oasis
ENVIRONMENTAL

SITE REMEDIATION
WATER RESOURCES
ECOLOGICAL SCIENCES
EHS MANAGEMENT

November 8, 2007

Mr. Stephen Wilson
Crowley Maritime Corporation
1102 SW Massachusetts St.
Seattle, WA 98124
Via e-mail: Stephen.Wilson@crowley.com

Re: Kotzebue Lot M Hangar Site Assessment Report

Dear Mr. Wilson:

This letter report summarizes the results of a baseline environmental assessment conducted by OASIS Environmental, Inc. (OASIS) at the Crowley Marine Services, Inc. (Crowley) Kotzebue Hangar Facility. The Hangar is located on Lot M, Block 1, and is leased from the Alaska Department of Transportation and Public Facility (DOT&PF) under lease ADA-71219. Kotzebue is located at the north end of the Baldwin Peninsula in Kotzebue Sound; approximately 550 air miles northwest of Anchorage, Alaska (Figure 1).

Associated attachments to this report include:

- Figures 1 through 4 depicting sample locations and adjacent land use (Attachment A);
- Table 1 summarizing analytical results and Table 2 summarizing ADEC contaminated sites (Attachment B);
- Photo-documentation (Attachment C); and
- Analytical data results (Attachment D).

BACKGROUND

Crowley currently leases Lot M of Block 1 at the Ralph Wien Memorial Airport in Kotzebue, Alaska (see Figure 2). The lot is 60 feet wide and 125 feet deep, with one hangar building. The southern portion of the lot (3,000 square feet) is paved. The hangar building measures approximately 31 feet wide by 42 feet deep, with hangar doors abutting the paved portion of the site. The floor of the hangar is gravel and has a thick liner located 1.5 feet below clean gravel. The liner comes up the sides of three of the four interior walls of the hangar. The hangar building is used to house two fueling trucks.

FIELD ACTIVITES

OASIS mobilized to the site on October 12, 2007 to collect surface and subsurface soil samples at the hangar property. At each of five locations, test pits were installed to permafrost (Figure 3). The depth of excavation was limited by permafrost, which ranged from 5.5 to 7 feet below ground surface (bgs). Although groundwater was expected above permafrost, no groundwater was encountered during test

pitting. At each test pit, OASIS collected soil samples from three intervals: surface soils; from approximately 3 feet bgs; and, from the bottom of each excavation. Two re-sealable bags were partially filled with soils at each of the three sampling intervals. One bag was placed on ice, and the second bag was warmed for photo ionization detector (PID) field screening using Alaska Department of Environmental Conservation's (ADEC's) headspace method. Once all three intervals were field screened, OASIS chose the sample interval with the highest PID reading for off-site analysis, using the second bag for filling sample containers.

Test Pit No. 1 was located in the center of the hangar building. Initial excavation of this test pit included removal of 1.5 feet of gravel fill that is located on top of a liner that lines the entire building floor. OASIS collect a field screening sample of this gravel material for PID field screening and obtained a reading of 0 parts per million (ppm) above background. Once the first 1.5 feet of gravel was removed exposing the liner, the liner was cut and folded back. Poly sheeting was laid out for temporary placement of excavated soils from below the liner. The following field screening samples, depths, and results were obtained at Test Pit No. 1 from below the liner:

Test Pit 1

Field No.	Depth (feet)	PPM
T1-1	1.5 to 2	1,140
T1-2	3 to 3.5	205
T1-3	5 to 5.5	82

Excavated soils at Test Pit No. 1 were backfilled into the hole, and the liner was patched by Crowley. Because of soil fluffing during excavation, not all soils were placed back into the hole. Crowley drummed these remaining soils for off-site disposal with their normal operations waste stream.

Test Pit No. 2 was located at the southwest corner of the Hangar, on the north edge of the airfield tarmac. The excavation was extended to 5.8 feet bgs. The following field screening samples, depths, and results were obtained at Test Pit No. 2:

Test Pit 2

Field No.	Depth (feet)	PPM
T2-1	0 to 1	0.4
T2-2	3	79
T2-3	5.8	1.8

Test Pit No. 3 was located at the northwest corner of the lot. OASIS noted an underground storage tank located 13 feet west of the test pit location, on adjacent Lot L. The following field screening samples, depths, and results were obtained at Test Pit No. 3:

Test Pit 3

Field No.	Depth (feet)	PPM
T3-1	0 to 1	0.4
T3-2	3	95
T3-3	6.5	14.9

Test Pit No. 4 was located at the southeast corner of the lot, on the north edge of the airfield tarmac. The following field screening samples, depths, and results were obtained at Test Pit No. 4:

Test Pit 4		
Field No.	Depth (feet)	PPM
T4-1	0 to 1	1.7
T4-2	3.5	1.6
T4-3	7	1.1

Test Pit No. 5 was located at the northeast corner of the lot. The following field screening samples, depths, and results were obtained at Test Pit No. 5:

Test Pit 5		
Field No.	Depth (feet)	PPM
T5-1	0 to 1	1.4
T5-2	3	9.9
T5-3	7	0.9

ANALYTICAL RESULTS

OASIS collected a total of seven project samples, one duplicate sample, and one volatiles trip blank for analysis by TestAmerica, Inc., in Anchorage, Alaska.

Samples were analyzed for gasoline-range organics (GRO), diesel-range organics (DRO), and residual-range organics (RRO), and benzene, ethylbenzene, toluene, xylenes (BTEX). Table 1 (Attachment B) summarizes the analytical results. Sample results for DRO, GRO, and RRO are compared to ADEC Method 1 Soil Cleanup Levels found in Table A2 of 18 AAC 75. BTEX concentrations are compared to ADEC Method 2 Cleanup Levels found in Table B1 of 18 AAC 75.341. Laboratory data verification and quality assurance are presented with the analytical data in Attachment D.

OASIS collected three samples for off site analysis, one from each sampling interval at Test Pit No.1. Sample no. 07-CLM-T1-01 was collected from soils just below the liner. Sample no. 07-CLM-T1-02 was collected from approximately 3 to 3.5 feet bgs and sample no. 07-CLM-T1-03 was collected from the bottom of the excavation at approximately 5.5 feet bgs. This location had the highest PID field screening readings, with PID reading decreased with depth to a low of 82 ppm. GRO results from all three samples exceeded the ADEC cleanup value of 100 ppm.

At Test Pit No. 2, OASIS collected Sample No. 07-CLM-T2-02 from approximately 3 feet bgs. Sample no. 07-CLM-T2-02 contained DRO at 1,500, well above the ADEC cleanup value of 200 ppm for DRO in soils. GRO, RRO, and xylenes were detected at this location; however concentrations did not exceed ADEC cleanup levels.

At Test Pit No. 3, OASIS collected Sample No. 07-CLM-T3-02 from approximately 3 feet bgs. GRO, DRO, RRO and xylenes were detected in sample 07-CLM-T3-02, but below ADEC cleanup levels.

At Test Pit No. 4, OASIS collected Sample No. 07-CLM-T4-01 from approximately 0 to 1 foot bgs. DRO and RRO were detected in sample 07-CLM-T4-01, but below ADEC cleanup levels.

At Test Pit No. 5, OASIS collected Sample No. 07-CLM-T5-02 from approximately 3 feet bgs. DRO and RRO were detected in sample 07-CLM-T5-02, but below ADEC cleanup levels.

SURROUNDING LAND USE

OASIS contacted Ms. Penelope Adler at ADOT & PF to determine if the department maintained any records of fuel spills or other environmental impacts at the Lot M property or adjacent properties. Ms. Adler was not aware of any file information maintained by ADOT & PF.

OASIS contacted Ms. Anne Farris at ADEC, Fairbanks. Ms. Farris is the main ADEC contact for the Kotzebue Airport, and indicated a contractor has developed a work plan for conducting an area-wide investigation of subsurface soils and ground water fuel contamination at the Kotzebue Airport. ADEC maintains a file of reports and historical information for the Kotzebue area at the Fairbanks ADEC office.

OASIS conducted a search of ADEC's contaminated sites databases on-line. A summary of ADEC listed sites collected from this database are presented in Table 2. Figure 4 displays the locations of contaminated sites.

CONCLUSIONS

Test pit sampling indicates GRO and DRO contamination of soils below the Hangar facility and extending to the west. The source of GRO and DRO contamination is not known and may be related to migration from other known or unknown contaminated sites at the Kotzebue Airport. Test Pits 3 and 4 were the cleanest on the eastern edge of the site.

Respectfully submitted,

OASIS Environmental, Inc.

Daniel Frank
Project Manager

Brad Authier
Principal

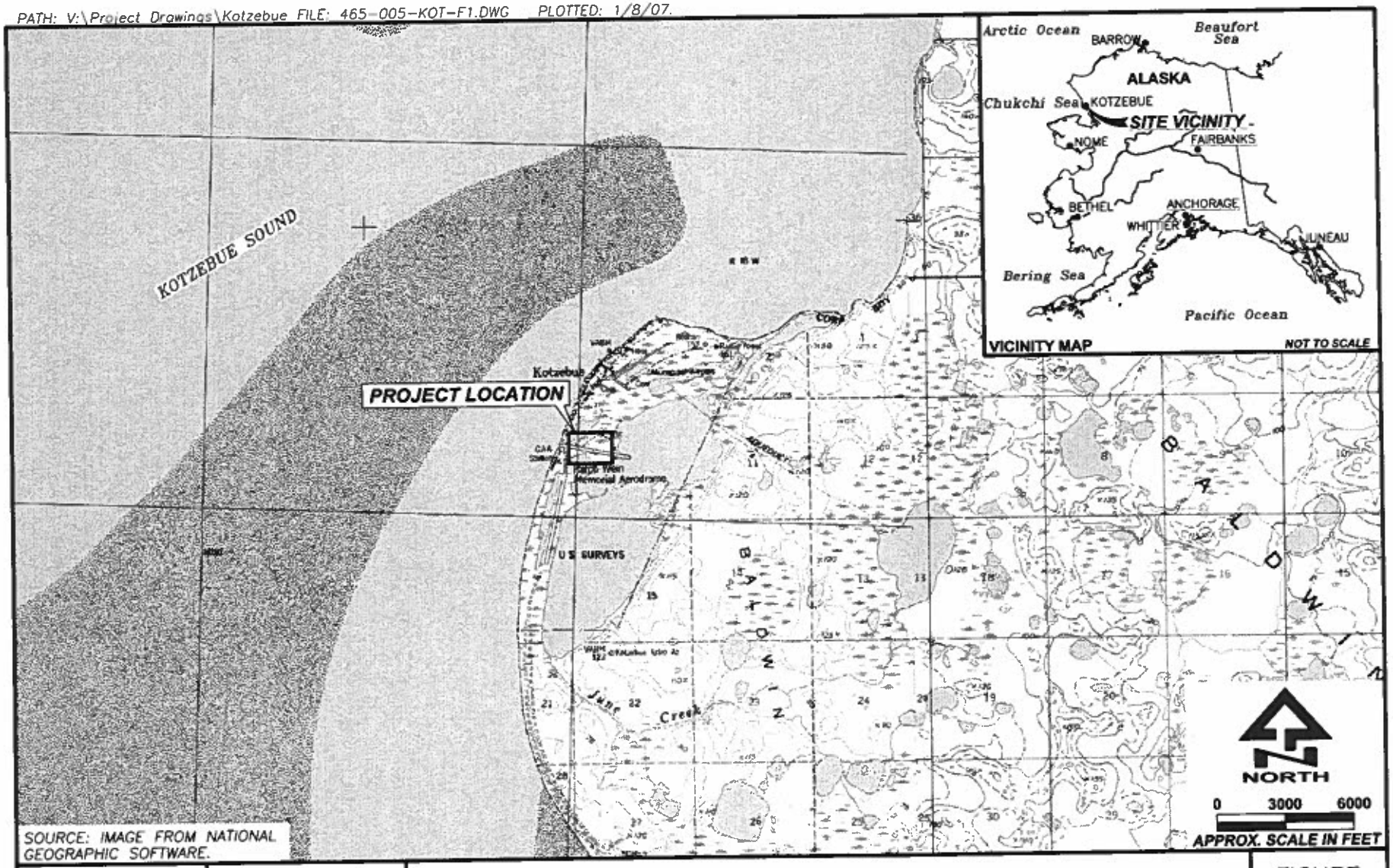
Attachments:

1. Attachment A – Figures
2. Attachment B – Tables
3. Attachment C – Photographic Log
4. Attachment D – Analytical Results

ATTACHMENT A

Figures

PATH: V:\Project Drawings\Kotzebue FILE: 465-005-KOT-F1.DWG PLOTTED: 1/8/07.



SOURCE: IMAGE FROM NATIONAL GEOGRAPHIC SOFTWARE.

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DATE: NOV. 2007
CHKD: D.J.F.
DRAWN: C.E.H.
PROJ. No.: 465-005

825 W. 8th Ave., Anchorage, AK 99501, (907) 258-4880

SITE LOCATION MAP

ENVIRONMENTAL ASSESSMENT
KOTZEBUE LOT M HANGAR
Kotzebue, Alaska

FIGURE
1

PATH: V:\Project Drawings\Kotzebue FILE: 465-005-KOT-F2.DWG PLOTTED: 11/8/07.

SOURCE: AERIAL PHOTO KOTZEBUE-7-19-03-CF196.JPG DATED 10/12/07 PROVIDED BY AERO-METRIC ANCHORAGE.

