DOWL HKM

410.38.~~018~~ 022

June 12, 2009
W.O. D58405

Mr. Chris Teich
NANA Development Corporation
1001 East Benson Boulevard
Anchorage, Alaska 99508

Subject: New Nullagvik Hotel
Findings of Environmental Field Work

Dear Mr. Teich:

This letter report summarizes the findings of environmental field work conducted at the New Nullagvik Hotel Site between February and May 2009. Earlier reports dated April 9, 2009, discussed soil sampling during the thermopile installation in February and March 2009. This report includes that information and also expands to include samples taken near Shore Avenue and on stockpiled drill cuttings in May 2009.

SITE HISTORY

NANA Development Corporation (NANA) is constructing a new 100-room hotel in Kotzebue, Alaska (T17N, R18W, Sec. 3, Kateel Meridian; USGS Quadrangle Kotzebue D-2.). The 65,000-square foot, four-story, wood frame structure will include 100 guest rooms, restaurant, meeting rooms, and miscellaneous support space. The project is located adjacent to a current hotel along Shore Avenue in Kotzebue, Alaska (Figure 1). The facility will be elevated on a thermopile foundation system common to the Kotzebue region.

In 2008, NANA had prepared this site for construction by demolishing old buildings, leveling the ground, and had foam board insulation placed in the project footprint area (Figure 2). The foam board was installed to a depth of approximately 4 feet below ground surface (bgs.) This will help to insulate the underlying permafrost and to keep it frozen throughout the year.

The most recent phase of the project involved installation of thermopiles and thermosiphons through the buried foam board. The thermopiles and thermosiphons contain a non-reactant refrigerant and were embedded into the soil approximately 25 feet bgs. Their thermal action ensures that the ground freezes and remains frozen throughout the year.

During test drilling for pilings in November 2008, petroleum odor was noted at approximately 6 feet bgs near the "supra-permafrost" groundwater level in two locations. The State of Alaska Department of Environmental Conservation (DEC) was notified a short time later.

RESULTS/DISCUSSION

Soil Sampling During Thermopile Installation

Select soil samples were taken during the installation of the thermopiles in March 2009 by DOWL HKM geologist Callie Keller. In addition to the 5 samples collected for laboratory analysis, Ms. Keller also field-screened soil cuttings using a photoionization detector (PID.) Both sample types

were collected directly from the rotor flight. (A Texoma #500 rotor drill with variously sized augers was used for pile installation). Because the rotor drill mixes soil as it advances, it is generally not used for environmental sampling and results from both the field screening and analytical samples should be considered estimated.

Soil samples were collected as discussed in the work plan dated February 17, 2009 (Attachment 1).

While field screening and analytical efforts were limited, field observations from the on-site geologist and drillers indicated that when petroleum contaminated soil was present, it was generally encountered around 8 feet bgs.

Table 1 lists the location, depth, and PID readings of the field screening samples. Figure 3 displays the location of pilings.

Table 1: Field Screening Results – Thermopile Installation

Date	Pile No.	Depth (ft)	PID Result (ppmV)
February 28, 2009	52	5	0
	52	6.5	40
	52	17	2
	57	5	0
	57	8	2
March 1, 2009	16	9	6
	32	22	0
March 2, 2009	15	9	11
	66	9	3
March 3, 2009	23	8	0
	74	8.5	3
	78	8	205
March 4, 2009	88	7	583
	97	7.5	214
March 6, 2009	39	9	0
	51	8	13
March 7, 2009	50	8	640

Table 2 shows the results for the five soil samples that were collected for laboratory analysis from four locations (piling numbers 74, 52, 97, and 51.) Samples were generally collected from 8 to 8.5 feet bgs to try to capture what appeared to be the most contaminated soils in the boring location.

Table 2: Analytical Results for Soil Samples Collected From Auger Flight during Thermopile Installation

Soil Sample	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	RRO (mg/kg)
NW-74-8.5	ND	ND	ND	ND	ND	ND	ND
NW-P52-8	ND	ND	ND	0.1 J	5	ND	ND
NW-97-8	**0.075**	ND	1.6	7.3	159	**907**	26
NW-P51-8	**0.024**	ND	0.1	0.4	8	ND	49
NW-P51-8 DUP[1]	**0.030**	ND	0.1	0.4	11	ND	49
DEC Cleanup Level [2]	***0.02***	***5.4***	***5.5***	***78***	***300***	***250***	***11,000***
DEC Cleanup Level [3]	***9***	***180***	***89***	***81***	***1,400***	***10,250***	***10,000***

[1] Duplicate sample (Duplicate to NW-P51-8)

[2] Method Two Cleanup Levels – Under 40 inch Zone – Migration to Groundwater (18 AAC 75, Tables B1 and B2)

[3] Method Two Cleanup Levels – Under 40 inch Zone – Inhalation/Ingestion (18 AAC 75, Tables B1 and B2)

***Bolded** Results in excess of migration to groundwater standards*

***Red Bolded** results in excess of Inhalation/Ingestion Standards*

DRO – diesel-range organics

GRO – gasoline range organics

J – Estimated Result

mg/kg – milligrams per kilogram

ND - Not Detected

PID – Reading taken with a Photoionization Detector

RRO - Residual Range Organics

PID and analytical results from the soil samples taken during the thermopile installation identified two potentially isolated spots of contaminated soil: one on the southwest side of new hotel site, near Bayside Inn and one on the northwest side of the new hotel site, near Shore Avenue.

Analytical results indicate that the spot on the southwest side is likely due to diesel fuel contamination, while the spot near Shore Avenue is of unknown origin. Former gasoline underground storage tanks and piping used for the old fueling dispenser were located nearby (Figure 2).

All analytical samples were below inhalation/ingestion clean up levels. but above migration to groundwater!!

Soil Sampling Near Shore Avenue

During the installation of thermosiphons in April and May 2009, a (CM-45) drill rig equipped with 140-pound hammer was utilized. Because this equipment had the capability of taking discreet soil samples from a split spoon sampling device, as opposed to sampling from the auger flight, additional soil samples were taken to the northwest of the new hotel site near Shore Avenue (Figure 4). Soil samples were field screened and select samples were submitted for laboratory analysis (Table 3).

Table 3: Field Screening and Analytical Results Samples collected at New Nullagvik Hotel near Shore Avenue

Soil Sample	Depth (ft bgs)	PID (ppm)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	RRO (mg/kg)
NUL E1-3	3	0	*Field Screening Sample Only*						
NUL E1-6	6	0	*Field Screening Sample Only*						
NUL E1-7.5	7.5	2	0.029	ND	0.2	0.4	17	133	486
NUL E1-9	9	0	*Field Screening Sample Only*						
NUL E1-10	10	2	*Field Screening Sample Only*						
NUL E2-8	8	217	**3.170**	3.30	1.3	7.4	**722**	158	ND
NUL E2-10	10	158	*Field Screening Sample Only*						
NUL E3-5	5	3	**0.091**	0.08	0.1	0.2	16	ND	ND
NUL E3-7.5	7.5	58	*Field Screening Sample Only- not enough recovery for analytical sample*						
NUL E4-3	3	8	ND	ND	ND	ND	ND	ND	ND
NUL E4-5	5	5	*Field Screening Sample Only*						
NUL E4-8	8	42	*Field Screening Sample Only - not enough recovery for analytical sample*						
NUL E4-9	9	4	*Field Screening Sample Only*						
NUL E5-8	8	488	*Field Screening Sample Only- not enough recovery for analytical sample*						
NUL E5-9.5	9.5	5	**0.057**	0.13	0.1	0.5	9	ND	ND
NUL E6-8	8	-	ND	ND	ND	ND	ND	ND	ND
DEC Cleanup Level [1]			***0.02***	***5.4***	***5.5***	***78***	***300***	***250***	***11,000***
DEC Cleanup Level [2]			***9***	***180***	***89***	***81***	***1,400***	***10,250***	***10,000***

[1] *Method Two Cleanup Levels – Under 40 inch Zone – Migration to Groundwater (18 AAC 75, Tables B1 and B2)*

[2] *Method Two Cleanup Levels – Under 40 inch Zone – Inhalation/Ingestion (18 AAC 75, Tables B1 and B2)*

Bolded *Results in excess of migration to groundwater standards*

Red Bolded *results in excess of Inhalation/Ingestion Standards*

DRO – diesel-range organics

GRO – gasoline range organics

J – Estimated Result

mg/kg – milligrams per kilogram

PID – Reading taken with a Photoionization Detector

RRO - Residual Range Organics

ND - Not Detected

2018 CUL exceedance

Results indicate that isolated areas of petroleum contamination are present on-site, but concentrations are well below the human health (inhalation/ingestion) action levels.

Hammer blow counts and soil descriptions are included in the field notes (Attachment 2).

Soil sampling of Stockpiled Drill Cuttings

Per a prior DEC agreement, soil cuttings generated during the installation of the thermopiles and thermosiphons were collected and transported to, and stockpiled at the landfill. Approximately 300 cubic yards of soil has been stockpiled at the landfill.

On May 15, 2009 Ms. Keller took 8 random-grab soil samples and one duplicate sample from the stockpiles. Samples were collected as described in the associated work plan (Attachment 1). Results of the soil sampling are shown in Table 4.

Table 4: Analytical results of soil samples taken from the Drill Cuttings Stockpile

Soil Sample	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	RRO (mg/kg)
NUL-STO-1	ND	ND	ND	ND	ND	133	486
NUL-STO-2	ND	ND	ND	0.1 J	ND	142	399
NUL-STO-3	ND	ND	ND	ND	ND	1060	4670
NUL-STO-4	ND	ND	ND	ND	ND	138	471
NUL-STO-5	ND	ND	ND	ND	ND	139	238
NUL-STO-6	ND	ND	ND	ND	ND	24	71
NUL-STO-7	ND	ND	ND	ND	ND	119	401
NUL-STO-8	ND	ND	ND	ND	ND	116	561
NUL-STO-9[1]	ND	ND	ND	ND	ND	30	94
DEC Cleanup Level[2]	***0.02***	***5.4***	***5.5***	***78***	***300***	***250***	***11,000***
DEC Cleanup Level[3]	***9***	***180***	***89***	***81***	***1,400***	***10,250***	***10,000***

[1]Duplicate sample (Duplicate to NUL-STO-6)

[2] Method Two Cleanup Levels – Under 40 inch Zone – Migration to Groundwater (18 AAC 75, Tables B1 and B2)

***Bolded** Results in excess of migration to groundwater standards*

***Red Bolded** results in excess of Inhalation/Ingestion Standards*

DRO – diesel-range organics

GRO – gasoline range organics

J – Estimated Result

mg/kg – milligrams per kilogram

ND - Not Detected

PID – Reading taken with a Photoionization Detector

RRO - Residual Range Organics

Low levels of petroleum contamination were noted in all the stockpiled samples as a result of the mixing effect of the drilling, handling, and stockpiling efforts. All samples were below the Human Health cleanup levels. One sample exceeded the migration to groundwater cleanup levels for DRO.

All laboratory reports are included in Attachment 3.

RECOMMENDATIONS

Isolated pockets of petroleum contaminated soil with concentrations below DEC's human health cleanup levels appear to exist within the new Hotel footprint. This area and soil immediately around the new hotel will be frozen in place due to the thermopile and thermosiphon freezing action.

Some low level petroleum contaminated soil may exist outside of the new hotel footprint. In previous conversations with DEC, the State of Alaska Department of Transportation and Public Facilities (DOT&PF) Shore Avenue project has been discussed. Starting in 2009, DOT&PF is planning extensive work including paving the road and adding fill to Kotzebue Sound. DEC has set the clean up levels for the Shore Avenue project regarding petroleum contaminants to human health (inhalation/ingestion) standards. No samples collected on the Nullagvik project site, along Shore Avenue or otherwise, had concentrations above the human health levels.

NO!

Taken as whole, the PID and analytical sampling appears to show that any contamination at the Nullagvik project site is minimal, isolated, sporadic, and not part of a larger migration of contaminants from within or across the site. For these reasons, no further actions are recommended at this time.

DOWL HKM recommends sending this report to DEC for their review and approval. We can forward this report to the appropriate project managers on your behalf.

Please feel free to contact me should you have any additional questions or concerns.

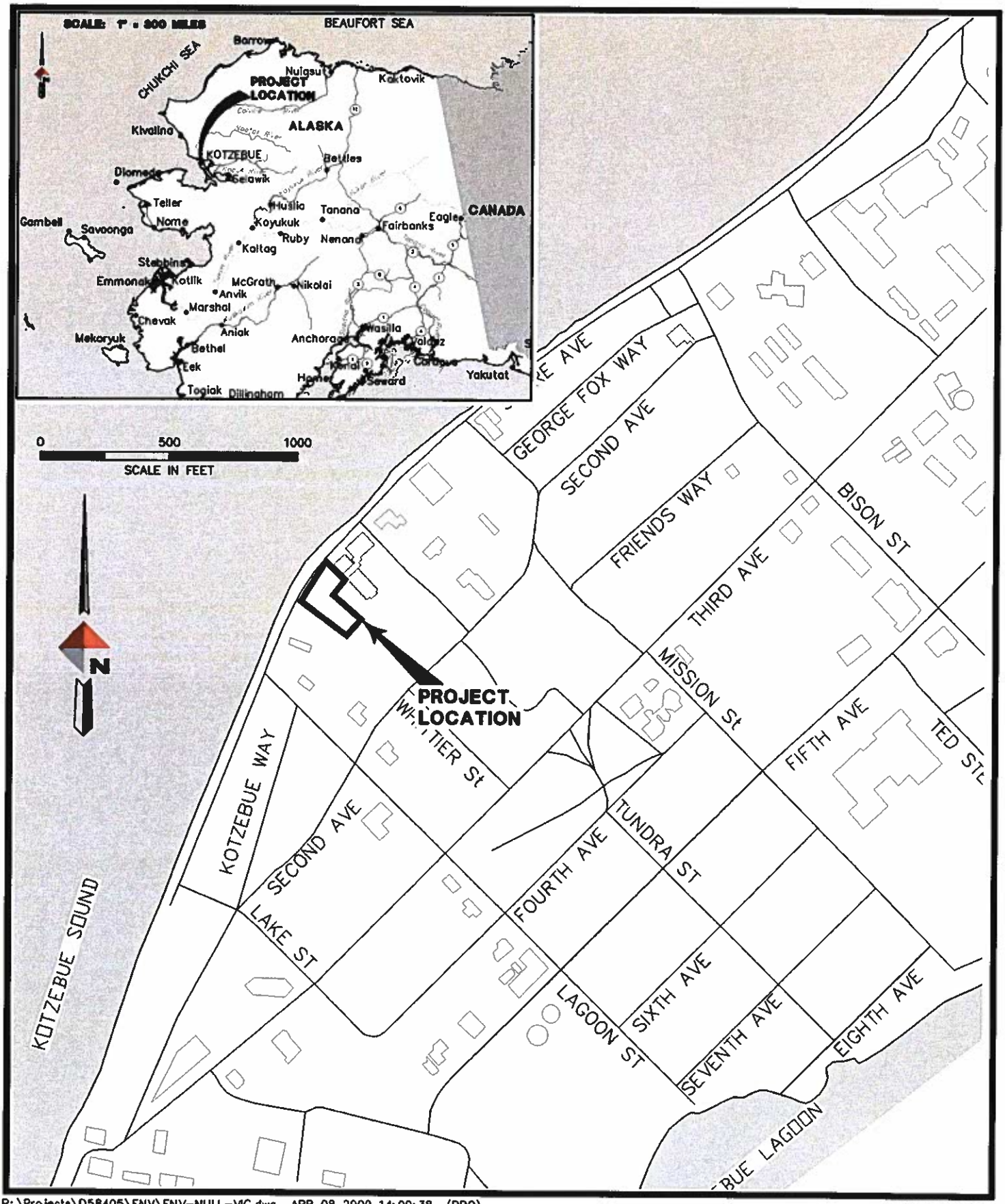
Sincerely,
DOWL HKM

Brandie Theisen Hofmeister, P.G.
Environmental Specialist

Attachments: Figures
1. Work Plan
2. Field Notes
3. Analytical Reports

D58405.Teich.Letter Report.BTH.061209.mas

FIGURES



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DOWL HKM

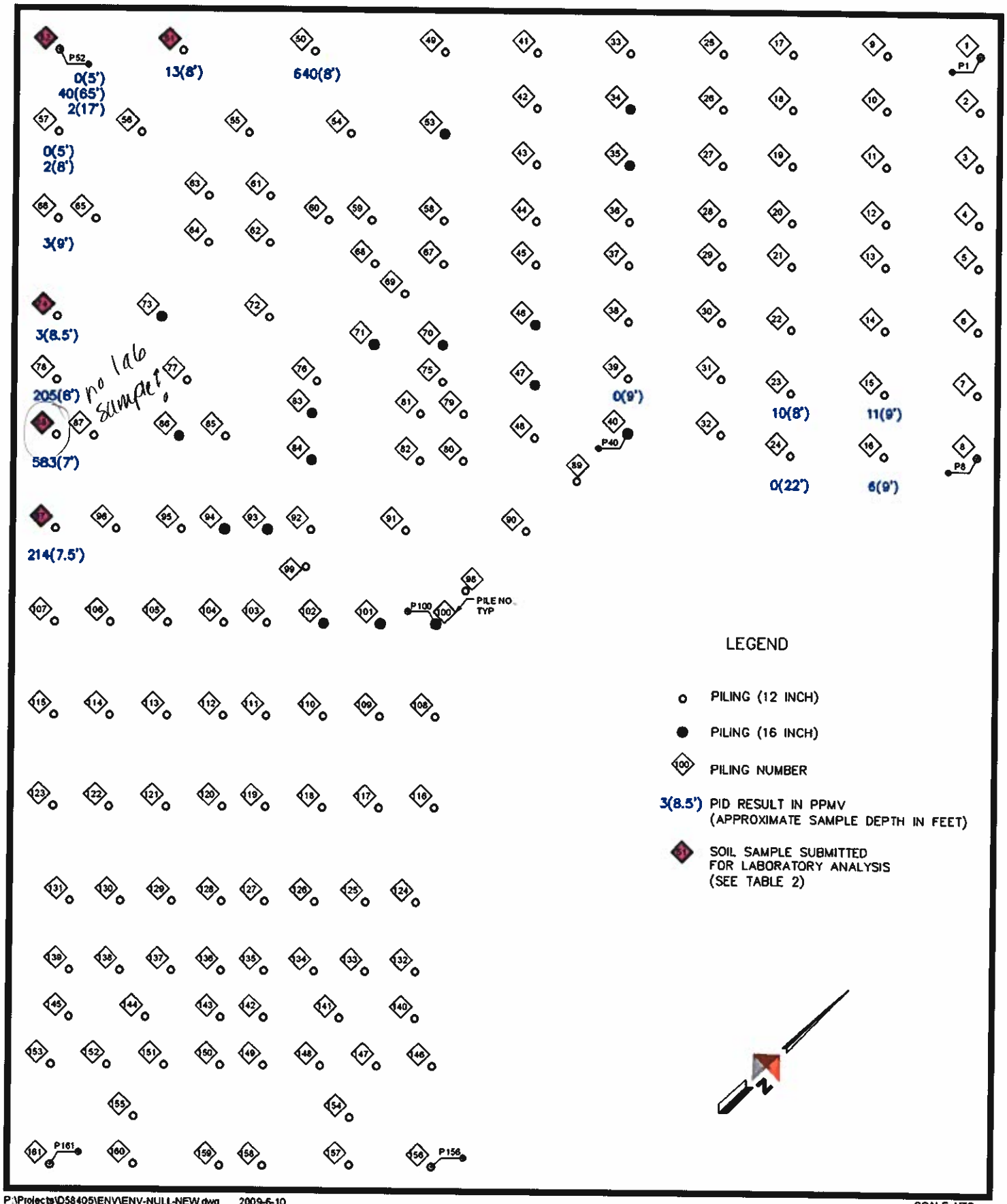
Vicinity Map
NEW NULLAGVIK HOTEL
Kotzebue, Alaska

FIGURE 1

Figure 2 Scanned Separately due to paper size.

P.M.

