ROCKWELL ENGINEERING & CONSTRUCTION SERVICES, Inc.

1825 Woodbine Road
Fairbanks, Alaska 99709
(907) 457-7625

CORRECTIVE ACTION REPORT

239 INA STREET
FAIRBANKS, ALASKA 99701
BLOCK 4 LOT 14 CHARLES SLATER

FACILITY No. 0-000425
ADEC FILE No. 100.26.141

Prepared For:

First Strike Environmental CO
204 Quarry Road
Roseburg, OR 97470-9453
Attn: James Roles

Prepared By:

ROCKWELL ENGINEERING & CONSTRUCTION SERVICES, Inc.

Mark Wilkinson
Geologist

Mark L. Rockwell, PE
Principal Investigator

November 10, 2000

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1.0 INTRODUCTION

This Corrective Action Report (CAR) describes the Year 2000 cleanup actions at 239 Ina Street in Fairbanks, Alaska. The corrective action was to remove diesel contaminated soil from a spill around a former underground storage tank (UST) closed in August, 2000, and to delineate any groundwater contamination.

The corrective action consisted of completing the following tasks:

1. Contaminated soil excavation in the former UST area. Contaminated soil was placed into a temporary stockpile just north of the excavation area on 10-mil liner. Laboratory samples were collected at final excavation limits. The excavation pit was backfilled and compactedwith compacted clean fill. The sidewalk, porch, and lawn were replaced to bring the property to pre spill conditions.

2. Permanent closure of the existing 500 gallon heating oil tank. The fuel tank was monitored, inerted, and removed. A site assessment was also performed. Two soil samples were collected beneath the tank.

3. Contaminated soil treatment and disposal. A total of 108 cubic yards (cy) of contaminated soil and four drums containing contaminated soil were hauled to Organic Incineration Technologies, Inc. (OIT) in Moose Creek, Alaska and thermally treated. The previous UST was disposed at K&K Recycling in Fairbanks.

4. Monitoring well installation. One monitoring well was installed in the vicinity of the spill to monitor groundwater contamination.

5. Initial groundwater monitoring. A groundwater sample was collected from the well after developing and purging.

The results of the corrective action are outlined below:

1. Fourteen primary soil samples were collected at excavation limits. Lab sample #s S4 and S9 were above the Alaska Department of Environmental Conservation (ADEC) cleanup level A for diesel range organics (DRO) and/or BTEX. DRO for lab sample S4 was 780 mg/Kg. Lab sample S9 had 6370 mg/Kg DRO, 238 mg/Kg Ethylbenzene, and 187 mg/Kg total Xylenes. Lab sample # S8 has levels of BTEX (13.0 mg/Kg Ethylbenzene and 69.7 mg/Kg total Xylenes) above ADEC cleanup level. Lab sample S4 came from under the large spruce tree at the southern property extent. Lab samples S8 and S9 came from under the house footer along the eastern side of the house.

2. The previous UST showed no signs of leakage during permanent closure by removal. The UST's contents consisted of approximately 200 gallons of fuel. Two laboratory samples were collected approximately 6 inches below the tank impression. Both samples were above ADEC cleanup levels for DRO and BTEX. Material under the tank was removed with the other contamination.

3. All contaminated soil removed from the excavation was permanently treated and disposed at OIT. Four associated drums containing contaminated soil were also permanently treated and disposed at OIT. The previous UST was cleaned, ends cut out, transported, and disposed at K&K Recycling of Fairbanks.

4. The permanent monitoring well installed in the spill vicinity was sampled. DRO results for MW1 is 1.84 mg/L and is above ADEC cleanup level of 1.5 mg/L.

1.1 Purpose

The purpose of this CAR is to respond to Alaska Department of Environmental Conservation (ADEC) requirements for corrective action for a petroleum spill. Spill corrective action requirements are provided by ADEC in 18 AAC 75 Oil and Other Hazardous Substances Pollution Control, as amended through October 28, 2000.

1.2 Project Organization

First Strike Environmental Company of 204 Quarry Road Roseburg, Oregon 97470-9453 contracted Mr. Mac Coulter of Industrial and Commercial Construction to perform cleanup actions.

Industrial and Commercial Construction contracted Rockwell Engineering & Construction Services, Inc. (Rockwell E&C) to provide excavation equipment and personnel for contaminated soil removal and disposal in accordance with ADEC 18 AAC 75.

Rockwell E&C contracted the following:

CT&E Environmental Services Inc. Laboratory Division (CT&E) of 3180 Peger Road Fairbanks, Alaska 99709-5471 performed the analyses on the soil and groundwater samples. CT&E is approved by ADEC to provide testing of soil and water for petroleum related contaminants.

Royal Contractor's Inc. of 3850 Royal Road, Fairbanks Alaska 99701 provided hauling of contaminated soil to OIT, Inc. and backfill material delivery.

OIT, Inc. provided soil treatment and disposal. OIT is located one mile north of Eielson Air Force Base in Moose Creek, Alaska. The address for OIT is P.O. Box 55878. North Pole, Alaska. Their telephone number is (907) 488-4899.

1.3 Scope of Work

Field efforts consisted of visual inspection and field screening for diesel contaminated soils, segregation of contaminated soil into a stockpile, and collection of soil samples for laboratory analysis. All field sampling procedures are in accordance with ADEC's UST Procedures Manual.

Rockwell E&C performed the following activities:

A. Site investigation;
B. Field screening excavation pit;
C. Collection of soil samples from excavation pit;
D. Field measurements and photos;
E. Coordination with testing laboratory;
F. Contaminated soil removal and final disposal;
G. Backfill and compact;
H. Developing, purging, and sampling monitoring well;
I. Other miscellaneous work items requested by First Strike Environmental; and
J. Preparation of corrective action report.

2.0 SITE DESCRIPTION

2.1 Location

The property location is 239 Ina Street, which intercepts Betty and Clara off Minnie Street. The residence consists of a two story single-family structure. The dig location is at the southeast corner of the residence. The former UST and spill location is seven feet east of the residence in the proximity of the side door. There is a single family home located to the east of the spill.

2.2 Site History

The report on investigation activities described below is on file at ADEC.

Rockwell E&C performed an environmental site assessment during the initial spill response actions at the property in December, 1999. The spill occurred when filling a 500 gallon UST containing heating oil. The estimated volume of spilled fuel is 430 to 580 gallons.

On December 9 and 10, 1999, Rockwell E&C conducted an initial inspection of the spill site. Industrial and Commercial Construction (ICC) response workers removed snow and turf from the affected area and placed it into 22 drums. Rockwell E&C

assisted ICC in determining the approximate extent of soil contamination using a photo ionization detector. The spill appeared to move towards the house laterally along the foundation. Rockwell E&C inspected under the house with a representative from the Alaska Department of Environmental Conservation. There were no indications of soil contamination or accumulation of vapors in the crawlspace. ICC workers placed a 10-mil reinforced liner on the ground surface to minimize snow and spring melt-water saturation of the contaminated soil.