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CHKD: D.J.F.
DRAWN: C.E.H.
PROJ. No.: 465-005

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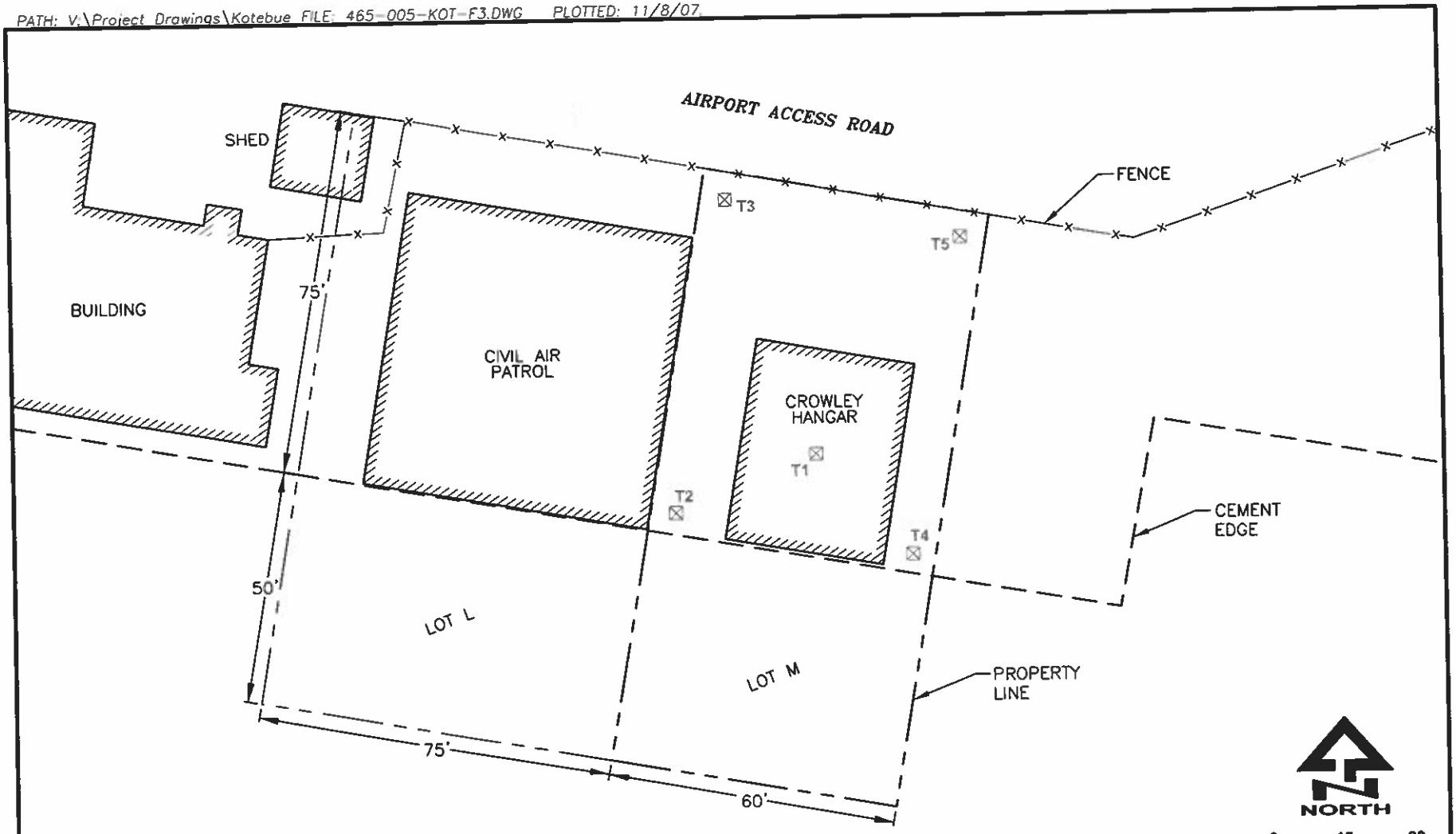
SITE PLAN

ENVIRONMENTAL ASSESSMENT
KOTZEBUE LOT M HANGAR
Kotzebue, Alaska

FIGURE
2

PATH: V:\Project Drawings\Kotebue FILE: 465-005-KOT-F3.DWG PLOTTED: 11/8/07



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TEST PIT LOCATIONS

ENVIRONMENTAL ASSESSMENT
KOTZEBUE LOT M HANGAR
Kotzebue, Alaska

FIGURE
3

Table 1

SOIL SAMPLE RESULTS SUMMARY
2007 CROWLEY ENVIRONMENTAL ASSESSMENT, Lot M Hangar
KOTZEBUE, ALASKA

Location:	Soil Screening Values	Test Pit 1	Test Pit 1	Test Pit 1	Test Pit 1	Test Pit 2	Test Pit 3	Test Pit 4	Test Pit 5	Trip Blank
Sample Number:		07CLM-T1-01	07CLM-T1-02	07CLM-T1-03	07CLM-T1-04	07CLM-T2-02	07CLM-T3-02	07CLM-T4-01	07CLM-T5-02	
PID (ppm):		1,140	205	82	dup of T1-03	79	95	1.7	9.9	
Depth:		Top	Middle	Bottom	Bottom	Middle	Middle	Top	Middle	
ADEC Fuels (mg/kg)										
Gasoline Range Organics	100 [1]	724 JS	128	126	93	75.3	32	ND (2.86)	ND (2.51)	ND (3.33)
Diesel Range Organics	500 [1]	904	231	147	158	1,550	481	18.2	129	na
Residual range Organics	2,000 [1]	61.6	153	144	178	122	110	144	154	na
VOCs (mg/kg)										
Benzene	13 [2]	ND (0.500) JS	ND (0.0166)	0.0205	ND (0.0166)	ND (0.0140)	ND (0.0135)	ND (0.0143)	ND (0.0125)	ND (0.0166)
Toluene	180 [2]	ND (1) JS	0.0905	0.152	0.0857	ND (0.0286)	ND (0.0271)	ND (0.0286)	ND (0.0251)	ND (0.0333)
Ethylbenzene	89 [2]	ND (1) JS	0.256	0.179	0.178	ND (0.0286)	ND (0.0271)	ND (0.0286)	ND (0.0251)	ND (0.0333)
Xylene (Total)	81 [2]	5.66 JS	0.55	0.592	0.489	0.515	0.182	ND (0.0428)	ND (0.0376)	ND (0.0500)

[1] ADEC Method 1 Soil Cleanup Levels; Table A2; ~~Low BTEX~~

[2] ADEC Method 2 Soil Cleanup Levels; Table B1; Arctic Zone.

Not Arctic Zone

Note: detected results are **bolded**. Results above ADEC cleanup values are **underlined.**

Key:

ADEC = Alaska Department of Environmental Conservation
mg/kg = Milligrams per kilogram.
ND = Analyte not detected above the method reporting limit.
PAHs = Polypolycyclic aromatic hydrocarbons
USEPA = United States Environmental Protection Agency
VOCs = Volitile Organic Compounds

ND= Not detected at the MDL

J Estimated Value. Analyte detected at a level less than the Practical Quantitation Limit (PQL) and greater than or equal to the Method Detection limit (MDL). The user of this data should be aware that this data is of limited reliability.

B Analyte was dectected in the associated method blank below the PQL at a concentration less than 10 times the sample result.

JS Estimated value due to surrogate recoveries outside of method acceptance limits.

ATTACHMENT C

Photographic Log

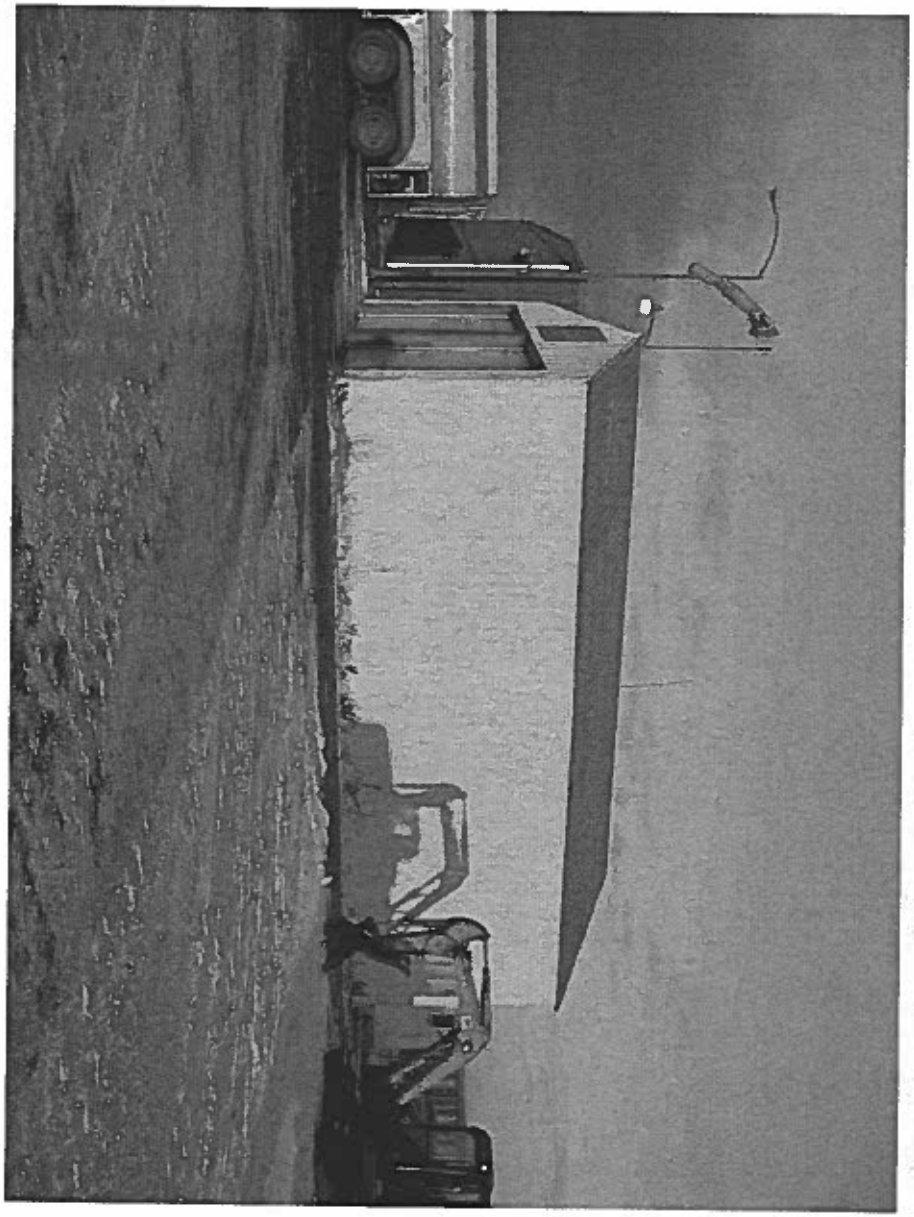

Photo: **2** Time: **0959** Date: **10/12/2007** Direction: **West**
Subject: **Crowley Hangar.**

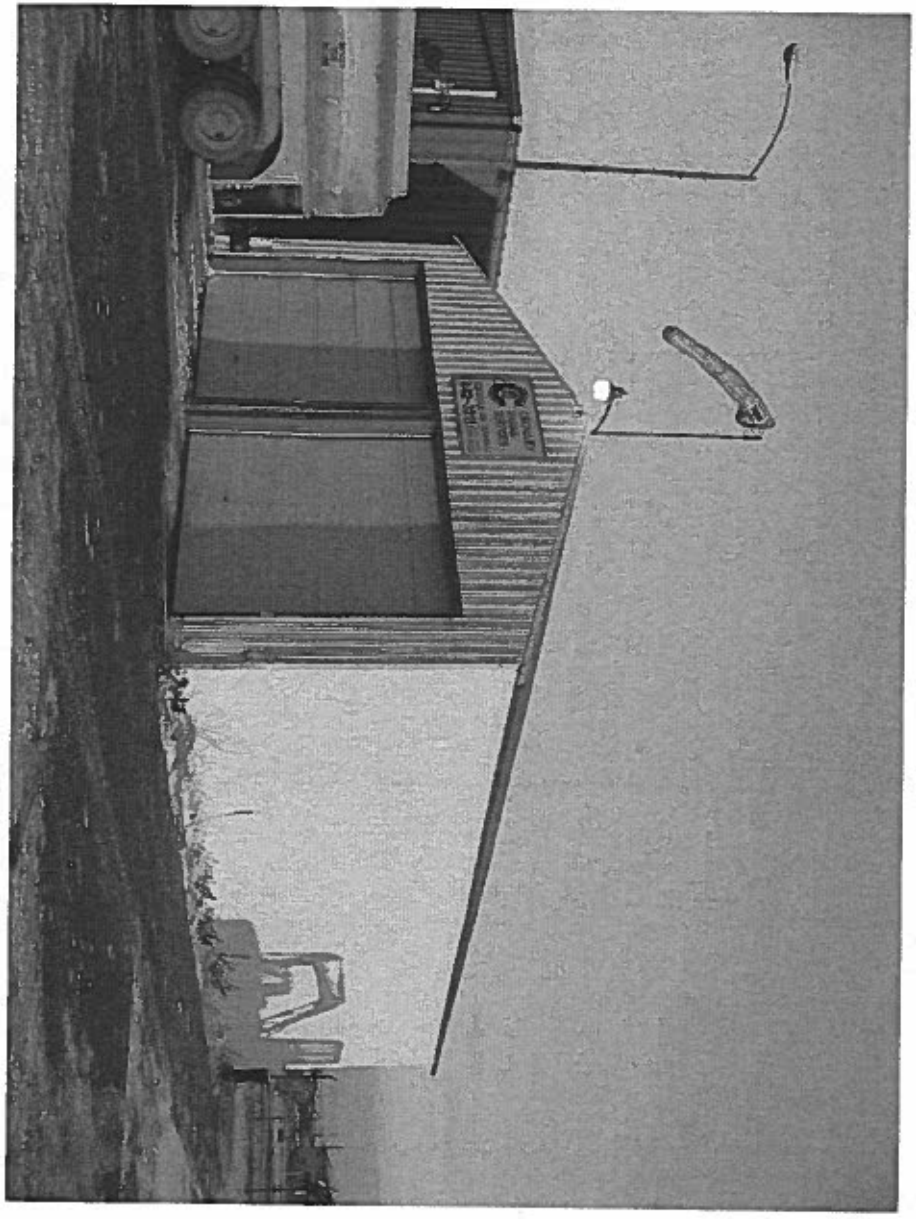

Photo: **1** Time: **0959** Date: **10/12/2007** Direction: **Northwest**
Subject: **Crowley Hangar**

