

November 4, 2019

Ms. Margaret deGravelle
Icicle Seafood, Inc.
4019 21st Avenue West
Seattle, WA 98199

RE: LANDFARM SOIL SAMPLING, ICICLE SEAFOODS EGEGIK CANNERY, EGEGIK,
ALASKA (FILE NO. 2543.38.002)

Dear Ms. deGravelle:

This letter report presents the results of Shannon & Wilson's landfarm soil sampling activities conducted at the Icicle Seafoods Egegik Cannery (Icicle) in Egegik, Alaska. The site is an active Alaska Department of Environmental Conservation (ADEC) listed contaminated site (File number 2543.38.002). The purpose of the soil sampling is to progress towards a cleanup complete designation for the site. The project objectives were to collect representative soil samples to evaluate the remedial progress of Icicle Seafoods Egegik Cannery landfarms and evaluate if the soil underlying the landfarm footprints has been impacted. A vicinity map is included as Figure 1 and general site features are shown on Figure 2.

BACKGROUND

Since 2005, four isolated spills have occurred at the Egegik Icicle Seafoods facility at locations which include the Freezer Plant day tank, the tank farm secondary containment system, the Generator Building day tank, and the Mechanics' Bunkhouse day tank. Petroleum-contaminated soils from previous spill cleanup activities have been placed in two separate landfarm areas designated Landfarm Area 1 and Landfarm Area 2.

Based on information provided in the 2013 *Land-Farm Monitoring Activities* report by BGES, Inc. dated February 2015, Landfarm Area 1 contains approximately 38 cubic yards (cy) of impacted soil generated during the 2005 through 2007 excavation activities and measures 25 feet by 95 feet; and Landfarm Area 2 contains approximately 51 cy of impacted soil generated during the 2008 excavation activities and measures 50 feet by 100 feet. Multi-incremental (MI) soil samples collected in 2013 from the landfarms contained diesel range organics (DRO) concentrations greater than the ADEC Method Two cleanup level. The 2013 MI soil samples had no detectable concentrations of gasoline range organics (GRO),

benzene, ethylbenzene, toluene, and xylenes; and concentrations of residual range organics (RRO) less than the ADEC Method Two cleanup levels.

PROJECT ACTIVITIES

The project consisted of conducting a visual assessment of the landfarm areas, collecting MI soil samples from the landfarm soil for laboratory analysis, and soil sampling beneath the landfarm footprints. Project activities were conducted in general accordance with ADEC regulation 18 AAC 75, Interstate Technology Regulatory Council (ITRC) *Incremental Sampling Methodology, Technical and Regulatory Guidance* (February 2012), and our July 22, 2019 ADEC-approved *Work Plan for Landfarm Soil Sampling, Icicle Seafood Egegik Cannery, Egegik, Alaska*. Site photos and field notes documenting the sampling activities are included in Attachments 1 and 2, respectively.

Task 1 – Visual Assessment of Landfarm Areas

The landfarm areas are located approximately 350 feet southeast from a three-way road junction located adjacent southeast of the Egegik Icicle Seafoods facility as shown on Figure 2. The landfarm areas are accessed via a driveway off the east side of an unpaved roadway that continues south from the three-way junction. A sign denoting the presence of contaminated soil is located between the landfarm areas (Photo 1).

The landfarm areas were covered with approximately 3 to 4-foot tall bluejoint reedgrass except for an approximately 6 to 8-foot strip in each landfarm area where Icicle personnel had used a loader to expose the underlying soil. Shannon & Wilson's qualified environmental professional (QEP) was present for the remainder of the vegetation clearing. The removed vegetation including limited soil in the grass roots was placed along the edge of the landfarm areas. The loader used to clear the vegetation was not decontaminated prior to arriving or leaving the landfarm areas.

The lateral extents of the landfarm areas were not definitive due to the presence of the vegetation. Based on the Icicle personnel's recollection of the landfarm area locations, the vegetation was removed beyond the anticipated extent of each landfarm area (Photo 2). The apparent extent of each landfarm area was further determined based on observed variations in soil compaction.

Landfarm Area 1 measured approximately 22-feet by 22-feet (Photo 3). Landfarm Area 2 measured approximately 30-feet by 18-feet (Photo 4). Note that the dimensions of the landfarm areas are different than presented in the *2013 Land-Farm Monitoring Activities*

report. Further, Shannon & Wilson's designations of the landfarm areas were switched, with our designated Landfarm Area 1 containing the 2008 landfarmed soil and Landfarm Area 2 containing the 2007 landfarmed soil.

Based on the presence of overgrown vegetation, the landfarm areas have not been routinely tilled. Soil berms were not observed in the vicinity of the landfarm areas. A woven black liner was intermittently observed approximately 1-foot below the landfarm soil (Photo 5). The liner integrity is compromised with pieces of liner material observed during removal of surficial vegetation and within the landfarmed soil during collection of samples. Stained soil measuring approximately 8-feet by 6-feet was observed on the southwestern portion of Landfarm Area 2 (Photo 6, Figure 4). The origin and age of the soil staining is not known. Scaled site plans are included as Figures 2 and 5.

Task 2 – Multi-Incremental Soil Sampling

MI sampling methods were used to obtain a statistically representative sample of the soil in each landfarm. Landfarm Area 1 and Landfarm Area 2 are discrete decision units identified as Decision Unit-DU1 (22-feet by 22-feet) and Decision Unit-DU2 (30-feet by 18-feet), respectively. Each decision unit is approximately 1-foot deep. One MI sample was collected from each decision unit using the methodology outlined in the ITRC and the process described below. For quality control purposes, a triplicate set of samples was collected from one decision unit to evaluate the precision of the MI sampling procedure.

1. A square-based grid system was used to overlay each decision unit as shown on Figures 3 and 4. The grid system was sized to contain at least 100 possible sampling locations/grid cells (Photos 3 and 4). The individual grid cells were identified using an alphanumeric naming convention where the vertical axis gradation is alphabetical, and the horizontal axis gradation is numerical. A list of the grid cell identifiers was compiled in Microsoft Excel® and the RANDBETWEEN random number function was used to select 30 grid cells from each decision unit for collection of sub-portion samples. Locations for each of the 30 sub-portion primary samples were in the northeast quadrant of the grid cells. Flags were placed at each primary sub-portion location to aid in replicate sample collection (see Step 5) and mapping.
2. At each sub-portion sample location, approximately 20 grams of soil were collected between 0 to 1 foot below the landfarm soil surface using a new or decontaminated sampling spoon and placed into a common container (double-bagged 1-gallon Ziploc®). Attempts were made to collect silt and fine-grained sand with particle diameters of less than

2 millimeters. A field scale was used to calibrate the sample size to obtain the target sub-portion sample mass.

3. After the 30 randomly selected grid cells were sampled, the bulk sample volume was verified using a field scale. Each bulk sample weighed a minimum of 600 grams which is within the SGS recommended bulk soil sample volume to allow for post-sieving and subsample processing.
4. Steps 1 through 3 were repeated as sampling activities continued to the second DU.
5. An MI duplicate and MI triplicate were collected from DU2. Of the two decision units, Decision Unit DU2 has the highest historical analytical results; therefore, the triplicate sample set were collected from this decision unit. The MI duplicate and triplicate sub-portion samples were collected from the northwest and southeast quadrants, respectively, of each of the 30 grid cells selected for the primary sample.
6. The four MI samples, including the triplicate sample set, were labeled, sealed, and placed in a cooler delivered to SGS using chain of custody procedures. The cooler was maintained at a temperature of 0 to 6 degrees Fahrenheit until arriving at SGS. SGS performed the MI post-sieving and subsample processing. The soil samples were analyzed for DRO by Alaska Method (AK) 102.

Task 3 –Landfarm Footprint Sampling

Five spatially-representative field screening samples were collected from within the footprint and beneath each of the landfarm areas to evaluate whether the underlying soil has been impacted. Each soil sample was collected from approximately 6 inches below the original ground surface (approximately 1.5 feet below the landfarm surface) using a clean, decontaminated hand shovel. The soil samples were “screened” for volatile organic compounds (VOCs) using a photoionization detector (PID) and ADEC-approved headspace screening techniques. The PID was calibrated before screening activities with 100 parts per million (ppm) isobutylene standard gas. The field screening samples were collected in re-sealable plastic bags, allowed to warm to the ambient air temperature of approximately 65 degrees Fahrenheit, and tested within 60 minutes of collection.

Based on PID readings and visual/olfactory observations, two analytical soil samples from each landfarm were collected. In addition, one duplicate soil sample was collected for quality control purposes. The five analytical samples were submitted to SGS and analyzed for GRO by AK 101, DRO by AK 102, RRO by AK 103, and benzene, toluene, ethylbenzene,

and xylenes (BTEX) by Environmental Protection Agency (EPA) Method 8021B. For quality control purposes, one trip blank was submitted and analyzed for GRO by AK 101 and BTEX by EPA Method 8021B.

Decontamination water generated during Tasks 2 and 3 soil sampling efforts was containerized in a 5-gallon bucket then discharged onto the soil within the respective landfarm areas.

DISCUSSION OF ANALYTICAL RESULTS

The soil sample results were compared to applicable cleanup levels listed in the Oil and Other Hazardous Substances Pollution Control Regulations, 18 AAC 75 (October 2018). The soil criteria are based on the most stringent ADEC Method 2 cleanup levels listed in Tables B1 and B2 for the “under 40-inch (precipitation) zone,” 18 AAC 75.341.

The project sample locations and descriptions are summarized in Table 1. The cleanup levels and analytical results for the soil samples are listed in Table 2. The laboratory report and completed ADEC Laboratory Data Review Checklist (LDRC) are provided in Attachment 3.

MI Sampling

Each MI sample (Samples DU1, DU2, DU3, and DU4) contained a concentration of DRO (maximum of 1,680 milligrams per kilograms [mg/kg]) exceeding the ADEC cleanup level.

Landfarm Footprint Sampling

Sample DU1-3, Sample DU2-1, and the duplicate sample set (Samples DU2-1 and DU2-11) contained concentrations of DRO (maximum of 1,250 mg/kg) exceeding the ADEC cleanup level. In addition, Sample DU1-5 contained a concentration of benzene (0.0394 mg/kg) exceeding the ADEC cleanup level. The remaining target analytes were either not detected or detected at concentrations less than the respective ADEC cleanup levels.

Quality Control

The project laboratory implements on-going quality assurance/quality control procedures to evaluate conformance to ADEC data quality objectives (DQOs). Internal laboratory controls for this project include surrogates, method blanks, matrix spike/matrix spike duplicates (MS/MSD), and laboratory control sample/laboratory control sample duplicates (LCS/LCSD)

to assess precision, accuracy, and matrix bias. If a DQO is not met, the project laboratory provides a brief narrative concerning the problem in the case narrative of their laboratory reports (See Attachment 3).

The field quality control sample included one laboratory prepared soil trip blank. The trip blank sample accompanied the project sample jars from the laboratory to the site during sampling activities and back again to SGS. According to the SGS laboratory report, the trip blank did not contain detectable concentrations of target analytes. Additionally, Shannon & Wilson submitted a MI triplicate sample set (Samples DU2, DU3, and DU4). The coefficient of variation (CV) for this MI sample set was calculated at 0.334. A CV greater than 3 indicates that the data is not usable due to errors in the sampling process or the presence of areas of significantly higher contaminant concentration. Therefore, the MI sample results are considered representative of the decision units.

Shannon & Wilson reviewed the SGS data deliverables and completed an ADEC Laboratory Data Review Checklist for the project work order. In our opinion, no non-conformances that would adversely impact data usability for the objectives of this project were noted.

CONCLUSIONS

Based on the presence of overgrown vegetation, the landfarm areas have not been routinely tilled. Further, the lateral extents of the landfarm areas were not definitive due to the presence of the overgrown vegetation. The landfarmed soil was identified based on Icicle personnel recollection of the landfarm area locations and observed variations in soil compaction.

An 8-feet by 6-feet apparent petroleum stain was observed on the southwestern portion of Landfarm Area 2 (Decision Unit DU2). The origin and age of the stained soil is not known.

Each submitted analytical soil sample, with the exception of Sample DU1-5, contained a concentration of DRO exceeding the ADEC cleanup level. Sample DU1-5 contained a concentration of benzene exceeding the ADEC cleanup level. The remaining target analytes were either not detected or detected at concentrations less than the respective ADEC cleanup levels. Based on the results of the MI samples, Landfarm Areas 1 and 2 continue to exhibit concentrations of DRO above the ADEC cleanup level. In addition, the landfarm footprint samples suggest the surface soil beneath the landfarm areas contain DRO and benzene concentrations greater than the ADEC cleanup levels.

CLOSURE/LIMITATIONS

This report was prepared for the exclusive use of our client and their representatives. The findings we have presented within this report are based on the limited sampling and analyses that we conducted. They should not be construed as definite conclusions regarding the project site's soil quality. It is possible that our tests missed higher levels of contaminants, although our intention was to sample areas likely to be impacted and in accordance with our ADEC-approved work plan. As a result, the sampling and analyses performed can only provide you with our professional judgment as to the environmental characteristics of this site, and in no way guarantees that an agency or its staff will reach the same conclusions as Shannon & Wilson, Inc. The data presented in this report should be considered representative of the time of our site assessment. Changes in site conditions can occur over time, due to natural forces or human activity. In addition, changes in government codes, regulations, or laws may occur. Because of such changes beyond our control, our observations and interpretations may need to be revised. Shannon & Wilson has prepared the document in Attachment 4, Important Information About Your Geotechnical/Environmental Report, to assist you and others in understanding the use and limitations of our reports.

You are advised that various state and federal agencies (ADEC, EPA, etc.) may require the reporting of this information. Shannon & Wilson does not assume the responsibility for reporting these findings and therefore has not, and will not, disclose the results of this study unless authorized by you or required by law.

We appreciate the opportunity to be of service. If you have questions or comments concerning this report, please call the undersigned at (907) 561-2120.


