

100-26,058

**FINAL
MAIL TRAIL ROAD PROPERTY
CORRECTIVE ACTION REPORT**

Prepared for
Crowley Environmental Services
2401 4th Avenue
Seattle, Washington 98111

February 1994

Prepared by
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Project 5119-055.00

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LIMITATIONS

The purpose of a geologic/hydrogeologic study is to reasonably characterize existing site conditions based on the geology/hydrogeology of the area. In performing such a study, it is understood that a balance must be struck between a reasonable inquiry into the site conditions and an exhaustive analysis of each conceivable environmental characteristic. The following paragraphs discuss the assumptions and parameters under which such an opinion is rendered.

No investigation is thorough enough to describe all geologic/hydrogeologic conditions of interest at a given site. If conditions have not been identified during the study, such a finding should not therefore be construed as a guarantee of the absence of such conditions at the site, but rather as the result of the services performed within the scope, limitations, and cost of the work performed.

We are unable to report on or accurately predict events that may change the site conditions after the described services are performed, whether occurring naturally or caused by external forces. We assume no responsibility for conditions we were not authorized to evaluate, or conditions not generally recognized as predictable when services were performed.

Geologic/hydrogeologic conditions may exist at the site that cannot be identified solely by visual observation. Where subsurface exploratory work was performed, our professional opinions are based in part on interpretation of data from discrete sampling locations that may not represent actual conditions at unsampled locations.

EXECUTIVE SUMMARY

EMCON Alaska, Inc. (EMCON) was contracted by Crowley Environmental Services (Crowley) to observe the removal of petroleum impacted soils associated with a 15,000-gallon underground storage tank (UST), formerly used for diesel storage at the Crowley Maritime Services property located at the junction of Mail Trail Road and South Dale Street near the Fairbanks International Airport, Fairbanks, Alaska. Field activities were performed during the month of October 1993. Soil removal and remediation operations and soil quality sampling results were documented.

Ten soil samples were collected and analyzed for diesel-range organics (DRO) petroleum hydrocarbons from the Visqueen lined soils used to backfill the UST excavation. All DRO concentrations were in excess of the site-specific Alaska Department of Environmental Conservation (ADEC) cleanup level of 100 milligram/kilogram (mg/kg). Based on these results, the Visqueen lined soils were removed during the soil excavation operations.

450 cu y
Soil removal operations were continued at the former UST location to remove all petroleum impacted soils exhibiting DRO concentrations above the ADEC cleanup level of 100 mg/kg. The vertical extent of excavation was limited to a depth of approximately six feet below ground surface (bgs), which represents the seasonal high water table elevation. A total of 450 cubic yards of petroleum impacted soil was removed and hauled to Environmental Systems, Inc. (ESI) for thermal remediation. Imported clean soil material was used to backfill the excavation areas.

Seven soil samples were collected and analyzed for DRO from the excavation limits to document attainment of site-specific cleanup levels. All seven soil cleanup confirmation samples were below the ADEC cleanup level of 100 mg/kg for DRO.

X The results of the confirmation sampling and analysis program indicate that petroleum hydrocarbon impacts in the vadose zone related to the former 15,000-gallon diesel UST have been remediated by excavation and thermal treatment. Residual impacts to the groundwater and the zone of groundwater fluctuation associated with this source are expected to naturally attenuate through time. Petroleum hydrocarbon constituents (benzene and gasoline-range organics) detected in upgradient property boundary wells during quarterly sampling events indicated the presence of an off-site source.

1 INTRODUCTION

EMCON was contracted by Crowley to provide oversight of petroleum impacted soil removal and remediation activities associated with the former removal of one 15,000-gallon diesel fuel underground storage tank (UST) located at the Crowley Maritime Services Mail Trail Road property (see Figure 1). The corrective action procedures were performed according to EMCON's September 21, 1993, proposal and cost estimate for this project. All sampling activities conducted in association with this corrective action were performed in accordance with EMCON's February 1991 "Quality Assurance Program Plan for Site Assessment" (QAPP), which is on file with the ADEC regional office in Anchorage.

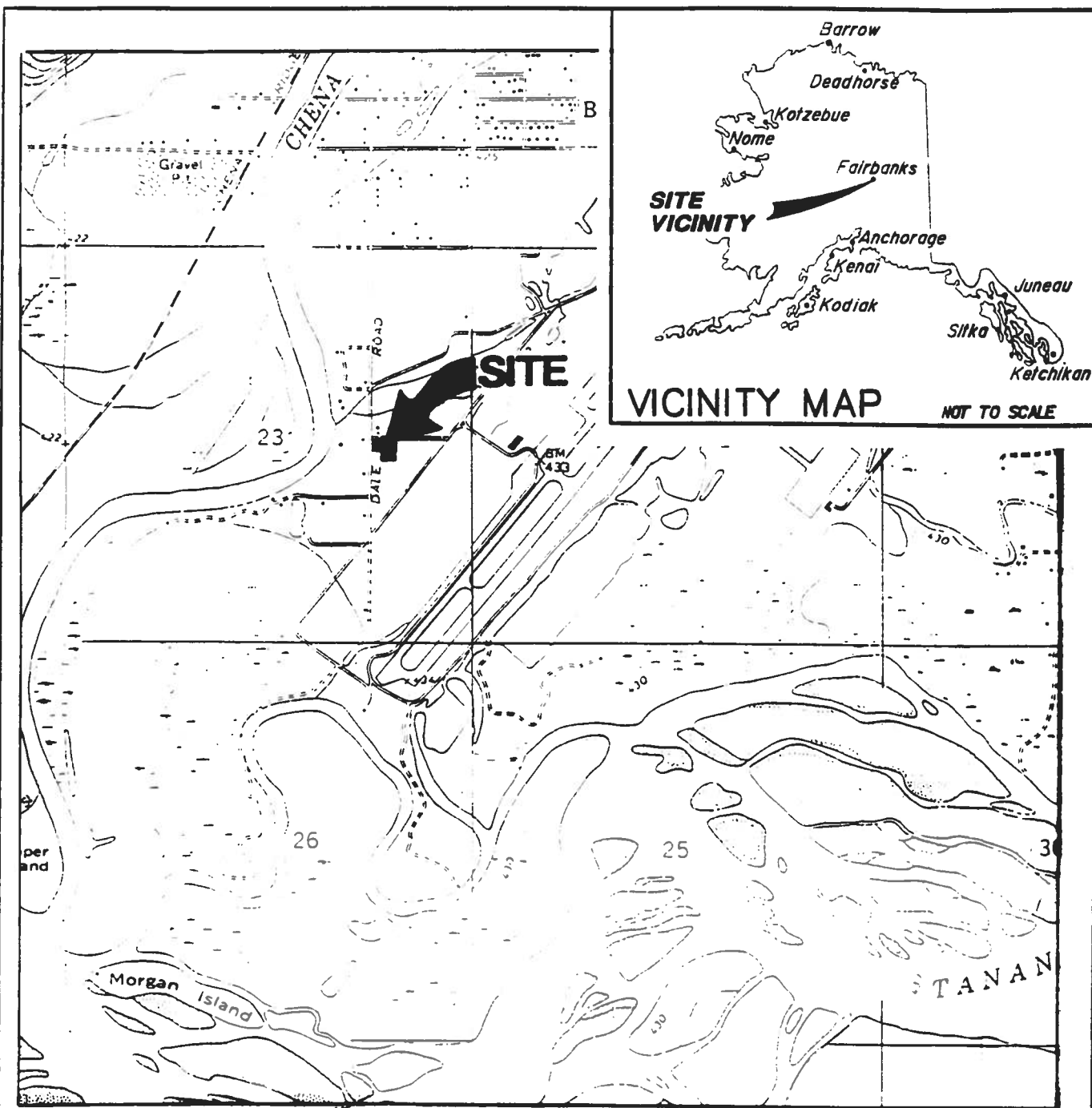
The purpose of the corrective action procedures was to remove and remediate petroleum impacted soils encountered during previous site investigations and to document attainment of site-specific cleanup levels at the limits of the excavation. A petroleum contamination assessment of site soils used to backfill the former UST excavation was also performed to determine if they comply with the site-specific cleanup levels.

