-GW

18:40 @ <sup>20</sup>

18:35 decon equip + pack up

19:01 pack up, done for day.

Heading home. Will check in w/ PM.

end

5/9/24





PNG 09107B

10 May 2023

0732 Arrive onsite. Weather overcast with light snow. 30's with windchill maybe to high 20.

0733 TSM

0738 check VSI call

ORP ok. PH + conductivity out of range. will cal.

Same solns as yesterday (lot using 4.01 + 10.01 pH (2-point + 1413  $\mu\text{S}/\text{cm}$  conductivity

0747 Set up to sample at MW-03

0808 begin purging MW03

0837 do take sample

24KSES - MW03 - GW

0850 windchill cold. will warm up in car as write labels/notes inspected pump after use lots of silty sand & PVC shavings (likely from 2023 well development).

0912 layered up + decon. Move to MW04 + set up

0944 begin purge MW04

1015 take sample

24KSES - MW04 - GW

PN60967B

10 May 2024 17

1030 write labels, warm in car  
1046 decon equipment move  
to MW05

1111 begin to purge MW05  
1129 take sample (petro odor)  
[24 KSES - MW05 - 6W]

and its field duplicate.

[24 KSES - MW06 - 6W]

with false time 1200.

1201 light decon & pack up,  
write labels. No tubing left in wells

1214 Write COC, Pack  
up coolers. IDW drum  $\approx 1/2$  full (30 gal  
pol4)

1240 coolers packed & sealed.  
Begin <sup>loading to</sup> decon:

1246 install reflective stake  
at each well

1312 Leave site, ship gear  
(<sup>at</sup>) Air Cargo (13:30 deadline)

1419 QC forms, notes.

1434 Done for day. At AKN  
waiting for only 40 May 24 flight



5/10/24

**Attachment B**  
**Groundwater Sampling Forms**



Project Name: KSES Proj. No: PNG0967B  
 Client: AT&T Alascom Date: 5/9/2024

Field Personnel: Molly Bevia, Emma Bristol DTW (prior to purge): 9.96 ft  
 Weather: overcast, 40°F Total Well Depth: 15.01 ft  
 Well Condition: good Water Column Height: 5.05  
 Damage?: no - good condition Total Well Volume: 0.8585

Pump type: mini-monsoon  
 Sample Description: turbid, never cleared, but parameters <sup>no</sup> appear stabilize, no olfactory evidence of contamination

Well Volume Calculation							
Nominal Casing Diameter	1"	1.5"	2"	3"	4"		1 gallon = 3.79 liters
Volume (gallon/linear foot)	0.04	0.11	0.17	0.38	0.66		

Well Purging									
Time	DTW	Pump Rate	Temperature	Specific Conductivity	Dissolved Oxygen	pH	ORP	Turbidity	Total Purged
(3-5 min)	(feet)	(mL/min)	(degree C)	(µS/cm)	(mg/L)	(S.U.)	(mV)	(NTU)	
Stabilization:	0.3 ft	-	3%	3%	10%	0.1 SU	10 mV	10%	3x vol.
1516	10.93	240	4.58	129	<del>536</del>	6.18	2275	1099	0.25
1522	12.89	216	4.97	128	14.90	6.25	2228	1100	0.5
1526	13.05	192	6.09	160	11.59	6.22	2285	1100	0.75
1531	13.05	90	6.20	167	10.73	6.22	228.9	1100	1.0
1536	12.91	84	6.27	173	10.35	6.22	228.5	1100	1.25
1541	12.39	216	6.35	177	10.51	6.22	227.8	1100	1.5

Analytical Sample Information		
Sample ID	Time	Analytes/Method
24 KSES - MW01 - GW	5/9/24 1543	8200, AK101, AK102, 8270-SIM

Note: Turbidity @ 1100 = out of range.

Project Name: KSES Proj. No: PN60967B  
 Client: ATAI Alascom Date: 5/9/24

Field Personnel: Emma Bristol, Molly Beira DTW (prior to purge): 11.11 ft  
 Weather: overcast, 40°F Total Well Depth: 15.30 ft  
 Well Condition: good Water Column Height: 4.19  
 Damage?: no - good condition Total Well Volume: 0.712

Pump type: mini-monsoon  
 Sample Description: mostly clear  
no odor or smell

Well Volume Calculation							
Nominal Casing Diameter	1"	1.5"	2"	3"	4"		1 gallon =
Volume (gallon/linear foot)	0.04	0.11	0.17	0.38	0.66		3.79 liters

Well Purging									
Time	DTW	Pump Rate	Temperature	Specific Conductivity	Dissolved Oxygen	pH	ORP	Turbidity	Total Purged
(3-5 min)	(feet)	(mL/min)	(degree C)	(µS/cm)	(mg/L)	(S.U.)	(mV)	(NTU)	(x vol.)
Stabilization:	0.3 ft	-	3%	3%	10%	0.1 SU	10 mV	10%	3x vol.
17:47	11.17	174	5.48	385	4.37	6.19	205.3	1100	0.05
17:52	11.79	318	5.53	381	7.64	6.17	216.5	1100	0.2
17:57	11.19	<del>6+300</del>	<del>6.17</del> 6.17	375	7.00	6.16	218.6	1100	<del>0.4</del> 0.6
18:02	11.19	<sup>MB</sup> 300	<sup>MB</sup> 6.34	364	7.08	6.13	217.5	1100	<del>0.6</del> 1.0
18:07	11.22	200	5.77	643	7.86	6.12	216.8	353.7	1.4
18:12	11.21	300	5.96	339	8.02	6.11	215.4	375.1	1.8
18:17	11.22	330	5.77	329	8.85	6.10	213.8	212.3	2.2
18:22	11.22	300	5.26	329	8.58	6.11	213.5	168.5	2.6
18:25	11.22	300	5.1A	327	8.29	6.11	213.0	145.0	3.00

Analytical Sample Information		
Sample ID	Time	Analytes/Method
24 KSES - MW02 - 6W	18:27	82100, AK101, AK102, 8270-SIM

Note: Turbidity @ 1100 = out of range



Project Name: KSES Proj. No: PN609678  
 Client: AT&T Alascom Date: 5/10/2024

Field Personnel: Molly Bevia & Emma Brustli DTW (prior to purge): 9.90ft  
 Weather: cloudy, light snow Total Well Depth: 14.85ft  
 Well Condition: good Water Column Height: 4.95ft  
 Damage?: no - good condition Total Well Volume: 0.84 gal/ft

Pump type: mini manson  
 Sample Description: white lumpy pump - like chunks on pumps no petro odor  
the slightly turbid - did not clear up

Well Volume Calculation							
Nominal Casing Diameter	1"	1.5"	2"	3"	4"		1 gallon = 3.79 liters
Volume (gallon/linear foot)	0.04	0.11	0.17	0.38	0.66		

Well Purging									
Time (3-5 min)	DTW (feet)	Pump Rate (mL/min)	Temperature (degree C)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	pH (S.U.)	ORP (mV)	Turbidity (NTU)	Total Purged (ft)
Stabilization:	0.3 ft	-	3%	3%	10%	0.1 SU	10 mV	10%	3x vol.
8:09	10.84	330	3.20	169	13.50	6.22	189.0	1100	0.25
8:14	11.59	192	3.47	165	11.24	6.20	187.5	746.1	0.50
8:19	11.82	180	3.59	161	11.14	6.20	186.9	318.7	0.70
8:22	11.97	96	3.69	157	11.08	6.20	182.2	252.9	0.75
8:25	11.85	210	3.74	155	11.00	6.19	177.3	353.1	0.80
8:28	12.29	180	3.97	152	11.35	6.19	183.9	237.8	0.85
8:31	12.31	186.0	4.03	151	11.05	6.18	169.9	261.9	1.0
8:34	12.24	168.0	3.96	149	11.00	6.18	167.0	38.1	2.2

not need adjust flow with pump depth

Analytical Sample Information		
Sample ID	Time	Analytes/Method
24 KSES - MW03 - GW	0837	82100, AK101, AK102, 8270-SIM

Note: Turbidity @ 1100 = out of range

MW-04

Project Name: KSES

Proj. No: PNG0967B

Client: AT&T Alamogordo

Date: 5/10/24

Field Personnel: Emma Bristol & Molly Bean

DTW (prior to purge): 7.72

Weather: cloudy, windy, light snow

Total Well Depth: 9.51

Well Condition: good

Water Column Height: 1.79

Damage?

Total Well Volume: 0.3

Pump type: mini minson

Sample Description:

mostly clear, no petro odor.

**Well Volume Calculation**

Nominal Casing Diameter	1"	1.5"	2"	3"	4"				
Volume (gallon/linear foot)	0.04	0.11	0.17	0.38	0.66				1 gallon = 3.79 liters

**Well Purging**

Time	DTW	Pump Rate	Temperature	Specific Conductivity	Dissolved Oxygen	pH	ORP	Turbidity	Total Purged
(3-5 min)	(feet)	(mL/min)	(degree C)	(µS/cm)	(mg/L)	(S.U.)	(mV)	(NTU)	(L)
Stabilization:	0.3 ft	-	3%	3%	10%	0.1 SU	10 mV	10%	3x vol.
9:45	8.02	210	2.65	131	15.0	6.33	160.3	1100	0.1
9:48	7.79	132	2.69	125	16.41	6.25	162.8	1100	0.2
9:51	7.81	192	2.75	124	15.72	6.23	162.9	1100	0.3
9:54	7.81	204	2.92	120	15.60	6.22	163.9	1100	0.4
9:57	7.83	268	3.56	113	15.10	6.20	163.0	681.2	0.5
10:01	7.82	168	4.06	107	14.82	6.17	163.7	344.2	0.6
10:04	7.84	180	4.51	103	14.33	6.16	164.8	301.9	0.8
10:07	7.85	180	5.01	98	13.84	6.14	182.6	204.6	1.2
10:10	7.85	214	5.19	95	13.68	6.13	169.9	144.0	1.75
No stability, well continues to draw down. Will collect sample because B well volumes removed.									

**Analytical Sample Information**

Sample ID	Time	Analytes/Method
24KSES-MW04-GW	1015	8260, AK101, AK102, 8270-SIM

Note: Turbidity @ 1100 = out of range.



MW-05

Project Name: KSES

Proj. No: PN60967B

Client: AT&T Aidsion

Date: 5/10/2024

Field Personnel: Molly Bacia and Emma Bristol DTW (prior to purge): 10.15 ft  
 Weather: cloudy, windy Total Well Depth: 15.0 ft  
 Well Condition: good Water Column Height: 4.85  
 Damage?: no Total Well Volume: 0.82

Pump type: mini-monsoon

Sample Description: purged water strong petro odor, small sheen building on purged water  
sample mostly clear, odor<sup>5x</sup> slight odor present @ sampling

Well Volume Calculation										
Nominal Casing Diameter	1"	1.5"	2"	3"	4"					1 gallon = 3.79 liters
Volume (gallon/linear foot)	0.04	0.11	0.17	0.38	0.66					
Well Purging										
Time	DTW	Pump Rate	Temperature	Specific Conductivity	Dissolved Oxygen	pH	ORP	Turbidity	Total Purged	
(3-5 min)	(feet)	(mL/min)	(degree C)	(µS/cm)	(mg/L)	(S.U.)	(mV)	(NTU)	(L)	
Stabilization:	0.3 ft	-	3%	3%	10%	0.1 SU	10 mV	10%	3x vol.	
11:13	10.78	480	3.88	498	6.92	6.26	181.7	460.3	.50	
11:16	10.75	420	3.96	498	4.11	6.25	173.8	255.8	.75	
11:19	10.82	420	3.94	491	4.02	6.24	169.7	199.2	1.0	
11:21	10.74	360	3.94	486	3.01	6.31	166.8	107.6	1.2	
11:24	10.79	384	3.92	484	3.26	6.32	164.4	69.09	1.5	
11:27	10.73	324	3.92	483	3.44	6.32	163.2	43.88	2.0	

Analytical Sample Information		
Sample ID	Time	Analytes/Method
24KSES-MW05-GW	1129	8260, AK101, AK102, 8270-SIM
24KSES-MW06-GW	1200	"

Note: Turbidity @ 1100 = out of range



**Attachment C**  
**Laboratory Analytical Report**



## Laboratory Report of Analysis

To: Geosyntec Consultants  
3003 Minnesota Dr Suite 302  
Anchorage, AK 99503

Report Number: **1242053**

Client Project: **KSES 2024**

Dear Matt Faust,

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 Jeremy 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.

---

Jeremy Greth  
Project Manager  
Jeremy.Greth@sgs.com

Date

**Case Narrative**

SGS Client: **Geosyntec Consultants**

SGS Project: **1242053**

Project Name/Site: **KSES 2024**

Project Contact: **Matt Faust**

Refer to sample receipt form for information on sample condition.

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

Print Date: 05/30/2024 2:05:03PM

## 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, 8270E, 8270E-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., 3/4 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>
24KSES-MW01-GW	1242053001	05/09/2024	05/13/2024	Water (Surface, Eff., Ground)
24KSES-MW02-GW	1242053002	05/09/2024	05/13/2024	Water (Surface, Eff., Ground)
24KSES-MW03-GW	1242053003	05/10/2024	05/13/2024	Water (Surface, Eff., Ground)
Trip Blank 1	1242053004	05/09/2024	05/13/2024	Water (Surface, Eff., Ground)
24KSES-MW04-GW	1242053005	05/10/2024	05/13/2024	Water (Surface, Eff., Ground)
24KSES-MW05-GW	1242053006	05/10/2024	05/13/2024	Water (Surface, Eff., Ground)
24KSES-MW06-GW	1242053007	05/10/2024	05/13/2024	Water (Surface, Eff., Ground)
Trip Blank 2	1242053008	05/10/2024	05/13/2024	Water (Surface, Eff., Ground)

Method

8270E SIM LV (PAH)  
 AK102  
 AK101  
 SW8260D

Method Description

8270 PAH SIM GC/MS LV  
 DRO Low Volume (W)  
 Gasoline Range Organics (W)  
 Volatile Organic Compounds (W) FULL

### Detectable Results Summary

Client Sample ID: **24KSES-MW02-GW**

Lab Sample ID: 1242053002

**Semivolatile Organic Fuels**

**Volatile GC/MS**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	0.220J	mg/L
Trichlorofluoromethane	0.550J	ug/L

Client Sample ID: **24KSES-MW03-GW**

Lab Sample ID: 1242053003

**Semivolatile Organic Fuels**

**Volatile GC/MS**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	0.272J	mg/L
Trichlorofluoromethane	3.24	ug/L

Client Sample ID: **24KSES-MW04-GW**

Lab Sample ID: 1242053005

**Semivolatile Organic Fuels**

**Volatile GC/MS**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	0.412J	mg/L
Trichlorofluoromethane	0.510J	ug/L

Client Sample ID: **24KSES-MW05-GW**

Lab Sample ID: 1242053006

**Polynuclear Aromatics GC/MS**

**Semivolatile Organic Fuels**

**Volatile GC/MS**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Pyrene	0.0282J	ug/L
Diesel Range Organics	1.56	mg/L
Trichlorofluoromethane	2.43	ug/L

Client Sample ID: **24KSES-MW06-GW**

Lab Sample ID: 1242053007

**Polynuclear Aromatics GC/MS**

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Acenaphthene	0.114	ug/L
Anthracene	0.893	ug/L
Benzo(a)Anthracene	0.820	ug/L
Benzo[a]pyrene	0.912	ug/L
Benzo[b]Fluoranthene	0.600	ug/L
Benzo[g,h,i]perylene	0.115	ug/L
Benzo[k]fluoranthene	0.313	ug/L
Chrysene	0.564	ug/L
Dibenzo[a,h]anthracene	0.675	ug/L
Fluoranthene	0.993	ug/L
Fluorene	0.524	ug/L
Indeno[1,2,3-c,d] pyrene	0.762	ug/L
Phenanthrene	0.926	ug/L
Pyrene	1.06	ug/L
Diesel Range Organics	1.62	mg/L
Trichlorofluoromethane	2.21	ug/L

**Semivolatile Organic Fuels**

**Volatile GC/MS**





**Results of 24KSES-MW01-GW**

Client Sample ID: **24KSES-MW01-GW**  
 Client Project ID: **KSES 2024**  
 Lab Sample ID: 1242053001  
 Lab Project ID: 1242053

Collection Date: 05/09/24 15:43  
 Received Date: 05/13/24 09:27  
 Matrix: Water (Surface, Eff., Ground)  
 Solids (%):  
 Location:

**Results by Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	0.0375	U	0.0500	0.0150	0.0375	ug/L	1		05/14/24 21:58
2-Methylnaphthalene	0.0375	U	0.0500	0.0150	0.0375	ug/L	1		05/14/24 21:58
Acenaphthene	0.0375	U	0.0500	0.0150	0.0375	ug/L	1		05/14/24 21:58
Acenaphthylene	0.0375	U	0.0500	0.0150	0.0375	ug/L	1		05/14/24 21:58
Anthracene	0.0375	U	0.0500	0.0150	0.0375	ug/L	1		05/14/24 21:58
Benzo(a)Anthracene	0.0375	U	0.0500	0.0150	0.0375	ug/L	1		05/14/24 21:58
Benzo[a]pyrene	0.0150	U	0.0200	0.00620	0.0150	ug/L	1		05/14/24 21:58
Benzo[b]Fluoranthene	0.0375	U	0.0500	0.0150	0.0375	ug/L	1		05/14/24 21:58
Benzo[g,h,i]perylene	0.0375	U	0.0500	0.0150	0.0375	ug/L	1		05/14/24 21:58
Benzo[k]fluoranthene	0.0375	U	0.0500	0.0150	0.0375	ug/L	1		05/14/24 21:58
Chrysene	0.0375	U	0.0500	0.0150	0.0375	ug/L	1		05/14/24 21:58
Dibenzo[a,h]anthracene	0.0150	U	0.0200	0.00620	0.0150	ug/L	1		05/14/24 21:58
Fluoranthene	0.0375	U	0.0500	0.0150	0.0375	ug/L	1		05/14/24 21:58
Fluorene	0.0375	U	0.0500	0.0150	0.0375	ug/L	1		05/14/24 21:58
Indeno[1,2,3-c,d] pyrene	0.0375	U	0.0500	0.0150	0.0375	ug/L	1		05/14/24 21:58
Naphthalene	0.0750	U	0.100	0.0310	0.0750	ug/L	1		05/14/24 21:58
Phenanthrene	0.0750	U	0.100	0.0310	0.0750	ug/L	1		05/14/24 21:58
Pyrene	0.0375	U	0.0500	0.0150	0.0375	ug/L	1		05/14/24 21:58

**Surrogates**

2-Methylnaphthalene-d10 (surr)	54.9		38-100			%	1		05/14/24 21:58
Fluoranthene-d10 (surr)	57		30-111			%	1		05/14/24 21:58