Sincerely,

SHANNON & WILSON, INC

Prepared by:


 Schylar Healy
Environmental Scientist

Approved by:


LeeAnne Osgood
Associate

Enc: Tables 1 and 2, Figures 1 through 5, and Attachments 1 through 4

**TABLE 1
SAMPLE LOCATIONS AND DESCRIPTIONS**

Sample Number^^	Date	Sample Location (See Figure 2)	Depth (feet**)	Headspace (ppm) ^	Sample Description
MI Samples					
* DU1	8/12/2019	Multi-incremental soil sample of Decision Unit DU1 (See Figure 3)	0-1.0	-	Brown, <i>Gravelly Silt with Sand (ML)</i> ; moist
* DU2	8/13/2019	Multi-incremental soil sample of Decision Unit DU2 (See Figure 4)	0-1.0	-	Brown, <i>Gravelly Silt with Sand (ML)</i> ; moist
* DU3	8/13/2019	Duplicate of Multi-incremental soil sample of Decision Unit DU2	0-1.0	-	Brown, <i>Gravelly Silt with Sand (ML)</i> ; moist
* DU4	8/13/2019	Triplicate of Multi-incremental soil sample of Decision Unit DU2	0-1.0	-	Brown, <i>Gravelly Silt with Sand (ML)</i> ; moist
Landfarm Footprint Samples					
DU1-1	8/13/2019	West corner of Decision Unit DU1	1.5	0.6	Brown, <i>Gravelly Silt with Sand (ML)</i> ; moist
DU1-2	8/13/2019	North corner of Decision Unit DU1	1.5	0.3	Brown, <i>Gravelly Silt with Sand (ML)</i> ; moist
* DU1-3	8/13/2019	Center of Decision Unit DU1	1.5	52.9	Brown, <i>Gravelly Silt with Sand (ML)</i> ; moist
DU1-4	8/13/2019	South corner of Decision Unit DU1	1.5	9.6	Brown, <i>Gravelly Silt with Sand (ML)</i> ; moist
* DU1-5	8/13/2019	East corner of Decision Unit DU1	1.5	18.6	Brown, <i>Gravelly Silt with Sand (ML)</i> ; moist
* DU2-1	8/13/2019	Northwest corner of Decision Unit DU2	1.5	106	Brown, <i>Gravelly Silt with Sand (ML)</i> ; moist
* DU2-11	8/13/2019	Duplicate Sample of Sample DU2-1	1.5	106	Brown, <i>Gravelly Silt with Sand (ML)</i> ; moist
DU2-2	8/13/2019	Northeast corner of Decision Unit DU2	1.5	22.3	Brown, <i>Gravelly Silt with Sand (ML)</i> ; moist
DU2-3	8/13/2019	Center of Decision Unit DU2	1.5	0.0	Brown, <i>Gravelly Silt with Sand (ML)</i> ; moist
DU2-4	8/13/2019	Southwest corner of Decision Unit DU2	1.5	8.6	Brown, <i>Gravelly Silt with Sand (ML)</i> ; moist
* DU2-5	8/13/2019	Southeast corner of Decision Unit DU2	1.5	58.5	Brown, <i>Gravelly Silt with Sand (ML)</i> ; moist
Quality Control					
* Trip Blank	8/12/2019	Trip Blank	-	-	Ottawa sand with methanol added in the laboratory

Notes:

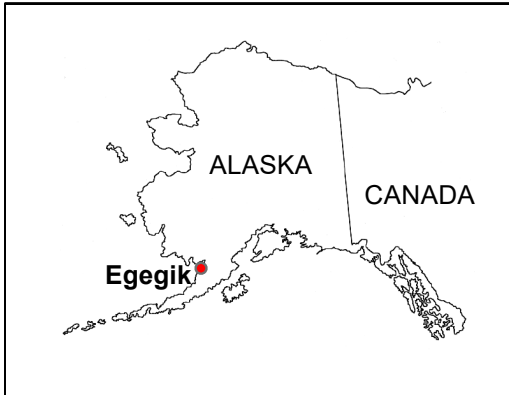
- * = Sample analyzed by the project laboratory (See Table 2 and Attachment 3)
- ** = Feet below the landfarm area surface
- ^ = Field screening instrument was a Thermo Environmental Instruments 580B photoionization detector (PID)
- ^^ = Sample number preceded by "103355-" on the chain-of-custody
- = Measurement not recorded or not applicable
- ppm = Parts per million

**TABLE 2
SUMMARY OF ANALYTICAL RESULTS**

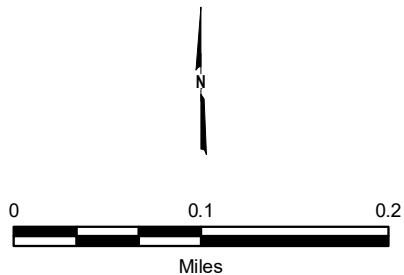
Parameter Tested	Units	Method*	Cleanup Level (mg/kg)**	Sample ID Number^ and Collection Depth in Feet Below The Landfarm Area Surface (See Table 1 and Figures 1 through 5)									
				MI Samples				Landfarm Footprint Samples					Quality Control
				DU1 0.0-1.0	DU2 0.0-1.0	DU3< 0.0-1.0	DU4< 0.0-1.0	DU1-3 1.5	DU1-5 1.5	DU2-1 1.5	DU2-11~ 1.5	DU2-5 1.5	Trip Blank
PID Headspace Reading	ppm	580B OVM	-	-	-	-	-	52.9	18.6	106	106	58.3	-
Gasoline Range Organics (GRO)	mg/kg	AK 101	300	-	-	-	-	1.82 J	2.02 J+	1.06 J+	<1.15	<1.34	<1.26
Diesel Range Organics (DRO)	mg/kg	AK 102	250	434	1,450	829	1,680	1,250	159	1,110	1,130	1,250	-
Residual Range Organics (RRO)	mg/kg	AK 103	10,000					250	171	148	168	254	
Volatile Organic Compounds (VOCs)													
Benzene	mg/kg	EPA 8021B	0.022	-	-	-	-	<0.00670	0.0394	<0.00615	<0.00575	<0.00670	<0.00635
Toluene	mg/kg	EPA 8021B	6.7	-	-	-	-	<0.0134	0.123	<0.0123	<0.0115	<0.0134	<0.0127
Ethylbenzene	mg/kg	EPA 8021B	0.13	-	-	-	-	<0.0134	0.0250	<0.0123	<0.0115	<0.0134	<0.0127
Xylenes	mg/kg	EPA 8021B	1.5	-	-	-	-	0.0296 J	0.215	<0.0370	<0.0345	<0.0402	<0.0380

Notes:

- * = See Attachment 3 for compounds tested, methods, and laboratory reporting limits.
- ** = Soil cleanup level is the most stringent Method Two standard listed in Table B1 or B2, 18 AAC 75, for the "under 40-inch (precipitation) zone" (October 2018)
- ^ = Sample ID No. preceded by "103355-" on the chain-of-custody form
- ppm = Parts per million
- mg/kg = Milligrams per kilogram
- < = Duplicate or Triplicate of Sample DU2
- ~ = Duplicate of Sample DU2-1
- = Not tested or not applicable
- <1.15 = Analyte not detected; laboratory limit of detection is 1.15 mg/kg
- 159** = Analyte detected at a concentration less than the applicable ADEC cleanup level
- 434** = Exceeds ADEC cleanup level
- J = Estimated concentration less than the limit of quantitation. See the SGS laboratory report for details.
- J+ = Estimated concentration, potentially biased high, due to quality control failures. Flag applied by Shannon & Wilson, Inc. See ADEC LDRC in Attachment 3 for details.



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



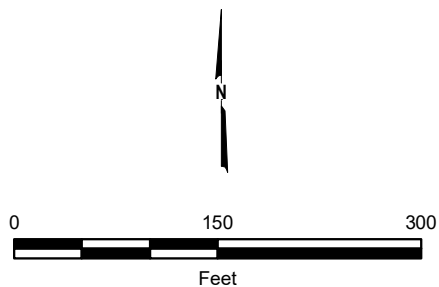
Icicle Seafoods Egegik Cannery
Egegik, Alaska


VICINITY MAP

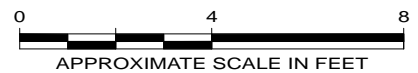
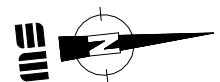
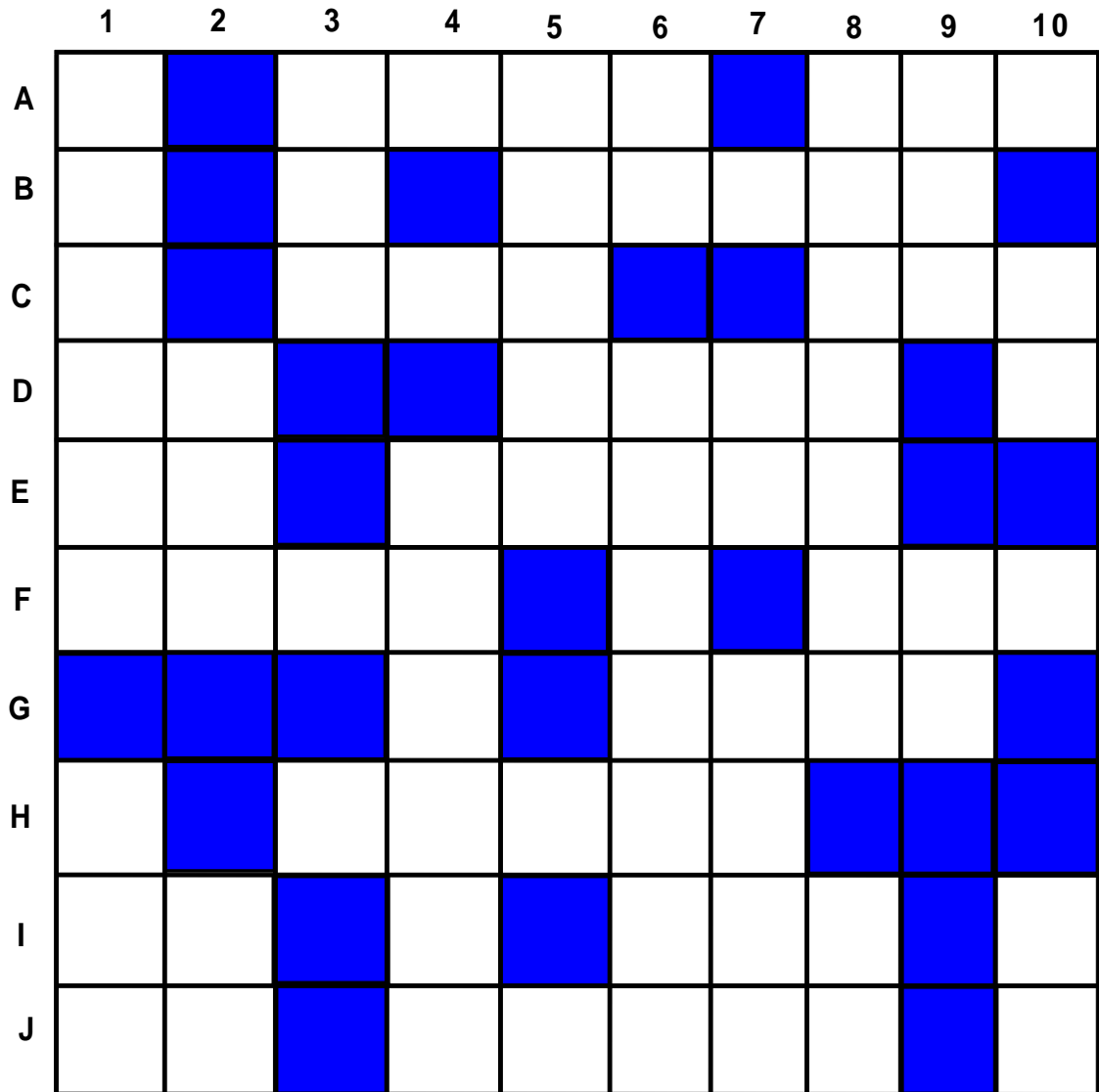
November 2019 103355-001



Notes: See Figures 3 through 5 for details regarding MIS and landfarm footprint sampling.



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SITE PLAN	
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 SHANNON & WILSON, INC. GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS	FIG. 2



Legend



Sub-portion Sample of MIS Sample DU1
 Collected from the northeast quadrant of the grid cell
 by Shannon & Wilson on August 12, 2019

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 Egegik, Alaska

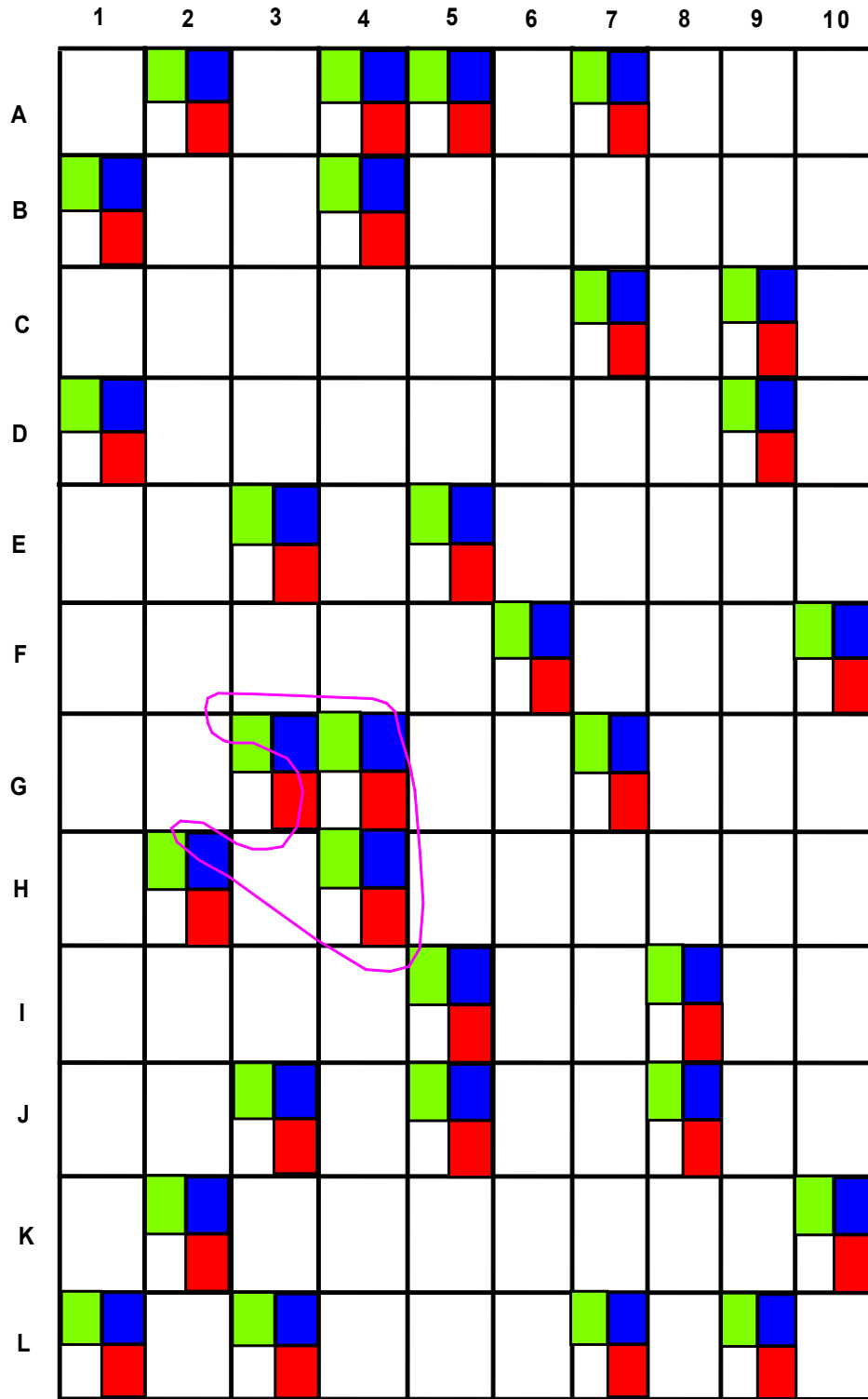
MIS SAMPLING PLAN: DECISION UNIT DU1

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Fig. 3



Legend



Sub-portion Sample of MIS Sample DU2
Collected by Shannon & Wilson on August 13, 2019