This report presents a description of the soil excavation and remediation activities conducted in October 1993 and a summary of soil quality conditions in the excavation after completion of corrective action procedures.

1.2 Site Description

The site is located approximately 1/4 mile west of the Fairbanks International Airport at the junction of Mail Trail Road and South Dale Road. The site, which is located approximately 450 feet east of the Chena River, is roughly rectangular, approximately 640 feet north to south and 600 feet east to west. Topography across the site is generally flat with an estimated relief of approximately 5 feet, sloping gradually to the west. Flood plain alluvium which consists of reworked glacial outwash sands, silt and gravel underlies the site. The thickness of these materials is reported to be greater than several hundred feet thick near the Tanana River.¹

¹ Fairbanks Area Soil Survey; 1963.



Source:
 Geologic Map of Fairbanks Quadrangle
 USGS Misc. Inv. Map I-455



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 REV.
 PROJECT No.
 5119-055.00

CROWLEY ENVIRONMENTAL SERVICES
 MAIL TRAIL ROAD
 Fairbanks, Alaska

FIGURE
 1

SITE LOCATION MAP

1.3 Previous Site Investigations (1991)

In summer 1991, EMCON (formerly America North/EMCON Inc.) conducted a focused soil and groundwater investigation on behalf of Crowley Maritime Corporation at the site. The assessment included advancing nine soil borings to depths ranging from 4 to 15 feet bgs. Five of these borings were completed as groundwater monitoring wells. Soil and groundwater samples were collected and analyzed for organic and inorganic compounds including extractable petroleum hydrocarbons (EPH) reported as diesel.²

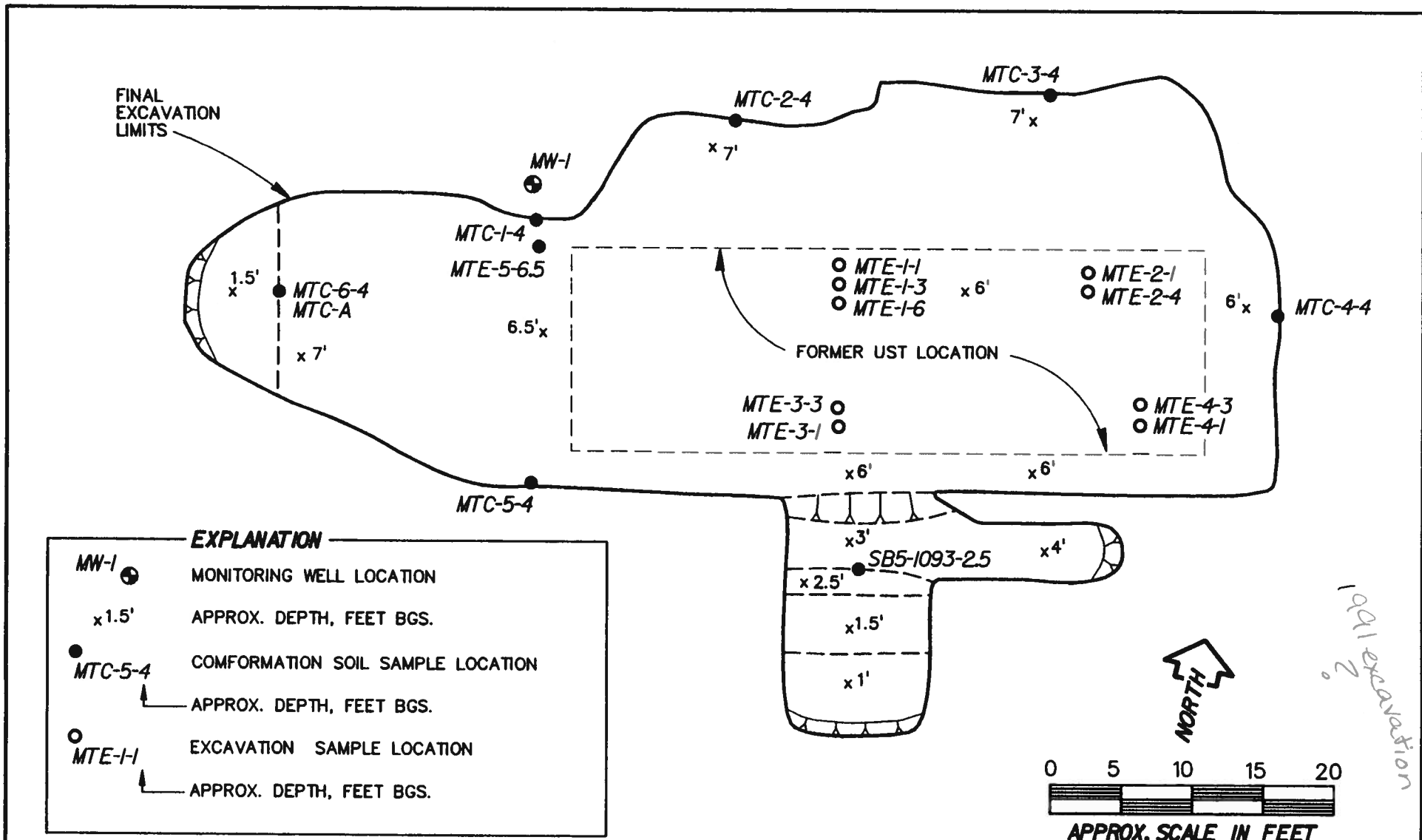
Findings of the assessment revealed the presence of EPH as diesel in soil and groundwater samples collected from the soil boring/monitoring well (MW-1) installed closest (less than 10 feet) to the UST (Figure 2). EPH as diesel were detected at 2,600 mg/kg in the soil sample collected on August 21, 1991 at approximately 6 feet bgs from MW-1. Benzene, toluene, ethylbenzene and xylenes compounds (BTEX) were not detected above the method reporting limits (MRLs) in this soil sample.

Prior to tank removal
EPH as diesel were detected at 66 milligrams/liter (mg/L) in a groundwater sample collected from MW-1 on September 9, 1991. BTEX compounds were detected at 0.92 mg/L, 0.41 mg/L, 0.16 mg/L and 0.52 mg/L respectively, in the groundwater sample collected from MW-1 on September 4, 1991. Phase-separated hydrocarbons were not detected on the water surface in any of the monitoring wells during the investigation in August and September of 1991.

free product
On October 21, 1991, EMCON observed the removal of a 15,000-gallon diesel fuel UST. On completion of the tank removal the portion of the excavation located below the top of the zone of seasonal water table fluctuation (approx. 6 ft bgs) was backfilled with pea gravel. A Visqueen liner was then placed in the bottom and sides of the excavation and the excavation backfilled with the soil material generated from the UST removal. The backfill was then covered with Visqueen and a layer of clean gravel. It was estimated that 300 cubic yards of excavated soil were used to backfill the UST excavation. No analytical results were obtained from the excavated soils used as backfill; however, soil samples were obtained from the excavation sidewalls prior to backfilling. EPH were detected at concentrations in excess of the ADEC recommended cleanup level of 100 mg/kg in soil samples collected from the north and west sidewalls.

Phase-separated hydrocarbons were observed on the water surface in the tank excavation during the tank removal. Approximately 165 gallons of water were pumped from the excavation in attempts to recover the phase-separated hydrocarbons prior to backfilling the excavation.

² "Focused Site Investigation Mail Trail Road Site, Fairbanks, Alaska", prepared for Crowley Maritime Services by EMCON Alaska, Inc., October 25, 1991.