**Batch Information**

Analytical Batch: XMS14242  
 Analytical Method: 8270E SIM LV (PAH)  
 Analyst: NRB  
 Analytical Date/Time: 05/14/24 21:58  
 Container ID: 1242053001-I

Prep Batch: XXX49452  
 Prep Method: SW3535A  
 Prep Date/Time: 05/14/24 10:30  
 Prep Initial Wt./Vol.: 250 mL  
 Prep Extract Vol: 1 mL



### Results of 24KSES-MW01-GW

Client Sample ID: **24KSES-MW01-GW**  
 Client Project ID: **KSES 2024**  
 Lab Sample ID: 1242053001  
 Lab Project ID: 1242053

Collection Date: 05/09/24 15:43  
 Received Date: 05/13/24 09:27  
 Matrix: Water (Surface, Eff., Ground)  
 Solids (%):  
 Location:

### Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>LOD</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	0.489	U	0.652	0.217	0.489	mg/L	1		05/21/24 18:26

#### Surrogates

5a Androstane (surr)	81.3		50-150			%	1		05/21/24 18:26
----------------------	------	--	--------	--	--	---	---	--	----------------

### Batch Information

Analytical Batch: XFC16878  
 Analytical Method: AK102  
 Analyst: NGG  
 Analytical Date/Time: 05/21/24 18:26  
 Container ID: 1242053001-G

Prep Batch: XXX49485  
 Prep Method: SW3520C  
 Prep Date/Time: 05/20/24 18:30  
 Prep Initial Wt./Vol.: 230 mL  
 Prep Extract Vol: 1 mL



Results of **24KSES-MW01-GW**

Client Sample ID: **24KSES-MW01-GW**  
Client Project ID: **KSES 2024**  
Lab Sample ID: 1242053001  
Lab Project ID: 1242053

Collection Date: 05/09/24 15:43  
Received Date: 05/13/24 09:27  
Matrix: Water (Surface, Eff., Ground)  
Solids (%):  
Location:

Results by **Volatile Fuels**

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>LOD</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	0.0750	U	0.100	0.0450	0.0750	mg/L	1		05/14/24 21:16
<b>Surrogates</b>									
4-Bromofluorobenzene (surr)	92.3		50-150			%	1		05/14/24 21:16

**Batch Information**

Analytical Batch: VFC16800  
Analytical Method: AK101  
Analyst: T.L  
Analytical Date/Time: 05/14/24 21:16  
Container ID: 1242053001-D

Prep Batch: VXX41149  
Prep Method: SW5030B  
Prep Date/Time: 05/14/24 06:00  
Prep Initial Wt./Vol.: 5 mL  
Prep Extract Vol: 5 mL



**Results of 24KSES-MW01-GW**

Client Sample ID: **24KSES-MW01-GW**  
 Client Project ID: **KSES 2024**  
 Lab Sample ID: 1242053001  
 Lab Project ID: 1242053

Collection Date: 05/09/24 15:43  
 Received Date: 05/13/24 09:27  
 Matrix: Water (Surface, Eff., Ground)  
 Solids (%):  
 Location:

**Results by Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.375	U	0.500	0.150	0.375	ug/L	1		05/14/24 20:34
1,1,1-Trichloroethane	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 20:34
1,1,2,2-Tetrachloroethane	0.375	U	0.500	0.150	0.375	ug/L	1		05/14/24 20:34
1,1,2-Trichloroethane	0.300	U	0.400	0.120	0.300	ug/L	1		05/14/24 20:34
1,1-Dichloroethane	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 20:34
1,1-Dichloroethene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 20:34
1,1-Dichloropropene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 20:34
1,2,3-Trichlorobenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 20:34
1,2,3-Trichloropropane	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 20:34
1,2,4-Trichlorobenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 20:34
1,2,4-Trimethylbenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 20:34
1,2-Dibromo-3-chloropropane	7.50	U	10.0	3.10	7.50	ug/L	1		05/14/24 20:34
1,2-Dibromoethane	0.0562	U	0.0750	0.0180	0.0562	ug/L	1		05/14/24 20:34
1,2-Dichlorobenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 20:34
1,2-Dichloroethane	0.375	U	0.500	0.200	0.375	ug/L	1		05/14/24 20:34
1,2-Dichloropropane	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 20:34
1,3,5-Trimethylbenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 20:34
1,3-Dichlorobenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 20:34
1,3-Dichloropropane	0.375	U	0.500	0.150	0.375	ug/L	1		05/14/24 20:34
1,4-Dichlorobenzene	0.375	U	0.500	0.150	0.375	ug/L	1		05/14/24 20:34
2,2-Dichloropropane	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 20:34
2-Butanone (MEK)	7.50	U	10.0	3.10	7.50	ug/L	1		05/14/24 20:34
2-Chlorotoluene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 20:34
2-Hexanone	7.50	U	10.0	3.10	7.50	ug/L	1		05/14/24 20:34
4-Chlorotoluene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 20:34
4-Isopropyltoluene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 20:34
4-Methyl-2-pentanone (MIBK)	7.50	U	10.0	3.10	7.50	ug/L	1		05/14/24 20:34
Benzene	0.300	U	0.400	0.120	0.300	ug/L	1		05/14/24 20:34
Bromobenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 20:34
Bromochloromethane	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 20:34
Bromodichloromethane	0.375	U	0.500	0.150	0.375	ug/L	1		05/14/24 20:34
Bromoform	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 20:34
Bromomethane	4.50	U	6.00	3.00	4.50	ug/L	1		05/14/24 20:34
Carbon disulfide	7.50	U	10.0	3.10	7.50	ug/L	1		05/14/24 20:34
Carbon tetrachloride	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 20:34
Chlorobenzene	0.375	U	0.500	0.150	0.375	ug/L	1		05/14/24 20:34
Chloroethane	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 20:34

Print Date: 05/30/2024 2:05:10PM

J flagging is activated



### Results of 24KSES-MW01-GW

Client Sample ID: **24KSES-MW01-GW**  
 Client Project ID: **KSES 2024**  
 Lab Sample ID: 1242053001  
 Lab Project ID: 1242053

Collection Date: 05/09/24 15:43  
 Received Date: 05/13/24 09:27  
 Matrix: Water (Surface, Eff., Ground)  
 Solids (%):  
 Location:

### Results by Volatile GC/MS

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 20:34
Chloromethane	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 20:34
cis-1,2-Dichloroethene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 20:34
cis-1,3-Dichloropropene	0.375	U	0.500	0.150	0.375	ug/L	1		05/14/24 20:34
Dibromochloromethane	0.375	U	0.500	0.150	0.375	ug/L	1		05/14/24 20:34
Dibromomethane	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 20:34
Dichlorodifluoromethane	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 20:34
Ethylbenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 20:34
Freon-113	7.50	U	10.0	3.10	7.50	ug/L	1		05/14/24 20:34
Hexachlorobutadiene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 20:34
Isopropylbenzene (Cumene)	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 20:34
Methylene chloride	7.50	U	10.0	3.10	7.50	ug/L	1		05/14/24 20:34
Methyl-t-butyl ether	7.50	U	10.0	3.10	7.50	ug/L	1		05/14/24 20:34
Naphthalene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 20:34
n-Butylbenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 20:34
n-Propylbenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 20:34
o-Xylene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 20:34
P & M -Xylene	1.50	U	2.00	0.620	1.50	ug/L	1		05/14/24 20:34
sec-Butylbenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 20:34
Styrene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 20:34
tert-Butylbenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 20:34
Tetrachloroethene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 20:34
Toluene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 20:34
trans-1,2-Dichloroethene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 20:34
trans-1,3-Dichloropropene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 20:34
Trichloroethene	0.375	U	0.500	0.150	0.375	ug/L	1		05/14/24 20:34
Trichlorofluoromethane	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 20:34
Vinyl acetate	7.50	U	10.0	3.10	7.50	ug/L	1		05/14/24 20:34
Vinyl chloride	0.112	U	0.150	0.0500	0.112	ug/L	1		05/14/24 20:34
Xylenes (total)	2.25	U	3.00	1.00	2.25	ug/L	1		05/14/24 20:34
<b>Surrogates</b>									
1,2-Dichloroethane-D4 (surr)	97		81-118			%	1		05/14/24 20:34
4-Bromofluorobenzene (surr)	96.5		85-114			%	1		05/14/24 20:34
Toluene-d8 (surr)	97.5		89-112			%	1		05/14/24 20:34

Print Date: 05/30/2024 2:05:10PM

J flagging is activated

## Results of 24KSES-MW01-GW

Client Sample ID: **24KSES-MW01-GW**  
Client Project ID: **KSES 2024**  
Lab Sample ID: 1242053001  
Lab Project ID: 1242053

Collection Date: 05/09/24 15:43  
Received Date: 05/13/24 09:27  
Matrix: Water (Surface, Eff., Ground)  
Solids (%):  
Location:

## Results by Volatile GC/MS

### Batch Information

Analytical Batch: VMS23233  
Analytical Method: SW8260D  
Analyst: JY  
Analytical Date/Time: 05/14/24 20:34  
Container ID: 1242053001-A

Prep Batch: VXX41156  
Prep Method: SW5030B  
Prep Date/Time: 05/14/24 06:00  
Prep Initial Wt./Vol.: 5 mL  
Prep Extract Vol: 5 mL





### Results of 24KSES-MW02-GW

Client Sample ID: **24KSES-MW02-GW**  
 Client Project ID: **KSES 2024**  
 Lab Sample ID: 1242053002  
 Lab Project ID: 1242053

Collection Date: 05/09/24 18:27  
 Received Date: 05/13/24 09:27  
 Matrix: Water (Surface, Eff., Ground)  
 Solids (%):  
 Location:

### Results by Polynuclear Aromatics GC/MS

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	0.0399	U	0.0532	0.0160	0.0399	ug/L	1		05/14/24 22:14
2-Methylnaphthalene	0.0399	U	0.0532	0.0160	0.0399	ug/L	1		05/14/24 22:14
Acenaphthene	0.0399	U	0.0532	0.0160	0.0399	ug/L	1		05/14/24 22:14
Acenaphthylene	0.0399	U	0.0532	0.0160	0.0399	ug/L	1		05/14/24 22:14
Anthracene	0.0399	U	0.0532	0.0160	0.0399	ug/L	1		05/14/24 22:14
Benzo(a)Anthracene	0.0399	U	0.0532	0.0160	0.0399	ug/L	1		05/14/24 22:14
Benzo[a]pyrene	0.0160	U	0.0213	0.00660	0.0160	ug/L	1		05/14/24 22:14
Benzo[b]Fluoranthene	0.0399	U	0.0532	0.0160	0.0399	ug/L	1		05/14/24 22:14
Benzo[g,h,i]perylene	0.0399	U	0.0532	0.0160	0.0399	ug/L	1		05/14/24 22:14
Benzo[k]fluoranthene	0.0399	U	0.0532	0.0160	0.0399	ug/L	1		05/14/24 22:14
Chrysene	0.0399	U	0.0532	0.0160	0.0399	ug/L	1		05/14/24 22:14
Dibenzo[a,h]anthracene	0.0160	U	0.0213	0.00660	0.0160	ug/L	1		05/14/24 22:14
Fluoranthene	0.0399	U	0.0532	0.0160	0.0399	ug/L	1		05/14/24 22:14
Fluorene	0.0399	U	0.0532	0.0160	0.0399	ug/L	1		05/14/24 22:14
Indeno[1,2,3-c,d] pyrene	0.0399	U	0.0532	0.0160	0.0399	ug/L	1		05/14/24 22:14
Naphthalene	0.0795	U	0.106	0.0330	0.0795	ug/L	1		05/14/24 22:14
Phenanthrene	0.0795	U	0.106	0.0330	0.0795	ug/L	1		05/14/24 22:14
Pyrene	0.0399	U	0.0532	0.0160	0.0399	ug/L	1		05/14/24 22:14

### Surrogates

2-Methylnaphthalene-d10 (surr)	72.5		38-100			%	1		05/14/24 22:14
Fluoranthene-d10 (surr)	83.6		30-111			%	1		05/14/24 22:14

### Batch Information

Analytical Batch: XMS14242  
 Analytical Method: 8270E SIM LV (PAH)  
 Analyst: NRB  
 Analytical Date/Time: 05/14/24 22:14  
 Container ID: 1242053002-I

Prep Batch: XXX49452  
 Prep Method: SW3535A  
 Prep Date/Time: 05/14/24 10:30  
 Prep Initial Wt./Vol.: 235 mL  
 Prep Extract Vol: 1 mL



### Results of 24KSES-MW02-GW

Client Sample ID: **24KSES-MW02-GW**  
 Client Project ID: **KSES 2024**  
 Lab Sample ID: 1242053002  
 Lab Project ID: 1242053

Collection Date: 05/09/24 18:27  
 Received Date: 05/13/24 09:27  
 Matrix: Water (Surface, Eff., Ground)  
 Solids (%):  
 Location:

### Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>LOD</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	0.220	J	0.625	0.208	0.469	mg/L	1		05/21/24 18:35

#### Surrogates

5a Androstane (surr)	69.3		50-150			%	1		05/21/24 18:35
----------------------	------	--	--------	--	--	---	---	--	----------------

### Batch Information

Analytical Batch: XFC16878  
 Analytical Method: AK102  
 Analyst: NGG  
 Analytical Date/Time: 05/21/24 18:35  
 Container ID: 1242053002-G

Prep Batch: XXX49485  
 Prep Method: SW3520C  
 Prep Date/Time: 05/20/24 18:30  
 Prep Initial Wt./Vol.: 240 mL  
 Prep Extract Vol: 1 mL

## Results of 24KSES-MW02-GW

Client Sample ID: **24KSES-MW02-GW**  
 Client Project ID: **KSES 2024**  
 Lab Sample ID: 1242053002  
 Lab Project ID: 1242053

Collection Date: 05/09/24 18:27  
 Received Date: 05/13/24 09:27  
 Matrix: Water (Surface, Eff., Ground)  
 Solids (%):  
 Location:

## Results by Volatile Fuels

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>LOD</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	0.0750	U	0.100	0.0450	0.0750	mg/L	1		05/14/24 21:35

### Surrogates

4-Bromofluorobenzene (surr)	90.6		50-150			%	1		05/14/24 21:35
-----------------------------	------	--	--------	--	--	---	---	--	----------------

## Batch Information

Analytical Batch: VFC16800  
 Analytical Method: AK101  
 Analyst: T.L  
 Analytical Date/Time: 05/14/24 21:35  
 Container ID: 1242053002-D

Prep Batch: VXX41149  
 Prep Method: SW5030B  
 Prep Date/Time: 05/14/24 06:00  
 Prep Initial Wt./Vol.: 5 mL  
 Prep Extract Vol: 5 mL



Results of 24KSES-MW02-GW

Client Sample ID: 24KSES-MW02-GW
Client Project ID: KSES 2024
Lab Sample ID: 1242053002
Lab Project ID: 1242053

Collection Date: 05/09/24 18:27
Received Date: 05/13/24 09:27
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 9 columns: Parameter, Result, Qual, LOQ/CL, DL, LOD, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.

Print Date: 05/30/2024 2:05:10PM

J flagging is activated



**Results of 24KSES-MW02-GW**

Client Sample ID: **24KSES-MW02-GW**  
 Client Project ID: **KSES 2024**  
 Lab Sample ID: 1242053002  
 Lab Project ID: 1242053

Collection Date: 05/09/24 18:27  
 Received Date: 05/13/24 09:27  
 Matrix: Water (Surface, Eff., Ground)  
 Solids (%):  
 Location:

**Results by Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 20:49
Chloromethane	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 20:49
cis-1,2-Dichloroethene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 20:49
cis-1,3-Dichloropropene	0.375	U	0.500	0.150	0.375	ug/L	1		05/14/24 20:49
Dibromochloromethane	0.375	U	0.500	0.150	0.375	ug/L	1		05/14/24 20:49
Dibromomethane	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 20:49
Dichlorodifluoromethane	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 20:49
Ethylbenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 20:49
Freon-113	7.50	U	10.0	3.10	7.50	ug/L	1		05/14/24 20:49
Hexachlorobutadiene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 20:49
Isopropylbenzene (Cumene)	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 20:49
Methylene chloride	7.50	U	10.0	3.10	7.50	ug/L	1		05/14/24 20:49
Methyl-t-butyl ether	7.50	U	10.0	3.10	7.50	ug/L	1		05/14/24 20:49
Naphthalene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 20:49
n-Butylbenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 20:49
n-Propylbenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 20:49
o-Xylene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 20:49
P & M -Xylene	1.50	U	2.00	0.620	1.50	ug/L	1		05/14/24 20:49
sec-Butylbenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 20:49
Styrene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 20:49
tert-Butylbenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 20:49
Tetrachloroethene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 20:49
Toluene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 20:49
trans-1,2-Dichloroethene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 20:49
trans-1,3-Dichloropropene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 20:49
Trichloroethene	0.375	U	0.500	0.150	0.375	ug/L	1		05/14/24 20:49
Trichlorofluoromethane	0.550	J	1.00	0.310	0.750	ug/L	1		05/14/24 20:49
Vinyl acetate	7.50	U	10.0	3.10	7.50	ug/L	1		05/14/24 20:49
Vinyl chloride	0.112	U	0.150	0.0500	0.112	ug/L	1		05/14/24 20:49
Xylenes (total)	2.25	U	3.00	1.00	2.25	ug/L	1		05/14/24 20:49
<b>Surrogates</b>									
1,2-Dichloroethane-D4 (surr)	102		81-118			%	1		05/14/24 20:49
4-Bromofluorobenzene (surr)	95.9		85-114			%	1		05/14/24 20:49
Toluene-d8 (surr)	96.3		89-112			%	1		05/14/24 20:49

Print Date: 05/30/2024 2:05:10PM

J flagging is activated

## Results of 24KSES-MW02-GW

Client Sample ID: **24KSES-MW02-GW**  
Client Project ID: **KSES 2024**  
Lab Sample ID: 1242053002  
Lab Project ID: 1242053

Collection Date: 05/09/24 18:27  
Received Date: 05/13/24 09:27  
Matrix: Water (Surface, Eff., Ground)  
Solids (%):  
Location:

## Results by Volatile GC/MS

### Batch Information

Analytical Batch: VMS23233  
Analytical Method: SW8260D  
Analyst: JY  
Analytical Date/Time: 05/14/24 20:49  
Container ID: 1242053002-A

Prep Batch: VXX41156  
Prep Method: SW5030B  
Prep Date/Time: 05/14/24 06:00  
Prep Initial Wt./Vol.: 5 mL  
Prep Extract Vol: 5 mL





### Results of 24KSES-MW03-GW

Client Sample ID: **24KSES-MW03-GW**  
 Client Project ID: **KSES 2024**  
 Lab Sample ID: 1242053003  
 Lab Project ID: 1242053

