ALTA GEOSCIENCES, Inc.
Environmental & Geotechnical Solutions

SOILS REMEDIATION CONSTRUCTION COMPLETION REPORT COLD BAY EARTH STATION

COLD BAY, ALASKA

ADEC SITE NO. 1990250129701

AT&T/Alascom Sites
Alaska

Prepared for:

ScottishPower Holdings, Inc.
Portland, Oregon

MARCH 2007

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ACRONYMS & ABBREVIATIONS

µg/L	micrograms per liter
AAC	Alaska Administrative Code
ADEC	Alaska Department of Environmental Conservation
ALTA	Alta Geosciences, Inc.
BTEX	benzene, toluene, ethylbenzene, and xylenes
DRO	diesel-range organics
GRO	gasoline-range organics
KSI	Kent & Sullivan, Inc.
LNAPL	light, non-aqueous phase liquid
mg/L	milligrams per liter
mg/Kg	milligrams per kilogram
ORP	oxidation-reduction potential
PERCO	PacifiCorp Environmental Remediation Company
PAH	polyaromatic hydrocarbon
PCB	polychlorinated biphenyls
QA	quality assurance
QC	quality control
RPD	relative percent difference
TOC	top of casing
USGS	U.S. Geological Survey
VOC	volatile organic compound
WCC	Woodward Clyde Consultants

EXECUTIVE SUMMARY

Soil remediation of Diesel fuel impacted soils began at the Cold Bay Earth Station site on August 22, 2005 in accordance with the *Cleanup Plan* and *Remedial Construction Plan*, which had been approved by ADEC. The purpose of this work was the remediation of soils impacted by Diesel-Range Organics in two locations in Area of Interest E (AOI-E) as described in the *Phase II Site Investigation* report. The first was a small area identified as "E-TP-1" where stained soils were identified near the door of the emergency generator. The second area, identified as "E-TP-3" was identified as an area of stained soil near the fuel transfer line connection from the 3,000 gallon emergency generator fuel tank to the emergency generator.

Since publication of the Phase 2 Site Investigation report (1997), the emergency generator tank has been replaced with a new tank with a different and larger footprint in a different location. This facilitated excavation in the "E-TP-3" area. The new tank, however, is located near the door to the emergency generator building potentially impinging on the area represented by the WCC sample. Soils excavated at the approximate location of WCC test pit "E-TP-1". The excavation was approximately 20 square feet in size and two feet deep. Two samples were collected from the base of the excavation and analyzed for DRO. Neither sample exceeded ADEC Method 2 criteria. The excavated soils were placed in the onsite biocell.

Impacted soils from the "E-TP-3" area were excavated to the extent practicable. The presence of the emergency generator building and the limits of the excavator reach limited the extent of the excavation. ADEC Method 2 criteria were met on all sides of the excavation. Soils in the bottom of the excavation (approximately 10 feet) remain in an area approximately 6 feet square which exceed ADEC Method 2 criteria. Approximately 110 cubic yards of diesel impacted soils were excavated for onsite treatment.

An engineered biocell was constructed adjacent to the Marine Transmitter building as described in the Remedial Construction Plan. Appropriate levels of nutrients (nitrogen and phosphorous) were added to the soils as they were placed in the biocell. The biocell cover was placed as designed, and the blower operation began on August 26, 2005. The biopile was operated by running the blowers twice per day for two hours until late October, 2005, when operation was suspended due to excessively cold weather. Operation was resumed in May, 2006.

1. INTRODUCTION

This report describes soil remediation activities performed during 2005 at the Cold Bay Earth Station Site in Cold Bay, Alaska. The site is owned by AT&T/Alascom. This document has been prepared by Alta Geosciences, Inc. (ALTA) for ScottishPower Holdings, Inc., which has assumed responsibility for conducting investigation and remediation at these sites. All work was performed under the direction of a "Qualified Person" as required by 18 AAC 75.

This report is organized as follows:

Section 1 contains an introduction and general description of site conditions and soil remediation plans.

Section 2 contains a description of the soil remediation activities including sampling and analysis results.

Section 3 describes the conclusions of this report

Section 4 includes a list of references

Tables, figures, and photos follow Section 4

Appendix A contains the ADEC Laboratory QC checklist

Appendix B contains the laboratory analysis certificates

1.1 BACKGROUND

Previous investigations at the site are discussed in:

- *Phase II Site Investigation, Cold Bay Earth Station, Cold Bay, Alaska* (Woodward Clyde Consultants, December 1997, hereafter referred to as the WCC report).
- *Cleanup Plan, Earth Station Complex ATT/Alascom Site, Cold Bay, Alaska* (ALTA Geosciences, July 26, 2005, hereafter referred to as the Cleanup Plan)

The Site location is shown on Figure 1 and a site plan showing the sampling locations from the WCC report is shown on Figure 2.

The Site is generally level and bounded on the west by Outer Marker Road (also known as St. Louis Road). Blinn Lake lies about 270 feet east of the Site and about 50 feet lower in elevation. The site is approximately 130 feet above mean sea level. Surrounding land use is entirely open space and is believed to be administered by the Bureau of Land Management or the Fish and Wildlife Service.

The WCC report identified two locations with residual petroleum contamination exceeding ADEC cleanup criteria. Both of these locations were associated with WCC Area of Interest (AOI) 3, "Earth Station 3,000 Gallon AST". The first was a small area identified as "E-TP-1"

where stained soils were identified near the door of the emergency generator. The second area, identified as "E-TP-3" was identified as an area of stained soil near the fuel transfer line connection from the 3,000 gallon emergency generator fuel tank to the emergency generator.

WCC test Pit E-TP-1 was positioned where WCC noted stained surface soils covering approximately 5 square feet near the door of the emergency generator. The sample from TP-1 (taken at 0.5 feet bgs) contained 2,800 mg/kg DRO and 22,000 mg/kg RRO. The soils were still obviously stained at a depth of 1.5 feet where the test pit was terminated due to excavation difficulty. The WCC Report states (page 4-4): *"The RRO source in the area of test pit TP-1 is most likely from the surface discharge of used oil from maintenance of the emergency generator. The surface area of discolored soil was approximately 5 ft ^{2}, overall depth of contamination was not determined. Obvious contamination was persistent at the bottom of the hand excavation, but was not as prevalent as the near surface soil".* Later, they conclude (page 4-5): *"The estimated volume of soil requiring corrective action is less than 1 cubic yard."*

WCC test pit E-TP-3 was positioned near the fuel transfer line connections to the 3,000 gallon AST. DRO was detected in the sample from 2.0 feet at 4,900 mg/kg. The descriptions in the WCC field notebook do not indicate any staining in this area, but a field screening result of 500 ppm using the headspace method and a portable ionization detector is noted. The WCC Report states (page 4-4): *"The DRO source at the 3,000 gallon AST is likely from a leaky fuel transfer line. Contamination was obvious over an area approximately 10 ft by 20 ft at the 3,000-gallon AST. However, contamination may also extend underneath the AST. The depth of the contamination was not determined."* The AST cited in the WCC report has since been removed and a new AST constructed northwest of the emergency generator building.

1.2 CLEANUP PLAN

The Cleanup Plan made the following provisions:

> *At this time, a cleanup level for excavation of 250 mg/kg DRO is proposed. It is anticipated however that it will be technically infeasible to reach this level in all areas due to the presence of building, antennas, roads, and property lines. Therefore, following excavation, it will likely be necessary to request an NFRAP for the excavation for these reasons.*
>
> *Based on the available data it is estimated that there are approximately 50-100 cubic yards of soil requiring remediation. Remediation will be performed in an onsite engineered biopile. Soils exceeding the cleanup level will be excavated, placed in the biopile together with appropriate nutrients (common nitrogen-phosphorous fertilizer), and a blower will be used to provide an oxygenated environment for microbial degradation. A liner will be placed below the biopile to prevent contamination from migrating into subgrade soils, and an impermeable cover will be placed on top of the pile to prevent rainwater infiltration and soil erosion. Liner and cover materials will meet or exceed ADEC guidance for long term stockpile storage.*

Details of the biopile design will be provided when this preliminary cleanup plan is approved and prior to the start of remediation construction. All aspects of the remediation work will be under the direct oversight of an experienced environmental specialist from Alta Geosciences.