Megan Roberts



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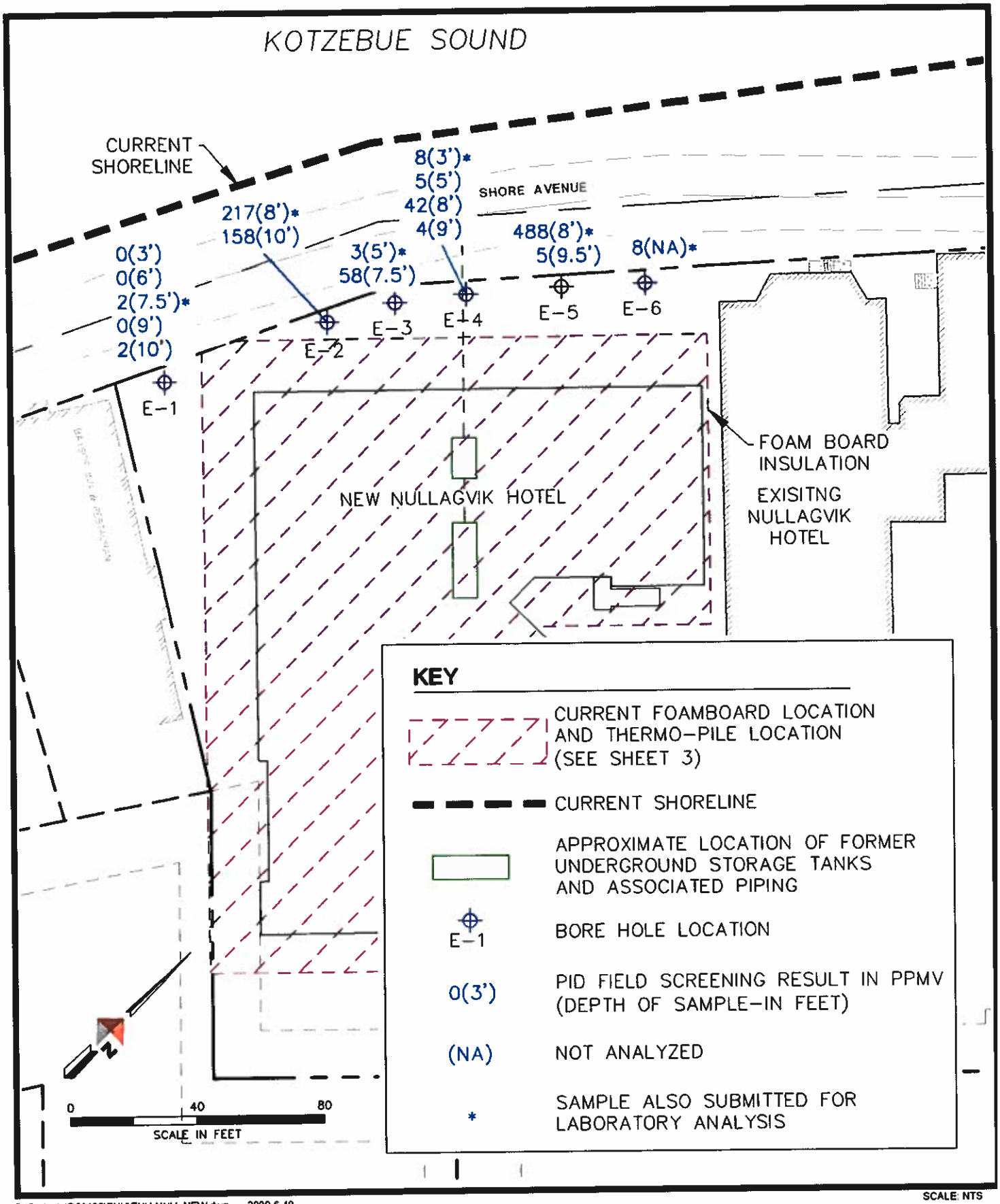
DOWL HKM

Field Screening Results - From Soil Taken From Rotor Flight During Installation of Thermopiles
NEW NULLAGVIK HOTEL
Kotzebue, Alaska

FIGURE 3



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DOWL HKM

Split Spoon Soil Sampling near Shore Avenue

NEW NULLAGVIK HOTEL

Kotzebue, Alaska

FIGURE 4

ATTACHMENT 1

WORK PLAN

DOWL HKM

February 17, 2009
W.O. D58405

Mr. Neal Everson
State of Alaska
Department of Environmental Conservation
610 University Avenue
Fairbanks, Alaska 99709

Subject: New Nullagvik Hotel
Work Plan for Thermopile Boring and Installation

Dear Mr. Everson:

Please find below, for your review and approval, a work plan which outlines how potentially contaminated soil cuttings will be handled during the boring and installation of thermopiles at the new Nullagvik Hotel construction site in Kotzebue, Alaska.

SITE HISTORY

Project Overview

NANA Development Corporation (NANA) is constructing a new 100-room hotel in Kotzebue, Alaska (T17N, R18W, Sec. 3, Kateel Meridian; USGS Quadrangle Kotzebue D-2.) The 65,000-square foot, four-story, wood frame structure will include 100 guest rooms, restaurant, meeting rooms, and miscellaneous support space. The project is located adjacent to a current hotel along Shore Avenue in Kotzebue, Alaska (Figure 1). The facility will be elevated on a thermopile foundation system common to the Kotzebue region.

The old Nullagvik Hotel will be demolished after the first phase of the new hotel becomes operational. The project has been phased to continue providing lodging services to Kotzebue visitors during construction.

Construction Overview

In 2008, NANA had prepared this site for construction by demolishing old buildings, leveling the ground, and had placed foam board in the project footprint area (Figure 2). The foam board was installed to a depth of approximately 4 feet below ground surface (bgs) and is overlain by gravel. The foam board is designed to insulate the underlying permafrost and to keep it frozen throughout the year.

The next phase of the project, scheduled to start in late February 2009, involves installation of approximately 200 thermopiles through the buried foam board (Figure 3). The thermopiles consist of steel cylinders containing a non-reactant refrigerant and will be embedded into the soil approximately 25 feet bgs. The piles not only act as structural load-bearing supports for the future hotel building, but also "pull heat" out of the ground. Their thermal action ensures that the ground freezes and remains frozen solid throughout the year.

Petroleum Odor Detected

During test drilling for pilings in November 2008, petroleum odor was noted at approximately 6 feet below ground surface near the "supra-permafrost" groundwater level in two locations. The State of Alaska Department of Environmental Conservation (DEC) was notified in December 2008.

While it is unknown if contaminated soil or groundwater exists on-site, petroleum odor indicates its likelihood.

Since installation of the thermopiles will freeze the underlying soils and supra-permafrost groundwater in the area, any potentially contaminated soils and water in the project area will be immobilized in place, and offsite migration of any contaminants would be extremely unlikely.

This work plan has been developed to manage any potentially contaminated soil cuttings that might result from the installation of the pilings.

Pilings are generally installed in late winter when the ground is most frozen to prevent collapse of boring holes. The installation process is expected to take between 4 to 7 weeks. It is estimated that less than 500 cubic yards of soil will be generated during the installation effort.

WORK PLAN

Work Plan Summary

Pile borings will be drilled using a Texoma #500 rotor drill with various sized auger (approximately 18 to 30 inches in diameter). Because this type of drill rig mixes soils as it drills, results of environmental sampling and field screening may not be truly indicative of potential contamination in place.

Consequently, all soil cuttings will be stockpiled and later sampled using a random grab technique. Cuttings will be stockpiled at the landfill and will be used as landfill cover upon approval from DEC solid waste. (DEC solid waste will review the results of the analytical samples prior to approval.)

To provide qualitative data of potential contamination onsite, visual and/olfactory observations will be noted by the construction contractor during pile drilling and installation. In addition, limited field screening and analytical sampling will be conducted by an on-site field geologist. Field screening of cuttings from selected piles along the northwest boundary of the project site will help provide an approximate extent of contamination.

Field Observations, Screening, and Sampling

During piling installation, drillers and other field personnel will note any visual or olfactory evidence of contamination. This will be noted in a field notebook and/or the final boring logs.

Cuttings from selected (first tier) piles along the northern and western boundary of the project will be monitored by an onsite field geologist. Soil samples will be collected from the auger during the drilling process and will be field screened using a photoionization detector (PID). If soil samples are observed with PID readings above 25 parts per million onsite, analytical samples may be taken from zones identified as having the highest field screening levels. Samples will be taken at depths and locations determined onsite by field geologist. No more than five analytical samples will be collected from soil cuttings during the drilling and installation effort.

Field Screening

Field screening of soils cuttings will be conducted with a PID and will be calibrated daily to yield "total organic vapors" in ppm (by volume) to a benzene equivalent. The PID will be operated with a 10.2 eV (+/-) lamp source. The dates, times, and results of all calibrations and repairs to field instruments will be recorded in the field record.

Soil cuttings will be field screened using the following method:

- Soil shall be taken directly from the auger flight, but not from areas directly touching the metal form.
- Using the sampled soil, a clean Ziploc© bag will be partially filled (one-third to one-half full). The bag (total capacity not be less than eight ounces) will then be quickly sealed.
- Headspace vapors will be allowed to develop in the container for at least ten minutes and not longer than one hour. Containers will be shaken or agitated for 15 seconds at the beginning and ending of the headspace development period to foster volatilization. Where possible, the temperature of the headspace will be brought to at least 60 degrees Fahrenheit. At a minimum, samples will be warmed to at least 40 degrees Fahrenheit.
- Subsequent to headspace development, the PID will be inserted to a point about one-half the headspace depth. The bag opening will be minimized during field screening and care will be taken to avoid uptake of water droplets and soil particulates contacting the probe.
- Following probe insertion, the highest meter reading will be identified and recorded, which normally occurs between two and five seconds after probe insertion. Erratic meter response may indicate either high organic vapor concentrations or conditions of elevated headspace moisture, in which case a note to that effect will accompany headspace data.
- All field-screening results will be documented in a field record or log book.

Stockpiling

Soil cuttings will be transported to the landfill and stockpiled for future use as land cover. Within 10 days of completion of the job, soils will be covered with visquine or a similar material to prevent wind-transport of the soils.

After stockpiling is complete, grab samples will be collected from the stockpile(s) for laboratory analysis.

The number of samples collected will depend on the final estimated volume of soil stockpiled as follows:

CUBIC YARDS OF SOIL	NUMBER OF SAMPLES COLLECTED
<50	2 + 1 QA/QC
50-100	3 + 1 QA/QC
100-150	4 + 1 QA/QC
150-200	5 + 1 QA/QC
200-250	6 + 1 QA/QC
250-300	7 + 1 QA/QC
300-350	8 + 1 QA/QC
350-400	9 + 1 QA/QC
400-450	10 + 2 QA/QC
450-500	11 + 2 QA/QC

One duplicate sample will be submitted for analysis for quality assurance/quality control for every 10 samples. In addition, one trip blank will accompany each batch of samples.

Soil Sampling

Soil samples taken for analytical samples will be obtained from freshly uncovered soil using decontaminated or disposable sampling equipment. Tools will be decontaminated by scrubbing with a stiff brush in a solution of hot water and laboratory solution (such as Alconox or similar product) and rinsed with tap water and again with deionized water.

Water used for decontamination purposes will be poured onto the stockpile after use.

Disposable gloves will be worn and replaced between sample collections; sample containers will be filled quickly.

Soil samples will be placed in containers in the order of volatilization sensitivity.

Containers will be quickly and adequately sealed. Rims will be cleaned prior to tightening of lids.

Containers will immediately be preserved according to method procedures. Unless specified otherwise, the samples will be immediately cooled to a minimum of 4 degrees Celsius and maintained at the temperature through delivery to laboratory and analysis.

Each sample will be given a unique identifier. For example, if a sample is collected from 5 feet bag at piling #36, the sample would be: Nul-P36-5. Alternatively, if a sample is taken from the north-northeast corner of the stockpile, at a depth of 1.5 feet bgs, the sample name would be: Nul-SNNE-1.5.

Laboratory Analysis

All soil samples collected for laboratory analysis will be analyzed for Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX) by AK Method 101, 8021B, or 8260B, gasoline range organics (GRO) by AK Method 101, diesel range organics (DRO) by AK Method 102, and residual range organics (RRO) by AK Method 102/103. In addition, one soil sample collected from the stockpile will be analyzed for polyaromatic hydrocarbons (PAH) by Method AK 8270C or AK 8310.

RESULTS

Results of the field observations, field screening, and analytical sampling will be summarized in a brief letter report. Upon client approval, the report will be submitted to DEC for review.

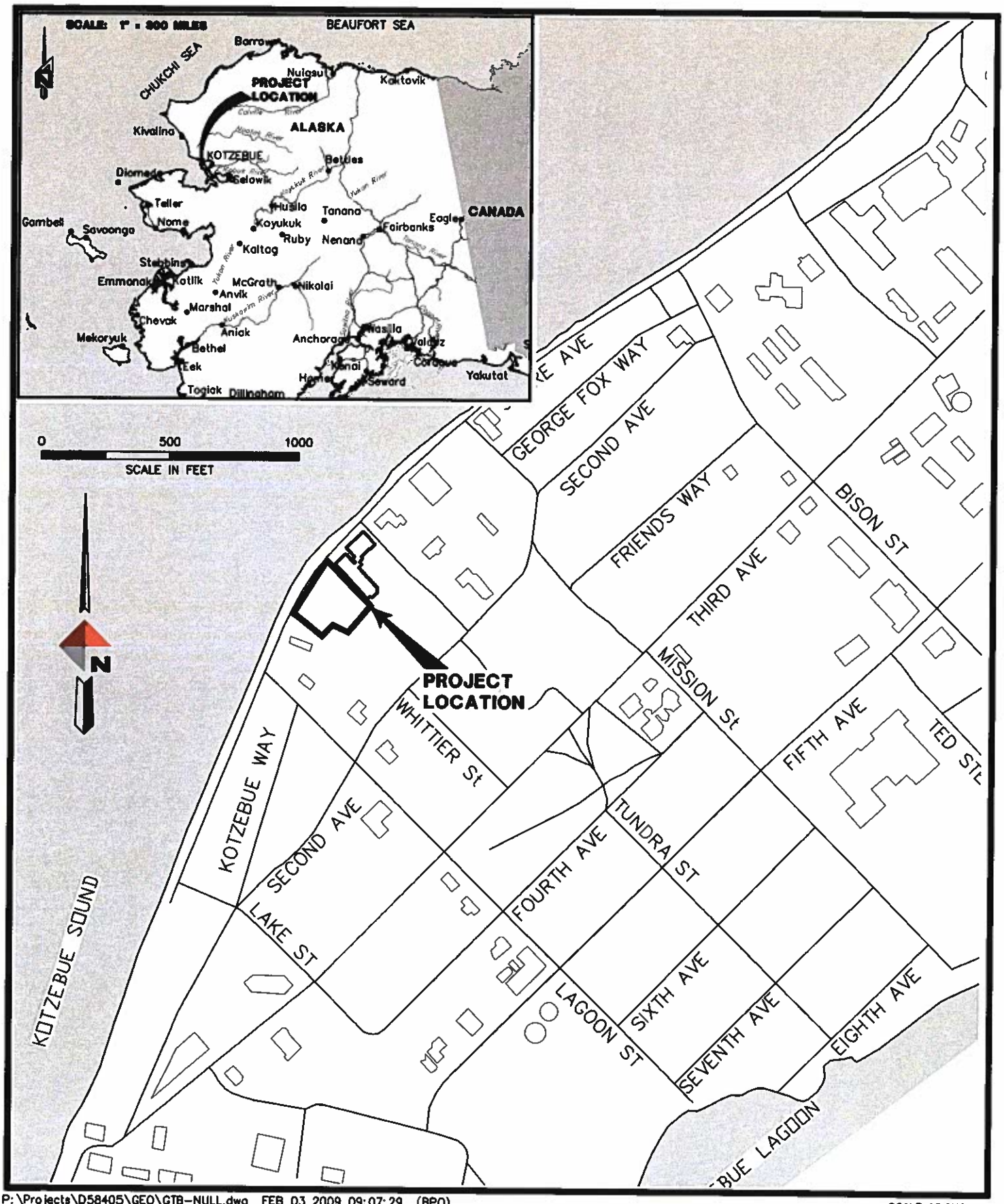
Thank you in advance for your attention to this matter.

Sincerely,
DOWL HKM

Brandie Theisen Hofmeister
Environmental Specialist

Attachments: As stated

D58405.Everson.Work Plan.BTH.021709.mas



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DOWL HKM

Vicinity Map
NEW NULAGVIK HOTEL
Kotzebue, Alaska

FIGURE 1

Figure 2 and 3 scanned separately due to paper size.

P.M.

Margo Robinson

ATTACHMENT 2

FIELD NOTES

2/27/09 Nullagvik Hotel / Kotzebue CJK

1130 58504.02 Phase D&F 110°F, blowing snow

8:00 Safety meeting @ Drake Shop

- went over safety procedures, what to look for, hard hats, vests, glasses, etc

- Foreman of Drake Construction determined weather was too bad to start, called work for the day

- Storm is predicted to be here at 10:00 am & have written comments which is not safe for work.

10:00 went back to hotel, sent emails

10:30 [illegible] blowing snow

CJK

2/28/09 Nullagvik Hotel / Kotzebue [illegible]

8:00 [illegible]

10:43 begin drilling Pile No 1/65, pink [illegible] observed at 4', 6' stinky soil, ground water at 8'. Stop to put larger diameter casing [illegible]

- hole caving has compacted soil on both inside and outside

~1130 begin installing pile, overdrilled 2', plan to fill with clean gravel. know elevation because Dan has surveyed in a marker to signal the correct elevation on.

continued on pg 6

CJK

2/28/09 Nullagvik Hotel Kotz "Notes"

Field Screening

Date	Time	Pile No	Depth (ft)	Screen #	Cal
2/28	10:47	1/65 52	5'	0 ppm	30 ppm
2/28	10:50	1/65 52	6.5'	40 ppm	↓
2/28	12:00	1/65 52	17	2 ppm	
2/28	4:05	215257	5'	0 ppm	19 ppm
2/28	4:50	215257	8'	2 ppm	
3/1	9:45	3/16	9'	6 ppm	
3/1	3:00	5/32	22'	0 ppm	↓
3/2	9:40	7/15	9'	11 ppm	7 ppm
3/2	1615 PM	116	9'	3 ppm	↓
3/3	0850	23	8'	0 ppm	70 ppm
3/3	0920	74	8.5'	3 ppm	↓
3/3	1640	78	8'	205 ppm	99 ppm
3/4	1350	85	7.0'	583 ppm	100 ppm
3/4	1425	97	7.5'	214 ppm - start at 3 ppm	↓
3/6	1235	39	9	0 ppm	99 ppm
3/6	1410	51	8'	13 ppm	↓
3/7	1000	50	8'	1040 ppm	103 ppm

NOTES: Analysis Here - CJK

Protection + Restorations:

☑ Snow + snow drifts are removed from work areas by contractor

☑ If removed ground/organic material/ice mixture is more than 3" or concentrated the contractor will contact the engineer

☐ Provide casing to seal off water (not much onsite) NOTE.

☑ Snow drifts + snow berms are ~~kept clear~~ removed

Reject Site conditions

☑ Protect structures + utilities

Thermal Heat Piles

- install longer piles where grade is lower - Alert CJK

Slurry Materials:

☑ aggregate is well graded + predominately of 4 to 6 inches - OK to use

☑ Slurry gradation: 3/4" 100% passing
NO. 4 80-100% passing
NO. 10 70-100% passing
NO. 40 25-60% passing
NO. 200 0-15% passing

does not pass should be re-tested

☑ water for slurry must be potable with a salinity less than 3 parts per thousand - comes from city water

☑ cutting from piles cannot be used in slurry

Pile Placement

☑ Contractor inspects piles once onsite, any damage is noted + reported

NOTES: Analysis Here - CJK

☑ use drilling equipment of proper size. Pre-drill holes is 12" larger than the pile outside diameter

☑ driving finish + training the pile is not allowed

☐ keep holes dry + cased. Casing may be required to prevent sloughing + water penetration

☐ inspect piling prior to placement. The portion of the piling that is not covered is free of snow, ice, mud, etc. for most part - hard with so much blowing snow

☑ scribes at or below required penetration depths

☐ prior to slurry placement, prepare area around the pile. Use wedges or clamps to plumb

☑ visually check piles for plumbness

☐ a closed end 1" pvc pipe will be installed at the bottom of every other hole with the pile, and will extend 12" above grade

☑ mix slurry material with enough potable water to flow as a thick mud

☑ Slurry temps are less than 45°F when placed, not frozen. Slurry in mixer is less than 60°F

☑ Augered holes will not stand open after drilling for more than 24 hours

☑ Place slurry w/ 3-4' lifts. compact w/ vibrator.

☑ remove insulation after slurrying

☐ placed material around pile - water infiltration - done at very end.

Notes: Nullaguix Hotel - Kotzebue — CJK

2/28/09 continued from page 2. — Blizzard, blowing snow

1:15 getting good weather when comes out
relations, they get off airplane pile on
really very hard to see, affects safety,
esp when get off airplane vehicles
Note: [illegible] clear of snow & ice,
[illegible] snowmobiles
snow/ice

~2:30 Mike at Bigside Supply to Toby and
Energy Clear re problems of leaving water
in the hole. Tell them that wastewater
want the oil contaminants to reach
the bottom of the hole. Toby plans to
put casing down to 16' instead of 12',
but the main problem is that there is
no permafrost. Prior to lunch the crew
filled in the outside of the hole w/ sand
from the stirring mixing water, water
already in hole created slurry but pockets
clean with oil contaminants. Thermistor
tube was also installed, cut to ~2' above
grade. Plan to start another pile today.