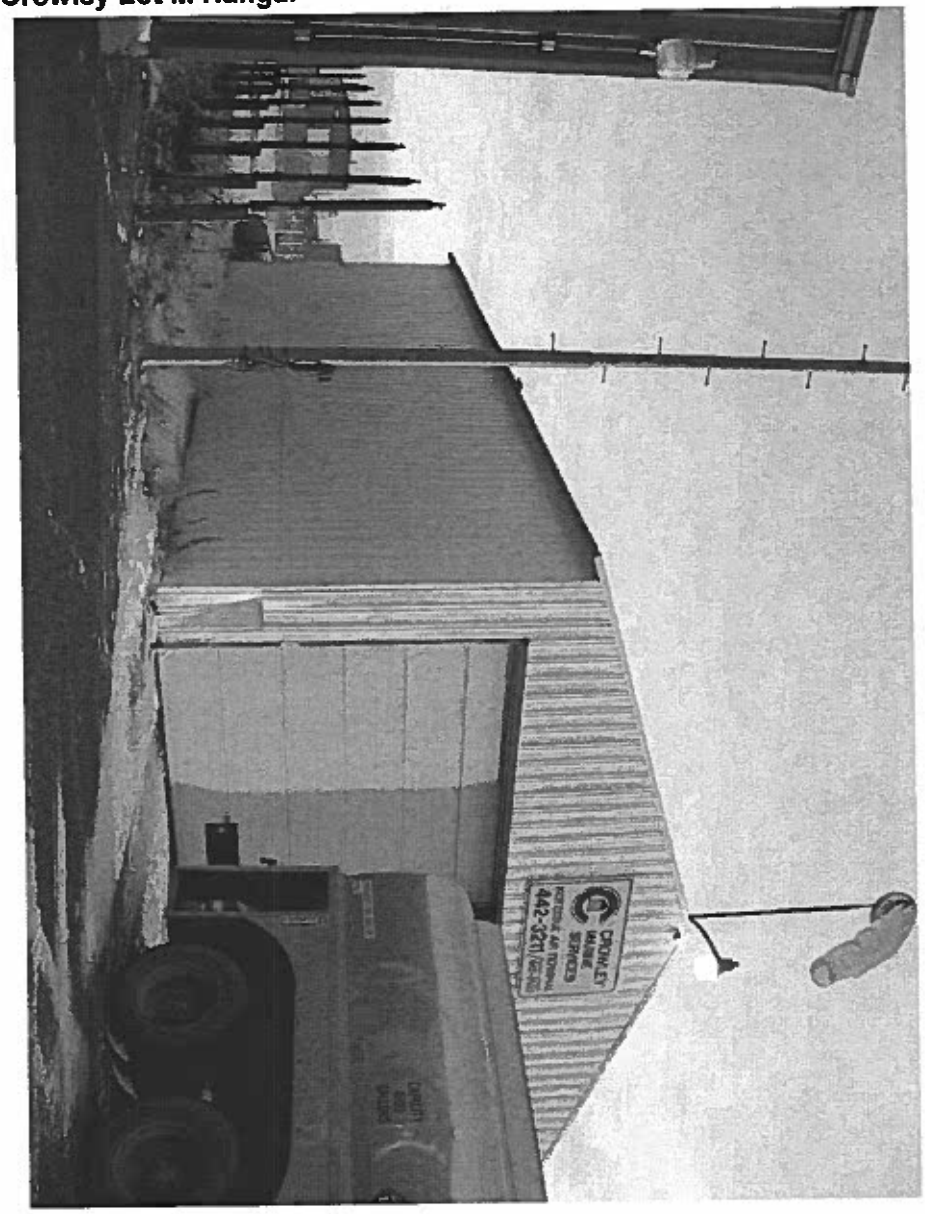

Photo: **4** Time: **1004** Date: **10/12/2007** Direction: **North**
Subject: **Crowley Hangar.**

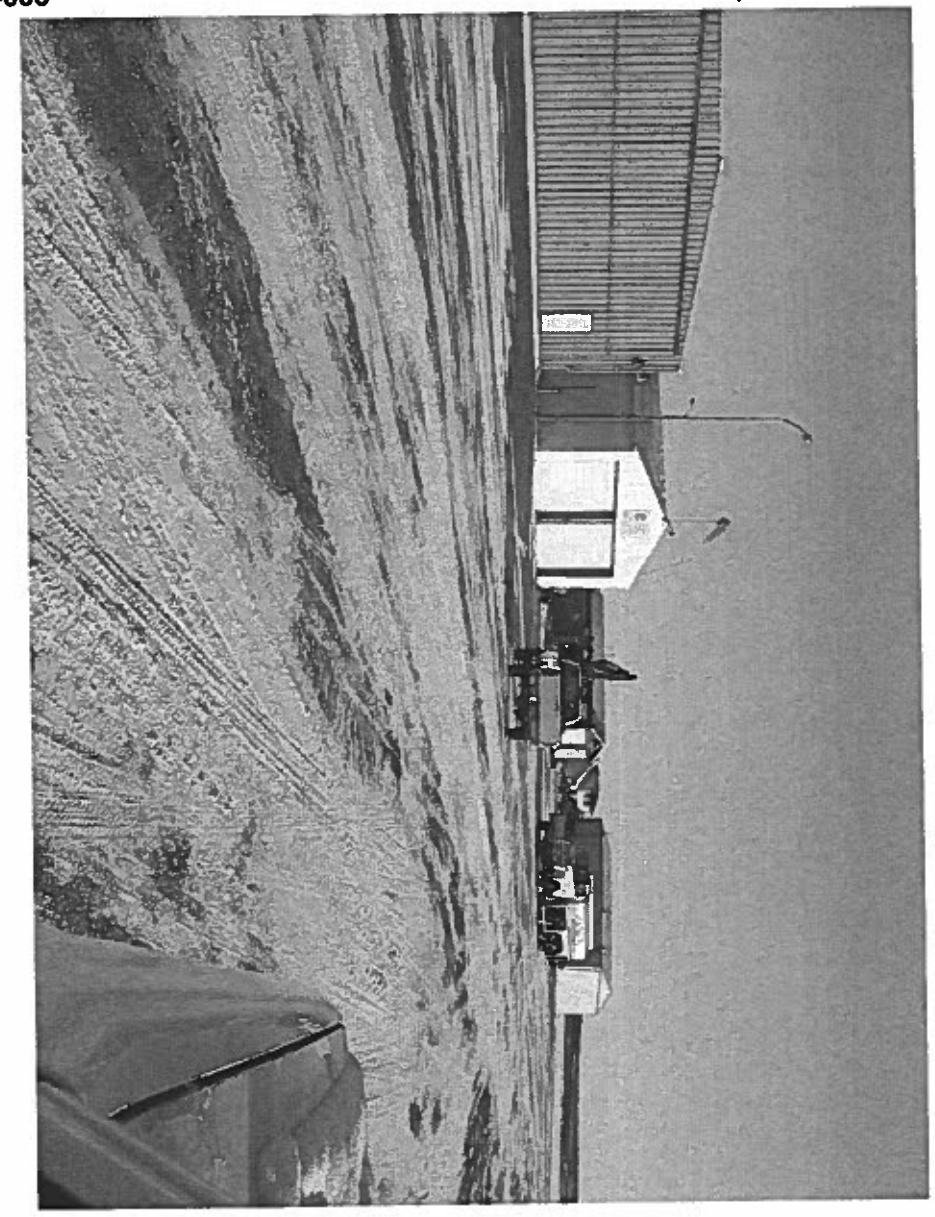

Photo: **3** Time: **1308** Date: **10/12/2007** Direction: **Northeast**
Subject: **Crowley Hangar and adjacent Civil Air Patrol Hangar**

Crowley Lot M Hangar

Job 465-005

Kotzebue, Alaska

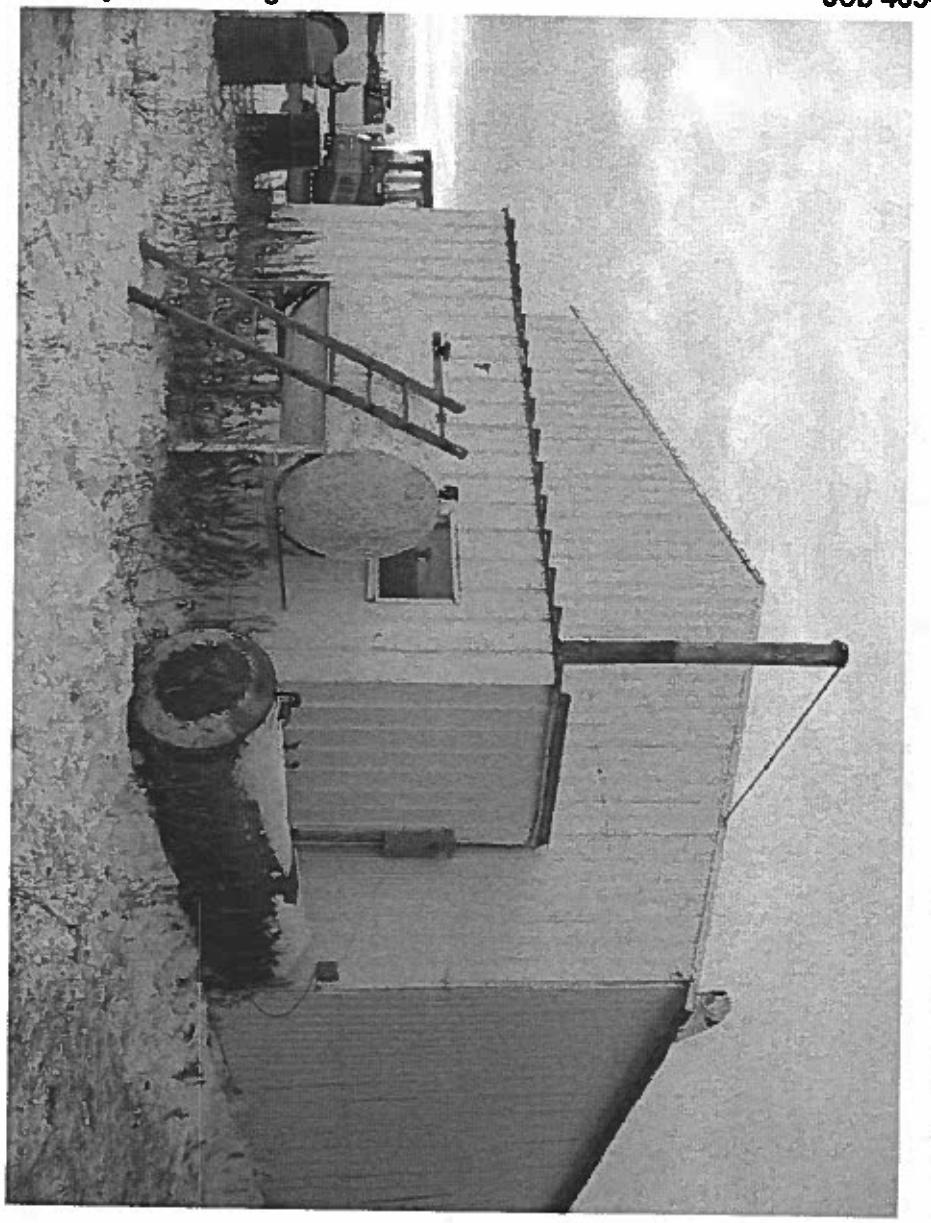

Photo: **6** Time: **0958** Date: **10/12/2007** Direction: **Southeast**
Subject: **Crowley Hangar, view of two ASTs.**

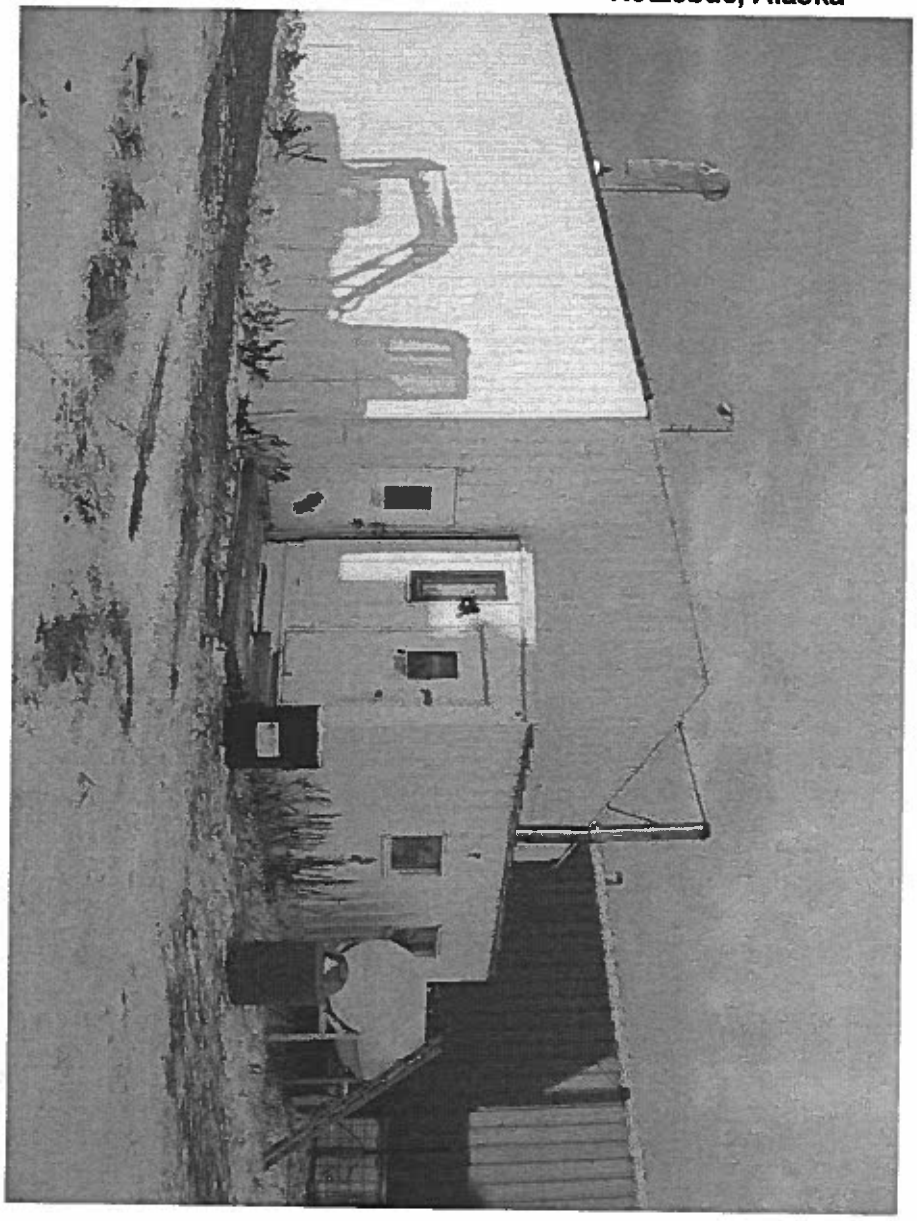

Photo: **5** Time: **0958** Date: **10/12/2007** Direction: **Southwest**
Subject: **Crowley Hangar and AST.**