Details of the proposed biocell were presented in: *Remedial Construction Plan, Soils Bioremediation Project, Cold Bay Earth Station*, Alta Geosciences, July 2005 (the Remedial Construction Plan). The specified liner and cover materials were 20 mil "OR RPE" manufactured by Layfield Plastics.

2. SOILS REMEDIATION CONSTRUCTION ACTIVITIES

2.1 INTRODUCTION

Soil remediation activities began on August 22, 2006, and soil excavation, sampling, and biocell construction were functionally completed on August 26, 2005, when the biocell blowers were switched on. Remediation construction was performed by CEcon Corporation of Tacoma, Washington, under the oversight of ALTA Geosciences. Remediation and sampling and analysis activities and results for each of the two locations are discussed separately below. Soil samples were collected as described in the *Sampling and Analysis Plan* (ALTA, July 2005). Samples were thoroughly mixed and split, with one split reserved for laboratory analysis and the other for field screening. All samples except those from the constructed biopile were screened in the field using the PetroFlag system manufactured by Dexsil Corporation. Results of field screening and laboratory analysis are shown in Table 1.

2.2 E-TP-1 – Near Emergency Generator Door

At some time since the completion of the 1997 Phase 2 investigation, the former 3,000 gallon above ground storage tank (which is used to power the emergency generator in the event of a power failure) was replaced with a new double walled steel tank on a larger concrete pad in a different location of the site, as shown on Figure 3 and Photo 1 and 2. The new location for the emergency generator tank impinges on the location of WCC E-TP-1. At the time of the remediation construction at the site, surface staining was not observable in this area. An excavation was made in the approximate location indicated by WCC. No field screening evidence of hydrocarbon impacts was noted. An area approximately 4 feet square was excavated to a depth of two feet. Two soil samples were collected from the bottom of the excavation (Samples T-1 and T-2, Table 1). Neither sample exceeded ADEC criteria for DRO. Despite the lack of field evidence of contamination, the soils were incorporated into the biocell and the excavation was backfilled with clean imported soil.

2.3 E-TP-3 – Fuel Transfer Line

The WCC Report states (page 4-4): *"The DRO source at the 3,000 gallon AST is likely from a leaky fuel transfer line. Contamination was obvious over an area approximately 10 ft by 20 ft at the 3,000-gallon AST.* The removal of the AST eliminated one conflict with respect to excavation in this area. A large area of disturbed soil appeared to mark the area of the former AST and associated piping (Photo 1). Excavation began approximately centered on WCC E-TP-3 and the initial excavation encompassed an area of 9 feet by 15 feet to a depth of 4 feet. Four initial samples were taken from the excavation floor (Figure 3 and Table 1). Field screening (PetroFLAG) indicated that the samples from the western half of the excavation (S3 and S4) were below cleanup levels, while samples from the southeast side

of the excavation floor and southeast sidewalls exceeded cleanup levels. Excavation was continued to the southeast and vertically with samples collected periodically for field screening. Selected samples were also submitted for laboratory analysis. Eventually, the excavation reached to within approximately 6 feet of the communications building when sidewall samples indicated that cleanup levels had been reached on all sides. A small (6 foot square) area near the center of the excavation remained exceeding the cleanup criteria (represented by samples S22, S23, S24, and S25). Further vertical excavation was precluded by the limits of the excavator (the only available excavator in Cold Bay) and concerns regarding the stability of the communications building.

2.4 BIOCELL CONSTRUCTION

The biocell was constructed as described in the Cleanup Plan and the Remedial Construction Plan on the south side of the Marine Transmitter building (see Photos 4, 5 and 6). The blower, timer, and monitoring unit are located inside the Marine Transmitter building in the south side of the structure. Nutrients (nitrogen and phosphorous) were added to the soil as it was being placed in the biocell by first dissolving the nutrients in water in a 55 gallon drum, then adding the nutrient-enriched water to the soil in the loader bucket as the soil was being transferred from the temporary stockpile to the biocell.

Once all the soil had been placed in the biocell, four soil samples were collected from four discrete locations around the pile by augering mid way into the pile and collecting a discrete sample. These samples are identified as sample numbers P1 through P4. These samples were submitted for analysis for DRO. The results of these analyses are shown on Table 1.

The air sampling ports were placed in the biocell soils by hand augering at two locations to the midpoint of the soil pile, placing the sampling point, and backfilling with the excavated soil. The sample tubes from the sample points were run back into the garage building to facilitate access. The vent line was added at the top of the pile. The liner was then folded over the top of the soil pile and the vent line extended through the top liner and the joint heat sealed. A surplus fishing net was placed on the liner and clean imported soil was bermed around the three open edges of the liner to secure the liner and the fishing net. Sand bags were secured to the fishing net to stabilize the top liner.

2.5 OPERATIONS AND MAINTENANCE

The biocell was started on August 26 and observed for several hours prior to departure of the field crew. The blower was set to operate twice a day for two hours each. This adequately oxygenates the pile without resulting in excessive drying. The data logger sends a fax report on a weekly basis, monitoring system operations and parameters.

In late October, 2005, the remediation site was visited again. The operation of the biocell was observed to be continuing as intended and the biocell was observed to be in satisfactory physical condition. However, as temperatures were consistently becoming below freezing, it was decided to shut the system down for the winter. The system was restarted in May 2006 when temperatures were again consistently above freezing.

2.6 QUALITY CONTROL SUMMARY

Appendix A contains ADEC's QC checklist for the August 2005 soil samples. All analytical data meet the applicable criteria for precision, accuracy, representativeness, completeness, and sensitivity. The laboratory failed to document the cooler temperature on arrival; this is not considered a significant flaw that would affect the usability of the data.

3. CONCLUSIONS

Remediation construction was successful at excavating soils which were technically feasible to excavate. The soils were placed in an engineered biocell together with nutrient additives to stimulate bioremediation. The biocell is equipped with a timer operated blower to maintain the biocell in an oxygenated environment. The biocell is operating as designed.

Excavations were backfilled with clean backfill soils similar to those excavated and restored to original grade.

Soil exceeding ADEC Method 2 criteria near the communications building (AOI-E, E-TP-3 location) were excavated to a depth of 10 feet. Further excavation was not technically feasible due to the proximity of the communications building and the limitations of excavation equipment available in this remote location. Soils exceeding ADEC Method 2 criteria remain at depths greater than 10 feet.

Approximately 110 cubic yards of diesel impacted soil are currently undergoing treatment in the onsite biocell. Once these soils reach cleanup level, a Conditional Closure will be requested for this site based on technical impracticability of further excavation.