3:15 Review lab results report with Dan (Surveyor)
& located at permafrost depths. It looks
like we might need to put casing on

2/28/09 Nullaguix Hotel — CJK, Blizzard, blowing snow

the holes located on top of the old Hansens store.

4:50 / 16:30 Out from the top, some of the old the mapholes
are working.

[illegible] 3" casing
[illegible] 12" diameter, plus 17" diameter [illegible]

16:50 Fingers, 1" over open

4:50 Sample at E (known gas samples), also
test sample for PID

Continue hole (P57), many problems
with water. Try putting in dry slurry to
~~[illegible]~~ soak up some of the water, works
a little, then water goes back in. Hole is
about 22' deep when we stop. Cover
hole w/ plywood and put the backhoe bucket
4:45 onto so kids cannot get in.

~~4:45~~ leave site

3/1/09 Nullaguix Hotel — WK

0830 Arrive onsite, go over last day's events
with Dan - surveyor, Talk to Toby, Dan, Greg
about options. Try to get a hold of [illegible]

0900 Crew begins to drill P61.

0945 Sample for PID reading P61/3, 9'

Note: ~~pile~~ ground is frozen, only about a
1' layer of water at bottom of hole.

Crew overdrills pile by 1', must fill in
hole. They use cuttings & do not tamp
down.

3-1-09 Nuiliagvik Hotel - Kotzebue CJK

0745 Began to slowly, slowly thaw material reads 43.8°F, within specs. Pile No. 1613 is almost complete. Sunny -10°

Note: Spoke with Maria. She thinks their best option is to raise the entire pile back down to the salt, then weld fast to ensure there is no water in the pile.

Note: There is a slight, but noticeable odor in this pile.

1230 lunch - order from Empress. Average not great

1320 Crew begins drilling Pile 32, minute water and stop.

Note: Crew is not covering holes when piles have been set. Strong wind 3/4 blowing. They begin to remove dirt from around pile. I mention to him it would be a good idea to cover the holes to avoid debris or people falling into the hole. He does. Pile 32 is covered with plywood while the crew waits for a second drill (need a 30" bit)

1405 Begin drilling pile 32 with a larger bit (30") so they can install a casing and avoid the water.

1740 Completed drilling for pile 89/16

1745 Installed thermopile - strap broke during installation, pile fell down into predrilled hole. Nobody got hurt, pile appears to be fine.

3-1-09 Nuiliagvik Hotel - Kotzebue CJK

1800 Secured pile installation insulation Sunny -10°

I kept tap on the inside pile.

1930 left jobsite. done for day

~~0845~~ 3/2/09 Nuiliagvik Hotel - Kotzebue CJK 10

0215 Arrived onsite. Spoke to Tony crew chief about plan for the day. Currently the backhoe is out of commission - won't start. In the meantime the crew is drilling P90/7, part of crew comes in and says the soil is damp at 8' (they are right above the water table) (0915)

0830 Called Heather Campfield and spoke with her about the problems I have been having with the PID

- will not read 100ppm - calibration day at about time, reads 7 ppm this morning

- got clarification on sample jars

She told me to record everything and that we could check out the problem from there.

0918 Went to go check on drilling progress

0900 Took a sample at P15, had a hydrocarbon odor when cuttings brought inside to check PID reading.

Note: P15 - fill material contains wood chips, seen before in other pile locations

3/2/09 Nanuqsaq Hotel - Kotzebue CJK -15, windy

0845 Crew [illegible] on drilling P15 while [illegible] pulls casing while P90, starting to install tank.

NOK: Once these two holes are complete (P15, P90) I think we will start on the holes at Shown Me & Bayside so that I can get out of here.

1055 Crew finishes P90, it takes Dixie Tape to bleed so I tape it back together. Bleed a few seconds stop for a while. Crew sets up on P15, casing is already installed

1115 complete P15, hole is dry

11:30 move drilling over to P57, use backhoe to fill hole in w/ cuttings, they will drill the cuttings out. They just want to try and soak up some of the water. Dissapointed they are throwing in cuttings with the pink foam.

NOK: Took a piece of the water in hole P57, slight smell to water. Unsure if it is from the water in the hole. Most likely it is from the contaminated soils they are putting in the hole to soak up water.

NOK: Permafrost levels in P15 and P90 were both around 12'.

1230 Crew continues to drill on P57, the cuttings the added in place to drop the water level down to about 15', but the avg. is at about 22', so

3/2/09 Nanuqsaq Hotel - Kotzebue CJK -20° windchill

that we still have about 7' of water and muck. The crew is going to add more cuttings to try and soak up the water, we will see how well it works. The plan is to have the slurry truck ready to go so when they remove most of the water and muck out of the hole, they can set & slurry the pile immediately.

NOK: Pile 15 is not covered, pile is not set [illegible] crew needs to cover hole w/ plywood or some other load bearing cover.

1300 muck measures 19', two minutes later measures 16'. The hole is drilled to 25'. I inform Tony about the muck depths. He says they are ready to install the pile. The pile is raised by the excavator and placed into the hole. Pile 57 is to high and is pushed down ~5 by the excavator, muck depth is 14' from ground surface. Wait for slurry truck

1325 still no slurry truck, the thermopile for P15 is moved near hole, hole is still not covered. Wind is blowing very cold, probably around -30°F to -40°F

1335 Slurry truck arrives, fill hole with slurry, slurry temp is 46.2°F

~Very wet slurry, standing water ~5' till slurry.

3/2/09 Nullagvik Hotel - Kotzebue CJK

"Crew forgot to install the thermistor pipe. installed w/ water through slurry ~ 10' short but better than nothing

1515 begin to drill Pile, stop at 8' to install casing. once again hole is left uncovered

1615 sample taken at 9' for PID.

Note: you can really tell the difference between the "clean" soil and the "dirty contaminated" soil. The clean soil is new fill above the water table and the dirty soil is at and below the water table and is dark gray. Also, when put into a glass of clean water there is a film (very thin) on the surface.

- there is no wood debris in the fill material over here
- the crew attempted to put casing on Pile but for some reason stopped
- the slurry temp for P90 is 38.4°F and is 38°F in P15

1730 ~~1800~~ Pile 116 has been drilled, set, and slurry truck is waiting. The pile is still being held up by the crane due to stability issues. Crew is removing casing from piles 15, 90, 57, 116 (pile 116 will be last)

3/2/09 Nullagvik Hotel - Kotzebue CJK-cont

1830 general notes. Toby and I spoke to Maria Kampsen at 1745 about what to do with the muck at the bottom of the hole. She recommends we underdrill the hole and then push the pile down to take care of the overdrilling into the muck problem. As for the muck we are going to do what we can to dry it out by placing dry cuttings into the hole and then drilling them back out. we will attempt this first thing in the morning.

Note: The crew is getting much better at covering the holes and especially taping the top of the thermistors. However they do need to work on covering the top of the holes w/ insulation after they are slurried (all but the last 3 feet or so) but before the casing and wood spacers (chalk - I believe it is called) are removed. They also need to make sure all of the snow is removed ~~before the~~ from the pile before the pile is placed into the ground.

CJK

313109 Nullagvik Hotel - Kotzebue CJK

0811 Crew begins to arrive, plan to drill P74 this morning. ~~Calibrated the~~ Check calibration of PID, reading is 7ppm from bag of gas.

NOTE: Heather Campfield sent a bottle of calibrated gas for me to check the PID. It should be arriving today on NAC.

0850 Crew begins to drill P23, are able to get down to -9' then stop to put casing in the hole. PID sample taken at -8'.

0900 Begin to drill P14, take a sample at -8.5' for DRO RRO / GRO BTEX / PID.

0935 Crew has installed casing on P23, return to hole to complete drilling.

NOTE: Both P74 and P23 have a hydrocarbon odor, P74 is stronger than P23. Holes are at opposite ends of the building.

Crew is working fast today, even though they seem to be a couple of people short. Their plan is to complete 6 holes today, starting ~~at~~ between holes along the Bayside Restaurant and the Nullagvik Hotel (existing)

1000 While drilling P74 ~~the~~ part of the casing on the drill breaks in half, at coupling. Crew does a good job cleaning it up

313109 Nullagvik Hotel: Kotzebue CJK

cont. We are now down to 1 drilling which will slow us down even more because the crew will need to keep changing drill bits. It is possible but not good for the schedule.

1015 P23 is started, slurry temp is 34.7°F

1135 Crew has begun drilling P31 and has gotten down to 9' then takes a break to change drill bits and install the casing. Today and the mechanics are still trying to get the auger from the broken drilling out of the ground. The crew says it is in ~12'. The material in P31 at ~8' has a very slight hydrocarbon odor when in the cold, samples were not taken.

1330 Crew finishes drilling P31 and ~~begins drilling~~ P14.

1400 Cal gas is in from NAC, calibrated PID, reads 99 ppm.

1530 Piles for P31 and P14 are put into place. P14 is 4" to right higher than the rest of the piles. However, the hole is filling with water, crew decides it would be best to slurry pile right away to avoid the water coming in faster.

3/3/09 Nuiqsut Hotel - Kotzebue CJK

NOK: we now need to think about the potential for "wet holes" on this side of the project.

Note: I spoke w Toby about the importance of covering the holes. Hopefully they work on this safety aspect.

0730 Slurry temp is 43.9°F, filling in piles 1, 2, 3, 31. Casing is put onto pile 74 and 78

1830 Toby says they will not be drilling any further, having problems with water, and they are getting close to the end of the day. There is not enough time to drill pile. Have the slurry truck ready, set pile, and get casing out. They will do it first thing in the morning.

Friday Nuiqsut Hotel - Kotz

0815 Crew arrives back + begins to move rigs + equipment back.

0845 Begin to finish drilling P74, material is wet. The crew has put in a couple of scoops of cuttings to try and dry up the hole but should have added more. Also, the hole was overdrilled so they are using the crane while the pile is slurried. They will let it sit until the pile is set.

0930 Crew begins to drill P78

3/4/09 Nuiqsut Hotel - Kotzebue CJK 0° sunny windy

Note: check on hole, there is a lot of water in the hole (~12'). I tell Daniel the hole is really wet and that he might want to add more cuttings to dry it out.

~10:30 Note: Daniel is able to dry out the hole, drill down to 23', place pile. Because the hole was underdrilled (to reduce muck) the pile is sitting too high. Used a bucket hoe to push the pile into the silts at the bottom of the pile to the correct depth. However, the hole is filling with water (~5' in hole). The slurry truck arrives and fills the hole with slurry. Toby and Daniel get slurry into the hole to help push some of the water out.

1100 Crew begins to drill P13, drills down until they need to install the casing
- Casing is installed

1200 Crew drills P22 and P30 until ~11', they stop for lunch due to have the casing installed

Note: the depth to permafrost is deeper than seen before (P16, P24). We might need a longer casing than 12', like a 15'.

3/4/09 Nullagvik Hotel - Kotzebue CJK

[illegible] section of casing. Spoke to Toby about the casing issue and he ~~[illegible]~~ says there is another 20' and 12' strand on its way. He would like to have two 22' sections, 1-15' section, 1-17' section, and 2-12' sections. He (Toby) thinks we should be in the shallower permafrost until we get closer to Shore Avenue. If we get closer to Shore Avenue and the holes are thawed then we will make more 22' sections and do the holes on or near Shore Avenue.

1350 Crew begins to drill P85. Sample for PID analysis is taken at ~7'. Smells bad, indicative color, not as bad as last hole. Reading is 585 ppm, the highest I have seen so far. It may be because of the fuel tank of the Bayside. The tank may have a leak. I will take an analytical sample in P97.

1425 Crew has begun P97, take sample for PID, and 2 samples for SVS, but ice was beginning to thaw, so I am letting it freeze outside. Note the water in P85 has a nice sheen to it (oil) ~10' from ground surface.

3/4/09 Nullagvik Hotel - Kotzebue CJK

1505 Tested sample NUL-97-8 for PID, only reads 214, still high, but would have liked to get a sample from the same layer. Having problems with the PID, I cannot get it to go back down to 0. The job shack smells, and that may be the reason. I will try it in the hotel tonight.

1645 Crew is drilling P22. They have 1/2 way drilled P85, P85, P97. P13 is ready to have the pile placed. The drilling crew did run into permafrost in P13 and P22, but the depth to permafrost appears to be getting deeper.

Note: Wood fragments observed in the fill material of P13, P14, P15, P23, P24. Pile P32 is from debris of previous buildings. The wood particles have not been observed in the holes by Bayside + Shore Ave.

1550 Crew finishes P13, P32, P30. Slurry looks warm, I lost my thermometer. Toby said he is going to have Don put an extra thermometer in his truck to test the slurry temp

3/5/09 Nullagvik Hotel - Kotzebue CJK

0800 Winter weather advisory of blowing snow and low visibility. Crew was the only person onsite today. Crew called it a weather day

3/6/09 Nullagvik Hotel - Kotzebue CJK 0°

0810 Drake Construction Crew arrives onsite to plow some of the snow

0830 Crew begins to drill the rest of P25. I go to check on them and notice there is about 4' from the ground surface to water. I have them stop and let Dan know they need some dirt in the hole. Dan dumps 2 buckets from the loader into the hole. The crew gets the water down to ~12', then they dump in another bucket. Crew drills the hole to 22' with ~2-3' muck on the bottom. Hole is plumb and slurried

1035 Crew begins to drill P97 the rest of the way

Note: The next person who comes up here needs to bring a thermistor strand to check the temps around the 16" piles. The crew plans to wait to drill the 16" piles until after they are

3/6/09 Nullagvik Hotel - Kotzebue CJK 0°

done with the Elder Care facility in hopes that the ground will freeze and they will not need to case the 16" piles. I am not sure this will work, but it's worth a shot.

1110 Drilling for P97 is complete, pile is down to ~~16~~ set + slurried. Drilling crew will start P39 next.

1200 P97 is complete w/ slurry. Slurry temp is 40.6°F. P97 had less water than P25, may have something to do with the contamination level of oil.

1217 Piles 13, 22, and 30 are topped off with slurry. Same procedure as P97. Crew is changing drill bits

1235 Took a sample from P39 at 9' for PID reading. Crew leaves for lunch break

1348 Crew is pounding casing for P39. next hole to drill is P51, weather is getting worse - blowing snow

1430 Tony is having a hard time getting the casing to P51 in the hole. The hole drilled out dry for the first 8', then we reached water, like usual. ~~The~~ A sample for SGS was taken at 1410

3/6/09 Nuliagvik Hotel - Kotzebue CJK

as well as a PID sample. Hydrocarbon odor is not as strong as P85, but is still there. After trying to install the casing the first time and failed, Joanie (green jacket driller) drilled down further. However, the walls of the hole kept sloughing in, was unable from ground surface. Drilling stopped, and they attempted to pound the casing in again. Failure once again led to little (outside) cutting the pile down. Hopefully we are able to stop the water on this hole and complete the hole.

Note P39 was slurried at ~1100. Slurry temp was 36.1°F.

1545 Crew spent remainder of the day drilling P51, moving the casing, and slurrying the pile. The bottom of the hole had about 5' thick muck and less than an inch of standing water. Pile was set into the hole immediately, and the slurry truck has still not arrived. Crew is adjusting piles including using a backhoe to reach over the boom of the crane to the pile. Not very safe. picture taken.

3/6/09 Nuliagvik Hotel - Kotz CJK

2000 Slurry truck arrives ~45 minutes after pile is put in to place. Slurry temp is 35.8°F

2010 Leave site

3/7/09 Nuliagvik Hotel - Kotz. CJK -15°

0810 Crew arrives on site, begin bringing over rigs, I watch from Hotel

0820 Arrive on site

0830 Crew begins to pull the casing off of P51. The plan today is to drive piles P50, P49, P41, set + slurry the piles

1000 Crew is drilling P50. Sample is taken at ~8'. P50 contains wood debris. Wood has an oil / cedar scent. Soil has a hydrocarbon odor, though not as strong as the holes along Bayside. Debris plastic is also found in cuttings (clear plastic around soda cans + tie pack) Sample taken is from right at the water table. Sample reads 1640 ppm. Highest one seen so far.

045 Dan begins to pound pile. Large gravel + cobbles make it difficult. Have ~4' stickup, will need to cut or keep pounding.

3/7/09 Nuiqsut to Kotzebue CJK

1:30 Call to Maria, we are having a lot of difficulty with getting the casing into the ground. The groundwater keeps on flowing into the hole and the gravels and sand in the ~~outside of~~ the hole keep on falling in. The crew is unable to get the casing in to the ground. And, as the crew continues to drill down they are not making any headway, and the are just making a huge bowl or cave inside of the hole. Amounts to a more voluminous pile and needs a lot more slurry. Also when they tried to move the casing from the PSI drilled yesterday, the pile moved or shifted a little bit, means the slurry is not setting. Maria says to come home and we will have a meeting about what is going on monday.

4:00 Arrived at the airport, trying to make the 3:00 flight. Unable to ship the Cat gas via Alaska Airlines air cargo because they cannot do that when a plane is on the ground. An employee with Drake Construction come and picked it up.

3/7/09 Nuiqsut to Kotzebue CJK

3:50 on board the plane

17:00 home

CJK

5/14/09 Nullagvik Hotel CJK

0830 began packing for Hotel

0930 Left for Airport

1400 Arrive in Nome

1430 Arrive at Job Shack

Mike + Remy go over job details + problems / concerns with the site.

- A few (~7) of the thermosyphons stick up - mainly along bayside R. (piles 115-161)
  - are 1' into permafrost (or more)
    - thermosyphons measure 34' bottom of fins to end (or tip)
    - looks funny, but thermosyphons will function.

1530 Drillers begin thermosyphon 145, drill 25', at 15' they encountered permafrost
- slow drilling

1545 I drop in the 1st set of thermistors,
- thermistor strands A and C are damaged
  - A is obstructed at ~4'
  - C - the top has been ripped off, water is most likely inside.
- dropped cable in B, E, + F

30° Sunny

5/14/09 Nullagvik Hotel CJK

- walk around site, observations
  - garbage is everywhere (break up)
  - the holes Drake drilled and pulled out of have sunken in
  - very little dirt if any is mounded around the piles
  - pile 151 still has chalks in it
  - need to place material around the thermosyphons, most of the material has fallen into a few of the holes.
  - some of the thermosyphons are not straight which just looks bad. - function is still there
  - standing water around the site, crew has done a good job to divert the water
    - frank put in a ditch in front of
  - ~~site~~ thermosyphon 12 is really close to the pile location, Mike said Greg already knows

5/14/09 Nullagvik Hotel windy CJK

1620 Went to Federation to see if Steve had a phone number for the Landfill. Steve left a message.

1700 Put thermistor strands into L, N, I, K, G

- Strands are skid's, they are 20' long with nodes at 5, 10, and 20

0740 Mike + Remy are finished drilling the mesa, prior ice, they attempt to set the pile, but the hole has caved in to much. They get ready to start pumping mud.

Thermistor tubes

- M, C, + A have the caps broken off and there is a potential for water to be in the nodes

- I am unable to find J, H, and D

1900 Left site - Pile ice complete

5/15/09 Nullagvik Hotel CJK

Thermistor Readings 30° F

Hole # B Strand # C3

Node Depth	Depth	Reading
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		

Hole # E Strand # Down 2 inches

Node	Depth	Reading
	5	16600
	5	16292
3	2	16556
4	6	16468
5	10	16491
6	14	16395
7	18	16390
8	22	16435
9	26	16422
10	30	16507
11	34	16633
12	38	16762

Hole F Strand Down 0'-1' -4'

Node	Depth	Reading	Node	Depth	Reading
1		16845	7		16624
2		16402	8		16758
3		16438	9		16889
4		16394	10		16981
5		16472	11	17.621	17071
6		16547	12	17.477	17177

5/15/09 Nuiaquik Hotel CJK

Sample	Depth	PID	Date Time
Nui E-1 3	3	0	5/15/09
Nui E-1 5	5	0	↓
Nui E-1 7.5	7.5	2	
Nui E-1 9	9	0	
Nui E-1 10	10	2	

* Soil in this hole consists of poorly graded gravels and sands. The soil was frozen from -5' to 10' (seasonal frost). The frozen material classifies as Vx, granular ice crystals, clear to white, hard, about 10-30% by volume (seen at 7.5', 9', and 10'

E-2

Sample	depth	blows	Desc	PID
Nui-E2-8	8	90/4"	PG Gravel w/sand	217
Nui-E2-10	10	100/5.5	PG Gravel w/silt + sand	158

* Soil is the same as observed in test pit 1 (E1). Ice is granular, friable, random orientation, clear to white, hard, ~15-30% by volume (seen in both samples)

5/15/09 Nuiaquik Hotel CJK

E-3

Sample	Blows	PID	Desc
Nui-E3-5	55/6"	3	PG Sand w/ gravel
Nui E3-7.5	100/3	58	PG Gravel w/ sand

- no analytical sample

Nui E3-9 75/5" 8

ice is same as before, seen at 7.5 + 9'

E-4

Sample	blows	PID	Desc
Nui-E4-3	13/6 22/6 33/6	8	PG Sand w/ gravel
Nui E4-5	51/10" 50/3"	5	PG Gravel w/sand
Nui E4-8	90/3"	42	[illegible]
Nui E4-9	90/5"	4	PG Sand w/gravel

ice seen at 8' and 9', same as before

E-5

Sample	blows	PID	Desc
Nui E5-8	100/5	488	PG gravel w/sand - only [illegible] sample
Nui E5-9.5	103/5	5	PG Sand w/ gravel

- ice is same as before at 8' and 9.5'

E-6

Sample	blows	PID	Desc
Nui E6-8	100/6	—	- poorly graded gravel w/ sand - no PID

- ice is observed in 8' sample, though saturated in water (dripping)

5/15/09 Nullagvik Hotel CJK

800 Leave Drake camp for Hotel site
- talk w/ Mike + Romy about game plan
- lay out boring locations
- check thermistors
  - some are not reading, decide to come back
- Mike + Romy steam clean the Auger, bits, + Rods

1000 I go to Napa to get buckets

1030 begin drilling holes
- call Brandie because we are in ice, weird.
- get 2 holes done and move onto 3rd

1235 set up on E3, drill + complete hole, boys go to pressure wash the auger.

