



P.O. Box 515429
Dallas, Texas 75075
Ph: (972) 669-3390
Fax: (469) 241-0896
Email: oseicorp@msn.com
Web: www.osei.us

AT&T Alaskom Utilizing OSE II for Eight Different Regions of Alaska

The company AT&T Alaskom has switching terminals in various regions of Alaska. These remote switching terminals required power, which was derived from generators, that produced the power, which in turn required fuel, in fact they used diesel fuel. The documentation below states for almost all the switching terminals, the fuel was handled poorly, which means the fuel ended up on the soil near the generators.

AT&T Alaskom tested the contaminated soil near the switching terminal generators, and discovered the contamination which was GRO (gasoline range organics) DRO (diesel range organics) and PAH's was above the threshold set for what is acceptable in the state of Alaska, for each of the eight regions.

AT&T Alaskom research the various ways to solve the contaminated soil problems, which was digging it up and hauling 100's of miles to a disposal site, digging up the soil and taking it to a thermal desorption unit both of which would have cost 100,000.00 's of \$ US. AT&T Alaskom learned of the potential benefit of OSE II, for less than 1000.00\$US, and decided to use OSE II.

In January of 2000 AT&T Alaskom had OSE II mixed and applied at each of their sites, just ahead of a massive snow storm, where the sites remained covered in snow, until early April. In early April AT&T Alaskom visited each site, extracted sample, where all the samples for GRO, DRO and PAH's came back non detect, which meant that OSE

II had remediated the soil, and saved AT&T Alaskom hundreds of thousands of dollars. AT&T Alaskom continued utilizing OSE II thereafter.

**Steven Pedigo
CEO OSEI Corporation**



INVOICE

OIL SPILL EATER INTERNATIONAL, CORP.

13127 Chandler Drive
Dallas, Texas 75243

(972) 669-3390
(972) 644-8359 (Fax)

SOLD TO: A T & T - ALASCOM

17103 Lena Loop Road

Juneau, AK 99801

ATTENTION: Mr. Louis Corazza

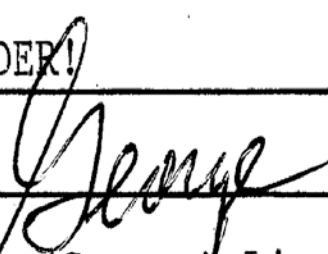
No

1-21-99

DATE:

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01/21/00

PO. NO. Mastercard

ITEM	QTY.	DESCRIPTION
1.	1	CASE OF "OIL SPILL EATER" II
		Contains 2 - 2½ Gallon Containers.
		PAYMENT: PAID/MC
		SHIPMENT: This date.
		Delivery: UPS - 2nd Day Air.
		THANKS FOR THE ORDER!
		
		O. A. (George) Lively

EXECUTIVE SUMMARY

Eight AT&T facilities in southeast Alaska were visited and environmental samples collected and analyzed to determine whether past fuel handling practices have resulted in fuel impacts to site soils and surface water (if present) within and around the existing fuel containment structures. The eight facilities include Angoon, Bessie, Gunnuk, High Mountain, Mount Ripinski, Point Howard, Ratz Mountain, and South Passage. The results of the sample analyses from these sites indicate that each of the facilities have concentrations of diesel range organics (DRO) in the soil that exceed cleanup levels established by the Alaska Department of Environmental Conservation (ADEC) and will require remediation to achieve the cleanup levels. The High Mountain and South Passage sites also had concentrations of one polynuclear aromatic hydrocarbon (PAH) compound (dibenzo(a,h)anthracene) in the site soils that exceeded the ADEC cleanup levels. With the exception of these PAH concentrations, each of the sites did not exceed the ADEC cleanup levels in soils for gasoline range organics (GRO), benzene, toluene, ethylbenzene, and xylenes (BTEX), or PAHs.

Surface water samples were obtained downslope of the site at the Bessie, Gunnuk, Point Howard, and Ratz Mountain facilities. The surface water samples did not exceed the ADEC ground water cleanup objectives for the sampled analytes. The water standing within the geotextile containment area at the High Mountain facility exceeded the ADEC ground water cleanup level for DRO. However, the DRO concentration was less than ten times the cleanup level which applies if the ground water is not a current drinking water source. Therefore, the water may not need to be remediated for DRO. The water standing within the concrete containment area at the South Passage facility exceeded ten times the ADEC ground water cleanup level for DRO. This water can be remediated along with the soil within the containment area at this site.

Due to time constraints and the limited scope of this portion of the project, an exhaustive study of the potential remedial alternatives has not been performed. However, it appears that bioremediation would be a cost effective approach to remediate the identified fuel impacts. A

preliminary cost estimate to perform bioremediation at all eight of these sites is estimated to be about \$2.4 million.

SITE SPECIFIC FINDINGS

Angeon Facility

Nine soil samples and one duplicate soil sample were obtained from within the fuel containment area at this facility as shown in Figure 1. The soil samples were analyzed for the presence of GRO, BTEX, and DRO. One sample and the duplicate sample were also analyzed for the presence of PAH compounds (S-9 and S-10). Three of the soil samples and the duplicate sample were impacted above the ADEC Method 2 soil cleanup levels for DRO. Sample S-9 and the duplicate of that sample, S-10, were also above the maximum allowable DRO concentration. These areas will require remediation to reduce the DRO concentrations below the cleanup level of 230 mg/kg. The laboratory analytical results are summarized on Tables 1 and 2.

The impacts at this site are very localized and shallow and appear to have resulted from leaking fittings at the ends of the aboveground storage tanks (ASTs). Surface stains at the ends of the tanks beneath the fittings were observed during the sampling activities. Other than below the ends of the tanks, the soil sample analytical results were well below the applicable cleanup levels. Vegetation consisting primarily of grasses was healthy and abundant within the containment area. The soils within the containment area are primarily gravely sand with varying amounts of silt.

Due to the relatively small area of impacted material at this facility, the recommended remedial action is to excavate the impacted soils and landfarm on-site using bioremediation enhancement. The costs estimated to perform these activities are \$150,000. Another option for this facility is to excavate the impacted soils and remove from the site for thermal destruction. Costs to perform these actions are estimated to be \$300,000.

Bessie Facility

Seven soil samples and one duplicate soil sample were obtained from within the fuel containment area and two soil samples were obtained downslope of the containment at this facility as shown in Figure 2. The soil samples were analyzed for the presence of GRO, BTEX, and DRO. Sample S-3 and the duplicate sample, S-9, were also sampled for the presence of PAH compounds. Each of the soil samples and the duplicate sample obtained from within the containment were impacted above the ADEC Method 2 soil cleanup levels for DRO. One of the soil samples collected downslope from the containment area (S-2) also exceeded the DRO cleanup levels. This sample also had slight fuel odors. The soils within the containment area and about 30 feet downslope of the containment area will require remediation to reduce the DRO concentrations below the cleanup level of 230 mg/kg. The laboratory analytical results are summarized on Tables 3, 4, and 5.

The surface water sample and duplicate sample obtained downslope from the containment area did not exceed the ADEC ground water GRO, BTEX, DRO, or PAH cleanup levels.

The impacts at this site appear to be the result of poor fuel handling practices. Surface staining was visible within the containment area and water standing within the containment had a slight sheen which worsened when the soils were disturbed. There was a minor amount of vegetation and bedrock outcrop was prevalent within the containment area. Bedrock was generally encountered within 0.8 feet during the sample collection activities. Soils within the containment were gravely sand with some silt. Soils outside the containment were organic-rich silty sand with some gravel.

Due to the relatively large area of impacted soils and the shallow depth to bedrock at this site, the recommended remedial action is in-situ, surface application, bioremediation. Costs to perform these actions are estimated to be \$350,000.

Gunnuk Facility

Six soil samples and one duplicate soil sample were obtained from within the fuel containment area and one soil sample was obtained downslope of the containment at this facility as shown in Figure 3. The soil samples were analyzed for the presence of GRO, BTEX, and DRO. Sample S-6 and the duplicate sample, S-8, were also sampled for the presence of PAH compounds. Each of the soil samples and the duplicate sample obtained from within the containment were impacted above the ADEC Method 2 soil cleanup levels for DRO. The soil sample collected downslope from the containment area (S-1) also exceeded the DRO cleanup level. However, this sample was primarily peat and the organic material likely interfered with the DRO detection. The laboratory report for this sample noted the hydrocarbon was unknown. No fuel odors were observed in the soil sample upon collection. The soils within the containment area will require remediation to reduce the DRO concentrations below the cleanup level of 230 mg/kg. Confirmation of the DRO concentration downslope may also be performed by additional sampling. The laboratory analytical results are summarized on Tables 6, 7, and 8.

The surface water sample and duplicate sample obtained downslope from the containment area did not exceed the ADEC ground water GRO, BTEX, DRO, or PAH cleanup levels.

The impacts at this site appear to be the result of poor fuel handling practices. Significant surface staining was not visible within the containment. Water standing within the containment did not have a sheen on the surface area, although a slight sheen did develop after disturbing the soils. There was a fair amount of vegetation within the containment area. Some bedrock outcrop was present within the containment area and bedrock was generally encountered within 1 foot during the sample collection activities. Soils within the containment were primarily bedrock fragments with some finer grained sandy matrix with minor amounts of silt. Soils outside the containment were primarily organic-rich peat overlying bedrock.

Due to the relatively large area of impacted soils within the containment and the shallow depth to bedrock at this site, the recommended remedial action is in-situ, surface application bioremediation. Costs to perform these actions are estimated to be \$300,000.

High Mountain Facility

This facility has a geotextile membrane which provides fuel spill containment. There were no soils within the containment. Water was standing within the containment up to the base of the ASTs. Three soil samples and one duplicate soil sample were obtained downslope from the containment area at this facility as shown in Figure 4. The soil samples were analyzed for the presence of GRO, BTEX, and DRO. Sample S-2 and the duplicate sample, S-3, were also sampled for the presence of PAH compounds. Each of the soil samples and the duplicate sample were impacted above the ADEC Method 2 soil cleanup levels for DRO. However, these samples were primarily peat and the organic material likely interfered with the DRO detection. The laboratory report stated that the hydrocarbon was unknown with several peaks. Slight fuel odors were observed in each of the soil samples, except S-4. Sample S-2 and the duplicate sample (S-3) also exceeded the cleanup level for dibenzo(a,h)anthracene, a carcinogenic PAH compound. The organic-rich soil may also have interfered with the PAH detection. The laboratory analytical results are summarized on Tables 9, 10, and 11.

The water sample and duplicate sample obtained from water standing within the geotextile containment exceeded the ADEC ground water DRO cleanup levels. However, the concentration was less than 10 times the cleanup level which applies to ground water determined to be not used for drinking water. ADEC input will likely be necessary to determine if remediation of this water is required.

Due to the uncertainty of the degree of impacts to site soils downslope of the containment caused by the peat soils and the impacts to the standing water within the containment, recommendations at this facility include discussions with ADEC concerning the remediation of

the water and confirmation sampling of the soils downslope of the containment. Assuming that remedial actions are required, the costs to perform these actions are estimated to be \$300,000.

