

CITY OF UNALASKA

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Via Certified Mail – Return Receipt Requested

September 11, 2012

Meghan Dooley
Alaska Department of Environmental Conservation
Contaminated Sites Program
555 Cordova Street
Anchorage, AK 99501

Re: City of Unalaska – Drainage Projects

Dear Ms. Dooley:

The attached document presents the results of a soils characterization and work plan addendum for City of Unalaska storm drain improvements near the Rocky Point Management Area and the Pre-WWII Tank Farm area in Dutch Harbor, Alaska.

If you have any questions or concerns regarding this matter, please contact myself or Robert Lund at 907-581-1260.

Sincerely,

A handwritten signature in black ink, appearing to read "Nancy Peterson", followed by a long horizontal line.

Nancy Peterson
Director of Public Works



Characterization Report and Work Plan Addendum for Ilulaa Lake/East Point Road & Delta Way

Prepared by

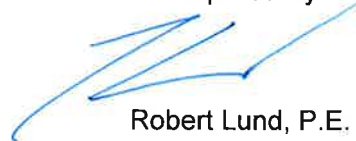
City of Unalaska
Department of Public Works
PO Box 610
Unalaska, Alaska 99685

Prepared for

Ilulaa Lake / East Point Road & Delta Way
Drainage Improvements
DPW *Project* No. 10101
Dutch Harbor, Alaska

September 11, 2012

Prepared By



Robert Lund, P.E.

Characterization Report and Work Plan Addendum for Ilulaaq Lake/East Point Road & Delta Way

Table of Contents

1.0 INTRODUCTION	1.1
1.1 SITE DESCRIPTION AND BACKGROUND	1.1
1.2 REGIONAL AND LOCAL GEOLOGY/HYDROGEOLOGY	1.3

2.0 PROJECT NARRATIVE	2.5
2.1 BACKGROUND	2.5
2.2 WORK PLAN DEVIATIONS.....	2.6
2.3 CHRONOLOGY	2.7

3.0 RESULTS AND FINDINGS	3.9
3.1 SOIL DATA	3.9
3.2 FIELD SCREENING RESULTS.....	3.9
3.3 ANALYTICAL RESULTS	3.9

4.0 REVISED SITE CONCEPTUAL MODEL	4.11
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5.0 PROPOSED CLEANUP LEVELS	5.12
--	-------------

6.0 WORK PLAN ADDENDUM.....	6.13
------------------------------------	-------------

7.0 QUALITY ASSURANCE SUMMARY	7.14
--	-------------

8.0 CONCLUSIONS & RECOMMENDATIONS	8.15
--	-------------

9.0 REFERENCES	9.16
-----------------------------	-------------

10.0 DOCUMENTS ADOPTED BY REFERENCE	10.17
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Characterization Report and Work Plan Addendum for Ilulag Lake/East Point Road & Delta Way

LIST OF FIGURES

Figure 1	Delta Way PID to TPH Plot
Figure 2	East Point Road PID to TPH Plot

LIST OF TABLES

Table 1	Soil Screening Results
Table 2	Soil Analytical Results
Table 3	Characterization Results

LIST OF ATTACHMENTS

Attachment A	Sample Location Map
Attachment B	ADEC Correspondance
Attachment C	Field Notes
Attachment D	Laboratory Analytical Reports and CoC Documentation
Attachment E	Laboratory Quality Assurance Forms and Consultant Narrative
Attachment F	Photolog

Characterization Report and Work Plan Addendum for Iluluaq Lake/East Point Road & Delta Way

LIST OF ACRONYMS

AAC	Alaska Administrative Code
ADEC	Alaska Department of Environmental Conservation
ARD	Aleutian Recording District
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and total xylenes
°C	degrees centigrade
CCV	continuing calibration verification
CMP	corrugated metal pipe
CoC	chain of custody
COPC	contaminants of potential concern
CPP	corrugated polyethylene pipe
CULs	cleanup levels
DL	detection level. 2x the DL is the LOD.
DUP	duplicate
DRO	diesel range organics
DPW	City of Unalaska Department of Public Works
DW	Delta Way
EPA	Environmental Protection Agency
EP	East Point Road
FUDS	formerly used defense sites
GRO	gasoline range organics
GPS RTK	global positionings system with real time kinematic satellite navigation
J	the quantification is an estimation
LCS/LCSD	lab control sample and lab control sample duplicate
LOD	limits of detection is the lowest statistical level at which the laboratory can qualify the presence of an analyte
LOQ	limits of quantification is the lowest level the lab can quantify an analyte
LNAPL	light non-aqueous phase liquid
MLLW	mean lower low water (tide level, 0.00 feet elevation in NGVD 29 elevation system)
MS/MSD	matrix spike and matrix spike duplicate
NAD 83	North American datum 1983 (horizontal)
NGVD 29	national geodetic vertical datum 1929
No.	number
NOAA	national oceanic and atmospheric administration
PAHs	polynuclear aromatic hydrocarbons
PE	professional engineer
PQL	practical quantification level
PID	photo-ionization detector
ppmv	parts per million by volume
QC	quality control
RPD	relative percent difference
PQL	practical quantification limit (same as the LOQ)
REPD	LOQ unless a lab value is j-flagged, in which case it is the LOD
QA/QC	quality assurance quality control
RPMA	Rocky Point Management Area
RRO	residual range organics
TPH	total petroleum hydrocarbons (GRO + DRO + RRO)
TB	trip blank
USACE	United States Army Corps of Engineers
USDIGS	United States Department of the Interior Geological Survey
USGS	United States Geological Survey
WRCC	Western Region Climate Center

Characterization Report and Work Plan Addendum for Ilulaa Lake/East Point Road & Delta Way

1.0 INTRODUCTION

The City of Unalaska (the City) has prepared this *Characterization Report and Work Plan Addendum* (the *Report*) to document the May 2012 characterization of soils along the path of future storm drain improvements at the Ilulaa Lake/East Point Road & Delta Way Drainage Project (the *Project*) in Dutch Harbor, Alaska. The purpose of the characterization was to delineate fuel contamination in the top 4-feet bgs of soil along the future storm drain improvements also shown in **Attachment A**.

Previously, the City submitted a *Work Plan* to ADEC for the *Project* entitled *Work Plan for Ilulaa Lake/East Point Road & Delta Way* dated February 29, 2011 (the *Work Plan*). ADEC approved the *Work Plan* with conditions on March 2, 2012. ADEC correspondence is included in **Attachment B**. The *Work Plan* also included civil engineering design plans for the storm drain installation (the *Plans*).

This *Report* follows ADEC's 2009 *Site Characterization Work Plan and Reporting Guidance for Investigation of Contaminated Sites* through presentation of the following elements:

- A *Project* description and background;
- A narrative description of fieldwork and *any Work Plan deviations*;
- The results and findings;
- A revised site conceptual model;
- The proposed cleanup levels;
- A *Work Plan Addendum* which defines eligible soils;
- An assessment of data quality; and
- The conclusions and recommendations.

This *Report* also adopts the ADEC guidance documents listed in **Section 10** by reference.

1.1 SITE DESCRIPTION AND BACKGROUND

The storm drain installations are both placed in Section 3, Township 73 South, Range 118 West, USGS Quadrangle Unalaska.

Characterization Report and Work Plan Addendum for Ilulaq Lake/East Point Road & Delta Way

The City owns the public rights of way including East Point Loop Road and Delta Way and has also established public utility easements through privately owned land adjacent to these rights of way. The path of the storm drain improvements are within these public rights of way and in other areas designated as public utility easements. These areas are contiguous to the Rocky Point Management Area (the RPMA) and the World War Two Tank Farm FUDS Site No. F10AK084103 on Amaknak Island (the FUDS Site).

The RPMA and the FUDS Site have been used as bulk petroleum storage and distribution facilities for the fueling of marine vessels and loading of tanker trucks for over 70 years. The Department of Defense initially operated fueling facilities through the conclusion of World War II. Standard Oil of California, a corporate predecessor to Chevron, subsequently leased portions of the facilities until 1986. Since 1986, Delta Western has leased and operated portions of the facility for fueling operations. Surface rights to most of the land on Amaknak Island, including the RPMA and the FUDS Site, were transferred to Ounalashka Corporation in response to the Alaska Native Claims Act of 1971 (Stantec, 2010).

East Point Road Storm Drain

The East Point Road storm drain replaces an existing storm drain and will run from Ilulaq Lake to Iliuliuk Bay, which is on the ADEC 2010 list of impaired waters for total petroleum hydrocarbons.

The East Point Road storm drain originates at Ilulaq Lake at Station 0+00 (53° 53' 14.03355" North latitude, -166° 32' 12.56411" West longitude in NAD 83). Ilulaq Lake's only surface water hydraulic connection to Iliuliuk Harbor is through this storm drain. This portion of Ilulaq Lake is recorded on ARD Plat No. 305-1988-88-14. At Station 0+29, the Storm Drain enters an easement through the Horizon Lines, Inc. (Horizon) yard, which is located on Tract A of ARD Plat 305-1994-94-1. The Horizon yard is used to store and load/off-load cargo containers. At Station 1+59, the Storm Drain enters the East Point Road right of way which is an unpaved gravel road. At Station 12+69, the Storm Drain leaves the East Point Road right of way and is converted to a sediment separator as it enters a utility easement which crosses ARD Plat No. 305-90-5 through Parcel 1-A and connects to the existing Iliuliuk Bay outfall pipe at Station 13+36. This area is currently crossed by aboveground and operational Delta Western, Inc. (Delta Western) fuel lines. The Iliuliuk Harbor outfall pipe is an existing 24" diameter CPP drain which discharges at Station 13+78 (53° 53' 23.92637" North latitude, -166° 32' 7.24855" West longitude in NAD 83; 1378 horizontal feet of drain pipe away from Station 0+00). Connection will be made to the existing 24" CMP at Station 13+36.

The East Point Road storm drain runs through or is in a right of way adjoining land zoned Marine Related/Industrial from Station 0+00 to Station 12+69. From Station 12+69 through Station 13+36, it runs through land zoned Marine Dependent Industrial. These zoning descriptions are per City of Unalaska Code of Ordinances 8.12.060. With the exception of East

Characterization Report and Work Plan Addendum for Iluluaq Lake/East Point Road & Delta Way

Point Road right of way, all of these properties are owned by the Ounalashka Corporation and leased to others.

Delta Way Storm Drain (revised from the *Work Plan*)

The Delta Way storm drain will replace an existing storm drain and runs from about half way up Delta Way down to Iliuliuk Harbor. The route has been changed from the original *Work Plan* depiction. In the new route, the storm drain runs along a straight path from Station 0+00 to the Delta Western Dock (**Attachment A**).

The new Delta Way storm drain originates at the tie in of an existing storm drain line to a catch basin at Station 0+00 in the Delta Way right of way (53° 53' 24.94687" North latitude, -166° 32' 16.37548" West longitude in NAD 83). At Station 3+25, the storm drain begins the crossing of East Point Road. At Station 3+72, the storm drain enters an easement through the Delta Western Dock approach on Tract B of ARD Plat No. 305-1990-90-5 and discharges to Iliuliuk Bay at Station 4+71 (53° 53' 27.71448" North latitude, -166° 32' 10.05367" West longitude in NAD 83; 471 horizontal feet of drain pipe away from Station 0+00).

The Delta Way storm drain runs through or is in a right of way which adjoins land zoned Marine Related/Industrial from Station 0+00 to Station 3+72. From Station 3+72 to Station 4+71, the land is zoned Marine Dependent Industrial. These zoning descriptions are per City of Unalaska Code of Ordinances 8.12.060. With the exception of Delta Way and East Point Road rights of way, all of these properties are owned by the Ounalashka Corporation.

1.2 REGIONAL AND LOCAL GEOLOGY/HYDROGEOLOGY

The new storm drains are located in Unalaska (Port of Dutch Harbor), Alaska, across from the entrance of Dutch Harbor to Iliuliuk Bay.

The bedrock underlying the area is typically found at depths from exposed to 12-feet bgs. The Unalaska area consists of interbedded volcanic flows of andesites and basalt extrusive rocks known as the Unalaska Formation (Drewes, et. al., 1961). The USGS found the bedrock to be dominated by hydrothermally altered volcanic rocks that are intruded by numerous dikes and veins. Some altered tuffs as well as outcrops of coarse sandstone are also present (Lemke, 1995). Formations of granodiorite batholith (typically mined and crushed for engineered fill which is used extensively in developed areas such as roads and parking areas) are also present in Unalaska (USDIGS 1028).

The native surface soil in the area is generally somewhat permeable coarse-silty loam (dark brown) or clay (orange/brown) or is composed of till which consists of stony material interbedded with clay (orange/brown) and silt (dark brown). Soils tend to contain more clay (orange/brown) towards the bottom. These soils extend five to twelve feet bgs or more and are interbedded with layers of colluvial sediments ranging from a few inches to a few feet in

Characterization Report and Work Plan Addendum for Iluluaq Lake/East Point Road & Delta Way

thickness (Drewes, et. al., 1961). Numerous lenses of volcanic ash and lapilli are also found throughout the top-soil.

The area has been developed over the years and many feet of aggregate and silty fill material must be assumed to have replaced and/or overlaid native bedrock or soils (USACE 2009 estimates 4 to 6-feet within in the FUDS Site). Cobbles or to some extent sand would be expected in areas that were formerly part of a beach prior to development.

Groundwater flows through the unconsolidated sediments in the Unalaska area and typically away from the nearby mountains towards the coast. Groundwater is also found in secondary openings, including fractures or joints found in the volcanic bedrock (Lemke, 1995). Groundwater is typically found at depths around 10-feet bgs and may be subject to tidal influence (USACE 2009 estimated measurable influence 400-feet inland). During storm events, field observations have shown that groundwater most readily flows between the base of engineered fill and native soils, through seeps in silty/clay material, and in the degraded aggregate along the top of bedrock. Due to the hilly terrain and native clay like materials, discrete discontinuous pockets of groundwater or other liquids may be expected.

The Unalaska/Dutch Harbor area has a mean annual precipitation of about 60.90 inches of water. The mean annual snow fall is about 91.2 inches. The snow water equivalent is included in the precipitation total (WRCC, 2012).

According to NOAA, 2003, the mean range of tides between MHW and MLLW in Unalaska are about 3.73-feet. The maximum high and low tides recorded in Unalaska have a range of 9.18 feet historically. The highest tide was recorded January 27, 1960, at 6.70-feet above MLLW and the lowest was recorded January 29, 1999, at 2.48-feet below MLLW.

It can be very windy in Unalaska; the structural design wind speed exceeds 130 mph plus per ASCE 7-05 (approximately 50 to 100-year return period). The average monthly wind speed ranges from a low of 8.3 mph in July to a high of 12.7 mph in November (Alaska Energy Authority, 2005).

Characterization Report and Work Plan Addendum for Iluluaq Lake/East Point Road & Delta Way

2.0 PROJECT NARRATIVE

2.1 BACKGROUND

The preparer of this Report is an employee of the City and a qualified person as stipulated in 18 AAC 75.990 and conditionally approved by ADEC (**Attachment B**). All field activities were performed by (sampling) or under the supervisory control (excavation and backfill) of the author of this report in general accordance with the *Work Plan*. Field support was provided by a representative of Regan Engineering in company with the author, and excavations of test pits were performed by the City Department of Public Works, also under the direction of the author.

Test pit excavations are referenced to the *Plans* stationing system (see **Attachment A**, DW-0+00 through DW-4+00 and EP-1+60 through EP-13+36) and were staked out with GPS-RTK equipment referenced to the *Plans* coordinate system at minimum 50-foot intervals. Per the *Work Plan*, utility locates were first provided, then test pits were advanced to 4-feet bgs, sampled, and finally backfilled with the excavator bucket. Materials were segregated so that they were backfilled in the reverse order in which they were excavated. The test pit excavations were not advanced below groundwater once it was evidenced. One test hole on East Point Road was advanced with hand tools because it was situated across live aboveground fuel lines in an area not easily accessible with heavy equipment.

For the purposes of this Report, the term “groundwater” means water that flooded in through the sidewalls or floor of an excavation. It is unknown whether the liquid was hydraulically connected to the shallow groundwater throughout the *Project* area, was seepage from surface water, or both.

The sampler entered the excavations to collect soil samples directly using sterile sample spoons and geo-cores (see exception in **Work Plan Deviations**). PID screens were collected from each test pit from 2-feet bgs (a sidewall sample) and 4-feet bgs (a floor sample) unless groundwater prevented advancement to 4-feet, in which case a PID screen was only collected from 2-feet bgs.

At least one confirmation sample was collected from each test pit from the horizon with the highest PID reading. Four duplicate confirmation samples were collected during the *Project*, a trip blank was stored with and submitted with each shipment of samples, and a temperature blank was included in each shipped sample cooler.

Soil samples were maintained at temperature inside a refrigerator and then shipped to the laboratory (SGS Labs), under chain of custody procedures and documentation, by air cargo, in coolers, on icepacks.

Characterization Report and Work Plan Addendum for Ilulaaq Lake/East Point Road & Delta Way

2.2 WORK PLAN DEVIATIONS

Deviations from the *Work Plan* or significant discoveries are identified below.

In locations where soil was of a cementitious character and contained substantial aggregate, samples for GRO/BTEX were collected with a sterile sample spoon rather than a geo-core because a sample could be collected with the spoon with far less disturbance. This was a common condition for the surface soils which often consisted of discrete layers of well graded highly consolidated aggregate (road base).

Groundwater was evidenced in EP-1+60, EP-2+10, EP-2+60, EP-3+10, EP-3+60, EP-4+10, and EP-4+60. Apparent LNAPL or sheen was evidenced at EP-1+60, EP-2+10, EP-2+60, EP-4+10, and EP-4+60. No tests were performed to determine the composition of the apparent LNAPL. Olfactory and chromatic evidence indicated they were composed of fuel rather than foam or mineral sheen.

Test pits were not advanced further when apparent groundwater was evidenced above 4-feet bgs (EP-1+60, EP-2+10, EP-2+60, EP-3+10 and EP-3+60). A screen and confirmation sample was only collected from 2-feet bgs at these locations with the exception of EP-2+60. At EP-2+60 apparent groundwater and LNAPL was evidenced at 6 inches bgs and no samples were collected.

If the higher of the two PID readings was at 2-feet bgs, then a confirmation sample was collected from both 2-feet and 4-feet bgs (EP-4+10, EP-9+10, and EP-10+60).

Confirmation samples were also collected from both 2-feet and 4-feet bgs in those locations where the 4-feet bgs PID reading was more than 10 times higher than the PID reading at 2-feet bgs (EP-4+60, EP-5+10, EP-5+60, and EP-6+10).

EP-13+10 was moved back to EP-12+97 due to accessibility issues with guard rails. Because the last sample was collected at EP-13+36 (39 feet away), the 50 feet spacing between test pits was still maintained.

EP-13+36 was advanced with hand shovels rather than an excavator bucket due to accessibility issues with live aboveground fuel pipelines.

An apparent end of a 6 or 8 inch steel fuel line was located at DW-4+00 which was exuding a viscous dark oil. ADEC was informed of the pipe on May 10, 2012 (**Attachment B**). The soil sample DW-4+00-4 was not biased into the oily material as it appeared to be a small discrete mass at the end of the pipe. The pipe was undamaged by the excavator.

Characterization Report and Work Plan Addendum for Iluluaq Lake/East Point Road & Delta Way

An unmarked and unknown 6 or 8 inch diameter steel pipe was uncovered at EP-5+60 at about 3.5–feet bgs to top of pipe and also in-line with the future storm drain. The pipe was scratched but otherwise undamaged by the excavator.

Planned samples from DW-4+50 and DW-5+00 were not collected due to the presence of a new office trailer. This *Report* notes a reroute of the Delta Way storm drain beginning at DW-2+75 which continues straight to discharge beneath the Delta Western Dock.

2.3 CHRONOLOGY

Utility Locates

On March 26, 2012, the City used GPS-RTK equipment to verify horizontal alignment with the *Plans* coordinate system and staked out the test pit locations on Delta Way. Activities also included notification of local businesses of upcoming activities and clearing privately owned equipment from the right of way. Test pit locations along East Point Road were similarly staked out on March 30, 2012.

On Monday, March 30, 2012, the City Department of Public Utilities and TelAlaska located and marked their underground utilities in the *Project* vicinity along Delta Way. Additionally, on May 2, 2012, underground utility locates were also performed on East Point Road.

Soil Sampling

Field notes are included in **Attachment C**.

On May 1, 2012, the City mobilized to the *Project* area and advanced 8 test pits to 4-feet bgs from DW-0+00 to DW-3+50 along Delta Way. A field screen was collected from each test pit at 2-feet bgs and 4-feet bgs. Confirmation samples were collected from each test pit at 4-feet bgs as the PID readings were most elevated at the floor level. No groundwater or free fuel was encountered. The test pits were backfilled with the excavator bucket immediately following sampling. Confirmation samples were stored in a refrigerator at the City DPW yard storage warehouse.

On May 3, 2012, the City mobilized to the *Project* area and advanced 9 test pits from EP-1+60 to EP-5+60 along East Point Road. A field screen was collected from each test pit at 2-feet bgs and 4-feet bgs (except where apparent groundwater was uncovered above 4-feet bgs within the excavation). Confirmation samples were collected from each test pit from the level where PID readings were most elevated. The test pits were backfilled with the excavator bucket immediately following sampling. Confirmation samples were stored in a refrigerator at the City DPW yard storage warehouse.

Characterization Report and Work Plan Addendum for Ilulaq Lake/East Point Road & Delta Way

On May 4, 2012, the City mobilized to the *Project* area and advanced 6 test pits from EP-6+10 to EP-8+60 along East Point Road. A field screen was collected from each test pit at 2-feet bgs and 4-feet bgs. At a minimum, a confirmation sample was collected from each test pit from the level where PID readings were most elevated. The test pits were backfilled with the excavator bucket immediately following sampling. Confirmation samples were stored in a refrigerator at the City DPW yard storage warehouse.

On May 7, 2012, the City mobilized to the *Project* area and advanced 7 test pits from EP-9+10 to EP-12+10 along East Point Road. A field screen was collected from each test pit at 2-feet bgs and 4-feet bgs. At a minimum, a confirmation sample was collected from each test pit from the level where PID readings were most elevated. The test pits were backfilled with the excavator bucket immediately following sampling. Confirmation samples were stored in a refrigerator at the City DPW yard storage warehouse.

On May 8, 2012, the City mobilized to the *Project* area and advanced 3 test pits from EP-12+60 to EP-12+97 and at DW-4+00 along East Point Road and Delta Way, respectively. A field screen was collected from each test pit at 2-feet bgs and 4-feet bgs. At a minimum, a confirmation sample was collected from each test pit from the level where PID readings were most elevated. The test pits were backfilled with the excavator bucket immediately following sampling. Confirmation samples were stored in a refrigerator at the City DPW yard storage warehouse.

On May 9, 2012, the City sent confirmation samples from May 1 and May 3, 2012, to SGS Labs via Penair Cargo, in coolers on icepacks.

On May 10, 2012, the City sent confirmation samples from May 4, May 7, and May 8, 2012, to SGS Labs via Penair Cargo, in coolers, and on icepacks.

On May 11, 2012, the City mobilized to the *Project* area and advanced 1 test pit at EP-13+36 along East Point Road. A field screen was collected from the test pit at 2-feet bgs and 4-feet bgs. A confirmation sample was collected from 4-feet bgs as the PID meter read 0.0 ppmv at both elevations. The test pit was backfilled with hand shovels following sampling. The confirmation sample was stored in a refrigerator at the City DPW yard storage warehouse.

On May 22, 2012, the City sent confirmation samples from May 11, 2012, to SGS Labs via Penair Cargo, in coolers, and on icepacks.

Characterization Report and Work Plan Addendum for Iluluaq Lake/East Point Road & Delta Way

3.0 RESULTS AND FINDINGS

3.1 SOIL DATA

Field notes are included in **Attachment C**. Laboratory analytical reports and CoC documentation are included in **Attachment D**. A photolog is included in **Attachment F**.

3.2 FIELD SCREENING RESULTS

During soil removal activities, the field screening samples were collected/analyzed in general accordance with ADECs May 2010 *DRAFT Field Sampling Guidance* and the conditionally approved *Work Plan*. Field screening was performed with a MiniRae Lite PID meter span calibrated daily with 0 ppmv fresh air to 100 ppmv isobutylene. Field screen results were used to guide the location of field confirmation samples.

Field screen PID readings are presented in **Table 1**.

3.3 ANALYTICAL RESULTS

During soil removal activities, the confirmation samples were collected/stored/transported/analyzed under CoC procedures in accordance with the ADEC May 2010 *DRAFT Field Sampling Guidance* and the conditionally approved *Work Plan*. The laboratory which analyzed the confirmation samples was SGS Laboratories, Inc.

The analytical results are presented in **Table 2**, and a map with sample locations is presented in **Attachment A**.

All of the confirmation samples were analyzed for the following COPC:

- BTEX by EPA Method 8021B;
- GRO by AK 101;
- DRO by AK 102;
- PAHs by EPA Method 8270D; and
- RRO by AK 103.

At least 10% of the confirmation samples were double analyzed with duplicates submitted blind to the lab.

A trip blank was analyzed for each sample shipment event for GRO/BTEX.

Characterization Report and Work Plan Addendum for Ilulaaq Lake/East Point Road & Delta Way

The following is a summary of confirmation samples whose analytical results exceeded the most stringent cleanup levels (18 AAC 75.340 Table B1 and/or B2 Method 2 Migration to Groundwater in the over 40 inch precipitation zone).

Along Delta Way:

- DW-3+00-4 for DRO at 262 mg/kg; and
- DW-3+50-4 for benzene at 51.7 mg/kg.

Along East Point Road:

- EP-1+60-2 for DRO at 893 mg/kg;
- EP-2+10-2 for DRO at 366 mg/kg;
- EP-4+60-4 for DRO 1870 mg/kg;
- EP-5+10-4 for DRO at 2080 mg/kg;
- EP-5+60-4 for DRO at 523 mg/kg; and
- EP-13+36-4 for DRO at 254 mg/kg.

Characterization Report and Work Plan Addendum for Ilulaq Lake/East Point Road & Delta Way

4.0 REVISED SITE CONCEPTUAL MODEL

No revisions are proposed to the February 29, 2011, *Work Plan's* Preliminary Site Conceptual Model, which is adopted by reference.

Characterization Report and Work Plan Addendum for Ilulaaq Lake/East Point Road & Delta Way

5.0 PROPOSED CLEANUP LEVELS

No revisions are proposed to the *Work Plan's* proposed CULs, which are adopted by reference for clarity.

This *Report* addresses the pre-characterization of soils along the storm drain routes. These soils may be eligible for disposal as clean fill off site if they do not exceed the CULs from 18 AAC 75.340 Table B1 and/or B2 Method 2 Migration to Groundwater in the over 40 inch Precipitation Zone (Method 2 CULs) for all COPCs.

Numerical concentration values for the applicable soil CULs are shown in **Table 2**.

6.0 WORK PLAN ADDENDUM

Characterization Report and Work Plan Addendum for Iluluaq Lake/East Point Road & Delta Way

7.0 QUALITY ASSURANCE SUMMARY

A data quality assurance summary was completed in accordance with ADEC's March 2009 *Environmental Laboratory Data and Quality Assurance Requirements*. The laboratory data as used in this *Report* appears to be complete and usable. Data Quality Assurance forms and a narrative for each lab report generated during this *Project* are included in **Attachment E**.

Characterization Report and Work Plan Addendum for Iluluaq Lake/East Point Road & Delta Way

8.0 CONCLUSIONS & RECOMMENDATIONS

Between May 1 and May 11, 2012, the City performed soil characterization activities along Delta Way and East Point Road. The results of those activities were used to delineate those portions above 4-feet bgs which are eligible for beneficial reuse offsite or onsite as clean fill.

The City requests ADEC's review and acceptance of the delineation of eligible soils provided by this *Report*.

Characterization Report and Work Plan Addendum for Iluluaq Lake/East Point Road & Delta Way

9.0 REFERENCES

- AECOM Technical Services for USACE, 2009. *FINAL 2009 Groundwater Monitoring Program Report, Amaknak Pre-WWII Tank Farm Contract No. W911KB-08-D-0004 Task Order 0007 FUDS Property No. F10AK084103.*
- Alaska Energy Authority, 2005. *Weather Station Wind Resource Summary for Dutch Harbor (Unalaska Airport), AK.*
- American Society of Civil Engineers – Structural Engineering Institute, 2010. *Minimum Design Loads for Buildings and Other Structures (ASCE 7-10).* American Society of Civil Engineers, Reston, Virginia.
- Drewes, Harald, G.D. Fraser, G.L. Snyder, and H.F. Barnet Jr., 1961. *Geology of Unalaska Island and Adjacent Insular Shelf, Aleutian Islands, Alaska.* In *Investigations of Alaskan Volcanoes.* US Geological Survey Bulletin 1028-S. United States Government Printing Office, Washington D.C.
- Lemke, K.J. and A.M. Vanderpool, 1995. *Overview of Environmental and Hydrogeologic Conditions at Dutch Harbor, Alaska.* US Geological Survey Open-File Report 95-411, Anchorage, Alaska.
- National Oceanic and Atmospheric Administration, 2003. *Published Benchmark Sheet for 9462620 Unalaska, Dutch Harbor Alaska – Datums Page.*
- Stantec Consulting Corporation, 2010. *2010 Pipeline Closure Documentation Rocky Point Management Area Dutch Harbor, Unalaska, Alaska.* Stantec Consulting Corporation for Chevron Environmental Management Company.
- United States Department of the Interior Geological Survey (USDIGS 1028). *Geologic Map of Unalaska Island, Alaska, and Adjacent Submarine Areas – Bulletin 1028 Plate 75.*
- Western Regional Climate Center, 2012. *Dutch Harbor Alaska Period of Record General Climate Summary – Precipitation Station:(502587)* <http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ak2587>

Characterization Report and Work Plan Addendum for Iluluaq Lake/East Point Road & Delta Way

10.0 DOCUMENTS ADOPTED BY REFERENCE

Alaska Department of Environmental Conservation, May 2010. *Draft Field Sampling Guidance*.
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Alaska Department of Environmental Conservation, August 12, 2008. *Technical Memorandum – 08-001. Guidelines for Data Reporting, Data Reduction, and Treatment of Non-Detect Values*.
<http://www.dec.state.ak.us/spar/csp/guidance/tech-memo-data-reporting-and-ND.pdf>

Characterization Report and Work Plan Addendum for Ilulaq Lake/East Point Road & Delta Way

FIGURES

Figure 1
Delta Way PID to TPH Plot
Iluluaq Lake / East Point Road and Delta Way Drainage Improvements
Dutch Harbor, Alaska

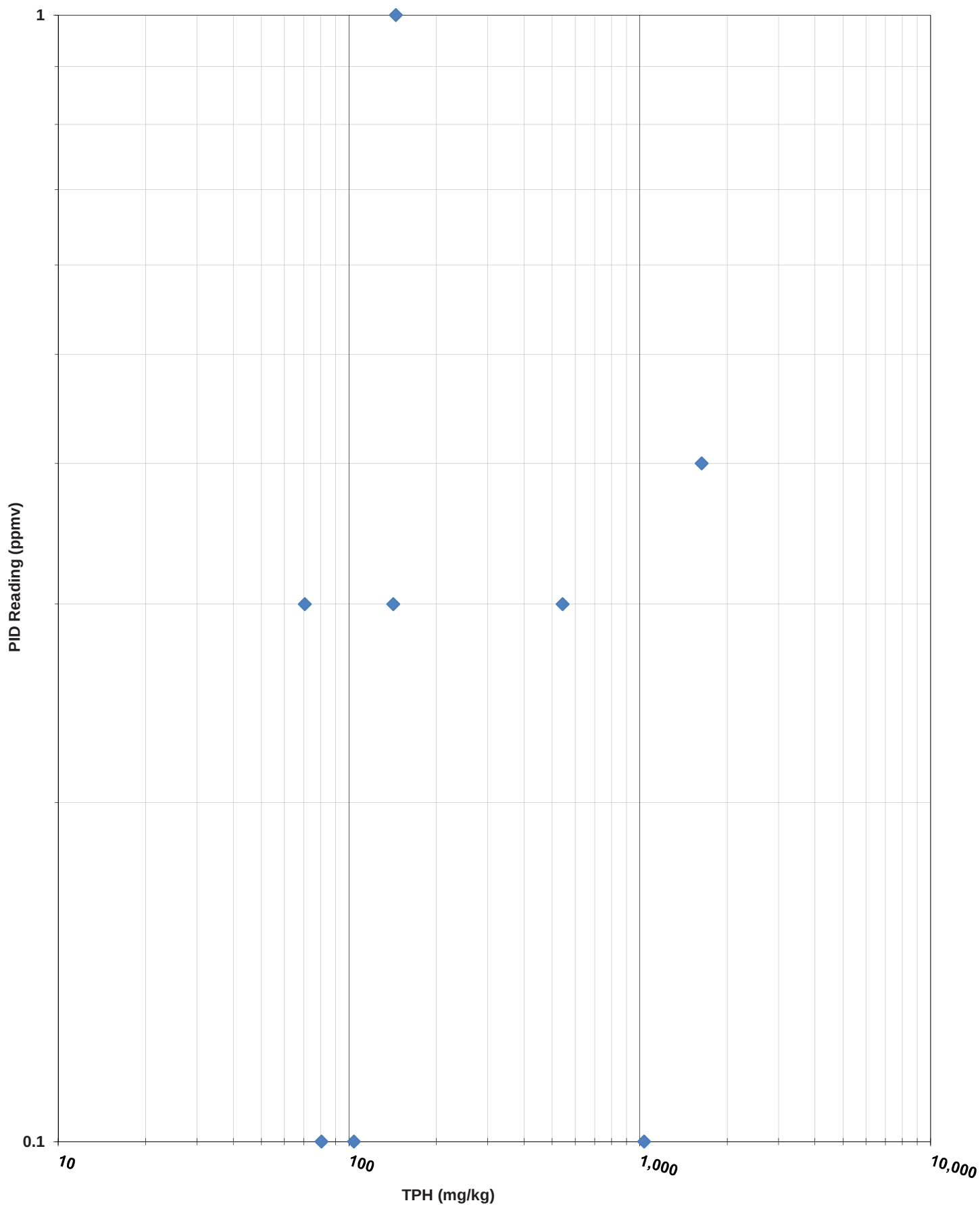
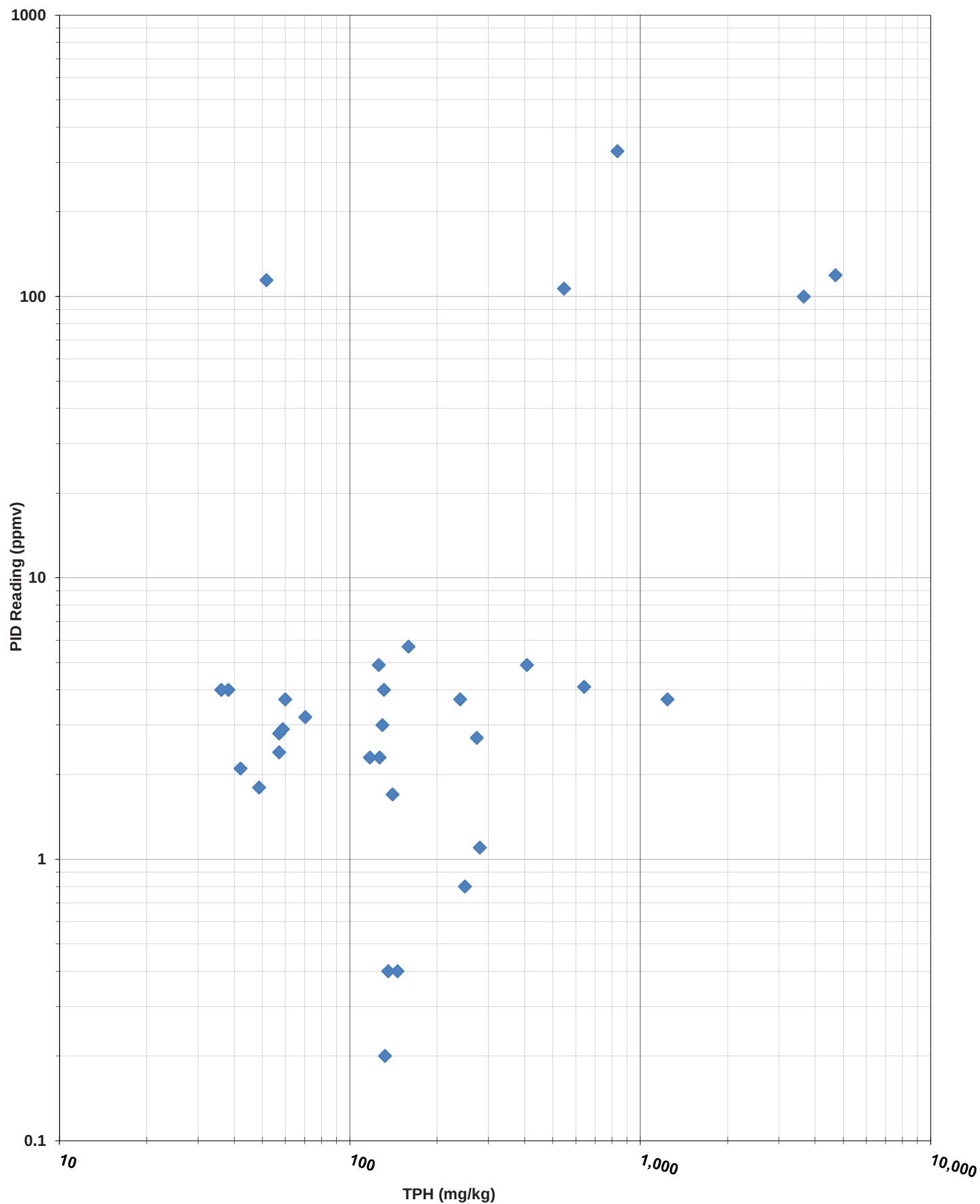


Figure 2
East Point Road PID to TPH Plot
Iluluaq Lake / East Point Road and Delta Way Drainage Improvements
Dutch Harbor, Alaska



**Characterization Report and Work Plan Addendum for Ilulaq
Lake/East Point Road & Delta Way**

TABLES

Table 1
Field Screen Results
 Iluluaq Lake / East Point Road & Delta Way Drainage Improvements
 Dutch Harbor, Alaska

Sample ID	PID Reading (ppmv)	Confirmation Sample Taken? (yes/no)	Elevation (ft bgs)	Field Notes
DW-0+00-2	0.0	no	2	Aggregate, grey. No odor, no stain.
DW-0+00-4	0.0	yes	4	Dark silt fine. No odor, no stain.
DW-0+50-2	0.0	no	2	Aggregate. No odor, no stain.
DW-0+50-4	0.1	yes	4	Cobbles & silt. No odor, no stain.
DW-1+00-2	0.3	no	2	Cobbles & silt. No odor, no stain.
DW-1+00-4	0.3	yes	4	Cobbles & silt. No odor, no stain.
DW-1+50-2	0.3	no	2	Cobbles & silt. No odor, no stain.
DW-1+50-4	0.3	yes	4	Cobbles & silt. No odor, no stain.
DW-2+00-2	0.0	no	2	Cobbles & silt. No odor, no stain.
DW-2+00-4	0.0	yes	4	Silt. No odor, no stain.
DW-2+50-2	0.1	no	2	Cobbles & silt. No stain, no odor.
DW-2+50-4	0.1	yes	4	Cobbles & silt. No stain, no odor. DUP-01.
DW-3+00-2	0.3	no	2	Cobbles & silt. No odor, no stain.
DW-3+00-4	0.4	yes	4	Cobbles & silt. No odor, no stain.
DW-3+50-2	0.1	no	2	Cobbles & silt. No stain, no odor.
DW-3+50-4	0.1	yes	4	Cobbles & silt. No stain, no odor.
DW-4+00-2	0.9	no	2	Aggregate. No odor, no stain.
DW-4+00-4	1.0	yes	4	Aggregate/silt. No odor, no stain, no gw. A.
EP-1+60-2	3.7	yes	2	Aggregate. gw @ 3' bgs, sheen.
EP-1+60-4	--	--	--	--
EP-2+10-2	106.7	yes	2	Aggregate. gw @ 2-1/2' bgs, sheen.
EP-2+10-4	--	--	--	--
EP-2+60-2	--	--	--	gw @ 6", <u>no sample</u> .
EP-2+60-4	--	--	--	--
EP-3+10-2	1.7	yes	2	Aggregate. gw @ 2-1/2', no sheen.
EP-3+10-4	--	--	--	--
EP-3+60-2	2.1	yes	2	Aggregate. Gw @ 2-1/2' bgs. No odor, no sheen.
EP-3+60-4	--	--	--	--
EP-4+10-2	3.2	yes	2	Aggregate. No odor, no stain.
EP-4+10-4	2.7	yes	4	Aggregate & silt. Gw @ 4-1/2', possible LNAPL.
EP-4+60-2	3.7	yes	2	Aggregate & sand. No odor, no sheen.
EP-4+60-4	100.0	yes	4	Aggregate & sand. Gw @ 4-1/2' approx, possible LNAPL.
EP-5+10-2	4.9	yes	2	Aggregate & silt. No stain, no odor.
EP-5+10-4	119.1	yes	4	Cobbles & silt. Stain, odor, no gw.
EP-5+60-2	4.1	yes	2	Aggregate. No stain, no odor.
EP-5+60-4	328.7	yes	4	Orange/red silt/shot rock. No stain, odor, no gw.
EP-6+10-2	5.7	yes	2	Brown silt & aggregate. No odor, no stain.
EP-6+10-4	114.4	yes	4	Brown silt/med plasticity. No odor, no stain, no gw (except seepage from culvert). DUP-02.
EP-6+60-2	2.1	no	2	Silt & aggregate. No odor, no stain.
EP-6+60-4	2.2	yes	4	Brown silt & cobbles/sand. No odor, no stain, gw 4-1/2'.
EP-7+10-2	3.1	no	2	Silt & aggregate/sand. No odor, no stain.
EP-7+10-4	4.0	yes	4	Brown silt/shot rock. No odor, no stain, no gw.
EP-7+60-2	4.6	no	2	Aggregate. No odor, no stain.
EP-7+60-4	4.9	yes	4	Aggregate/silt/shot rock. No odor, no stain, no gw.
EP-8+10-2	4.4	no	2	Aggregate. No odor, no stain.
EP-8+10-4	5.7	yes	4	Silt/shot rock. No odor, no stain, no gw.
EP-8+60-2	2.1	no	2	Aggregate. No odor, no stain.
EP-8+60-4	3.7	yes	4	Silt & shot rock. No odor, no stain, no gw.
EP-9+10-2	2.8	yes	2	Aggregate. No odor, no stain.
EP-9+10-4	1.8	yes	4	Shot rock & silt. No odor, no stain, no gw.
EP-9+60-2	2.2	no	2	Aggregate. No odor, no stain.
EP-9+60-4	2.9	yes	4	Aggregate/silt. No odor, no stain, no gw.
EP-10+10-2	1.4	no	2	Aggregate/silt/shot rock. No odor, no stain, no gw.
EP-10+10-4	3.0	yes	4	Aggregate. No odor, no stain.
EP-10+60-2	2.4	yes	2	Aggregate. No odor, no stain.
EP-10+60-4	0.8	yes	4	Aggregate/silt/shot rock. No odor, no stain, no gw.
EP-11+10-2	3.1	no	2	Aggregate. No odor, no stain.
EP-11+10-4	4.0	yes	4	Aggregate/silt. No odor, no stain, no gw.
EP-11+60-2	1.8	no	2	Aggregate. No odor, no stain.
EP-11+60-4	2.3	yes	4	Aggregate/shot rock. No odor, no stain, no gw. DUP-03.
EP-12+10-2	0.9	no	2	Aggregate/silt. No odor, no stain.
EP-12+10-4	1.1	yes	4	Silt/shot rock/aggregate. No odor, no stain, no gw.
EP-12+60-2	0.1	no	2	Aggregate. No odor, no stain.
EP-12+60-4	0.2	yes	4	Aggregate/silt/cobbles. No odor, no stain, no gw.
EP-12+97-2	0.4	no	2	Aggregate. No odor, no stain.

Table 1
Field Screen Results
 Iluluaq Lake / East Point Road & Delta Way Drainage Improvements
 Dutch Harbor, Alaska

EP-12+97-4	0.7	yes	4	Aggregate/silt/cobbles. No odor, no stain, no gw. DUP-04.
EP-13+36-2	0.0	no	2	Aggregate & silt. No stain, no odor.
EP-13+36-4	0.0	yes	4	Aggregate & silt. No stain, no odor, no gw.

Notes:

A = located end of 6" steel pipe at about 3-1/2' bgs. Appears to be leaking viscous black oil.
 B = located steel pipe, likely a fuel line.

Abbreviations:

DW = Delta Way
 DUP = duplicate
 EP = East Point Road
 ft bgs = feet below ground surface
 gw = groundwater
 ID = identification
 LNAPL = light non-aqueous phase liquid
 PID = photo ionization detector
 ppmv = parts per million by volume

Table 1
Soil Analytical Results
Ilulaa Lake / East Point Road & Delta Way Drainage Improvements
Dutch Harbor, Alaska

					GRO AK101 (mg/kg)	DRO AK102 (mg/kg)	RRO AK101 (mg/kg)	TPH (mg/kg)	Benzene EPA 8021B (ug/kg)	Toluene EPA 8021B (ug/kg)	Ethyl- benzene EPA 8021B (ug/kg)	o- Xylene EPA 8021B (ug/kg)	P&M- Xylene EPA 8021B (ug/kg)	Total Xylenes (ug/kg)	1-Methyl-Naphthalene EPA 8270D (ug/kg)	2-Methyl-Naphthalene EPA 8270D (ug/kg)	Acenaphthene EPA 8270D (ug/kg)	Acenaphthylene EPA 8270D (ug/kg)	Anthracene EPA 8270D (ug/kg)	Benzo(a)anthracene EPA 8270D (ug/kg)	Benzo(a)pyrene EPA 8270D (ug/kg)	Benzo(b)fluoranthene EPA 8270D (ug/kg)	Benzo(g,h,i)perylene EPA 8270D (ug/kg)	Benzo(k)fluoranthene EPA 8270D (ug/kg)	Chrysene EPA 8270D (ug/kg)	Dibenz(a,h)anthracene EPA 8270D (ug/kg)	Fluoranthene EPA 8270D (ug/kg)	Fluorene EPA 8270D (ug/kg)	Indeno(1,2,3- cd)pyrene EPA 8270D (ug/kg)	Naphthalene EPA 8270D (ug/kg)	Phenanthrene EPA 8270D (ug/kg)	Pyrene EPA 8270D (ug/kg)	Total Solids (%)	
18 AAC 75.340 Table B1 Method 2 Soil Cleanup Levels Over 40 Inch Zone Migration to Groundwater (ug/kg)				Exceedence	--	--	--	--	25	6,500	6,900	--	--	63,000	6,100	6,100	180,000	180,000	3,000,000	3,600	2,100	12,000	38,700,000	120,000	360,000	4,000	1,400,000	220,000	41,000	20,000	3,000,000	1,000,000	--	
18 AAC 75.340 Table B2 Method 2 Soil Cleanup Levels Over 40 Inch Zone Migration to Groundwater (mg/kg)				Exceedence	260	230	9,700	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Sample Date/Time	Sample ID	Notes	SGS Lab Report ID	PID Reading (ppmv)	GRO AK101 (mg/kg)	DRO AK102 (mg/kg)	RRO AK101 (mg/kg)	TPH (mg/kg)	Benzene EPA 8021B (ug/kg)	Toluene EPA 8021B (ug/kg)	Ethyl- benzene EPA 8021B (ug/kg)	o- Xylene EPA 8021B (ug/kg)	P&M- Xylene EPA 8021B (ug/kg)	Total Xylenes (ug/kg)	1-Methyl-Naphthalene EPA 8270D (ug/kg)	2-Methyl-Naphthalene EPA 8270D (ug/kg)	Acenaphthene EPA 8270D (ug/kg)	Acenaphthylene EPA 8270D (ug/kg)	Anthracene EPA 8270D (ug/kg)	Benzo(a)anthracene EPA 8270D (ug/kg)	Benzo(a)pyrene EPA 8270D (ug/kg)	Benzo(b)fluoranthene EPA 8270D (ug/kg)	Benzo(g,h,i)perylene EPA 8270D (ug/kg)	Benzo(k)fluoranthene EPA 8270D (ug/kg)	Chrysene EPA 8270D (ug/kg)	Dibenz(a,h)anthracene EPA 8270D (ug/kg)	Fluoranthene EPA 8270D (ug/kg)	Fluorene EPA 8270D (ug/kg)	Indeno(1,2,3- cd)pyrene EPA 8270D (ug/kg)	Naphthalene EPA 8270D (ug/kg)	Phenanthrene EPA 8270D (ug/kg)	Pyrene EPA 8270D (ug/kg)	Total Solids (%)	
05/01/2012 10:00	DW-0+00-4		1121591	0.0	< 8.52	< 24.2	54.8	54.8	< 45.4	< 88.6	< 88.6	< 88.6	< 170.6	0.0	< 29.6	< 29.6	< 29.6	< 29.6	< 29.6	< 29.6	50.6	68.2	< 29.6	< 29.6	< 29.6	< 29.6	92.4	< 29.6	< 29.6	< 29.6	< 29.6	83.4	69	50.8
05/01/2012 11:15	DW-0+50-4		1121591	0.3	< 4.5	< 15.44	70.5	70.5	< 24	< 46.8	< 46.8	< 46.8	< 89.8	0.0	< 18.8	< 18.8	< 18.8	< 18.8	< 18.8	< 18.8	45.8	61.5	81.1	39.2	< 18.8	40.2	< 18.8	70.6	< 18.8	< 18.8	< 18.8	55	67.7	79.3
05/01/2012 10:20	DW-1+00-4		1121591	0.3	< 3.5	< 72.4	142	142	< 18.7	< 36.4	< 36.4	< 36.4	< 70.2	0.0	32.5	40.4	< 17.44	< 17.44	182	599	736	719	542	190	412	127	640	42.9	462	71.6	565	783	85.2	
05/01/2012 11:00	DW-1+50-4		1121591	0.3	< 3.66	< 73.4	543	543	< 19.56	< 38.2	< 38.2	< 38.2	< 73.4	0.0	< 17.58	< 17.58	< 17.58	< 17.58	< 17.58	37.9	47.3	< 17.58	31	< 17.58	< 17.58	46.1	< 17.58	< 17.58	< 17.58	< 17.58	< 17.58	< 17.58	47.1	84.4
05/01/2012 11:45	DW-2+00-4		1121591	0.0	< 6.74	< 21	69.6	69.6	< 36	< 70.2	< 70.2	< 70.2	< 135	0.0	< 25.6	< 25.6	< 25.6	< 25.6	< 25.6	51.5	57.4	73.8	< 25.6	< 25.6	51.6	< 25.6	93.4	< 25.6	< 25.6	< 25.6	< 25.6	60.9	87.8	58
05/01/2012 14:00	DW-2+50-4 (DUP-01)		1121591	0.1	< 4.52	< 16.8	80.4	80.4	< 24	< 47	< 47	< 47	< 90.4	0.0	< 4.1	< 4.1	< 4.1	< 4.1	< 4.1	9.05	15.1	< 4.1	13.1	< 4.1	8.38	< 4.1	15.8	< 4.1	8.58	< 4.1	8.18	18.6	73.3	
05/01/2012 00:00	DUP-01		1121591	0.1	< 6.14	< 19.28	104	104	< 32.8	< 63.8	< 63.8	< 63.8	< 122.8	0.0	< 23.4	< 23.4	< 23.4	< 23.4	< 23.4	< 23.4	< 23.4	< 23.4	< 23.4	< 23.4	< 23.4	< 23.4	< 23.4	< 23.4	< 23.4	< 23.4	< 23.4	< 23.4	64	
--	Relative Percent Difference		--	--	--	--	26%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	14%
05/01/2012 09:30	DW-3+00-4		1121591	0.4	< 3.54	262	1370	1632	< 18.86	< 36.8	< 36.8	< 36.8	< 70.8	0.0	< 34.6	< 34.6	< 34.6	< 34.6	60.9	205	219	277	188	< 34.6	143	< 34.6	311	< 34.6	118	< 34.6	187	317	86.4	
05/01/2012 13:30	DW-3+50-4		1121591	0.1	< 3.6	158	877	1035	51.7	100	< 37.6	< 37.6	< 72.2	0.0	67.1	113	< 34.2	< 34.2	< 34.2	67.5	93.3	117	109	< 34.2	< 34.2	94.8	< 34.2	57.4	79.8	< 34.2	100	87		
05/08/2012 11:30	DW-4+00-4		1121591	1.0	< 4.66	< 85.2	145	145	< 24.8	< 48.4	< 48.4	< 48.4	< 93.2	0.0	< 20.6	< 20.6	< 20.6	< 20.6	< 20.6	< 20.6	41	55.6	36	< 20.6	< 20.6	< 20.6	< 20.6	< 20.6	< 20.6	< 20.6	< 20.6	< 20.6	72	
05/03/2012 09:20	EP-1+60-2		1121591	3.7	9.33	893	339	1241.33	< 20.6	< 40	< 40	< 40	< 77	0.0	< 18.38	< 18.38	< 18.38	< 18.38	< 18.38	< 18.38	< 18.38	< 18.38	< 18.38	< 18.38	< 18.38	< 18.38	< 18.38	< 18.38	< 18.38	< 18.38	< 18.38	< 18.38	80.8	
05/03/2012 09:45	EP-2+10-2		1121591	106.7	< 3.5	366	181	547	< 18.66	< 36.4	< 36.4	< 36.4	< 70	0.0	< 17.36	< 17.36	< 17.36	< 17.36	< 17.36	< 17.36	33.5	69.2	< 17.36	< 17.36	35.5	< 17.36	84.5	< 17.36	< 17.36	< 17.36	40.3	72.3	86.2	
05/03/2012 10:10	EP-3+10-2		1121591	1.7	< 3.44	46	94.3	140.3	< 18.38	< 35.8	< 35.8	< 35.8	< 69	0.0	< 17.48	< 17.48	< 17.48	< 17.48	< 17.48	< 17.48	< 17.48	< 17.48	< 17.48	< 17.48	< 17.48	< 17.48	< 17.48	< 17.48	< 17.48	< 17.48	< 17.48	< 17.48	85.1	
05/03/2012 10:30	EP-3+60-2		1121591	2.1	< 4.12	< 16.1	42	42	< 22	< 43	< 43	< 43	< 82.6	0.0	< 19.26	< 19.26	< 19.26	< 19.26	< 19.26	< 19.26	34.1	39	< 19.26	< 19.26	52	< 19.26	< 19.26	< 19.26	< 19.26	< 19.26	44.2	46.8	76.9	
05/03/2012 11:00	EP-4+10-2		1121591	3.2	< 3.48	29.8	40.5	70.3	< 18.54	< 36.2	< 36.2	< 36.2	< 69.6	0.0	< 16.76	< 16.76	< 16.76	< 16.76	< 16.76	< 16.76	< 16.76	< 16.76	< 16.76	< 16.76	< 16.76	< 16.76	< 16.76	< 16.76	< 16.76	< 16.76	< 16.76	< 16.76	88.6	
05/03/2012 11:30	EP-4+10-4		1121591	2.7	< 4.16	178	95.5	273.5	< 22.2	< 43.2	< 43.2	< 43.2	< 83.2	0.0	< 17.52	< 17.52	< 17.52	< 17.52	< 17.52	32.5	31.6	49.3	< 17.52	< 17.52	30.9	< 17.52	37.4	< 17.52	< 17.52	< 17.52	< 17.52	< 17.52	33.5	83.9
05/03/2012 14:10	EP-4+60-2		1121591	3.7	< 3.34	31	28.9	59.9	< 17.84	< 34.8	< 34.8	< 34.8	< 67	0.0	< 16.82	< 16.82	< 16.82	< 16.82	< 16.82	< 16.82	< 16.82	< 16.82	< 16.82	< 16.82	< 16.82	< 16.82	< 16.82	< 16.82	< 16.82	< 16.82	< 16.82	< 16.82	88.6	
05/03/2012 14:00	EP-4+60-4		1121591	100.0	< 3.72	1870	1790	3660	< 19.84	< 38.6	< 38.6	< 38.6	< 74.4	0.0	< 35	< 35	< 35	< 35	< 35	71.3	141	< 35	68	< 35	92.8	< 35	86.4	< 35	< 35	< 35	< 35	< 35	232	85.3
05/03/2012 15:30	EP-5+10-4 (EP-5+10-2)		1121591	4.9	< 4.1	173	234	407	< 21.8	< 42.6	< 42.6	< 42.6	< 81.8	0.0	< 17.64	< 17.64	< 17.64	< 17.64	< 17.64	< 17.64	46.6	57	< 17.64	56.3	< 17.64	29.6	< 17.64	37.2	< 17.64	39.7	< 17.64	41.4	84.9	
05/03/2012 15:20	EP-5+10-4 (EP-5+10-4)		1121591	119.1	9.08	2080	2620	4709.08	< 23	< 45	< 45	141	< 86.6	141	< 39.4	< 39.4	< 39.4	< 39.4	200	260	165	< 39.4	75.5	< 39.4	418	< 39.4	191	403	< 39.4	870	960	75.6		
05/03/2012 16:40	EP-5+60-2		1121591	4.1	< 3.62	151	490	641	< 19.32	< 37.6	< 37.6	< 37.6	< 72.4	0.0	< 16.98	< 16.98	< 16.98	< 16.98	< 16.98	< 16.98	39.3	< 16.98	48.3	< 16.98	< 16.98	31.6	< 16.98	< 16.98	< 16.98	< 16.98	< 16.98	52.9	87.8	
05/03/2012 16:30	EP-5+60-4		1121591	328.7	< 5.12	523	311	834	< 27.4	< 53.4	< 53.4	< 53.4	< 102.6	0.0	< 21.4	< 21.4	< 21.4	< 21.4	< 21.4	43.2	48.7	< 21.4	38.5	< 21.4	48.8	< 21.4	80.9	< 21.4	< 21.4	< 21.4	50.3	87.9	69.5	
05/04/2012 09:40	EP-6+10-2		1121608	5.7	< 7.44	< 22.2	< 22.2	0	< 39.6	< 77.2	< 77.2	< 77.2	< 148.6	0.0	< 5.3	< 5.3	< 5.3	< 5.3	< 5.3	< 5.3	< 5.3	< 5.3	< 5.3	< 5.3	< 5.3	< 5.3	< 5.3	< 5.3	< 5.3	< 5.3	< 5.3	55.8		
05/04/2012 09:30	EP-6+10-4 (DUP-02)		1121608	114.4	< 6.34	< 19.68	< 19.68	0	< 33.8	< 66	< 66	< 66	< 127	0.0	26.7	10.3	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	< 4.7	8.29	< 4.7	< 4.7	14.7	< 4.7	< 4.7	< 4.7	11.9	13.7	11	62.8	
05/04/2012 00:00	DUP-02		1121608	114.4	< 6.14	< 18.82	51.6	51.6	< 32.8	< 63.8	< 63.8	< 63.8	< 122.8	0.0	31.7	11.3	< 4.52	< 4.52	< 4.52	< 4.52	< 4.52	< 4.52	< 4.52	< 4.52	< 4.52	< 4.52	< 4.52	< 4.52	< 4.52	< 4.52	< 4.52	< 4.52	65.1	
--	Relative Percent Difference		--	--	--	--	90%	--	--	--	--	--	--	--	17%	9%	--	--	--	--	--	59%	--	--	106%	--	--	--	--	--	--	--	84%	4%
05/04/2012 10:00	EP-6+60-4		1121608	4.0	< 3.8	26	105	131	< 20.2	< 39.4	< 39.4	< 39.4	< 75.8	0.0	< 17.02	< 17.02	< 17.02	< 17.02	< 17.02	38.4	42.2	58.7	39.2	< 17.02	38	< 17.02	49.9	< 17.02	< 17.02	< 17.02	< 17.02	52.7	85.8	
05/04/2012 13:30	EP-7+10-4		11																															

Table 1
Soil Analytical Results
Iluluaq Lake / East Point Road & Delta Way Drainage Improvements
Dutch Harbor, Alaska

					GRO AK101 (mg/kg)	DRO AK102 (mg/kg)	RRO AK101 (mg/kg)	TPH (mg/kg)	Benzene EPA 8021B (ug/kg)	Toluene EPA 8021B (ug/kg)	Ethyl- benzene EPA 8021B (ug/kg)	o- Xylene EPA 8021B (ug/kg)	P&M- Xylene EPA 8021B (ug/kg)	Total Xylenes (ug/kg)	1-Methyl-Naphthalene EPA 8270D (ug/kg)	2-Methyl-Naphthalene EPA 8270D (ug/kg)	Acenaphthene EPA 8270D (ug/kg)	Acenaphthylene EPA 8270D (ug/kg)	Anthracene EPA 8270D (ug/kg)	Benzo(a)anthracene EPA 8270D (ug/kg)	Benzo(a)pyrene EPA 8270D (ug/kg)	Benzo(b)fluoranthene EPA 8270D (ug/kg)	Benzo(g,h,i)perylene EPA 8270D (ug/kg)	Benzo(k)fluoranthene EPA 8270D (ug/kg)	Chrysene EPA 8270D (ug/kg)	Dibenz(a,h)anthracene EPA 8270D (ug/kg)	Fluoranthene EPA 8270D (ug/kg)	Fluorene EPA 8270D (ug/kg)	Indeno(1,2,3- cd)pyrene EPA 8270D (ug/kg)	Naphthalene EPA 8270D (ug/kg)	Phenanthrene EPA 8270D (ug/kg)	Pyrene EPA 8270D (ug/kg)	Total Solids (%)	
18 AAC 75.340 Table B1 Method 2 Soil Cleanup Levels Over 40 Inch Zone Migration to Groundwater (ug/kg)					Exceedence	--	--	--	--	25	6,500	6,900	--	--	63,000	6,100	6,100	180,000	180,000	3,000,000	3,600	2,100	12,000	38,700,000	120,000	360,000	4,000	1,400,000	220,000	41,000	20,000	3,000,000	1,000,000	--
18 AAC 75.340 Table B2 Method 2 Soil Cleanup Levels Over 40 Inch Zone Migration to Groundwater (mg/kg)					Exceedence	260	230	9,700	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sample Date/Time	Sample ID	Notes	SGS Lab Report ID	PID Reading (ppmv)	GRO AK101 (mg/kg)	DRO AK102 (mg/kg)	RRO AK101 (mg/kg)	TPH (mg/kg)	Benzene EPA 8021B (ug/kg)	Toluene EPA 8021B (ug/kg)	Ethyl- benzene EPA 8021B (ug/kg)	o- Xylene EPA 8021B (ug/kg)	P&M- Xylene EPA 8021B (ug/kg)	Total Xylenes (ug/kg)	1-Methyl-Naphthalene EPA 8270D (ug/kg)	2-Methyl-Naphthalene EPA 8270D (ug/kg)	Acenaphthene EPA 8270D (ug/kg)	Acenaphthylene EPA 8270D (ug/kg)	Anthracene EPA 8270D (ug/kg)	Benzo(a)anthracene EPA 8270D (ug/kg)	Benzo(a)pyrene EPA 8270D (ug/kg)	Benzo(b)fluoranthene EPA 8270D (ug/kg)	Benzo(g,h,i)perylene EPA 8270D (ug/kg)	Benzo(k)fluoranthene EPA 8270D (ug/kg)	Chrysene EPA 8270D (ug/kg)	Dibenz(a,h)anthracene EPA 8270D (ug/kg)	Fluoranthene EPA 8270D (ug/kg)	Fluorene EPA 8270D (ug/kg)	Indeno(1,2,3- cd)pyrene EPA 8270D (ug/kg)	Naphthalene EPA 8270D (ug/kg)	Phenanthrene EPA 8270D (ug/kg)	Pyrene EPA 8270D (ug/kg)	Total Solids (%)	

Notes:

Abbreviations:

< ____ = per the lab document the analyte was tested for but not detected (ND U-qualified). The numerical value given is the detecton level (DL) times 2, which is the limit of detection (LOD), i.e. a statistical estimation of the lowest amount detectable by the particular instrument under ideal conditions.

% = percent

DRO = diesel range organics

EPA = Environmental Protection Agency (denotes laboratory method)

ft bgs = feet below ground surface

GRO = gasoline range organics

ID = identification

J = per the lab report document the quantitation is an estimate

mg/kg = milligrams of constituent per kilogram of soil matrix

PID = photo ionization detector

RRO = residual range organcis

U = per the lab report document the analyte was tested for but not detected

ug/kg = micrograms of constituent per kilogram of soil matrix

**Characterization Report and Work Plan Addendum for Ilulaq
Lake/East Point Road & Delta Way**

ATTACHMENT A

NOTES:
1.) THIS FIGURE IS BASED ON THE 2012
WORK PLAN STORM DRAIN CIVIL PLANS
BY REGAN ENGINEERING

CONTROL POINT 1
ALUMINUM CAP AK Z10 NAD 83
NORTHING 1189477.52
EASTING 5316256.72

KEY:
DW-3+50-4 CONFIRMATION SOIL SAMPLE **ABOVE**
MIGRATION TO GROUNDWATER CULs
EP-12+10-4 CONFIRMATION SOIL SAMPLE **BELOW**
MIGRATION TO GROUNDWATER CULs



**Characterization Report and Work Plan Addendum for Ilulaq
Lake/East Point Road & Delta Way**

ATTACHMENT B



THE STATE
of **ALASKA**
GOVERNOR SEAN PARNELL

Department of
Environmental Conservation

DIVISION OF SPILL PREVENTION & RESPONSE
Contaminated Sites Program

555 Cordova Street
Anchorage, Alaska 99501
Phone: 907.269.7503
Fax: 907.269.7649
dec.alaska.gov

File No: 2542.38.018

September 17, 2012

Nancy Peterson
City of Unalaska, Department of Public Works
P.O. Box 610
Unalaska, Alaska 99685

Re: Approval of the revised Characterization Report and Work Plan Addendum for
Ilulak Lake/East Point Road and Delta Way For the City of Unalaska

Dear Ms. Peterson;

Thank you for submitting the response to comments and the revised report referenced above which was received electronically by the Alaska Department of Environmental Conservation on September 13, 2012. ADEC has reviewed the responses and determined they adequately address our comments. ADEC approves of the report and the delineation of contaminated and uncontaminated soils presented in the report. Please submit a final hard copy report to ADEC for our files.

If you have any questions regarding this letter please contact me at (907) 269-3056 or Meghan.dooley@alaska.gov.

Sincerely,

A handwritten signature in blue ink, appearing to read "Meghan Dooley".

Meghan Dooley
Environmental Program Specialist

cc: Robert Lund (via email)

REVIEW**PROJECT: City of Unalaska Drainage Improvements****COMMENTS DOCUMENT: draft Characterization Report for Ilulak Lake/East Point Road & Delta Way
Drainage Improvements****Location: Amaknak Island, Alaska**

City of Unalaska/ADEC		DATE: August 24, 2012 REVIEWER: Meghan Dooley (DEC) PHONE: 269-3056	Action taken on comment by:		
Item No.	Drawing Sheet No., Spec. Para.	COMMENTS	REVIEW CONFERENCE A - comment accepted W - comment withdrawn (if neither, explain)	CONTRACTOR RESPONSE	ADEC RESPONSE ACCEPTANCE (A-AGREE) (D-DISAGREE)

1.	Page 3.10	Please provide results of exceedances with associated locations.	A	Revised the text with the requested information.	
2.	Page 6.13, Table 3	Delta Way: Confirmation samples were collected in the soil noted as contaminated, but are not labeled on the table.	A	Revised to include locations on Delta Way.	
3.	Page 6.13	Please provide more information about the vault: depth, where any openings are, etc. If the soil within the vault is exposed to the smear zone, it cannot be assumed that the soil is still clean.	A	Per Stantec the bottom of vault is about 14' bgs. Text referencing the vault on page 6.13 has been removed.	
4.	Page 8.15	ADEC concurs with the delineation of eligible soils presented in the report.	A	Okay	

STATE OF ALASKA

SEAN PARNELL, GOVERNOR

DEPT. OF ENVIRONMENTAL CONSERVATION

DIVISION OF SPILL PREVENTION AND RESPONSE CONTAMINATED SITES PROGRAM

555 Cordova Street
Anchorage, AK 99501
PHONE (907) 269-3056
FAX (907) 269-7649
www.dec.state.ak.us

File No: 2542.38.018

March 2, 2012

Nancy Peterson
City of Unalaska, Department of Public Works
P.O. Box 610
Unalaska, Alaska 99685

Re: Approval for the revised Work Plan for Iluluaq Lake/East Point Road and
Delta Way Drainage Improvements and

Dear Ms. Peterson,

Thank you for submitting the draft work plan referenced above which was received by the Department of Environmental Conservation (ADEC) electronically on March 1, 2012. ADEC has carefully reviewed the revised plan and has determined that all comments have been adequately addressed. ADEC approves of the revised plan. Please submit a final hardcopy of the work plan to ADEC. Should any major deviation from the approved work plan occur please contact ADEC immediately.

The approved work plan requested a waiver for the requirement for having an impartial third party conduct the site characterization and excavation activities detailed in the work plan. The State of Alaska under regulation 18 Alaska Administrative Code (AAC) 75.355 requires that "the analysis is conducted or supervised by a qualified, impartial third party." Under 18 AAC 75.390, however, "If the department determines that a waiver of modification will be protective of human health, safety, and welfare of the environment, the department will waive or modify the site cleanup rules based on a review of the quantity or concentration of the discharge or release, soil and groundwater conditions, surface water and topography, geology water and land use, construction methods and materials, and any other human health or environmental factor important to the evaluation."

The City of Unalaska (City) has proposed that the work be conducted by a City employee, Robert Lund. ADEC formally waives the requirement for having an impartial third party conduct and oversee site work. ADEC grants this waiver

specifically for Robert Lund on this project only and reserves the right to revoke the waiver based on adequacy of work performed.

If you have any questions regarding this letter please contact me at (907) 269-3056 or Meghan.Dooley@alaska.gov.

Sincerely,

A handwritten signature in blue ink, appearing to read 'M. Dooley', is positioned above the printed name.

Meghan Dooley
Environmental Program Specialist

Cc: Tyler Zimmerman, City of Unalaska

**Characterization Report and Work Plan Addendum for Ilulaq
Lake/East Point Road & Delta Way**

ATTACHMENT C

SOIL SAMPLING FIELD NOTES

Date: 5/1/12

Weather: Overcast 50°F

Page 1 of 2

Time of Arrival: 0900

Time of Departure: 1200

Sampler & Other Personnel On-site:

Robert Lund & City DPW Roads crew

SAP/QAP Calculations:

Per work plan 1 screen @ 2' and 1 screen at 4' bgs. collect highest PID as confirmation sample

PPE / Sampling Equipment Used:

sterile nitrile gloves & disposable sample spoons

PID Calibration Record:

Model No.:	Serial No.:	Zero Adjust.:	Gas (ppm)	Reading (ppm)	Comments:
Mini Rae Lite	590-901909	0.0	100	100	OK

General Sample Locations/Descriptions/Types:

Delta Way 0+00 to 3+50

Samples Released To (Lab/Shipping Arrangements/Preservation Method):

SGS labs in coolers on ice packs. Samples stored in refrigerator

Notes:

PID

0930 ✓	DW-3+00-4	0.4	cobbles & silt	No odor	No stain
	DW-3+00-2	0.3	cobbles & silt	No odor	No stain
1000 ✓	DW-0+00-4	0.0	dark silt fine	No odor	No stain
	DW-0+00-2	0.0	aggregate grey	No odor	No stain
1020 ✓	DW-1+00-4	0.3	cobbles & silt	No odor	No stain
	DW-1+00-2	0.3	cobbles & silt	No odor	No stain
1100 ✓	DW-1+50-2	0.3	cobbles & silt	No odor	No stain
	DW-1+50-2	0.3	cobbles & silt	No odor	No stain
1115 ✓	DW-0+50-4	0.1	cobbles & silt	No odor	No stain
	DW-0+50-2	0.0	aggregate	No odor	No stain
1145 ✓	DW-2+00-4	0.0	silt	No odor	No stain
	DW-2+00-2	0.0	cobbles & silt	No odor	No stain

2

SOIL SAMPLING FIELD NOTES

Date: 5/1/12

Weather: Overcast 50°F

Page 2 of 2

Time of Arrival: 1300

Time of Departure: 1430

Sampler & Other Personnel On-site:

SAP/QAP Calculations:

PPE / Sampling Equipment Used:

PID Calibration Record:

Model No:

Serial No:

Zero
Adjust:

Gas (ppm)

Reading
(ppm)

Comments:

~~Mini Rae-Lite~~

100

General Sample Locations/Descriptions/Types:

Samples Released To (Lab/Shipping Arrangements/Preservation Method):

Notes:

1330	✓	DW-3+SD-4	0.1	cobbles & silt		No stain	No odor
		DW-3+SD-2	0.1	cobbles & silt		No stain	No odor
1400	✓	DW-2+SD-4	0.1	cobbles & silt	Dup of	No stain	No odor
		DW-2+SD-2	0.1	cobbles & silt		No stain	No odor

SOIL SAMPLING FIELD NOTES

Date: 5/3/12

Weather: Overcast 50°F

1 of 2

Time of Arrival: 0900

Time of Departure: 1145

Sampler & Other Personnel On-site:

Robert Lund & City DPW Roads Crew

SAP/QAP Calculations:

Per work plan 1 screen @ 2' bgs & 1 screen @ 4' bgs. Take confirmation sample from highest PID

PPE / Sampling Equipment Used:

Nitrile gloves and sterile sample spoons + geocores

PID Calibration Record:

Model No.:	Serial No.:	Zero Adjust.:	Gas (ppm)	Reading (ppm)	Comments:
Mini Rae Lite	590 901 909	0.0	100	100.4	okay

General Sample Locations/Descriptions/Types:

East Point Road, grab, 1+60 -7

Samples Released To (Lab/Shipping Arrangements/Preservation Method):

SBS Labs in coolers on ice. Samples stored in refrigerator

Notes:

PID

0920 ✓	EP-1+60-4	NA	NA	NA
	EP-1+60-2	3.7	aggregate	gw @ 3' bgs, screen
	EP-2+10-4	NA	NA	
0945 ✓	EP-2+10-2	106.7	aggregate	gw @ 2½' bgs, screen
	EP-2+60-4	NA	gw @ 6" no sample	
	EP-2+60-2	NA		
1010 ✓	EP-3+10-4	NA	gw @ 2½', no screen	
	EP-3+10-2	1.7	aggregate	No odor, no screen
	EP-3+60-4	NA	NA, gw @ 2½' bgs	
1030 ✓	EP-3+60-2	2.1	aggregate	No odor, no screen
1100 ✓	EP-4+10-2	3.2	aggregate	No odor, no stain
1130 ✓	EP-4+10-4	2.7	aggregate & silt	GW @ 4½', possible LNAPL

SOIL SAMPLING FIELD NOTES

Date: 5/3/12

Weather: —

2 of 2

Time of Arrival: 1300

Time of Departure: 1600

Sampler & Other Personnel On-site:

SAP/QAP Calculations:

PPE / Sampling Equipment Used:

PID Calibration Record:

Model No.:	Serial No.:	Zero Adjust.:	Gas (ppm)	Reading (ppm)	Comments:
Mini Rae Lite			100		

General Sample Locations/Descriptions/Types:

Samples Released To (Lab/Shipping Arrangements/Preservation Method):

Notes:

1400 ✓	EP-4+60-4	100.0	aggregate & silt	GW @ 4½' approx, possible LNAPL
1410 ✓	EP-4+60-2	3.7	aggregate & sand	No odor no stain
1520 ✓	EP-5+10-4	119.1	cobbles & silt	stain, odor, no GW
1530 ✓	EP-5+10-2	4.9	aggregate & silt	No stain, no odor
1630 ✓	EP-5+60-4	328.7	orange/red silt/shale	No stain, odor, no GW *
1640 ✓	EP-5+60-2	4.1	aggregate	No stain, no odor

* found steel pipe, likely a fuel line
as water lines are deeper —

SOIL SAMPLING FIELD NOTES

Date: 5/4/12

Weather: Overcast/flurries 40°F

Time of Arrival: 0900

Time of Departure: 1600

Sampler & Other Personnel On-site:

Robert Lund & DPW Roads Dept

SAP/QAP Calculations:

Per work plan SAP/QAP 1 screen @ 4' bss & 1 screen @ 2' bss
highest PID as confirmation sample

PPE / Sampling Equipment Used:

Nitrile gloves, sterile sample spoons & geocoors

PID Calibration Record:

Model No.:	Serial No.:	Zero Adjust.:	Gas (ppm)	Reading (ppm)	Comments:
Mini Rae Lite	590-901909	0.0	100	99.9	okay

General Sample Locations/Descriptions/Types:

EP 6+10-7

Samples Released To (Lab/Shipping Arrangements/Preservation Method):

In coolers on ice packs to SGS labs, refrigerator

Notes:

DVD-02

0930 ✓	EP-6+10-4	114.4	brn silt/med plast	No odor no stain, No gw (except
0940 ✓	EP-6+10-2	5.7	brn silt & aggregate	No odor no stain, seepage from culvert
1000 ✓	EP-6+60-4	2.2	brn silt & cobbles/sand	No odor, no stain, gw 4 1/2'
	EP-6+60-2	2.1	silt & aggregate	No odor, no stain
	EP-7+10-4	4.0	brn silt/shotrock	No odor, no stain, no gw
1330 ✓	EP-7+10-2	3.1	silt & aggregate/sand	No odor, no stain
	EP-7+60-4	4.9	aggregate/silt/shotrock	No odor, no stain, no gw
1400 ✓	EP-7+60-2	4.6	aggregate	No odor, no stain
	EP-8+10-4	5.7	silt/shotrock	No odor, no stain, no gw
1500 ✓	EP-8+10-2	4.4	aggregate	No odor, no stain
1545 ✓	EP-8+60-4	3.7	silt & shotrock	No odor, no stain, no gw
	EP-8+60-2	2.1	aggregate	No odor, no stain

SOIL SAMPLING FIELD NOTES

Date: 5/7/12

Weather: Overcast 35°

Time of Arrival: 0900

Time of Departure: 1145

Page 1 of 2

Sampler & Other Personnel On-site:

Robert Lund & City DPW Roads crew

SAP/QAP Calculations:

Per work plan & SAPQAP 2 PID screens per test hole, + least one confirmation from each test hole

PPE / Sampling Equipment Used:

Sterile nitrile gloves / sample spoons / scoopers

PID Calibration Record:

Model No.:	Serial No.:	Zero Adjust.:	Gas (ppm)	Reading (ppm)	Comments:
Mini Rae Lite	590 901909	0.0	100	100	OK

General Sample Locations/Descriptions/Types:

EP-9+10 to EP-12+10

Samples Released To (Lab/Shipping Arrangements/Preservation Method):

SGS labs in coolers on ice packs. Samples stored in refrigerator

Notes:

0930 ✓	EP-9+10-4	1.8	shot rock & silt	No odor, no stain, no SW
0945 ✓	EP-9+10-2	2.8	aggregate	No odor, no stain
1030 ✓	EP-9+60-4	2.9	aggregate/silt	No odor, no stain, no SW
	EP-9+60-2	2.2	aggregate	No odor, no stain
1100 ✓	EP-10+10-4	3.0	aggregate/shot rock/silt	No odor, no stain, no SW
	EP-10+10-2	1.4	aggregate	No odor, no stain
1330 ✓	EP-10+60-4	0.8	aggregate/silt/shot rock	No odor, no stain, no SW
1345 ✓	EP-10+60-2	2.4	aggregate	No odor, no stain
1445 ✓	EP-11+10-4	4.0	aggregate/silt	No odor, no stain, no SW
	EP-11+10-2	3.1	aggregate	No odor, no stain
1500 ✓	EP-11+60-4	2.3	aggregate/shot rock	No odor, no stain, no SW
	EP-11+60-2	1.8	aggregate	No odor, no stain

SOIL SAMPLING FIELD NOTES

Date: 5/7/12

Weather: overcast 45° (afternoon)

Time of Arrival: 1300

Time of Departure: 1600

Page 2 of 2

Sampler & Other Personnel On-site:

SAP/QAP Calculations:

PPE / Sampling Equipment Used:

PID Calibration Record:

Model No.:	Serial No.:	Zero Adjust.:	Gas (ppm)	Reading (ppm)	Comments:
Mini Rae Lite			100		

General Sample Locations/Descriptions/Types:

Samples Released To (Lab/Shipping Arrangements/Preservation Method):

Notes:

1530 ✓ EP-12+10-4 1.1
EP-12+10-2 0.9

silt/shotrock/aggregate
aggregate/silt

No odor, no staining, No odor, no staining

SOIL SAMPLING FIELD NOTES

Date: 5/8/12

Weather: overcast 40°F

Time of Arrival: 0900

Time of Departure: 1145

Sampler & Other Personnel On-site:

Robert Lund & PPW Roads Crew

SAP/QAP Calculations:

Per work plan & SAP/QAP 2 PID screens per test hole, at least 1 confirmation sample per test hole.