1315 Meet Edward at Elder Cane and he takes Frank + I to the dump
- collect 8 samples + 1 dup from the stockpiled material.
- estimate a little less than 500 cy

2410 return back to Nullagvik hotel

5/15/09 Nullagvik Hotel CJK

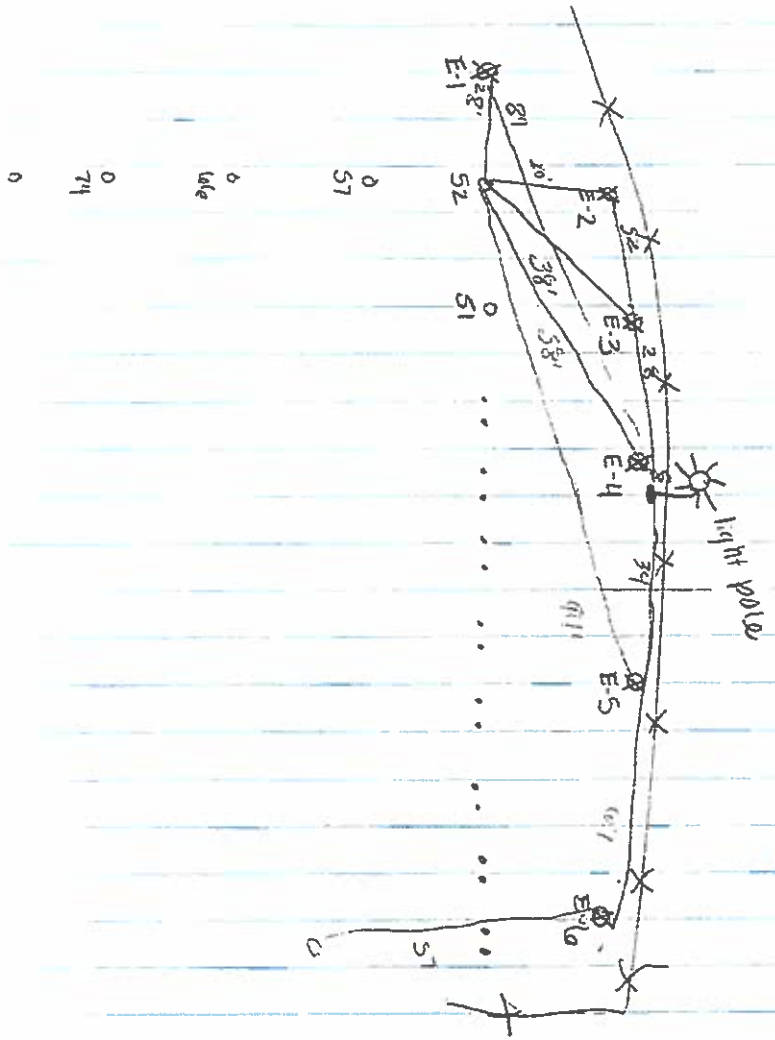
1530 begin drilling again, last 3 holes are completed by 5:00 pm
- crew begins cleaning up stuff
- I organize + pack stuff up.
- go to check thermistors and Frank had already pulled them up w/o checking them
- put the thermistors back in the holes

1900 Frank and I place the 5 thermistor strands they have at Elder Cane
- I drop Frank off at his house
- come back to site to do paperwork + organize + wait for the drillers to finish.

CJK

5/15/09 Nulagvik Hotel WK

Swing tie locations of test borings
E1 to E6



5/16/09 Elder Care

Thermistors

# A	depth	A	reading
32.0	5	1	16993
30.2	10	6	17071
30.2	20	16	17891

Piles 74, 28, 30, 32
SKW 9-1

# C	depth	A	Reading
32	5	0	16448
31.1	10	5	16692
30.2	20	15	17696

piles 50, 51
SKW 9-2

# E	depth	A	Reading
32.0	5	1	16390
30.2	10	6	17183
30.2	20	16	18165

Piles 61, 66, 67
SKW 9-3

# D	depth	A	Reading
32.0	5	1	16450
30.2	10	6	17144
28.4	20	16	18225

Piles 58, 65, 63
SKW 9-4

# B	depth	A	Reading
30.2	5	0	17225
28.4	10	5	18779
26.6	20	15	19230

Piles 54, 62, 47
SKW 9-5

5/14/09 Elder Care Facility CK

9:00 checked thermistor strands

- general notes
  - ground is soft, even after a night's freeze (high silt content)
  - some pile had to be tied and did re-mounted around the base of the pile & thermistor strand
  - hole where Drake's camera accidentally drained water needs to be filled in the rest of the way, (~ 50.5')
  - all of the valves & covers seem to be in decent working shape
    - no major drips or missing covers
  - some of the thermistor strands are broken, disconnected, or broken line ~15
  - pictures were taken
  - only major problems are the sunken holes which may lead to ponding of water
    - [illegible] pipes placed through the site to help allow the site to drain

5/14/09 Nuuliagvik Hotel CJK

Pile 13, thermistor strand will not read?
Dave ok-3

Hole B strand 30.6°C

Node	Depth	Reading
1		
2		
3		
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5		
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7		
8		
9		
10		
11		
12		

Pile # 13 strand

Node	Depth	Reading
1	5	12929
2	5	13970
3	5	13930
4	5	9878
5	5	13509
6	0	15906
7	4	16888
8	8	16917
9	12	17285
10	16	17513
11	20	17548
12	24	17500

1400 Airport to go back to [illegible]
1700 Hotel [illegible]

CJK

ATTACHMENT 3

ANALYTICAL REPORTS

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

Project:	Kotzebue
Client:	Dowl Engineers-Ak Test Lab
SGS Work Order:	1090876

Released by:

Contents:

Note:
Unless otherwise noted, all quality assurance/quality control criteria is in compliance with the standards set forth by the proper regulatory authority, the SGS Quality Assurance Program Plan, and the National Environmental Accreditation Conference.

SGS

CASE NARRATIVE

Print Date: 3/18/2009

Client Name: Dowl Engineers-Ak Test Lab
Project Name: Kotzebue
Workorder No.: 1090876

Sample Comments

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

Lab Sample ID	Sample Type	Client Sample ID
1090876003	PS	NW-97-8
	AK101/8021B - BFB (surrogate) recovery does not meet QC goals (biased high) due to hydrocarbon interference. AK102 - The pattern is consistent with a weathered middle distillate. AK103 - Unknown hydrocarbon with several peaks is present.	
1090876004	PS	NW-P51-8
	AK103 - Unknown hydrocarbon with several peaks is present.	
1090876005	PS	NW-P51-8 DUP
	AK103 - Unknown hydrocarbon with several peaks is present.	

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t (907) 562 2343 f (907) 561 5301 www.us.sgs.com

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Report of Manual Integrations

Print Date: 3/18/2009 11:44 am

Laboratory ID	Client Sample ID	Analytical Batch	Method	Analyte	Reason
1090876004	NW-P51-8	VFC9366	SW8021B	o-Xylene	sp
1090876004	NW-P51-8	VFC9366	SW8021B	Toluene	blc
1090876005	NW-P51-8 DUP	VFC9366	SW8021B	Toluene	blc

Manual Integration Reason Code Descriptions

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

All DRO/RRO analysis are integrated per SOP.

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Laboratory Analytical Report

Client: **Dowl Engineers-Ak Test Lab**
4041 B Street
Anchorage, AK 99503

Attn: **Brandy Hofmeister**
T: (907) 562-2000 F:
bholfmeister@dowlhkm.com

Project: **Kotzebue**

Workorder No.: **1090876**

Certification:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, other than the conditions noted on the sample data sheet(s) and/or the case narrative. This certification applies only to the tested parameters and the specific sample(s) received at the laboratory.

If you have any questions regarding this report, or if we can be of further assistance, please contact your SGS Project Manager.

Tamara Rentz
tamara.rentz@sgs.com
Project Manager

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Print Date: 3/18/2009

Enclosed are the analytical results associated with this workorder.

As required by the state of Alaska and the USEPA, a formal Quality Assurance/Quality Control Program is maintained by SGS. A copy of our Quality Assurance Plan (QAP), which outlines this program is available at your request.

The Laboratory certification numbers are AK971-05 (DW), UTS-005 (CS) and AK00971 (Micro) for ADEC and AK100001 for NELAP (RCRA methods: 1020A, 1311, 6010B, 7470A, 7471A, 9040B, 9045C, 9056, 9060, 8015B, 8021B, 8081A/8082, 8260B, 8270C).

Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP, the National Environmental Laboratory Accreditation Program and, when applicable, other regulatory authorities.

If you have any questions regarding this report or if we can be of any assistance, please contact your SGS Project Manager at 907-562-2343. All work is being provided under SGS general terms and conditions (http://www.sgs.com/terms_and_conditions.htm)

The following descriptors may be found on your report which will serve to further qualify the data.

MDL	Method Detection Limit
PQL	Practical Quantitation Limit (reporting limit).
CL	Control Limit
U	Indicates the analyte was analyzed for but not detected.
F	Indicates value that is greater than or equal to the MDL.
J	The quantitation is an estimation.
ND	Indicates the analyte is not detected
B	Indicates the analyte is found in a blank associated with the sample.
*	The analyte has exceeded allowable regulatory or control limits.
D	The analyte concentration is the result of dilution.
GT	Greater Than
LT	Less Than
Q	QC parameter out of acceptance range.
M	A matrix effect was present.
E	The analyte result is above the calibrated range.
R	Rejected
DF	Analytical Dilution Factor
JL	The analyte was positively identified, but the quantitation is a low estimation.
<Surr>	Surrogate QC spiked standard
<Surr/IS>	Surrogate / Internal Standard QC spiked standard
QC	Quality Control
QA	Quality Assurance
MB	Method Blank
LCS (D)	Laboratory Control Sample (Duplicate)
MS(D)	Matrix Spike (Duplicate)
BMS(D)	Site Specific Matrix Spike (Duplicate)
RPD	Relative Percent Difference
ICV	Initial Calibration Verification
CCV	Continuous Calibration Verification
MSA	Method of Standard Addition

Notes: Soil samples are reported on a dry weight basis unless otherwise specified
All DRO/RRO analyses are integrated per SOP.

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SAMPLE SUMMARY

Print Date: 3/18/2009 11:44 am

Client Name: Dowl Engineers-Ak Test Lab
Project Name: Kotzebue
Workorder No.: 1090876

Analytical Methods

Method Description	Analytical Method
AK101/8021 Combo. (S)	AK101
AK101/8021 Combo. (S)	SW8021B
Diesel/Residual Range Organics	AK102
Diesel/Residual Range Organics	AK103
Percent Solids SM2540G	SM20 2540G

Sample ID Cross Reference

Lab Sample ID	Client Sample ID
1090876001	NW-74-8.5
1090876002	NW-P52-8
1090876003	NW-97-8
1090876004	NW-P51-8
1090876005	NW-P51-8 DUP
1090876006	Trip Blank

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SGS

Dowl Engineers-Ak Test Lab

Print Date: 3/18/2009 11:44 am

Client Sample ID: **NW-74-8.5**
SGS Ref. #: 1090876001
Project ID: Kotzebue
Matrix: Soil/Solid (dry weight)
Percent Solids: 89.7

Collection Date/Time: 03/03/09 09:20
Receipt Date/Time: 03/09/09 10:50

Volatile Fuels Department

Parameter	Result	PQL/CL	Units	DF	Analytical Batch	Prep Batch	Qualifiers
Gasoline Range Organics	ND	2.79	mg/Kg	1	VFC9366	VXX19243	
Benzene	ND	14.0	ug/Kg	1	VFC9366	VXX19243	
Toluene	ND	55.8	ug/Kg	1	VFC9366	VXX19243	
Ethylbenzene	ND	55.8	ug/Kg	1	VFC9366	VXX19243	
o-Xylene	ND	55.8	ug/Kg	1	VFC9366	VXX19243	
P & M -Xylene	131	55.8	ug/Kg	1	VFC9366	VXX19243	
4-Bromofluorobenzene <surr>	82.5	50-150	%	1	VFC9366	VXX19243	
1,4-Difluorobenzene <surr>	89.4	80-120	%	1	VFC9366	VXX19243	

Batch Information

Analytical Batch: VFC9366
Analytical Method: AK101
Analysis Date/Time: 03/11/09 11:23
Dilution Factor: 1

Prep Batch: VXX19243
Prep Method: SW5035A
Prep Date/Time: 03/03/09 09:20

Initial Prep Wt./Vol.: 62.971 g
Prep Extract Vol.: 31.52 mL
Container ID:1090876001-A
Analyst: HM

Analytical Batch: VFC9366
Analytical Method: SW8021B
Analysis Date/Time: 03/11/09 11:23
Dilution Factor: 1

Prep Batch: VXX19243
Prep Method: SW5035A
Prep Date/Time: 03/03/09 09:20

Initial Prep Wt./Vol.: 62.971 g
Prep Extract Vol.: 31.52 mL
Container ID:1090876001-A
Analyst: HM

SGS

Dowl Engineers-Ak Test Lab Print Date: 3/18/2009 11:44 am

Client Sample ID: **NW-74-8.5**
SGS Ref. #: 1090876001
Project ID: Kotzebue
Matrix: Soil/Solid (dry weight)
Percent Solids: 89.7

Collection Date/Time: 03/03/09 09:20
Receipt Date/Time: 03/09/09 10:50

Semivolatile Organic Fuels Department

Parameter	Result	PQL/CL	Units	DF	Analytical Batch	Prep Batch	Qualifiers
Diesel Range Organics	ND	22.0	mg/Kg	1	XFC8472	XXX20645	
Residual Range Organics	ND	22.0	mg/Kg	1	XFC8472	XXX20645	
n-Triacontane-d62 <surr>	83.5	50-150	%	1	XFC8472	XXX20645	
5a Androstane <surr>	77.1	50-150	%	1	XFC8472	XXX20645	

Batch Information

Analytical Batch: XFC8472
Analytical Method: AK102
Analysis Date/Time: 03/16/09 13:21
Dilution Factor: 1

Prep Batch: XXX20645
Prep Method: SW3550C
Prep Date/Time: 03/13/09 10:45

Initial Prep Wt./Vol.: 30.482 g
Prep Extract Vol.: 1 mL
Container ID:1090876001-B
Analyst: KDC

Analytical Batch: XFC8472
Analytical Method: AK103
Analysis Date/Time: 03/16/09 13:21
Dilution Factor: 1

Prep Batch: XXX20645
Prep Method: SW3550C
Prep Date/Time: 03/13/09 10:45

Initial Prep Wt./Vol.: 30.482 g
Prep Extract Vol.: 1 mL
Container ID:1090876001-B
Analyst: KDC

SGS

Dowl Engineers-Ak Test Lab

Print Date: 3/18/2009 11:44 am

Client Sample ID: **NW-74-8.5**
SGS Ref. #: 1090876001
Project ID: Kotzebue
Matrix: Soil/Solid (dry weight)
Percent Solids: 89.7

Collection Date/Time: 03/03/09 09:20
Receipt Date/Time: 03/09/09 10:50

Solids

Parameter	Result	PQL/CL	Units	DF	Analytical Batch	Prep Batch	Qualifiers
Total Solids	89.7		%	1	SPT7886		

Batch Information

Analytical Batch: SPT7886
Analytical Method: SM20 2540G
Analysis Date/Time: 03/12/09 13:00
Dilution Factor: 1

Initial Prep Wt./Vol.: 1 mL

Container ID:1090876001-B
Analyst: STB

SGS

Dowl Engineers-Ak Test Lab

Print Date: 3/18/2009 11:44 am

Client Sample ID: **NW-P52-8**
SGS Ref. #: 1090876002
Project ID: Kotzebue
Matrix: Soil/Solid (dry weight)
Percent Solids: 87.1

Collection Date/Time: 02/28/09 16:50
Receipt Date/Time: 03/09/09 10:50

Volatile Fuels Department

Parameter	Result	PQL/CL	Units	DF	Analytical Batch	Prep Batch	Qualifiers
Gasoline Range Organics	4.74	3.45	mg/Kg	1	VFC9366	VXX19243	
Benzene	ND	17.3	ug/Kg	1	VFC9366	VXX19243	
Toluene	ND	69.1	ug/Kg	1	VFC9366	VXX19243	
Ethylbenzene	ND	69.1	ug/Kg	1	VFC9366	VXX19243	
o-Xylene	ND	69.1	ug/Kg	1	VFC9366	VXX19243	
P & M -Xylene	104	69.1	ug/Kg	1	VFC9366	VXX19243	
4-Bromofluorobenzene <surr>	108	50-150	%	1	VFC9366	VXX19243	
1,4-Difluorobenzene <surr>	91.9	80-120	%	1	VFC9366	VXX19243	

Batch Information

Analytical Batch: VFC9366
Analytical Method: AK101
Analysis Date/Time: 03/11/09 11:42
Dilution Factor: 1

Prep Batch: VXX19243
Prep Method: SW5035A
Prep Date/Time: 02/28/09 16:50

Initial Prep Wt./Vol.: 52.928 g
Prep Extract Vol.: 31.84 mL
Container ID:1090876002-A
Analyst: HM

Analytical Batch: VFC9366
Analytical Method: SW8021B
Analysis Date/Time: 03/11/09 11:42
Dilution Factor: 1

Prep Batch: VXX19243
Prep Method: SW5035A
Prep Date/Time: 02/28/09 16:50

Initial Prep Wt./Vol.: 52.928 g
Prep Extract Vol.: 31.84 mL
Container ID:1090876002-A
Analyst: HM

Client Sample ID: **NW-P52-8**
SGS Ref. #: 1090876002
Project ID: Kotzebue
Matrix: Soil/Solid (dry weight)
Percent Solids: 87.1

Collection Date/Time: 02/28/09 16:50
Receipt Date/Time: 03/09/09 10:50

Semivolatile Organic Fuels Department

Parameter	Result	PQL/CL	Units	DF	Analytical Batch	Prep Batch	Qualifiers
Diesel Range Organics	ND	22.4	mg/Kg	1	XFC8472	XXX20645	
Residual Range Organics	ND	22.4	mg/Kg	1	XFC8472	XXX20645	
n-Triacontane-d62 <surr>	93	50-150	%	1	XFC8472	XXX20645	
5a Androstane <surr>	81.2	50-150	%	1	XFC8472	XXX20645	

Batch Information

Analytical Batch: XFC8472
Analytical Method: AK102
Analysis Date/Time: 03/16/09 13:31
Dilution Factor: 1

Prep Batch: XXX20645
Prep Method: SW3550C
Prep Date/Time: 03/13/09 10:45

Initial Prep Wt./Vol.: 30.829 g
Prep Extract Vol.: 1 mL
Container ID:1090876002-B
Analyst: KDC

Analytical Batch: XFC8472
Analytical Method: AK103
Analysis Date/Time: 03/16/09 13:31
Dilution Factor: 1

Prep Batch: XXX20645
Prep Method: SW3550C
Prep Date/Time: 03/13/09 10:45

Initial Prep Wt./Vol.: 30.829 g
Prep Extract Vol.: 1 mL
Container ID:1090876002-B
Analyst: KDC

SGS

Dowl Engineers-Ak Test Lab

Print Date: 3/18/2009 11:44 am

Client Sample ID: **NW-P52-8**
SGS Ref. #: 1090876002
Project ID: Kotzebue
Matrix: Soil/Solid (dry weight)
Percent Solids: 87.1