On December 10, 1999, Rockwell E&C collected five primary soil samples and one duplicate soil sample for laboratory analysis. Lab samples S1 and duplicate S2 revealed up to 54,300 ppm DRO and 12.2 ppm benzene at a depth of two feet in the contaminated area. Lab sample S3 came from a depth of three feet. Lab samples S4 to S6 were surface samples. Lab samples S3, S4, S5, and S6 ranged from 14,300 to 38,900 ppm DRO and 1.72 to 8.74 ppm benzene.

On December 15, 1999, Rockwell E&C inspected nine drums of liquids and thirteen drums of solid waste at the ICC shop. Only three drums had visible fuel layers up to ¼ inch thick indicating little fuel recovered from the snow and turf. One liquid lab sample and one duplicate were collected from the drum with the thickest layer. The lab result was flash point greater than 200°F and 0.0527 ppm benzene.

2.3 Topography, Geology and Hydrogeology

The topography consists of nearly level residential development. The buildings are mostly single-family structures with a few small apartment buildings. The site consists of the house with a gravel covered parking area to the north. To the south, east, and west are single-family residential structures. Directly north of the property is Ina Street which is paved. The subdivision lies between the Chena River to the south and Noyes Slough to the north.

According to the Geologic Map of the Fairbanks Mining District (compiled by R.J. Newberry and T.K. Bundtzen 1996), Fairbanks lies upon polydeformed and polymetamorphosed Upper Paleozoic and older metasedimentary, metavolcanic, and

metaplutonic rocks. Overlying the bedrock are Quaternary deposits consisting of well-stratified layers and lenses of unconsolidated silt, sand, and gravel. Locally perennially frozen with low ice content. Fairbanks lies in the discontinuous zone for permafrost and was not encountered during work at this site.

Soil conditions at the site consist of topsoil to a depth of at least 4 inches below ground surface (bgs). Below the topsoil is sandy silt to a depth of at least 10 feet bgs.

Fairbanks receives their drinking water from three city-owned drinking water wells located approximately one mile southwest of the site, across the Chena River. The depths of the wells are unknown. There is no known private drinking water wells adjacent to the site. A well survey was not conducted as part of the site assessment.

3.0 CORRECTIVE ACTION

3.1 Field Screening and Excavation

Field screening was completed using a Photoionization Detector (PID) to measure hydrocarbon vapors present in petroleum contaminants on a real time basis for rapid qualitative analysis in the field. Soil was screened immediately after removal from the excavation using a small funnel to contain vapors. Readings from the PID were used to direct excavation of the contaminated soil.

3.1.1 Equipment and Instruments

All on-site personnel wore appropriate clothing and safety gear including, but not limited to, respirators, steel-toed boots and earplugs. The qualified environmental professional wore a safety vest and maintained eye contact with the heavy equipment operator.

Traffic cones were placed around the general work perimeter during excavation activities. Traffic cones were set along the road at the end of each day.

Rockwell E&C used a PhotoVac Model No. 2020, which is intrinsically safe. The PID was calibrated in 0 ppm free air and 97 ppm isobutylene, using a response factor of 1.0, each day before each use according the manufacturer's instructions. Latex or vinyl gloves were worn during all field screening activities. Clean hand tools were used to unearth sampling locations.

3.1.2 Headspace Sampling

Headspace samples were collected intermittently to confirm soil classification and at final excavation limits. The headspace procedure consisted of partially filling a clean ziplock bag with the soil sample to be screened. Headspace vapors were allowed to develop in the bag for at least 10 minutes, but no longer than one hour. Soil in the bag was warmed to at least 60°F. The bag was then agitated for approximately 15 seconds to assist volatilization. The measurement of headspace gases was achieved by carefully inserting the PID probe into the bag and recording the highest PID reading and soil temperature on a daily field screening report sheet (Appendix C).

The UST Procedures Manual recommends one representative headspace sample for at least every 100 square feet or excavation bottom, and one headspace sample for every 10 cy of stockpiled soil.

3.2 Contaminated Soil Excavation

Soil was separated and stockpiled according to the following classifications:

Clean.

Clean. No visible stains, no odors of fuels or volatiles, and no PID readings above 50 ppm.

Contaminated. Visible stains, smell of fuels or volatiles and/or PID readings greater than 50 ppm.

The contaminated soil was temporally stockpiled north of the excavation area on the driveway/parking area. A 10 mil liner was placed underneath the stockpile with the edges bermed. The stockpile was covered with plastic 10-mil liner at the end of each day. The liner was held in place using concrete pieces. The contaminated soil remained stockpiled at the location only long enough to accumulate the amount of material needed to fill a truck. PID readings were taken from under the stockpile after the stockpile and liner were removed.

3.3 Field Observations

Removal of contaminated material occurred from August 1 to August 9, 2000. Backfilling, restoration, and vapor recovery system installation occurred from August 10 to August 25, 2000. The former UST, 55 gallon drums, and miscellaneous debri were removed on August 23, 2000. Weather conditions were partly to mostly cloudy, with occasional light rain. The temperature was in the 40's through 70's Fahrenheit with winds from 0 to 10 miles per hour.

On August 1, excavation began along the back and east side and of the house. Headspace sample (HS) readings ranged from 0.0 to 798 ppm. The western extent of contamination was established along the back side of the house shown by HS #s 11-13. The contamination extent followed the property line along the southern end shown by HS #s 17-19. Contamination continued under a large spruce tree near the southeast corner of the house (HS # 22). The tree was left in place. Four primary lab samples and one trip blank were collected (S1 to S4).

On August 2, contamination removal occurred along the east side of the house up to the existing UST. PID readings ranged from 0.3 to 621 ppm with no extents found. Headspace numbers 23-37 represent the level of contaminated material removed. One truckload of contaminated material was sent to OIT, Inc.

On August 3, contamination removal continued along the east side of the house up to the sidewalk and extended east six feet from the house. PID readings ranged from 1301 to 1797 ppm with no extents found. Headspace numbers 38 and 39 represent

the level of contaminated material removed. Headspace sampling occurred under the house with readings ranging from 20.7 to 1537 ppm, highest along the east wall (HD #s 40-43). Two trucks of contaminated material were removed and sent to OIT, Inc. The former UST was emptied and removed.

On August 4, contamination removal continued along the eastern portion of the property. PID readings ranged from 7.7 to >2000 ppm with no extents found (HD #s 44-50). One truck of contaminated material was loaded and sent to OIT, Inc. Headspace samples were collected under the footer along the east side of the house (HS #s 62-90). Results showed the contamination continued under the house. Two lab samples were collected from under the UST, one primary and one duplicate.

On August 5, one truck of contaminated material was loaded and sent to OIT, Inc.

On August 7, contamination removal continued along the eastern portion of the property. PID readings ranged from 4.9 to 47.2 ppm with contamination extents found next to the neighbors house and along the bottom (HD #s 97-170). One truck of contaminated material was sent to OIT, Inc.

On August 8, contamination removal continued along the eastern portion of the property. PID readings ranged from 0.3 to 1709 ppm. Most of the contamination extents were found but minor amounts of contamination remained in different locations. Fourteen lab soil samples were collected. Headspace numbers 108-139 show the remaining levels of contamination, mostly taken in concurrence with the lab samples. Installation of a groundwater monitoring well (MW1) occurred along the eastern side of the house. One water sample was collected from the well Two trucks of contaminated material were loaded and sent to OIT, Inc.