PPE / Sampling Equipment Used:

sterile nitrile gloves/sample spoons & scoops

PID Calibration Record:

Model No.:	Serial No.:	Zero Adjust.:	Gas (ppm)	Reading (ppm)	Comments:
Mini Rae Lite	590 90/909	0.0	100	100	OK

General Sample Locations/Descriptions/Types:

EP-12+60-7 12+97 & DW-4+00

Samples Released To (Lab/Shipping Arrangements/Preservation Method):

SGS labs in coolers on ice. Samples stored in refrigerator

Notes:

1000 ✓ EP-12+60-4 0.2 aggregate/silt/cobbles no odor, no stain, no gw
 EP-12+60-2 0.1 aggregate no odor, no stain
 1030 ✓ EP-12+97-4 0.7 DW ~~at~~ aggregate/silt/cobbles no odor, no stain, no gw
 EP-12+97-2 0.4 aggregate no odor, no stain
 1130 ✓ DW-4+00-4 1.0 aggregate/silt no odor, no stain, no gw
 DW-4+00-2 0.9 aggregate no odor, no stain

*located end of 6" steel pipe. appears to be leaking viscous black oil.

SOIL SAMPLING FIELD NOTES

Date: 5/11/12

Weather: Overcast 55°F

Time of Arrival: 1300

Time of Departure: 1500

Sampler & Other Personnel On-site:

Robert Lund & Regan Engineering

SAP/QAP Calculations:

Per work plan. 4' deep test hole w/ field screen @ 2' & 4' bgs. Collect confirmation sample from highest PID

PPE / Sampling Equipment Used:

Nitrile gloves sterile sample spoons & geocores

PID Calibration Record:

Model No.:	Serial No.:	Zero Adjust.:	Gas (ppm)	Reading (ppm)	Comments:
Mini Rae Lite	590 901509	0.0	100	100	OK

General Sample Locations/Descriptions/Types:

East Point Road 13+36, opposite side of pipelines, hand dig

Samples Released To (Lab/Shipping Arrangements/Preservation Method):

SGS labs via Penair, chilled in refrigerator, shipped on ice packs in cooler

Notes:

*V EP-13+36-4 0.0 aggregate & silt No stain, no odor, no gw
 EP-13+36-2 0.0 aggregate & silt No stain, no odor
 * Hand dug w/ shovel due to fuel lines

**Characterization Report and Work Plan Addendum for Ilulaq
Lake/East Point Road & Delta Way**

ATTACHMENT D



SGS North America Inc.
Alaska Division
Level II Laboratory Data Report

Project: Ilulaq Lake East Point Rd DW
Client: Unalaska City-Public Works
SGS Work Order: 1121591

Released by:

Contents:

Cover Page
Case Narrative
Final Report Pages
Quality Control Summary Forms
Chain of Custody/Sample Receipt Forms



CASE NARRATIVE

Print Date: 5/29/2012

Client Name: Unalaska City-Public Works
Project Name: Ilulak Lake East Point Rd DW
Workorder No.: 1121591

Sample Comments

Refer to the sample receipt form for information on sample condition.

<u>Lab Sample ID</u>	<u>Sample Type</u>	<u>Client Sample ID</u>
1121591001	PS	DW-0+00-4
	AK102/103 - Unknown hydrocarbon with several peaks is present.	
1121591002	PS	DW-0+50-4
	AK102/103 - Unknown hydrocarbon with several peaks is present.	
1121591003	PS	DW-1+00-4
	AK102/103 - The pattern is consistent with a lube oil.	
	AK102/103 - Sample was diluted due to dark color of extract;therefore the LOQ was elevated.	
1121591004	PS	DW-1+50-4
	AK102/103 - The pattern is consistent with a lube oil.	
	AK102/103 - Sample was diluted due to dark color of extract;therefore the LOQ was elevated.	
	8270D SIM- Surrogate (2-fluorobiphenyl) recovery is outside of QC criteria due to sample dilution.	
1121591005	PS	DW-2+00-4
	AK102/103 - Unknown hydrocarbon with several peaks is present.	
1121591006	PS	DW-2+50-4
	AK102/103 - The pattern is consistent with a lube oil.	
1121591007	PS	DW-3+00-4
	AK102/103 - The pattern is consistent with a lube oil.	
1121591008	PS	DW-3+50-4
	AK102/103 - The pattern is consistent with a weathered middle distillate.	
1121591009	PS	DW-4+00-4
	AK102/103 - Unknown hydrocarbon with several peaks is present.	
1121591010	PS	DUP-01
	AK102/103 - Unknown hydrocarbon with several peaks is present.	
	8270D SIM - Elevated LOQs due to sample dilution. Sample diluted due to dark extract.	
1121591011	PS	EP-1+60-2
	AK102/103 - The pattern is consistent with a weathered middle distillate.	
1121591012	PS	EP-2+10-2
	AK102/103 - The pattern is consistent with a weathered middle distillate.	
1121591013	PS	EP-3+10-2
	AK102/103 - Unknown hydrocarbon with several peaks is present.	
	8270D SIM - Elevated LOQs due to sample dilution. Sample diluted due to dark extract.	
1121591014	PS	EP-3+60-2
	AK102/103 - Unknown hydrocarbon with several peaks is present.	

1121591015	PS	EP-4+10-2	AK102/103 - Unknown hydrocarbon with several peaks is present. 8270D SIM - Elevated LOQs due to sample dilution. Sample diluted due to dark extract.
1121591016	PS	EP-4+10-4	AK102/103 - The pattern is consistent with a weathered middle distillate.
1121591017	PS	EP-4+60-2	AK102/103 - The pattern is consistent with a weathered middle distillate. 8270D SIM - Elevated LOQs due to sample dilution. Sample diluted due to dark extract.
1121591018	PS	EP-4+60-4	AK102/103 - The pattern is consistent with a weathered middle distillate.
1121591019	PS	EP-5+10-4	AK102/103 - Unknown hydrocarbon with several peaks is present.
1121591020	PS	EP-5-10-4	AK102/103 - The pattern is consistent with a weathered middle distillate. 8270D SIM- Surrogate (2-fluorobiphenyl and terphenyl-d14) recovery is outside of QC criteria due to sample dilution.
1121591021	PS	EP-5+60-2	AK102/103 - The pattern is consistent with a weathered middle distillate.
1121591022	PS	EP-5+60-4	AK102/103 - The pattern is consistent with a weathered middle distillate.
1086051	* MS	1121529001MS	8270D SIM - MS recovery for naphthalene, benzo(a)anthracene and benzo[a]pyrene is outside of QC criteria. Refer to LCS for accuracy.
1086052	* MSD	1121529001MSD	8270D SIM - MSD recovery for naphthalene and benzo[a]pyrene is outside of QC criteria. Refer to LCS for accuracy. 8270D SIM- MS/MSD RPD for acenaphthene does not meet QC criteria.
1086095	* LCSD	LCSD for HBN 1339070 [VXX/2346	8021B - LCSD recovery is outside of acceptance criteria for benzene (biased high). Sample concentrations are less than LOQ.
1086113	* CCV2	CCV2 for HBN 1339072 (VFC/1097	8021B - CCV recovery is outside of acceptance criteria for benzene (biased high). Sample concentrations are less than LOQ.
1086246	* MS	1121591018MS	8270D SIM - MS/MSD recovery for multiple analytes is outside of QC criteria. Refer to LCS for accuracy.
1086247	* MSD	1121591018MSD	8270D SIM - MS/MSD recovery for multiple analytes is outside of QC criteria. Refer to LCS for accuracy.
1086280	* CCV2	CCV2 for HBN 1339072 (VFC/1097	8021B - CCV recovery is outside of acceptance criteria for benzene (biased high). Sample concentrations are less than LOQ.

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



Report of Manual Integrations

Print Date: 5/29/2012 3:25 pm

<u>Laboratory ID</u>	<u>Client Sample ID</u>	<u>Analytical Batch</u>	<u>Method</u>	<u>Analyte</u>	<u>Reason</u>
1086051	1121529001MS	XMS6656	8270D SIMS (F	Phenanthrene	RP
1086245	LCS for HBN 1339103 [XXX/26839	XMS6656	8270D SIMS (F	Benzo(a)Anthracene	RP
1086245	LCS for HBN 1339103 [XXX/26839	XMS6656	8270D SIMS (F	Benzo[a]pyrene	BLC
1086245	LCS for HBN 1339103 [XXX/26839	XMS6656	8270D SIMS (F	Benzo[b]Fluoranthene	RP
1086245	LCS for HBN 1339103 [XXX/26839	XMS6656	8270D SIMS (F	Benzo[k]fluoranthene	PNF
1086245	LCS for HBN 1339103 [XXX/26839	XMS6656	8270D SIMS (F	Chrysene	BLC
1086246	1121591018MS	XMS6656	8270D SIMS (F	Acenaphthene	RP
1086246	1121591018MS	XMS6656	8270D SIMS (F	Benzo(a)Anthracene	RP
1086246	1121591018MS	XMS6656	8270D SIMS (F	Benzo[a]pyrene	BLC
1086246	1121591018MS	XMS6656	8270D SIMS (F	Chrysene	RP
1086246	1121591018MS	XMS6656	8270D SIMS (F	Dibenzo[a,h]anthracene	RP
1086246	1121591018MS	XMS6656	8270D SIMS (F	Indeno[1,2,3-c,d] pyrene	RP
1086246	1121591018MS	XMS6656	8270D SIMS (F	Phenanthrene	RP
1086247	1121591018MSD	XMS6656	8270D SIMS (F	Benzo(a)Anthracene	RP
1086247	1121591018MSD	XMS6656	8270D SIMS (F	Benzo[a]pyrene	BLC
1086247	1121591018MSD	XMS6656	8270D SIMS (F	Chrysene	RP
1086247	1121591018MSD	XMS6656	8270D SIMS (F	Dibenzo[a,h]anthracene	RP
1086247	1121591018MSD	XMS6656	8270D SIMS (F	Indeno[1,2,3-c,d] pyrene	RP
1086247	1121591018MSD	XMS6656	8270D SIMS (F	Phenanthrene	BLC
1121591001	DW-0+00-4	XMS6656	8270D SIMS (F	Benzo[b]Fluoranthene	SP
1121591001	DW-0+00-4	XMS6656	8270D SIMS (F	Benzo[k]fluoranthene	RP
1121591002	DW-0+50-4	XMS6656	8270D SIMS (F	Benzo[b]Fluoranthene	SP
1121591002	DW-0+50-4	XMS6656	8270D SIMS (F	Benzo[k]fluoranthene	RP
1121591003	DW-1+00-4	XMS6656	8270D SIMS (F	Benzo(a)Anthracene	RP
1121591003	DW-1+00-4	XMS6656	8270D SIMS (F	Benzo[a]pyrene	BLC
1121591003	DW-1+00-4	XMS6656	8270D SIMS (F	Benzo[b]Fluoranthene	SP
1121591003	DW-1+00-4	XMS6656	8270D SIMS (F	Benzo[k]fluoranthene	RP
1121591004	DW-1+50-4	XMS6656	8270D SIMS (F	Benzo(a)Anthracene	RP
1121591004	DW-1+50-4	XMS6656	8270D SIMS (F	Phenanthrene	BLC
1121591005	DW-2+00-4	XMS6663	8270D SIMS (F	Benzo[b]Fluoranthene	SP
1121591005	DW-2+00-4	XMS6663	8270D SIMS (F	Benzo[k]fluoranthene	RP
1121591006	DW-2+50-4	XMS6656	8270D SIMS (F	Benzo(a)Anthracene	RP
1121591006	DW-2+50-4	XMS6656	8270D SIMS (F	Benzo[a]pyrene	BLC
1121591006	DW-2+50-4	XMS6656	8270D SIMS (F	Chrysene	BLC
1121591006	DW-2+50-4	XMS6656	8270D SIMS (F	Phenanthrene	BLC
1121591007	DW-3+00-4	XMS6656	8270D SIMS (F	Benzo(a)Anthracene	RP
1121591007	DW-3+00-4	XMS6656	8270D SIMS (F	Benzo[b]Fluoranthene	SP
1121591007	DW-3+00-4	XMS6656	8270D SIMS (F	Phenanthrene	RP
1121591008	DW-3+50-4	XMS6656	8270D SIMS (F	Benzo(a)Anthracene	RP
1121591008	DW-3+50-4	XMS6656	8270D SIMS (F	Benzo[a]pyrene	BLC
1121591008	DW-3+50-4	XMS6656	8270D SIMS (F	Benzo[b]Fluoranthene	SP
1121591008	DW-3+50-4	XMS6656	8270D SIMS (F	Phenanthrene	BLC
1121591009	DW-4+00-4	XMS6656	8270D SIMS (F	Benzo[b]Fluoranthene	SP
1121591009	DW-4+00-4	XMS6656	8270D SIMS (F	Benzo[k]fluoranthene	RP
1121591011	EP-1+60-2	XMS6656	8270D SIMS (F	Benzo(a)Anthracene	RP
1121591011	EP-1+60-2	XMS6656	8270D SIMS (F	Chrysene	BLC
1121591012	EP-2+10-2	XMS6656	8270D SIMS (F	Acenaphthylene	SP
1121591012	EP-2+10-2	XMS6656	8270D SIMS (F	Benzo[b]Fluoranthene	SP
1121591012	EP-2+10-2	XMS6656	8270D SIMS (F	Benzo[k]fluoranthene	RP
1121591012	EP-2+10-2	XMS6656	8270D SIMS (F	Chrysene	BLC

<u>Laboratory ID</u>	<u>Client Sample ID</u>	<u>Analytical Batch</u>	<u>Method</u>	<u>Analyte</u>	<u>Reason</u>
1121591012	EP-2+10-2	XMS6656	8270D SIMS (F	Phenanthrene	BLC
1121591013	EP-3+10-2	XMS6656	8270D SIMS (F	Benzo[b]Fluoranthene	SP
1121591013	EP-3+10-2	XMS6656	8270D SIMS (F	Phenanthrene	BLC
1121591014	EP-3+60-2	XMS6656	8270D SIMS (F	Benzo[b]Fluoranthene	SP
1121591014	EP-3+60-2	XMS6656	8270D SIMS (F	Benzo[k]fluoranthene	PNF
1121591014	EP-3+60-2	XMS6656	8270D SIMS (F	Chrysene	BLC
1121591014	EP-3+60-2	XMS6656	8270D SIMS (F	Dibenzo[a,h]anthracene	RP
1121591016	EP-4+10-4	XMS6656	8270D SIMS (F	Benzo[b]Fluoranthene	SP
1121591016	EP-4+10-4	XMS6656	8270D SIMS (F	Benzo[k]fluoranthene	RP
1121591016	EP-4+10-4	XMS6656	8270D SIMS (F	Chrysene	BLC
1121591016	EP-4+10-4	XMS6656	8270D SIMS (F	Phenanthrene	BLC
1121591018	EP-4+60-4	XMS6656	8270D SIMS (F	Benzo(a)Anthracene	RP
1121591018	EP-4+60-4	XMS6656	8270D SIMS (F	Benzo[a]pyrene	BLC
1121591018	EP-4+60-4	XMS6656	8270D SIMS (F	Benzo[g,h,i]perylene	RP
1121591018	EP-4+60-4	XMS6656	8270D SIMS (F	Chrysene	RP
1121591019	EP-5+10-4	XMS6663	8270D SIMS (F	Acenaphthylene	SP
1121591019	EP-5+10-4	XMS6663	8270D SIMS (F	Anthracene	RP
1121591019	EP-5+10-4	XMS6663	8270D SIMS (F	Benzo(a)Anthracene	RP
1121591019	EP-5+10-4	XMS6663	8270D SIMS (F	Benzo[b]Fluoranthene	SP
1121591019	EP-5+10-4	XMS6663	8270D SIMS (F	Phenanthrene	BLC
1121591020	EP-5-10-4	XMS6663	8270D SIMS (F	Anthracene	RP
1121591020	EP-5-10-4	XMS6663	8270D SIMS (F	Benzo(a)Anthracene	RP
1121591020	EP-5-10-4	XMS6663	8270D SIMS (F	Phenanthrene	BLC
1121591021	EP-5+60-2	XMS6663	8270D SIMS (F	Anthracene	RP
1121591021	EP-5+60-2	XMS6663	8270D SIMS (F	Phenanthrene	BLC
1121591022	EP-5+60-4	XMS6663	8270D SIMS (F	Benzo(a)Anthracene	RP
1121591022	EP-5+60-4	XMS6663	8270D SIMS (F	Phenanthrene	BLC

Manual Integration Reason Code Descriptions

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

All DRO/RRO analysis are integrated per SOP.



Laboratory Analytical Report

Client: **Unalaska City-Public Works**

P.O. Box 610
Unalaska, AK 99685

Attn: **Robert Lund**

T: 907-581-1260 F:
rlund@ci.unalaska.ak.us

Project: **Ilulaa Lake East Point Rd DW**

Workorder No.: **1121591**

Certification:

This data package is in compliance with the terms and conditions of the contract, both technically and for completeness, unless otherwise noted on the sample data sheet(s) and/or case narrative. This certification applies only to the tested parameters and the specific sample(s) received at the laboratory. If you have any questions regarding this report, or if we can be of further assistance, please contact your SGS Project Manager.

Forest Taylor

Forest.Taylor@sgs.com
Project Manager

Contents (Bookmarked in PDF):

Cover Page
Glossary
Sample Summary Forms
Case Narrative
Sample Results Forms
Batch Summary Forms (by method)
Quality Control Summary Forms (by method)
Chain of Custody/Sample Receipt Forms
Attachments (if applicable)

Enclosed are the analytical results associated with the above work order. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. If you have any questions regarding this report, or if we can be of any other assistance, please contact your SGS Project Manager at 907-562-2343. All work is provided under SGS general terms and conditions (http://www.sgs.com/terms_and_conditions.htm), unless other written agreements have been accepted by both parties.

SGS maintains a formal Quality Assurance/Quality Control (QA/QC) program. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request. The laboratory certification numbers are AK00971 (DW Chemistry & Microbiology) & UST-005 (CS) for ADEC and 2944.01 for DOD ELAP/ISO 17025 (RCRA methods: 1020A, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035B, 6020, 7470A, 7471B, 8021B, 8082A, 8260B, 8270D, 8270D-SIM, 9040B, 9045C, 9056A, 9060A, AK101 and AK102/103). Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP and, when applicable, other regulatory authorities.

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

*	The analyte has exceeded allowable regulatory or control limits.
!	Surrogate out of control limits.
B	Indicates the analyte is found in a blank associated with the sample.
CCV	Continuing Calibration Verification
CL	Control Limit
D	The analyte concentration is the result of a dilution.
DF	Dilution Factor
DL	Detection Limit (i.e., maximum method detection limit)
E	The analyte result is above the calibrated range.
F	Indicates value that is greater than or equal to the DL
GT	Greater Than
ICV	Initial Calibration Verification
J	The quantitation is an estimation.
JL	The analyte was positively identified, but the quantitation is a low estimation.
LCS(D)	Laboratory Control Spike (Duplicate)
LOD	Limit of Detection (i.e., 2xDL)
LOQ	Limit of Quantitation (i.e., reporting or practical quantitation limit)
LT	Less Than
M	A matrix effect was present.
MB	Method Blank
MS(D)	Matrix Spike (Duplicate)
ND	Indicates the analyte is not detected.
Q	QC parameter out of acceptance range.
R	Rejected
RL	Reporting Limit
RPD	Relative Percent Difference
U	Indicates the analyte was analyzed for but not detected.

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



SAMPLE SUMMARY

Print Date: 5/29/2012 3:25 pm

Client Name: Unalaska City-Public Works
Project Name: Ilulak Lake East Point Rd DW
Workorder No.: 1121591

Analytical Methods

Method Description

8270 PAH SIM Semi-Volatiles GC/MS
AK101/8021 Combo. (S)
AK101/8021 Combo. (S)
Diesel/Residual Range Organics
Diesel/Residual Range Organics
Percent Solids SM2540G

Analytical Method

8270D SIMS (PAH)
AK101
SW8021B
AK102
AK103
SM21 2540G

Sample ID Cross Reference

Lab Sample ID

1121591001
1121591002
1121591003
1121591004
1121591005
1121591006
1121591007
1121591008
1121591009
1121591010
1121591011
1121591012
1121591013
1121591014
1121591015
1121591016
1121591017
1121591018
1121591019
1121591020
1121591021
1121591022
1121591023

Client Sample ID

DW-0+00-4
DW-0+50-4
DW-1+00-4
DW-1+50-4
DW-2+00-4
DW-2+50-4
DW-3+00-4
DW-3+50-4
DW-4+00-4
DUP-01
EP-1+60-2
EP-2+10-2
EP-3+10-2
EP-3+60-2
EP-4+10-2
EP-4+10-4
EP-4+60-2
EP-4+60-4
EP-5+10-4
EP-5-10-4
EP-5+60-2
EP-5+60-4
TB-01



Detectable Results Summary

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **DW-0+00-4**

SGS Ref. #: 1121591001

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Residual Range Organics	54.8	mg/Kg

Polynuclear Aromatics GC/MS

Phenanthrene	83.4	ug/Kg
Fluoranthene	92.4	ug/Kg
Pyrene	69.0	ug/Kg
Benzo[b]Fluoranthene	68.2	ug/Kg
Benzo[a]pyrene	50.6	ug/Kg

Client Sample ID: **DW-0+50-4**

SGS Ref. #: 1121591002

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Residual Range Organics	70.5	mg/Kg

Polynuclear Aromatics GC/MS

Phenanthrene	55.0	ug/Kg
Fluoranthene	70.6	ug/Kg
Pyrene	67.7	ug/Kg
Benzo(a)Anthracene	45.8	ug/Kg
Chrysene	40.2	ug/Kg
Benzo[b]Fluoranthene	81.1	ug/Kg
Benzo[a]pyrene	61.5	ug/Kg
Benzo[g,h,i]perylene	39.2	ug/Kg



Detectable Results Summary

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **DW-1+00-4**

SGS Ref. #: 1121591003

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Residual Range Organics	142	mg/Kg

Polynuclear Aromatics GC/MS

Naphthalene	71.6	ug/Kg
2-Methylnaphthalene	40.4	ug/Kg
1-Methylnaphthalene	32.5	ug/Kg
Fluorene	42.9	ug/Kg
Phenanthrene	565	ug/Kg
Anthracene	182	ug/Kg
Fluoranthene	640	ug/Kg
Pyrene	783	ug/Kg
Benzo(a)Anthracene	599	ug/Kg
Chrysene	412	ug/Kg
Benzo[b]Fluoranthene	719	ug/Kg
Benzo[k]fluoranthene	190	ug/Kg
Benzo[a]pyrene	736	ug/Kg
Indeno[1,2,3-c,d] pyrene	462	ug/Kg
Dibenzo[a,h]anthracene	127	ug/Kg
Benzo[g,h,i]perylene	542	ug/Kg

Client Sample ID: **DW-1+50-4**

SGS Ref. #: 1121591004

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Residual Range Organics	543	mg/Kg

Polynuclear Aromatics GC/MS

Fluoranthene	46.1	ug/Kg
Pyrene	47.1	ug/Kg
Benzo(a)Anthracene	37.9	ug/Kg
Benzo[a]pyrene	47.3	ug/Kg
Benzo[g,h,i]perylene	31.0	ug/Kg



Detectable Results Summary

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **DW-2+00-4**

SGS Ref. #: 1121591005

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Residual Range Organics	69.6	mg/Kg

Polynuclear Aromatics GC/MS

Phenanthrene	60.9	ug/Kg
Fluoranthene	93.4	ug/Kg
Pyrene	87.8	ug/Kg
Benzo(a)Anthracene	51.5	ug/Kg
Chrysene	51.6	ug/Kg
Benzo[b]Fluoranthene	73.8	ug/Kg
Benzo[a]pyrene	57.4	ug/Kg

Client Sample ID: **DW-2+50-4**

SGS Ref. #: 1121591006

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Residual Range Organics	80.4	mg/Kg

Polynuclear Aromatics GC/MS

Phenanthrene	8.18	ug/Kg
Fluoranthene	15.8	ug/Kg
Pyrene	18.6	ug/Kg
Benzo(a)Anthracene	9.05	ug/Kg
Chrysene	8.38	ug/Kg
Benzo[a]pyrene	15.1	ug/Kg
Indeno[1,2,3-c,d] pyrene	8.58	ug/Kg
Benzo[g,h,i]perylene	13.1	ug/Kg



Detectable Results Summary

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **DW-3+00-4**

SGS Ref. #: 1121591007

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	262	mg/Kg
Residual Range Organics	1370	mg/Kg

Polynuclear Aromatics GC/MS

Phenanthrene	187	ug/Kg
Anthracene	60.9	ug/Kg
Fluoranthene	311	ug/Kg
Pyrene	317	ug/Kg
Benzo(a)Anthracene	205	ug/Kg
Chrysene	143	ug/Kg
Benzo[b]Fluoranthene	277	ug/Kg
Benzo[a]pyrene	219	ug/Kg
Indeno[1,2,3-c,d] pyrene	118	ug/Kg
Benzo[g,h,i]perylene	188	ug/Kg

Client Sample ID: **DW-3+50-4**

SGS Ref. #: 1121591008

Volatile Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Benzene	51.7	ug/Kg
Toluene	100	ug/Kg

Semivolatile Organic Fuels Department

Diesel Range Organics	158	mg/Kg
Residual Range Organics	877	mg/Kg

Polynuclear Aromatics GC/MS

Naphthalene	79.8	ug/Kg
2-Methylnaphthalene	113	ug/Kg
1-Methylnaphthalene	67.1	ug/Kg
Fluoranthene	94.8	ug/Kg
Pyrene	100	ug/Kg
Benzo(a)Anthracene	67.5	ug/Kg
Benzo[b]Fluoranthene	117	ug/Kg
Benzo[a]pyrene	93.3	ug/Kg
Indeno[1,2,3-c,d] pyrene	57.4	ug/Kg
Benzo[g,h,i]perylene	109	ug/Kg



Detectable Results Summary

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **DW-4+00-4**

SGS Ref. #: 1121591009

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Residual Range Organics	145	mg/Kg

Polynuclear Aromatics GC/MS

Benzo[b]Fluoranthene	55.6	ug/Kg
Benzo[a]pyrene	41.0	ug/Kg
Benzo[g,h,i]perylene	36.0	ug/Kg

Client Sample ID: **DUP-01**

SGS Ref. #: 1121591010

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Residual Range Organics	104	mg/Kg

Client Sample ID: **EP-1+60-2**

SGS Ref. #: 1121591011

Volatile Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Gasoline Range Organics	9.33	mg/Kg

Semivolatile Organic Fuels Department

Diesel Range Organics	893	mg/Kg
Residual Range Organics	339	mg/Kg

Polynuclear Aromatics GC/MS

Benzo[g,h,i]perylene	32.4	ug/Kg
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Client Sample ID: **EP-2+10-2**

SGS Ref. #: 1121591012

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	366	mg/Kg
Residual Range Organics	181	mg/Kg

Polynuclear Aromatics GC/MS

Phenanthrene	40.3	ug/Kg
Fluoranthene	84.5	ug/Kg
Pyrene	72.3	ug/Kg
Chrysene	35.5	ug/Kg
Benzo[b]Fluoranthene	69.2	ug/Kg
Benzo[a]pyrene	33.5	ug/Kg



Detectable Results Summary

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **EP-3+10-2**

SGS Ref. #: 1121591013

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	46.0	mg/Kg
Residual Range Organics	94.3	mg/Kg

Client Sample ID: **EP-3+60-2**

SGS Ref. #: 1121591014

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Residual Range Organics	42.0	mg/Kg

Polynuclear Aromatics GC/MS

Phenanthrene	44.2	ug/Kg
Fluoranthene	52.0	ug/Kg
Pyrene	46.8	ug/Kg
Benzo[b]Fluoranthene	39.0	ug/Kg
Benzo[a]pyrene	34.1	ug/Kg

Client Sample ID: **EP-4+10-2**

SGS Ref. #: 1121591015

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	29.8	mg/Kg
Residual Range Organics	40.5	mg/Kg

Client Sample ID: **EP-4+10-4**

SGS Ref. #: 1121591016

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	178	mg/Kg
Residual Range Organics	95.5	mg/Kg

Polynuclear Aromatics GC/MS

Fluoranthene	37.4	ug/Kg
Pyrene	33.5	ug/Kg
Benzo(a)Anthracene	32.5	ug/Kg
Chrysene	30.9	ug/Kg
Benzo[b]Fluoranthene	49.3	ug/Kg
Benzo[a]pyrene	31.6	ug/Kg

Client Sample ID: **EP-4+60-2**

SGS Ref. #: 1121591017

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	31.0	mg/Kg
Residual Range Organics	28.9	mg/Kg



Detectable Results Summary

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **EP-4+60-4**

SGS Ref. #: 1121591018

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	1870	mg/Kg
Residual Range Organics	1790	mg/Kg

Polynuclear Aromatics GC/MS

Fluoranthene	86.4	ug/Kg
Pyrene	232	ug/Kg
Benzo(a)Anthracene	71.3	ug/Kg
Chrysene	92.8	ug/Kg
Benzo[a]pyrene	141	ug/Kg
Benzo[g,h,i]perylene	68.0	ug/Kg

Client Sample ID: **EP-5+10-4**

SGS Ref. #: 1121591019

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	173	mg/Kg
Residual Range Organics	234	mg/Kg

Polynuclear Aromatics GC/MS

Fluoranthene	37.2	ug/Kg
Pyrene	41.4	ug/Kg
Chrysene	29.6	ug/Kg
Benzo[b]Fluoranthene	57.0	ug/Kg
Benzo[a]pyrene	46.6	ug/Kg
Indeno[1,2,3-c,d] pyrene	39.7	ug/Kg
Benzo[g,h,i]perylene	56.3	ug/Kg



Detectable Results Summary

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **EP-5-10-4**

SGS Ref. #: 1121591020

Volatile Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Gasoline Range Organics	9.08	mg/Kg
o-Xylene	141	ug/Kg

Semivolatile Organic Fuels Department

Diesel Range Organics	2080	mg/Kg
Residual Range Organics	2620	mg/Kg

Polynuclear Aromatics GC/MS

Fluorene	403	ug/Kg
Phenanthrene	870	ug/Kg
Anthracene	200	ug/Kg
Fluoranthene	191	ug/Kg
Pyrene	960	ug/Kg
Benzo(a)Anthracene	260	ug/Kg
Chrysene	418	ug/Kg
Benzo[a]pyrene	165	ug/Kg
Benzo[g,h,i]perylene	75.5	ug/Kg

Client Sample ID: **EP-5+60-2**

SGS Ref. #: 1121591021

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	151	mg/Kg
Residual Range Organics	490	mg/Kg

Polynuclear Aromatics GC/MS

Fluoranthene	31.6	ug/Kg
Pyrene	52.9	ug/Kg
Benzo[a]pyrene	39.3	ug/Kg
Benzo[g,h,i]perylene	48.3	ug/Kg



Detectable Results Summary

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **EP-5+60-4**

SGS Ref. #: 1121591022

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	523	mg/Kg
Residual Range Organics	311	mg/Kg

Polynuclear Aromatics GC/MS

Phenanthrene	50.3	ug/Kg
Fluoranthene	80.9	ug/Kg
Pyrene	87.9	ug/Kg
Benzo(a)Anthracene	43.2	ug/Kg
Chrysene	48.8	ug/Kg
Benzo[a]pyrene	48.7	ug/Kg
Benzo[g,h,i]perylene	38.5	ug/Kg

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **DW-0+00-4**

SGS Ref. #: 1121591001

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 50.8

Collection Date/Time: 05/01/12 10:00

Receipt Date/Time: 05/09/12 16:15

Volatile Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Benzene	71.1 U	71.1	ug/Kg	1	VFC10970	VXX23467	
Ethylbenzene	142 U	142	ug/Kg	1	VFC10970	VXX23467	
Gasoline Range Organics	14.2 U	14.2	mg/Kg	1	VFC10970	VXX23467	
o-Xylene	142 U	142	ug/Kg	1	VFC10970	VXX23467	
P & M -Xylene	284 U	284	ug/Kg	1	VFC10970	VXX23467	
Toluene	142 U	142	ug/Kg	1	VFC10970	VXX23467	
1,4-Difluorobenzene <sur>	96.1	72-119	%	1	VFC10970	VXX23467	
4-Bromofluorobenzene <sur>	84.3	50-150	%	1	VFC10970	VXX23467	

Batch Information

Analytical Batch: VFC10970

Analytical Method: AK101

Analysis Date/Time: 05/11/12 22:52

Dilution Factor: 1

Prep Batch: VXX23467

Prep Method: SW5035A

Prep Date/Time: 05/01/12 10:00

Initial Prep Wt./Vol.: 26.31 g

Prep Extract Vol.: 37.9575 mL

Container ID: 1121591001-B

Analyst: NRB

Analytical Batch: VFC10970

Analytical Method: SW8021B

Analysis Date/Time: 05/11/12 22:52

Dilution Factor: 1

Prep Batch: VXX23467

Prep Method: SW5035A

Prep Date/Time: 05/01/12 10:00

Initial Prep Wt./Vol.: 26.31 g

Prep Extract Vol.: 37.9575 mL

Container ID: 1121591001-B

Analyst: NRB

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **DW-0+00-4**

SGS Ref. #: 1121591001

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 50.8

Collection Date/Time: 05/01/12 10:00

Receipt Date/Time: 05/09/12 16:15

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Diesel Range Organics	39.0 U	39.0	mg/Kg	1	XFC10364	XXX26834	
Residual Range Organics	54.8	39.0	mg/Kg	1	XFC10364	XXX26834	
5a Androstane <surr>	86	50-150	%	1	XFC10364	XXX26834	
n-Triacontane-d62 <surr>	75.5	50-150	%	1	XFC10364	XXX26834	

Batch Information

Analytical Batch: XFC10364	Prep Batch: XXX26834	Initial Prep Wt./Vol.: 30.28 g
Analytical Method: AK102	Prep Method: SW3550C	Prep Extract Vol.: 1 mL
Analysis Date/Time: 05/14/12 23:20	Prep Date/Time: 05/11/12 14:50	Container ID:1121591001-A
Dilution Factor: 1		Analyst: MCM
Analytical Batch: XFC10364	Prep Batch: XXX26834	Initial Prep Wt./Vol.: 30.28 g
Analytical Method: AK103	Prep Method: SW3550C	Prep Extract Vol.: 1 mL
Analysis Date/Time: 05/14/12 23:20	Prep Date/Time: 05/11/12 14:50	Container ID:1121591001-A
Dilution Factor: 1		Analyst: MCM

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **DW-0+00-4**

SGS Ref. #: 1121591001

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 50.8

Collection Date/Time: 05/01/12 10:00

Receipt Date/Time: 05/09/12 16:15

Polynuclear Aromatics GC/MS

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
1-Methylnaphthalene	49.2 U	49.2	ug/Kg	5	XMS6656	XXX26835	
2-Methylnaphthalene	49.2 U	49.2	ug/Kg	5	XMS6656	XXX26835	
Acenaphthene	49.2 U	49.2	ug/Kg	5	XMS6656	XXX26835	
Acenaphthylene	49.2 U	49.2	ug/Kg	5	XMS6656	XXX26835	
Anthracene	49.2 U	49.2	ug/Kg	5	XMS6656	XXX26835	
Benzo(a)Anthracene	49.2 U	49.2	ug/Kg	5	XMS6656	XXX26835	
Benzo[a]pyrene	50.6	49.2	ug/Kg	5	XMS6656	XXX26835	
Benzo[b]Fluoranthene	68.2	49.2	ug/Kg	5	XMS6656	XXX26835	
Benzo[g,h,i]perylene	49.2 U	49.2	ug/Kg	5	XMS6656	XXX26835	
Benzo[k]fluoranthene	49.2 U	49.2	ug/Kg	5	XMS6656	XXX26835	
Chrysene	49.2 U	49.2	ug/Kg	5	XMS6656	XXX26835	
Dibenzo[a,h]anthracene	49.2 U	49.2	ug/Kg	5	XMS6656	XXX26835	
Fluoranthene	92.4	49.2	ug/Kg	5	XMS6656	XXX26835	
Fluorene	49.2 U	49.2	ug/Kg	5	XMS6656	XXX26835	
Indeno[1,2,3-c,d] pyrene	49.2 U	49.2	ug/Kg	5	XMS6656	XXX26835	
Naphthalene	49.2 U	49.2	ug/Kg	5	XMS6656	XXX26835	
Phenanthrene	83.4	49.2	ug/Kg	5	XMS6656	XXX26835	
Pyrene	69.0	49.2	ug/Kg	5	XMS6656	XXX26835	
2-Fluorobiphenyl <surr>	81.6	45-105	%	5	XMS6656	XXX26835	
Terphenyl-d14 <surr>	98.6	30-125	%	5	XMS6656	XXX26835	

Batch Information

Analytical Batch: XMS6656

Analytical Method: 8270D SIMS (PAH)

Analysis Date/Time: 05/15/12 12:28

Dilution Factor: 5

Prep Batch: XXX26835

Prep Method: SW3550C

Prep Date/Time: 05/14/12 10:00

Initial Prep Wt./Vol.: 22.51 g

Prep Extract Vol.: 1 mL

Container ID: 1121591001-A

Analyst: RTS

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **DW-0+00-4**

SGS Ref. #: 1121591001

Collection Date/Time: 05/01/12 10:00

Project ID: Ilulak Lake East Point Rd DW

Receipt Date/Time: 05/09/12 16:15

Matrix: Soil/Solid (dry weight)

Percent Solids: 50.8

Solids

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Total Solids	50.8		%	1	SPT8624		

Batch Information

Analytical Batch: SPT8624

Initial Prep Wt./Vol.: 1 mL

Analytical Method: SM21 2540G

Analysis Date/Time: 05/11/12 16:55

Container ID:1121591001-A

Dilution Factor: 1

Analyst: CDE

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **DW-0+50-4**

SGS Ref. #: 1121591002

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 79.3

Collection Date/Time: 05/01/12 11:15

Receipt Date/Time: 05/09/12 16:15

Volatile Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Benzene	37.4 U	37.4	ug/Kg	1	VFC10970	VXX23467	
Ethylbenzene	74.9 U	74.9	ug/Kg	1	VFC10970	VXX23467	
Gasoline Range Organics	7.49 U	7.49	mg/Kg	1	VFC10970	VXX23467	
o-Xylene	74.9 U	74.9	ug/Kg	1	VFC10970	VXX23467	
P & M -Xylene	150 U	150	ug/Kg	1	VFC10970	VXX23467	
Toluene	74.9 U	74.9	ug/Kg	1	VFC10970	VXX23467	
1,4-Difluorobenzene <sur>	96.4	72-119	%	1	VFC10970	VXX23467	
4-Bromofluorobenzene <sur>	88.4	50-150	%	1	VFC10970	VXX23467	

Batch Information

Analytical Batch: VFC10970

Analytical Method: AK101

Analysis Date/Time: 05/11/12 23:10

Dilution Factor: 1

Prep Batch: VXX23467

Prep Method: SW5035A

Prep Date/Time: 05/01/12 11:15

Initial Prep Wt./Vol.: 25.466 g

Prep Extract Vol.: 30.2633 mL

Container ID: 1121591002-B

Analyst: NRB

Analytical Batch: VFC10970

Analytical Method: SW8021B

Analysis Date/Time: 05/11/12 23:10

Dilution Factor: 1

Prep Batch: VXX23467

Prep Method: SW5035A

Prep Date/Time: 05/01/12 11:15

Initial Prep Wt./Vol.: 25.466 g

Prep Extract Vol.: 30.2633 mL

Container ID: 1121591002-B

Analyst: NRB

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **DW-0+50-4**

SGS Ref. #: 1121591002

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 79.3

Collection Date/Time: 05/01/12 11:15

Receipt Date/Time: 05/09/12 16:15

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Diesel Range Organics	24.9 U	24.9	mg/Kg	1	XFC10364	XXX26834	
Residual Range Organics	70.5	24.9	mg/Kg	1	XFC10364	XXX26834	
5a Androstane <surr>	85.3	50-150	%	1	XFC10364	XXX26834	
n-Triacontane-d62 <surr>	71.4	50-150	%	1	XFC10364	XXX26834	

Batch Information

Analytical Batch: XFC10364	Prep Batch: XXX26834	Initial Prep Wt./Vol.: 30.378 g
Analytical Method: AK102	Prep Method: SW3550C	Prep Extract Vol.: 1 mL
Analysis Date/Time: 05/15/12 07:41	Prep Date/Time: 05/11/12 14:50	Container ID:1121591002-A
Dilution Factor: 1		Analyst: MCM
Analytical Batch: XFC10364	Prep Batch: XXX26834	Initial Prep Wt./Vol.: 30.378 g
Analytical Method: AK103	Prep Method: SW3550C	Prep Extract Vol.: 1 mL
Analysis Date/Time: 05/15/12 07:41	Prep Date/Time: 05/11/12 14:50	Container ID:1121591002-A
Dilution Factor: 1		Analyst: MCM



Unalaska City-Public Works

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **DW-0+50-4**

SGS Ref. #: 1121591002

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 79.3

Collection Date/Time: 05/01/12 11:15

Receipt Date/Time: 05/09/12 16:15

Polynuclear Aromatics GC/MS

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
1-Methylnaphthalene	31.3 U	31.3	ug/Kg	5	XMS6656	XXX26835	
2-Methylnaphthalene	31.3 U	31.3	ug/Kg	5	XMS6656	XXX26835	
Acenaphthene	31.3 U	31.3	ug/Kg	5	XMS6656	XXX26835	
Acenaphthylene	31.3 U	31.3	ug/Kg	5	XMS6656	XXX26835	
Anthracene	31.3 U	31.3	ug/Kg	5	XMS6656	XXX26835	
Benzo(a)Anthracene	45.8	31.3	ug/Kg	5	XMS6656	XXX26835	
Benzo[a]pyrene	61.5	31.3	ug/Kg	5	XMS6656	XXX26835	
Benzo[b]Fluoranthene	81.1	31.3	ug/Kg	5	XMS6656	XXX26835	
Benzo[g,h,i]perylene	39.2	31.3	ug/Kg	5	XMS6656	XXX26835	
Benzo[k]fluoranthene	31.3 U	31.3	ug/Kg	5	XMS6656	XXX26835	
Chrysene	40.2	31.3	ug/Kg	5	XMS6656	XXX26835	
Dibenzo[a,h]anthracene	31.3 U	31.3	ug/Kg	5	XMS6656	XXX26835	
Fluoranthene	70.6	31.3	ug/Kg	5	XMS6656	XXX26835	
Fluorene	31.3 U	31.3	ug/Kg	5	XMS6656	XXX26835	
Indeno[1,2,3-c,d] pyrene	31.3 U	31.3	ug/Kg	5	XMS6656	XXX26835	
Naphthalene	31.3 U	31.3	ug/Kg	5	XMS6656	XXX26835	
Phenanthrene	55.0	31.3	ug/Kg	5	XMS6656	XXX26835	
Pyrene	67.7	31.3	ug/Kg	5	XMS6656	XXX26835	
2-Fluorobiphenyl <surr>	85.1	45-105	%	5	XMS6656	XXX26835	
Terphenyl-d14 <surr>	103	30-125	%	5	XMS6656	XXX26835	

Batch Information

Analytical Batch: XMS6656

Analytical Method: 8270D SIMS (PAH)

Analysis Date/Time: 05/15/12 12:48

Dilution Factor: 5

Prep Batch: XXX26835

Prep Method: SW3550C

Prep Date/Time: 05/14/12 10:00

Initial Prep Wt./Vol.: 22.619 g

Prep Extract Vol.: 1 mL

Container ID: 1121591002-A

Analyst: RTS

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **DW-0+50-4**

SGS Ref. #: 1121591002

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 79.3

Collection Date/Time: 05/01/12 11:15

Receipt Date/Time: 05/09/12 16:15

Solids

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Total Solids	79.3		%	1	SPT8624		

Batch Information

Analytical Batch: SPT8624

Analytical Method: SM21 2540G

Analysis Date/Time: 05/11/12 16:55

Dilution Factor: 1

Initial Prep Wt./Vol.: 1 mL

Container ID:1121591002-A

Analyst: CDE

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **DW-1+00-4**

SGS Ref. #: 1121591003

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 85.2

Collection Date/Time: 05/01/12 10:20

Receipt Date/Time: 05/09/12 16:15

Volatile Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Benzene	29.2 U	29.2	ug/Kg	1	VFC10970	VXX23467	
Ethylbenzene	58.5 U	58.5	ug/Kg	1	VFC10970	VXX23467	
Gasoline Range Organics	5.85 U	5.85	mg/Kg	1	VFC10970	VXX23467	
o-Xylene	58.5 U	58.5	ug/Kg	1	VFC10970	VXX23467	
P & M -Xylene	117 U	117	ug/Kg	1	VFC10970	VXX23467	
Toluene	58.5 U	58.5	ug/Kg	1	VFC10970	VXX23467	
1,4-Difluorobenzene <sur>	95.6	72-119	%	1	VFC10970	VXX23467	
4-Bromofluorobenzene <sur>	84.5	50-150	%	1	VFC10970	VXX23467	

Batch Information

Analytical Batch: VFC10970

Analytical Method: AK101

Analysis Date/Time: 05/11/12 23:28

Dilution Factor: 1

Prep Batch: VXX23467

Prep Method: SW5035A

Prep Date/Time: 05/01/12 10:20

Initial Prep Wt./Vol.: 29.497 g

Prep Extract Vol.: 29.3718 mL

Container ID: 1121591003-B

Analyst: NRB

Analytical Batch: VFC10970

Analytical Method: SW8021B

Analysis Date/Time: 05/11/12 23:28

Dilution Factor: 1

Prep Batch: VXX23467

Prep Method: SW5035A

Prep Date/Time: 05/01/12 10:20

Initial Prep Wt./Vol.: 29.497 g

Prep Extract Vol.: 29.3718 mL

Container ID: 1121591003-B

Analyst: NRB

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **DW-1+00-4**

SGS Ref. #: 1121591003

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 85.2

Collection Date/Time: 05/01/12 10:20

Receipt Date/Time: 05/09/12 16:15

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Diesel Range Organics	117 U	117	mg/Kg	5	XFC10364	XXX26834	
Residual Range Organics	142	117	mg/Kg	5	XFC10364	XXX26834	
5a Androstane <surr>	88.8	50-150	%	5	XFC10364	XXX26834	
n-Triacontane-d62 <surr>	81.4	50-150	%	5	XFC10364	XXX26834	

Batch Information

Analytical Batch: XFC10364	Prep Batch: XXX26834	Initial Prep Wt./Vol.: 30.178 g
Analytical Method: AK102	Prep Method: SW3550C	Prep Extract Vol.: 1 mL
Analysis Date/Time: 05/15/12 09:40	Prep Date/Time: 05/11/12 14:50	Container ID:1121591003-A
Dilution Factor: 5		Analyst: MCM
Analytical Batch: XFC10364	Prep Batch: XXX26834	Initial Prep Wt./Vol.: 30.178 g
Analytical Method: AK103	Prep Method: SW3550C	Prep Extract Vol.: 1 mL
Analysis Date/Time: 05/15/12 09:40	Prep Date/Time: 05/11/12 14:50	Container ID:1121591003-A
Dilution Factor: 5		Analyst: MCM



Unalaska City-Public Works

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **DW-1+00-4**

SGS Ref. #: 1121591003

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 85.2

Collection Date/Time: 05/01/12 10:20

Receipt Date/Time: 05/09/12 16:15

Polynuclear Aromatics GC/MS

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
1-Methylnaphthalene	32.5	29.1	ug/Kg	5	XMS6656	XXX26835	
2-Methylnaphthalene	40.4	29.1	ug/Kg	5	XMS6656	XXX26835	
Acenaphthene	29.1 U	29.1	ug/Kg	5	XMS6656	XXX26835	
Acenaphthylene	29.1 U	29.1	ug/Kg	5	XMS6656	XXX26835	
Anthracene	182	29.1	ug/Kg	5	XMS6656	XXX26835	
Benzo(a)Anthracene	599	29.1	ug/Kg	5	XMS6656	XXX26835	
Benzo[a]pyrene	736	291	ug/Kg	50	XMS6656	XXX26835	
Benzo[b]Fluoranthene	719	291	ug/Kg	50	XMS6656	XXX26835	
Benzo[g,h,i]perylene	542	29.1	ug/Kg	5	XMS6656	XXX26835	
Benzo[k]fluoranthene	190	29.1	ug/Kg	5	XMS6656	XXX26835	
Chrysene	412	29.1	ug/Kg	5	XMS6656	XXX26835	
Dibenzo[a,h]anthracene	127	29.1	ug/Kg	5	XMS6656	XXX26835	
Fluoranthene	640	29.1	ug/Kg	5	XMS6656	XXX26835	
Fluorene	42.9	29.1	ug/Kg	5	XMS6656	XXX26835	
Indeno[1,2,3-c,d] pyrene	462	29.1	ug/Kg	5	XMS6656	XXX26835	
Naphthalene	71.6	29.1	ug/Kg	5	XMS6656	XXX26835	
Phenanthrene	565	29.1	ug/Kg	5	XMS6656	XXX26835	
Pyrene	783	291	ug/Kg	50	XMS6656	XXX26835	
2-Fluorobiphenyl <surr>	90.5	45-105	%	5	XMS6656	XXX26835	
Terphenyl-d14 <surr>	112	30-125	%	5	XMS6656	XXX26835	

Batch Information

Analytical Batch: XMS6656

Analytical Method: 8270D SIMS (PAH)

Analysis Date/Time: 05/15/12 13:08

Dilution Factor: 5

Prep Batch: XXX26835

Prep Method: SW3550C

Prep Date/Time: 05/14/12 10:00

Initial Prep Wt./Vol.: 22.714 g

Prep Extract Vol.: 1 mL

Container ID: 1121591003-A

Analyst: RTS

Analytical Batch: XMS6656

Analytical Method: 8270D SIMS (PAH)

Analysis Date/Time: 05/15/12 18:07

Dilution Factor: 50

Prep Batch: XXX26835

Prep Method: SW3550C

Prep Date/Time: 05/14/12 10:00

Initial Prep Wt./Vol.: 22.714 g

Prep Extract Vol.: 1 mL

Container ID: 1121591003-A

Analyst: RTS

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **DW-1+00-4**

SGS Ref. #: 1121591003

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 85.2

Collection Date/Time: 05/01/12 10:20

Receipt Date/Time: 05/09/12 16:15

Solids

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical</u> <u>Batch</u>	<u>Prep</u> <u>Batch</u>	<u>Qualifiers</u>
Total Solids	85.2		%	1	SPT8624		

Batch Information

Analytical Batch: SPT8624

Analytical Method: SM21 2540G

Analysis Date/Time: 05/11/12 16:55

Dilution Factor: 1

Initial Prep Wt./Vol.: 1 mL

Container ID:1121591003-A

Analyst: CDE

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **DW-1+50-4**

SGS Ref. #: 1121591004

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 84.4

Collection Date/Time: 05/01/12 11:00

Receipt Date/Time: 05/09/12 16:15

Volatile Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Benzene	30.6 U	30.6	ug/Kg	1	VFC10970	VXX23467	
Ethylbenzene	61.1 U	61.1	ug/Kg	1	VFC10970	VXX23467	
Gasoline Range Organics	6.11 U	6.11	mg/Kg	1	VFC10970	VXX23467	
o-Xylene	61.1 U	61.1	ug/Kg	1	VFC10970	VXX23467	
P & M -Xylene	122 U	122	ug/Kg	1	VFC10970	VXX23467	
Toluene	61.1 U	61.1	ug/Kg	1	VFC10970	VXX23467	
1,4-Difluorobenzene <surr>	96.6	72-119	%	1	VFC10970	VXX23467	
4-Bromofluorobenzene <surr>	86.6	50-150	%	1	VFC10970	VXX23467	

Batch Information

Analytical Batch: VFC10970

Analytical Method: AK101

Analysis Date/Time: 05/11/12 23:46

Dilution Factor: 1

Prep Batch: VXX23467

Prep Method: SW5035A

Prep Date/Time: 05/01/12 11:00

Initial Prep Wt./Vol.: 28.537 g

Prep Extract Vol.: 29.4514 mL

Container ID: 1121591004-B

Analyst: NRB

Analytical Batch: VFC10970

Analytical Method: SW8021B

Analysis Date/Time: 05/11/12 23:46

Dilution Factor: 1

Prep Batch: VXX23467

Prep Method: SW5035A

Prep Date/Time: 05/01/12 11:00

Initial Prep Wt./Vol.: 28.537 g

Prep Extract Vol.: 29.4514 mL

Container ID: 1121591004-B

Analyst: NRB

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **DW-1+50-4**

SGS Ref. #: 1121591004

Collection Date/Time: 05/01/12 11:00

Project ID: Iluluaq Lake East Point Rd DW

Receipt Date/Time: 05/09/12 16:15

Matrix: Soil/Solid (dry weight)

Percent Solids: 84.4

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Diesel Range Organics	118 U	118	mg/Kg	5	XFC10364	XXX26834	
Residual Range Organics	543	118	mg/Kg	5	XFC10364	XXX26834	
5a Androstane <surr>	92.1	50-150	%	5	XFC10364	XXX26834	
n-Triacontane-d62 <surr>	98.3	50-150	%	5	XFC10364	XXX26834	

Batch Information

Analytical Batch: XFC10364	Prep Batch: XXX26834	Initial Prep Wt./Vol.: 30.015 g
Analytical Method: AK102	Prep Method: SW3550C	Prep Extract Vol.: 1 mL
Analysis Date/Time: 05/15/12 10:01	Prep Date/Time: 05/11/12 14:50	Container ID:1121591004-A
Dilution Factor: 5		Analyst: MCM
Analytical Batch: XFC10364	Prep Batch: XXX26834	Initial Prep Wt./Vol.: 30.015 g
Analytical Method: AK103	Prep Method: SW3550C	Prep Extract Vol.: 1 mL
Analysis Date/Time: 05/15/12 10:01	Prep Date/Time: 05/11/12 14:50	Container ID:1121591004-A
Dilution Factor: 5		Analyst: MCM

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **DW-1+50-4**

SGS Ref. #: 1121591004

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 84.4

Collection Date/Time: 05/01/12 11:00

Receipt Date/Time: 05/09/12 16:15

Polynuclear Aromatics GC/MS

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
1-Methylnaphthalene	29.3 U	29.3	ug/Kg	5	XMS6656	XXX26835	
2-Methylnaphthalene	29.3 U	29.3	ug/Kg	5	XMS6656	XXX26835	
Acenaphthene	29.3 U	29.3	ug/Kg	5	XMS6656	XXX26835	
Acenaphthylene	29.3 U	29.3	ug/Kg	5	XMS6656	XXX26835	
Anthracene	29.3 U	29.3	ug/Kg	5	XMS6656	XXX26835	
Benzo(a)Anthracene	37.9	29.3	ug/Kg	5	XMS6656	XXX26835	
Benzo[a]pyrene	47.3	29.3	ug/Kg	5	XMS6656	XXX26835	
Benzo[b]Fluoranthene	29.3 U	29.3	ug/Kg	5	XMS6656	XXX26835	
Benzo[g,h,i]perylene	31.0	29.3	ug/Kg	5	XMS6656	XXX26835	
Benzo[k]fluoranthene	29.3 U	29.3	ug/Kg	5	XMS6656	XXX26835	
Chrysene	29.3 U	29.3	ug/Kg	5	XMS6656	XXX26835	
Dibenzo[a,h]anthracene	29.3 U	29.3	ug/Kg	5	XMS6656	XXX26835	
Fluoranthene	46.1	29.3	ug/Kg	5	XMS6656	XXX26835	
Fluorene	29.3 U	29.3	ug/Kg	5	XMS6656	XXX26835	
Indeno[1,2,3-c,d] pyrene	29.3 U	29.3	ug/Kg	5	XMS6656	XXX26835	
Naphthalene	29.3 U	29.3	ug/Kg	5	XMS6656	XXX26835	
Phenanthrene	29.3 U	29.3	ug/Kg	5	XMS6656	XXX26835	
Pyrene	47.1	29.3	ug/Kg	5	XMS6656	XXX26835	
2-Fluorobiphenyl <sur>	42.8	* 45-105	%	5	XMS6656	XXX26835	
Terphenyl-d14 <sur>	60.8	30-125	%	5	XMS6656	XXX26835	

Batch Information

Analytical Batch: XMS6656

Analytical Method: 8270D SIMS (PAH)

Analysis Date/Time: 05/15/12 13:28

Dilution Factor: 5

Prep Batch: XXX26835

Prep Method: SW3550C

Prep Date/Time: 05/14/12 10:00

Initial Prep Wt./Vol.: 22.755 g

Prep Extract Vol.: 1 mL

Container ID: 1121591004-A

Analyst: RTS

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **DW-1+50-4**

SGS Ref. #: 1121591004

Collection Date/Time: 05/01/12 11:00

Project ID: Ilulak Lake East Point Rd DW

Receipt Date/Time: 05/09/12 16:15

Matrix: Soil/Solid (dry weight)

Percent Solids: 84.4

Solids

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Total Solids	84.4		%	1	SPT8624		

Batch Information

Analytical Batch: SPT8624

Initial Prep Wt./Vol.: 1 mL

Analytical Method: SM21 2540G

Analysis Date/Time: 05/11/12 16:55

Container ID:1121591004-A

Dilution Factor: 1

Analyst: CDE

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **DW-2+00-4**

SGS Ref. #: 1121591005

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 58.0

Collection Date/Time: 05/01/12 11:45

Receipt Date/Time: 05/09/12 16:15

Volatile Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Benzene	56.2 U	56.2	ug/Kg	1	VFC10970	VXX23467	
Ethylbenzene	112 U	112	ug/Kg	1	VFC10970	VXX23467	
Gasoline Range Organics	11.2 U	11.2	mg/Kg	1	VFC10970	VXX23467	
o-Xylene	112 U	112	ug/Kg	1	VFC10970	VXX23467	
P & M -Xylene	225 U	225	ug/Kg	1	VFC10970	VXX23467	
Toluene	112 U	112	ug/Kg	1	VFC10970	VXX23467	
1,4-Difluorobenzene <surr>	96.3	72-119	%	1	VFC10970	VXX23467	
4-Bromofluorobenzene <surr>	90.7	50-150	%	1	VFC10970	VXX23467	

Batch Information

Analytical Batch: VFC10970

Analytical Method: AK101

Analysis Date/Time: 05/12/12 00:04

Dilution Factor: 1

Prep Batch: VXX23467

Prep Method: SW5035A

Prep Date/Time: 05/01/12 11:45

Initial Prep Wt./Vol.: 28.236 g

Prep Extract Vol.: 36.8503 mL

Container ID: 1121591005-B

Analyst: NRB

Analytical Batch: VFC10970

Analytical Method: SW8021B

Analysis Date/Time: 05/12/12 00:04

Dilution Factor: 1

Prep Batch: VXX23467

Prep Method: SW5035A

Prep Date/Time: 05/01/12 11:45

Initial Prep Wt./Vol.: 28.236 g

Prep Extract Vol.: 36.8503 mL

Container ID: 1121591005-B

Analyst: NRB

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **DW-2+00-4**

SGS Ref. #: 1121591005

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 58.0

Collection Date/Time: 05/01/12 11:45

Receipt Date/Time: 05/09/12 16:15

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Diesel Range Organics	34.0 U	34.0	mg/Kg	1	XFC10365	XXX26837	
Residual Range Organics	69.6	34.0	mg/Kg	1	XFC10365	XXX26837	
5a Androstane <surr>	80.9	50-150	%	1	XFC10365	XXX26837	
n-Triacontane-d62 <surr>	75.4	50-150	%	1	XFC10365	XXX26837	

Batch Information

Analytical Batch: XFC10365	Prep Batch: XXX26837	Initial Prep Wt./Vol.: 30.382 g
Analytical Method: AK102	Prep Method: SW3550C	Prep Extract Vol.: 1 mL
Analysis Date/Time: 05/16/12 02:27	Prep Date/Time: 05/14/12 15:00	Container ID:1121591005-A
Dilution Factor: 1		Analyst: MCM
Analytical Batch: XFC10365	Prep Batch: XXX26837	Initial Prep Wt./Vol.: 30.382 g
Analytical Method: AK103	Prep Method: SW3550C	Prep Extract Vol.: 1 mL
Analysis Date/Time: 05/16/12 02:27	Prep Date/Time: 05/14/12 15:00	Container ID:1121591005-A
Dilution Factor: 1		Analyst: MCM

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **DW-2+00-4**

SGS Ref. #: 1121591005

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 58.0

Collection Date/Time: 05/01/12 11:45

Receipt Date/Time: 05/09/12 16:15

Polynuclear Aromatics GC/MS

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
1-Methylnaphthalene	42.5 U	42.5	ug/Kg	5	XMS6663	XXX26839	
2-Methylnaphthalene	42.5 U	42.5	ug/Kg	5	XMS6663	XXX26839	
Acenaphthene	42.5 U	42.5	ug/Kg	5	XMS6663	XXX26839	
Acenaphthylene	42.5 U	42.5	ug/Kg	5	XMS6663	XXX26839	
Anthracene	42.5 U	42.5	ug/Kg	5	XMS6663	XXX26839	
Benzo(a)Anthracene	51.5	42.5	ug/Kg	5	XMS6663	XXX26839	
Benzo[a]pyrene	57.4	42.5	ug/Kg	5	XMS6663	XXX26839	
Benzo[b]Fluoranthene	73.8	42.5	ug/Kg	5	XMS6663	XXX26839	
Benzo[g,h,i]perylene	42.5 U	42.5	ug/Kg	5	XMS6663	XXX26839	
Benzo[k]fluoranthene	42.5 U	42.5	ug/Kg	5	XMS6663	XXX26839	
Chrysene	51.6	42.5	ug/Kg	5	XMS6663	XXX26839	
Dibenzo[a,h]anthracene	42.5 U	42.5	ug/Kg	5	XMS6663	XXX26839	
Fluoranthene	93.4	42.5	ug/Kg	5	XMS6663	XXX26839	
Fluorene	42.5 U	42.5	ug/Kg	5	XMS6663	XXX26839	
Indeno[1,2,3-c,d] pyrene	42.5 U	42.5	ug/Kg	5	XMS6663	XXX26839	
Naphthalene	42.5 U	42.5	ug/Kg	5	XMS6663	XXX26839	
Phenanthrene	60.9	42.5	ug/Kg	5	XMS6663	XXX26839	
Pyrene	87.8	42.5	ug/Kg	5	XMS6663	XXX26839	
2-Fluorobiphenyl <surr>	58.7	45-105	%	5	XMS6663	XXX26839	
Terphenyl-d14 <surr>	98.7	30-125	%	5	XMS6663	XXX26839	

Batch Information

Analytical Batch: XMS6663

Analytical Method: 8270D SIMS (PAH)

Analysis Date/Time: 05/16/12 20:50

Dilution Factor: 5

Prep Batch: XXX26839

Prep Method: SW3550C

Prep Date/Time: 05/14/12 15:00

Initial Prep Wt./Vol.: 22.801 g

Prep Extract Vol.: 1 mL

Container ID: 1121591005-A

Analyst: RTS

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **DW-2+00-4**

SGS Ref. #: 1121591005

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 58.0

Collection Date/Time: 05/01/12 11:45

Receipt Date/Time: 05/09/12 16:15

Solids

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Total Solids	58.0		%	1	SPT8624		

Batch Information

Analytical Batch: SPT8624

Analytical Method: SM21 2540G

Analysis Date/Time: 05/11/12 16:55

Dilution Factor: 1

Initial Prep Wt./Vol.: 1 mL

Container ID:1121591005-A

Analyst: CDE

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **DW-2+50-4**

SGS Ref. #: 1121591006

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 73.3

Collection Date/Time: 05/01/12 14:00

Receipt Date/Time: 05/09/12 16:15

Volatile Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Benzene	37.6 U	37.6	ug/Kg	1	VFC10970	VXX23467	
Ethylbenzene	75.3 U	75.3	ug/Kg	1	VFC10970	VXX23467	
Gasoline Range Organics	7.53 U	7.53	mg/Kg	1	VFC10970	VXX23467	
o-Xylene	75.3 U	75.3	ug/Kg	1	VFC10970	VXX23467	
P & M -Xylene	151 U	151	ug/Kg	1	VFC10970	VXX23467	
Toluene	75.3 U	75.3	ug/Kg	1	VFC10970	VXX23467	
1,4-Difluorobenzene <surr>	96.4	72-119	%	1	VFC10970	VXX23467	
4-Bromofluorobenzene <surr>	92.6	50-150	%	1	VFC10970	VXX23467	

Batch Information

Analytical Batch: VFC10970

Analytical Method: AK101

Analysis Date/Time: 05/12/12 00:22

Dilution Factor: 1

Prep Batch: VXX23467

Prep Method: SW5035A

Prep Date/Time: 05/01/12 14:00

Initial Prep Wt./Vol.: 29.934 g

Prep Extract Vol.: 33.0067 mL

Container ID: 1121591006-B

Analyst: NRB

Analytical Batch: VFC10970

Analytical Method: SW8021B

Analysis Date/Time: 05/12/12 00:22

Dilution Factor: 1

Prep Batch: VXX23467

Prep Method: SW5035A

Prep Date/Time: 05/01/12 14:00

Initial Prep Wt./Vol.: 29.934 g

Prep Extract Vol.: 33.0067 mL

Container ID: 1121591006-B

Analyst: NRB

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **DW-2+50-4**

SGS Ref. #: 1121591006

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 73.3

Collection Date/Time: 05/01/12 14:00

Receipt Date/Time: 05/09/12 16:15

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Diesel Range Organics	27.1 U	27.1	mg/Kg	1	XFC10364	XXX26834	
Residual Range Organics	80.4	27.1	mg/Kg	1	XFC10364	XXX26834	
5a Androstane <surr>	86.1	50-150	%	1	XFC10364	XXX26834	
n-Triacontane-d62 <surr>	78.3	50-150	%	1	XFC10364	XXX26834	

Batch Information

Analytical Batch: XFC10364	Prep Batch: XXX26834	Initial Prep Wt./Vol.: 30.225 g
Analytical Method: AK102	Prep Method: SW3550C	Prep Extract Vol.: 1 mL
Analysis Date/Time: 05/15/12 08:16	Prep Date/Time: 05/11/12 14:50	Container ID:1121591006-A
Dilution Factor: 1		Analyst: MCM
Analytical Batch: XFC10364	Prep Batch: XXX26834	Initial Prep Wt./Vol.: 30.225 g
Analytical Method: AK103	Prep Method: SW3550C	Prep Extract Vol.: 1 mL
Analysis Date/Time: 05/15/12 08:16	Prep Date/Time: 05/11/12 14:50	Container ID:1121591006-A
Dilution Factor: 1		Analyst: MCM



Unalaska City-Public Works

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **DW-2+50-4**

SGS Ref. #: 1121591006

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 73.3

Collection Date/Time: 05/01/12 14:00

Receipt Date/Time: 05/09/12 16:15

Polynuclear Aromatics GC/MS

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
1-Methylnaphthalene	6.82 U	6.82	ug/Kg	1	XMS6656	XXX26835	
2-Methylnaphthalene	6.82 U	6.82	ug/Kg	1	XMS6656	XXX26835	
Acenaphthene	6.82 U	6.82	ug/Kg	1	XMS6656	XXX26835	
Acenaphthylene	6.82 U	6.82	ug/Kg	1	XMS6656	XXX26835	
Anthracene	6.82 U	6.82	ug/Kg	1	XMS6656	XXX26835	
Benzo(a)Anthracene	9.05	6.82	ug/Kg	1	XMS6656	XXX26835	
Benzo[a]pyrene	15.1	6.82	ug/Kg	1	XMS6656	XXX26835	
Benzo[b]Fluoranthene	6.82 U	6.82	ug/Kg	1	XMS6656	XXX26835	
Benzo[g,h,i]perylene	13.1	6.82	ug/Kg	1	XMS6656	XXX26835	
Benzo[k]fluoranthene	6.82 U	6.82	ug/Kg	1	XMS6656	XXX26835	
Chrysene	8.38	6.82	ug/Kg	1	XMS6656	XXX26835	
Dibenzo[a,h]anthracene	6.82 U	6.82	ug/Kg	1	XMS6656	XXX26835	
Fluoranthene	15.8	6.82	ug/Kg	1	XMS6656	XXX26835	
Fluorene	6.82 U	6.82	ug/Kg	1	XMS6656	XXX26835	
Indeno[1,2,3-c,d] pyrene	8.58	6.82	ug/Kg	1	XMS6656	XXX26835	
Naphthalene	6.82 U	6.82	ug/Kg	1	XMS6656	XXX26835	
Phenanthrene	8.18	6.82	ug/Kg	1	XMS6656	XXX26835	
Pyrene	18.6	6.82	ug/Kg	1	XMS6656	XXX26835	
2-Fluorobiphenyl <surr>	89.5	45-105	%	1	XMS6656	XXX26835	
Terphenyl-d14 <surr>	104	30-125	%	1	XMS6656	XXX26835	

Batch Information

Analytical Batch: XMS6656

Analytical Method: 8270D SIMS (PAH)

Analysis Date/Time: 05/15/12 18:27

Dilution Factor: 1

Prep Batch: XXX26835

Prep Method: SW3550C

Prep Date/Time: 05/14/12 10:00

Initial Prep Wt./Vol.: 22.516 g

Prep Extract Vol.: 1 mL

Container ID: 1121591006-A

Analyst: RTS

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **DW-2+50-4**

SGS Ref. #: 1121591006

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 73.3

Collection Date/Time: 05/01/12 14:00

Receipt Date/Time: 05/09/12 16:15

Solids

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Total Solids	73.3		%	1	SPT8624		

Batch Information

Analytical Batch: SPT8624

Analytical Method: SM21 2540G

Analysis Date/Time: 05/11/12 16:55

Dilution Factor: 1

Initial Prep Wt./Vol.: 1 mL

Container ID:1121591006-A

Analyst: CDE

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **DW-3+00-4**

SGS Ref. #: 1121591007

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 86.4

Collection Date/Time: 05/01/12 09:30

Receipt Date/Time: 05/09/12 16:15

Volatile Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Benzene	29.5 U	29.5	ug/Kg	1	VFC10970	VXX23467	
Ethylbenzene	58.9 U	58.9	ug/Kg	1	VFC10970	VXX23467	
Gasoline Range Organics	5.89 U	5.89	mg/Kg	1	VFC10970	VXX23467	
o-Xylene	58.9 U	58.9	ug/Kg	1	VFC10970	VXX23467	
P & M -Xylene	118 U	118	ug/Kg	1	VFC10970	VXX23467	
Toluene	58.9 U	58.9	ug/Kg	1	VFC10970	VXX23467	
1,4-Difluorobenzene <sur>	96.2	72-119	%	1	VFC10970	VXX23467	
4-Bromofluorobenzene <sur>	79.1	50-150	%	1	VFC10970	VXX23467	