Collection Date: 05/10/24 08:37  
 Received Date: 05/13/24 09:27  
 Matrix: Water (Surface, Eff., Ground)  
 Solids (%):  
 Location:

### Results by Polynuclear Aromatics GC/MS

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	0.0417	U	0.0556	0.0167	0.0417	ug/L	1		05/14/24 22:31
2-Methylnaphthalene	0.0417	U	0.0556	0.0167	0.0417	ug/L	1		05/14/24 22:31
Acenaphthene	0.0417	U	0.0556	0.0167	0.0417	ug/L	1		05/14/24 22:31
Acenaphthylene	0.0417	U	0.0556	0.0167	0.0417	ug/L	1		05/14/24 22:31
Anthracene	0.0417	U	0.0556	0.0167	0.0417	ug/L	1		05/14/24 22:31
Benzo(a)Anthracene	0.0417	U	0.0556	0.0167	0.0417	ug/L	1		05/14/24 22:31
Benzo[a]pyrene	0.0167	U	0.0222	0.00689	0.0167	ug/L	1		05/14/24 22:31
Benzo[b]Fluoranthene	0.0417	U	0.0556	0.0167	0.0417	ug/L	1		05/14/24 22:31
Benzo[g,h,i]perylene	0.0417	U	0.0556	0.0167	0.0417	ug/L	1		05/14/24 22:31
Benzo[k]fluoranthene	0.0417	U	0.0556	0.0167	0.0417	ug/L	1		05/14/24 22:31
Chrysene	0.0417	U	0.0556	0.0167	0.0417	ug/L	1		05/14/24 22:31
Dibenzo[a,h]anthracene	0.0167	U	0.0222	0.00689	0.0167	ug/L	1		05/14/24 22:31
Fluoranthene	0.0417	U	0.0556	0.0167	0.0417	ug/L	1		05/14/24 22:31
Fluorene	0.0417	U	0.0556	0.0167	0.0417	ug/L	1		05/14/24 22:31
Indeno[1,2,3-c,d] pyrene	0.0417	U	0.0556	0.0167	0.0417	ug/L	1		05/14/24 22:31
Naphthalene	0.0833	U	0.111	0.0344	0.0833	ug/L	1		05/14/24 22:31
Phenanthrene	0.0833	U	0.111	0.0344	0.0833	ug/L	1		05/14/24 22:31
Pyrene	0.0417	U	0.0556	0.0167	0.0417	ug/L	1		05/14/24 22:31

### Surrogates

2-Methylnaphthalene-d10 (surr)	51.4		38-100			%	1		05/14/24 22:31
Fluoranthene-d10 (surr)	68.8		30-111			%	1		05/14/24 22:31

### Batch Information

Analytical Batch: XMS14242  
 Analytical Method: 8270E SIM LV (PAH)  
 Analyst: NRB  
 Analytical Date/Time: 05/14/24 22:31  
 Container ID: 1242053003-I

Prep Batch: XXX49452  
 Prep Method: SW3535A  
 Prep Date/Time: 05/14/24 10:30  
 Prep Initial Wt./Vol.: 225 mL  
 Prep Extract Vol: 1 mL



### Results of 24KSES-MW03-GW

Client Sample ID: **24KSES-MW03-GW**  
 Client Project ID: **KSES 2024**  
 Lab Sample ID: 1242053003  
 Lab Project ID: 1242053

Collection Date: 05/10/24 08:37  
 Received Date: 05/13/24 09:27  
 Matrix: Water (Surface, Eff., Ground)  
 Solids (%):  
 Location:

### Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>LOD</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	0.272	J	0.625	0.208	0.469	mg/L	1		05/21/24 18:45

#### Surrogates

5a Androstane (surr)	81.1		50-150			%	1		05/21/24 18:45
----------------------	------	--	--------	--	--	---	---	--	----------------

### Batch Information

Analytical Batch: XFC16878  
 Analytical Method: AK102  
 Analyst: NGG  
 Analytical Date/Time: 05/21/24 18:45  
 Container ID: 1242053003-G

Prep Batch: XXX49485  
 Prep Method: SW3520C  
 Prep Date/Time: 05/20/24 18:30  
 Prep Initial Wt./Vol.: 240 mL  
 Prep Extract Vol: 1 mL



### Results of 24KSES-MW03-GW

Client Sample ID: **24KSES-MW03-GW**  
 Client Project ID: **KSES 2024**  
 Lab Sample ID: 1242053003  
 Lab Project ID: 1242053

Collection Date: 05/10/24 08:37  
 Received Date: 05/13/24 09:27  
 Matrix: Water (Surface, Eff., Ground)  
 Solids (%):  
 Location:

### Results by Volatile Fuels

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>LOD</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	0.0750	U	0.100	0.0450	0.0750	mg/L	1		05/14/24 21:54

### Surrogates

4-Bromofluorobenzene (surr)	90.7		50-150			%	1		05/14/24 21:54
-----------------------------	------	--	--------	--	--	---	---	--	----------------

### Batch Information

Analytical Batch: VFC16800  
 Analytical Method: AK101  
 Analyst: T.L  
 Analytical Date/Time: 05/14/24 21:54  
 Container ID: 1242053003-D

Prep Batch: VXX41149  
 Prep Method: SW5030B  
 Prep Date/Time: 05/14/24 06:00  
 Prep Initial Wt./Vol.: 5 mL  
 Prep Extract Vol: 5 mL



### Results of 24KSES-MW03-GW

Client Sample ID: **24KSES-MW03-GW**  
 Client Project ID: **KSES 2024**  
 Lab Sample ID: 1242053003  
 Lab Project ID: 1242053

Collection Date: 05/10/24 08:37  
 Received Date: 05/13/24 09:27  
 Matrix: Water (Surface, Eff., Ground)  
 Solids (%):  
 Location:

### Results by Volatile GC/MS

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.375	U	0.500	0.150	0.375	ug/L	1		05/14/24 21:04
1,1,1-Trichloroethane	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:04
1,1,2,2-Tetrachloroethane	0.375	U	0.500	0.150	0.375	ug/L	1		05/14/24 21:04
1,1,2-Trichloroethane	0.300	U	0.400	0.120	0.300	ug/L	1		05/14/24 21:04
1,1-Dichloroethane	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:04
1,1-Dichloroethene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:04
1,1-Dichloropropene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:04
1,2,3-Trichlorobenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:04
1,2,3-Trichloropropane	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:04
1,2,4-Trichlorobenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:04
1,2,4-Trimethylbenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:04
1,2-Dibromo-3-chloropropane	7.50	U	10.0	3.10	7.50	ug/L	1		05/14/24 21:04
1,2-Dibromoethane	0.0562	U	0.0750	0.0180	0.0562	ug/L	1		05/14/24 21:04
1,2-Dichlorobenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:04
1,2-Dichloroethane	0.375	U	0.500	0.200	0.375	ug/L	1		05/14/24 21:04
1,2-Dichloropropane	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:04
1,3,5-Trimethylbenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:04
1,3-Dichlorobenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:04
1,3-Dichloropropane	0.375	U	0.500	0.150	0.375	ug/L	1		05/14/24 21:04
1,4-Dichlorobenzene	0.375	U	0.500	0.150	0.375	ug/L	1		05/14/24 21:04
2,2-Dichloropropane	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:04
2-Butanone (MEK)	7.50	U	10.0	3.10	7.50	ug/L	1		05/14/24 21:04
2-Chlorotoluene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:04
2-Hexanone	7.50	U	10.0	3.10	7.50	ug/L	1		05/14/24 21:04
4-Chlorotoluene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:04
4-Isopropyltoluene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:04
4-Methyl-2-pentanone (MIBK)	7.50	U	10.0	3.10	7.50	ug/L	1		05/14/24 21:04
Benzene	0.300	U	0.400	0.120	0.300	ug/L	1		05/14/24 21:04
Bromobenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:04
Bromochloromethane	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:04
Bromodichloromethane	0.375	U	0.500	0.150	0.375	ug/L	1		05/14/24 21:04
Bromoform	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:04
Bromomethane	4.50	U	6.00	3.00	4.50	ug/L	1		05/14/24 21:04
Carbon disulfide	7.50	U	10.0	3.10	7.50	ug/L	1		05/14/24 21:04
Carbon tetrachloride	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:04
Chlorobenzene	0.375	U	0.500	0.150	0.375	ug/L	1		05/14/24 21:04
Chloroethane	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:04

Print Date: 05/30/2024 2:05:10PM

J flagging is activated



**Results of 24KSES-MW03-GW**

Client Sample ID: **24KSES-MW03-GW**  
 Client Project ID: **KSES 2024**  
 Lab Sample ID: 1242053003  
 Lab Project ID: 1242053

Collection Date: 05/10/24 08:37  
 Received Date: 05/13/24 09:27  
 Matrix: Water (Surface, Eff., Ground)  
 Solids (%):  
 Location:

**Results by Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:04
Chloromethane	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:04
cis-1,2-Dichloroethene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:04
cis-1,3-Dichloropropene	0.375	U	0.500	0.150	0.375	ug/L	1		05/14/24 21:04
Dibromochloromethane	0.375	U	0.500	0.150	0.375	ug/L	1		05/14/24 21:04
Dibromomethane	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:04
Dichlorodifluoromethane	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:04
Ethylbenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:04
Freon-113	7.50	U	10.0	3.10	7.50	ug/L	1		05/14/24 21:04
Hexachlorobutadiene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:04
Isopropylbenzene (Cumene)	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:04
Methylene chloride	7.50	U	10.0	3.10	7.50	ug/L	1		05/14/24 21:04
Methyl-t-butyl ether	7.50	U	10.0	3.10	7.50	ug/L	1		05/14/24 21:04
Naphthalene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:04
n-Butylbenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:04
n-Propylbenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:04
o-Xylene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:04
P & M -Xylene	1.50	U	2.00	0.620	1.50	ug/L	1		05/14/24 21:04
sec-Butylbenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:04
Styrene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:04
tert-Butylbenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:04
Tetrachloroethene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:04
Toluene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:04
trans-1,2-Dichloroethene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:04
trans-1,3-Dichloropropene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:04
Trichloroethene	0.375	U	0.500	0.150	0.375	ug/L	1		05/14/24 21:04
Trichlorofluoromethane	3.24		1.00	0.310	0.750	ug/L	1		05/23/24 19:08
Vinyl acetate	7.50	U	10.0	3.10	7.50	ug/L	1		05/14/24 21:04
Vinyl chloride	0.112	U	0.150	0.0500	0.112	ug/L	1		05/14/24 21:04
Xylenes (total)	2.25	U	3.00	1.00	2.25	ug/L	1		05/14/24 21:04
<b>Surrogates</b>									
1,2-Dichloroethane-D4 (surr)	97.9		81-118			%	1		05/14/24 21:04
4-Bromofluorobenzene (surr)	97		85-114			%	1		05/14/24 21:04
Toluene-d8 (surr)	97.7		89-112			%	1		05/14/24 21:04

Print Date: 05/30/2024 2:05:10PM

J flagging is activated

## Results of 24KSES-MW03-GW

Client Sample ID: **24KSES-MW03-GW**  
Client Project ID: **KSES 2024**  
Lab Sample ID: 1242053003  
Lab Project ID: 1242053

Collection Date: 05/10/24 08:37  
Received Date: 05/13/24 09:27  
Matrix: Water (Surface, Eff., Ground)  
Solids (%):  
Location:

## Results by Volatile GC/MS

### Batch Information

Analytical Batch: VMS23253  
Analytical Method: SW8260D  
Analyst: JY  
Analytical Date/Time: 05/23/24 19:08  
Container ID: 1242053003-B

Prep Batch: VXX41191  
Prep Method: SW5030B  
Prep Date/Time: 05/23/24 06:00  
Prep Initial Wt./Vol.: 5 mL  
Prep Extract Vol: 5 mL

Analytical Batch: VMS23233  
Analytical Method: SW8260D  
Analyst: JY  
Analytical Date/Time: 05/14/24 21:04  
Container ID: 1242053003-A

Prep Batch: VXX41156  
Prep Method: SW5030B  
Prep Date/Time: 05/14/24 06:00  
Prep Initial Wt./Vol.: 5 mL  
Prep Extract Vol: 5 mL



## Results of Trip Blank 1

Client Sample ID: **Trip Blank 1**  
 Client Project ID: **KSES 2024**  
 Lab Sample ID: 1242053004  
 Lab Project ID: 1242053

Collection Date: 05/09/24 00:00  
 Received Date: 05/13/24 09:27  
 Matrix: Water (Surface, Eff., Ground)  
 Solids (%):  
 Location:

## Results by Volatile Fuels

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>LOD</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	0.0750	U	0.100	0.0450	0.0750	mg/L	1		05/16/24 16:40

### Surrogates

4-Bromofluorobenzene (surr)	95.7		50-150			%	1		05/16/24 16:40
-----------------------------	------	--	--------	--	--	---	---	--	----------------

## Batch Information

Analytical Batch: VFC16801  
 Analytical Method: AK101  
 Analyst: JY  
 Analytical Date/Time: 05/16/24 16:40  
 Container ID: 1242053004-C

Prep Batch: VXX41161  
 Prep Method: SW5030B  
 Prep Date/Time: 05/16/24 06:00  
 Prep Initial Wt./Vol.: 5 mL  
 Prep Extract Vol: 5 mL



### Results of Trip Blank 1

Client Sample ID: **Trip Blank 1**  
 Client Project ID: **KSES 2024**  
 Lab Sample ID: 1242053004  
 Lab Project ID: 1242053

Collection Date: 05/09/24 00:00  
 Received Date: 05/13/24 09:27  
 Matrix: Water (Surface, Eff., Ground)  
 Solids (%):  
 Location:

### Results by Volatile GC/MS

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.375	U	0.500	0.150	0.375	ug/L	1		05/14/24 21:20
1,1,1-Trichloroethane	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:20
1,1,2,2-Tetrachloroethane	0.375	U	0.500	0.150	0.375	ug/L	1		05/14/24 21:20
1,1,2-Trichloroethane	0.300	U	0.400	0.120	0.300	ug/L	1		05/14/24 21:20
1,1-Dichloroethane	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:20
1,1-Dichloroethene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:20
1,1-Dichloropropene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:20
1,2,3-Trichlorobenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:20
1,2,3-Trichloropropane	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:20
1,2,4-Trichlorobenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:20
1,2,4-Trimethylbenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:20
1,2-Dibromo-3-chloropropane	7.50	U	10.0	3.10	7.50	ug/L	1		05/14/24 21:20
1,2-Dibromoethane	0.0562	U	0.0750	0.0180	0.0562	ug/L	1		05/14/24 21:20
1,2-Dichlorobenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:20
1,2-Dichloroethane	0.375	U	0.500	0.200	0.375	ug/L	1		05/14/24 21:20
1,2-Dichloropropane	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:20
1,3,5-Trimethylbenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:20
1,3-Dichlorobenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:20
1,3-Dichloropropane	0.375	U	0.500	0.150	0.375	ug/L	1		05/14/24 21:20
1,4-Dichlorobenzene	0.375	U	0.500	0.150	0.375	ug/L	1		05/14/24 21:20
2,2-Dichloropropane	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:20
2-Butanone (MEK)	7.50	U	10.0	3.10	7.50	ug/L	1		05/14/24 21:20
2-Chlorotoluene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:20
2-Hexanone	7.50	U	10.0	3.10	7.50	ug/L	1		05/14/24 21:20
4-Chlorotoluene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:20
4-Isopropyltoluene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:20
4-Methyl-2-pentanone (MIBK)	7.50	U	10.0	3.10	7.50	ug/L	1		05/14/24 21:20
Benzene	0.300	U	0.400	0.120	0.300	ug/L	1		05/14/24 21:20
Bromobenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:20
Bromochloromethane	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:20
Bromodichloromethane	0.375	U	0.500	0.150	0.375	ug/L	1		05/14/24 21:20
Bromoform	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:20
Bromomethane	4.50	U	6.00	3.00	4.50	ug/L	1		05/14/24 21:20
Carbon disulfide	7.50	U	10.0	3.10	7.50	ug/L	1		05/14/24 21:20
Carbon tetrachloride	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:20
Chlorobenzene	0.375	U	0.500	0.150	0.375	ug/L	1		05/14/24 21:20
Chloroethane	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:20

Print Date: 05/30/2024 2:05:10PM

J flagging is activated



### Results of Trip Blank 1

Client Sample ID: **Trip Blank 1**  
 Client Project ID: **KSES 2024**  
 Lab Sample ID: 1242053004  
 Lab Project ID: 1242053

Collection Date: 05/09/24 00:00  
 Received Date: 05/13/24 09:27  
 Matrix: Water (Surface, Eff., Ground)  
 Solids (%):  
 Location:

### Results by Volatile GC/MS

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:20
Chloromethane	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:20
cis-1,2-Dichloroethene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:20
cis-1,3-Dichloropropene	0.375	U	0.500	0.150	0.375	ug/L	1		05/14/24 21:20
Dibromochloromethane	0.375	U	0.500	0.150	0.375	ug/L	1		05/14/24 21:20
Dibromomethane	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:20
Dichlorodifluoromethane	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:20
Ethylbenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:20
Freon-113	7.50	U	10.0	3.10	7.50	ug/L	1		05/14/24 21:20
Hexachlorobutadiene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:20
Isopropylbenzene (Cumene)	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:20
Methylene chloride	7.50	U	10.0	3.10	7.50	ug/L	1		05/14/24 21:20
Methyl-t-butyl ether	7.50	U	10.0	3.10	7.50	ug/L	1		05/14/24 21:20
Naphthalene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:20
n-Butylbenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:20
n-Propylbenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:20
o-Xylene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:20
P & M -Xylene	1.50	U	2.00	0.620	1.50	ug/L	1		05/14/24 21:20
sec-Butylbenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:20
Styrene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:20
tert-Butylbenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:20
Tetrachloroethene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:20
Toluene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:20
trans-1,2-Dichloroethene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:20
trans-1,3-Dichloropropene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:20
Trichloroethene	0.375	U	0.500	0.150	0.375	ug/L	1		05/14/24 21:20
Trichlorofluoromethane	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:20
Vinyl acetate	7.50	U	10.0	3.10	7.50	ug/L	1		05/14/24 21:20
Vinyl chloride	0.112	U	0.150	0.0500	0.112	ug/L	1		05/14/24 21:20
Xylenes (total)	2.25	U	3.00	1.00	2.25	ug/L	1		05/14/24 21:20
<b>Surrogates</b>									
1,2-Dichloroethane-D4 (surr)	99.7		81-118			%	1		05/14/24 21:20
4-Bromofluorobenzene (surr)	96.7		85-114			%	1		05/14/24 21:20
Toluene-d8 (surr)	97.1		89-112			%	1		05/14/24 21:20