Mount Ripinski Facility

Five soil samples and one duplicate soil sample were obtained from within the fuel containment area and four soil samples were obtained downslope of the containment at this facility as shown in Figure 5. The soil samples were analyzed for the presence of GRO, BTEX, and DRO. Sample S-8 and the duplicate sample, S-10, were also sampled for the presence of PAH compounds. Each of the soil samples and the duplicate sample obtained from within the containment were impacted above the ADEC Method 2 soil cleanup levels for DRO. The soil samples collected downslope from the containment area were below the applicable cleanup levels. The soils within the containment area will require remediation to reduce the DRO concentrations below the cleanup level of 230 mg/kg. The laboratory analytical results are summarized on Tables 12 and 13.

There was no free standing surface water downslope from this site. A small amount of standing water was present in the southeast corner of the containment. The standing water was not sampled.

The impacts at this site appear to be the result of poor fuel handling practices. Surface staining was visible within the containment area. The small amount of water standing within the containment did not have a sheen on the surface and water bugs were abundant within the small pool. There was a minor amount of vegetation and bedrock outcrop was prevalent within the containment area. Bedrock was generally encountered within 1 foot during the sample collection activities. Soils within the containment were gravely sand with some silt. Soils outside the containment were silty sand with some gravel.

Due to the relatively large area of impacted soils within the containment area and the shallow depth to bedrock at this site, the recommended remedial action is in-situ, surface application bioremediation. Costs to perform these actions are estimated to be \$300,000.

Point Howard Facility

Eight soil samples and one duplicate soil sample were obtained from within the fuel containment area and two soil samples were obtained downslope of the containment at this facility as shown in Figure 6. The soil samples were analyzed for the presence of GRO, BTEX, and DRO. Sample S-7 and the duplicate sample, S-11, were also analyzed for the presence of PAH compounds. Three of the soil samples and the duplicate sample from inside the containment were impacted above the ADEC Method 2 soil cleanup levels for DRO. Five soil samples from within the containment and two samples immediately downslope of the containment were below the applicable cleanup levels. The areas exceeding the DRO cleanup levels will require remediation to reduce the DRO concentrations below the cleanup level of 230 mg/kg. The laboratory analytical results are summarized on Tables 14, 15, and 16.

The surface water sample and duplicate sample obtained downslope from the containment area did not exceed the ADEC ground water GRO, BTEX, or DRO cleanup levels.

The impacts at this site are relatively localized and shallow and appear to be surface spills confined within the fuel containment area resulting from poor fuel handling procedures. Surface staining was not visible and there was no standing water within the containment area. There are abundant grasses within the containment at this site. The soils within the containment area are orange-brown silt with trace amounts of clay and gravel.

Due to the fairly large area of impacted material at this facility, the recommended remedial action is a combination of excavation of obviously impacted soils to landfarm on-site using bioremediation enhancement and surface application bioremediation methods. Costs to perform these actions are estimated to be \$200,000.

Ratz Mountain Facility

Ten soil samples and one duplicate soil sample were obtained from within the fuel containment area and two soil samples were obtained downslope of the containment at this facility as shown in Figure 7. The soil samples were analyzed for the presence of GRO, BTEX, and DRO. Sample S-2 and the duplicate sample, S-3, were also sampled for the presence of PAH compounds. Each of the soil samples and the duplicate sample obtained from within the containment were impacted above the ADEC Method 2 soil cleanup levels for DRO. One of the soil samples collected downslope from the containment area (S-12) also slightly exceeded the DRO cleanup level. However, this sample contained organic rich peat and likely influenced the DRO detection. The laboratory report noted that the hydrocarbon from this sample was unknown. The soils within the containment area will require remediation to reduce the DRO concentrations below the cleanup level of 230 mg/kg. The laboratory analytical results are summarized on Tables 17, 18, and 19.

The surface water sample and duplicate sample obtained downslope from the containment area did not exceed the ADEC ground water GRO, BTEX, and DRO cleanup levels.

The impacts at this site appear to be the result of poor fuel handling practices. Surface staining was visible and fuel odors were detected everywhere within the containment area. There was no standing water within the containment area. There was a negligible amount of vegetation within the containment area. Bedrock outcrop surrounded the north and west sides of the containment and it appeared that the bedrock excavation material was to grade and level part of the site and comprised the surface of the containment area. There was little to no soil development within the containment. Soils were primarily bedrock fragments with some finer grained sand matrix.

Due to the relatively large area of impacted soils within the containment area and the shallow depth to bedrock at this site, the recommended remedial action is in-situ, surface application bioremediation. Costs to perform these actions are estimated to be \$350,000.

South Passage Facility

One soil sample was obtained from within the fuel containment area and nine soil samples and one duplicate soil sample were obtained downslope of the containment at this facility as shown in Figure 8. The soil samples were analyzed for the presence of GRO, BTEX, and DRO. Sample S-7 and the duplicate sample, S-8, and sample S-11 were also sampled for the presence of PAH compounds. Each of the soil samples and the duplicate sample obtained from this site were impacted above the ADEC Method 2 soil cleanup levels for DRO. However, the soil samples collected outside of the containment area were primarily peat and the organic material likely interfered with the DRO detection. The laboratory report for these samples noted that the hydrocarbon was unknown when compared to fuel standards. Fuel odors were observed in soil samples S-4, S-5, S-6, S-7, and the duplicate sample S-8 during the sample collection activities outside of the containment area. Each of the three samples analyzed for the presence of PAH compounds (S-7, S-8, and S-11) also exceeded the cleanup level for dibenzo(a,h)anthracene, a carcinogenic PAH compound. The organic-rich soil present outside of the containment may also have interfered with the PAH detection. The soils and water within the containment area will require remediation to reduce the DRO concentrations below the cleanup level of 230 mg/kg. Confirmation of the DRO and PAH concentrations downslope of the containment area may also be performed by additional sampling. The laboratory analytical results are summarized on Tables 20, 21, and 22.

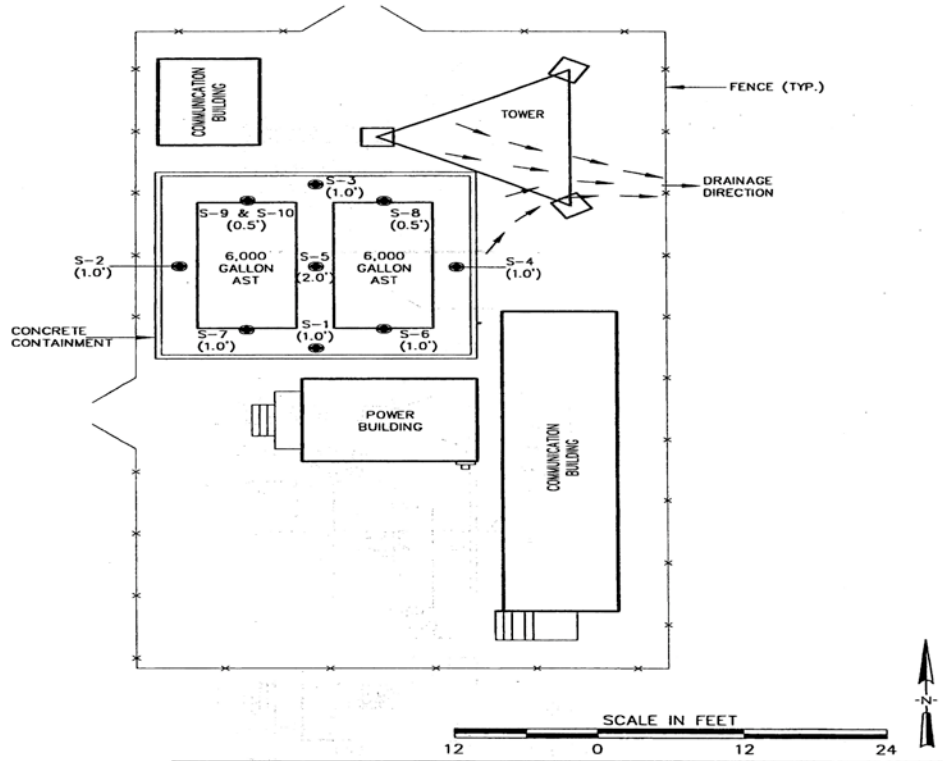
The water sample and duplicate sample obtained from water standing within the containment exceeded ten times the ADEC ground water DRO cleanup levels. The water can be remediated along with the soil within the containment area.

The impacts at this site appear to be the result of poor fuel handling practices. Significant surface staining was visible within the containment. Water standing within the containment had a heavy sheen on the surface. There was a fair amount of vegetation within the containment area where the soils were not heavily stained with fuel. Soils outside the containment were primarily organic-rich peat.

Due to the relatively large area of impacted soils and water within the containment at this site, the recommended remedial action is in-situ, surface application bioremediation. Due to the uncertainty of the degree of impacts to site soils downslope of the containment caused by the peat soils, recommendations at this facility also include confirmation sampling of the soils downslope of the containment. Costs to perform these actions are estimated to be \$450,000.

FIGURES

1. BRUCE BRISTOL ANGOON, AK 07/99 M.Z.E.M.

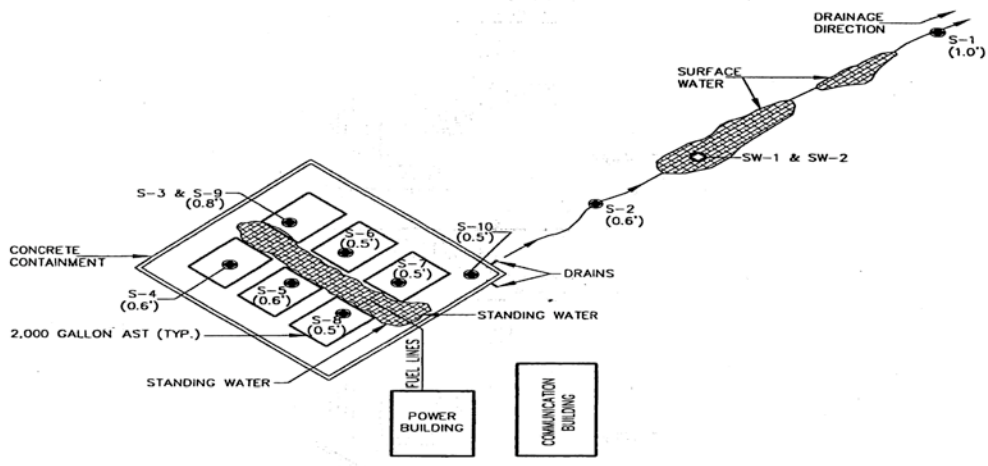


LEGEND
● SOIL SAMPLE LOCATION
(1.0') DEPTH TO SOIL SAMPLE

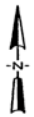
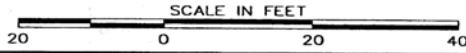