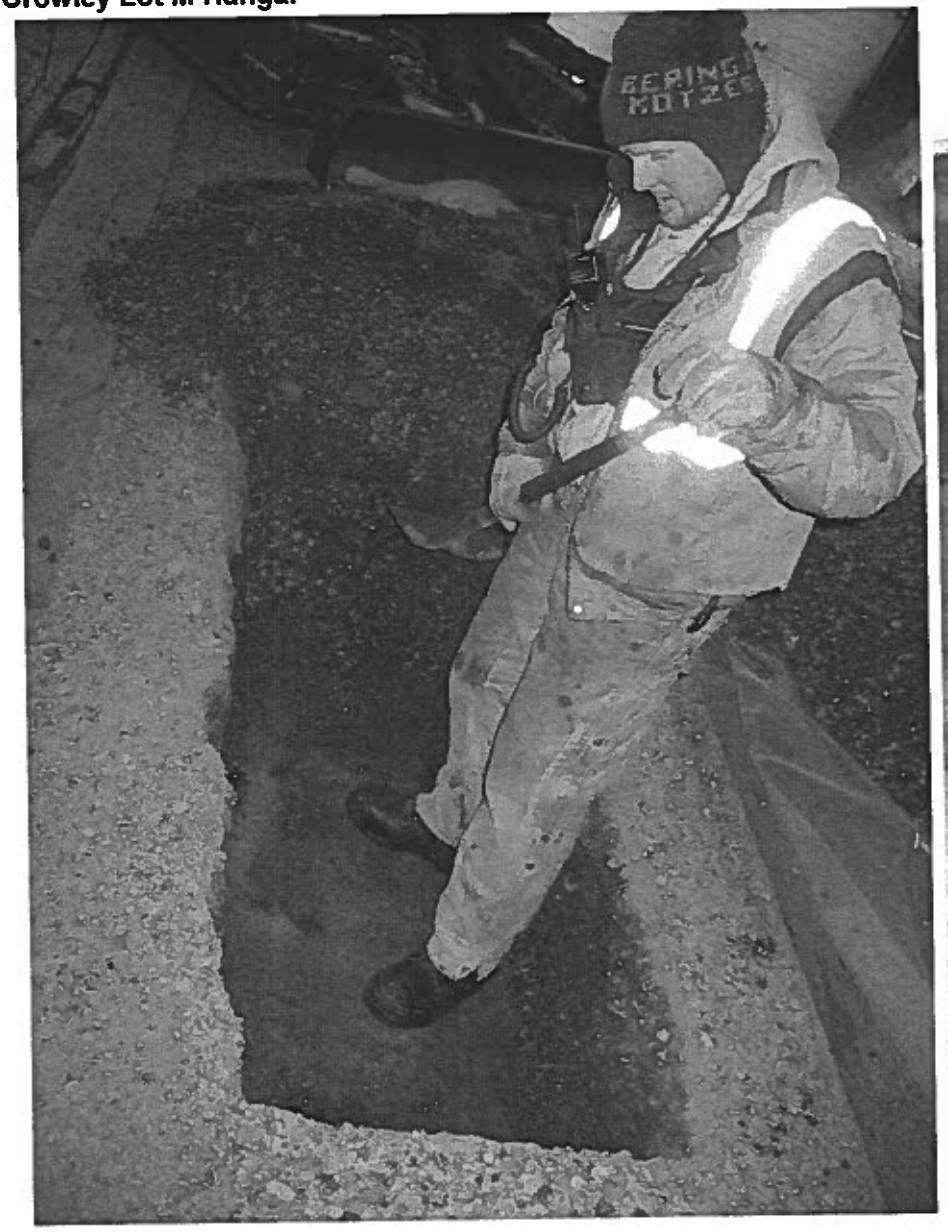

Photo: **8** Time: **1034** Date: **10/12/2007** Direction: **--**
Subject: **Uncovering liner material below Hangar floor.**

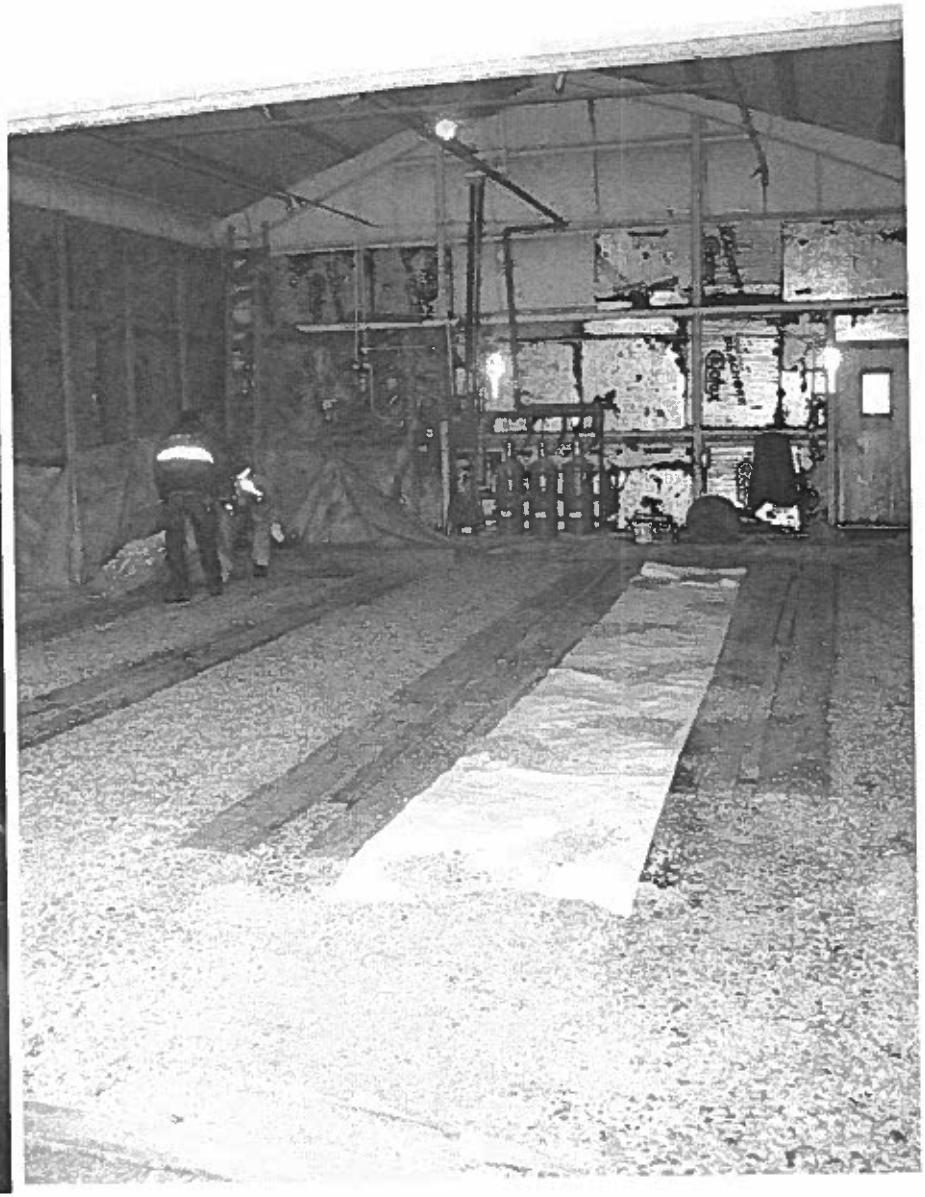

Photo: **7** Time: **1022** Date: **10/12/2007** Direction: **North**
Subject: **Interior of Crowley Hanger prior to test pitting.**

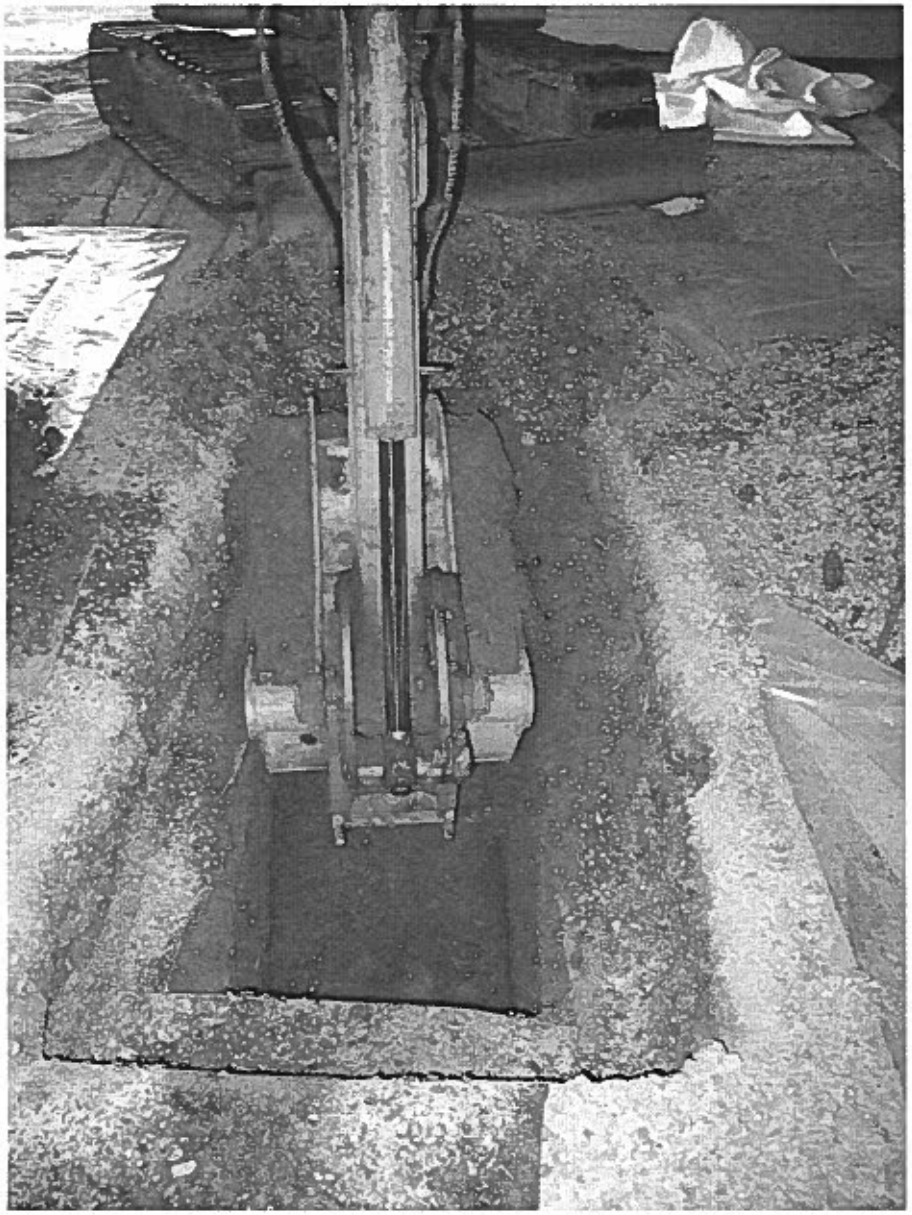

Photo: **10** Time: **1052** Date: **10/122007** Direction: **South**
Subject: **Excavating Test Pit 1 (T1).**

Photo: **9** Time: **1052** Date: **10/12/2007** Direction: **South**
Subject: **Excavating Test Pit 1 (T1).**

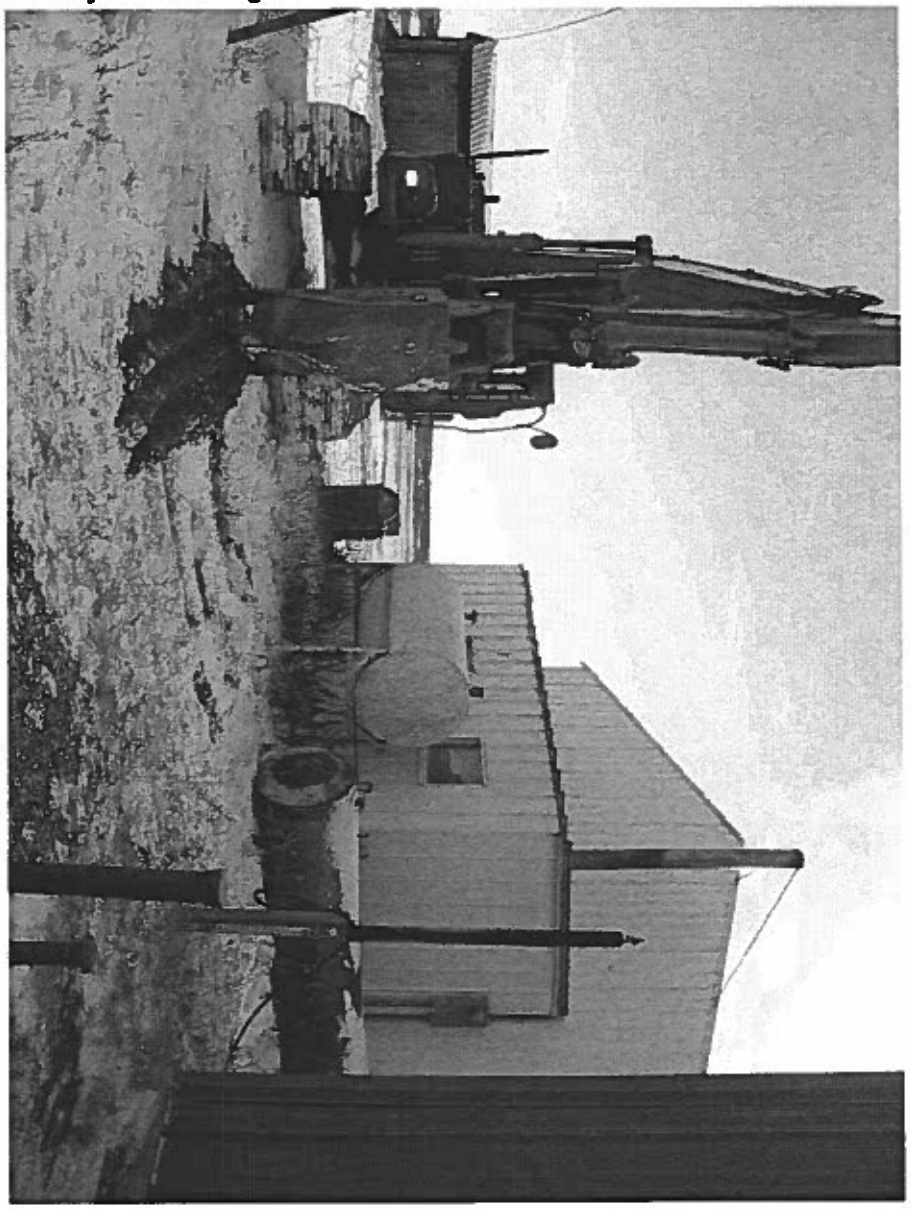

Photo: **12** Time: **1338** Date: **10/12/2007** Direction: **East**
Subject: **Excavating at Test Pit 3 (T3).**