Batch Information

Analytical Batch: VFC10970

Analytical Method: AK101

Analysis Date/Time: 05/12/12 00:40

Dilution Factor: 1

Prep Batch: VXX23467

Prep Method: SW5035A

Prep Date/Time: 05/01/12 13:30

Initial Prep Wt./Vol.: 28.295 g

Prep Extract Vol.: 28.8344 mL

Container ID: 1121591007-B

Analyst: NRB

Analytical Batch: VFC10970

Analytical Method: SW8021B

Analysis Date/Time: 05/12/12 00:40

Dilution Factor: 1

Prep Batch: VXX23467

Prep Method: SW5035A

Prep Date/Time: 05/01/12 13:30

Initial Prep Wt./Vol.: 28.295 g

Prep Extract Vol.: 28.8344 mL

Container ID: 1121591007-B

Analyst: NRB

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **DW-3+00-4**

SGS Ref. #: 1121591007

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 86.4

Collection Date/Time: 05/01/12 09:30

Receipt Date/Time: 05/09/12 16:15

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Diesel Range Organics	262	116	mg/Kg	5	XFC10364	XXX26834	
Residual Range Organics	1370	116	mg/Kg	5	XFC10364	XXX26834	
5a Androstane <surr>	91.3	50-150	%	5	XFC10364	XXX26834	
n-Triacontane-d62 <surr>	100	50-150	%	5	XFC10364	XXX26834	

Batch Information

Analytical Batch: XFC10364

Analytical Method: AK102

Analysis Date/Time: 05/15/12 10:22

Dilution Factor: 5

Prep Batch: XXX26834

Prep Method: SW3550C

Prep Date/Time: 05/11/12 14:50

Initial Prep Wt./Vol.: 30.017 g

Prep Extract Vol.: 1 mL

Container ID:1121591007-A

Analyst: MCM

Analytical Batch: XFC10364

Analytical Method: AK103

Analysis Date/Time: 05/15/12 10:22

Dilution Factor: 5

Prep Batch: XXX26834

Prep Method: SW3550C

Prep Date/Time: 05/11/12 14:50

Initial Prep Wt./Vol.: 30.017 g

Prep Extract Vol.: 1 mL

Container ID:1121591007-A

Analyst: MCM



Unalaska City-Public Works

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **DW-3+00-4**

SGS Ref. #: 1121591007

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 86.4

Collection Date/Time: 05/01/12 09:30

Receipt Date/Time: 05/09/12 16:15

Polynuclear Aromatics GC/MS

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
1-Methylnaphthalene	57.7 U	57.7	ug/Kg	10	XMS6656	XXX26835	
2-Methylnaphthalene	57.7 U	57.7	ug/Kg	10	XMS6656	XXX26835	
Acenaphthene	57.7 U	57.7	ug/Kg	10	XMS6656	XXX26835	
Acenaphthylene	57.7 U	57.7	ug/Kg	10	XMS6656	XXX26835	
Anthracene	60.9	57.7	ug/Kg	10	XMS6656	XXX26835	
Benzo(a)Anthracene	205	57.7	ug/Kg	10	XMS6656	XXX26835	
Benzo[a]pyrene	219	57.7	ug/Kg	10	XMS6656	XXX26835	
Benzo[b]Fluoranthene	277	57.7	ug/Kg	10	XMS6656	XXX26835	
Benzo[g,h,i]perylene	188	57.7	ug/Kg	10	XMS6656	XXX26835	
Benzo[k]fluoranthene	57.7 U	57.7	ug/Kg	10	XMS6656	XXX26835	
Chrysene	143	57.7	ug/Kg	10	XMS6656	XXX26835	
Dibenzo[a,h]anthracene	57.7 U	57.7	ug/Kg	10	XMS6656	XXX26835	
Fluoranthene	311	57.7	ug/Kg	10	XMS6656	XXX26835	
Fluorene	57.7 U	57.7	ug/Kg	10	XMS6656	XXX26835	
Indeno[1,2,3-c,d] pyrene	118	57.7	ug/Kg	10	XMS6656	XXX26835	
Naphthalene	57.7 U	57.7	ug/Kg	10	XMS6656	XXX26835	
Phenanthrene	187	57.7	ug/Kg	10	XMS6656	XXX26835	
Pyrene	317	57.7	ug/Kg	10	XMS6656	XXX26835	
2-Fluorobiphenyl <sur>	83.5	45-105	%	10	XMS6656	XXX26835	
Terphenyl-d14 <sur>	107	30-125	%	10	XMS6656	XXX26835	

Batch Information

Analytical Batch: XMS6656

Analytical Method: 8270D SIMS (PAH)

Analysis Date/Time: 05/15/12 14:08

Dilution Factor: 10

Prep Batch: XXX26835

Prep Method: SW3550C

Prep Date/Time: 05/14/12 10:00

Initial Prep Wt./Vol.: 22.56 g

Prep Extract Vol.: 1 mL

Container ID: 1121591007-A

Analyst: RTS

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **DW-3+00-4**

SGS Ref. #: 1121591007

Collection Date/Time: 05/01/12 09:30

Project ID: Ilulak Lake East Point Rd DW

Receipt Date/Time: 05/09/12 16:15

Matrix: Soil/Solid (dry weight)

Percent Solids: 86.4

Solids

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Total Solids	86.4		%	1	SPT8624		

Batch Information

Analytical Batch: SPT8624

Initial Prep Wt./Vol.: 1 mL

Analytical Method: SM21 2540G

Analysis Date/Time: 05/11/12 16:55

Container ID:1121591007-A

Dilution Factor: 1

Analyst: CDE

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **DW-3+50-4**

SGS Ref. #: 1121591008

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 87.0

Collection Date/Time: 05/08/12 13:30

Receipt Date/Time: 05/09/12 16:15

Volatile Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Benzene	51.7	30.1	ug/Kg	1	VFC10972	VXX23473	
Ethylbenzene	60.1 U	60.1	ug/Kg	1	VFC10970	VXX23467	
Gasoline Range Organics	6.01 U	6.01	mg/Kg	1	VFC10970	VXX23467	
o-Xylene	60.1 U	60.1	ug/Kg	1	VFC10970	VXX23467	
P & M -Xylene	120 U	120	ug/Kg	1	VFC10970	VXX23467	
Toluene	100	60.1	ug/Kg	1	VFC10970	VXX23467	
1,4-Difluorobenzene <sur>	95.1	72-119	%	1	VFC10970	VXX23467	
4-Bromofluorobenzene <sur>	86.3	50-150	%	1	VFC10970	VXX23467	

Batch Information

Analytical Batch: VFC10970	Prep Batch: VXX23467	Initial Prep Wt./Vol.: 27.267 g
Analytical Method: AK101	Prep Method: SW5035A	Prep Extract Vol.: 28.5322 mL
Analysis Date/Time: 05/12/12 00:58	Prep Date/Time: 05/08/12 13:30	Container ID: 1121591008-B
Dilution Factor: 1		Analyst: NRB
Analytical Batch: VFC10970	Prep Batch: VXX23467	Initial Prep Wt./Vol.: 27.267 g
Analytical Method: SW8021B	Prep Method: SW5035A	Prep Extract Vol.: 28.5322 mL
Analysis Date/Time: 05/12/12 00:58	Prep Date/Time: 05/08/12 13:30	Container ID: 1121591008-B
Dilution Factor: 1		Analyst: NRB
Analytical Batch: VFC10972	Prep Batch: VXX23473	Initial Prep Wt./Vol.: 27.267 g
Analytical Method: SW8021B	Prep Method: SW5035A	Prep Extract Vol.: 28.5322 mL
Analysis Date/Time: 05/15/12 21:08	Prep Date/Time: 05/08/12 13:30	Container ID: 1121591008-A
Dilution Factor: 1		Analyst: EAB

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **DW-3+50-4**

SGS Ref. #: 1121591008

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 87.0

Collection Date/Time: 05/08/12 13:30

Receipt Date/Time: 05/09/12 16:15

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Diesel Range Organics	158	114	mg/Kg	5	XFC10364	XXX26834	
Residual Range Organics	877	114	mg/Kg	5	XFC10364	XXX26834	
5a Androstane <surr>	93.9	50-150	%	5	XFC10364	XXX26834	
n-Triacontane-d62 <surr>	95.1	50-150	%	5	XFC10364	XXX26834	

Batch Information

Analytical Batch: XFC10364	Prep Batch: XXX26834	Initial Prep Wt./Vol.: 30.293 g
Analytical Method: AK102	Prep Method: SW3550C	Prep Extract Vol.: 1 mL
Analysis Date/Time: 05/15/12 11:25	Prep Date/Time: 05/11/12 14:50	Container ID:1121591008-A
Dilution Factor: 5		Analyst: MCM
Analytical Batch: XFC10364	Prep Batch: XXX26834	Initial Prep Wt./Vol.: 30.293 g
Analytical Method: AK103	Prep Method: SW3550C	Prep Extract Vol.: 1 mL
Analysis Date/Time: 05/15/12 11:25	Prep Date/Time: 05/11/12 14:50	Container ID:1121591008-A
Dilution Factor: 5		Analyst: MCM

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **DW-3+50-4**

SGS Ref. #: 1121591008

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 87.0

Collection Date/Time: 05/08/12 13:30

Receipt Date/Time: 05/09/12 16:15

Polynuclear Aromatics GC/MS

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
1-Methylnaphthalene	67.1	57.1	ug/Kg	10	XMS6656	XXX26835	
2-Methylnaphthalene	113	57.1	ug/Kg	10	XMS6656	XXX26835	
Acenaphthene	57.1 U	57.1	ug/Kg	10	XMS6656	XXX26835	
Acenaphthylene	57.1 U	57.1	ug/Kg	10	XMS6656	XXX26835	
Anthracene	57.1 U	57.1	ug/Kg	10	XMS6656	XXX26835	
Benzo(a)Anthracene	67.5	57.1	ug/Kg	10	XMS6656	XXX26835	
Benzo[a]pyrene	93.3	57.1	ug/Kg	10	XMS6656	XXX26835	
Benzo[b]Fluoranthene	117	57.1	ug/Kg	10	XMS6656	XXX26835	
Benzo[g,h,i]perylene	109	57.1	ug/Kg	10	XMS6656	XXX26835	
Benzo[k]fluoranthene	57.1 U	57.1	ug/Kg	10	XMS6656	XXX26835	
Chrysene	57.1 U	57.1	ug/Kg	10	XMS6656	XXX26835	
Dibenzo[a,h]anthracene	57.1 U	57.1	ug/Kg	10	XMS6656	XXX26835	
Fluoranthene	94.8	57.1	ug/Kg	10	XMS6656	XXX26835	
Fluorene	57.1 U	57.1	ug/Kg	10	XMS6656	XXX26835	
Indeno[1,2,3-c,d] pyrene	57.4	57.1	ug/Kg	10	XMS6656	XXX26835	
Naphthalene	79.8	57.1	ug/Kg	10	XMS6656	XXX26835	
Phenanthrene	57.1 U	57.1	ug/Kg	10	XMS6656	XXX26835	
Pyrene	100	57.1	ug/Kg	10	XMS6656	XXX26835	
2-Fluorobiphenyl <surr>	77.6	45-105	%	10	XMS6656	XXX26835	
Terphenyl-d14 <surr>	102	30-125	%	10	XMS6656	XXX26835	

Batch Information

Analytical Batch: XMS6656

Analytical Method: 8270D SIMS (PAH)

Analysis Date/Time: 05/15/12 14:28

Dilution Factor: 10

Prep Batch: XXX26835

Prep Method: SW3550C

Prep Date/Time: 05/14/12 10:00

Initial Prep Wt./Vol.: 22.617 g

Prep Extract Vol.: 1 mL

Container ID: 1121591008-A

Analyst: RTS

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **DW-3+50-4**

SGS Ref. #: 1121591008

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 87.0

Collection Date/Time: 05/08/12 13:30

Receipt Date/Time: 05/09/12 16:15

Solids

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Total Solids	87.0		%	1	SPT8624		

Batch Information

Analytical Batch: SPT8624

Analytical Method: SM21 2540G

Analysis Date/Time: 05/11/12 16:55

Dilution Factor: 1

Initial Prep Wt./Vol.: 1 mL

Container ID:1121591008-A

Analyst: CDE

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **DW-4+00-4**

SGS Ref. #: 1121591009

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 72.0

Collection Date/Time: 05/08/12 11:30

Receipt Date/Time: 05/09/12 16:15

Volatile Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Benzene	38.8 U	38.8	ug/Kg	1	VFC10970	VXX23467	
Ethylbenzene	77.6 U	77.6	ug/Kg	1	VFC10970	VXX23467	
Gasoline Range Organics	7.76 U	7.76	mg/Kg	1	VFC10970	VXX23467	
o-Xylene	77.6 U	77.6	ug/Kg	1	VFC10970	VXX23467	
P & M -Xylene	155 U	155	ug/Kg	1	VFC10970	VXX23467	
Toluene	77.6 U	77.6	ug/Kg	1	VFC10970	VXX23467	
1,4-Difluorobenzene <surr>	96.2	72-119	%	1	VFC10970	VXX23467	
4-Bromofluorobenzene <surr>	83.6	50-150	%	1	VFC10970	VXX23467	

Batch Information

Analytical Batch: VFC10970

Analytical Method: AK101

Analysis Date/Time: 05/12/12 01:52

Dilution Factor: 1

Prep Batch: VXX23467

Prep Method: SW5035A

Prep Date/Time: 05/08/12 11:30

Initial Prep Wt./Vol.: 29.891 g

Prep Extract Vol.: 33.3815 mL

Container ID: 1121591009-B

Analyst: NRB

Analytical Batch: VFC10970

Analytical Method: SW8021B

Analysis Date/Time: 05/12/12 01:52

Dilution Factor: 1

Prep Batch: VXX23467

Prep Method: SW5035A

Prep Date/Time: 05/08/12 11:30

Initial Prep Wt./Vol.: 29.891 g

Prep Extract Vol.: 33.3815 mL

Container ID: 1121591009-B

Analyst: NRB

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **DW-4+00-4**

SGS Ref. #: 1121591009

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 72.0

Collection Date/Time: 05/08/12 11:30

Receipt Date/Time: 05/09/12 16:15

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Diesel Range Organics	137 U	137	mg/Kg	5	XFC10365	XXX26837	
Residual Range Organics	145	137	mg/Kg	5	XFC10365	XXX26837	
5a Androstane <surr>	81.3	50-150	%	5	XFC10365	XXX26837	
n-Triacontane-d62 <surr>	74.1	50-150	%	5	XFC10365	XXX26837	

Batch Information

Analytical Batch: XFC10365

Analytical Method: AK102

Analysis Date/Time: 05/16/12 02:48

Dilution Factor: 5

Prep Batch: XXX26837

Prep Method: SW3550C

Prep Date/Time: 05/14/12 15:00

Initial Prep Wt./Vol.: 30.36 g

Prep Extract Vol.: 1 mL

Container ID:1121591009-A

Analyst: MCM

Analytical Batch: XFC10365

Analytical Method: AK103

Analysis Date/Time: 05/16/12 02:48

Dilution Factor: 5

Prep Batch: XXX26837

Prep Method: SW3550C

Prep Date/Time: 05/14/12 15:00

Initial Prep Wt./Vol.: 30.36 g

Prep Extract Vol.: 1 mL

Container ID:1121591009-A

Analyst: MCM

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **DW-4+00-4**

SGS Ref. #: 1121591009

Project ID: Ilulaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 72.0

Collection Date/Time: 05/08/12 11:30

Receipt Date/Time: 05/09/12 16:15

Polynuclear Aromatics GC/MS

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
1-Methylnaphthalene	34.2 U	34.2	ug/Kg	5	XMS6656	XXX26835	
2-Methylnaphthalene	34.2 U	34.2	ug/Kg	5	XMS6656	XXX26835	
Acenaphthene	34.2 U	34.2	ug/Kg	5	XMS6656	XXX26835	
Acenaphthylene	34.2 U	34.2	ug/Kg	5	XMS6656	XXX26835	
Anthracene	34.2 U	34.2	ug/Kg	5	XMS6656	XXX26835	
Benzo(a)Anthracene	34.2 U	34.2	ug/Kg	5	XMS6656	XXX26835	
Benzo[a]pyrene	41.0	34.2	ug/Kg	5	XMS6656	XXX26835	
Benzo[b]Fluoranthene	55.6	34.2	ug/Kg	5	XMS6656	XXX26835	
Benzo[g,h,i]perylene	36.0	34.2	ug/Kg	5	XMS6656	XXX26835	
Benzo[k]fluoranthene	34.2 U	34.2	ug/Kg	5	XMS6656	XXX26835	
Chrysene	34.2 U	34.2	ug/Kg	5	XMS6656	XXX26835	
Dibenzo[a,h]anthracene	34.2 U	34.2	ug/Kg	5	XMS6656	XXX26835	
Fluoranthene	34.2 U	34.2	ug/Kg	5	XMS6656	XXX26835	
Fluorene	34.2 U	34.2	ug/Kg	5	XMS6656	XXX26835	
Indeno[1,2,3-c,d] pyrene	34.2 U	34.2	ug/Kg	5	XMS6656	XXX26835	
Naphthalene	34.2 U	34.2	ug/Kg	5	XMS6656	XXX26835	
Phenanthrene	34.2 U	34.2	ug/Kg	5	XMS6656	XXX26835	
Pyrene	34.2 U	34.2	ug/Kg	5	XMS6656	XXX26835	
2-Fluorobiphenyl <sur>	84	45-105	%	5	XMS6656	XXX26835	
Terphenyl-d14 <sur>	99.2	30-125	%	5	XMS6656	XXX26835	

Batch Information

Analytical Batch: XMS6656

Analytical Method: 8270D SIMS (PAH)

Analysis Date/Time: 05/15/12 14:48

Dilution Factor: 5

Prep Batch: XXX26835

Prep Method: SW3550C

Prep Date/Time: 05/14/12 10:00

Initial Prep Wt./Vol.: 22.828 g

Prep Extract Vol.: 1 mL

Container ID: 1121591009-A

Analyst: RTS

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **DW-4+00-4**

SGS Ref. #: 1121591009

Collection Date/Time: 05/08/12 11:30

Project ID: Ilulaa Lake East Point Rd DW

Receipt Date/Time: 05/09/12 16:15

Matrix: Soil/Solid (dry weight)

Percent Solids: 72.0

Solids

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Total Solids	72.0		%	1	SPT8624		

Batch Information

Analytical Batch: SPT8624

Initial Prep Wt./Vol.: 1 mL

Analytical Method: SM21 2540G

Analysis Date/Time: 05/11/12 16:55

Container ID:1121591009-A

Dilution Factor: 1

Analyst: CDE

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **DUP-01**

SGS Ref. #: 1121591010

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 64.0

Collection Date/Time: 05/01/12 00:00

Receipt Date/Time: 05/09/12 16:15

Volatile Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Benzene	51.2 U	51.2	ug/Kg	1	VFC10970	VXX23467	
Ethylbenzene	102 U	102	ug/Kg	1	VFC10970	VXX23467	
Gasoline Range Organics	10.2 U	10.2	mg/Kg	1	VFC10970	VXX23467	
o-Xylene	102 U	102	ug/Kg	1	VFC10970	VXX23467	
P & M -Xylene	205 U	205	ug/Kg	1	VFC10970	VXX23467	
Toluene	102 U	102	ug/Kg	1	VFC10970	VXX23467	
1,4-Difluorobenzene <sur>	96	72-119	%	1	VFC10970	VXX23467	
4-Bromofluorobenzene <sur>	111	50-150	%	1	VFC10970	VXX23467	

Batch Information

Analytical Batch: VFC10970

Analytical Method: AK101

Analysis Date/Time: 05/12/12 02:10

Dilution Factor: 1

Prep Batch: VXX23467

Prep Method: SW5035A

Prep Date/Time: 05/01/12 00:00

Initial Prep Wt./Vol.: 26.329 g

Prep Extract Vol.: 34.4881 mL

Container ID: 1121591010-B

Analyst: NRB

Analytical Batch: VFC10970

Analytical Method: SW8021B

Analysis Date/Time: 05/12/12 02:10

Dilution Factor: 1

Prep Batch: VXX23467

Prep Method: SW5035A

Prep Date/Time: 05/01/12 00:00

Initial Prep Wt./Vol.: 26.329 g

Prep Extract Vol.: 34.4881 mL

Container ID: 1121591010-B

Analyst: NRB

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **DUP-01**

SGS Ref. #: 1121591010

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 64.0

Collection Date/Time: 05/01/12 00:00

Receipt Date/Time: 05/09/12 16:15

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Diesel Range Organics	31.1 U	31.1	mg/Kg	1	XFC10365	XXX26837	
Residual Range Organics	104	31.1	mg/Kg	1	XFC10365	XXX26837	
5a Androstane <surr>	75.2	50-150	%	1	XFC10365	XXX26837	
n-Triacontane-d62 <surr>	79.6	50-150	%	1	XFC10365	XXX26837	

Batch Information

Analytical Batch: XFC10365	Prep Batch: XXX26837	Initial Prep Wt./Vol.: 30.166 g
Analytical Method: AK102	Prep Method: SW3550C	Prep Extract Vol.: 1 mL
Analysis Date/Time: 05/16/12 03:10	Prep Date/Time: 05/14/12 15:00	Container ID:1121591010-A
Dilution Factor: 1		Analyst: MCM
Analytical Batch: XFC10365	Prep Batch: XXX26837	Initial Prep Wt./Vol.: 30.166 g
Analytical Method: AK103	Prep Method: SW3550C	Prep Extract Vol.: 1 mL
Analysis Date/Time: 05/16/12 03:10	Prep Date/Time: 05/14/12 15:00	Container ID:1121591010-A
Dilution Factor: 1		Analyst: MCM



Unalaska City-Public Works

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **DUP-01**

SGS Ref. #: 1121591010

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 64.0

Collection Date/Time: 05/01/12 00:00

Receipt Date/Time: 05/09/12 16:15

Polynuclear Aromatics GC/MS

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
1-Methylnaphthalene	38.9 U	38.9	ug/Kg	5	XMS6656	XXX26835	
2-Methylnaphthalene	38.9 U	38.9	ug/Kg	5	XMS6656	XXX26835	
Acenaphthene	38.9 U	38.9	ug/Kg	5	XMS6656	XXX26835	
Acenaphthylene	38.9 U	38.9	ug/Kg	5	XMS6656	XXX26835	
Anthracene	38.9 U	38.9	ug/Kg	5	XMS6656	XXX26835	
Benzo(a)Anthracene	38.9 U	38.9	ug/Kg	5	XMS6656	XXX26835	
Benzo[a]pyrene	38.9 U	38.9	ug/Kg	5	XMS6656	XXX26835	
Benzo[b]Fluoranthene	38.9 U	38.9	ug/Kg	5	XMS6656	XXX26835	
Benzo[g,h,i]perylene	38.9 U	38.9	ug/Kg	5	XMS6656	XXX26835	
Benzo[k]fluoranthene	38.9 U	38.9	ug/Kg	5	XMS6656	XXX26835	
Chrysene	38.9 U	38.9	ug/Kg	5	XMS6656	XXX26835	
Dibenzo[a,h]anthracene	38.9 U	38.9	ug/Kg	5	XMS6656	XXX26835	
Fluoranthene	38.9 U	38.9	ug/Kg	5	XMS6656	XXX26835	
Fluorene	38.9 U	38.9	ug/Kg	5	XMS6656	XXX26835	
Indeno[1,2,3-c,d] pyrene	38.9 U	38.9	ug/Kg	5	XMS6656	XXX26835	
Naphthalene	38.9 U	38.9	ug/Kg	5	XMS6656	XXX26835	
Phenanthrene	38.9 U	38.9	ug/Kg	5	XMS6656	XXX26835	
Pyrene	38.9 U	38.9	ug/Kg	5	XMS6656	XXX26835	
2-Fluorobiphenyl <surr>	80.6	45-105	%	5	XMS6656	XXX26835	
Terphenyl-d14 <surr>	90	30-125	%	5	XMS6656	XXX26835	

Batch Information

Analytical Batch: XMS6656

Analytical Method: 8270D SIMS (PAH)

Analysis Date/Time: 05/15/12 15:08

Dilution Factor: 5

Prep Batch: XXX26835

Prep Method: SW3550C

Prep Date/Time: 05/14/12 10:00

Initial Prep Wt./Vol.: 22.626 g

Prep Extract Vol.: 1 mL

Container ID: 1121591010-A

Analyst: RTS

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **DUP-01**

SGS Ref. #: 1121591010

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 64.0

Collection Date/Time: 05/01/12 00:00

Receipt Date/Time: 05/09/12 16:15

Solids

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Total Solids	64.0		%	1	SPT8624		

Batch Information

Analytical Batch: SPT8624

Analytical Method: SM21 2540G

Analysis Date/Time: 05/11/12 16:55

Dilution Factor: 1

Initial Prep Wt./Vol.: 1 mL

Container ID:1121591010-A

Analyst: CDE

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **EP-1+60-2**

SGS Ref. #: 1121591011

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 80.8

Collection Date/Time: 05/03/12 09:20

Receipt Date/Time: 05/09/12 16:15

Volatile Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Benzene	32.1 U	32.1	ug/Kg	1	VFC10970	VXX23467	
Ethylbenzene	64.2 U	64.2	ug/Kg	1	VFC10970	VXX23467	
Gasoline Range Organics	9.33	6.42	mg/Kg	1	VFC10970	VXX23467	
o-Xylene	64.2 U	64.2	ug/Kg	1	VFC10970	VXX23467	
P & M -Xylene	128 U	128	ug/Kg	1	VFC10970	VXX23467	
Toluene	64.2 U	64.2	ug/Kg	1	VFC10970	VXX23467	
1,4-Difluorobenzene <sur>	97	72-119	%	1	VFC10970	VXX23467	
4-Bromofluorobenzene <sur>	106	50-150	%	1	VFC10970	VXX23467	

Batch Information

Analytical Batch: VFC10970

Analytical Method: AK101

Analysis Date/Time: 05/12/12 02:28

Dilution Factor: 1

Prep Batch: VXX23467

Prep Method: SW5035A

Prep Date/Time: 05/03/12 09:20

Initial Prep Wt./Vol.: 29.568 g

Prep Extract Vol.: 30.6713 mL

Container ID: 1121591011-B

Analyst: NRB

Analytical Batch: VFC10970

Analytical Method: SW8021B

Analysis Date/Time: 05/12/12 02:28

Dilution Factor: 1

Prep Batch: VXX23467

Prep Method: SW5035A

Prep Date/Time: 05/03/12 09:20

Initial Prep Wt./Vol.: 29.568 g

Prep Extract Vol.: 30.6713 mL

Container ID: 1121591011-B

Analyst: NRB

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **EP-1+60-2**

SGS Ref. #: 1121591011

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 80.8

Collection Date/Time: 05/03/12 09:20

Receipt Date/Time: 05/09/12 16:15

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Diesel Range Organics	893	122	mg/Kg	5	XFC10365	XXX26837	
Residual Range Organics	339	122	mg/Kg	5	XFC10365	XXX26837	
5a Androstane <surr>	82.5	50-150	%	5	XFC10365	XXX26837	
n-Triacontane-d62 <surr>	85.3	50-150	%	5	XFC10365	XXX26837	

Batch Information

Analytical Batch: XFC10365

Analytical Method: AK102

Analysis Date/Time: 05/16/12 11:51

Dilution Factor: 5

Prep Batch: XXX26837

Prep Method: SW3550C

Prep Date/Time: 05/14/12 15:00

Initial Prep Wt./Vol.: 30.433 g

Prep Extract Vol.: 1 mL

Container ID:1121591011-A

Analyst: MCM

Analytical Batch: XFC10365

Analytical Method: AK103

Analysis Date/Time: 05/16/12 11:51

Dilution Factor: 5

Prep Batch: XXX26837

Prep Method: SW3550C

Prep Date/Time: 05/14/12 15:00

Initial Prep Wt./Vol.: 30.433 g

Prep Extract Vol.: 1 mL

Container ID:1121591011-A

Analyst: MCM

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **EP-1+60-2**

SGS Ref. #: 1121591011

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 80.8

Collection Date/Time: 05/03/12 09:20

Receipt Date/Time: 05/09/12 16:15

Polynuclear Aromatics GC/MS

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
1-Methylnaphthalene	30.6 U	30.6	ug/Kg	5	XMS6656	XXX26835	
2-Methylnaphthalene	30.6 U	30.6	ug/Kg	5	XMS6656	XXX26835	
Acenaphthene	30.6 U	30.6	ug/Kg	5	XMS6656	XXX26835	
Acenaphthylene	30.6 U	30.6	ug/Kg	5	XMS6656	XXX26835	
Anthracene	30.6 U	30.6	ug/Kg	5	XMS6656	XXX26835	
Benzo(a)Anthracene	30.6 U	30.6	ug/Kg	5	XMS6656	XXX26835	
Benzo[a]pyrene	30.6 U	30.6	ug/Kg	5	XMS6656	XXX26835	
Benzo[b]Fluoranthene	30.6 U	30.6	ug/Kg	5	XMS6656	XXX26835	
Benzo[g,h,i]perylene	32.4	30.6	ug/Kg	5	XMS6656	XXX26835	
Benzo[k]fluoranthene	30.6 U	30.6	ug/Kg	5	XMS6656	XXX26835	
Chrysene	30.6 U	30.6	ug/Kg	5	XMS6656	XXX26835	
Dibenzo[a,h]anthracene	30.6 U	30.6	ug/Kg	5	XMS6656	XXX26835	
Fluoranthene	30.6 U	30.6	ug/Kg	5	XMS6656	XXX26835	
Fluorene	30.6 U	30.6	ug/Kg	5	XMS6656	XXX26835	
Indeno[1,2,3-c,d] pyrene	30.6 U	30.6	ug/Kg	5	XMS6656	XXX26835	
Naphthalene	30.6 U	30.6	ug/Kg	5	XMS6656	XXX26835	
Phenanthrene	30.6 U	30.6	ug/Kg	5	XMS6656	XXX26835	
Pyrene	30.6 U	30.6	ug/Kg	5	XMS6656	XXX26835	
2-Fluorobiphenyl <surr>	78.8	45-105	%	5	XMS6656	XXX26835	
Terphenyl-d14 <surr>	103	30-125	%	5	XMS6656	XXX26835	

Batch Information

Analytical Batch: XMS6656

Analytical Method: 8270D SIMS (PAH)

Analysis Date/Time: 05/15/12 15:28

Dilution Factor: 5

Prep Batch: XXX26835

Prep Method: SW3550C

Prep Date/Time: 05/14/12 10:00

Initial Prep Wt./Vol.: 22.729 g

Prep Extract Vol.: 1 mL

Container ID: 1121591011-A

Analyst: RTS

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **EP-1+60-2**

SGS Ref. #: 1121591011

Collection Date/Time: 05/03/12 09:20

Project ID: Ilulak Lake East Point Rd DW

Receipt Date/Time: 05/09/12 16:15

Matrix: Soil/Solid (dry weight)

Percent Solids: 80.8

Solids

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Total Solids	80.8		%	1	SPT8624		

Batch Information

Analytical Batch: SPT8624

Initial Prep Wt./Vol.: 1 mL

Analytical Method: SM21 2540G

Analysis Date/Time: 05/11/12 16:55

Container ID:1121591011-A

Dilution Factor: 1

Analyst: CDE

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **EP-2+10-2**

SGS Ref. #: 1121591012

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 86.2

Collection Date/Time: 05/03/12 09:45

Receipt Date/Time: 05/09/12 16:15

Volatile Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Benzene	29.1 U	29.1	ug/Kg	1	VFC10970	VXX23467	
Ethylbenzene	58.3 U	58.3	ug/Kg	1	VFC10970	VXX23467	
Gasoline Range Organics	5.83 U	5.83	mg/Kg	1	VFC10970	VXX23467	
o-Xylene	58.3 U	58.3	ug/Kg	1	VFC10970	VXX23467	
P & M -Xylene	117 U	117	ug/Kg	1	VFC10970	VXX23467	
Toluene	58.3 U	58.3	ug/Kg	1	VFC10970	VXX23467	
1,4-Difluorobenzene <sur>	96.1	72-119	%	1	VFC10970	VXX23467	
4-Bromofluorobenzene <sur>	84.5	50-150	%	1	VFC10970	VXX23467	

Batch Information

Analytical Batch: VFC10970

Analytical Method: AK101

Analysis Date/Time: 05/12/12 02:46

Dilution Factor: 1

Prep Batch: VXX23467

Prep Method: SW5035A

Prep Date/Time: 05/03/12 09:45

Initial Prep Wt./Vol.: 28.832 g

Prep Extract Vol.: 28.975 mL

Container ID: 1121591012-B

Analyst: NRB

Analytical Batch: VFC10970

Analytical Method: SW8021B

Analysis Date/Time: 05/12/12 02:46

Dilution Factor: 1

Prep Batch: VXX23467

Prep Method: SW5035A

Prep Date/Time: 05/03/12 09:45

Initial Prep Wt./Vol.: 28.832 g

Prep Extract Vol.: 28.975 mL

Container ID: 1121591012-B

Analyst: NRB

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **EP-2+10-2**

SGS Ref. #: 1121591012

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 86.2

Collection Date/Time: 05/03/12 09:45

Receipt Date/Time: 05/09/12 16:15

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Diesel Range Organics	366	23.1	mg/Kg	1	XFC10365	XXX26837	
Residual Range Organics	181	23.1	mg/Kg	1	XFC10365	XXX26837	
5a Androstane <surr>	91.3	50-150	%	1	XFC10365	XXX26837	
n-Triacontane-d62 <surr>	79.2	50-150	%	1	XFC10365	XXX26837	

Batch Information

Analytical Batch: XFC10365	Prep Batch: XXX26837	Initial Prep Wt./Vol.: 30.191 g
Analytical Method: AK102	Prep Method: SW3550C	Prep Extract Vol.: 1 mL
Analysis Date/Time: 05/16/12 03:52	Prep Date/Time: 05/14/12 15:00	Container ID:1121591012-A
Dilution Factor: 1		Analyst: MCM
Analytical Batch: XFC10365	Prep Batch: XXX26837	Initial Prep Wt./Vol.: 30.191 g
Analytical Method: AK103	Prep Method: SW3550C	Prep Extract Vol.: 1 mL
Analysis Date/Time: 05/16/12 03:52	Prep Date/Time: 05/14/12 15:00	Container ID:1121591012-A
Dilution Factor: 1		Analyst: MCM



Unalaska City-Public Works

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **EP-2+10-2**

SGS Ref. #: 1121591012

Project ID: Ilulaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 86.2

Collection Date/Time: 05/03/12 09:45

Receipt Date/Time: 05/09/12 16:15

Polynuclear Aromatics GC/MS

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
1-Methylnaphthalene	28.9 U	28.9	ug/Kg	5	XMS6656	XXX26835	
2-Methylnaphthalene	28.9 U	28.9	ug/Kg	5	XMS6656	XXX26835	
Acenaphthene	28.9 U	28.9	ug/Kg	5	XMS6656	XXX26835	
Acenaphthylene	28.9 U	28.9	ug/Kg	5	XMS6656	XXX26835	
Anthracene	28.9 U	28.9	ug/Kg	5	XMS6656	XXX26835	
Benzo(a)Anthracene	28.9 U	28.9	ug/Kg	5	XMS6656	XXX26835	
Benzo[a]pyrene	33.5	28.9	ug/Kg	5	XMS6656	XXX26835	
Benzo[b]Fluoranthene	69.2	28.9	ug/Kg	5	XMS6656	XXX26835	
Benzo[g,h,i]perylene	28.9 U	28.9	ug/Kg	5	XMS6656	XXX26835	
Benzo[k]fluoranthene	28.9 U	28.9	ug/Kg	5	XMS6656	XXX26835	
Chrysene	35.5	28.9	ug/Kg	5	XMS6656	XXX26835	
Dibenzo[a,h]anthracene	28.9 U	28.9	ug/Kg	5	XMS6656	XXX26835	
Fluoranthene	84.5	28.9	ug/Kg	5	XMS6656	XXX26835	
Fluorene	28.9 U	28.9	ug/Kg	5	XMS6656	XXX26835	
Indeno[1,2,3-c,d] pyrene	28.9 U	28.9	ug/Kg	5	XMS6656	XXX26835	
Naphthalene	28.9 U	28.9	ug/Kg	5	XMS6656	XXX26835	
Phenanthrene	40.3	28.9	ug/Kg	5	XMS6656	XXX26835	
Pyrene	72.3	28.9	ug/Kg	5	XMS6656	XXX26835	
2-Fluorobiphenyl <surr>	73.7	45-105	%	5	XMS6656	XXX26835	
Terphenyl-d14 <surr>	92.8	30-125	%	5	XMS6656	XXX26835	

Batch Information

Analytical Batch: XMS6656

Analytical Method: 8270D SIMS (PAH)

Analysis Date/Time: 05/15/12 15:48

Dilution Factor: 5

Prep Batch: XXX26835

Prep Method: SW3550C

Prep Date/Time: 05/14/12 10:00

Initial Prep Wt./Vol.: 22.545 g

Prep Extract Vol.: 1 mL

Container ID: 1121591012-A

Analyst: RTS

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **EP-2+10-2**

SGS Ref. #: 1121591012

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 86.2

Collection Date/Time: 05/03/12 09:45

Receipt Date/Time: 05/09/12 16:15

Solids

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Total Solids	86.2		%	1	SPT8624		

Batch Information

Analytical Batch: SPT8624

Analytical Method: SM21 2540G

Analysis Date/Time: 05/11/12 16:55

Dilution Factor: 1

Initial Prep Wt./Vol.: 1 mL

Container ID:1121591012-A

Analyst: CDE

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **EP-3+10-2**

SGS Ref. #: 1121591013

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 85.1

Collection Date/Time: 05/03/12 10:10

Receipt Date/Time: 05/09/12 16:15

Volatile Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Benzene	28.7 U	28.7	ug/Kg	1	VFC10970	VXX23467	
Ethylbenzene	57.4 U	57.4	ug/Kg	1	VFC10970	VXX23467	
Gasoline Range Organics	5.74 U	5.74	mg/Kg	1	VFC10970	VXX23467	
o-Xylene	57.4 U	57.4	ug/Kg	1	VFC10970	VXX23467	
P & M -Xylene	115 U	115	ug/Kg	1	VFC10970	VXX23467	
Toluene	57.4 U	57.4	ug/Kg	1	VFC10970	VXX23467	
1,4-Difluorobenzene <sur>	97.8	72-119	%	1	VFC10970	VXX23467	
4-Bromofluorobenzene <sur>	84.5	50-150	%	1	VFC10970	VXX23467	

Batch Information

Analytical Batch: VFC10970

Analytical Method: AK101

Analysis Date/Time: 05/12/12 03:04

Dilution Factor: 1

Prep Batch: VXX23467

Prep Method: SW5035A

Prep Date/Time: 05/03/12 10:10

Initial Prep Wt./Vol.: 30.149 g

Prep Extract Vol.: 29.4787 mL

Container ID: 1121591013-B

Analyst: NRB

Analytical Batch: VFC10970

Analytical Method: SW8021B

Analysis Date/Time: 05/12/12 03:04

Dilution Factor: 1

Prep Batch: VXX23467

Prep Method: SW5035A

Prep Date/Time: 05/03/12 10:10

Initial Prep Wt./Vol.: 30.149 g

Prep Extract Vol.: 29.4787 mL

Container ID: 1121591013-B

Analyst: NRB

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **EP-3+10-2**

SGS Ref. #: 1121591013

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 85.1

Collection Date/Time: 05/03/12 10:10

Receipt Date/Time: 05/09/12 16:15

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Diesel Range Organics	46.0	23.3	mg/Kg	1	XFC10365	XXX26837	
Residual Range Organics	94.3	23.3	mg/Kg	1	XFC10365	XXX26837	
5a Androstane <surr>	83.7	50-150	%	1	XFC10365	XXX26837	
n-Triacontane-d62 <surr>	84.6	50-150	%	1	XFC10365	XXX26837	

Batch Information

Analytical Batch: XFC10365	Prep Batch: XXX26837	Initial Prep Wt./Vol.: 30.299 g
Analytical Method: AK102	Prep Method: SW3550C	Prep Extract Vol.: 1 mL
Analysis Date/Time: 05/16/12 04:14	Prep Date/Time: 05/14/12 15:00	Container ID:1121591013-A
Dilution Factor: 1		Analyst: MCM
Analytical Batch: XFC10365	Prep Batch: XXX26837	Initial Prep Wt./Vol.: 30.299 g
Analytical Method: AK103	Prep Method: SW3550C	Prep Extract Vol.: 1 mL
Analysis Date/Time: 05/16/12 04:14	Prep Date/Time: 05/14/12 15:00	Container ID:1121591013-A
Dilution Factor: 1		Analyst: MCM

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **EP-3+10-2**

SGS Ref. #: 1121591013

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 85.1

Collection Date/Time: 05/03/12 10:10

Receipt Date/Time: 05/09/12 16:15

Polynuclear Aromatics GC/MS

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
1-Methylnaphthalene	29.1 U	29.1	ug/Kg	5	XMS6656	XXX26835	
2-Methylnaphthalene	29.1 U	29.1	ug/Kg	5	XMS6656	XXX26835	
Acenaphthene	29.1 U	29.1	ug/Kg	5	XMS6656	XXX26835	
Acenaphthylene	29.1 U	29.1	ug/Kg	5	XMS6656	XXX26835	
Anthracene	29.1 U	29.1	ug/Kg	5	XMS6656	XXX26835	
Benzo(a)Anthracene	29.1 U	29.1	ug/Kg	5	XMS6656	XXX26835	
Benzo[a]pyrene	29.1 U	29.1	ug/Kg	5	XMS6656	XXX26835	
Benzo[b]Fluoranthene	29.1 U	29.1	ug/Kg	5	XMS6656	XXX26835	
Benzo[g,h,i]perylene	29.1 U	29.1	ug/Kg	5	XMS6656	XXX26835	
Benzo[k]fluoranthene	29.1 U	29.1	ug/Kg	5	XMS6656	XXX26835	
Chrysene	29.1 U	29.1	ug/Kg	5	XMS6656	XXX26835	
Dibenzo[a,h]anthracene	29.1 U	29.1	ug/Kg	5	XMS6656	XXX26835	
Fluoranthene	29.1 U	29.1	ug/Kg	5	XMS6656	XXX26835	
Fluorene	29.1 U	29.1	ug/Kg	5	XMS6656	XXX26835	
Indeno[1,2,3-c,d] pyrene	29.1 U	29.1	ug/Kg	5	XMS6656	XXX26835	
Naphthalene	29.1 U	29.1	ug/Kg	5	XMS6656	XXX26835	
Phenanthrene	29.1 U	29.1	ug/Kg	5	XMS6656	XXX26835	
Pyrene	29.1 U	29.1	ug/Kg	5	XMS6656	XXX26835	
2-Fluorobiphenyl <surr>	77.9	45-105	%	5	XMS6656	XXX26835	
Terphenyl-d14 <surr>	102	30-125	%	5	XMS6656	XXX26835	

Batch Information

Analytical Batch: XMS6656

Analytical Method: 8270D SIMS (PAH)

Analysis Date/Time: 05/15/12 16:08

Dilution Factor: 5

Prep Batch: XXX26835

Prep Method: SW3550C

Prep Date/Time: 05/14/12 10:00

Initial Prep Wt./Vol.: 22.685 g

Prep Extract Vol.: 1 mL

Container ID: 1121591013-A

Analyst: RTS

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **EP-3+10-2**

SGS Ref. #: 1121591013

Collection Date/Time: 05/03/12 10:10

Project ID: Ilulak Lake East Point Rd DW

Receipt Date/Time: 05/09/12 16:15

Matrix: Soil/Solid (dry weight)

Percent Solids: 85.1

Solids

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Total Solids	85.1		%	1	SPT8624		

Batch Information

Analytical Batch: SPT8624

Initial Prep Wt./Vol.: 1 mL

Analytical Method: SM21 2540G

Analysis Date/Time: 05/11/12 16:55

Container ID:1121591013-A

Dilution Factor: 1

Analyst: CDE

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **EP-3+60-2**

SGS Ref. #: 1121591014

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 76.9

Collection Date/Time: 05/03/12 10:30

Receipt Date/Time: 05/09/12 16:15

Volatile Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical</u> <u>Batch</u>	<u>Prep</u> <u>Batch</u>	<u>Qualifiers</u>
Benzene	34.4 U	34.4	ug/Kg	1	VFC10970		
Ethylbenzene	68.8 U	68.8	ug/Kg	1	VFC10970		
Gasoline Range Organics	6.88 U	6.88	mg/Kg	1	VFC10970		
o-Xylene	68.8 U	68.8	ug/Kg	1	VFC10970		
P & M -Xylene	138 U	138	ug/Kg	1	VFC10970		
Toluene	68.8 U	68.8	ug/Kg	1	VFC10970		
1,4-Difluorobenzene <sur>	96	72-119	%	1	VFC10970		
4-Bromofluorobenzene <sur>	87.3	50-150	%	1	VFC10970		

Batch Information

Analytical Batch: VFC10970

Analytical Method: AK101

Analysis Date/Time: 05/12/12 03:22

Dilution Factor: 1

Initial Prep Wt./Vol.: 30.183 g

Container ID:1121591014-B

Analyst: NRB

Analytical Batch: VFC10970

Analytical Method: SW8021B

Analysis Date/Time: 05/12/12 03:22

Dilution Factor: 1

Initial Prep Wt./Vol.: 30.183 g

Container ID:1121591014-B

Analyst: NRB

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **EP-3+60-2**

SGS Ref. #: 1121591014

Collection Date/Time: 05/03/12 10:30

Project ID: Iluluaq Lake East Point Rd DW

Receipt Date/Time: 05/09/12 16:15

Matrix: Soil/Solid (dry weight)

Percent Solids: 76.9

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Diesel Range Organics	26.0 U	26.0	mg/Kg	1	XFC10365	XXX26837	
Residual Range Organics	42.0	26.0	mg/Kg	1	XFC10365	XXX26837	
5a Androstane <surr>	83.1	50-150	%	1	XFC10365	XXX26837	
n-Triacontane-d62 <surr>	78.1	50-150	%	1	XFC10365	XXX26837	

Batch Information

Analytical Batch: XFC10365	Prep Batch: XXX26837	Initial Prep Wt./Vol.: 30.041 g
Analytical Method: AK102	Prep Method: SW3550C	Prep Extract Vol.: 1 mL
Analysis Date/Time: 05/16/12 04:35	Prep Date/Time: 05/14/12 15:00	Container ID:1121591014-A
Dilution Factor: 1		Analyst: MCM
Analytical Batch: XFC10365	Prep Batch: XXX26837	Initial Prep Wt./Vol.: 30.041 g
Analytical Method: AK103	Prep Method: SW3550C	Prep Extract Vol.: 1 mL
Analysis Date/Time: 05/16/12 04:35	Prep Date/Time: 05/14/12 15:00	Container ID:1121591014-A
Dilution Factor: 1		Analyst: MCM



Unalaska City-Public Works

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **EP-3+60-2**

SGS Ref. #: 1121591014

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 76.9

Collection Date/Time: 05/03/12 10:30

Receipt Date/Time: 05/09/12 16:15

Polynuclear Aromatics GC/MS

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
1-Methylnaphthalene	32.1 U	32.1	ug/Kg	5	XMS6656	XXX26835	
2-Methylnaphthalene	32.1 U	32.1	ug/Kg	5	XMS6656	XXX26835	
Acenaphthene	32.1 U	32.1	ug/Kg	5	XMS6656	XXX26835	
Acenaphthylene	32.1 U	32.1	ug/Kg	5	XMS6656	XXX26835	
Anthracene	32.1 U	32.1	ug/Kg	5	XMS6656	XXX26835	
Benzo(a)Anthracene	32.1 U	32.1	ug/Kg	5	XMS6656	XXX26835	
Benzo[a]pyrene	34.1	32.1	ug/Kg	5	XMS6656	XXX26835	
Benzo[b]Fluoranthene	39.0	32.1	ug/Kg	5	XMS6656	XXX26835	
Benzo[g,h,i]perylene	32.1 U	32.1	ug/Kg	5	XMS6656	XXX26835	
Benzo[k]fluoranthene	32.1 U	32.1	ug/Kg	5	XMS6656	XXX26835	
Chrysene	32.1 U	32.1	ug/Kg	5	XMS6656	XXX26835	
Dibenzo[a,h]anthracene	32.1 U	32.1	ug/Kg	5	XMS6656	XXX26835	
Fluoranthene	52.0	32.1	ug/Kg	5	XMS6656	XXX26835	
Fluorene	32.1 U	32.1	ug/Kg	5	XMS6656	XXX26835	
Indeno[1,2,3-c,d] pyrene	32.1 U	32.1	ug/Kg	5	XMS6656	XXX26835	
Naphthalene	32.1 U	32.1	ug/Kg	5	XMS6656	XXX26835	
Phenanthrene	44.2	32.1	ug/Kg	5	XMS6656	XXX26835	
Pyrene	46.8	32.1	ug/Kg	5	XMS6656	XXX26835	
2-Fluorobiphenyl <surr>	69.4	45-105	%	5	XMS6656	XXX26835	
Terphenyl-d14 <surr>	82.1	30-125	%	5	XMS6656	XXX26835	

Batch Information

Analytical Batch: XMS6656

Analytical Method: 8270D SIMS (PAH)

Analysis Date/Time: 05/15/12 16:28

Dilution Factor: 5

Prep Batch: XXX26835

Prep Method: SW3550C

Prep Date/Time: 05/14/12 10:00

Initial Prep Wt./Vol.: 22.786 g

Prep Extract Vol.: 1 mL

Container ID: 1121591014-A

Analyst: RTS

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **EP-3+60-2**

SGS Ref. #: 1121591014

Collection Date/Time: 05/03/12 10:30

Project ID: Ilulak Lake East Point Rd DW

Receipt Date/Time: 05/09/12 16:15

Matrix: Soil/Solid (dry weight)

Percent Solids: 76.9

Solids

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Total Solids	76.9		%	1	SPT8624		

Batch Information

Analytical Batch: SPT8624

Initial Prep Wt./Vol.: 1 mL

Analytical Method: SM21 2540G

Analysis Date/Time: 05/11/12 16:55

Container ID:1121591014-A

Dilution Factor: 1

Analyst: CDE

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **EP-4+10-2**

SGS Ref. #: 1121591015

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 88.6

Collection Date/Time: 05/03/12 11:00

Receipt Date/Time: 05/09/12 16:15

Volatile Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Benzene	29.0 U	29.0	ug/Kg	1	VFC10972	VXX23473	
Ethylbenzene	57.9 U	57.9	ug/Kg	1	VFC10972	VXX23473	
Gasoline Range Organics	5.79 U	5.79	mg/Kg	1	VFC10972	VXX23473	
o-Xylene	57.9 U	57.9	ug/Kg	1	VFC10972	VXX23473	
P & M -Xylene	116 U	116	ug/Kg	1	VFC10972	VXX23473	
Toluene	57.9 U	57.9	ug/Kg	1	VFC10972	VXX23473	
1,4-Difluorobenzene <sur>	95.7	72-119	%	1	VFC10972	VXX23473	
4-Bromofluorobenzene <sur>	108	50-150	%	1	VFC10972	VXX23473	

Batch Information

Analytical Batch: VFC10972

Analytical Method: AK101

Analysis Date/Time: 05/15/12 18:23

Dilution Factor: 1

Prep Batch: VXX23473

Prep Method: SW5035A

Prep Date/Time: 05/03/12 11:30

Initial Prep Wt./Vol.: 27.411 g

Prep Extract Vol.: 28.1348 mL

Container ID: 1121591015-B

Analyst: EAB

Analytical Batch: VFC10972

Analytical Method: SW8021B

Analysis Date/Time: 05/15/12 18:23

Dilution Factor: 1

Prep Batch: VXX23473

Prep Method: SW5035A

Prep Date/Time: 05/03/12 11:30

Initial Prep Wt./Vol.: 27.411 g

Prep Extract Vol.: 28.1348 mL

Container ID: 1121591015-B

Analyst: EAB

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **EP-4+10-2**

SGS Ref. #: 1121591015

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 88.6

Collection Date/Time: 05/03/12 11:00

Receipt Date/Time: 05/09/12 16:15

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Diesel Range Organics	29.8	22.4	mg/Kg	1	XFC10365	XXX26837	
Residual Range Organics	40.5	22.4	mg/Kg	1	XFC10365	XXX26837	
5a Androstane <surr>	77	50-150	%	1	XFC10365	XXX26837	
n-Triacontane-d62 <surr>	70.7	50-150	%	1	XFC10365	XXX26837	

Batch Information

Analytical Batch: XFC10365	Prep Batch: XXX26837	Initial Prep Wt./Vol.: 30.27 g
Analytical Method: AK102	Prep Method: SW3550C	Prep Extract Vol.: 1 mL
Analysis Date/Time: 05/16/12 04:57	Prep Date/Time: 05/14/12 15:00	Container ID:1121591015-A
Dilution Factor: 1		Analyst: MCM
Analytical Batch: XFC10365	Prep Batch: XXX26837	Initial Prep Wt./Vol.: 30.27 g
Analytical Method: AK103	Prep Method: SW3550C	Prep Extract Vol.: 1 mL
Analysis Date/Time: 05/16/12 04:57	Prep Date/Time: 05/14/12 15:00	Container ID:1121591015-A
Dilution Factor: 1		Analyst: MCM



Unalaska City-Public Works

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **EP-4+10-2**

SGS Ref. #: 1121591015

Project ID: Ilulaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 88.6

Collection Date/Time: 05/03/12 11:00

Receipt Date/Time: 05/09/12 16:15

Polynuclear Aromatics GC/MS

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
1-Methylnaphthalene	27.9 U	27.9	ug/Kg	5	XMS6656	XXX26835	
2-Methylnaphthalene	27.9 U	27.9	ug/Kg	5	XMS6656	XXX26835	
Acenaphthene	27.9 U	27.9	ug/Kg	5	XMS6656	XXX26835	
Acenaphthylene	27.9 U	27.9	ug/Kg	5	XMS6656	XXX26835	
Anthracene	27.9 U	27.9	ug/Kg	5	XMS6656	XXX26835	
Benzo(a)Anthracene	27.9 U	27.9	ug/Kg	5	XMS6656	XXX26835	
Benzo[a]pyrene	27.9 U	27.9	ug/Kg	5	XMS6656	XXX26835	
Benzo[b]Fluoranthene	27.9 U	27.9	ug/Kg	5	XMS6656	XXX26835	
Benzo[g,h,i]perylene	27.9 U	27.9	ug/Kg	5	XMS6656	XXX26835	
Benzo[k]fluoranthene	27.9 U	27.9	ug/Kg	5	XMS6656	XXX26835	
Chrysene	27.9 U	27.9	ug/Kg	5	XMS6656	XXX26835	
Dibenzo[a,h]anthracene	27.9 U	27.9	ug/Kg	5	XMS6656	XXX26835	
Fluoranthene	27.9 U	27.9	ug/Kg	5	XMS6656	XXX26835	
Fluorene	27.9 U	27.9	ug/Kg	5	XMS6656	XXX26835	
Indeno[1,2,3-c,d] pyrene	27.9 U	27.9	ug/Kg	5	XMS6656	XXX26835	
Naphthalene	27.9 U	27.9	ug/Kg	5	XMS6656	XXX26835	
Phenanthrene	27.9 U	27.9	ug/Kg	5	XMS6656	XXX26835	
Pyrene	27.9 U	27.9	ug/Kg	5	XMS6656	XXX26835	
2-Fluorobiphenyl <surr>	74.4	45-105	%	5	XMS6656	XXX26835	
Terphenyl-d14 <surr>	93.4	30-125	%	5	XMS6656	XXX26835	

Batch Information

Analytical Batch: XMS6656

Analytical Method: 8270D SIMS (PAH)

Analysis Date/Time: 05/15/12 16:48

Dilution Factor: 5

Prep Batch: XXX26835

Prep Method: SW3550C

Prep Date/Time: 05/14/12 10:00

Initial Prep Wt./Vol.: 22.73 g

Prep Extract Vol.: 1 mL

Container ID: 1121591015-A

Analyst: RTS

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **EP-4+10-2**

SGS Ref. #: 1121591015

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 88.6

Collection Date/Time: 05/03/12 11:00

Receipt Date/Time: 05/09/12 16:15

Solids

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Total Solids	88.6		%	1	SPT8624		

Batch Information

Analytical Batch: SPT8624

Analytical Method: SM21 2540G

Analysis Date/Time: 05/11/12 16:55

Dilution Factor: 1

Initial Prep Wt./Vol.: 1 mL

Container ID:1121591015-A

Analyst: CDE

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **EP-4+10-4**

SGS Ref. #: 1121591016

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 83.9

Collection Date/Time: 05/03/12 11:30

Receipt Date/Time: 05/09/12 16:15

Volatile Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Benzene	34.6 U	34.6	ug/Kg	1	VFC10972	VXX23473	
Ethylbenzene	69.3 U	69.3	ug/Kg	1	VFC10972	VXX23473	
Gasoline Range Organics	6.93 U	6.93	mg/Kg	1	VFC10972	VXX23473	
o-Xylene	69.3 U	69.3	ug/Kg	1	VFC10972	VXX23473	
P & M -Xylene	139 U	139	ug/Kg	1	VFC10972	VXX23473	
Toluene	69.3 U	69.3	ug/Kg	1	VFC10972	VXX23473	
1,4-Difluorobenzene <sur>	95.4	72-119	%	1	VFC10972	VXX23473	
4-Bromofluorobenzene <sur>	108	50-150	%	1	VFC10972	VXX23473	

Batch Information

Analytical Batch: VFC10972

Analytical Method: AK101

Analysis Date/Time: 05/15/12 18:41

Dilution Factor: 1

Prep Batch: VXX23473

Prep Method: SW5035A

Prep Date/Time: 05/03/12 11:30

Initial Prep Wt./Vol.: 24.966 g

Prep Extract Vol.: 29.0244 mL

Container ID: 1121591016-B

Analyst: EAB

Analytical Batch: VFC10972

Analytical Method: SW8021B

Analysis Date/Time: 05/15/12 18:41

Dilution Factor: 1

Prep Batch: VXX23473

Prep Method: SW5035A

Prep Date/Time: 05/03/12 11:30

Initial Prep Wt./Vol.: 24.966 g

Prep Extract Vol.: 29.0244 mL

Container ID: 1121591016-B

Analyst: EAB

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **EP-4+10-4**

SGS Ref. #: 1121591016

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 83.9

Collection Date/Time: 05/03/12 11:30

Receipt Date/Time: 05/09/12 16:15

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Diesel Range Organics	178	23.5	mg/Kg	1	XFC10365	XXX26837	
Residual Range Organics	95.5	23.5	mg/Kg	1	XFC10365	XXX26837	
5a Androstane <surr>	78	50-150	%	1	XFC10365	XXX26837	
n-Triacontane-d62 <surr>	68.5	50-150	%	1	XFC10365	XXX26837	

Batch Information

Analytical Batch: XFC10365

Analytical Method: AK102

Analysis Date/Time: 05/16/12 05:18

Dilution Factor: 1

Prep Batch: XXX26837

Prep Method: SW3550C

Prep Date/Time: 05/14/12 15:00

Initial Prep Wt./Vol.: 30.381 g

Prep Extract Vol.: 1 mL

Container ID:1121591016-A

Analyst: MCM

Analytical Batch: XFC10365

Analytical Method: AK103

Analysis Date/Time: 05/16/12 05:18

Dilution Factor: 1

Prep Batch: XXX26837

Prep Method: SW3550C

Prep Date/Time: 05/14/12 15:00

Initial Prep Wt./Vol.: 30.381 g

Prep Extract Vol.: 1 mL

Container ID:1121591016-A

Analyst: MCM

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **EP-4+10-4**

SGS Ref. #: 1121591016

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 83.9

Collection Date/Time: 05/03/12 11:30

Receipt Date/Time: 05/09/12 16:15

Polynuclear Aromatics GC/MS

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
1-Methylnaphthalene	29.2 U	29.2	ug/Kg	5	XMS6656	XXX26835	
2-Methylnaphthalene	29.2 U	29.2	ug/Kg	5	XMS6656	XXX26835	
Acenaphthene	29.2 U	29.2	ug/Kg	5	XMS6656	XXX26835	
Acenaphthylene	29.2 U	29.2	ug/Kg	5	XMS6656	XXX26835	
Anthracene	29.2 U	29.2	ug/Kg	5	XMS6656	XXX26835	
Benzo(a)Anthracene	32.5	29.2	ug/Kg	5	XMS6656	XXX26835	
Benzo[a]pyrene	31.6	29.2	ug/Kg	5	XMS6656	XXX26835	
Benzo[b]Fluoranthene	49.3	29.2	ug/Kg	5	XMS6656	XXX26835	
Benzo[g,h,i]perylene	29.2 U	29.2	ug/Kg	5	XMS6656	XXX26835	
Benzo[k]fluoranthene	29.2 U	29.2	ug/Kg	5	XMS6656	XXX26835	
Chrysene	30.9	29.2	ug/Kg	5	XMS6656	XXX26835	
Dibenzo[a,h]anthracene	29.2 U	29.2	ug/Kg	5	XMS6656	XXX26835	
Fluoranthene	37.4	29.2	ug/Kg	5	XMS6656	XXX26835	
Fluorene	29.2 U	29.2	ug/Kg	5	XMS6656	XXX26835	
Indeno[1,2,3-c,d] pyrene	29.2 U	29.2	ug/Kg	5	XMS6656	XXX26835	
Naphthalene	29.2 U	29.2	ug/Kg	5	XMS6656	XXX26835	
Phenanthrene	29.2 U	29.2	ug/Kg	5	XMS6656	XXX26835	
Pyrene	33.5	29.2	ug/Kg	5	XMS6656	XXX26835	
2-Fluorobiphenyl <surr>	78.6	45-105	%	5	XMS6656	XXX26835	
Terphenyl-d14 <surr>	95.5	30-125	%	5	XMS6656	XXX26835	

Batch Information

Analytical Batch: XMS6656

Analytical Method: 8270D SIMS (PAH)

Analysis Date/Time: 05/15/12 17:08

Dilution Factor: 5

Prep Batch: XXX26835

Prep Method: SW3550C

Prep Date/Time: 05/14/12 10:00

Initial Prep Wt./Vol.: 22.966 g

Prep Extract Vol.: 1 mL

Container ID: 1121591016-A

Analyst: RTS

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **EP-4+10-4**

SGS Ref. #: 1121591016

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 83.9

Collection Date/Time: 05/03/12 11:30

Receipt Date/Time: 05/09/12 16:15

Solids

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Total Solids	83.9		%	1	SPT8624		

Batch Information

Analytical Batch: SPT8624

Analytical Method: SM21 2540G

Analysis Date/Time: 05/11/12 16:55

Dilution Factor: 1

Initial Prep Wt./Vol.: 1 mL

Container ID:1121591016-A

Analyst: CDE

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **EP-4+60-2**

SGS Ref. #: 1121591017

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 88.6

Collection Date/Time: 05/03/12 14:10

Receipt Date/Time: 05/09/12 16:15

Volatile Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Benzene	27.9 U	27.9	ug/Kg	1	VFC10972	VXX23473	
Ethylbenzene	55.8 U	55.8	ug/Kg	1	VFC10972	VXX23473	
Gasoline Range Organics	5.58 U	5.58	mg/Kg	1	VFC10972	VXX23473	
o-Xylene	55.8 U	55.8	ug/Kg	1	VFC10972	VXX23473	
P & M -Xylene	112 U	112	ug/Kg	1	VFC10972	VXX23473	
Toluene	55.8 U	55.8	ug/Kg	1	VFC10972	VXX23473	
1,4-Difluorobenzene <sur>	95.3	72-119	%	1	VFC10972	VXX23473	
4-Bromofluorobenzene <sur>	106	50-150	%	1	VFC10972	VXX23473	

Batch Information

Analytical Batch: VFC10972	Prep Batch: VXX23473	Initial Prep Wt./Vol.: 28.611 g
Analytical Method: AK101	Prep Method: SW5035A	Prep Extract Vol.: 28.2645 mL
Analysis Date/Time: 05/15/12 19:00	Prep Date/Time: 05/03/12 14:10	Container ID: 1121591017-B
Dilution Factor: 1		Analyst: EAB
Analytical Batch: VFC10972	Prep Batch: VXX23473	Initial Prep Wt./Vol.: 28.611 g
Analytical Method: SW8021B	Prep Method: SW5035A	Prep Extract Vol.: 28.2645 mL
Analysis Date/Time: 05/15/12 19:00	Prep Date/Time: 05/03/12 14:10	Container ID: 1121591017-B
Dilution Factor: 1		Analyst: EAB

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **EP-4+60-2**

SGS Ref. #: 1121591017

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 88.6

Collection Date/Time: 05/03/12 14:10

Receipt Date/Time: 05/09/12 16:15

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Diesel Range Organics	31.0	22.3	mg/Kg	1	XFC10365	XXX26837	
Residual Range Organics	28.9	22.3	mg/Kg	1	XFC10365	XXX26837	
5a Androstane <surr>	91.4	50-150	%	1	XFC10365	XXX26837	
n-Triacontane-d62 <surr>	85.7	50-150	%	1	XFC10365	XXX26837	

Batch Information

Analytical Batch: XFC10365	Prep Batch: XXX26837	Initial Prep Wt./Vol.: 30.398 g
Analytical Method: AK102	Prep Method: SW3550C	Prep Extract Vol.: 1 mL
Analysis Date/Time: 05/16/12 05:39	Prep Date/Time: 05/14/12 15:00	Container ID:1121591017-A
Dilution Factor: 1		Analyst: MCM
Analytical Batch: XFC10365	Prep Batch: XXX26837	Initial Prep Wt./Vol.: 30.398 g
Analytical Method: AK103	Prep Method: SW3550C	Prep Extract Vol.: 1 mL
Analysis Date/Time: 05/16/12 05:39	Prep Date/Time: 05/14/12 15:00	Container ID:1121591017-A
Dilution Factor: 1		Analyst: MCM



Unalaska City-Public Works

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **EP-4+60-2**

SGS Ref. #: 1121591017

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 88.6

Collection Date/Time: 05/03/12 14:10

Receipt Date/Time: 05/09/12 16:15

Polynuclear Aromatics GC/MS

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
1-Methylnaphthalene	28.0 U	28.0	ug/Kg	5	XMS6656	XXX26835	
2-Methylnaphthalene	28.0 U	28.0	ug/Kg	5	XMS6656	XXX26835	
Acenaphthene	28.0 U	28.0	ug/Kg	5	XMS6656	XXX26835	
Acenaphthylene	28.0 U	28.0	ug/Kg	5	XMS6656	XXX26835	
Anthracene	28.0 U	28.0	ug/Kg	5	XMS6656	XXX26835	
Benzo(a)Anthracene	28.0 U	28.0	ug/Kg	5	XMS6656	XXX26835	
Benzo[a]pyrene	28.0 U	28.0	ug/Kg	5	XMS6656	XXX26835	
Benzo[b]Fluoranthene	28.0 U	28.0	ug/Kg	5	XMS6656	XXX26835	
Benzo[g,h,i]perylene	28.0 U	28.0	ug/Kg	5	XMS6656	XXX26835	
Benzo[k]fluoranthene	28.0 U	28.0	ug/Kg	5	XMS6656	XXX26835	
Chrysene	28.0 U	28.0	ug/Kg	5	XMS6656	XXX26835	
Dibenzo[a,h]anthracene	28.0 U	28.0	ug/Kg	5	XMS6656	XXX26835	
Fluoranthene	28.0 U	28.0	ug/Kg	5	XMS6656	XXX26835	
Fluorene	28.0 U	28.0	ug/Kg	5	XMS6656	XXX26835	
Indeno[1,2,3-c,d] pyrene	28.0 U	28.0	ug/Kg	5	XMS6656	XXX26835	
Naphthalene	28.0 U	28.0	ug/Kg	5	XMS6656	XXX26835	
Phenanthrene	28.0 U	28.0	ug/Kg	5	XMS6656	XXX26835	
Pyrene	28.0 U	28.0	ug/Kg	5	XMS6656	XXX26835	
2-Fluorobiphenyl <surr>	76.8	45-105	%	5	XMS6656	XXX26835	
Terphenyl-d14 <surr>	103	30-125	%	5	XMS6656	XXX26835	

Batch Information

Analytical Batch: XMS6656

Analytical Method: 8270D SIMS (PAH)

Analysis Date/Time: 05/15/12 17:28

Dilution Factor: 5

Prep Batch: XXX26835

Prep Method: SW3550C

Prep Date/Time: 05/14/12 10:00

Initial Prep Wt./Vol.: 22.649 g

Prep Extract Vol.: 1 mL

Container ID: 1121591017-A

Analyst: RTS

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **EP-4+60-2**

SGS Ref. #: 1121591017

Collection Date/Time: 05/03/12 14:10

Project ID: Ilulak Lake East Point Rd DW

Receipt Date/Time: 05/09/12 16:15

Matrix: Soil/Solid (dry weight)

Percent Solids: 88.6

Solids

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Total Solids	88.6		%	1	SPT8624		

Batch Information

Analytical Batch: SPT8624

Initial Prep Wt./Vol.: 1 mL

Analytical Method: SM21 2540G

Analysis Date/Time: 05/11/12 16:55

Container ID:1121591017-A

Dilution Factor: 1

Analyst: CDE

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **EP-4+60-4**

SGS Ref. #: 1121591018

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 85.3

Collection Date/Time: 05/03/12 14:00

Receipt Date/Time: 05/09/12 16:15

Volatile Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Benzene	31.0 U	31.0	ug/Kg	1	VFC10972	VXX23473	
Ethylbenzene	62.0 U	62.0	ug/Kg	1	VFC10972	VXX23473	
Gasoline Range Organics	6.20 U	6.20	mg/Kg	1	VFC10972	VXX23473	
o-Xylene	62.0 U	62.0	ug/Kg	1	VFC10972	VXX23473	
P & M -Xylene	124 U	124	ug/Kg	1	VFC10972	VXX23473	
Toluene	62.0 U	62.0	ug/Kg	1	VFC10972	VXX23473	
1,4-Difluorobenzene <sur>	96.1	72-119	%	1	VFC10972	VXX23473	
4-Bromofluorobenzene <sur>	99.4	50-150	%	1	VFC10972	VXX23473	

Batch Information

Analytical Batch: VFC10972

Analytical Method: AK101

Analysis Date/Time: 05/15/12 19:18

Dilution Factor: 1

Prep Batch: VXX23473

Prep Method: SW5035A

Prep Date/Time: 05/03/12 15:30

Initial Prep Wt./Vol.: 27.444 g

Prep Extract Vol.: 29.0331 mL

Container ID: 1121591018-B

Analyst: EAB

Analytical Batch: VFC10972

Analytical Method: SW8021B

Analysis Date/Time: 05/15/12 19:18

Dilution Factor: 1

Prep Batch: VXX23473

Prep Method: SW5035A

Prep Date/Time: 05/03/12 15:30

Initial Prep Wt./Vol.: 27.444 g

Prep Extract Vol.: 29.0331 mL

Container ID: 1121591018-B

Analyst: EAB

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **EP-4+60-4**

SGS Ref. #: 1121591018

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 85.3

Collection Date/Time: 05/03/12 14:00

Receipt Date/Time: 05/09/12 16:15

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Diesel Range Organics	1870	116	mg/Kg	5	XFC10365	XXX26837	
Residual Range Organics	1790	116	mg/Kg	5	XFC10365	XXX26837	
5a Androstane <surr>	74.4	50-150	%	5	XFC10365	XXX26837	
n-Triacontane-d62 <surr>	121	50-150	%	5	XFC10365	XXX26837	

Batch Information

Analytical Batch: XFC10365	Prep Batch: XXX26837	Initial Prep Wt./Vol.: 30.193 g
Analytical Method: AK102	Prep Method: SW3550C	Prep Extract Vol.: 1 mL
Analysis Date/Time: 05/16/12 06:01	Prep Date/Time: 05/14/12 15:00	Container ID:1121591018-A
Dilution Factor: 5		Analyst: MCM
Analytical Batch: XFC10365	Prep Batch: XXX26837	Initial Prep Wt./Vol.: 30.193 g
Analytical Method: AK103	Prep Method: SW3550C	Prep Extract Vol.: 1 mL
Analysis Date/Time: 05/16/12 06:01	Prep Date/Time: 05/14/12 15:00	Container ID:1121591018-A
Dilution Factor: 5		Analyst: MCM



Unalaska City-Public Works

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **EP-4+60-4**

SGS Ref. #: 1121591018

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 85.3

Collection Date/Time: 05/03/12 14:00

Receipt Date/Time: 05/09/12 16:15

Polynuclear Aromatics GC/MS

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
1-Methylnaphthalene	58.3 U	58.3	ug/Kg	10	XMS6656	XXX26839	
2-Methylnaphthalene	58.3 U	58.3	ug/Kg	10	XMS6656	XXX26839	
Acenaphthene	58.3 U	58.3	ug/Kg	10	XMS6656	XXX26839	
Acenaphthylene	58.3 U	58.3	ug/Kg	10	XMS6656	XXX26839	
Anthracene	58.3 U	58.3	ug/Kg	10	XMS6656	XXX26839	
Benzo(a)Anthracene	71.3	58.3	ug/Kg	10	XMS6656	XXX26839	
Benzo[a]pyrene	141	58.3	ug/Kg	10	XMS6656	XXX26839	
Benzo[b]Fluoranthene	58.3 U	58.3	ug/Kg	10	XMS6656	XXX26839	
Benzo[g,h,i]perylene	68.0	58.3	ug/Kg	10	XMS6656	XXX26839	
Benzo[k]fluoranthene	58.3 U	58.3	ug/Kg	10	XMS6656	XXX26839	
Chrysene	92.8	58.3	ug/Kg	10	XMS6656	XXX26839	
Dibenzo[a,h]anthracene	58.3 U	58.3	ug/Kg	10	XMS6656	XXX26839	
Fluoranthene	86.4	58.3	ug/Kg	10	XMS6656	XXX26839	
Fluorene	58.3 U	58.3	ug/Kg	10	XMS6656	XXX26839	
Indeno[1,2,3-c,d] pyrene	58.3 U	58.3	ug/Kg	10	XMS6656	XXX26839	
Naphthalene	58.3 U	58.3	ug/Kg	10	XMS6656	XXX26839	
Phenanthrene	58.3 U	58.3	ug/Kg	10	XMS6656	XXX26839	
Pyrene	232	58.3	ug/Kg	10	XMS6656	XXX26839	
2-Fluorobiphenyl <surr>	79.3	45-105	%	10	XMS6656	XXX26839	
Terphenyl-d14 <surr>	120	30-125	%	10	XMS6656	XXX26839	

Batch Information

Analytical Batch: XMS6656

Analytical Method: 8270D SIMS (PAH)

Analysis Date/Time: 05/15/12 19:27

Dilution Factor: 10

Prep Batch: XXX26839

Prep Method: SW3550C

Prep Date/Time: 05/14/12 15:00

Initial Prep Wt./Vol.: 22.605 g

Prep Extract Vol.: 1 mL

Container ID: 1121591018-A

Analyst: RTS

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **EP-4+60-4**

SGS Ref. #: 1121591018

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 85.3

Collection Date/Time: 05/03/12 14:00

Receipt Date/Time: 05/09/12 16:15

Solids

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Total Solids	85.3		%	1	SPT8624		

Batch Information

Analytical Batch: SPT8624

Analytical Method: SM21 2540G

Analysis Date/Time: 05/11/12 16:55

Dilution Factor: 1

Initial Prep Wt./Vol.: 1 mL

Container ID:1121591018-A

Analyst: CDE

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **EP-5+10-4**

SGS Ref. #: 1121591019

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 84.9

Collection Date/Time: 05/03/12 15:30

Receipt Date/Time: 05/09/12 16:15

Volatile Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Benzene	34.1 U	34.1	ug/Kg	1	VFC10972	VXX23473	
Ethylbenzene	68.2 U	68.2	ug/Kg	1	VFC10972	VXX23473	
Gasoline Range Organics	6.82 U	6.82	mg/Kg	1	VFC10972	VXX23473	
o-Xylene	68.2 U	68.2	ug/Kg	1	VFC10972	VXX23473	
P & M -Xylene	136 U	136	ug/Kg	1	VFC10972	VXX23473	
Toluene	68.2 U	68.2	ug/Kg	1	VFC10972	VXX23473	
1,4-Difluorobenzene <sur>	95.1	72-119	%	1	VFC10972	VXX23473	
4-Bromofluorobenzene <sur>	111	50-150	%	1	VFC10972	VXX23473	