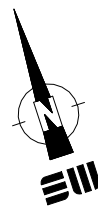
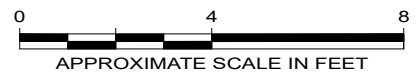
Sub-portion Sample of MIS Duplicate Sample DU3
Collected by Shannon & Wilson on August 13, 2019



Sub-portion Sample of MIS Triplicate Sample DU4
Collected by Shannon & Wilson on August 13, 2019



Approximate Location of Petroleum Staining
Observed on August 12, 2019



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MIS SAMPLING PLAN: DECISION UNIT DU2

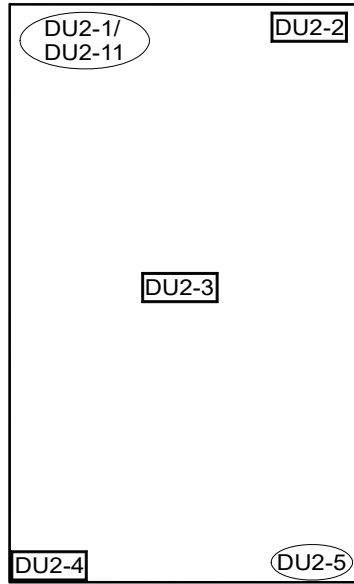
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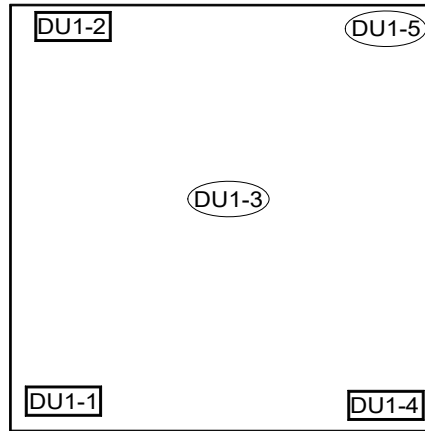
Fig. 4

Approximate Location of
Landfarm Area 2
(Decision Unit DU2)



Vegetated area

Contaminated Soil Sign



Approximate Location of
Landfarm Area 1
(Decision Unit DU1)

Vegetated area

Unpaved parking area

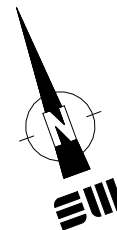
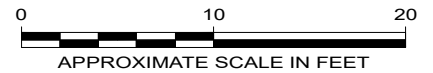
Legend



Approximate Location of Field Screening Sample DU2-3
Collected By Shannon & Wilson on August 13, 2019



Approximate Location of Analytical Soil Sample DU1-3
Collected By Shannon & Wilson on August 13, 2019



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Egegik, Alaska

Landfarm Footprint Sampling Plan

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Fig. 5

Attachment 1
Site Photos

ATTACHMENT 1: SITE PHOTOS



Photo 1: Looking south at the contaminated soil sign (August 12, 2019)



Photo 2: Looking west while clearing vegetation from the surface of Landfarm Area 1 (Decision Unit DU1). (August 12, 2019)

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PHOTOS 1 AND 2

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Photo 3: Looking southwest across gridded Landfarm Area 1 (Decision Unit DU1). (August 12, 2019)



Photo 4: Looking south across gridded Landfarm Area 2 (Decision Unit DU2). (August 12, 2019)

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PHOTOS 3 AND 4

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Photo 5: Black woven liner observed while collecting field screening sample DU1-1. (August 13, 2019)



Photo 6: Looking southeast at petroleum staining observed in Landfarm Area 2 (Decision Unit DU2). (August 12, 2019)

Attachment 2
Field Notes

ATTACHMENT 2: FIELD NOTES

8/12/2019 Ejigik SAH

14:35: Landed in Ejigik

14:45: Arrive @ Iliche main office to meet w/ Belu, BT, and Sam

14:52: Arrive @ site to conduct visual assessment.

- Sam mentioned that prior to my arrival a front loader was used to clear densely overgrown *v. canadensis* from each DU.
- Currently, the extent of each cleared DU does not reflect historical info.
- Evidence of soil ~~turn~~ tilling and/or surface water was not observed
- A beam was observed along the SW perimeter.
- He odor + staining observed in DU2

15:15: Return to main office to discuss size + location of DU's. Based on discussion landforms are not regularly tilled. Locations are correct. We will use front loader to clear vegetation further and look for surface soil irregularities.

15:38: front loader use to clear vegetation. Piece of potential liner revealed

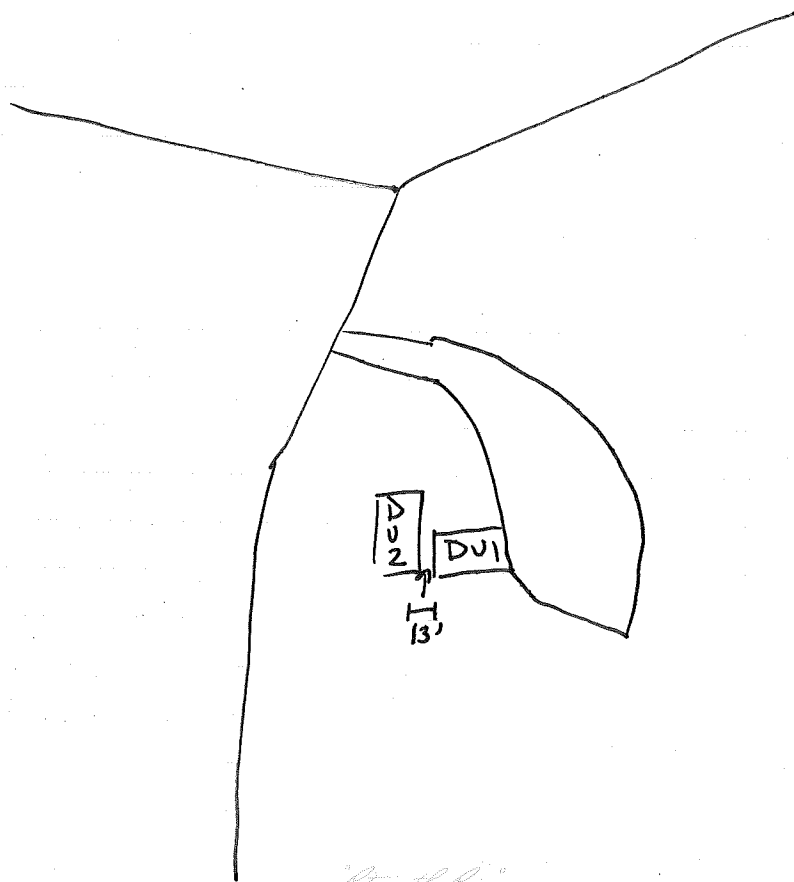
16:50: Measure extent of each DU: DU1, DU2 30' x 18'. Collect GPS points. Grid each DU w/ Pin flags

17:25: Leave site + Return to Main office to randomly select sub-portion sample locations.

19:20: Return to site. Calibrate weight + soil grain size.

19:30: Begin collection: MIS sample 103355 - DU1

20:30: Leave site for day



DUI

1 2 3 4 5 6 7 8 9 10

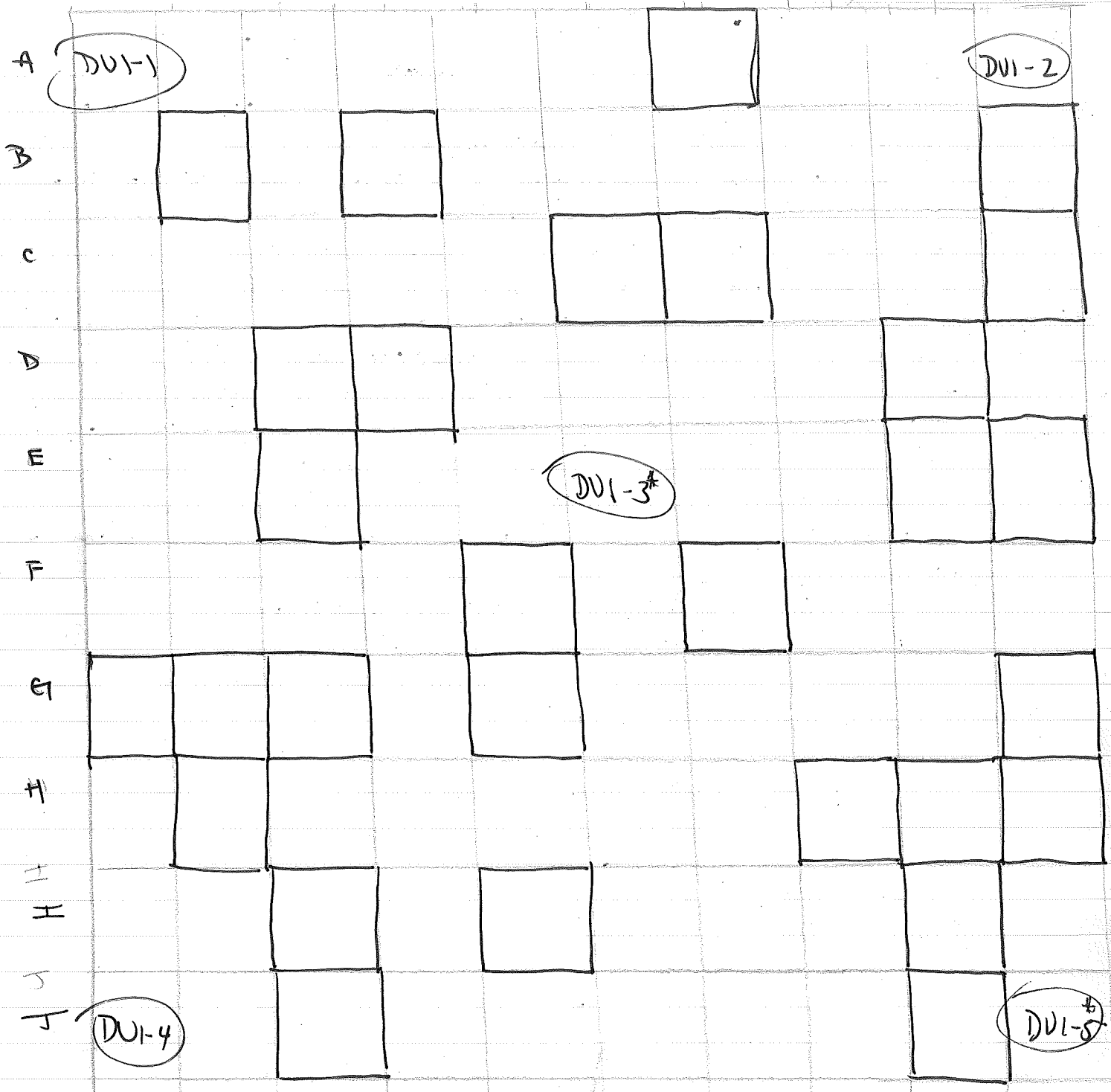
A DUI-1

DUI-2

DUI-3*

DUI-4

DUI-5*



DU2

D2: 7:28

D3: 8:38

D4: 9:30

	1	2	3	4	5	6	7	8	9	10
A	<div style="border: 1px solid black; border-radius: 50%; padding: 5px; display: inline-block;"> * DU2-1 </div>	<div style="border: 1px solid black; padding: 5px;"> D3 D2 D4 </div>		<div style="border: 1px solid black; padding: 5px;"> D3 D2 D4 </div>	<div style="border: 1px solid black; padding: 5px;"> D3 D2 D4 </div>		<div style="border: 1px solid black; padding: 5px;"> D3 D2 D4 </div>			<div style="border: 1px solid black; border-radius: 50%; padding: 5px; display: inline-block;"> DU2-2 </div>
B	<div style="border: 1px solid black; padding: 5px;"> D3 D2 D4 </div>			<div style="border: 1px solid black; padding: 5px;"> D3 D2 D4 </div>						
C							<div style="border: 1px solid black; padding: 5px;"> D3 D2 D4 </div>		<div style="border: 1px solid black; padding: 5px;"> D3 D2 D4 </div>	
D	<div style="border: 1px solid black; padding: 5px;"> D3 D2 D4 </div>								<div style="border: 1px solid black; padding: 5px;"> D3 D2 D4 </div>	
E			<div style="border: 1px solid black; padding: 5px;"> D3 D2 D4 </div>		<div style="border: 1px solid black; padding: 5px;"> D3 D2 D4 </div>					
F					<div style="border: 1px solid black; border-radius: 50%; padding: 5px; display: inline-block;"> DU2-3 </div>	<div style="border: 1px solid black; padding: 5px;"> D3 D2 D4 </div>				<div style="border: 1px solid black; padding: 5px;"> D3 D2 D4 </div>
G			<div style="border: 1px solid black; padding: 5px;"> D3 D2 D4 </div>	<div style="border: 1px solid black; padding: 5px;"> D3 D2 D4 </div>			<div style="border: 1px solid black; padding: 5px;"> D3 D2 D4 </div>			
H		<div style="border: 1px solid black; padding: 5px;"> D3 D2 D4 </div>		<div style="border: 1px solid black; padding: 5px;"> D3 D2 D4 </div>						
I				<div style="border: 1px solid black; padding: 5px;"> D3 D2 D4 </div>				<div style="border: 1px solid black; padding: 5px;"> D3 D2 D4 </div>		
J			<div style="border: 1px solid black; padding: 5px;"> D3 D2 D4 </div>		<div style="border: 1px solid black; padding: 5px;"> D3 D2 D4 </div>			<div style="border: 1px solid black; padding: 5px;"> D3 D2 D4 </div>		
K	<div style="border: 1px solid black; border-radius: 50%; padding: 5px; display: inline-block;"> DU2-4 </div>	<div style="border: 1px solid black; padding: 5px;"> D3 D2 D4 </div>							<div style="border: 1px solid black; border-radius: 50%; padding: 5px; display: inline-block;"> DU2-5* </div>	<div style="border: 1px solid black; padding: 5px;"> D3 D2 D4 </div>
L	<div style="border: 1px solid black; padding: 5px;"> D3 D2 D4 </div>		<div style="border: 1px solid black; padding: 5px;"> D3 D2 D4 </div>				<div style="border: 1px solid black; padding: 5px;"> D3 D2 D4 </div>		<div style="border: 1px solid black; padding: 5px;"> D3 D2 D4 </div>	

8/13/2019 103355 Esigik

SAH

7:18 : Arrive @ site.