Print Date: 05/30/2024 2:05:10PM

J flagging is activated

## Results of Trip Blank 1

Client Sample ID: **Trip Blank 1**  
Client Project ID: **KSES 2024**  
Lab Sample ID: 1242053004  
Lab Project ID: 1242053

Collection Date: 05/09/24 00:00  
Received Date: 05/13/24 09:27  
Matrix: Water (Surface, Eff., Ground)  
Solids (%):  
Location:

## Results by Volatile GC/MS

### Batch Information

Analytical Batch: VMS23233  
Analytical Method: SW8260D  
Analyst: JY  
Analytical Date/Time: 05/14/24 21:20  
Container ID: 1242053004-A

Prep Batch: VXX41156  
Prep Method: SW5030B  
Prep Date/Time: 05/14/24 06:00  
Prep Initial Wt./Vol.: 5 mL  
Prep Extract Vol: 5 mL



### Results of 24KSES-MW04-GW

Client Sample ID: **24KSES-MW04-GW**  
 Client Project ID: **KSES 2024**  
 Lab Sample ID: 1242053005  
 Lab Project ID: 1242053

Collection Date: 05/10/24 10:15  
 Received Date: 05/13/24 09:27  
 Matrix: Water (Surface, Eff., Ground)  
 Solids (%):  
 Location:

### Results by Polynuclear Aromatics GC/MS

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	0.0417	U	0.0556	0.0167	0.0417	ug/L	1		05/14/24 22:47
2-Methylnaphthalene	0.0417	U	0.0556	0.0167	0.0417	ug/L	1		05/14/24 22:47
Acenaphthene	0.0417	U	0.0556	0.0167	0.0417	ug/L	1		05/14/24 22:47
Acenaphthylene	0.0417	U	0.0556	0.0167	0.0417	ug/L	1		05/14/24 22:47
Anthracene	0.0417	U	0.0556	0.0167	0.0417	ug/L	1		05/14/24 22:47
Benzo(a)Anthracene	0.0417	U	0.0556	0.0167	0.0417	ug/L	1		05/14/24 22:47
Benzo[a]pyrene	0.0167	U	0.0222	0.00689	0.0167	ug/L	1		05/14/24 22:47
Benzo[b]Fluoranthene	0.0417	U	0.0556	0.0167	0.0417	ug/L	1		05/14/24 22:47
Benzo[g,h,i]perylene	0.0417	U	0.0556	0.0167	0.0417	ug/L	1		05/14/24 22:47
Benzo[k]fluoranthene	0.0417	U	0.0556	0.0167	0.0417	ug/L	1		05/14/24 22:47
Chrysene	0.0417	U	0.0556	0.0167	0.0417	ug/L	1		05/14/24 22:47
Dibenzo[a,h]anthracene	0.0167	U	0.0222	0.00689	0.0167	ug/L	1		05/14/24 22:47
Fluoranthene	0.0417	U	0.0556	0.0167	0.0417	ug/L	1		05/14/24 22:47
Fluorene	0.0417	U	0.0556	0.0167	0.0417	ug/L	1		05/14/24 22:47
Indeno[1,2,3-c,d] pyrene	0.0417	U	0.0556	0.0167	0.0417	ug/L	1		05/14/24 22:47
Naphthalene	0.0833	U	0.111	0.0344	0.0833	ug/L	1		05/14/24 22:47
Phenanthrene	0.0833	U	0.111	0.0344	0.0833	ug/L	1		05/14/24 22:47
Pyrene	0.0417	U	0.0556	0.0167	0.0417	ug/L	1		05/14/24 22:47

### Surrogates

2-Methylnaphthalene-d10 (surr)	67.5		38-100			%	1		05/14/24 22:47
Fluoranthene-d10 (surr)	91.9		30-111			%	1		05/14/24 22:47

### Batch Information

Analytical Batch: XMS14242  
 Analytical Method: 8270E SIM LV (PAH)  
 Analyst: NRB  
 Analytical Date/Time: 05/14/24 22:47  
 Container ID: 1242053005-I

Prep Batch: XXX49452  
 Prep Method: SW3535A  
 Prep Date/Time: 05/14/24 10:30  
 Prep Initial Wt./Vol.: 225 mL  
 Prep Extract Vol: 1 mL



### Results of 24KSES-MW04-GW

Client Sample ID: **24KSES-MW04-GW**  
 Client Project ID: **KSES 2024**  
 Lab Sample ID: 1242053005  
 Lab Project ID: 1242053

Collection Date: 05/10/24 10:15  
 Received Date: 05/13/24 09:27  
 Matrix: Water (Surface, Eff., Ground)  
 Solids (%):  
 Location:

### Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>LOD</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	0.412	J	0.652	0.217	0.489	mg/L	1		05/21/24 18:54

#### Surrogates

5a Androstane (surr)	71.1		50-150			%	1		05/21/24 18:54
----------------------	------	--	--------	--	--	---	---	--	----------------

### Batch Information

Analytical Batch: XFC16878  
 Analytical Method: AK102  
 Analyst: NGG  
 Analytical Date/Time: 05/21/24 18:54  
 Container ID: 1242053005-G

Prep Batch: XXX49485  
 Prep Method: SW3520C  
 Prep Date/Time: 05/20/24 18:30  
 Prep Initial Wt./Vol.: 230 mL  
 Prep Extract Vol: 1 mL





Results of **24KSES-MW04-GW**

Client Sample ID: **24KSES-MW04-GW**  
Client Project ID: **KSES 2024**  
Lab Sample ID: 1242053005  
Lab Project ID: 1242053

Collection Date: 05/10/24 10:15  
Received Date: 05/13/24 09:27  
Matrix: Water (Surface, Eff., Ground)  
Solids (%):  
Location:

Results by **Volatile Fuels**

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>LOD</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	0.0750	U	0.100	0.0450	0.0750	mg/L	1		05/14/24 22:13
<b>Surrogates</b>									
4-Bromofluorobenzene (surr)	96.1		50-150			%	1		05/14/24 22:13

**Batch Information**

Analytical Batch: VFC16800  
Analytical Method: AK101  
Analyst: T.L  
Analytical Date/Time: 05/14/24 22:13  
Container ID: 1242053005-D

Prep Batch: VXX41149  
Prep Method: SW5030B  
Prep Date/Time: 05/14/24 06:00  
Prep Initial Wt./Vol.: 5 mL  
Prep Extract Vol: 5 mL



Results of 24KSES-MW04-GW

Client Sample ID: 24KSES-MW04-GW
Client Project ID: KSES 2024
Lab Sample ID: 1242053005
Lab Project ID: 1242053

Collection Date: 05/10/24 10:15
Received Date: 05/13/24 09:27
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 9 columns: Parameter, Result, Qual, LOQ/CL, DL, LOD, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.

Print Date: 05/30/2024 2:05:10PM

J flagging is activated



**Results of 24KSES-MW04-GW**

Client Sample ID: **24KSES-MW04-GW**  
 Client Project ID: **KSES 2024**  
 Lab Sample ID: 1242053005  
 Lab Project ID: 1242053

Collection Date: 05/10/24 10:15  
 Received Date: 05/13/24 09:27  
 Matrix: Water (Surface, Eff., Ground)  
 Solids (%):  
 Location:

**Results by Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:35
Chloromethane	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:35
cis-1,2-Dichloroethene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:35
cis-1,3-Dichloropropene	0.375	U	0.500	0.150	0.375	ug/L	1		05/14/24 21:35
Dibromochloromethane	0.375	U	0.500	0.150	0.375	ug/L	1		05/14/24 21:35
Dibromomethane	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:35
Dichlorodifluoromethane	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:35
Ethylbenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:35
Freon-113	7.50	U	10.0	3.10	7.50	ug/L	1		05/14/24 21:35
Hexachlorobutadiene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:35
Isopropylbenzene (Cumene)	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:35
Methylene chloride	7.50	U	10.0	3.10	7.50	ug/L	1		05/14/24 21:35
Methyl-t-butyl ether	7.50	U	10.0	3.10	7.50	ug/L	1		05/14/24 21:35
Naphthalene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:35
n-Butylbenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:35
n-Propylbenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:35
o-Xylene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:35
P & M -Xylene	1.50	U	2.00	0.620	1.50	ug/L	1		05/14/24 21:35
sec-Butylbenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:35
Styrene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:35
tert-Butylbenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:35
Tetrachloroethene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:35
Toluene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:35
trans-1,2-Dichloroethene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:35
trans-1,3-Dichloropropene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 21:35
Trichloroethene	0.375	U	0.500	0.150	0.375	ug/L	1		05/14/24 21:35
Trichlorofluoromethane	0.510	J	1.00	0.310	0.750	ug/L	1		05/14/24 21:35
Vinyl acetate	7.50	U	10.0	3.10	7.50	ug/L	1		05/14/24 21:35
Vinyl chloride	0.112	U	0.150	0.0500	0.112	ug/L	1		05/14/24 21:35
Xylenes (total)	2.25	U	3.00	1.00	2.25	ug/L	1		05/14/24 21:35
<b>Surrogates</b>									
1,2-Dichloroethane-D4 (surr)	99.6		81-118			%	1		05/14/24 21:35
4-Bromofluorobenzene (surr)	95.4		85-114			%	1		05/14/24 21:35
Toluene-d8 (surr)	98.9		89-112			%	1		05/14/24 21:35



**Results of 24KSES-MW04-GW**

Client Sample ID: **24KSES-MW04-GW**  
Client Project ID: **KSES 2024**  
Lab Sample ID: 1242053005  
Lab Project ID: 1242053

Collection Date: 05/10/24 10:15  
Received Date: 05/13/24 09:27  
Matrix: Water (Surface, Eff., Ground)  
Solids (%):  
Location:

**Results by Volatile GC/MS**

**Batch Information**

Analytical Batch: VMS23233  
Analytical Method: SW8260D  
Analyst: JY  
Analytical Date/Time: 05/14/24 21:35  
Container ID: 1242053005-A

Prep Batch: VXX41156  
Prep Method: SW5030B  
Prep Date/Time: 05/14/24 06:00  
Prep Initial Wt./Vol.: 5 mL  
Prep Extract Vol: 5 mL



### Results of 24KSES-MW05-GW

Client Sample ID: **24KSES-MW05-GW**  
 Client Project ID: **KSES 2024**  
 Lab Sample ID: 1242053006  
 Lab Project ID: 1242053

Collection Date: 05/10/24 11:29  
 Received Date: 05/13/24 09:27  
 Matrix: Water (Surface, Eff., Ground)  
 Solids (%):  
 Location:

### Results by Polynuclear Aromatics GC/MS

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	0.0399	U	0.0532	0.0160	0.0399	ug/L	1		05/21/24 21:55
2-Methylnaphthalene	0.0399	U	0.0532	0.0160	0.0399	ug/L	1		05/21/24 21:55
Acenaphthene	0.0399	U	0.0532	0.0160	0.0399	ug/L	1		05/21/24 21:55
Acenaphthylene	0.0399	U	0.0532	0.0160	0.0399	ug/L	1		05/21/24 21:55
Anthracene	0.0399	U	0.0532	0.0160	0.0399	ug/L	1		05/21/24 21:55
Benzo(a)Anthracene	0.0399	U	0.0532	0.0160	0.0399	ug/L	1		05/21/24 21:55
Benzo[a]pyrene	0.0160	U	0.0213	0.00660	0.0160	ug/L	1		05/21/24 21:55
Benzo[b]Fluoranthene	0.0399	U	0.0532	0.0160	0.0399	ug/L	1		05/21/24 21:55
Benzo[g,h,i]perylene	0.0399	U	0.0532	0.0160	0.0399	ug/L	1		05/21/24 21:55
Benzo[k]fluoranthene	0.0399	U	0.0532	0.0160	0.0399	ug/L	1		05/21/24 21:55
Chrysene	0.0399	U	0.0532	0.0160	0.0399	ug/L	1		05/21/24 21:55
Dibenzo[a,h]anthracene	0.0160	U	0.0213	0.00660	0.0160	ug/L	1		05/21/24 21:55
Fluoranthene	0.0399	U	0.0532	0.0160	0.0399	ug/L	1		05/21/24 21:55
Fluorene	0.0399	U	0.0532	0.0160	0.0399	ug/L	1		05/21/24 21:55
Indeno[1,2,3-c,d] pyrene	0.0399	U	0.0532	0.0160	0.0399	ug/L	1		05/21/24 21:55
Naphthalene	0.0795	U	0.106	0.0330	0.0795	ug/L	1		05/21/24 21:55
Phenanthrene	0.0795	U	0.106	0.0330	0.0795	ug/L	1		05/21/24 21:55
Pyrene	0.0282	J	0.0532	0.0160	0.0399	ug/L	1		05/21/24 21:55

### Surrogates

2-Methylnaphthalene-d10 (surr)	53.9		38-100			%	1		05/21/24 21:55
Fluoranthene-d10 (surr)	88.9		30-111			%	1		05/21/24 21:55

### Batch Information

Analytical Batch: XMS14255  
 Analytical Method: 8270E SIM LV (PAH)  
 Analyst: NRB  
 Analytical Date/Time: 05/21/24 21:55  
 Container ID: 1242053006-I

Prep Batch: XXX49452  
 Prep Method: SW3535A  
 Prep Date/Time: 05/14/24 10:30  
 Prep Initial Wt./Vol.: 235 mL  
 Prep Extract Vol: 1 mL





### Results of 24KSES-MW05-GW

Client Sample ID: **24KSES-MW05-GW**  
 Client Project ID: **KSES 2024**  
 Lab Sample ID: 1242053006  
 Lab Project ID: 1242053

Collection Date: 05/10/24 11:29  
 Received Date: 05/13/24 09:27  
 Matrix: Water (Surface, Eff., Ground)  
 Solids (%):  
 Location:

### Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>LOD</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	1.56		0.625	0.208	0.469	mg/L	1		05/21/24 19:04

#### Surrogates

5a Androstane (surr)	75.3		50-150			%	1		05/21/24 19:04
----------------------	------	--	--------	--	--	---	---	--	----------------

### Batch Information

Analytical Batch: XFC16878  
 Analytical Method: AK102  
 Analyst: NGG  
 Analytical Date/Time: 05/21/24 19:04  
 Container ID: 1242053006-G

Prep Batch: XXX49485  
 Prep Method: SW3520C  
 Prep Date/Time: 05/20/24 18:30  
 Prep Initial Wt./Vol.: 240 mL  
 Prep Extract Vol: 1 mL



Results of **24KSES-MW05-GW**

Client Sample ID: **24KSES-MW05-GW**  
Client Project ID: **KSES 2024**  
Lab Sample ID: 1242053006  
Lab Project ID: 1242053

Collection Date: 05/10/24 11:29  
Received Date: 05/13/24 09:27  
Matrix: Water (Surface, Eff., Ground)  
Solids (%):  
Location:

Results by **Volatile Fuels**

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>LOD</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	0.0750	U	0.100	0.0450	0.0750	mg/L	1		05/14/24 22:32
<b>Surrogates</b>									
4-Bromofluorobenzene (surr)	94		50-150			%	1		05/14/24 22:32

**Batch Information**

Analytical Batch: VFC16800  
Analytical Method: AK101  
Analyst: T.L  
Analytical Date/Time: 05/14/24 22:32  
Container ID: 1242053006-D

Prep Batch: VXX41149  
Prep Method: SW5030B  
Prep Date/Time: 05/14/24 06:00  
Prep Initial Wt./Vol.: 5 mL  
Prep Extract Vol: 5 mL



Results of 24KSES-MW05-GW

Client Sample ID: 24KSES-MW05-GW
Client Project ID: KSES 2024
Lab Sample ID: 1242053006
Lab Project ID: 1242053

Collection Date: 05/10/24 11:29
Received Date: 05/13/24 09:27
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 9 columns: Parameter, Result, Qual, LOQ/CL, DL, LOD, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical parameters and their corresponding results and limits.

Print Date: 05/30/2024 2:05:10PM

J flagging is activated



Results of 24KSES-MW05-GW

Client Sample ID: 24KSES-MW05-GW
Client Project ID: KSES 2024
Lab Sample ID: 1242053006
Lab Project ID: 1242053

Collection Date: 05/10/24 11:29
Received Date: 05/13/24 09:27
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with columns: Parameter, Result, Qual, LOQ/CL, DL, LOD, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical parameters like Chloroform, Chloromethane, etc., with their respective results and quality indicators.



**Results of 24KSES-MW05-GW**

Client Sample ID: **24KSES-MW05-GW**  
Client Project ID: **KSES 2024**  
Lab Sample ID: 1242053006  
Lab Project ID: 1242053

Collection Date: 05/10/24 11:29  
Received Date: 05/13/24 09:27  
Matrix: Water (Surface, Eff., Ground)  
Solids (%):  
Location:

**Results by Volatile GC/MS**

**Batch Information**

Analytical Batch: VMS23233  
Analytical Method: SW8260D  
Analyst: JY  
Analytical Date/Time: 05/15/24 00:22  
Container ID: 1242053006-A

Prep Batch: VXX41156  
Prep Method: SW5030B  
Prep Date/Time: 05/14/24 06:00  
Prep Initial Wt./Vol.: 5 mL  
Prep Extract Vol: 5 mL

Analytical Batch: VMS23253  
Analytical Method: SW8260D  
Analyst: JY  
Analytical Date/Time: 05/23/24 19:23  
Container ID: 1242053006-B

Prep Batch: VXX41191  
Prep Method: SW5030B  
Prep Date/Time: 05/23/24 06:00  
Prep Initial Wt./Vol.: 5 mL  
Prep Extract Vol: 5 mL





Results of 24KSES-MW06-GW

Client Sample ID: 24KSES-MW06-GW
Client Project ID: KSES 2024
Lab Sample ID: 1242053007
Lab Project ID: 1242053

Collection Date: 05/10/24 12:00
Received Date: 05/13/24 09:27
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Polynuclear Aromatics GC/MS

Table with 9 columns: Parameter, Result, Qual, LOQ/CL, DL, LOD, Units, DF, Allowable Limits, Date Analyzed. Lists various polynuclear aromatic hydrocarbons and their detection results.

Surrogates

Table with 2 rows showing surrogate results for 2-Methylnaphthalene-d10 and Fluoranthene-d10.