Batch Information

Analytical Batch: VFC10972

Analytical Method: AK101

Analysis Date/Time: 05/15/12 19:36

Dilution Factor: 1

Prep Batch: VXX23473

Prep Method: SW5035A

Prep Date/Time: 05/03/12 15:30

Initial Prep Wt./Vol.: 24.82 g

Prep Extract Vol.: 28.7491 mL

Container ID: 1121591019-B

Analyst: EAB

Analytical Batch: VFC10972

Analytical Method: SW8021B

Analysis Date/Time: 05/15/12 19:36

Dilution Factor: 1

Prep Batch: VXX23473

Prep Method: SW5035A

Prep Date/Time: 05/03/12 15:30

Initial Prep Wt./Vol.: 24.82 g

Prep Extract Vol.: 28.7491 mL

Container ID: 1121591019-B

Analyst: EAB

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **EP-5+10-4**

SGS Ref. #: 1121591019

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 84.9

Collection Date/Time: 05/03/12 15:30

Receipt Date/Time: 05/09/12 16:15

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Diesel Range Organics	173	117	mg/Kg	5	XFC10365	XXX26837	
Residual Range Organics	234	117	mg/Kg	5	XFC10365	XXX26837	
5a Androstane <surr>	89.8	50-150	%	5	XFC10365	XXX26837	
n-Triacontane-d62 <surr>	77.4	50-150	%	5	XFC10365	XXX26837	

Batch Information

Analytical Batch: XFC10365

Analytical Method: AK102

Analysis Date/Time: 05/16/12 06:22

Dilution Factor: 5

Prep Batch: XXX26837

Prep Method: SW3550C

Prep Date/Time: 05/14/12 15:00

Initial Prep Wt./Vol.: 30.224 g

Prep Extract Vol.: 1 mL

Container ID:1121591019-A

Analyst: MCM

Analytical Batch: XFC10365

Analytical Method: AK103

Analysis Date/Time: 05/16/12 06:22

Dilution Factor: 5

Prep Batch: XXX26837

Prep Method: SW3550C

Prep Date/Time: 05/14/12 15:00

Initial Prep Wt./Vol.: 30.224 g

Prep Extract Vol.: 1 mL

Container ID:1121591019-A

Analyst: MCM



Unalaska City-Public Works

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **EP-5+10-4**

SGS Ref. #: 1121591019

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 84.9

Collection Date/Time: 05/03/12 15:30

Receipt Date/Time: 05/09/12 16:15

Polynuclear Aromatics GC/MS

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
1-Methylnaphthalene	29.4 U	29.4	ug/Kg	5	XMS6663	XXX26839	
2-Methylnaphthalene	29.4 U	29.4	ug/Kg	5	XMS6663	XXX26839	
Acenaphthene	29.4 U	29.4	ug/Kg	5	XMS6663	XXX26839	
Acenaphthylene	29.4 U	29.4	ug/Kg	5	XMS6663	XXX26839	
Anthracene	29.4 U	29.4	ug/Kg	5	XMS6663	XXX26839	
Benzo(a)Anthracene	29.4 U	29.4	ug/Kg	5	XMS6663	XXX26839	
Benzo[a]pyrene	46.6	29.4	ug/Kg	5	XMS6663	XXX26839	
Benzo[b]Fluoranthene	57.0	29.4	ug/Kg	5	XMS6663	XXX26839	
Benzo[g,h,i]perylene	56.3	29.4	ug/Kg	5	XMS6663	XXX26839	
Benzo[k]fluoranthene	29.4 U	29.4	ug/Kg	5	XMS6663	XXX26839	
Chrysene	29.6	29.4	ug/Kg	5	XMS6663	XXX26839	
Dibenzo[a,h]anthracene	29.4 U	29.4	ug/Kg	5	XMS6663	XXX26839	
Fluoranthene	37.2	29.4	ug/Kg	5	XMS6663	XXX26839	
Fluorene	29.4 U	29.4	ug/Kg	5	XMS6663	XXX26839	
Indeno[1,2,3-c,d] pyrene	39.7	29.4	ug/Kg	5	XMS6663	XXX26839	
Naphthalene	29.4 U	29.4	ug/Kg	5	XMS6663	XXX26839	
Phenanthrene	29.4 U	29.4	ug/Kg	5	XMS6663	XXX26839	
Pyrene	41.4	29.4	ug/Kg	5	XMS6663	XXX26839	
2-Fluorobiphenyl <surr>	68.6	45-105	%	5	XMS6663	XXX26839	
Terphenyl-d14 <surr>	111	30-125	%	5	XMS6663	XXX26839	

Batch Information

Analytical Batch: XMS6663

Analytical Method: 8270D SIMS (PAH)

Analysis Date/Time: 05/16/12 19:30

Dilution Factor: 5

Prep Batch: XXX26839

Prep Method: SW3550C

Prep Date/Time: 05/14/12 15:00

Initial Prep Wt./Vol.: 22.548 g

Prep Extract Vol.: 1 mL

Container ID: 1121591019-A

Analyst: RTS

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **EP-5+10-4**

SGS Ref. #: 1121591019

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 84.9

Collection Date/Time: 05/03/12 15:30

Receipt Date/Time: 05/09/12 16:15

Solids

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Total Solids	84.9		%	1	SPT8624		

Batch Information

Analytical Batch: SPT8624

Analytical Method: SM21 2540G

Analysis Date/Time: 05/11/12 16:55

Dilution Factor: 1

Initial Prep Wt./Vol.: 1 mL

Container ID:1121591019-A

Analyst: CDE

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **EP-5-10-4**

SGS Ref. #: 1121591020

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 75.6

Collection Date/Time: 05/03/12 15:20

Receipt Date/Time: 05/09/12 16:15

Volatile Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Benzene	36.1 U	36.1	ug/Kg	1	VFC10972	VXX23473	
Ethylbenzene	72.1 U	72.1	ug/Kg	1	VFC10972	VXX23473	
Gasoline Range Organics	9.08	7.21	mg/Kg	1	VFC10972	VXX23473	
o-Xylene	141	72.1	ug/Kg	1	VFC10972	VXX23473	
P & M -Xylene	144 U	144	ug/Kg	1	VFC10972	VXX23473	
Toluene	72.1 U	72.1	ug/Kg	1	VFC10972	VXX23473	
1,4-Difluorobenzene <sur>	96.5	72-119	%	1	VFC10972	VXX23473	
4-Bromofluorobenzene <sur>	119	50-150	%	1	VFC10972	VXX23473	

Batch Information

Analytical Batch: VFC10972	Prep Batch: VXX23473	Initial Prep Wt./Vol.: 29.54 g
Analytical Method: AK101	Prep Method: SW5035A	Prep Extract Vol.: 32.2107 mL
Analysis Date/Time: 05/15/12 19:54	Prep Date/Time: 05/03/12 15:20	Container ID: 1121591020-B
Dilution Factor: 1		Analyst: EAB
Analytical Batch: VFC10972	Prep Batch: VXX23473	Initial Prep Wt./Vol.: 29.54 g
Analytical Method: SW8021B	Prep Method: SW5035A	Prep Extract Vol.: 32.2107 mL
Analysis Date/Time: 05/15/12 19:54	Prep Date/Time: 05/03/12 15:20	Container ID: 1121591020-B
Dilution Factor: 1		Analyst: EAB

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **EP-5-10-4**

SGS Ref. #: 1121591020

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 75.6

Collection Date/Time: 05/03/12 15:20

Receipt Date/Time: 05/09/12 16:15

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Diesel Range Organics	2080	132	mg/Kg	5	XFC10365	XXX26837	
Residual Range Organics	2620	132	mg/Kg	5	XFC10365	XXX26837	
5a Androstane <surr>	110	50-150	%	5	XFC10365	XXX26837	
n-Triacontane-d62 <surr>	117	50-150	%	5	XFC10365	XXX26837	

Batch Information

Analytical Batch: XFC10365	Prep Batch: XXX26837	Initial Prep Wt./Vol.: 30.072 g
Analytical Method: AK102	Prep Method: SW3550C	Prep Extract Vol.: 1 mL
Analysis Date/Time: 05/16/12 06:44	Prep Date/Time: 05/14/12 15:00	Container ID:1121591020-A
Dilution Factor: 5		Analyst: MCM
Analytical Batch: XFC10365	Prep Batch: XXX26837	Initial Prep Wt./Vol.: 30.072 g
Analytical Method: AK103	Prep Method: SW3550C	Prep Extract Vol.: 1 mL
Analysis Date/Time: 05/16/12 06:44	Prep Date/Time: 05/14/12 15:00	Container ID:1121591020-A
Dilution Factor: 5		Analyst: MCM

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **EP-5-10-4**

SGS Ref. #: 1121591020

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 75.6

Collection Date/Time: 05/03/12 15:20

Receipt Date/Time: 05/09/12 16:15

Polynuclear Aromatics GC/MS

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
1-Methylnaphthalene	65.6 U	65.6	ug/Kg	10	XMS6663	XXX26839	
2-Methylnaphthalene	65.6 U	65.6	ug/Kg	10	XMS6663	XXX26839	
Acenaphthene	65.6 U	65.6	ug/Kg	10	XMS6663	XXX26839	
Acenaphthylene	65.6 U	65.6	ug/Kg	10	XMS6663	XXX26839	
Anthracene	200	65.6	ug/Kg	10	XMS6663	XXX26839	
Benzo(a)Anthracene	260	65.6	ug/Kg	10	XMS6663	XXX26839	
Benzo[a]pyrene	165	65.6	ug/Kg	10	XMS6663	XXX26839	
Benzo[b]Fluoranthene	65.6 U	65.6	ug/Kg	10	XMS6663	XXX26839	
Benzo[g,h,i]perylene	75.5	65.6	ug/Kg	10	XMS6663	XXX26839	
Benzo[k]fluoranthene	65.6 U	65.6	ug/Kg	10	XMS6663	XXX26839	
Chrysene	418	65.6	ug/Kg	10	XMS6663	XXX26839	
Dibenzo[a,h]anthracene	65.6 U	65.6	ug/Kg	10	XMS6663	XXX26839	
Fluoranthene	191	65.6	ug/Kg	10	XMS6663	XXX26839	
Fluorene	403	65.6	ug/Kg	10	XMS6663	XXX26839	
Indeno[1,2,3-c,d] pyrene	65.6 U	65.6	ug/Kg	10	XMS6663	XXX26839	
Naphthalene	65.6 U	65.6	ug/Kg	10	XMS6663	XXX26839	
Phenanthrene	870	65.6	ug/Kg	10	XMS6663	XXX26839	
Pyrene	960	65.6	ug/Kg	10	XMS6663	XXX26839	
2-Fluorobiphenyl <sur>	148	* 45-105	%	10	XMS6663	XXX26839	
Terphenyl-d14 <sur>	165	* 30-125	%	10	XMS6663	XXX26839	

Batch Information

Analytical Batch: XMS6663

Analytical Method: 8270D SIMS (PAH)

Analysis Date/Time: 05/16/12 19:50

Dilution Factor: 10

Prep Batch: XXX26839

Prep Method: SW3550C

Prep Date/Time: 05/14/12 15:00

Initial Prep Wt./Vol.: 22.692 g

Prep Extract Vol.: 1 mL

Container ID: 1121591020-A

Analyst: RTS

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **EP-5-10-4**

SGS Ref. #: 1121591020

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 75.6

Collection Date/Time: 05/03/12 15:20

Receipt Date/Time: 05/09/12 16:15

Solids

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Total Solids	75.6		%	1	SPT8624		

Batch Information

Analytical Batch: SPT8624

Analytical Method: SM21 2540G

Analysis Date/Time: 05/11/12 16:55

Dilution Factor: 1

Initial Prep Wt./Vol.: 1 mL

Container ID:1121591020-A

Analyst: CDE

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **EP-5+60-2**

SGS Ref. #: 1121591021

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 87.8

Collection Date/Time: 05/03/12 16:40

Receipt Date/Time: 05/09/12 16:15

Volatile Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Benzene	30.2 U	30.2	ug/Kg	1	VFC10972	VXX23473	
Ethylbenzene	60.3 U	60.3	ug/Kg	1	VFC10972	VXX23473	
Gasoline Range Organics	6.03 U	6.03	mg/Kg	1	VFC10972	VXX23473	
o-Xylene	60.3 U	60.3	ug/Kg	1	VFC10972	VXX23473	
P & M -Xylene	121 U	121	ug/Kg	1	VFC10972	VXX23473	
Toluene	60.3 U	60.3	ug/Kg	1	VFC10972	VXX23473	
1,4-Difluorobenzene <sur>	95.2	72-119	%	1	VFC10972	VXX23473	
4-Bromofluorobenzene <sur>	101	50-150	%	1	VFC10972	VXX23473	

Batch Information

Analytical Batch: VFC10972

Analytical Method: AK101

Analysis Date/Time: 05/15/12 20:13

Dilution Factor: 1

Prep Batch: VXX23473

Prep Method: SW5035A

Prep Date/Time: 05/03/12 16:40

Initial Prep Wt./Vol.: 26.682 g

Prep Extract Vol.: 28.2645 mL

Container ID: 1121591021-B

Analyst: EAB

Analytical Batch: VFC10972

Analytical Method: SW8021B

Analysis Date/Time: 05/15/12 20:13

Dilution Factor: 1

Prep Batch: VXX23473

Prep Method: SW5035A

Prep Date/Time: 05/03/12 16:40

Initial Prep Wt./Vol.: 26.682 g

Prep Extract Vol.: 28.2645 mL

Container ID: 1121591021-B

Analyst: EAB

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **EP-5+60-2**

SGS Ref. #: 1121591021

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 87.8

Collection Date/Time: 05/03/12 16:40

Receipt Date/Time: 05/09/12 16:15

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Diesel Range Organics	151	113	mg/Kg	5	XFC10365	XXX26837	
Residual Range Organics	490	113	mg/Kg	5	XFC10365	XXX26837	
5a Androstane <surr>	89.7	50-150	%	5	XFC10365	XXX26837	
n-Triacontane-d62 <surr>	83.4	50-150	%	5	XFC10365	XXX26837	

Batch Information

Analytical Batch: XFC10365

Analytical Method: AK102

Analysis Date/Time: 05/16/12 07:05

Dilution Factor: 5

Prep Batch: XXX26837

Prep Method: SW3550C

Prep Date/Time: 05/14/12 15:00

Initial Prep Wt./Vol.: 30.374 g

Prep Extract Vol.: 1 mL

Container ID:1121591021-A

Analyst: MCM

Analytical Batch: XFC10365

Analytical Method: AK103

Analysis Date/Time: 05/16/12 07:05

Dilution Factor: 5

Prep Batch: XXX26837

Prep Method: SW3550C

Prep Date/Time: 05/14/12 15:00

Initial Prep Wt./Vol.: 30.374 g

Prep Extract Vol.: 1 mL

Container ID:1121591021-A

Analyst: MCM



Unalaska City-Public Works

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **EP-5+60-2**

SGS Ref. #: 1121591021

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 87.8

Collection Date/Time: 05/03/12 16:40

Receipt Date/Time: 05/09/12 16:15

Polynuclear Aromatics GC/MS

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
1-Methylnaphthalene	28.3 U	28.3	ug/Kg	5	XMS6663	XXX26839	
2-Methylnaphthalene	28.3 U	28.3	ug/Kg	5	XMS6663	XXX26839	
Acenaphthene	28.3 U	28.3	ug/Kg	5	XMS6663	XXX26839	
Acenaphthylene	28.3 U	28.3	ug/Kg	5	XMS6663	XXX26839	
Anthracene	28.3 U	28.3	ug/Kg	5	XMS6663	XXX26839	
Benzo(a)Anthracene	28.3 U	28.3	ug/Kg	5	XMS6663	XXX26839	
Benzo[a]pyrene	39.3	28.3	ug/Kg	5	XMS6663	XXX26839	
Benzo[b]Fluoranthene	28.3 U	28.3	ug/Kg	5	XMS6663	XXX26839	
Benzo[g,h,i]perylene	48.3	28.3	ug/Kg	5	XMS6663	XXX26839	
Benzo[k]fluoranthene	28.3 U	28.3	ug/Kg	5	XMS6663	XXX26839	
Chrysene	28.3 U	28.3	ug/Kg	5	XMS6663	XXX26839	
Dibenzo[a,h]anthracene	28.3 U	28.3	ug/Kg	5	XMS6663	XXX26839	
Fluoranthene	31.6	28.3	ug/Kg	5	XMS6663	XXX26839	
Fluorene	28.3 U	28.3	ug/Kg	5	XMS6663	XXX26839	
Indeno[1,2,3-c,d] pyrene	28.3 U	28.3	ug/Kg	5	XMS6663	XXX26839	
Naphthalene	28.3 U	28.3	ug/Kg	5	XMS6663	XXX26839	
Phenanthrene	28.3 U	28.3	ug/Kg	5	XMS6663	XXX26839	
Pyrene	52.9	28.3	ug/Kg	5	XMS6663	XXX26839	
2-Fluorobiphenyl <surr>	85.9	45-105	%	5	XMS6663	XXX26839	
Terphenyl-d14 <surr>	120	30-125	%	5	XMS6663	XXX26839	

Batch Information

Analytical Batch: XMS6663

Analytical Method: 8270D SIMS (PAH)

Analysis Date/Time: 05/16/12 20:10

Dilution Factor: 5

Prep Batch: XXX26839

Prep Method: SW3550C

Prep Date/Time: 05/14/12 15:00

Initial Prep Wt./Vol.: 22.637 g

Prep Extract Vol.: 1 mL

Container ID: 1121591021-A

Analyst: RTS

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **EP-5+60-2**

SGS Ref. #: 1121591021

Collection Date/Time: 05/03/12 16:40

Project ID: Ilulak Lake East Point Rd DW

Receipt Date/Time: 05/09/12 16:15

Matrix: Soil/Solid (dry weight)

Percent Solids: 87.8

Solids

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Total Solids	87.8		%	1	SPT8624		

Batch Information

Analytical Batch: SPT8624

Initial Prep Wt./Vol.: 1 mL

Analytical Method: SM21 2540G

Analysis Date/Time: 05/11/12 16:55

Container ID:1121591021-A

Dilution Factor: 1

Analyst: CDE

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **EP-5+60-4**

SGS Ref. #: 1121591022

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 69.5

Collection Date/Time: 05/03/12 16:30

Receipt Date/Time: 05/09/12 16:15

Volatile Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Benzene	42.7 U	42.7	ug/Kg	1	VFC10972	VXX23473	
Ethylbenzene	85.4 U	85.4	ug/Kg	1	VFC10972	VXX23473	
Gasoline Range Organics	8.54 U	8.54	mg/Kg	1	VFC10972	VXX23473	
o-Xylene	85.4 U	85.4	ug/Kg	1	VFC10972	VXX23473	
P & M -Xylene	171 U	171	ug/Kg	1	VFC10972	VXX23473	
Toluene	85.4 U	85.4	ug/Kg	1	VFC10972	VXX23473	
1,4-Difluorobenzene <sur>	95.5	72-119	%	1	VFC10972	VXX23473	
4-Bromofluorobenzene <sur>	116	50-150	%	1	VFC10972	VXX23473	

Batch Information

Analytical Batch: VFC10972	Prep Batch: VXX23473	Initial Prep Wt./Vol.: 28.333 g
Analytical Method: AK101	Prep Method: SW5035A	Prep Extract Vol.: 33.6447 mL
Analysis Date/Time: 05/15/12 20:31	Prep Date/Time: 05/03/12 16:30	Container ID: 1121591022-B
Dilution Factor: 1		Analyst: EAB
Analytical Batch: VFC10972	Prep Batch: VXX23473	Initial Prep Wt./Vol.: 28.333 g
Analytical Method: SW8021B	Prep Method: SW5035A	Prep Extract Vol.: 33.6447 mL
Analysis Date/Time: 05/15/12 20:31	Prep Date/Time: 05/03/12 16:30	Container ID: 1121591022-B
Dilution Factor: 1		Analyst: EAB

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **EP-5+60-4**

SGS Ref. #: 1121591022

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 69.5

Collection Date/Time: 05/03/12 16:30

Receipt Date/Time: 05/09/12 16:15

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Diesel Range Organics	523	144	mg/Kg	5	XFC10365	XXX26837	
Residual Range Organics	311	144	mg/Kg	5	XFC10365	XXX26837	
5a Androstane <surr>	88.4	50-150	%	5	XFC10365	XXX26837	
n-Triacontane-d62 <surr>	77.1	50-150	%	5	XFC10365	XXX26837	

Batch Information

Analytical Batch: XFC10365

Analytical Method: AK102

Analysis Date/Time: 05/16/12 07:30

Dilution Factor: 5

Prep Batch: XXX26837

Prep Method: SW3550C

Prep Date/Time: 05/14/12 15:00

Initial Prep Wt./Vol.: 30.022 g

Prep Extract Vol.: 1 mL

Container ID:1121591022-A

Analyst: MCM

Analytical Batch: XFC10365

Analytical Method: AK103

Analysis Date/Time: 05/16/12 07:30

Dilution Factor: 5

Prep Batch: XXX26837

Prep Method: SW3550C

Prep Date/Time: 05/14/12 15:00

Initial Prep Wt./Vol.: 30.022 g

Prep Extract Vol.: 1 mL

Container ID:1121591022-A

Analyst: MCM

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **EP-5+60-4**

SGS Ref. #: 1121591022

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 69.5

Collection Date/Time: 05/03/12 16:30

Receipt Date/Time: 05/09/12 16:15

Polynuclear Aromatics GC/MS

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
1-Methylnaphthalene	35.7 U	35.7	ug/Kg	5	XMS6663	XXX26839	
2-Methylnaphthalene	35.7 U	35.7	ug/Kg	5	XMS6663	XXX26839	
Acenaphthene	35.7 U	35.7	ug/Kg	5	XMS6663	XXX26839	
Acenaphthylene	35.7 U	35.7	ug/Kg	5	XMS6663	XXX26839	
Anthracene	35.7 U	35.7	ug/Kg	5	XMS6663	XXX26839	
Benzo(a)Anthracene	43.2	35.7	ug/Kg	5	XMS6663	XXX26839	
Benzo[a]pyrene	48.7	35.7	ug/Kg	5	XMS6663	XXX26839	
Benzo[b]Fluoranthene	35.7 U	35.7	ug/Kg	5	XMS6663	XXX26839	
Benzo[g,h,i]perylene	38.5	35.7	ug/Kg	5	XMS6663	XXX26839	
Benzo[k]fluoranthene	35.7 U	35.7	ug/Kg	5	XMS6663	XXX26839	
Chrysene	48.8	35.7	ug/Kg	5	XMS6663	XXX26839	
Dibenzo[a,h]anthracene	35.7 U	35.7	ug/Kg	5	XMS6663	XXX26839	
Fluoranthene	80.9	35.7	ug/Kg	5	XMS6663	XXX26839	
Fluorene	35.7 U	35.7	ug/Kg	5	XMS6663	XXX26839	
Indeno[1,2,3-c,d] pyrene	35.7 U	35.7	ug/Kg	5	XMS6663	XXX26839	
Naphthalene	35.7 U	35.7	ug/Kg	5	XMS6663	XXX26839	
Phenanthrene	50.3	35.7	ug/Kg	5	XMS6663	XXX26839	
Pyrene	87.9	35.7	ug/Kg	5	XMS6663	XXX26839	
2-Fluorobiphenyl <surr>	74.6	45-105	%	5	XMS6663	XXX26839	
Terphenyl-d14 <surr>	125	30-125	%	5	XMS6663	XXX26839	

Batch Information

Analytical Batch: XMS6663

Analytical Method: 8270D SIMS (PAH)

Analysis Date/Time: 05/16/12 20:30

Dilution Factor: 5

Prep Batch: XXX26839

Prep Method: SW3550C

Prep Date/Time: 05/14/12 15:00

Initial Prep Wt./Vol.: 22.657 g

Prep Extract Vol.: 1 mL

Container ID: 1121591022-A

Analyst: RTS

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **EP-5+60-4**

SGS Ref. #: 1121591022

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 69.5

Collection Date/Time: 05/03/12 16:30

Receipt Date/Time: 05/09/12 16:15

Solids

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Total Solids	69.5		%	1	SPT8624		

Batch Information

Analytical Batch: SPT8624

Analytical Method: SM21 2540G

Analysis Date/Time: 05/11/12 16:55

Dilution Factor: 1

Initial Prep Wt./Vol.: 1 mL

Container ID:1121591022-A

Analyst: CDE

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:25 pm

Client Sample ID: **TB-01**

SGS Ref. #: 1121591023

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Collection Date/Time: 05/01/12 00:00

Receipt Date/Time: 05/09/12 16:15

Volatile Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Benzene	12.4 U	12.4	ug/Kg	1	VFC10970	VXX23467	
Ethylbenzene	24.8 U	24.8	ug/Kg	1	VFC10970	VXX23467	
Gasoline Range Organics	2.48 U	2.48	mg/Kg	1	VFC10970	VXX23467	
o-Xylene	24.8 U	24.8	ug/Kg	1	VFC10970	VXX23467	
P & M -Xylene	49.6 U	49.6	ug/Kg	1	VFC10970	VXX23467	
Toluene	24.8 U	24.8	ug/Kg	1	VFC10970	VXX23467	
1,4-Difluorobenzene <sur>	96	72-119	%	1	VFC10970	VXX23467	
4-Bromofluorobenzene <sur>	82.5	50-150	%	1	VFC10970	VXX23467	

Batch Information

Analytical Batch: VFC10970	Prep Batch: VXX23467	Initial Prep Wt./Vol.: 50.429 g
Analytical Method: AK101	Prep Method: SW5035A	Prep Extract Vol.: 25 mL
Analysis Date/Time: 05/12/12 03:40	Prep Date/Time: 05/01/12 00:00	Container ID: 1121591023-A
Dilution Factor: 1		Analyst: NRB

Analytical Batch: VFC10970	Prep Batch: VXX23467	Initial Prep Wt./Vol.: 50.429 g
Analytical Method: SW8021B	Prep Method: SW5035A	Prep Extract Vol.: 25 mL
Analysis Date/Time: 05/12/12 03:40	Prep Date/Time: 05/01/12 00:00	Container ID: 1121591023-A
Dilution Factor: 1		Analyst: NRB



SGS Ref.# 1085999 Method Blank
Client Name Unalaska City-Public Works
Project Name/# Ilulak Lake East Point Rd DW
Matrix Soil/Solid (dry weight)

Printed Date/Time 05/29/2012 15:25
Prep Batch XXX26834
Method SW3550C
Date 05/11/2012

QC results affect the following production samples:

1121591001, 1121591002, 1121591003, 1121591004, 1121591006, 1121591007, 1121591008

Parameter	Results	LOQ/CL	DL	Units	Analysis Date
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Semivolatile Organic Fuels Department

Diesel Range Organics	8.27J	20.0	6.20	mg/Kg	05/14/12
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Surrogates

5a Androstane <surr>	85.6	60-120		%	05/14/12
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Batch XFC10364

Method AK102

Instrument HP 7890A FID SV E R

Residual Range Organics	12.4 U	20.0	6.20	mg/Kg	05/14/12
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Surrogates

n-Triacontane-d62 <surr>	83.2	60-120		%	05/14/12
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Batch XFC10364

Method AK103

Instrument HP 7890A FID SV E R



SGS Ref.#	1086047	Method Blank	Printed Date/Time	05/29/2012 15:25
Client Name	Unalaska City-Public Works		Prep	Batch
Project Name/#	Ilulaq Lake East Point Rd DW			Method
Matrix	Soil/Solid (dry weight)			Date

QC results affect the following production samples:
1121591001, 1121591002, 1121591003, 1121591004, 1121591005, 1121591006, 1121591007, 1121591008, 1121591009,
1121591010, 1121591011, 1121591012, 1121591013, 1121591014, 1121591015, 1121591016, 1121591017, 1121591018,
1121591019, 1121591020, 1121591021, 1121591022

Parameter	Results	LOQ/CL	DL	Units	Analysis Date
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Solids

Total Solids	100			%	05/11/12
Batch	SPT8624				
Method	SM21 2540G				
Instrument					



SGS Ref.# 1086049 Method Blank
Client Name Unalaska City-Public Works
Project Name/# Ilulak Lake East Point Rd DW
Matrix Soil/Solid (dry weight)

Printed Date/Time 05/29/2012 15:25
Prep Batch XXX26835
Method SW3550C
Date 05/14/2012

QC results affect the following production samples:

1121591001, 1121591002, 1121591003, 1121591004, 1121591006, 1121591007, 1121591008, 1121591009, 1121591010,
1121591011, 1121591012, 1121591013, 1121591014, 1121591015, 1121591016, 1121591017

Parameter	Results	LOQ/CL	DL	Units	Analysis Date
Polynuclear Aromatics GC/MS					
1-Methylnaphthalene	3.00 U	5.00	1.50	ug/Kg	05/15/12
2-Methylnaphthalene	3.00 U	5.00	1.50	ug/Kg	05/15/12
Acenaphthene	3.00 U	5.00	1.50	ug/Kg	05/15/12
Acenaphthylene	3.00 U	5.00	1.50	ug/Kg	05/15/12
Anthracene	3.00 U	5.00	1.50	ug/Kg	05/15/12
Benzo(a)Anthracene	3.00 U	5.00	1.50	ug/Kg	05/15/12
Benzo[a]pyrene	3.00 U	5.00	1.50	ug/Kg	05/15/12
Benzo[b]Fluoranthene	3.00 U	5.00	1.50	ug/Kg	05/15/12
Benzo[g,h,i]perylene	3.00 U	5.00	1.50	ug/Kg	05/15/12
Benzo[k]fluoranthene	3.00 U	5.00	1.50	ug/Kg	05/15/12
Chrysene	3.00 U	5.00	1.50	ug/Kg	05/15/12
Dibenzo[a,h]anthracene	3.00 U	5.00	1.50	ug/Kg	05/15/12
Fluoranthene	3.00 U	5.00	1.50	ug/Kg	05/15/12
Fluorene	3.00 U	5.00	1.50	ug/Kg	05/15/12
Indeno[1,2,3-c,d] pyrene	3.00 U	5.00	1.50	ug/Kg	05/15/12
Naphthalene	3.00 U	5.00	1.50	ug/Kg	05/15/12
Phenanthrene	3.00 U	5.00	1.50	ug/Kg	05/15/12
Pyrene	3.00 U	5.00	1.50	ug/Kg	05/15/12
Surrogates					
2-Fluorobiphenyl <surr>	79.3	45-105		%	05/15/12
Terphenyl-d14 <surr>	109	30-125		%	05/15/12
Batch	XMS6656				
Method	8270D SIMS (PAH)				
Instrument	HP 6890/5973 MS SVQA				



SGS Ref.# 1086093 Method Blank
Client Name Unalaska City-Public Works
Project Name/# Iluluaq Lake East Point Rd DW
Matrix Soil/Solid (dry weight)

Printed Date/Time 05/29/2012 15:25
Prep Batch VXX23467
Method SW5035A
Date 05/11/2012

QC results affect the following production samples:

1121591001, 1121591002, 1121591003, 1121591004, 1121591005, 1121591006, 1121591007, 1121591008, 1121591009,
1121591010, 1121591011, 1121591012, 1121591013, 1121591014, 1121591023

Parameter	Results	LOQ/CL	DL	Units	Analysis Date
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Volatile Fuels Department

Gasoline Range Organics	1.50 U	2.50	0.750	mg/Kg	05/11/12
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Surrogates

4-Bromofluorobenzene <surr>	92.6	50-150		%	05/11/12
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Batch VFC10970

Method AK101

Instrument Agilent 7890 PID/FID

Benzene	8.00 U	12.5	4.00	ug/Kg	05/11/12
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Ethylbenzene	15.6 U	25.0	7.80	ug/Kg	05/11/12
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o-Xylene	15.6 U	25.0	7.80	ug/Kg	05/11/12
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P & M -Xylene	30.0 U	50.0	15.0	ug/Kg	05/11/12
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Toluene	15.6 U	25.0	7.80	ug/Kg	05/11/12
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Surrogates

1,4-Difluorobenzene <surr>	95.7	72-119		%	05/11/12
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Batch VFC10970

Method SW8021B

Instrument Agilent 7890 PID/FID



SGS Ref.# 1086143 Method Blank
Client Name Unalaska City-Public Works
Project Name/# Iluluaq Lake East Point Rd DW
Matrix Soil/Solid (dry weight)

Printed Date/Time 05/29/2012 15:25
Prep Batch XXX26837
Method SW3550C
Date 05/14/2012

QC results affect the following production samples:

1121591005, 1121591009, 1121591010, 1121591011, 1121591012, 1121591013, 1121591014, 1121591015, 1121591016,
1121591017, 1121591018, 1121591019, 1121591020, 1121591021, 1121591022

Parameter	Results	LOQ/CL	DL	Units	Analysis Date
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Semivolatile Organic Fuels Department

Diesel Range Organics	12.4 U	20.0	6.20	mg/Kg	05/16/12
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Surrogates

5a Androstane <surr>	75.3	60-120		%	05/16/12
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Batch XFC10365

Method AK102

Instrument HP 7890A FID SV E R

Residual Range Organics	12.4 U	20.0	6.20	mg/Kg	05/16/12
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Surrogates

n-Triacontane-d62 <surr>	77.4	60-120		%	05/16/12
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Batch XFC10365

Method AK103

Instrument HP 7890A FID SV E R



SGS Ref.# 1086244 Method Blank
Client Name Unalaska City-Public Works
Project Name/# Iluluaq Lake East Point Rd DW
Matrix Soil/Solid (dry weight)

Printed Date/Time 05/29/2012 15:25
Prep Batch XXX26839
Method SW3550C
Date 05/14/2012

QC results affect the following production samples:

1121591005, 1121591018, 1121591019, 1121591020, 1121591021, 1121591022

Parameter	Results	LOQ/CL	DL	Units	Analysis Date
<u>Polynuclear Aromatics GC/MS</u>					
1-Methylnaphthalene	3.00 U	5.00	1.50	ug/Kg	05/15/12
2-Methylnaphthalene	3.00 U	5.00	1.50	ug/Kg	05/15/12
Acenaphthene	3.00 U	5.00	1.50	ug/Kg	05/15/12
Acenaphthylene	3.00 U	5.00	1.50	ug/Kg	05/15/12
Anthracene	3.00 U	5.00	1.50	ug/Kg	05/15/12
Benzo(a)Anthracene	3.00 U	5.00	1.50	ug/Kg	05/15/12
Benzo[a]pyrene	3.00 U	5.00	1.50	ug/Kg	05/15/12
Benzo[b]Fluoranthene	3.00 U	5.00	1.50	ug/Kg	05/15/12
Benzo[g,h,i]perylene	3.00 U	5.00	1.50	ug/Kg	05/15/12
Benzo[k]fluoranthene	3.00 U	5.00	1.50	ug/Kg	05/15/12
Chrysene	3.00 U	5.00	1.50	ug/Kg	05/15/12
Dibenzo[a,h]anthracene	3.00 U	5.00	1.50	ug/Kg	05/15/12
Fluoranthene	3.00 U	5.00	1.50	ug/Kg	05/15/12
Fluorene	3.00 U	5.00	1.50	ug/Kg	05/15/12
Indeno[1,2,3-c,d] pyrene	3.00 U	5.00	1.50	ug/Kg	05/15/12
Naphthalene	3.00 U	5.00	1.50	ug/Kg	05/15/12
Phenanthrene	3.00 U	5.00	1.50	ug/Kg	05/15/12
Pyrene	3.00 U	5.00	1.50	ug/Kg	05/15/12
Surrogates					
2-Fluorobiphenyl <surr>	79.7	45-105		%	05/15/12
Terphenyl-d14 <surr>	113	30-125		%	05/15/12

Batch XMS6656
Method 8270D SIMS (PAH)
Instrument HP 6890/5973 MS SVQA



SGS Ref.# 1086434 Method Blank
Client Name Unalaska City-Public Works
Project Name/# Ilulak Lake East Point Rd DW
Matrix Soil/Solid (dry weight)

Printed Date/Time 05/29/2012 15:25
Prep Batch VXX23473
Method SW5035A
Date 05/15/2012

QC results affect the following production samples:

1121591008, 1121591015, 1121591016, 1121591017, 1121591018, 1121591019, 1121591020, 1121591021, 1121591022

Parameter	Results	LOQ/CL	DL	Units	Analysis Date
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Volatile Fuels Department

Gasoline Range Organics	1.50 U	2.50	0.750	mg/Kg	05/15/12
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Surrogates

4-Bromofluorobenzene <surr>	98.8	50-150		%	05/15/12
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Batch VFC10972

Method AK101

Instrument Agilent 7890 PID/FID

Benzene	8.00 U	12.5	4.00	ug/Kg	05/15/12
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Ethylbenzene	15.6 U	25.0	7.80	ug/Kg	05/15/12
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o-Xylene	15.6 U	25.0	7.80	ug/Kg	05/15/12
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P & M -Xylene	30.0 U	50.0	15.0	ug/Kg	05/15/12
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Toluene	9.75J	25.0	7.80	ug/Kg	05/15/12
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Surrogates

1,4-Difluorobenzene <surr>	95.7	72-119		%	05/15/12
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Batch VFC10972

Method SW8021B

Instrument Agilent 7890 PID/FID



SGS Ref.# 1086048 Duplicate
Client Name Unalaska City-Public Works
Project Name/# Ilulaq Lake East Point Rd DW
Original 1121617001
Matrix Soil/Solid (dry weight)

Printed Date/Time 05/29/2012 15:25
Prep Batch
Method
Date

QC results affect the following production samples:

1121591001, 1121591002, 1121591003, 1121591004, 1121591005, 1121591006, 1121591007, 1121591008, 1121591009, 1121591010,
1121591011, 1121591012, 1121591013, 1121591014, 1121591015, 1121591016, 1121591017, 1121591018, 1121591019, 1121591020,
1121591021, 1121591022

Parameter	Original Result	QC Result	Units	RPD	RPD Limits	Analysis Date
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Solids

Total Solids	97.8	97.8	%	0	(< 15)	05/11/2012
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Batch SPT8624
Method SM21 2540G
Instrument



SGS Ref.#	1086000	Lab Control Sample	Printed Date/Time	05/29/2012	15:25
	1086001	Lab Control Sample Duplicate	Prep	Batch	XXX26834
Client Name	Unalaska City-Public Works		Method	SW3550C	
Project Name/#	Iluluaq Lake East Point Rd DW		Date	05/11/2012	
Matrix	Soil/Solid (dry weight)				

QC results affect the following production samples:

1121591001, 1121591002, 1121591003, 1121591004, 1121591006, 1121591007, 1121591008

Parameter	QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
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Semivolatile Organic Fuels Department

Diesel Range Organics	LCS	161	96	(75-125)		167 mg/Kg	05/14/2012
	LCSD	156	94		3	(< 20)	167 mg/Kg 05/14/2012

Surrogates

5a Androstane <surr>	LCS		97	(60-120)			05/14/2012
	LCSD		95		1		05/14/2012

Batch	XFC10364	
Method	AK102	
Instrument	HP 7890A	FID SV E R

Residual Range Organics	LCS	178	107	(60-120)		167 mg/Kg	05/14/2012
	LCSD	173	104		3	(< 20)	167 mg/Kg 05/14/2012

Surrogates

n-Triacontane-d62 <surr>	LCS		94	(60-120)			05/14/2012
	LCSD		91		2		05/14/2012

Batch	XFC10364	
Method	AK103	
Instrument	HP 7890A	FID SV E R



SGS Ref.#	1086050	Lab Control Sample	Printed Date/Time	05/29/2012	15:25
			Prep	Batch	XXX26835
Client Name	Unalaska City-Public Works			Method	SW3550C
Project Name/#	Ilulaq Lake East Point Rd DW			Date	05/14/2012
Matrix	Soil/Solid (dry weight)				

QC results affect the following production samples:
1121591001, 1121591002, 1121591003, 1121591004, 1121591006, 1121591007, 1121591008, 1121591009, 1121591010, 1121591011,
1121591012, 1121591013, 1121591014, 1121591015, 1121591016, 1121591017

Parameter	QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
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Polynuclear Aromatics GC/MS



SGS Ref.# 1086050 Lab Control Sample

Printed Date/Time 05/29/2012 15:25
Prep XXX26835

Client Name Unalaska City-Public Works
Project Name/# Iluluaq Lake East Point Rd DW
Matrix Soil/Solid (dry weight)

Batch Method SW3550C
Date 05/14/2012

Parameter	QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
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Polynuclear Aromatics GC/MS

1-Methylnaphthalene	LCS	18.5	84	(44-107)		22.2 ug/Kg	05/15/2012
2-Methylnaphthalene	LCS	17.5	79	(45-105)		22.2 ug/Kg	05/15/2012
Acenaphthene	LCS	19.3	87	(45-110)		22.2 ug/Kg	05/15/2012
Acenaphthylene	LCS	17.8	80	(45-105)		22.2 ug/Kg	05/15/2012
Anthracene	LCS	16.3	73	(55-105)		22.2 ug/Kg	05/15/2012
Benzo(a)Anthracene	LCS	20.7	93	(50-110)		22.2 ug/Kg	05/15/2012
Benzo[a]pyrene	LCS	16.2	73	(50-110)		22.2 ug/Kg	05/15/2012
Benzo[b]Fluoranthene	LCS	21.7	98	(45-115)		22.2 ug/Kg	05/15/2012
Benzo[g,h,i]perylene	LCS	20.8	94	(40-125)		22.2 ug/Kg	05/15/2012
Benzo[k]fluoranthene	LCS	21.0	94	(45-125)		22.2 ug/Kg	05/15/2012
Chrysene	LCS	19.8	89	(55-110)		22.2 ug/Kg	05/15/2012
Dibenzo[a,h]anthracene	LCS	19.2	86	(40-125)		22.2 ug/Kg	05/15/2012
Fluoranthene	LCS	20.0	90	(55-115)		22.2 ug/Kg	05/15/2012
Fluorene	LCS	19.3	87	(50-110)		22.2 ug/Kg	05/15/2012
Indeno[1,2,3-c,d] pyrene	LCS	20.3	91	(40-120)		22.2 ug/Kg	05/15/2012
Naphthalene	LCS	16.9	76	(40-105)		22.2 ug/Kg	05/15/2012
Phenanthrene	LCS	20.6	93	(50-110)		22.2 ug/Kg	05/15/2012
Pyrene	LCS	19.1	86	(45-125)		22.2 ug/Kg	05/15/2012

Surrogates

2-Fluorobiphenyl <surr>	LCS		94	(45-105)			05/15/2012
Terphenyl-d14 <surr>	LCS		102	(30-125)			05/15/2012



SGS Ref.#	1086050	Lab Control Sample	Printed Date/Time	05/29/2012	15:25
Client Name	Unalaska City-Public Works		Prep	Batch	XXX26835
Project Name/#	Ilulaq Lake East Point Rd DW			Method	SW3550C
Matrix	Soil/Solid (dry weight)			Date	05/14/2012

Parameter	QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
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Polynuclear Aromatics GC/MS

Batch	XMS6656
Method	8270D SIMS (PAH)
Instrument	HP 6890/5973 MS SVQA



SGS Ref.# 1086094 Lab Control Sample
1086095 Lab Control Sample Duplicate
Client Name Unalaska City-Public Works
Project Name/# Iluluaq Lake East Point Rd DW
Matrix Soil/Solid (dry weight)

Printed Date/Time 05/29/2012 15:25
Prep Batch VXX23467
Method SW5035A
Date 05/11/2012

QC results affect the following production samples:

1121591001, 1121591002, 1121591003, 1121591004, 1121591005, 1121591006, 1121591007, 1121591008, 1121591009, 1121591010,
1121591011, 1121591012, 1121591013, 1121591014, 1121591023

Parameter	QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
<u>Volatile Fuels Department</u>							
Benzene	LCS	1510	120	(75-125)		1250 ug/Kg	05/11/2012
	LCSD	1580	126 *	5	(< 20)	1250 ug/Kg	05/11/2012
Ethylbenzene	LCS	1370	110	(75-125)		1250 ug/Kg	05/11/2012
	LCSD	1440	116	5	(< 20)	1250 ug/Kg	05/11/2012
o-Xylene	LCS	1280	103	(75-125)		1250 ug/Kg	05/11/2012
	LCSD	1350	108	5	(< 20)	1250 ug/Kg	05/11/2012
P & M -Xylene	LCS	2670	107	(80-125)		2500 ug/Kg	05/11/2012
	LCSD	2810	113	5	(< 20)	2500 ug/Kg	05/11/2012
Toluene	LCS	1410	113	(70-125)		1250 ug/Kg	05/11/2012
	LCSD	1490	119	5	(< 20)	1250 ug/Kg	05/11/2012
Surrogates							
1,4-Difluorobenzene <surr>	LCS		100	(72-119)			05/11/2012
	LCSD		100	0			05/11/2012

Batch VFC10970
Method SW8021B
Instrument Agilent 7890 PID/FID



SGS Ref.# 1086096 Lab Control Sample
1086097 Lab Control Sample Duplicate
Client Name Unalaska City-Public Works
Project Name/# Iluluaq Lake East Point Rd DW
Matrix Soil/Solid (dry weight)

Printed Date/Time 05/29/2012 15:25
Prep Batch VXX23467
Method SW5035A
Date 05/11/2012

QC results affect the following production samples:

1121591001, 1121591002, 1121591003, 1121591004, 1121591005, 1121591006, 1121591007, 1121591008, 1121591009, 1121591010,
1121591011, 1121591012, 1121591013, 1121591014, 1121591023

Parameter	QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
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Volatile Fuels Department

Gasoline Range Organics	LCS	9.54	95	(60-120)		10.0 mg/Kg	05/11/2012
	LCSD	9.58	96		0	(< 20)	10.0 mg/Kg 05/11/2012

Surrogates

4-Bromofluorobenzene <surr>	LCS		90	(50-150)			05/11/2012
	LCSD		85		5		05/11/2012

Batch VFC10970
Method AK101
Instrument Agilent 7890 PID/FID



SGS Ref.# 1086144 Lab Control Sample
1086145 Lab Control Sample Duplicate
Client Name Unalaska City-Public Works
Project Name/# Iluluaq Lake East Point Rd DW
Matrix Soil/Solid (dry weight)

Printed Date/Time 05/29/2012 15:25
Prep Batch XXX26837
Method SW3550C
Date 05/14/2012

QC results affect the following production samples:

1121591005, 1121591009, 1121591010, 1121591011, 1121591012, 1121591013, 1121591014, 1121591015, 1121591016, 1121591017,
1121591018, 1121591019, 1121591020, 1121591021, 1121591022

Parameter	QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
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Semivolatile Organic Fuels Department

Diesel Range Organics	LCS	130	78	(75-125)		167 mg/Kg	05/16/2012
	LCSD	139	84		7	(< 20)	167 mg/Kg 05/16/2012

Surrogates

5a Androstane <surr>	LCS		81	(60-120)			05/16/2012
	LCSD		87		7		05/16/2012

Batch XFC10365
Method AK102
Instrument HP 7890A FID SV E R

Residual Range Organics	LCS	143	86	(60-120)		167 mg/Kg	05/16/2012
	LCSD	159	96		11	(< 20)	167 mg/Kg 05/16/2012

Surrogates

n-Triacontane-d62 <surr>	LCS		76	(60-120)			05/16/2012
	LCSD		87		14		05/16/2012

Batch XFC10365
Method AK103
Instrument HP 7890A FID SV E R



SGS Ref.#	1086245	Lab Control Sample	Printed Date/Time	05/29/2012	15:25
			Prep	Batch	XXX26839
Client Name	Unalaska City-Public Works			Method	SW3550C
Project Name/#	Iluluaq Lake East Point Rd DW			Date	05/14/2012
Matrix	Soil/Solid (dry weight)				

QC results affect the following production samples:
1121591005, 1121591018, 1121591019, 1121591020, 1121591021, 1121591022

Parameter	QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
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Polynuclear Aromatics GC/MS



SGS Ref.# 1086245 Lab Control Sample

Printed Date/Time 05/29/2012 15:25

Prep XXX26839

Client Name Unalaska City-Public Works

Batch Method SW3550C

Project Name/# Ilulak Lake East Point Rd DW

Date 05/14/2012

Matrix Soil/Solid (dry weight)

Parameter	QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
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Polynuclear Aromatics GC/MS

1-Methylnaphthalene	LCS	12.2	55	(44-107)		22.2 ug/Kg	05/15/2012
2-Methylnaphthalene	LCS	12.0	54	(45-105)		22.2 ug/Kg	05/15/2012
Acenaphthene	LCS	13.3	60	(45-110)		22.2 ug/Kg	05/15/2012
Acenaphthylene	LCS	12.8	57	(45-105)		22.2 ug/Kg	05/15/2012
Anthracene	LCS	13.3	60	(55-105)		22.2 ug/Kg	05/15/2012
Benzo(a)Anthracene	LCS	24.4	110	(50-110)		22.2 ug/Kg	05/15/2012
Benzo[a]pyrene	LCS	20.7	93	(50-110)		22.2 ug/Kg	05/15/2012
Benzo[b]Fluoranthene	LCS	23.9	108	(45-115)		22.2 ug/Kg	05/15/2012
Benzo[g,h,i]perylene	LCS	19.0	85	(40-125)		22.2 ug/Kg	05/15/2012
Benzo[k]fluoranthene	LCS	24.7	111	(45-125)		22.2 ug/Kg	05/15/2012
Chrysene	LCS	20.5	92	(55-110)		22.2 ug/Kg	05/15/2012
Dibenzo[a,h]anthracene	LCS	20.9	94	(40-125)		22.2 ug/Kg	05/15/2012
Fluoranthene	LCS	19.4	87	(55-115)		22.2 ug/Kg	05/15/2012
Fluorene	LCS	13.4	60	(50-110)		22.2 ug/Kg	05/15/2012
Indeno[1,2,3-c,d] pyrene	LCS	21.3	96	(40-120)		22.2 ug/Kg	05/15/2012
Naphthalene	LCS	11.8	53	(40-105)		22.2 ug/Kg	05/15/2012
Phenanthrene	LCS	15.8	71	(50-110)		22.2 ug/Kg	05/15/2012
Pyrene	LCS	18.7	84	(45-125)		22.2 ug/Kg	05/15/2012

Surrogates

2-Fluorobiphenyl <surr>	LCS		64	(45-105)			05/15/2012
Terphenyl-d14 <surr>	LCS		117	(30-125)			05/15/2012



SGS Ref.#	1086245	Lab Control Sample	Printed Date/Time	05/29/2012	15:25
			Prep	Batch	XXX26839
Client Name	Unalaska City-Public Works			Method	SW3550C
Project Name/#	Ilulaq Lake East Point Rd DW			Date	05/14/2012
Matrix	Soil/Solid (dry weight)				

Parameter	QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
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Polynuclear Aromatics GC/MS

Batch	XMS6656
Method	8270D SIMS (PAH)
Instrument	HP 6890/5973 MS SVQA



SGS Ref.#	1086435	Lab Control Sample	Printed Date/Time	05/29/2012	15:25
	1086436	Lab Control Sample Duplicate	Prep	Batch	VXX23473
Client Name	Unalaska City-Public Works		Method	SW5035A	
Project Name/#	Iluluaq Lake East Point Rd DW		Date	05/15/2012	
Matrix	Soil/Solid (dry weight)				

QC results affect the following production samples:

1121591008, 1121591015, 1121591016, 1121591017, 1121591018, 1121591019, 1121591020, 1121591021, 1121591022

Parameter	QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
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Volatile Fuels Department

Benzene	LCS	1310	105	(75-125)			1250 ug/Kg	05/15/2012
	LCSD	1320	105		1	(< 20)	1250 ug/Kg	05/15/2012
Ethylbenzene	LCS	1310	105	(75-125)			1250 ug/Kg	05/15/2012
	LCSD	1320	106		1	(< 20)	1250 ug/Kg	05/15/2012
o-Xylene	LCS	1280	102	(75-125)			1250 ug/Kg	05/15/2012
	LCSD	1300	104		2	(< 20)	1250 ug/Kg	05/15/2012
P & M -Xylene	LCS	2600	104	(80-125)			2500 ug/Kg	05/15/2012
	LCSD	2630	105		1	(< 20)	2500 ug/Kg	05/15/2012
Toluene	LCS	1310	105	(70-125)			1250 ug/Kg	05/15/2012
	LCSD	1320	105		1	(< 20)	1250 ug/Kg	05/15/2012

Surrogates

1,4-Difluorobenzene <surr>	LCS		100	(72-119)				05/15/2012
	LCSD		100		0			05/15/2012

Batch	VFC10972
Method	SW8021B
Instrument	Agilent 7890 PID/FID



SGS Ref.#	1086437	Lab Control Sample	Printed Date/Time	05/29/2012	15:25
	1086438	Lab Control Sample Duplicate	Prep	Batch	VXX23473
Client Name	Unalaska City-Public Works		Method	SW5035A	
Project Name/#	Ilulaq Lake East Point Rd DW		Date	05/15/2012	
Matrix	Soil/Solid (dry weight)				

QC results affect the following production samples:

1121591008, 1121591015, 1121591016, 1121591017, 1121591018, 1121591019, 1121591020, 1121591021, 1121591022

Parameter	QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
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Volatile Fuels Department

Gasoline Range Organics	LCS	10.6	106	(60-120)		10.0 mg/Kg	05/15/2012
	LCSD	11.3	113		6	(< 20)	10.0 mg/Kg 05/15/2012

Surrogates

4-Bromofluorobenzene <surr>	LCS		106	(50-150)			05/15/2012
	LCSD		105		1		05/15/2012

Batch	VFC10972
Method	AK101
Instrument	Agilent 7890 PID/FID



SGS Ref.#	1086051	Matrix Spike	Printed Date/Time	05/29/2012 15:25
	1086052	Matrix Spike Duplicate	Prep	Batch
			Method	Sonication Extraction Soil 8270
			Date	05/14/2012
Original	1121529001			
Matrix	Soil/Solid (dry weight)			

QC results affect the following production samples:

1121591001, 1121591002, 1121591003, 1121591004, 1121591006, 1121591007, 1121591008, 1121591009, 1121591010,
1121591011, 1121591012, 1121591013, 1121591014, 1121591015, 1121591016, 1121591017

Parameter	Qualifiers	Original Result	QC Result	Pct Recov	MS/MSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
Polynuclear Aromatics GC/MS									
1-Methylnaphthalene	MS	27.9	42.5	58	(44-107)			25.3	ug/Kg 05/15/2012
	MSD		39.4	46		7	(< 30)	25.4	ug/Kg 05/15/2012
2-Methylnaphthalene	MS	50.6	70.6	79	(45-105)			25.3	ug/Kg 05/15/2012
	MSD		64.2	53		10	(< 30)	25.4	ug/Kg 05/15/2012
Acenaphthene	MS	(3.46) U	20.4	81	(45-110)			25.3	ug/Kg 05/15/2012
	MSD		12.6	50		47 *	(< 30)	25.4	ug/Kg 05/15/2012
Acenaphthylene	MS	(3.46) U	22.5	89	(45-105)			25.3	ug/Kg 05/15/2012
	MSD		21.5	85		5	(< 30)	25.4	ug/Kg 05/15/2012
Anthracene	MS	(3.46) U	19.3	77	(55-105)			25.3	ug/Kg 05/15/2012
	MSD		17.6	70		9	(< 30)	25.4	ug/Kg 05/15/2012
Benzo(a)Anthracene	MS	(3.46) U	29.1	115*	(50-110)			25.3	ug/Kg 05/15/2012
	MSD		27.7	109		5	(< 30)	25.4	ug/Kg 05/15/2012
Benzo[a]pyrene	MS	(3.46) U	44.2	175*	(50-110)			25.3	ug/Kg 05/15/2012
	MSD		42.9	169*		3	(< 30)	25.4	ug/Kg 05/15/2012
Benzo[b]Fluoranthene	MS	(3.46) U	27.7	110	(45-115)			25.3	ug/Kg 05/15/2012
	MSD		28.7	113		3	(< 30)	25.4	ug/Kg 05/15/2012
Benzo[g,h,i]perylene	MS	(3.46) U	26.8	106	(40-125)			25.3	ug/Kg 05/15/2012
	MSD		26.8	105		0	(< 30)	25.4	ug/Kg 05/15/2012
Benzo[k]fluoranthene	MS	(3.46) U	30.0	119	(45-125)			25.3	ug/Kg 05/15/2012
	MSD		28.0	110		7	(< 30)	25.4	ug/Kg 05/15/2012
Chrysene	MS	(3.46) U	20.9	83	(55-110)			25.3	ug/Kg 05/15/2012
	MSD		20.6	81		1	(< 30)	25.4	ug/Kg 05/15/2012
Dibenzo[a,h]anthracene	MS	(3.46) U	26.5	105	(40-125)			25.3	ug/Kg 05/15/2012
	MSD		26.0	102		2	(< 30)	25.4	ug/Kg 05/15/2012
Fluoranthene	MS	2.27J	22.7	81	(55-115)			25.3	ug/Kg 05/15/2012
	MSD		21.9	78		4	(< 30)	25.4	ug/Kg 05/15/2012
Fluorene	MS	(3.46) U	25.4	100	(50-110)			25.3	ug/Kg 05/15/2012
	MSD		24.7	97		3	(< 30)	25.4	ug/Kg 05/15/2012
Indeno[1,2,3-c,d] pyrene	MS	(3.46) U	27.6	109	(40-120)			25.3	ug/Kg 05/15/2012
	MSD		27.0	107		2	(< 30)	25.4	ug/Kg 05/15/2012
Naphthalene	MS	(3.46) U	0.00	0*	(40-105)			25.3	ug/Kg 05/15/2012
	MSD		0.00	0*		0	(< 30)	25.4	ug/Kg 05/15/2012
Phenanthrene	MS	(3.46) U	23.4	93	(50-110)			25.3	ug/Kg 05/15/2012
	MSD		27.7	109		17	(< 30)	25.4	ug/Kg 05/15/2012
Pyrene	MS	4.63J	24.4	78	(45-125)			25.3	ug/Kg 05/15/2012
	MSD		23.5	74		4	(< 30)	25.4	ug/Kg 05/15/2012



SGS Ref.# 1086051 Matrix Spike
1086052 Matrix Spike Duplicate

Printed Date/Time 05/29/2012 15:25
Prep Batch XXX26835
Method Sonication Extraction Soil 8270
Date 05/14/2012

Original 1121529001
Matrix Soil/Solid (dry weight)

Parameter	Qualifiers	Original Result	QC Result	Pct Recov	MS/MSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
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Polynuclear Aromatics GC/MS

Surrogates

2-Fluorobiphenyl <surr>	MS	18.1	72	(45-105)				05/15/2012
	MSD	16.2	64		11			05/15/2012
Terphenyl-d14 <surr>	MS	24.1	96	(30-125)				05/15/2012
	MSD	24.1	95		0			05/15/2012

Batch XMS6656
Method 8270D SIMS (PAH)
Instrument HP 6890/5973 MS SVQA



SGS Ref.# 1086102 Matrix Spike
1086103 Matrix Spike Duplicate

Printed Date/Time 05/29/2012 15:25
Prep Batch VXX23467
Method AK101 Extraction (S)
Date 05/11/2012

Original 1121529001
Matrix Soil/Solid (dry weight)

QC results affect the following production samples:

1121591001, 1121591002, 1121591003, 1121591004, 1121591005, 1121591006, 1121591007, 1121591008, 1121591009,
1121591010, 1121591011, 1121591012, 1121591013, 1121591014, 1121591023

Parameter	Qualifiers	Original Result	QC Result	Pct Recov	MS/MSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
Volatile Fuels Department									
Benzene	MS	6.32J	1879	119	(75-125)			1578 ug/Kg	05/11/2012
	MSD		1937	122		3	(< 20)	1578 ug/Kg	05/11/2012
Ethylbenzene	MS	96.7	1775	106	(75-125)			1578 ug/Kg	05/11/2012
	MSD		1833	110		3	(< 20)	1578 ug/Kg	05/11/2012
o-Xylene	MS	104	1937	116	(75-125)			1578 ug/Kg	05/11/2012
	MSD		1984	120		3	(< 20)	1578 ug/Kg	05/11/2012
P & M -Xylene	MS	178	3550	107	(80-125)			3155 ug/Kg	05/11/2012
	MSD		3666	111		3	(< 20)	3155 ug/Kg	05/11/2012
Toluene	MS	46.2	1821	112	(70-125)			1578 ug/Kg	05/11/2012
	MSD		1879	117		4	(< 20)	1578 ug/Kg	05/11/2012
Surrogates									
1,4-Difluorobenzene <surr>	MS		1543	98	(72-119)				05/11/2012
	MSD		1543	98		0			05/11/2012

Batch VFC10970
Method SW8021B
Instrument Agilent 7890 PID/FID



SGS Ref.#	1086246	Matrix Spike	Printed Date/Time	05/29/2012 15:25	
	1086247	Matrix Spike Duplicate		Prep	Batch
				Method	Sonication Extraction Soil 8270
				Date	05/14/2012
Original	1121591018				
Matrix	Soil/Solid (dry weight)				

QC results affect the following production samples:
1121591005, 1121591018, 1121591019, 1121591020, 1121591021, 1121591022

Parameter	Qualifiers	Original Result	QC Result	Pet Recov	MS/MSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
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Polynuclear Aromatics GC/MS



SGS Ref.# 1086246 Matrix Spike
1086247 Matrix Spike Duplicate

Printed Date/Time 05/29/2012 15:25
Prep Batch XXX26839
Method Sonication Extraction Soil 8270
Date 05/14/2012

Original 1121591018
Matrix Soil/Solid (dry weight)

Parameter	Qualifiers	Original Result	QC Result	Pct Recov	MS/MSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
Polynuclear Aromatics GC/MS									
1-Methylnaphthalene	MS	(58.3) U	22.9	89	(44-107)			25.8 ug/Kg	05/15/2012
	MSD		23.0	89		1	(< 30)	25.9 ug/Kg	05/15/2012
2-Methylnaphthalene	MS	(58.3) U	25.0	97	(45-105)			25.8 ug/Kg	05/15/2012
	MSD		29.9	115*		18	(< 30)	25.9 ug/Kg	05/15/2012
Acenaphthene	MS	(58.3) U	22.6	88	(45-110)			25.8 ug/Kg	05/15/2012
	MSD		27.4	106		19	(< 30)	25.9 ug/Kg	05/15/2012
Acenaphthylene	MS	(58.3) U	59.2	230*	(45-105)			25.8 ug/Kg	05/15/2012
	MSD		63.2	243*		7	(< 30)	25.9 ug/Kg	05/15/2012
Anthracene	MS	(58.3) U	39.9	155*	(55-105)			25.8 ug/Kg	05/15/2012
	MSD		38.0	147*		5	(< 30)	25.9 ug/Kg	05/15/2012
Benzo(a)Anthracene	MS	71.3	78.4	28*	(50-110)			25.8 ug/Kg	05/15/2012
	MSD		73.7	9*		6	(< 30)	25.9 ug/Kg	05/15/2012
Benzo[a]pyrene	MS	141	141	0*	(50-110)			25.8 ug/Kg	05/15/2012
	MSD		148	25*		5	(< 30)	25.9 ug/Kg	05/15/2012
Benzo[b]Fluoranthene	MS	(58.3) U	0.00	0*	(45-115)			25.8 ug/Kg	05/15/2012
	MSD		0.00	0*		0	(< 30)	25.9 ug/Kg	05/15/2012
Benzo[g,h,i]perylene	MS	68.0	87.8	77	(40-125)			25.8 ug/Kg	05/15/2012
	MSD		102	131*		15	(< 30)	25.9 ug/Kg	05/15/2012
Benzo[k]fluoranthene	MS	(58.3) U	0.00	0*	(45-125)			25.8 ug/Kg	05/15/2012
	MSD		0.00	0*		0	(< 30)	25.9 ug/Kg	05/15/2012
Chrysene	MS	92.8	92.8	0*	(55-110)			25.8 ug/Kg	05/15/2012
	MSD		103	38*		10	(< 30)	25.9 ug/Kg	05/15/2012
Dibenzo[a,h]anthracene	MS	(58.3) U	36.1	140*	(40-125)			25.8 ug/Kg	05/15/2012
	MSD		43.3	167*		18	(< 30)	25.9 ug/Kg	05/15/2012
Fluoranthene	MS	86.4	69.1	-67*	(55-115)			25.8 ug/Kg	05/15/2012
	MSD		60.3	-101*		14	(< 30)	25.9 ug/Kg	05/15/2012
Fluorene	MS	(58.3) U	36.5	142*	(50-110)			25.8 ug/Kg	05/15/2012
	MSD		35.5	137*		3	(< 30)	25.9 ug/Kg	05/15/2012
Indeno[1,2,3-c,d] pyrene	MS	(58.3) U	67.5	262*	(40-120)			25.8 ug/Kg	05/15/2012
	MSD		66.9	258*		1	(< 30)	25.9 ug/Kg	05/15/2012
Naphthalene	MS	(58.3) U	19.2	75	(40-105)			25.8 ug/Kg	05/15/2012
	MSD		20.3	78		6	(< 30)	25.9 ug/Kg	05/15/2012
Phenanthrene	MS	(58.3) U	85.3	331*	(50-110)			25.8 ug/Kg	05/15/2012
	MSD		77.0	297*		10	(< 30)	25.9 ug/Kg	05/15/2012
Pyrene	MS	232	193	-152*	(45-125)			25.8 ug/Kg	05/15/2012
	MSD		213	-71*		10	(< 30)	25.9 ug/Kg	05/15/2012
Surrogates									
2-Fluorobiphenyl <surr>	MS		22.4	87	(45-105)				05/15/2012
	MSD		21.5	83		4			05/15/2012
Terphenyl-d14 <surr>	MS		39.2	152*	(30-125)				05/15/2012



Printed Date/Time	05/29/2012 15:25
Prep Batch	XXX26839
Method	Sonication Extraction Soil 8270
Date	05/14/2012

Parameter	Qualifiers	Original Result	QC Result	Pct Recov	MS/MSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
-----------	------------	--------------------	--------------	--------------	------------------	-----	---------------	------------------	------------------

MSD	38.0	146*	3	05/15/2012
-----	------	------	---	------------

Batch	XMS6656
Method	8270D SIMS (PAH)
Instrument	HP 6890/5973 MS SVQA



SGS Ref.#	1086439	Matrix Spike
	1086440	Matrix Spike Duplicate

Printed Date/Time	05/29/2012 15:25
Prep Batch	VXX23473
Method	AK101 Extraction (S)
Date	05/15/2012

Original	1121617002
Matrix	Soil/Solid (dry weight)

QC results affect the following production samples:

1121591008, 1121591015, 1121591016, 1121591017, 1121591018, 1121591019, 1121591020, 1121591021, 1121591022

Parameter	Qualifiers	Original Result	QC Result	Pct Recov	MS/MSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
-----------	------------	--------------------	--------------	--------------	------------------	-----	---------------	------------------	------------------

Volatile Fuels Department

Benzene	MS	(5.72) U	910	109	(75-125)		833	ug/Kg	05/15/2012
	MSD		919	110		1 (< 20)	833	ug/Kg	05/15/2012
Ethylbenzene	MS	7.86J	920	109	(75-125)		833	ug/Kg	05/15/2012
	MSD		952	113		3 (< 20)	833	ug/Kg	05/15/2012
o-Xylene	MS	14.8J	904	107	(75-125)		833	ug/Kg	05/15/2012
	MSD		949	112		5 (< 20)	833	ug/Kg	05/15/2012
P & M -Xylene	MS	32.0J	1832	108	(80-125)		1668	ug/Kg	05/15/2012
	MSD		1924	114		5 (< 20)	1668	ug/Kg	05/15/2012
Toluene	MS	22.3	921	108	(70-125)		833	ug/Kg	05/15/2012
	MSD		946	111		3 (< 20)	833	ug/Kg	05/15/2012

Surrogates

1,4-Difluorobenzene <surr>	MS	828	99	(72-119)	05/15/2012
	MSD	822	99	1	05/15/2012

Batch	VFC10972
Method	SW8021B
Instrument	Agilent 7890 PID/FID



SGS North America Inc.
CHAIN OF CUSTODY RECORD

Locations N/A
• Alaska
• New Jersey
• North Carolina
• West Virginia
www.ui

1121591



1 CLIENT: <u>City of Unalaska Port of Dutch Harbor</u>		SGS Reference #:		page <u>1</u> of <u>3</u>	
CONTACT: <u>Robert Lund</u>		PHONE NO: <u>907-581-1260</u>			
PROJECT NAME: <u>Ilulag Lake/East Point</u>		PROJECT PWSID/ PERMIT#:			
REPORTS TO: <u>Robert Lund</u>		EMAIL: <u>rlund@ci.unalaska.sk.us</u>			
INVOICE TO: <u>Client</u>		QUOTE #: <u>10199</u>			
P.O. #: <u>—</u>					
RESERVED for lab use	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX CODE	
1 A-B	DW-0+00-4	050112	1000	S	
2 A-B	DW-0+50-4	050112	1115	S	
3 A-B	DW-1+00-4	050112	1020	S	
4 A-B	DW-1+50-4	050112	1100	S	
5 A-B	DW-2+00-4	050112	1145	S	
6 A-B	DW-2+50-4	050112	1400	S	
7 A-B	DW-3+00-4	050112	0930	S	
8 A-B	DW-3+50-4	050112	1330	S	
9 A-B	DW-4+00-4	050812	1130	S	
10 A-B	DUP-01	050112	—	S	
Collected/Relinquished By: (1)	Date	Time	Received By:	Received By:	
<u>Robert Lund</u>	<u>050912</u>	<u>0830</u>	<u>Pennar</u>	<u>SGS Anchorage</u>	
Relinquished By: (2)	Date	Time	Received By:	Received By:	
Relinquished By: (3)	Date	Time	Received By:	Received By:	
Relinquished By: (4)	Date	Time	Received By:	Received By:	
	<u>5/9/12</u>	<u>1615</u>	<u>Robert Lund</u>	<u>SGS Anchorage</u>	

SAMPLE TYPE	Preservatives Used	Analysis Required	MOH	NA	NA	REMARKS/LOC ID
C=						
COMP						
G=						
GRAB						
MI=						
Multi						
Incremental						
Samples						
# CONTAINERS						
620/1317	AK01	AK02	AK03	AK04	AK05	PID = 0.0 ppm
620/1317	AK01	AK02	AK03	AK04	AK05	0.1
620/1317	AK01	AK02	AK03	AK04	AK05	0.3
620/1317	AK01	AK02	AK03	AK04	AK05	0.3
620/1317	AK01	AK02	AK03	AK04	AK05	0.0
620/1317	AK01	AK02	AK03	AK04	AK05	0.1
620/1317	AK01	AK02	AK03	AK04	AK05	0.4
620/1317	AK01	AK02	AK03	AK04	AK05	0.1
620/1317	AK01	AK02	AK03	AK04	AK05	1.0
620/1317	AK01	AK02	AK03	AK04	AK05	—

Data Deliverable Requirements:
Alaska DEC. PDF NMS ACCESS

Requested Turnaround Time and/or Special Instructions:
Std TAT. Samples are soil w/ petroleum hydrocarbons (aged)

Chain of Custody Seal: (Circle)
INTACT BROKEN ABSENT
(See attached Sample Receipt Form)

Temperature Blank °C: 0.50#11
or Ambient []
(See attached Sample Receipt Form)



SGS North America Inc.
CHAIN OF CUSTODY RECORD

Locations Nat'l
• Alaska
• New Jersey
• North Carolina
• West Virginia
www.usgs.gov

1121591



1 CLIENT: City of Unalaska Port of Dutch Harbor
CONTACT: Robert Lund PHONE NO: 907-581-1260
PROJECT NAME: Ilulag Lake/Est Port PROJECT/ PWSID/ PERMIT#:
REPORTS TO: Robert Lund EMAIL: rlund@ci.unalaska.ak.us
INVOICE TO: Client QUOTE #: 10199 P.O. #: —

SGS Reference #:

page 2 of 3

#	CONTAINERS	SAMPLE TYPE C= COMP G= GRAB MI= Multi Incremental	PRESERVES USED	ANALYSIS REQUIRED	MOOH NA	NA	NA	REMARKS/ LOC ID
1	EP-1460-2	2	G	X	AK101	AK102	AK103	PID=3.7 ppm
2	EP-2+10-2	2	G	X	AK101	AK102	AK103	106.7
3	EP-3+10-2	2	G	X	AK101	AK102	AK103	1.7
4	EP-3+10-2	2	G	X	AK101	AK102	AK103	2.1
5	EP-4+10-2	2	G	X	AK101	AK102	AK103	3.2
6	EP-4+10-4	2	G	X	AK101	AK102	AK103	2.7
7	EP-4+10-2	2	G	X	AK101	AK102	AK103	3.7
8	EP-4+10-4	2	G	X	AK101	AK102	AK103	100.0
9	EP-5+10-2	2	G	X	AK101	AK102	AK103	4.9
10	EP-5+10-4	2	G	X	AK101	AK102	AK103	119.1

4

Collected/Relinquished By: (1) Robert Lund Date 05/09/12 Time 0830
Received By: Pearce → SGS
Relinquished By: (2) _____ Date _____ Time _____
Relinquished By: (3) _____ Date _____ Time _____
Relinquished By: (4) _____ Date 5/9/12 Time 1615
Received For Laboratory By: [Signature]

Requested Turnaround Time and/or Special Instructions:
Std TAT. Samples are soil w/ petroleum hydrocarbons (aged)

Chain of Custody Seal: (Circle)
INTACT 1512 BROKEN ABSENT
(See attached Sample Receipt Form)

Temperature Blank °C 0.0 # 11
0.0 Ambient []
(See attached Sample Receipt Form)

[illegible]



SAMPLE RECEIPT FORM

Review Criteria:	Condition:	Comments/Action Taken:
Were custody seals intact? Note # & location, if applicable. COC accompanied samples?	☒ Yes No N/A ☒ Yes No N/A	IF, in Both
Temperature blank compliant* (i.e., 0-6°C after correction factor)? * Note: Exemption permitted for chilled samples collected less than 8 hours ago. Cooler ID: <u>1</u> @ <u>0.8°</u> w/ Therm.ID: <u>11</u> Cooler ID: <u>2</u> @ <u>0.0°</u> w/ Therm.ID: <u>11</u> Cooler ID: _____ @ _____ w/ Therm.ID: _____ Cooler ID: _____ @ _____ w/ Therm.ID: _____ Cooler ID: _____ @ _____ w/ Therm.ID: _____ Note: If non-compliant, use form FS-0029 to document affected samples/analyses. If samples are received <u>without</u> a temperature blank, the "cooler temperature" will be documented in lieu of the temperature blank & "COOLER TEMP" will be noted to the right. In cases where neither a temp blank <u>nor</u> cooler temp can be obtained, note "ambient" or "chilled." If temperature(s) <0°C, were all sample containers ice free?	☒ Yes No N/A ☒ Yes No N/A ☒ Yes No ☒ N/A	
Delivery method (specify all that apply): USPS ☒ Alert Courier Road Runner AK Air Lynden Carlisle ERA ☒ FedEx FedEx UPS NAC Other: → For WO# with airbills, was the WO# & airbill info recorded in the Front Counter eLog?	Note ABN/tracking # ☒ See Attached or N/A ☒ Yes No N/A	
→ For samples received with payment, note amount (\$) and cash / check / CC (circle one) or note: → For samples received in FBKS, ANCH staff will verify all criteria are reviewed.		☒ N/A ☒ N/A SRF Initiated by:
Were samples received within hold time? Note: Refer to form F-083 "Sample Guide" for hold time information. Do samples match COC* (i.e., sample IDs, dates/times collected)? * Note: Exemption permitted if times differ <1hr; in which case, use times on COC. Were analyses requested unambiguous?	☒ Yes No N/A ☒ Yes No N/A ☒ Yes No N/A	
Were samples in good condition (no leaks/cracks/breakage)? Packing material used (specify all that apply) ☒ Bubble Wrap Separate plastic bags Vermiculite Other:	☒ Yes No N/A ☒ Yes No N/A	
Were all VOA vials free of headspace (i.e., bubbles ≤6 mm)? Were all soil VOAs field extracted with MeOH+BFB?	Yes No ☒ N/A ☒ Yes No N/A	
Were proper containers (type/mass/volume/preservative*) used? * Note: Exemption permitted for waters to be analyzed for metals. Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?	☒ Yes No N/A Yes ☒ No N/A	Trip Blank was transported in cooler #1 with samples 001-010, no trip blank was transported in cooler #2 with samples 011-022
For special handling (e.g., "MI" or foreign soils, lab filter, limited volume, Ref Lab), were bottles/paperwork flagged (e.g., sticker)?	Yes No ☒ N/A	
For preserved waters (other than VOA vials, LL-Mercury or microbiological analyses), was pH verified and compliant? If pH was adjusted, were bottles flagged (i.e., stickers)?	Yes No ☒ N/A Yes No ☒ N/A	
For RUSH/SHORT Hold Time or site-specific QC (e.g., BMS/BMSD/BDUP) samples, were the COC & bottles flagged (e.g., stickers) accordingly? For RUSH/SHORT HT, was email sent?	Yes No ☒ N/A	
For any question answered "No," has the PM been notified and the problem resolved (or paperwork put in their bin)?	☒ Yes No N/A	SRF Completed by: <u>[Signature]</u> PM = ☒ N/A
Was PEER REVIEW of sample numbering/labeling completed?	Yes No ☒ N/A	Peer Reviewed by: ☒ N/A

Additional notes (if applicable):

Note to Client: Any "no" circled above indicates non-compliance with standard procedures and may impact data quality.