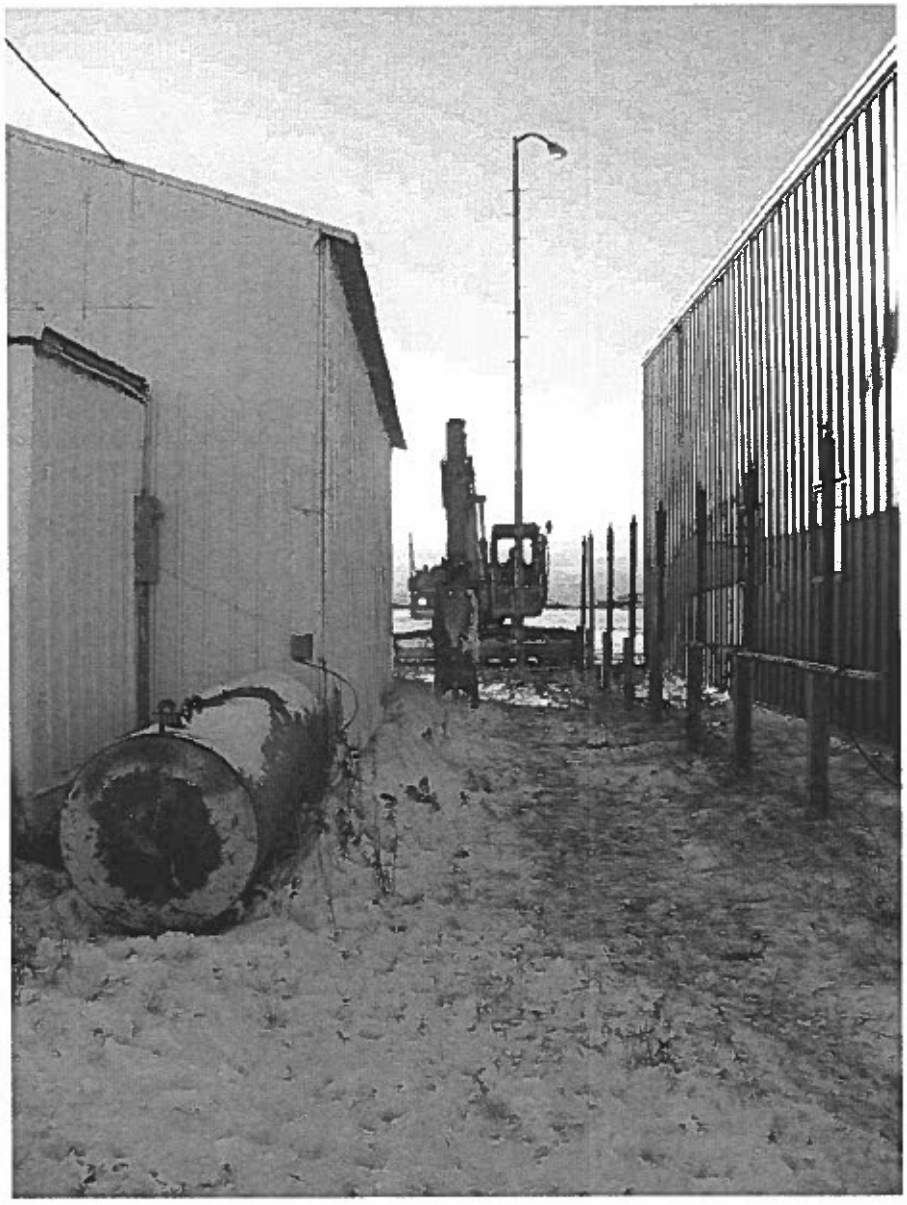

Photo: **11** Time: **1316** Date: **10/12/2007** Direction: **South**
Subject: **Excavating at Test Pit 2 (T2).**

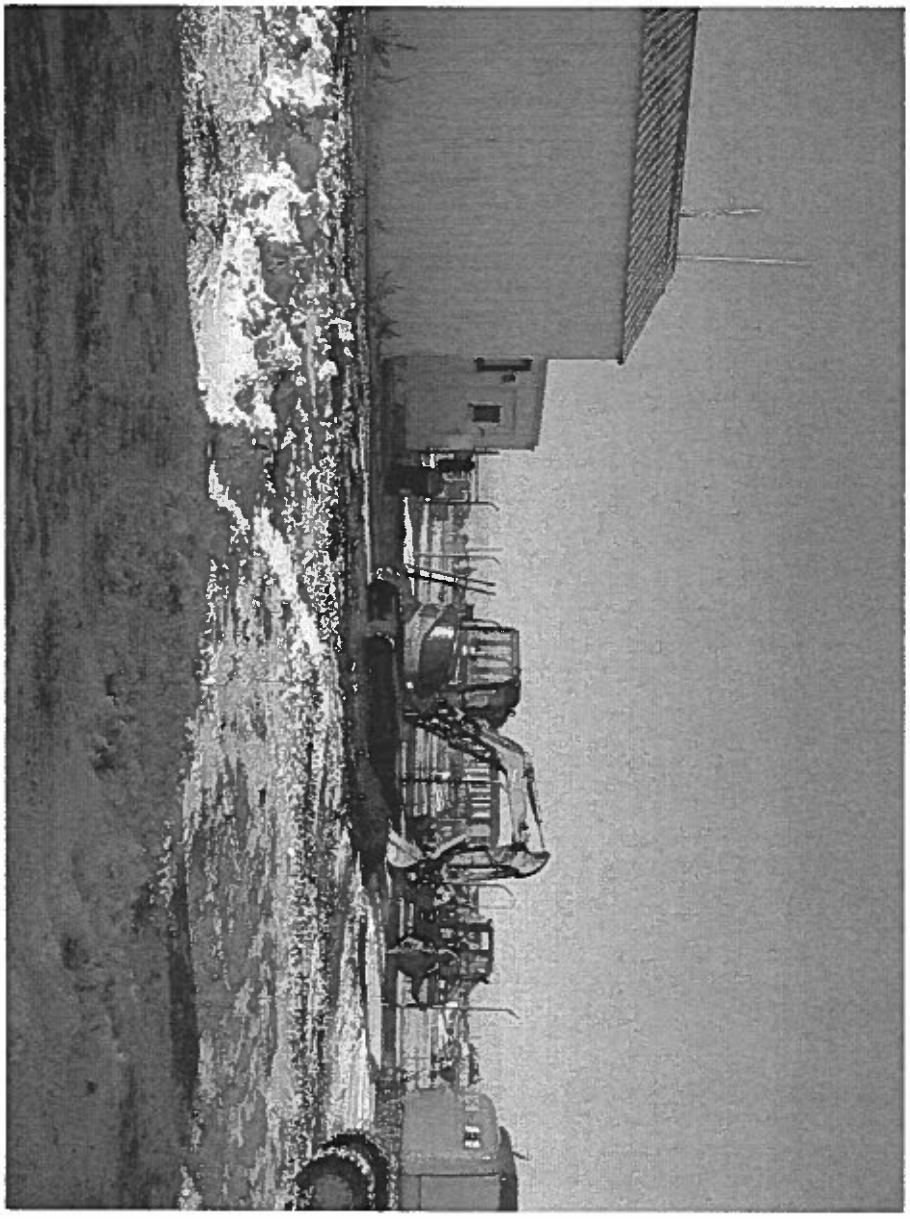

Photo: **14** Time: **1545** Date: **10/12/2007** Direction: **Northwest**
Subject: **Backfilling at Test Pit 5 (T5).**

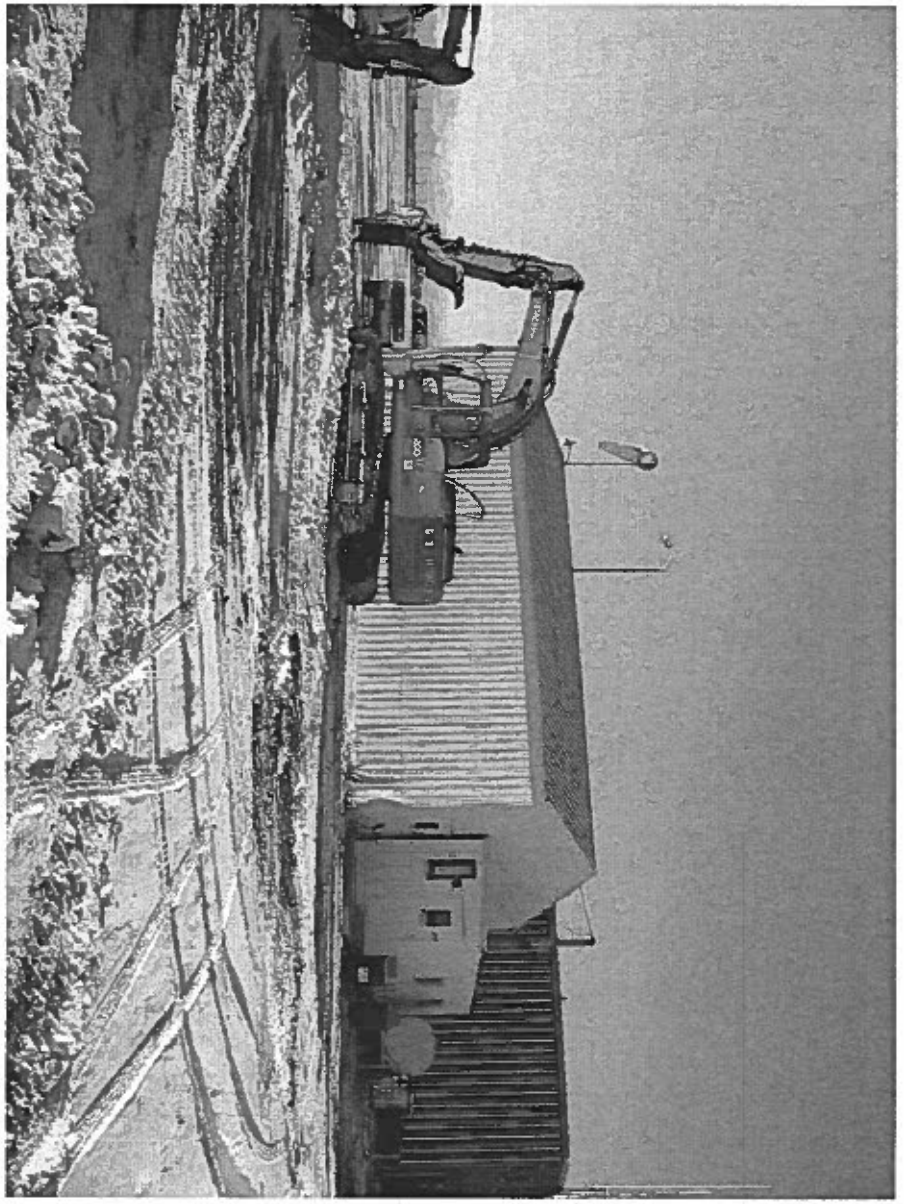

Photo: **13** Time: **1437** Date: **10/12/2007** Direction: **Southwest**
Subject: **Excavating at Test Pit 4 (T4).**

Crowley Lot M Hangar | Job 465-005 | Kotzebue, Alaska

Photo: **16** Time: **1750** Date: **7/19/2007** Direction: **South**
Subject: **Drumming soils and patching liner floor at Test Pit 1.**

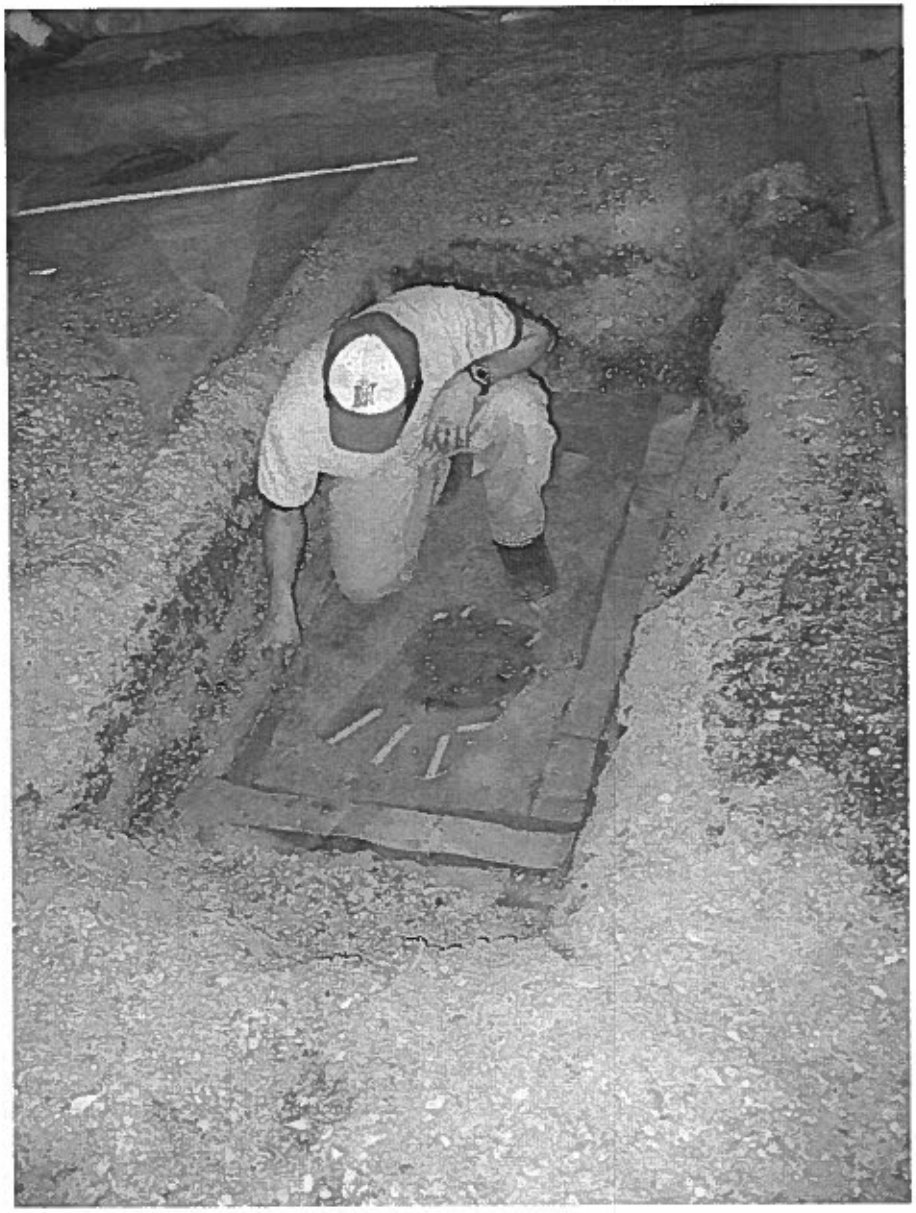

Photo: **15** Time: **1745** Date: **7/19/2007** Direction: **North**
Subject: **Patching liner in floor of Hangar at Test Pit 1.**