On August 9, final contamination removal continued along the eastern portion of the property. PID readings ranged from 0.0 to 120 ppm (HD #s 140-150). Minor amounts of contamination remained under the eastern side of the structure. Two final lab samples were collected.

On August 10, backfilling occurred along the eastern side of the structure. Gravel was placed against the material under the footer and sloped away from the house at a 45° angle. A vent pipe was installed on top of the gravel and run to the back side of the house. Felt and plastic were placed on top of the gravel. One final truck of contaminated material was loaded and sent to OIT, Inc. The contaminated stockpile area was screened when final removal occurred to insure complete removal. PID readings ranged from 0-51 ppm. Five trucks of backfill were delivered to the site.

On August 11, backfilling continued and the new UST was buried. Compaction occurred in sequence with the backfilling.

On August 14, backfilling and compaction continued. One load of topsoil was delivered. The new UST was removed and reburied deeper.

On August 15, backfilling and compaction continued.

On August 16, the vent pipe under the crawlspace plastic was installed for the vapor extraction system. Excavation of the top of the tank occurred and the lines were connected. The new single section lines were run under the house and into the garage where the furnace is located. The topsoil was graded. The old tank and drums were removed from the location and other miscellaneous items were loaded onto a trailer.

On August 17, concrete forms were set, soil compacted, and the new sidewalk poured. Gravel was spread on the new driveway.

On August 18, the sidewalk work was finished, the new fuel lines under the house braced, and fence post set.

On August 19, the driveway was compacted, lawn seeded, and materials brought in for deck. General cleanup began.

On August 22, the deck was built and cleanup continued.

On August 23, the former UST was decommissioned and disposed at K&K Recycling. The drums from the property were disposed at OIT, Inc. and the miscellaneous debri placed at the landfill.

On August 25, the vapor recovery system was completed and initial readings taken. After this date, Rockwell Engineering and Construction continues screening of the residence, crawlspace, and vapor recovery system.

3.4 Contaminated Soil Treatment and Disposal

3.4.1 Transportation

A total of 108 cy of contaminated material was transported offsite using trucks. Loading was done to prevent excess spillage. Once the trucks reached OIT, Inc. the trucks were weighed and the soil then dumped in OIT's pretreatment storage area. OIT, Inc. measured a total of 140.31 tons of material.

Rockwell E&C separately hauled 4 drums to OIT. The drums contained contaminated soil associated with the spill.

3.4.2 Disposal

OIT, Inc permanently disposed of the contaminated soil via thermal remediation using a high temperature incinerator. A Certificate of Thermal Treatment was issued to Rockwell E&C after the soil was remediated (Appendix E).

3.5 Excavation Sampling

3.5.1 Soil Sampling Procedure

Rockwell E&C collected sixteen soil samples and one water sample for lab testing using the procedures outlined in the UST Procedures Manual. Two of the samples were duplicates. The number of primary soil samples and sampling locations are guided by the requirements of 18 AAC 78.090 Paragraph (d)(2)(B), which requires at least two samples from the first 250 sf of pit area, plus one additional sample for each 250 sf thereafter. The depth and location were from areas showing the highest level of contamination during field screening as described in the UST Procedures Manual.

All samples were grab samples. Soil samples were obtained from freshly uncovered soil. A minimum of six inches of soil was removed immediately before collection. Eighteen inches of soil was removed immediately before collection if the excavation was open for more than one hour.

To minimize volatilization, the lab jars were filled in order of decreasing analytical volatility. Soil samples were handled using disposable gloves. All jars were filled quickly and completely to eliminate excess headspace within the jar. For BTEX, 25 milliliters (ml) of methanol was added to each sample jar immediately upon sample collection.

Sample jars were properly labeled and placed into a pre-chilled cooler. The chilled temperature within the cooler was maintained at approximately 4°C using frozen gel packages during transportation to the CT&E laboratory. A signed Chain-of-Custody (COC) accompanied the samples to CT&E. The COC is attached to CT&E's Lab Report. The specific lab methods used by CT&E are listed in the lab results. CT&E tested all samples collected each day with instructions for a maximum 72 hour turnaround for S1-4, and 14-day turnaround for the remaining samples.

3.5.2 Lab Results for Soil and Groundwater Samples

The results of soil samples analyses and monitor well sampling are summarized in Table 3.1. CT&E's lab results are included within Appendix D.

Table 3.1 Soil Excavation Analytical Results Summary

(Results shown as mg/kg)

S1	S2	S3	S4	TB	Analysis	Description
4'7"	7'4"	2'1"	2"	8/1/00 Soil	Method	
16.7	<10.3	17.1	780	na	AK102/ DRO	Diesel Range Organics
<0.0294	<0.0545	<0.0467	<0.0956	<0.0125	8021B/ BTEX	Benzene,
<0.118	<0.218	<0.187	0.714	<0.0500		Toluene,
0.182	<0.218	<0.187	2.64	<0.0500		Ethylbenzene,
1.19	<0.416	<0.374	13.55	<0.0500		Total Xylenes

< = less than the Practical Quantitation Limit (PQL); na = not analyzed.

Table 3.1 Continued. Soil Excavation Analytical Results Summary

(Results shown as mg/kg)

S5	S6	S7	S8	S9	Analysis	Description
6'10"	DUP of S5	10'	5'5"	4'11"	Method	
10400	18600	<13.4	53.0	6370	AK102/ DRO	Diesel Range Organics
0.231	0.101	<0.0365	<0.0604	<0.257	8021B/ BTEX	Benzene,
10.3	5.95	<0.146	2.52	7.60		Toluene,
35.3	18.4	<0.146	13.0	28.8		Ethylbenzene,
154	139.7	<0.292	69.7	187		Total Xylenes

< = less than the Practical Quantitation Limit (PQL);

Table 3.1 Continued. Soil Excavation Analytical Results Summary

(Results shown as mg/kg)

S10	S11	S12	S13	S14	Analysis	Description
8'	7'4"	DUP of S11	3'8"	4'5"	Method	
<16.9	<13.9	<15.6	<19.0	<19.3	AK102/ DRO	Diesel Range Organics
<0.0121	<0.0139	<0.0131	<0.0158	<0.257	8021B/ BTEX	Benzene,
<0.0483	<0.0556	<0.0525	<0.0631	<0.0155		Toluene,
<0.0483	<0.0556	<0.0525	<0.0631	<0.0618		Ethylbenzene,
<0.0966	0.1538	<0.1050	<0.1262	<0.0618		Total Xylenes

< = less than the Practical Quantitation Limit (PQL);

Table 3.1 Continued. Soil Excavation and Monitoring Well Analytical Results Summary

(Results shown as mg/kg except MW1 and water TB for 8/9/00 which are mg/L)

S15	S16	TB	MW1	TB	Analysis	Description
10'	6'3"	8/9/00 Soil	na	8/9/00 Water	Method	
<15.7	<15.0	na	1.84	na	AK102/ DRO	Diesel Range Organics
<0.0145	<0.0128	<0.0127	0.00073	<0.0005	8021B/ BTEX	Benzene,
<0.0581	<0.0511	<0.0509	0.00894	<0.0020		Toluene,
<0.0581	<0.0511	<0.0509	0.0116	<0.0020		Ethylbenzene,
<0.1162	<0.1022	<0.1018	0.0481	<0.0040		Total Xylenes

< = less than the Practical Quantitation Limit (PQL); na = not analyzed.