SAMPLE LOCATION PLAN
SITE CHARACTERIZATION
AT&T ANGOON FACILITY
ANGOON, ALASKA
JOB NO. 985722 **FIGURE 1**

4:15:05 99S5722 BESSIE FAC 03/27/99 10:18 AM



- LEGEND**
- SOIL SAMPLE LOCATION
(0.6') DEPTH TO SOIL SAMPLE
 - WATER SAMPLE LOCATION



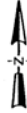
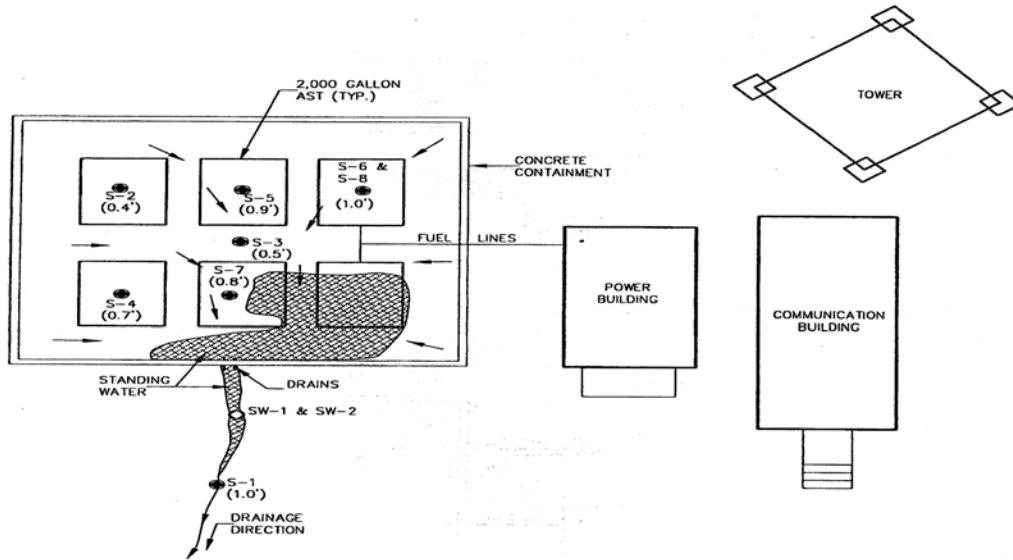
SAMPLE LOCATION PLAN

**SITE CHARACTERIZATION
AT&T BESSIE FACILITY
BESSIE, ALASKA**

JOB NO. 99S5722

FIGURE 2

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LEGEND

- SOIL SAMPLE LOCATION (0.9')
- WATER SAMPLE LOCATION

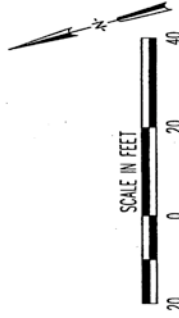
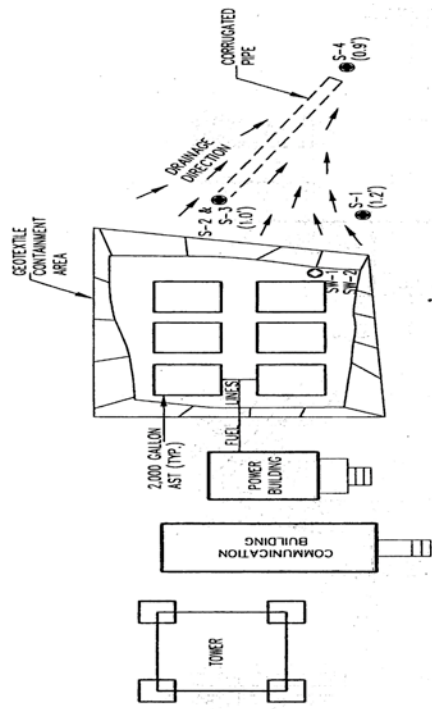


SAMPLE LOCATION PLAN

**SITE CHARACTERIZATION
AT&T GUNNUK FACILITY
GUNNUK, ALASKA**

JOB NO. 99S5722

FIGURE 3



- LEGEND**
- SOIL SAMPLE LOCATION
 - (1.2) DEPTH TO SOIL SAMPLE
 - WATER SAMPLE LOCATION

SAMPLE LOCATION PLAN

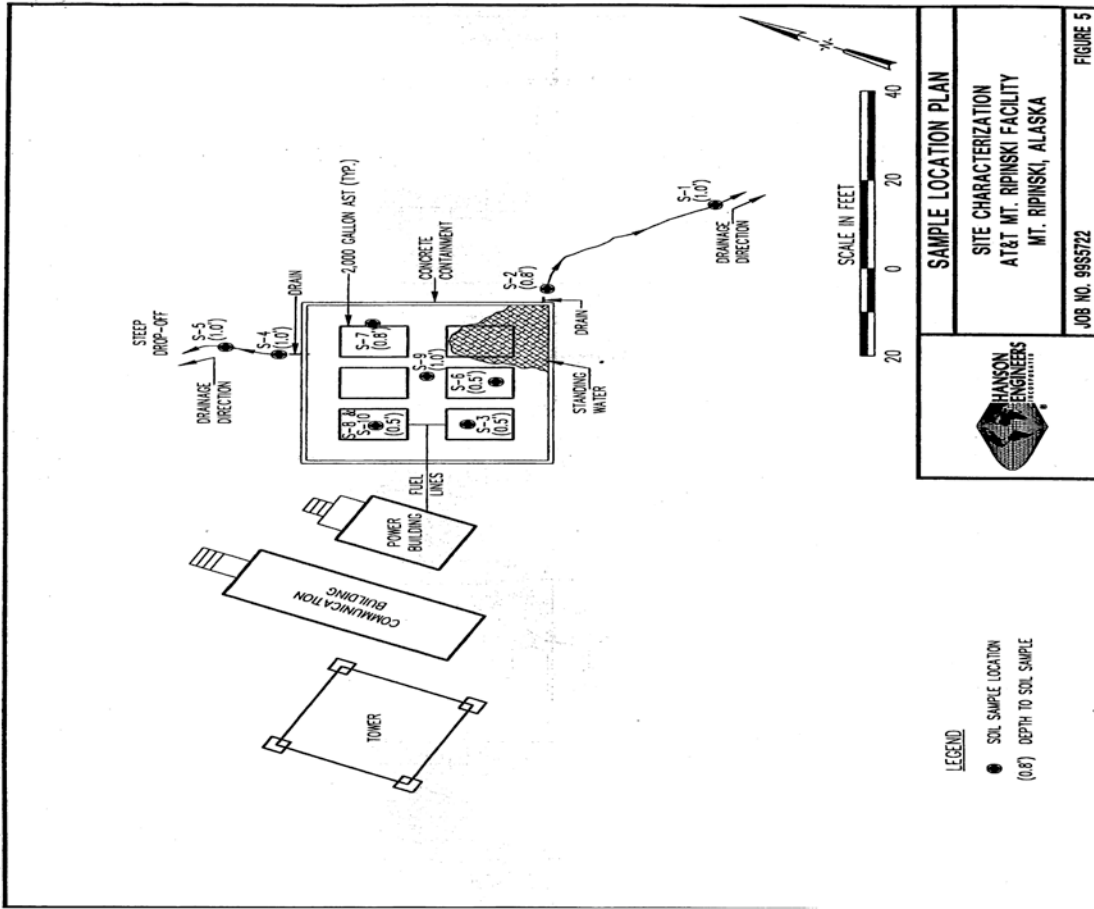
**SITE CHARACTERIZATION
AT&T HIGH MOUNTAIN FACILITY
HIGH MOUNTAIN, ALASKA**



JOB NO. 985572

FIGURE 4

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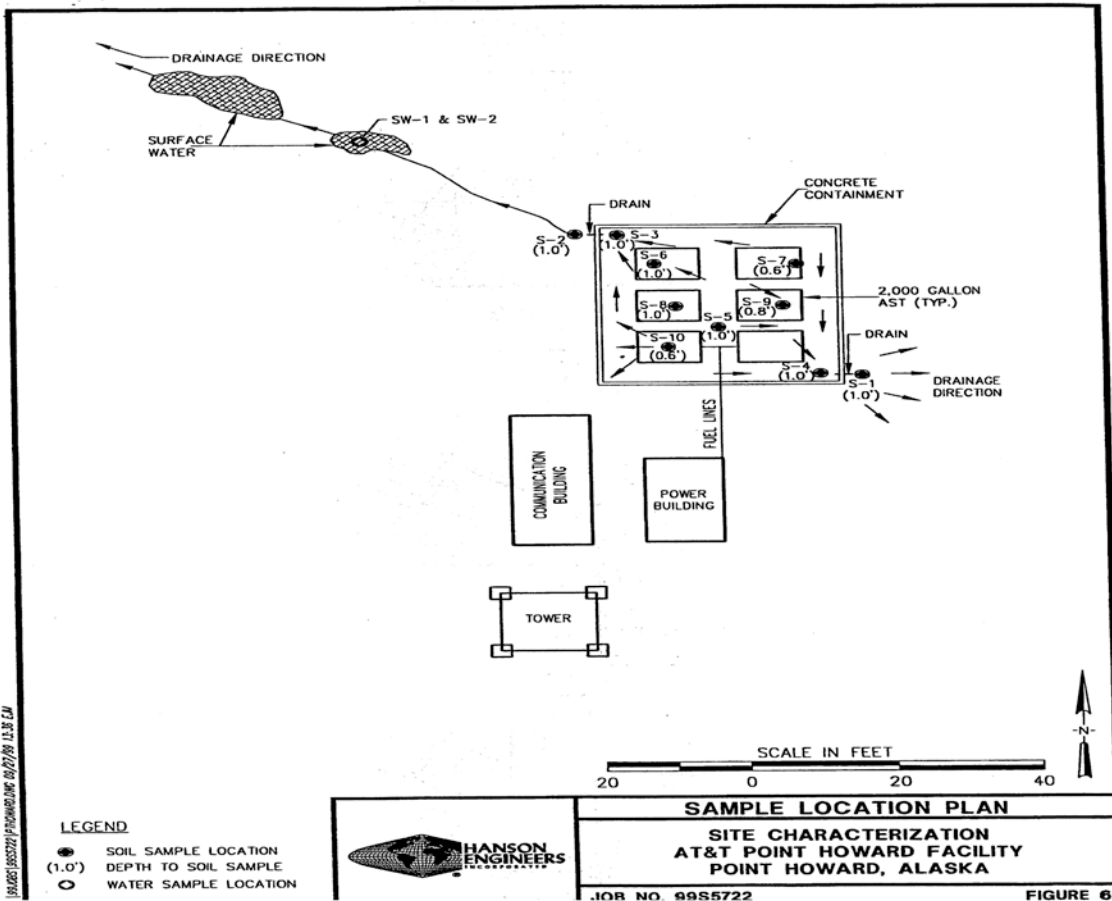