339 0 249 4450

339

0249 4450

SHIPPER'S NAME AND ADDRESS

SHIPPER'S ACCOUNT NUMBER

NOT NEGOTIABLE

AIR WAYBILL

(AIR CONSIGNMENT NOTE)

PENAIR6100 BOEING AVE.
ANCHORAGE, ALASKA 99502

Copies 1, 2 and 3 of this Air Waybill are originals and have the same validity.

If the carriage involves an ultimate destination or stop in a country other than the country of departure, the Warsaw Convention may be applicable and the Convention governs and in most cases limits the liability of carriers in respect of loss or damage to cargo. Agreed stopping places are those places (other than the places of departure and destination) shown under requested routing and/or those places shown in carriers' timetables as scheduled stopping places for the route. Address of first carrier is the airport of departure. SEE CONDITIONS ON REVERSE HEREOF.

Received in good condition at _____ on _____ Date/Time

Please print your name _____

Signature _____

1121591

S TO CARRIER

☐ PRIORITY ☒ ECONOMY

TO EXPEDITE MOVEMENT, SHIPMENT MAY BE DIVERTED

TO MOTOR OR OTHER CARRIER UNLESS SHIPPER GIVES

OTHER INSTRUCTIONS HEREON.

DATE

TIME

PHONE

PERSC

AGENTS IATA CODE

ACCOUNT NO.

Domestic Liability: If no value declared PEN AIR liability will not exceed \$.50 per lb. plus transportation costs. See rule G32B5 A.T.P.

AIRPORT OF DEPARTURE (ADDR OF FIRST CARRIER) AND REQUESTED ROUTING

ROUTING AND DESTINATION

TO BY FIRST CARRIER

TO

BY

TO

BY

CURRENCY

CHRG

CODE

WT/VAL

PPD

COLL

OTHER

PPD

COLL

DECLARED VALUE FOR CARRIAGE

DECLARED VALUE FOR CUSTOMS

AIRPORT OF DESTINATION

FOR CARRIER USE ONLY

FLIGHT/DATE

FLIGHT/DATE

HANDLING INFORMATION

Those commodities licensed by US for ultimate destination. Diversion contrary to US law is prohibited.

NO. OF
PIECES
RCPGROSS
WEIGHTkg
lbRATE CLASS
COMMODITY
ITEM NO.CHARGEABLE
WEIGHTRATE
/ CHARGE

- TOTAL

NATURE AND QUANTITY OF GOODS
(INCL. DIMENSIONS OR VOLUME)

2

86

GEN

86

.75

64.50

SOIL SAMPLE

LPC#

37035

2

86

64.50

PREPAID

WEIGHT CHARGE

COLLECT

A.

64.50

VALUATION CHARGE

P-UP

ZONE

B.

DELIVERY CHARGES

ORIGIN ADVANCE CHARGES

DESCRIPTION OF ORIGIN ADVANCE

ITEMS

PREPAID

D.

4.03

TAX

C.

SHIPPER'S R.F.C.

(AMOUNT TO BE ENTERED BY SHIPPER)

OTHER CHARGES AND DESCRIPTION

ITEMS

COLLECT

TOTAL OTHER CHARGES DUE AGENT

TOTAL OTHER CHARGES DUE CARRIER

COD →

CURRENCY

TOTAL PREPAID

TOTAL COLLECT

CURRENCY CONVERSION RATES

TOTAL COLLECT IN DESTINATION CURRENCY

FOR CARRIERS USE ONLY
AT DESTINATION
(ALL COLLECT CHARGES
IN DESTINATION CURRENCY)

CHARGES AT DESTINATION

TOTAL COLLECT CHARGES

Shipper certifies that the particulars on the face hereof are correct and that insofar as any part of the consignment contains dangerous goods (hazardous materials) such part is properly described by name and is in proper condition for carriage by air according to the applicable government regulations and, for international shipments, the current International Air Transport Association's Dangerous Goods Regulations. It is agreed that the goods described herein are accepted in apparent good order and condition (except as noted) for carriage, SUBJECT TO THE CONDITIONS OF CONTRACT ON THE REVERSE HEREOF. THE SHIPPER'S ATTENTION IS DRAWN OF THE NOTICE CONCERNING CARRIERS LIMITATION OF LIABILITY. Shipper may increase such limitation of liability by declaring a higher value for carriage and pay a supplemental charge if required.

PRINTED NAME

SIGNATURE OF SHIPPER OR HIS AGENT AND INITIAL APPROPRIATE BOX BELOW

Z

This shipment does NOT contain Dangerous Goods.

□

This shipment DOES contain Dangerous Goods.

EXECUTED ON

(Date)

(Time)

at

(Place)

SIGNATURE OF ISSUING CARRIER OR ITS AGENT

0249 4450

Alert Expeditors Inc.
DBA/Petroleum Courier Service

528054

Citywide Delivery
272-0349 • 440-3351

8421 Flamingo Drive • Anchorage, Alaska 99502

Date

From

To

Collect ☐

Prepay ☐
Account ☐

Advance Charges ☐

Job #

PO#

2080*

249 448

1121591



Shipped Signature

Total Charge

Received By:



SGS North America Inc.
Alaska Division
Level II Laboratory Data Report

Project: Ilulaq Lake East Point Rd DW
Client: Unalaska City-Public Works
SGS Work Order: 1121608

Released by:

Contents:

Cover Page
Case Narrative
Final Report Pages
Quality Control Summary Forms
Chain of Custody/Sample Receipt Forms



CASE NARRATIVE

Print Date: 5/29/2012

Client Name: Unalaska City-Public Works
Project Name: Iluluaq Lake East Point Rd DW
Workorder No.: 1121608

Sample Comments

Refer to the sample receipt form for information on sample condition.

<u>Lab Sample ID</u>	<u>Sample Type</u>	<u>Client Sample ID</u>
1121608003	PS	EP-6+60-4
	AK102/103 - Unknown hydrocarbon with several peaks is present.	
1121608004	PS	EP-7+10-4
	AK103 - Unknown hydrocarbon with several peaks is present.	
1121608005	PS	EP-7+60-4
	AK102 - The pattern is consistent with a weathered middle distillate. AK103 - Unknown hydrocarbon with several peaks is present.	
1121608006	PS	EP-8+10-4
	AK102 - The pattern is consistent with a weathered middle distillate. AK103 - Unknown hydrocarbon with several peaks is present.	
1121608007	PS	EP-8+60-4
	AK102 - The pattern is consistent with a weathered middle distillate. AK103 - Unknown hydrocarbon with several peaks is present.	
1121608008	PS	DUP-02
	AK103 - Unknown hydrocarbon with several peaks is present.	
1121608009	PS	DUP-03
	AK102 - The pattern is consistent with a weathered middle distillate. AK103 - Unknown hydrocarbon with several peaks is present.	
1121608010	PS	DUP-04
	AK102 - The pattern is consistent with a weathered middle distillate. AK103 - Unknown hydrocarbon with several peaks is present.	
1121608011	PS	EP-9+10-2
	AK103 - Unknown hydrocarbon with several peaks is present.	
1121608012	PS	EP-9+10-4
	AK103 - Unknown hydrocarbon with several peaks is present.	
1121608013	PS	EP-9+60-4
	AK103 - Unknown hydrocarbon with several peaks is present.	
1121608014	PS	EP-10+10-4
	AK102 - The pattern is consistent with a weathered middle distillate. AK103 - Unknown hydrocarbon with several peaks is present.	
1121608015	PS	EP-10+60-2
	AK103 - Unknown hydrocarbon with several peaks is present.	
1121608016	PS	EP-10+60-4
	AK102 - The pattern is consistent with a weathered middle distillate. AK103 - Unknown hydrocarbon with several peaks is present.	

1121608017	PS	EP-11+10-4	AK103 - Unknown hydrocarbon with several peaks is present.
1121608018	PS	EP-11+60-4	AK102/103 - Unknown hydrocarbon with several peaks is present.
1121608019	PS	EP-12+10-4	AK102/103 - Unknown hydrocarbon with several peaks is present.
1121608020	PS	EP-12+60-4	AK102 - The pattern is consistent with a weathered middle distillate. AK103 - Unknown hydrocarbon with several peaks is present.
1121608021	PS	EP-12+97-4	AK102 - The pattern is consistent with a weathered middle distillate. AK103 - Unknown hydrocarbon with several peaks is present.
1086246	* MS	1121591018MS	8270D SIM - MS/MSD recovery for multiple analytes is outside of QC criteria. Refer to LCS for accuracy.
1086247	* MSD	1121591018MSD	8270D SIM - MS/MSD recovery for multiple analytes is outside of QC criteria. Refer to LCS for accuracy.

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



Report of Manual Integrations

Print Date: 5/29/2012 3:26 pm

<u>Laboratory ID</u>	<u>Client Sample ID</u>	<u>Analytical Batch</u>	<u>Method</u>	<u>Analyte</u>	<u>Reason</u>
1086245	LCS for HBN 1339103 [XXX/26839	XMS6656	8270D SIMS (F	Benzo(a)Anthracene	RP
1086245	LCS for HBN 1339103 [XXX/26839	XMS6656	8270D SIMS (F	Benzo[a]pyrene	BLC
1086245	LCS for HBN 1339103 [XXX/26839	XMS6656	8270D SIMS (F	Benzo[b]Fluoranthene	RP
1086245	LCS for HBN 1339103 [XXX/26839	XMS6656	8270D SIMS (F	Benzo[k]fluoranthene	PNF
1086245	LCS for HBN 1339103 [XXX/26839	XMS6656	8270D SIMS (F	Chrysene	BLC
1086246	1121591018MS	XMS6656	8270D SIMS (F	Acenaphthene	RP
1086246	1121591018MS	XMS6656	8270D SIMS (F	Benzo(a)Anthracene	RP
1086246	1121591018MS	XMS6656	8270D SIMS (F	Benzo[a]pyrene	BLC
1086246	1121591018MS	XMS6656	8270D SIMS (F	Chrysene	RP
1086246	1121591018MS	XMS6656	8270D SIMS (F	Dibenzo[a,h]anthracene	RP
1086246	1121591018MS	XMS6656	8270D SIMS (F	Indeno[1,2,3-c,d] pyrene	RP
1086246	1121591018MS	XMS6656	8270D SIMS (F	Phenanthrene	RP
1086247	1121591018MSD	XMS6656	8270D SIMS (F	Benzo(a)Anthracene	RP
1086247	1121591018MSD	XMS6656	8270D SIMS (F	Benzo[a]pyrene	BLC
1086247	1121591018MSD	XMS6656	8270D SIMS (F	Chrysene	RP
1086247	1121591018MSD	XMS6656	8270D SIMS (F	Dibenzo[a,h]anthracene	RP
1086247	1121591018MSD	XMS6656	8270D SIMS (F	Indeno[1,2,3-c,d] pyrene	RP
1086247	1121591018MSD	XMS6656	8270D SIMS (F	Phenanthrene	BLC
1121591018	LABREFQC	XMS6656	8270D SIMS (F	Benzo(a)Anthracene	RP
1121591018	LABREFQC	XMS6656	8270D SIMS (F	Benzo[a]pyrene	BLC
1121591018	LABREFQC	XMS6656	8270D SIMS (F	Benzo[g,h,i]perylene	RP
1121591018	LABREFQC	XMS6656	8270D SIMS (F	Chrysene	RP
1121608001	EP-6+10-2	XMS6656	8270D SIMS (F	Benzo(a)Anthracene	RP
1121608001	EP-6+10-2	XMS6656	8270D SIMS (F	Benzo[a]pyrene	BLC
1121608002	EP-6+10-4	XMS6656	8270D SIMS (F	Benzo(a)Anthracene	RP
1121608002	EP-6+10-4	XMS6656	8270D SIMS (F	Benzo[a]pyrene	BLC
1121608002	EP-6+10-4	XMS6656	8270D SIMS (F	Benzo[b]Fluoranthene	SP
1121608002	EP-6+10-4	XMS6656	8270D SIMS (F	Benzo[k]fluoranthene	RP
1121608002	EP-6+10-4	XMS6656	8270D SIMS (F	Chrysene	BLC
1121608002	EP-6+10-4	XMS6656	8270D SIMS (F	Naphthalene	SP
1121608003	EP-6+60-4	XMS6663	8270D SIMS (F	Benzo(a)Anthracene	RP
1121608003	EP-6+60-4	XMS6663	8270D SIMS (F	Benzo[b]Fluoranthene	SP
1121608003	EP-6+60-4	XMS6663	8270D SIMS (F	Phenanthrene	RP
1121608004	EP-7+10-4	XMS6656	8270D SIMS (F	Benzo[a]pyrene	RP
1121608004	EP-7+10-4	XMS6656	8270D SIMS (F	Chrysene	BLC
1121608004	EP-7+10-4	XMS6656	8270D SIMS (F	Phenanthrene	BLC
1121608005	EP-7+60-4	XMS6663	8270D SIMS (F	Benzo(a)Anthracene	RP
1121608005	EP-7+60-4	XMS6663	8270D SIMS (F	Benzo[b]Fluoranthene	SP
1121608005	EP-7+60-4	XMS6663	8270D SIMS (F	Benzo[k]fluoranthene	RP
1121608005	EP-7+60-4	XMS6663	8270D SIMS (F	Chrysene	BLC
1121608006	EP-8+10-4	XMS6664	8270D SIMS (F	Benzo(a)Anthracene	RP
1121608006	EP-8+10-4	XMS6664	8270D SIMS (F	Benzo[b]Fluoranthene	SP
1121608006	EP-8+10-4	XMS6664	8270D SIMS (F	Chrysene	RP
1121608008	DUP-02	XMS6663	8270D SIMS (F	Benzo(a)Anthracene	RP
1121608008	DUP-02	XMS6663	8270D SIMS (F	Naphthalene	SP
1121608008	DUP-02	XMS6663	8270D SIMS (F	Phenanthrene	RP
1121608009	DUP-03	XMS6663	8270D SIMS (F	Benzo(a)Anthracene	RP
1121608009	DUP-03	XMS6663	8270D SIMS (F	Benzo[b]Fluoranthene	BLC
1121608009	DUP-03	XMS6663	8270D SIMS (F	Benzo[k]fluoranthene	RP
1121608009	DUP-03	XMS6663	8270D SIMS (F	Chrysene	BLC

<u>Laboratory ID</u>	<u>Client Sample ID</u>	<u>Analytical Batch</u>	<u>Method</u>	<u>Analyte</u>	<u>Reason</u>
1121608010	DUP-04	XMS6665	8270D SIMS (F	Benzo[b]Fluoranthene	SP
1121608010	DUP-04	XMS6665	8270D SIMS (F	Benzo[k]fluoranthene	RP
1121608011	EP-9+10-2	XMS6665	8270D SIMS (F	Benzo[b]Fluoranthene	SP
1121608012	EP-9+10-4	XMS6665	8270D SIMS (F	Benzo[b]Fluoranthene	SP
1121608013	EP-9+60-4	XMS6665	8270D SIMS (F	Benzo(a)Anthracene	RP
1121608013	EP-9+60-4	XMS6665	8270D SIMS (F	Benzo[b]Fluoranthene	SP
1121608013	EP-9+60-4	XMS6665	8270D SIMS (F	Benzo[k]fluoranthene	RP
1121608013	EP-9+60-4	XMS6665	8270D SIMS (F	Dibenzo[a,h]anthracene	RP
1121608014	EP-10+10-4	XMS6665	8270D SIMS (F	Benzo[b]Fluoranthene	SP
1121608014	EP-10+10-4	XMS6665	8270D SIMS (F	Phenanthrene	RP
1121608016	EP-10+60-4	XMS6665	8270D SIMS (F	Benzo[b]Fluoranthene	SP
1121608016	EP-10+60-4	XMS6665	8270D SIMS (F	Benzo[k]fluoranthene	SP
1121608016	EP-10+60-4	XMS6665	8270D SIMS (F	Dibenzo[a,h]anthracene	RP
1121608017	EP-11+10-4	XMS6663	8270D SIMS (F	Benzo[b]Fluoranthene	SP
1121608017	EP-11+10-4	XMS6663	8270D SIMS (F	Benzo[k]fluoranthene	RP
1121608017	EP-11+10-4	XMS6663	8270D SIMS (F	Naphthalene	SP, BLC
1121608018	EP-11+60-4	XMS6663	8270D SIMS (F	Benzo(a)Anthracene	RP
1121608018	EP-11+60-4	XMS6663	8270D SIMS (F	Benzo[b]Fluoranthene	SP
1121608018	EP-11+60-4	XMS6663	8270D SIMS (F	Benzo[k]fluoranthene	RP
1121608018	EP-11+60-4	XMS6663	8270D SIMS (F	Chrysene	BLC
1121608019	EP-12+10-4	XMS6663	8270D SIMS (F	Benzo[b]Fluoranthene	SP
1121608019	EP-12+10-4	XMS6663	8270D SIMS (F	Chrysene	BLC
1121608019	EP-12+10-4	XMS6663	8270D SIMS (F	Dibenzo[a,h]anthracene	RP
1121608020	EP-12+60-4	XMS6663	8270D SIMS (F	Benzo[b]Fluoranthene	SP
1121608020	EP-12+60-4	XMS6663	8270D SIMS (F	Benzo[k]fluoranthene	RP
1121608021	EP-12+97-4	XMS6663	8270D SIMS (F	Benzo[b]Fluoranthene	SP
1121608021	EP-12+97-4	XMS6663	8270D SIMS (F	Benzo[k]fluoranthene	RP
1121608021	EP-12+97-4	XMS6663	8270D SIMS (F	Chrysene	BLC

Manual Integration Reason Code Descriptions

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

All DRO/RRO analysis are integrated per SOP.



Laboratory Analytical Report

Client: **Unalaska City-Public Works**

P.O. Box 610
Unalaska, AK 99685

Attn: **Robert Lund**

T: 907-581-1260 F:
rlund@ci.unalaska.ak.us

Project: **Ilulag Lake East Point Rd DW**

Workorder No.: **1121608**

Certification:

This data package is in compliance with the terms and conditions of the contract, both technically and for completeness, unless otherwise noted on the sample data sheet(s) and/or case narrative. This certification applies only to the tested parameters and the specific sample(s) received at the laboratory. If you have any questions regarding this report, or if we can be of further assistance, please contact your SGS Project Manager.

Forest Taylor

Forest.Taylor@sgs.com
Project Manager

Contents (Bookmarked in PDF):

Cover Page
Glossary
Sample Summary Forms
Case Narrative
Sample Results Forms
Batch Summary Forms (by method)
Quality Control Summary Forms (by method)
Chain of Custody/Sample Receipt Forms
Attachments (if applicable)

Enclosed are the analytical results associated with the above work order. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. If you have any questions regarding this report, or if we can be of any other assistance, please contact your SGS Project Manager at 907-562-2343. All work is provided under SGS general terms and conditions (http://www.sgs.com/terms_and_conditions.htm), unless other written agreements have been accepted by both parties.

SGS maintains a formal Quality Assurance/Quality Control (QA/QC) program. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request. The laboratory certification numbers are AK00971 (DW Chemistry & Microbiology) & UST-005 (CS) for ADEC and 2944.01 for DOD ELAP/ISO 17025 (RCRA methods: 1020A, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035B, 6020, 7470A, 7471B, 8021B, 8082A, 8260B, 8270D, 8270D-SIM, 9040B, 9045C, 9056A, 9060A, AK101 and AK102/103). Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP and, when applicable, other regulatory authorities.

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

*	The analyte has exceeded allowable regulatory or control limits.
!	Surrogate out of control limits.
B	Indicates the analyte is found in a blank associated with the sample.
CCV	Continuing Calibration Verification
CL	Control Limit
D	The analyte concentration is the result of a dilution.
DF	Dilution Factor
DL	Detection Limit (i.e., maximum method detection limit)
E	The analyte result is above the calibrated range.
F	Indicates value that is greater than or equal to the DL
GT	Greater Than
ICV	Initial Calibration Verification
J	The quantitation is an estimation.
JL	The analyte was positively identified, but the quantitation is a low estimation.
LCS(D)	Laboratory Control Spike (Duplicate)
LOD	Limit of Detection (i.e., 2xDL)
LOQ	Limit of Quantitation (i.e., reporting or practical quantitation limit)
LT	Less Than
M	A matrix effect was present.
MB	Method Blank
MS(D)	Matrix Spike (Duplicate)
ND	Indicates the analyte is not detected.
Q	QC parameter out of acceptance range.
R	Rejected
RL	Reporting Limit
RPD	Relative Percent Difference
U	Indicates the analyte was analyzed for but not detected.

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



SAMPLE SUMMARY

Print Date: 5/29/2012 3:2f pm

Client Name: Unalaska City-Public Works
Project Name: Iluluaq Lake East Point Rd DW
Workorder No.: 1121608

Analytical Methods

Method Description

8270 PAH SIM Semi-Volatiles GC/MS
AK101/8021 Combo. (S)
AK101/8021 Combo. (S)
Diesel/Residual Range Organics
Diesel/Residual Range Organics
Percent Solids SM2540G

Analytical Method

8270D SIMS (PAH)
AK101
SW8021B
AK102
AK103
SM21 2540G

Sample ID Cross Reference

Lab Sample ID

1121f 08001
1121f 08002
1121f 08003
1121f 08004
1121f 08005
1121f 0800f
1121f 08007
1121f 08008
1121f 08009
1121f 08010
1121f 08011
1121f 08012
1121f 08013
1121f 08014
1121f 08015
1121f 0801f
1121f 08017
1121f 08018
1121f 08019
1121f 08020
1121f 08021
1121f 08022

Client Sample ID

EP-f 610-2
EP-f 610-4
EP-f 6f 0-4
EP-7610-4
EP-76f 0-4
EP-8610-4
EP-86f 0-4
DUP-02
DUP-03
DUP-04
EP-9610-2
EP-9610-4
EP-96f 0-4
EP-10610-4
EP-106f 0-2
EP-106f 0-4
EP-11610-4
EP-116f 0-4
EP-12610-4
EP-126f 0-4
EP-12697-4
TB-02



Detectable Results Summary

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-6+10-4**

SGS Ref. #: 1121608002

Polynuclear Aromatics GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Naphthalene	11.9	ug/Kg
2-Methylnaphthalene	10.3	ug/Kg
1-Methylnaphthalene	26.7	ug/Kg
Phenanthrene	13.7	ug/Kg
Fluoranthene	14.7	ug/Kg
Pyrene	11.0	ug/Kg
Benzo[b]Fluoranthene	8.29	ug/Kg

Client Sample ID: **EP-6+60-4**

SGS Ref. #: 1121608003

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	26.0	mg/Kg
Residual Range Organics	105	mg/Kg

Polynuclear Aromatics GC/MS

Fluoranthene	49.9	ug/Kg
Pyrene	52.7	ug/Kg
Benzo(a)Anthracene	38.4	ug/Kg
Chrysene	38.0	ug/Kg
Benzo[b]Fluoranthene	58.7	ug/Kg
Benzo[a]pyrene	42.2	ug/Kg
Benzo[g,h,i]perylene	39.2	ug/Kg

Client Sample ID: **EP-7+10-4**

SGS Ref. #: 1121608004

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Residual Range Organics	38.2	mg/Kg



Detectable Results Summary

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-7+60-4**

SGS Ref. #: 1121608005

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	29.0	mg/Kg
Residual Range Organics	96.7	mg/Kg

Polynuclear Aromatics GC/MS

2-Methylnaphthalene	8.94	ug/Kg
1-Methylnaphthalene	6.77	ug/Kg
Phenanthrene	36.9	ug/Kg
Anthracene	6.68	ug/Kg
Fluoranthene	40.3	ug/Kg
Pyrene	37.3	ug/Kg
Benzo(a)Anthracene	23.3	ug/Kg
Chrysene	18.3	ug/Kg
Benzo[b]Fluoranthene	29.6	ug/Kg
Benzo[k]fluoranthene	6.47	ug/Kg
Benzo[a]pyrene	21.5	ug/Kg
Indeno[1,2,3-c,d] pyrene	11.1	ug/Kg
Benzo[g,h,i]perylene	12.7	ug/Kg

Client Sample ID: **EP-8+10-4**

SGS Ref. #: 1121608006

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	29.4	mg/Kg
Residual Range Organics	130	mg/Kg

Polynuclear Aromatics GC/MS

Fluoranthene	27.4	ug/Kg
Pyrene	27.5	ug/Kg
Benzo[g,h,i]perylene	29.9	ug/Kg

Client Sample ID: **EP-8+60-4**

SGS Ref. #: 1121608007

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	171	mg/Kg
Residual Range Organics	68.8	mg/Kg



Detectable Results Summary

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **DUP-02**

SGS Ref. #: 1121608008

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Residual Range Organics	51.6	mg/Kg

Polynuclear Aromatics GC/MS

Naphthalene	14.2	ug/Kg
2-Methylnaphthalene	11.3	ug/Kg
1-Methylnaphthalene	31.7	ug/Kg

Client Sample ID: **DUP-03**

SGS Ref. #: 1121608009

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	26.7	mg/Kg
Residual Range Organics	100	mg/Kg

Polynuclear Aromatics GC/MS

Phenanthrene	12.8	ug/Kg
Fluoranthene	34.3	ug/Kg
Pyrene	30.8	ug/Kg
Benzo(a)Anthracene	26.7	ug/Kg
Chrysene	20.3	ug/Kg
Benzo[b]Fluoranthene	39.7	ug/Kg
Benzo[k]fluoranthene	10.9	ug/Kg
Benzo[a]pyrene	25.6	ug/Kg
Indeno[1,2,3-c,d] pyrene	14.6	ug/Kg
Benzo[g,h,i]perylene	16.1	ug/Kg



Detectable Results Summary

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **DUP-04**

SGS Ref. #: 1121608010

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	32.7	mg/Kg
Residual Range Organics	103	mg/Kg

Polynuclear Aromatics GC/MS

Acenaphthene	8.73	ug/Kg
Fluorene	8.70	ug/Kg
Phenanthrene	94.6	ug/Kg
Anthracene	28.6	ug/Kg
Fluoranthene	209	ug/Kg
Pyrene	165	ug/Kg
Benzo(a)Anthracene	90.9	ug/Kg
Chrysene	79.8	ug/Kg
Benzo[b]Fluoranthene	115	ug/Kg
Benzo[k]fluoranthene	31.3	ug/Kg
Benzo[a]pyrene	75.7	ug/Kg
Indeno[1,2,3-c,d] pyrene	46.0	ug/Kg
Dibenzo[a,h]anthracene	12.2	ug/Kg
Benzo[g,h,i]perylene	47.4	ug/Kg

Client Sample ID: **EP-9+10-2**

SGS Ref. #: 1121608011

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Residual Range Organics	57.1	mg/Kg

Client Sample ID: **EP-9+10-4**

SGS Ref. #: 1121608012

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Residual Range Organics	48.7	mg/Kg



Detectable Results Summary

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-9+60-4**

SGS Ref. #: 1121608013

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Residual Range Organics	58.8	mg/Kg

Polynuclear Aromatics GC/MS

Fluoranthene	12.0	ug/Kg
Pyrene	11.7	ug/Kg
Benzo(a)Anthracene	6.10	ug/Kg
Chrysene	6.61	ug/Kg
Benzo[b]Fluoranthene	9.79	ug/Kg
Benzo[a]pyrene	8.47	ug/Kg
Benzo[g,h,i]perylene	7.41	ug/Kg

Client Sample ID: **EP-10+10-4**

SGS Ref. #: 1121608014

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	42.3	mg/Kg
Residual Range Organics	87.1	mg/Kg

Polynuclear Aromatics GC/MS

Fluoranthene	6.35	ug/Kg
Pyrene	6.11	ug/Kg

Client Sample ID: **EP-10+60-2**

SGS Ref. #: 1121608015

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Residual Range Organics	57.1	mg/Kg



Detectable Results Summary

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-10+60-4**

SGS Ref. #: 1121608016

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	101	mg/Kg
Residual Range Organics	148	mg/Kg

Polynuclear Aromatics GC/MS

Phenanthrene	9.27	ug/Kg
Fluoranthene	30.7	ug/Kg
Pyrene	28.5	ug/Kg
Benzo(a)Anthracene	20.2	ug/Kg
Chrysene	19.2	ug/Kg
Benzo[b]Fluoranthene	25.2	ug/Kg
Benzo[k]fluoranthene	6.98	ug/Kg
Benzo[a]pyrene	16.9	ug/Kg
Indeno[1,2,3-c,d] pyrene	10.3	ug/Kg
Benzo[g,h,i]perylene	13.4	ug/Kg

Client Sample ID: **EP-11+10-4**

SGS Ref. #: 1121608017

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Residual Range Organics	36.1	mg/Kg

Client Sample ID: **EP-11+60-4**

SGS Ref. #: 1121608018

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	26.2	mg/Kg
Residual Range Organics	91.1	mg/Kg

Polynuclear Aromatics GC/MS

Phenanthrene	18.9	ug/Kg
Anthracene	6.07	ug/Kg
Fluoranthene	54.4	ug/Kg
Pyrene	48.1	ug/Kg
Benzo(a)Anthracene	45.0	ug/Kg
Chrysene	31.8	ug/Kg
Benzo[b]Fluoranthene	58.1	ug/Kg
Benzo[k]fluoranthene	12.9	ug/Kg
Benzo[a]pyrene	37.2	ug/Kg
Indeno[1,2,3-c,d] pyrene	20.0	ug/Kg
Dibenzo[a,h]anthracene	6.25	ug/Kg
Benzo[g,h,i]perylene	20.9	ug/Kg



Detectable Results Summary

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-12+10-4**

SGS Ref. #: 1121608019

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	44.1	mg/Kg
Residual Range Organics	236	mg/Kg

Polynuclear Aromatics GC/MS

Phenanthrene	16.4	ug/Kg
Fluoranthene	20.9	ug/Kg
Pyrene	18.7	ug/Kg
Benzo(a)Anthracene	16.3	ug/Kg
Chrysene	15.9	ug/Kg
Benzo[b]Fluoranthene	24.9	ug/Kg
Benzo[a]pyrene	16.8	ug/Kg
Indeno[1,2,3-c,d] pyrene	8.65	ug/Kg
Benzo[g,h,i]perylene	10.5	ug/Kg

Client Sample ID: **EP-12+60-4**

SGS Ref. #: 1121608020

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	34.9	mg/Kg
Residual Range Organics	97.3	mg/Kg

Polynuclear Aromatics GC/MS

Phenanthrene	15.4	ug/Kg
Fluoranthene	33.8	ug/Kg
Pyrene	29.9	ug/Kg
Benzo(a)Anthracene	26.2	ug/Kg
Chrysene	19.2	ug/Kg
Benzo[b]Fluoranthene	41.2	ug/Kg
Benzo[k]fluoranthene	8.05	ug/Kg
Benzo[a]pyrene	25.6	ug/Kg
Indeno[1,2,3-c,d] pyrene	14.0	ug/Kg
Benzo[g,h,i]perylene	15.6	ug/Kg



Detectable Results Summary

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-12+97-4**

SGS Ref. #: 1121608021

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	33.0	mg/Kg
Residual Range Organics	113	mg/Kg

Polynuclear Aromatics GC/MS

Acenaphthene	7.61	ug/Kg
Fluorene	8.78	ug/Kg
Phenanthrene	114	ug/Kg
Anthracene	35.0	ug/Kg
Fluoranthene	233	ug/Kg
Pyrene	140	ug/Kg
Benzo(a)Anthracene	119	ug/Kg
Chrysene	97.1	ug/Kg
Benzo[b]Fluoranthene	132	ug/Kg
Benzo[k]fluoranthene	35.7	ug/Kg
Benzo[a]pyrene	86.2	ug/Kg
Indeno[1,2,3-c,d] pyrene	44.2	ug/Kg
Dibenzo[a,h]anthracene	11.8	ug/Kg
Benzo[g,h,i]perylene	47.1	ug/Kg

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-6+10-2**

SGS Ref. #: 1121608001

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 55.8

Collection Date/Time: 05/04/12 09:40

Receipt Date/Time: 05/10/12 16:20

Volatile Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Benzene	61.9 U	61.9	ug/Kg	1	VFC10974	VXX23479	
Ethylbenzene	124 U	124	ug/Kg	1	VFC10974	VXX23479	
Gasoline Range Organics	12.4 U	12.4	mg/Kg	1	VFC10974	VXX23479	
o-Xylene	124 U	124	ug/Kg	1	VFC10974	VXX23479	
P & M -Xylene	248 U	248	ug/Kg	1	VFC10974	VXX23479	
Toluene	124 U	124	ug/Kg	1	VFC10974	VXX23479	
1,4-Difluorobenzene <sur>	97.9	72-119	%	1	VFC10974	VXX23479	
4-Bromofluorobenzene <sur>	95.9	50-150	%	1	VFC10974	VXX23479	

Batch Information

Analytical Batch: VFC10974

Analytical Method: AK101

Analysis Date/Time: 05/15/12 18:21

Dilution Factor: 1

Prep Batch: VXX23479

Prep Method: SW5035A

Prep Date/Time: 05/04/12 09:40

Initial Prep Wt./Vol.: 26.633 g

Prep Extract Vol.: 36.7823 mL

Container ID: 1121608001-B

Analyst: EAB

Analytical Batch: VFC10974

Analytical Method: SW8021B

Analysis Date/Time: 05/15/12 18:21

Dilution Factor: 1

Prep Batch: VXX23479

Prep Method: SW5035A

Prep Date/Time: 05/04/12 09:40

Initial Prep Wt./Vol.: 26.633 g

Prep Extract Vol.: 36.7823 mL

Container ID: 1121608001-B

Analyst: EAB

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-6+10-2**

SGS Ref. #: 1121608001

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 55.8

Collection Date/Time: 05/04/12 09:40

Receipt Date/Time: 05/10/12 16:20

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Diesel Range Organics	35.8 U	35.8	mg/Kg	1	XFC10365	XXX26837	
Residual Range Organics	35.8 U	35.8	mg/Kg	1	XFC10365	XXX26837	
5a Androstane <surr>	69.7	50-150	%	1	XFC10365	XXX26837	
n-Triacontane-d62 <surr>	64.7	50-150	%	1	XFC10365	XXX26837	

Batch Information

Analytical Batch: XFC10365	Prep Batch: XXX26837	Initial Prep Wt./Vol.: 30.045 g
Analytical Method: AK102	Prep Method: SW3550C	Prep Extract Vol.: 1 mL
Analysis Date/Time: 05/16/12 09:21	Prep Date/Time: 05/14/12 15:00	Container ID:1121608001-A
Dilution Factor: 1		Analyst: MCM
Analytical Batch: XFC10365	Prep Batch: XXX26837	Initial Prep Wt./Vol.: 30.045 g
Analytical Method: AK103	Prep Method: SW3550C	Prep Extract Vol.: 1 mL
Analysis Date/Time: 05/16/12 09:21	Prep Date/Time: 05/14/12 15:00	Container ID:1121608001-A
Dilution Factor: 1		Analyst: MCM



Unalaska City-Public Works

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-6+10-2**

SGS Ref. #: 1121608001

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 55.8

Collection Date/Time: 05/04/12 09:40

Receipt Date/Time: 05/10/12 16:20

Polynuclear Aromatics GC/MS

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
1-Methylnaphthalene	8.84 U	8.84	ug/Kg	1	XMS6656	XXX26839	
2-Methylnaphthalene	8.84 U	8.84	ug/Kg	1	XMS6656	XXX26839	
Acenaphthene	8.84 U	8.84	ug/Kg	1	XMS6656	XXX26839	
Acenaphthylene	8.84 U	8.84	ug/Kg	1	XMS6656	XXX26839	
Anthracene	8.84 U	8.84	ug/Kg	1	XMS6656	XXX26839	
Benzo(a)Anthracene	8.84 U	8.84	ug/Kg	1	XMS6656	XXX26839	
Benzo[a]pyrene	8.84 U	8.84	ug/Kg	1	XMS6656	XXX26839	
Benzo[b]Fluoranthene	8.84 U	8.84	ug/Kg	1	XMS6656	XXX26839	
Benzo[g,h,i]perylene	8.84 U	8.84	ug/Kg	1	XMS6656	XXX26839	
Benzo[k]fluoranthene	8.84 U	8.84	ug/Kg	1	XMS6656	XXX26839	
Chrysene	8.84 U	8.84	ug/Kg	1	XMS6656	XXX26839	
Dibenzo[a,h]anthracene	8.84 U	8.84	ug/Kg	1	XMS6656	XXX26839	
Fluoranthene	8.84 U	8.84	ug/Kg	1	XMS6656	XXX26839	
Fluorene	8.84 U	8.84	ug/Kg	1	XMS6656	XXX26839	
Indeno[1,2,3-c,d] pyrene	8.84 U	8.84	ug/Kg	1	XMS6656	XXX26839	
Naphthalene	8.84 U	8.84	ug/Kg	1	XMS6656	XXX26839	
Phenanthrene	8.84 U	8.84	ug/Kg	1	XMS6656	XXX26839	
Pyrene	8.84 U	8.84	ug/Kg	1	XMS6656	XXX26839	
2-Fluorobiphenyl <surr>	79.9	45-105	%	1	XMS6656	XXX26839	
Terphenyl-d14 <surr>	110	30-125	%	1	XMS6656	XXX26839	

Batch Information

Analytical Batch: XMS6656

Analytical Method: 8270D SIMS (PAH)

Analysis Date/Time: 05/15/12 20:27

Dilution Factor: 1

Prep Batch: XXX26839

Prep Method: SW3550C

Prep Date/Time: 05/14/12 15:00

Initial Prep Wt./Vol.: 22.822 g

Prep Extract Vol.: 1 mL

Container ID: 1121608001-A

Analyst: RTS

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-6+10-2**

SGS Ref. #: 1121608001

Collection Date/Time: 05/04/12 09:40

Project ID: Ilulak Lake East Point Rd DW

Receipt Date/Time: 05/10/12 16:20

Matrix: Soil/Solid (dry weight)

Percent Solids: 55.8

Solids

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical</u> <u>Batch</u>	<u>Prep</u> <u>Batch</u>	<u>Qualifiers</u>
Total Solids	55.8		%	1	SPT8625		

Batch Information

Analytical Batch: SPT8625

Initial Prep Wt./Vol.: 1 mL

Analytical Method: SM21 2540G

Analysis Date/Time: 05/14/12 17:00

Container ID:1121608001-A

Dilution Factor: 1

Analyst: CDE

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-6+10-4**

SGS Ref. #: 1121608002

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 62.8

Collection Date/Time: 05/04/12 09:30

Receipt Date/Time: 05/10/12 16:20

Volatile Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Benzene	52.9 U	52.9	ug/Kg	1	VFC10974	VXX23479	
Ethylbenzene	106 U	106	ug/Kg	1	VFC10974	VXX23479	
Gasoline Range Organics	10.6 U	10.6	mg/Kg	1	VFC10974	VXX23479	
o-Xylene	106 U	106	ug/Kg	1	VFC10974	VXX23479	
P & M -Xylene	212 U	212	ug/Kg	1	VFC10974	VXX23479	
Toluene	106 U	106	ug/Kg	1	VFC10974	VXX23479	
1,4-Difluorobenzene <sur>	98	72-119	%	1	VFC10974	VXX23479	
4-Bromofluorobenzene <sur>	109	50-150	%	1	VFC10974	VXX23479	

Batch Information

Analytical Batch: VFC10974

Analytical Method: AK101

Analysis Date/Time: 05/15/12 17:26

Dilution Factor: 1

Prep Batch: VXX23479

Prep Method: SW5035A

Prep Date/Time: 05/04/12 09:30

Initial Prep Wt./Vol.: 26.164 g

Prep Extract Vol.: 34.7436 mL

Container ID: 1121608002-B

Analyst: EAB

Analytical Batch: VFC10974

Analytical Method: SW8021B

Analysis Date/Time: 05/15/12 17:26

Dilution Factor: 1

Prep Batch: VXX23479

Prep Method: SW5035A

Prep Date/Time: 05/04/12 09:30

Initial Prep Wt./Vol.: 26.164 g

Prep Extract Vol.: 34.7436 mL

Container ID: 1121608002-B

Analyst: EAB

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-6+10-4**

SGS Ref. #: 1121608002

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 62.8

Collection Date/Time: 05/04/12 09:30

Receipt Date/Time: 05/10/12 16:20

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Diesel Range Organics	31.7 U	31.7	mg/Kg	1	XFC10365	XXX26837	
Residual Range Organics	31.7 U	31.7	mg/Kg	1	XFC10365	XXX26837	
5a Androstane <surr>	82.5	50-150	%	1	XFC10365	XXX26837	
n-Triacontane-d62 <surr>	79	50-150	%	1	XFC10365	XXX26837	

Batch Information

Analytical Batch: XFC10365	Prep Batch: XXX26837	Initial Prep Wt./Vol.: 30.113 g
Analytical Method: AK102	Prep Method: SW3550C	Prep Extract Vol.: 1 mL
Analysis Date/Time: 05/16/12 07:52	Prep Date/Time: 05/14/12 15:00	Container ID:1121608002-A
Dilution Factor: 1		Analyst: MCM
Analytical Batch: XFC10365	Prep Batch: XXX26837	Initial Prep Wt./Vol.: 30.113 g
Analytical Method: AK103	Prep Method: SW3550C	Prep Extract Vol.: 1 mL
Analysis Date/Time: 05/16/12 07:52	Prep Date/Time: 05/14/12 15:00	Container ID:1121608002-A
Dilution Factor: 1		Analyst: MCM



Unalaska City-Public Works

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-6+10-4**

SGS Ref. #: 1121608002

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 62.8

Collection Date/Time: 05/04/12 09:30

Receipt Date/Time: 05/10/12 16:20

Polynuclear Aromatics GC/MS

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
1-Methylnaphthalene	26.7	7.84	ug/Kg	1	XMS6656	XXX26839	
2-Methylnaphthalene	10.3	7.84	ug/Kg	1	XMS6656	XXX26839	
Acenaphthene	7.84 U	7.84	ug/Kg	1	XMS6656	XXX26839	
Acenaphthylene	7.84 U	7.84	ug/Kg	1	XMS6656	XXX26839	
Anthracene	7.84 U	7.84	ug/Kg	1	XMS6656	XXX26839	
Benzo(a)Anthracene	7.84 U	7.84	ug/Kg	1	XMS6656	XXX26839	
Benzo[a]pyrene	7.84 U	7.84	ug/Kg	1	XMS6656	XXX26839	
Benzo[b]Fluoranthene	8.29	7.84	ug/Kg	1	XMS6656	XXX26839	
Benzo[g,h,i]perylene	7.84 U	7.84	ug/Kg	1	XMS6656	XXX26839	
Benzo[k]fluoranthene	7.84 U	7.84	ug/Kg	1	XMS6656	XXX26839	
Chrysene	7.84 U	7.84	ug/Kg	1	XMS6656	XXX26839	
Dibenzo[a,h]anthracene	7.84 U	7.84	ug/Kg	1	XMS6656	XXX26839	
Fluoranthene	14.7	7.84	ug/Kg	1	XMS6656	XXX26839	
Fluorene	7.84 U	7.84	ug/Kg	1	XMS6656	XXX26839	
Indeno[1,2,3-c,d] pyrene	7.84 U	7.84	ug/Kg	1	XMS6656	XXX26839	
Naphthalene	11.9	7.84	ug/Kg	1	XMS6656	XXX26839	
Phenanthrene	13.7	7.84	ug/Kg	1	XMS6656	XXX26839	
Pyrene	11.0	7.84	ug/Kg	1	XMS6656	XXX26839	
2-Fluorobiphenyl <surr>	72.8	45-105	%	1	XMS6656	XXX26839	
Terphenyl-d14 <surr>	103	30-125	%	1	XMS6656	XXX26839	

Batch Information

Analytical Batch: XMS6656

Analytical Method: 8270D SIMS (PAH)

Analysis Date/Time: 05/15/12 20:46

Dilution Factor: 1

Prep Batch: XXX26839

Prep Method: SW3550C

Prep Date/Time: 05/14/12 15:00

Initial Prep Wt./Vol.: 22.863 g

Prep Extract Vol.: 1 mL

Container ID: 1121608002-A

Analyst: RTS

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-6+10-4**

SGS Ref. #: 1121608002

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 62.8

Collection Date/Time: 05/04/12 09:30

Receipt Date/Time: 05/10/12 16:20

Solids

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Total Solids	62.8		%	1	SPT8625		

Batch Information

Analytical Batch: SPT8625

Analytical Method: SM21 2540G

Analysis Date/Time: 05/14/12 17:00

Dilution Factor: 1

Initial Prep Wt./Vol.: 1 mL

Container ID:1121608002-A

Analyst: CDE

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-6+60-4**

SGS Ref. #: 1121608003

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 85.8

Collection Date/Time: 05/04/12 10:00

Receipt Date/Time: 05/10/12 16:20

Volatile Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Benzene	31.6 U	31.6	ug/Kg	1	VFC10974	VXX23479	
Ethylbenzene	63.2 U	63.2	ug/Kg	1	VFC10974	VXX23479	
Gasoline Range Organics	6.32 U	6.32	mg/Kg	1	VFC10974	VXX23479	
o-Xylene	63.2 U	63.2	ug/Kg	1	VFC10974	VXX23479	
P & M -Xylene	126 U	126	ug/Kg	1	VFC10974	VXX23479	
Toluene	63.2 U	63.2	ug/Kg	1	VFC10974	VXX23479	
1,4-Difluorobenzene <sur>	97.6	72-119	%	1	VFC10974	VXX23479	
4-Bromofluorobenzene <sur>	96.1	50-150	%	1	VFC10974	VXX23479	

Batch Information

Analytical Batch: VFC10974

Analytical Method: AK101

Analysis Date/Time: 05/15/12 18:39

Dilution Factor: 1

Prep Batch: VXX23479

Prep Method: SW5035A

Prep Date/Time: 05/04/12 10:00

Initial Prep Wt./Vol.: 26.52 g

Prep Extract Vol.: 28.7586 mL

Container ID: 1121608003-B

Analyst: EAB

Analytical Batch: VFC10974

Analytical Method: SW8021B

Analysis Date/Time: 05/15/12 18:39

Dilution Factor: 1

Prep Batch: VXX23479

Prep Method: SW5035A

Prep Date/Time: 05/04/12 10:00

Initial Prep Wt./Vol.: 26.52 g

Prep Extract Vol.: 28.7586 mL

Container ID: 1121608003-B

Analyst: EAB

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-6+60-4**

SGS Ref. #: 1121608003

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 85.8

Collection Date/Time: 05/04/12 10:00

Receipt Date/Time: 05/10/12 16:20

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Diesel Range Organics	26.0	23.0	mg/Kg	1	XFC10365	XXX26837	
Residual Range Organics	105	23.0	mg/Kg	1	XFC10365	XXX26837	
5a Androstane <surr>	82.3	50-150	%	1	XFC10365	XXX26837	
n-Triacontane-d62 <surr>	81.8	50-150	%	1	XFC10365	XXX26837	

Batch Information

Analytical Batch: XFC10365	Prep Batch: XXX26837	Initial Prep Wt./Vol.: 30.349 g
Analytical Method: AK102	Prep Method: SW3550C	Prep Extract Vol.: 1 mL
Analysis Date/Time: 05/16/12 08:13	Prep Date/Time: 05/14/12 15:00	Container ID:1121608003-A
Dilution Factor: 1		Analyst: MCM
Analytical Batch: XFC10365	Prep Batch: XXX26837	Initial Prep Wt./Vol.: 30.349 g
Analytical Method: AK103	Prep Method: SW3550C	Prep Extract Vol.: 1 mL
Analysis Date/Time: 05/16/12 08:13	Prep Date/Time: 05/14/12 15:00	Container ID:1121608003-A
Dilution Factor: 1		Analyst: MCM

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-6+60-4**

SGS Ref. #: 1121608003

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 85.8

Collection Date/Time: 05/04/12 10:00

Receipt Date/Time: 05/10/12 16:20

Polynuclear Aromatics GC/MS

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
1-Methylnaphthalene	28.4 U	28.4	ug/Kg	5	XMS6663	XXX26839	
2-Methylnaphthalene	28.4 U	28.4	ug/Kg	5	XMS6663	XXX26839	
Acenaphthene	28.4 U	28.4	ug/Kg	5	XMS6663	XXX26839	
Acenaphthylene	28.4 U	28.4	ug/Kg	5	XMS6663	XXX26839	
Anthracene	28.4 U	28.4	ug/Kg	5	XMS6663	XXX26839	
Benzo(a)Anthracene	38.4	28.4	ug/Kg	5	XMS6663	XXX26839	
Benzo[a]pyrene	42.2	28.4	ug/Kg	5	XMS6663	XXX26839	
Benzo[b]Fluoranthene	58.7	28.4	ug/Kg	5	XMS6663	XXX26839	
Benzo[g,h,i]perylene	39.2	28.4	ug/Kg	5	XMS6663	XXX26839	
Benzo[k]fluoranthene	28.4 U	28.4	ug/Kg	5	XMS6663	XXX26839	
Chrysene	38.0	28.4	ug/Kg	5	XMS6663	XXX26839	
Dibenzo[a,h]anthracene	28.4 U	28.4	ug/Kg	5	XMS6663	XXX26839	
Fluoranthene	49.9	28.4	ug/Kg	5	XMS6663	XXX26839	
Fluorene	28.4 U	28.4	ug/Kg	5	XMS6663	XXX26839	
Indeno[1,2,3-c,d] pyrene	28.4 U	28.4	ug/Kg	5	XMS6663	XXX26839	
Naphthalene	28.4 U	28.4	ug/Kg	5	XMS6663	XXX26839	
Phenanthrene	28.4 U	28.4	ug/Kg	5	XMS6663	XXX26839	
Pyrene	52.7	28.4	ug/Kg	5	XMS6663	XXX26839	
2-Fluorobiphenyl <surr>	78.8	45-105	%	5	XMS6663	XXX26839	
Terphenyl-d14 <surr>	116	30-125	%	5	XMS6663	XXX26839	

Batch Information

Analytical Batch: XMS6663

Analytical Method: 8270D SIMS (PAH)

Analysis Date/Time: 05/16/12 21:10

Dilution Factor: 5

Prep Batch: XXX26839

Prep Method: SW3550C

Prep Date/Time: 05/14/12 15:00

Initial Prep Wt./Vol.: 23.097 g

Prep Extract Vol.: 1 mL

Container ID: 1121608003-A

Analyst: RTS

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-6+60-4**

SGS Ref. #: 1121608003

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 85.8

Collection Date/Time: 05/04/12 10:00

Receipt Date/Time: 05/10/12 16:20

Solids

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical</u> <u>Batch</u>	<u>Prep</u> <u>Batch</u>	<u>Qualifiers</u>
Total Solids	85.8		%	1	SPT8625		

Batch Information

Analytical Batch: SPT8625

Analytical Method: SM21 2540G

Analysis Date/Time: 05/14/12 17:00

Dilution Factor: 1

Initial Prep Wt./Vol.: 1 mL

Container ID:1121608003-A

Analyst: CDE

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-7+10-4**

SGS Ref. #: 1121608004

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 70.5

Collection Date/Time: 05/04/12 13:30

Receipt Date/Time: 05/10/12 16:20

Volatile Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Benzene	44.5 U	44.5	ug/Kg	1	VFC10974	VXX23479	
Ethylbenzene	88.9 U	88.9	ug/Kg	1	VFC10974	VXX23479	
Gasoline Range Organics	8.89 U	8.89	mg/Kg	1	VFC10974	VXX23479	
o-Xylene	88.9 U	88.9	ug/Kg	1	VFC10974	VXX23479	
P & M -Xylene	178 U	178	ug/Kg	1	VFC10974	VXX23479	
Toluene	88.9 U	88.9	ug/Kg	1	VFC10974	VXX23479	
1,4-Difluorobenzene <sur>	98.9	72-119	%	1	VFC10974	VXX23479	
4-Bromofluorobenzene <sur>	99.5	50-150	%	1	VFC10974	VXX23479	

Batch Information

Analytical Batch: VFC10974

Analytical Method: AK101

Analysis Date/Time: 05/15/12 18:57

Dilution Factor: 1

Prep Batch: VXX23479

Prep Method: SW5035A

Prep Date/Time: 05/04/12 13:30

Initial Prep Wt./Vol.: 26.061 g

Prep Extract Vol.: 32.6841 mL

Container ID: 1121608004-B

Analyst: EAB

Analytical Batch: VFC10974

Analytical Method: SW8021B

Analysis Date/Time: 05/15/12 18:57

Dilution Factor: 1

Prep Batch: VXX23479

Prep Method: SW5035A

Prep Date/Time: 05/04/12 13:30

Initial Prep Wt./Vol.: 26.061 g

Prep Extract Vol.: 32.6841 mL

Container ID: 1121608004-B

Analyst: EAB

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-7+10-4**

SGS Ref. #: 1121608004

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 70.5

Collection Date/Time: 05/04/12 13:30

Receipt Date/Time: 05/10/12 16:20

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Diesel Range Organics	27.9 U	27.9	mg/Kg	1	XFC10371	XXX26852	
Residual Range Organics	38.2	27.9	mg/Kg	1	XFC10371	XXX26852	
5a Androstane <surr>	67.2	50-150	%	1	XFC10371	XXX26852	
n-Triacontane-d62 <surr>	75.5	50-150	%	1	XFC10371	XXX26852	

Batch Information

Analytical Batch: XFC10371	Prep Batch: XXX26852	Initial Prep Wt./Vol.: 30.45 g
Analytical Method: AK102	Prep Method: SW3550C	Prep Extract Vol.: 1 mL
Analysis Date/Time: 05/16/12 21:22	Prep Date/Time: 05/16/12 15:15	Container ID:1121608004-A
Dilution Factor: 1		Analyst: LCE
Analytical Batch: XFC10371	Prep Batch: XXX26852	Initial Prep Wt./Vol.: 30.45 g
Analytical Method: AK103	Prep Method: SW3550C	Prep Extract Vol.: 1 mL
Analysis Date/Time: 05/16/12 21:22	Prep Date/Time: 05/16/12 15:15	Container ID:1121608004-A
Dilution Factor: 1		Analyst: LCE

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-7+10-4**

SGS Ref. #: 1121608004

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 70.5

Collection Date/Time: 05/04/12 13:30

Receipt Date/Time: 05/10/12 16:20

Polynuclear Aromatics GC/MS

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
1-Methylnaphthalene	6.91 U	6.91	ug/Kg	1	XMS6656	XXX26839	
2-Methylnaphthalene	6.91 U	6.91	ug/Kg	1	XMS6656	XXX26839	
Acenaphthene	6.91 U	6.91	ug/Kg	1	XMS6656	XXX26839	
Acenaphthylene	6.91 U	6.91	ug/Kg	1	XMS6656	XXX26839	
Anthracene	6.91 U	6.91	ug/Kg	1	XMS6656	XXX26839	
Benzo(a)Anthracene	6.91 U	6.91	ug/Kg	1	XMS6656	XXX26839	
Benzo[a]pyrene	6.91 U	6.91	ug/Kg	1	XMS6656	XXX26839	
Benzo[b]Fluoranthene	6.91 U	6.91	ug/Kg	1	XMS6656	XXX26839	
Benzo[g,h,i]perylene	6.91 U	6.91	ug/Kg	1	XMS6656	XXX26839	
Benzo[k]fluoranthene	6.91 U	6.91	ug/Kg	1	XMS6656	XXX26839	
Chrysene	6.91 U	6.91	ug/Kg	1	XMS6656	XXX26839	
Dibenzo[a,h]anthracene	6.91 U	6.91	ug/Kg	1	XMS6656	XXX26839	
Fluoranthene	6.91 U	6.91	ug/Kg	1	XMS6656	XXX26839	
Fluorene	6.91 U	6.91	ug/Kg	1	XMS6656	XXX26839	
Indeno[1,2,3-c,d] pyrene	6.91 U	6.91	ug/Kg	1	XMS6656	XXX26839	
Naphthalene	6.91 U	6.91	ug/Kg	1	XMS6656	XXX26839	
Phenanthrene	6.91 U	6.91	ug/Kg	1	XMS6656	XXX26839	
Pyrene	6.91 U	6.91	ug/Kg	1	XMS6656	XXX26839	
2-Fluorobiphenyl <surr>	91.2	45-105	%	1	XMS6656	XXX26839	
Terphenyl-d14 <surr>	110	30-125	%	1	XMS6656	XXX26839	

Batch Information

Analytical Batch: XMS6656

Analytical Method: 8270D SIMS (PAH)

Analysis Date/Time: 05/15/12 21:06

Dilution Factor: 1

Prep Batch: XXX26839

Prep Method: SW3550C

Prep Date/Time: 05/14/12 15:00

Initial Prep Wt./Vol.: 23.087 g

Prep Extract Vol.: 1 mL

Container ID: 1121608004-A

Analyst: RTS

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-7+10-4**

SGS Ref. #: 1121608004

Collection Date/Time: 05/04/12 13:30

Project ID: Ilulak Lake East Point Rd DW

Receipt Date/Time: 05/10/12 16:20

Matrix: Soil/Solid (dry weight)

Percent Solids: 70.5

Solids

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Total Solids	70.5		%	1	SPT8625		

Batch Information

Analytical Batch: SPT8625

Initial Prep Wt./Vol.: 1 mL

Analytical Method: SM21 2540G

Analysis Date/Time: 05/14/12 17:00

Container ID:1121608004-A

Dilution Factor: 1

Analyst: CDE

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-7+60-4**

SGS Ref. #: 1121608005

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 80.0

Collection Date/Time: 05/04/12 14:00

Receipt Date/Time: 05/10/12 16:20

Volatile Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Benzene	34.0 U	34.0	ug/Kg	1	VFC10974	VXX23479	
Ethylbenzene	68.0 U	68.0	ug/Kg	1	VFC10974	VXX23479	
Gasoline Range Organics	6.80 U	6.80	mg/Kg	1	VFC10974	VXX23479	
o-Xylene	68.0 U	68.0	ug/Kg	1	VFC10974	VXX23479	
P & M -Xylene	136 U	136	ug/Kg	1	VFC10974	VXX23479	
Toluene	68.0 U	68.0	ug/Kg	1	VFC10974	VXX23479	
1,4-Difluorobenzene <sur>	98	72-119	%	1	VFC10974	VXX23479	
4-Bromofluorobenzene <sur>	108	50-150	%	1	VFC10974	VXX23479	

Batch Information

Analytical Batch: VFC10974

Analytical Method: AK101

Analysis Date/Time: 05/15/12 19:15

Dilution Factor: 1

Prep Batch: VXX23479

Prep Method: SW5035A

Prep Date/Time: 05/04/12 14:00

Initial Prep Wt./Vol.: 28.181 g

Prep Extract Vol.: 30.65 mL

Container ID: 1121608005-B

Analyst: EAB

Analytical Batch: VFC10974

Analytical Method: SW8021B

Analysis Date/Time: 05/15/12 19:15

Dilution Factor: 1

Prep Batch: VXX23479

Prep Method: SW5035A

Prep Date/Time: 05/04/12 14:00

Initial Prep Wt./Vol.: 28.181 g

Prep Extract Vol.: 30.65 mL

Container ID: 1121608005-B

Analyst: EAB

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-7+60-4**

SGS Ref. #: 1121608005

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 80.0

Collection Date/Time: 05/04/12 14:00

Receipt Date/Time: 05/10/12 16:20

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Diesel Range Organics	29.0	25.0	mg/Kg	1	XFC10371	XXX26852	
Residual Range Organics	96.7	25.0	mg/Kg	1	XFC10371	XXX26852	
5a Androstane <surr>	81	50-150	%	1	XFC10371	XXX26852	
n-Triacontane-d62 <surr>	75.4	50-150	%	1	XFC10371	XXX26852	

Batch Information

Analytical Batch: XFC10371

Analytical Method: AK102

Analysis Date/Time: 05/16/12 21:32

Dilution Factor: 1

Prep Batch: XXX26852

Prep Method: SW3550C

Prep Date/Time: 05/16/12 15:15

Initial Prep Wt./Vol.: 30.032 g

Prep Extract Vol.: 1 mL

Container ID:1121608005-A

Analyst: LCE

Analytical Batch: XFC10371

Analytical Method: AK103

Analysis Date/Time: 05/16/12 21:32

Dilution Factor: 1

Prep Batch: XXX26852

Prep Method: SW3550C

Prep Date/Time: 05/16/12 15:15

Initial Prep Wt./Vol.: 30.032 g

Prep Extract Vol.: 1 mL

Container ID:1121608005-A

Analyst: LCE



Unalaska City-Public Works

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-7+60-4**

SGS Ref. #: 1121608005

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 80.0

Collection Date/Time: 05/04/12 14:00

Receipt Date/Time: 05/10/12 16:20

Polynuclear Aromatics GC/MS

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
1-Methylnaphthalene	6.77	6.21	ug/Kg	1	XMS6663	XXX26839	
2-Methylnaphthalene	8.94	6.21	ug/Kg	1	XMS6663	XXX26839	
Acenaphthene	6.21 U	6.21	ug/Kg	1	XMS6663	XXX26839	
Acenaphthylene	6.21 U	6.21	ug/Kg	1	XMS6663	XXX26839	
Anthracene	6.68	6.21	ug/Kg	1	XMS6663	XXX26839	
Benzo(a)Anthracene	23.3	6.21	ug/Kg	1	XMS6663	XXX26839	
Benzo[a]pyrene	21.5	6.21	ug/Kg	1	XMS6663	XXX26839	
Benzo[b]Fluoranthene	29.6	6.21	ug/Kg	1	XMS6663	XXX26839	
Benzo[g,h,i]perylene	12.7	6.21	ug/Kg	1	XMS6663	XXX26839	
Benzo[k]fluoranthene	6.47	6.21	ug/Kg	1	XMS6663	XXX26839	
Chrysene	18.3	6.21	ug/Kg	1	XMS6663	XXX26839	
Dibenzo[a,h]anthracene	6.21 U	6.21	ug/Kg	1	XMS6663	XXX26839	
Fluoranthene	40.3	6.21	ug/Kg	1	XMS6663	XXX26839	
Fluorene	6.21 U	6.21	ug/Kg	1	XMS6663	XXX26839	
Indeno[1,2,3-c,d] pyrene	11.1	6.21	ug/Kg	1	XMS6663	XXX26839	
Naphthalene	6.21 U	6.21	ug/Kg	1	XMS6663	XXX26839	
Phenanthrene	36.9	6.21	ug/Kg	1	XMS6663	XXX26839	
Pyrene	37.3	6.21	ug/Kg	1	XMS6663	XXX26839	
2-Fluorobiphenyl <surr>	83.7	45-105	%	1	XMS6663	XXX26839	
Terphenyl-d14 <surr>	103	30-125	%	1	XMS6663	XXX26839	

Batch Information

Analytical Batch: XMS6663

Analytical Method: 8270D SIMS (PAH)

Analysis Date/Time: 05/16/12 17:50

Dilution Factor: 1

Prep Batch: XXX26839

Prep Method: SW3550C

Prep Date/Time: 05/14/12 15:00

Initial Prep Wt./Vol.: 22.643 g

Prep Extract Vol.: 1 mL

Container ID: 1121608005-A

Analyst: RTS

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-7+60-4**

SGS Ref. #: 1121608005

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 80.0

Collection Date/Time: 05/04/12 14:00

Receipt Date/Time: 05/10/12 16:20

Solids

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical</u> <u>Batch</u>	<u>Prep</u> <u>Batch</u>	<u>Qualifiers</u>
Total Solids	80.0		%	1	SPT8625		

Batch Information

Analytical Batch: SPT8625

Analytical Method: SM21 2540G

Analysis Date/Time: 05/14/12 17:00

Dilution Factor: 1

Initial Prep Wt./Vol.: 1 mL

Container ID:1121608005-A

Analyst: CDE

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-8+10-4**

SGS Ref. #: 1121608006

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 92.6

Collection Date/Time: 05/04/12 15:00

Receipt Date/Time: 05/10/12 16:20

Volatile Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Benzene	28.5 U	28.5	ug/Kg	1	VFC10974	VXX23479	
Ethylbenzene	57.0 U	57.0	ug/Kg	1	VFC10974	VXX23479	
Gasoline Range Organics	5.70 U	5.70	mg/Kg	1	VFC10974	VXX23479	
o-Xylene	57.0 U	57.0	ug/Kg	1	VFC10974	VXX23479	
P & M -Xylene	114 U	114	ug/Kg	1	VFC10974	VXX23479	
Toluene	57.0 U	57.0	ug/Kg	1	VFC10974	VXX23479	
1,4-Difluorobenzene <sur>	97.4	72-119	%	1	VFC10974	VXX23479	
4-Bromofluorobenzene <sur>	103	50-150	%	1	VFC10974	VXX23479	

Batch Information

Analytical Batch: VFC10974

Analytical Method: AK101

Analysis Date/Time: 05/15/12 19:34

Dilution Factor: 1

Prep Batch: VXX23479

Prep Method: SW5035A

Prep Date/Time: 05/04/12 15:00

Initial Prep Wt./Vol.: 25.483 g

Prep Extract Vol.: 26.8848 mL

Container ID: 1121608006-B

Analyst: EAB

Analytical Batch: VFC10974

Analytical Method: SW8021B

Analysis Date/Time: 05/15/12 19:34

Dilution Factor: 1

Prep Batch: VXX23479

Prep Method: SW5035A

Prep Date/Time: 05/04/12 15:00

Initial Prep Wt./Vol.: 25.483 g

Prep Extract Vol.: 26.8848 mL

Container ID: 1121608006-B

Analyst: EAB

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-8+10-4**

SGS Ref. #: 1121608006

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 92.6

Collection Date/Time: 05/04/12 15:00

Receipt Date/Time: 05/10/12 16:20

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Diesel Range Organics	29.4	21.3	mg/Kg	1	XFC10371	XXX26852	
Residual Range Organics	130	21.3	mg/Kg	1	XFC10371	XXX26852	
5a Androstane <surr>	93.1	50-150	%	1	XFC10371	XXX26852	
n-Triacontane-d62 <surr>	88.7	50-150	%	1	XFC10371	XXX26852	

Batch Information

Analytical Batch: XFC10371	Prep Batch: XXX26852	Initial Prep Wt./Vol.: 30.481 g
Analytical Method: AK102	Prep Method: SW3550C	Prep Extract Vol.: 1 mL
Analysis Date/Time: 05/17/12 00:44	Prep Date/Time: 05/16/12 15:15	Container ID: 1121608006-A
Dilution Factor: 1		Analyst: LCE
Analytical Batch: XFC10371	Prep Batch: XXX26852	Initial Prep Wt./Vol.: 30.481 g
Analytical Method: AK103	Prep Method: SW3550C	Prep Extract Vol.: 1 mL
Analysis Date/Time: 05/17/12 00:44	Prep Date/Time: 05/16/12 15:15	Container ID: 1121608006-A
Dilution Factor: 1		Analyst: LCE



Unalaska City-Public Works

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-8+10-4**

SGS Ref. #: 1121608006

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 92.6

Collection Date/Time: 05/04/12 15:00

Receipt Date/Time: 05/10/12 16:20

Polynuclear Aromatics GC/MS

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
1-Methylnaphthalene	26.9 U	26.9	ug/Kg	5	XMS6664	XXX26839	
2-Methylnaphthalene	26.9 U	26.9	ug/Kg	5	XMS6664	XXX26839	
Acenaphthene	26.9 U	26.9	ug/Kg	5	XMS6664	XXX26839	
Acenaphthylene	26.9 U	26.9	ug/Kg	5	XMS6664	XXX26839	
Anthracene	26.9 U	26.9	ug/Kg	5	XMS6664	XXX26839	
Benzo(a)Anthracene	26.9 U	26.9	ug/Kg	5	XMS6664	XXX26839	
Benzo[a]pyrene	26.9 U	26.9	ug/Kg	5	XMS6664	XXX26839	
Benzo[b]Fluoranthene	26.9 U	26.9	ug/Kg	5	XMS6664	XXX26839	
Benzo[g,h,i]perylene	29.9	26.9	ug/Kg	5	XMS6664	XXX26839	
Benzo[k]fluoranthene	26.9 U	26.9	ug/Kg	5	XMS6664	XXX26839	
Chrysene	26.9 U	26.9	ug/Kg	5	XMS6664	XXX26839	
Dibenzo[a,h]anthracene	26.9 U	26.9	ug/Kg	5	XMS6664	XXX26839	
Fluoranthene	27.4	26.9	ug/Kg	5	XMS6664	XXX26839	
Fluorene	26.9 U	26.9	ug/Kg	5	XMS6664	XXX26839	
Indeno[1,2,3-c,d] pyrene	26.9 U	26.9	ug/Kg	5	XMS6664	XXX26839	
Naphthalene	26.9 U	26.9	ug/Kg	5	XMS6664	XXX26839	
Phenanthrene	26.9 U	26.9	ug/Kg	5	XMS6664	XXX26839	
Pyrene	27.5	26.9	ug/Kg	5	XMS6664	XXX26839	
2-Fluorobiphenyl <surr>	96.2	45-105	%	5	XMS6664	XXX26839	
Terphenyl-d14 <surr>	115	30-125	%	5	XMS6664	XXX26839	

Batch Information

Analytical Batch: XMS6664

Analytical Method: 8270D SIMS (PAH)

Analysis Date/Time: 05/18/12 14:18

Dilution Factor: 5

Prep Batch: XXX26839

Prep Method: SW3550C

Prep Date/Time: 05/14/12 15:00

Initial Prep Wt./Vol.: 22.579 g

Prep Extract Vol.: 1 mL

Container ID: 1121608006-A

Analyst: RTS

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-8+10-4**

SGS Ref. #: 1121608006

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 92.6

Collection Date/Time: 05/04/12 15:00

Receipt Date/Time: 05/10/12 16:20

Solids

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical</u> <u>Batch</u>	<u>Prep</u> <u>Batch</u>	<u>Qualifiers</u>
Total Solids	92.6		%	1	SPT8625		

Batch Information

Analytical Batch: SPT8625

Analytical Method: SM21 2540G

Analysis Date/Time: 05/14/12 17:00

Dilution Factor: 1

Initial Prep Wt./Vol.: 1 mL

Container ID:1121608006-A

Analyst: CDE

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-8+60-4**

SGS Ref. #: 1121608007

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 87.8

Collection Date/Time: 05/04/12 15:45

Receipt Date/Time: 05/10/12 16:20

Volatile Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Benzene	31.2 U	31.2	ug/Kg	1	VFC10974	VXX23479	
Ethylbenzene	62.4 U	62.4	ug/Kg	1	VFC10974	VXX23479	
Gasoline Range Organics	6.24 U	6.24	mg/Kg	1	VFC10974	VXX23479	
o-Xylene	62.4 U	62.4	ug/Kg	1	VFC10974	VXX23479	
P & M -Xylene	125 U	125	ug/Kg	1	VFC10974	VXX23479	
Toluene	62.4 U	62.4	ug/Kg	1	VFC10974	VXX23479	
1,4-Difluorobenzene <sur>	97.4	72-119	%	1	VFC10974	VXX23479	
4-Bromofluorobenzene <sur>	99	50-150	%	1	VFC10974	VXX23479	

Batch Information

Analytical Batch: VFC10974

Analytical Method: AK101

Analysis Date/Time: 05/15/12 19:52

Dilution Factor: 1

Prep Batch: VXX23479

Prep Method: SW5035A

Prep Date/Time: 05/04/12 15:45

Initial Prep Wt./Vol.: 25.683 g

Prep Extract Vol.: 28.1454 mL

Container ID: 1121608007-B

Analyst: EAB

Analytical Batch: VFC10974

Analytical Method: SW8021B

Analysis Date/Time: 05/15/12 19:52

Dilution Factor: 1

Prep Batch: VXX23479

Prep Method: SW5035A

Prep Date/Time: 05/04/12 15:45

Initial Prep Wt./Vol.: 25.683 g

Prep Extract Vol.: 28.1454 mL

Container ID: 1121608007-B

Analyst: EAB

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-8+60-4**

SGS Ref. #: 1121608007

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 87.8

Collection Date/Time: 05/04/12 15:45

Receipt Date/Time: 05/10/12 16:20

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Diesel Range Organics	171	22.6	mg/Kg	1	XFC10371	XXX26852	
Residual Range Organics	68.8	22.6	mg/Kg	1	XFC10371	XXX26852	
5a Androstane <surr>	82.8	50-150	%	1	XFC10371	XXX26852	
n-Triacontane-d62 <surr>	71.8	50-150	%	1	XFC10371	XXX26852	

Batch Information

Analytical Batch: XFC10371	Prep Batch: XXX26852	Initial Prep Wt./Vol.: 30.217 g
Analytical Method: AK102	Prep Method: SW3550C	Prep Extract Vol.: 1 mL
Analysis Date/Time: 05/16/12 21:41	Prep Date/Time: 05/16/12 15:15	Container ID:1121608007-A
Dilution Factor: 1		Analyst: LCE
Analytical Batch: XFC10371	Prep Batch: XXX26852	Initial Prep Wt./Vol.: 30.217 g
Analytical Method: AK103	Prep Method: SW3550C	Prep Extract Vol.: 1 mL
Analysis Date/Time: 05/16/12 21:41	Prep Date/Time: 05/16/12 15:15	Container ID:1121608007-A
Dilution Factor: 1		Analyst: LCE

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-8+60-4**

SGS Ref. #: 1121608007

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 87.8

Collection Date/Time: 05/04/12 15:45

Receipt Date/Time: 05/10/12 16:20

Polynuclear Aromatics GC/MS

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
1-Methylnaphthalene	5.61 U	5.61	ug/Kg	1	XMS6663	XXX26839	
2-Methylnaphthalene	5.61 U	5.61	ug/Kg	1	XMS6663	XXX26839	
Acenaphthene	5.61 U	5.61	ug/Kg	1	XMS6663	XXX26839	
Acenaphthylene	5.61 U	5.61	ug/Kg	1	XMS6663	XXX26839	
Anthracene	5.61 U	5.61	ug/Kg	1	XMS6663	XXX26839	
Benzo(a)Anthracene	5.61 U	5.61	ug/Kg	1	XMS6663	XXX26839	
Benzo[a]pyrene	5.61 U	5.61	ug/Kg	1	XMS6663	XXX26839	
Benzo[b]Fluoranthene	5.61 U	5.61	ug/Kg	1	XMS6663	XXX26839	
Benzo[g,h,i]perylene	5.61 U	5.61	ug/Kg	1	XMS6663	XXX26839	
Benzo[k]fluoranthene	5.61 U	5.61	ug/Kg	1	XMS6663	XXX26839	
Chrysene	5.61 U	5.61	ug/Kg	1	XMS6663	XXX26839	
Dibenzo[a,h]anthracene	5.61 U	5.61	ug/Kg	1	XMS6663	XXX26839	
Fluoranthene	5.61 U	5.61	ug/Kg	1	XMS6663	XXX26839	
Fluorene	5.61 U	5.61	ug/Kg	1	XMS6663	XXX26839	
Indeno[1,2,3-c,d] pyrene	5.61 U	5.61	ug/Kg	1	XMS6663	XXX26839	
Naphthalene	5.61 U	5.61	ug/Kg	1	XMS6663	XXX26839	
Phenanthrene	5.61 U	5.61	ug/Kg	1	XMS6663	XXX26839	
Pyrene	5.61 U	5.61	ug/Kg	1	XMS6663	XXX26839	
2-Fluorobiphenyl <surr>	88.9	45-105	%	1	XMS6663	XXX26839	
Terphenyl-d14 <surr>	116	30-125	%	1	XMS6663	XXX26839	

Batch Information

Analytical Batch: XMS6663

Analytical Method: 8270D SIMS (PAH)