SURROUNDING LAND USE AND ADEC CONTAMINATED SITES
ENVIRONMENTAL ASSESSMENT KOTZEBUE
LOT M HANGAR
Kotzebue, Alaska
FIGURE 4
oasis
DATE: NOV. 2007
CHKD: D.J.F.
DRAWN: C.E.H.
PROJ. No.: 465-005
825 W. 6th Ave., Anchorage, AK 99501, (907) 258-4660
NORTH
0
75
150
APPROX. SCALE IN FEET
EXPLANATION
ALASKA AIRLINES
BAKER AVIATION
ADEC CONTAMINATED SITE
GENERAL SITE IDENTIFICATION AND CALLOUTS
SOURCE: AERIAL PHOTO KOTZ_7-19-03_1-4_TIF.
DATED 7-19-03 PROVIDED BY AERO-METRIC INC.
KOTZEBUE SOUND
THIRD AVENUE
ACCESS ROAD
ACCESS ROAD "AA"
ACCESS ROAD "BB"
TAXIWAY "A"
TAXIWAY "B"
BLOCK 1
BLOCK 2
BLOCK 3
BLOCK 4
PARKING RESTRICTION LINE
RALPH WIEN MEMORIAL AIRPORT
STATE OF ALASKA DOT AND PF
FORMER MARKAIR CARGO FACILITY
BAKER AVIATION
HAGELAND AVIATION
NANA MUSEUM
ALASKA DOT AND PF
FORMER MARKAIR FACILITY
CROWLEY MARINE SERVICES
ALASKA AIRLINES
BERING AIR INC.
BAKER AVIATION
FRONTIER FLYING SERVICE
AIRPORT PROPERTY BOUNDARY
PROPERTY LINE (TYP)
DRAKE INVESTMENTS
CROWLEY HANGAR
EXOUSA INC.
CIVIL AIR PATROL
PARCEL
SEASONAL USE AREA
FENCE (TYP)
ALASKA DOT AND PF
SECURITY FENCE
NANA UST SITE
ARCTIC TRANSPORTATION SERVICES
EDGE OF PAVEMENT
NORTHWESTERN AVIATION
PATH: V:\Project Drawings\Kotzebue FILE: 465-005-KOT-F4.DWG PLOTTED: 11/8/07

ATTACHMENT B

Tables

ATTACHMENT D

Analytical Data

Does not match site

Laboratory Data Review Checklist

Completed by:	Marty Hannah
Title:	Environmental Scientist
Date:	November 05, 2007
CS Report Name:	Crowley Maritime Aniak Airport
Report Date:	
Consultant Firm:	OASIS Environmental Inc.
Laboratory Name:	TestAmerica, Anchorage, AK
Laboratory Report Number:	AQJ0082
ADEC File Number:	
ADEC RecKey Number:	

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:

   Not Aplicable

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:

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

☒ Yes ☐ No Comments:

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

☒ Yes ☐ No Comments:

Samples were received in good condition.

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

☐ Yes ☐ No Comments:

No discrepancies

e. Data quality or usability affected? Explain.

Comments:

Not Applicable

4. Case Narrative

a. Present and understandable?

☒ Yes ☐ No Comments:

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

☐ Yes ☐ No Comments:

No discrepancies

c. Were all corrective actions documented?

☐ Yes ☐ No Comments:

Not Applicable

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

Comments:

All sample results are usable without qualification.

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:

All data is usable for project purposes.

6. 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:

Not Applicable

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

☐ Yes ☐ No Comments:

Not Applicable

v. Data quality or usability affected? Explain.

Comments:

Not Applicable

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:

Not Applicable.

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

☑ Yes ☐ No Comments:

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. (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:

Not Applicable

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

☐ Yes ☐ No Comments:

Not Applicable

vii. Data quality or usability affected? Explain.

Comments:

Not Applicable

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 limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)

☐ Yes ☒ No Comments:

Sample 07CLM-T1-01 had surrogate recoveries exceeding method limits (biased high).

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

☒ Yes ☐ No Comments:

Effected sample results are flagged JS for estimates due to surrogate recoveries outside of method acceptance limits.

iv. Data quality or usability affected? Explain.

Comments:

Effected sample data is usable as an estimate.

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:

Not Applicable

iv. Data quality or usability affected? Explain.

Comments:

Not Applicable

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:

Not Applicable

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

$$\text{RPD (\%)} = \text{Absolute value of: } \frac{(R_1-R_2)}{((R_1+R_2)/2)} \times 100$$

Where R_1 = Sample Concentration
R_2 = Field Duplicate Concentration

☐ Yes ☐ No Comments:

Not Applicable

iv. Data quality or usability affected? Explain.

Comments:

Not Applicable

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:

Not Applicable

iii. Data quality or usability affected? Explain.

Comments:

Not Applicable

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

a. Defined and appropriate?

☐ Yes ☐ No Comments:

Not Applicable

TestAmerica
ANALYTICAL TESTING CORPORATION

ANCHORAGE, AK 2000 W INTERNATIONAL AIRPORT ROAD, SUITE A-10
ANCHORAGE, AK 99502-1119
ph: (907) 563.9200 fax: (907) 563.9210

October 25, 2007

Dan Frank
Oasis Environmental, Inc.
825 W 8th Ave, ste 200
Anchorage, AK/USA 99501-4427

RE: 465-500 Crowley Hangar

Enclosed are the results of analyses for samples received by the laboratory on 10/15/07 08:25. The following list is a summary of the Work Orders contained in this report, generated on 10/25/07 17:08.

If you have any questions concerning this report, please feel free to contact me.

Work Order	Project	ProjectNumber
AQJ0082	465-500 Crowley Hangar	465-005

TestAmerica - Anchorage, AK

Troy J. Engstrom

Troy J. Engstrom, Manager

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Oasis Environmental, Inc.	Project Name:	**465-500 Crowley Hangar**	
825 W 8th Ave, ste 200	Project Number:	465-005	Report Created:
Anchorage, AK/USA 99501-4427	Project Manager:	Dan Frank	10/25/07 17:08

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
07-CLM-T1-01	AQJ0082-01	Soil	10/12/07 10:40	10/15/07 08:25
07-CLM-T1-02	AQJ0082-02	Soil	10/12/07 10:44	10/15/07 08:25
07-CLM-T1-03	AQJ0082-03	Soil	10/12/07 10:50	10/15/07 08:25
07-CLM-T1-04	AQJ0082-04	Soil	10/12/07 11:20	10/15/07 08:25
07-CLM-T2-02	AQJ0082-05	Soil	10/12/07 13:25	10/15/07 08:25
07-CLM-T3-02	AQJ0082-06	Soil	10/12/07 13:52	10/15/07 08:25
07-CLM-T4-01	AQJ0082-07	Soil	10/12/07 14:43	10/15/07 08:25
07-CLM-T5-02	AQJ0082-08	Soil	10/12/07 15:27	10/15/07 08:25
Trip Blank	AQJ0082-09	Soil	10/12/07 00:00	10/15/07 08:25

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Oasis Environmental, Inc.	Project Name:	**465-500 Crowley Hangar**	
825 W 8th Ave, ste 200	Project Number:	465-005	Report Created:
Anchorage, AK/USA 99501-4427	Project Manager:	Dan Frank	10/25/07 17:08

Gasoline Range Organics (C6-C10) and BTEX per AK101

TestAmerica - Anchorage, AK

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
AQJ0082-01 (07-CLM-T1-01)		**Soil**			**Sampled: 10/12/07 10:40**					**RL7**
Gasoline Range Organics	AK101 GRO/BTEX	**724**	-----	100	mg/kg dry	30x	7100109	10/19/07 10:21	10/22/07 16:41	
Benzene	"	ND	----	0.500	"	"	"	"	"	
Toluene	"	ND	----	1.00	"	"	"	"	"	R10
Ethylbenzene	"	ND	----	1.00	"	"	"	"	"	R10
Xylenes (total)	"	**5.66**	-----	1.50	"	"	"	"	"	R10
Surrogate(s): a,a,a-TFT (FID)			*431%*		*50 - 150 %*	"			"	*Z3*
a,a,a-TFT (PID)			*256%*		*50 - 150 %*	"			"	*Z3*
AQJ0082-02 (07-CLM-T1-02)		**Soil**			**Sampled: 10/12/07 10:44**					
Gasoline Range Organics	AK101 GRO/BTEX	**128**	-----	3.33	mg/kg dry	1x	7100109	10/19/07 10:21	10/22/07 06:22	
Benzene	"	ND	----	0.0166	"	"	"	"	"	
Toluene	"	**0.0905**	-----	0.0333	"	"	"	"	"	R10
Ethylbenzene	"	**0.256**	-----	0.0333	"	"	"	"	"	R10
Xylenes (total)	"	**0.550**	-----	0.0500	"	"	"	"	"	R10
Surrogate(s): a,a,a-TFT (FID)			*137%*		*50 - 150 %*	"			"	
a,a,a-TFT (PID)			*105%*		*50 - 150 %*	"			"	
AQJ0082-03 (07-CLM-T1-03)		**Soil**			**Sampled: 10/12/07 10:50**					
Gasoline Range Organics	AK101 GRO/BTEX	**126**	----	3.92	mg/kg dry	1x	7100109	10/19/07 10:21	10/22/07 06:55	
Benzene	"	**0.0205**	-----	0.0196	"	"	"	"	"	
Toluene	"	**0.152**	-----	0.0392	"	"	"	"	"	R10
Ethylbenzene	"	**0.179**	-----	0.0392	"	"	"	"	"	R10
Xylenes (total)	"	**0.592**	-----	0.0587	"	"	"	"	"	R10
Surrogate(s): a,a,a-TFT (FID)			*127%*		*50 - 150 %*	"			"	
a,a,a-TFT (PID)			*98.3%*		*50 - 150 %*	"			"	
AQJ0082-04 (07-CLM-T1-04)		**Soil**			**Sampled: 10/12/07 11:20**					
Gasoline Range Organics	AK101 GRO/BTEX	**93.0**	----	3.33	mg/kg dry	1x	7100109	10/19/07 10:21	10/22/07 07:28	
Benzene	"	ND	-----	0.0166	"	"	"	"	"	
Toluene	"	**0.0857**	----	0.0333	"	"	"	"	"	R10
Ethylbenzene	"	**0.178**	----	0.0333	"	"	"	"	"	R10
Xylenes (total)	"	**0.489**	----	0.0500	"	"	"	"	"	R10
Surrogate(s): a,a,a-TFT (FID)			*118%*		*50 - 150 %*	"			"	
a,a,a-TFT (PID)			*93.5%*		*50 - 150 %*	"			"	

TestAmerica - Anchorage, AK

Troy J. Engstrom, Manager

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Oasis Environmental, Inc.	Project Name:	**465-500 Crowley Hangar**	
825 W 8th Ave, ste 200	Project Number:	465-005	Report Created:
Anchorage, AK/USA 99501-4427	Project Manager:	Dan Frank	10/25/07 17:08

Gasoline Range Organics (C6-C10) and BTEX per AK101

TestAmerica - Anchorage, AK

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
AQJ0082-05 (07-CLM-T2-02)		**Soil**			**Sampled: 10/12/07 13:25**					
Gasoline Range Organics	AK101 GRO/BTEX	**75.3**	----	2.80	mg/kg dry	1x	7100109	10/19/07 10:21	10/22/07 08:00	
Benzene	"	ND	----	0.0140	"	"	"	"	"	
Toluene	"	ND	----	0.0280	"	"	"	"	"	**R10**
Ethylbenzene	"	ND	----	0.0280	"	"	"	"	"	**R10**
Xylenes (total)	"	**0.515**	----	0.0420	"	"	"	"	"	**R10**
Surrogate(s): a,a,a-TFT (FID)			*87.8%*		*50 - 150 %*	"			"	
a,a,a-TFT (PID)			*72.9%*		*50 - 150 %*	"			"	
AQJ0082-06 (07-CLM-T3-02)		**Soil**			**Sampled: 10/12/07 13:52**					
Gasoline Range Organics	AK101 GRO/BTEX	**32.0**	----	2.71	mg/kg dry	1x	7100109	10/19/07 10:21	10/22/07 08:33	
Benzene	"	ND	----	0.0135	"	"	"	"	"	
Toluene	"	ND	----	0.0271	"	"	"	"	"	
Ethylbenzene	"	ND	----	0.0271	"	"	"	"	"	**R10**
Xylenes (total)	"	**0.182**	----	0.0406	"	"	"	"	"	**R10**
Surrogate(s): a,a,a-TFT (FID)			*85.0%*		*50 - 150 %*	"			"	
a,a,a-TFT (PID)			*75.8%*		*50 - 150 %*	"			"	
AQJ0082-07 (07-CLM-T4-01)		**Soil**			**Sampled: 10/12/07 14:43**					
Gasoline Range Organics	AK101 GRO/BTEX	ND	----	2.86	mg/kg dry	1x	7100109	10/19/07 10:21	10/22/07 14:25	
Benzene	"	ND	----	0.0143	"	"	"	"	"	
Toluene	"	ND	----	0.0286	"	"	"	"	"	
Ethylbenzene	"	ND	----	0.0286	"	"	"	"	"	
Xylenes (total)	"	ND	----	0.0428	"	"	"	"	"	
Surrogate(s): a,a,a-TFT (FID)			*106%*		*50 - 150 %*	"			"	
a,a,a-TFT (PID)			*104%*		*50 - 150 %*	"			"	
AQJ0082-08 (07-CLM-T5-02)		**Soil**			**Sampled: 10/12/07 15:27**					
Gasoline Range Organics	AK101 GRO/BTEX	ND	----	2.51	mg/kg dry	1x	7100109	10/19/07 10:21	10/22/07 09:39	
Benzene	"	ND	----	0.0125	"	"	"	"	"	
Toluene	"	ND	----	0.0251	"	"	"	"	"	
Ethylbenzene	"	ND	----	0.0251	"	"	"	"	"	
Xylenes (total)	"	ND	----	0.0376	"	"	"	"	"	
Surrogate(s): a,a,a-TFT (FID)			*83.9%*		*50 - 150 %*	"			"	
a,a,a-TFT (PID)			*73.9%*		*50 - 150 %*	"			"	

TestAmerica - Anchorage, AK

Troy J. Engstrom, Manager

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Oasis Environmental, Inc.	Project Name:	**465-500 Crowley Hangar**	
825 W 8th Ave, ste 200	Project Number:	465-005	Report Created:
Anchorage, AK/USA 99501-4427	Project Manager:	Dan Frank	10/25/07 17:08