EXPLANATION	
MW-1	MONITORING WELL LOCATION
x 1.5'	APPROX. DEPTH, FEET BGS.
MTC-5-4	COMFORMATION SOIL SAMPLE LOCATION
↑	APPROX. DEPTH, FEET BGS.
MTE-1-1	EXCAVATION SAMPLE LOCATION
↑	APPROX. DEPTH, FEET BGS.



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Crowley Environmental Services
 Mail Trail Road

EXCAVATION LIMITS AND SAMPLING PLAN

FIGURE
 2

1.4 Previous Site Investigations (1992)

In October 1992, EMCON conducted additional site investigation and sampling activities under the direction of Crowley. Seven soil borings and four additional monitoring wells were installed at this time. The soil borings were located around the former UST location to delineate the extent of petroleum hydrocarbon impacts. Soil and groundwater samples were collected and analyzed for EPH as diesel, volatile petroleum hydrocarbons (VPH) as gasoline, and BTEX. Analytical testing results from the groundwater samples indicated petroleum hydrocarbon impacts at locations hydraulically upgradient of the former UST location. Soil quality data revealed that the ADEC cleanup criteria of 100 mg/kg EPH as diesel was exceeded in a single soil sample collected from a soil boring (SB-5) located proximal to the south sidewall of the former UST excavation. Monitoring efforts performed from October 1992 through September 1993, did not indicate the presence of phase-separated hydrocarbons in any of the monitoring wells sampled during this time.

Based on the analytical results of these efforts, EMCON concluded that soils impacted by diesel-range hydrocarbons above 100 mg/kg remain in a localized area around the former UST excavation. The volume of contaminated soil was estimated at less than 150 cubic yards. This estimate did not include the 300 cubic yards of Visqueen lined soils which may also be impacted by diesel-range hydrocarbons. It was recommended that the impacted soils delineated during these investigation activities and located above the zone of seasonal groundwater fluctuations be removed and/or remediated as appropriate.

1.5 Historic Groundwater Monitoring (1993)

Groundwater samples and depth-to-water measurements have been obtained from on-site monitoring wells on a periodic basis from September 1991 to September 1993. Monthly depth-to-water gauging and quarterly sampling was initiated in March 1993. Historic piezometric surface maps constructed from groundwater elevation data document that the direction of groundwater movement beneath the site has been consistently to the northwest.

Benzene, VPH and EPH have been detected in monitoring wells adjacent to the former UST location and in upgradient property boundary wells. Petroleum hydrocarbon constituent concentrations at the upgradient property boundary indicate the presence of an upgradient off-site source.

2 UST BACKFILL CONTAMINATION ASSESSMENT

EMCON personnel arrived at the site on October 25, 1993. Prior to conducting the soil removal and remediation activities, soil samples were collected from the Visqueen lined soils used to backfill the UST excavation. Soil Services, Inc. (SSI) of Fairbanks, Alaska, provided excavation and transportation equipment and services for this project.

2.1 Soil Sampling

The six-inch layer of gravel cover and Visqueen were removed to expose the soil materials used to backfill the UST excavation. Four test pits were then excavated within the Visqueen lined soil area for the purpose of collecting soil samples. A total of ten soil samples were collected from the test pit excavations. Each test pit was sampled at depths of one and three feet bgs. The one foot depth bgs represents the top of the Visqueen lined area and the three foot depth is near midlevel. The remaining two samples were taken from the bottom of the Visqueen lined area. Sample locations were identified by using the test pit number and sample depth (example MTE-#-#, MTE represented the site location - Mail Trail Road Excavation, the first number represents the test pit number and the second number represents the sample depth in feet bgs).

2.2 Field Screening

Field-screening for the presence of ionizable organic compounds (volatile organic compounds [VOCs]) with a Thermo Environmental Instruments, Inc., photoionization detector (PID) model 580B was performed during all soil sample collection activities. Soil samples were placed in a Ziplock bag, warmed in a heated vehicle for approximately 30 minutes, and the headspace gas analyzed with the PID. The PID was calibrated with 100 parts per million by volume (ppm) isobutylene gas and zero gas (less than 1 ppm) prior to use at the site.

2.3 Analytical Testing and Results

Soil samples were collected in glass sample containers with Teflon-lined lids and submitted to Boreochem Mobile Lab & Consulting of Fairbanks, Alaska, under chain-of-custody procedures. The soil samples were analyzed for DRO using Alaska Method AK102. The analytical results are summarized in Table 1.

**Table 1: UST Backfill Contamination Assessment
Mail Trail Road
Fairbanks, Alaska**

Sample Identification	Date Collected	Sample Depth (feet)	DRO MRL (mg/Kg)	DRO AK102 Method (mg/Kg)
MTE-1-1	25-Oct-93	1	4	3,200
MTE-1-3	25-Oct-93	3	4	790
MTE-1-6	25-Oct-93	6	4	4,700
MTE-2-1	25-Oct-93	1	4	11,000
MTE-2-3	25-Oct-93	3	4	5,100
MTE-2-4	25-Oct-93	4	4	2,400
MTE-3-1	25-Oct-93	1	4	1,400
MTE-3-3	25-Oct-93	3	4	910
MTE-4-1	25-Oct-93	1	4	10,000
MTE-4-3	25-Oct-93	3	4	6,600
MTE-5-6.5	26-Oct-93	6.4	4	10,000

Notes:

DRO - Diesel-Range Organics
MRL - Method Reporting Limit

PID screening results from the ten soil samples ranged from 62 to 329 ppm. All ten soil samples had DRO concentrations in excess of the 100 mg/kg ADEC site-specific cleanup level. Sample concentrations ranged from 790 mg/kg to 11,000 mg/kg DRO (Table 1). Based on these analytical results it was determined that all of the Visqueen lined soils would be removed from the UST excavation for remediation.

3 SOIL REMEDIATION ACTIVITIES

The soil remediation activities consisted of removing all petroleum impacted soils having DRO concentrations in excess of 100 mg/kg, thermal remediation of petroleum impacted soil, and backfilling the excavation with clean fill material. Soil excavation activities were conducted from October 25 through 28, 1993, under the supervision of EMCON personnel. Soil excavation and transportation was performed by SSI. Thermal remediation was performed at ESI facilities in Fairbanks, Alaska.

3.1 Field Screening

Field-screening for the presence of VOCs with a Thermo Environmental Instruments, Inc. PID model 580B was performed during the soil excavation operations. The PID was calibrated and soil samples analyzed as previously described.

A review of the results of the field screening of the Visqueen lined soils used to backfill the UST excavation (MTE samples) indicated a good correlation with analytical results. Therefore, the PID field screening results were utilized to assist in directing the excavation activities. Soil samples which yielded PID readings greater than 5 ppm (above background levels) were considered to be contaminated and continued soil removal was performed in these areas.

3.2 Soil Removal

Initially, the Visqueen lined soils were removed and temporarily stockpiled on site. The excavation limits were extended laterally past the Visqueen liner until native soils were encountered and vertically to the depth of previous pea gravel placement (approx. 6 ft. bgs). The excavation side walls were then sampled and screened with a PID to direct additional excavation activities.

1993 Excavation

The excavation limits were primarily extended in a westerly and northerly direction, as previous sampling results indicated elevated diesel-range hydrocarbon concentrations in these directions. Excavation was continued in each of these directions until all PID readings were less than 5 ppm. Approximate dimensions of the final excavation limits were 20 to 30 feet wide (north-south) by 70 feet long (east-west) by 6 to 7 feet deep (Figure 2). One soil sample, MTE-5-6.5, was collected from soil excavated outside of

the limits of the former UST excavation and backfilled location to document the levels of DRO in these excavated soils. The detected concentration of DRO in soil sample MTE-5-6.5 was 10,000 mg/kg (see Table 1). It is estimated that approximately 425 cubic yards of soil were removed from the excavation. Soil samples were obtained from the excavation sidewalls as discussed in Section 4.