Collection Date/Time: 02/28/09 16:50
Receipt Date/Time: 03/09/09 10:50

Solids

Parameter	Result	PQL/CL	Units	DF	Analytical Batch	Prep Batch	Qualifiers
Total Solids	87.1		%	1	SPT7886		

Batch Information

Analytical Batch: SPT7886
Analytical Method: SM20 2540G
Analysis Date/Time: 03/12/09 13:00
Dilution Factor: 1

Initial Prep Wt./Vol.: 1 mL

Container ID:1090876002-B
Analyst: STB

SGS

Dowl Engineers-Ak Test Lab

Print Date: 3/18/2009 11:44 am

Client Sample ID: **NW-97-8**
SGS Ref. #: 1090876003
Project ID: Kotzebue
Matrix: Soil/Solid (dry weight)
Percent Solids: 92.6

Collection Date/Time: 03/04/09 14:25
Receipt Date/Time: 03/09/09 10:50

Volatile Fuels Department

Parameter	Result		PQL/CL	Units	DF	Analytical Batch	Prep Batch	Qualifiers
Gasoline Range Organics	159		29.9	mg/Kg	10	VFC9366	VXX19243	
Benzene	75.3		14.9	ug/Kg	1	VFC9366	VXX19243	
Toluene	ND		59.7	ug/Kg	1	VFC9366	VXX19243	
Ethylbenzene	1580		59.7	ug/Kg	1	VFC9366	VXX19243	
o-Xylene	1540		59.7	ug/Kg	1	VFC9366	VXX19243	
P & M -Xylene	5790		59.7	ug/Kg	1	VFC9366	VXX19243	
4-Bromofluorobenzene <surr>	808	*	50-150	%	10	VFC9366	VXX19243	
1,4-Difluorobenzene <surr>	106		80-120	%	1	VFC9366	VXX19243	

Batch Information

Analytical Batch: VFC9366
Analytical Method: AK101
Analysis Date/Time: 03/11/09 13:14
Dilution Factor: 10

Prep Batch: VXX19243
Prep Method: SW5035A
Prep Date/Time: 03/04/09 14:25

Initial Prep Wt./Vol.: 52.141 g
Prep Extract Vol.: 28.84 mL
Container ID:1090876003-A
Analyst: HM

Analytical Batch: VFC9366
Analytical Method: SW8021B
Analysis Date/Time: 03/11/09 12:00
Dilution Factor: 1

Prep Batch: VXX19243
Prep Method: SW5035A
Prep Date/Time: 03/04/09 14:25

Initial Prep Wt./Vol.: 52.141 g
Prep Extract Vol.: 28.84 mL
Container ID:1090876003-A
Analyst: HM

SGS

Dowl Engineers-Ak Test Lab

Print Date: 3/18/2009 11:44 am

Client Sample ID: **NW-97-8**
SGS Ref. #: 1090876003
Project ID: Kotzebue
Matrix: Soil/Solid (dry weight)
Percent Solids: 92.6

Collection Date/Time: 03/04/09 14:25
Receipt Date/Time: 03/09/09 10:50

Semivolatile Organic Fuels Department

Parameter	Result	PQL/CL	Units	DF	Analytical Batch	Prep Batch	Qualifiers
Diesel Range Organics	907	85.6	mg/Kg	4	XFC8472	XXX20645	
Residual Range Organics	25.9	21.4	mg/Kg	1	XFC8472	XXX20645	
5a Androstane <surr>	94.1	50-150	%	1	XFC8472	XXX20645	
n-Triacontane-d62 <surr>	82.8	50-150	%	1	XFC8472	XXX20645	

Batch Information

Analytical Batch: XFC8472
Analytical Method: AK102
Analysis Date/Time: 03/16/09 13:40
Dilution Factor: 1

Prep Batch: XXX20645
Prep Method: SW3550C
Prep Date/Time: 03/13/09 10:45

Initial Prep Wt./Vol.: 30.26 g
Prep Extract Vol.: 1 mL
Container ID:1090876003-B
Analyst: KDC

Analytical Batch: XFC8472
Analytical Method: AK102
Analysis Date/Time: 03/16/09 14:36
Dilution Factor: 4

Prep Batch: XXX20645
Prep Method: SW3550C
Prep Date/Time: 03/13/09 10:45

Initial Prep Wt./Vol.: 30.26 g
Prep Extract Vol.: 1 mL
Container ID:1090876003-B
Analyst: KDC

Analytical Batch: XFC8472
Analytical Method: AK103
Analysis Date/Time: 03/16/09 13:40
Dilution Factor: 1

Prep Batch: XXX20645
Prep Method: SW3550C
Prep Date/Time: 03/13/09 10:45

Initial Prep Wt./Vol.: 30.26 g
Prep Extract Vol.: 1 mL
Container ID:1090876003-B
Analyst: KDC

SGS

Dowl Engineers-Ak Test Lab

Print Date: 3/18/2009 11:44 am

Client Sample ID: **NW-97-8**
SGS Ref. #: 1090876003
Project ID: Kotzebue
Matrix: Soil/Solid (dry weight)
Percent Solids: 92.6

Collection Date/Time: 03/04/09 14:25
Receipt Date/Time: 03/09/09 10:50

Solids

Parameter	Result	PQL/CL	Units	DF	Analytical Batch	Prep Batch	Qualifiers
Total Solids	92.6		%	1	SPT7886		

Batch Information

Analytical Batch: SPT7886
Analytical Method: SM20 2540G
Analysis Date/Time: 03/12/09 13:00
Dilution Factor: 1

Initial Prep Wt./Vol.: 1 mL

Container ID:1090876003-B
Analyst: STB

SGS

Dowl Engineers-Ak Test Lab

Print Date: 3/18/2009 11:44 am

Client Sample ID: **NW-P51-8**
SGS Ref. #: 1090876004
Project ID: Kotzebue
Matrix: Soil/Solid (dry weight)
Percent Solids: 84.6

Collection Date/Time: 03/06/09 14:10
Receipt Date/Time: 03/09/09 10:50

Volatile Fuels Department

Parameter	Result	PQL/CL	Units	DF	Analytical Batch	Prep Batch	Qualifiers
Gasoline Range Organics	7.81	3.18	mg/Kg	1	VFC9366	VXX19243	
Benzene	23.8	15.9	ug/Kg	1	VFC9366	VXX19243	
Toluene	ND	63.7	ug/Kg	1	VFC9366	VXX19243	
Ethylbenzene	113	63.7	ug/Kg	1	VFC9366	VXX19243	
o-Xylene	95.4	63.7	ug/Kg	1	VFC9366	VXX19243	
P & M -Xylene	303	63.7	ug/Kg	1	VFC9366	VXX19243	
4-Bromofluorobenzene <surr>	137	50-150	%	1	VFC9366	VXX19243	
1,4-Difluorobenzene <surr>	95.2	80-120	%	1	VFC9366	VXX19243	

Batch Information

Analytical Batch: VFC9366
Analytical Method: AK101
Analysis Date/Time: 03/11/09 13:32
Dilution Factor: 1

Prep Batch: VXX19243
Prep Method: SW5035A
Prep Date/Time: 03/06/09 14:10

Initial Prep Wt./Vol.: 64.885 g
Prep Extract Vol.: 34.96 mL
Container ID:1090876004-A
Analyst: HM

Analytical Batch: VFC9366
Analytical Method: SW8021B
Analysis Date/Time: 03/11/09 12:18
Dilution Factor: 1

Prep Batch: VXX19243
Prep Method: SW5035A
Prep Date/Time: 03/06/09 14:10

Initial Prep Wt./Vol.: 64.885 g
Prep Extract Vol.: 34.96 mL
Container ID:1090876004-A
Analyst: HM

Client Sample ID: **NW-P51-8**
SGS Ref. #: 1090876004
Project ID: Kotzebue
Matrix: Soil/Solid (dry weight)
Percent Solids: 84.6

Collection Date/Time: 03/06/09 14:10
Receipt Date/Time: 03/09/09 10:50

Semivolatile Organic Fuels Department

Parameter	Result	PQL/CL	Units	DF	Analytical Batch	Prep Batch	Qualifiers
Diesel Range Organics	ND	23.6	mg/Kg	1	XFC8472	XXX20645	
Residual Range Organics	48.6	23.6	mg/Kg	1	XFC8472	XXX20645	
n-Triacontane-d62 <surr>	86.1	50-150	%	1	XFC8472	XXX20645	
5a Androstane <surr>	86	50-150	%	1	XFC8472	XXX20645	

Batch Information

Analytical Batch: XFC8472
Analytical Method: AK102
Analysis Date/Time: 03/16/09 13:59
Dilution Factor: 1

Prep Batch: XXX20645
Prep Method: SW3550C
Prep Date/Time: 03/13/09 10:45

Initial Prep Wt./Vol.: 30.041 g
Prep Extract Vol.: 1 mL
Container ID:1090876004-B
Analyst: KDC

Analytical Batch: XFC8472
Analytical Method: AK103
Analysis Date/Time: 03/16/09 13:59
Dilution Factor: 1

Prep Batch: XXX20645
Prep Method: SW3550C
Prep Date/Time: 03/13/09 10:45

Initial Prep Wt./Vol.: 30.041 g
Prep Extract Vol.: 1 mL
Container ID:1090876004-B
Analyst: KDC

SGS

Dowl Engineers-Ak Test Lab

Print Date: 3/18/2009 11:44 am

Client Sample ID: **NW-P51-8**
SGS Ref. #: 1090876004
Project ID: Kotzebue
Matrix: Soil/Solid (dry weight)
Percent Solids: 84.6

Collection Date/Time: 03/06/09 14:10
Receipt Date/Time: 03/09/09 10:50

Solids

Parameter	Result	PQL/CL	Units	DF	Analytical Batch	Prep Batch	Qualifiers
Total Solids	84.6		%	1	SPT7886		

Batch Information

Analytical Batch: SPT7886
Analytical Method: SM20 2540G
Analysis Date/Time: 03/12/09 13:00
Dilution Factor: 1

Initial Prep Wt./Vol.: 1 mL

Container ID:1090876004-B
Analyst: STB

SGS

Dowl Engineers-Ak Test Lab

Print Date: 3/18/2009 11:44 am

Client Sample ID: **NW-P51-8 DUP**
SGS Ref. #: 1090876005
Project ID: Kotzebue
Matrix: Soil/Solid (dry weight)
Percent Solids: 89.3

Collection Date/Time: 03/06/09 14:10
Receipt Date/Time: 03/09/09 10:50

Volatile Fuels Department

Parameter	Result	PQL/CL	Units	DF	Analytical Batch	Prep Batch	Qualifiers
Gasoline Range Organics	11.1	3.07	mg/Kg	1	VFC9366	VXX19243	
Benzene	29.8	15.4	ug/Kg	1	VFC9366	VXX19243	
Toluene	ND	61.4	ug/Kg	1	VFC9366	VXX19243	
Ethylbenzene	112	61.4	ug/Kg	1	VFC9366	VXX19243	
o-Xylene	101	61.4	ug/Kg	1	VFC9366	VXX19243	
P & M -Xylene	283	61.4	ug/Kg	1	VFC9366	VXX19243	
4-Bromofluorobenzene <surr>	136	50-150	%	1	VFC9366	VXX19243	
1,4-Difluorobenzene <surr>	93.5	80-120	%	1	VFC9366	VXX19243	

Batch Information

Analytical Batch: VFC9366
Analytical Method: AK101
Analysis Date/Time: 03/11/09 13:51
Dilution Factor: 1

Prep Batch: VXX19243
Prep Method: SW5035A
Prep Date/Time: 03/06/09 14:10

Initial Prep Wt./Vol.: 56.559 g
Prep Extract Vol.: 31.04 mL
Container ID:1090876005-A
Analyst: HM

Analytical Batch: VFC9366
Analytical Method: SW8021B
Analysis Date/Time: 03/11/09 13:51
Dilution Factor: 1

Prep Batch: VXX19243
Prep Method: SW5035A
Prep Date/Time: 03/06/09 14:10

Initial Prep Wt./Vol.: 56.559 g
Prep Extract Vol.: 31.04 mL
Container ID:1090876005-A
Analyst: HM

SGS

Dowl Engineers-Ak Test Lab

Print Date: 3/18/2009 11:44 am

Client Sample ID: **NW-P51-8 DUP**
SGS Ref. #: 1090876005
Project ID: Kotzebue
Matrix: Soil/Solid (dry weight)
Percent Solids: 89.3

Collection Date/Time: 03/06/09 14:10
Receipt Date/Time: 03/09/09 10:50

Semivolatile Organic Fuels Department

Parameter	Result	PQL/CL	Units	DF	Analytical Batch	Prep Batch	Qualifiers
Diesel Range Organics	ND	22.3	mg/Kg	1	XFC8472	XXX20645	
Residual Range Organics	49.1	22.3	mg/Kg	1	XFC8472	XXX20645	
n-Triacontane-d62 <surr>	89.4	50-150	%	1	XFC8472	XXX20645	
5a Androstane <surr>	78.5	50-150	%	1	XFC8472	XXX20645	

Batch Information

Analytical Batch: XFC8472
Analytical Method: AK102
Analysis Date/Time: 03/16/09 14:08
Dilution Factor: 1

Prep Batch: XXX20645
Prep Method: SW3550C
Prep Date/Time: 03/13/09 10:45

Initial Prep Wt./Vol.: 30.154 g
Prep Extract Vol.: 1 mL
Container ID:1090876005-B
Analyst: KDC

Analytical Batch: XFC8472
Analytical Method: AK103
Analysis Date/Time: 03/16/09 14:08
Dilution Factor: 1

Prep Batch: XXX20645
Prep Method: SW3550C
Prep Date/Time: 03/13/09 10:45

Initial Prep Wt./Vol.: 30.154 g
Prep Extract Vol.: 1 mL
Container ID:1090876005-B
Analyst: KDC

SGS

Dowl Engineers-Ak Test Lab

Print Date: 3/18/2009 11:44 am

Client Sample ID: **NW-P51-8 DUP**
SGS Ref. #: 1090876005
Project ID: Kotzebue
Matrix: Soil/Solid (dry weight)
Percent Solids: 89.3

Collection Date/Time: 03/06/09 14:10
Receipt Date/Time: 03/09/09 10:50

Solids

Parameter	Result	PQL/CL	Units	DF	Analytical Batch	Prep Batch	Qualifiers
Total Solids	89.3		%	1	SPT7886		

Batch Information

Analytical Batch: SPT7886
Analytical Method: SM20 2540G
Analysis Date/Time: 03/12/09 13:00
Dilution Factor: 1

Initial Prep Wt./Vol.: 1 mL

Container ID:1090876005-B
Analyst: STB

SGS

Dowl Engineers-Ak Test Lab

Print Date: 3/18/2009 11:44 am

Client Sample ID: **Trip Blank**
SGS Ref. #: 1090876006
Project ID: Kotzebue
Matrix: Solid/Soil (Wet Weight)

Collection Date/Time: 03/06/09 14:10
Receipt Date/Time: 03/09/09 10:50

Volatile Fuels Department

Parameter	Result	PQL/CL	Units	DF	Analytical Batch	Prep Batch	Qualifiers
Gasoline Range Organics	ND	2.54	mg/Kg	1	VFC9366	VXX19243	
Benzene	ND	12.7	ug/Kg	1	VFC9366	VXX19243	
Toluene	ND	50.7	ug/Kg	1	VFC9366	VXX19243	
Ethylbenzene	ND	50.7	ug/Kg	1	VFC9366	VXX19243	
o-Xylene	ND	50.7	ug/Kg	1	VFC9366	VXX19243	
P & M -Xylene	ND	50.7	ug/Kg	1	VFC9366	VXX19243	
4-Bromofluorobenzene <surr>	79.7	50-150	%	1	VFC9366	VXX19243	
1,4-Difluorobenzene <surr>	91.8	80-120	%	1	VFC9366	VXX19243	

Batch Information

Analytical Batch: VFC9366
Analytical Method: AK101
Analysis Date/Time: 03/11/09 14:09
Dilution Factor: 1

Prep Batch: VXX19243
Prep Method: SW5035A
Prep Date/Time: 03/06/09 14:10

Initial Prep Wt./Vol.: 49.298 g
Prep Extract Vol.: 25 mL
Container ID:1090876006-A
Analyst: HM

Analytical Batch: VFC9366
Analytical Method: SW8021B
Analysis Date/Time: 03/11/09 14:09
Dilution Factor: 1

Prep Batch: VXX19243
Prep Method: SW5035A
Prep Date/Time: 03/06/09 14:10

Initial Prep Wt./Vol.: 49.298 g
Prep Extract Vol.: 25 mL
Container ID:1090876006-A
Analyst: HM

SGS

SGS Ref.#	886458	Method Blank	**Printed Date/Time**		03/18/2009 11:44
Client Name	Dowl Engineers-Ak Test Lab		**Prep**	**Batch**	VXX19243
Project Name/#	Kotzebue			**Method**	SW5035A
Matrix	Soil/Solid (dry weight)			**Date**	03/11/2009

QC results affect the following production samples:

1090876001, 1090876002, 1090876003, 1090876004, 1090876005, 1090876006

Parameter	Results	Reporting/Control Limit	MDL	Units	Analysis Date
Volatile Fuels Department					
Gasoline Range Organics	0.649J	2.50	0.500	mg/Kg	03/11/09
Surrogates					
4-Bromofluorobenzene <surr>	97.4	50-150		%	03/11/09
Batch VFC9366					
Method AK101					
Instrument HP 5890 Series II PID+HECD VBA					
Benzene	ND	12.5	4.00	ug/Kg	03/11/09
Toluene	ND	50.0	15.0	ug/Kg	03/11/09
Ethylbenzene	ND	50.0	15.0	ug/Kg	03/11/09
o-Xylene	ND	50.0	15.0	ug/Kg	03/11/09
P & M -Xylene	ND	50.0	15.0	ug/Kg	03/11/09
Surrogates					
1,4-Difluorobenzene <surr>	92.4	80-120		%	03/11/09
Batch VFC9366					
Method SW8021B					
Instrument HP 5890 Series II PID+HECD VBA					

SGS

SGS Ref.#	886517	Method Blank	**Printed Date/Time**	03/18/2009 11:44
Client Name	Dowl Engineers-Ak Test Lab		**Prep**	**Batch**
Project Name/#	Kotzebue			**Method**
Matrix	Soil/Solid (dry weight)			**Date**

QC results affect the following production samples:

1090876001, 1090876002, 1090876003, 1090876004, 1090876005

Parameter	Results	Reporting/Control Limit	MDL	Units	Analysis Date
Solids					
Total Solids	99.9			%	03/12/09
Batch SPT7886					
Method SM20 2540G					
Instrument					

SGS

SGS Ref.#	886679	Method Blank	**Printed Date/Time**		03/18/2009 11:44
Client Name	Dowl Engineers-Ak Test Lab		**Prep**	**Batch**	XXX20645
Project Name/#	Kotzebue			**Method**	SW3550C
Matrix	Soil/Solid (dry weight)			**Date**	03/13/2009

QC results affect the following production samples:

1090876001, 1090876002, 1090876003, 1090876004, 1090876005

Parameter	Results	Reporting/Control Limit	MDL	Units	Analysis Date
Semivolatile Organic Fuels Department					
Diesel Range Organics	ND	20.0	2.00	mg/Kg	03/16/09
Surrogates					
5a Androstane <surr>	85.1	60-120		%	03/16/09
Batch XFC8472					
Method AK102					
Instrument HP 6890 Series II FID SV D R					
Residual Range Organics	2.62 J	20.0	2.00	mg/Kg	03/16/09
Surrogates					
n-Triacontane-d62 <surr>	89.4	60-120		%	03/16/09
Batch XFC8472					
Method AK103					
Instrument HP 6890 Series II FID SV D R					

SGS

SGS Ref.#	886518	Duplicate	**Printed Date/Time**	03/18/2009 11:44
Client Name	Dowl Engineers-Ak Test Lab		**Prep**	**Batch**
Project Name/#	Kotzebue			**Method**
				Date
Original	1090892001			
Matrix	Soil/Solid (dry weight)			

QC results affect the following production samples:

1090876001, 1090876002, 1090876003, 1090876004, 1090876005

Parameter	Original Result	QC Result	Units	RPD	RPD Limits	Analysis Date
Solids						
Total Solids	90.2	92.2	%	2	(< 15)	03/12/2009

Batch SPT7886
Method SM20 2540G
Instrument

SGS

SGS Ref.#	886459	Lab Control Sample	**Printed Date/Time**	03/18/2009	11:44
	886460	Lab Control Sample Duplicate	**Prep Batch**	VXX19243	
Client Name	Dowl Engineers-Ak Test Lab		**Method**	SW5035A	
Project Name/#	Kotzebue		**Date**	03/11/2009	
Matrix	Soil/Solid (dry weight)				

QC results affect the following production samples:

1090876001, 1090876002, 1090876003, 1090876004, 1090876005, 1090876006

Parameter		QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
Volatile Fuels Department								
Benzene	LCS	1300	104	(80-125)			1250 ug/Kg	03/11/2009
	LCSD	1320	105		2	(< 20)	1250 ug/Kg	03/11/2009
Toluene	LCS	1320	106	(85-120)			1250 ug/Kg	03/11/2009
	LCSD	1350	108		2	(< 20)	1250 ug/Kg	03/11/2009
Ethylbenzene	LCS	1350	108	(85-125)			1250 ug/Kg	03/11/2009
	LCSD	1380	111		2	(< 20)	1250 ug/Kg	03/11/2009
o-Xylene	LCS	1330	106	(85-125)			1250 ug/Kg	03/11/2009
	LCSD	1370	109		3	(< 20)	1250 ug/Kg	03/11/2009
P & M -Xylene	LCS	2800	112	(85-125)			2500 ug/Kg	03/11/2009
	LCSD	2880	115		3	(< 20)	2500 ug/Kg	03/11/2009
Surrogates								
1,4-Difluorobenzene <surr>	LCS		99	(80-120)				03/11/2009
	LCSD		98		1			03/11/2009

Batch	VFC9366
Method	SW8021B
Instrument	HP 5890 Series II PID+HECD VBA

SGS

SGS Ref.#	886461	Lab Control Sample	**Printed Date/Time**	03/18/2009	11:44
	886462	Lab Control Sample Duplicate	**Prep Batch**	VXX19243	
Client Name	Dowl Engineers-Ak Test Lab		**Method**	SW5035A	
Project Name/#	Kotzebue		**Date**	03/11/2009	
Matrix	Soil/Solid (dry weight)				

QC results affect the following production samples:

1090876001, 1090876002, 1090876003, 1090876004, 1090876005, 1090876006

Parameter		QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
Volatile Fuels Department								
Gasoline Range Organics	LCS	10.7	95	(60-120)			11.3 mg/Kg	03/11/2009
	LCSD	10.6	95		1	(< 20)	11.3 mg/Kg	03/11/2009
Surrogates								
4-Bromofluorobenzene <surr>	LCS		102	(50-150)				03/11/2009
	LCSD		103		2			03/11/2009

Batch VFC9366
Method AK101
Instrument HP 5890 Series II PID+HECD VBA

SGS

SGS Ref.#	886680	Lab Control Sample	**Printed Date/Time**	03/18/2009	11:44
	886681	Lab Control Sample Duplicate	**Prep Batch**	XXX20645	
Client Name	Dowl Engineers-Ak Test Lab		**Method**	SW3550C	
Project Name/#	Kotzebue		**Date**	03/13/2009	
Matrix	Soil/Solid (dry weight)				

QC results affect the following production samples:

1090876001, 1090876002, 1090876003, 1090876004, 1090876005

Parameter		QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
Semivolatile Organic Fuels Department								
Diesel Range Organics	LCS	163	98	(75-125)			167 mg/Kg	03/16/2009
	LCSD	166	100		2	(< 20)	167 mg/Kg	03/16/2009
Surrogates								
5a Androstane <surr>	LCS		96	(60-120)				03/16/2009
	LCSD		98		3			03/16/2009

Batch XFC8472
Method AK102
Instrument HP 6890 Series II FID SV D R

Residual Range Organics	LCS	152	91	(60-120)			167 mg/Kg	03/16/2009
	LCSD	156	94		2	(< 20)	167 mg/Kg	03/16/2009
Surrogates								
n-Triacontane-d62 <surr>	LCS		94	(60-120)				03/16/2009
	LCSD		93		1			03/16/2009

Batch XFC8472
Method AK103
Instrument HP 6890 Series II FID SV D R

SGS

SGS Environmental Services Inc.
CHAIN OF CUSTODY RECORD

Lo
• Alaska
• New Jer
• North Ca
• West Vir

1090876

30

(1)

CLIENT: DOWL HKM

CONTACT: Brandie Hofmeister PHONE NO: 562-2000

PROJECT: Kotzebue SITE/PWSID#:

REPORTS TO: Brandie Hofmeister EMAIL: bholfmeister@dowlhkm.com

INVOICE TO: DOWL HKM QUOTE #:

P.O. #: D58405

SGS Reference #:

page 1 of 1

(2)

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX/ MATRIX CODE	# CONTAINERS	SAMPLE TYPE C= COMP G= GRAB MI= Multi Incremental Samples	DRO/RRO (3)	GRO/BTEX									REMARKS/ LOC ID
						Preservatives Used	~~MEOH~~ CK	MEOH									
134.88	NW-P74-8.5	3/3/09	0920	S	2	G	X	X		1	A,B						
129.94	NW-P52-8	2/28/09	1450	S	2	G	X	X		2							
129.57	NW-97-8	3/4/09	1425	S	2	G	X WET WEIGHT	X		3							
134.92	NW-P51-8	3/6/09	1410	S	2	G	X	X		4							
130.03	NW-P51-8 DUP	3/6/09	1410	S	2	G	X	X		5							
	TB									6	A						

(5)

Collected/Relinquished By:(1)	Date	Time	Received By:
Calvin Keller	3/7/09	2:10	Cooler
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date 3/9/09	Time 1050	Received For Laboratory By:

(4)

DOD Project? YES NO

Cooler ID _____

Special Deliverable Requirements:

Requested Turnaround Time and-or Special Instructions:

Samples Received Cold? YES NO

Cooler TB

Temperature°C: 2.4 . ICE

Chain of Custody Seal: (Circle)

INTACT BROKEN ABSENT

SGS

SAMPLE RECEIPT FORM

SGS WO#: 1090876

Yes	No	NA	
	✓		Are samples **RUSH**, priority or *w/in 72 hrs* of hold time?
		✓	If yes, have you done *e-mail ALERT notification*?
	✓		Are samples *within 24 hrs.* of hold time or due date?
		✓	If yes, have you also *spoken with* supervisor?
		✓	Archiving bottles (if req'd): Are they properly marked?
	✓		Are there any **problems**? PM Notified?
✓			Were samples preserved correctly and ~~pH verified~~?
		✓	If this is for PWS, provide **PWSID**.
	✓		Will courier charges apply?
			Method of payment?
	✓		Data package required? (Level: 1 / 2 / 3 / 4)
			Notes:
	✓		Is this a DoD project? (USACE, Navy, AFCEE)

TAT (circle one): Standard -or- Rush
Received Date: 3.9.09
Received Time: 1050
Is date/time conversion necessary? NO
# of hours to AK Local Time: —
Thermometer ID: 70d

Cooler ID	Temp Blank	Cooler Temp
1	ICE °C	2.9 °C
	°C	°C
	°C	°C
	°C	°C
	°C	°C

Note: Temperature readings include thermometer correction factors

Delivery method (circle all that apply): Client / Alert Courier / UPS / FedEx / USPS / DHL / AA Goldstreak / NAC / ERA / PenAir / Carlile/ Lynden / SGS / Other:
Airbill #

Additional Sample Remarks: (√ if applicable)
- ___ Extra Sample Volume?
- ___ Limited Sample Volume?
- ✓ MeOH field preserved for volatiles?
- ___ Field-filtered for dissolved ___
- ___ Lab-filtered for dissolved ___
- ___ Ref Lab required? ___
- ___ Foreign Soil?

This section must be filled out for DoD projects (USACE, Navy, AFCEE)

Yes	No	
		Is received temperature 4 ± 2°C? Exceptions: Samples/Analyses Affected:
		If temperature(s) <0°C, were containers ice-free? N/A. *Notify PM immediately of any ice in samples.*
		Was there an airbill? *(Note # above in the right hand column)*
		Was cooler sealed with custody seals? # / where:
		Were seal(s) intact upon arrival?
		Was there a COC with cooler?
		Was COC sealed in plastic bag & taped inside lid of cooler?
		Was the COC filled out properly?
		Did the COC indicate USACE / Navy / AFCEE project?
		Did the COC and samples correspond?
		Were all sample packed to prevent breakage? Packing material:
		Were all samples unbroken and clearly labeled?
		Were all samples sealed in separate plastic bags?
		Were all VOCs free of headspace and/or MeOH preserved?
		Were correct container / sample sizes submitted?
		Is sample condition good?
		Was copy of CoC, SRF, and custody seals given to PM to fax?

This section must be filled if problems are found.

Yes	No	
		Was client notified of problems?

Individual contacted:
Via: Phone / Fax / Email (*circle one*)
Date/Time:
Reason for contact:

Change Order Required?
SGS Contact:

Notes:

Completed by (sign): [signature] **(print):** [illegible]
Login proof (check one): waived ✓ required ___ performed by:

Form # F004r17 revised 04/11/08

SGS

SAMPLE RECEIPT FORM (page 2)

SGS WO#: 1090876

#	Container ID	Matrix	Test	QC	TB	Container Volume: 1 L	500 mL	250 mL	125 mL	60 mL	40 mL	8oz (250 mL)	4oz (125 mL)	Other	Container Type: AG	CG	HDPE	Nalgene	Cubic	Coli	Septa	Other	Preservative: None	HCl	HNO_3	H_2SO_4	MeOH	$Na_2S_2O_3$	NaOH	Other
1-5	A	2	GRO BTEX										5		✓						✓						✓			
	B		DRO MRO										5		✓								✓							
6	A	2	GRO BTEX		✓								1		✓						✓						✓			
Bottle Totals													11																	

Completed by: [signature] Date: 3.9.09

Form # F004r16 revised 03/10/08

SGS Environmental Services Inc.
200 W. Potter Dr., Anchorage, AK 99518 — P: 907-562-2343, F: 907-561-5301
3180 Peger Rd., Fairbanks, AK 99701 — P: 907-474-8656, F: 907-474-9685
255 Sand Island Rd. Unit1B, Honolulu, HI 96819 — P: 808-224-6217, F: 808-845-2287

Sample Kit Request

☒ Client pickup on: ~~2/26/09 800~~ 2/25 12w
☐ Deliver to client:
☐ Shipment Method:
Date to ship by:
Notes:

Airbill to PM? ☐ Yes ☐ N/A

Client Name: DOWL
Ordered By: Brandy
Phone/Fax:
Project Name: Kotzebue

1090876

Deliver To:
ATTN:

Kit request taken by: DL Date: 2/19
Kit prepared by: MD Date: 2-25-09
Kit checked by: JJ Date: 2-25-09
Kit shipped by: Date:

Reminders:
☐ DOD project (AFCEE, Navy, USACE)? ☐ Methanol jars for each tared 4 oz amber?

Estimated date for samples returning to the lab:

☐ Total # Containers includes bottles for % Solids ☐ Foreign Soils?

# of Samples	Matrix	Analysis	Container	Preservative	Date	Time	Preservative	Date Time	# QC Bottles	Total # Bottles
6	Soil	DRO/RRO	4 oz amber			4C		14d		6
6	Soil	GRO/BTEX	4 oz amber w/septa lined			MeOH		14d		6
			40mL VOA w/25mL MeOH							6

☐ Total # Containers includes extra bottles for QC
☒ Temperature Blank: (25 mL) 500 mL (circle one)
☒ VOA Trip Blank (circle matrix): (soil) water
ID: VW7-901

☐ Chlorinated DW: Ascorbic Acid Req'd? ☐ yes ☐ o
☒ Blue Ice ☒ SGS COCs
☒ Labels ☒ Custody Seals
☒ Bubble Wrap ☒ Coolers
Other:

Other Notes/Reminders:

Sampling Instructions:
1. Do not rinse container before filling and be aware of any acid preservative in container.
2. Fill container to top, but do not overfill (except volatiles which should be headspace free).
3. Label the container with your sample/site ID, as well as the date & time of collection.
4. Fill in the Chain of Custody.
5. Add frozen gel packs or ice to your cooler & pack to prevent breakage.

If you have any questions concerning this sample kit, please contact your Project Manager for assistance. *Thank you.*

1090876

SGS Environmental

CUSTODY SEAL

Signature: Callie Keller

Date/Time: 3/7/09 2:20 pm

Laboratory Analysis Report

200 W. Potter Drive
Anchorage, AK 99518-1605
Tel: (907) 562-2343
Fax: (907) 561-5301
Web: http://www.us.sgs.com

Brandy Hofmeister
Dowl Engineers-Ak Test Lab
4041 B Street
Anchorage, AK 99503

Work Order:	1092076	
	Nullagnik Hotel	**Released by:**
Client:	Dowl Engineers-Ak Test Lab	
Report Date:	May 30, 2009	

Enclosed are the analytical results associated with the above workorder.

As required by the state of Alaska and the USEPA, a formal Quality Assurance/Quality Control Program is maintained by SGS. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request.

The laboratory certification numbers are AK971-05 (DW), UST-005 (CS) and AK00971 (Micro) for ADEC and AK100001 for NELAP (RCRA methods: 1020A, 1311, 6010B, 7470A, 7471A, 9040B, 9045C, 9056, 9060, 9065, 8015B, 8021B, 8081A/8082, 8260B, 8270C).

Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP, the National Environmental Laboratory Accreditation Program and, when applicable, other regulatory authorities.

If you have any questions regarding this report or if we can be of any other assistance, please contact your SGS Project Manager at 907-562-2343. All work is being provided under SGS general terms and conditions (http://www.sgs.com/terms_and_conditions.htm) unless other written agreements have been accepted by both parties.

PQL	Practical Quantitation Limit (reporting limit).
U	Indicates the analyte was analyzed for but not detected.
F	Indicates value that is greater than or equal to the MDL.
J	The quantitation is an estimation.
ND	Indicates the analyte is not detected.
B	Indicates the analyte is found in a blank associated with the sample.
*	The analyte has exceeded allowable regulatory or control limits.
GT	Greater Than
D	The analyte concentration is the result of a dilution.
LT	Less Than
!	Surrogate out of control limits.
Q	QC parameter out of acceptance range.
M	A matrix effect was present.
JL	The analyte was positively identified, but the quantitation is a low estimation.
E	The analyte result is above the calibrated range.
R	Rejected

Note: Sample summaries which include a result for "Total Solids" have already been adjusted for moisture content.

SGS

SGS Ref.#	1092076001		
Client Name	Dowl Engineers-Ak Test Lab	**Printed Date/Time**	05/30/2009 12:38
Project Name/#	Nullagnik Hotel	**Collected Date/Time**	05/15/2009 13:41
Client Sample ID	NUL-STO-1	**Received Date/Time**	05/18/2009 11:40
Matrix	Soil/Solid (dry weight)	**Technical Director**	**Stephen C. Ede**

Sample Remarks:

AK102 - Unknown hydrocarbon with several peaks is present.

AK103 - The pattern is consistent with a lube oil.

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
Volatile Fuels Department									
Gasoline Range Organics	ND	3.92	mg/Kg	AK101	A		05/15/09	05/21/09	KPW
Benzene	ND	19.6	ug/Kg	SW8021B	A		05/15/09	05/21/09	KPW
Toluene	ND	78.5	ug/Kg	SW8021B	A		05/15/09	05/21/09	KPW
Ethylbenzene	ND	78.5	ug/Kg	SW8021B	A		05/15/09	05/21/09	KPW
o-Xylene	ND	78.5	ug/Kg	SW8021B	A		05/15/09	05/21/09	KPW
P & M -Xylene	ND	78.5	ug/Kg	SW8021B	A		05/15/09	05/21/09	KPW
Surrogates									
4-Bromofluorobenzene <surr>	89.3		%	AK101	A	50-150	05/15/09	05/21/09	KPW
1,4-Difluorobenzene <surr>	84.2		%	SW8021B	A	80-120	05/15/09	05/21/09	KPW
Semivolatile Organic Fuels Department									
Diesel Range Organics	133	22.7	mg/Kg	AK102	B		05/21/09	05/22/09	KDC
Residual Range Organics	486	22.7	mg/Kg	AK103	B		05/21/09	05/22/09	KDC
Surrogates									
5a Androstane <surr>	88		%	AK102	B	50-150	05/21/09	05/22/09	KDC
n-Triacontane-d62 <surr>	88.4		%	AK103	B	50-150	05/21/09	05/22/09	KDC
Solids									
Total Solids	88.4		%	SM20 2540G	B			05/18/09	SMI

SGS

SGS Ref.#	1092076002		
Client Name	Dowl Engineers-Ak Test Lab	**Printed Date/Time**	05/30/2009 12:38
Project Name/#	Nullagnik Hotel	**Collected Date/Time**	05/15/2009 13:42
Client Sample ID	NUL-STO-2	**Received Date/Time**	05/18/2009 11:40
Matrix	Soil/Solid (dry weight)	**Technical Director**	**Stephen C. Ede**

Sample Remarks:

AK102 - Unknown hydrocarbon with several peaks is present.
AK103 - The pattern is consistent with a lube oil.

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
Volatile Fuels Department									
Gasoline Range Organics	2.97	2.88	mg/Kg	AK101	A		05/15/09	05/21/09	KPW
Benzene	ND	14.4	ug/Kg	SW8021B	A		05/15/09	05/21/09	KPW
Toluene	ND	57.6	ug/Kg	SW8021B	A		05/15/09	05/21/09	KPW
Ethylbenzene	ND	57.6	ug/Kg	SW8021B	A		05/15/09	05/21/09	KPW
o-Xylene	ND	57.6	ug/Kg	SW8021B	A		05/15/09	05/21/09	KPW
P & M -Xylene	87.2	57.6	ug/Kg	SW8021B	A		05/15/09	05/21/09	KPW
Surrogates									
4-Bromofluorobenzene <surr>	103		%	AK101	A	50-150	05/15/09	05/21/09	KPW
1,4-Difluorobenzene <surr>	83.7		%	SW8021B	A	80-120	05/15/09	05/21/09	KPW
Semivolatile Organic Fuels Department									
Diesel Range Organics	142	22.6	mg/Kg	AK102	B		05/21/09	05/22/09	KDC
Residual Range Organics	399	22.6	mg/Kg	AK103	B		05/21/09	05/22/09	KDC
Surrogates									
5a Androstane <surr>	92.5		%	AK102	B	50-150	05/21/09	05/22/09	KDC
n-Triacontane-d62 <surr>	92		%	AK103	B	50-150	05/21/09	05/22/09	KDC
Solids									
Total Solids	88.0		%	SM20 2540G	B			05/18/09	SMH

SGS

SGS Ref.#	1092076003		
Client Name	Dowl Engineers-Ak Test Lab	**Printed Date/Time**	05/30/2009 12:38
Project Name/#	Nullagnik Hotel	**Collected Date/Time**	05/15/2009 13:43
Client Sample ID	NUL-STO-3	**Received Date/Time**	05/18/2009 11:40
Matrix	Soil/Solid (dry weight)	**Technical Director**	**Stephen C. Ede**

Sample Remarks:

AK102/103 - The pattern is consistent with a lube oil.

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
Volatile Fuels Department									
Gasoline Range Organics	ND	3.41	mg/Kg	AK101	A		05/15/09	05/21/09	KPW
Benzene	ND	17.0	ug/Kg	SW8021B	A		05/15/09	05/21/09	KPW
Toluene	ND	68.2	ug/Kg	SW8021B	A		05/15/09	05/21/09	KPW
Ethylbenzene	ND	68.2	ug/Kg	SW8021B	A		05/15/09	05/21/09	KPW
o-Xylene	ND	68.2	ug/Kg	SW8021B	A		05/15/09	05/21/09	KPW
P & M -Xylene	ND	68.2	ug/Kg	SW8021B	A		05/15/09	05/21/09	KPW
Surrogates									
4-Bromofluorobenzene <surr>	83.7		%	AK101	A	50-150	05/15/09	05/21/09	KPW
1,4-Difluorobenzene <surr>	83.1		%	SW8021B	A	80-120	05/15/09	05/21/09	KPW
Semivolatile Organic Fuels Department									
Diesel Range Organics	1060	222	mg/Kg	AK102	B		05/21/09	05/29/09	KD(
Residual Range Organics	4670	222	mg/Kg	AK103	B		05/21/09	05/29/09	KD(
Surrogates									
5a Androstane <surr>	114		%	AK102	B	50-150	05/21/09	05/29/09	KD(
n-Triacontane-d62 <surr>	82.3		%	AK103	B	50-150	05/21/09	05/29/09	KD(
Solids									
Total Solids	86.6		%	SM20 2540G	B			05/18/09	SMI

SGS

SGS Ref.#	1092076004		
Client Name	Dowl Engineers-Ak Test Lab	**Printed Date/Time**	05/30/2009 12:38
Project Name/#	Nullagnik Hotel	**Collected Date/Time**	05/15/2009 13:44
Client Sample ID	NUL-STO-4	**Received Date/Time**	05/18/2009 11:40
Matrix	Soil/Solid (dry weight)	**Technical Director**	**Stephen C. Ede**

Sample Remarks:

AK102 - Unknown hydrocarbon with several peaks is present.
AK103 - The pattern is consistent with a lube oil.