Batch Information

Analytical Batch: XMS14255
Analytical Method: 8270E SIM LV (PAH)
Analyst: NRB
Analytical Date/Time: 05/21/24 22:11
Container ID: 1242053007-I

Prep Batch: XXX49452
Prep Method: SW3535A
Prep Date/Time: 05/14/24 10:30
Prep Initial Wt./Vol.: 225 mL
Prep Extract Vol: 1 mL



### Results of 24KSES-MW06-GW

Client Sample ID: **24KSES-MW06-GW**  
 Client Project ID: **KSES 2024**  
 Lab Sample ID: 1242053007  
 Lab Project ID: 1242053

Collection Date: 05/10/24 12:00  
 Received Date: 05/13/24 09:27  
 Matrix: Water (Surface, Eff., Ground)  
 Solids (%):  
 Location:

### Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>LOD</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	1.62		0.638	0.213	0.479	mg/L	1		05/21/24 19:13

#### Surrogates

5a Androstane (surr)	78.4		50-150			%	1		05/21/24 19:13
----------------------	------	--	--------	--	--	---	---	--	----------------

### Batch Information

Analytical Batch: XFC16878  
 Analytical Method: AK102  
 Analyst: NGG  
 Analytical Date/Time: 05/21/24 19:13  
 Container ID: 1242053007-G

Prep Batch: XXX49485  
 Prep Method: SW3520C  
 Prep Date/Time: 05/20/24 18:30  
 Prep Initial Wt./Vol.: 235 mL  
 Prep Extract Vol: 1 mL



Results of **24KSES-MW06-GW**

Client Sample ID: **24KSES-MW06-GW**  
Client Project ID: **KSES 2024**  
Lab Sample ID: 1242053007  
Lab Project ID: 1242053

Collection Date: 05/10/24 12:00  
Received Date: 05/13/24 09:27  
Matrix: Water (Surface, Eff., Ground)  
Solids (%):  
Location:

Results by **Volatile Fuels**

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>LOD</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	0.0750	U	0.100	0.0450	0.0750	mg/L	1		05/14/24 16:13
<b>Surrogates</b>									
4-Bromofluorobenzene (surr)	98.4		50-150			%	1		05/14/24 16:13

**Batch Information**

Analytical Batch: VFC16800  
Analytical Method: AK101  
Analyst: T.L  
Analytical Date/Time: 05/14/24 16:13  
Container ID: 1242053007-D

Prep Batch: VXX41149  
Prep Method: SW5030B  
Prep Date/Time: 05/14/24 06:00  
Prep Initial Wt./Vol.: 5 mL  
Prep Extract Vol: 5 mL



**Results of 24KSES-MW06-GW**

Client Sample ID: **24KSES-MW06-GW**  
 Client Project ID: **KSES 2024**  
 Lab Sample ID: 1242053007  
 Lab Project ID: 1242053

Collection Date: 05/10/24 12:00  
 Received Date: 05/13/24 09:27  
 Matrix: Water (Surface, Eff., Ground)  
 Solids (%):  
 Location:

**Results by Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.375	U	0.500	0.150	0.375	ug/L	1		05/15/24 00:36
1,1,1-Trichloroethane	0.750	U	1.00	0.310	0.750	ug/L	1		05/15/24 00:36
1,1,2,2-Tetrachloroethane	0.375	U	0.500	0.150	0.375	ug/L	1		05/15/24 00:36
1,1,2-Trichloroethane	0.300	U	0.400	0.120	0.300	ug/L	1		05/15/24 00:36
1,1-Dichloroethane	0.750	U	1.00	0.310	0.750	ug/L	1		05/15/24 00:36
1,1-Dichloroethene	0.750	U	1.00	0.310	0.750	ug/L	1		05/15/24 00:36
1,1-Dichloropropene	0.750	U	1.00	0.310	0.750	ug/L	1		05/15/24 00:36
1,2,3-Trichlorobenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/15/24 00:36
1,2,3-Trichloropropane	0.750	U	1.00	0.310	0.750	ug/L	1		05/15/24 00:36
1,2,4-Trichlorobenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/15/24 00:36
1,2,4-Trimethylbenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/15/24 00:36
1,2-Dibromo-3-chloropropane	7.50	U	10.0	3.10	7.50	ug/L	1		05/15/24 00:36
1,2-Dibromoethane	0.0562	U	0.0750	0.0180	0.0562	ug/L	1		05/15/24 00:36
1,2-Dichlorobenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/15/24 00:36
1,2-Dichloroethane	0.375	U	0.500	0.200	0.375	ug/L	1		05/15/24 00:36
1,2-Dichloropropane	0.750	U	1.00	0.310	0.750	ug/L	1		05/15/24 00:36
1,3,5-Trimethylbenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/15/24 00:36
1,3-Dichlorobenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/15/24 00:36
1,3-Dichloropropane	0.375	U	0.500	0.150	0.375	ug/L	1		05/15/24 00:36
1,4-Dichlorobenzene	0.375	U	0.500	0.150	0.375	ug/L	1		05/15/24 00:36
2,2-Dichloropropane	0.750	U	1.00	0.310	0.750	ug/L	1		05/15/24 00:36
2-Butanone (MEK)	7.50	U	10.0	3.10	7.50	ug/L	1		05/15/24 00:36
2-Chlorotoluene	0.750	U	1.00	0.310	0.750	ug/L	1		05/15/24 00:36
2-Hexanone	7.50	U	10.0	3.10	7.50	ug/L	1		05/15/24 00:36
4-Chlorotoluene	0.750	U	1.00	0.310	0.750	ug/L	1		05/15/24 00:36
4-Isopropyltoluene	0.750	U	1.00	0.310	0.750	ug/L	1		05/15/24 00:36
4-Methyl-2-pentanone (MIBK)	7.50	U	10.0	3.10	7.50	ug/L	1		05/15/24 00:36
Benzene	0.300	U	0.400	0.120	0.300	ug/L	1		05/15/24 00:36
Bromobenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/15/24 00:36
Bromochloromethane	0.750	U	1.00	0.310	0.750	ug/L	1		05/15/24 00:36
Bromodichloromethane	0.375	U	0.500	0.150	0.375	ug/L	1		05/15/24 00:36
Bromoform	0.750	U	1.00	0.310	0.750	ug/L	1		05/15/24 00:36
Bromomethane	4.50	U	6.00	3.00	4.50	ug/L	1		05/15/24 00:36
Carbon disulfide	7.50	U	10.0	3.10	7.50	ug/L	1		05/15/24 00:36
Carbon tetrachloride	0.750	U	1.00	0.310	0.750	ug/L	1		05/15/24 00:36
Chlorobenzene	0.375	U	0.500	0.150	0.375	ug/L	1		05/15/24 00:36
Chloroethane	0.750	U	1.00	0.310	0.750	ug/L	1		05/15/24 00:36

Print Date: 05/30/2024 2:05:10PM

J flagging is activated



### Results of 24KSES-MW06-GW

Client Sample ID: **24KSES-MW06-GW**  
 Client Project ID: **KSES 2024**  
 Lab Sample ID: 1242053007  
 Lab Project ID: 1242053

Collection Date: 05/10/24 12:00  
 Received Date: 05/13/24 09:27  
 Matrix: Water (Surface, Eff., Ground)  
 Solids (%):  
 Location:

### Results by Volatile GC/MS

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.750	U	1.00	0.310	0.750	ug/L	1		05/15/24 00:36
Chloromethane	0.750	U	1.00	0.310	0.750	ug/L	1		05/15/24 00:36
cis-1,2-Dichloroethene	0.750	U	1.00	0.310	0.750	ug/L	1		05/15/24 00:36
cis-1,3-Dichloropropene	0.375	U	0.500	0.150	0.375	ug/L	1		05/15/24 00:36
Dibromochloromethane	0.375	U	0.500	0.150	0.375	ug/L	1		05/15/24 00:36
Dibromomethane	0.750	U	1.00	0.310	0.750	ug/L	1		05/15/24 00:36
Dichlorodifluoromethane	0.750	U	1.00	0.310	0.750	ug/L	1		05/15/24 00:36
Ethylbenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/15/24 00:36
Freon-113	7.50	U	10.0	3.10	7.50	ug/L	1		05/15/24 00:36
Hexachlorobutadiene	0.750	U	1.00	0.310	0.750	ug/L	1		05/15/24 00:36
Isopropylbenzene (Cumene)	0.750	U	1.00	0.310	0.750	ug/L	1		05/15/24 00:36
Methylene chloride	7.50	U	10.0	3.10	7.50	ug/L	1		05/15/24 00:36
Methyl-t-butyl ether	7.50	U	10.0	3.10	7.50	ug/L	1		05/15/24 00:36
Naphthalene	0.750	U	1.00	0.310	0.750	ug/L	1		05/15/24 00:36
n-Butylbenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/15/24 00:36
n-Propylbenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/15/24 00:36
o-Xylene	0.750	U	1.00	0.310	0.750	ug/L	1		05/15/24 00:36
P & M -Xylene	1.50	U	2.00	0.620	1.50	ug/L	1		05/15/24 00:36
sec-Butylbenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/15/24 00:36
Styrene	0.750	U	1.00	0.310	0.750	ug/L	1		05/15/24 00:36
tert-Butylbenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/15/24 00:36
Tetrachloroethene	0.750	U	1.00	0.310	0.750	ug/L	1		05/15/24 00:36
Toluene	0.750	U	1.00	0.310	0.750	ug/L	1		05/15/24 00:36
trans-1,2-Dichloroethene	0.750	U	1.00	0.310	0.750	ug/L	1		05/15/24 00:36
trans-1,3-Dichloropropene	0.750	U	1.00	0.310	0.750	ug/L	1		05/15/24 00:36
Trichloroethene	0.375	U	0.500	0.150	0.375	ug/L	1		05/15/24 00:36
Trichlorofluoromethane	2.21		1.00	0.310	0.750	ug/L	1		05/23/24 19:38
Vinyl acetate	7.50	U	10.0	3.10	7.50	ug/L	1		05/15/24 00:36
Vinyl chloride	0.112	U	0.150	0.0500	0.112	ug/L	1		05/15/24 00:36
Xylenes (total)	2.25	U	3.00	1.00	2.25	ug/L	1		05/15/24 00:36
<b>Surrogates</b>									
1,2-Dichloroethane-D4 (surr)	102		81-118			%	1		05/15/24 00:36
4-Bromofluorobenzene (surr)	94		85-114			%	1		05/15/24 00:36
Toluene-d8 (surr)	96.9		89-112			%	1		05/15/24 00:36

Print Date: 05/30/2024 2:05:10PM

J flagging is activated

## Results of 24KSES-MW06-GW

Client Sample ID: **24KSES-MW06-GW**  
Client Project ID: **KSES 2024**  
Lab Sample ID: 1242053007  
Lab Project ID: 1242053

Collection Date: 05/10/24 12:00  
Received Date: 05/13/24 09:27  
Matrix: Water (Surface, Eff., Ground)  
Solids (%):  
Location:

## Results by Volatile GC/MS

### Batch Information

Analytical Batch: VMS23233  
Analytical Method: SW8260D  
Analyst: JY  
Analytical Date/Time: 05/15/24 00:36  
Container ID: 1242053007-A

Prep Batch: VXX41156  
Prep Method: SW5030B  
Prep Date/Time: 05/14/24 06:00  
Prep Initial Wt./Vol.: 5 mL  
Prep Extract Vol: 5 mL

Analytical Batch: VMS23253  
Analytical Method: SW8260D  
Analyst: JY  
Analytical Date/Time: 05/23/24 19:38  
Container ID: 1242053007-B

Prep Batch: VXX41191  
Prep Method: SW5030B  
Prep Date/Time: 05/23/24 06:00  
Prep Initial Wt./Vol.: 5 mL  
Prep Extract Vol: 5 mL



## Results of Trip Blank 2

Client Sample ID: **Trip Blank 2**  
 Client Project ID: **KSES 2024**  
 Lab Sample ID: 1242053008  
 Lab Project ID: 1242053

Collection Date: 05/10/24 00:00  
 Received Date: 05/13/24 09:27  
 Matrix: Water (Surface, Eff., Ground)  
 Solids (%):  
 Location:

## Results by Volatile Fuels

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>LOD</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	0.0750	U	0.100	0.0450	0.0750	mg/L	1		05/14/24 19:41

### Surrogates

4-Bromofluorobenzene (surr)	89.9		50-150			%	1		05/14/24 19:41
-----------------------------	------	--	--------	--	--	---	---	--	----------------

## Batch Information

Analytical Batch: VFC16800  
 Analytical Method: AK101  
 Analyst: T.L  
 Analytical Date/Time: 05/14/24 19:41  
 Container ID: 1242053008-B

Prep Batch: VXX41149  
 Prep Method: SW5030B  
 Prep Date/Time: 05/14/24 06:00  
 Prep Initial Wt./Vol.: 5 mL  
 Prep Extract Vol: 5 mL



### Results of Trip Blank 2

Client Sample ID: **Trip Blank 2**  
 Client Project ID: **KSES 2024**  
 Lab Sample ID: 1242053008  
 Lab Project ID: 1242053

Collection Date: 05/10/24 00:00  
 Received Date: 05/13/24 09:27  
 Matrix: Water (Surface, Eff., Ground)  
 Solids (%):  
 Location:

### Results by Volatile GC/MS

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.375	U	0.500	0.150	0.375	ug/L	1		05/14/24 19:33
1,1,1-Trichloroethane	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 19:33
1,1,2,2-Tetrachloroethane	0.375	U	0.500	0.150	0.375	ug/L	1		05/14/24 19:33
1,1,2-Trichloroethane	0.300	U	0.400	0.120	0.300	ug/L	1		05/14/24 19:33
1,1-Dichloroethane	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 19:33
1,1-Dichloroethene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 19:33
1,1-Dichloropropene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 19:33
1,2,3-Trichlorobenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 19:33
1,2,3-Trichloropropane	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 19:33
1,2,4-Trichlorobenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 19:33
1,2,4-Trimethylbenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 19:33
1,2-Dibromo-3-chloropropane	7.50	U	10.0	3.10	7.50	ug/L	1		05/14/24 19:33
1,2-Dibromoethane	0.0562	U	0.0750	0.0180	0.0562	ug/L	1		05/14/24 19:33
1,2-Dichlorobenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 19:33
1,2-Dichloroethane	0.375	U	0.500	0.200	0.375	ug/L	1		05/14/24 19:33
1,2-Dichloropropane	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 19:33
1,3,5-Trimethylbenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 19:33
1,3-Dichlorobenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 19:33
1,3-Dichloropropane	0.375	U	0.500	0.150	0.375	ug/L	1		05/14/24 19:33
1,4-Dichlorobenzene	0.375	U	0.500	0.150	0.375	ug/L	1		05/14/24 19:33
2,2-Dichloropropane	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 19:33
2-Butanone (MEK)	7.50	U	10.0	3.10	7.50	ug/L	1		05/14/24 19:33
2-Chlorotoluene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 19:33
2-Hexanone	7.50	U	10.0	3.10	7.50	ug/L	1		05/14/24 19:33
4-Chlorotoluene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 19:33
4-Isopropyltoluene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 19:33
4-Methyl-2-pentanone (MIBK)	7.50	U	10.0	3.10	7.50	ug/L	1		05/14/24 19:33
Benzene	0.300	U	0.400	0.120	0.300	ug/L	1		05/14/24 19:33
Bromobenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 19:33
Bromochloromethane	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 19:33
Bromodichloromethane	0.375	U	0.500	0.150	0.375	ug/L	1		05/14/24 19:33
Bromoform	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 19:33
Bromomethane	4.50	U	6.00	3.00	4.50	ug/L	1		05/14/24 19:33
Carbon disulfide	7.50	U	10.0	3.10	7.50	ug/L	1		05/14/24 19:33
Carbon tetrachloride	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 19:33
Chlorobenzene	0.375	U	0.500	0.150	0.375	ug/L	1		05/14/24 19:33
Chloroethane	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 19:33

Print Date: 05/30/2024 2:05:10PM

J flagging is activated



### Results of Trip Blank 2

Client Sample ID: **Trip Blank 2**  
 Client Project ID: **KSES 2024**  
 Lab Sample ID: 1242053008  
 Lab Project ID: 1242053

Collection Date: 05/10/24 00:00  
 Received Date: 05/13/24 09:27  
 Matrix: Water (Surface, Eff., Ground)  
 Solids (%):  
 Location:

### Results by Volatile GC/MS

Parameter	Result	Qual	LOQ/CL	DL	LOD	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 19:33
Chloromethane	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 19:33
cis-1,2-Dichloroethene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 19:33
cis-1,3-Dichloropropene	0.375	U	0.500	0.150	0.375	ug/L	1		05/14/24 19:33
Dibromochloromethane	0.375	U	0.500	0.150	0.375	ug/L	1		05/14/24 19:33
Dibromomethane	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 19:33
Dichlorodifluoromethane	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 19:33
Ethylbenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 19:33
Freon-113	7.50	U	10.0	3.10	7.50	ug/L	1		05/14/24 19:33
Hexachlorobutadiene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 19:33
Isopropylbenzene (Cumene)	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 19:33
Methylene chloride	7.50	U	10.0	3.10	7.50	ug/L	1		05/14/24 19:33
Methyl-t-butyl ether	7.50	U	10.0	3.10	7.50	ug/L	1		05/14/24 19:33
Naphthalene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 19:33
n-Butylbenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 19:33
n-Propylbenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 19:33
o-Xylene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 19:33
P & M -Xylene	1.50	U	2.00	0.620	1.50	ug/L	1		05/14/24 19:33
sec-Butylbenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 19:33
Styrene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 19:33
tert-Butylbenzene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 19:33
Tetrachloroethene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 19:33
Toluene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 19:33
trans-1,2-Dichloroethene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 19:33
trans-1,3-Dichloropropene	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 19:33
Trichloroethene	0.375	U	0.500	0.150	0.375	ug/L	1		05/14/24 19:33
Trichlorofluoromethane	0.750	U	1.00	0.310	0.750	ug/L	1		05/14/24 19:33
Vinyl acetate	7.50	U	10.0	3.10	7.50	ug/L	1		05/14/24 19:33
Vinyl chloride	0.112	U	0.150	0.0500	0.112	ug/L	1		05/14/24 19:33
Xylenes (total)	2.25	U	3.00	1.00	2.25	ug/L	1		05/14/24 19:33
<b>Surrogates</b>									
1,2-Dichloroethane-D4 (surr)	102		81-118			%	1		05/14/24 19:33
4-Bromofluorobenzene (surr)	96.3		85-114			%	1		05/14/24 19:33
Toluene-d8 (surr)	96.4		89-112			%	1		05/14/24 19:33

Print Date: 05/30/2024 2:05:10PM

J flagging is activated

## Results of Trip Blank 2

Client Sample ID: **Trip Blank 2**  
Client Project ID: **KSES 2024**  
Lab Sample ID: 1242053008  
Lab Project ID: 1242053

Collection Date: 05/10/24 00:00  
Received Date: 05/13/24 09:27  
Matrix: Water (Surface, Eff., Ground)  
Solids (%):  
Location:

## Results by Volatile GC/MS

### Batch Information

Analytical Batch: VMS23233  
Analytical Method: SW8260D  
Analyst: JY  
Analytical Date/Time: 05/14/24 19:33  
Container ID: 1242053008-A

Prep Batch: VXX41156  
Prep Method: SW5030B  
Prep Date/Time: 05/14/24 06:00  
Prep Initial Wt./Vol.: 5 mL  
Prep Extract Vol: 5 mL