Soil removal operations were also conducted just south of the UST excavation. Analytical results from soil boring SB-5, drilled during the October 1992 site investigation, indicated diesel-range hydrocarbon concentrations of 1,700 mg/kg at 0.5 feet bgs. Approximately 25 cubic yards of soil were removed from this area and one soil sample (SB5-1093-2.5) was collected for verification of contaminant removal.

On completion of the excavation and sampling activities clean soil material was imported and used to backfill the excavation areas. All excavations were returned to their original surface grade.

3.3 Soil Remediation

Approximately 450 cubic yards of petroleum impacted soils were hauled to ESI's North Pole Thermal Remediation Facility by SSI from October 26 to October 28, 1993. On October 27 and October 28, the soils were thermally remediated at temperatures of 550 to 750°F to comply with ADEC's Level A cleanup standard of 100 mg/kg for DRO. The total petroleum hydrocarbon (TPH) concentrations of nine soil samples collected after treatment were all less than 60 mg/kg (Appendix A). A split of one of the TPH samples was submitted to Boreochem for analysis of diesel-range hydrocarbons using EPA Method 8100 Modified. This sample had a TPH concentration of 58 mg/kg and a DRO concentration of 4.3 mg/kg.

4 SOIL SAMPLING AND ANALYTICAL TESTING RESULTS

4.1 Soil Sampling

On completion of the soil excavation and removal activities soil samples were collected for verification that the soil cleanup level of 100 mg/kg for diesel-range hydrocarbons had been achieved. Soil samples were obtained from the sidewalls of the excavation as shown on Figure 2. Each of the six sidewall samples were collected from a depth of approximately 4 feet bgs. The sidewall samples were designated as Mail Trail Road Confirmation (MTC)-#-#, where the first number represents the sample identification and the second number represents the sample depth in feet bgs. A duplicate sample was collected at MTC-6-4 and designated MTC-A.

One additional soil sample (SB5-1093-2.5) was collected from the soil removal area located in the vicinity of SB-5 south of the UST excavation (Figure 2) to document attainment of soil cleanup levels at this location.

Soil samples from within the excavation were obtained by using the excavator bucket to scrape soil from each of the sidewalls. Samples were collected from the bucket using a stainless-steel spoon and placed in separate laboratory-prepared sample containers. Each container was labeled and placed in a chilled ice chest and transported to Boreochem Mobil Lab & Consulting in Fairbanks, Alaska, under EMCON's standard chain-of-custody procedures.

4.2 Analytical Methods and Testing Results

The soil cleanup confirmation samples were analyzed by Alaska Method AK102 for DRO. The analytical results are summarized in Table 2. The laboratory analytical testing results and chain-of-custody forms are presented in Appendix B.

Concentrations of DRO were reported in the UST excavation sidewall samples (MTC-1-4 through MTC-6-4) at levels below ADEC's guideline cleanup level of 100 mg/kg. A maximum DRO concentration of 30 mg/kg was reported for sample MTC-6-4; the duplicate sample (MTC-A) had a nondetectable concentration. Soil sample

**Table 2: Closure Sampling Analytical Results
UST Soil Removal
Mail Trail Road
Fairbanks, Alaska**

1993 excavation

Sample Identification	Date Collected	Sample Depth (feet)	DRO MRL (mg/Kg)	DRO AK102 Method (mg/Kg)
MTC-1-4	26-Oct-93	4	4	<4
MTC-2-4	26-Oct-93	4	4	<4
MTC-3-4	26-Oct-93	4	4	<4
MTC-4-4	26-Oct-93	4	4	<4
MTC-5-4	26-Oct-93	4	4	<4
MTC-6-4	26-Oct-93	4	4	30
MTC-A	26-Oct-93		4	<4
SB5-1093-2.5	27-Oct-93	2.5	4	85

Notes:

- DRO - Diesel-Range Organics
- MRL - Method Reporting Limit
- MTC-A is duplicate of MTC-6-4

(SB5-1093-2.5) taken from the bottom of the excavation at soil boring location SB-5 contained a DRO concentration of 85 mg/kg, which is also below the ADEC cleanup level.

5 CONCLUSIONS

Diesel-range petroleum hydrocarbons were detected at levels below the ADEC cleanup level (100 mg/kg) in soil samples collected from the excavation sidewalls and soil removal operations conducted south of the excavation. Diesel-range petroleum hydrocarbon-impacted soils were excavated to the top of the zone of seasonal groundwater fluctuation. Unstable soil conditions precluded the excavation of potentially petroleum-impacted soils beneath the zone of groundwater fluctuations.

The results of the confirmation sampling and analysis program indicate that petroleum hydrocarbon impacts in the vadose zone related to the former 15,000-gallon diesel UST have been remediated by excavation and thermal treatment. Residual impacts to the groundwater and the zone of groundwater fluctuation associated with this source are expected to naturally attenuate through time. Petroleum hydrocarbon constituents (benzene and gasoline-range organics) detected in upgradient property boundary wells during quarterly sampling events indicated the presence of an off-site source.³

There is no known usage of groundwater from the uppermost saturated zone between the site and the Chena River located approximately 450 feet to the west.⁴ Therefore, the diesel-range hydrocarbons present in this uppermost saturated zone, either within the soils beneath the UST excavation or in the groundwater as reported in groundwater samples collected from the on-site monitoring wells present no known threat to human health.

³ "Quarterly Groundwater Monitoring Report, Crowley Maritime Services Property Located at Mail Trail Road, Fairbanks, Alaska", EMCON Alaska, Inc., September 10, 1993, and March 9, 1993.

⁴ "Focused Site Investigation Mail Trail Road Site, Fairbanks, Alaska", prepared for Crowley Maritime Services by EMCON Alaska, Inc., October 25, 1991.

APPENDIX A

THERMAL REMEDIATION PROJECT DOCUMENTATION



Environmental Systems, Inc.



Crowley Maritime
Thermal Remediation Project Report

CASE NARRATIVE:

From October 26-28 Soil Services, Inc. and America North /Emcon conducted excavation and closure activity at a former UST site located at the Crowley Maritime property located on Mail Trail Rd. in Fairbanks, AK. 450 cubic yards of petroleum hydrocarbon contaminated soil were hauled to the Environmental Systems Inc. (ESI) North Pole Thermal Remediation Facility. From October 27-28th the soils were thermally remediated at temperatures of 600-650F to meet ADEC Level A cleanup standards. On the following pages are found: Certificate of Remediation, Quality Control Analyses, Quality Assurance Analysis, and ESI's Soils Management Plan and Quality Assurance Program Plan for Thermal Remediation.



Environmental Systems, Inc.



Certificate of Remediation

Project Name: Crowley Maritime-Airport **Project ID #93-SOIL-055**

Client: Soil Services

Contact: Jim Hill **Phone:** 451-1905

Source of Material: Former Diesel UST Site Fairbanks Int'l Airport

Remedial Batch Date: October 27-28, 1993

Project Cubic Yards: 450 yd³

Initial TPH: < 15,000 PPM

The above soils were successfully remediated at soil discharge temperatures of 550-750F, and found to have an average final Total Petroleum Hydrocarbon Level of: < 60 PPM .

These soils meet ADEC Level A Cleanup standards and are suitable for final disposition by ESI.

I hereby certify the information contained above is true, and to the best of my knowledge and belief this information is comprised from scientifically justifiable data intended to insure the integrity of remedial activities. I also certify that the thermal remediation unit was operated in accordance with 18 AAC 50.050 and Air Quality Permit to Operate No. 9240-AA001.

Signed:  Date: 11/5 1993
 Carl S. Overpeck, Chemist/Compliance Officer

ESI

Environmental Systems, Inc.