Analysis Date/Time: 05/16/12 16:29

Dilution Factor: 1

Prep Batch: XXX26839

Prep Method: SW3550C

Prep Date/Time: 05/14/12 15:00

Initial Prep Wt./Vol.: 22.836 g

Prep Extract Vol.: 1 mL

Container ID: 1121608007-A

Analyst: RTS

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-8+60-4**

SGS Ref. #: 1121608007

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 87.8

Collection Date/Time: 05/04/12 15:45

Receipt Date/Time: 05/10/12 16:20

Solids

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Total Solids	87.8		%	1	SPT8625		

Batch Information

Analytical Batch: SPT8625

Analytical Method: SM21 2540G

Analysis Date/Time: 05/14/12 17:00

Dilution Factor: 1

Initial Prep Wt./Vol.: 1 mL

Container ID:1121608007-A

Analyst: CDE

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **DUP-02**

SGS Ref. #: 1121608008

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 65.1

Collection Date/Time: 05/04/12 00:00

Receipt Date/Time: 05/10/12 16:20

Volatile Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Benzene	51.1 U	51.1	ug/Kg	1	VFC10974	VXX23479	
Ethylbenzene	102 U	102	ug/Kg	1	VFC10974	VXX23479	
Gasoline Range Organics	10.2 U	10.2	mg/Kg	1	VFC10974	VXX23479	
o-Xylene	102 U	102	ug/Kg	1	VFC10974	VXX23479	
P & M -Xylene	205 U	205	ug/Kg	1	VFC10974	VXX23479	
Toluene	102 U	102	ug/Kg	1	VFC10974	VXX23479	
1,4-Difluorobenzene <sur>	99.3	72-119	%	1	VFC10974	VXX23479	
4-Bromofluorobenzene <sur>	106	50-150	%	1	VFC10974	VXX23479	

Batch Information

Analytical Batch: VFC10974

Analytical Method: AK101

Analysis Date/Time: 05/15/12 20:10

Dilution Factor: 1

Prep Batch: VXX23479

Prep Method: SW5035A

Prep Date/Time: 05/04/12 00:00

Initial Prep Wt./Vol.: 25.426 g

Prep Extract Vol.: 33.8685 mL

Container ID: 1121608008-B

Analyst: EAB

Analytical Batch: VFC10974

Analytical Method: SW8021B

Analysis Date/Time: 05/15/12 20:10

Dilution Factor: 1

Prep Batch: VXX23479

Prep Method: SW5035A

Prep Date/Time: 05/04/12 00:00

Initial Prep Wt./Vol.: 25.426 g

Prep Extract Vol.: 33.8685 mL

Container ID: 1121608008-B

Analyst: EAB

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **DUP-02**

SGS Ref. #: 1121608008

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 65.1

Collection Date/Time: 05/04/12 00:00

Receipt Date/Time: 05/10/12 16:20

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Diesel Range Organics	30.3 U	30.3	mg/Kg	1	XFC10371	XXX26852	
Residual Range Organics	51.6	30.3	mg/Kg	1	XFC10371	XXX26852	
5a Androstane <surr>	77.3	50-150	%	1	XFC10371	XXX26852	
n-Triacontane-d62 <surr>	78.2	50-150	%	1	XFC10371	XXX26852	

Batch Information

Analytical Batch: XFC10371

Analytical Method: AK102

Analysis Date/Time: 05/16/12 21:51

Dilution Factor: 1

Prep Batch: XXX26852

Prep Method: SW3550C

Prep Date/Time: 05/16/12 15:15

Initial Prep Wt./Vol.: 30.367 g

Prep Extract Vol.: 1 mL

Container ID:1121608008-A

Analyst: LCE

Analytical Batch: XFC10371

Analytical Method: AK103

Analysis Date/Time: 05/16/12 21:51

Dilution Factor: 1

Prep Batch: XXX26852

Prep Method: SW3550C

Prep Date/Time: 05/16/12 15:15

Initial Prep Wt./Vol.: 30.367 g

Prep Extract Vol.: 1 mL

Container ID:1121608008-A

Analyst: LCE

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **DUP-02**

SGS Ref. #: 1121608008

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 65.1

Collection Date/Time: 05/04/12 00:00

Receipt Date/Time: 05/10/12 16:20

Polynuclear Aromatics GC/MS

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
1-Methylnaphthalene	31.7	7.52	ug/Kg	1	XMS6663	XXX26839	
2-Methylnaphthalene	11.3	7.52	ug/Kg	1	XMS6663	XXX26839	
Acenaphthene	7.52 U	7.52	ug/Kg	1	XMS6663	XXX26839	
Acenaphthylene	7.52 U	7.52	ug/Kg	1	XMS6663	XXX26839	
Anthracene	7.52 U	7.52	ug/Kg	1	XMS6663	XXX26839	
Benzo(a)Anthracene	7.52 U	7.52	ug/Kg	1	XMS6663	XXX26839	
Benzo[a]pyrene	7.52 U	7.52	ug/Kg	1	XMS6663	XXX26839	
Benzo[b]Fluoranthene	7.52 U	7.52	ug/Kg	1	XMS6663	XXX26839	
Benzo[g,h,i]perylene	7.52 U	7.52	ug/Kg	1	XMS6663	XXX26839	
Benzo[k]fluoranthene	7.52 U	7.52	ug/Kg	1	XMS6663	XXX26839	
Chrysene	7.52 U	7.52	ug/Kg	1	XMS6663	XXX26839	
Dibenzo[a,h]anthracene	7.52 U	7.52	ug/Kg	1	XMS6663	XXX26839	
Fluoranthene	7.52 U	7.52	ug/Kg	1	XMS6663	XXX26839	
Fluorene	7.52 U	7.52	ug/Kg	1	XMS6663	XXX26839	
Indeno[1,2,3-c,d] pyrene	7.52 U	7.52	ug/Kg	1	XMS6663	XXX26839	
Naphthalene	14.2	7.52	ug/Kg	1	XMS6663	XXX26839	
Phenanthrene	7.52 U	7.52	ug/Kg	1	XMS6663	XXX26839	
Pyrene	7.52 U	7.52	ug/Kg	1	XMS6663	XXX26839	
2-Fluorobiphenyl <surr>	90.5	45-105	%	1	XMS6663	XXX26839	
Terphenyl-d14 <surr>	108	30-125	%	1	XMS6663	XXX26839	

Batch Information

Analytical Batch: XMS6663

Analytical Method: 8270D SIMS (PAH)

Analysis Date/Time: 05/16/12 16:49

Dilution Factor: 1

Prep Batch: XXX26839

Prep Method: SW3550C

Prep Date/Time: 05/14/12 15:00

Initial Prep Wt./Vol.: 22.961 g

Prep Extract Vol.: 1 mL

Container ID: 1121608008-A

Analyst: RTS

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **DUP-02**

SGS Ref. #: 1121608008

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 65.1

Collection Date/Time: 05/04/12 00:00

Receipt Date/Time: 05/10/12 16:20

Solids

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical</u> <u>Batch</u>	<u>Prep</u> <u>Batch</u>	<u>Qualifiers</u>
Total Solids	65.1		%	1	SPT8625		

Batch Information

Analytical Batch: SPT8625

Analytical Method: SM21 2540G

Analysis Date/Time: 05/14/12 17:00

Dilution Factor: 1

Initial Prep Wt./Vol.: 1 mL

Container ID:1121608008-A

Analyst: CDE

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **DUP-03**

SGS Ref. #: 1121608009

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 86.0

Collection Date/Time: 05/07/12 00:00

Receipt Date/Time: 05/10/12 16:20

Volatile Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Benzene	29.3 U	29.3	ug/Kg	1	VFC10974	VXX23479	
Ethylbenzene	58.6 U	58.6	ug/Kg	1	VFC10974	VXX23479	
Gasoline Range Organics	5.86 U	5.86	mg/Kg	1	VFC10974	VXX23479	
o-Xylene	58.6 U	58.6	ug/Kg	1	VFC10974	VXX23479	
P & M -Xylene	117 U	117	ug/Kg	1	VFC10974	VXX23479	
Toluene	58.6 U	58.6	ug/Kg	1	VFC10974	VXX23479	
1,4-Difluorobenzene <sur>	97.7	72-119	%	1	VFC10974	VXX23479	
4-Bromofluorobenzene <sur>	105	50-150	%	1	VFC10974	VXX23479	

Batch Information

Analytical Batch: VFC10974

Analytical Method: AK101

Analysis Date/Time: 05/15/12 20:29

Dilution Factor: 1

Prep Batch: VXX23479

Prep Method: SW5035A

Prep Date/Time: 05/04/12 00:00

Initial Prep Wt./Vol.: 28.766 g

Prep Extract Vol.: 29.0171 mL

Container ID: 1121608009-B

Analyst: EAB

Analytical Batch: VFC10974

Analytical Method: SW8021B

Analysis Date/Time: 05/15/12 20:29

Dilution Factor: 1

Prep Batch: VXX23479

Prep Method: SW5035A

Prep Date/Time: 05/04/12 00:00

Initial Prep Wt./Vol.: 28.766 g

Prep Extract Vol.: 29.0171 mL

Container ID: 1121608009-B

Analyst: EAB

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **DUP-03**

SGS Ref. #: 1121608009

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 86.0

Collection Date/Time: 05/07/12 00:00

Receipt Date/Time: 05/10/12 16:20

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Diesel Range Organics	26.7	23.2	mg/Kg	1	XFC10371	XXX26852	
Residual Range Organics	100	23.2	mg/Kg	1	XFC10371	XXX26852	
5a Androstane <surr>	89.7	50-150	%	1	XFC10371	XXX26852	
n-Triacontane-d62 <surr>	88.9	50-150	%	1	XFC10371	XXX26852	

Batch Information

Analytical Batch: XFC10371	Prep Batch: XXX26852	Initial Prep Wt./Vol.: 30.068 g
Analytical Method: AK102	Prep Method: SW3550C	Prep Extract Vol.: 1 mL
Analysis Date/Time: 05/16/12 22:00	Prep Date/Time: 05/16/12 15:15	Container ID:1121608009-A
Dilution Factor: 1		Analyst: LCE
Analytical Batch: XFC10371	Prep Batch: XXX26852	Initial Prep Wt./Vol.: 30.068 g
Analytical Method: AK103	Prep Method: SW3550C	Prep Extract Vol.: 1 mL
Analysis Date/Time: 05/16/12 22:00	Prep Date/Time: 05/16/12 15:15	Container ID:1121608009-A
Dilution Factor: 1		Analyst: LCE



Unalaska City-Public Works

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **DUP-03**

SGS Ref. #: 1121608009

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 86.0

Collection Date/Time: 05/07/12 00:00

Receipt Date/Time: 05/10/12 16:20

Polynuclear Aromatics GC/MS

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
1-Methylnaphthalene	5.69 U	5.69	ug/Kg	1	XMS6663	XXX26839	
2-Methylnaphthalene	5.69 U	5.69	ug/Kg	1	XMS6663	XXX26839	
Acenaphthene	5.69 U	5.69	ug/Kg	1	XMS6663	XXX26839	
Acenaphthylene	5.69 U	5.69	ug/Kg	1	XMS6663	XXX26839	
Anthracene	5.69 U	5.69	ug/Kg	1	XMS6663	XXX26839	
Benzo(a)Anthracene	26.7	5.69	ug/Kg	1	XMS6663	XXX26839	
Benzo[a]pyrene	25.6	5.69	ug/Kg	1	XMS6663	XXX26839	
Benzo[b]Fluoranthene	39.7	5.69	ug/Kg	1	XMS6663	XXX26839	
Benzo[g,h,i]perylene	16.1	5.69	ug/Kg	1	XMS6663	XXX26839	
Benzo[k]fluoranthene	10.9	5.69	ug/Kg	1	XMS6663	XXX26839	
Chrysene	20.3	5.69	ug/Kg	1	XMS6663	XXX26839	
Dibenzo[a,h]anthracene	5.69 U	5.69	ug/Kg	1	XMS6663	XXX26839	
Fluoranthene	34.3	5.69	ug/Kg	1	XMS6663	XXX26839	
Fluorene	5.69 U	5.69	ug/Kg	1	XMS6663	XXX26839	
Indeno[1,2,3-c,d] pyrene	14.6	5.69	ug/Kg	1	XMS6663	XXX26839	
Naphthalene	5.69 U	5.69	ug/Kg	1	XMS6663	XXX26839	
Phenanthrene	12.8	5.69	ug/Kg	1	XMS6663	XXX26839	
Pyrene	30.8	5.69	ug/Kg	1	XMS6663	XXX26839	
2-Fluorobiphenyl <surr>	93.4	45-105	%	1	XMS6663	XXX26839	
Terphenyl-d14 <surr>	113	30-125	%	1	XMS6663	XXX26839	

Batch Information

Analytical Batch: XMS6663

Analytical Method: 8270D SIMS (PAH)

Analysis Date/Time: 05/16/12 17:09

Dilution Factor: 1

Prep Batch: XXX26839

Prep Method: SW3550C

Prep Date/Time: 05/14/12 15:00

Initial Prep Wt./Vol.: 22.971 g

Prep Extract Vol.: 1 mL

Container ID: 1121608009-A

Analyst: RTS

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **DUP-03**

SGS Ref. #: 1121608009

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 86.0

Collection Date/Time: 05/07/12 00:00

Receipt Date/Time: 05/10/12 16:20

Solids

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical</u> <u>Batch</u>	<u>Prep</u> <u>Batch</u>	<u>Qualifiers</u>
Total Solids	86.0		%	1	SPT8625		

Batch Information

Analytical Batch: SPT8625

Analytical Method: SM21 2540G

Analysis Date/Time: 05/14/12 17:00

Dilution Factor: 1

Initial Prep Wt./Vol.: 1 mL

Container ID:1121608009-A

Analyst: CDE

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **DUP-04**

SGS Ref. #: 1121608010

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 83.1

Collection Date/Time: 05/08/12 00:00

Receipt Date/Time: 05/10/12 16:20

Volatile Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Benzene	32.7 U	32.7	ug/Kg	1	VFC10974	VXX23479	
Ethylbenzene	65.5 U	65.5	ug/Kg	1	VFC10974	VXX23479	
Gasoline Range Organics	6.55 U	6.55	mg/Kg	1	VFC10974	VXX23479	
o-Xylene	65.5 U	65.5	ug/Kg	1	VFC10974	VXX23479	
P & M -Xylene	131 U	131	ug/Kg	1	VFC10974	VXX23479	
Toluene	65.5 U	65.5	ug/Kg	1	VFC10974	VXX23479	
1,4-Difluorobenzene <sur>	95.6	72-119	%	1	VFC10974	VXX23479	
4-Bromofluorobenzene <sur>	106	50-150	%	1	VFC10974	VXX23479	

Batch Information

Analytical Batch: VFC10974

Analytical Method: AK101

Analysis Date/Time: 05/15/12 20:47

Dilution Factor: 1

Prep Batch: VXX23479

Prep Method: SW5035A

Prep Date/Time: 05/04/12 00:00

Initial Prep Wt./Vol.: 27.227 g

Prep Extract Vol.: 29.6149 mL

Container ID: 1121608010-B

Analyst: EAB

Analytical Batch: VFC10974

Analytical Method: SW8021B

Analysis Date/Time: 05/15/12 20:47

Dilution Factor: 1

Prep Batch: VXX23479

Prep Method: SW5035A

Prep Date/Time: 05/04/12 00:00

Initial Prep Wt./Vol.: 27.227 g

Prep Extract Vol.: 29.6149 mL

Container ID: 1121608010-B

Analyst: EAB

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **DUP-04**

SGS Ref. #: 1121608010

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 83.1

Collection Date/Time: 05/08/12 00:00

Receipt Date/Time: 05/10/12 16:20

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Diesel Range Organics	32.7	23.8	mg/Kg	1	XFC10371	XXX26852	
Residual Range Organics	103	23.8	mg/Kg	1	XFC10371	XXX26852	
5a Androstane <surr>	88.4	50-150	%	1	XFC10371	XXX26852	
n-Triacontane-d62 <surr>	75.7	50-150	%	1	XFC10371	XXX26852	

Batch Information

Analytical Batch: XFC10371	Prep Batch: XXX26852	Initial Prep Wt./Vol.: 30.298 g
Analytical Method: AK102	Prep Method: SW3550C	Prep Extract Vol.: 1 mL
Analysis Date/Time: 05/16/12 22:10	Prep Date/Time: 05/16/12 15:15	Container ID:1121608010-A
Dilution Factor: 1		Analyst: LCE
Analytical Batch: XFC10371	Prep Batch: XXX26852	Initial Prep Wt./Vol.: 30.298 g
Analytical Method: AK103	Prep Method: SW3550C	Prep Extract Vol.: 1 mL
Analysis Date/Time: 05/16/12 22:10	Prep Date/Time: 05/16/12 15:15	Container ID:1121608010-A
Dilution Factor: 1		Analyst: LCE



Unalaska City-Public Works

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **DUP-04**

SGS Ref. #: 1121608010

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 83.1

Collection Date/Time: 05/08/12 00:00

Receipt Date/Time: 05/10/12 16:20

Polynuclear Aromatics GC/MS

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
1-Methylnaphthalene	6.00 U	6.00	ug/Kg	1	XMS6665	XXX26865	
2-Methylnaphthalene	6.00 U	6.00	ug/Kg	1	XMS6665	XXX26865	
Acenaphthene	8.73	6.00	ug/Kg	1	XMS6665	XXX26865	
Acenaphthylene	6.00 U	6.00	ug/Kg	1	XMS6665	XXX26865	
Anthracene	28.6	6.00	ug/Kg	1	XMS6665	XXX26865	
Benzo(a)Anthracene	90.9	6.00	ug/Kg	1	XMS6665	XXX26865	
Benzo[a]pyrene	75.7	6.00	ug/Kg	1	XMS6665	XXX26865	
Benzo[b]Fluoranthene	115	6.00	ug/Kg	1	XMS6665	XXX26865	
Benzo[g,h,i]perylene	47.4	6.00	ug/Kg	1	XMS6665	XXX26865	
Benzo[k]fluoranthene	31.3	6.00	ug/Kg	1	XMS6665	XXX26865	
Chrysene	79.8	6.00	ug/Kg	1	XMS6665	XXX26865	
Dibenzo[a,h]anthracene	12.2	6.00	ug/Kg	1	XMS6665	XXX26865	
Fluoranthene	209	60.0	ug/Kg	10	XMS6665	XXX26865	
Fluorene	8.70	6.00	ug/Kg	1	XMS6665	XXX26865	
Indeno[1,2,3-c,d] pyrene	46.0	6.00	ug/Kg	1	XMS6665	XXX26865	
Naphthalene	6.00 U	6.00	ug/Kg	1	XMS6665	XXX26865	
Phenanthrene	94.6	6.00	ug/Kg	1	XMS6665	XXX26865	
Pyrene	165	60.0	ug/Kg	10	XMS6665	XXX26865	
2-Fluorobiphenyl <sur>	67.4	45-105	%	1	XMS6665	XXX26865	
Terphenyl-d14 <sur>	101	30-125	%	1	XMS6665	XXX26865	

Batch Information

Analytical Batch: XMS6665

Analytical Method: 8270D SIMS (PAH)

Analysis Date/Time: 05/21/12 16:45

Dilution Factor: 1

Prep Batch: XXX26865

Prep Method: SW3550C

Prep Date/Time: 05/18/12 15:00

Initial Prep Wt./Vol.: 22.559 g

Prep Extract Vol.: 1 mL

Container ID: 1121608010-A

Analyst: RTS

Analytical Batch: XMS6665

Analytical Method: 8270D SIMS (PAH)

Analysis Date/Time: 05/21/12 19:27

Dilution Factor: 10

Prep Batch: XXX26865

Prep Method: SW3550C

Prep Date/Time: 05/18/12 15:00

Initial Prep Wt./Vol.: 22.559 g

Prep Extract Vol.: 1 mL

Container ID: 1121608010-A

Analyst: RTS

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **DUP-04**

SGS Ref. #: 1121608010

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 83.1

Collection Date/Time: 05/08/12 00:00

Receipt Date/Time: 05/10/12 16:20

Solids

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Total Solids	83.1		%	1	SPT8625		

Batch Information

Analytical Batch: SPT8625

Analytical Method: SM21 2540G

Analysis Date/Time: 05/14/12 17:00

Dilution Factor: 1

Initial Prep Wt./Vol.: 1 mL

Container ID:1121608010-A

Analyst: CDE

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-9+10-2**

SGS Ref. #: 1121608011

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 93.7

Collection Date/Time: 05/07/12 09:45

Receipt Date/Time: 05/10/12 16:20

Volatile Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Benzene	27.5 U	27.5	ug/Kg	1	VFC10977	VXX23483	
Ethylbenzene	55.1 U	55.1	ug/Kg	1	VFC10977	VXX23483	
Gasoline Range Organics	5.51 U	5.51	mg/Kg	1	VFC10977	VXX23483	
o-Xylene	55.1 U	55.1	ug/Kg	1	VFC10977	VXX23483	
P & M -Xylene	110 U	110	ug/Kg	1	VFC10977	VXX23483	
Toluene	55.1 U	55.1	ug/Kg	1	VFC10977	VXX23483	
1,4-Difluorobenzene <sur>	97.8	72-119	%	1	VFC10977	VXX23483	
4-Bromofluorobenzene <sur>	100	50-150	%	1	VFC10977	VXX23483	

Batch Information

Analytical Batch: VFC10977

Analytical Method: AK101

Analysis Date/Time: 05/16/12 16:01

Dilution Factor: 1

Prep Batch: VXX23483

Prep Method: SW5035A

Prep Date/Time: 05/07/12 09:45

Initial Prep Wt./Vol.: 25.768 g

Prep Extract Vol.: 26.6111 mL

Container ID: 1121608011-B

Analyst: EAB

Analytical Batch: VFC10977

Analytical Method: SW8021B

Analysis Date/Time: 05/16/12 16:01

Dilution Factor: 1

Prep Batch: VXX23483

Prep Method: SW5035A

Prep Date/Time: 05/07/12 09:45

Initial Prep Wt./Vol.: 25.768 g

Prep Extract Vol.: 26.6111 mL

Container ID: 1121608011-B

Analyst: EAB

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-9+10-2**

SGS Ref. #: 1121608011

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 93.7

Collection Date/Time: 05/07/12 09:45

Receipt Date/Time: 05/10/12 16:20

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Diesel Range Organics	21.2 U	21.2	mg/Kg	1	XFC10371	XXX26852	
Residual Range Organics	57.1	21.2	mg/Kg	1	XFC10371	XXX26852	
5a Androstane <surr>	95.1	50-150	%	1	XFC10371	XXX26852	
n-Triacontane-d62 <surr>	93.3	50-150	%	1	XFC10371	XXX26852	

Batch Information

Analytical Batch: XFC10371	Prep Batch: XXX26852	Initial Prep Wt./Vol.: 30.158 g
Analytical Method: AK102	Prep Method: SW3550C	Prep Extract Vol.: 1 mL
Analysis Date/Time: 05/16/12 22:20	Prep Date/Time: 05/16/12 15:15	Container ID: 1121608011-A
Dilution Factor: 1		Analyst: LCE

Analytical Batch: XFC10371	Prep Batch: XXX26852	Initial Prep Wt./Vol.: 30.158 g
Analytical Method: AK103	Prep Method: SW3550C	Prep Extract Vol.: 1 mL
Analysis Date/Time: 05/16/12 22:20	Prep Date/Time: 05/16/12 15:15	Container ID: 1121608011-A
Dilution Factor: 1		Analyst: LCE

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-9+10-2**

SGS Ref. #: 1121608011

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 93.7

Collection Date/Time: 05/07/12 09:45

Receipt Date/Time: 05/10/12 16:20

Polynuclear Aromatics GC/MS

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
1-Methylnaphthalene	5.29 U	5.29	ug/Kg	1	XMS6665	XXX26865	
2-Methylnaphthalene	5.29 U	5.29	ug/Kg	1	XMS6665	XXX26865	
Acenaphthene	5.29 U	5.29	ug/Kg	1	XMS6665	XXX26865	
Acenaphthylene	5.29 U	5.29	ug/Kg	1	XMS6665	XXX26865	
Anthracene	5.29 U	5.29	ug/Kg	1	XMS6665	XXX26865	
Benzo(a)Anthracene	5.29 U	5.29	ug/Kg	1	XMS6665	XXX26865	
Benzo[a]pyrene	5.29 U	5.29	ug/Kg	1	XMS6665	XXX26865	
Benzo[b]Fluoranthene	5.29 U	5.29	ug/Kg	1	XMS6665	XXX26865	
Benzo[g,h,i]perylene	5.29 U	5.29	ug/Kg	1	XMS6665	XXX26865	
Benzo[k]fluoranthene	5.29 U	5.29	ug/Kg	1	XMS6665	XXX26865	
Chrysene	5.29 U	5.29	ug/Kg	1	XMS6665	XXX26865	
Dibenzo[a,h]anthracene	5.29 U	5.29	ug/Kg	1	XMS6665	XXX26865	
Fluoranthene	5.29 U	5.29	ug/Kg	1	XMS6665	XXX26865	
Fluorene	5.29 U	5.29	ug/Kg	1	XMS6665	XXX26865	
Indeno[1,2,3-c,d] pyrene	5.29 U	5.29	ug/Kg	1	XMS6665	XXX26865	
Naphthalene	5.29 U	5.29	ug/Kg	1	XMS6665	XXX26865	
Phenanthrene	5.29 U	5.29	ug/Kg	1	XMS6665	XXX26865	
Pyrene	5.29 U	5.29	ug/Kg	1	XMS6665	XXX26865	
2-Fluorobiphenyl <surr>	63.5	45-105	%	1	XMS6665	XXX26865	
Terphenyl-d14 <surr>	94.5	30-125	%	1	XMS6665	XXX26865	

Batch Information

Analytical Batch: XMS6665

Analytical Method: 8270D SIMS (PAH)

Analysis Date/Time: 05/21/12 15:44

Dilution Factor: 1

Prep Batch: XXX26865

Prep Method: SW3550C

Prep Date/Time: 05/18/12 15:00

Initial Prep Wt./Vol.: 22.685 g

Prep Extract Vol.: 1 mL

Container ID: 1121608011-A

Analyst: RTS

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-9+10-2**

SGS Ref. #: 1121608011

Collection Date/Time: 05/07/12 09:45

Project ID: Ilulak Lake East Point Rd DW

Receipt Date/Time: 05/10/12 16:20

Matrix: Soil/Solid (dry weight)

Percent Solids: 93.7

Solids

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical</u> <u>Batch</u>	<u>Prep</u> <u>Batch</u>	<u>Qualifiers</u>
Total Solids	93.7		%	1	SPT8625		

Batch Information

Analytical Batch: SPT8625

Initial Prep Wt./Vol.: 1 mL

Analytical Method: SM21 2540G

Analysis Date/Time: 05/14/12 17:00

Container ID:1121608011-A

Dilution Factor: 1

Analyst: CDE

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-9+10-4**

SGS Ref. #: 1121608012

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 87.6

Collection Date/Time: 05/07/12 09:30

Receipt Date/Time: 05/10/12 16:20

Volatile Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Benzene	30.5 U	30.5	ug/Kg	1	VFC10977	VXX23483	
Ethylbenzene	61.0 U	61.0	ug/Kg	1	VFC10977	VXX23483	
Gasoline Range Organics	6.10 U	6.10	mg/Kg	1	VFC10977	VXX23483	
o-Xylene	61.0 U	61.0	ug/Kg	1	VFC10977	VXX23483	
P & M -Xylene	122 U	122	ug/Kg	1	VFC10977	VXX23483	
Toluene	61.0 U	61.0	ug/Kg	1	VFC10977	VXX23483	
1,4-Difluorobenzene <sur>	97.9	72-119	%	1	VFC10977	VXX23483	
4-Bromofluorobenzene <sur>	104	50-150	%	1	VFC10977	VXX23483	

Batch Information

Analytical Batch: VFC10977

Analytical Method: AK101

Analysis Date/Time: 05/16/12 18:10

Dilution Factor: 1

Prep Batch: VXX23483

Prep Method: SW5035A

Prep Date/Time: 05/07/12 09:30

Initial Prep Wt./Vol.: 26.448 g

Prep Extract Vol.: 28.276 mL

Container ID: 1121608012-B

Analyst: EAB

Analytical Batch: VFC10977

Analytical Method: SW8021B

Analysis Date/Time: 05/16/12 18:10

Dilution Factor: 1

Prep Batch: VXX23483

Prep Method: SW5035A

Prep Date/Time: 05/07/12 09:30

Initial Prep Wt./Vol.: 26.448 g

Prep Extract Vol.: 28.276 mL

Container ID: 1121608012-B

Analyst: EAB

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-9+10-4**

SGS Ref. #: 1121608012

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 87.6

Collection Date/Time: 05/07/12 09:30

Receipt Date/Time: 05/10/12 16:20

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Diesel Range Organics	22.7 U	22.7	mg/Kg	1	XFC10371	XXX26852	
Residual Range Organics	48.7	22.7	mg/Kg	1	XFC10371	XXX26852	
5a Androstane <surr>	75.3	50-150	%	1	XFC10371	XXX26852	
n-Triacontane-d62 <surr>	82.6	50-150	%	1	XFC10371	XXX26852	

Batch Information

Analytical Batch: XFC10371	Prep Batch: XXX26852	Initial Prep Wt./Vol.: 30.149 g
Analytical Method: AK102	Prep Method: SW3550C	Prep Extract Vol.: 1 mL
Analysis Date/Time: 05/16/12 22:29	Prep Date/Time: 05/16/12 15:15	Container ID:1121608012-A
Dilution Factor: 1		Analyst: LCE
Analytical Batch: XFC10371	Prep Batch: XXX26852	Initial Prep Wt./Vol.: 30.149 g
Analytical Method: AK103	Prep Method: SW3550C	Prep Extract Vol.: 1 mL
Analysis Date/Time: 05/16/12 22:29	Prep Date/Time: 05/16/12 15:15	Container ID:1121608012-A
Dilution Factor: 1		Analyst: LCE

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-9+10-4**

SGS Ref. #: 1121608012

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 87.6

Collection Date/Time: 05/07/12 09:30

Receipt Date/Time: 05/10/12 16:20

Polynuclear Aromatics GC/MS

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
1-Methylnaphthalene	5.70 U	5.70	ug/Kg	1	XMS6665	XXX26865	
2-Methylnaphthalene	5.70 U	5.70	ug/Kg	1	XMS6665	XXX26865	
Acenaphthene	5.70 U	5.70	ug/Kg	1	XMS6665	XXX26865	
Acenaphthylene	5.70 U	5.70	ug/Kg	1	XMS6665	XXX26865	
Anthracene	5.70 U	5.70	ug/Kg	1	XMS6665	XXX26865	
Benzo(a)Anthracene	5.70 U	5.70	ug/Kg	1	XMS6665	XXX26865	
Benzo[a]pyrene	5.70 U	5.70	ug/Kg	1	XMS6665	XXX26865	
Benzo[b]Fluoranthene	5.70 U	5.70	ug/Kg	1	XMS6665	XXX26865	
Benzo[g,h,i]perylene	5.70 U	5.70	ug/Kg	1	XMS6665	XXX26865	
Benzo[k]fluoranthene	5.70 U	5.70	ug/Kg	1	XMS6665	XXX26865	
Chrysene	5.70 U	5.70	ug/Kg	1	XMS6665	XXX26865	
Dibenzo[a,h]anthracene	5.70 U	5.70	ug/Kg	1	XMS6665	XXX26865	
Fluoranthene	5.70 U	5.70	ug/Kg	1	XMS6665	XXX26865	
Fluorene	5.70 U	5.70	ug/Kg	1	XMS6665	XXX26865	
Indeno[1,2,3-c,d] pyrene	5.70 U	5.70	ug/Kg	1	XMS6665	XXX26865	
Naphthalene	5.70 U	5.70	ug/Kg	1	XMS6665	XXX26865	
Phenanthrene	5.70 U	5.70	ug/Kg	1	XMS6665	XXX26865	
Pyrene	5.70 U	5.70	ug/Kg	1	XMS6665	XXX26865	
2-Fluorobiphenyl <surr>	70.5	45-105	%	1	XMS6665	XXX26865	
Terphenyl-d14 <surr>	101	30-125	%	1	XMS6665	XXX26865	

Batch Information

Analytical Batch: XMS6665

Analytical Method: 8270D SIMS (PAH)

Analysis Date/Time: 05/21/12 16:05

Dilution Factor: 1

Prep Batch: XXX26865

Prep Method: SW3550C

Prep Date/Time: 05/18/12 15:00

Initial Prep Wt./Vol.: 22.509 g

Prep Extract Vol.: 1 mL

Container ID: 1121608012-A

Analyst: RTS

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-9+10-4**

SGS Ref. #: 1121608012

Collection Date/Time: 05/07/12 09:30

Project ID: Ilulak Lake East Point Rd DW

Receipt Date/Time: 05/10/12 16:20

Matrix: Soil/Solid (dry weight)

Percent Solids: 87.6

Solids

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Total Solids	87.6		%	1	SPT8625		

Batch Information

Analytical Batch: SPT8625

Initial Prep Wt./Vol.: 1 mL

Analytical Method: SM21 2540G

Analysis Date/Time: 05/14/12 17:00

Container ID:1121608012-A

Dilution Factor: 1

Analyst: CDE

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-9+60-4**

SGS Ref. #: 1121608013

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 87.1

Collection Date/Time: 05/07/12 10:30

Receipt Date/Time: 05/10/12 16:20

Volatile Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Benzene	28.3 U	28.3	ug/Kg	1	VFC10977	VXX23483	
Ethylbenzene	56.7 U	56.7	ug/Kg	1	VFC10977	VXX23483	
Gasoline Range Organics	5.67 U	5.67	mg/Kg	1	VFC10977	VXX23483	
o-Xylene	56.7 U	56.7	ug/Kg	1	VFC10977	VXX23483	
P & M -Xylene	113 U	113	ug/Kg	1	VFC10977	VXX23483	
Toluene	56.7 U	56.7	ug/Kg	1	VFC10977	VXX23483	
1,4-Difluorobenzene <sur>	97.8	72-119	%	1	VFC10977	VXX23483	
4-Bromofluorobenzene <sur>	104	50-150	%	1	VFC10977	VXX23483	

Batch Information

Analytical Batch: VFC10977

Analytical Method: AK101

Analysis Date/Time: 05/16/12 18:28

Dilution Factor: 1

Prep Batch: VXX23483

Prep Method: SW5035A

Prep Date/Time: 05/07/12 10:30

Initial Prep Wt./Vol.: 29.14 g

Prep Extract Vol.: 28.7597 mL

Container ID: 1121608013-B

Analyst: EAB

Analytical Batch: VFC10977

Analytical Method: SW8021B

Analysis Date/Time: 05/16/12 18:28

Dilution Factor: 1

Prep Batch: VXX23483

Prep Method: SW5035A

Prep Date/Time: 05/07/12 10:30

Initial Prep Wt./Vol.: 29.14 g

Prep Extract Vol.: 28.7597 mL

Container ID: 1121608013-B

Analyst: EAB

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-9+60-4**

SGS Ref. #: 1121608013

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 87.1

Collection Date/Time: 05/07/12 10:30

Receipt Date/Time: 05/10/12 16:20

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Diesel Range Organics	22.7 U	22.7	mg/Kg	1	XFC10371	XXX26852	
Residual Range Organics	58.8	22.7	mg/Kg	1	XFC10371	XXX26852	
5a Androstane <surr>	85.3	50-150	%	1	XFC10371	XXX26852	
n-Triacontane-d62 <surr>	95.2	50-150	%	1	XFC10371	XXX26852	

Batch Information

Analytical Batch: XFC10371	Prep Batch: XXX26852	Initial Prep Wt./Vol.: 30.297 g
Analytical Method: AK102	Prep Method: SW3550C	Prep Extract Vol.: 1 mL
Analysis Date/Time: 05/16/12 22:39	Prep Date/Time: 05/16/12 15:15	Container ID:1121608013-A
Dilution Factor: 1		Analyst: LCE
Analytical Batch: XFC10371	Prep Batch: XXX26852	Initial Prep Wt./Vol.: 30.297 g
Analytical Method: AK103	Prep Method: SW3550C	Prep Extract Vol.: 1 mL
Analysis Date/Time: 05/16/12 22:39	Prep Date/Time: 05/16/12 15:15	Container ID:1121608013-A
Dilution Factor: 1		Analyst: LCE

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-9+60-4**

SGS Ref. #: 1121608013

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 87.1

Collection Date/Time: 05/07/12 10:30

Receipt Date/Time: 05/10/12 16:20

Polynuclear Aromatics GC/MS

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
1-Methylnaphthalene	5.69 U	5.69	ug/Kg	1	XMS6665	XXX26865	
2-Methylnaphthalene	5.69 U	5.69	ug/Kg	1	XMS6665	XXX26865	
Acenaphthene	5.69 U	5.69	ug/Kg	1	XMS6665	XXX26865	
Acenaphthylene	5.69 U	5.69	ug/Kg	1	XMS6665	XXX26865	
Anthracene	5.69 U	5.69	ug/Kg	1	XMS6665	XXX26865	
Benzo(a)Anthracene	6.10	5.69	ug/Kg	1	XMS6665	XXX26865	
Benzo[a]pyrene	8.47	5.69	ug/Kg	1	XMS6665	XXX26865	
Benzo[b]Fluoranthene	9.79	5.69	ug/Kg	1	XMS6665	XXX26865	
Benzo[g,h,i]perylene	7.41	5.69	ug/Kg	1	XMS6665	XXX26865	
Benzo[k]fluoranthene	5.69 U	5.69	ug/Kg	1	XMS6665	XXX26865	
Chrysene	6.61	5.69	ug/Kg	1	XMS6665	XXX26865	
Dibenzo[a,h]anthracene	5.69 U	5.69	ug/Kg	1	XMS6665	XXX26865	
Fluoranthene	12.0	5.69	ug/Kg	1	XMS6665	XXX26865	
Fluorene	5.69 U	5.69	ug/Kg	1	XMS6665	XXX26865	
Indeno[1,2,3-c,d] pyrene	5.69 U	5.69	ug/Kg	1	XMS6665	XXX26865	
Naphthalene	5.69 U	5.69	ug/Kg	1	XMS6665	XXX26865	
Phenanthrene	5.69 U	5.69	ug/Kg	1	XMS6665	XXX26865	
Pyrene	11.7	5.69	ug/Kg	1	XMS6665	XXX26865	
2-Fluorobiphenyl <surr>	81.5	45-105	%	1	XMS6665	XXX26865	
Terphenyl-d14 <surr>	95.9	30-125	%	1	XMS6665	XXX26865	

Batch Information

Analytical Batch: XMS6665

Analytical Method: 8270D SIMS (PAH)

Analysis Date/Time: 05/21/12 17:05

Dilution Factor: 1

Prep Batch: XXX26865

Prep Method: SW3550C

Prep Date/Time: 05/18/12 15:00

Initial Prep Wt./Vol.: 22.711 g

Prep Extract Vol.: 1 mL

Container ID: 1121608013-A

Analyst: RTS

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-9+60-4**

SGS Ref. #: 1121608013

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 87.1

Collection Date/Time: 05/07/12 10:30

Receipt Date/Time: 05/10/12 16:20

Solids

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical</u> <u>Batch</u>	<u>Prep</u> <u>Batch</u>	<u>Qualifiers</u>
Total Solids	87.1		%	1	SPT8625		

Batch Information

Analytical Batch: SPT8625

Analytical Method: SM21 2540G

Analysis Date/Time: 05/14/12 17:00

Dilution Factor: 1

Initial Prep Wt./Vol.: 1 mL

Container ID:1121608013-A

Analyst: CDE

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-10+10-4**

SGS Ref. #: 1121608014

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 89.7

Collection Date/Time: 05/07/12 11:00

Receipt Date/Time: 05/10/12 16:20

Volatile Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Benzene	28.0 U	28.0	ug/Kg	1	VFC10977	VXX23483	
Ethylbenzene	55.9 U	55.9	ug/Kg	1	VFC10977	VXX23483	
Gasoline Range Organics	5.59 U	5.59	mg/Kg	1	VFC10977	VXX23483	
o-Xylene	55.9 U	55.9	ug/Kg	1	VFC10977	VXX23483	
P & M -Xylene	112 U	112	ug/Kg	1	VFC10977	VXX23483	
Toluene	55.9 U	55.9	ug/Kg	1	VFC10977	VXX23483	
1,4-Difluorobenzene <sur>	96.4	72-119	%	1	VFC10977	VXX23483	
4-Bromofluorobenzene <sur>	104	50-150	%	1	VFC10977	VXX23483	

Batch Information

Analytical Batch: VFC10977

Analytical Method: AK101

Analysis Date/Time: 05/16/12 18:47

Dilution Factor: 1

Prep Batch: VXX23483

Prep Method: SW5035A

Prep Date/Time: 05/07/12 11:00

Initial Prep Wt./Vol.: 27.79 g

Prep Extract Vol.: 27.8663 mL

Container ID: 1121608014-B

Analyst: EAB

Analytical Batch: VFC10977

Analytical Method: SW8021B

Analysis Date/Time: 05/16/12 18:47

Dilution Factor: 1

Prep Batch: VXX23483

Prep Method: SW5035A

Prep Date/Time: 05/07/12 11:00

Initial Prep Wt./Vol.: 27.79 g

Prep Extract Vol.: 27.8663 mL

Container ID: 1121608014-B

Analyst: EAB

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-10+10-4**

SGS Ref. #: 1121608014

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 89.7

Collection Date/Time: 05/07/12 11:00

Receipt Date/Time: 05/10/12 16:20

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Diesel Range Organics	42.3	22.2	mg/Kg	1	XFC10371	XXX26852	
Residual Range Organics	87.1	22.2	mg/Kg	1	XFC10371	XXX26852	
5a Androstane <sur>	98.9	50-150	%	1	XFC10371	XXX26852	
n-Triacontane-d62 <sur>	96.2	50-150	%	1	XFC10371	XXX26852	

Batch Information

Analytical Batch: XFC10371	Prep Batch: XXX26852	Initial Prep Wt./Vol.: 30.092 g
Analytical Method: AK102	Prep Method: SW3550C	Prep Extract Vol.: 1 mL
Analysis Date/Time: 05/16/12 22:48	Prep Date/Time: 05/16/12 15:15	Container ID:1121608014-A
Dilution Factor: 1		Analyst: LCE
Analytical Batch: XFC10371	Prep Batch: XXX26852	Initial Prep Wt./Vol.: 30.092 g
Analytical Method: AK103	Prep Method: SW3550C	Prep Extract Vol.: 1 mL
Analysis Date/Time: 05/16/12 22:48	Prep Date/Time: 05/16/12 15:15	Container ID:1121608014-A
Dilution Factor: 1		Analyst: LCE



Unalaska City-Public Works

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-10+10-4**

SGS Ref. #: 1121608014

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 89.7

Collection Date/Time: 05/07/12 11:00

Receipt Date/Time: 05/10/12 16:20

Polynuclear Aromatics GC/MS

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
1-Methylnaphthalene	5.53 U	5.53	ug/Kg	1	XMS6665	XXX26865	
2-Methylnaphthalene	5.53 U	5.53	ug/Kg	1	XMS6665	XXX26865	
Acenaphthene	5.53 U	5.53	ug/Kg	1	XMS6665	XXX26865	
Acenaphthylene	5.53 U	5.53	ug/Kg	1	XMS6665	XXX26865	
Anthracene	5.53 U	5.53	ug/Kg	1	XMS6665	XXX26865	
Benzo(a)Anthracene	5.53 U	5.53	ug/Kg	1	XMS6665	XXX26865	
Benzo[a]pyrene	5.53 U	5.53	ug/Kg	1	XMS6665	XXX26865	
Benzo[b]Fluoranthene	5.53 U	5.53	ug/Kg	1	XMS6665	XXX26865	
Benzo[g,h,i]perylene	5.53 U	5.53	ug/Kg	1	XMS6665	XXX26865	
Benzo[k]fluoranthene	5.53 U	5.53	ug/Kg	1	XMS6665	XXX26865	
Chrysene	5.53 U	5.53	ug/Kg	1	XMS6665	XXX26865	
Dibenzo[a,h]anthracene	5.53 U	5.53	ug/Kg	1	XMS6665	XXX26865	
Fluoranthene	6.35	5.53	ug/Kg	1	XMS6665	XXX26865	
Fluorene	5.53 U	5.53	ug/Kg	1	XMS6665	XXX26865	
Indeno[1,2,3-c,d] pyrene	5.53 U	5.53	ug/Kg	1	XMS6665	XXX26865	
Naphthalene	5.53 U	5.53	ug/Kg	1	XMS6665	XXX26865	
Phenanthrene	5.53 U	5.53	ug/Kg	1	XMS6665	XXX26865	
Pyrene	6.11	5.53	ug/Kg	1	XMS6665	XXX26865	
2-Fluorobiphenyl <surr>	70.4	45-105	%	1	XMS6665	XXX26865	
Terphenyl-d14 <surr>	101	30-125	%	1	XMS6665	XXX26865	

Batch Information

Analytical Batch: XMS6665

Analytical Method: 8270D SIMS (PAH)

Analysis Date/Time: 05/21/12 17:25

Dilution Factor: 1

Prep Batch: XXX26865

Prep Method: SW3550C

Prep Date/Time: 05/18/12 15:00

Initial Prep Wt./Vol.: 22.68 g

Prep Extract Vol.: 1 mL

Container ID: 1121608014-A

Analyst: RTS

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-10+10-4**

SGS Ref. #: 1121608014

Collection Date/Time: 05/07/12 11:00

Project ID: Ilulak Lake East Point Rd DW

Receipt Date/Time: 05/10/12 16:20

Matrix: Soil/Solid (dry weight)

Percent Solids: 89.7

Solids

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical</u> <u>Batch</u>	<u>Prep</u> <u>Batch</u>	<u>Qualifiers</u>
Total Solids	89.7		%	1	SPT8625		

Batch Information

Analytical Batch: SPT8625

Initial Prep Wt./Vol.: 1 mL

Analytical Method: SM21 2540G

Analysis Date/Time: 05/14/12 17:00

Container ID:1121608014-A

Dilution Factor: 1

Analyst: CDE

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-10+60-2**

SGS Ref. #: 1121608015

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 93.5

Collection Date/Time: 05/07/12 13:45

Receipt Date/Time: 05/10/12 16:20

Volatile Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Benzene	24.8 U	24.8	ug/Kg	1	VFC10977	VXX23483	
Ethylbenzene	49.6 U	49.6	ug/Kg	1	VFC10977	VXX23483	
Gasoline Range Organics	4.96 U	4.96	mg/Kg	1	VFC10977	VXX23483	
o-Xylene	49.6 U	49.6	ug/Kg	1	VFC10977	VXX23483	
P & M -Xylene	99.2 U	99.2	ug/Kg	1	VFC10977	VXX23483	
Toluene	49.6 U	49.6	ug/Kg	1	VFC10977	VXX23483	
1,4-Difluorobenzene <sur>	98.7	72-119	%	1	VFC10977	VXX23483	
4-Bromofluorobenzene <sur>	100	50-150	%	1	VFC10977	VXX23483	

Batch Information

Analytical Batch: VFC10977

Analytical Method: AK101

Analysis Date/Time: 05/16/12 19:05

Dilution Factor: 1

Prep Batch: VXX23483

Prep Method: SW5035A

Prep Date/Time: 05/07/12 13:45

Initial Prep Wt./Vol.: 28.987 g

Prep Extract Vol.: 26.8795 mL

Container ID: 1121608015-B

Analyst: EAB

Analytical Batch: VFC10977

Analytical Method: SW8021B

Analysis Date/Time: 05/16/12 19:05

Dilution Factor: 1

Prep Batch: VXX23483

Prep Method: SW5035A

Prep Date/Time: 05/07/12 13:45

Initial Prep Wt./Vol.: 28.987 g

Prep Extract Vol.: 26.8795 mL

Container ID: 1121608015-B

Analyst: EAB

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-10+60-2**

SGS Ref. #: 1121608015

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 93.5

Collection Date/Time: 05/07/12 13:45

Receipt Date/Time: 05/10/12 16:20

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Diesel Range Organics	21.3 U	21.3	mg/Kg	1	XFC10371	XXX26852	
Residual Range Organics	57.1	21.3	mg/Kg	1	XFC10371	XXX26852	
5a Androstane <surr>	99.8	50-150	%	1	XFC10371	XXX26852	
n-Triacontane-d62 <surr>	98.3	50-150	%	1	XFC10371	XXX26852	

Batch Information

Analytical Batch: XFC10371	Prep Batch: XXX26852	Initial Prep Wt./Vol.: 30.152 g
Analytical Method: AK102	Prep Method: SW3550C	Prep Extract Vol.: 1 mL
Analysis Date/Time: 05/16/12 22:58	Prep Date/Time: 05/16/12 15:15	Container ID: 1121608015-A
Dilution Factor: 1		Analyst: LCE
Analytical Batch: XFC10371	Prep Batch: XXX26852	Initial Prep Wt./Vol.: 30.152 g
Analytical Method: AK103	Prep Method: SW3550C	Prep Extract Vol.: 1 mL
Analysis Date/Time: 05/16/12 22:58	Prep Date/Time: 05/16/12 15:15	Container ID: 1121608015-A
Dilution Factor: 1		Analyst: LCE



Unalaska City-Public Works

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-10+60-2**

SGS Ref. #: 1121608015

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 93.5

Collection Date/Time: 05/07/12 13:45

Receipt Date/Time: 05/10/12 16:20

Polynuclear Aromatics GC/MS

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
1-Methylnaphthalene	5.33 U	5.33	ug/Kg	1	XMS6665	XXX26865	
2-Methylnaphthalene	5.33 U	5.33	ug/Kg	1	XMS6665	XXX26865	
Acenaphthene	5.33 U	5.33	ug/Kg	1	XMS6665	XXX26865	
Acenaphthylene	5.33 U	5.33	ug/Kg	1	XMS6665	XXX26865	
Anthracene	5.33 U	5.33	ug/Kg	1	XMS6665	XXX26865	
Benzo(a)Anthracene	5.33 U	5.33	ug/Kg	1	XMS6665	XXX26865	
Benzo[a]pyrene	5.33 U	5.33	ug/Kg	1	XMS6665	XXX26865	
Benzo[b]Fluoranthene	5.33 U	5.33	ug/Kg	1	XMS6665	XXX26865	
Benzo[g,h,i]perylene	5.33 U	5.33	ug/Kg	1	XMS6665	XXX26865	
Benzo[k]fluoranthene	5.33 U	5.33	ug/Kg	1	XMS6665	XXX26865	
Chrysene	5.33 U	5.33	ug/Kg	1	XMS6665	XXX26865	
Dibenzo[a,h]anthracene	5.33 U	5.33	ug/Kg	1	XMS6665	XXX26865	
Fluoranthene	5.33 U	5.33	ug/Kg	1	XMS6665	XXX26865	
Fluorene	5.33 U	5.33	ug/Kg	1	XMS6665	XXX26865	
Indeno[1,2,3-c,d] pyrene	5.33 U	5.33	ug/Kg	1	XMS6665	XXX26865	
Naphthalene	5.33 U	5.33	ug/Kg	1	XMS6665	XXX26865	
Phenanthrene	5.33 U	5.33	ug/Kg	1	XMS6665	XXX26865	
Pyrene	5.33 U	5.33	ug/Kg	1	XMS6665	XXX26865	
2-Fluorobiphenyl <surr>	68.3	45-105	%	1	XMS6665	XXX26865	
Terphenyl-d14 <surr>	96.1	30-125	%	1	XMS6665	XXX26865	

Batch Information

Analytical Batch: XMS6665

Analytical Method: 8270D SIMS (PAH)

Analysis Date/Time: 05/21/12 17:45

Dilution Factor: 1

Prep Batch: XXX26865

Prep Method: SW3550C

Prep Date/Time: 05/18/12 15:00

Initial Prep Wt./Vol.: 22.554 g

Prep Extract Vol.: 1 mL

Container ID: 1121608015-A

Analyst: RTS

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-10+60-2**

SGS Ref. #: 1121608015

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 93.5

Collection Date/Time: 05/07/12 13:45

Receipt Date/Time: 05/10/12 16:20

Solids

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Total Solids	93.5		%	1	SPT8625		

Batch Information

Analytical Batch: SPT8625

Analytical Method: SM21 2540G

Analysis Date/Time: 05/14/12 17:00

Dilution Factor: 1

Initial Prep Wt./Vol.: 1 mL

Container ID:1121608015-A

Analyst: CDE

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-10+60-4**

SGS Ref. #: 1121608016

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 87.0

Collection Date/Time: 05/07/12 13:30

Receipt Date/Time: 05/10/12 16:20

Volatile Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Benzene	28.9 U	28.9	ug/Kg	1	VFC10977	VXX23483	
Ethylbenzene	57.8 U	57.8	ug/Kg	1	VFC10977	VXX23483	
Gasoline Range Organics	5.78 U	5.78	mg/Kg	1	VFC10977	VXX23483	
o-Xylene	57.8 U	57.8	ug/Kg	1	VFC10977	VXX23483	
P & M -Xylene	116 U	116	ug/Kg	1	VFC10977	VXX23483	
Toluene	57.8 U	57.8	ug/Kg	1	VFC10977	VXX23483	
1,4-Difluorobenzene <sur>	98	72-119	%	1	VFC10977	VXX23483	
4-Bromofluorobenzene <sur>	104	50-150	%	1	VFC10977	VXX23483	

Batch Information

Analytical Batch: VFC10977

Analytical Method: AK101

Analysis Date/Time: 05/16/12 19:23

Dilution Factor: 1

Prep Batch: VXX23483

Prep Method: SW5035A

Prep Date/Time: 05/07/12 13:30

Initial Prep Wt./Vol.: 28.527 g

Prep Extract Vol.: 28.7089 mL

Container ID: 1121608016-B

Analyst: EAB

Analytical Batch: VFC10977

Analytical Method: SW8021B

Analysis Date/Time: 05/16/12 19:23

Dilution Factor: 1

Prep Batch: VXX23483

Prep Method: SW5035A

Prep Date/Time: 05/07/12 13:30

Initial Prep Wt./Vol.: 28.527 g

Prep Extract Vol.: 28.7089 mL

Container ID: 1121608016-B

Analyst: EAB

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-10+60-4**

SGS Ref. #: 1121608016

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 87.0

Collection Date/Time: 05/07/12 13:30

Receipt Date/Time: 05/10/12 16:20

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Diesel Range Organics	101	22.7	mg/Kg	1	XFC10371	XXX26852	
Residual Range Organics	148	22.7	mg/Kg	1	XFC10371	XXX26852	
5a Androstane <surr>	102	50-150	%	1	XFC10371	XXX26852	
n-Triacontane-d62 <surr>	95.1	50-150	%	1	XFC10371	XXX26852	

Batch Information

Analytical Batch: XFC10371	Prep Batch: XXX26852	Initial Prep Wt./Vol.: 30.372 g
Analytical Method: AK102	Prep Method: SW3550C	Prep Extract Vol.: 1 mL
Analysis Date/Time: 05/16/12 23:07	Prep Date/Time: 05/16/12 15:15	Container ID:1121608016-A
Dilution Factor: 1		Analyst: LCE
Analytical Batch: XFC10371	Prep Batch: XXX26852	Initial Prep Wt./Vol.: 30.372 g
Analytical Method: AK103	Prep Method: SW3550C	Prep Extract Vol.: 1 mL
Analysis Date/Time: 05/16/12 23:07	Prep Date/Time: 05/16/12 15:15	Container ID:1121608016-A
Dilution Factor: 1		Analyst: LCE



Unalaska City-Public Works

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-10+60-4**

SGS Ref. #: 1121608016

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 87.0

Collection Date/Time: 05/07/12 13:30

Receipt Date/Time: 05/10/12 16:20

Polynuclear Aromatics GC/MS

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
1-Methylnaphthalene	5.65 U	5.65	ug/Kg	1	XMS6665	XXX26865	
2-Methylnaphthalene	5.65 U	5.65	ug/Kg	1	XMS6665	XXX26865	
Acenaphthene	5.65 U	5.65	ug/Kg	1	XMS6665	XXX26865	
Acenaphthylene	5.65 U	5.65	ug/Kg	1	XMS6665	XXX26865	
Anthracene	5.65 U	5.65	ug/Kg	1	XMS6665	XXX26865	
Benzo(a)Anthracene	20.2	5.65	ug/Kg	1	XMS6665	XXX26865	
Benzo[a]pyrene	16.9	5.65	ug/Kg	1	XMS6665	XXX26865	
Benzo[b]Fluoranthene	25.2	5.65	ug/Kg	1	XMS6665	XXX26865	
Benzo[g,h,i]perylene	13.4	5.65	ug/Kg	1	XMS6665	XXX26865	
Benzo[k]fluoranthene	6.98	5.65	ug/Kg	1	XMS6665	XXX26865	
Chrysene	19.2	5.65	ug/Kg	1	XMS6665	XXX26865	
Dibenzo[a,h]anthracene	5.65 U	5.65	ug/Kg	1	XMS6665	XXX26865	
Fluoranthene	30.7	5.65	ug/Kg	1	XMS6665	XXX26865	
Fluorene	5.65 U	5.65	ug/Kg	1	XMS6665	XXX26865	
Indeno[1,2,3-c,d] pyrene	10.3	5.65	ug/Kg	1	XMS6665	XXX26865	
Naphthalene	5.65 U	5.65	ug/Kg	1	XMS6665	XXX26865	
Phenanthrene	9.27	5.65	ug/Kg	1	XMS6665	XXX26865	
Pyrene	28.5	5.65	ug/Kg	1	XMS6665	XXX26865	
2-Fluorobiphenyl <surr>	81.9	45-105	%	1	XMS6665	XXX26865	
Terphenyl-d14 <surr>	115	30-125	%	1	XMS6665	XXX26865	

Batch Information

Analytical Batch: XMS6665

Analytical Method: 8270D SIMS (PAH)

Analysis Date/Time: 05/21/12 18:46

Dilution Factor: 1

Prep Batch: XXX26865

Prep Method: SW3550C

Prep Date/Time: 05/18/12 15:00

Initial Prep Wt./Vol.: 22.886 g

Prep Extract Vol.: 1 mL

Container ID: 1121608016-A

Analyst: RTS

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-10+60-4**

SGS Ref. #: 1121608016

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 87.0

Collection Date/Time: 05/07/12 13:30

Receipt Date/Time: 05/10/12 16:20

Solids

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical</u> <u>Batch</u>	<u>Prep</u> <u>Batch</u>	<u>Qualifiers</u>
Total Solids	87.0		%	1	SPT8625		

Batch Information

Analytical Batch: SPT8625

Analytical Method: SM21 2540G

Analysis Date/Time: 05/14/12 17:00

Dilution Factor: 1

Initial Prep Wt./Vol.: 1 mL

Container ID:1121608016-A

Analyst: CDE

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-11+10-4**

SGS Ref. #: 1121608017

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 92.7

Collection Date/Time: 05/07/12 14:45

Receipt Date/Time: 05/10/12 16:20

Volatile Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Benzene	27.2 U	27.2	ug/Kg	1	VFC10977	VXX23483	
Ethylbenzene	54.5 U	54.5	ug/Kg	1	VFC10977	VXX23483	
Gasoline Range Organics	5.45 U	5.45	mg/Kg	1	VFC10977	VXX23483	
o-Xylene	54.5 U	54.5	ug/Kg	1	VFC10977	VXX23483	
P & M -Xylene	109 U	109	ug/Kg	1	VFC10977	VXX23483	
Toluene	54.5 U	54.5	ug/Kg	1	VFC10977	VXX23483	
1,4-Difluorobenzene <sur>	97.4	72-119	%	1	VFC10977	VXX23483	
4-Bromofluorobenzene <sur>	99.8	50-150	%	1	VFC10977	VXX23483	

Batch Information

Analytical Batch: VFC10977

Analytical Method: AK101

Analysis Date/Time: 05/16/12 19:42

Dilution Factor: 1

Prep Batch: VXX23483

Prep Method: SW5035A

Prep Date/Time: 05/07/12 14:45

Initial Prep Wt./Vol.: 26.666 g

Prep Extract Vol.: 26.9356 mL

Container ID: 1121608017-B

Analyst: EAB

Analytical Batch: VFC10977

Analytical Method: SW8021B

Analysis Date/Time: 05/16/12 19:42

Dilution Factor: 1

Prep Batch: VXX23483

Prep Method: SW5035A

Prep Date/Time: 05/07/12 14:45

Initial Prep Wt./Vol.: 26.666 g

Prep Extract Vol.: 26.9356 mL

Container ID: 1121608017-B

Analyst: EAB

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-11+10-4**

SGS Ref. #: 1121608017

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 92.7

Collection Date/Time: 05/07/12 14:45

Receipt Date/Time: 05/10/12 16:20

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Diesel Range Organics	21.4 U	21.4	mg/Kg	1	XFC10371	XXX26852	
Residual Range Organics	36.1	21.4	mg/Kg	1	XFC10371	XXX26852	
5a Androstane <surr>	89.8	50-150	%	1	XFC10371	XXX26852	
n-Triacontane-d62 <surr>	89.3	50-150	%	1	XFC10371	XXX26852	

Batch Information

Analytical Batch: XFC10371	Prep Batch: XXX26852	Initial Prep Wt./Vol.: 30.183 g
Analytical Method: AK102	Prep Method: SW3550C	Prep Extract Vol.: 1 mL
Analysis Date/Time: 05/16/12 23:17	Prep Date/Time: 05/16/12 15:15	Container ID: 1121608017-A
Dilution Factor: 1		Analyst: LCE
Analytical Batch: XFC10371	Prep Batch: XXX26852	Initial Prep Wt./Vol.: 30.183 g
Analytical Method: AK103	Prep Method: SW3550C	Prep Extract Vol.: 1 mL
Analysis Date/Time: 05/16/12 23:17	Prep Date/Time: 05/16/12 15:15	Container ID: 1121608017-A
Dilution Factor: 1		Analyst: LCE

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-11+10-4**

SGS Ref. #: 1121608017

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 92.7

Collection Date/Time: 05/07/12 14:45

Receipt Date/Time: 05/10/12 16:20

Polynuclear Aromatics GC/MS

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
1-Methylnaphthalene	5.36 U	5.36	ug/Kg	1	XMS6663	XXX26839	
2-Methylnaphthalene	5.36 U	5.36	ug/Kg	1	XMS6663	XXX26839	
Acenaphthene	5.36 U	5.36	ug/Kg	1	XMS6663	XXX26839	
Acenaphthylene	5.36 U	5.36	ug/Kg	1	XMS6663	XXX26839	
Anthracene	5.36 U	5.36	ug/Kg	1	XMS6663	XXX26839	
Benzo(a)Anthracene	5.36 U	5.36	ug/Kg	1	XMS6663	XXX26839	
Benzo[a]pyrene	5.36 U	5.36	ug/Kg	1	XMS6663	XXX26839	
Benzo[b]Fluoranthene	5.36 U	5.36	ug/Kg	1	XMS6663	XXX26839	
Benzo[g,h,i]perylene	5.36 U	5.36	ug/Kg	1	XMS6663	XXX26839	
Benzo[k]fluoranthene	5.36 U	5.36	ug/Kg	1	XMS6663	XXX26839	
Chrysene	5.36 U	5.36	ug/Kg	1	XMS6663	XXX26839	
Dibenzo[a,h]anthracene	5.36 U	5.36	ug/Kg	1	XMS6663	XXX26839	
Fluoranthene	5.36 U	5.36	ug/Kg	1	XMS6663	XXX26839	
Fluorene	5.36 U	5.36	ug/Kg	1	XMS6663	XXX26839	
Indeno[1,2,3-c,d] pyrene	5.36 U	5.36	ug/Kg	1	XMS6663	XXX26839	
Naphthalene	5.36 U	5.36	ug/Kg	1	XMS6663	XXX26839	
Phenanthrene	5.36 U	5.36	ug/Kg	1	XMS6663	XXX26839	
Pyrene	5.36 U	5.36	ug/Kg	1	XMS6663	XXX26839	
2-Fluorobiphenyl <surr>	98.1	45-105	%	1	XMS6663	XXX26839	
Terphenyl-d14 <surr>	114	30-125	%	1	XMS6663	XXX26839	

Batch Information

Analytical Batch: XMS6663

Analytical Method: 8270D SIMS (PAH)

Analysis Date/Time: 05/16/12 17:30

Dilution Factor: 1

Prep Batch: XXX26839

Prep Method: SW3550C

Prep Date/Time: 05/14/12 15:00

Initial Prep Wt./Vol.: 22.652 g

Prep Extract Vol.: 1 mL

Container ID: 1121608017-A

Analyst: RTS

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-11+10-4**

SGS Ref. #: 1121608017

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 92.7

Collection Date/Time: 05/07/12 14:45

Receipt Date/Time: 05/10/12 16:20

Solids

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical</u> <u>Batch</u>	<u>Prep</u> <u>Batch</u>	<u>Qualifiers</u>
Total Solids	92.7		%	1	SPT8625		

Batch Information

Analytical Batch: SPT8625

Analytical Method: SM21 2540G

Analysis Date/Time: 05/14/12 17:00

Dilution Factor: 1

Initial Prep Wt./Vol.: 1 mL

Container ID:1121608017-A

Analyst: CDE

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-11+60-4**

SGS Ref. #: 1121608018

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 84.3

Collection Date/Time: 05/07/12 15:00

Receipt Date/Time: 05/10/12 16:20

Volatile Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Benzene	32.5 U	32.5	ug/Kg	1	VFC10977	VXX23483	
Ethylbenzene	64.9 U	64.9	ug/Kg	1	VFC10977	VXX23483	
Gasoline Range Organics	6.49 U	6.49	mg/Kg	1	VFC10977	VXX23483	
o-Xylene	64.9 U	64.9	ug/Kg	1	VFC10977	VXX23483	
P & M -Xylene	130 U	130	ug/Kg	1	VFC10977	VXX23483	
Toluene	64.9 U	64.9	ug/Kg	1	VFC10977	VXX23483	
1,4-Difluorobenzene <sur>	100	72-119	%	1	VFC10977	VXX23483	
4-Bromofluorobenzene <sur>	103	50-150	%	1	VFC10977	VXX23483	

Batch Information

Analytical Batch: VFC10977

Analytical Method: AK101

Analysis Date/Time: 05/16/12 20:18

Dilution Factor: 1

Prep Batch: VXX23483

Prep Method: SW5035A

Prep Date/Time: 05/07/12 15:00

Initial Prep Wt./Vol.: 26.67 g

Prep Extract Vol.: 29.1858 mL

Container ID: 1121608018-B

Analyst: EAB

Analytical Batch: VFC10977

Analytical Method: SW8021B

Analysis Date/Time: 05/16/12 20:18

Dilution Factor: 1

Prep Batch: VXX23483

Prep Method: SW5035A

Prep Date/Time: 05/07/12 15:00

Initial Prep Wt./Vol.: 26.67 g

Prep Extract Vol.: 29.1858 mL

Container ID: 1121608018-B

Analyst: EAB

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-11+60-4**

SGS Ref. #: 1121608018

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 84.3

Collection Date/Time: 05/07/12 15:00

Receipt Date/Time: 05/10/12 16:20

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Diesel Range Organics	26.2	23.5	mg/Kg	1	XFC10371	XXX26852	
Residual Range Organics	91.1	23.5	mg/Kg	1	XFC10371	XXX26852	
5a Androstane <surr>	84	50-150	%	1	XFC10371	XXX26852	
n-Triacontane-d62 <surr>	80.3	50-150	%	1	XFC10371	XXX26852	

Batch Information

Analytical Batch: XFC10371	Prep Batch: XXX26852	Initial Prep Wt./Vol.: 30.231 g
Analytical Method: AK102	Prep Method: SW3550C	Prep Extract Vol.: 1 mL
Analysis Date/Time: 05/16/12 23:27	Prep Date/Time: 05/16/12 15:15	Container ID:1121608018-A
Dilution Factor: 1		Analyst: LCE
Analytical Batch: XFC10371	Prep Batch: XXX26852	Initial Prep Wt./Vol.: 30.231 g
Analytical Method: AK103	Prep Method: SW3550C	Prep Extract Vol.: 1 mL
Analysis Date/Time: 05/16/12 23:27	Prep Date/Time: 05/16/12 15:15	Container ID:1121608018-A
Dilution Factor: 1		Analyst: LCE



Unalaska City-Public Works

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-11+60-4**

SGS Ref. #: 1121608018

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 84.3

Collection Date/Time: 05/07/12 15:00

Receipt Date/Time: 05/10/12 16:20

Polynuclear Aromatics GC/MS

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
1-Methylnaphthalene	5.81 U	5.81	ug/Kg	1	XMS6663	XXX26839	
2-Methylnaphthalene	5.81 U	5.81	ug/Kg	1	XMS6663	XXX26839	
Acenaphthene	5.81 U	5.81	ug/Kg	1	XMS6663	XXX26839	
Acenaphthylene	5.81 U	5.81	ug/Kg	1	XMS6663	XXX26839	
Anthracene	6.07	5.81	ug/Kg	1	XMS6663	XXX26839	
Benzo(a)Anthracene	45.0	5.81	ug/Kg	1	XMS6663	XXX26839	
Benzo[a]pyrene	37.2	5.81	ug/Kg	1	XMS6663	XXX26839	
Benzo[b]Fluoranthene	58.1	5.81	ug/Kg	1	XMS6663	XXX26839	
Benzo[g,h,i]perylene	20.9	5.81	ug/Kg	1	XMS6663	XXX26839	
Benzo[k]fluoranthene	12.9	5.81	ug/Kg	1	XMS6663	XXX26839	
Chrysene	31.8	5.81	ug/Kg	1	XMS6663	XXX26839	
Dibenzo[a,h]anthracene	6.25	5.81	ug/Kg	1	XMS6663	XXX26839	
Fluoranthene	54.4	5.81	ug/Kg	1	XMS6663	XXX26839	
Fluorene	5.81 U	5.81	ug/Kg	1	XMS6663	XXX26839	
Indeno[1,2,3-c,d] pyrene	20.0	5.81	ug/Kg	1	XMS6663	XXX26839	
Naphthalene	5.81 U	5.81	ug/Kg	1	XMS6663	XXX26839	
Phenanthrene	18.9	5.81	ug/Kg	1	XMS6663	XXX26839	
Pyrene	48.1	5.81	ug/Kg	1	XMS6663	XXX26839	
2-Fluorobiphenyl <surr>	72.5	45-105	%	1	XMS6663	XXX26839	
Terphenyl-d14 <surr>	96	30-125	%	1	XMS6663	XXX26839	

Batch Information

Analytical Batch: XMS6663

Analytical Method: 8270D SIMS (PAH)

Analysis Date/Time: 05/16/12 18:10

Dilution Factor: 1

Prep Batch: XXX26839

Prep Method: SW3550C

Prep Date/Time: 05/14/12 15:00

Initial Prep Wt./Vol.: 22.985 g

Prep Extract Vol.: 1 mL

Container ID: 1121608018-A

Analyst: RTS

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-11+60-4**

SGS Ref. #: 1121608018

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 84.3

Collection Date/Time: 05/07/12 15:00

Receipt Date/Time: 05/10/12 16:20

Solids

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical</u> <u>Batch</u>	<u>Prep</u> <u>Batch</u>	<u>Qualifiers</u>
Total Solids	84.3		%	1	SPT8625		

Batch Information

Analytical Batch: SPT8625

Analytical Method: SM21 2540G

Analysis Date/Time: 05/14/12 17:00

Dilution Factor: 1

Initial Prep Wt./Vol.: 1 mL

Container ID:1121608018-A

Analyst: CDE

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-12+10-4**

SGS Ref. #: 1121608019

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 72.6

Collection Date/Time: 05/07/12 15:30

Receipt Date/Time: 05/10/12 16:20

Volatile Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Benzene	41.7 U	41.7	ug/Kg	1	VFC10977	VXX23483	
Ethylbenzene	83.4 U	83.4	ug/Kg	1	VFC10977	VXX23483	
Gasoline Range Organics	8.34 U	8.34	mg/Kg	1	VFC10977	VXX23483	
o-Xylene	83.4 U	83.4	ug/Kg	1	VFC10977	VXX23483	
P & M -Xylene	167 U	167	ug/Kg	1	VFC10977	VXX23483	
Toluene	83.4 U	83.4	ug/Kg	1	VFC10977	VXX23483	
1,4-Difluorobenzene <sur>	98.9	72-119	%	1	VFC10977	VXX23483	
4-Bromofluorobenzene <sur>	90.1	50-150	%	1	VFC10977	VXX23483	

Batch Information

Analytical Batch: VFC10977

Analytical Method: AK101

Analysis Date/Time: 05/16/12 20:37

Dilution Factor: 1

Prep Batch: VXX23483

Prep Method: SW5035A

Prep Date/Time: 05/07/12 15:30

Initial Prep Wt./Vol.: 26.681 g

Prep Extract Vol.: 32.3078 mL

Container ID: 1121608019-B

Analyst: EAB

Analytical Batch: VFC10977

Analytical Method: SW8021B

Analysis Date/Time: 05/16/12 20:37

Dilution Factor: 1

Prep Batch: VXX23483

Prep Method: SW5035A

Prep Date/Time: 05/07/12 15:30

Initial Prep Wt./Vol.: 26.681 g

Prep Extract Vol.: 32.3078 mL

Container ID: 1121608019-B

Analyst: EAB

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-12+10-4**

SGS Ref. #: 1121608019

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 72.6

Collection Date/Time: 05/07/12 15:30

Receipt Date/Time: 05/10/12 16:20

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Diesel Range Organics	44.1	27.5	mg/Kg	1	XFC10371	XXX26852	
Residual Range Organics	236	27.5	mg/Kg	1	XFC10371	XXX26852	
5a Androstane <surr>	93.4	50-150	%	1	XFC10371	XXX26852	
n-Triacontane-d62 <surr>	90.4	50-150	%	1	XFC10371	XXX26852	

Batch Information

Analytical Batch: XFC10371	Prep Batch: XXX26852	Initial Prep Wt./Vol.: 30.058 g
Analytical Method: AK102	Prep Method: SW3550C	Prep Extract Vol.: 1 mL
Analysis Date/Time: 05/16/12 23:56	Prep Date/Time: 05/16/12 15:15	Container ID:1121608019-A
Dilution Factor: 1		Analyst: LCE
Analytical Batch: XFC10371	Prep Batch: XXX26852	Initial Prep Wt./Vol.: 30.058 g
Analytical Method: AK103	Prep Method: SW3550C	Prep Extract Vol.: 1 mL
Analysis Date/Time: 05/16/12 23:56	Prep Date/Time: 05/16/12 15:15	Container ID:1121608019-A
Dilution Factor: 1		Analyst: LCE



Unalaska City-Public Works

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-12+10-4**

SGS Ref. #: 1121608019

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 72.6

Collection Date/Time: 05/07/12 15:30

Receipt Date/Time: 05/10/12 16:20

Polynuclear Aromatics GC/MS

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
1-Methylnaphthalene	7.54 U	7.54	ug/Kg	1	XMS6663	XXX26839	
2-Methylnaphthalene	7.54 U	7.54	ug/Kg	1	XMS6663	XXX26839	
Acenaphthene	7.54 U	7.54	ug/Kg	1	XMS6663	XXX26839	
Acenaphthylene	7.54 U	7.54	ug/Kg	1	XMS6663	XXX26839	
Anthracene	7.54 U	7.54	ug/Kg	1	XMS6663	XXX26839	
Benzo(a)Anthracene	16.3	7.54	ug/Kg	1	XMS6663	XXX26839	
Benzo[a]pyrene	16.8	7.54	ug/Kg	1	XMS6663	XXX26839	
Benzo[b]Fluoranthene	24.9	7.54	ug/Kg	1	XMS6663	XXX26839	
Benzo[g,h,i]perylene	10.5	7.54	ug/Kg	1	XMS6663	XXX26839	
Benzo[k]fluoranthene	7.54 U	7.54	ug/Kg	1	XMS6663	XXX26839	
Chrysene	15.9	7.54	ug/Kg	1	XMS6663	XXX26839	
Dibenzo[a,h]anthracene	7.54 U	7.54	ug/Kg	1	XMS6663	XXX26839	
Fluoranthene	20.9	7.54	ug/Kg	1	XMS6663	XXX26839	
Fluorene	7.54 U	7.54	ug/Kg	1	XMS6663	XXX26839	
Indeno[1,2,3-c,d] pyrene	8.65	7.54	ug/Kg	1	XMS6663	XXX26839	
Naphthalene	7.54 U	7.54	ug/Kg	1	XMS6663	XXX26839	
Phenanthrene	16.4	7.54	ug/Kg	1	XMS6663	XXX26839	
Pyrene	18.7	7.54	ug/Kg	1	XMS6663	XXX26839	
2-Fluorobiphenyl <surr>	73.7	45-105	%	1	XMS6663	XXX26839	
Terphenyl-d14 <surr>	97.1	30-125	%	1	XMS6663	XXX26839	