7:25 : Begin to collect M15 sample from DV2

9:00 : Dig for 1.5' bgs land from foot print samples
- Liner observed approximately 1.0' bgs in both DV's

10:20 : Cal.ibrate PID

10:20 : Collect field screening samples

12:00 : Collect analytical land from foot print samples

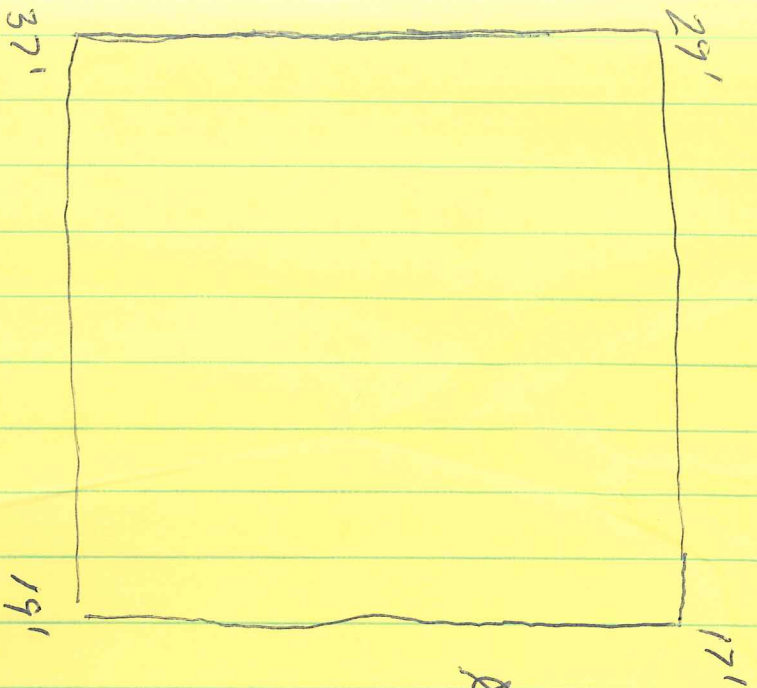
12:50 : All samples in cooler ice

13:00 : Clean up site

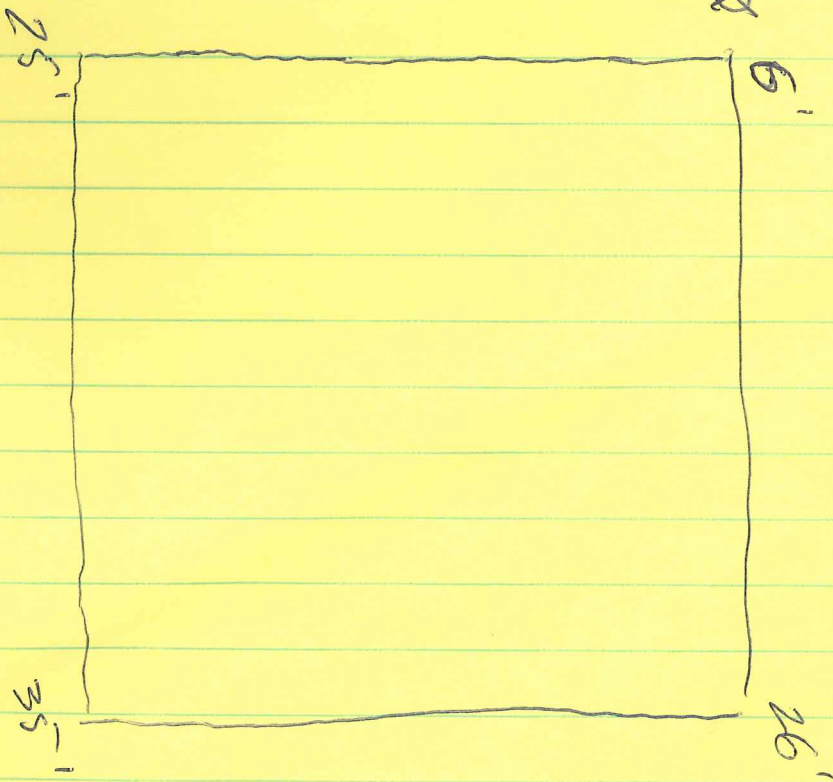
13:30 : Leave site for office/park up

14:00 : Flight to King Salmon

W



S



E

8/13/15
Feyzi

Pid readings for: Brown SHW1 Sand + Gravel

DV1 - 1	2.4	DV2 - 1	- 106
DV1 - 2	0.3	DV2 - 2	- 22.3
DV1 - 3	0.9	DV2 - 3	- 0.0
DV1 - 4	9.6	DV2 - 4	- 8.6
DV1 - 5	18.6	DV2 - 5	- 58.5

MP1 (Corner of Unpaved parking) MP2 - Contaminated Soil Sign

MP1 - SED1	10'
NED1	30'
NWD1	40'
SWD1	30'
SED2	45'
NED2	60.5'
NWD2	75'
SWD2	65'



SGS North America Inc.
CHAIN OF CUSTODY RECORD

1194660



Locations Nationwide
ska Maryland
v Jersey New York
th Carolina Indiana
st Virginia Kentucky

www.us.sgs.com

Instructions: Sections 1 - 5 must be filled out.
Omissions may delay the onset of analysis.

Page 1 of 1

Section 1				Section 3				Section 4					
CLIENT: <i>(Freide Seaford 5yrik) Shawna + Wilson Inc</i>		CONTACT: <i>Schuyler Hardy</i>		PHONE NO: <i>443 605 4098</i>		PROJECT: <i>103355</i>		PRESERVATIVE		DOD Project? Yes No		Data Deliverable Requirements:	
PROJECT NAME: <i>Freide Seaford 5yrik</i>		PROJECT PMSID/ PERMIT#: <i>103355</i>		E-MAIL: <i>d102shawnwil-com</i>		#		Type		Requested Turnaround Time and/or Special Instructions:		Chain of Custody Seal: (Circle)	
REPORTS TO: <i>Leanne Legend</i>		E-MAIL: <i>sal@shawwil.com</i>		QUOTE #:		C = COMP		G = GRAB		M = Multi		INTACT	
INVOICE TO:		P.O. #:		INCRE = Incremental		S = Soils		AWL		Cooler ID:		BROKEN	
RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX/MATRIX CODE	RE	SO	LI	IN	REMARKS/LOC ID	Temp Blank °C: <i>4.2</i>	D38	Chain of Custody Seal: (Circle)	
	103355-DU1	8/12/2019	19:30	Soil	1 bag	W1	X						
	DU2	8/13/2019	7:28	Soil	1 bag	M1	X						
	DU3	8/13/2019	8:38	Soil	1 bag	M1	X						
	DU4	8/13/2019	9:30	Soil	1 bag	M1	X						
	103355-DU1-S	8/13/2019	12:12	Soil	2	G	X						
	DU4-3	8/13/2019	12:09	Soil	2	G	X						
	DU2-1	8/13/2019	12:15	Soil	2	G	X						
	DU2-11	8/13/2019	12:30	Soil	2	G	X						
	DU2-S	8/13/2019	12:36	Soil	2	G	X						
	Top Blank	8/12/19	20:00	Soil	1	G	X						
	Relinquished By: (4)	Date	Time	Received By:	Date	Time	Received For Laboratory By:						
	<i>[Signature]</i>	8/13/19	15:50	<i>[Signature]</i>	8/15/19	11:50	<i>[Signature]</i>						
	Relinquished By: (2)	Date	Time	Received By:	Date	Time	Received For Laboratory By:						
	<i>[Signature]</i>	8/15/19	13:19	<i>[Signature]</i>			<i>[Signature]</i>						
	Relinquished By: (3)	Date	Time	Received By:	Date	Time	Received For Laboratory By:						
	<i>[Signature]</i>			<i>[Signature]</i>			<i>[Signature]</i>						

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

F083-Kit_Request_and_COOC_Templates-Blank
Revised 2013-03-24

Attachment 3

Analytical Test Results by SGS North America, Inc. and ADEC Laboratory Data Review Checklist

ATTACHMENT 3: LABORATORY RESULTS AND LDRC

Laboratory Report of Analysis

To: Icicle Seafoods Inc.
5430 Fairbanks Street, Suite 3
Anchorage, AK 99518

Report Number: **1194660**

Client Project: **103355 Icicle Seafoods Egigik**

Dear LeeAnne Osgood,

Enclosed are the results of the analytical services performed under the referenced project for the received samples and associated QC as applicable. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of ten years in the event they are required for future reference. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. Any samples submitted to our laboratory will be retained for a maximum of fourteen (14) days from the date of this report unless other archiving requirements were included in the quote.

If there are any questions about the report or services performed during this project, please call Jillian at (907) 562-2343. We will be happy to answer any questions or concerns which you may have.

Thank you for using SGS North America Inc. for your analytical services. We look forward to working with you again on any additional analytical needs.

Sincerely,
SGS North America Inc.


SGS North America, Inc.
Fairbanks and Anchorage - Alaska Division
Project Manager

Jillian Janssen

2019.09.05

16:24:23

-08'00'

Jillian Janssen
Project Manager
Jillian.Janssen@sgs.com

Date

Case Narrative

SGS Client: **Icicle Seafoods Inc.**
SGS Project: **1194660**
Project Name/Site: **103355 Icicle Seafoods Egigik**
Project Contact: **LeeAnne Osgood**

Refer to sample receipt form for information on sample condition.

103355-DU1-5 (1194660005) PS

AK101 - Surrogate recovery for 4-bromofluorobenzene does not meet QC criteria due to matrix interference.

103355-DU2-1 (1194660007) PS

AK101 - Surrogate recovery for 4-bromofluorobenzene does not meet QC criteria due to matrix interference.

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

Print Date: 09/05/2019 4:15:28PM

Laboratory Qualifiers

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

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

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

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

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

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

Sample Summary

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Collected</u>	<u>Received</u>	<u>Matrix</u>
103355-DU1	1194660001	08/12/2019	08/16/2019	Soil/Solid (dry weight)
103355-DU2	1194660002	08/13/2019	08/16/2019	Soil/Solid (dry weight)
103355-DU3	1194660003	08/13/2019	08/16/2019	Soil/Solid (dry weight)
103355-DU4	1194660004	08/13/2019	08/16/2019	Soil/Solid (dry weight)
103355-DU1-5	1194660005	08/13/2019	08/15/2019	Soil/Solid (dry weight)
103355-DU1-3	1194660006	08/13/2019	08/15/2019	Soil/Solid (dry weight)
103355-DU2-1	1194660007	08/13/2019	08/15/2019	Soil/Solid (dry weight)
103355-DU2-11	1194660008	08/13/2019	08/15/2019	Soil/Solid (dry weight)
103355-DU2-5	1194660009	08/13/2019	08/15/2019	Soil/Solid (dry weight)
Trip Blank	1194660010	08/12/2019	08/15/2019	Soil/Solid (dry weight)

<u>Method</u>	<u>Method Description</u>
AK101	AK101/8021 Combo. (S)
SW8021B	AK101/8021 Combo. (S)
AK102	Diesel Range Organics (S)
AK102	Diesel/Residual Range Organics
AK103	Diesel/Residual Range Organics
MI-ITRC ISM (Feb 2012)	MI Sampling/Sieving
SM21 2540G	Percent Solids SM2540G

Print Date: 09/05/2019 4:15:34PM

Detectable Results Summary

Client Sample ID: 103355-DU1			
Lab Sample ID: 1194660001	<u>Parameter</u>	<u>Result</u>	<u>Units</u>
ITRC Incremental Samp Method (2012)	Multi-Incremental Sub Sampling	0.00	
Semivolatile Organic Fuels	Diesel Range Organics	434	mg/Kg
Client Sample ID: 103355-DU2			
Lab Sample ID: 1194660002	<u>Parameter</u>	<u>Result</u>	<u>Units</u>
ITRC Incremental Samp Method (2012)	Multi-Incremental Sub Sampling	0.00	
Semivolatile Organic Fuels	Diesel Range Organics	1450	mg/Kg
Client Sample ID: 103355-DU3			
Lab Sample ID: 1194660003	<u>Parameter</u>	<u>Result</u>	<u>Units</u>
ITRC Incremental Samp Method (2012)	Multi-Incremental Sub Sampling	0.00	
Semivolatile Organic Fuels	Diesel Range Organics	829	mg/Kg
Client Sample ID: 103355-DU4			
Lab Sample ID: 1194660004	<u>Parameter</u>	<u>Result</u>	<u>Units</u>
ITRC Incremental Samp Method (2012)	Multi-Incremental Sub Sampling	0.00	
Semivolatile Organic Fuels	Diesel Range Organics	1680	mg/Kg
Client Sample ID: 103355-DU1-5			
Lab Sample ID: 1194660005	<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Semivolatile Organic Fuels	Diesel Range Organics	159	mg/Kg
	Residual Range Organics	171	mg/Kg
Volatile Fuels	Benzene	39.4	ug/Kg
	Ethylbenzene	25.0	ug/Kg
	Gasoline Range Organics	2.02J	mg/Kg
	o-Xylene	78.2	ug/Kg
	P & M -Xylene	137	ug/Kg
	Toluene	123	ug/Kg
	Xylenes (total)	215	ug/Kg
Client Sample ID: 103355-DU1-3			
Lab Sample ID: 1194660006	<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Semivolatile Organic Fuels	Diesel Range Organics	1250	mg/Kg
	Residual Range Organics	250	mg/Kg
Volatile Fuels	Gasoline Range Organics	1.82J	mg/Kg
	o-Xylene	13.1J	ug/Kg
	P & M -Xylene	16.4J	ug/Kg
	Xylenes (total)	29.6J	ug/Kg
Client Sample ID: 103355-DU2-1			
Lab Sample ID: 1194660007	<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Semivolatile Organic Fuels	Diesel Range Organics	1110	mg/Kg
	Residual Range Organics	148	mg/Kg
Volatile Fuels	Gasoline Range Organics	1.06J	mg/Kg