4.0 QUALITY CONTROL AND QUALITY ASSURANCE

As required by the 18 AAC 78 and the UST Procedures Manual, field quality control sampling consisted of 10% field duplicates (one per set of 10 samples) for each analytical method and 5% trip blanks (one per set of 20 volatile samples). Samples for volatiles (BTEX) were collected as separate duplicates and others were splits of homogenized samples mixed in the hole. Field duplicates were labeled as separate sample locations in order to be blind from the laboratory.

The Relative Percent Difference (RPD) for DRO and BTEX calculation for duplicates is calculated below.

DRO or BTEX (Value 1 – Value 2)/[(Value 1 + Value 2) / 2] x 100 = %

Lab sample #s S5 and duplicate S6

DRO	(10400 - 18600)/[(10400+18600) / 2] x 100 = 56.6%
Total BTEX	(199.8 - 164.2)/[(199.8+164.2) / 2] x 100 = 19.6%

Analytical results for lab sample #S11 and duplicate #S12 were non detect for GRO, and total BTEX. The RPD was therefore not calculated.

Both duplicate soil sample #s S6 and S12 were collected during field activities. The RPD calculation for DRO is outside the acceptable 50% range. This is usually due to filling the sample bottles separately. The RPD calculation for total BTEX is within the acceptable 50% range.

Rockwell E&C checked the laboratory results for completeness, accuracy, and unexpected results. All holding times to extract and analyze were met. Quality control data was provided by CT&E, which reported that all acceptance criteria were met. The practical quantitation limits are within acceptable ranges. The analytical results generally agree with field observations and screening results. The lab data

report meets the requirements for data reporting, Section 8.4 UST Procedures Manual. Quality control review did not reveal any out of control situation that needed corrective action

Soil and Water Samples

CT&E reported that sample #s S4, S5, S6 S8, and S9 had GRO/BTEX that were biased high due to matrix interference but the results are not affected. Lab samples #s S4, S5, S6 S8, S9, and MW1 have DRO patterns consistent with weathered middle distillate. Lab samples #s S1 and S2 had DRO results with an unknown hydrocarbon with several peaks.

5.0 DISCUSSION OF RESULTS

Target Soil and Groundwater Cleanup Levels

Table 5.1 lists the target Soil Cleanup Levels using the requirements listed in 18 AAC 75.340; and, the Groundwater Cleanup Levels using requirements listed in 18 AAC 75.345, Table C.

Table 5.1 ADEC Soil and Groundwater Cleanup Levels

Chemical Name	Soil Cleanup Level[1] (mg/kg)	Groundwater Cleanup Level (mg/L)
Benzene	0.02	0.005
Toluene	5.4	1.0
Ethylbenzene	5.5	0.7
Xylenes (total)	78	10.0
DRO	100[2]	1.5

1 = cleanup level with respect to migration to groundwater unless otherwise noted
2 = cleanup level based on Cleanup Level A

Excavation

Laboratory results for lab sample #s S5 (and DUP S6) and S9 had DRO and BTEX above ADEC cleanup levels. Lab sample S5 had 10400 mg/Kg DRO, 10.3 mg/Kg Ethylbenzene, and 154 mg/Kg total Xylenes. Lab sample S9 had 6370 mg/Kg DRO, 238 mg/Kg Ethylbenzene, and 187 mg/Kg total Xylenes. Lab sample S5 came from under the tank. Material in the vicinity was classified contaminated and removed. Lab sample S9 came from under the house footer. A vapor recovery system was placed under the footer and house to extract the remaining contamination.

Lab sample # S4 haf DRO above ADEC cleanup level A. DRO for S4 is 780 mg/Kg. The sample came from under the large spruce tree at the southern property extent. The material was left in place to keep from damaging the tree.

Lab sample # S8 had BTEX above ADEC cleanup level. Lab sample S8 had 13.0 mg/Kg Ethylbenzene and 69.7 mg/Kg total Xylenes. The lab sample also came from under the house footer.

Monitoring Wells

Well MW1 installed in the source area had levels of DRO at 1.84mg/L, above ADEC cleanup level of 1.5 mg/L.

6.0 CONCLUSIONS

Excavation

Out of the 14 primary soil samples collected at final excavation limits, only sample #s S4 and S9 were above ADEC cleanup level A for DRO and/or BTEX. Sample #S8 was above the cleanup level for BTEX. Lab sample #S4 was collected from under a large spruce tree and lab sample #s S8 and S9 were collected from under the house footer along the eastern side of the foundation. The results show that petroleum contamination was not totally removed from under the house and beneath the spruce tree. The material under the spruce tree is at the southern extent of the contamination. A vapor recovery system is currently in place removing contamination

that extends under the footer.

Monitoring Wells

Permanent monitoring well MW1 had DRO results slightly above ADEC cleanup levels.

7.0 RECOMMENDATIONS

Rockwell E&C recommends the following:

1. No further excavation of contaminated soil. Based on soil samples collected at final excavation limits, the site does not appear to have large amounts of contaminated soil remaining.

2. ADEC accept this corrective action report as fulfillment of corrective action requirements as per 18 AAC 75.

3. ADEC accept this report as evidence of the permanent closure at this site of the 500-gallon UST as per 18 AAC 78.090.

4. Continued use of the vapor extraction system for one year to remove contamination left under the footer.

5. Continue monitoring the well, field screening in the crawl space and vapor extraction system, and air monitoring in the crawlspace and residence on a quarterly basis for the first year.