4. REFERENCES

Woodward Clyde Consultants, December 1997: *Phase II Site Investigation, Cold Bay Earth Station, Cold Bay, Alaska*

ALTA Geosciences, Inc., July 12, 2005: *Preliminary Cleanup Plan Earth Station Complex ATT/Alascom Site, Cold Bay, Alaska.*

ALTA Geosciences, Inc., July 2005: *Remedial Construction Plan, Soils Bioremediation Project, King Salmon Earth Station, Cold Bay, Alaska.*

ALTA Geosciences, Inc., July 2005: *Sampling And Analysis Plan, Soils Bioremediation Project, Cold Bay Earth Station, King Salmon, Alaska.*

TABLES

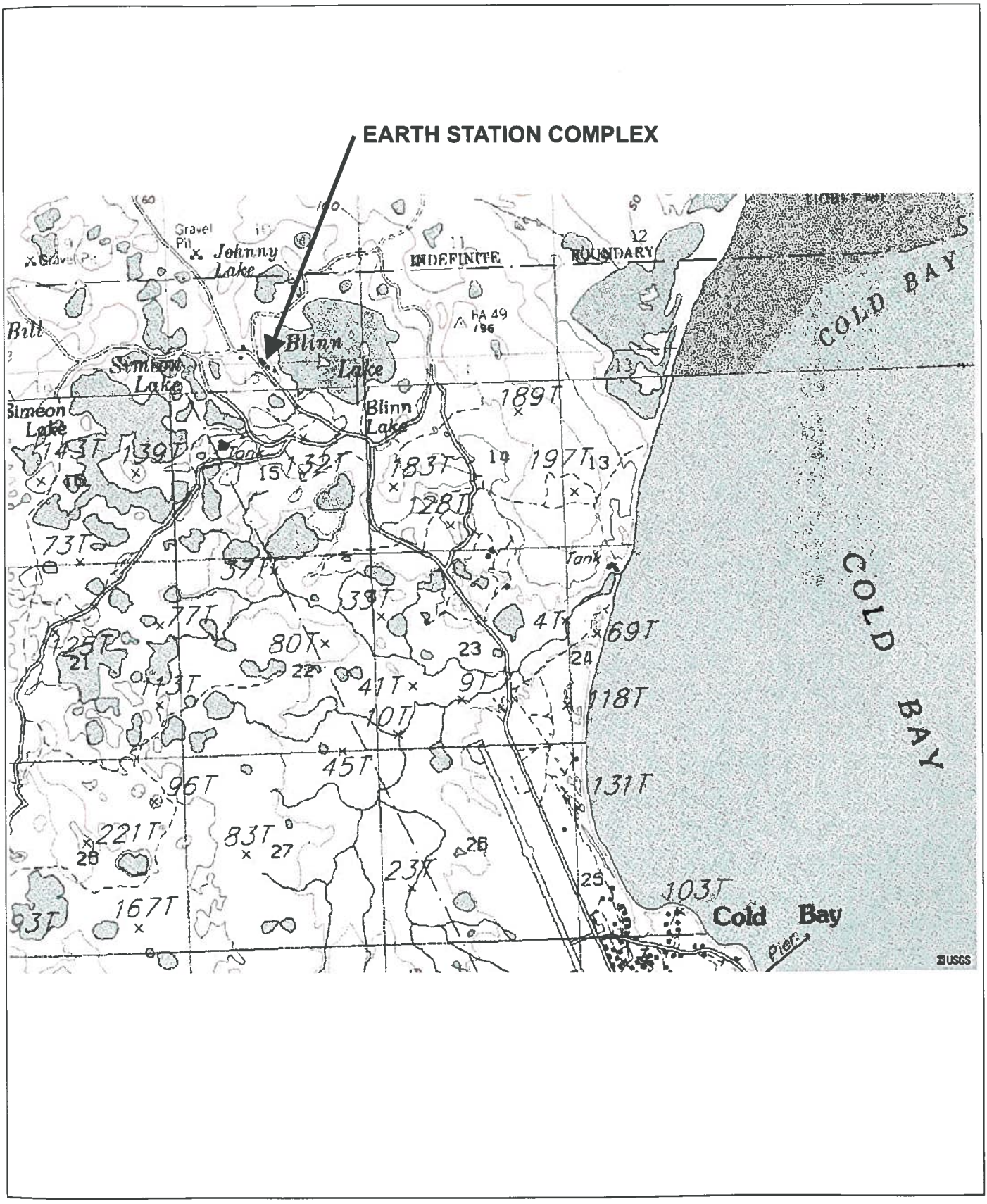
ALTA Geosciences, Inc.

Table 1 - Summary of soil analytical data, Cold Bay Earth Station

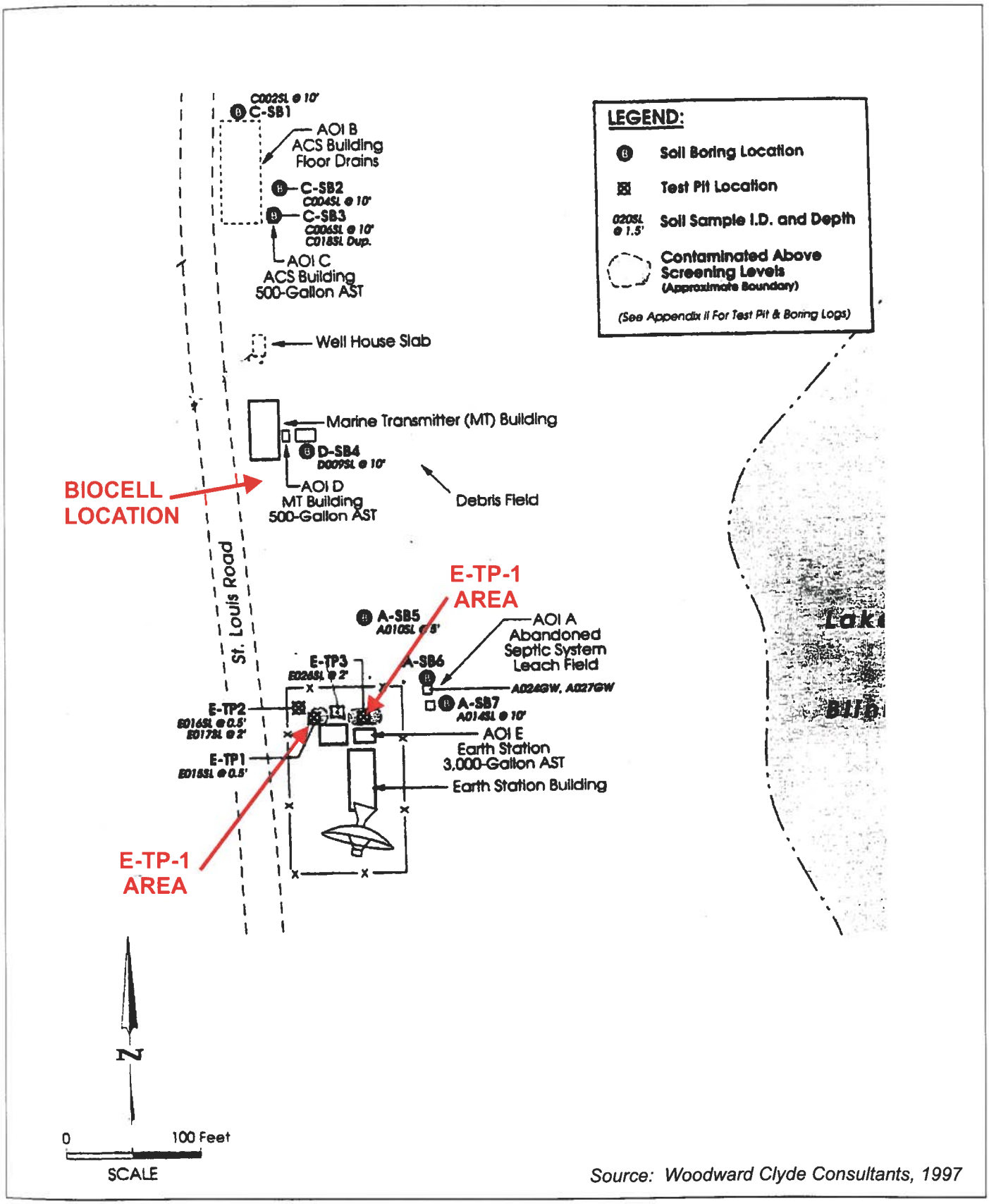
Sample ID	Lab ID	Sample Date	Depth	PetroFLAG *ADEC Method 2 Criteria:*	DRO *250*	COMMENTS
S3	A5H0109-01	8/23/05	6	6	ND	
S4	A5H0109-02	8/23/05	6	6	ND	
S8	A5H0109-03	8/24/05	4	851	405	*Excavated*
S9	A5H0109-04	8/24/05	4.5	2328	1550	*Excavated*
S10	A5H0109-05	8/25/05	4	25	ND	
S14	A5H0109-06	8/25/05	2.5	150	ND	
S15	A5H0109-07	8/25/05	5.5	7	ND	
S18	A5H0109-08	8/25/05	4.5	16	ND	
S19	A5H0109-09	8/25/05	2.5	19	ND	
S20	A5H0109-10	8/25/05	5	19	ND	
S21	A5H0109-11	8/25/05	7	8	ND	
S22	A5H0109-12	8/25/05	10	801	443	*Bottom*
S23	A5H0109-13	8/25/05	10	>3,000	2240	*Bottom*
S24	A5H0109-14	8/25/05	10	2630	1390	*Bottom*
S25	A5H0109-15	8/25/05	10	1357	967	*Bottom*
T1	A5H0109-16	8/25/05	2	6	ND	*E-TP-1 Area*
T2	A5H0109-17	8/25/05	2	130	213	*E-TP-1 Area*
P1	A5H0109-18	8/25/05	na	NA	434	*Biocell*
P2	A5H0109-19	8/25/05	na	NA	347	*Biocell*
P3	A5H0109-20	8/25/05	na	NA	339	*Biocell*
P4	A5H0109-21	8/25/05	na	NA	1170	*Biocell*