Print Date: 09/05/2019 4:15:35PM

Detectable Results Summary

Client Sample ID: **103355-DU2-11**

Lab Sample ID: 1194660008

Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	1130	mg/Kg
Residual Range Organics	168	mg/Kg

Client Sample ID: **103355-DU2-5**

Lab Sample ID: 1194660009

Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	1250	mg/Kg
Residual Range Organics	254	mg/Kg

Print Date: 09/05/2019 4:15:35PM

Results of 103355-DU1

Client Sample ID: **103355-DU1**
Client Project ID: **103355 Icicle Seafoods Egigik**
Lab Sample ID: 1194660001
Lab Project ID: 1194660

Collection Date: 08/12/19 19:30
Received Date: 08/16/19 13:19
Matrix: Soil/Solid (dry weight)
Solids (%):93.8
Location:

Results by ITRC Incremental Samp Method (2012)

Parameter

Multi-Incremental Sub Sampling

Date Analyzed

08/20/19 08:03

Batch Information

Analytical Batch: SPT10858
Analytical Method: MI-ITRC ISM (Feb 2012)
Analyst: MER
Analytical Date/Time: 08/20/19 08:03
Container ID: 1194660001-A

Results of 103355-DU1

Client Sample ID: **103355-DU1**
 Client Project ID: **103355 Icicle Seafoods Egigik**
 Lab Sample ID: 1194660001
 Lab Project ID: 1194660

Collection Date: 08/12/19 19:30
 Received Date: 08/16/19 13:19
 Matrix: Soil/Solid (dry weight)
 Solids (%):93.8
 Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	434	21.3	6.60	mg/Kg	1		08/20/19 08:35
Surrogates							
5a Androstane (surr)	82.8	50-150		%	1		08/20/19 08:35

Batch Information

Analytical Batch: XFC15256
 Analytical Method: AK102
 Analyst: CMS
 Analytical Date/Time: 08/20/19 08:35
 Container ID: 1194660001-C

Prep Batch: XXX42048
 Prep Method: SW3550C
 Prep Date/Time: 08/19/19 19:12
 Prep Initial Wt./Vol.: 30.031 g
 Prep Extract Vol: 5 mL

Results of 103355-DU2

Client Sample ID: **103355-DU2**
Client Project ID: **103355 Icicle Seafoods Egigik**
Lab Sample ID: 1194660002
Lab Project ID: 1194660

Collection Date: 08/13/19 07:28
Received Date: 08/16/19 13:19
Matrix: Soil/Solid (dry weight)
Solids (%):94.2
Location:

Results by ITRC Incremental Samp Method (2012)

Parameter

Multi-Incremental Sub Sampling

Date Analyzed

08/20/19 08:03

Batch Information

Analytical Batch: SPT10858
Analytical Method: MI-ITRC ISM (Feb 2012)
Analyst: MER
Analytical Date/Time: 08/20/19 08:03
Container ID: 1194660002-A

Results of 103355-DU2

Client Sample ID: **103355-DU2**
 Client Project ID: **103355 Icicle Seafoods Egigik**
 Lab Sample ID: 1194660002
 Lab Project ID: 1194660

Collection Date: 08/13/19 07:28
 Received Date: 08/16/19 13:19
 Matrix: Soil/Solid (dry weight)
 Solids (%):94.2
 Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	1450	21.2	6.57	mg/Kg	1		08/20/19 08:44
Surrogates							
5a Androstane (surr)	88.5	50-150		%	1		08/20/19 08:44

Batch Information

Analytical Batch: XFC15256
 Analytical Method: AK102
 Analyst: CMS
 Analytical Date/Time: 08/20/19 08:44
 Container ID: 1194660002-C

Prep Batch: XXX42048
 Prep Method: SW3550C
 Prep Date/Time: 08/19/19 19:12
 Prep Initial Wt./Vol.: 30.074 g
 Prep Extract Vol: 5 mL

Results of 103355-DU3

Client Sample ID: **103355-DU3**
Client Project ID: **103355 Icicle Seafoods Egigik**
Lab Sample ID: 1194660003
Lab Project ID: 1194660

Collection Date: 08/13/19 08:38
Received Date: 08/16/19 13:19
Matrix: Soil/Solid (dry weight)
Solids (%):93.3
Location:

Results by ITRC Incremental Samp Method (2012)

Parameter

Multi-Incremental Sub Sampling

Date Analyzed

08/20/19 08:04

Batch Information

Analytical Batch: SPT10858
Analytical Method: MI-ITRC ISM (Feb 2012)
Analyst: MER
Analytical Date/Time: 08/20/19 08:04
Container ID: 1194660003-A

Results of 103355-DU3

Client Sample ID: **103355-DU3**
 Client Project ID: **103355 Icicle Seafoods Egigik**
 Lab Sample ID: 1194660003
 Lab Project ID: 1194660

Collection Date: 08/13/19 08:38
 Received Date: 08/16/19 13:19
 Matrix: Soil/Solid (dry weight)
 Solids (%):93.3
 Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	829	21.2	6.56	mg/Kg	1		08/18/19 19:11
Surrogates							
5a Androstane (surr)	84.8	50-150		%	1		08/18/19 19:11

Batch Information

Analytical Batch: XFC15247
 Analytical Method: AK102
 Analyst: VDL
 Analytical Date/Time: 08/18/19 19:11
 Container ID: 1194660003-C

Prep Batch: XXX42037
 Prep Method: SW3550C
 Prep Date/Time: 08/17/19 11:26
 Prep Initial Wt./Vol.: 30.365 g
 Prep Extract Vol: 5 mL

Results of 103355-DU4

Client Sample ID: **103355-DU4**
Client Project ID: **103355 Icicle Seafoods Egigik**
Lab Sample ID: 1194660004
Lab Project ID: 1194660

Collection Date: 08/13/19 09:30
Received Date: 08/16/19 13:19
Matrix: Soil/Solid (dry weight)
Solids (%):94.7
Location:

Results by ITRC Incremental Samp Method (2012)

Parameter

Multi-Incremental Sub Sampling

Date Analyzed

08/20/19 08:04

Batch Information

Analytical Batch: SPT10858
Analytical Method: MI-ITRC ISM (Feb 2012)
Analyst: MER
Analytical Date/Time: 08/20/19 08:04
Container ID: 1194660004-A

Results of 103355-DU4

Client Sample ID: **103355-DU4**
 Client Project ID: **103355 Icicle Seafoods Egigik**
 Lab Sample ID: 1194660004
 Lab Project ID: 1194660

Collection Date: 08/13/19 09:30
 Received Date: 08/16/19 13:19
 Matrix: Soil/Solid (dry weight)
 Solids (%):94.7
 Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	1680	21.0	6.52	mg/Kg	1		08/20/19 08:54
Surrogates							
5a Androstane (surr)	91.9	50-150		%	1		08/20/19 08:54

Batch Information

Analytical Batch: XFC15256
 Analytical Method: AK102
 Analyst: CMS
 Analytical Date/Time: 08/20/19 08:54
 Container ID: 1194660004-C

Prep Batch: XXX42048
 Prep Method: SW3550C
 Prep Date/Time: 08/19/19 19:12
 Prep Initial Wt./Vol.: 30.112 g
 Prep Extract Vol: 5 mL



Results of 103355-DU1-5

Client Sample ID: 103355-DU1-5
Client Project ID: 103355 Icicle Seafoods Egigik
Lab Sample ID: 1194660005
Lab Project ID: 1194660

Collection Date: 08/13/19 12:12
Received Date: 08/15/19 13:19
Matrix: Soil/Solid (dry weight)
Solids (%):94.2
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Diesel Range Organics and Surrogates (5a Androstane).

Batch Information

Analytical Batch: XFC15247
Analytical Method: AK102
Analyst: VDL
Analytical Date/Time: 08/18/19 16:51
Container ID: 1194660005-A

Prep Batch: XXX42037
Prep Method: SW3550C
Prep Date/Time: 08/17/19 11:26
Prep Initial Wt./Vol.: 30.109 g
Prep Extract Vol: 5 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Residual Range Organics and Surrogates (n-Triacontane-d62).

Batch Information

Analytical Batch: XFC15247
Analytical Method: AK103
Analyst: VDL
Analytical Date/Time: 08/18/19 16:51
Container ID: 1194660005-A

Prep Batch: XXX42037
Prep Method: SW3550C
Prep Date/Time: 08/17/19 11:26
Prep Initial Wt./Vol.: 30.109 g
Prep Extract Vol: 5 mL



Results of 103355-DU1-5

Client Sample ID: 103355-DU1-5
Client Project ID: 103355 Icicle Seafoods Egigik
Lab Sample ID: 1194660005
Lab Project ID: 1194660

Collection Date: 08/13/19 12:12
Received Date: 08/15/19 13:19
Matrix: Soil/Solid (dry weight)
Solids (%):94.2
Location:

Results by Volatile Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Gasoline Range Organics, 2.02 J, 2.03, 0.610, mg/Kg, 1, 08/23/19 20:02

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 4-Bromofluorobenzene (surr), 154 *, 50-150, %, 1, 08/23/19 20:02

Batch Information

Analytical Batch: VFC14892
Analytical Method: AK101
Analyst: NRB
Analytical Date/Time: 08/23/19 20:02
Container ID: 1194660005-B

Prep Batch: VXX34707
Prep Method: SW5035A
Prep Date/Time: 08/13/19 12:12
Prep Initial Wt./Vol.: 76.834 g
Prep Extract Vol: 29.4572 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows: Benzene, Ethylbenzene, o-Xylene, P & M -Xylene, Toluene, Xylenes (total)

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 1,4-Difluorobenzene (surr), 99.5, 72-119, %, 1, 08/23/19 20:02

Batch Information

Analytical Batch: VFC14892
Analytical Method: SW8021B
Analyst: NRB
Analytical Date/Time: 08/23/19 20:02
Container ID: 1194660005-B

Prep Batch: VXX34707
Prep Method: SW5035A
Prep Date/Time: 08/13/19 12:12
Prep Initial Wt./Vol.: 76.834 g
Prep Extract Vol: 29.4572 mL



Results of 103355-DU1-3

Client Sample ID: 103355-DU1-3
Client Project ID: 103355 Icicle Seafoods Egigik
Lab Sample ID: 1194660006
Lab Project ID: 1194660

Collection Date: 08/13/19 12:09
Received Date: 08/15/19 13:19
Matrix: Soil/Solid (dry weight)
Solids (%):89.8
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Diesel Range Organics and Surrogates (5a Androstane (surr)).

Batch Information

Analytical Batch: XFC15247
Analytical Method: AK102
Analyst: VDL
Analytical Date/Time: 08/18/19 17:02
Container ID: 1194660006-A
Prep Batch: XXX42037
Prep Method: SW3550C
Prep Date/Time: 08/17/19 11:26
Prep Initial Wt./Vol.: 30.024 g
Prep Extract Vol: 5 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Residual Range Organics and Surrogates (n-Triacontane-d62 (surr)).

Batch Information

Analytical Batch: XFC15247
Analytical Method: AK103
Analyst: VDL
Analytical Date/Time: 08/18/19 17:02
Container ID: 1194660006-A
Prep Batch: XXX42037
Prep Method: SW3550C
Prep Date/Time: 08/17/19 11:26
Prep Initial Wt./Vol.: 30.024 g
Prep Extract Vol: 5 mL



Results of 103355-DU1-3

Client Sample ID: 103355-DU1-3
Client Project ID: 103355 Icicle Seafoods Egigik
Lab Sample ID: 1194660006
Lab Project ID: 1194660

Collection Date: 08/13/19 12:09
Received Date: 08/15/19 13:19
Matrix: Soil/Solid (dry weight)
Solids (%):89.8
Location:

Results by Volatile Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Gasoline Range Organics, 1.82 J, 2.69, 0.806, mg/Kg, 1, 08/23/19 20:20

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 4-Bromofluorobenzene (surr), 142, 50-150, %, 1, 08/23/19 20:20

Batch Information

Analytical Batch: VFC14892
Analytical Method: AK101
Analyst: NRB
Analytical Date/Time: 08/23/19 20:20
Container ID: 1194660006-B

Prep Batch: VXX34707
Prep Method: SW5035A
Prep Date/Time: 08/13/19 12:09
Prep Initial Wt./Vol.: 65.797 g
Prep Extract Vol: 31.735 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows: Benzene, Ethylbenzene, o-Xylene, P & M -Xylene, Toluene, Xylenes (total)

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 1,4-Difluorobenzene (surr), 95.2, 72-119, %, 1, 08/23/19 20:20

Batch Information

Analytical Batch: VFC14892
Analytical Method: SW8021B
Analyst: NRB
Analytical Date/Time: 08/23/19 20:20
Container ID: 1194660006-B

Prep Batch: VXX34707
Prep Method: SW5035A
Prep Date/Time: 08/13/19 12:09
Prep Initial Wt./Vol.: 65.797 g
Prep Extract Vol: 31.735 mL



Results of 103355-DU2-1

Client Sample ID: 103355-DU2-1
Client Project ID: 103355 Icicle Seafoods Egigik
Lab Sample ID: 1194660007
Lab Project ID: 1194660

Collection Date: 08/13/19 12:19
Received Date: 08/15/19 13:19
Matrix: Soil/Solid (dry weight)
Solids (%):92.1
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Diesel Range Organics and Surrogates (5a Androstane).

Batch Information

Analytical Batch: XFC15247
Analytical Method: AK102
Analyst: VDL
Analytical Date/Time: 08/18/19 17:32
Container ID: 1194660007-A
Prep Batch: XXX42037
Prep Method: SW3550C
Prep Date/Time: 08/17/19 11:26
Prep Initial Wt./Vol.: 30.478 g
Prep Extract Vol: 5 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Residual Range Organics and Surrogates (n-Triacontane-d62).