8.0 LIMITATIONS OF INVESTIGATION

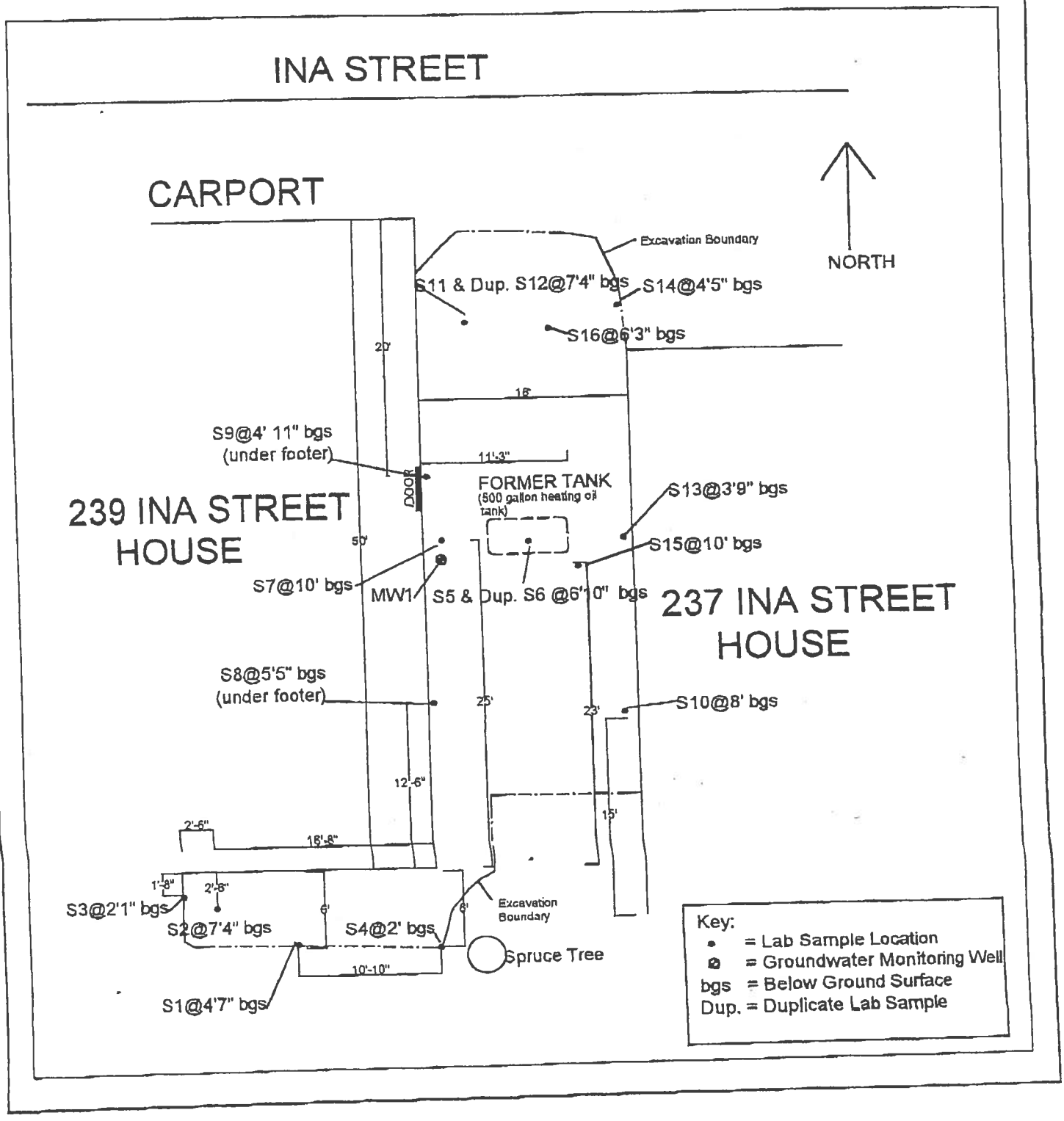
This report has been prepared for the sole use of the property owner and their designated representatives. This report is intended to document a clean up from an overspill as per 18 ACC 75 and also UST closure actions completed by the owner in response to ADEC UST regulations. The observations and recommendations

presented in this report are based on readily observable site conditions existing at the time the closure actions were conducted and a limited number of sampling locations. It should be recognized that even the most extensive and comprehensive scope of work may not detect all sources of environmental liability at a particular site. Therefore, Rockwell Engineering & Construction Services, Inc. makes no expressed or implied warranty with this report. We reserve the right to amend our recommendations if additional information becomes available.

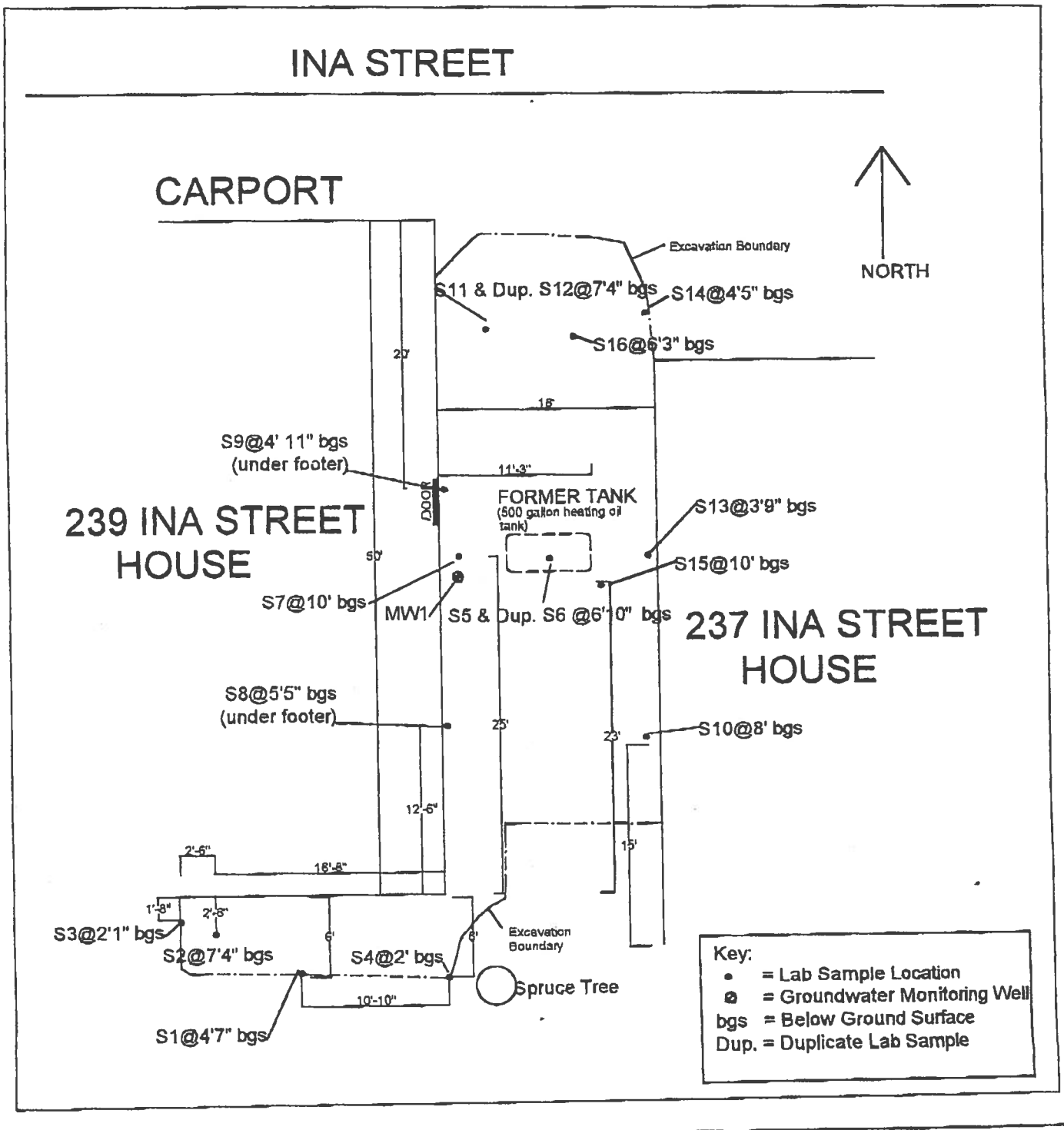
APPENDIX A

SITE MAPS

ROCKWELL E&C 1825 WOODBINE FAIRBANKS, ALASKA				LAB SAMPLE LOCATIONS 239 INA STREET FAIRBANKS, ALASKA Buried Heating Oil Tank Closure	Project No. ICC Date: 8/28/00 Reference N/A Sht. of 1 1
DESIGN BY: hbg	DRAWN BY: hbg	SCALE: as shown	EFN: Ina Street Sample Locations.dwg		