Batch Information

Analytical Batch: XMS6663

Analytical Method: 8270D SIMS (PAH)

Analysis Date/Time: 05/16/12 18:30

Dilution Factor: 1

Prep Batch: XXX26839

Prep Method: SW3550C

Prep Date/Time: 05/14/12 15:00

Initial Prep Wt./Vol.: 20.552 g

Prep Extract Vol.: 1 mL

Container ID: 1121608019-A

Analyst: RTS

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-12+10-4**

SGS Ref. #: 1121608019

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 72.6

Collection Date/Time: 05/07/12 15:30

Receipt Date/Time: 05/10/12 16:20

Solids

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Total Solids	72.6		%	1	SPT8625		

Batch Information

Analytical Batch: SPT8625

Analytical Method: SM21 2540G

Analysis Date/Time: 05/14/12 17:00

Dilution Factor: 1

Initial Prep Wt./Vol.: 1 mL

Container ID:1121608019-A

Analyst: CDE

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-12+60-4**

SGS Ref. #: 1121608020

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 85.9

Collection Date/Time: 05/08/12 10:00

Receipt Date/Time: 05/10/12 16:20

Volatile Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical</u> <u>Batch</u>	<u>Prep</u> <u>Batch</u>	<u>Qualifiers</u>
Benzene	28.9 U	28.9	ug/Kg	1	VFC10977		
Ethylbenzene	57.8 U	57.8	ug/Kg	1	VFC10977		
Gasoline Range Organics	5.78 U	5.78	mg/Kg	1	VFC10977		
o-Xylene	57.8 U	57.8	ug/Kg	1	VFC10977		
P & M -Xylene	116 U	116	ug/Kg	1	VFC10977		
Toluene	57.8 U	57.8	ug/Kg	1	VFC10977		
1,4-Difluorobenzene <sur>	96.6	72-119	%	1	VFC10977		
4-Bromofluorobenzene <sur>	104	50-150	%	1	VFC10977		

Batch Information

Analytical Batch: VFC10977

Analytical Method: AK101

Analysis Date/Time: 05/16/12 20:55

Dilution Factor: 1

Initial Prep Wt./Vol.: 29.326 g

Container ID:1121608020-B

Analyst: EAB

Analytical Batch: VFC10977

Analytical Method: SW8021B

Analysis Date/Time: 05/16/12 20:55

Dilution Factor: 1

Initial Prep Wt./Vol.: 29.326 g

Container ID:1121608020-B

Analyst: EAB

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-12+60-4**

SGS Ref. #: 1121608020

Collection Date/Time: 05/08/12 10:00

Project ID: Iluluaq Lake East Point Rd DW

Receipt Date/Time: 05/10/12 16:20

Matrix: Soil/Solid (dry weight)

Percent Solids: 85.9

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Diesel Range Organics	34.9	22.9	mg/Kg	1	XFC10371	XXX26852	
Residual Range Organics	97.3	22.9	mg/Kg	1	XFC10371	XXX26852	
5a Androstane <surr>	88.4	50-150	%	1	XFC10371	XXX26852	
n-Triacontane-d62 <surr>	86.1	50-150	%	1	XFC10371	XXX26852	

Batch Information

Analytical Batch: XFC10371

Prep Batch: XXX26852

Initial Prep Wt./Vol.: 30.476 g

Analytical Method: AK102

Prep Method: SW3550C

Prep Extract Vol.: 1 mL

Analysis Date/Time: 05/17/12 00:05

Prep Date/Time: 05/16/12 15:15

Container ID: 1121608020-A

Dilution Factor: 1

Analyst: LCE

Analytical Batch: XFC10371

Prep Batch: XXX26852

Initial Prep Wt./Vol.: 30.476 g

Analytical Method: AK103

Prep Method: SW3550C

Prep Extract Vol.: 1 mL

Analysis Date/Time: 05/17/12 00:05

Prep Date/Time: 05/16/12 15:15

Container ID: 1121608020-A

Dilution Factor: 1

Analyst: LCE



Unalaska City-Public Works

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-12+60-4**

SGS Ref. #: 1121608020

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 85.9

Collection Date/Time: 05/08/12 10:00

Receipt Date/Time: 05/10/12 16:20

Polynuclear Aromatics GC/MS

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
1-Methylnaphthalene	6.25 U	6.25	ug/Kg	1	XMS6663	XXX26839	
2-Methylnaphthalene	6.25 U	6.25	ug/Kg	1	XMS6663	XXX26839	
Acenaphthene	6.25 U	6.25	ug/Kg	1	XMS6663	XXX26839	
Acenaphthylene	6.25 U	6.25	ug/Kg	1	XMS6663	XXX26839	
Anthracene	6.25 U	6.25	ug/Kg	1	XMS6663	XXX26839	
Benzo(a)Anthracene	26.2	6.25	ug/Kg	1	XMS6663	XXX26839	
Benzo[a]pyrene	25.6	6.25	ug/Kg	1	XMS6663	XXX26839	
Benzo[b]Fluoranthene	41.2	6.25	ug/Kg	1	XMS6663	XXX26839	
Benzo[g,h,i]perylene	15.6	6.25	ug/Kg	1	XMS6663	XXX26839	
Benzo[k]fluoranthene	8.05	6.25	ug/Kg	1	XMS6663	XXX26839	
Chrysene	19.2	6.25	ug/Kg	1	XMS6663	XXX26839	
Dibenzo[a,h]anthracene	6.25 U	6.25	ug/Kg	1	XMS6663	XXX26839	
Fluoranthene	33.8	6.25	ug/Kg	1	XMS6663	XXX26839	
Fluorene	6.25 U	6.25	ug/Kg	1	XMS6663	XXX26839	
Indeno[1,2,3-c,d] pyrene	14.0	6.25	ug/Kg	1	XMS6663	XXX26839	
Naphthalene	6.25 U	6.25	ug/Kg	1	XMS6663	XXX26839	
Phenanthrene	15.4	6.25	ug/Kg	1	XMS6663	XXX26839	
Pyrene	29.9	6.25	ug/Kg	1	XMS6663	XXX26839	
2-Fluorobiphenyl <surr>	76.7	45-105	%	1	XMS6663	XXX26839	
Terphenyl-d14 <surr>	98.6	30-125	%	1	XMS6663	XXX26839	

Batch Information

Analytical Batch: XMS6663

Analytical Method: 8270D SIMS (PAH)

Analysis Date/Time: 05/16/12 18:50

Dilution Factor: 1

Prep Batch: XXX26839

Prep Method: SW3550C

Prep Date/Time: 05/14/12 15:00

Initial Prep Wt./Vol.: 20.941 g

Prep Extract Vol.: 1 mL

Container ID: 1121608020-A

Analyst: RTS

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-12+60-4**

SGS Ref. #: 1121608020

Collection Date/Time: 05/08/12 10:00

Project ID: Ilulak Lake East Point Rd DW

Receipt Date/Time: 05/10/12 16:20

Matrix: Soil/Solid (dry weight)

Percent Solids: 85.9

Solids

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Total Solids	85.9		%	1	SPT8625		

Batch Information

Analytical Batch: SPT8625

Initial Prep Wt./Vol.: 1 mL

Analytical Method: SM21 2540G

Analysis Date/Time: 05/14/12 17:00

Container ID:1121608020-A

Dilution Factor: 1

Analyst: CDE

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-12+97-4**

SGS Ref. #: 1121608021

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 83.5

Collection Date/Time: 05/08/12 11:30

Receipt Date/Time: 05/10/12 16:20

Volatile Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Benzene	32.5 U	32.5	ug/Kg	1	VFC10977	VXX23483	
Ethylbenzene	65.1 U	65.1	ug/Kg	1	VFC10977	VXX23483	
Gasoline Range Organics	6.51 U	6.51	mg/Kg	1	VFC10977	VXX23483	
o-Xylene	65.1 U	65.1	ug/Kg	1	VFC10977	VXX23483	
P & M -Xylene	130 U	130	ug/Kg	1	VFC10977	VXX23483	
Toluene	65.1 U	65.1	ug/Kg	1	VFC10977	VXX23483	
1,4-Difluorobenzene <sur>	98.1	72-119	%	1	VFC10977	VXX23483	
4-Bromofluorobenzene <sur>	101	50-150	%	1	VFC10977	VXX23483	

Batch Information

Analytical Batch: VFC10977

Analytical Method: AK101

Analysis Date/Time: 05/16/12 21:13

Dilution Factor: 1

Prep Batch: VXX23483

Prep Method: SW5035A

Prep Date/Time: 05/08/12 11:30

Initial Prep Wt./Vol.: 27.105 g

Prep Extract Vol.: 29.4612 mL

Container ID: 1121608021-B

Analyst: EAB

Analytical Batch: VFC10977

Analytical Method: SW8021B

Analysis Date/Time: 05/16/12 21:13

Dilution Factor: 1

Prep Batch: VXX23483

Prep Method: SW5035A

Prep Date/Time: 05/08/12 11:30

Initial Prep Wt./Vol.: 27.105 g

Prep Extract Vol.: 29.4612 mL

Container ID: 1121608021-B

Analyst: EAB

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-12+97-4**

SGS Ref. #: 1121608021

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 83.5

Collection Date/Time: 05/08/12 11:30

Receipt Date/Time: 05/10/12 16:20

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Diesel Range Organics	33.0	23.8	mg/Kg	1	XFC10371	XXX26852	
Residual Range Organics	113	23.8	mg/Kg	1	XFC10371	XXX26852	
5a Androstane <surr>	86	50-150	%	1	XFC10371	XXX26852	
n-Triacontane-d62 <surr>	84	50-150	%	1	XFC10371	XXX26852	

Batch Information

Analytical Batch: XFC10371

Analytical Method: AK102

Analysis Date/Time: 05/17/12 00:15

Dilution Factor: 1

Prep Batch: XXX26852

Prep Method: SW3550C

Prep Date/Time: 05/16/12 15:15

Initial Prep Wt./Vol.: 30.229 g

Prep Extract Vol.: 1 mL

Container ID:1121608021-A

Analyst: LCE

Analytical Batch: XFC10371

Analytical Method: AK103

Analysis Date/Time: 05/17/12 00:15

Dilution Factor: 1

Prep Batch: XXX26852

Prep Method: SW3550C

Prep Date/Time: 05/16/12 15:15

Initial Prep Wt./Vol.: 30.229 g

Prep Extract Vol.: 1 mL

Container ID:1121608021-A

Analyst: LCE



Unalaska City-Public Works

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-12+97-4**

SGS Ref. #: 1121608021

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 83.5

Collection Date/Time: 05/08/12 11:30

Receipt Date/Time: 05/10/12 16:20

Polynuclear Aromatics GC/MS

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
1-Methylnaphthalene	6.51 U	6.51	ug/Kg	1	XMS6663	XXX26839	
2-Methylnaphthalene	6.51 U	6.51	ug/Kg	1	XMS6663	XXX26839	
Acenaphthene	7.61	6.51	ug/Kg	1	XMS6663	XXX26839	
Acenaphthylene	6.51 U	6.51	ug/Kg	1	XMS6663	XXX26839	
Anthracene	35.0	6.51	ug/Kg	1	XMS6663	XXX26839	
Benzo(a)Anthracene	119	6.51	ug/Kg	1	XMS6663	XXX26839	
Benzo[a]pyrene	86.2	6.51	ug/Kg	1	XMS6663	XXX26839	
Benzo[b]Fluoranthene	132	6.51	ug/Kg	1	XMS6663	XXX26839	
Benzo[g,h,i]perylene	47.1	6.51	ug/Kg	1	XMS6663	XXX26839	
Benzo[k]fluoranthene	35.7	6.51	ug/Kg	1	XMS6663	XXX26839	
Chrysene	97.1	6.51	ug/Kg	1	XMS6663	XXX26839	
Dibenzo[a,h]anthracene	11.8	6.51	ug/Kg	1	XMS6663	XXX26839	
Fluoranthene	233	65.1	ug/Kg	10	XMS6665	XXX26839	
Fluorene	8.78	6.51	ug/Kg	1	XMS6663	XXX26839	
Indeno[1,2,3-c,d] pyrene	44.2	6.51	ug/Kg	1	XMS6663	XXX26839	
Naphthalene	6.51 U	6.51	ug/Kg	1	XMS6663	XXX26839	
Phenanthrene	114	6.51	ug/Kg	1	XMS6663	XXX26839	
Pyrene	140	6.51	ug/Kg	1	XMS6663	XXX26839	
2-Fluorobiphenyl <surr>	62.6	45-105	%	1	XMS6663	XXX26839	
Terphenyl-d14 <surr>	101	30-125	%	1	XMS6663	XXX26839	

Batch Information

Analytical Batch: XMS6663

Analytical Method: 8270D SIMS (PAH)

Analysis Date/Time: 05/16/12 19:10

Dilution Factor: 1

Prep Batch: XXX26839

Prep Method: SW3550C

Prep Date/Time: 05/14/12 15:00

Initial Prep Wt./Vol.: 20.701 g

Prep Extract Vol.: 1 mL

Container ID: 1121608021-A

Analyst: RTS

Analytical Batch: XMS6665

Analytical Method: 8270D SIMS (PAH)

Analysis Date/Time: 05/21/12 14:03

Dilution Factor: 10

Prep Batch: XXX26839

Prep Method: SW3550C

Prep Date/Time: 05/14/12 15:00

Initial Prep Wt./Vol.: 20.701 g

Prep Extract Vol.: 1 mL

Container ID: 1121608021-A

Analyst: RTS

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **EP-12+97-4**

SGS Ref. #: 1121608021

Collection Date/Time: 05/08/12 11:30

Project ID: Ilulak Lake East Point Rd DW

Receipt Date/Time: 05/10/12 16:20

Matrix: Soil/Solid (dry weight)

Percent Solids: 83.5

Solids

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Total Solids	83.5		%	1	SPT8625		

Batch Information

Analytical Batch: SPT8625

Initial Prep Wt./Vol.: 1 mL

Analytical Method: SM21 2540G

Analysis Date/Time: 05/14/12 17:00

Container ID:1121608021-A

Dilution Factor: 1

Analyst: CDE

**Unalaska City-Public Works**

Print Date: 5/29/2012 3:26 pm

Client Sample ID: **TB-02**

SGS Ref. #: 1121608022

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Collection Date/Time: 05/04/12 00:00

Receipt Date/Time: 05/10/12 16:20

Volatile Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Benzene	12.4 U	12.4	ug/Kg	1	VFC10974	VXX23479	
Ethylbenzene	24.9 U	24.9	ug/Kg	1	VFC10974	VXX23479	
Gasoline Range Organics	2.49 U	2.49	mg/Kg	1	VFC10974	VXX23479	
o-Xylene	24.9 U	24.9	ug/Kg	1	VFC10974	VXX23479	
P & M -Xylene	49.7 U	49.7	ug/Kg	1	VFC10974	VXX23479	
Toluene	24.9 U	24.9	ug/Kg	1	VFC10974	VXX23479	
1,4-Difluorobenzene <sur>	96.7	72-119	%	1	VFC10974	VXX23479	
4-Bromofluorobenzene <sur>	100	50-150	%	1	VFC10974	VXX23479	

Batch Information

Analytical Batch: VFC10974

Analytical Method: AK101

Analysis Date/Time: 05/15/12 21:24

Dilution Factor: 1

Prep Batch: VXX23479

Prep Method: SW5035A

Prep Date/Time: 05/04/12 00:00

Initial Prep Wt./Vol.: 50.275 g

Prep Extract Vol.: 25 mL

Container ID: 1121608022-A

Analyst: EAB

Analytical Batch: VFC10974

Analytical Method: SW8021B

Analysis Date/Time: 05/15/12 21:24

Dilution Factor: 1

Prep Batch: VXX23479

Prep Method: SW5035A

Prep Date/Time: 05/04/12 00:00

Initial Prep Wt./Vol.: 50.275 g

Prep Extract Vol.: 25 mL

Container ID: 1121608022-A

Analyst: EAB



SGS Ref.#	10M81et	h od Bl an kl s C	Printed Date/Time	05/29/2012 15:28
Client Name	i s ULyCUa	Rltc Wkl aq BLCy	Prep	Batch
Project Name/#	BKWL RaDUCoaS Uyd	Bs d(l awq	Method	4 4 4 28M Q
Matrix	g Bk/g Bkl a)l luaXoR6	dB	Date	gq t 550-05/1e/2012

f - aloyWkl d l pol dcl oq BkEXB 6anl Bl W d Bs ayU mloy:
112180M0017al 12180M0027al 12180M00t

c ULl oclL	(oyWkl	DOf /- D	wD	i s Rly	As UkyRy wUdb
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Semivolatile Organic Fuels Department

wByok(U s 6oaOI6U s Hy	12.eai	20.0	8.20	, 6/J 6	05/18/12
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Surrogates

5U s As l IByd s o a KyWL<	Q s.t	80bl20		>	05/18/12
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Batch 4 % 10t 85
Method AJ 102
Instrument F c a QM0A aaaaaa l Bwag H a S d

(oyR Wkl(U s 6oaOI6U s Hy	12.eai	20.0	8.20	, 6/J 6	05/18/12
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Surrogates

sbVIRU Bs d s obl 82a KyWL<	QQe	80bl20		>	05/18/12
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Batch 4 % 10t 85
Method AJ 10t
Instrument F c a QM0A aaaaaa l Bwag H a S d



SGS Ref.#	10M2ee h od Bl an kLkC	Printed Date/Time	05/29/2012 15:28
Client Name	i s ULyCUh Rbuc WkH aq BLCy	Prep	Batch 4 4 4 28M9
Project Name/#	HWLRaDUCoaS ydc BR d(l avq	Method	gq t 550-
Matrix	gBRg BR a) l lwaXoR6 dB	Date	05/1e/2012

f - aloyWdyaUppol dda oapBkBXB 6amIBI WdBS ayU mloy.

112180M0017a112180M0027a112180M00t7a112180M00e7a112180M0057a112180M0087a112180M00O7a112180M00Ma112180M009a

112180M01Oal 12180M01Mal 12180M019al 12180M020al 12180M021

Condition	Weld	Dof +/- D	wD	isRy	As UuyRy wUtb
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Polynuclear Aromatics GC/MS

1th od uls Um d Uos o	t .00a	5.00	1.50	W/J 6	05/15/12
2th od uls Um d Uos o	t .00a	5.00	1.50	W/J 6	05/15/12
AIos Um d os o	t .00a	5.00	1.50	W/J 6	05/15/12
AIos Um d ulos o	t .00a	5.00	1.50	W/J 6	05/15/12
As d IU os o	t .00a	5.00	1.50	W/J 6	05/15/12
n os TB)UAs d IU os o	t .00a	5.00	1.50	W/J 6	05/15/12
n os TBG7zmuLos o	t .00a	5.00	1.50	W/J 6	05/15/12
n os TBG7zWBLs d os o	t .00a	5.00	1.50	W/J 6	05/15/12
n os TBG7zmuLos o	t .00a	5.00	1.50	W/J 6	05/15/12
n os TBG7zWBLs d os o	t .00a	5.00	1.50	W/J 6	05/15/12
- Iuyos o	t .00a	5.00	1.50	W/J 6	05/15/12
wP os TBG7zIs d IU os o	t .00a	5.00	1.50	W/J 6	05/15/12
%WBLs d os o	t .00a	5.00	1.50	W/J 6	05/15/12
%WBLos o	t .00a	5.00	1.50	W/J 6	05/15/12
Es l os BG 77 bl 7 zmuLos o	t .00a	5.00	1.50	W/J 6	05/15/12
[Um d Uos o	t .00a	5.00	1.50	W/J 6	05/15/12
c os Us d Ios o	t .00a	5.00	1.50	W/J 6	05/15/12
cuLos o	t .00a	5.00	1.50	W/J 6	05/15/12

Surrogates

2b4WLB Im osukh KyWL<	Q.Q	e5bl05	>	05/15/12
Volm osukh lea KyWL<	11t	t0bl25	>	05/15/12

Batch	4 h g8858
Method	M20wag h gacAF 3
Instrument	F c sM90/59Q d g gHf A



SGS Ref.#	10M#t 1M	h od Bl an kls C	Printed Date/Time	05/29/2012 15:28
Client Name	i s UkyCUa	Rltc WkH aq BLCy	Prep	Batch
Project Name/#	BkWL RaDUCoaS Uyd	Bs d(l awq	Method	
Matrix	g Bk/g BkH a)l luaXoR6	dB	Date	

f - aloyWkH a)l pol dcl oaq BkEXB 6anl B WdHs aU nloy:

112180M001	7al 12180M002	7al 12180M00t	7al 12180M00e	7al 12180M005	7al 12180M008	7al 12180M00Q	7al 12180M00M	7al 12180M009	7a
112180M010	7al 12180M011	7al 12180M012	7al 12180M01t	7al 12180M01e	7al 12180M015	7al 12180M018	7al 12180M01Q	7al 12180M01M	7a
112180M019	7al 12180M020	7al 12180M021							

cUllj odbL	(oyWkH	DOf /- D	wD	i sRy	As UkyRy wUib
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Solids

VBdUkg BkH y	100	>	05/1e/12
Batch	gc VM\$25		
Method	gh 21a25e0]		
Instrument			



SGS Ref.#	10M858	h od Bl an kl s C	Printed Date/Time	05/29/2012 15:28
Client Name	i s UlyCUa Rltc Wkl aq BLCy		Prep	Batch
Project Name/#	BWLRaDUCoaS Uyd B S d(l awq		Method	H4 4 2t eQ
Matrix	g Bkg Bkl a) l luaXoR b		Date	gq 50t 5A
				05/15/2012

f - aloyWtdl ppol dcl oq Bk BXR B 6an l Bl W d B s ay U nloy:	
112180M001al 12180M002al 12180M00t al 12180M00e al 12180M005al 12180M008al 12180M00Qal 12180M00Mal 12180M009al	
112180M010al 12180M022	

c Ullj odbl	(oyWtdy	DOf /- D	wD	i s Rly	As UkyRy wLlb
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Volatile Fuels Department

] UlyBk oq U s 6oa Ol6 U s Hy	1.50ai	2.50	0.Q50	, 6/J 6	05/15/12
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Surrogates

eln IB Bk WLB os Tos oakyWL<	108	50bl50		>	05/15/12
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Batch	H% 109Qe
Method	AJ 101
Instrument	A6Bos dQM0Aa Ew/%Ew

n os Tos o	M00ai	12.5	e.00	V6/J 6	05/15/12
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Sd ulk os Tos o	15.8ai	25.0	QM0	V6/J 6	05/15/12
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Bb4 ulos o	15.8ai	25.0	QM0	V6/J 6	05/15/12
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c aNah ab4 ulos o	t 0.0ai	50.0	15.0	V6/J 6	05/15/12
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VEKWo so	15.8ai	25.0	QM0	V6/J 6	05/15/12
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Surrogates

l 7ebw Bk WLB os Tos oakyWL<	9Q8	Qb119		>	05/15/12
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Batch	H% 109Qe
Method	gq M021n
Instrument	A6Bos dQM0Aa Ew/%Ew



SGS Ref.#	10M8M h od Bl an k k C	Printed Date/Time	05/29/2012 15:28
Client Name	i s U L j C l a R h t W k h a q B C y	Prep	Batch 4 4 4 28M52
Project Name/#	E K W L R a D U C o a S U y d e B l s d t l a v q	Method	g q t 550-
Matrix	g B k g B k a l l l u a X o R b d B	Date	05/18/2012

f - aloyWyaUppol dcl oapBkBXRS 6anlBl WdBS ayU mloy.

112180M00e7a112180M0057a112180M0087a112180M00Q7a112180M00M7a112180M0097a112180M0107a112180M0117a112180M0127a

112180M01t 7a112180M01e 7a112180M0157a112180M0187a112180M01Q7a112180M01M7a112180M0197a112180M0207a112180M021

Unit	Wavelength	Dof / - D	Wavelength	Unit
cm	0.0001	1	0.0001	cm

Semivolatile Organic Fuels Department

Wykaz Usług i Opłat 12.01.2020 20.08.2020 8.20 05/18/12

Surrogates

5UaSlIBydLoKyWL< M.e 80bl20 > 05/18/12

Batch 4 % 10t Q1

Method AJ 102

Instrument Fc8M90g0IPyaH2/EwagHawa(

(oyH Wk(U\$6oaOL6U\$Hy 12.ea 20.0 8.20 , 6/J 6 05/18/12

Surrogates

sbVIRUBd obsl 82aKyWL< M.5 80bl20 > 05/18/12

Batch 4 % 10t QI

Method	AJ 10t
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Instrument Fc8M90g0IPyaH2/EwagHawa



SGS Ref.#	10M0	h od B an k s C	Printed Date/Time	05/29/2012 15:28
Client Name	i s U k U C u	Rubc W k H a q B C y	Prep	Batch
Project Name/#	B k W L R a D U C o a S U y d a B s d (l a w q		Method	H4 4 2t e M
Matrix	g B k g B k a l l u a X o R s d B		Date	gq 50t 5A
				05/18/2012

f - aloyW d a l p o l d d l o a p B k B X B 6 a n l B l W d B s a U n l o y:

112180M011	112180M012	112180M013	112180M014	112180M015	112180M016	112180M017	112180M018	112180M019	112180M020	112180M021
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c U l l o d L	(o y W d y	D o f / - D	w D	i s R y	As U k u y R y w l u b
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Volatile Fuels Department

] U y B k o a U s 6 o a O l 6 U s H y	1.50a	2.50	0.00	, 6/J 6	05/18/12
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Surrogates

e l n l B B k W L B r o s T o s o a K y W L <	1t 9	50b l 50		>	05/18/12
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Batch	H% 109QQ
Method	AJ 101
Instrument	A6Bos d Q M 0 A a E v / % E v

n o s T o s o	M00a	12.5	e.00	V6/J 6	05/18/12
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S d u k r o s T o s o	15.8a	25.0	Q M 0	V6/J 6	05/18/12
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B b 4 u l o s o	15.8a	25.0	Q M 0	V6/J 6	05/18/12
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c a N a h a b 4 u l o s o	t 0.0a	50.0	15.0	V6/J 6	05/18/12
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V E k W s o	9.50&	25.0	Q M 0	V6/J 6	05/18/12
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Surrogates

l 7 e b w B k W L B r o s T o s o a K y W L <	99.8	Q b l 19		>	05/18/12
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Batch	H% 109QQ
Method	gq M021n
Instrument	A6Bos d Q M 0 A a E v / % E v



SGS Ref.#	10M000	h od Bl an kl s C	Printed Date/Time	05/29/2012 15:28
Client Name	i s UlyCUa Rltc Wkl aq BLCy		Prep	Batch
Project Name/#	BKWL RaDUCo S Uyd B S d(l awq		Method	4 4 4 28M5
Matrix	g BK/g BK a) l luaXoR5 d		Date	gq t 550-05/1M2012

f - dloyWld Jpol dcl oq BEXB 6anl El W d B s ayU nloy:

112180M0107al 12180M0117al 12180M0127al 12180M01t 7al 12180M01e7al 12180M0157al 12180M018

c ULL odL	(oyWdy	DOF /- D	wD	i s Rly	As UkyRy wUdb
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Polynuclear Aromatics GC/MS

1th od uls Un d Uos o	t .00ai	5.00	1.50	V6/J 6	05/21/12
2th od uls Un d Uos o	t .00ai	5.00	1.50	V6/J 6	05/21/12
AI os Un d os o	t .00ai	5.00	1.50	V6/J 6	05/21/12
AI os Un d ulos o	t .00ai	5.00	1.50	V6/J 6	05/21/12
As d III os o	t .00ai	5.00	1.50	V6/J 6	05/21/12
n os TB)UAs d III os o	t .00ai	5.00	1.50	V6/J 6	05/21/12
n os TB)U muLos o	t .00ai	5.00	1.50	V6/J 6	05/21/12
n os TB)U z/ wBLU s d os o	t .00ai	5.00	1.50	V6/J 6	05/21/12
n os TB)U 7 2noLulos o	t .00ai	5.00	1.50	V6/J 6	05/21/12
n os TB)U z/ wBLU s d os o	t .00ai	5.00	1.50	V6/J 6	05/21/12
- Iuyos o	t .00ai	5.00	1.50	V6/J 6	05/21/12
wP os TB)U 7 zUs d III os o	t .00ai	5.00	1.50	V6/J 6	05/21/12
% wBLU s d os o	t .00ai	5.00	1.50	V6/J 6	05/21/12
% wBLU s o	t .00ai	5.00	1.50	V6/J 6	05/21/12
Es l os BG 27 t bl 7 zmuLos o	t .00ai	5.00	1.50	V6/J 6	05/21/12
[Un d Uos o	t .00ai	5.00	1.50	V6/J 6	05/21/12
c os Us d Ios o	t .00ai	5.00	1.50	V6/J 6	05/21/12
cuLos o	t .00ai	5.00	1.50	V6/J 6	05/21/12

Surrogates

2B wBLU Bm os ukKyWL<	82.5	e5bl05	>	05/21/12
Volm os ukh l eaKyWL<	92.M	t 0bl25	>	05/21/12

Batch 4 h g8885
Method MQwagHh gacAF 3
Instrument F c 8M0/59Q dh gagHf A



SGS Ref.#	106U419	p b8stWye	Printed Date/Time	05/29/2012 15:2U
Client Name	n al sl k l G ty- Ribest	W r I k	Prep	Batch
Project Name/#	qbsl LG1	BRl ky r tay d Dp o		Method
Original	1121U06002			Date
Matrix	Sr ts/Sr st D(DI- GwHghy)			

7 i C BbskC QWChEQ sr wtagSr DbWtra d f 8sEk

1121U06001	1121U06002	1121U06004	1121U0600,	1121U06005	1121U0600U	1121U06003	1121U06006	1121U06009	1121U06010	1121U06011	1121U06012	1121U06014	1121U0601,	1121U06015	1121U0601U	1121U06013	1121U06016	1121U06019	1121U06020	1121U06021
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ul ll f B jH	Oltgtal s d Bbsv	7 i d Bbsv	n atyk	d up	d up etf tyk	Aal s- ktk p l vE
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Solids

Tryl sSr stDk	U2.6	U5.1	%	Ç	(<U5Ç	05/1,/2012
Batch	SuT6U25					
Method	SM21Q25, 0G					
Instrument						



SGS Ref.# 1086144 Lab Control Sample
1086145 Lab Control Sample Duplicate
Client Name Unalaska City-Public Works
Project Name/# Iluluaq Lake East Point Rd DW
Matrix Soil/Solid (dry weight)

Printed Date/Time 05/29/2012 15:26
Prep Batch XXX26837
Method SW3550C
Date 05/14/2012

QC results affect the following production samples:
1121608001, 1121608002, 1121608003

Parameter	QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
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Semivolatile Organic Fuels Department

Diesel Range Organics	LCS	130	78	(75-125)		167 mg/Kg	05/16/2012
	LCSD	139	84		7	(< 20)	167 mg/Kg 05/16/2012

Surrogates

5a Androstane <surr>	LCS		81	(60-120)			05/16/2012
	LCSD		87		7		05/16/2012

Batch XFC10365
Method AK102
Instrument HP 7890A FID SV E R

Residual Range Organics	LCS	143	86	(60-120)		167 mg/Kg	05/16/2012
	LCSD	159	96		11	(< 20)	167 mg/Kg 05/16/2012

Surrogates

n-Triacontane-d62 <surr>	LCS		76	(60-120)			05/16/2012
	LCSD		87		14		05/16/2012

Batch XFC10365
Method AK103
Instrument HP 7890A FID SV E R



SGS Ref.# 1086245 Lab Control Sample

Client Name Unalaska City-Public Works

Project Name/# Ilulaq Lake East Point Rd DW

Matrix Soil/Solid (dry weight)

Printed Date/Time 05/29/2012 15:26

Prep Batch XXX26839

Method SW3550C

Date 05/14/2012

QC results affect the following production samples:

1121608001, 1121608002, 1121608003, 1121608004, 1121608005, 1121608006, 1121608007, 1121608008, 1121608009, 1121608017, 1121608018, 1121608019, 1121608020, 1121608021

Parameter	QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
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Polynuclear Aromatics GC/MS



SGS Ref.# 1086245 Lab Control Sample

Printed Date/Time 05/29/2012 15:26

Client Name Unalaska City-Public Works

Prep XXX26839

Project Name/# Ilulak Lake East Point Rd DW

Batch Method SW3550C

Matrix Soil/Solid (dry weight)

Date 05/14/2012

Parameter		QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
Polynuclear Aromatics GC/MS								
1-Methylnaphthalene	LCS	12.2	55	(44-107)			22.2 ug/Kg	05/15/2012
2-Methylnaphthalene	LCS	12.0	54	(45-105)			22.2 ug/Kg	05/15/2012
Acenaphthene	LCS	13.3	60	(45-110)			22.2 ug/Kg	05/15/2012
Acenaphthylene	LCS	12.8	57	(45-105)			22.2 ug/Kg	05/15/2012
Anthracene	LCS	13.3	60	(55-105)			22.2 ug/Kg	05/15/2012
Benzo(a)Anthracene	LCS	24.4	110	(50-110)			22.2 ug/Kg	05/15/2012
Benzo[a]pyrene	LCS	20.7	93	(50-110)			22.2 ug/Kg	05/15/2012
Benzo[b]Fluoranthene	LCS	23.9	108	(45-115)			22.2 ug/Kg	05/15/2012
Benzo[g,h,i]perylene	LCS	19.0	85	(40-125)			22.2 ug/Kg	05/15/2012
Benzo[k]fluoranthene	LCS	24.7	111	(45-125)			22.2 ug/Kg	05/15/2012
Chrysene	LCS	20.5	92	(55-110)			22.2 ug/Kg	05/15/2012
Dibenzo[a,h]anthracene	LCS	20.9	94	(40-125)			22.2 ug/Kg	05/15/2012
Fluoranthene	LCS	19.4	87	(55-115)			22.2 ug/Kg	05/15/2012
Fluorene	LCS	13.4	60	(50-110)			22.2 ug/Kg	05/15/2012
Indeno[1,2,3-c,d] pyrene	LCS	21.3	96	(40-120)			22.2 ug/Kg	05/15/2012
Naphthalene	LCS	11.8	53	(40-105)			22.2 ug/Kg	05/15/2012
Phenanthrene	LCS	15.8	71	(50-110)			22.2 ug/Kg	05/15/2012
Pyrene	LCS	18.7	84	(45-125)			22.2 ug/Kg	05/15/2012
Surrogates								
2-Fluorobiphenyl <surr>	LCS		64	(45-105)				05/15/2012
Terphenyl-d14 <surr>	LCS		117	(30-125)				05/15/2012



SGS Ref.#	1086245	Lab Control Sample	Printed Date/Time	05/29/2012	15:26
			Prep	Batch	XXX26839
Client Name	Unalaska City-Public Works			Method	SW3550C
Project Name/#	Ilulaq Lake East Point Rd DW			Date	05/14/2012
Matrix	Soil/Solid (dry weight)				

Parameter	QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
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Polynuclear Aromatics GC/MS

Batch	XMS6656
Method	8270D SIMS (PAH)
Instrument	HP 6890/5973 MS SVQA



SGS Ref.# 1086657 Lab Control Sample
1086658 Lab Control Sample Duplicate
Client Name Unalaska City-Public Works
Project Name/# Ilulak Lake East Point Rd DW
Matrix Soil/Solid (dry weight)

Printed Date/Time 05/29/2012 15:26
Prep Batch VXX23479
Method SW5035A
Date 05/15/2012

QC results affect the following production samples:

1121608001, 1121608002, 1121608003, 1121608004, 1121608005, 1121608006, 1121608007, 1121608008, 1121608009, 1121608010,
1121608022

Parameter	QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
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Volatile Fuels Department

Benzene	LCS	1260	101	(75-125)			1250 ug/Kg	05/15/2012
	LCSD	1280	103		2	(< 20)	1250 ug/Kg	05/15/2012
Ethylbenzene	LCS	1350	108	(75-125)			1250 ug/Kg	05/15/2012
	LCSD	1320	105		2	(< 20)	1250 ug/Kg	05/15/2012
o-Xylene	LCS	1320	106	(75-125)			1250 ug/Kg	05/15/2012
	LCSD	1320	106		0	(< 20)	1250 ug/Kg	05/15/2012
P & M -Xylene	LCS	2670	107	(80-125)			2500 ug/Kg	05/15/2012
	LCSD	2670	107		0	(< 20)	2500 ug/Kg	05/15/2012
Toluene	LCS	1330	106	(70-125)			1250 ug/Kg	05/15/2012
	LCSD	1290	104		2	(< 20)	1250 ug/Kg	05/15/2012

Surrogates

1,4-Difluorobenzene <surr>	LCS		98	(72-119)				05/15/2012
	LCSD		100		3			05/15/2012

Batch VFC10974
Method SW8021B
Instrument Agilent 7890A PID/FID



SGS Ref.#	1086659	Lab Control Sample	Printed Date/Time	05/29/2012	15:26
	1086660	Lab Control Sample Duplicate	Prep	Batch	VXX23479
Client Name	Unalaska City-Public Works		Method	SW5035A	
Project Name/#	Iluluaq Lake East Point Rd DW		Date	05/15/2012	
Matrix	Soil/Solid (dry weight)				

QC results affect the following production samples:

1121608001, 1121608002, 1121608003, 1121608004, 1121608005, 1121608006, 1121608007, 1121608008, 1121608009, 1121608010, 1121608022

Parameter	QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
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Volatile Fuels Department

Gasoline Range Organics	LCS	10.5	105	(60-120)		10.0 mg/Kg	05/15/2012
	LCSD	10.4	104		1	(< 20)	10.0 mg/Kg 05/15/2012

Surrogates

4-Bromofluorobenzene <surr>	LCS		111	(50-150)			05/15/2012
	LCSD		110		1		05/15/2012

Batch	VFC10974
Method	AK101
Instrument	Agilent 7890A PID/FID



SGS Ref.#	1086682	Lab Control Sample	Printed Date/Time	05/29/2012	15:26
	1086683	Lab Control Sample Duplicate	Prep	Batch	XXX26852
Client Name	Unalaska City-Public Works		Method	SW3550C	
Project Name/#	Ilulak Lake East Point Rd DW		Date	05/16/2012	
Matrix	Soil/Solid (dry weight)				

QC results affect the following production samples:

1121608004, 1121608005, 1121608006, 1121608007, 1121608008, 1121608009, 1121608010, 1121608011, 1121608012, 1121608013, 1121608014, 1121608015, 1121608016, 1121608017, 1121608018, 1121608019, 1121608020, 1121608021

Parameter	QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
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Semivolatile Organic Fuels Department

Diesel Range Organics	LCS	150	90	(75-125)		167 mg/Kg	05/16/2012
	LCSD	144	87		4	(< 20)	167 mg/Kg 05/16/2012

Surrogates

5a Androstane <surr>	LCS		90	(60-120)			05/16/2012
	LCSD		98		8		05/16/2012

Batch XFC10371
Method AK102
Instrument HP 6890 Series II FID SV D R

Residual Range Organics	LCS	157	94	(60-120)		167 mg/Kg	05/16/2012
	LCSD	173	104		10	(< 20)	167 mg/Kg 05/16/2012

Surrogates

n-Triacontane-d62 <surr>	LCS		90	(60-120)			05/16/2012
	LCSD		96		7		05/16/2012

Batch XFC10371
Method AK103
Instrument HP 6890 Series II FID SV D R



Printed Date/Time	05/29/2012	15:26
Prep	Batch	VXX23483
	Method	SW5035A
	Date	05/16/2012

1121608011, 1121608012, 1121608013, 1121608014, 1121608015, 1121608016, 1121608017, 1121608018, 1121608019, 1121608020, 1121608021

Volatile Fuels Department

Batch	VFC10977
Method	SW8021B
Instrument	Agilent 7890A PID/FID



SGS Ref.# 1086843 Lab Control Sample
1086844 Lab Control Sample Duplicate
Client Name Unalaska City-Public Works
Project Name/# Iluluaq Lake East Point Rd DW
Matrix Soil/Solid (dry weight)

Printed Date/Time 05/29/2012 15:26
Prep Batch VXX23483
Method SW5035A
Date 05/16/2012

QC results affect the following production samples:

1121608011, 1121608012, 1121608013, 1121608014, 1121608015, 1121608016, 1121608017, 1121608018, 1121608019, 1121608020,
1121608021

Parameter	QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
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Volatile Fuels Department

Gasoline Range Organics	LCS	10.3	103	(60-120)		10.0 mg/Kg	05/16/2012
	LCSD	10.2	102		1	(< 20)	10.0 mg/Kg 05/16/2012

Surrogates

4-Bromofluorobenzene <surr>	LCS		140	(50-150)			05/16/2012
	LCSD		139		1		05/16/2012

Batch VFC10977
Method AK101
Instrument Agilent 7890A PID/FID



SGS Ref.#	1087081	Lab Control Sample	Printed Date/Time	05/29/2012	15:26
			Prep	Batch	XXX26865
Client Name	Unalaska City-Public Works			Method	SW3550C
Project Name/#	Ilulaq Lake East Point Rd DW			Date	05/18/2012
Matrix	Soil/Solid (dry weight)				

QC results affect the following production samples:
1121608010, 1121608011, 1121608012, 1121608013, 1121608014, 1121608015, 1121608016

Parameter	QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
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Polynuclear Aromatics GC/MS



SGS Ref.# 1087081 Lab Control Sample

Printed Date/Time 05/29/2012 15:26

Client Name Unalaska City-Public Works
Project Name/# Ilulak Lake East Point Rd DW
Matrix Soil/Solid (dry weight)

Prep Batch XXX26865
Method SW3550C
Date 05/18/2012

Parameter		QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
Polynuclear Aromatics GC/MS								
1-Methylnaphthalene	LCS	15.2	68	(44-107)			22.2 ug/Kg	05/23/2012
2-Methylnaphthalene	LCS	13.5	61	(45-105)			22.2 ug/Kg	05/23/2012
Acenaphthene	LCS	15.3	69	(45-110)			22.2 ug/Kg	05/23/2012
Acenaphthylene	LCS	15.2	68	(45-105)			22.2 ug/Kg	05/23/2012
Anthracene	LCS	16.8	76	(55-105)			22.2 ug/Kg	05/23/2012
Benzo(a)Anthracene	LCS	19.1	86	(50-110)			22.2 ug/Kg	05/23/2012
Benzo[a]pyrene	LCS	18.6	84	(50-110)			22.2 ug/Kg	05/23/2012
Benzo[b]Fluoranthene	LCS	18.6	84	(45-115)			22.2 ug/Kg	05/23/2012
Benzo[g,h,i]perylene	LCS	22.3	100	(40-125)			22.2 ug/Kg	05/23/2012
Benzo[k]fluoranthene	LCS	22.6	102	(45-125)			22.2 ug/Kg	05/23/2012
Chrysene	LCS	19.7	89	(55-110)			22.2 ug/Kg	05/23/2012
Dibenzo[a,h]anthracene	LCS	22.0	99	(40-125)			22.2 ug/Kg	05/23/2012
Fluoranthene	LCS	18.3	83	(55-115)			22.2 ug/Kg	05/23/2012
Fluorene	LCS	15.2	68	(50-110)			22.2 ug/Kg	05/23/2012
Indeno[1,2,3-c,d] pyrene	LCS	22.8	103	(40-120)			22.2 ug/Kg	05/23/2012
Naphthalene	LCS	14.2	64	(40-105)			22.2 ug/Kg	05/23/2012
Phenanthrene	LCS	16.3	74	(50-110)			22.2 ug/Kg	05/23/2012
Pyrene	LCS	17.5	79	(45-125)			22.2 ug/Kg	05/23/2012
Surrogates								
2-Fluorobiphenyl <surr>	LCS		71	(45-105)				05/23/2012
Terphenyl-d14 <surr>	LCS		99	(30-125)				05/23/2012



SGS Ref.#	1087081	Lab Control Sample	Printed Date/Time	05/29/2012	15:26
Client Name	Unalaska City-Public Works		Prep	Batch	XXX26865
Project Name/#	Ilulaq Lake East Point Rd DW			Method	SW3550C
Matrix	Soil/Solid (dry weight)			Date	05/18/2012

Parameter	QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
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Polynuclear Aromatics GC/MS

Batch	XMS6672
Method	8270D SIMS (PAH)
Instrument	HP 6890/5973 MS SVQA



SGS Ref.#	1086246	Matrix Spike	Printed Date/Time	05/29/2012 15:26
	1086247	Matrix Spike Duplicate	Prep	Batch
			Method	Sonication Extraction Soil 8270
			Date	05/14/2012
Original	1121591018			
Matrix	Soil/Solid (dry weight)			

QC results affect the following production samples:

1121608001, 1121608002, 1121608003, 1121608004, 1121608005, 1121608006, 1121608007, 1121608008, 1121608009,
1121608017, 1121608018, 1121608019, 1121608020, 1121608021

Parameter	Qualifiers	Original Result	QC Result	Pct Recov	MS/MSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
Polynuclear Aromatics GC/MS									
1-Methylnaphthalene	MS	(58.3) U	22.9	89	(44-107)			25.8	ug/Kg 05/15/2012
	MSD		23.0	89		1	(< 30)	25.9	ug/Kg 05/15/2012
2-Methylnaphthalene	MS	(58.3) U	25.0	97	(45-105)			25.8	ug/Kg 05/15/2012
	MSD		29.9	115*		18	(< 30)	25.9	ug/Kg 05/15/2012
Acenaphthene	MS	(58.3) U	22.6	88	(45-110)			25.8	ug/Kg 05/15/2012
	MSD		27.4	106		19	(< 30)	25.9	ug/Kg 05/15/2012
Acenaphthylene	MS	(58.3) U	59.2	230*	(45-105)			25.8	ug/Kg 05/15/2012
	MSD		63.2	243*		7	(< 30)	25.9	ug/Kg 05/15/2012
Anthracene	MS	(58.3) U	39.9	155*	(55-105)			25.8	ug/Kg 05/15/2012
	MSD		38.0	147*		5	(< 30)	25.9	ug/Kg 05/15/2012
Benzo(a)Anthracene	MS	71.3	78.4	28*	(50-110)			25.8	ug/Kg 05/15/2012
	MSD		73.7	9*		6	(< 30)	25.9	ug/Kg 05/15/2012
Benzo[a]pyrene	MS	141	141	0*	(50-110)			25.8	ug/Kg 05/15/2012
	MSD		148	25*		5	(< 30)	25.9	ug/Kg 05/15/2012
Benzo[b]Fluoranthene	MS	(58.3) U	0.00	0*	(45-115)			25.8	ug/Kg 05/15/2012
	MSD		0.00	0*		0	(< 30)	25.9	ug/Kg 05/15/2012
Benzo[g,h,i]perylene	MS	68.0	87.8	77	(40-125)			25.8	ug/Kg 05/15/2012
	MSD		102	131*		15	(< 30)	25.9	ug/Kg 05/15/2012
Benzo[k]fluoranthene	MS	(58.3) U	0.00	0*	(45-125)			25.8	ug/Kg 05/15/2012
	MSD		0.00	0*		0	(< 30)	25.9	ug/Kg 05/15/2012
Chrysene	MS	92.8	92.8	0*	(55-110)			25.8	ug/Kg 05/15/2012
	MSD		103	38*		10	(< 30)	25.9	ug/Kg 05/15/2012
Dibenzo[a,h]anthracene	MS	(58.3) U	36.1	140*	(40-125)			25.8	ug/Kg 05/15/2012
	MSD		43.3	167*		18	(< 30)	25.9	ug/Kg 05/15/2012
Fluoranthene	MS	86.4	69.1	-67*	(55-115)			25.8	ug/Kg 05/15/2012
	MSD		60.3	-101*		14	(< 30)	25.9	ug/Kg 05/15/2012
Fluorene	MS	(58.3) U	36.5	142*	(50-110)			25.8	ug/Kg 05/15/2012
	MSD		35.5	137*		3	(< 30)	25.9	ug/Kg 05/15/2012
Indeno[1,2,3-c,d] pyrene	MS	(58.3) U	67.5	262*	(40-120)			25.8	ug/Kg 05/15/2012
	MSD		66.9	258*		1	(< 30)	25.9	ug/Kg 05/15/2012
Naphthalene	MS	(58.3) U	19.2	75	(40-105)			25.8	ug/Kg 05/15/2012
	MSD		20.3	78		6	(< 30)	25.9	ug/Kg 05/15/2012
Phenanthrene	MS	(58.3) U	85.3	331*	(50-110)			25.8	ug/Kg 05/15/2012
	MSD		77.0	297*		10	(< 30)	25.9	ug/Kg 05/15/2012
Pyrene	MS	232	193	-152*	(45-125)			25.8	ug/Kg 05/15/2012
	MSD		213	-71*		10	(< 30)	25.9	ug/Kg 05/15/2012



SGS Ref.# 1086246 Matrix Spike
1086247 Matrix Spike Duplicate

Printed Date/Time 05/29/2012 15:26
Prep Batch XXX26839
Method Sonication Extraction Soil 8270
Date 05/14/2012

Original 1121591018
Matrix Soil/Solid (dry weight)

Parameter	Qualifiers	Original Result	QC Result	Pct Recov	MS/MSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
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Polynuclear Aromatics GC/MS

Surrogates

2-Fluorobiphenyl <surr>	MS	22.4	87	(45-105)				05/15/2012
	MSD	21.5	83		4			05/15/2012
Terphenyl-d14 <surr>	MS	39.2	152*	(30-125)				05/15/2012
	MSD	38.0	146*		3			05/15/2012

Batch XMS6656
Method 8270D SIMS (PAH)
Instrument HP 6890/5973 MS SVQA



SGS Ref.# 1086661 Matrix Spike
1086662 Matrix Spike Duplicate

Printed Date/Time 05/29/2012 15:26
Prep Batch VXX23479
Method AK101 Extraction (S)
Date 05/15/2012

Original 1121608002
Matrix Soil/Solid (dry weight)

QC results affect the following production samples:

1121608001, 1121608002, 1121608003, 1121608004, 1121608005, 1121608006, 1121608007, 1121608008, 1121608009,
1121608010, 1121608022

Parameter	Qualifiers	Original Result	QC Result	Pct Recov	MS/MSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
Volatile Fuels Department									
Benzene	MS	(52.9) U	3854	101	(75-125)			3806 ug/Kg	05/15/2012
	MSD		3965	104		3	(< 20)	3806 ug/Kg	05/15/2012
Ethylbenzene	MS	(106) U	4029	106	(75-125)			3806 ug/Kg	05/15/2012
	MSD		4156	109		3	(< 20)	3806 ug/Kg	05/15/2012
o-Xylene	MS	(106) U	3997	105	(75-125)			3806 ug/Kg	05/15/2012
	MSD		4140	109		3	(< 20)	3806 ug/Kg	05/15/2012
P & M -Xylene	MS	(212) U	8057	106	(80-125)			7611 ug/Kg	05/15/2012
	MSD		8312	109		3	(< 20)	7611 ug/Kg	05/15/2012
Toluene	MS	(106) U	3965	104	(70-125)			3806 ug/Kg	05/15/2012
	MSD		4092	107		3	(< 20)	3806 ug/Kg	05/15/2012
Surrogates									
1,4-Difluorobenzene <surr>	MS		3790	100	(72-119)				05/15/2012
	MSD		3806	100		0			05/15/2012

Batch VFC10974
Method SW8021B
Instrument Agilent 7890A PID/FID



SGS Ref.# 1086845 Matrix Spike
1086846 Matrix Spike Duplicate

Printed Date/Time 05/29/2012 15:26
Prep Batch VXX23483
Method AK101 Extraction (S)
Date 05/16/2012

Original 1121608011
Matrix Soil/Solid (dry weight)

QC results affect the following production samples:

1121608011, 1121608012, 1121608013, 1121608014, 1121608015, 1121608016, 1121608017, 1121608018, 1121608019,
1121608020, 1121608021

Parameter	Qualifiers	Original Result	QC Result	Pct Recov	MS/MSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
Volatile Fuels Department									
Benzene	MS	(27.5) U	2572	99	(75-125)			2593	ug/Kg 05/16/2012
	MSD		2636	102		2	(< 20)	2593	ug/Kg 05/16/2012
Ethylbenzene	MS	(55.1) U	2711	105	(75-125)			2593	ug/Kg 05/16/2012
	MSD		2721	105		0	(< 20)	2593	ug/Kg 05/16/2012
o-Xylene	MS	(55.1) U	2668	103	(75-125)			2593	ug/Kg 05/16/2012
	MSD		2711	105		1	(< 20)	2593	ug/Kg 05/16/2012
P & M -Xylene	MS	(110) U	5432	105	(80-125)			5176	ug/Kg 05/16/2012
	MSD		5496	106		1	(< 20)	5176	ug/Kg 05/16/2012
Toluene	MS	(55.1) U	2679	103	(70-125)			2593	ug/Kg 05/16/2012
	MSD		2668	103		0	(< 20)	2593	ug/Kg 05/16/2012
Surrogates									
1,4-Difluorobenzene <surr>	MS		2572	99	(72-119)				05/16/2012
	MSD		2583	100		1			05/16/2012

Batch VFC10977
Method SW8021B
Instrument Agilent 7890A PID/FID



SGS Ref.#	1087082	Matrix Spike	Printed Date/Time	05/29/2012 15:26	
	1087083	Matrix Spike Duplicate		Prep	Batch
				Method	Sonication Extraction Soil 8270
				Date	05/18/2012
Original	1121608015				
Matrix	Soil/Solid (dry weight)				

QC results affect the following production samples:
1121608010, 1121608011, 1121608012, 1121608013, 1121608014, 1121608015, 1121608016

Parameter	Qualifiers	Original Result	QC Result	Pet Recov	MS/MSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
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Polynuclear Aromatics GC/MS



SGS Ref.# 1087082 Matrix Spike
1087083 Matrix Spike Duplicate

Printed Date/Time 05/29/2012 15:26
Prep Batch XXX26865
Method Sonication Extraction Soil 8270
Date 05/18/2012

Original 1121608015
Matrix Soil/Solid (dry weight)

Parameter	Qualifiers	Original Result	QC Result	Pct Recov	MS/MSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
Polynuclear Aromatics GC/MS									
1-Methylnaphthalene	MS	(5.33) U	15.9	69	(44-107)			23.3 ug/Kg	05/21/2012
	MSD		16.6	70		4	(< 30)	23.7 ug/Kg	05/21/2012
2-Methylnaphthalene	MS	(5.33) U	14.3	61	(45-105)			23.3 ug/Kg	05/21/2012
	MSD		14.5	61		2	(< 30)	23.7 ug/Kg	05/21/2012
Acenaphthene	MS	(5.33) U	16.3	70	(45-110)			23.3 ug/Kg	05/21/2012
	MSD		16.9	71		4	(< 30)	23.7 ug/Kg	05/21/2012
Acenaphthylene	MS	(5.33) U	16.5	71	(45-105)			23.3 ug/Kg	05/21/2012
	MSD		16.9	71		2	(< 30)	23.7 ug/Kg	05/21/2012
Anthracene	MS	(5.33) U	17.4	75	(55-105)			23.3 ug/Kg	05/21/2012
	MSD		18.1	76		4	(< 30)	23.7 ug/Kg	05/21/2012
Benzo(a)Anthracene	MS	(5.33) U	20.6	89	(50-110)			23.3 ug/Kg	05/21/2012
	MSD		21.1	89		2	(< 30)	23.7 ug/Kg	05/21/2012
Benzo[a]pyrene	MS	(5.33) U	17.4	75	(50-110)			23.3 ug/Kg	05/21/2012
	MSD		18.6	78		6	(< 30)	23.7 ug/Kg	05/21/2012
Benzo[b]Fluoranthene	MS	(5.33) U	19.6	84	(45-115)			23.3 ug/Kg	05/21/2012
	MSD		20.0	84		2	(< 30)	23.7 ug/Kg	05/21/2012
Benzo[g,h,i]perylene	MS	(5.33) U	15.5	67	(40-125)			23.3 ug/Kg	05/21/2012
	MSD		16.5	69		6	(< 30)	23.7 ug/Kg	05/21/2012
Benzo[k]fluoranthene	MS	(5.33) U	17.3	74	(45-125)			23.3 ug/Kg	05/21/2012
	MSD		18.0	76		3	(< 30)	23.7 ug/Kg	05/21/2012
Chrysene	MS	(5.33) U	19.5	83	(55-110)			23.3 ug/Kg	05/21/2012
	MSD		19.0	80		2	(< 30)	23.7 ug/Kg	05/21/2012
Dibenzo[a,h]anthracene	MS	(5.33) U	14.7	63	(40-125)			23.3 ug/Kg	05/21/2012
	MSD		16.0	68		9	(< 30)	23.7 ug/Kg	05/21/2012
Fluoranthene	MS	(5.33) U	24.2	103	(55-115)			23.3 ug/Kg	05/21/2012
	MSD		24.1	101		0	(< 30)	23.7 ug/Kg	05/21/2012
Fluorene	MS	(5.33) U	16.7	72	(50-110)			23.3 ug/Kg	05/21/2012
	MSD		17.2	72		3	(< 30)	23.7 ug/Kg	05/21/2012
Indeno[1,2,3-c,d] pyrene	MS	(5.33) U	16.3	70	(40-120)			23.3 ug/Kg	05/21/2012
	MSD		17.1	72		5	(< 30)	23.7 ug/Kg	05/21/2012
Naphthalene	MS	(5.33) U	14.3	62	(40-105)			23.3 ug/Kg	05/21/2012
	MSD		14.2	60		1	(< 30)	23.7 ug/Kg	05/21/2012
Phenanthrene	MS	(5.33) U	17.6	76	(50-110)			23.3 ug/Kg	05/21/2012
	MSD		19.0	80		8	(< 30)	23.7 ug/Kg	05/21/2012
Pyrene	MS	(5.33) U	23.5	101	(45-125)			23.3 ug/Kg	05/21/2012
	MSD		23.0	97		2	(< 30)	23.7 ug/Kg	05/21/2012
Surrogates									
2-Fluorobiphenyl <surrogate>	MS		16.7	72	(45-105)				05/21/2012
	MSD		17.3	73		4			05/21/2012
Terphenyl-d14 <surrogate>	MS		22.9	98	(30-125)				05/21/2012



SGS Ref.# 1087082 Matrix Spike
1087083 Matrix Spike Duplicate

Printed Date/Time 05/29/2012 15:26
Prep Batch XXX26865
Method Sonication Extraction Soil 8270
Date 05/18/2012

Original 1121608015
Matrix Soil/Solid (dry weight)

Parameter	Qualifiers	Original Result	QC Result	Pct Recov	MS/MSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
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Polynuclear Aromatics GC/MS

MSD	23.1	97	1	05/21/2012
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Batch XMS6665
Method 8270D SIMS (PAH)
Instrument HP 6890/5973 MS SVQA



SGS North America Inc.
CHAIN OF CUSTODY RECEIPT

1121608



Locations Nationwide
• Alaska
• Maryland
• New Jersey
• North Carolina
• Virginia
• Kentucky
www.us.sgs.com

1 CLIENT: City of Unalaska Port of Dutch Harbor		SGS Reference		
CONTACT: Robert Lund		PHONE NO: 907-581-1260		
PROJECT NAME: Ilukag Lake/East Point		PROJECT/ PWSID/ PERMIT#:		
REPORTS TO: Robert Lund		EMAIL: rlund@ci.unalaska.ak.us		
INVOICE TO: Client		QUOTE #: 10199 P.O. #: —		
RESERVED for lab use	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX/ MATRIX CODE
1 A-B	EP-6+10-2	050412	0940	S
2 A-B	EP-6+10-4	050412	0930	S
3 A-B	EP-6+60-4	050412	1000	S
4 A-B	EP-7+10-4	050412	1330	S
5 A-B	EP-7+60-4	050412	1400	S
6 A-B	EP-8+10-4	050412	1500	S
7 A-B	EP-8+60-4	050412	1545	S
8 A-B	DUP-02	050412	—	S
9 A-B	DUP-03	050712	—	S
10 A-B	DUP-04	050812	—	S
Collected/Relinquished By: (1) Robert Lund		Date	Time	Received By: Repair -> SCS
Relinquished By: (2)		Date	Time	Received By:
Relinquished By: (3)		Date	Time	Received By:
Relinquished By: (4)		Date	Time	Received For Laboratory By: [Signature]

1		page 1 of 3		
SAMPLE TYPE	CONTAINERS	MEOH NA	NA	NA
Analysis Required	3	GR013TEX AK101	GR013TEX AK102	GR013TEX AK103
Preservatives Used				
REMARKS/ LOC ID				
				PID = 5.7
				114.4
				2.2
				4.0
				4.9
				5.7
				3.7
				—
				—
				—
DOD Project? YES NO		Cooler ID		Data Deliverable Requirements: Alaska DEC. PDF XMS ACCESS
Requested Turnaround Time and/or Special Instructions: Std TAT. Samples are soil w/ petroleum hydrocarbons (aged)				
Temperature Blank °C: 0.3 B		Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT		(See attached Sample Receipt Form)



SGS North America Inc.
CHAIN OF CUSTODY RECORD

1121608

Locations Nationwide



1 CLIENT: City of Unalaska Port of Dutch Harbor		SGS Reference #:		page 1 of 3	
CONTACT: Robert Lund		PHONE NO: 907-581-1260			
PROJECT NAME: Inlag Lake/East Point Rd & Delta Way		PROJECT/ PWSID/ PERMIT #:			
REPORTS TO: Robert Lund		EMAIL: rlund@ci.unalaska.ak.us			
INVOICE TO: Client		QUOTE #: 10199			
P.O. #: —					
RESERVED for lab use	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX/ MATRIX CODE	
11 ARB	EP-9+10-2	050712	0945	S	
12 ARB	EP-9+10-4	050712	0930	S	
13 ARB	EP-9+60-4	050712	1030	S	
14 ARB	EP-10+10-4	050712	1100	S	
15 ARB	EP-10+60-2	050712	1345	S	
16 ARB	EP-10+60-4	050712	1330	S	
17 ARB	EP-11+10-4	050712	1445	S	
18 ARB	EP-11+60-4	050712	1500	S	
19 ARB	EP-12+10-4	050712	1530	S	
20 ARB	EP-12+60-4	050812	1000	S	
Collected/Relinquished By: (1) Robert Lund		Date	Time	Received By:	Received By:
Relinquished By: (2)		Date	Time	Received By:	Received By:
Relinquished By: (3)		Date	Time	Received By:	Received By:
Relinquished By: (4)		Date	Time	Received For Laboratory By:	Received For Laboratory By:

#	CONTAINERS	SAMPLE TYPE	Preservatives Used	Analysis Required	NA	NA	REMARKS/ LOC ID
1	2	G	X	X	X	X	PID = 2.8 ppm
2	2	G	X	X	X	X	1.8
3	2	G	X	X	X	X	2.9
4	2	G	X	X	X	X	3.0
5	2	G	X	X	X	X	2.4
6	2	G	X	X	X	X	0.8
7	2	G	X	X	X	X	4.0
8	2	G	X	X	X	X	2.3
9	2	G	X	X	X	X	1.1
10	2	G	X	X	X	X	0.2

Data Deliverable Requirements: Alaska DEC. PDF XMS ACCESS		DOD Project? YES NO		Cooler ID	
Requested Turnaround Time and/or Special Instructions: Std TAT. Samples are soil w/ petroleum hydrocarbons (aged)					
Temperature Blank °C: DB-13		Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT		(See attached Sample Receipt Form)	

CLIENT:	City of Unalaska Port of Dutch Harbor		
CONTACT:	Robert Lund	PHONE NO:	907-581-1260
PROJECT NAME:	Iliukag Lake/East Point Rd & Delta Way	PROJECT/ PWSID/ PERMIT#:	—
REPORTS TO:	Robert Lund	EMAIL:	r.lund@ci.unalaska.ak.us
INVOICE TO:	Client		
		QUOTE #:	10/199
		P.O. #:	—

SGS Reference #:

page 3 of 3

PROJECT NAME:	PROJECT/ PWSID/ PERMIT#:	REPORTS TO:	EMAIL:	QUOTE #:	P.O. #:
Robert Lund	17-581-1200	Robert Lund	r.lund@ci.vncfask.ca.sk.us	10199	
INVOICE TO:	Client				

RESERVED for lab use	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX/ MATRIX CODE
① AB	EP-12+97-4	090812	1130	S
② A	TB-02	—	—	S

#	CONTAINERS	SAMPLE TYPE	Preservatives Used	MOH NA	NA	NA	REMARKS/ LOC ID
3		G= GRAB	Analysis Required	620/137ex AK101/ 802/13	DR0/KR0 AK102/ 103	YAH SIMS - SIMS	PID=0.7pmv Trip Blank

Collected/Relinquished By: (1)

Received By:

Perair 7

YES NO

Data No.

Data Deliverable Description

Data Deliverable Requirements:
ALASKA DEC. PDF XMS ACCESS

Relinquished Bv: (2)

Received By:

1003

1

Relinquished Bv. (3)

Received By: _____

11.

2

1/20/2017

11

Relinquished By: (4)

1

100

6

2

Chain of Custody Seal

Chain of Custody Seal: (Circle)



SAMPLE RECEIPT FORM

Review Criteria:	Condition:	Comments/Action Taken:
Were custody seals intact? Note # & location, if applicable. COC accompanied samples?	Yes No N/A Yes No N/A	IF
Temperature blank compliant* (i.e., 0-6°C after correction factor)? * Note: Exemption permitted for chilled samples collected less than 8 hours ago. Cooler ID: 1 @ -0.3 w/ Therm.ID: 13 Cooler ID: @ w/ Therm.ID: Cooler ID: @ w/ Therm.ID: Cooler ID: @ w/ Therm.ID: Cooler ID: @ w/ Therm.ID: Note: If non-compliant, use form FS-0029 to document affected samples/analyses. If samples are received without a temperature blank, the "cooler temperature" will be documented in lieu of the temperature blank & "COOLER TEMP" will be noted to the right. In cases where neither a temp blank nor cooler temp can be obtained, note "ambient" or "chilled." If temperature(s) <0°C, were all sample containers ice free?	Yes No N/A Yes No N/A Yes No N/A Yes No N/A Yes No N/A Yes No N/A Yes No N/A Yes No N/A	fronter temp blank
Delivery method (specify all that apply): Client USPS Alert Courier Road Runner AK Air Lynden Carlisle ERA PenAir FedEx UPS NAC Other: → For WO# with airbills, was the WO# & airbill info recorded in the Front Counter eLog?	Note ABN/ tracking # See Attached or N/A Yes No N/A	
→ For samples received with payment, note amount (\$) and cash / check / CC (circle one) or note: → For samples received in FBKS, ANCH staff will verify all criteria are reviewed.		SRF Initiated by: [Signature] N/A
Were samples received within hold time? Note: Refer to form F-083 "Sample Guide" for hold time information. Do samples match COC* (i.e., sample IDs, dates/times collected)? * Note: Exemption permitted if times differ <1hr; in which case, use times on COC. Were analyses requested unambiguous?	Yes No N/A Yes No N/A Yes No N/A Yes No N/A	Missing Lab Label on 21A. no other discrepancy on other bottles, by default made 21A -
Were samples in good condition (no leaks/cracks/breakage)? Packing material used (specify all that apply): Bubble Wrap Separate plastic bags Vermiculite Other:	Yes No N/A Yes No N/A	
Were all VOA vials free of headspace (i.e., bubbles <6 mm)? Were all soil VOAs field extracted with MeOH+BFB?	Yes No N/A Yes No N/A	
Were proper containers (type/mass/volume/preservative*) used? * Note: Exemption permitted for waters to be analyzed for metals. Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?	Yes No N/A Yes No N/A	
For special handling (e.g., "MI" or foreign soils, lab filter, limited volume, Ref Lab), were bottles/paperwork flagged (e.g., sticker)?	Yes No N/A	
For preserved waters (other than VOA vials, LL-Mercury or microbiological analyses), was pH verified and compliant? If pH was adjusted, were bottles flagged (i.e., stickers)?	Yes No N/A Yes No N/A	
For RUSH/SHORT Hold Time or site-specific QC (e.g., BMS/BMSD/BDUP) samples, were the COC & bottles flagged (e.g., stickers) accordingly? For RUSH/SHORT HT, was email sent?	Yes No N/A	
For any question answered "No," has the PM been notified and the problem resolved (or paperwork put in their bin)?	Yes No N/A	SRF Completed by: [Signature] PM = [Signature] N/A
Was PEER REVIEW of sample numbering/labeling completed?	Yes No N/A	Peer Reviewed by: [Signature] N/A
Additional notes (if applicable):		

Note to Client: Any "no" circled above indicates non-compliance with standard procedures and may impact data quality.

339 DUT 249 4402

No 6. CONSIGNEE MEMO

Alert Expeditors Inc.
DBA/Petroleum Courier Service

328405

Citywide Delivery
272-0349 • 440-3351
8421 Flamingo Drive • Anchorage, Alaska 99502

Date

8/10/14

From

TO Unalaska

To

303

Collect ☐

Prepay ☐

Advance Charges ☐

Account ☐

Job #

PO#

1121608



Shipped By

Total Charge

Received By



SGS North America Inc.
Alaska Division
Level II Laboratory Data Report

Project: Ilulaq Lake East Point Rd DW
Client: Unalaska City-Public Works
SGS Work Order: 1121774

Released by:

Contents:

Cover Page
Case Narrative
Final Report Pages
Quality Control Summary Forms
Chain of Custody/Sample Receipt Forms



CASE NARRATIVE

Print Date: 5/30/2012

Client Name: Unalaska City-Public Works
Project Name: Iluluaq Lake East Point Rd DW
Workorder No.: 1121774

Sample Comments

Refer to the sample receipt form for information on sample condition.

<u>Lab Sample ID</u>	<u>Sample Type</u>	<u>Client Sample ID</u>
1121774001	PS	EP-13+39-4
	AK102 - The pattern is consistent with a weathered middle distillate. AK103 - The pattern is consistent with a lube oil.	
1087781	* MS	1121741007MS
	8270D SIM - MS/MSD recovery for multiple analytes is outside of QC criteria. Refer to LCS for accuracy.	
1087782	* MSD	1121741007MSD
	8270D SIM - MS/MSD recovery for multiple analytes is outside of QC criteria. Refer to LCS for accuracy.	

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



Report of Manual Integrations

Print Date: 5/30/2012 9:02 am

<u>Laboratory ID</u>	<u>Client Sample ID</u>	<u>Analytical Batch</u>	<u>Method</u>	<u>Analyte</u>	<u>Reason</u>
1087781	1121741007MS	XMS6672	8270D SIMS (F	Benzo[k]fluoranthene	RP
1087781	1121741007MS	XMS6672	8270D SIMS (F	Fluorene	SP
1087781	1121741007MS	XMS6672	8270D SIMS (F	Naphthalene	SP
1087782	1121741007MSD	XMS6672	8270D SIMS (F	Benzo[k]fluoranthene	RP
1087782	1121741007MSD	XMS6672	8270D SIMS (F	Fluorene	SP
1087782	1121741007MSD	XMS6672	8270D SIMS (F	Naphthalene	SP
1121741007	LABREFQC	XMS6672	8270D SIMS (F	Naphthalene	SP
1121774001	EP-13+39-4	XMS6675	8270D SIMS (F	Benzo[k]fluoranthene	PNF

Manual Integration Reason Code Descriptions

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

All DRO/RRO analysis are integrated per SOP.



Laboratory Analytical Report

Client: **Unalaska City-Public Works**

P.O. Box 610
Unalaska, AK 99685

Attn: **Robert Lund**

T: 907-581-1260 F:
rlund@ci.unalaska.ak.us

Project: **Ilulag Lake East Point Rd DW**

Workorder No.: **1121774**

Certification:

This data package is in compliance with the terms and conditions of the contract, both technically and for completeness, unless otherwise noted on the sample data sheet(s) and/or case narrative. This certification applies only to the tested parameters and the specific sample(s) received at the laboratory. If you have any questions regarding this report, or if we can be of further assistance, please contact your SGS Project Manager.

Forest Taylor

Forest.Taylor@sgs.com
Project Manager

Contents (Bookmarked in PDF):

- Cover Page
- Glossary
- Sample Summary Forms
- Case Narrative
- Sample Results Forms
- Batch Summary Forms (by method)
- Quality Control Summary Forms (by method)
- Chain of Custody/Sample Receipt Forms
- Attachments (if applicable)



Enclosed are the analytical results associated with the above work order. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. If you have any questions regarding this report, or if we can be of any other assistance, please contact your SGS Project Manager at 907-562-2343. All work is provided under SGS general terms and conditions (http://www.sgs.com/terms_and_conditions.htm), unless other written agreements have been accepted by both parties.

SGS maintains a formal Quality Assurance/Quality Control (QA/QC) program. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request. The laboratory certification numbers are AK00971 (DW Chemistry & Microbiology) & UST-005 (CS) for ADEC and 2944.01 for DOD ELAP/ISO 17025 (RCRA methods: 1020A, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035B, 6020, 7470A, 7471B, 8021B, 8082A, 8260B, 8270D, 8270D-SIM, 9040B, 9045C, 9056A, 9060A, AK101 and AK102/103). Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP and, when applicable, other regulatory authorities.

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

*	The analyte has exceeded allowable regulatory or control limits.
!	Surrogate out of control limits.
B	Indicates the analyte is found in a blank associated with the sample.
CCV	Continuing Calibration Verification
CL	Control Limit
D	The analyte concentration is the result of a dilution.
DF	Dilution Factor
DL	Detection Limit (i.e., maximum method detection limit)
E	The analyte result is above the calibrated range.
F	Indicates value that is greater than or equal to the DL
GT	Greater Than
ICV	Initial Calibration Verification
J	The quantitation is an estimation.
JL	The analyte was positively identified, but the quantitation is a low estimation.
LCS(D)	Laboratory Control Spike (Duplicate)
LOD	Limit of Detection (i.e., 2xDL)
LOQ	Limit of Quantitation (i.e., reporting or practical quantitation limit)
LT	Less Than
M	A matrix effect was present.
MB	Method Blank
MS(D)	Matrix Spike (Duplicate)
ND	Indicates the analyte is not detected.
Q	QC parameter out of acceptance range.
R	Rejected
RL	Reporting Limit
RPD	Relative Percent Difference
U	Indicates the analyte was analyzed for but not detected.