Batch Information

Analytical Batch: XFC15247
Analytical Method: AK103
Analyst: VDL
Analytical Date/Time: 08/18/19 17:32
Container ID: 1194660007-A
Prep Batch: XXX42037
Prep Method: SW3550C
Prep Date/Time: 08/17/19 11:26
Prep Initial Wt./Vol.: 30.478 g
Prep Extract Vol: 5 mL



Results of 103355-DU2-1

Client Sample ID: 103355-DU2-1
Client Project ID: 103355 Icicle Seafoods Egigik
Lab Sample ID: 1194660007
Lab Project ID: 1194660

Collection Date: 08/13/19 12:19
Received Date: 08/15/19 13:19
Matrix: Soil/Solid (dry weight)
Solids (%):92.1
Location:

Results by Volatile Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Gasoline Range Organics, 1.06 J, 2.46, 0.739, mg/Kg, 1, 08/23/19 20:38

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 4-Bromofluorobenzene (surr), 152 *, 50-150, %, 1, 08/23/19 20:38

Batch Information

Analytical Batch: VFC14892
Analytical Method: AK101
Analyst: NRB
Analytical Date/Time: 08/23/19 20:38
Container ID: 1194660007-B

Prep Batch: VXX34707
Prep Method: SW5035A
Prep Date/Time: 08/13/19 12:19
Prep Initial Wt./Vol.: 66.723 g
Prep Extract Vol: 30.264 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows: Benzene, Ethylbenzene, o-Xylene, P & M -Xylene, Toluene, Xylenes (total)

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 1,4-Difluorobenzene (surr), 96.5, 72-119, %, 1, 08/23/19 20:38

Batch Information

Analytical Batch: VFC14892
Analytical Method: SW8021B
Analyst: NRB
Analytical Date/Time: 08/23/19 20:38
Container ID: 1194660007-B

Prep Batch: VXX34707
Prep Method: SW5035A
Prep Date/Time: 08/13/19 12:19
Prep Initial Wt./Vol.: 66.723 g
Prep Extract Vol: 30.264 mL



Results of 103355-DU2-11

Client Sample ID: 103355-DU2-11
Client Project ID: 103355 Icicle Seafoods Egigik
Lab Sample ID: 1194660008
Lab Project ID: 1194660

Collection Date: 08/13/19 12:30
Received Date: 08/15/19 13:19
Matrix: Soil/Solid (dry weight)
Solids (%):92.4
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Diesel Range Organics and Surrogates (5a Androstane (surr)).

Batch Information

Analytical Batch: XFC15247
Analytical Method: AK102
Analyst: VDL
Analytical Date/Time: 08/18/19 17:41
Container ID: 1194660008-A
Prep Batch: XXX42037
Prep Method: SW3550C
Prep Date/Time: 08/17/19 11:26
Prep Initial Wt./Vol.: 30.11 g
Prep Extract Vol: 5 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Residual Range Organics and Surrogates (n-Triacontane-d62 (surr)).

Batch Information

Analytical Batch: XFC15247
Analytical Method: AK103
Analyst: VDL
Analytical Date/Time: 08/18/19 17:41
Container ID: 1194660008-A
Prep Batch: XXX42037
Prep Method: SW3550C
Prep Date/Time: 08/17/19 11:26
Prep Initial Wt./Vol.: 30.11 g
Prep Extract Vol: 5 mL



Results of 103355-DU2-11

Client Sample ID: 103355-DU2-11
Client Project ID: 103355 Icicle Seafoods Egigik
Lab Sample ID: 1194660008
Lab Project ID: 1194660

Collection Date: 08/13/19 12:30
Received Date: 08/15/19 13:19
Matrix: Soil/Solid (dry weight)
Solids (%):92.4
Location:

Results by Volatile Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Gasoline Range Organics, 1.15 U, 2.30, 0.691, mg/Kg, 1, 08/23/19 20:55

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 4-Bromofluorobenzene (surr), 150, 50-150, %, 1, 08/23/19 20:55

Batch Information

Analytical Batch: VFC14892
Analytical Method: AK101
Analyst: NRB
Analytical Date/Time: 08/23/19 20:55
Container ID: 1194660008-B
Prep Batch: VXX34707
Prep Method: SW5035A
Prep Date/Time: 08/13/19 12:30
Prep Initial Wt./Vol.: 71.331 g
Prep Extract Vol: 30.3881 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows: Benzene, Ethylbenzene, o-Xylene, P & M -Xylene, Toluene, Xylenes (total)

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 1,4-Difluorobenzene (surr), 95.5, 72-119, %, 1, 08/23/19 20:55

Batch Information

Analytical Batch: VFC14892
Analytical Method: SW8021B
Analyst: NRB
Analytical Date/Time: 08/23/19 20:55
Container ID: 1194660008-B
Prep Batch: VXX34707
Prep Method: SW5035A
Prep Date/Time: 08/13/19 12:30
Prep Initial Wt./Vol.: 71.331 g
Prep Extract Vol: 30.3881 mL



Results of 103355-DU2-5

Client Sample ID: 103355-DU2-5
Client Project ID: 103355 Icicle Seafoods Egigik
Lab Sample ID: 1194660009
Lab Project ID: 1194660

Collection Date: 08/13/19 12:36
Received Date: 08/15/19 13:19
Matrix: Soil/Solid (dry weight)
Solids (%):90.4
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Diesel Range Organics and Surrogates (5a Androstane).

Batch Information

Analytical Batch: XFC15247
Analytical Method: AK102
Analyst: VDL
Analytical Date/Time: 08/18/19 17:51
Container ID: 1194660009-A
Prep Batch: XXX42037
Prep Method: SW3550C
Prep Date/Time: 08/17/19 11:26
Prep Initial Wt./Vol.: 30.041 g
Prep Extract Vol: 5 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Residual Range Organics and Surrogates (n-Triacontane-d62).

Batch Information

Analytical Batch: XFC15247
Analytical Method: AK103
Analyst: VDL
Analytical Date/Time: 08/18/19 17:51
Container ID: 1194660009-A
Prep Batch: XXX42037
Prep Method: SW3550C
Prep Date/Time: 08/17/19 11:26
Prep Initial Wt./Vol.: 30.041 g
Prep Extract Vol: 5 mL



Results of 103355-DU2-5

Client Sample ID: 103355-DU2-5
Client Project ID: 103355 Icicle Seafoods Egigik
Lab Sample ID: 1194660009
Lab Project ID: 1194660

Collection Date: 08/13/19 12:36
Received Date: 08/15/19 13:19
Matrix: Soil/Solid (dry weight)
Solids (%):90.4
Location:

Results by Volatile Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Gasoline Range Organics, 1.34 U, 2.68, 0.804, mg/Kg, 1, 08/23/19 21:13

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 4-Bromofluorobenzene (surr), 144, 50-150, %, 1, 08/23/19 21:13

Batch Information

Analytical Batch: VFC14892
Analytical Method: AK101
Analyst: NRB
Analytical Date/Time: 08/23/19 21:13
Container ID: 1194660009-B

Prep Batch: VXX34707
Prep Method: SW5035A
Prep Date/Time: 08/13/19 12:36
Prep Initial Wt./Vol.: 64.324 g
Prep Extract Vol: 31.1584 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows: Benzene, Ethylbenzene, o-Xylene, P & M -Xylene, Toluene, Xylenes (total)

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 1,4-Difluorobenzene (surr), 95.5, 72-119, %, 1, 08/23/19 21:13

Batch Information

Analytical Batch: VFC14892
Analytical Method: SW8021B
Analyst: NRB
Analytical Date/Time: 08/23/19 21:13
Container ID: 1194660009-B

Prep Batch: VXX34707
Prep Method: SW5035A
Prep Date/Time: 08/13/19 12:36
Prep Initial Wt./Vol.: 64.324 g
Prep Extract Vol: 31.1584 mL

Results of Trip Blank

Client Sample ID: **Trip Blank**
 Client Project ID: **103355 Icicle Seafoods Egigik**
 Lab Sample ID: 1194660010
 Lab Project ID: 1194660

Collection Date: 08/12/19 20:00
 Received Date: 08/15/19 13:19
 Matrix: Soil/Solid (dry weight)
 Solids (%):
 Location:

Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	1.26 U	2.53	0.760	mg/Kg	1		08/23/19 18:51

Surrogates

4-Bromofluorobenzene (surr)	129	50-150		%	1		08/23/19 18:51
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Batch Information

Analytical Batch: VFC14892
 Analytical Method: AK101
 Analyst: NRB
 Analytical Date/Time: 08/23/19 18:51
 Container ID: 1194660010-A

Prep Batch: VXX34707
 Prep Method: SW5035A
 Prep Date/Time: 08/12/19 20:00
 Prep Initial Wt./Vol.: 49.316 g
 Prep Extract Vol: 25 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	6.35 U	12.7	4.06	ug/Kg	1		08/23/19 18:51
Ethylbenzene	12.7 U	25.3	7.91	ug/Kg	1		08/23/19 18:51
o-Xylene	12.7 U	25.3	7.91	ug/Kg	1		08/23/19 18:51
P & M -Xylene	25.4 U	50.7	15.2	ug/Kg	1		08/23/19 18:51
Toluene	12.7 U	25.3	7.91	ug/Kg	1		08/23/19 18:51
Xylenes (total)	38.0 U	76.0	23.1	ug/Kg	1		08/23/19 18:51

Surrogates

1,4-Difluorobenzene (surr)	95.2	72-119		%	1		08/23/19 18:51
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Batch Information

Analytical Batch: VFC14892
 Analytical Method: SW8021B
 Analyst: NRB
 Analytical Date/Time: 08/23/19 18:51
 Container ID: 1194660010-A

Prep Batch: VXX34707
 Prep Method: SW5035A
 Prep Date/Time: 08/12/19 20:00
 Prep Initial Wt./Vol.: 49.316 g
 Prep Extract Vol: 25 mL

Method Blank

Blank ID: MB for HBN 1798056 [SPT/10856]
Blank Lab ID: 1525964

Matrix: Soil/Solid (dry weight)

QC for Samples:
1194660005, 1194660006, 1194660007, 1194660008, 1194660009

Results by SM21 2540G

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Total Solids	100			%

Batch Information

Analytical Batch: SPT10856
Analytical Method: SM21 2540G
Instrument:
Analyst: KTW
Analytical Date/Time: 8/16/2019 10:30:00PM

Print Date: 09/05/2019 4:15:44PM

Duplicate Sample Summary

Original Sample ID: 1194667004

Duplicate Sample ID: 1525965

QC for Samples:

1194660005, 1194660006, 1194660007, 1194660008, 1194660009

Analysis Date: 08/16/2019 22:30

Matrix: Soil/Solid (dry weight)

Results by SM21 2540G

<u>NAME</u>	<u>Original</u>	<u>Duplicate</u>	<u>Units</u>	<u>RPD (%)</u>	<u>RPD CL</u>
Total Solids	74.9	76.3	%	1.90	(< 15)

Batch Information

Analytical Batch: SPT10856

Analytical Method: SM21 2540G

Instrument:

Analyst: KTW

Print Date: 09/05/2019 4:15:45PM

Method Blank

Blank ID: MB for HBN 1798073 [SPT/10857]

Blank Lab ID: 1526043

QC for Samples:
1194660003

Matrix: Soil/Solid (dry weight)

Results by SM21 2540G

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Total Solids	100			%

Batch Information

Analytical Batch: SPT10857
Analytical Method: SM21 2540G
Instrument:
Analyst: MER
Analytical Date/Time: 8/17/2019 3:35:00PM

Print Date: 09/05/2019 4:15:49PM

Duplicate Sample Summary

Original Sample ID: 1194704003

Duplicate Sample ID: 1526044

QC for Samples:

1194660003

Analysis Date: 08/17/2019 15:35

Matrix: Soil/Solid (dry weight)

Results by SM21 2540G

<u>NAME</u>	<u>Original</u>	<u>Duplicate</u>	<u>Units</u>	<u>RPD (%)</u>	<u>RPD CL</u>
Total Solids	88.6	88.4	%	0.20	(< 15)

Batch Information

Analytical Batch: SPT10857

Analytical Method: SM21 2540G

Instrument:

Analyst: MER

Print Date: 09/05/2019 4:15:50PM



Method Blank

Blank ID: MB for HBN 1798154 [SPT/10859]
Blank Lab ID: 1526364

Matrix: Soil/Solid (dry weight)

QC for Samples:
1194660001, 1194660002, 1194660004

Results by SM21 2540G

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Total Solids	100			%

Batch Information

Analytical Batch: SPT10859
Analytical Method: SM21 2540G
Instrument:
Analyst: MER
Analytical Date/Time: 8/19/2019 11:32:00PM

Print Date: 09/05/2019 4:15:54PM

Duplicate Sample Summary

Original Sample ID: 1194660002

Duplicate Sample ID: 1526365

QC for Samples:

1194660001, 1194660002, 1194660004

Analysis Date: 08/19/2019 23:32

Matrix: Soil/Solid (dry weight)

Results by SM21 2540G

<u>NAME</u>	<u>Original</u>	<u>Duplicate</u>	<u>Units</u>	<u>RPD (%)</u>	<u>RPD CL</u>
Total Solids	94.2	94.4	%	0.19	(< 15)

Batch Information

Analytical Batch: SPT10859

Analytical Method: SM21 2540G

Instrument:

Analyst: MER

Print Date: 09/05/2019 4:15:55PM

Duplicate Sample Summary

Original Sample ID: 1194718004

Duplicate Sample ID: 1526366

QC for Samples:

1194660004

Analysis Date: 08/19/2019 23:32

Matrix: Soil/Solid (dry weight)

Results by SM21 2540G

<u>NAME</u>	<u>Original</u>	<u>Duplicate</u>	<u>Units</u>	<u>RPD (%)</u>	<u>RPD CL</u>
Total Solids	91.4	91.8	%	0.41	(< 15)

Batch Information

Analytical Batch: SPT10859

Analytical Method: SM21 2540G

Instrument:

Analyst: MER

Print Date: 09/05/2019 4:15:55PM

Method Blank

Blank ID: MB for HBN 1798428 [VXX/34707]
Blank Lab ID: 1527598

Matrix: Soil/Solid (dry weight)

QC for Samples:
1194660005, 1194660006, 1194660007, 1194660008, 1194660009, 1194660010

Results by AK101

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Gasoline Range Organics	1.25U	2.50	0.750	mg/Kg
Surrogates				
4-Bromofluorobenzene (surr)	104	50-150		%

Batch Information

Analytical Batch: VFC14892
Analytical Method: AK101
Instrument: Agilent 7890A PID/FID
Analyst: NRB
Analytical Date/Time: 8/23/2019 6:33:00PM

Prep Batch: VXX34707
Prep Method: SW5035A
Prep Date/Time: 8/23/2019 12:30:00AM
Prep Initial Wt./Vol.: 50 g
Prep Extract Vol: 25 mL

Print Date: 09/05/2019 4:15:57PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1194660 [VXX34707]
 Blank Spike Lab ID: 1527601
 Date Analyzed: 08/23/2019 17:57

Spike Duplicate ID: LCSD for HBN 1194660 [VXX34707]
 Spike Duplicate Lab ID: 1527602
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1194660005, 1194660006, 1194660007, 1194660008, 1194660009, 1194660010

Results by AK101

Parameter	Blank Spike (mg/Kg)			Spike Duplicate (mg/Kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Gasoline Range Organics	12.5	12.0	96	12.5	11.6	93	(60-120)	3.70	(< 20)