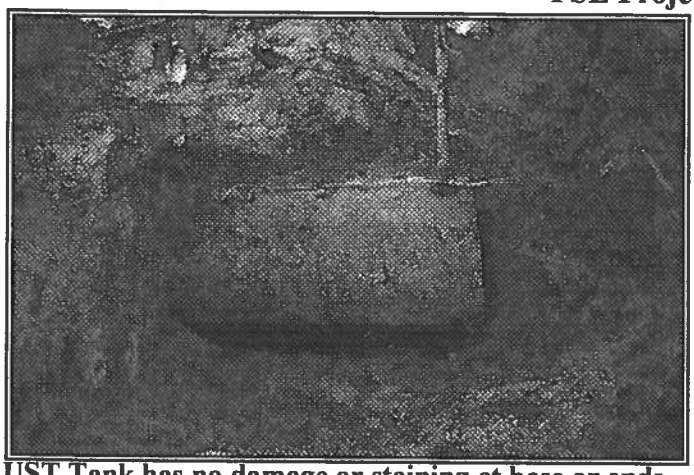
ROCKWELL E&C 1825 WOODBINE FAIRBANKS, ALASKA				LAB SAMPLE LOCATIONS 239 INA STREET FAIRBANKS, ALASKA	Project No. ICC Date: 8/28/00 Reference N/A
DESIGN BY: hbg	DRAWN BY: hbg	SCALE: as shown	EFN: Ina Street Sample Locations.dwg	Buried Heating Oil Tank Closure	Sht. of 1 1



APPENDIX B

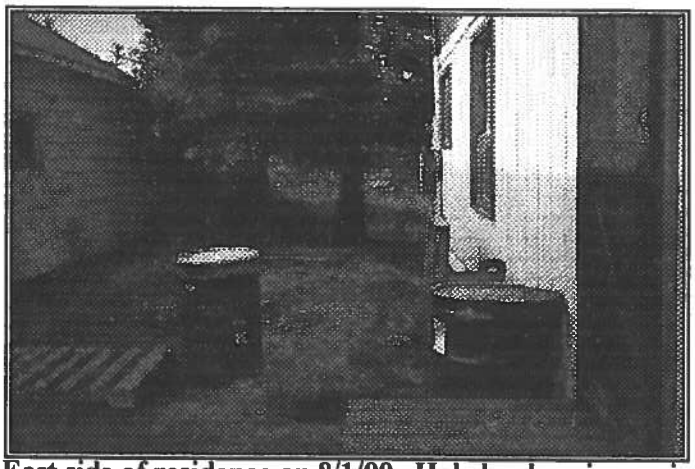
SITE PHOTOS

FIRST STRIKE ENVIRONMENTAL
Emergency Response & Cleanup Project
for
National Claims Management
Heating Oil Spill/Release ~ 239 Ina Street, Fairbanks, Alaska
FSE Project #: 99-12-10

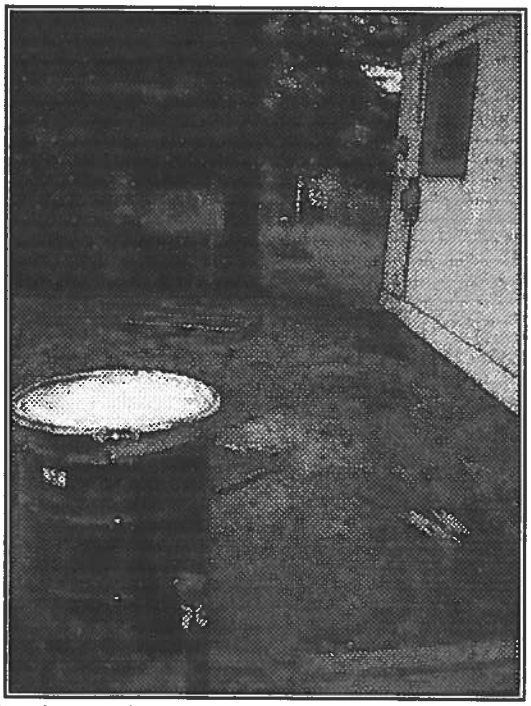


UST Tank has no damage or staining at base or ends Of UST during excavation on 8/3/00.

Top of UST after excavation on 8/3/00.



East side of residence on 8/1/00. Hole by door is repaired, fuel line area. Plastice is removed and area ready to begin excavation of PCS, dark stain next to foundation shows contaminated area.



Continual view of the east side of residence, dark stained soil shows contamination of soil.

FIRST STRIKE ENVIRONMENTAL
Emergency Response & Cleanup Project
for
National Claims Management
Heating Oil Spill/Release ~ 239 Ina Street, Fairbanks, Alaska
FSE Project #: 99-12-10

Fuel lines that were broken & repaired on 12/10/00, by I.C.C. Photo date 8/1/00 shows no significant staining from any leaks in the pit, showing fuel line repair.

Vent Pipe for UST, 8/2/00.
Fuel Lines going through foundation wall.

Lines & vent pipe, 8/3/00.

Another view of fuel lines & vent pipe.
Excavating contaminated soil from area on 8/3/00.

Photo 3: Looking north on August 3, 2000 at excavation in the vicinity of the former underground storage tank.

Photo 4: Installation on August 10, 2000 of the plastic and liner overlying the intake pipe for the vapor recovery system

Photo 1: Appearance of site looking south on July 31,2000 before excavation and removal of contaminated material. Drums in the background contain soil from previous investigation.

Photo 2: Initial view looking west along back of house on July 31, 2000 showing plastic in place.

Photo 7: View of back of the house on August 22, 2000 after installation of intake vent and backfilling.

Photo 8: Appearance of site on August 22, 2000 after completion of landscaping and seeding. To the side of the house is the new sidewalk and porch.

Photo 5: View of backfilling on August 11, 2000. Pipe near the side door of the house is monitoring well #1.

Photo 6: Close up view of installation of the new underground storage tank and fuel lines.