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



SAMPLE SUMMARY

Print Date: 5/30/2012 9:02 am

Client Name: Unalaska City-Public Works
Project Name: Ilulak Lake East Point Rd DW
Workorder No.: 1121774

Analytical Methods

Method Description

8270 PAH SIM Semi-Volatiles GC/MS

AK101/8021 Combo. (S)

AK101/8021 Combo. (S)

Diesel/Residual Range Organics

Diesel/Residual Range Organics

Percent Solids SM2540G

Analytical Method

8270D SIMS (PAH)

AK101

SW8021B

AK102

AK103

SM21 2540G

Sample ID Cross Reference

Lab Sample ID

1121774001

1121774002

Client Sample ID

EP-13+39-4

TB-03



Detectable Results Summary

Print Date: 5/30/2012 9:02 am

Client Sample ID: **EP-13+39-4**

SGS Ref. #: 1121774001

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	254	mg/Kg
Residual Range Organics	609	mg/Kg

Polynuclear Aromatics GC/MS

Phenanthrene	206	ug/Kg
Anthracene	93.1	ug/Kg
Fluoranthene	326	ug/Kg
Pyrene	267	ug/Kg
Benzo(a)Anthracene	137	ug/Kg
Chrysene	158	ug/Kg
Benzo[b]Fluoranthene	225	ug/Kg
Benzo[a]pyrene	143	ug/Kg
Indeno[1,2,3-c,d] pyrene	124	ug/Kg
Benzo[g,h,i]perylene	171	ug/Kg

**Unalaska City-Public Works**

Print Date: 5/30/2012 9:02 am

Client Sample ID: **EP-13+39-4**

SGS Ref. #: 1121774001

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 77.2

Collection Date/Time: 05/11/12 16:30

Receipt Date/Time: 05/22/12 16:10

Volatile Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Benzene	38.9 U	38.9	ug/Kg	1	VFC10989	VXX23513	
Ethylbenzene	77.9 U	77.9	ug/Kg	1	VFC10989	VXX23513	
Gasoline Range Organics	7.79 U	7.79	mg/Kg	1	VFC10989	VXX23513	
o-Xylene	77.9 U	77.9	ug/Kg	1	VFC10989	VXX23513	
P & M -Xylene	156 U	156	ug/Kg	1	VFC10989	VXX23513	
Toluene	77.9 U	77.9	ug/Kg	1	VFC10989	VXX23513	
1,4-Difluorobenzene <sur>	95.7	72-119	%	1	VFC10989	VXX23513	
4-Bromofluorobenzene <sur>	105	50-150	%	1	VFC10989	VXX23513	

Batch Information

Analytical Batch: VFC10989

Analytical Method: AK101

Analysis Date/Time: 05/24/12 12:41

Dilution Factor: 1

Prep Batch: VXX23513

Prep Method: SW5035A

Prep Date/Time: 05/11/12 16:30

Initial Prep Wt./Vol.: 25.645 g

Prep Extract Vol.: 30.8438 mL

Container ID: 1121774001-B

Analyst: EAB

Analytical Batch: VFC10989

Analytical Method: SW8021B

Analysis Date/Time: 05/24/12 12:41

Dilution Factor: 1

Prep Batch: VXX23513

Prep Method: SW5035A

Prep Date/Time: 05/11/12 16:30

Initial Prep Wt./Vol.: 25.645 g

Prep Extract Vol.: 30.8438 mL

Container ID: 1121774001-B

Analyst: EAB

**Unalaska City-Public Works**

Print Date: 5/30/2012 9:02 am

Client Sample ID: **EP-13+39-4**

SGS Ref. #: 1121774001

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 77.2

Collection Date/Time: 05/11/12 16:30

Receipt Date/Time: 05/22/12 16:10

Semivolatile Organic Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
Diesel Range Organics	254	129	mg/Kg	5	XFC10381	XXX26896	
Residual Range Organics	609	129	mg/Kg	5	XFC10381	XXX26896	
5a Androstane <surr>	89	50-150	%	5	XFC10381	XXX26896	
n-Triacontane-d62 <surr>	83	50-150	%	5	XFC10381	XXX26896	

Batch Information

Analytical Batch: XFC10381

Analytical Method: AK102

Analysis Date/Time: 05/25/12 17:46

Dilution Factor: 5

Prep Batch: XXX26896

Prep Method: SW3550C

Prep Date/Time: 05/22/12 18:00

Initial Prep Wt./Vol.: 30.003 g

Prep Extract Vol.: 1 mL

Container ID:1121774001-A

Analyst: MEM

Analytical Batch: XFC10381

Analytical Method: AK103

Analysis Date/Time: 05/25/12 17:46

Dilution Factor: 5

Prep Batch: XXX26896

Prep Method: SW3550C

Prep Date/Time: 05/22/12 18:00

Initial Prep Wt./Vol.: 30.003 g

Prep Extract Vol.: 1 mL

Container ID:1121774001-A

Analyst: MEM



Unalaska City-Public Works

Print Date: 5/30/2012 9:02 am

Client Sample ID: **EP-13+39-4**

SGS Ref. #: 1121774001

Project ID: Iluluaq Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 77.2

Collection Date/Time: 05/11/12 16:30

Receipt Date/Time: 05/22/12 16:10

Polynuclear Aromatics GC/MS

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical Batch</u>	<u>Prep Batch</u>	<u>Qualifiers</u>
1-Methylnaphthalene	63.9 U	63.9	ug/Kg	10	XMS6675	XXX26895	
2-Methylnaphthalene	63.9 U	63.9	ug/Kg	10	XMS6675	XXX26895	
Acenaphthene	63.9 U	63.9	ug/Kg	10	XMS6675	XXX26895	
Acenaphthylene	63.9 U	63.9	ug/Kg	10	XMS6675	XXX26895	
Anthracene	93.1	63.9	ug/Kg	10	XMS6675	XXX26895	
Benzo(a)Anthracene	137	63.9	ug/Kg	10	XMS6675	XXX26895	
Benzo[a]pyrene	143	63.9	ug/Kg	10	XMS6675	XXX26895	
Benzo[b]Fluoranthene	225	63.9	ug/Kg	10	XMS6675	XXX26895	
Benzo[g,h,i]perylene	171	63.9	ug/Kg	10	XMS6675	XXX26895	
Benzo[k]fluoranthene	63.9 U	63.9	ug/Kg	10	XMS6675	XXX26895	
Chrysene	158	63.9	ug/Kg	10	XMS6675	XXX26895	
Dibenzo[a,h]anthracene	63.9 U	63.9	ug/Kg	10	XMS6675	XXX26895	
Fluoranthene	326	63.9	ug/Kg	10	XMS6675	XXX26895	
Fluorene	63.9 U	63.9	ug/Kg	10	XMS6675	XXX26895	
Indeno[1,2,3-c,d] pyrene	124	63.9	ug/Kg	10	XMS6675	XXX26895	
Naphthalene	63.9 U	63.9	ug/Kg	10	XMS6675	XXX26895	
Phenanthrene	206	63.9	ug/Kg	10	XMS6675	XXX26895	
Pyrene	267	63.9	ug/Kg	10	XMS6675	XXX26895	
2-Fluorobiphenyl <surr>	97.2	45-105	%	10	XMS6675	XXX26895	
Terphenyl-d14 <surr>	124	30-125	%	10	XMS6675	XXX26895	

Batch Information

Analytical Batch: XMS6675

Analytical Method: 8270D SIMS (PAH)

Analysis Date/Time: 05/24/12 21:14

Dilution Factor: 10

Prep Batch: XXX26895

Prep Method: SW3550C

Prep Date/Time: 05/23/12 15:00

Initial Prep Wt./Vol.: 22.786 g

Prep Extract Vol.: 1 mL

Container ID: 1121774001-A

Analyst: RTS

**Unalaska City-Public Works**

Print Date: 5/30/2012 9:02 am

Client Sample ID: **EP-13+39-4**

SGS Ref. #: 1121774001

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Percent Solids: 77.2

Collection Date/Time: 05/11/12 16:30

Receipt Date/Time: 05/22/12 16:10

Solids

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical</u> <u>Batch</u>	<u>Prep</u> <u>Batch</u>	<u>Qualifiers</u>
Total Solids	77.2		%	1	SPT8632		

Batch Information

Analytical Batch: SPT8632

Analytical Method: SM21 2540G

Analysis Date/Time: 05/23/12 17:08

Dilution Factor: 1

Initial Prep Wt./Vol.: 1 mL

Container ID:1121774001-A

Analyst: JSK

**Unalaska City-Public Works**

Print Date: 5/30/2012 9:02 am

Client Sample ID: **TB-03**

SGS Ref. #: 1121774002

Project ID: Ilulak Lake East Point Rd DW

Matrix: Soil/Solid (dry weight)

Collection Date/Time: 05/11/12 16:30

Receipt Date/Time: 05/22/12 16:10

Volatile Fuels Department

<u>Parameter</u>	<u>Result</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Analytical</u> <u>Batch</u>	<u>Prep</u> <u>Batch</u>	<u>Qualifiers</u>
Benzene	12.6 U	12.6	ug/Kg	1	VFC10989		
Ethylbenzene	25.2 U	25.2	ug/Kg	1	VFC10989		
Gasoline Range Organics	2.52 U	2.52	mg/Kg	1	VFC10989		
o-Xylene	25.2 U	25.2	ug/Kg	1	VFC10989		
P & M -Xylene	50.3 U	50.3	ug/Kg	1	VFC10989		
Toluene	25.2 U	25.2	ug/Kg	1	VFC10989		
1,4-Difluorobenzene <sur>	94.9	72-119	%	1	VFC10989		
4-Bromofluorobenzene <sur>	103	50-150	%	1	VFC10989		

Batch Information

Analytical Batch: VFC10989

Analytical Method: AK101

Analysis Date/Time: 05/24/12 17:06

Dilution Factor: 1

Initial Prep Wt./Vol.: 49.696 g

Container ID:1121774002-A

Analyst: EAB

Analytical Batch: VFC10989

Analytical Method: SW8021B

Analysis Date/Time: 05/24/12 17:06

Dilution Factor: 1

Initial Prep Wt./Vol.: 49.696 g

Container ID:1121774002-A

Analyst: EAB



SGS Ref.# 1087779 Method Blank
Client Name Unalaska City-Public Works
Project Name/# Iluluaq Lake East Point Rd DW
Matrix Soil/Solid (dry weight)

Printed Date/Time 05/30/2012 9:02
Prep Batch XXX26895
Method SW3550C
Date 05/23/2012

QC results affect the following production samples:

1121774001

Parameter	Results	LOQ/CL	DL	Units	Analysis Date
<u>Polynuclear Aromatics GC/MS</u>					
1-Methylnaphthalene	3.00 U	5.00	1.50	ug/Kg	05/23/12
2-Methylnaphthalene	3.00 U	5.00	1.50	ug/Kg	05/23/12
Acenaphthene	3.00 U	5.00	1.50	ug/Kg	05/23/12
Acenaphthylene	3.00 U	5.00	1.50	ug/Kg	05/23/12
Anthracene	3.00 U	5.00	1.50	ug/Kg	05/23/12
Benzo(a)Anthracene	3.00 U	5.00	1.50	ug/Kg	05/23/12
Benzo[a]pyrene	3.00 U	5.00	1.50	ug/Kg	05/23/12
Benzo[b]Fluoranthene	3.00 U	5.00	1.50	ug/Kg	05/23/12
Benzo[g,h,i]perylene	3.00 U	5.00	1.50	ug/Kg	05/23/12
Benzo[k]fluoranthene	3.00 U	5.00	1.50	ug/Kg	05/23/12
Chrysene	3.00 U	5.00	1.50	ug/Kg	05/23/12
Dibenzo[a,h]anthracene	3.00 U	5.00	1.50	ug/Kg	05/23/12
Fluoranthene	3.00 U	5.00	1.50	ug/Kg	05/23/12
Fluorene	3.00 U	5.00	1.50	ug/Kg	05/23/12
Indeno[1,2,3-c,d] pyrene	3.00 U	5.00	1.50	ug/Kg	05/23/12
Naphthalene	3.00 U	5.00	1.50	ug/Kg	05/23/12
Phenanthrene	3.00 U	5.00	1.50	ug/Kg	05/23/12
Pyrene	3.00 U	5.00	1.50	ug/Kg	05/23/12
Surrogates					
2-Fluorobiphenyl <surr>	63.1	45-105		%	05/23/12
Terphenyl-d14 <surr>	94.9	30-125		%	05/23/12
Batch	XMS6672				
Method	8270D SIMS (PAH)				
Instrument	HP 6890/5973 MS SVQA				



SGS Ref.# 1087807 Method Blank
Client Name Unalaska City-Public Works
Project Name/# Ilulaq Lake East Point Rd DW
Matrix Soil/Solid (dry weight)

Printed Date/Time 05/30/2012 9:02
Prep Batch XXX26896
Method SW3550C
Date 05/22/2012

QC results affect the following production samples:

1121774001

Parameter	Results	LOQ/CL	DL	Units	Analysis Date
<u>Semivolatile Organic Fuels Department</u>					
Diesel Range Organics	12.4 U	20.0	6.20	mg/Kg	05/24/12
Surrogates					
5a Androstane <surr>	92.3	60-120		%	05/24/12
Batch	XFC10379				
Method	AK102				
Instrument	HP 7890A FID SV E R				
Residual Range Organics	12.4 U	20.0	6.20	mg/Kg	05/24/12
Surrogates					
n-Triacontane-d62 <surr>	96.6	60-120		%	05/24/12
Batch	XFC10379				
Method	AK103				
Instrument	HP 7890A FID SV E R				



SGS Ref.#	1087886	Method Blank	Printed Date/Time	05/30/2012	9:02
Client Name	Unalaska City-Public Works		Prep	Batch	
Project Name/#	Ilulaq Lake East Point Rd DW			Method	
Matrix	Soil/Solid (dry weight)			Date	

QC results affect the following production samples:
1121774001

Parameter	Results	LOQ/CL	DL	Units	Analysis Date
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Solids

Total Solids	99.8			%	05/23/12
Batch	SPT8632				
Method	SM21 2540G				
Instrument					



SGS Ref.# 1088266 Method Blank
Client Name Unalaska City-Public Works
Project Name/# Ilulaq Lake East Point Rd DW
Matrix Soil/Solid (dry weight)

Printed Date/Time 05/30/2012 9:02
Prep Batch VXX23513
Method SW5035A
Date 05/24/2012

QC results affect the following production samples:

1121774001, 1121774002

Parameter	Results	LOQ/CL	DL	Units	Analysis Date
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Volatile Fuels Department

Gasoline Range Organics	1.50 U	2.50	0.750	mg/Kg	05/24/12
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Surrogates

4-Bromofluorobenzene <surrogate>	99.6	50-150		%	05/24/12
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Batch VFC10989

Method AK101

Instrument Agilent 7890 PID/FID

Benzene	8.00 U	12.5	4.00	ug/Kg	05/24/12
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Ethylbenzene	15.6 U	25.0	7.80	ug/Kg	05/24/12
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o-Xylene	15.6 U	25.0	7.80	ug/Kg	05/24/12
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P & M -Xylene	30.0 U	50.0	15.0	ug/Kg	05/24/12
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Toluene	15.6 U	25.0	7.80	ug/Kg	05/24/12
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Surrogates

1,4-Difluorobenzene <surrogate>	94.8	72-119		%	05/24/12
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Batch VFC10989

Method SW8021B

Instrument Agilent 7890 PID/FID



SGS Ref.# 1087887 Duplicate
Client Name Unalaska City-Public Works
Project Name/# Ilulaq Lake East Point Rd DW
Original 1121784017
Matrix Soil/Solid (dry weight)

Printed Date/Time 05/30/2012 9:02
Prep Batch
Method
Date

QC results affect the following production samples:
1121774001

Parameter	Original Result	QC Result	Units	RPD	RPD Limits	Analysis Date
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Solids

Total Solids	79.7	80.9	%	2	(< 15)	05/23/2012
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Batch SPT8632
Method SM21 2540G
Instrument



SGS Ref.#	104LL40	ab :Control:Sample	Printed Date/Time	05/20/9019	:6809
Client Name	Dnblbui b:CtUšky	le:P ori u	Prep	Batch	XXX93465
Project Name/#	Wylbl :a bi e:q but:koant:ERd P		Method		SP 2550C
Matrix	Sod/SoldR:(R)Uweght)		Date		05/92/9019

7 C:reuyltu:bQ-t:the:Qllowang:proRy-taon:ubmpleu8
1191LLf001

kbrbmeter	7 C Eeuyltu	k-t Ee-o,	a CS/a CSd a mdu	Ekd	Ekd a mdu	Spä eR v moynt:	v nblUau d bte
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Polynuclear Aromatics GC/MS

1sA ethUnbphthblene	a CS	13Q	:L2	(:ffs10L:)		99Q yg/Kg	05/92/9019
9sA ethUnbphthblene	a CS	15Q	:34	(:f5s105:)		99Q yg/Kg	05/92/9019
v -enbphthene	a CS	13Q	:Lf	(:f5s110:)		99Q yg/Kg	05/92/9019
v -enbphthUene	a CS	15Q	:L1	(:f5s105:)		99Q yg/Kg	05/92/9019
v nthrb-ene	a CS	15Q	:34	(:55s105:)		99Q yg/Kg	05/92/9019
<en>o(b)v nthrb-ene	a CS	13Q	:Lf	(:50s110:)		99Q yg/Kg	05/92/9019
<en>oHbUene	a CS	19Q	:5L	(:50s110:)		99Q yg/Kg	05/92/9019
<en>oF Myorbnthene	a CS	13Q	:Lf	(:f5s115:)		99Q yg/Kg	05/92/9019
<en>oFg HperUene	a CS	13Q	:Lf	(:f0s195:)		99Q yg/Kg	05/92/9019
<en>oF HMyorbnthene	a CS	16Q	:44	(:f5s195:)		99Q yg/Kg	05/92/9019
ChrUene	a CS	16Q	:44	(:55s110:)		99Q yg/Kg	05/92/9019
d c en>oBThnthrb-ene	a CS	13Q	:L2	(:f0s195:)		99Q yg/Kg	05/92/9019
Vyorbnthene	a CS	90Q	:60	(:55s115:)		99Q yg/Kg	05/92/9019
Vyorene	a CS	13Q	:L5	(:50s110:)		99Q yg/Kg	05/92/9019
WRenoFl D's- RHpUene	a CS	1LQ	:L4	(:f0s190:)		99Q yg/Kg	05/92/9019
Mbphthblene	a CS	15Q	:36	(:f0s105:)		99Q yg/Kg	05/92/9019
khenbnthrene	a CS	1LQ	:LL	(:50s110:)		99Q yg/Kg	05/92/9019
kUene	a CS	16Q	:44	(:f5s195:)		99Q yg/Kg	05/92/9019

Surrogates							
9sVyoro phenU.: uyrrB	a CS		:L6	(:f5s105:)			05/92/9019



SGS Ref.#	104LL40	a b :Control:Sample	Printed Date/Time		05/20/9019	:6809
			Prep	Batch	XXX93465	
Client Name	Dnblbui b:CdUšky	le:P ori u		Method	SP 2550C	
Project Name/#	Wylbl :a bi e:qbut:koant:ERd P			Date	05/92/9019	
Matrix	Sod/SoldR:(RrUweght)					
kbrbmeter	7 C Eeuyltu	k-t Ee-o,	a CS/a CSd a cndu	Ekd a cndu	Spä eR v moynt:	v nblUku d bte

Polynuclear Aromatics GC/MS

z erphenUsRlf:.. uyrrB	a CS	:101	(:20s195:)	05/92/9019
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Batch XA S33L9
Method 49L0d :S~~W~~ S:(kv [)
Instrument [k:3460/56L2:A S:S] 7 v



SGS Ref.#	104L404	a b :Control:Sbmple	Printed Date/Time	05/20/9019	:6809
	104L406	a b :Control:Sbmple:d yple-bte	Prep	Batch	XXX93463
Client Name	Dnblbui b:CtUšky	le :P ori u		Method	SP 2550C
Project Name/#	Wylbl :a bi e:q but:koant:ERd P		Date		05/99/9019
Matrix	Sod/SoldR:(RrUwecglt)				

7 C:reuyltu:bQ-t:the:Qllowang:proRy-tøn:ubmpleu8
1191LLf001

kbrbmeter	7 C Eeuyltu	k-t Ee-o,	a CS/a CSd a cndu	Ekd	Ekd a cndu	Spä eR v moynt:	v nblUxu d bte
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Semivolatle Organic Fuels Department

d æuel:Ebnge:Nrgbnc-u	a CS	159	:61	(:L5s195:)		13L mg/Kg	05/9f/9019
	a CSd	150	:60		:1	(. :90:)	13L mg/Kg 05/9f/9019

Surrogates							
5b:v nRroutbne:.. uyrrB	a CS		:45	(:30s190:)			05/9f/9019
	a CSd		:43		:1		05/9f/9019

Batch XVC102L6
Method v K109
Instrument [k:L460v ::::::::::VW:S] :q:E

EeudRybl:Ebnge:Nrgbnc-u	a CS	15L	:6f	(:30s190:)		13L mg/Kg	05/9f/9019
	a CSd	15f	:69		:9	(. :90:)	13L mg/Kg 05/9f/9019

Surrogates							
nsz rdb-ontfbnesR39:.. uyrrB	a CS		:45	(:30s190:)			05/9f/9019
	a CSd		:42		:2		05/9f/9019

Batch XVC102L6
Method v K102
Instrument [k:L460v ::::::::::VW:S] :q:E



SGS Ref.#	104493L a b :Control:Sbmp	Printed Date/Time	05/20/9019 :6809
	1044934 a b :Control:Sbmp: d yple-bte	Prep	Batch] XX92512
Client Name	Dnblbui b:CtUšky le :P ori u	Method	SP 5025v
Project Name/#	Wylbl :a bi e:q but:koant:ERd P	Date	05/9f/9019
Matrix	Sod/SoldR:(RtUweght)		

7 C:reuyltu:bQ-t:the:Qllowng:proRy-tøn:ubmpleu8
1191LLf001Tl191LLf009

kbrbmeter	7 C Eeuyltu	k-t Ee-o,	a CS/a CSd a mdu	Ekd	Ekd a mdu	Spä eR v moynt:	v nblUku d bte
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Volatile Fuels Department

<en>ene	a CS	19L0	:109	(:L5s195:)		1950 yg/Kg	05/9f/9019
	a CSd	1200	:10f		:9	(. :90:)	1950 yg/Kg 05/9f/9019
qthU en>ene	a CS	1930	:101	(:L5s195:)		1950 yg/Kg	05/9f/9019
	a CSd	1960	:102		:9	(. :90:)	1950 yg/Kg 05/9f/9019
osXUene	a CS	1900	:63	(:L5s195:)		1950 yg/Kg	05/9f/9019
	a CSd	1920	:66		:2	(. :90:)	1950 yg/Kg 05/9f/9019
k: & :A :sXUene	a CS	9fL0	:66	(:40s195:)		9500 yg/Kg	05/9f/9019
	a CSd	9520	:101		:9	(. :90:)	9500 yg/Kg 05/9f/9019
z olyene	a CS	1930	:101	(:L0s195:)		1950 yg/Kg	05/9f/9019
	a CSd	1940	:102		:9	(. :90:)	1950 yg/Kg 05/9f/9019

Surrogates							
lTsd Qyoro en>ene:.. uyrrB	a CS		:66	(:L9s116:)			05/9f/9019
	a CSd		:66		:0		05/9f/9019

Batch] VC10646
Method SP 4091<
Instrument v gdent:L460:kW/VW



Printed Date/Time	05/20/9019	:6809
Prep	Batch	] XX92512
	Method	SP 5025v
	Date	05/9f/9019

7C	k-t	aCS/aCSd	Ekd	Ekd	Spa eR	v nblUu
Eeyltu	Ee-o,	a amdu	Ekd	a amdu	v moynt:	d bte
kbrbmeter						

Gbuolne:Ebnge:Nrgbne-u	a CS	694	:62	(:30s190:)		100	mg/Kg	05/9f/9019
	a CSd	69L	:6L		:f	(. :90:)	100	mg/Kg 05/9f/9019

fs<romoQyoro en>ene.: uyrRB	a CS	:64	(:50sl50:)	05/9f/9019
	a CSd	:64	:0	05/9f/9019

Batch] VC10646
Method v K101
Instrument v gdent:L460:kW/VW



SGS Ref.#	10MaM	t rixS:pk eD	Printed Date/Time	05/20/9019 :809
	10MaM	t rixS:pk eDu l l kcoriD	Prep	n n n 9EM85
			Batch	p(7 ori (7:PSixoi (7:p(cM9a0
			Method	05/92/9019
			Date	
Original	1191ad100a			
Matrix	p(c'p(cy:w'xg:h D) Xi3			

QC:DL is:rfDi: iXDf(α(h 7) :kx(yl oi (7:srmkd36
1191aad001

ArxrmDDx	:Ql rcf Ds	Lx) 7rc Dl d	QC Dl d	Aoi D(R	t p/t pu v m is	, Au	, Au v m is	pk eDy Hm(1 7i:	H7rqs s uriD
Polynuclear Aromatics GC/MS									
10 DXgc7rkXiXdD	t p	9d20	9E0E	:a15-	wd0Q0a:3			92.5	1)/(K) 05/9d/9019
	t pu		9118	Q-250-		:91	wd20:3	92.d	1)/(K) 05/9d/9019
90 DXgc7rkXiXdD	t p	9E50	9a8a	:E99-	wd5Q05:3			92.5	1)/(K) 05/9d/9019
	t pu		99aM	Q-5E0-		:90	wd20:3	92.d	1)/(K) 05/9d/9019
HoD7rkXiXdD	t p	wd1.E3*	0.00	:0-	wd5Q10:3			92.5	1)/(K) 05/92/9019
	t pu		0.00	:0-		:0	wd20:3	92.d	1)/(K) 05/92/9019
HoD7rkXiXdD	t p	wd1.E3*	0.00	:0-	wd5Q05:3			92.5	1)/(K) 05/92/9019
	t pu		0.00	:0-		:0	wd20:3	92.d	1)/(K) 05/92/9019
H7iXroD7D	t p	wd1.E3*	9a.9	:11E-	w55Q05:3			92.5	1)/(K) 05/92/9019
	t pu		92.5	:100		:15	wd20:3	92.d	1)/(K) 05/92/9019
BD7z(w3H7iXroD7D	t p	wd1.E3*	0.00	:0-	w50Q10:3			92.5	1)/(K) 05/92/9019
	t pu		1E.2	:a0		:0	wd20:3	92.d	1)/(K) 05/92/9019
BD7z([r]kgxD7D	t p	wd1.E3*	1Md	:a8	w50Q10:3			92.5	1)/(K) 05/92/9019
	t pu		1Md	:a8		:0	wd20:3	92.d	1)/(K) 05/92/9019
BD7z([b]Fd (x7iXdD	t p	wd1.E3*	1E.1	:E8	wd5Q15:3			92.5	1)/(K) 05/92/9019
	t pu		1a.2	:ad		:a	wd20:3	92.d	1)/(K) 05/92/9019
BD7z([] <X<]kDgdD7D	t p	wd1.E3*	0.00	:0-	wd0Q95:3			92.5	1)/(K) 05/92/9019
	t pu		0.00	:0-		:0	wd20:3	92.d	1)/(K) 05/92/9019
BD7z([e]fd (x7iXdD	t p	wd1.E3*	9d.a	:105	wd5Q95:3			92.5	1)/(K) 05/92/9019
	t pu		9d.a	:105		:0	wd20:3	92.d	1)/(K) 05/92/9019
CXgsD7D	t p	wd1.E3*	9d.0	:109	w55Q10:3			92.5	1)/(K) 05/92/9019
	t pu		99.0	:8d		:8	wd20:3	92.d	1)/(K) 05/92/9019
u bD7z([r <X]r 7iXroD7D	t p	wd1.E3*	0.00	:0-	wd0Q95:3			92.5	1)/(K) 05/92/9019
	t pu		15.8	:EM		:0	wd20:3	92.d	1)/(K) 05/92/9019
Fd (x7iXdD	t p	wd1.E3*	9Md	:191-	w55Q15:3			92.5	1)/(K) 05/92/9019
	t pu		9d.9	:102		:1E	wd20:3	92.d	1)/(K) 05/92/9019
Fd (xD7D	t p	wd1.E3*	2Ml	:1E9-	w50Q10:3			92.5	1)/(K) 05/92/9019
	t pu		2d.5	:1dM		:10	wd20:3	92.d	1)/(K) 05/92/9019
47yD7([1-9-2Q-y]:kgxD7D	t p	wd1.E3*	0.00	:0-	wd0Q90:3			92.5	1)/(K) 05/92/9019
	t pu		0.00	:0-		:0	wd20:3	92.d	1)/(K) 05/92/9019
J rkXiXdD	t p	2E1	2dd	Qa1-	wd0Q05:3			92.5	1)/(K) 05/92/9019
	t pu		215	Q00-		:8	wd20:3	92.d	1)/(K) 05/92/9019
AXD7r 7iXxD7D	t p	da.0N	Ea.d	:M	w50Q10:3			92.5	1)/(K) 05/92/9019
	t pu		E8.9	:85		:2	wd20:3	92.d	1)/(K) 05/92/9019
AgxD7D	t p	wd1.E3*	21.9	:122-	wd5Q95:3			92.5	1)/(K) 05/92/9019
	t pu		9Ma	:199		:8	wd20:3	92.d	1)/(K) 05/92/9019

Surrogates



SGS Ref.#	10MaM	t rixS:pk eD	Printed Date/Time	05/20/9019 :809
	10MaM	t rixS:pk eDu l kcoriD	Prep	Batch
			Method	n n n 9EM5
			Date	p(7 ori (7:PSixroi (7:p(cMa0
Original	1191ad100a			05/92/9019
Matrix	p(cp(cy:wxg:h D) Xi3			
ArxmDDx	:QlrcfDs	Lx) 7rc	QC	Aoi
		, Dli	, Dli	, Do(R
			t p/t pu	, Au
			v m is	, Au
				v m is
				pk eDy
				Hm(17i:
				H7rgs s
				u riD

Polynuclear Aromatics GC/MS

90Cd (x b kXJgcUsl xx>	t p	18.a	:Ml	wd5Q05:3	05/92/9019
	t pu	18.2	:M	:9	05/92/9019
TDkXJgcUsl xx>	t p	9E.1	:111	w20Q95:3	05/92/9019
	t pu	92.M	:109	:8	05/92/9019
Batch	n t pEEa9				
Method	M9a0u :p4 p:wAHl 3				
Instrument	I A:EM80/58a2:t p:pVQH				



SGS Ref.#	10M9a1	t rixS:pk eD	Printed Date/Time	05/20/9019 :809
	10M9a9	t rixS:pk eDu l kcoriD	Prep	Batch
			Method	Vn n 92512
			Date	HK101:PSixroi (7:wp3
Original	1191aad001			05/9d/9019
Matrix	p(c/p(cy:wxg:h D) Xi3			

QC:xDl is:rffDi:iXDf(α(h 7):kx(yl oi (7:srmkd36
1191aad001<1191aad009

ArxrmDDx	:QlrcfDs	Lx) 7rc	QC	Aoi	t p/t pu	, Au	, Au	pk eDy	H7rqs s
		Dl i	Dl i	, D(R	v m is		v m is	Hm(1 7i:	u riD

Volatile Fuels Department

BD/zDD	t p	v2M83*	2188	:101	wa5Q95:3			21EI	1)/(K) 05/9d/9019
	t pu		9852	:8d		:M	vE:90:3	21EI	1)/(K) 05/9d/9019
PiXgcbD/zDD	t p	wa.83*	2108	:88	wa5Q95:3			21EI	1)/(K) 05/9d/9019
	t pu		9ME	:81		:M	vE:90:3	21EI	1)/(K) 05/9d/9019
(QdD	t p	wa.83*	201M	:8E	wa5Q95:3			21EI	1)/(K) 05/9d/9019
	t pu		9aM	:MM		:M	vE:90:3	21EI	1)/(K) 05/9d/9019
A&t :QdD	t p	w5E3*	E11d	:8a	wM0Q95:3			E20M	1)/(K) 05/9d/9019
	t pu		5E25	:M		:M	vE:90:3	E20M	1)/(K) 05/9d/9019
T(d DD	t p	wa.83*	21dM	:100	wa0Q95:3			21EI	1)/(K) 05/9d/9019
	t pu		9809	:89		:M	vE:90:3	21EI	1)/(K) 05/9d/9019

Surrogates									
1-dQ fd (x bD/zDDUsI xx>	t p		2199	:88	wa9Q18:3				05/9d/9019
	t pu		2199	:88		:0			05/9d/9019

Batch	VFC108M
Method	pWM091B
Instrument	H) dTi:aM0:A4u /F4u



Locations Nationwide

- Alaska
- New Jersey
- North Carolina
- West Virginia
- Maryland
- New York
- Indiana
- Kentucky

www.us.sgs.com

☐ 200 W. Potter Drive Anchorage, AK 99518 Tel: (907) 562-2343 Fax: (907) 561-5301
☐ 5500 Business Drive Wilmington, NC 28405 Tel: (910) 350-1903 Fax: (910) 350-1557

http://www.sgs.com/terms_and_conditions.htm

White - Retained by Lab
Pink - Retained by Client

SAMPLE RECEIPT FORM

1121774



Review Criteria:	Condition:	Comments/Action Taken.
Were custody seals intact? Note # & location, if applicable. COC accompanied samples?	Yes No <u>N/A</u>	
Temperature blank compliant* (i.e., 0-6°C after correction factor)? * Note: Exemption permitted for chilled samples collected less than 8 hours ago. Cooler ID: <u>1</u> @ <u>3.8</u> w/ Therm.ID: <u>203</u> Cooler ID: _____ @ _____ w/ Therm.ID: _____ Cooler ID: _____ @ _____ w/ Therm.ID: _____ Cooler ID: _____ @ _____ w/ Therm.ID: _____ Cooler ID: _____ @ _____ w/ Therm.ID: _____ Note: If non-compliant, use form FS-0029 to document affected samples/analyses. If samples are received without a temperature blank, the "cooler temperature" will be documented in lieu of the temperature blank & "COOLER TEMP" will be noted to the right. In cases where neither a temp blank nor cooler temp can be obtained, note "ambient" or "chilled." If temperature(s) <0°C, were all sample containers ice free?	Yes No <u>N/A</u>	
Delivery method (specify all that apply): Client USPS <u>Alert Courier</u> Road Runner AK Air Lynden Carlile ERA <u>PenAir</u> FedEx UPS NAC Other: → For WO# with airbills, was the WO# & airbill info recorded in the Front Counter eLog?	Note ABN/ tracking # <u>See Attached</u> or N/A Yes No <u>N/A</u>	
→ For samples received with payment, note amount (\$) and cash / check / CC (circle one) or note: → For samples received in FBKS, ANCH staff will verify all criteria are reviewed.		<u>N/A</u> SRF Initiated by: <u>KMB</u> N/A
Were samples received within hold time? Note: Refer to form F-083 "Sample Guide" for hold time information. Do samples match COC* (i.e., sample IDs, dates/times collected)? * Note: Exemption permitted if times differ <1hr; in which case, use times on COC. Were analyses requested unambiguous?	<u>Yes</u> No <u>N/A</u> <u>Yes</u> No <u>N/A</u> <u>Yes</u> No <u>N/A</u>	
Were samples in good condition (no leaks/cracks/breakage)? Packing material used (specify all that apply): <u>Bubble Wrap</u> Separate plastic bags Vermiculite Other:	<u>Yes</u> No <u>N/A</u>	
Were all VOA vials free of headspace (i.e., bubbles ≤6 mm)? Were all soil VOAs field extracted with MeOH+BFB?	Yes No <u>N/A</u> <u>Yes</u> No <u>N/A</u>	
Were proper containers (type/mass/volume/preservative*) used? * Note: Exemption permitted for waters to be analyzed for metals. Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?	<u>Yes</u> No <u>N/A</u> <u>Yes</u> No <u>N/A</u>	
For special handling (e.g., "MI" or foreign soils, lab filter, limited volume, Ref Lab), were bottles/paperwork flagged (e.g., sticker)?	Yes No <u>N/A</u>	
For preserved waters (other than VOA vials, LL-Mercury or microbiological analyses), was pH verified and compliant? If pH was adjusted, were bottles flagged (i.e., stickers)?	Yes No <u>N/A</u> Yes No <u>N/A</u>	
For RUSH/SHORT HOLD Time or site-specific QC (e.g., BMS/BMSD/BDUP) samples, were the COC & bottles flagged (e.g., stickers) accordingly? For RUSH/SHORT HT, was email sent?	<u>Yes</u> No <u>N/A</u>	
For any question answered "No," has the PM been notified and the problem resolved (or paperwork put in their bin)?	Yes No <u>N/A</u>	SRF Completed by: <u>KMB</u> PM = <u>PAT</u> N/A
Was PEER REVIEW of sample numbering/labeling completed?	Yes No <u>N/A</u>	Peer Reviewed by: <u>N/A</u>

Additional notes (if applicable):

* Per PM, there should be enough sample in septa jar to run; proceed w/ analysis.

Note to Client: Any "no" circled above indicates non-compliance with standard procedures and may impact data quality.

Alert Expeditors Inc.
DBA/Petroleum Courier Service

328484

Citywide Delivery
272-0349 • 440-3351
8421 Flamingo Drive • Anchorage, Alaska 99502

Date: 5/22/12
From: CO Alaska

To: ASCS

Collect ☐	Prepay ☐ Account ☐	Advance Charges ☐
Job #	PO#	

Leon
Rice

2414372

1121774



Shipped Signature

Total Charge

Received By: Rodriguez

1610

4892

339

0249 4892

SHIPPER'S ADDRESS ANCHORAGE		SHIPPER'S ACCOUNT NUMBER 0120		NOT NEGOTIABLE AIR WAYBILL (AIR CONSIGNMENT NOTE)		PENAIR 6100 BOEING AVE. ANCHORAGE, ALASKA 99502 Copies 1, 2 and 3 of this Air Waybill are originals and have the same validity.	
CONSIGNEE'S NAME AND ADDRESS SGS LABS ANCHORAGE		CONSIGNEE'S ACCOUNT NUMBER		If the carriage involves an ultimate destination or stop in a country other than the country of departure, the Warsaw Convention may be applicable and the Convention governs and in most cases limits the liability of carriers in respect of loss or damage to cargo. Agreed stopping places are those places (other than the places of departure and destination) shown under requested routing and/or those places shown in carriers' timetables as scheduled stopping places for the route. Address of first carrier is the airport of departure. SEE CONDITIONS ON REVERSE HEREOF.			
Received in good condition at ANCHORAGE on 5/22/12		Date/Time		Please print your name			
Signature							
☐ PRIORITY ☒ ECONOMY TO EXPEDITE MOVEMENT, SHIPMENT MAY BE DIVERTED TO MOTOR OR OTHER CARRIER UNLESS SHIPPER GIVES OTHER INSTRUCTIONS HEREON.		DATE	TIME	PHONE	PERSON CONTACTED	BY	INSTRUCTIONS TO CARRIER
AGENTS IATA CODE		ACCOUNT NO.		Domestic Liability: If no value declared PEN AIR liability will not exceed \$.50 per lb. plus transportation costs. See rule G32B5 A.T.P.			
AIRPORT OF DEPARTURE (ADDR OF FIRST CARRIER) AND REQUESTED ROUTING ANCHORAGE							
ROUTING AND DESTINATION TO ANCHORAGE BY FIRST CARRIER		TO	BY	TO	BY	CURRENCY USD	DECLARED VALUE FOR CARRIAGE 35.00
AIRPORT OF DESTINATION ANCHORAGE		FOR CARRIER USE ONLY FLIGHT/DATE		FLIGHT/DATE		DECLARED VALUE FOR CUSTOMS	
HANDLING INFORMATION These commodities licensed by US for ultimate destination. Diversion contrary to US law is prohibited.							
INCA 359 3264 CHILL							
NO. OF PIECES RCP	GROSS WEIGHT	kg	RATE CLASS COMMODITY ITEM NO.	CHARGEABLE WEIGHT	RATE CHARGE	TOTAL	NATURE AND QUANTITY OF GOODS (INCL. DIMENSIONS OR VOLUME)
1	12		GEN	12	R11	35.00	SOIL SAMPLE LPO# 37072
1	12					35.00	
PREPAID		WEIGHT CHARGE		COLLECT		PICKUP CHARGES	
A. 35.00		VALUATION CHARGE		D. TAX		B. DELIVERY CHARGES	
I. 2.17		TOTAL OTHER CHARGES DUE AGENT		TOTAL OTHER CHARGES DUE CARRIER		SHIPPER'S R.F.C. (AMOUNT TO BE ENTERED BY SHIPPER)	
COD →		CURRENCY		TOTAL PREPAID		TOTAL COLLECT	
37.17		CURRENCY CONVERSION RATES		TOTAL COLLECT IN DESTINATION CURRENCY		EXECUTED ON 5/22/12 (Date) 2:30 (Time) at (Place)	
FOR CARRIERS USE ONLY AT DESTINATION (ALL COLLECT CHARGES IN DESTINATION CURRENCY)		CHARGES AT DESTINATION		TOTAL COLLECT CHARGES		SIGNATURE OF ISSUING CARRIER OR ITS AGENT	
						Shipper certifies that the particulars on the face hereof are correct and that insofar as any part of the consignment contains dangerous goods (hazardous materials) such part is properly described by name and is in proper condition for carriage by air according to the applicable government regulations and, for international shipments, the current International Air Transport Association's Dangerous Goods Regulations. It is agreed that the goods described herein are accepted in apparent good order and condition (except as noted) for carriage. SUBJECT TO THE CONDITIONS OF CONTRACT ON THE REVERSE HEREOF, THE SHIPPER'S ATTENTION IS DRAWN TO THE NOTICE CONCERNING CARRIERS LIMITATION OF LIABILITY. Shipper may increase such limitation of liability by declaring a higher value for carriage and pay a supplemental charge if required. PRINTED NAME Robert Lund SIGNATURE OF SHIPPER OR HIS AGENT AND INITIAL APPROPRIATE BOX BELOW	
☒ This shipment does NOT contain Dangerous Goods.		☐ This shipment DOES contain Dangerous Goods.					

0249 4892

**Characterization Report and Work Plan Addendum for Ilulaq
Lake/East Point Road & Delta Way**

ATTACHMENT E

1.0 QUALITY ASSURANCE NARRATIVE

1.1 PRECISION

A total of 40 confirmation soil samples were collected throughout the *Project*, with 4 of those confirmation samples doubled with a blind duplicate sample (DUP-01 through DUP-04). The RPD was calculated for each target analyte where both duplicates included quantifiable concentrations. A relative percent difference <50% is acceptable per ADECs 2010 *Draft Field Sampling Guidance*. While the RPD was higher than 50% in some of the PAH results, the level of precision is still high enough that the results with respect to CULs are unchanged.

$$\text{RPD (\%)} = \text{Absolute value of } \frac{(R1 - R2)}{((R1 + R2)/2)} \times 100$$

Table 2 includes RPD calculations.

SGS Report No. 1121591. For DW-2+50-4 and corresponding DUP-01 a RPD of 25.6% was calculated for RRO and 13.5% for percent moisture. Other analytes were not calculable due to both non-detect results. There was a mixture of corresponding non-detect and measurable concentrations in the PAHs, but this was due to DUP-01 having detection levels lower than the quantifiable levels for DW-2+50-4. The precision of RRO and % moisture results are not low enough to affect the interpretation of most other results with the same analytes with regards to exceedence of CULs. The exception is DRO results for DW-3+00-4, where the CUL is within 13.5% (the % moisture RPD) of the result, but the RPD in percent moisture was likely confined to DW-2+50 and DUP-01 as the result of variability in the submitted soils.

The laboratory performed the appropriate number of QC samples for the lab report MS/MSD and LCS/LCSD.

SGS Report No. 1121608 For EP-6+10-4 and corresponding DUP-02 a RPD was calculated as: 17% for 1-Methyl-Naphthalene, 9% for 2-Methyl-Naphthalene, 18% for Naphthalene, and 4% was calculated for percent moisture. Other analytes were not calculable due to two non-detect results. There was a mixture of corresponding non-detect and measurable concentrations in the PAHs, these have RPDs higher than 50%, but the quantified results are very close to the limits of quantification and well below CULs. The observed precision levels are not low enough to affect the interpretation of other results with the same analytes with regards to exceedence of CULs.

For EP-11+60-4 and corresponding DUP-03 a RPD was calculated as: 2% for DRO, 9% for RRO, 51% for Benzo(a)Anthracene, 37% for Benzo(a)pyrene, 38% for Benzo(b)Fluoranthene, 26% for Benzo(g,h,i)perylene, 17% for Benzo(k)fluoranthene, 44% for Chrysene, 45% for Fluoranthene, 31% for Indeno(1,2,3-cd)pyrene, 38% for

Phenanthrene, 44% for Pyrene, and 2% for % moisture. Other analytes were not calculable due to two non-detect results. There was a mixture of corresponding non-detect and measurable concentrations in the PAHs, these have RPDs higher than 50%, but the quantified results are very close to the limits of quantification and well below CULs. The observed precision levels are not low enough to affect the interpretation of other results with the same analytes with regards to exceedence of CULs, but it is noted that the RPD for Benzo(a)Anthracene was slightly higher than 50%.

For EP-12+97-4 and corresponding DUP-04 a RPD was calculated as: 1% for DRO, 9% for RRO, 14% for Acenaphthene, 20% for Anthracene, 27% for Benzo(a)Anthracene, 13% for Benzo(a)pyrene, 14% for Benzo(b)Fluoranthene, 1% for Benzo(g,h,i)perylene, 13% for Benzo(k)fluoranthene, 20% for Chrysene, 3% for Dibenz(a,h)anthracene, 11% for Fluoranthene, 1% for Fluorene, 19% for Phenanthrene, 16% for Pyrene, and 0.5% for total solids. Other analytes were not calculable due to two non-detect results. The observed precision levels are not low enough to affect the interpretation of other results with the same analytes with regards to exceedence of CULs.

The laboratory performed the appropriate number of QC samples for the lab report MS/MSD and LCS/LCSD.

1.2 ACCURACY

Each lab report included analysis of lab control samples at a rate of at least 1 lab control sample per 20 field confirmation samples, matrix, and analysis. In addition, surrogate percent recoveries were analyzed and reported for each field confirmation sample analyte.

The following are potential issues with lab results as taken from a review of the reports and the individual case narratives

SGS Report No. 1121591

SGS Report No. 1121591 contains laboratory results for DW-0+00 through DW-4+00, EP-1+60 through EP-5+60, DUP-01, and TB-01.

All benzene PQLs (also LOQ or REPD, i.e. the lower limit for quantifiable results) exceeded the migration to groundwater CULs for benzene. However, as the LODs (i.e. 2 times the DL. The DL is the lower limit of quantifiable results) for benzene were all below the CUL for benzene then the presence of benzene above CULs would have at least been noted as a concentration with a J flag. This did not occur in any of the non-detect U qualified values for benzene.

The two coolers shared a trip blank (TB-01) as noted by the lab. All samples were stored together with that trip blank prior to being split for shipment in the sealed coolers.

AK102/103 - Unknown hydrocarbon with several peaks is present.

DW-0+00-4, DW-0+50-4, DW-2+00-4, DW-4+00-4, DUP-01, EP-3+10-2, EP-3+60-2, EP-4+10-2, EP-5+10-4 are affected.

AK102/103 - The pattern is consistent with a lube oil.

DW-1+00-4, DW-1+50-4, DW-2+50-4, and DW-3+00-4 are affected.

AK102/103 - Sample was diluted due to dark color of extract; therefore the LOQ was elevated.

DW-1+00-4 and DW-1+50 were affected. The data is not affected as the LOQs are still below CULs.

8270D SIM- Surrogate (2-fluorobiphenyl) recovery is outside of QC criteria due to sample dilution.

DW-1+50-4 was affected for PAHs. 2-fluorobiphenyl was recovered at 42.8% just below the 45%-105% acceptable range. In samples with low surrogate recoveries, target analytes may not have been detected if present in low concentrations. However; the LOQs are well below the CULs for PAHs so the data is still usable.

AK102/103 - The pattern is consistent with a weathered middle distillate.

DW-3+50-4, EP-1+60-2, EP-2+10-2, EP-4+10-4, EP-4+60-2, EP-4+60-4, EP-5-10-4, EP-5+60-2, and EP-5+60-4 are affected.

8270D SIM - Elevated LOQs due to sample dilution. Sample diluted due to dark extract.

DUP-01, EP-3+10-2, EP-4+10-2, EP-4+60-2 are affected. The data is still usable as the LOQs are below the CULs.

8270D SIM- Surrogate (2-fluorobiphenyl and terphenyl-d14) recovery is outside of QC criteria due to sample dilution.

EP-5-10-4 is affected. Samples with high surrogate recoveries indicate that the target analytes will be detected if present, but the concentrations may be exaggerated. As PAHs did not exceed CULs the data usability is not affected.

8270D SIM - MS recovery for naphthalene, benzo(a)anthracene and benzo[a]pyrene is outside of QC criteria. Refer to LCS for accuracy.

DW-0+00-4, DW-0+50-4, DW-1+00-4, DW-1+50-4, DW-2+50-4, DW-3+00-4, DW-3+50-4, DW-4+00-4, DUP-01, EP-1+60-2, EP-2+10-2, EP-3+10-2, EP-3+60-2, EP-4+10-2, EP-4+10-4, and EP-4+60-2 are affected. This indicates matrix interference; however, the corresponding LCS percent recoveries fell within acceptable bounds and the data is still usable.

8270D SIM - MSD recovery for naphthalene and benzo[a]pyrene is outside of QC criteria. Refer to LCS for accuracy.

See notes above.

8270D SIM- MS/MSD RPD for acenaphthene does not meet QC criteria.

DW-0+00-4, DW-0+50-4, DW-1+00-4, DW-1+50-4, DW-2+50-4, DW-3+00-4, DW-3+50-4, DW-4+00-4, DUP-01, EP-1+60-2, EP-2+10-2, EP-3+10-2, EP-3+60-2, EP-4+10-2, EP-4+10-4, and EP-4+60-2 are affected. This is actually a precision issue and indicates variation in the results between duplicates of a matrix spike above acceptable levels; however, Acenaphthene results are well below CULs and the LCS/LCSD was acceptable so the usability of the data is not affected.

8021B - LCSD recovery is outside of acceptance criteria for benzene (biased high). Sample concentrations are less than LOQ.

DW-0+00-4, DW-0+50-4, DW-1+00-4, DW-1+50-4, DW-2+00-4, DW-2+50-4, DW-3+00-4, DW-3+50-4, DW-4+00-4, DUP-01, EP-1+60-2, EP-2+10-2, EP-3+10-2, EP-3+60-2, and TB-01 are affected. Data usability may be affected because DW-3+50-4 had a benzene detection above the CUL. The labs statement that "Sample concentrations are less than the LOQ" is therefore incorrect, however, the bias would not be enough to drive DW-3+50-4 below the CUL or the LOQ for benzene, so the data is usable.

8021B - CCV recovery is outside of acceptance criteria for benzene (biased high). Sample concentrations are less than LOQ.

CCV2 for HBN 1339072 (VFC/1097 is affected. Lab report does not describe the affected field samples; however, the effect on the results would be conservative.

8270D SIM - MS/MSD recovery for multiple analytes is outside of QC criteria. Refer to LCS for accuracy.

DW-2+00-4, EP-4+60-4, EP-5+10-4 (EP-5+10-2), EP-5-10-4 (EP-5+10-4), EP-5+60-2, EP-5+60-4 are affected. This indicates matrix interference; however, the corresponding LCS percent recoveries fell within acceptable bounds and the data is still usable on that basis. The field notes show that EP-4+60-4 which was the matrix used in this spike was sand and gravel, where sand was a rare find during this *Project* and is therefore not entirely representative of the other affected field samples.

8270D SIM - MS/MSD recovery for multiple analytes is outside of QC criteria. Refer to LCS for accuracy.

See above, this appears to be a repeat.

8021B - CCV recovery is outside of acceptance criteria for benzene (biased high). Sample concentrations are less than LOQ.

CCV2 for HBN 1339072 (VFC/1097. Lab report does not describe the affected field samples; however, the effect on the results would be conservative as they are biased high.

SGS Report No. 1121608

SGS Report No. 1121608 contains laboratory results for EP-6+10 through EP-12+97, DUP-02, DUP-03, DUP-04, and TB-02.

All benzene PQLs (the same as the LOQ, i.e. the lower limit for quantifiable results) exceeded the migration to groundwater CULs for benzene. However, as the LODs (2xDL) for benzene were all below the CUL for benzene, the presence of benzene above CULs would have at least been noted as a concentration with a J flag. This did not occur in any of the non-detect U qualified values.

Samples arrived at the lab in a cooler which was shipped air freight from Dutch Harbor to Anchorage. The cooler arrived at -0.3°C. The low temperature is not expected to affect the results, but is noted because ADEC's 2010 *Draft Field Sampling Guidance* recommends 4°C ± 2°C.

AK102/103 - Unknown hydrocarbon with several peaks is present.

EP-6+60-4, EP-11+60-4, and EP-12+10-4 are affected.

AK103 - Unknown hydrocarbon with several peaks is present.

EP-7+10-4, EP-7+60-4, EP-8+10-4, EP-8+60-4, DUP-02, DUP-03, DUP-04, EP-9+10-2, EP-9+10-4, EP-9+60-4, EP-10+10-4, EP-10+60-4, EP-11+10-4, EP-11+60-4, EP-12+60-4, and EP-12+97-4 are affected.

AK102 - The pattern is consistent with a weathered middle distillate.

EP-7+60-4, EP-8+10-4, EP-8+60-4, DUP-03, DUP-04, EP-10+10-4, EP-10+60-4, EP-12+60-4, and EP-12+97-4 are affected.

8270D SIM - MS/MSD recovery for multiple analytes is outside of QC criteria. Refer to LCS for accuracy.

EP-6+60-2 through EP-8+60-4, DUP-2, DUP-03, and EP-11+1-4 through EP-12+97-4 are affected. The matrix interference was based on EP-11+60-4 which was noted as aggregate and shot rock which was composed of gravel fill and native crushed bedrock. The lab report refers to the LCS for accuracy which had accurate results which is the best that can be done under the circumstances.

8270D SIM - MS/MSD recovery for multiple analytes is outside of QC criteria. Refer to LCS for accuracy.

See above.

SGS Report No. 1121608

SGS Report No. 1121608 contains laboratory results for EP-13+39 (EP-13+36). The actual location was EP-13+36.

The benzene PQL (also LOQ or REPD, i.e. the lower limit for quantifiable results) exceeded the migration to groundwater CUL for benzene. However, as the LOD (i.e. 2 times the DL, i.e. the DL is the lower limit of quantifiable results) for benzene was below the CUL for benzene then the presence of benzene above CULs would have at least been noted as a concentration with a J flag. This did not occur for this non-detect U qualified value.

Samples arrived at the lab in a cooler which was shipped air freight from Dutch Harbor to Anchorage. The cooler arrived at 3.8°C.

AK102 - The pattern is consistent with a weathered middle distillate.

EP-13-36-4 is affected.

AK103 - The pattern is consistent with a lube oil.

EP-13+36-4 is affected.

8270D SIM - MS/MSD recovery for multiple analytes is outside of QC criteria. Refer to LCS for accuracy.

EP-6+60-2 through EP-8+60-4, DUP-2, DUP-03, and EP-11+1-4 through EP-12+97-4 are affected. The matrix interference was based on EP-11+60-4 which was noted as aggregate and shot rock which was composed of gravel fill and native crushed bedrock. The lab report refers to the LCS for accuracy which had accurate results which is the best that can be done under the circumstances.

1.3 REPRESENTATIVENESS

Representativeness may be divided into two categories:

1. The extent to which the physical location of the field screen and confirmation soil samples characterize the *Project* area; and
2. Whether confirmation soil sample laboratory results are representative of the actual field conditions at the time of sample collection.

Test pits were advanced at approximately 50 feet or smaller intervals along the Delta Way proposed storm drain (Station 0+00 to 4+00) and along the East Point Road storm drain (Station 1+60 to 13+36; exception 2+60 bypassed due to groundwater above 2-feet bgs).

In the field, a PID meter was used to screen 62 field samples and the results were used to bias 40 confirmation samples to the vertical level (2 or 4-feet bgs) which represented the highest soil contamination within each test pit. Soil screening was also used to judge vertical locations to take additional field confirmation samples in order to better delineate the extents of the highest soil contamination. These additional vertical delineation confirmation samples occurred where the 2-foot vertical horizon had a higher PID reading than 4-feet, or where the PID reading at 4-feet significantly exceeded the PID reading at 2-feet.

The respective storm drain paths appear to be well characterized as to the extent and levels of soil contamination to 4-feet bgs along the test pit route. However, because the Delta Way route has been relocated and was not pre-characterized, all soils from DW-2+75 to the outfall will be assumed over CULs. Along the East Point Road Route a 'clean' sample at EP-6+10-4 is neglected because it appears to be isolated.

1.4 COMPARABILITY

Per ADECs May 2010 *Draft Field Sampling Guidance*, ADEC recommends a correlation study between on-site field screening and site specific analytical results be evaluated and reported where variable field screening results are common or expected.

The author used the PID meter as a screening device to bias field confirmation sample locations towards the highest soil contamination. The PID meter was used as a guide but not as a qualitative or quantitative device. There are many factors present in the soil which may limit correlation; the below are some factors relevant to this *Project*:

- The age and nature of the release(s) including biogenic and other unknown interferences. A better correlation would be expected for a fresh release versus an aged release where the volatile portions have had more time to dissipate;
- The moisture content of the soil. Dry soil allows fuel to volatilize to the air more effectively than wetter soil, which restrains volatilization;
- Stabilization in rock. Hydrocarbon contamination may become adsorbed in the micro-pores of rocky material and fail to volatilize effectively; and
- The general heterogeneity of the soils and/or contamination encountered throughout the *Project* area.

Delta Way

The PID readings from Delta Way are plotted versus the Site field confirmation sample laboratory TPH concentrations on a log-log scale in **Figure 1**. There is not a clear correlation between PID readings and laboratory results even when non-detect readings for DRO were removed from comparison. In the authors experience this behavior can be typical of low PID readings in areas with residual or background contamination, and may also be due to scaling problems with low threshold PID readings or laboratory results. In

addition, the material was very rocky, and releases in the area would be aged. If one neglects the benzene exceedence in DW-3+50-4, then a PID reading over 0.4 ppmv could be used to indicate an exceedence for DRO in this vicinity, but it is not recommended to do so due to the lack of repeatable results.

East Point Road

The PID readings from East Point Road are plotted versus the Site field confirmation sample laboratory TPH concentrations on a log-log scale in **Figure 2**. There is not a clear correlation between PID readings and laboratory results even when locations with non-detect readings for DRO were removed from comparison or only DRO CUL exceedence points were used. The lack of correlation is likely due to the heterogeneity of the soils and the age of the releases in the area. If one neglects the DRO exceedence in EP-13+36-4, and EP-1+60-2, then a PID reading over 100 ppmv may indicate an exceedence of the CUL for DRO in this vicinity, but is not definitive.

Note that EP-13+36-4 appeared clear by evidence of the PID meter, but lab results yielded a 10% exceedence of the DRO CUL.

Also note that EP-6+10-4 verified by DUP-02 had a PID reading of 114.4 ppmv yet did not exceed CULs. The material at EP-6+10-4 was a native brown silt of medium plasticity which was unique to this sample set. In the authors experience this type of native materials in Dutch Harbor/Unalaska consisting of little or no aggregate and a dark organic appearance, tend to yield low lab results despite elevated PID readings.

1.5 COMPLETENESS

During the *Project* a total of 40 field confirmation samples were sent to the laboratory. Samples from SGS report 1121608 arrived to the lab at temperatures below freezing. This issue is neglected as unlikely to affect the test results. There is then a 100% validity rate for data submitted to the lab for this *Project*.

1.6 SENSITIVITY

The LOD fell below the most stringent migration to groundwater CULs for all constituents analyzed. The LOD is the level below which a statistically valid qualitative statement of the presence of a chemical cannot be made. I.e. non-detect U qualified.

SGS lab report noted that the samples were transported in two coolers but that only one of the coolers contained a trip blank (TB-01). This was intentional as all of the samples handled were handled and stored together with the trip blank prior to shipment in sealed coolers.

All trip blank results were also non-detect U qualified.

Laboratory Data Review Checklist

Completed by:	Robert Lund		
Title:	Engineering Technician	Date:	6/14/2012
CS Report Name:	Characterization Report and Work Plan Addendum	Report Date:	5/29/2012
Consultant Firm:	City of Unalaska		
Laboratory Name:	SGS Labs	Laboratory Report Number:	1121591
ADEC File Number:		ADEC RecKey Number:	

1. Laboratory

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

☒ Yes ☐ No ☐ NA (Please explain.) Comments:

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

☐ Yes ☐ No ☒ NA (Please explain) Comments:

Not transferred.

2. Chain of Custody (COC)

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

☒ Yes ☐ No ☐ NA (Please explain) Comments:

--

b. Correct analyses requested?

☒ Yes ☐ No ☐ NA (Please explain) Comments:

--

3. Laboratory Sample Receipt Documentation

a. Sample/cooler temperature documented and within range at receipt ($4^{\circ} \pm 2^{\circ} \text{C}$)?

☐ Yes ☒ No ☐ NA (Please explain) Comments:

Samples transported in two coolers. Cooler 1 was 0.8dC and Cooler 2 was 0.0dC.
--

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

☒ Yes

☐ No

☐ NA (Please explain)

Comments:

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

☒ Yes

☐ No

☐ NA (Please explain)

Comments:

No problems noted.

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

☒ Yes

☐ No

☐ NA (Please explain)

Comments:

Temperatures below range.

e. Data quality or usability affected? (Please explain)

Comments:

Unlikely. ADEC guidance defines frozen soils as <7dC and Unalaska soils undergo freeze/thaw naturally.

4. Case Narrative

a. Present and understandable?

☒ Yes

☐ No

☐ NA (Please explain)

Comments:

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

☒ Yes

☐ No

☐ NA (Please explain)

Comments:

c. Were all corrective actions documented?

☒ Yes

☐ No

☐ NA (Please explain)

Comments:

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

Comments:

* LCSD biased high for benzene. CCV2 biased high for benzene.

5. Samples Results

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

☒ Yes ☐ No ☐ NA (Please explain)

Comments:

b. All applicable holding times met?

☒ Yes ☐ No ☐ NA (Please explain)

Comments:

c. All soils reported on a dry weight basis?

☒ Yes ☐ No ☐ NA (Please explain)

Comments:

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

☐ Yes ☒ No ☐ NA (Please explain)

Comments:

All PQLs (SGS/REPD) exceeded migration to groundwater CULs for over 60 inch Zone for benzene.

e. Data quality or usability affected? (Please explain)

Comments:

No. LOD (2xDL) below the CUL for benzene. J flag results would be shown if benzene was above CUL.

6. QC Samples

a. Method Blank

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

☒ Yes ☐ No ☐ NA (Please explain)

Comments:

ii. All method blank results less than PQL?

☒ Yes ☐ No ☐ NA (Please explain)

Comments:

Yes.

iii. If above PQL, what samples are affected?

Comments:

NA.

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

☐ Yes

☐ No

☒ NA (Please explain)

Comments:

No issues noted.

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

Comments:

No issues noted.

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

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

☒ Yes

☐ No

☐ NA (Please explain)

Comments:

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

☐ Yes

☐ No

☒ NA (Please explain)

Comments:

Not analyzed for.

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

☐ Yes

☒ No

☐ NA (Please explain)

Comments:

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

☐ Yes

☒ No

☐ NA (Please explain)

Comments:

All reported, not all are within limits.

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

Comments:

All samples affected.

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

☒ Yes ☐ No ☐ NA (Please explain) Comments:

Flags noted in case narrative only.

vii. Data quality or usability affected? (Please explain)

Comments:

Benzene may be biased high. PAHs are affected, however exhibited okay surrogate recovery.

c. Surrogates - Organics Only

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

☒ Yes ☐ No ☐ NA (Please explain) Comments:

ii. Accuracy - All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)

☐ Yes ☒ No ☐ NA (Please explain) Comments:

Exceedance for PAHs due to required sample dilution.

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

☒ Yes ☐ No ☐ NA (Please explain) Comments:

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

Comments:

Suggests a low bias for PAHs. Recovery for 2-Fluorobiphenyl was 42.8% versus the 45% required.

d. Trip Blank - Volatile analyses only (GRO, BTEX, Volatile Chlorinated Solvents, etc.): Water and Soil

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

☐ Yes ☒ No ☐ NA (Please explain.) Comments:

1 trip blank submitted for 2 coolers. All were stored together prior to shipment in sealed coolers.

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

☐ Yes ☒ No ☐ NA (Please explain.) Comments:

Lab receiving noted that TB-01 was in Cooler 1 with DW-0+00 through DW-4+00 and EP-1+60.

iii. All results less than PQL?

☒ Yes ☐ No ☐ NA (Please explain.)

Comments:

iv. If above PQL, what samples are affected?

Comments:

NA.

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

Comments:

No issues noted.

e. Field Duplicate

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

☒ Yes ☐ No ☐ NA (Please explain)

Comments:

ii. Submitted blind to lab?

☒ Yes ☐ No ☐ NA (Please explain.)

Comments:

Submitted blind, but the lab does require a sample date for duplicates.

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

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

Where R_1 = Sample Concentration

R_2 = Field Duplicate Concentration

☒ Yes ☐ No ☐ NA (Please explain)

Comments:

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

☐ Yes ☒ No ☐ NA (Please explain)

Comments:

f. Decontamination or Equipment Blank (if applicable)

☐ Yes

☒ No

☐ NA (Please explain)

Comments:

New sample equipment and gloves used between sample points.

i. All results less than PQL?

☐ Yes

☐ No

☒ NA (Please explain)

Comments:

ii. If above PQL, what samples are affected?

Comments:

NA

iii. Data quality or usability affected? (Please explain.)

Comments:

NA

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

a. Defined and appropriate?

☒ Yes

☐ No

☐ NA (Please explain)

Comments:

Reset Form

Laboratory Data Review Checklist

Completed by:	Robert Lund		
Title:	Engineering Technician	Date:	6/15/2012
CS Report Name:	Characterization Report and Work Plan Addendum	Report Date:	5/29/2012
Consultant Firm:	City of Unalaska		
Laboratory Name:	SGS Labs	Laboratory Report Number:	1121608
ADEC File Number:		ADEC RecKey Number:	

1. Laboratory

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

☒ Yes ☐ No ☐ NA (Please explain.) Comments:

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

☐ Yes ☐ No ☒ NA (Please explain) Comments:

Not transferred.

2. Chain of Custody (COC)

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

☒ Yes ☐ No ☐ NA (Please explain) Comments:

b. Correct analyses requested?

☒ Yes ☐ No ☐ NA (Please explain) Comments:

3. Laboratory Sample Receipt Documentation

a. Sample/cooler temperature documented and within range at receipt ($4^{\circ} \pm 2^{\circ} \text{C}$)?

☐ Yes ☒ No ☐ NA (Please explain) Comments:

Cooler temperature blank was -0.3dC.

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

☒ Yes

☐ No

☐ NA (Please explain)

Comments:

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

☒ Yes

☐ No

☐ NA (Please explain)

Comments:

No problems noted.

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

☒ Yes

☐ No

☐ NA (Please explain)

Comments:

Missing label on one jar. Identified by default.

e. Data quality or usability affected? (Please explain)

Comments:

Unlikely. ADEC guidance defines frozen soils as <7dC and Unalaska soils undergo freeze/thaw naturally.

4. Case Narrative

a. Present and understandable?

☒ Yes

☐ No

☐ NA (Please explain)

Comments:

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

☒ Yes

☐ No

☐ NA (Please explain)

Comments:

c. Were all corrective actions documented?

☐ Yes

☐ No

☒ NA (Please explain)

Comments:

Corrective actions not noted or not needed.

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

Comments:

None noted.

5. Samples Results

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

☒ Yes ☐ No ☐ NA (Please explain)

Comments:

b. All applicable holding times met?

☒ Yes ☐ No ☐ NA (Please explain)

Comments:

c. All soils reported on a dry weight basis?

☒ Yes ☐ No ☐ NA (Please explain)

Comments:

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

☐ Yes ☒ No ☐ NA (Please explain)

Comments:

Most PQLs (SGS/REPD) exceeded migration to groundwater CULs for over 60 inch Zone for benzene.

e. Data quality or usability affected? (Please explain)

Comments:

No. LOD (2xDL) below the CUL for benzene. J flag results would be shown if benzene was above CUL.

6. QC Samples

a. Method Blank

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

☒ Yes ☐ No ☐ NA (Please explain)

Comments:

ii. All method blank results less than PQL?

☒ Yes ☐ No ☐ NA (Please explain)

Comments:

Yes.

iii. If above PQL, what samples are affected?

Comments:

NA.

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

☐ Yes

☐ No

☒ NA (Please explain)

Comments:

No issues noted.

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

Comments:

No issues noted.

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

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

☒ Yes

☐ No

☐ NA (Please explain)

Comments:

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

☐ Yes

☐ No

☒ NA (Please explain)

Comments:

Not analyzed for.

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

☒ Yes

☐ No

☐ NA (Please explain)

Comments:

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

☐ Yes

☒ No

☐ NA (Please explain)

Comments:

MS/MSD show several issues with PAHs on one run; lab refer to the LCS for accuracy.

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

Comments:

EP-6+60-2 through EP-8+60-4, DUP-2, DUP-03, and EP-11+1-4 through EP-12+97-4 by MS/MSD.

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

☐ Yes

☐ No

☒ NA (Please explain)

Comments:

Lab refers to LCS for accuracy and samples are not flagged.

vii. Data quality or usability affected? (Please explain)

Comments:

There is matrix interference; however, it is beyond the labs control. Results were well below the CULs.

c. Surrogates - Organics Only

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

☒ Yes

☐ No

☐ NA (Please explain)

Comments:

ii. Accuracy - All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)

☒ Yes

☐ No

☐ NA (Please explain)

Comments:

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

☒ Yes

☐ No

☐ NA (Please explain)

Comments:

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

Comments:

No effects.

d. Trip Blank - Volatile analyses only (GRO, BTEX, Volatile Chlorinated Solvents, etc.): Water and Soil

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

☒ Yes

☒ No

☐ NA (Please explain.)

Comments:

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

☐ Yes

☐ No

☒ NA (Please explain.)

Comments:

Only 1 cooler used, samples were stored and shipped with trip blank.

iii. All results less than PQL?

☒ Yes ☐ No ☐ NA (Please explain.)

Comments:

iv. If above PQL, what samples are affected?

Comments:

NA.

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

Comments:

No issues noted.

e. Field Duplicate

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

☒ Yes ☐ No ☐ NA (Please explain.)

Comments:

ii. Submitted blind to lab?

☒ Yes ☐ No ☐ NA (Please explain.)

Comments:

Submitted blind, but the lab does require at least a sample date for duplicates.

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

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

Where R_1 = Sample Concentration

R_2 = Field Duplicate Concentration

☐ Yes ☒ No ☐ NA (Please explain.)

Comments:

Some out of range values in DUP-02 and DUP-03. DUP-04 was Okay.

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

☐ Yes ☒ No ☐ NA (Please explain.)

Comments:

% difference not high enough to drive any results over the CULs.

f. Decontamination or Equipment Blank (if applicable)

☐ Yes

☒ No

☐ NA (Please explain)

Comments:

New sample equipment and gloves used between sample points.

i. All results less than PQL?

☐ Yes

☐ No

☒ NA (Please explain)

Comments:

ii. If above PQL, what samples are affected?

Comments:

NA

iii. Data quality or usability affected? (Please explain.)

Comments:

NA

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

a. Defined and appropriate?

☒ Yes

☐ No

☐ NA (Please explain)

Comments:

Reset Form

Laboratory Data Review Checklist

Completed by:	Robert Lund 		
Title:	Engineering Technician	Date:	6/18/2012
CS Report Name:	Characterization Report and Work Plan Addendum	Report Date:	5/30/2012
Consultant Firm:	City of Unalaska		
Laboratory Name:	SGS Labs	Laboratory Report Number:	1121774
ADEC File Number:		ADEC RecKey Number:	

1. Laboratory

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

☒ Yes ☐ No ☐ NA (Please explain.) Comments:

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

☐ Yes ☐ No ☒ NA (Please explain) Comments:

Not transferred.

2. Chain of Custody (COC)

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

☒ Yes ☐ No ☐ NA (Please explain) Comments:

b. Correct analyses requested?

☒ Yes ☐ No ☐ NA (Please explain) Comments:

3. Laboratory Sample Receipt Documentation

a. Sample/cooler temperature documented and within range at receipt ($4^{\circ} \pm 2^{\circ} \text{C}$)?

☐ Yes ☒ No ☐ NA (Please explain) Comments:

Cooler temperature blank was 3.8dC.

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

☒ Yes

☐ No

☐ NA (Please explain)

Comments:

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

☒ Yes

☐ No

☐ NA (Please explain)

Comments:

Lab did note that the PM was asked if there was enough MeOH for analysis, but no leakage was noted.

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

☒ Yes

☐ No

☐ NA (Please explain)

Comments:

None.

e. Data quality or usability affected? (Please explain)

Comments:

No.

4. Case Narrative

a. Present and understandable?

☒ Yes

☐ No

☐ NA (Please explain)

Comments:

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

☒ Yes

☐ No

☐ NA (Please explain)

Comments:

c. Were all corrective actions documented?

☐ Yes

☐ No

☒ NA (Please explain)

Comments:

Corrective actions not noted or not needed.

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

Comments:

None noted.

5. Samples Results

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

☒ Yes ☐ No ☐ NA (Please explain)

Comments:

b. All applicable holding times met?

☒ Yes ☐ No ☐ NA (Please explain)

Comments:

c. All soils reported on a dry weight basis?

☒ Yes ☐ No ☐ NA (Please explain)

Comments:

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

☐ Yes ☒ No ☐ NA (Please explain)

Comments:

PQL (SGS/REPD) exceeded migration to groundwater CUL for over 60 inch Zone for benzene.

e. Data quality or usability affected? (Please explain)

Comments:

No. LOD (2xDL) below the CUL for benzene. J flag results would be shown if benzene was above CUL.

6. QC Samples

a. Method Blank

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

☒ Yes ☐ No ☐ NA (Please explain)

Comments:

ii. All method blank results less than PQL?

☒ Yes ☐ No ☐ NA (Please explain)

Comments:

Yes.

iii. If above PQL, what samples are affected?

Comments:

NA.

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

☐ Yes ☐ No ☒ NA (Please explain) Comments:

No issues noted.

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

Comments:

No issues noted.

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

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

☒ Yes ☐ No ☐ NA (Please explain) Comments:

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

☐ Yes ☐ No ☒ NA (Please explain) Comments:

Not analyzed for.

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

☒ Yes ☐ No ☐ NA (Please explain) Comments:

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

☐ Yes ☒ No ☐ NA (Please explain) Comments:

MS/MSD show several issues with PAHs on one run; lab refer to the LCS for accuracy.

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

Comments:

EP-13+36-4 by MS/MSD.

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

☐ Yes

☐ No

☒ NA (Please explain)

Comments:

Lab refers to LCS for accuracy and samples are not flagged.

vii. Data quality or usability affected? (Please explain)

Comments:

There is matrix interference; however, it is beyond the labs control. Results were well below the CULs.

c. Surrogates - Organics Only

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

☒ Yes

☐ No

☐ NA (Please explain)

Comments:

ii. Accuracy - All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)

☒ Yes

☐ No

☐ NA (Please explain)

Comments:

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

☒ Yes

☐ No

☐ NA (Please explain)

Comments:

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

Comments:

No effects.

d. Trip Blank - Volatile analyses only (GRO, BTEX, Volatile Chlorinated Solvents, etc.): Water and Soil

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

☒ Yes

☒ No

☐ NA (Please explain.)

Comments:

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

☐ Yes

☐ No

☒ NA (Please explain.)

Comments:

Only 1 cooler used, samples were stored and shipped with trip blank.

iii. All results less than PQL?

☒ Yes ☐ No ☐ NA (Please explain.)

Comments:

iv. If above PQL, what samples are affected?

Comments:

NA.

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

Comments:

No issues noted.

e. Field Duplicate

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

☒ Yes ☐ No ☐ NA (Please explain.)

Comments:

ii. Submitted blind to lab?

☒ Yes ☐ No ☐ NA (Please explain.)

Comments:

Submitted blind, but the lab does require at least a sample date for duplicates.

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

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

Where R_1 = Sample Concentration

R_2 = Field Duplicate Concentration

☐ Yes ☒ No ☐ NA (Please explain.)

Comments:

Some out of range values in DUP-02 and DUP-03. DUP-04 was Okay.

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

☐ Yes ☒ No ☐ NA (Please explain.)

Comments:

% difference not high enough to drive any results over the CULs.

f. Decontamination or Equipment Blank (if applicable)

☐ Yes

☒ No

☐ NA (Please explain)

Comments:

New sample equipment and gloves used between sample points.

i. All results less than PQL?

☐ Yes

☐ No

☒ NA (Please explain)

Comments:

ii. If above PQL, what samples are affected?

Comments:

NA

iii. Data quality or usability affected? (Please explain.)

Comments:

NA

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

a. Defined and appropriate?

☒ Yes

☐ No

☐ NA (Please explain)

Comments:

Reset Form

**Characterization Report and Work Plan Addendum for Ilulaq
Lake/East Point Road & Delta Way**

ATTACHMENT F

DW-3+50
Soil profile here is
typical of all test pits
on Delta Way





EP-2+10
excavations
flooded,
typical in
vicinity



EP-4+10
water levels
dropped in
this vicinity

EP-5+60
steel pipe





EP-8+10
bottom of
excavation
exhibits 'shot
rock'