Gasoline Range Organics (C6-C10) and BTEX per AK101

TestAmerica - Anchorage, AK

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
AQJ0082-09 (Trip Blank)		**Soil**			**Sampled: 10/12/07 00:00**					
Gasoline Range Organics	AK101 GRO/BTEX	ND	----	3.33	mg/kg wet	1x	7100123	10/23/07 14:21	10/24/07 08:04	
Benzene	"	ND	----	0.0166	"	"	"	"	"	
Toluene	"	ND	----	0.0333	"	"	"	"	"	
Ethylbenzene	"	ND	----	0.0333	"	"	"	"	"	
Xylenes (total)	"	ND	----	0.0500	"	"	"	"	"	
Surrogate(s): *a,a,a-TFT (FID)*			*102%*		*50 - 150 %*	"			"	
a,a,a-TFT (PID)			*99.9%*		*50 - 150 %*	"			"	

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Oasis Environmental, Inc.	Project Name:	**465-500 Crowley Hangar**	
825 W 8th Ave, ste 200	Project Number:	465-005	Report Created:
Anchorage, AK/USA 99501-4427	Project Manager:	Dan Frank	10/25/07 17:08

Diesel Range Organics (C10-C25) and Residual Range Organics (C25-C36) per AK102/RRO

TestAmerica - Anchorage, AK

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
AQJ0082-01 (07-CLM-T1-01)		**Soil**			**Sampled: 10/12/07 10:40**					
Diesel Range Organics	AK102/103	904	----	18.2	mg/kg dry	1x	7100105	10/18/07 16:03	10/21/07 14:48	
Residual Range Organics	"	61.6	----	45.4	"	"	"	"	"	
Surrogate(s): 1-Chlorooctadecane			*95.2%*		*50 - 150 %*	"			"	
Triacontane			*99.7%*		*50 - 150 %*	"			"	
AQJ0082-02 (07-CLM-T1-02)		**Soil**			**Sampled: 10/12/07 10:44**					
Diesel Range Organics	AK102/103	231	----	17.5	mg/kg dry	1x	7100105	10/18/07 16:03	10/21/07 15:21	
Residual Range Organics	"	153	----	43.9	"	"	"	"	"	
Surrogate(s): 1-Chlorooctadecane			*101%*		*50 - 150 %*	"			"	
Triacontane			*93.2%*		*50 - 150 %*	"			"	
AQJ0082-03 (07-CLM-T1-03)		**Soil**			**Sampled: 10/12/07 10:50**					
Diesel Range Organics	AK102/103	147	----	15.6	mg/kg dry	1x	7100105	10/18/07 16:03	10/21/07 15:21	
Residual Range Organics	"	144	----	38.9	"	"	"	"	"	
Surrogate(s): 1-Chlorooctadecane			*92.5%*		*50 - 150 %*	"			"	
Triacontane			*97.5%*		*50 - 150 %*	"			"	
AQJ0082-04 (07-CLM-T1-04)		**Soil**			**Sampled: 10/12/07 11:20**					
Diesel Range Organics	AK102/103	158	----	17.9	mg/kg dry	1x	7100105	10/18/07 16:03	10/21/07 15:55	
Residual Range Organics	"	178	----	44.8	"	"	"	"	"	
Surrogate(s): 1-Chlorooctadecane			*99.0%*		*50 - 150 %*	"			"	
Triacontane			*90.7%*		*50 - 150 %*	"			"	
AQJ0082-05 (07-CLM-T2-02)		**Soil**			**Sampled: 10/12/07 13:25**					
Diesel Range Organics	AK102/103	1550	----	20.0	mg/kg dry	1x	7100105	10/18/07 16:03	10/21/07 15:55	
Residual Range Organics	"	122	----	50.0	"	"	"	"	"	
Surrogate(s): 1-Chlorooctadecane			*95.4%*		*50 - 150 %*	"			"	
Triacontane			*95.2%*		*50 - 150 %*	"			"	
AQJ0082-06 (07-CLM-T3-02)		**Soil**			**Sampled: 10/12/07 13:52**					
Diesel Range Organics	AK102/103	481	----	16.1	mg/kg dry	1x	7100105	10/18/07 16:03	10/21/07 17:02	
Residual Range Organics	"	110	----	40.4	"	"	"	"	"	
Surrogate(s): 1-Chlorooctadecane			*102%*		*50 - 150 %*	"			"	
Triacontane			*99.1%*		*50 - 150 %*	"			"	

TestAmerica - Anchorage, AK

Troy J. Engstrom, Manager

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Oasis Environmental, Inc.	Project Name:	**465-500 Crowley Hangar**	
825 W 8th Ave, ste 200	Project Number:	465-005	Report Created:
Anchorage, AK/USA 99501-4427	Project Manager:	Dan Frank	10/25/07 17:08

Diesel Range Organics (C10-C25) and Residual Range Organics (C25-C36) per AK102/RRO

TestAmerica - Anchorage, AK

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
AQJ0082-07 (07-CLM-T4-01)		**Soil**			**Sampled: 10/12/07 14:43**					
Diesel Range Organics	AK102/103	**18.2**	-----	15.5	mg/kg dry	1x	7100105	10/18/07 16:03	10/21/07 17:02	
Residual Range Organics	"	**144**	-----	38.8	"	"	"	"	"	
Surrogate(s): 1-Chlorooctadecane			*89.7%*		*50 - 150 %*	"			"	
Triacontane			*102%*		*50 - 150 %*	"			"	
AQJ0082-08 (07-CLM-T5-02)		**Soil**			**Sampled: 10/12/07 15:27**					
Diesel Range Organics	AK102/103	**129**	-----	20.0	mg/kg dry	1x	7100105	10/18/07 16:03	10/21/07 17:35	
Residual Range Organics	"	**154**	-----	50.0	"	"	"	"	"	
Surrogate(s): 1-Chlorooctadecane			*103%*		*50 - 150 %*	"			"	
Triacontane			*94.6%*		*50 - 150 %*	"			"	

TestAmerica - Anchorage, AK

Troy J. Engstrom, Manager

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Oasis Environmental, Inc.	Project Name:	**465-500 Crowley Hangar**	
825 W 8th Ave, ste 200	Project Number:	465-005	Report Created:
Anchorage, AK/USA 99501-4427	Project Manager:	Dan Frank	10/25/07 17:08

Physical Parameters by APHA/ASTM/EPA Methods

TestAmerica - Anchorage, AK

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
AQJ0082-01 (07-CLM-T1-01)		**Soil**				**Sampled: 10/12/07 10:40**				
Dry Weight	TA-SOP	96.6	-----	1.00	%	1x	7100107	10/18/07 17:12	10/19/07 13:29	
AQJ0082-02 (07-CLM-T1-02)		**Soil**				**Sampled: 10/12/07 10:44**				
Dry Weight	TA-SOP	88.6	-----	1.00	%	1x	7100107	10/18/07 17:12	10/19/07 13:29	
AQJ0082-03 (07-CLM-T1-03)		**Soil**				**Sampled: 10/12/07 10:50**				
Dry Weight	TA-SOP	90.2	-----	1.00	%	1x	7100107	10/18/07 17:12	10/19/07 13:29	
AQJ0082-04 (07-CLM-T1-04)		**Soil**				**Sampled: 10/12/07 11:20**				
Dry Weight	TA-SOP	89.1	-----	1.00	%	1x	7100107	10/18/07 17:12	10/19/07 13:29	
AQJ0082-05 (07-CLM-T2-02)		**Soil**				**Sampled: 10/12/07 13:25**				
Dry Weight	TA-SOP	90.6	-----	1.00	%	1x	7100107	10/18/07 17:12	10/19/07 13:29	
AQJ0082-06 (07-CLM-T3-02)		**Soil**				**Sampled: 10/12/07 13:52**				
Dry Weight	TA-SOP	93.0	-----	1.00	%	1x	7100107	10/18/07 17:12	10/19/07 13:29	
AQJ0082-07 (07-CLM-T4-01)		**Soil**				**Sampled: 10/12/07 14:43**				
Dry Weight	TA-SOP	95.4	-----	1.00	%	1x	7100107	10/18/07 17:12	10/19/07 13:29	
AQJ0082-08 (07-CLM-T5-02)		**Soil**				**Sampled: 10/12/07 15:27**				
Dry Weight	TA-SOP	92.5	-----	1.00	%	1x	7100107	10/18/07 17:12	10/19/07 13:29	

TestAmerica - Anchorage, AK

Troy J. Engstrom, Manager

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ANALYTICAL TESTING CORPORATION

ANCHORAGE, AK 2000 W. INTERNATIONAL AIRPORT ROAD, SUITE A-10
ANCHORAGE, AK 99502-1119
ph: (907) 563.9200 fax: (907) 563.9210

Oasis Environmental, Inc.	Project Name:	**465-500 Crowley Hangar**	
825 W 8th Ave, ste 200	Project Number:	465-005	Report Created:
Anchorage, AK/USA 99501-4427	Project Manager:	Dan Frank	10/25/07 17:08

Gasoline Range Organics (C6-C10) and BTEX per AK101 - Laboratory Quality Control Results

TestAmerica - Anchorage, AK

QC Batch: 7100109 **Soil Preparation Method: AK101 Field Prep**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (7100109-BLK1)								Extracted: 10/19/07 10:21						
Gasoline Range Organics	AK101 GRO/BTEX	ND	---	3.33	mg/kg wet	1x	--	--	--	--	--	--	10/21/07 18:13	
Benzene	"	ND	---	0.0166	"	"	--	--	--	--	--	--	"	
Toluene	"	ND	---	0.0333	"	"	--	--	--	--	--	--	"	
Ethylbenzene	"	ND	---	0.0333	"	"	--	--	--	--	--	--	"	
Xylenes (total)	"	ND	---	0.0500	"	"	--	--	--	--	--	--	"	
Surrogate(s): a,a,a-TFT (FID)		*Recovery: 95.6%*			*Limits: 50-150%*	"							*10/21/07 18:13*	
a,a,a-TFT (PID)		*90.4%*			*50-150%*	"							"	
LCS (7100109-BS1)								Extracted: 10/19/07 10:21						
Gasoline Range Organics	AK101 GRO/BTEX	22.3	---	3.33	mg/kg wet	1x	--	22.0	102%	(60-120)	--	--	10/21/07 17:06	
Benzene	"	0.273	---	0.0166	"	"	--	0.264	103%	(73.5-120)	--	--	"	
Toluene	"	1.85	---	0.0333	"	"	--	1.94	95.7%	(76.3-120)	--	--	"	
Ethylbenzene	"	0.360	---	0.0333	"	"	--	0.404	89.0%	(80-122)	--	--	"	
Xylenes (total)	"	2.09	---	0.0500	"	"	--	2.32	90.3%	(80-120)	--	--	"	
Surrogate(s): a,a,a-TFT (FID)		*Recovery: 110%*			*Limits: 60-120%*	"							*10/21/07 17:06*	
a,a,a-TFT (PID)		*106%*			*60-120%*	"							"	
LCS Dup (7100109-BSD1)								Extracted: 10/19/07 10:21						
Gasoline Range Organics	AK101 GRO/BTEX	23.0	---	3.33	mg/kg wet	1x	--	22.0	104%	(60-120)	2.86%	(20)	10/21/07 17:40	
Benzene	"	0.259	---	0.0166	"	"	--	0.264	98.1%	(73.5-120)	5.37%	(13)	"	
Toluene	"	1.91	---	0.0333	"	"	--	1.94	98.9%	(76.3-120)	3.29%	(12.3)	"	
Ethylbenzene	"	0.352	---	0.0333	"	"	--	0.404	87.1%	(80-122)	2.18%	(10.1)	"	
Xylenes (total)	"	2.15	---	0.0500	"	"	--	2.32	92.6%	(80-120)	2.51%	(11.6)	"	
Surrogate(s): a,a,a-TFT (FID)		*Recovery: 109%*			*Limits: 60-120%*	"							*10/21/07 17:40*	
a,a,a-TFT (PID)		*106%*			*60-120%*	"							"	
Duplicate (7100109-DUP1)							QC Source: AQJ0080-03	Extracted: 10/19/07 10:21						
Gasoline Range Organics	AK101 GRO/BTEX	6.80	---	3.33	mg/kg dry	1x	7.18	--	--	--	5.46%	(35.8)	10/22/07 01:25	
Surrogate(s): a,a,a-TFT (FID)		*Recovery: 96.7%*			*Limits: 50-150%*	"							*10/22/07 01:25*	
Matrix Spike (7100109-MS1)							QC Source: AQJ0080-03	Extracted: 10/19/07 10:21						
Benzene	AK101 GRO/BTEX	0.669	---	0.0166	mg/kg dry	1x	0.0104	0.696	94.6%	(80-125)	--	--	10/22/07 01:58	
Toluene	"	0.798	---	0.0333	"	"	0.0890	0.666	106%	(80-130)	--	--	"	
Ethylbenzene	"	0.814	---	0.0333	"	"	0.0174	0.669	119%	(80-138)	--	--	"	
Xylenes (total)	"	2.71	---	0.0500	"	"	0.424	2.01	113%	(80-141)	--	--	"	
Surrogate(s): a,a,a-TFT (PID)		*Recovery: 89.4%*			*Limits: 50-150%*	"							*10/22/07 01:58*	

TestAmerica - Anchorage, AK

Troy J Engstrom

Troy J. Engstrom, Manager

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ANCHORAGE, AK 2000 W. INTERNATIONAL AIRPORT ROAD, SUITE A-10
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Oasis Environmental, Inc.	Project Name: **465-500 Crowley Hangar**	
825 W 8th Ave, ste 200	Project Number: 465-005	Report Created:
Anchorage, AK/USA 99501-4427	Project Manager: Dan Frank	10/25/07 17:08

Gasoline Range Organics (C6-C10) and BTEX per AK101 - Laboratory Quality Control Results

TestAmerica - Anchorage, AK

QC Batch: 7100109 **Soil Preparation Method: AK101 Field Prep**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Matrix Spike Dup (7100109-MSD1)					QC Source: AQJ0080-03			Extracted: 10/19/07 10:21						
Benzene	AK101 GRO/BTEX	0.653	---	0.0166	mg/kg dry	1x	0.0104	0.696	92.3%	(80-125)	2.41%	(18.4)	10/22/07 02:31	
Toluene	"	0.784	---	0.0333	"	"	0.0890	0.666	104%	(80-130)	1.68%	(18)	"	
Ethylbenzene	"	0.800	---	0.0333	"	"	0.0174	0.669	117%	(80-138)	1.73%	(15.3)	"	
Xylenes (total)	"	2.68	---	0.0500	"	"	0.424	2.01	112%	(80-141)	0.790%	(14.2)	"	
Surrogate(s): a,a,a-TFT (PID)		*Recovery: 88.2%*			*Limits: 50-150%*	"							*10/22/07 02:31*	