Total Recoverable Petroleum Hydrocarbon
418.1 Analyses

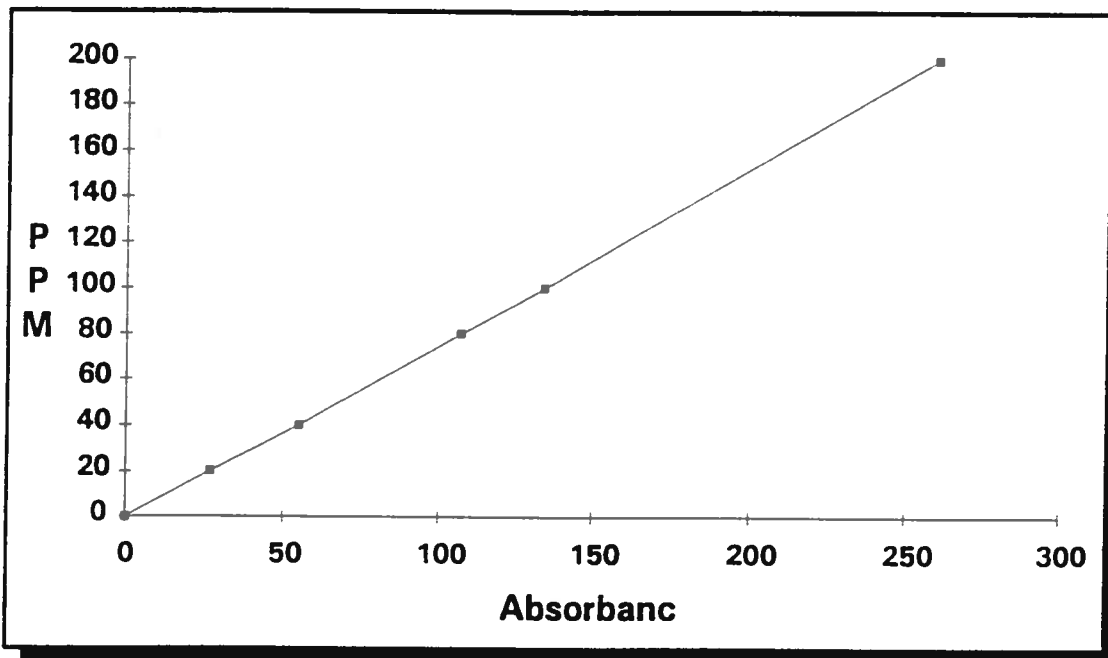
Client : Crowley Maritime
Project : Fairbanks International Airport UST Closure
Thermal Remediation Project

Date Samples Received : October 27-29, 1993

Date Samples Analyzed : October 27-29, 1993

The samples were analyzed according to modified Method 418.1 for soil. The Miran 1FF infrared spectrophotometer was calibrated and the following calibration curve was generated:

Calibration Curve



$R^2 = 0.999$ Equation of Line: $PPM = \{(Abs. \times 0.74) + 0.5\}$



Environmental Systems, Inc.

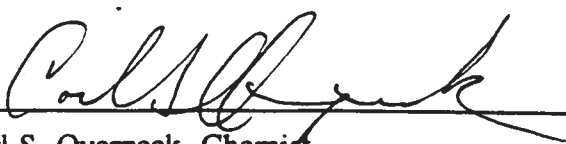


On the day the samples were analyzed a check standard was analyzed to check the validity of the infrared spectrophotometer calibration. The calibration was considered to be valid as the percent difference between the initial calibration and the check standard calibrations were $< \pm 15\%$. Blanks, duplicates and a spiked samples were also analyzed for quality assurance purposes at a 10% analytical frequency. The Method Detection Limit (MDL) for Total Recoverable Petroleum Hydrocarbon analyses is 20 PPM.

<u>Sample ID</u>	<u>Description</u>	<u>TPH</u> <u>mg/Kg</u>
1027-01R	Remediation Day Production	40
1027-02C	Contaminated Stockpile	14,300
1027-03R	Remediation Day Production	54
1027-04R	Remediation Day Production	46
1028-01R*	Remediation Night Production	58
1028-02R	Remediation Day Production	21
1028-03R	Remediation Day Production	39
1028-04R	Remediation Day Production	56
1028-05R	Remediation Night Production	48
1028-06Ra	Remediation Night Production	32
1028-07Rb	(Duplicate Analyses)	31
Blank	Silica Sand	11
Spike	500ul 10,000 PPM to 50 ml (100 PPM)	112%

* Quality Assurance Sample Split for Independent Analyses by Method 8100, Diesel Range Organics, Report Attached.

TPH reported in mg/Kg dry weight corrected for % moisture and blank uncorrected, calibrated to aerated diesel.


 Carl S. Overpeck, Chemist

Total Petroleum Hydrocarbons Data Deliverables

SCL 418 (Spectrophotometric, Infrared)

PROJECT NAME: CROWLEY MARITIME AIRPORT DATE: 10/28-10/29 COC#s 93-1106

#	Sample ID	Mass (g)	Volume (ml)	% H ₂ O	Abs.	mg/L Extract	mg/Kg TPH	Comments/ Other
1	1027-01R	12.08	36	10	16	12	40	
2	1027-02C	14.88	42 (50:1)	10	124	92	14,300	contaminated soil
3	1027-03R	15.74	32	10	32	24	54	
4	1027-04R	13.80	32	10	24	18	46	
5	1028-01R	17.61	32	10	34	26	58	
6	1028-02R	13.52	36	10	12	9	21	
7	1028-03R	11.18	28	10	16	12	39	
8	1028-04R	12.22	32	10	28	21	56	
9	1028-05R	9.71	30	10	16	12	48	
10A	1028-06Ra	11.98	34	10	14	12	32	
10B	1028-06Rb	12.43	28	10	16	11	31	
11	BLANK	14.21	32	---	6	5	11	
12	SPIKE	13.80	50	---	151	112	112% == R	500 ul 10,000 PPM

R CALIBRATION: TRUE VALUE = 80 \ FOUND ABS = 112 FOUND VALUE = 83.4 %R = 104 %

0g SCALE CALIBRATION = 10.01 g %R = 100%

MOISTURE: SAMPLE # 1028-01R TW = .74 g WW = 56.53 g DW = 52.33 g %H₂O = 8 %

no Silica Gel Cleanup Required

SIGNATURE: 
 Carl S. Overpeck, Chemist

APPENDIX B

Laboratory Analytical Results



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 (907) 488-4575 • Fax: (907) 488-4578



CHAIN OF CUSTODY #
No 93-1066

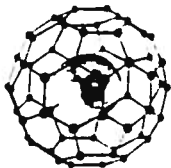
CONTAINERS	COMPOSITE	GRAB	418.1	M8015 GAS	8100 DIESEL	8020 BTEX	AK100 TPH	AK101 GAS	AK102 DIESEL	OTHER
/		X	X							
/		X	X							
/		X	X							
/		X	X							
/	5		X							X
/		X	X							
/		X	X							
/		X	X							
/	3		X							
/	3		X							

PROJECT NAME / NUMBER
Rowley Maritime

SAMPLER(S) SIGNATURE

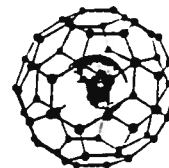
LOCATION	DATE	TIME	CLIENT I.D. #	LABORATORY I.D.	
ESI	10/27	102	1027-01R	day prod	
Yard		10:15a	02C	cont. soil	
		12p	03R	day prod	
		3:30p	04K	"	
		10/28	102	1028-01R	nite prod
		10:15a	02K	day prod	
		1p	03K	day prod	
		3p	04K	day prod.	
		10/29	8a	05R	nite prod
		8:15a	06R	nite prod	

ELINQUISHED BY:	DATE & TIME:	RECEIVED IN LABORATORY BY:
RECEIVED BY:	DATE & TIME:	
ELINQUISHED BY:	DATE & TIME:	
RECEIVED BY:	DATE & TIME:	DATE & TIME:
ELINQUISHED BY:	DATE & TIME:	COMMENTS:
RECEIVED BY:	DATE & TIME:	



Boreochem Mobile Lab & Consulting

3070 Totem Drive
Fairbanks, Alaska 99709
(907) 479-2004



Office Phone: 479-5459

Fax: 479-9544

November 3, 1993

RESULTS OF A DIESEL-RANGE ORGANICS ANALYSIS OF A SOIL SAMPLE CROWLEY-AIRPORT PROJECT FOR ENVIRONMENTAL SYSTEMS ,INC.