Notes:
Concentrations are reported in mg/kg
Criteria is ADEC Method 2 cleanup levels for soils as contained in 18 AAC 75
Bold: Analyte was detected at concentration shown
[ ] Concentration exceeds ADEC Method 2 criteria
DRO = Diesel-Range Organics
U = Analyte was not detected in the sample at the reporting limit shown
PetroFLAG = PetroFLAG field test kits manufactured by Dexsil Corporation
NA = Not analyzed
na = Not applicable
* = Field duplicate sample

FIGURES

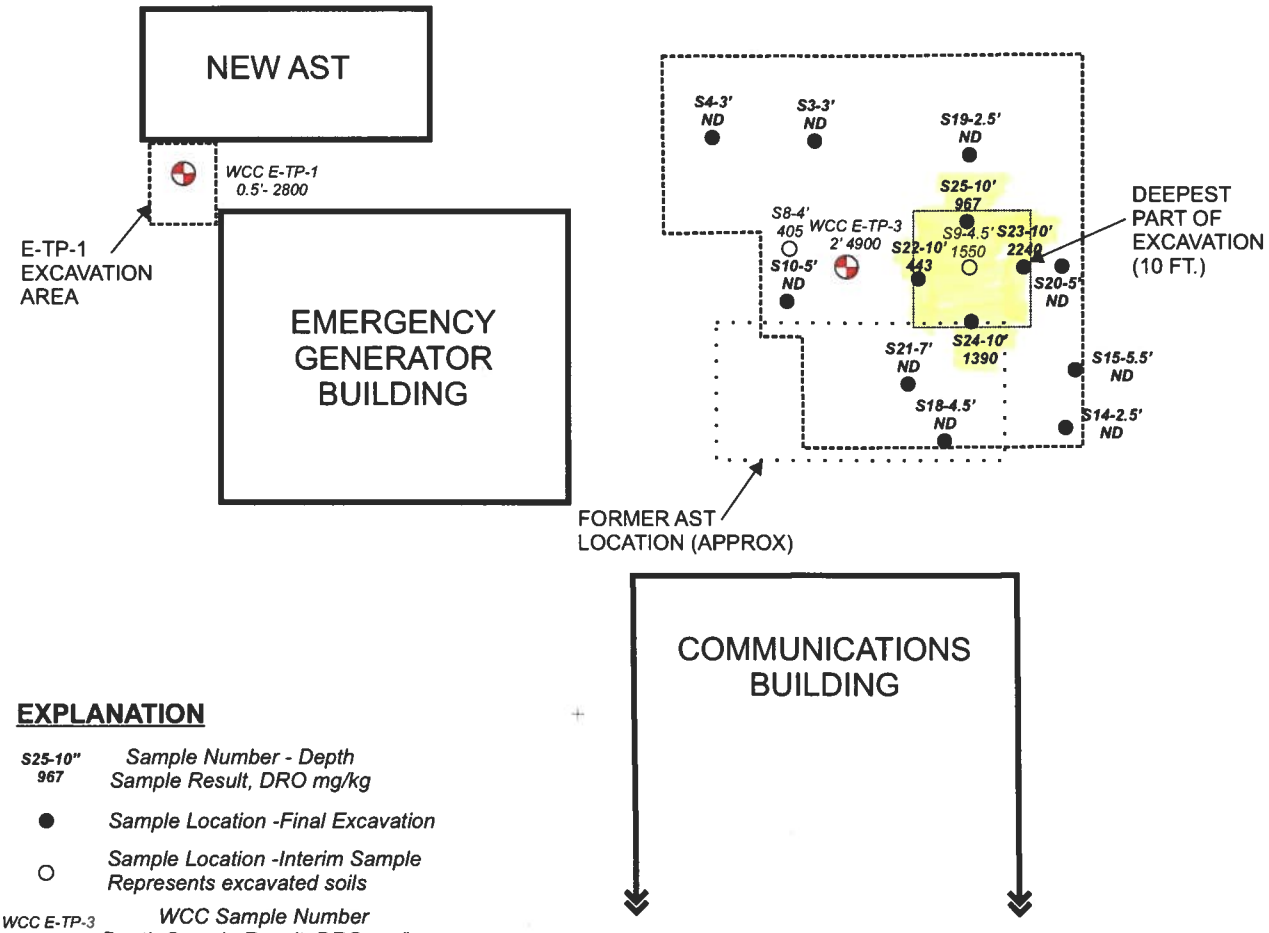


ALTA GEOSCIENCES, INC. *Environmental & Geotechnical Solutions* Bothell, Washington *Prepared for:* *ScottishPower Holdings, Inc.*	**COLD BAY EARTH STATION** **COLD BAY, ALASKA** **SITE LOCATION**	**FIGURE** **1**



Source: Woodward Clyde Consultants, 1997

ALTA GEOSCIENCES, INC. *Environmental & Geotechnical Solutions* Bothell, Washington *Prepared for:* *ScottishPower Holdings, Inc.*	**COLD BAY EARTH STATION** **COLD BAY, ALASKA** **SITE PLAN AND PRIOR SAMPLE LOCATIONS**	**FIGURE** **2**



EXPLANATION

S25-10" 967	Sample Number - Depth Sample Result, DRO mg/kg
●	Sample Location -Final Excavation
○	Sample Location -Interim Sample Represents excavated soils
WCC E-TP-3 2' 4900	WCC Sample Number Depth-Sample Result, DRO mg/kg
⊕	WCC Sample Location -Phase 2 Report

ALTA GEOSCIENCES, INC. *Environmental & Geotechnical Solutions* Bothell, Washington *Prepared for:* *ScottishPower Holdings, Inc.*	**COLD BAY EARTH STATION** **COLD BAY, ALASKA** **EXCAVATION AREAS AND SAMPLE LOCATIONS**	**FIGURE** **3**

PHOTOS

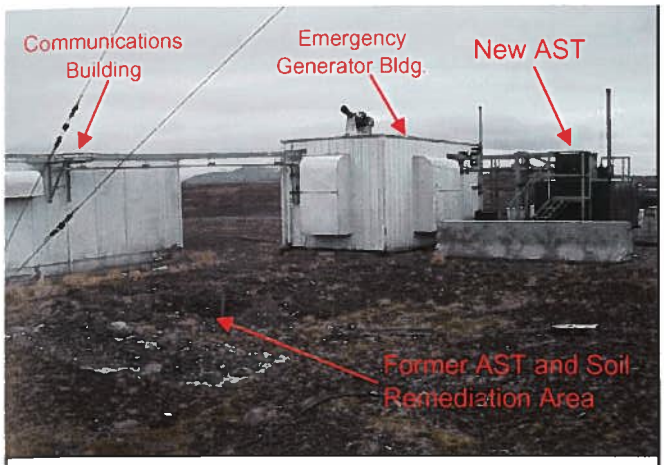


Photo 1. New emergency generator tank and E-TP-3 soil remediation area

Photo 2. Excavation at E-TP-1 area.