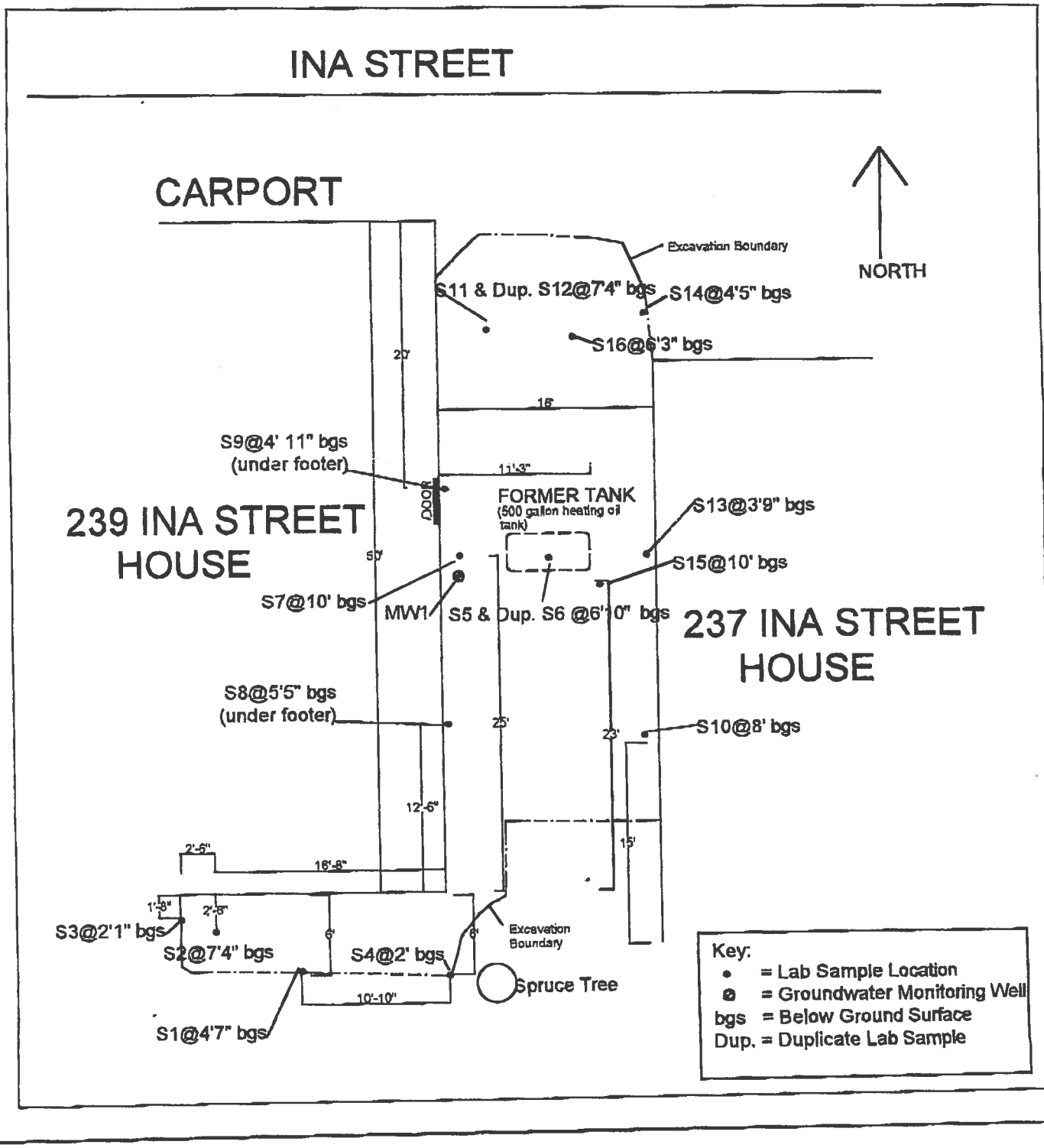
APPENDIX C

DAILY QC ENVIRONMENTAL REPORTS

APPENDIX D

ANALYTICAL RESULTS

ROCKWELL E&C 1825 WOODBINE FAIRBANKS, ALASKA				LAB SAMPLE LOCATIONS 239 INA STREET FAIRBANKS, ALASKA	Project No. ICC Date: 8/28/00 Reference N/A
DESIGN BY: hbg	DRAWN BY: hbg	SCALE: as shown	EFN: Ina Street Sample Locations.dwg	Buried Heating Oil Tank Closure	Sht. of 1 1



Case Narrative

Customer: ROCKWEL **Rockwell Engineering & Construction**
Project: 1003449 **239 INA Street**

1003449002 PS
DRO - Unknown hydrocarbon with several peaks.

1003449004 PS
DRO - Unknown hydrocarbon with several peaks.

1003449005 PS
DRO - Pattern consistent with weathered middle distillate.
GRO/BTEX - Surrogate recovery is biased high due to matrix interference. Results not affected.

319900 LCS
DRO LCS/LCSD - Surrogate is biased high due to interference by method required petroleum spike.

320731 LCS
DRO LCS/LCSD - Surrogate is biased high due to interference by method required petroleum spike.

319901 LCSD
DRO LCS/LCSD - Surrogate is biased high due to interference by method required petroleum spike.

320732 LCSD
DRO LCS/LCSD - Surrogate is biased high due to interference by method required petroleum spike.

CHAIN OF CUSTODY RECORD

1003449

CT&E Environmental Services Inc.
Laboratory Division

(1)
CLIENT: Rockwell E & C
CONTACT: MARK ROCKWELL PHONE NO: (907) 457 7625
PROJECT: 239 INA STREET SITE: SAME
REPORTS TO:
FAX NO: (907) 457-7620
INVOICE TO:
P.O. NUMBER:

CT&E Reference:

PAGE ____ OF ____

(2)

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	No. CONTAINERS	SAMPLE TYPE C=COMP G=GRAB	Preservatives Used	Analysis Required (3) BTEX	DRO	REMARKS
(1)	T.B.	8/01/00			1			X BTEX ONLY!		
(2)	S1	8/01/00	15:30	SOIL	2	G		X	X	RUSH
(3)	S2	8/01/00	15:50	SOIL	2	G		X	X	1
(4)	S3	8/01/00	16:00	SOIL	2	G		X	X	
(5)	S4	8/01/00	16:15	SOIL	2	G		X	X	

RUSH

(5)

	Date	Time	
Collected/Relinquished By: (1)	08/01/00	16 50	Received By:
Relinquished By: (2)	8/1/00	16:55	Received By:
Relinquished By: (3)			Received By:
Relinquished By: (4)	8/2/00	0850	Received For Laboratory By:

(4)

Shipping Carrier: HAND
Shipping Ticket No:

Samples Received Cold? (Circle) YES NO
Temperature °C: 8.6°C

Data Deliverables Required
(Level I) Level II Level III

Chain of Custody Seal: (Circle) N/A
INTACT BROKEN ABSENT

Requested Turnaround Time and Special Instructions:
SAMPLE #3 & #5 ARE THE PRIORITIES
DUE 8-3-00 RUSH

200 W. Potter Drive Anchorage, AK 99518 Tel: (907) 562-2343 Fax: (907) 561-5301
3180 Peger Road Fairbanks, AK 99701 Tel: (907) 474-8656 Fax: (907) 474-9685

White - Retained by Lab (Project File) Yellow - Returned with Report Pink - Retained by Sampler

CT&E Environmental Services Inc.

SAMPLE RECEIPT FORM

1003449

Yes	No	
✓		Are samples **RUSH**, priority, or *within 72 hrs* of **hold time**?
✓		If yes, have you done *e-mail notification*?
	✓	Are samples *within 24 hrs* of **hold time** or **due date**?
✓		If yes, have you *spoken with* Supervisor?
	✓	Are there any **problems** (e.g., ids, analyses)?
✓		Were samples preserved correctly and pH verified?
✓		Has Project Manager been notified of problems?
✓		Is this an ACOE/AFCEE/(ADEC) project?
✓		Will a **data package** be required? LEVEL I
	✓	If this is for PWS, provide **PWSID**.
✓		Is there a **quote** for this project? 4795
	✓	Will **courier** charges apply?