Surrogates

4-Bromofluorobenzene (surr)	1.25	106	106	1.25	104	104	(50-150)	1.30	
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Batch Information

Analytical Batch: **VFC14892**
 Analytical Method: **AK101**
 Instrument: **Agilent 7890A PID/FID**
 Analyst: **NRB**

Prep Batch: **VXX34707**
 Prep Method: **SW5035A**
 Prep Date/Time: **08/23/2019 00:30**
 Spike Init Wt./Vol.: 12.5 mg/Kg Extract Vol: 25 mL
 Dupe Init Wt./Vol.: 12.5 mg/Kg Extract Vol: 25 mL

Method Blank

Blank ID: MB for HBN 1798428 [VXX/34707]
 Blank Lab ID: 1527598

Matrix: Soil/Solid (dry weight)

QC for Samples:
 1194660005, 1194660006, 1194660007, 1194660008, 1194660009, 1194660010

Results by SW8021B

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	6.25U	12.5	4.00	ug/Kg
Ethylbenzene	12.5U	25.0	7.80	ug/Kg
o-Xylene	12.5U	25.0	7.80	ug/Kg
P & M -Xylene	25.0U	50.0	15.0	ug/Kg
Toluene	12.5U	25.0	7.80	ug/Kg
Xylenes (total)	37.5U	75.0	22.8	ug/Kg
Surrogates				
1,4-Difluorobenzene (surr)	97	72-119		%

Batch Information

Analytical Batch: VFC14892
 Analytical Method: SW8021B
 Instrument: Agilent 7890A PID/FID
 Analyst: NRB
 Analytical Date/Time: 8/23/2019 6:33:00PM

Prep Batch: VXX34707
 Prep Method: SW5035A
 Prep Date/Time: 8/23/2019 12:30:00AM
 Prep Initial Wt./Vol.: 50 g
 Prep Extract Vol: 25 mL

Print Date: 09/05/2019 4:16:00PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1194660 [VXX34707]
 Blank Spike Lab ID: 1527599
 Date Analyzed: 08/23/2019 17:21

Spike Duplicate ID: LCSD for HBN 1194660 [VXX34707]
 Spike Duplicate Lab ID: 1527600
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1194660005, 1194660006, 1194660007, 1194660008, 1194660009, 1194660010

Results by SW8021B

Parameter	Blank Spike (ug/Kg)			Spike Duplicate (ug/Kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	1250	1280	103	1250	1280	102	(75-125)	0.23	(< 20)
Ethylbenzene	1250	1150	92	1250	1160	92	(75-125)	0.59	(< 20)
o-Xylene	1250	1130	90	1250	1140	92	(75-125)	1.40	(< 20)
P & M -Xylene	2500	2280	91	2500	2300	92	(80-125)	0.87	(< 20)
Toluene	1250	1200	96	1250	1200	96	(70-125)	0.11	(< 20)
Xylenes (total)	3750	3410	91	3750	3450	92	(78-124)	1.00	(< 20)

Surrogates

1,4-Difluorobenzene (surr)	1250	99.9	100	1250	101	101	(72-119)	0.85	
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Batch Information

Analytical Batch: VFC14892
 Analytical Method: SW8021B
 Instrument: Agilent 7890A PID/FID
 Analyst: NRB

Prep Batch: VXX34707
 Prep Method: SW5035A
 Prep Date/Time: 08/23/2019 00:30
 Spike Init Wt./Vol.: 1250 ug/Kg Extract Vol: 25 mL
 Dupe Init Wt./Vol.: 1250 ug/Kg Extract Vol: 25 mL

Method Blank

Blank ID: MB for HBN 1798057 [XXX/42037]
Blank Lab ID: 1525969

Matrix: Soil/Solid (dry weight)

QC for Samples:

1194660003, 1194660005, 1194660006, 1194660007, 1194660008, 1194660009

Results by AK102

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Diesel Range Organics	10.0U	20.0	6.20	mg/Kg
Surrogates				
5a Androstane (surr)	83.4	60-120		%

Batch Information

Analytical Batch: XFC15274
Analytical Method: AK102
Instrument: Agilent 7890B F
Analyst: CMS
Analytical Date/Time: 8/23/2019 1:17:00PM

Prep Batch: XXX42037
Prep Method: SW3550C
Prep Date/Time: 8/17/2019 11:26:59AM
Prep Initial Wt./Vol.: 30 g
Prep Extract Vol: 5 mL

Print Date: 09/05/2019 4:16:03PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1194660 [XXX42037]
 Blank Spike Lab ID: 1525970
 Date Analyzed: 08/23/2019 13:26

Spike Duplicate ID: LCSD for HBN 1194660
 [XXX42037]
 Spike Duplicate Lab ID: 1525971
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1194660003, 1194660005, 1194660006, 1194660007, 1194660008, 1194660009

Results by AK102

Parameter	Blank Spike (mg/Kg)			Spike Duplicate (mg/Kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Diesel Range Organics	833	840	101	833	849	102	(75-125)	1.10	(< 20)
Surrogates									
5a Androstane (surr)	16.7	91.9	92	16.7	91.5	92	(60-120)	0.49	

Batch Information

Analytical Batch: **XFC15274**
 Analytical Method: **AK102**
 Instrument: **Agilent 7890B F**
 Analyst: **CMS**

Prep Batch: **XXX42037**
 Prep Method: **SW3550C**
 Prep Date/Time: **08/17/2019 11:26**
 Spike Init Wt./Vol.: 833 mg/Kg Extract Vol: 5 mL
 Dupe Init Wt./Vol.: 833 mg/Kg Extract Vol: 5 mL

Method Blank

Blank ID: MB for HBN 1798057 [XXX/42037]
 Blank Lab ID: 1525969

Matrix: Soil/Solid (dry weight)

QC for Samples:
 1194660003, 1194660005, 1194660006, 1194660007, 1194660008, 1194660009

Results by AK103

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Residual Range Organics	10.0U	20.0	6.20	mg/Kg
Surrogates				
n-Triacontane-d62 (surr)	90.9	60-120		%

Batch Information

Analytical Batch: XFC15274
 Analytical Method: AK103
 Instrument: Agilent 7890B F
 Analyst: CMS
 Analytical Date/Time: 8/23/2019 1:17:00PM

Prep Batch: XXX42037
 Prep Method: SW3550C
 Prep Date/Time: 8/17/2019 11:26:59AM
 Prep Initial Wt./Vol.: 30 g
 Prep Extract Vol: 5 mL

Print Date: 09/05/2019 4:16:07PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1194660 [XXX42037]
 Blank Spike Lab ID: 1525970
 Date Analyzed: 08/23/2019 13:26

Spike Duplicate ID: LCSD for HBN 1194660
 [XXX42037]
 Spike Duplicate Lab ID: 1525971
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1194660003, 1194660005, 1194660006, 1194660007, 1194660008, 1194660009

Results by AK103

Parameter	Blank Spike (mg/Kg)			Spike Duplicate (mg/Kg)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Residual Range Organics	833	710	85	833	714	86	(60-120)	0.68	(< 20)
Surrogates									
n-Triacontane-d62 (surr)	16.7	94.4	94	16.7	95.2	95	(60-120)	0.92	

Batch Information

Analytical Batch: **XFC15274**
 Analytical Method: **AK103**
 Instrument: **Agilent 7890B F**
 Analyst: **CMS**

Prep Batch: **XXX42037**
 Prep Method: **SW3550C**
 Prep Date/Time: **08/17/2019 11:26**
 Spike Init Wt./Vol.: 833 mg/Kg Extract Vol: 5 mL
 Dupe Init Wt./Vol.: 833 mg/Kg Extract Vol: 5 mL

Print Date: 09/05/2019 4:16:13PM

Method Blank

Blank ID: MB for HBN 1798143 [XXX/42048]

Blank Lab ID: 1526326

QC for Samples:

1194660001, 1194660002, 1194660004

Matrix: Soil/Solid (dry weight)

Results by AK102

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Diesel Range Organics	10.0U	20.0	6.20	mg/Kg
Surrogates				
5a Androstane (surr)	85.4	60-120		%

Batch Information

Analytical Batch: XFC15256

Analytical Method: AK102

Instrument: Agilent 7890B F

Analyst: CMS

Analytical Date/Time: 8/20/2019 8:05:00AM

Prep Batch: XXX42048

Prep Method: SW3550C

Prep Date/Time: 8/19/2019 7:12:18PM

Prep Initial Wt./Vol.: 30 g

Prep Extract Vol: 5 mL

Print Date: 09/05/2019 4:16:17PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1194660 [XXX42048]
 Blank Spike Lab ID: 1526327
 Date Analyzed: 08/20/2019 08:15

Spike Duplicate ID: LCSD for HBN 1194660 [XXX42048]
 Spike Duplicate Lab ID: 1526328
 Matrix: Soil/Solid (dry weight)

QC for Samples: 1194660001, 1194660002, 1194660004

Results by AK102

Parameter	Blank Spike (mg/Kg)			Spike Duplicate (mg/Kg)			CL	RPD (%)	RPD CL	
	Spike	Result	Rec (%)	Spike	Result	Rec (%)				
Diesel Range Organics	833	842	101	833	853	102	(75-125)	1.30	(< 20)	
Surrogates										
5a Androstane (surr)	16.7	91.4	91	16.7	92.4	92	(60-120)	1.20		

Batch Information

Analytical Batch: **XFC15256**
 Analytical Method: **AK102**
 Instrument: **Agilent 7890B F**
 Analyst: **CMS**

Prep Batch: **XXX42048**
 Prep Method: **SW3550C**
 Prep Date/Time: **08/19/2019 19:12**
 Spike Init Wt./Vol.: 833 mg/Kg Extract Vol: 5 mL
 Dupe Init Wt./Vol.: 833 mg/Kg Extract Vol: 5 mL

Janssen, Jillian (Anchorage)

From: LeeAnne Osgood <DLO@shanwil.com>
Sent: Wednesday, September 04, 2019 10:00 AM
To: Janssen, Jillian (Anchorage)
Subject: [EXTERNAL] Work Order 1194660

***** WARNING: this message is from an EXTERNAL SENDER. Please be cautious, particularly with links and attachments. *****

Good Morning Jillian,

I was wondering what the status is for Work Order 1194660. Also, this work order should be going through the Icicle Seafoods account, not Shannon & Wilson. It looks like we may not have communicated that during sample drop off as I see the COC is listed under the Shannon & Wilson account and not the Icicle account on Engage. Please give me a call or email.

Thanks, LeeAnne



LeeAnne Osgood, P.E. | Associate

5430 Fairbanks Street, Suite 3
Anchorage, Alaska 99518

www.shannonwilson.com

Phone: (907) 561-2120

Direct: (907) 433-3236 dlo@shanwil.com



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 Please consider the environment before printing this e-mail



SGS North America Inc.
CHAIN OF CUSTODY RECORD

1194660



Locations Nationwide
ska Maryland
v Jersey New York
th Carolina Indiana
st Virginia Kentucky

www.us.sgs.com

CLIENT: <i>(Feiche Seafood İşigik) Shannon + Wilson Inc</i>					Instructions: Sections 1 - 5 must be filled out. Omissions may delay the onset of analysis.					Page <u>1</u> of <u>1</u>			
CONTACT: <i>Schylar Healy</i> PHONE NO: <i>443 605 4098</i>					Section 3		Preservative						
PROJECT NAME: <i>Feiche Seafood İşigik</i> PROJECT/PWSID/PERMIT#: <i>103355</i>					#	C O N T A I N E R S	Type C = COMP G = GRAB M = Multi Incremental Soils	<i>Manual</i> <i>D 20 by ARWL</i> <i>BRD/PRO Ak102/103</i> <i>GRD/DTX Ak101/5021</i>					REMARKS/ LOC ID
REPORTS TO: <i>Leanne Osgood</i> E-MAIL: <i>d10@shannwil.com</i> <i>sah@shannwil.com</i>													
INVOICE TO: QUOTE #: P.O. #:													
RESERVED for lab use													
SAMPLE IDENTIFICATION					DATE	TIME	MATRIX/ MATRIX CODE						
1AD					8/12/2019	19:30	Soil	1 bag	M1	X			
2AD					8/13/2019	7:28	Soil	1 bag	M1	X			
3AD					8/13/2019	8:38	Soil	1 bag	M1	X			
4AD					8/13/2019	9:30	Soil	1 bag	M1	X			
5AB					8/13/2019	12:12	Soil	2	G	X	X		
6AB					8/13/2019	12:09	Soil	2	G	X	X		
7AB					8/13/2019	12:19	Soil	2	G	X	X		
8AB					8/13/2019	12:30	Soil	2	G	X	X		
9AB					8/13/19	12:36	Soil	2	G	X	X		
10A					8/12/19	20:00	Soil	1				X	
Relinquished By: (1)					Date	Time	Received By:		Section 4		DOD Project? Yes No		Data Deliverable Requirements:
<i>[Signature]</i>					8/13/19	15:50	<i>[Signature]</i> 8/15/19 11:50						
Relinquished By: (2)					Date	Time	Received By:		Cooler ID:		Requested Turnaround Time and/or Special Instructions:		
<i>[Signature]</i>					8/15/19	13:19	<i>[Signature]</i>				103355 DU1-DU4 MIS Lab processing required Profile: 362285 JKJ		
Relinquished By: (3)					Date	Time	Received By:				limited quantity of 103355 DU2-1 and DU2-11		
<i>[Signature]</i>													
Relinquished By: (4)					Date	Time	Received For Laboratory By:		Temp Blank °C: 4.2 D3D		Chain of Custody Seal: (Circle)		
<i>[Signature]</i>					8-15-19	13:19	<i>[Signature]</i> MHA		or Ambient []		INTACT BROKEN ABSENT		<i>[Signature]</i>
										(See attached Sample Receipt Form)		(See attached Sample Receipt Form)	



e-Sample Receipt Form

SGS Workorder #:

1194660



1 1 9 4 6 6 0

Review Criteria	Condition (Yes, No, N/A)	Exceptions Noted below
Chain of Custody / Temperature Requirements		Yes Exemption permitted if sampler hand carries/delivers.
Were Custody Seals intact? Note # & location	N/A	
COC accompanied samples?	Yes	
DOD: Were samples received in COC corresponding coolers?	N/A	
<input type="checkbox"/> N/A **Exemption permitted if chilled & collected <8 hours ago, or for samples where chilling is not required		
Temperature blank compliant* (i.e., 0-6 °C after CF)?	Yes	Cooler ID: 1 @ 4.2 °C Therm. ID: D30
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
*If >6°C, were samples collected <8 hours ago? N/A		
If <0°C, were sample containers ice free? N/A		
Note: Identify containers received at non-compliant temperature . Use form FS-0029 if more space is needed.		
Holding Time / Documentation / Sample Condition Requirements		Note: Refer to form F-083 "Sample Guide" for specific holding times.
Were samples received within holding time?	Yes	
Do samples match COC** (i.e., sample IDs, dates/times collected)?	Yes	
Note: If times differ <1hr, record details & login per COC. *Note: If sample information on containers differs from COC, SGS will default to COC information		
Were analytical requests clear? (i.e., method is specified for analyses with multiple option for analysis (Ex: BTEX, Metals))	Yes	
<input type="checkbox"/> N/A ***Exemption permitted for metals (e.g,200.8/6020A).		
Were proper containers (type/mass/volume/preservative***)used?	Yes	
Volatile / LL-Hg Requirements		
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?	Yes	
Were all water VOA vials free of headspace (i.e., bubbles ≤ 6mm)?	N/A	
Were all soil VOAs field extracted with MeOH+BFB?	Yes	
Note to Client: Any "No", answer above indicates non-compliance with standard procedures and may impact data quality.		
Additional notes (if applicable):		



Sample Containers and Preservatives

<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>	<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>
1194660001-A	No Preservative Required	OK			
1194660001-B	No Preservative Required	OK			
1194660001-C	No Preservative Required	OK			
1194660001-D	No Preservative Required	OK			
1194660002-A	No Preservative Required	OK			
1194660002-B	No Preservative Required	OK			
1194660002-C	No Preservative Required	OK			
1194660002-D	No Preservative Required	OK			
1194660003-A	No Preservative Required	OK			
1194660003-B	No Preservative Required	OK			
1194660003-C	No Preservative Required	OK			
1194660003-D	No Preservative Required	OK			
1194660004-A	No Preservative Required	OK			
1194660004-B	No Preservative Required	OK			
1194660004-C	No Preservative Required	OK			
1194660004-D	No Preservative Required	OK			
1194660005-A	No Preservative Required	OK			
1194660005-B	Methanol field pres. 4 C	OK			
1194660006-A	No Preservative Required	OK			
1194660006-B	Methanol field pres. 4 C	OK			
1194660007-A	No Preservative Required	OK			
1194660007-B	Methanol field pres. 4 C	OK			
1194660008-A	No Preservative Required	OK			
1194660008-B	Methanol field pres. 4 C	OK			
1194660009-A	No Preservative Required	OK			
1194660009-B	Methanol field pres. 4 C	OK			
1194660010-A	Methanol field pres. 4 C	OK			

Container Condition Glossary

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

OK - The container was received at an acceptable pH for the analysis requested.

BU - The container was received with headspace greater than 6mm.

DM - The container was received damaged.

FR - The container was received frozen and not usable for Bacteria or BOD analyses.

IC - The container provided for microbiology analysis was not a laboratory-supplied, pre-sterilized container and therefore was not suitable for analysis.

NC- The container provided was not preserved or was under-preserved. The method does not allow for additional preservative added after collection.

PA - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt and the container is now at the correct pH. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

PH - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt, but was insufficient to bring the container to the correct pH for the analysis requested. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

QN - Insufficient sample quantity provided.

LABORATORY DATA REVIEW CHECKLIST

CS Report Name: Icicle Seafoods Egegik Cannery
Egegik, Alaska

Date: November 2019

Laboratory Report Date: September 5, 2019

Consultant Firm: Shannon & Wilson, Inc.

Completed by: Schylar Healy

Title: Environmental Scientist

Laboratory Name: SGS North America Inc.

Work Order Number: 1194660

ADEC File Number:

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

1. Laboratory

- a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses? **Yes** / No / NA (Please explain.)

Comments:

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

Yes / No / **NA**

Comments: *The samples were not transferred to another "network" laboratory or sub-contracted to an alternate laboratory.*

2. Chain of Custody (COC)

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

Yes / No / NA (Please explain.)

Comments:

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

Comments:

3. Laboratory Sample Receipt Documentation

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

Yes / No / NA (Please explain.)

Comments: *The cooler temperature blank had a temperature of 4.2°C.*

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

Comments:

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

Comments: *No discrepancies were noted.*

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

Comments:

- e. Data quality or usability affected? Yes / **No** (Please Explain.)

Comments: *See above.*

4. Case Narrative

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

Comments:

- b. Discrepancies, errors or QC failures noted by the lab? **Yes** / No / NA (Please explain.)

Comments: *The laboratory noted the following:*

- *Samples DU1-5 and DU2-1: AK101 - Surrogate recovery for 4-bromofluorobenzene does not meet QC criteria due to matrix interference.*

- c. Were corrective actions documented? Yes / **No** / NA (Please explain.)

Comments: *See above.*

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

Comments: *GRO results for Samples DU1-5 and DU2-1 may be bias high due to a surrogate recovery failure.*

5. Sample Results

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

Comments:

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

Comments:

- c. All soils reported on a dry-weight basis? **Yes** / No / NA (Please explain.)

Comments:

- d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project? **Yes** / No / NA (Please explain.)

Comments:

- e. Data quality or usability affected? **NA** (Please explain.)

Comments:

6. QC Samples

a. Method Blank

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

Yes / No / NA (Please explain.)

Comments:

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

Comments:

- iii. If above LOQ, what samples are affected? **NA**

Comments:

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

Comments:

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

Comments:

- v. Data quality or usability affected? (Please explain.) **NA**

Comments: *See above.*

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

- i. Organics - One LCS/LCSD reported per matrix, analysis, and 20 samples?

(LCS/LCSD required per AK methods, LCS required per SW846) **Yes** / No / NA

(Please explain.)

Comments:

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

Comments:

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

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

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

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

vii. Data quality or usability affected? Explain. **NA**
Comments: *See above.*

c. Surrogates - Organics Only

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

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages) **Yes** / **No** / NA (Please explain.)
Comments: *Surrogate receives for GRO (4-bromofluorobenzene) in Samples DU1-5 and DU2-1 are outside QC criteria and considered biased high.*

iii. Do the sample results with failed surrogate recoveries have data flags? **Yes** / No / NA (Please explain.)
Comments: *Shannon & Wilson-applied data flags (“J+”) are presented on Table 2 which indicate the analytical results are potentially biased high due to surrogate failure.*

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

iv. Data quality or usability affected? **NA**
Comments: *The laboratory reported concentrations of GRO in Samples DU1-5 and DU2-1 were reported as estimated concentrations below the ADEC cleanup level. Therefore, data quality and/or usability are considered unaffected for the purposes of this reported.*

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

- i. One trip blank reported per matrix, analysis and cooler? **Yes** / No / NA (Please explain.)

Comments: *One soil trip blank (Trip Blank) was submitted to the laboratory with the project samples.*

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

Comments: *Only one cooler was used to transport the project samples.*

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

Comments:

- iv. If above LOQ, what samples are affected?

Comments: **NA**

- v. Data quality or usability affected? Explain. **NA**

Comments:

e. Field Duplicate

- i. One field duplicate submitted per matrix, analysis and 10 project samples? **Yes** / No / NA (Please explain.)

Comments: *A triplicate sample set was collected from Decision Unit ICLP-DU2. MI Samples DU3 and DU4 were the field duplicate and triplicate of MI Sample DU2. Additionally, Landfarm Footprint Sample DU2-11 is the field duplicate of Sample DU2-1.*

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

Comments:

- iii. Precision – All relative percent differences (RPDs) less than specified DQOs? (Recommended: 30% for water, 50% for soil) Yes / **No** / NA (Please explain.)

Comments: *The RPD result for DRO in the duplicate sample DU3 was outside the QC criteria of 50%. However, the RPD result for DRO in the triplicate sample DU4 was within the QC criteria.*

- iv. Data quality or usability affected? Explain. NA

Comments: *DRO results for Samples DU2 and DU3 are flagged "E" in Table 2 and may be considered estimated. Although, in each sample of the triplicate sample set the results were consistently greater than the ADEC cleanup level.*

- f. Decontamination or Equipment Blank** (if not applicable, a comment stating why must be entered below)

Yes **No** / NA **(Please explain.)** *The use of a decontamination or equipment blank was not included in our ADEC-approved work plan.*

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

Comments:

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

Comments:

- iii.** Data quality or usability affected? Explain. **NA**

Comments:

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

- a.** Are they defined and appropriate? **Yes** / No / NA

Comments: *A key is provided on Page 3 of the SGS Laboratory Report.*

Attachment 4

Important Information About Your Geotechnical/Environmental Report

ATTACHMENT 4: IMPORTANT INFORMATION



Date: November 2019

To: Ms. Margaret deGravelle

IMPORTANT INFORMATION ABOUT YOUR GEOTECHNICAL/ENVIRONMENTAL REPORT

CONSULTING SERVICES ARE PERFORMED FOR SPECIFIC PURPOSES AND FOR SPECIFIC CLIENTS.

Consultants prepare reports to meet the specific needs of specific individuals. A report prepared for a civil engineer may not be adequate for a construction contractor or even another civil engineer. Unless indicated otherwise, your consultant prepared your report expressly for you and expressly for the purposes you indicated. No one other than you should apply this report for its intended purpose without first conferring with the consultant. No party should apply this report for any purpose other than that originally contemplated without first conferring with the consultant.

THE CONSULTANT'S REPORT IS BASED ON PROJECT-SPECIFIC FACTORS.

A geotechnical/environmental report is based on a subsurface exploration plan designed to consider a unique set of project-specific factors. Depending on the project, these may include: the general nature of the structure and property involved; its size and configuration; its historical use and practice; the location of the structure on the site and its orientation; other improvements such as access roads, parking lots, and underground utilities; and the additional risk created by scope-of-service limitations imposed by the client. To help avoid costly problems, ask the consultant to evaluate how any factors that change subsequent to the date of the report may affect the recommendations. Unless your consultant indicates otherwise, your report should not be used: (1) when the nature of the proposed project is changed (for example, if an office building will be erected instead of a parking garage, or if a refrigerated warehouse will be built instead of an unrefrigerated one, or chemicals are discovered on or near the site); (2) when the size, elevation, or configuration of the proposed project is altered; (3) when the location or orientation of the proposed project is modified; (4) when there is a change of ownership; or (5) for application to an adjacent site. Consultants cannot accept responsibility for problems that may occur if they are not consulted after factors which were considered in the development of the report have changed.

SUBSURFACE CONDITIONS CAN CHANGE.

Subsurface conditions may be affected as a result of natural processes or human activity. Because a geotechnical/environmental report is based on conditions that existed at the time of subsurface exploration, construction decisions should not be based on a report whose adequacy may have been affected by time. Ask the consultant to advise if additional tests are desirable before construction starts; for example, groundwater conditions commonly vary seasonally.

Construction operations at or adjacent to the site and natural events such as floods, earthquakes, or groundwater fluctuations may also affect subsurface conditions and, thus, the continuing adequacy of a geotechnical/environmental report. The consultant should be kept apprised of any such events, and should be consulted to determine if additional tests are necessary.

MOST RECOMMENDATIONS ARE PROFESSIONAL JUDGMENTS.

Site exploration and testing identifies actual surface and subsurface conditions only at those points where samples are taken. The data were extrapolated by your consultant, who then applied judgment to render an opinion about overall subsurface conditions. The actual interface between materials may be far more gradual or abrupt than your report indicates. Actual conditions in areas not sampled may differ from those predicted in your report. While nothing can be done to prevent such situations, you and your consultant can work together to help reduce their impacts. Retaining your consultant to observe subsurface construction operations can be particularly beneficial in this respect.

A REPORT'S CONCLUSIONS ARE PRELIMINARY.

The conclusions contained in your consultant's report are preliminary because they must be based on the assumption that conditions revealed through selective exploratory sampling are indicative of actual conditions throughout a site. Actual subsurface conditions can be discerned only during earthwork; therefore, you should retain your consultant to observe actual conditions and to provide conclusions. Only the consultant who prepared the report is fully familiar with the background information needed to determine whether or not the report's recommendations based on those conclusions are valid and whether or not the contractor is abiding by applicable recommendations. The consultant who developed your report cannot assume responsibility or liability for the adequacy of the report's recommendations if another party is retained to observe construction.

THE CONSULTANT'S REPORT IS SUBJECT TO MISINTERPRETATION.

Costly problems can occur when other design professionals develop their plans based on misinterpretation of a geotechnical/environmental report. To help avoid these problems, the consultant should be retained to work with other project design professionals to explain relevant geotechnical, geological, hydrogeological, and environmental findings, and to review the adequacy of their plans and specifications relative to these issues.

BORING LOGS AND/OR MONITORING WELL DATA SHOULD NOT BE SEPARATED FROM THE REPORT.

Final boring logs developed by the consultant are based upon interpretation of field logs (assembled by site personnel), field test results, and laboratory and/or office evaluation of field samples and data. Only final boring logs and data are customarily included in geotechnical/environmental reports. These final logs should not, under any circumstances, be redrawn for inclusion in architectural or other design drawings, because drafters may commit errors or omissions in the transfer process.

To reduce the likelihood of boring log or monitoring well misinterpretation, contractors should be given ready access to the complete geotechnical engineering/environmental report prepared or authorized for their use. If access is provided only to the report prepared for you, you should advise contractors of the report's limitations, assuming that a contractor was not one of the specific persons for whom the report was prepared, and that developing construction cost estimates was not one of the specific purposes for which it was prepared. While a contractor may gain important knowledge from a report prepared for another party, the contractor should discuss the report with your consultant and perform the additional or alternative work believed necessary to obtain the data specifically appropriate for construction cost estimating purposes. Some clients hold the mistaken impression that simply disclaiming responsibility for the accuracy of subsurface information always insulates them from attendant liability. Providing the best available information to contractors helps prevent costly construction problems and the adversarial attitudes that aggravate them to a disproportionate scale.

READ RESPONSIBILITY CLAUSES CLOSELY.

Because geotechnical/environmental engineering is based extensively on judgment and opinion, it is far less exact than other design disciplines. This situation has resulted in wholly unwarranted claims being lodged against consultants. To help prevent this problem, consultants have developed a number of clauses for use in their contracts, reports and other documents. These responsibility clauses are not exculpatory clauses designed to transfer the consultant's liabilities to other parties; rather, they are definitive clauses that identify where the consultant's responsibilities begin and end. Their use helps all parties involved recognize their individual responsibilities and take appropriate action. Some of these definitive clauses are likely to appear in your report, and you are encouraged to read them closely. Your consultant will be pleased to give full and frank answers to your questions.

The preceding paragraphs are based on information provided by the
ASFE/Association of Engineering Firms Practicing in the Geosciences, Silver Spring, Maryland