### Method Blank

Blank ID: MB for HBN 1882044 [VXX/41149]  
Blank Lab ID: 1763493

Matrix: Water (Surface, Eff., Ground)

QC for Samples:

1242053001, 1242053002, 1242053003, 1242053005, 1242053006, 1242053007, 1242053008

### Results by AK101

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>LOD</u>	<u>Units</u>
Gasoline Range Organics	0.0750U	0.100	0.0450	0.0750	mg/L
<b>Surrogates</b>					
4-Bromofluorobenzene (surr)	90.6	50-150		0	%

### Batch Information

Analytical Batch: VFC16800  
Analytical Method: AK101  
Instrument: Agilent 7890 PID/FID  
Analyst: T.L  
Analytical Date/Time: 5/14/2024 11:40:00AM

Prep Batch: VXX41149  
Prep Method: SW5030B  
Prep Date/Time: 5/14/2024 6:00:00AM  
Prep Initial Wt./Vol.: 5 mL  
Prep Extract Vol: 5 mL

Print Date: 05/30/2024 2:05:14PM

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1242053 [VXX41149]  
 Blank Spike Lab ID: 1763494  
 Date Analyzed: 05/14/2024 12:18

Spike Duplicate ID: LCSD for HBN 1242053 [VXX41149]  
 Spike Duplicate Lab ID: 1763495  
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1242053001, 1242053002, 1242053003, 1242053005, 1242053006, 1242053007, 1242053008

## 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	0.916	92	1.00	0.933	93	( 60-120 )	1.80	(< 20 )
<b>Surrogates</b>									
4-Bromofluorobenzene (surr)	0.0500		91	0.0500		98	( 50-150 )	7.70	

## Batch Information

Analytical Batch: **VFC16800**  
 Analytical Method: **AK101**  
 Instrument: **Agilent 7890 PID/FID**  
 Analyst: **T.L**

Prep Batch: **VXX41149**  
 Prep Method: **SW5030B**  
 Prep Date/Time: **05/14/2024 06:00**  
 Spike Init Wt./Vol.: 0.0500 mg/L Extract Vol: 5 mL  
 Dupe Init Wt./Vol.: 0.0500 mg/L Extract Vol: 5 mL

Print Date: 05/30/2024 2:05:17PM





**Method Blank**

Blank ID: MB for HBN 1882231 [VXX/41156]  
Blank Lab ID: 1763611

Matrix: Water (Surface, Eff., Ground)

QC for Samples:

1242053001, 1242053002, 1242053003, 1242053004, 1242053005, 1242053006, 1242053007, 1242053008

**Results by SW8260D**

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>LOD</u>	<u>Units</u>
1,1,1,2-Tetrachloroethane	0.375U	0.500	0.150	0.375	ug/L
1,1,1-Trichloroethane	0.750U	1.00	0.310	0.750	ug/L
1,1,2,2-Tetrachloroethane	0.375U	0.500	0.150	0.375	ug/L
1,1,2-Trichloroethane	0.300U	0.400	0.120	0.300	ug/L
1,1-Dichloroethane	0.750U	1.00	0.310	0.750	ug/L
1,1-Dichloroethene	0.750U	1.00	0.310	0.750	ug/L
1,1-Dichloropropene	0.750U	1.00	0.310	0.750	ug/L
1,2,3-Trichlorobenzene	0.750U	1.00	0.310	0.750	ug/L
1,2,3-Trichloropropane	0.750U	1.00	0.310	0.750	ug/L
1,2,4-Trichlorobenzene	0.750U	1.00	0.310	0.750	ug/L
1,2,4-Trimethylbenzene	0.750U	1.00	0.310	0.750	ug/L
1,2-Dibromo-3-chloropropane	7.50U	10.0	3.10	7.50	ug/L
1,2-Dibromoethane	0.0562U	0.0750	0.0180	0.0562	ug/L
1,2-Dichlorobenzene	0.750U	1.00	0.310	0.750	ug/L
1,2-Dichloroethane	0.375U	0.500	0.200	0.375	ug/L
1,2-Dichloropropane	0.750U	1.00	0.310	0.750	ug/L
1,3,5-Trimethylbenzene	0.750U	1.00	0.310	0.750	ug/L
1,3-Dichlorobenzene	0.750U	1.00	0.310	0.750	ug/L
1,3-Dichloropropane	0.375U	0.500	0.150	0.375	ug/L
1,4-Dichlorobenzene	0.375U	0.500	0.150	0.375	ug/L
2,2-Dichloropropane	0.750U	1.00	0.310	0.750	ug/L
2-Butanone (MEK)	7.50U	10.0	3.10	7.50	ug/L
2-Chlorotoluene	0.750U	1.00	0.310	0.750	ug/L
2-Hexanone	7.50U	10.0	3.10	7.50	ug/L
4-Chlorotoluene	0.750U	1.00	0.310	0.750	ug/L
4-Isopropyltoluene	0.750U	1.00	0.310	0.750	ug/L
4-Methyl-2-pentanone (MIBK)	7.50U	10.0	3.10	7.50	ug/L
Benzene	0.300U	0.400	0.120	0.300	ug/L
Bromobenzene	0.750U	1.00	0.310	0.750	ug/L
Bromochloromethane	0.750U	1.00	0.310	0.750	ug/L
Bromodichloromethane	0.375U	0.500	0.150	0.375	ug/L
Bromoform	0.750U	1.00	0.310	0.750	ug/L
Bromomethane	4.50U	6.00	3.00	4.50	ug/L
Carbon disulfide	7.50U	10.0	3.10	7.50	ug/L
Carbon tetrachloride	0.750U	1.00	0.310	0.750	ug/L
Chlorobenzene	0.375U	0.500	0.150	0.375	ug/L
Chloroethane	0.750U	1.00	0.310	0.750	ug/L
Chloroform	0.750U	1.00	0.310	0.750	ug/L
Chloromethane	0.750U	1.00	0.310	0.750	ug/L
cis-1,2-Dichloroethene	0.750U	1.00	0.310	0.750	ug/L
cis-1,3-Dichloropropene	0.375U	0.500	0.150	0.375	ug/L
Dibromochloromethane	0.375U	0.500	0.150	0.375	ug/L

Print Date: 05/30/2024 2:05:21PM



### Method Blank

Blank ID: MB for HBN 1882231 [VXX/41156]  
Blank Lab ID: 1763611

Matrix: Water (Surface, Eff., Ground)

QC for Samples:

1242053001, 1242053002, 1242053003, 1242053004, 1242053005, 1242053006, 1242053007, 1242053008

### Results by SW8260D

Parameter	Results	LOQ/CL	DL	LOD	Units
Dibromomethane	0.750U	1.00	0.310	0.750	ug/L
Dichlorodifluoromethane	0.750U	1.00	0.310	0.750	ug/L
Ethylbenzene	0.750U	1.00	0.310	0.750	ug/L
Freon-113	7.50U	10.0	3.10	7.50	ug/L
Hexachlorobutadiene	0.750U	1.00	0.310	0.750	ug/L
Isopropylbenzene (Cumene)	0.750U	1.00	0.310	0.750	ug/L
Methylene chloride	7.50U	10.0	3.10	7.50	ug/L
Methyl-t-butyl ether	7.50U	10.0	3.10	7.50	ug/L
Naphthalene	0.750U	1.00	0.310	0.750	ug/L
n-Butylbenzene	0.750U	1.00	0.310	0.750	ug/L
n-Propylbenzene	0.750U	1.00	0.310	0.750	ug/L
o-Xylene	0.750U	1.00	0.310	0.750	ug/L
P & M -Xylene	1.50U	2.00	0.620	1.50	ug/L
sec-Butylbenzene	0.750U	1.00	0.310	0.750	ug/L
Styrene	0.750U	1.00	0.310	0.750	ug/L
tert-Butylbenzene	0.750U	1.00	0.310	0.750	ug/L
Tetrachloroethene	0.750U	1.00	0.310	0.750	ug/L
Toluene	0.750U	1.00	0.310	0.750	ug/L
trans-1,2-Dichloroethene	0.750U	1.00	0.310	0.750	ug/L
trans-1,3-Dichloropropene	0.750U	1.00	0.310	0.750	ug/L
Trichloroethene	0.375U	0.500	0.150	0.375	ug/L
Trichlorofluoromethane	0.750U	1.00	0.310	0.750	ug/L
Vinyl acetate	7.50U	10.0	3.10	7.50	ug/L
Vinyl chloride	0.112U	0.150	0.0500	0.112	ug/L
Xylenes (total)	2.25U	3.00	1.00	2.25	ug/L

### Surrogates

1,2-Dichloroethane-D4 (surr)	92.3	81-118		0	%
4-Bromofluorobenzene (surr)	100	85-114		0	%
Toluene-d8 (surr)	98.9	89-112		0	%

### Batch Information

Analytical Batch: VMS23233  
Analytical Method: SW8260D  
Instrument: VPA 780/5975 GC/MS  
Analyst: JY  
Analytical Date/Time: 5/14/2024 4:20:00PM

Prep Batch: VXX41156  
Prep Method: SW5030B  
Prep Date/Time: 5/14/2024 6:00:00AM  
Prep Initial Wt./Vol.: 5 mL  
Prep Extract Vol: 5 mL

Print Date: 05/30/2024 2:05:21PM

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1242053 [VXX41156]  
 Blank Spike Lab ID: 1763612  
 Date Analyzed: 05/14/2024 16:35

Spike Duplicate ID: LCSD for HBN 1242053 [VXX41156]  
 Spike Duplicate Lab ID: 1763613  
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1242053001, 1242053002, 1242053003, 1242053004, 1242053005, 1242053006, 1242053007, 1242053008

## 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	31.5	105	30	31.5	105	( 78-124 )	0.00	(< 20 )
1,1,1-Trichloroethane	30	32.0	107	30	31.7	106	( 74-131 )	0.66	(< 20 )
1,1,2,2-Tetrachloroethane	30	28.5	95	30	29.6	99	( 71-121 )	3.90	(< 20 )
1,1,2-Trichloroethane	30	29.7	99	30	30.1	100	( 80-119 )	1.30	(< 20 )
1,1-Dichloroethane	30	30.6	102	30	30.7	102	( 77-125 )	0.23	(< 20 )
1,1-Dichloroethene	30	33.9	113	30	32.7	109	( 71-131 )	3.50	(< 20 )
1,1-Dichloropropene	30	31.5	105	30	31.3	104	( 79-125 )	0.60	(< 20 )
1,2,3-Trichlorobenzene	30	28.7	96	30	29.0	97	( 69-129 )	1.30	(< 20 )
1,2,3-Trichloropropane	30	29.1	97	30	30.5	102	( 73-122 )	4.60	(< 20 )
1,2,4-Trichlorobenzene	30	28.8	96	30	29.0	97	( 69-130 )	0.80	(< 20 )
1,2,4-Trimethylbenzene	30	30.5	102	30	30.6	102	( 79-124 )	0.49	(< 20 )
1,2-Dibromo-3-chloropropane	30	27.4	92	30	29.0	97	( 62-128 )	5.60	(< 20 )
1,2-Dibromoethane	30	29.9	100	30	30.5	102	( 77-121 )	1.70	(< 20 )
1,2-Dichlorobenzene	30	29.3	98	30	29.3	98	( 80-119 )	0.03	(< 20 )
1,2-Dichloroethane	30	29.4	98	30	29.6	99	( 73-128 )	0.68	(< 20 )
1,2-Dichloropropane	30	31.2	104	30	31.2	104	( 78-122 )	0.03	(< 20 )
1,3,5-Trimethylbenzene	30	30.7	102	30	30.7	102	( 75-124 )	0.10	(< 20 )
1,3-Dichlorobenzene	30	29.9	100	30	30.0	100	( 80-119 )	0.07	(< 20 )
1,3-Dichloropropane	30	29.4	98	30	30.2	101	( 80-119 )	2.70	(< 20 )
1,4-Dichlorobenzene	30	29.7	99	30	29.9	100	( 79-118 )	0.67	(< 20 )
2,2-Dichloropropane	30	30.6	102	30	31.0	103	( 60-139 )	1.20	(< 20 )
2-Butanone (MEK)	90	98.4	109	90	102	113	( 56-143 )	3.30	(< 20 )
2-Chlorotoluene	30	29.4	98	30	29.7	99	( 79-122 )	0.81	(< 20 )
2-Hexanone	90	95.5	106	90	97.0	108	( 57-139 )	1.60	(< 20 )
4-Chlorotoluene	30	29.6	99	30	30.1	100	( 78-122 )	1.60	(< 20 )
4-Isopropyltoluene	30	30.4	101	30	30.9	103	( 77-127 )	1.70	(< 20 )
4-Methyl-2-pentanone (MIBK)	90	101	112	90	104	116	( 67-130 )	3.10	(< 20 )
Benzene	30	31.2	104	30	31.5	105	( 79-120 )	0.99	(< 20 )
Bromobenzene	30	30.4	101	30	31.1	104	( 80-120 )	2.40	(< 20 )
Bromochloromethane	30	32.3	108	30	32.4	108	( 78-123 )	0.09	(< 20 )
Bromodichloromethane	30	32.0	107	30	32.2	107	( 79-125 )	0.47	(< 20 )
Bromoform	30	34.4	115	30	35.0	117	( 66-130 )	1.80	(< 20 )
Bromomethane	30	26.9	90	30	29.0	97	( 53-141 )	7.60	(< 20 )

Print Date: 05/30/2024 2:05:24PM

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1242053 [VXX41156]  
 Blank Spike Lab ID: 1763612  
 Date Analyzed: 05/14/2024 16:35

Spike Duplicate ID: LCSD for HBN 1242053 [VXX41156]  
 Spike Duplicate Lab ID: 1763613  
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1242053001, 1242053002, 1242053003, 1242053004, 1242053005, 1242053006, 1242053007, 1242053008

## Results by SW8260D

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Carbon disulfide	45	48.4	108	45	47.2	105	( 64-133 )	2.70	(< 20 )
Carbon tetrachloride	30	30.6	102	30	30.3	101	( 72-136 )	1.20	(< 20 )
Chlorobenzene	30	30.6	102	30	30.7	102	( 82-118 )	0.33	(< 20 )
Chloroethane	30	29.2	98	30	28.3	94	( 60-138 )	3.30	(< 20 )
Chloroform	30	30.4	101	30	30.4	101	( 79-124 )	0.26	(< 20 )
Chloromethane	30	28.8	96	30	28.5	95	( 50-139 )	1.00	(< 20 )
cis-1,2-Dichloroethene	30	30.9	103	30	31.4	105	( 78-123 )	1.80	(< 20 )
cis-1,3-Dichloropropene	30	30.3	101	30	30.9	103	( 75-124 )	1.70	(< 20 )
Dibromochloromethane	30	31.8	106	30	32.0	107	( 74-126 )	0.78	(< 20 )
Dibromomethane	30	30.8	103	30	31.4	105	( 79-123 )	1.70	(< 20 )
Dichlorodifluoromethane	30	27.2	91	30	25.5	85	( 32-152 )	6.50	(< 20 )
Ethylbenzene	30	31.2	104	30	30.9	103	( 79-121 )	0.84	(< 20 )
Freon-113	45	52.0	116	45	50.1	111	( 70-136 )	3.70	(< 20 )
Hexachlorobutadiene	30	30.0	100	30	30.0	100	( 66-134 )	0.13	(< 20 )
Isopropylbenzene (Cumene)	30	31.6	105	30	31.3	104	( 72-131 )	0.89	(< 20 )
Methylene chloride	30	31.4	105	30	31.2	104	( 74-124 )	0.80	(< 20 )
Methyl-t-butyl ether	45	45.6	101	45	46.5	103	( 71-124 )	1.90	(< 20 )
Naphthalene	30	27.6	92	30	28.7	96	( 61-128 )	3.90	(< 20 )
n-Butylbenzene	30	30.2	101	30	30.3	101	( 75-128 )	0.40	(< 20 )
n-Propylbenzene	30	29.6	99	30	29.7	99	( 76-126 )	0.24	(< 20 )
o-Xylene	30	31.2	104	30	31.1	104	( 78-122 )	0.22	(< 20 )
P & M -Xylene	60	63.2	105	60	62.5	104	( 80-121 )	1.20	(< 20 )
sec-Butylbenzene	30	29.5	98	30	29.7	99	( 77-126 )	0.88	(< 20 )
Styrene	30	32.6	109	30	32.1	107	( 78-123 )	1.80	(< 20 )
tert-Butylbenzene	30	30.1	100	30	30.1	100	( 78-124 )	0.03	(< 20 )
Tetrachloroethene	30	32.5	108	30	32.0	107	( 74-129 )	1.40	(< 20 )
Toluene	30	29.6	99	30	29.5	98	( 80-121 )	0.17	(< 20 )
trans-1,2-Dichloroethene	30	32.2	107	30	31.7	106	( 75-124 )	1.50	(< 20 )
trans-1,3-Dichloropropene	30	30.9	103	30	31.6	105	( 73-127 )	2.30	(< 20 )
Trichloroethene	30	31.5	105	30	31.4	105	( 79-123 )	0.38	(< 20 )
Trichlorofluoromethane	30	37.0	123	30	33.8	113	( 65-141 )	8.90	(< 20 )
Vinyl acetate	30	30.8	103	30	30.9	103	( 54-146 )	0.55	(< 20 )
Vinyl chloride	30	32.5	108	30	30.9	103	( 58-137 )	5.00	(< 20 )

Print Date: 05/30/2024 2:05:24PM

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1242053 [VXX41156]  
 Blank Spike Lab ID: 1763612  
 Date Analyzed: 05/14/2024 16:35

Spike Duplicate ID: LCSD for HBN 1242053 [VXX41156]  
 Spike Duplicate Lab ID: 1763613  
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1242053001, 1242053002, 1242053003, 1242053004, 1242053005, 1242053006, 1242053007, 1242053008

## Results by SW8260D

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Xylenes (total)	90	94.5	105	90	93.6	104	( 79-121 )	0.88	(< 20 )
<b>Surrogates</b>									
1,2-Dichloroethane-D4 (surr)	30		97	30		98	( 81-118 )	0.58	
4-Bromofluorobenzene (surr)	30		98	30		99	( 85-114 )	1.60	
Toluene-d8 (surr)	30		99	30		100	( 89-112 )	0.67	

## Batch Information

Analytical Batch: VMS23233  
 Analytical Method: SW8260D  
 Instrument: VPA 780/5975 GC/MS  
 Analyst: JY

Prep Batch: VXX41156  
 Prep Method: SW5030B  
 Prep Date/Time: 05/14/2024 06:00  
 Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL  
 Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL



### Method Blank

Blank ID: MB for HBN 1883239 [VXX/41161]  
Blank Lab ID: 1763847

Matrix: Water (Surface, Eff., Ground)