SAMPLE LOCATION PLAN
 SITE CHARACTERIZATION
 AT&T MT. RIPINSKI FACILITY
 MT. RIPINSKI, ALASKA

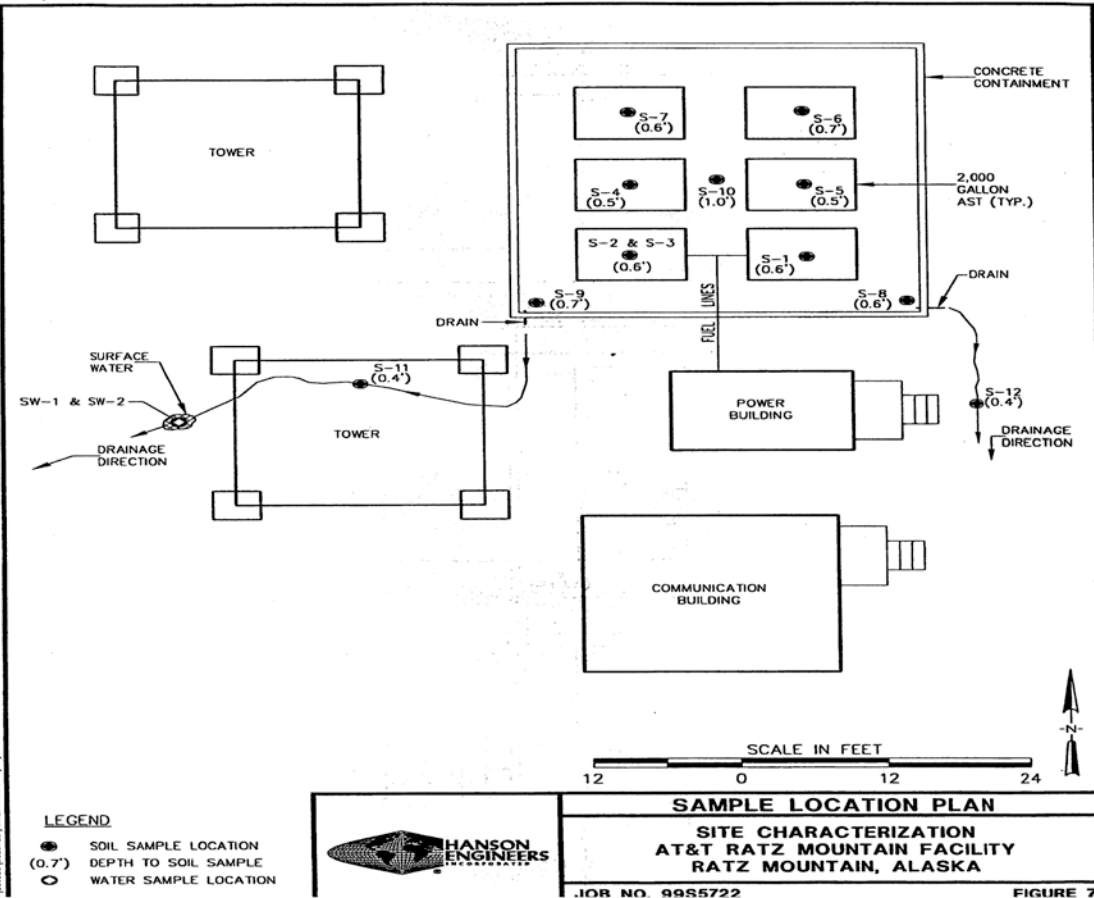
HANSON ENGINEERS

JOB NO. 9955722

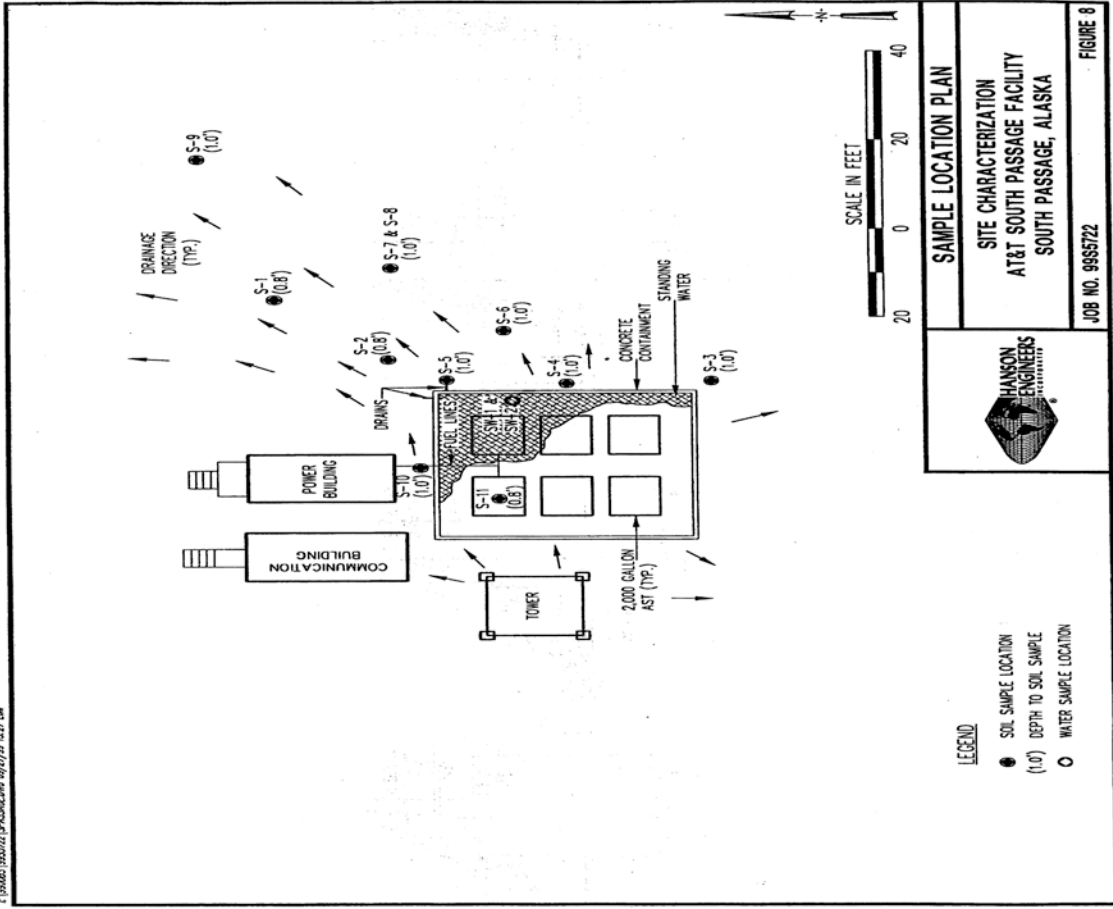
FIGURE 5



18 AUGUST 1998 09:07:20 AM 10/27/98 14:23:54



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TABLES

TABLE 1

Soil Sample GRO, BTEX, & DRO Analytical Results
AT&T Angoon Facility
Angoon, Alaska

Parameter	Sample Designation				
	S-1 (mg/kg)	S-2 (mg/kg)	S-3 (mg/kg)	S-4 (mg/kg)	S-5 (mg/kg)
Gasoline Range Organics	<2.11	<2.26	<1.89	<1.56	<2.05 ⁽¹⁾
Benzene	<0.0105	<0.0113	<0.00945	<0.00782	<0.0102 ⁽¹⁾
Toluene	<0.0422	<0.0453	<0.0378	<0.0313	<0.0410 ⁽¹⁾
Ethylbenzene	<0.0422	<0.0453	<0.0378	<0.0313	<0.0410 ⁽¹⁾
p & m -xylene	<0.0422	<0.0453	<0.0378	<0.0313	<0.0410 ⁽¹⁾
o -xylene	<0.0422	<0.0453	<0.0378	<0.0313	<0.0410 ⁽¹⁾
Diesel Range Organics	18.4	19.7	23.7	18.6	<11.3

Parameter	Sample Designation				
	S-6 (mg/kg)	S-7 (mg/kg)	S-8 (mg/kg)	S-9 (mg/kg)	S-10 (mg/kg)
Gasoline Range Organics	<2.12 ⁽¹⁾	<1.76	<1.43 ⁽¹⁾	89.5 ⁽⁴⁾	103 ⁽⁴⁾
Benzene	<0.0106 ⁽¹⁾	<0.00878	<0.00716 ⁽¹⁾	<0.0721 ⁽⁴⁾	<0.160 ⁽⁴⁾
Toluene	<0.0424 ⁽¹⁾	<0.0351	<0.0286 ⁽¹⁾	1.06 ⁽⁴⁾	0.917 ⁽⁴⁾
Ethylbenzene	<0.0424 ⁽¹⁾	<0.0351	<0.0286 ⁽¹⁾	2.34 ⁽⁴⁾	2.06 ⁽⁴⁾
p & m -xylene	<0.0424 ⁽¹⁾	<0.0351	<0.0286 ⁽¹⁾	10.5 ⁽⁴⁾	9.74 ⁽⁴⁾
o -xylene	<0.0424 ⁽¹⁾	<0.0351	<0.0286 ⁽¹⁾	6.32 ⁽⁴⁾	6.36 ⁽⁴⁾
Diesel Range Organics	125 ⁽²⁾⁽³⁾	265 ⁽²⁾⁽³⁾	984 ⁽²⁾⁽³⁾	45,600 ⁽³⁾⁽⁵⁾	38,800 ⁽³⁾⁽⁵⁾

NOTES:

Sample S-10 is a blind field duplicate of sample S-9.

Shading indicates concentrations that exceed ADEC Method 2 cleanup levels.

(1) GRO/BTEX - Field surrogate recovery is biased low, run twice for confirmation, results may be biased low.

(2) DRO - Pattern consistent with highly weathered middle distillate.

(3) DRO - Surrogate recovery outside controls due to matrix interference.

(4) GRO/BTEX - Surrogate recovery is biased high due to matrix interference, results not affected.

(5) DRO - Pattern consistent with weathered middle distillate.

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TABLE 2

Soil Sample PAH Analytical Results
 AT&T Angoon Facility
 Angoon, Alaska

Parameter	Sample Designation	
	S-9 (mg/kg)	S-10 (mg/kg)
PAHs		
Naphthalene	27 ⁽¹⁾	36 ⁽¹⁾
Acenaphthylene	2.7 ⁽¹⁾	<7.6 ⁽¹⁾
Acenaphthene	2.8 ⁽¹⁾	<7.6 ⁽¹⁾
Fluorene	9.6 ⁽¹⁾	12 ⁽¹⁾
Phenanthrene	20 ⁽¹⁾	26 ⁽¹⁾
Anthracene	2.5 ⁽¹⁾	3.2 ⁽¹⁾
Fluoranthene	0.51 ⁽¹⁾	0.76 ⁽¹⁾
Pyrene	4.3 ⁽¹⁾	5.9 ⁽¹⁾
Benzo(a)anthracene	0.079 ⁽¹⁾	0.11 ⁽¹⁾
Chrysene	0.62 ⁽¹⁾	0.92 ⁽¹⁾
Benzo(b)fluoranthene	0.013 ⁽¹⁾	0.023 ⁽¹⁾
Benzo(k)fluoranthene	0.0058 ⁽¹⁾	<0.0076 ⁽¹⁾
Benzo(a)pyrene	<0.0041 ⁽¹⁾	<0.038 ⁽¹⁾
Dibenzo(a,h)anthracene	<0.0081 ⁽¹⁾	<0.076 ⁽¹⁾
Benzo(g,h,i)perylene	<0.0041 ⁽¹⁾	<0.038 ⁽¹⁾
Indeno(1,2,3-c,d)pyrene	<0.0081 ⁽¹⁾	<0.076 ⁽¹⁾

NOTES:

Sample S-10 is a blind field duplicate of sample S-9.