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
Volatile Fuels Department									
Gasoline Range Organics	ND	3.41	mg/Kg	AK101	A		05/15/09	05/21/09	KPW
Benzene	ND	17.1	ug/Kg	SW8021B	A		05/15/09	05/21/09	KPW
Toluene	ND	68.3	ug/Kg	SW8021B	A		05/15/09	05/21/09	KPW
Ethylbenzene	ND	68.3	ug/Kg	SW8021B	A		05/15/09	05/21/09	KPW
o-Xylene	ND	68.3	ug/Kg	SW8021B	A		05/15/09	05/21/09	KPW
P & M -Xylene	ND	68.3	ug/Kg	SW8021B	A		05/15/09	05/21/09	KPW
Surrogates									
4-Bromofluorobenzene <surr>	91.8		%	AK101	A	50-150	05/15/09	05/21/09	KPW
1,4-Difluorobenzene <surr>	83.3		%	SW8021B	A	80-120	05/15/09	05/21/09	KPW
Semivolatile Organic Fuels Department									
Diesel Range Organics	138	22.6	mg/Kg	AK102	B		05/21/09	05/23/09	KDC
Residual Range Organics	471	22.6	mg/Kg	AK103	B		05/21/09	05/23/09	KDC
Surrogates									
5a Androstane <surr>	86.7		%	AK102	B	50-150	05/21/09	05/23/09	KDC
n-Triacontane-d62 <surr>	84.4		%	AK103	B	50-150	05/21/09	05/23/09	KDC
Solids									
Total Solids	87.1		%	SM20 2540G	B			05/18/09	SMH

SGS

SGS Ref.#	1092076005		
Client Name	Dowl Engineers-Ak Test Lab	**Printed Date/Time**	05/30/2009 12:38
Project Name/#	Nullagnik Hotel	**Collected Date/Time**	05/15/2009 13:45
Client Sample ID	NUL-STO-5	**Received Date/Time**	05/18/2009 11:40
Matrix	Soil/Solid (dry weight)	**Technical Director**	**Stephen C. Ede**

Sample Remarks:

AK102 - The pattern is consistent with a weathered middle distillate.

AK103 - The pattern is consistent with a lube oil.

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
Volatile Fuels Department									
Gasoline Range Organics	ND	4.57	mg/Kg	AK101	A		05/15/09	05/21/09	KPV
Benzene	ND	22.9	ug/Kg	SW8021B	A		05/15/09	05/21/09	KPV
Toluene	ND	91.4	ug/Kg	SW8021B	A		05/15/09	05/21/09	KPV
Ethylbenzene	ND	91.4	ug/Kg	SW8021B	A		05/15/09	05/21/09	KPV
o-Xylene	ND	91.4	ug/Kg	SW8021B	A		05/15/09	05/21/09	KPV
P & M -Xylene	ND	91.4	ug/Kg	SW8021B	A		05/15/09	05/21/09	KPV
Surrogates									
4-Bromofluorobenzene <surr>	92.9		%	AK101	A	50-150	05/15/09	05/21/09	KPV
1,4-Difluorobenzene <surr>	83		%	SW8021B	A	80-120	05/15/09	05/21/09	KPV
Semivolatile Organic Fuels Department									
Diesel Range Organics	139	22.0	mg/Kg	AK102	B		05/21/09	05/23/09	KD
Residual Range Organics	238	22.0	mg/Kg	AK103	B		05/21/09	05/23/09	KD
Surrogates									
5a Androstane <surr>	87.8		%	AK102	B	50-150	05/21/09	05/23/09	KD
n-Triacontane-d62 <surr>	80.7		%	AK103	B	50-150	05/21/09	05/23/09	KD
Solids									
Total Solids	88.6		%	SM20 2540G	B			05/18/09	SM

SGS

SGS Ref.#	1092076006		
Client Name	Dowl Engineers-Ak Test Lab	**Printed Date/Time**	05/30/2009 12:38
Project Name/#	Nullagnik Hotel	**Collected Date/Time**	05/15/2009 13:46
Client Sample ID	NUL-STO-6	**Received Date/Time**	05/18/2009 11:40
Matrix	Soil/Solid (dry weight)	**Technical Director**	**Stephen C. Ede**

Sample Remarks:

AK102/103 - Unknown hydrocarbon with several peaks is present.

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
Volatile Fuels Department									
Gasoline Range Organics	ND	2.51	mg/Kg	AK101	A		05/15/09	05/21/09	KPW
Benzene	ND	12.6	ug/Kg	SW8021B	A		05/15/09	05/21/09	KPW
Toluene	ND	50.3	ug/Kg	SW8021B	A		05/15/09	05/21/09	KPW
Ethylbenzene	ND	50.3	ug/Kg	SW8021B	A		05/15/09	05/21/09	KPW
o-Xylene	ND	50.3	ug/Kg	SW8021B	A		05/15/09	05/21/09	KPW
P & M -Xylene	ND	50.3	ug/Kg	SW8021B	A		05/15/09	05/21/09	KPW
Surrogates									
4-Bromofluorobenzene <surr>	90.2		%	AK101	A	50-150	05/15/09	05/21/09	KPW
1,4-Difluorobenzene <surr>	82.5		%	SW8021B	A	80-120	05/15/09	05/21/09	KPW
Semivolatile Organic Fuels Department									
Diesel Range Organics	23.6	20.9	mg/Kg	AK102	B		05/21/09	05/23/09	KDC
Residual Range Organics	71.4	20.9	mg/Kg	AK103	B		05/21/09	05/23/09	KDC
Surrogates									
5a Androstane <surr>	86.8		%	AK102	B	50-150	05/21/09	05/23/09	KDC
n-Triacontane-d62 <surr>	81.6		%	AK103	B	50-150	05/21/09	05/23/09	KDC
Solids									
Total Solids	93.3		%	SM20 2540G	B			05/18/09	SMH

SGS

SGS Ref.#	1092076007		
Client Name	Dowl Engineers-Ak Test Lab	**Printed Date/Time**	05/30/2009 12:38
Project Name/#	Nullagnik Hotel	**Collected Date/Time**	05/15/2009 13:47
Client Sample ID	NUL-STO-7	**Received Date/Time**	05/18/2009 11:40
Matrix	Soil/Solid (dry weight)	**Technical Director**	**Stephen C. Ede**

Sample Remarks:

AK102 - Unknown hydrocarbon with several peaks is present.
AK103 - The pattern is consistent with a lube oil.

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
Volatile Fuels Department									
Gasoline Range Organics	ND	3.32	mg/Kg	AK101	A		05/15/09	05/22/09	KPW
Benzene	ND	16.6	ug/Kg	SW8021B	A		05/15/09	05/22/09	KPW
Toluene	ND	66.5	ug/Kg	SW8021B	A		05/15/09	05/22/09	KPW
Ethylbenzene	ND	66.5	ug/Kg	SW8021B	A		05/15/09	05/22/09	KPW
o-Xylene	ND	66.5	ug/Kg	SW8021B	A		05/15/09	05/22/09	KPW
P & M -Xylene	ND	66.5	ug/Kg	SW8021B	A		05/15/09	05/22/09	KPW
Surrogates									
4-Bromofluorobenzene <surr>	72		%	AK101	A	50-150	05/15/09	05/22/09	KPW
1,4-Difluorobenzene <surr>	85.3		%	SW8021B	A	80-120	05/15/09	05/22/09	KPW
Semivolatile Organic Fuels Department									
Diesel Range Organics	119	87.9	mg/Kg	AK102	B		05/21/09	05/23/09	KDC
Residual Range Organics	401	87.9	mg/Kg	AK103	B		05/21/09	05/23/09	KDC
Surrogates									
5a Androstane <surr>	86.3		%	AK102	B	50-150	05/21/09	05/23/09	KDC
n-Triacontane-d62 <surr>	93.6		%	AK103	B	50-150	05/21/09	05/23/09	KDC
Solids									
Total Solids	90.6		%	SM20 2540G	B			05/18/09	SMH

SGS

SGS Ref.#	1092076008		
Client Name	Dowl Engineers-Ak Test Lab	**Printed Date/Time**	05/30/2009 12:38
Project Name/#	Nullagnik Hotel	**Collected Date/Time**	05/15/2009 13:48
Client Sample ID	NUL-STO-8	**Received Date/Time**	05/18/2009 11:40
Matrix	Soil/Solid (dry weight)	**Technical Director**	**Stephen C. Ede**

Sample Remarks:

AK102 - Unknown hydrocarbon with several peaks is present.
AK103 - The pattern is consistent with a lube oil.

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
Volatile Fuels Department									
Gasoline Range Organics	ND	4.25	mg/Kg	AK101	A		05/15/09	05/22/09	KPW
Benzene	ND	21.2	ug/Kg	SW8021B	A		05/15/09	05/22/09	KPW
Toluene	ND	84.9	ug/Kg	SW8021B	A		05/15/09	05/22/09	KPW
Ethylbenzene	ND	84.9	ug/Kg	SW8021B	A		05/15/09	05/22/09	KPW
o-Xylene	ND	84.9	ug/Kg	SW8021B	A		05/15/09	05/22/09	KPW
P & M -Xylene	ND	84.9	ug/Kg	SW8021B	A		05/15/09	05/22/09	KPW
Surrogates									
4-Bromofluorobenzene <surr>	77.8		%	AK101	A	50-150	05/15/09	05/22/09	KPW
1,4-Difluorobenzene <surr>	85		%	SW8021B	A	80-120	05/15/09	05/22/09	KPW
Semivolatile Organic Fuels Department									
Diesel Range Organics	116	22.7	mg/Kg	AK102	B		05/21/09	05/23/09	KDC
Residual Range Organics	561	22.7	mg/Kg	AK103	B		05/21/09	05/23/09	KDC
Surrogates									
5a Androstane <surr>	90		%	AK102	B	50-150	05/21/09	05/23/09	KDC
n-Triacontane-d62 <surr>	85		%	AK103	B	50-150	05/21/09	05/23/09	KDC
Solids									
Total Solids	85.0		%	SM20 2540G	B			05/18/09	SMH

SGS

SGS Ref.#	1092076009		
Client Name	Dowl Engineers-Ak Test Lab	**Printed Date/Time**	05/30/2009 12:38
Project Name/#	Nullagnik Hotel	**Collected Date/Time**	05/15/2009 13:49
Client Sample ID	NUL-STO-9	**Received Date/Time**	05/18/2009 11:40
Matrix	Soil/Solid (dry weight)	**Technical Director**	**Stephen C. Ede**

Sample Remarks:

AK102/103 - Unknown hydrocarbon with several peaks is present.

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
Volatile Fuels Department									
Gasoline Range Organics	ND	2.59	mg/Kg	AK101	A		05/15/09	05/22/09	KPV
Benzene	ND	13.0	ug/Kg	SW8021B	A		05/15/09	05/22/09	KPV
Toluene	ND	51.8	ug/Kg	SW8021B	A		05/15/09	05/22/09	KPV
Ethylbenzene	ND	51.8	ug/Kg	SW8021B	A		05/15/09	05/22/09	KPV
o-Xylene	ND	51.8	ug/Kg	SW8021B	A		05/15/09	05/22/09	KPV
P & M -Xylene	ND	51.8	ug/Kg	SW8021B	A		05/15/09	05/22/09	KPV
Surrogates									
4-Bromofluorobenzene <surr>	87.1		%	AK101	A	50-150	05/15/09	05/22/09	KPV
1,4-Difluorobenzene <surr>	84.6		%	SW8021B	A	80-120	05/15/09	05/22/09	KPV
Semivolatile Organic Fuels Department									
Diesel Range Organics	30.2	20.7	mg/Kg	AK102	B		05/21/09	05/23/09	KD
Residual Range Organics	93.7	20.7	mg/Kg	AK103	B		05/21/09	05/23/09	KD
Surrogates									
5a Androstane <surr>	91.4		%	AK102	B	50-150	05/21/09	05/23/09	KD
n-Triacontane-d62 <surr>	85.7		%	AK103	B	50-150	05/21/09	05/23/09	KD
Solids									
Total Solids	93.1		%	SM20 2540G	B			05/18/09	SM

SGS

SGS Ref.#	1092076010		
Client Name	Dowl Engineers-Ak Test Lab	**Printed Date/Time**	05/30/2009 12:38
Project Name/#	Nullagnik Hotel	**Collected Date/Time**	05/15/2009 10:45
Client Sample ID	NUL-E1-3	**Received Date/Time**	05/18/2009 11:40
Matrix	Soil/Solid (dry weight)	**Technical Director**	**Stephen C. Ede**

Sample Remarks:

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
Solids									
Total Solids	97.0		%	SM20 2540G	B			05/18/09	SMH

SGS

SGS Ref.#	1092076011		
Client Name	Dowl Engineers-Ak Test Lab	**Printed Date/Time**	05/30/2009 12:38
Project Name/#	Nullagnik Hotel	**Collected Date/Time**	05/15/2009 11:05
Client Sample ID	NUL-E1-5	**Received Date/Time**	05/18/2009 11:40
Matrix	Soil/Solid (dry weight)	**Technical Director**	**Stephen C. Ede**

Sample Remarks:

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
Solids									
Total Solids	91.9		%	SM20 2540G	B			05/18/09	SMI

SGS

SGS Ref.#	1092076012		
Client Name	Dowl Engineers-Ak Test Lab	**Printed Date/Time**	05/30/2009 12:38
Project Name/#	Nullagnik Hotel	**Collected Date/Time**	05/15/2009 11:20
Client Sample ID	NUL-E1-7.5	**Received Date/Time**	05/18/2009 11:40
Matrix	Soil/Solid (dry weight)	**Technical Director**	**Stephen C. Ede**

Sample Remarks:

AK102/103 - Unknown hydrocarbon with several peaks is present.

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
Volatile Fuels Department									
Gasoline Range Organics	16.5	4.73	mg/Kg	AK101	A		05/15/09	05/21/09	KPW
Benzene	28.6	23.6	ug/Kg	SW8021B	A		05/15/09	05/21/09	KPW
Toluene	ND	94.5	ug/Kg	SW8021B	A		05/15/09	05/21/09	KPW
Ethylbenzene	164	94.5	ug/Kg	SW8021B	A		05/15/09	05/21/09	KPW
o-Xylene	102	94.5	ug/Kg	SW8021B	A		05/15/09	05/21/09	KPW
P & M -Xylene	250	94.5	ug/Kg	SW8021B	A		05/15/09	05/21/09	KPW
Surrogates									
4-Bromofluorobenzene <surr>	133		%	AK101	A	50-150	05/15/09	05/21/09	KPW
1,4-Difluorobenzene <surr>	82.6		%	SW8021B	A	80-120	05/15/09	05/21/09	KPW
Semivolatile Organic Fuels Department									
Diesel Range Organics	45.2	23.6	mg/Kg	AK102	B		05/21/09	05/23/09	KDC
Residual Range Organics	55.0	23.6	mg/Kg	AK103	B		05/21/09	05/23/09	KDC
Surrogates									
5a Androstane <surr>	75.8		%	AK102	B	50-150	05/21/09	05/23/09	KDC
n-Triacontane-d62 <surr>	69.5		%	AK103	B	50-150	05/21/09	05/23/09	KDC
Solids									
Total Solids	83.2		%	SM20 2540G	B			05/18/09	SMH

SGS

SGS Ref.#	1092076013		
Client Name	Dowl Engineers-Ak Test Lab	**Printed Date/Time**	05/30/2009 12:38
Project Name/#	Nullagnik Hotel	**Collected Date/Time**	05/15/2009 11:45
Client Sample ID	NUL-E1-9	**Received Date/Time**	05/18/2009 11:40
Matrix	Soil/Solid (dry weight)	**Technical Director**	**Stephen C. Ede**

Sample Remarks:

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
Solids									
Total Solids	87.6		%	SM20 2540G	B			05/18/09	SMI

SGS

SGS Ref.#	1092076014		
Client Name	Dowl Engineers-Ak Test Lab	**Printed Date/Time**	05/30/2009 12:38
Project Name/#	Nullagnik Hotel	**Collected Date/Time**	05/15/2009 12:35
Client Sample ID	NUL-E2-8	**Received Date/Time**	05/18/2009 11:40
Matrix	Soil/Solid (dry weight)	**Technical Director**	**Stephen C. Ede**

Sample Remarks:

AK102 - The pattern is consistent with a weathered middle distillate.
AK101 - BFB (surrogate) recovery outside QC criteria (biased high) due to hydrocarbon interference.
AK101/8021B - BFB (surrogate) recovery does not meet QC criteria (biased high) due to hydrocarbon interference.

Parameter	Results		PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
Volatile Fuels Department										
Gasoline Range Organics	722		53.8	mg/Kg	AK101	A		05/15/09	05/27/09	KPW
Benzene	3170		271	ug/Kg	SW8021B			05/15/09	05/30/09	KPW
Toluene	3300		1080	ug/Kg	SW8021B			05/15/09	05/30/09	KPW
Ethylbenzene	1290		1080	ug/Kg	SW8021B			05/15/09	05/30/09	KPW
o-Xylene	2160		1080	ug/Kg	SW8021B			05/15/09	05/30/09	KPW
P & M -Xylene	5250		1080	ug/Kg	SW8021B			05/15/09	05/30/09	KPW
Surrogates										
4-Bromofluorobenzene <surr>	711	!		%	AK101	A	50-150	05/15/09	05/27/09	KPW
4-Bromofluorobenzene <surr>	735	!		%	AK101		50-150	05/15/09	05/30/09	KPW
1,4-Difluorobenzene <surr>	88.4			%	SW8021B		80-120	05/15/09	05/30/09	KPW
Semivolatile Organic Fuels Department										
Diesel Range Organics	158		22.8	mg/Kg	AK102	B		05/21/09	05/23/09	KDC
Residual Range Organics	ND		22.8	mg/Kg	AK103	B		05/21/09	05/23/09	KDC
Surrogates										
5a Androstane <surr>	90			%	AK102	B	50-150	05/21/09	05/23/09	KDC
n-Triacontane-d62 <surr>	80.1			%	AK103	B	50-150	05/21/09	05/23/09	KDC
Solids										
Total Solids	87.1			%	SM20 2540G	B			05/18/09	SMH

SGS

SGS Ref.#	1092076015		
Client Name	Dowl Engineers-Ak Test Lab	**Printed Date/Time**	05/30/2009 12:38
Project Name/#	Nullagnik Hotel	**Collected Date/Time**	05/15/2009 12:45
Client Sample ID	NUL-E2-10	**Received Date/Time**	05/18/2009 11:40
Matrix	Soil/Solid (dry weight)	**Technical Director**	**Stephen C. Ede**

Sample Remarks:

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
Solids									
Total Solids	86.5		%	SM20 2540G	B			05/18/09	SMI

SGS

SGS Ref.#	1092076016		
Client Name	Dowl Engineers-Ak Test Lab	**Printed Date/Time**	05/30/2009 12:38
Project Name/#	Nullagnik Hotel	**Collected Date/Time**	05/15/2009 12:55
Client Sample ID	NUL-E3-5	**Received Date/Time**	05/18/2009 11:40
Matrix	Soil/Solid (dry weight)	**Technical Director**	**Stephen C. Ede**

Sample Remarks:

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
Volatile Fuels Department									
Gasoline Range Organics	16.3	2.81	mg/Kg	AK101	A		05/15/09	05/21/09	KPW
Benzene	91.1	14.1	ug/Kg	SW8021B	A		05/15/09	05/21/09	KPW
Toluene	83.4	56.2	ug/Kg	SW8021B	A		05/15/09	05/21/09	KPW
Ethylbenzene	75.1	56.2	ug/Kg	SW8021B	A		05/15/09	05/21/09	KPW
o-Xylene	74.2	56.2	ug/Kg	SW8021B	A		05/15/09	05/21/09	KPW
P & M -Xylene	145	56.2	ug/Kg	SW8021B	A		05/15/09	05/21/09	KPW
Surrogates									
4-Bromofluorobenzene <surr>	124		%	AK101	A	50-150	05/15/09	05/21/09	KPW
1,4-Difluorobenzene <surr>	85		%	SW8021B	A	80-120	05/15/09	05/21/09	KPW
Semivolatile Organic Fuels Department									
Diesel Range Organics	ND	20.6	mg/Kg	AK102	B		05/21/09	05/23/09	KDC
Residual Range Organics	ND	20.6	mg/Kg	AK103	B		05/21/09	05/23/09	KDC
Surrogates									
5a Androstane <surr>	88.7		%	AK102	B	50-150	05/21/09	05/23/09	KDC
n-Triacontane-d62 <surr>	76.5		%	AK103	B	50-150	05/21/09	05/23/09	KDC
Solids									
Total Solids	96.3		%	SM20 2540G	B			05/18/09	SMH

SGS

SGS Ref.#	1092076017		
Client Name	Dowl Engineers-Ak Test Lab	**Printed Date/Time**	05/30/2009 12:38
Project Name/#	Nullagnik Hotel	**Collected Date/Time**	05/15/2009 15:10
Client Sample ID	NUL-E4-3	**Received Date/Time**	05/18/2009 11:40
Matrix	Soil/Solid (dry weight)	**Technical Director**	**Stephen C. Ede**