Photo 3. Soil excavation at E-TP-3 area

Photo 4. Biocell construction

Photo 5. Completed biocell

Photo 6. Completed biocell

ALTA Geosciences, Inc.
Bothell, Washington

PHOTO PLATE 1.
Cold Bay Earth Station Soil Remediation
ScottishPower Holdings, Inc.
Cold Bay, Alaska
August, 2005

APPENDIX A

Laboratory Reports – 2005 Soil Analyses
And ADEC QA/QC Checklist

North Creek Analytical Work Order Number: A5H0109

Submit by E-Mail | Print Form | Reset Form

Laboratory Data Review Checklist

1. Laboratory

a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?

(•) Yes ( ) No Comments:

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

( ) Yes ( ) No Comments:

2. Chain of Custody (COC)

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

(•) Yes ( ) No Comments:

b. Correct analyses requested?

(•) Yes ( ) No Comments:

3. Laboratory Sample Receipt Documentation

a. Sample/cooler temperature documented and within range at receipt (4° ± 2° C)?

( ) Yes (•) No Comments:

Not documented by laboratory

b. Sample preservation acceptable - acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

( ) Yes ( ) No Comments:

n/a

c. Sample condition documented - broken, leaking (Methanol), zero headspace (VOC vials)?

(•) Yes ( ) No Comments:

d. If there were any discrepancies, were they documented? For example, incorrect sample containers/ preservation, sample temperature ouside of acceptance range, insufficient or missing samples, etc.?

○ Yes ○ No Comments:

n/a

e. Data quality or usability affected? Explain.

Comments:

no

4. Case Narrative

a. Present and understandable?

○ Yes ◉ No Comments:

Not included by laboratory

b. Discrepancies, errors or QC failures identified by the lab?

○ Yes ◉ No Comments:

c. Were all corrective actions documented?

○ Yes ○ No Comments:

na

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

Comments:

none

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

◉ Yes ○ No Comments:

b. All applicable holding times met?

◉ Yes ○ No Comments:

c. All soils reported on a dry weight basis?

◉ Yes ○ No Comments:

d. Are the reported PQLs less than the Cleanup Level or the minimum required detection level for the project?

(•) Yes ( ) No Comments:

e. Data quality or usability affected? Explain.

Comments:

no

j. QC Samples

a. Method Blank

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

(•) Yes ( ) No Comments:

ii. All method blank results less than PQL?

(•) Yes ( ) No Comments:

iii. If above PQL, what samples are affected?

Comments:

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

( ) Yes ( ) No Comments:

v. Data quality or usability affected? Explain.

Comments:

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

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

(•) Yes ( ) No Comments:

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

( ) Yes ( ) No Comments:

iii. Accuracy - All percent recoveries (%R) reported and within method or laboratory limits or project specified DQOs? (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

(•) Yes ( ) No Comments:

iv. Precision - All relative percent differences (RPD) reported and less than method or laboratory limits or project specified DQOs? (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

(•) Yes ( ) No Comments:

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

Comments:

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

( ) Yes ( ) No Comments:

vii. Data quality or usability affected? Explain.

Comments:

c. Surrogates - Organics Only

i. Are surrogate recoveries reported for organic analyses - field, QC and laboratory samples?

(•) Yes ( ) No Comments:

ii. Accuracy - All percent recoveries (%R) reported and within method or laboratory limts or project specified DQOs? (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)

(•) Yes ( ) No Comments:

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

( ) Yes ( ) No Comments:

iv. Data quality or usability affected? Explain.

Comments:

d. Trip Blank - Volatile analyses only (GRO, BTEX, Volatile Chlorinated Solvents, etc.):
Water and Soil

i. One trip blank reported per matrix, analysis and cooler?

○ Yes ○ No Comments:

ii. All results less than PQL?

○ Yes ○ No Comments:

iii. If above PQL, what samples are affected?

Comments:

iv. Data quality or usability affected? Explain.

Comments:

e. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

○ Yes ◉ No Comments:

ii. Submitted blind to lab?

○ Yes ○ No Comments:

iii. Precision - All relative percent differences (RPD) less than specified DQOs? (Reccomended: 30% water, 50% soil)

○ Yes ○ No Comments:

iv. Data quality or usability affected?

○ Yes ○ No Comments:

f. Decontamination or Equipment Blank (if applicable)

○ Yes ○ No ◉ Not Applicable

i. All results less than PQL?

○ Yes ○ No Comments:

ii. If above PQL, what samples are affected?

Comments:

iii. Data quality or usability affected? Explain.

Comments:

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

a. Defined and appropriate?

○ Yes ○ No Comments:

Completed by: Alex Tula

Title: Geologist Date: Mar 23, 2007

Report Name: Cold Bay Earth Station-Soil Remediation Construction Report Report Date: Mar 23, 2007

Firm: Alta Geosciences, Inc. File Number: 1990250129701

Submit by E-Mail Print Form Reset Form

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September 08, 2005

Alex Tula
ALTA Geosciences, Inc.
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Bothell, WA/USA 98021-9365

RE: Cold Bay ESC

Enclosed are the results of analyses for samples received by the laboratory on 08/29/05 09:30.
The following list is a summary of the NCA Work Orders contained in this report.
If you have any questions concerning this report, please feel free to contact me.

Work	Project	ProjectNumber
A5H0109	Cold Bay ESC	[none]

Thank You,

Stephen Wilson, Laboratory Manager

www.ncalabs.com

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Bothell, WA/USA 98021-9365

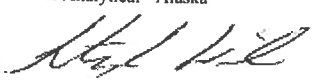
Project Name: **Cold Bay ESC**
Project Number: [none]
Project Manager: Alex Tula

Report Created:
09/08/05 15:36

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S3	A5H0109-01	Soil	08/23/05 11:45	08/29/05 09:30
S4	A5H0109-02	Soil	08/23/05 11:50	08/29/05 09:30
S8	A5H0109-03	Soil	08/24/05 16:15	08/29/05 09:30
S9	A5H0109-04	Soil	08/24/05 16:20	08/29/05 09:30
S10	A5H0109-05	Soil	08/25/05 09:15	08/29/05 09:30
S14	A5H0109-06	Soil	08/25/05 13:00	08/29/05 09:30
S15	A5H0109-07	Soil	08/25/05 13:05	08/29/05 09:30
S18	A5H0109-08	Soil	08/25/05 13:20	08/29/05 09:30
S19	A5H0109-09	Soil	08/25/05 16:00	08/29/05 09:30
S20	A5H0109-10	Soil	08/25/05 16:05	08/29/05 09:30
S21	A5H0109-11	Soil	08/25/05 16:10	08/29/05 09:30
S22	A5H0109-12	Soil	08/25/05 17:00	08/29/05 09:30
S23	A5H0109-13	Soil	08/25/05 17:05	08/29/05 09:30
S24	A5H0109-14	Soil	08/25/05 17:10	08/29/05 09:30
S25	A5H0109-15	Soil	08/25/05 17:20	08/29/05 09:30
T1	A5H0109-16	Soil	08/25/05 16:15	08/29/05 09:30
T2	A5H0109-17	Soil	08/25/05 16:20	08/29/05 09:30
P1	A5H0109-18	Soil	08/25/05 17:25	08/29/05 09:30
P2	A5H0109-19	Soil	08/25/05 17:30	08/29/05 09:30
P3	A5H0109-20	Soil	08/25/05 17:35	08/29/05 09:30
P4	A5H0109-21	Soil	08/25/05 17:40	08/29/05 09:30

North Creek Analytical - Alaska



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Project Name: **Cold Bay ESC**
Project Number: [none]
Project Manager: Alex Tula