Shading indicates concentrations that exceed ADEC cleanup levels.

(1) PAH - Surrogate recoveries do not meet QC criteria due to matrix interference.

TABLE 3

Soil Sample GRO, BTEX, & DRO Analytical Results
AT&T Bessie Facility
Bessie, Alaska

Parameter	Sample Designation				
	S-1 (mg/kg)	S-2 (mg/kg)	S-3 (mg/kg)	S-4 (mg/kg)	S-5 (mg/kg)
Gasoline Range Organics	<4.82	<3.50	34.3 ⁽⁴⁾	<3.49	<2.71 ⁽⁶⁾
Benzene	<0.0241	<0.0175	<0.0119 ⁽⁴⁾	<0.0175	<0.0136 ⁽⁶⁾
Toluene	<0.0964	<0.0701	<0.0475 ⁽⁴⁾	<0.0699	<0.0543 ⁽⁶⁾
Ethylbenzene	<0.0964	<0.0701	0.101 ⁽⁴⁾	<0.0699	<0.0543 ⁽⁶⁾
p & m -xylene	<0.0964	<0.0701	0.368 ⁽⁴⁾	<0.0699	<0.0543 ⁽⁶⁾
o -xylene	<0.0964	<0.0701	0.156 ⁽⁴⁾	<0.0699	<0.0543 ⁽⁶⁾
Diesel Range Organics	128 ⁽¹⁾	1,140 ⁽²⁾⁽³⁾	10,700 ⁽³⁾⁽⁵⁾	1,900 ⁽³⁾⁽⁵⁾	17,400 ⁽³⁾⁽⁵⁾
Parameter	Sample Designation				
	S-6 (mg/kg)	S-7 (mg/kg)	S-8 (mg/kg)	S-9 (mg/kg)	S-10 (mg/kg)
Gasoline Range Organics	<7.78	12.2	2.05 ⁽⁶⁾	30.7	<3.86 ⁽⁶⁾
Benzene	<0.0389	<0.0205	<0.00738 ⁽⁶⁾	<0.0498	<0.0193 ⁽⁶⁾
Toluene	<0.156	<0.0818	<0.0295 ⁽⁶⁾	<0.199	<0.0771 ⁽⁶⁾
Ethylbenzene	<0.156	<0.0818	<0.0295 ⁽⁶⁾	<0.199	<0.0771 ⁽⁶⁾
p & m -xylene	<0.156	0.116	<0.0295 ⁽⁶⁾	0.230	<0.0771 ⁽⁶⁾
o -xylene	<0.156	<0.0818	<0.0295 ⁽⁶⁾	<0.199	<0.0771 ⁽⁶⁾
Diesel Range Organics	13,100 ⁽³⁾⁽⁵⁾	5,400 ⁽³⁾⁽⁵⁾	11,500 ⁽³⁾⁽⁵⁾	19,100 ⁽³⁾⁽⁵⁾	8,620 ⁽³⁾⁽⁵⁾

NOTES:

Sample S-9 is a blind field duplicate of sample S-3.

Shading indicates concentrations that exceed ADEC Method 2 cleanup levels.

(1) DRO - Unknown hydrocarbon with several peaks.

(2) DRO - Pattern consistent with highly weathered middle distillate.

(3) DRO - Surrogate recovery outside controls due to matrix interference.

(4) GRO/BTEX - Surrogate recovery is biased high due to matrix interference. Results not affected.

(5) DRO - Pattern consistent with weathered middle distillate.

(6) GRO/BTEX - Surrogate recoveries are biased low due to high moisture content in sample.

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TABLE 4

Soil Sample PAH Analytical Results
AT&T Bessie Facility
Bessie, Alaska

Parameter	Sample Designation	
	S-3 (mg/kg)	S-9 (mg/kg)
PAHs		
Naphthalene	<3.1 ⁽¹⁾	<3.2 ⁽¹⁾
Acenaphthylene	4.8 ⁽¹⁾	4.3 ⁽¹⁾
Acenaphthene	<3.1 ⁽¹⁾	<3.2 ⁽¹⁾⁽²⁾
Fluorene	2.9 ⁽¹⁾	2.7 ⁽¹⁾
Phenanthrene	1.8 ⁽¹⁾	1.9 ⁽¹⁾
Anthracene	1.0 ⁽¹⁾	0.33 ⁽¹⁾
Fluoranthene	0.1 ⁽¹⁾	0.11 ⁽¹⁾
Pyrene	1.4 ⁽¹⁾	1.3 ⁽¹⁾
Benzo(a)anthracene	0.076 ⁽¹⁾	0.061 ⁽¹⁾
Chrysene	0.35 ⁽¹⁾	0.37 ⁽¹⁾
Benzo(b)fluoranthene	0.016 ⁽¹⁾	0.015 ⁽¹⁾
Benzo(k)fluoranthene	0.0055 ⁽¹⁾	0.0054 ⁽¹⁾
Benzo(a)pyrene	<0.015 ⁽¹⁾	<0.016 ⁽¹⁾⁽³⁾
Dibenzo(a,h)anthracene	<0.031 ⁽¹⁾	<0.032 ⁽¹⁾
Benzo(g,h,i)perylene	<0.015 ⁽¹⁾	<0.016 ⁽¹⁾
Indeno(1,2,3-c,d)pyrene	<0.031 ⁽¹⁾	<0.032 ⁽¹⁾

NOTES:

Sample S-9 is a blind field duplicate of sample S-3.

Shading indicates concentrations that exceed ADEC cleanup levels.

(1) Surrogate recoveries do not meet QC criteria due to matrix interference.

(2) Results for acenaphthene are estimated as the RPD for this analyte in the LCS and LCSD did not meet QC goals.

(3) Benzo(a)pyrene was biased high in the LCS and LCSD and may be biased high in this sample.

TABLE 5

Surface Water Sample Analytical Results
AT&T Bessie Facility
Bessie, Alaska

Parameter	Sample Designation	
	SW-1 (mg/l)	SW-2 (mg/l)
Gasoline Range Organics	<0.0900	<0.0900
Benzene	<0.00050	<0.00050
Toluene	<0.0020	<0.0020
Ethylbenzene	<0.0020	<0.0020
p & m -xylene	<0.0020	<0.0020
o -xylene	<0.0020	<0.0020
Diesel Range Organics	0.900 ⁽¹⁾	0.956 ⁽¹⁾
PAHs	(ug/l)	(ug/l)
Naphthalene	<10.4	<10.4
Acenaphthylene	<10.4	<10.4
Acenaphthene	<10.4	<10.4 ⁽²⁾
Fluorene	1.43	1.67
Phenanthrene	<0.521	<0.521
Anthracene	<0.521	<0.521
Fluoranthene	<0.0260	<0.0260
Pyrene	<0.521	<0.521
Benzo(a)anthracene	<0.0104	<0.0104
Chrysene	<0.521	<0.521
Benzo(b)fluoranthene	<0.0104	<0.0104
Benzo(k)fluoranthene	<0.0104	<0.0104
Benzo(a)pyrene	<0.0521	<0.0521
Dibenzo(a,h)anthracene	<0.104	<0.104
Benzo(g,h,i)perylene	<0.0521	<0.0521
Indeno(1,2,3-c,d)pyrene	<0.104	<0.104

NOTES:

Sample SW-2 is a blind field duplicate of sample SW-1.

Shading indicates concentrations that exceed ADEC cleanup levels.

(1) DRO - Pattern consistent with highly weathered middle distillate.

(2) PAH - The result for acenaphthene is estimated. The RPD for the LCS/LCSD failed QC limits.

TABLE 6

Soil Sample GRO, BTEX, & DRO Analytical Results
AT&T Gunnuk Facility
Gunnuk, Alaska

Parameter	Sample Designation			
	S-1 (mg/kg)	S-2 (mg/kg)	S-3 (mg/kg)	S-4 (mg/kg)
Gasoline Range Organics	<25.7 ⁽¹⁾	<2.20	<2.11 ⁽⁵⁾	<2.77
Benzene	<0.129 ⁽¹⁾	<0.0110	<0.0105 ⁽⁵⁾	<0.0138
Toluene	<0.514 ⁽¹⁾	<0.0439	<0.0422 ⁽⁵⁾	<0.0554
Ethylbenzene	<0.514 ⁽¹⁾	<0.0439	<0.0422 ⁽⁵⁾	<0.0554
p & m -xylene	<0.514 ⁽¹⁾	0.0580	<0.0422 ⁽⁵⁾	<0.0554
o -xylene	<0.514 ⁽¹⁾	<0.0439	<0.0422 ⁽⁵⁾	<0.0554
Diesel Range Organics	3,710 ⁽²⁾⁽³⁾	6,200 ⁽³⁾⁽⁴⁾	1,750 ⁽³⁾⁽⁴⁾	424 ⁽³⁾⁽⁴⁾

Parameter	Soil Sample Designation			
	S-5 (mg/kg)	S-6 (mg/kg)	S-7 (mg/kg)	S-8 (mg/kg)
Gasoline Range Organics	3.04	<2.34	6.08	<2.45
Benzene	<0.0141	<0.0117	<0.0108	<0.0122
Toluene	<0.0563	<0.0467	<0.0433	<0.0490
Ethylbenzene	<0.0563	<0.0467	<0.0433	<0.0490
p & m -xylene	<0.0563	<0.0467	0.0530	<0.0490
o -xylene	<0.0563	<0.0467	<0.0433	<0.0490
Diesel Range Organics	6,590 ⁽³⁾⁽⁴⁾	5,820 ⁽³⁾⁽⁴⁾	12,800 ⁽³⁾⁽⁴⁾	4,030 ⁽³⁾⁽⁴⁾

NOTES:

Sample S-8 is a blind field duplicate of sample S-6.

Shading indicates concentrations that exceed ADEC Method 2 cleanup levels.

(1) GRO/BTEX - Surrogate recoveries are biased low due to high moisture content in sample.

(2) DRO - Unknown hydrocarbon with several peaks.

(3) DRO - Surrogate recovery outside controls due to matrix interference.

(4) DRO - Pattern consistent with weathered middle distillate.

(5) GRO/BTEX - Field surrogate recovery is biased low, run twice for confirmation, results may be biased low.