QC Batch: 7100123 **Soil Preparation Method: AK101 Field Prep**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (7100123-BLK1)								Extracted: 10/23/07 14:21						
Gasoline Range Organics	AK101 GRO/BTEX	ND	---	3.33	mg/kg wet	1x	--	--	--	--	--	--	10/24/07 07:30	
Benzene	"	ND	---	0.0166	"	"	--	--	--	--	--	--	"	
Toluene	"	ND	---	0.0333	"	"	--	--	--	--	--	--	"	
Ethylbenzene	"	ND	---	0.0333	"	"	--	--	--	--	--	--	"	
Xylenes (total)	"	ND	---	0.0500	"	"	--	--	--	--	--	--	"	
Surrogate(s): a,a,a-TFT (FID)		*Recovery: 98.1%*			*Limits: 50-150%*	"							*10/24/07 07:30*	
a,a,a-TFT (PID)		*98.1%*			*50-150%*	"							"	
LCS (7100123-BS1)								Extracted: 10/23/07 14:21						
Gasoline Range Organics	AK101 GRO/BTEX	22.1	---	3.33	mg/kg wet	1x	--	22.0	100%	(60-120)	--	--	10/24/07 06:22	
Benzene	"	0.271	---	0.0166	"	"	--	0.264	102%	(73.5-120)	--	--	"	
Toluene	"	1.94	---	0.0333	"	"	--	1.94	100%	(76.3-120)	--	--	"	
Ethylbenzene	"	0.374	---	0.0333	"	"	--	0.404	92.7%	(80-122)	--	--	"	
Xylenes (total)	"	2.14	---	0.0500	"	"	--	2.32	92.4%	(80-120)	--	--	"	
Surrogate(s): a,a,a-TFT (FID)		*Recovery: 105%*			*Limits: 60-120%*	"							*10/24/07 06:22*	
a,a,a-TFT (PID)		*110%*			*60-120%*	"							"	
LCS Dup (7100123-BSD1)								Extracted: 10/23/07 14:21						
Gasoline Range Organics	AK101 GRO/BTEX	22.6	---	3.33	mg/kg wet	1x	--	22.0	103%	(60-120)	2.55%	(20)	10/24/07 06:56	
Benzene	"	0.270	---	0.0166	"	"	--	0.264	102%	(73.5-120)	0.308%	(13)	"	
Toluene	"	1.93	---	0.0333	"	"	--	1.94	99.9%	(76.3-120)	0.562%	(12.3)	"	
Ethylbenzene	"	0.366	---	0.0333	"	"	--	0.404	90.5%	(80-122)	2.39%	(10.1)	"	
Xylenes (total)	"	2.20	---	0.0500	"	"	--	2.32	94.8%	(80-120)	2.61%	(11.6)	"	
Surrogate(s): a,a,a-TFT (FID)		*Recovery: 107%*			*Limits: 60-120%*	"							*10/24/07 06:56*	
a,a,a-TFT (PID)		*109%*			*60-120%*	"							"	

TestAmerica - Anchorage, AK

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Troy J. Engstrom, Manager

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Oasis Environmental, Inc.	Project Name: **465-500 Crowley Hangar**	
825 W 8th Ave, ste 200	Project Number: 465-005	Report Created:
Anchorage, AK/USA 99501-4427	Project Manager: Dan Frank	10/25/07 17:08

Diesel Range Organics (C10-C25) and Residual Range Organics (C25-C36) per AK102/RRO - Laboratory Quality Control Results

TestAmerica - Anchorage, AK

QC Batch: 7100105 **Soil Preparation Method: EPA 3545**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (7100105-BLK1)							Extracted: 10/18/07 16:03							
Diesel Range Organics	AK102/103	ND	---	20.0	mg/kg wet	1x	--	--	--	--	--	--	10/21/07 10:53	
Residual Range Organics	"	ND	---	50.0	"	"	--	--	--	--	--	--	"	
Surrogate(s): 1-Chlorooctadecane		*Recovery: 90.9%*			*Limits: 50-150%*	"							*10/21/07 10:53*	
Triacontane		*91.4%*			*50-150%*	"							"	
LCS (7100105-BS1)							Extracted: 10/18/07 16:03							
Diesel Range Organics	AK102/103	129	---	20.0	mg/kg wet	1x	--	126	102%	(75-125)	--	--	10/21/07 11:27	
Residual Range Organics	"	131	---	50.0	"	"	--	128	103%	(60-120)	--	--	"	
Surrogate(s): 1-Chlorooctadecane		*Recovery: 98.7%*			*Limits: 60-120%*	"							*10/21/07 11:27*	
Triacontane		*91.8%*			*60-120%*	"							"	
LCS Dup (7100105-BSD1)							Extracted: 10/18/07 16:03							
Diesel Range Organics	AK102/103	132	---	20.0	mg/kg wet	1x	--	126	104%	(75-125)	1.77%	(20)	10/21/07 12:00	
Residual Range Organics	"	134	---	50.0	"	"	--	128	105%	(60-120)	2.13%	"	"	
Surrogate(s): 1-Chlorooctadecane		*Recovery: 99.5%*			*Limits: 60-120%*	"							*10/21/07 12:00*	
Triacontane		*92.9%*			*60-120%*	"							"	
Duplicate (7100105-DUP1)					QC Source: AQJ0065-01		Extracted: 10/18/07 16:03							
Diesel Range Organics	AK102/103	ND	---	16.9	mg/kg wet	1x	ND	--	--	--	12.6%	(20)	10/21/07 10:53	
Residual Range Organics	"	ND	---	42.4	"	"	ND	--	--	--	57.4%	"	"	R4
Surrogate(s): 1-Chlorooctadecane		*Recovery: 95.6%*			*Limits: 50-150%*	"							*10/21/07 10:53*	
Triacontane		*95.4%*			*50-150%*	"							"	
Matrix Spike (7100105-MS1)					QC Source: AQJ0065-01		Extracted: 10/18/07 16:03							
Diesel Range Organics	AK102/103	134	---	20.0	mg/kg wet	1x	5.68	119	108%	(75-125)	--	--	10/21/07 12:00	
Residual Range Organics	"	134	---	50.0	"	"	5.62	120	107%	(60-150)	--	--	"	
Surrogate(s): 1-Chlorooctadecane		*Recovery: 93.7%*			*Limits: 50-150%*	"							*10/21/07 12:00*	
Triacontane		*96.3%*			*50-150%*	"							"	
Matrix Spike Dup (7100105-MSD1)					QC Source: AQJ0065-01		Extracted: 10/18/07 16:03							
Diesel Range Organics	AK102/103	114	---	18.0	mg/kg wet	1x	5.68	113	95.8%	(75-125)	16.0%	(25)	10/21/07 12:34	
Residual Range Organics	"	115	---	44.9	"	"	5.62	115	95.9%	(60-150)	15.0%	"	"	
Surrogate(s): 1-Chlorooctadecane		*Recovery: 83.1%*			*Limits: 50-150%*	"							*10/21/07 12:34*	
Triacontane		*84.8%*			*50-150%*	"							"	

TestAmerica - Anchorage, AK

Troy J. Engstrom, Manager

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ANCHORAGE, AK 99502-1119
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Oasis Environmental, Inc.	Project Name:	**465-500 Crowley Hangar**	
825 W 8th Ave, ste 200	Project Number:	465-005	Report Created:
Anchorage, AK/USA 99501-4427	Project Manager:	Dan Frank	10/25/07 17:08

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

TestAmerica - Anchorage, AK

QC Batch: 7100107 **Soil Preparation Method: *** DEFAULT PREP**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Duplicate (7100107-DUP1)					QC Source: AQJ0081-01			Extracted: 10/18/07 17:12						
Dry Weight	TA-SOP	93.6	---	1.00	%	1x	91.0	--	--	--	2.78%	(25)	10/19/07 13:29	

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Oasis Environmental, Inc.	Project Name:	**465-500 Crowley Hangar**	
825 W 8th Ave, ste 200	Project Number:	465-005	Report Created:
Anchorage, AK/USA 99501-4427	Project Manager:	Dan Frank	10/25/07 17:08

Notes and Definitions

Report Specific Notes:

R10	-	The RPD between the primary and confirmatory analysis exceeded 40%. Per method 8000B, the lower value was reported due to apparent chromatographic problems.
R4	-	Due to the low levels of analyte in the sample, the duplicate RPD calculation does not provide useful information.
RL7	-	Sample required dilution due to high concentrations of target analyte.
Z3	-	The sample required a dilution due to the nature of the sample matrix. Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

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. Results and Reporting Limits have been corrected for Percent Dry Weight.
wet	-	Sample results and reporting limits reported on a Wet Weight Basis (as received). Results with neither 'wet' nor 'dry' are reported on a Wet Weight Basis.
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.
Electronic Signature	-	Electronic Signature added in accordance with TestAmerica's *Electronic Reporting and Electronic Signatures Policy*. Application of electronic signature indicates that the report has been reviewed and approved for release by the laboratory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Troy J Engstrom

Troy J. Engstrom, Manager

SACOC

AQ50082

Test America
ANALYTICAL TESTING CORPORATION

CHAIN OF CUSTODY

☐ 885 Jarvis Drive • **Morgan Hill, CA 95037** • (408) 776-9600 • FAX (408) 782-6308
☐ 819 Striker Ave., Suite 8 • **Sacramento, CA 95834** • (916) 921-9600 • FAX (916) 921-0100

Company Name: OASIS Environmental		Project: 465-005 Crowley Hangar	
Mailing Address: 825 W 8th		Billing Address (if different):	
City: Anchorage	State: AK	Zip Code: 99501	
Telephone: 258-4880	Fax #:	P.O. #: 465-005	
Report To: Dan Frank	E-Mail Address: d.frank@oasisenviro.com	QC Data: ☒ Level II (standard) ☐ Level III ☐ Level IV	
Sampler: D. Frank	Date/Time Results Required:	Test America Work Order #	

Turnaround Time: ☒ 10-15 Working Days (Standard TAT) ☐ 7 Working Days ☐ 5 Working Days ☐ 72 hours ☐ 48 hours ☐ 24 hours ☐ 2-8 hours

MANDATORY: ☐ SDWA (Drinking Water) ☐ CWA (Waste Water) ☐ RCRA (Hazardous Waste) ☐ Other

ANALYSES REQUESTED (Please provide method)

Client Sample I.D.	Date / Time Sampled	Matrix Desc.	# of Cont.	Container Type	Test America's Sample #	GRO AK101	BTEX 8021B	DRO AK102	RRO AK103	Comments/Temp. (if required)
1. 07-CLM-T1-01	10/12/07 1040 DF		2	4oz x2	-01	X	X	X	X	
2. 07-CLM-T1-02	1044		2		-02	X	X	X	X	
3. 07-CLM-T1-03	1050		2		-03	X	X	X	X	
4. 07-CLM-T1-04	1120		2		-04	X	X	X	X	
5. 07-CLM-T2-02	1325		2		-05	X	X	X	X	
6. 07-CLM-T3-02	1352		2		-06	X	X	X	X	
7. 07-CLM-T4-01	1443		2		-07	X	X	X	X	
8. 07-CLM-T5-02	1527		2		-08	X	X	X	X	
9.										
10.										

10/12/07

10/12/07

Relinquished by/Co.: 10/15/07 0825	Received by/Co.:	Date/Time/Temp: 10/15/07 0825 3.6°
Relinquished by/Co.:	Received by/Co.:	Date/Time/Temp:
Relinquished by/Co.:	Received by/Co.:	Date/Time/Temp:

Were Samples Received in Good Condition? ☐ Yes ☐ No Samples on Ice? ☐ Yes ☐ No Method of Shipment: _____ Page ___ of ___

Note: By relinquishing samples to Test America, client agrees to pay for the services requested on this chain of custody form and any additional analyses performed on this project. Payment for services is due within 30 days from the date of the invoice. Sample(s) will be disposed of after 30 days.

White: Test America **Yellow:** Test America **Pink:** Client

Test America Cooler Receipt Form

WORK ORDER # AQJ0082 CLIENT: Oasis PROJECT: 465-005 Crowley Hangar

Date /Time Cooler Arrived 10/15/07 08:25 Cooler signed for by: David Summerville (Print name)

Preliminary Examination Phase:

Date cooler opened: ☒ same as date received or ___/___/___

Cooler opened by (print) Johanna Dreher (sign) Johanna Dreher

1. Delivered by ☐ ALASKA AIRLINES ☐ Fed-Ex ☐ UPS ☐ NAC ☐ LYNDEN ☒ CLIENT ☐ Other

Shipment Tracking # if applicable — (include copy of shipping papers in file)

2. Number of Custody Seals 0 Signed by — Date ___/___/___

Were custody seals unbroken and intact on arrival? N/A ☐ Yes ☐ No

3. Were custody papers sealed in a plastic bag? ☐ Yes ☒ No

4. Were custody papers filled out properly (ink, signed, etc.)? ☒ Yes ☐ No

5. Did you sign the custody papers in the appropriate place? ☒ Yes ☐ No

6. Was ice used? ☒ Yes ☐ No Type of ice: ☐ blue ice ☒ gel ice ☐ real ice ☐ dry ice Condition of Ice: Soft

Temperature by Digi-Thermo Probe 3.6 °C Thermometer # Rec#3

Acceptance Criteria: 0 - 6°C

7. Packing in Cooler: ☒ bubble wrap ☐ styrofoam ☒ cardboard ☒ Other: paper

8. Did samples arrive in plastic bags? ☐ Yes ☒ No

9. Did all bottles arrive unbroken, and with labels in good condition? ☒ Yes ☐ No

10. Are all bottle labels complete (ID, date, time, etc.) ☒ Yes ☐ No

11. Do bottle labels and Chain of Custody agree? ☒ Yes ☐ No

12. Are the containers and preservatives correct for the tests indicated? ☒ Yes ☐ No

13. Is there adequate volume for the tests requested? ☒ Yes ☐ No

14. Were VOA vials free of bubbles? ☒ N/A ☐ Yes ☐ No

If "No" which containers contained "head space" or bubbles? ___

Log-in Phase:

Date of sample log-in 10/15/07

Samples logged in by (print) Johanna Dreher (sign) Johanna Dreher

1. Was project identifiable from custody papers? ☒ Yes ☐ No

2. Do Turn Around Times and Due Dates agree? ☒ Yes ☐ No

3. Was the Project Manager notified of status? ☒ Yes ☐ No

4. Was the Lab notified of status? ☒ Yes ☐ No

5. Was the COC scanned and copied? ☒ Yes ☐ No