Report Created:
09/08/05 15:36

Diesel Range Organics (C10-C25) per AK102

North Creek Analytical - Alaska

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
A5H0109-01 Soil S3 Sampled: 08/23/05 11:45										
Diesel Range Organics	AK 102	ND	-----	25.0	mg/kg dry	1x	5090001	09/01/05	09/01/05 23:52	
Surrogate(s): 1-Chlorooctadecane		*Recovery: 92.8%*		*Limits: 50 - 150 %*		"			"	
A5H0109-02 Soil S4 Sampled: 08/23/05 11:50										
Diesel Range Organics	AK 102	ND	-----	25.0	mg/kg dry	1x	5090001	09/01/05	09/02/05 00:33	
Surrogate(s): 1-Chlorooctadecane		*Recovery: 93.5%*		*Limits: 50 - 150 %*		"			"	
A5H0109-03 Soil S8 Sampled: 08/24/05 16:15										
Diesel Range Organics	AK 102	**405**	-----	22.2	mg/kg dry	1x	5090001	09/01/05	09/02/05 04:01	
Surrogate(s): 1-Chlorooctadecane		*Recovery: 91.5%*		*Limits: 50 - 150 %*		"			"	
A5H0109-04 Soil S9 Sampled: 08/24/05 16:20										
Diesel Range Organics	AK 102	**1550**	-----	25.0	mg/kg dry	1x	5090001	09/01/05	09/02/05 06:45	
Surrogate(s): 1-Chlorooctadecane		*Recovery: 105%*		*Limits: 50 - 150 %*		"			"	
A5H0109-05 Soil S10 Sampled: 08/25/05 09:15										
Diesel Range Organics	AK 102	ND	-----	25.0	mg/kg dry	1x	5090001	09/01/05	09/02/05 03:19	
Surrogate(s): 1-Chlorooctadecane		*Recovery: 95.4%*		*Limits: 50 - 150 %*		"			"	
A5H0109-06 Soil S14 Sampled: 08/25/05 13:00										
Diesel Range Organics	AK 102	ND	-----	25.0	mg/kg dry	1x	5090001	09/01/05	09/02/05 01:57	
Surrogate(s): 1-Chlorooctadecane		*Recovery: 91.3%*		*Limits: 50 - 150 %*		"			"	

North Creek Analytical - Alaska

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Project Number: [none]
Project Manager: Alex Tula

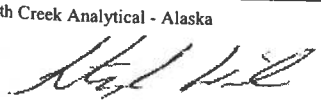
Report Created:
09/08/05 15:36

Diesel Range Organics (C10-C25) per AK102

North Creek Analytical - Alaska

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
A5H0109-07 Soil S15 Sampled: 08/25/05 13:05										
Diesel Range Organics	AK 102	ND	-----	25.0	mg/kg dry	1x	5090001	09/01/05	09/02/05 04:01	
Surrogate(s): 1-Chlorooctadecane		*Recovery: 89.6%*		*Limits: 50 - 150 %*		"			"	
A5H0109-08 Soil S18 Sampled: 08/25/05 13:20										
Diesel Range Organics	AK 102	ND	-----	25.0	mg/kg dry	1x	5090001	09/01/05	09/02/05 02:38	
Surrogate(s): 1-Chlorooctadecane		*Recovery: 92.2%*		*Limits: 50 - 150 %*		"			"	
A5H0109-09 Soil S19 Sampled: 08/25/05 16:00										
Diesel Range Organics	AK 102	ND	-----	25.0	mg/kg dry	1x	5090001	09/01/05	09/02/05 02:38	
Surrogate(s): 1-Chlorooctadecane		*Recovery: 93.0%*		*Limits: 50 - 150 %*		"			"	
A5H0109-10 Soil S20 Sampled: 08/25/05 16:05										
Diesel Range Organics	AK 102	ND	-----	21.8	mg/kg dry	1x	5090001	09/01/05	09/02/05 06:45	
Surrogate(s): 1-Chlorooctadecane		*Recovery: 90.4%*		*Limits: 50 - 150 %*		"			"	
A5H0109-11 Soil S21 Sampled: 08/25/05 16:10										
Diesel Range Organics	AK 102	ND	-----	25.0	mg/kg dry	1x	5090001	09/01/05	09/02/05 07:26	
Surrogate(s): 1-Chlorooctadecane		*Recovery: 91.6%*		*Limits: 50 - 150 %*		"			"	
A5H0109-12 Soil S22 Sampled: 08/25/05 17:00										
Diesel Range Organics	AK 102	**443**	-----	25.0	mg/kg dry	1x	5090001	09/01/05	09/02/05 07:26	
Surrogate(s): 1-Chlorooctadecane		*Recovery: 103%*		*Limits: 50 - 150 %*		"			"	

North Creek Analytical - Alaska



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Project Name: **Cold Bay ESC**
Project Number: [none]
Project Manager: Alex Tula

Report Created:
09/08/05 15:36

Diesel Range Organics (C10-C25) per AK102

North Creek Analytical - Alaska

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
A5H0109-19 Soil P2 Sampled: 08/25/05 17:30										
Diesel Range Organics	AK 102	**347**	-----	25.0	mg/kg dry	1x	5090003	09/01/05	09/06/05 13:07	
Surrogate(s): 1-Chlorooctadecane		*Recovery: 91.1%*		*Limits: 50 - 150 %*		"			"	
A5H0109-20 Soil P3 Sampled: 08/25/05 17:35										
Diesel Range Organics	AK 102	**339**	-----	25.0	mg/kg dry	1x	5090003	09/01/05	09/06/05 13:47	
Surrogate(s): 1-Chlorooctadecane		*Recovery: 96.4%*		*Limits: 50 - 150 %*		"			"	
A5H0109-21 Soil P4 Sampled: 08/25/05 17:40										
Diesel Range Organics	AK 102	**1170**	-----	25.0	mg/kg dry	1x	5090003	09/01/05	09/06/05 13:47	
Surrogate(s): 1-Chlorooctadecane		*Recovery: 91.2%*		*Limits: 50 - 150 %*		"			"	

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Project Number: [none]
Project Manager: Alex Tula

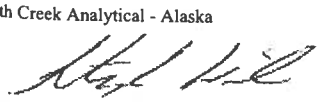
Report Created:
09/08/05 15:36

Physical Parameters by APHA/ASTM/EPA Methods

North Creek Analytical - Alaska

Analyte			Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
A5H0109-01	**Soil**	**S3**	**Sampled: 08/23/05 11:45**									
Dry Weight			BSOPSPL003R0	94.3	-----	1.00	%	1x	5090002	09/01/05	09/02/05 10:08	
A5H0109-02	**Soil**	**S4**	**Sampled: 08/23/05 11:50**									
Dry Weight			BSOPSPL003R0	91.7	-----	1.00	%	1x	5090002	09/01/05	09/02/05 10:08	
A5H0109-03	**Soil**	**S8**	**Sampled: 08/24/05 16:15**									
Dry Weight			BSOPSPL003R0	90.9	-----	1.00	%	1x	5090002	09/01/05	09/02/05 10:08	
A5H0109-04	**Soil**	**S9**	**Sampled: 08/24/05 16:20**									
Dry Weight			BSOPSPL003R0	91.2	-----	1.00	%	1x	5090002	09/01/05	09/02/05 10:08	
A5H0109-05	**Soil**	**S10**	**Sampled: 08/25/05 09:15**									
Dry Weight			BSOPSPL003R0	91.7	-----	1.00	%	1x	5090002	09/01/05	09/02/05 10:08	
A5H0109-06	**Soil**	**S14**	**Sampled: 08/25/05 13:00**									
Dry Weight			BSOPSPL003R0	84.8	-----	1.00	%	1x	5090002	09/01/05	09/02/05 10:08	
A5H0109-07	**Soil**	**S15**	**Sampled: 08/25/05 13:05**									
Dry Weight			BSOPSPL003R0	91.5	-----	1.00	%	1x	5090002	09/01/05	09/02/05 10:08	