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TABLE 7

Soil Sample PAH Analytical Results
 AT&T Gunnuk Facility
 Gunnuk, Alaska

Parameter	Sample Designation	
	S-6 (mg/kg)	S-8 (mg/kg)
PAHs		
Naphthalene	<2.9 ⁽¹⁾	1.8 ⁽¹⁾
Acenaphthylene	<2.9 ⁽¹⁾	0.77 ⁽¹⁾
Acenaphthene	<2.9 ⁽¹⁾	0.30 ⁽¹⁾
Fluorene	1.1 ⁽¹⁾	0.62 ⁽¹⁾
Phenanthrene	0.61 ⁽¹⁾	0.11 ⁽¹⁾
Anthracene	0.42 ⁽¹⁾	0.016 ⁽¹⁾
Fluoranthene	0.034 ⁽¹⁾	0.0073 ⁽¹⁾
Pyrene	0.49 ⁽¹⁾	0.29 ⁽¹⁾
Benzo(a)anthracene	0.049 ⁽¹⁾	0.029 ⁽¹⁾
Chrysene	0.16 ⁽¹⁾	0.086 ⁽¹⁾
Benzo(b)fluoranthene	0.016 ⁽¹⁾	0.0067 ⁽¹⁾
Benzo(k)fluoranthene	0.0038 ⁽¹⁾	0.0027 ⁽¹⁾
Benzo(a)pyrene	<0.015 ⁽¹⁾	<0.0015 ⁽¹⁾
Dibenzo(a,h)anthracene	0.059 ⁽¹⁾	0.032 ⁽¹⁾
Benzo(g,h,i)perylene	<0.015 ⁽¹⁾	0.0020 ⁽¹⁾
Indeno(1,2,3-c,d)pyrene	0.030 ⁽¹⁾	0.0096 ⁽¹⁾

NOTES:

Sample S-8 is a blind field duplicate of sample S-6.

Shading indicates concentrations that exceed ADEC cleanup levels.

(1) Surrogate recoveries do not meet QC criteria due to matrix interference.

TABLE 8

Surface Water Sample Analytical Results
AT&T Gunnuk Facility
Gunnuk, Alaska

Parameter	Sample Designation	
	SW-1 (mg/l)	SW-2 (mg/l)
Gasoline Range Organics	<0.0900	<0.0900
Benzene	<0.00050	<0.00050
Toluene	<0.0020	<0.0020
Ethylbenzene	<0.0020	<0.0020
p & m -xylene	<0.0020	<0.0020
o -xylene	<0.0020	<0.0020
Diesel Range Organics	0.956 ⁽¹⁾	0.890 ⁽¹⁾
PAHs	(ug/l)	(ug/l)
Naphthalene	<10.5	<10.4
Acenaphthylene	<10.5	<10.4
Acenaphthene	<10.5	<10.4
Fluorene	1.35	1.64
Phenanthrene	<0.526	<0.521
Anthracene	<0.526	<0.521
Fluoranthene	<0.0263	<0.0260
Pyrene	<0.526	<0.521
Benzo(a)anthracene	<0.0105	<0.0104
Chrysene	<0.526	<0.521
Benzo(b)fluoranthene	0.0242	<0.0104
Benzo(k)fluoranthene	<0.0105	<0.0104
Benzo(a)pyrene	0.0632	<0.0521
Dibenzo(a,h)anthracene	<0.105	<0.104
Benzo(g,h,i)perylene	<0.0526	<0.0521
Indeno(1,2,3-c,d)pyrene	<0.105	<0.104

NOTES:

Sample SW-2 is a blind field duplicate of SW-1.

Shading indicates concentrations that exceed ADEC cleanup levels.

(1) DRO - Pattern consistent with highly weathered middle distillate.

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TABLE 9

Soil Sample GRO, BTEX, & DRO Analytical Results
AT&T High Mountain Facility
High Mountain, Alaska

Parameter	Sample Designation			
	S-1 (mg/kg)	S-2 (mg/kg)	S-3 (mg/kg)	S-4 (mg/kg)
Gasoline Range Organics	<44.1 ⁽¹⁾	<56.2 ⁽¹⁾	<31.0 ⁽¹⁾	<8.30 ⁽¹⁾
Benzene	<0.221 ⁽¹⁾	<0.281 ⁽¹⁾	<0.155 ⁽¹⁾	<0.0415 ⁽¹⁾
Toluene	<0.883 ⁽¹⁾	<1.12 ⁽¹⁾	<0.619 ⁽¹⁾	<0.166 ⁽¹⁾
Ethylbenzene	<0.883 ⁽¹⁾	<1.12 ⁽¹⁾	<0.619 ⁽¹⁾	<0.166 ⁽¹⁾
p & m -xylene	<0.883 ⁽¹⁾	<1.12 ⁽¹⁾	<0.619 ⁽¹⁾	<0.166 ⁽¹⁾
o -xylene	<0.883 ⁽¹⁾	<1.12 ⁽¹⁾	<0.619 ⁽¹⁾	<0.166 ⁽¹⁾
Diesel Range Organics	5,230 ⁽²⁾	7,080 ⁽²⁾	5,960 ⁽²⁾	803 ⁽²⁾

NOTES:

Sample S-3 is a blind field duplicate of sample S-2.

Shading indicates concentrations that exceed ADEC Method 2 cleanup levels.

(1) GRO/BTEX - Surrogate recoveries are biased low due to high moisture content in sample.

(2) DRO - Unknown hydrocarbon with several peaks.

TABLE 10

Soil Sample PAH Analytical Results
 AT&T High Mountain Facility
 High Mountain, Alaska

Parameter	Sample Designation	
	S-2 (mg/kg)	S-3 (mg/kg)
PAHs		
Naphthalene	<6.9	<9.5
Acenaphthylene	<6.9	<9.5
Acenaphthene	<6.9	<9.5
Fluorene	<0.69	<0.95
Phenanthrene	<0.35	<0.48
Anthracene	<0.35	<0.48
Fluoranthene	0.23	0.18
Pyrene	<0.35	<0.48
Benzo(a)anthracene	<0.0069	<0.0095
Chrysene	<0.35	<0.48
Benzo(b)fluoranthene	<0.0069	<0.0095
Benzo(k)fluoranthene	<0.0069	<0.0095
Benzo(a)pyrene	<0.035	<0.048
Dibenzo(a,h)anthracene	3.2	2
Benzo(g,h,i)perylene	<0.035	<0.048
Indeno(1,2,3-c,d)pyrene	<0.069	<0.095

NOTE:

Sample S-3 is a blind field duplicate of sample S-2.
 Shading indicates concentrations that exceed ADEC cleanup levels.

TABLE 11

Surface Water Sample Analytical Results
 AT&T High Mountain Facility
 High Mountain, Alaska

Parameter	Sample Designation	
	SW-1 (mg/l)	SW-2 (mg/l)
Gasoline Range Organics	<0.0900	<0.0900
Benzene	<0.00050	<0.00050
Toluene	<0.0020	<0.0020
Ethylbenzene	<0.0020	<0.0020
p & m -xylene	<0.0020	<0.0020
o -xylene	<0.0020	<0.0020
Diesel Range Organics	2.61 ⁽¹⁾⁽²⁾	4.14 ⁽¹⁾⁽²⁾
PAHs	(ug/l)	(ug/l)
Naphthalene	<10.2 ⁽³⁾	<10.3 ⁽³⁾
Acenaphthylene	<10.2 ⁽³⁾	<10.3 ⁽³⁾
Acenaphthene	<10.2 ⁽³⁾	<10.3 ⁽³⁾
Fluorene	2.50 ⁽³⁾	2.63 ⁽³⁾
Phenanthrene	<0.510 ⁽³⁾	<0.515 ⁽³⁾
Anthracene	<0.510 ⁽³⁾	0.593 ⁽³⁾
Fluoranthene	<0.0255	<0.0258
Pyrene	<0.510 ⁽³⁾	<0.515 ⁽³⁾
Benzo(a)anthracene	<0.0102 ⁽³⁾	0.0134 ⁽³⁾
Chrysene	<0.510 ⁽³⁾	<0.515 ⁽³⁾
Benzo(b)fluoranthene	<0.0102 ⁽³⁾	<0.0103 ⁽³⁾
Benzo(k)fluoranthene	<0.0102 ⁽³⁾	<0.0103 ⁽³⁾
Benzo(a)pyrene	<0.0510 ⁽³⁾	<0.0515 ⁽³⁾
Dibenzo(a,h)anthracene	<0.102 ⁽³⁾	<0.103 ⁽³⁾
Benzo(g,h,i)perylene	<0.0510 ⁽³⁾	<0.0515 ⁽³⁾
Indeno(1,2,3-c,d)pyrene	<0.102 ⁽³⁾	<0.103 ⁽³⁾

NOTES:

Sample SW-2 is a blind field duplicate of sample SW-1.

Shading indicates concentrations that exceed ADEC cleanup levels.

(1) DRO - Pattern consistent with weathered middle distillate.

(2) DRO - Surrogate recovery outside controls due to matrix interference.

(3) PAH - Surrogate recoveries do not meet QC criteria due to matrix interference.

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TABLE 12

Soil Sample GRO, BTEX, & DRO Analytical Results
AT&T Mt. Ripinski Facility
Mt Ripinski, Alaska

Parameter	Sample Designation				
	S-1 (mg/kg)	S-2 (mg/kg)	S-3 (mg/kg)	S-4 (mg/kg)	S-5 (mg/kg)
Gasoline Range Organics	<2.75	<3.05	42.3 ⁽²⁾	<2.70	<3.22
Benzene	<0.0137	<0.0153	<0.0946 ⁽²⁾	<0.0135	<0.0161
Toluene	<0.0550	<0.0610	<0.378 ⁽²⁾	<0.0539	<0.0644
Ethylbenzene	<0.0550	<0.0610	<0.378 ⁽²⁾	<0.0539	<0.0644
p & m -xylene	<0.0550	<0.0610	<0.378 ⁽²⁾	<0.0539	<0.0644
o -xylene	<0.0550	<0.0610	<0.378 ⁽²⁾	<0.0539	<0.0644
Diesel Range Organics	41.9 ⁽¹⁾	18.8	21,300 ⁽³⁾⁽⁴⁾	<12.0	37.4 ⁽³⁾
Parameter	Sample Designation				
	S-6 (mg/kg)	S-7 (mg/kg)	S-8 (mg/kg)	S-9 (mg/kg)	S-10 (mg/kg)
Gasoline Range Organics	14.1	<2.65	27.7 ⁽²⁾	<3.77	50.9 ⁽²⁾
Benzene	<0.0237	<0.0133	<0.0225 ⁽²⁾	<0.0189	<0.0258 ⁽²⁾
Toluene	<0.0948	<0.0530	<0.0901 ⁽²⁾	<0.0755	<0.103 ⁽²⁾
Ethylbenzene	<0.0948	<0.0530	<0.0901 ⁽²⁾	<0.0755	<0.103 ⁽²⁾
p & m -xylene	0.0983	<0.0530	0.263 ⁽²⁾	<0.0755	0.600 ⁽²⁾
o -xylene	<0.0948	<0.0530	<0.0901 ⁽²⁾	<0.0755	0.152 ⁽²⁾
Diesel Range Organics	31,800 ⁽⁴⁾⁽⁵⁾	2,150 ⁽³⁾⁽⁶⁾	4,500 ⁽⁴⁾⁽⁵⁾	18,500 ⁽⁴⁾⁽⁵⁾	42,100 ⁽⁴⁾⁽⁵⁾

NOTES:

Sample S-10 is a blind field duplicate of sample S-8.

Shading indicates concentrations that exceed ADEC Method 2 cleanup levels.

(1) DRO - Pattern consistent with highly weathered middle distillate.

(2) GRO/BTEX - Surrogate recovery is biased high due to matrix interference. Results not affected.