SAMPLE IDENTIFICATION

DATE SAMPLED:	October 28, 1993/0800 hours
DATE RECEIVED:	October 29, 1993/1203 hours

FIELD ID #	LAB ID #	ANALYSIS REQUESTED
1028-01R	93102901	m8100

CLIENT NAME:	Environmental Systems, Inc.
CLIENT ADDRESS:	PO Box 73638 Fairbanks, Alaska 99707
CONTACT PERSON:	Mr. Carl Overpeck
SAMPLER:	Mr. Carl Overpeck

SAMPLE INFORMATION

SAMPLE #	MATRIX	CONTAINER	PRESERVATION
93102901	Soil	8 oz/glass-teflon	Cooled to 4 ° C.

ANALYSIS SCHEDULE

SAMPLE #	DATE EXTRACTED	DATE ANALYZED
93102901	11/02/93	11/03/93

PER CENT SOLIDS DATA

SAMPLE #	% SOLIDS
93102512	92.3 %

RESULTS OF m8100 DIESEL-RANGE ANALYSES
MILLIGRAMS PER DRY KILLOGRAM

LAB ID #	FIELD ID #	DRO CONCENTRATION PPM
93102901	1028-01R	4.3 ppm

QUALITY CONTROL DATA

PARAMETER	MATRIX	%SPIKE RECOVERY	RPD DUPLICATES
Diesel-range orgs.	Soil	60.4 %	34.3 %

QUALITY CONTROL DATA

PARAMETER	METHOD DETECT LIMIT	BLANK CONC.
Diesel	4 ppm	7.1 ppm

SAMPLE #	% DRO SURR. REC.
93102901	90 %

METHODS

Method for the Determination of Diesel Range Organics: m8100.

ABBREVIATIONS

DRO : Diesel-range Organic.

PPM/PPB: Parts per million/ Parts per billion.

C: degrees Centigrade.

Report reviewed and approved by:



Tim Thomas.
Lab manager



Environmental Systems Inc.

P.O. Box 73638 • Fairbanks, Alaska 99707
(907) 488-4575 • Fax: (907) 488-4578



turnaround: _____

CHAIN OF CUSTODY

Nº 93-1038

PROJECT NAME / NUMBER
Rowley-Airport

SAMPLER(S) SIGNATURE
Carl H. G. [Signature]

LOCATION	DATE	TIME	CLIENT I.D. #	LABORATORY I.D.	C O N T A I N E R S	C O M P O S I T E	G R A B	4 1 8 . 1	M 8 0 1 5 G A S	8 1 0 0 D I E S E L	8 0 2 0 B T E X	A K 1 0 0 T P H	A K 1 0 1 G A S	A K 1 0 2 D I E S L	O T H E R
<i>E.S.I</i>	<i>10/28</i>	<i>Scout</i>	<i>1028 OIK</i>		<i>1</i>		<i>X</i>			<i>X</i>					

RELINQUISHED BY: *Carl H. G. [Signature]*

DATE & TIME: *10/29/93 noon*

RECEIVED BY: *Jim Thomas*

DATE & TIME: *10/29/93 1203*

RECEIVED IN LABORATORY BY:

RELINQUISHED BY:

DATE & TIME:

DATE & TIME:

RECEIVED BY:

DATE & TIME:

COMMENTS:

RELINQUISHED BY:

DATE & TIME:

RECEIVED BY:

DATE & TIME:

APPENDIX B

LABORATORY ANALYTICAL RESULTS



Boreochem Mobile Lab & Consulting
3070 Totem Drive
Fairbanks, Alaska 99709
(907) 479-2004



Office phone: 479-5459
Fax: 479-9544

Received

REC'D NOV 01 1993

October 25, 1993

**RESULTS OF DIESEL-RANGE ORGANICS ANALYSES OF SOIL SAMPLES
FOR AMERICA NORTH/EMCON, INC.
CROWLEY PROJECT, # 5119-054.00**

SAMPLE IDENTIFICATION

DATE SAMPLED:	October 25, 1993
DATE RECEIVED:	October 25, 1993/ 1500 hours

FIELD ID #	LAB ID #	ANALYSIS	TIME SAMPLED
MTE-1-1	93102501	m8100	1300
MTE-1-3	93102502	m8100	1305
MTE-2-1	93102503	m8100	1320
MTE-2-3	93102504	m8100	1325
MTE-1-6	93102505	m8100	1335
MTE-2-4	93102506	m8100	1345
MTE-3-1	93102507	m8100	1355
MTE-3-3	93102508	m8100	1400
MTE-4-1	93102509	m8100	1415
MTE-4-3	93102510	m8100	1430

CLIENT NAME:	America North/ Emcon, Inc.
CLIENT ADDRESS:	201 East 56th, Suite 300 Anchorage, Alaska 99518
CONTACT PERSON:	Ms. Theresa O'Carroll
SAMPLER:	Mr. Barry Benko
SAMPLER ADDRESS:	201 East 56th, Suite 300 Anchorage, Alaska 99518

America North Crowley Project DRO

SAMPLE INFORMATION

All samples were soil samples and were contained in 8 ounce glass bottles with teflon-lined closures. All samples in this batch were preserved before analysis by storage in a refrigerator maintained at 4 degrees Celsius.

All samples were delivered to the laboratory by Theresa O'Carroll and were accompanied by a chain-of-custody form. (See attached).

ANALYSIS SCHEDULE

SAMPLE #	DATE EXTRACTED	DATE ANALYZED
93102501	10/25/93	10/25/93
93102502	10/25/93	10/25/93
93102503	10/25/93	10/25/93
93102504	10/25/93	10/25/93
93102505	10/25/93	10/25/93
93102506	10/25/93	10/26/93
93102507	10/25/93	10/26/93
93102508	10/25/93	10/26/93
93102509	10/25/93	10/26/93
93102510	10/25/93	10/26/93

PER CENT SOLIDS DATA

SAMPLE #	FIELD ID #	% SOLIDS
93102501	MTE-1-1	92.3
93102502	MTE-1-3	87.3
93102503	MTE-2-1	84.8
93102504	MTE-2-3	78.5
93102505	MTE-1-6	89.8
93102506	MTE-2-4	79.7
93102507	MTE-3-1	92.0
93102508	MTE-3-3	87.0
93102509	MTE-4-1	84.3
93102510	MTE-4-3	83.4

America North Crowley Project DRO

**RESULTS OF AK102 DIESEL-RANGE ANALYSES
MILLIGRAMS PER DRY KILLIGRAM**

SAMPLE #	FIELD ID #	DRO CONC.(ppm)	% SURR. REC.
93102501	MTE-1-1	3,168.1	144.2
93102502	MTE-1-3	789.7	102.3
93102503	MTE-2-1	10,916.9	Coelution
93102504	MTE-2-3	5,118.2	144.3
93102505	MTE-1-6	4,654.8	Coelution
93102506	MTE-2-4	2,358.2	131.4
93102507	MTE-3-1	1,440.0	123.3
93102508	MTE-3-3	908.0	107.2
93102509	MTE-4-1	10,117.2	Coelution
93102510	MTE-4-3	6,610.6	Coelution

QUALITY CONTROL DATA

PARAMETER	MATRIX	%SPIKE RECOVERY	RPD DUPLICATES
Diesel-range orgs.	Soil	61%	8.3 %

PARAMETER	METHOD DETECT LIMIT	BLANK CONC.
Diesel-range (Soil)	4 ppm	4.7 ppm

America North Crowley Project DRO

METHODS

1. AK 102: Method for the Determination of Diesel Range Organics, revision 2, 2/5/93.

Alaska Department of Environmental Conservation.