North Creek Analytical - Alaska



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Project Name: **Cold Bay ESC**
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Project Manager: Alex Tula

Report Created:
09/08/05 15:36

Physical Parameters by APHA/ASTM/EPA Methods

North Creek Analytical - Alaska

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
A5H0109-08 Soil S18 Sampled: 08/25/05 13:20										
Dry Weight	BSOPSPL003R0	92.6	-----	1.00	%	1x	5090002	09/01/05	09/02/05 10:08	
A5H0109-09 Soil S19 Sampled: 08/25/05 16:00										
Dry Weight	BSOPSPL003R0	92.0	-----	1.00	%	1x	5090002	09/01/05	09/02/05 10:08	
A5H0109-10 Soil S20 Sampled: 08/25/05 16:05										
Dry Weight	BSOPSPL003R0	92.2	-----	1.00	%	1x	5090002	09/01/05	09/02/05 10:08	
A5H0109-11 Soil S21 Sampled: 08/25/05 16:10										
Dry Weight	BSOPSPL003R0	95.0	-----	1.00	%	1x	5090002	09/01/05	09/02/05 10:08	
A5H0109-12 Soil S22 Sampled: 08/25/05 17:00										
Dry Weight	BSOPSPL003R0	91.1	-----	1.00	%	1x	5090002	09/01/05	09/02/05 10:08	
A5H0109-13 Soil S23 Sampled: 08/25/05 17:05										
Dry Weight	BSOPSPL003R0	91.5	-----	1.00	%	1x	5090004	09/01/05	09/02/05 10:03	
A5H0109-14 Soil S24 Sampled: 08/25/05 17:10										
Dry Weight	BSOPSPL003R0	95.5	-----	1.00	%	1x	5090004	09/01/05	09/02/05 10:03	

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09/08/05 15:36

Physical Parameters by APHA/ASTM/EPA Methods

North Creek Analytical - Alaska

Analyte			Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
A5H0109-15	**Soil**	**S25**	**Sampled: 08/25/05 17:20**									
Dry Weight			BSOPSPL003R0	92.1	-----	1.00	%	1x	5090004	09/01/05	09/02/05 10:03	
A5H0109-16	**Soil**	**T1**	**Sampled: 08/25/05 16:15**									
Dry Weight			BSOPSPL003R0	89.9	-----	1.00	%	1x	5090004	09/01/05	09/02/05 10:03	
A5H0109-17	**Soil**	**T2**	**Sampled: 08/25/05 16:20**									
Dry Weight			BSOPSPL003R0	91.3	-----	1.00	%	1x	5090004	09/01/05	09/02/05 10:03	
A5H0109-18	**Soil**	**P1**	**Sampled: 08/25/05 17:25**									
Dry Weight			BSOPSPL003R0	87.1	-----	1.00	%	1x	5090004	09/01/05	09/02/05 10:03	
A5H0109-19	**Soil**	**P2**	**Sampled: 08/25/05 17:30**									
Dry Weight			BSOPSPL003R0	89.1	-----	1.00	%	1x	5090004	09/01/05	09/02/05 10:03	
A5H0109-20	**Soil**	**P3**	**Sampled: 08/25/05 17:35**									
Dry Weight			BSOPSPL003R0	90.9	-----	1.00	%	1x	5090004	09/01/05	09/02/05 10:03	
A5H0109-21	**Soil**	**P4**	**Sampled: 08/25/05 17:40**									
Dry Weight			BSOPSPL003R0	89.6	-----	1.00	%	1x	5090004	09/01/05	09/02/05 10:03	

North Creek Analytical - Alaska

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Project Name: **Cold Bay ESC**
Project Number: [none]
Project Manager: Alex Tula

Report Created:
09/08/05 15:36

Physical Parameters by APHA/ASTM/EPA Methods

North Creek Analytical - Bothell

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
A5H0109-18 Soil P1	**Sampled: 08/25/05 17:25**									
Fractional Organic Carbon	EPA 9060 Mod	**0.00430**	-----	0.00110	g/g dry	1x	5I02045	08/31/05	09/01/05 00:00	
Dry Weight	BSOPSPL003R0	**89.2**	-----	1.00	%	"	5I01056	09/01/05	09/02/05 00:00	
A5H0109-19 Soil P2	**Sampled: 08/25/05 17:30**									
Fractional Organic Carbon	EPA 9060 Mod	**0.00194**	-----	0.00110	g/g dry	1x	5I02045	08/31/05	09/01/05 00:00	
Dry Weight	BSOPSPL003R0	**88.9**	-----	1.00	%	"	5I01056	09/01/05	09/02/05 00:00	
A5H0109-20 Soil P3	**Sampled: 08/25/05 17:35**									
Fractional Organic Carbon	EPA 9060 Mod	**0.00444**	-----	0.00110	g/g dry	1x	5I02045	08/31/05	09/01/05 00:00	
Dry Weight	BSOPSPL003R0	**87.3**	-----	1.00	%	"	5I01056	09/01/05	09/02/05 00:00	
A5H0109-21 Soil P4	**Sampled: 08/25/05 17:40**									
Fractional Organic Carbon	EPA 9060 Mod	**0.00210**	-----	0.00110	g/g dry	1x	5I02045	08/31/05	09/01/05 00:00	
Dry Weight	BSOPSPL003R0	**90.5**	-----	1.00	%	"	5I01056	09/01/05	09/02/05 00:00	

North Creek Analytical - Alaska

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Project Name: **Cold Bay ESC**
Project Number: [none]
Project Manager: Alex Tula

Report Created:
09/08/05 15:36

Diesel Range Organics (C10-C25) per AK102 - Laboratory Quality Control Results

North Creek Analytical - Alaska

QC Batch: 5090001 **Soil Preparation Method: EPA 3545**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (5090001-BLK1)								Extracted: 09/01/05 06:14						
Diesel Range Organics	AK 102	ND	---	25.0	mg/kg	1x	--	--	--	--	--	--	09/01/05 21:45	
Surrogate(s): 1-Chlorooctadecane		*Recovery: 93.1%*			*Limits: 50-150%*	"							*09/01/05 21:45*	
LCS (5090001-BS1)								Extracted: 09/01/05 06:14						
Diesel Range Organics	AK 102	126	---	25.0	mg/kg	1x	--	126	100%	(75-125)	--	--	09/01/05 22:28	
Surrogate(s): 1-Chlorooctadecane		*Recovery: 95.8%*			*Limits: 50-150%*	"							*09/01/05 22:28*	
LCS Dup (5090001-BSD1)								Extracted: 09/01/05 06:14						
Diesel Range Organics	AK 102	132	---	25.0	mg/kg	1x	--	126	105%	(75-125)	4.65%	(20)	09/01/05 23:10	
Surrogate(s): 1-Chlorooctadecane		*Recovery: 101%*			*Limits: 50-150%*	"							*09/01/05 23:10*	
Duplicate (5090001-DUP1)						QC Source: A5H0119-01		Extracted: 09/01/05 06:14						
Diesel Range Organics	AK 102	ND	---	25.0	mg/kg dry	1x	ND	--	--	--	0.00%	(50)	09/01/05 21:45	
Surrogate(s): 1-Chlorooctadecane		*Recovery: 81.4%*			*Limits: 50-150%*	"							*09/01/05 21:45*	
Matrix Spike (5090001-MS1)						QC Source: A5H0109-02		Extracted: 09/01/05 06:14						
Diesel Range Organics	AK 102	133	---	25.0	mg/kg dry	1x	8.96	140	88.6%	(75-125)	--	--	09/01/05 22:28	
Surrogate(s): 1-Chlorooctadecane		*Recovery: 95.0%*			*Limits: 50-150%*	"							*09/01/05 22:28*	
Matrix Spike Dup (5090001-MSD1)						QC Source: A5H0109-02		Extracted: 09/01/05 06:14						
Diesel Range Organics	AK 102	128	---	25.0	mg/kg dry	1x	8.96	129	92.3%	(75-125)	3.83%	(25)	09/01/05 23:10	
Surrogate(s): 1-Chlorooctadecane		*Recovery: 94.6%*			*Limits: 50-150%*	"							*09/01/05 23:10*	