(3) DRO - Pattern consistent with weathered middle distillate.

(4) DRO - Surrogate recovery outside controls due to matrix interference.

(5) DRO - Pattern consistent with middle distillate.

(6) DRO - Surrogate does not meet QC goals due to matrix interference. Results not affected.

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TABLE 13

Soil Sample PAH Analytical Results
AT&T Mt. Ripinski Facility
Mt Ripinski, Alaska

Parameter	Sample Designation	
	S-8 (mg/kg)	S-10 (mg/kg)
PAHs		
Naphthalene	<3.1 ⁽¹⁾	4.3 ⁽¹⁾
Acenaphthylene	5.5 ⁽¹⁾	11 ⁽¹⁾
Acenaphthene	<3.1 ⁽¹⁾	<3.0 ⁽¹⁾
Fluorene	1.7 ⁽¹⁾	3.7 ⁽¹⁾
Phenanthrene	1.5 ⁽¹⁾	1.6 ⁽¹⁾
Anthracene	0.39 ⁽¹⁾	0.86 ⁽¹⁾
Fluoranthene	0.21 ⁽¹⁾	0.26 ⁽¹⁾
Pyrene	<0.77 ⁽¹⁾	51 ⁽¹⁾
Benzo(a)anthracene	0.084 ⁽¹⁾	0.17 ⁽¹⁾
Chrysene	0.46 ⁽¹⁾	6.8 ⁽¹⁾
Benzo(b)fluoranthene	0.019 ⁽¹⁾	0.047 ⁽¹⁾
Benzo(k)fluoranthene	<0.0031 ⁽¹⁾	0.0091 ⁽¹⁾
Benzo(a)pyrene	<0.015 ⁽¹⁾	<0.015 ⁽¹⁾
Dibenzo(a,h)anthracene	<0.031 ⁽¹⁾	<0.030 ⁽¹⁾
Benzo(g,h,i)perylene	<0.015 ⁽¹⁾	<0.015 ⁽¹⁾
Indeno(1,2,3-c,d)pyrene	<0.031 ⁽¹⁾	<0.030 ⁽¹⁾

NOTES:

Sample S-10 is a blind field duplicate of sample S-8.

Shading indicates concentrations that exceed ADEC cleanup levels.

(1) PAH - Surrogate recoveries do not meet QC criteria due to matrix interference.

TABLE 14

Soil Sample GRO, BTEX, & DRO Analytical Results
AT&T Point Howard Facility
Point Howard, Alaska

Parameter	Sample Designation					
	S-1 (mg/kg)	S-2 (mg/kg)	S-3 (mg/kg)	S-4 (mg/kg)	S-5 (mg/kg)	S-6 (mg/kg)
Gasoline Range Organics	<5.16 ⁽¹⁾	<5.14 ⁽¹⁾	<2.52	<5.47 ⁽¹⁾	<4.63	<3.33 ⁽¹⁾
Benzene	<0.0258 ⁽¹⁾	<0.0257 ⁽¹⁾	<0.0126	<0.0274 ⁽¹⁾	<0.0232	<0.0166 ⁽¹⁾
Toluene	<0.103 ⁽¹⁾	<0.103 ⁽¹⁾	<0.0505	<0.109 ⁽¹⁾	<0.0927	<0.0665 ⁽¹⁾
Ethylbenzene	<0.103 ⁽¹⁾	<0.103 ⁽¹⁾	<0.0505	<0.109 ⁽¹⁾	<0.0927	<0.0665 ⁽¹⁾
p & m -xylene	<0.103 ⁽¹⁾	<0.103 ⁽¹⁾	<0.0505	<0.109 ⁽¹⁾	<0.0927	<0.0665 ⁽¹⁾
o -xylene	<0.103 ⁽¹⁾	<0.103 ⁽¹⁾	<0.0505	<0.109 ⁽¹⁾	<0.0927	<0.0665 ⁽¹⁾
Diesel Range Organics	24.4	<14.4	<12.8	226	138 ⁽²⁾	186 ⁽²⁾

Parameter	Sample Designation				
	S-7 (mg/kg)	S-8 (mg/kg)	S-9 (mg/kg)	S-10 (mg/kg)	S-11 (mg/kg)
Gasoline Range Organics	<2.40 ⁽¹⁾	<2.88 ⁽¹⁾	<4.18 ⁽¹⁾	<3.48 ⁽¹⁾	<3.10 ⁽¹⁾
Benzene	<0.0120 ⁽¹⁾	<0.0144 ⁽¹⁾	<0.0209 ⁽¹⁾	<0.0174 ⁽¹⁾	<0.0155 ⁽¹⁾
Toluene	<0.0480 ⁽¹⁾	<0.0577 ⁽¹⁾	<0.0836 ⁽¹⁾	<0.0696 ⁽¹⁾	<0.0620 ⁽¹⁾
Ethylbenzene	<0.0480 ⁽¹⁾	<0.0577 ⁽¹⁾	<0.0836 ⁽¹⁾	<0.0696 ⁽¹⁾	<0.0620 ⁽¹⁾
p & m -xylene	<0.0480 ⁽¹⁾	<0.0577 ⁽¹⁾	<0.0836 ⁽¹⁾	<0.0696 ⁽¹⁾	<0.0620 ⁽¹⁾
o -xylene	<0.0480 ⁽¹⁾	<0.0577 ⁽¹⁾	<0.0836 ⁽¹⁾	<0.0696 ⁽¹⁾	<0.0620 ⁽¹⁾
Diesel Range Organics	6,370 ⁽³⁾	159	16,900 ⁽³⁾⁽⁴⁾	5,990 ⁽²⁾⁽⁴⁾	14,800 ⁽³⁾⁽⁵⁾

NOTES:

Sample S-11 is a blind field duplicate of sample S-7.

Shading indicates concentrations that exceed ADEC Method 2 cleanup levels.

(1) GRO/BTEX - Field surrogate recovery is biased low due to high moisture content in sample.

(2) DRO - Pattern consistent with weathered middle distillate.

(3) DRO - Pattern consistent with middle distillate.

(4) DRO - Surrogate does not meet QC goals due to matrix interference. Results not affected.

(5) DRO - Surrogate recovery outside controls due to matrix interference.

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TABLE 15

Soil Sample PAH Analytical Results
AT&T Point Howard Facility
Point Howard, Alaska

Parameter	Sample Designation	
	S-7 (mg/kg)	S-11 (mg/kg)
PAHs		
Naphthalene	0.66 ⁽¹⁾	0.84 ⁽¹⁾
Acenaphthylene	<0.31 ⁽¹⁾	2.1 ⁽¹⁾
Acenaphthene	<0.31 ⁽¹⁾	<0.62 ⁽¹⁾
Fluorene	1.8 ⁽¹⁾	2.5 ⁽¹⁾
Phenanthrene	0.78 ⁽¹⁾	2.1 ⁽¹⁾
Anthracene	0.25 ⁽¹⁾	0.86 ⁽¹⁾
Fluoranthene	0.030 ⁽¹⁾	0.053 ⁽¹⁾
Pyrene	1.1 ⁽¹⁾	2.5 ⁽¹⁾
Benzo(a)anthracene	0.031 ⁽¹⁾	0.051 ⁽¹⁾
Chrysene	2.1 ⁽¹⁾	0.29 ⁽¹⁾
Benzo(b)fluoranthene	0.011 ⁽¹⁾	0.019 ⁽¹⁾
Benzo(k)fluoranthene	0.0028 ⁽¹⁾	0.0060 ⁽¹⁾
Benzo(a)pyrene	<0.0016 ⁽¹⁾	<0.0031 ⁽¹⁾
Dibenzo(a,h)anthracene	<0.0031 ⁽¹⁾	<0.0062 ⁽¹⁾
Benzo(g,h,i)perylene	<0.0016 ⁽¹⁾	<0.0031 ⁽¹⁾
Indeno(1,2,3-c,d)pyrene	<0.0031 ⁽¹⁾	<0.0062 ⁽¹⁾

NOTES:

Sample S-11 is a blind field duplicate of sample S-7.

Shading indicates concentrations that exceed ADEC cleanup levels.

(1) PAH - Surrogate recoveries do not meet QC criteria due to matrix interference.

TABLE 16

Surface Water Sample Analytical Results
 AT&T Point Howard Facility
 Point Howard, Alaska

Parameter	Sample Designation	
	SW-1 (mg/l)	SW-2 (mg/l)
Gasoline Range Organics	<0.0900	<0.0900
Benzene	<0.00050	<0.00050
Toluene	<0.0020	<0.0020
Ethylbenzene	<0.0020	<0.0020
p & m -xylene	<0.0020	<0.0020
o -xylene	<0.0020	<0.0020
Diesel Range Organics	<0.330 ⁽¹⁾⁽²⁾	<0.319 ⁽¹⁾⁽²⁾

NOTES:

Sample SW-2 is a blind field duplicate of sample SW-1.

Shading indicates concentrations that exceed ADEC cleanup levels.

(1) DRO - Pattern consistent with weathered middle distillate.

(2) DRO - Surrogate recovery outside controls due to matrix interference.

TABLE 17

Soil Sample GRO, BTEX, & DRO Analytical Results
AT&T Ratz Mountain Facility
Ratz Mountain, Alaska

Parameter	Sample Designation					
	S-1 (mg/kg)	S-2 (mg/kg)	S-3 (mg/kg)	S-4 (mg/kg)	S-5 (mg/kg)	S-6 (mg/kg)
Gasoline Range Organics	<3.26	24.2 ⁽⁴⁾	114 ⁽⁴⁾	<2.27	<1.79	<2.78
Benzene	<0.0163	<0.0808 ⁽⁴⁾	<0.133 ⁽⁴⁾	<0.0113	<0.00896	<0.0139
Toluene	<0.0653	<0.323 ⁽⁴⁾	<0.534 ⁽⁴⁾	<0.0454	<0.0358	<0.0556
Ethylbenzene	<0.0653	<0.323 ⁽⁴⁾	0.960 ⁽⁴⁾	<0.0454	<0.0358	<0.0556
p & m -xylene	<0.0653	<0.323 ⁽⁴⁾	3.08 ⁽⁴⁾	<0.0454	<0.0358	<0.0556
o -xylene	<0.0653	<0.323 ⁽⁴⁾	2.26 ⁽⁴⁾	<0.0454	<0.0358	<0.0556
Diesel Range Organics	1,470 ⁽¹⁾⁽²⁾⁽³⁾	15,200 ⁽⁵⁾⁽⁶⁾	9,950 ⁽⁶⁾⁽⁷⁾	4,100 ⁽¹⁾⁽⁶⁾⁽⁷⁾	11,400 ⁽⁵⁾⁽⁶⁾	7,140 ⁽⁶⁾⁽⁷⁾
Parameter	Sample Designation					
	S-7 (mg/kg)	S-8 (mg/kg)	S-9 (mg/kg)	S-10 (mg/kg)	S-11 (mg/kg)	S-12 (mg/kg)
Gasoline Range Organics	<1.73	<1.63	<2.09	<1.50	<2.22	<4.59
Benzene	<0.00866	<0.00813	<0.0105	<0.00750	<0.0111	<0.0229
Toluene	<0.0346	<0.0325	<0.0419	<0.0300	<0.0445	<0.0917
Ethylbenzene	<0.0346	<0.0325	<0.0419	<0.0300	<0.0445	<0.0917
p & m -xylene	<0.0346	<0.0325	<0.0419	<0.0300	<0.0445	<0.0917
o -xylene	<0.0346	<0.0325	<0.0419	<0.0300	<0.0445	<0.0917
Diesel Range Organics	4,530 ⁽⁶⁾⁽⁷⁾	454 ⁽¹⁾⁽⁷⁾	262 ⁽¹⁾⁽⁷⁾	1,930 ⁽³⁾⁽⁷⁾	20.7 ⁽⁸⁾	276 ⁽⁸⁾

NOTES:

Sample S-3 is a blind field duplicate of sample S-2.