QC for Samples:  
1242053004

### Results by AK101

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>LOD</u>	<u>Units</u>
Gasoline Range Organics	0.0750U	0.100	0.0450	0.0750	mg/L
<b>Surrogates</b>					
4-Bromofluorobenzene (surr)	89.4	50-150		0	%

### Batch Information

Analytical Batch: VFC16801  
Analytical Method: AK101  
Instrument: Agilent 7890 PID/FID  
Analyst: JY  
Analytical Date/Time: 5/16/2024 12:58:00PM

Prep Batch: VXX41161  
Prep Method: SW5030B  
Prep Date/Time: 5/16/2024 6:00:00AM  
Prep Initial Wt./Vol.: 5 mL  
Prep Extract Vol: 5 mL

Print Date: 05/30/2024 2:05:28PM



## Blank Spike Summary

Blank Spike ID: LCS for HBN 1242053 [VXX41161]  
 Blank Spike Lab ID: 1763850  
 Date Analyzed: 05/16/2024 13:55

Spike Duplicate ID: LCSD for HBN 1242053 [VXX41161]  
 Spike Duplicate Lab ID: 1763851  
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1242053004

## 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	0.972	97	1.00	0.889	89	( 60-120 )	8.90	(< 20 )
<b>Surrogates</b>									
4-Bromofluorobenzene (surr)	0.0500		98	0.0500		98	( 50-150 )	0.37	

## Batch Information

Analytical Batch: **VFC16801**  
 Analytical Method: **AK101**  
 Instrument: **Agilent 7890 PID/FID**  
 Analyst: **JY**

Prep Batch: **VXX41161**  
 Prep Method: **SW5030B**  
 Prep Date/Time: **05/16/2024 06:00**  
 Spike Init Wt./Vol.: 0.0500 mg/L Extract Vol: 5 mL  
 Dupe Init Wt./Vol.: 0.0500 mg/L Extract Vol: 5 mL



**Method Blank**

Blank ID: MB for HBN 1885459 [VXX/41191]  
Blank Lab ID: 1764979

Matrix: Water (Surface, Eff., Ground)

QC for Samples:  
1242053003, 1242053006, 1242053007

**Results by SW8260D**

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>LOD</u>	<u>Units</u>
Trichlorofluoromethane	0.750U	1.00	0.310	0.750	ug/L
<b>Surrogates</b>					
1,2-Dichloroethane-D4 (surr)	103	81-118		0	%
4-Bromofluorobenzene (surr)	101	85-114		0	%
Toluene-d8 (surr)	99.6	89-112		0	%

**Batch Information**

Analytical Batch: VMS23253  
Analytical Method: SW8260D  
Instrument: Agilent 7890-75MS  
Analyst: JY  
Analytical Date/Time: 5/23/2024 2:54:00PM

Prep Batch: VXX41191  
Prep Method: SW5030B  
Prep Date/Time: 5/23/2024 6:00:00AM  
Prep Initial Wt./Vol.: 5 mL  
Prep Extract Vol: 5 mL

Print Date: 05/30/2024 2:05:33PM

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1242053 [VXX41191]  
 Blank Spike Lab ID: 1764980  
 Date Analyzed: 05/23/2024 15:10

Spike Duplicate ID: LCSD for HBN 1242053 [VXX41191]  
 Spike Duplicate Lab ID: 1764981  
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1242053003, 1242053006, 1242053007

## Results by SW8260D

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Trichlorofluoromethane	30	29.8	99	30	28.8	96	( 65-141 )	3.60	(< 20 )
<b>Surrogates</b>									
1,2-Dichloroethane-D4 (surr)	30		97	30		97	( 81-118 )	0.31	
4-Bromofluorobenzene (surr)	30		99	30		99	( 85-114 )	0.17	
Toluene-d8 (surr)	30		99	30		99	( 89-112 )	0.71	

## Batch Information

Analytical Batch: **VMS23253**  
 Analytical Method: **SW8260D**  
 Instrument: **Agilent 7890-75MS**  
 Analyst: **JY**

Prep Batch: **VXX41191**  
 Prep Method: **SW5030B**  
 Prep Date/Time: **05/23/2024 06:00**  
 Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL  
 Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL



### Method Blank

Blank ID: MB for HBN 1881532 [XXX/49452]

Matrix: Water (Surface, Eff., Ground)

Blank Lab ID: 1763302

QC for Samples:

1242053001, 1242053002, 1242053003, 1242053005, 1242053006, 1242053007

### Results by 8270E SIM LV (PAH)

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>LOD</u>	<u>Units</u>
1-Methylnaphthalene	0.0375U	0.0500	0.0150	0.0375	ug/L
2-Methylnaphthalene	0.0375U	0.0500	0.0150	0.0375	ug/L
Acenaphthene	0.0375U	0.0500	0.0150	0.0375	ug/L
Acenaphthylene	0.0375U	0.0500	0.0150	0.0375	ug/L
Anthracene	0.0375U	0.0500	0.0150	0.0375	ug/L
Benzo(a)Anthracene	0.0375U	0.0500	0.0150	0.0375	ug/L
Benzo[a]pyrene	0.0150U	0.0200	0.00620	0.0150	ug/L
Benzo[b]Fluoranthene	0.0375U	0.0500	0.0150	0.0375	ug/L
Benzo[g,h,i]perylene	0.0375U	0.0500	0.0150	0.0375	ug/L
Benzo[k]fluoranthene	0.0375U	0.0500	0.0150	0.0375	ug/L
Chrysene	0.0375U	0.0500	0.0150	0.0375	ug/L
Dibenzo[a,h]anthracene	0.0150U	0.0200	0.00620	0.0150	ug/L
Fluoranthene	0.0375U	0.0500	0.0150	0.0375	ug/L
Fluorene	0.0375U	0.0500	0.0150	0.0375	ug/L
Indeno[1,2,3-c,d] pyrene	0.0375U	0.0500	0.0150	0.0375	ug/L
Naphthalene	0.0750U	0.100	0.0310	0.0750	ug/L
Phenanthrene	0.0750U	0.100	0.0310	0.0750	ug/L
Pyrene	0.0375U	0.0500	0.0150	0.0375	ug/L
<b>Surrogates</b>					
2-Methylnaphthalene-d10 (surr)	74.9	38-100		0	%
Fluoranthene-d10 (surr)	93.3	30-111		0	%

### Batch Information

Analytical Batch: XMS14242  
 Analytical Method: 8270E SIM LV (PAH)  
 Instrument: Agilent 8890 GC/MS SYA  
 Analyst: NRB  
 Analytical Date/Time: 5/14/2024 7:48:00PM

Prep Batch: XXX49452  
 Prep Method: SW3535A  
 Prep Date/Time: 5/14/2024 10:30:00AM  
 Prep Initial Wt./Vol.: 250 mL  
 Prep Extract Vol: 1 mL

Print Date: 05/30/2024 2:05:39PM

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1242053 [XXX49452]  
 Blank Spike Lab ID: 1763303  
 Date Analyzed: 05/14/2024 20:04

Spike Duplicate ID: LCSD for HBN 1242053 [XXX49452]  
 Spike Duplicate Lab ID: 1763304  
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1242053001, 1242053002, 1242053003, 1242053005, 1242053006, 1242053007

## Results by 8270E SIM LV (PAH)

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
1-Methylnaphthalene	2	1.55	78	2	1.46	73	( 41-115 )	6.00	(< 20 )
2-Methylnaphthalene	2	1.36	68	2	1.31	66	( 39-114 )	3.50	(< 20 )
Acenaphthene	2	1.77	89	2	1.69	85	( 48-114 )	4.50	(< 20 )
Acenaphthylene	2	1.53	76	2	1.47	73	( 35-121 )	4.10	(< 20 )
Anthracene	2	1.69	85	2	1.58	79	( 53-119 )	6.80	(< 20 )
Benzo(a)Anthracene	2	1.71	86	2	1.58	79	( 59-120 )	8.00	(< 20 )
Benzo[a]pyrene	2	1.85	93	2	1.72	86	( 53-120 )	7.50	(< 20 )
Benzo[b]Fluoranthene	2	1.65	83	2	1.51	76	( 53-126 )	8.70	(< 20 )
Benzo[g,h,i]perylene	2	1.71	85	2	1.57	78	( 44-128 )	8.50	(< 20 )
Benzo[k]fluoranthene	2	1.94	97	2	1.79	89	( 54-125 )	8.40	(< 20 )
Chrysene	2	1.74	87	2	1.58	79	( 57-120 )	9.60	(< 20 )
Dibenzo[a,h]anthracene	2	1.92	96	2	1.78	89	( 44-131 )	7.60	(< 20 )
Fluoranthene	2	1.81	91	2	1.68	84	( 58-120 )	7.50	(< 20 )
Fluorene	2	1.69	85	2	1.67	83	( 50-118 )	1.60	(< 20 )
Indeno[1,2,3-c,d] pyrene	2	1.86	93	2	1.73	86	( 48-130 )	7.60	(< 20 )
Naphthalene	2	1.45	72	2	1.36	68	( 43-114 )	6.40	(< 20 )
Phenanthrene	2	1.69	85	2	1.62	81	( 53-115 )	4.70	(< 20 )
Pyrene	2	1.77	89	2	1.62	81	( 53-121 )	8.90	(< 20 )
<b>Surrogates</b>									
2-Methylnaphthalene-d10 (surr)	2		79	2		75	( 38-100 )	5.40	
Fluoranthene-d10 (surr)	2		95	2		90	( 30-111 )	5.40	

## Batch Information

Analytical Batch: XMS14242  
 Analytical Method: 8270E SIM LV (PAH)  
 Instrument: Agilent 8890 GC/MS SYA  
 Analyst: NRB

Prep Batch: XXX49452  
 Prep Method: SW3535A  
 Prep Date/Time: 05/14/2024 10:30  
 Spike Init Wt./Vol.: 2 ug/L Extract Vol: 1 mL  
 Dupe Init Wt./Vol.: 2 ug/L Extract Vol: 1 mL



### Method Blank

Blank ID: MB for HBN 1884033 [XXX/49485]  
Blank Lab ID: 1764244

Matrix: Water (Surface, Eff., Ground)

QC for Samples:  
1242053001, 1242053002, 1242053003, 1242053005, 1242053006, 1242053007

### Results by AK102

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>LOD</u>	<u>Units</u>
Diesel Range Organics	0.450U	0.600	0.200	0.450	mg/L
<b>Surrogates</b>					
5a Androstane (surr)	70.3	60-120		0	%

### Batch Information

Analytical Batch: XFC16878  
Analytical Method: AK102  
Instrument: Agilent 7890B R  
Analyst: NGG  
Analytical Date/Time: 5/21/2024 5:58:00PM

Prep Batch: XXX49485  
Prep Method: SW3520C  
Prep Date/Time: 5/20/2024 6:30:00PM  
Prep Initial Wt./Vol.: 250 mL  
Prep Extract Vol: 1 mL

Print Date: 05/30/2024 2:05:45PM



## Blank Spike Summary

Blank Spike ID: LCS for HBN 1242053 [XXX49485]  
 Blank Spike Lab ID: 1764245  
 Date Analyzed: 05/21/2024 18:07

Spike Duplicate ID: LCSD for HBN 1242053 [XXX49485]  
 Spike Duplicate Lab ID: 1764246  
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1242053001, 1242053002, 1242053003, 1242053005, 1242053006, 1242053007

## 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	15.7	79	20	16.3	82	( 75-125 )	3.60	(< 20 )
<b>Surrogates</b>									
5a Androstane (surr)	0.4		103	0.4		109	( 60-120 )	6.00	

## Batch Information

Analytical Batch: **XFC16878**  
 Analytical Method: **AK102**  
 Instrument: **Agilent 7890B R**  
 Analyst: **NGG**

Prep Batch: **XXX49485**  
 Prep Method: **SW3520C**  
 Prep Date/Time: **05/20/2024 18:30**  
 Spike Init Wt./Vol.: 0.4 mg/L Extract Vol: 1 mL  
 Dupe Init Wt./Vol.: 0.4 mg/L Extract Vol: 1 mL



SGS North America Inc.  
CHAIN OF CUSTODY RECORD

1242053

SG  
201  
An  
en  
ww



Profile #: 395569 Int.: CSW

CLIENT: <sup>MB</sup> <u>At+ Geosyntec, Inc</u>					Instructions: Sections 1 - 5 must be filled out. Omissions may delay the onset of analysis.					Page <u>1</u> of <u>2</u>			
CONTACT: <u>Math Faust</u>			PHONE #: <u>907-290-2413</u>		Section 3		Preservative						
PROJECT NAME: <u>KSES 2024</u>			Project/Permit Number:		CONTAINERS	/ / / / /					NOTE: *The following analyses require specific method and/or compound list: BTEX, Metals, PFAS		
REPORTS TO: <u>Math Faust</u>			NPDL Number(DOD):			Sample Type	Analysis*						
INVOICE TO: <u>Math Faust</u>			E-MAIL: <u>matthew.faust@geosyntec.com</u>			Comp							
			QUOTE #:			Grab							
			P.O. #:		MI	<u>8260 VOL</u>	<u>AK101 GRD</u>	<u>AK102 DRD</u>	<u>8270SIM</u>				
RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX/MATRIX CODE							REMARKS/LOC ID		
<u>1A5</u>	<u>24 KSES-MW01-GW</u>	<u>5/9/24</u>	<u>1543</u>	<u>GW</u>	<u>10</u>	<u>grab</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>			
<u>2A5</u>	<u>24 KSES-MW02-GW</u>	<u>5/9/24</u>	<u>1827</u>	<u>GW</u>	<u>10</u>	<u>grab</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>			
<u>3A5</u>	<u>24 KSES-MW03-GW</u>	<u>5/10/24</u>	<u>0837</u>	<u>GW</u>	<u>10</u>	<u>grab</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>			
<u>4AC</u>	<u>TRIP BLANK Log</u>												
Comments:													
DOD Project? YES NO				Turnaround Time Requested				SGS Sample Receipt (Lab Use Only)					
Data Deliverables Requested				Standard				Delivery Method: <u>Client</u> Commercial		Chain of Custody Seal Condition:			
DataView		SEDD		EQUIS		Rush		Did each cooler have a corresponding COC? Yes No		INTACT BROKEN ABSENT			
Level 4		ERPIMS		Other:		Requested Rush Report Date:				COC Seal Location(s): <u>1, 2, 3</u>			
RELINQUISHED BY:			DATE:	TIME:	RECEIVED BY:			Cooler ID	Temperature (°C)	Therm. ID	If more than three coolers are received, or for documentation of non-compliant coolers, use form FS-0029.		
<u>[Signature]</u>			<u>5/10/24</u>	<u>1240</u>	<u>[Signature]</u>			<u>1</u>	<u>2.6°</u>	<u>121</u>			
<u>[Signature]</u>			<u>5/13/24</u>	<u>0855</u>									
			<u>5/15/24</u>	<u>0927</u>	<u>[Signature]</u>						Intials: _____		

Laboratory Use Only

<http://www.sgs.com/terms-and-conditions>





1242053



SAMPLE RECEIPT FORM

Project Manager Completion				
Was all necessary information recorded on the COC upon receipt? (temperature, COC seals, etc.?)	<input checked="" type="radio"/> Yes	No	N/A	
Was temperature between 0-6° C?	<input checked="" type="radio"/> Yes	No	N/A	If "No", are the samples either exempt* or sampled <8 hours prior to receipt?
Were all analyses received within holding time*?	<input checked="" type="radio"/> Yes	No	N/A	
Was a method specified for each analysis, where applicable? If no, please note correct methods.	<input checked="" type="radio"/> Yes	No	N/A	
Are compound lists specified, where applicable? For project specific or special compound lists please note correct analysis code.	Yes	No	<input checked="" type="radio"/> N/A	
If rush was requested by the client, was the requested TAT approved?	Yes	No	<input checked="" type="radio"/> N/A	If "NO", what is the approved TAT?
If SEDD Deliverables are required, were Location ID's and an NPD Number provided?	Yes	No	<input checked="" type="radio"/> N/A	If "NO", contact client for information.
Sample Login Completion				
Do ID's on sample containers match COC?	<input checked="" type="radio"/> Yes	No	N/A	
If provided on containers, do dates/times collected match COC?	<input checked="" type="radio"/> Yes	No	N/A	Note: If times differ <1 hr., record details below and login per COC.
Were all sample containers received in good condition?	Yes	<input checked="" type="radio"/> No	N/A	2H-ice present, 1 left / 1 broken lid some volume lost
Were proper containers (type/mass/volume/preservative) received for all samples? *See form F-083 "Sample Guide"	<input checked="" type="radio"/> Yes	No	N/A	Note: If 200.8/6020 Total Metals are received unpreserved, preserve and note HNO3 lot here: If 200.8/6020 Dissolved Metals are received unpreserved, log in for LABFILTER and do not preserve. For all non-metals methods, inform Project Manager.
Were Trip Blanks (VOC, GRO, Low-Level Hg, etc.) received with samples, where applicable*?	<input checked="" type="radio"/> Yes	No	N/A	
Were all VOA vials free of headspace >6mm?	<input checked="" type="radio"/> Yes	No	N/A	
Were all soil VOA samples received field extracted with Methanol?	Yes	No	<input checked="" type="radio"/> N/A	
Did all soil VOA samples have an accompanying unpreserved container for % solids?	Yes	No	<input checked="" type="radio"/> N/A	
If special handling is required, were containers labelled appropriately? e.g. MI/ISM, foreign soils, lab filter, Ref Lab, limited volume	Yes	No	<input checked="" type="radio"/> N/A	
For Rush/Short Holding time, was the lab notified?	Yes	No	<input checked="" type="radio"/> N/A	
For any question answered "NO", was the Project Manager notified?	<input checked="" type="radio"/> Yes	No	N/A	PM Initials: <i>[Signature]</i>
Was Peer Review of sample numbering/labelling completed?	<input checked="" type="radio"/> Yes	No	N/A	Reviewer Initials: <i>HOS</i>
<b>Additional Notes/Clarification where Applicable, including resolution of "No" answers when a change order is not attached:</b>				



### 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>
1242053001-A	HCL to pH < 2	OK	1242053006-G	HCL to pH < 2	OK
1242053001-B	HCL to pH < 2	OK	1242053006-H	HCL to pH < 2	OK
1242053001-C	HCL to pH < 2	OK	1242053006-I	No Preservative Required	OK
1242053001-D	HCL to pH < 2	OK	1242053006-J	No Preservative Required	OK
1242053001-E	HCL to pH < 2	OK	1242053007-A	HCL to pH < 2	OK
1242053001-F	HCL to pH < 2	OK	1242053007-B	HCL to pH < 2	OK
1242053001-G	HCL to pH < 2	OK	1242053007-C	HCL to pH < 2	OK
1242053001-H	HCL to pH < 2	OK	1242053007-D	HCL to pH < 2	OK
1242053001-I	No Preservative Required	OK	1242053007-E	HCL to pH < 2	OK
1242053001-J	No Preservative Required	OK	1242053007-F	HCL to pH < 2	OK
1242053002-A	HCL to pH < 2	OK	1242053007-G	HCL to pH < 2	OK
1242053002-B	HCL to pH < 2	OK	1242053007-H	HCL to pH < 2	OK
1242053002-C	HCL to pH < 2	OK	1242053007-I	No Preservative Required	OK
1242053002-D	HCL to pH < 2	OK	1242053007-J	No Preservative Required	OK
1242053002-E	HCL to pH < 2	OK	1242053008-A	HCL to pH < 2	OK
1242053002-F	HCL to pH < 2	OK	1242053008-B	HCL to pH < 2	OK
1242053002-G	HCL to pH < 2	OK	1242053008-C	HCL to pH < 2	OK
1242053002-H	HCL to pH < 2	FR			
1242053002-I	No Preservative Required	OK			
1242053002-J	No Preservative Required	OK			
1242053003-A	HCL to pH < 2	OK			
1242053003-B	HCL to pH < 2	OK			
1242053003-C	HCL to pH < 2	OK			
1242053003-D	HCL to pH < 2	OK			
1242053003-E	HCL to pH < 2	OK			
1242053003-F	HCL to pH < 2	OK			
1242053003-G	HCL to pH < 2	OK			
1242053003-H	HCL to pH < 2	OK			
1242053003-I	No Preservative Required	OK			
1242053003-J	No Preservative Required	OK			
1242053004-A	HCL to pH < 2	OK			
1242053004-B	HCL to pH < 2	OK			
1242053004-C	HCL to pH < 2	OK			
1242053005-A	HCL to pH < 2	OK			
1242053005-B	HCL to pH < 2	OK			
1242053005-C	HCL to pH < 2	OK			
1242053005-D	HCL to pH < 2	OK			
1242053005-E	HCL to pH < 2	OK			
1242053005-F	HCL to pH < 2	OK			
1242053005-G	HCL to pH < 2	OK			
1242053005-H	HCL to pH < 2	OK			
1242053005-I	No Preservative Required	OK			
1242053005-J	No Preservative Required	OK			
1242053006-A	HCL to pH < 2	OK			
1242053006-B	HCL to pH < 2	OK			
1242053006-C	HCL to pH < 2	OK			
1242053006-D	HCL to pH < 2	OK			
1242053006-E	HCL to pH < 2	OK			
1242053006-F	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.