ABBREVIATIONS

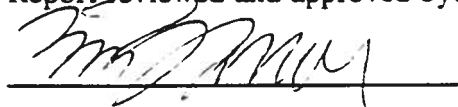
DRO : Diesel-range Organic.

PPM/PPB: Parts per million/ Parts per billion.

C: degrees Celcius.

mL/L: milliliter/Liter.

Report reviewed and approved by:



Tim Thomas,
Lab manager



America North/EMCON, Inc.

201 East 56th, Suite 300 • Anchorage AK 99518
(907) 562-3452 • FAX (907) 563-2814

Chain of Custody / Laboratory Analysis Request

DATE 25 OCT 93 PAGE 1 OF 2

PROJECT CROWLEY # 5119-054:00

CLIENT INFO
CONTACT T O'CARROLL

ADDRESS AN/E Anchorage

TELEPHONE# 562-3452

SAMPLER'S NAME GARRY A. BENKO PHONEN#

SAMPLER'S SIGNATURE GBenko

ANALYSIS REQUESTED					GENERAL CHEMISTRY (Specify)							OTHER (Specify)			NUMBER OF CONTAINERS			
BASE/NEU/ACID ORGANIC GC/MS/625/8270	VOLATILE ORGANICS GC/MS/624/8240	HALOGENATED VOLATILE ORGANICS 601/8010	PHENOLICS 604/8040	POLYNUCLEAR AROMATIC 610/8310	TOTAL ORGANIC CARBON (TOC) 415/9060	TOTAL ORGANIC HALIDE (TOX) 9020	EP TOX/TCLP METALS (Circle One)	METALS (TOTAL) (See Special Inst.)	TCLP ORGANICS	pH, COND	ALK	NO ₃ /NO ₂ -C	SO ₄	Ca, Mg, Na, K		ESR (ESEM)		
															+			1
															+			1
															+			1
															+			1
															+			1
															+			1
															+			1
															+			1
															+			1
															+			1

Relinquished By America North/EMCON Inc.
Signature [Signature]
Printed Name AN/E
Firm
Date/Time 10/25/93 1500

Relinquished By
Signature
Printed Name
Firm
Date/Time

Relinquished By
Signature
Printed Name
Firm
Date/Time

PROJECT INFORMATION
Shipping I.D. No.
VIA
Project

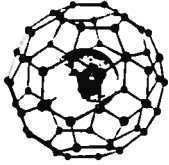
SAMPLE RECEIPT
Total No. of Containers
Chain of Custody Seals
Received in good condition
LAB NO

Received By [Signature]
Signature Tom Thomas
Printed Name Boree chon
Firm
Date/Time 10/25/93 / 1500

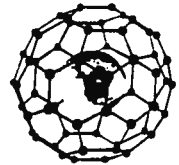
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Received By
Signature
Printed Name
Firm
Date/Time

SPECIAL INSTRUCTIONS/COMMENTS
TIER II REF



Boreochem Mobile Lab & Consulting
3070 Totem Drive
Fairbanks, Alaska 99709
(907) 479-2004



Office phone: 479-5459
Fax: 479-9544

October 28, 1993

**RESULTS OF DIESEL-RANGE ORGANICS ANALYSES OF SOIL SAMPLES
FOR AMERICA NORTH/EMCON, INC.
CROWLEY PROJECT, # 5119-054.00**

SAMPLE IDENTIFICATION

DATE SAMPLED:	October 26, 1993
DATE RECEIVED:	October 26, 1993/ 1903 hours

FIELD ID #	LAB ID #	ANALYSIS	TIME SAMPLED
MTC-1-4	93102601	m8100	1810
MTC-2-4	93102602	m8100	1815
MTC-3-4	93102603	m8100	1820
MTC-4-4	93102604	m8100	1825
MTC-5-4	93102605	m8100	1830
MTC-6-4	93102606	m8100	1835
MTC-A	93102607	m8100	1840
MTE-5-6.5	93102608	m8100	1845

CLIENT NAME:	America North/ Emcon, Inc.
CLIENT ADDRESS:	201 East 56th, Suite 300 Anchorage, Alaska 99518
CONTACT PERSON:	Mr. Barry Benko
SAMPLER:	Mr. Barry Benko
SAMPLER ADDRESS:	201 East 56th, Suite 300 Anchorage, Alaska 99518

America North Crowley Project DRO. 2nd Batch

SAMPLE INFORMATION

All samples were soil samples and were contained in 8 ounce glass bottles with teflon-lined closures. All samples in this batch were preserved before analysis by storage in a refrigerator maintained at 4 degrees Celsius.

All samples were delivered to the laboratory by Mr. Barry Benko and were accompanied by a chain-of-custody form. (See attached).

ANALYSIS SCHEDULE

SAMPLE #	DATE EXTRACTED	DATE ANALYZED
93102601	10/26/93	10/26/93
93102602	10/26/93	10/26/93
93102603	10/26/93	10/26/93
93102604	10/26/93	10/27/93
93102605	10/26/93	10/27/93
93102606	10/26/93	10/27/93
93102607	10/27/93	10/27/93
93102608	10/26/93	10/27/93

PER CENT SOLIDS DATA

SAMPLE #	FIELD ID #	% SOLIDS
93102601	MTC-1-4	77.4
93102602	MTC-2-4	78.4
93102603	MTC-3-4	77.1
93102604	MTC-4-4	75.0
93102605	MTC-5-4	75.6
93102606	MTC-6-4	73.7
93102607	MTC-A	71.5
93102608	MTE-5-6.5	75.9

America North Crowley Project DRO, 2nd Batch

**RESULTS OF AK102 DIESEL-RANGE ANALYSES
MILLIGRAMS PER DRY MILLIGRAM**

SAMPLE #	FIELD ID #	DRO CONC.(ppm)	% SURR. REC.
93102601	MTC-1-4	< 4	80.9
93102602	MTC-2-4	< 4	75.2
93102603	MTC-3-4	< 4	75.0
93102604	MTC-4-4	< 4	78.6
93102605	MTC-5-4	< 4	74.5
93102606	MTC-6-4	30.1	71.4
93102607	MTC-A	< 4	92.3
93102608	MTE-5-6.5	10,183.1	Coelution

QUALITY CONTROL DATA

PARAMETER	MATRIX	%SPIKE RECOVERY	RPD DUPLICATES
Diesel-range orgs.	Soil	61%	< 5 %

PARAMETER	METHOD DETECT LIMIT	BLANK CONC.
Diesel-range (Soil)	4 ppm	11 ppm

METHODS

1. AK 102: Method for the Determination of Diesel Range Organics, revision 2, 2/5/93.

Alaska Department of Environmental Conservation.

America North Crowley Project DRO, 2nd Batch

ABBREVIATIONS

DRO : Diesel-range Organic.

PPM/PPB: Parts per million/ Parts per billion.

C: degrees Celcius.

mL/L: milliliter/Liter.