Shading indicates concentrations that exceed ADEC Method 2 cleanup levels.

(1) DRO - Heavier hydrocarbons contributing to diesel range quantitation.

(2) DRO - Pattern consistent with lube oil.

(3) DRO - Surrogate recovery outside controls due to matrix interference.

(4) GRO/BTEX - Surrogate recovery is biased high due to matrix interference. Results not affected.

(5) DRO - Pattern consistent with middle distillate.

(6) DRO - Surrogate does not meet QC goals due to matrix interference. Results not affected.

(7) DRO - Pattern consistent with weathered middle distillate.

(8) DRO - Unknown hydrocarbon with several peaks.

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TABLE 18

Soil Sample PAH Analytical Results
 AT&T Ratz Mountain Facility
 Ratz Mountain, Alaska

Parameter	Sample Designation	
	S-2 (mg/kg)	S-3 (mg/kg)
PAHs		
Naphthalene	3.5 ⁽¹⁾	<3.2 ⁽¹⁾
Acenaphthylene	<3.3 ⁽¹⁾	<3.2 ⁽¹⁾
Acenaphthene	8.8 ⁽¹⁾	6.3 ⁽¹⁾
Fluorene	3.1 ⁽¹⁾	2.0 ⁽¹⁾
Phenanthrene	3.0 ⁽¹⁾	3.0 ⁽¹⁾
Anthracene	0.98 ⁽¹⁾	0.59 ⁽¹⁾
Fluoranthene	0.080 ⁽¹⁾	0.047 ⁽¹⁾
Pyrene	1.3 ⁽¹⁾	0.74 ⁽¹⁾
Benzo(a)anthracene	0.065 ⁽¹⁾	0.039 ⁽¹⁾
Chrysene	0.32 ⁽¹⁾	0.23 ⁽¹⁾
Benzo(b)fluoranthene	0.021 ⁽¹⁾	0.015 ⁽¹⁾
Benzo(k)fluoranthene	0.0069 ⁽¹⁾	0.0047 ⁽¹⁾
Benzo(a)pyrene	<0.016 ⁽¹⁾	<0.016 ⁽¹⁾
Dibenzo(a,h)anthracene	<0.033 ⁽¹⁾	<0.032 ⁽¹⁾
Benzo(g,h,i)perylene	<0.016 ⁽¹⁾	<0.016 ⁽¹⁾
Indeno(1,2,3-c,d)pyrene	<0.033 ⁽¹⁾	<0.032 ⁽¹⁾

NOTES:

Sample S-3 is a blind field duplicate of sample S-2.

Shading indicates concentrations that exceed ADEC cleanup levels.

(1) Surrogate recoveries do not meet QC criteria due to matrix interference.

TABLE 19

Surface Water Sample Analytical Results
 AT&T Ratz Mountain Facility
 Ratz Mountain, Alaska

Parameter	Sample Designation	
	SW-1 (mg/l)	SW-2 (mg/l)
Gasoline Range Organics	<0.0900	<0.0900
Benzene	<0.00050	<0.00050
Toluene	<0.0020	<0.0020
Ethylbenzene	<0.0020	<0.0020
p & m -xylene	<0.0020	<0.0020
o -xylene	<0.0020	<0.0020
Diesel Range Organics	<0.316	<0.316

NOTES:
 Sample SW-2 is a blind field duplicate of sample SW-1.
 Shading indicates concentrations that exceed ADEC cleanup levels.

TABLE 20

Soil Sample GRO, BTEX, & DRO Analytical Results
AT&T South Passage Facility
South Passage, Alaska

Parameter	Sample Designation					
	S-1 (mg/kg)	S-2 (mg/kg)	S-3 (mg/kg)	S-4 (mg/kg)	S-5 (mg/kg)	S-6 (mg/kg)
Gasoline Range Organics	<15.8 ⁽¹⁾	<15.3 ⁽¹⁾	<6.53 ⁽¹⁾	11.5	<3.87 ⁽¹⁾	<15.9 ⁽¹⁾
Benzene	<0.0790 ⁽¹⁾	<0.0764 ⁽¹⁾	<0.0327 ⁽¹⁾	<0.0451	<0.0193 ⁽¹⁾	<0.0797 ⁽¹⁾
Toluene	<0.316 ⁽¹⁾	<0.306 ⁽¹⁾	<0.131 ⁽¹⁾	<0.180	<0.0774 ⁽¹⁾	<0.319 ⁽¹⁾
Ethylbenzene	<0.316 ⁽¹⁾	<0.306 ⁽¹⁾	<0.131 ⁽¹⁾	<0.180	<0.0774 ⁽¹⁾	<0.319 ⁽¹⁾
p & m -xylene	<0.316 ⁽¹⁾	<0.306 ⁽¹⁾	<0.131 ⁽¹⁾	0.213	<0.0774 ⁽¹⁾	<0.319 ⁽¹⁾
o -xylene	<0.316 ⁽¹⁾	<0.306 ⁽¹⁾	<0.131 ⁽¹⁾	0.195	<0.0774 ⁽¹⁾	<0.319 ⁽¹⁾
Diesel Range Organics	5,450 ⁽²⁾⁽³⁾	4,990 ⁽²⁾⁽³⁾	2,020 ⁽²⁾⁽³⁾	3,940 ⁽²⁾⁽³⁾	873 ⁽²⁾⁽³⁾	4,930 ⁽²⁾⁽³⁾
Parameter	Sample Designation					
	S-7 (mg/kg)	S-8 (mg/kg)	S-9 (mg/kg)	S-10 (mg/kg)	S-11 (mg/kg)	
Gasoline Range Organics	<15.9 ⁽¹⁾	<17.3 ⁽¹⁾	<28.0 ⁽¹⁾	<6.87 ⁽¹⁾	<122 ⁽⁴⁾	
Benzene	<0.0795 ⁽¹⁾	<0.0866 ⁽¹⁾	<0.140 ⁽¹⁾	<0.0343 ⁽¹⁾	<0.610 ⁽⁴⁾	
Toluene	<0.318 ⁽¹⁾	<0.346 ⁽¹⁾	<0.560 ⁽¹⁾	<0.137 ⁽¹⁾	<2.44 ⁽⁴⁾	
Ethylbenzene	<0.318 ⁽¹⁾	<0.346 ⁽¹⁾	<0.560 ⁽¹⁾	<0.137 ⁽¹⁾	<2.44 ⁽⁴⁾	
p & m -xylene	0.655 ⁽¹⁾	<0.346 ⁽¹⁾	<0.560 ⁽¹⁾	<0.137 ⁽¹⁾	<2.44 ⁽⁴⁾	
o -xylene	0.688 ⁽¹⁾	<0.346 ⁽¹⁾	<0.560 ⁽¹⁾	<0.137 ⁽¹⁾	<2.44 ⁽⁴⁾	
Diesel Range Organics	6,700 ⁽²⁾⁽³⁾	6,300 ⁽²⁾⁽³⁾	2,660 ⁽²⁾⁽³⁾	3,240 ⁽²⁾⁽³⁾	200,000 ⁽⁵⁾⁽⁶⁾	

NOTES:

Sample S-8 is a blind field duplicate of sample S-7.

Shading indicates concentrations that exceed ADEC Method 2 cleanup levels.

(1) GRO/BTEX - Surrogate recoveries are biased low due to high moisture content in sample.

(2) DRO - Unknown hydrocarbon with several peaks.

(3) DRO - Surrogate recovery outside controls due to matrix interference.

(4) GRO/BTEX - Surrogate recovery is biased high due to matrix interference. Results not affected.

(5) DRO - Pattern consistent with middle distillate.

(6) DRO - Surrogate does not meet QC goals due to matrix interference. Results not affected.

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TABLE 21

Soil Sample PAH Analytical Results
AT&T South Passage Facility
South Passage, Alaska

Parameter	Sample Designation		
	S-7 (mg/kg)	S-8 (mg/kg)	S-11 (mg/kg)
PAHs			
Naphthalene	<5.6	<6.2 ⁽¹⁾	14 ⁽¹⁾
Acenaphthylene	<5.6	<6.2 ⁽¹⁾	55 ⁽¹⁾
Acenaphthene	<5.6	<6.2 ⁽¹⁾	48 ⁽¹⁾
Fluorene	<0.56	<0.62 ⁽¹⁾	11 ⁽¹⁾
Phenanthrene	<0.28	<0.31 ⁽¹⁾	5.3 ⁽¹⁾
Anthracene	<0.28	<0.31 ⁽¹⁾	2.1 ⁽¹⁾
Fluoranthene	<0.013	<0.015 ⁽¹⁾	0.97 ⁽¹⁾
Pyrene	<0.28	<0.31 ⁽¹⁾	15 ⁽¹⁾
Benzo(a)anthracene	0.0056	<0.0062 ⁽¹⁾	0.44 ⁽¹⁾
Chrysene	<0.28	<0.31 ⁽¹⁾	2.5 ⁽¹⁾
Benzo(b)fluoranthene	<0.0056	<0.0062 ⁽¹⁾	0.18 ⁽¹⁾
Benzo(k)fluoranthene	<0.0056	<0.0062 ⁽¹⁾	0.048 ⁽¹⁾
Benzo(a)pyrene	<0.028	<0.031 ⁽¹⁾	<0.032 ⁽¹⁾
Dibenzo(a,h)anthracene	2.3	2.6 ⁽¹⁾	1.3 ⁽¹⁾
Benzo(g,h,i)perylene	<0.028	<0.031 ⁽¹⁾	<0.032 ⁽¹⁾
Indeno(1,2,3-c,d)pyrene	<0.056	<0.062 ⁽¹⁾	<0.065 ⁽¹⁾

NOTES:

Sample S-8 is a blind field duplicate of sample S-7.

Shading indicates concentrations that exceed ADEC cleanup levels.

(1) Surrogate recoveries do not meet QC criteria due to matrix interference.

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Dear George Lively,

OSE II was applied to the diesel spill the day before a snow. OSE II and the diesel were covered for from January 24th 2000 to early April 2000. The sampling showed Non detect on all the diesel and gasoline range contaminants. We will order more OSE II in May.

Louis Corazza

NOTE; AT&T Alaskon ordered OSE II on May 11, 2000, and again on June 20, 2000 and then again in July 2000

First AT&T Alaskom order invoice

Louis Corazza phone number 907 789 5331