**Attachment D**  
**ADEC Laboratory Data Review Checklist**



# ADEC Contaminated Sites Program Laboratory Data Review Checklist

<b>Completed By:</b>	Molly Becia	<b>CS Site Name:</b>	King Salmon Earth Station (KSES)	<b>Lab Name:</b>	SGS North America Inc.
<b>Title:</b>	Staff Scientist	<b>ADEC File No.:</b>	2569.38.007	<b>Lab Report No.:</b>	1242053
<b>Consulting Firm:</b>	Geosyntec	<b>Hazard ID No.:</b>	2819	<b>Lab Report Date:</b>	05/30/2024

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

## 1. Laboratory

- a. Did an ADEC Contaminated Sites Laboratory Approval Program (CS-LAP) approved laboratory receive and perform all of the submitted sample analyses?  
Yes  No  N/A   
Comments: Samples received and analyses performed by SGS North America Inc. - Anchorage
- b. If the samples were transferred to another “network” laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses CS-LAP approved?  
Yes  No  N/A   
Comments: Samples were not sub-contracted to an alternate laboratory.

## 2. Chain of Custody (CoC)

- a. Is the CoC information completed, signed, and dated (including released/received by)?  
Yes  No  N/A   
Comments:
- b. Were the correct analyses requested?  
Yes  No  N/A   
Analyses requested: Click or tap here to enter text. The following analyses were requested on the COC: VOCs, GRO, DRO, and PAHs  
Comments: Click or tap here to enter text.

**CS Site Name:** King Salmon Earth Station (KSES)

**Lab Report No.:** 1242053

### 3. Laboratory Sample Receipt Documentation

- a. Is the sample/cooler temperature documented and within range at receipt (0° to 6° C)?

Yes  No  N/A

Cooler temperature(s): 2.6 and 5.7 degrees Celsius

Sample temperature(s): 2.6 and 5.7 degrees Celsius

Comments: Click or tap here to enter text.

- b. Is the sample preservation acceptable – acidified waters, methanol preserved soil (GRO, BTEX, VOCs, etc.)?

Yes  No  N/A

Comments: Click or tap here to enter text.

- c. Is the sample condition documented – broken, leaking, zero headspace (VOA vials); canister vacuum/pressure checked and no open valves, etc.?

Yes  No  N/A

Comments:

- 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, canister not holding a vacuum, etc.?

Yes  No  N/A

Comments: According to the Sample Receipt Form in the Laboratory Report, a subset of samples were received with broken container lids and missing sample volume. This included container H for sample 1242053006 (24KSES-MW05-GW) and container H for sample 1242053007 (24KSES-MW06-GW).

Additionally, the Sample Receipt Form noted container H for sample 1242053002 (24KSES-MW02-GW) was received with ice present in the sample.

- e. Is the data quality or usability affected?

Yes  No  N/A

Comments: Based on the Container ID information provided on the sample results sheets in the laboratory report, container H for samples 1242053006 (24KSES-MW05-GW), 1242053007 (24KSES-MW06-GW), and 1242053002 (24KSES-MW02-GW) were not used for analysis. Therefore, data quality was not affected.

### 4. Case Narrative

- a. Is the case narrative present and understandable?

Yes  No  N/A

Comments: Click or tap here to enter text.

- b. Are there discrepancies, errors, or QC failures identified by the lab?

Yes  No  N/A

**CS Site Name:** King Salmon Earth Station (KSES)

**Lab Report No.:** 1242053

Comments: Click or tap here to enter text.

- c. Were all the corrective actions documented?

Yes  No  N/A

Comments: Corrective actions were not addressed in the case narrative.

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

Comments: According to the case narrative, there are no impacts to data quality or usability.

## 5. Sample Results

- a. Are the correct analyses performed/reported as requested on CoC?

Yes  No  N/A

Comments: Click or tap here to enter text.

- b. Are all applicable holding times met?

Yes  No  N/A

Comments: Click or tap here to enter text.

- c. Are all soils reported on a dry weight basis?

Yes  No  N/A

Comments: Solid samples were not collected with the sample set.

- d. Are the reported limits of quantitation (LoQ) or limits of detections (LOD), or reporting limits (RL) less than the Cleanup Level or the action level for the project?

Yes  No  N/A

Comments: Click or tap here to enter text.

- e. Is the data quality or usability affected?

Yes  No  N/A

Comments: Since the LOD and LOQ values are less than the Groundwater and Soil Cleanup Levels, data quality and usability are not affected.

## 6. QC Samples

- a. Method Blank

- i. Was one method blank reported per matrix, analysis, and 20 samples?

Yes  No  N/A

Comments: Click or tap here to enter text.

- ii. Are all method blank results less than LOQ (or RL)?

Yes  No

Comments:

**CS Site Name:** King Salmon Earth Station (KSES)

**Lab Report No.:** 1242053

- iii. If above LoQ or RL, what samples are affected?

Comments: Click or tap here to enter text.

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

Yes  No  N/A

Comments: Sample results were not flagged by the laboratory based on the method blank contamination.

- v. Data quality or usability affected?

Yes  No  N/A

Comments: Data quality and usability were not affected by method blank results.

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

- i. Organics – Are 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: Click or tap here to enter text.

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

Yes  No  N/A

Comments: Metals/Inorganics not reported for the sample set.

- iii. Accuracy – Are 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: Click or tap here to enter text.

- iv. Precision – Are all relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? Was the 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: Click or tap here to enter text.

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

Comments: Click or tap here to enter text.

**CS Site Name:** King Salmon Earth Station (KSES)

**Lab Report No.:** 1242053

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

Yes  No  N/A

Comments: Samples were not flagged due to LCS/LCSD results.

vii. Is the data quality or usability affected?

Yes  No  N/A

Comments: Data quality and usability were not affected by LCS/LCSD results.

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

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

Yes  No  N/A

Comments: MS/MSD pairs were not reported for GRO, DRO, PAH, or VOC analysis.

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

Yes  No  N/A

Comments: Metals/Inorganics not reported for the sample set.

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

Yes  No  N/A

Comments: MS/MSD pairs were not reported.

iv. Precision – Are 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: MS/MSD pairs were not reported.

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

Comments: Click or tap here to enter text. N/A

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

Yes  No  N/A

Comments: MS/MSD pairs were not reported.

vii. Is the data quality or usability affected?

Yes  No  N/A

**CS Site Name:** King Salmon Earth Station (KSES)

**Lab Report No.:** 1242053

Comments: Data quality and usability were not affected by MS/MSD results. Precision and accuracy was assessed using the LCS/LCSD pairs for GRO, DRO, PAH, and VOC batches.

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: Click or tap here to enter text.

- ii. Accuracy – Are 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: Click or tap here to enter text.

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

Yes  No  N/A

Comments: There were no surrogate failures in the project samples.

- iv. Is the data quality or usability affected?

Yes  No  N/A

Comments: Data quality and usability are not affected by the surrogate results.

e. Trip Blanks

- i. Is one trip blank reported per matrix, analysis, and for each cooler containing volatile samples? Yes  No  N/A

Comments: Click or tap here to enter text.

- ii. Are all results less than LoQ or RL?

Yes  No  N/A

Comments: Click or tap here to enter text.

- iii. If above LoQ or RL, what samples are affected?

Comments: N/A

- iv. Is the data quality or usability affected?

Yes  No  N/A

Comments: Data quality and usability are not affected by the trip blank results.

f. Field Duplicate

- i. Are one field duplicate submitted per matrix, analysis, and 10 project samples?

Yes  No  N/A

Comments: Click or tap here to enter text.

- ii. Was the duplicate submitted blind to lab?

Yes  No  N/A

Comments: Field duplicate 24KSES-MW06-GW is associated with primary sample 24KSES-MW05-GW.

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

$$RPD (\%) = \left| \frac{R_1 - R_2}{\left(\frac{R_1 + R_2}{2}\right)} \right| \times 100$$

Where  $R_1$  = Sample Concentration

$R_2$  = Field Duplicate Concentration

Is the data quality or usability affected? (Explain)

Yes  No  N/A

Comments: RPDs for acenaphthene, anthracene, benz[a]anthracene, benz[a]anthracene, benzo(a)pyrene, benzo(g,h,i)perylene, benzo[b]fluoranthene, benzo[k]fluoranthene, chrysene, dibenz[a,h]anthracene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, phenanthrene, and pyrene were non-calculable due to situations in which one of the compared results is a detection and the other is non-detect or in which one of the compared concentrations is estimated less than the LOQ and the other is greater than the LOQ.

- iv. Is the data quality or usability affected? (Explain)

Yes  No  N/A

Comments: Based on professional and technical judgment, field duplicate RPDs were only evaluated if both results were greater than the LOQ. Data quality and usability are not affected by the field duplicate results.

g. Decontamination or Equipment Blanks

- i. Were decontamination or equipment blanks collected?

Yes  No  N/A

Comments: Click or tap here to enter text.

- ii. Are all results less than LoQ or RL?



**CS Site Name:** King Salmon Earth Station (KSES)

**Lab Report No.:** 1242053

Yes  No  N/A

Comments: Decontamination or equipment blanks were not submitted.

iii. If above LoQ or RL, specify what samples are affected.

Comments: Click or tap here to enter text.

iv. Are data quality or usability affected?

Yes  No  N/A

Comments: Decontamination or equipment blanks were not specified in the project work plan addendum. Data quality and usability are not affected.

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

a. Are they defined and appropriate?

Yes  No  N/A

Comments: No additional data flags or qualifiers were applied.

**APPENDIX B**  
ADEC Conceptual Site Model Human Health  
Scoping and Graphic and Ecoscoping Forms

# 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 - PM<sub>10</sub>). 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							

## Appendix C: Blank Ecoscoping Form

**Site Name:** AT&T Alascom King Salmon Earth Station

**Completed by:** Matt Faust (Geosyntec Consultants)

**Date:** 28 September 2023

*Instructions: Follow the italicized instructions in each section below. “Off-ramps,” where the evaluation ends before completing all of the sections, can be taken when indicated by the instructions. Comment boxes should be used to help support your answers.*

### 1. Direct Visual Impacts and Acute Toxicity

Are direct impacts that may result from the site contaminants evident, or is acute toxicity from high contaminant concentrations suspected? *Check the appropriate box.*

- Yes – *Describe observations below and evaluate all of the remaining sections without taking any off-ramps.*
- No – *Go to next section.*

Comments:

### 2. Terrestrial and Aquatic Exposure Routes

*Check each terrestrial and aquatic route that could occur at the site.*

#### Terrestrial Exposure Routes

- Exposure to water-borne contaminants as a result of wading or swimming in contaminated waters or ingesting contaminated water.
- Contaminant uptake in terrestrial plants whose roots are in contact with contaminated surface water.
- Contaminant migration via saturated or unsaturated groundwater zones and discharge at upland “seep” locations (not associated with a wetland or waterbody).
- Contaminant uptake by terrestrial plants whose roots are in contact with soil moisture or groundwater present within the root zone (generally no more than 4 feet below ground surface).
- Particulates deposited on plants directly or from rain splash.
- Incidental ingestion and/or exposure while animals grub for food, burrow (up to 2 feet for small animals or 6 feet for large animals), or groom.

- Inhalation of fugitive dust or vapors disturbed by foraging or burrowing activities.
- Bioaccumulatives (other than PAHs, which bioaccumulate more readily in aquatic environments) taken up by soil invertebrates, which are in turn eaten by higher food chain organisms (see the *Policy Guidance on Developing Conceptual Site Models*).
- Other site-specific exposure pathways.

Aquatic Exposure Routes

- Contaminated surface runoff migration to water bodies through swales, drainage ditches, or overland flow.
- Aquatic receptors exposed through osmotic exchange, respiration, or ventilation of surface waters.
- Contaminant migration via saturated or unsaturated groundwater zones and discharge at “seep” locations along banks or directly to surface water.
- Deposition into sediments from upwelling of contaminated groundwater.
- Aquatic receptors may be exposed directly to contaminated sediments through foraging or burrowing, or indirectly exposed due to osmotic exchange, respiration, or ventilation of sediment pore water.
- Aquatic plants rooted in contaminated sediments.
- Bioaccumulatives (see the *Policy Guidance on Developing Conceptual Site Models*) taken up by sediment invertebrates, which are in turn eaten by higher food chain organisms.
- Other site-specific exposure pathways.

*If any of the above boxes are checked, go on to the next section. If none are checked, end the evaluation and check the box below.*

OFF-RAMP: NO FURTHER ECOLOGICAL EVALUATION NECESSARY

Comments:

**3. Habitat**

*Check all that may apply. See *Ecoscoping Guidance* for additional help.*

- Habitat that could be affected by the contamination supports valued species (i.e., species that are regulated, used for subsistence, have ceremonial importance, have commercial value, or provide recreational opportunity).
- Critical habitat or anadromous stream in an area that could be affected by the contamination.
- Habitat that is important to the region that could be affected by the contamination.

- Contamination is in a park, preserve, or wildlife refuge.

*If any of the above boxes are checked, go on to the next scoping factor. If none are checked, end the evaluation and check the box below.*

- OFF-RAMP: NO FURTHER ECOLOGICAL EVALUATION NECESSARY

Comments:

#### **4. Contaminant Quantity**

*Check all that may apply. See Ecoscoping Guidance for additional help.*

- Endangered or threatened species are present.
- The aquatic environment is or could be affected.
- Non-petroleum contaminants may be present, or the total area of petroleum-contaminated surface soil exceeds one-half acre.

*If any of the above boxes are checked, go on to the next scoping factor. If none are checked, end the evaluation and check the box below.*

- OFF-RAMP: NO FURTHER ECOLOGICAL EVALUATION NECESSARY

Comments:

#### **5. Toxicity Determination**

*Check all that apply.*

- Bioaccumulative chemicals are present (see *Policy Guidance on Developing Conceptual Site Models*).
- Contaminants exceed benchmark levels (see the Ecological Benchmark Tool in RAIS, available at: [http://rais.ornl.gov/tools/eco\\_search.php](http://rais.ornl.gov/tools/eco_search.php)).

*If either box is checked, complete a detailed Ecological Conceptual Site Model (see DEC's Policy Guidance on Developing Conceptual Site Models) and submit it with the form to your DEC project manager.*

*If neither box is checked, check the box below and submit this form to your DEC project manager.*

OFF-RAMP: NO FURTHER ECOLOGICAL EVALUATION NECESSARY

Comments:



# APPENDIX C

## Example Field Forms



**Additional Sampling Notes and Diagrams**

**TAILGATE SAFETY MEETING**

---

---

Project Name: \_\_\_\_\_ Date: \_\_\_\_\_  
Client: \_\_\_\_\_ Project No.: \_\_\_\_\_  
Site Address: \_\_\_\_\_

Items discussed in this meeting:

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Recommended PPE:

_____	_____
_____	_____
_____	_____
_____	_____

Hospital Location/Directions:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Attendance/Signatures:

Print Name/Company	Signature
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

\_\_\_\_\_  
Project Manager

\_\_\_\_\_  
Date

## Water Quality Meter Calibration Form

**Site Name:** \_\_\_\_\_

**Location:** \_\_\_\_\_

**Date:** \_\_\_\_\_

Calibration Standards Lot Numbers and Expiration Date							
Standard	Lot / Exp. Date			Standard	Lot / Exp. Date		
	pH 4 <small>(standard units)</small>	pH 7 <small>(standard units)</small>	pH 10 <small>(standard units)</small>	ORP <small>(mV)</small>	Cond. <small>(<math>\frac{\quad}{\quad}</math>)</small>	DO (Zero) <small>mg/L</small>	DO <small>(mg/L) / Temp.</small>
Pre-calibration Reading							
Post-calibration Reading							
<b>Meter make/Model and SN:</b>	NTU	NTU	NTU	NTU	Comments		
Pre-calibration Reading							
Post-calibration Reading							
	pH 4 <small>(standard units)</small>	pH 7 <small>(standard units)</small>	pH 10 <small>(standard units)</small>	ORP <small>(mV)</small>	Cond. <small>(<math>\frac{\quad}{\quad}</math>)</small>	DO (Zero) <small>mg/L</small>	DO <small>(mg/L) / Temp.</small>
Pre-calibration Reading							
Post-calibration Reading							
<b>Meter make/Model and SN:</b>	NTU	NTU	NTU	NTU	Comments		
Pre-calibration Reading							
Post-calibration Reading							

\_\_\_\_\_

Personnel Signature/Date