Report reviewed and approved by:



Tim Thomas,
Lab manager



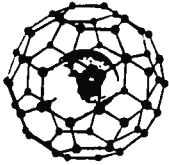
Chain of Custody Laboratory Analysis Request

DATE 26 OCT 93 PAGE 1 OF 1

PROJECT <u>CROWLEY</u> # <u>5119-055.00</u>	ANALYSIS REQUESTED	GENERAL CHEMISTRY (Specify)	OTHER (Specify)
CLIENT INFO. CONTACT <u>T. O'CARROLL</u>	BASE/NEU/ACID ORGAN. GC/MS/625/8270 VOLATILE ORGANICS GC/MS/624/8240 HALOGENATED VOLATILE ORGANICS 601/8010 PHENOLICS 604/8040 POLYNUCLEAR AROMATIC 610/8310 TOTAL ORGANIC CARBON (TOC) 415/9060 TOTAL ORGANIC HALIDE (TOX) 9020 EP TOX./TCLP METALS (Circle One) METALS (TOTAL) (See Special Inst.) TCLP ORGANICS PH. COND ALK NO ₃ /NO ₂ . Cl SO ₄ Ca. Mg. Na. K	<u>8100 M EPHO</u>	
ADDRESS			
TELEPHONE# <u>456-2011 / 562-3452</u>			
SAMPLER'S NAME <u>BARRY A. BENKO</u> PHONE# <u>562-3452</u>	SAMPLER'S SIGNATURE <u>[Signature]</u>		

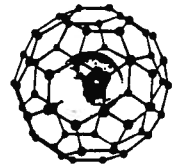
SAMPLE I.D.	DATE	TIME	LAB I.D.	TYPE	BASE/NEU/ACID ORGAN. GC/MS/625/8270	VOLATILE ORGANICS GC/MS/624/8240	HALOGENATED VOLATILE ORGANICS 601/8010	PHENOLICS 604/8040	POLYNUCLEAR AROMATIC 610/8310	TOTAL ORGANIC CARBON (TOC) 415/9060	TOTAL ORGANIC HALIDE (TOX) 9020	EP TOX./TCLP METALS (Circle One)	METALS (TOTAL) (See Special Inst.)	TCLP ORGANICS	PH. COND ALK	NO ₃ /NO ₂ . Cl SO ₄	Ca. Mg. Na. K	8100 M EPHO	NUMBER OF CONTAINERS
1. MTC-1-4	10-26	1810		Soil														X	1
2. MTC-2-4		1815																X	1
3. MTC-3-4		1820																X	1
4. MTC-4-4		1825																X	1
5. MTC-5-4		1830																X	1
6. MTC-6-4		1835																X	1
7. MTC-A		1840																X	1
8. MTE-5-6.5		1845																X	1

Relinquished By <u>[Signature]</u> Signature <u>BARRY A. BENKO</u> Printed Name <u>ABVE</u> Firm <u>10.26.93 1902</u> Date/Time	Relinquished By Signature Printed Name Firm Date/Time	Relinquished By Signature Printed Name Firm Date/Time	PROJECT INFORMATION Shipping I.D. No. VIA Project	SAMPLE RECEIPT Total No. of Containers Chain of Custody Seals Received in good condition LAB NO
Received By <u>[Signature]</u> Signature <u>Tom THOMAS</u> Printed Name <u>Borechem</u> Firm <u>10.26.93 1903</u> Date/Time	Received By Signature Printed Name Firm Date/Time	Received By Signature Printed Name Firm Date/Time	SPECIAL INSTRUCTIONS/COMMENTS <u>• TIER II REPORT</u>	



Boreochem Mobile Lab & Consulting

3070 Totem Drive
Fairbanks, Alaska 99709
(907) 479-2004



Office phone: 479-5459
Fax: 479-9544

October 28, 1993

**RESULTS OF DIESEL-RANGE ORGANICS ANALYSES OF A SOIL SAMPLE
FOR AMERICA NORTH/EMCON, INC.
CROWLEY PROJECT, # 5119-054.00**

SAMPLE IDENTIFICATION

DATE SAMPLED:	October 27, 1993
DATE RECEIVED:	October 27, 1993/ 1512 hours

FIELD ID #	LAB ID #	ANALYSIS	TIME SAMPLED
(SB5)1093-2.5	93102701	m8100	1430

CLIENT NAME:	America North/ Emcon, Inc.
CLIENT ADDRESS:	201 East 56th, Suite 300 Anchorage, Alaska 99518
CONTACT PERSON:	Mr. Barry Benko
SAMPLER:	Mr. Barry Benko
SAMPLER ADDRESS:	201 East 56th, Suite 300 Anchorage , Alaska 99518

America North Crowley Project DRO, 3rd Batch

SAMPLE INFORMATION

All samples were soil samples and were contained in 8 ounce glass bottles with teflon-lined closures. All samples in this batch were preserved before analysis by storage in a refrigerator maintained at 4 degrees Celsius.

All samples were delivered to the laboratory by Mr. Barry Benko and were accompanied by a chain-of-custody form. (See attached).

ANALYSIS SCHEDULE

SAMPLE #	DATE EXTRACTED	DATE ANALYZED
93102701	10/27/93	10/27/93

PER CENT SOLIDS DATA

SAMPLE #	FIELD ID #	% SOLIDS
93102701	(SB5)1093-2.5	79.3

**RESULTS OF AK102 DIESEL-RANGE ANALYSES
MILLIGRAMS PER DRY KILLIGRAM**

SAMPLE #	FIELD ID #	DRO CONC.(ppm)	% SURR. REC.
93102701	(SB5)1093-2.5	84.6	89.0

America North Crowley Project DRO, 3rd Batch

QUALITY CONTROL DATA

PARAMETER	MATRIX	%SPIKE RECOVERY	RPD DUPLICATES
Diesel-range orgs.	Soil	64.4%	7.9 %

PARAMETER	METHOD DETECT LIMIT	BLANK CONC.
Diesel-range (Soil)	4 ppm	31.5ppm

METHODS

1. AK 102: Method for the Determination of Diesel Range Organics, revision 2, 2/5/93.
Alaska Department of Environmental Conservation.

ABBREVIATIONS

DRO : Diesel-range Organic.
PPM/PPB: Parts per million/ Parts per billion.
C: degrees Celcius.
mL/L: milliliter/Liter.

Report reviewed and approved by:



Tim Thomas,
Lab manager

Chain of Custody / Laboratory Analysis Request

 DATE 27 OCT 93 PAGE 1 OF 1

ECT <u>CROWLEY</u> # <u>5119-055-00</u>					ANALYSIS REQUESTED												GENERAL CHEMISTRY (Specify)		OTHER (Specify)		NUMBER OF CONTAINERS							
VT INFO. / ACT <u>T. O'CARROLL</u>					GC/MS/625/8270	VOLATILE ORGANICS GC/MS/624/8240	HALOGENATED VOLATILE ORGANICS 601/8010	PHENOLICS 604/8040	POLYNUCLEAR AROMATIC 610/8310	TOTAL ORGANIC CARBON (TOC) 415/9060	TOTAL ORGANIC HALIDE (TOX) 9020	EP TOX/TCPLP METALS (Circle One)	METALS (TOTAL) (See Special Inst.)	TCPLP ORGANICS	PH. COND	ALK	NO ₃ /NO ₂ . Cl SO ₄	Ca. Mg. Na. K										
LESS																												
PHONE# <u>562-3452 / 456-2011</u>																												
CLIENTS NAME <u>BARRY BENKO</u> PHONE#																												
CLIENTS SIGNATURE <u>BG Benko</u>																												
SAMPLE I.D.	DATE	TIME	LAB I.D.	TYPE																								
<u>B-5)1093-2.5</u>	<u>10.27</u>	<u>1430</u>		<u>SOIL</u>																								

 Relinquished By
BG Benko
 Signature
BARRY BENKO
 Printed Name
ANV
 Firm
10.27.93 1510
 Date/Time

 Relinquished By

 Signature

 Printed Name

 Firm

 Date/Time

 PROJECT INFORMATION
 Shipping I.D. No.
 VIA
 Project

 SAMPLE RECEIPT
 Total No. of Containers
 Chain of Custody Seals
 Received in good condition
 LAB NO

 Relinquished By
Tim Thomas
 Signature
Tim Thomas
 Printed Name
Sorechem Lab
 Firm
10.27.93 1512
 Date/Time

 Received By

 Signature

 Printed Name

 Firm

 Date/Time

 Received By

 Signature

 Printed Name

 Firm

 Date/Time

 SPECIAL INSTRUCTIONS/COMMENTS