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Project Name: **Cold Bay ESC**
Project Number: [none]
Project Manager: Alex Tula

Report Created:
09/08/05 15:36

Diesel Range Organics (C10-C25) per AK102 - Laboratory Quality Control Results

North Creek Analytical - Alaska

QC Batch: 5090003 **Soil Preparation Method: EPA 3545**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (5090003-BLK1)							Extracted: 09/01/05 12:54							
Diesel Range Organics	AK 102	ND	---	25.0	mg/kg	1x	--	--	--	--	--	--	09/02/05 12:04	
Surrogate(s): 1-Chlorooctadecane		*Recovery: 106%*			*Limits: 50-150%*	"							*09/02/05 12:04*	
LCS (5090003-BS1)							Extracted: 09/01/05 12:54							
Diesel Range Organics	AK 102	131	---	25.0	mg/kg	1x	--	126	104%	(75-125)	--	--	09/02/05 12:36	
Surrogate(s): 1-Chlorooctadecane		*Recovery: 112%*			*Limits: 50-150%*	"							*09/02/05 12:36*	
LCS Dup (5090003-BSD1)							Extracted: 09/01/05 12:54							
Diesel Range Organics	AK 102	129	---	25.0	mg/kg	1x	--	126	102%	(75-125)	1.54%	(20)	09/02/05 13:09	
Surrogate(s): 1-Chlorooctadecane		*Recovery: 110%*			*Limits: 50-150%*	"							*09/02/05 13:09*	
Duplicate (5090003-DUP1)					QC Source: A5I0003-01		Extracted: 09/01/05 12:54							
Diesel Range Organics	AK 102	933	---	250	mg/kg dry	10x	929	--	--	--	0.430%	(50)	09/07/05 13:48	
Surrogate(s): 1-Chlorooctadecane		*Recovery: 70.9%*			*Limits: 50-150%*	"							*09/07/05 13:48*	
Matrix Spike (5090003-MS1)					QC Source: A5I0003-02		Extracted: 09/01/05 12:54							
Diesel Range Organics	AK 102	1080	---	250	mg/kg dry	10x	965	132	87.1%	(75-125)	--	--	09/02/05 12:36	Q-03
Surrogate(s): 1-Chlorooctadecane		*Recovery: 67.0%*			*Limits: 50-150%*	"							*09/02/05 12:36*	
Matrix Spike Dup (5090003-MSD1)					QC Source: A5I0003-02		Extracted: 09/01/05 12:54							
Diesel Range Organics	AK 102	1150	---	250	mg/kg dry	10x	965	125	148%	(75-125)	6.28%	(25)	09/02/05 13:09	Q-03
Surrogate(s): 1-Chlorooctadecane		*Recovery: 75.3%*			*Limits: 50-150%*	"							*09/02/05 13:09*	

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Project Name: **Cold Bay ESC**
Project Number: [none]
Project Manager: Alex Tula

Report Created:
09/08/05 15:36

Physical Parameters by APHA/ASTM/EPA Methods - Laboratory Quality Control Results

North Creek Analytical - Alaska

QC Batch: 5090002 **Soil Preparation Method: General Preparation**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Duplicate (5090002-DUP1)				QC Source: A5H0109-02			Extracted: 09/01/05 06:19							
Dry Weight	BSOPSPL003R07	92.5	---	1.00	%	1x	91.7	--	--	--	0.869%	(25)	09/02/05 10:08	

QC Batch: 5090004 **Soil Preparation Method: General Preparation**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Duplicate (5090004-DUP1)				QC Source: A5I0003-01			Extracted: 09/01/05 12:59							
Dry Weight	BSOPSPL003R07	95.8	---	1.00	%	1x	95.4	--	--	--	0.418%	(25)	09/02/05 10:03	

North Creek Analytical - Alaska

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Project Name: **Cold Bay ESC**
Project Number: [none]
Project Manager: Alex Tula

Report Created:
09/08/05 15:36

Physical Parameters by APHA/ASTM/EPA Methods - Laboratory Quality Control Results

North Creek Analytical - Bothell

QC Batch: 5I01056 **Soil Preparation Method: Dry Weight**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (5I01056-BLK1)									Extracted: 09/01/05 13:32					
Dry Weight	BSOPSPL003R08	100	---	1.00	%	1x	--	--	--	--	--	--	09/02/05 00:00	

QC Batch: 5I02045 **Soil Preparation Method: General Preparation**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (5I02045-BLK1)									Extracted: 09/01/05 00:00					
Fractional Organic Carbon	EPA 9060 Mod	ND	---	0.00110	g/g	1x	--	--	--	--	--	--	09/01/05 00:00	
LCS (5I02045-BS1)									Extracted: 08/18/05 00:00					
Fractional Organic Carbon	EPA 9060 Mod	0.0314	---	0.00110	g/g	1x	--	0.0299	105%	(80-120)	--	--	09/01/05 00:00	
LCS Dup (5I02045-BSD1)									Extracted: 08/18/05 00:00					
Fractional Organic Carbon	EPA 9060 Mod	0.0304	---	0.00110	g/g	1x	--	0.0299	102%	(80-120)	3.24%	(20)	09/01/05 00:00	
Duplicate (5I02045-DUP1)					QC Source: B5H0521-22				Extracted: 08/29/05 00:00					
Fractional Organic Carbon	EPA 9060 Mod	ND	---	0.00110	g/g dry	1x	ND	--	--	--	NR	(25)	09/01/05 00:00	
Duplicate (5I02045-DUP2)					QC Source: A5H0109-18				Extracted: 08/31/05 00:00					
Fractional Organic Carbon	EPA 9060 Mod	0.00483	---	0.00110	g/g dry	1x	0.00430	--	--	--	11.6%	(25)	09/01/05 00:00	
Matrix Spike (5I02045-MS1)					QC Source: B5H0521-22				Extracted: 08/29/05 00:00					
Fractional Organic Carbon	EPA 9060 Mod	0.00180	---	0.00110	g/g dry	1x	0.000520	0.00127	101%	(70-125)	--	--	09/01/05 00:00	

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ALTA Geosciences, Inc.	Project Name:	**Cold Bay ESC**	
22833 Bothell-Everett Hwy., Suite 102 #1168	Project Number:	[none]	Report Created:
Bothell, WA/USA 98021-9365	Project Manager:	Alex Tula	09/08/05 15:36

Notes and Definitions

Report Specific Notes:

Q-03 - The percent recovery for this QC spike sample cannot be accurately calculated due to the high concentration of analyte already present in the sample.

Laboratory Reporting Conventions:

DET - Analyte DETECTED at or above the Reporting Limit. Qualitative Analyses only.

ND - Analyte NOT DETECTED at or above the reporting limit (MDL or MRL, as appropriate).

NR / NA - Not Reported / Not Available

dry - Sample results reported on a dry weight basis. Reporting Limits are corrected for %Solids when %Solids are <50%.

wet - Sample results and reporting limits reported on a wet weight basis (as received).

RPD - Relative Percent Difference. (RPDs calculated using Results, not Percent Recoveries).

MRL - METHOD REPORTING LIMIT. Reporting Level at, or above, the lowest level standard of the Calibration Table.

MDL* - METHOD DETECTION LIMIT. Reporting Level at, or above, the statistically derived limit based on 40CFR, Part 136, Appendix B. *MDLs are listed on the report only if the data has been evaluated below the MRL. Results between the MDL and MRL are reported as Estimated results.

Dil - Dilutions are calculated based on deviations from the standard dilution performed for an analysis, and may not represent the dilution found on the analytical raw data.

Reporting limits - Reporting limits (MDLs and MRLs) are adjusted based on variations in sample preparation amounts, analytical dilutions and percent solids, where applicable.