Sample Remarks:

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
Volatile Fuels Department									
Gasoline Range Organics	ND	3.15	mg/Kg	AK101	A		05/15/09	05/30/09	KPV
Benzene	ND	15.7	ug/Kg	SW8021B	A		05/15/09	05/30/09	KPV
Toluene	ND	62.9	ug/Kg	SW8021B	A		05/15/09	05/30/09	KPV
Ethylbenzene	ND	62.9	ug/Kg	SW8021B	A		05/15/09	05/30/09	KPV
o-Xylene	ND	62.9	ug/Kg	SW8021B	A		05/15/09	05/30/09	KPV
P & M -Xylene	ND	62.9	ug/Kg	SW8021B	A		05/15/09	05/30/09	KPV
Surrogates									
4-Bromofluorobenzene <surr>	92.9		%	AK101	A	50-150	05/15/09	05/30/09	KPV
1,4-Difluorobenzene <surr>	81.9		%	SW8021B	A	80-120	05/15/09	05/30/09	KPV
Semivolatile Organic Fuels Department									
Diesel Range Organics	ND	20.1	mg/Kg	AK102	B		05/21/09	05/23/09	KD
Residual Range Organics	ND	20.1	mg/Kg	AK103	B		05/21/09	05/23/09	KD
Surrogates									
5a Androstane <surr>	88.2		%	AK102	B	50-150	05/21/09	05/23/09	KD
n-Triacontane-d62 <surr>	83.3		%	AK103	B	50-150	05/21/09	05/23/09	KD
Solids									
Total Solids	97.4		%	SM20 2540G	B			05/18/09	SMI

SGS

SGS Ref.#	1092076018		
Client Name	Dowl Engineers-Ak Test Lab	**Printed Date/Time**	05/30/2009 12:38
Project Name/#	Nullagnik Hotel	**Collected Date/Time**	05/15/2009 3:20
Client Sample ID	NUL-E4-5	**Received Date/Time**	05/18/2009 11:40
Matrix	Soil/Solid (dry weight)	**Technical Director**	**Stephen C. Ede**

Sample Remarks:

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
Solids									
Total Solids	97.1		%	SM20 2540G	B			05/18/09	SMH

SGS

SGS Ref.#	1092076019		
Client Name	Dowl Engineers-Ak Test Lab	**Printed Date/Time**	05/30/2009 12:38
Project Name/#	Nullagnik Hotel	**Collected Date/Time**	05/15/2009 15:40
Client Sample ID	NUL-E4-9	**Received Date/Time**	05/18/2009 11:40
Matrix	Soil/Solid (dry weight)	**Technical Director**	**Stephen C. Ede**

Sample Remarks:

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
Volatile Fuels Department									
Gasoline Range Organics	8.64	3.85	mg/Kg	AK101	A		05/15/09	05/22/09	KPW
Benzene	56.7	19.3	ug/Kg	SW8021B	A		05/15/09	05/22/09	KPW
Toluene	130	77.0	ug/Kg	SW8021B	A		05/15/09	05/22/09	KPW
Ethylbenzene	126	77.0	ug/Kg	SW8021B	A		05/15/09	05/22/09	KPW
o-Xylene	149	77.0	ug/Kg	SW8021B	A		05/15/09	05/22/09	KPW
P & M -Xylene	354	77.0	ug/Kg	SW8021B	A		05/15/09	05/22/09	KPW
Surrogates									
4-Bromofluorobenzene <surr>	109		%	AK101	A	50-150	05/15/09	05/22/09	KPW
1,4-Difluorobenzene <surr>	84.6		%	SW8021B	A	80-120	05/15/09	05/22/09	KPW
Semivolatile Organic Fuels Department									
Diesel Range Organics	ND	22.8	mg/Kg	AK102	B		05/22/09	05/26/09	KD(
Residual Range Organics	ND	22.8	mg/Kg	AK103	B		05/22/09	05/26/09	KD(
Surrogates									
5a Androstane <surr>	89.5		%	AK102	B	50-150	05/22/09	05/26/09	KD(
n-Triacontane-d62 <surr>	85.1		%	AK103	B	50-150	05/22/09	05/26/09	KD(
Solids									
Total Solids	85.9		%	SM20 2540G	B			05/18/09	SMI

SGS

SGS Ref.#	1092076020		
Client Name	Dowl Engineers-Ak Test Lab	**Printed Date/Time**	05/30/2009 12:38
Project Name/#	Nullagnik Hotel	**Collected Date/Time**	05/15/2009 16:20
Client Sample ID	NUL-E5-8	**Received Date/Time**	05/18/2009 11:40
Matrix	Soil/Solid (dry weight)	**Technical Director**	**Stephen C. Ede**

Sample Remarks:

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
Volatile Fuels Department									
Benzene	ND	54.4	ug/Kg	SW8021B	A		05/15/09	05/22/09	KPW
Toluene	ND	218	ug/Kg	SW8021B	A		05/15/09	05/22/09	KPW
Ethylbenzene	ND	218	ug/Kg	SW8021B	A		05/15/09	05/22/09	KPW
o-Xylene	ND	218	ug/Kg	SW8021B	A		05/15/09	05/22/09	KPW
P & M -Xylene	ND	218	ug/Kg	SW8021B	A		05/15/09	05/22/09	KPW
Surrogates									
1,4-Difluorobenzene <surr>	84.5		%	SW8021B	A	80-120	05/15/09	05/22/09	KPW
Semivolatile Organic Fuels Department									
Diesel Range Organics	ND	23.5	mg/Kg	AK102	B		05/22/09	05/26/09	KDC
Residual Range Organics	ND	23.5	mg/Kg	AK103	B		05/22/09	05/26/09	KDC
Surrogates									
5a Androstane <surr>	92.4		%	AK102	B	50-150	05/22/09	05/26/09	KDC
n-Triacontane-d62 <surr>	85.8		%	AK103	B	50-150	05/22/09	05/26/09	KDC
Solids									
Total Solids	84.7		%	SM20 2540G	B			05/18/09	SMH

SGS

SGS Ref.#	1092076021		
Client Name	Dowl Engineers-Ak Test Lab	**Printed Date/Time**	05/30/2009 12:38
Project Name/#	Nullagnik Hotel	**Collected Date/Time**	05/15/2009 16:30
Client Sample ID	NUL-E6-8	**Received Date/Time**	05/18/2009 11:40
Matrix	Soil/Solid (dry weight)	**Technical Director**	**Stephen C. Ede**

Sample Remarks:

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
Volatile Fuels Department									
Gasoline Range Organics	ND	2.88	mg/Kg	AK101	A		05/15/09	05/22/09	KPV
Benzene	ND	14.4	ug/Kg	SW8021B	A		05/15/09	05/22/09	KPV
Toluene	ND	57.6	ug/Kg	SW8021B	A		05/15/09	05/22/09	KPV
Ethylbenzene	ND	57.6	ug/Kg	SW8021B	A		05/15/09	05/22/09	KPV
o-Xylene	ND	57.6	ug/Kg	SW8021B	A		05/15/09	05/22/09	KPV
P & M -Xylene	ND	57.6	ug/Kg	SW8021B	A		05/15/09	05/22/09	KPV
Surrogates									
4-Bromofluorobenzene <surr>	90.9		%	AK101	A	50-150	05/15/09	05/22/09	KPV
1,4-Difluorobenzene <surr>	85.3		%	SW8021B	A	80-120	05/15/09	05/22/09	KPV
Semivolatile Organic Fuels Department									
Diesel Range Organics	ND	22.6	mg/Kg	AK102	B		05/22/09	05/26/09	KD
Residual Range Organics	ND	22.6	mg/Kg	AK103	B		05/22/09	05/26/09	KD
Surrogates									
5a Androstane <surr>	91.1		%	AK102	B	50-150	05/22/09	05/26/09	KD
n-Triacontane-d62 <surr>	86.2		%	AK103	B	50-150	05/22/09	05/26/09	KD
Solids									
Total Solids	87.2		%	SM20 2540G	B			05/18/09	SM

SGS

SGS Ref.#	1092076022		
Client Name	Dowl Engineers-Ak Test Lab	**Printed Date/Time**	05/30/2009 12:38
Project Name/#	Nullagnik Hotel	**Collected Date/Time**	05/15/2009 10:45
Client Sample ID	TRIP BLANK	**Received Date/Time**	05/18/2009 11:40
Matrix	Soil/Solid (dry weight)	**Technical Director**	**Stephen C. Ede**

Sample Remarks:

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
Volatile Fuels Department									
Gasoline Range Organics	ND	2.53	mg/Kg	AK101	A		05/15/09	05/20/09	KPW
Benzene	ND	12.6	ug/Kg	SW8021B	A		05/15/09	05/20/09	KPW
Toluene	ND	50.5	ug/Kg	SW8021B	A		05/15/09	05/20/09	KPW
Ethylbenzene	ND	50.5	ug/Kg	SW8021B	A		05/15/09	05/20/09	KPW
o-Xylene	ND	50.5	ug/Kg	SW8021B	A		05/15/09	05/20/09	KPW
P & M -Xylene	ND	50.5	ug/Kg	SW8021B	A		05/15/09	05/20/09	KPW
Surrogates									
4-Bromofluorobenzene <surr>	81.7		%	AK101	A	50-150	05/15/09	05/20/09	KPW
1,4-Difluorobenzene <surr>	84.6		%	SW8021B	A	80-120	05/15/09	05/20/09	KPW

SGS

SGS Ref.#	1092076023		
Client Name	Dowl Engineers-Ak Test Lab	**Printed Date/Time**	05/30/2009 12:38
Project Name/#	Nullagnik Hotel	**Collected Date/Time**	05/15/2009 10:45
Client Sample ID	TRIP BLANK	**Received Date/Time**	05/18/2009 11:40
Matrix	Soil/Solid (dry weight)	**Technical Director**	**Stephen C. Ede**

Sample Remarks:

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
Volatile Fuels Department									
Gasoline Range Organics	ND	2.53	mg/Kg	AK101	A		05/15/09	05/20/09	KPW
Benzene	ND	12.6	ug/Kg	SW8021B	A		05/15/09	05/20/09	KPW
Toluene	ND	50.6	ug/Kg	SW8021B	A		05/15/09	05/20/09	KPW
Ethylbenzene	ND	50.6	ug/Kg	SW8021B	A		05/15/09	05/20/09	KPW
o-Xylene	ND	50.6	ug/Kg	SW8021B	A		05/15/09	05/20/09	KPW
P & M -Xylene	ND	50.6	ug/Kg	SW8021B	A		05/15/09	05/20/09	KPW
Surrogates									
4-Bromofluorobenzene <surr>	91.5		%	AK101	A	50-150	05/15/09	05/20/09	KPW
1,4-Difluorobenzene <surr>	85		%	SW8021B	A	80-120	05/15/09	05/20/09	KPW

SGS

SGS Environmental Services Inc
CHAIN OF CUSTODY RECORD

1092076

...tionwide
- Maryland
- New York
- Ohio

...sgs.com

(1)

CLIENT: DOWL HKM

CONTACT: Brandie Hofmeister PHONE NO: 562-2000

PROJECT: Nullagvik Hotel SITE/PWSID#:

REPORTS TO: Brandie Holfmeister EMAIL: bholfmeister@dowlhkm.com

INVOICE TO: DOWL HKM 4041 B ST Anchorage AK QUOTE #: Nullagvik Hotel

P.O. #: 58405

SGS Reference #:

page 1 of 3

(2)

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX/ MATRIX CODE	# CONTAINERS	SAMPLE TYPE C= COMP G= GRAB MI= Multi Incremental Samples	Preservatives Used: MeOH	Analysis Required (3): AK101 GRO/BTEX	AK102/103 DRO/RRO	REMARKS/ LOC ID
~~Nul-Sto-1~~ (1)AB	Nul-Sto-1	5/15/09	1:41	Soil	2			X	X	
(2)	Nul-Sto-2		1:42		2					
(3)	Nul-Sto-3		1:43		2					
(4)	Nul-Sto-4		1:44		2					
(5)	Nul-Sto-5		1:45		2					
(6)	Nul-Sto-6		1:46		2					
(7)	Nul-Sto-7		1:47		2					
(8)	Nul-Sto-8		1:48		2					
(9)	Nul-Sto-9		1:49		2					
(20)(22)(23)A	Trip Blank	NA	NA	NA	1					

(5)

Collected/Relinquished By:(1)	Date	Time	Received By:
Calli Kelly	5/18/09	11:40	
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date 5/18/09	Time 1140 5/18/09	Received For Laboratory By:

(4)

DOD Project? YES NO

Cooler ID _____

Special Deliverable Requirements:

Requested Turnaround Time and-or Special Instructions:

Samples Received Cold? YES NO

Temperature °C: Cooler _____ TB 6.2

Chain of Custody Seal: (Circle)

INTACT BROKEN ABSENT

☐ 200 W. Potter Drive Anchorage, AK 99518 Tel: (907) 562-2343 Fax: (907) 561-5301
☐ 550 Business Drive Wilmington, NC 28405 Tel: (910) 350-1903 Fax: (910) 350-1557

White - Retained by Lab
Pink - Retained by Client

SGS

SGS Environmental Services Inc.
CHAIN OF CUSTODY RECORD

Locations Nationwide
- Alaska
- New Jersey
- North Carolina
- West Virginia
- Maryland
- New York
- Ohio

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26 of 92

(1)

CLIENT: DOWL HKM

CONTACT: Brandie — PHONE NO:

PROJECT: Nullaguik Hotel — SITE/PWSID#:

REPORTS TO: Brandie — EMAIL: bholfmeister@dowlhkm.com

INVOICE TO: — QUOTE #: — P.O. #:

SGS Reference #:

page 2 of 3

(2)

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX/ MATRIX CODE	# CONTAINERS	SAMPLE TYPE C= COMP G= GRAB MI= Multi Incremental Samples	DRO/RRO	GRO/BTEX								REMARKS/ LOC ID
Preservatives Used								MeOH								
Analysis Required (3)																
(10) A,B	Nul-E1-3	5/15	10:45	S	2	G	[redacted]	[redacted]								HOLD
(11)	Nul-E1-5		11:05				[redacted]	[redacted]								HOLD
(12)	Nul-E1-7.5		11:20				X	X								
(13)	Nul-E1-9		11:45				[redacted]	[redacted]								HOLD
(14)	Nul-E2-8		12:35				X	X								
(15)	Nul-E2-10		12:45				[redacted]	[redacted]								HOLD
(16)	Nul-E3-5		12:55				X	X								
(17)	Nul-E4-3		3:10				X	X								
(18)	Nul-E4-5		8:20				[redacted]	[redacted]								HOLD
(19)	Nul-E4-9		3:40				X	X								

(5)

Collected/Relinquished By:(1)	Date	Time	Received By:
Callie Keller	5/15		
Relinquished By: (2)	Date	Time	Received By:
Callie Keller	5/18	11:40	
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received For Laboratory By:
	5/18/09	1140	

(4)

DOD Project? YES NO

Cooler ID _____

Special Deliverable Requirements:

Requested Turnaround Time and-or Special Instructions:

Samples Received Cold? YES NO

Cooler TB

Temperature°C: _____ . _____

Chain of Custody Seal: (Circle)

INTACT BROKEN ABSENT

SGS Environmental Services Inc.
CHAIN OF CUSTODY RECORD

Locations Nationwide
- Alaska
- New Jersey
- North Carolina
- West Virginia
- Maryland
- New York
- Ohio

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(1)

CLIENT: DOWL HKM

CONTACT: Brandie Holfmeister PHONE NO: 562-2000

PROJECT: Nuiqsut Hotel SITE/PWSID# :

REPORTS TO: EMAIL:

Brandie Holfmeister bholfmeister@dowlhkm.com

INVOICE TO: QUOTE #:

P.O. #:

SGS Reference #:

page 3 of 3

(2)

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX/ MATRIX CODE	# CONTAINERS	SAMPLE TYPE C= COMP G= GRAB MI= Multi Incremental Samples	Preservatives Used: MeOH										REMARKS/ LOC ID
							Analysis Required (3)	GRO/BTEX	DRO/RRO								
(20) A,B	Nul-ES-B	5/15	4:20	S	2	G		X	X								
(21) A,B	Nul-E16-B	5/15	4:30	S	2	G		X	X								

(5)

Collected/Relinquished By:(1)	Date	Time	Received By:
Callie Kelle	5/18/09	11:40	
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date 1140	Time 5/18/09	Received For Laboratory By:

(4)

DOD Project? YES NO

Cooler ID _____

Special Deliverable Requirements:

Requested Turnaround Time and-or Special Instructions:

Samples Received Cold? YES NO

Cooler TB

Temperature°C: _____ . _____

Chain of Custody Seal: (Circle)

INTACT BROKEN ABSENT

1092076

SGS

SAMPLE RECEIPT FORM

SGS WO#:

Yes	No	NA	
	✓		Are samples **RUSH**, priority or *w/in 72 hrs* of **hold time?**
		✓	If yes, have you done *e-mail ALERT notification*?
	✓		Are samples *within 24 hrs.* of **hold time** or **due date?**
		✓	If yes, have you also *spoken with* supervisor?
		✓	Archiving bottles: Are lids marked w/ red "X"?
✓			Were samples collected with proper preservative?
	✓		**Any problems (ID, cond'n, HT, etc)? Explain:**
		✓	If this is for PWS, provide **PWSID:**_____
	✓		Payment received: $_____ by Check or Credit Card
	✓		Will courier charges apply?
✓			Data package required? (Level: 1 / 2 / 3 / 4)
	✓		Is this a DoD project? (USACE, Navy, AFCEE)

TAT (circle one): Standard or Rush

Received Date: 5/18/09

Received Time: 1140

Cooler ID	Temperature	Measured w/ (Therm/IR ID#)
1	6.2 °C	#7
	°C	
	°C	
	°C	

Note: Temperature readings include thermometer correction factors

Delivery method (circle all that apply):

Client / Alert Courier / Lynden / SGS
UPS / FedEx / USPS / DHL / Carlile
AkAir Goldstreak / NAC / ERA / PenAir
Other: _____

Additional Sample Remarks: (√ *if applicable*)

_____ Extra Sample Volume?
_____ Limited Sample Volume?
_____ Multi-Incremental Samples?
_____ Lab-filtered for dissolved_____
_____ Ref Lab required for_____
_____ Foreign Soil?

This section must be filled out for DoD projects (USACE, Navy, AFCEE):

Yes	No	
		Is received temperature <6°C?
		Were containers undamaged? *Notify PM immediately if any are damaged.*
		If some sample temperatures are non-compliant, see form FS-0029 (attached) for samples affected.
		Was there an anomaly? (If yes, see attached.)
		Was cooler sealed with custody seals & were they intact?
		# & where:
		Was there a COC with cooler?
		Was COC sealed in plastic bag & taped inside lid of cooler?
		Was the COC filled out properly? Did labels correspond?
		Did the COC indicate USACE / Navy / AFCEE project?
		Samples were packed to prevent breakage with (circle one): Bubble Wrap / Vermiculite / Other (specify): _____
		Were all samples sealed in separate plastic bags?
		Were all VOCs free of headspace and/or MeOH preserved?
		Were correct containers & sample sizes submitted?
		Was the PM notified to email so they can send Sample Receipt Acknowledgement to client?

This section must be completed if problems are noted.

Was client notified of problems? Yes / No

By (SGS PM): _____ Date: _____

Individual contacted: _____

Via: Phone / Fax / E-mail (circle one)

Date/Time: _____

Reason for contact: _____

Change Order Received? Yes / No

Notes:

Completed by (sign): [signature] **(print):** Joe Rudi

Login proof: Self-check completed JJR **Peer-reviewer's initials** [initials]

Form # F004r20 revised 05/05/200

1092076

SGS

SAMPLE RECEIPT FORM (page 2)

SGS WO#:

#	Container ID	Matrix	Test	QC	TB	Container Volume: 1 L	500 mL	250 mL or 8oz	125 mL or 4oz	60 mL	40 mL	Other (specify)	Container Type: AG	CG	HDPE	Nalgene	Coli	Septa	Other (specify)	Preservative: None	HCl	HNO_3	H_2SO_4	MeOH	$Na_2S_2O_3$	NaOH	NaOH+ZnAc	Other (specify)	* Notes
1-8,12 14,15,17	A	2	GRO/Btex						16				✓					✓						✓					
19,20, 21	B	2	DRO/RRO						16				✓							✓									
10,11,13 15,18	A	2	GRO Hold						5				✓					✓						✓					
	B	2	↓						5				✓																
22,23	A	2	GRO/Btex		✓				2				✓					✓						✓					
Bottle Totals									49																				

* Note: Containers which require (additional) chemical preservation upon receipt must be documented per SOP#106.

Completed by: [signature] Date: 5/18/09