Completed by (sign): [signature] (print): STEPHANIE FOGGIA

*** The following *must* be completed for *all* ACOE & AFCEE projects: ***

Yes	No		Notes:
		Is cooler temperature 4 ± C?	
		thermometer used:	
		Was there an airbill, etc? note #:	
		Was cooler sealed with custody seals?	
		#/where?	
		Were seals intact upon arrival?	
		Was there a COC with cooler?	
		Was the COC filled out properly?	
		Did the COC indicate ACOE/AFCEE project?	
		Did the COC and samples correspond?	
		Were samples screened with Geiger counter?	
		Were all samples packed to prevent breakage?	
		packing material:	
		Were all samples unbroken and clearly labelled?	
		Were all samples sealed in separate plastic bags?	
		Were all bottles for volatiles free of headspace?	
		Were correct container/sample sizes submitted?	
		Was client notified of problems? (specify below)	

Individual contacted:

Date & Time: Phone/Fax #:

CT&E WO#:

Due Date: 8/3/00
Received Date/Time: 8/1/00 4:51p
Cooler Temperature: 8.6°C
Sample Condition: Good / Poor
Matrix of each Sample:
2 " " #001-005
" "
" "
" "
2 Trip Blank #001
MS/MSD

Additional Sample Remarks:
AK101s/____ 8260s field pres'd?
Field-filtered for dissolved____?
Lab-filter for dissolved____?
Ref Lab required?

Notes: SAMPLES #001-005 ARE RUSH WITH #008 + #009 BEING TOP PRIORITY.
RUSH
5.0°C [illegible] custody seals intact

# of each Container Received:

#	Container	Preservative
[redacted]	950 ml amber	unpres'd
[redacted]	ml amber	w/ HCl
[redacted]	ml amber	w/ H2SO4
[redacted]	cubies	unpres'd
	1L cubies	w/ HNO3
	1L cubies	w/ H2SO4
	1L cubies	w/ NaOH + ZnAc
	120 ml coli	bottles
	60 ml	Nalg
4	8 oz amber	unpres'd
	4 oz amber	unpres'd
5	4 oz w/ septa	w/ MeOH
	40 ml vials	w/ HCl
	Other (specify)	
	Other (specify)	

#/Log In Proofed by:

Form Number F004r2

CT&E Environmental Services Inc.

CT&E Ref.#	1003449001	**Client PO#**	
Client Name	Rockwell Engineering & Construction	**Printed Date/Time**	08/08/2000 14:14
Project Name/#	239 INA Street	**Collected Date/Time**	08/01/2000 0:00
Client Sample ID	T.B.	**Received Date/Time**	08/01/2000 16:51
Matrix	Soil/Solid	**Technical Director**	**Stephen C. Ede**
Ordered By		**Released By**	Shawn Preston

Sample Remarks:

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Solids								
Total Solids	100		%	SM20 2540G			08/02/00	AKL
Volatile Fuels Department								
Benzene	0.0125 U	0.0125	mg/Kg	BTX SW846-8021B		08/01/00	08/02/00	MAH
Toluene	0.0500 U	0.0500	mg/Kg	BTX SW846-8021B		08/01/00	08/02/00	MAH
Ethylbenzene	0.0500 U	0.0500	mg/Kg	BTX SW846-8021B		08/01/00	08/02/00	MAH
P & M -Xylene	0.0500 U	0.0500	mg/Kg	BTX SW846-8021B		08/01/00	08/02/00	MAH
o-Xylene	0.0500 U	0.0500	mg/Kg	BTX SW846-8021B		08/01/00	08/02/00	MAH
Surrogates								
1,4-Difluorobenzene <Surr>	85.7		%	BTX SW846-8021B	60-120	08/01/00	08/02/00	MAH
4-Bromofluorobenzene <Surr>	84.6		%	BTX SW846-8021B	50-150	08/01/00	08/02/00	MAH

CT&E Environmental Services Inc.

CT&E Ref.#	1003449002	**Client PO#**	
Client Name	Rockwell Engineering & Construction	**Printed Date/Time**	08/08/2000 14:14
Project Name/#	239 INA Street	**Collected Date/Time**	08/01/2000 15:30
Client Sample ID	S1	**Received Date/Time**	08/01/2000 16:51
Matrix	Soil/Solid	**Technical Director**	Stephen C. Ede
Ordered By		**Released By**	

Sample Remarks:

DRO/RRO - Unknown hydrocarbon with several peaks.

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Solids								
Total Solids	95.7		%	SM20 2540G			08/02/00	AKL
Volatile Fuels Department								
Benzene	0.0294 U	0.0294	mg/Kg	BTX SW846-8021B		08/01/00	08/02/00	MAH
Toluene	0.118 U	0.118	mg/Kg	BTX SW846-8021B		08/01/00	08/02/00	MAH
Ethylbenzene	0.182	0.118	mg/Kg	BTX SW846-8021B		08/01/00	08/02/00	MAH
P & M -Xylene	0.729	0.118	mg/Kg	BTX SW846-8021B		08/01/00	08/02/00	MAH
o-Xylene	0.461	0.118	mg/Kg	BTX SW846-8021B		08/01/00	08/02/00	MAH
Surrogates								
1,4-Difluorobenzene <Surr>	91		%	BTX SW846-8021B	60-120	08/01/00	08/02/00	MAH
4-Bromofluorobenzene <Surr>	115		%	BTX SW846-8021B	50-150	08/01/00	08/02/00	MAH
Semivolatile Organic Fuels Department								
Diesel Range Organics	16.7	15.4	mg/Kg	AK102 DRO		08/02/00	08/03/00	MCM
Surrogates								
5a Androstane <surr>	69.9		%	AK102 DRO	60-120	08/02/00	08/03/00	MCM

CT&E Environmental Services Inc.

CT&E Ref.#	1003449003	**Client PO#**	
Client Name	Rockwell Engineering & Construction	**Printed Date/Time**	08/08/2000 14:14
Project Name/#	239 INA Street	**Collected Date/Time**	08/01/2000 15:50
Client Sample ID	S2	**Received Date/Time**	08/01/2000 16:51
Matrix	Soil/Solid	**Technical Director**	**Stephen C. Ede**
Ordered By			

Released By Shawn Paxton

Sample Remarks:

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Solids								
Total Solids	97.0		%	SM20 2540G			08/02/00	AKL
Volatile Fuels Department								
Benzene	0.0545 U	0.0545	mg/Kg	BTX SW846-8021B		08/01/00	08/02/00	MAH
Toluene	0.218 U	0.218	mg/Kg	BTX SW846-8021B		08/01/00	08/02/00	MAH
Ethylbenzene	0.218 U	0.218	mg/Kg	BTX SW846-8021B		08/01/00	08/02/00	MAH
P & M -Xylene	0.218 U	0.218	mg/Kg	BTX SW846-8021B		08/01/00	08/02/00	MAH
o-Xylene	0.218 U	0.218	mg/Kg	BTX SW846-8021B		08/01/00	08/02/00	MAH
Surrogates								
1,4-Difluorobenzene <Surr>	86.9		%	BTX SW846-8021B	60-120	08/01/00	08/02/00	MAH
4-Bromofluorobenzene <Surr>	82.9		%	BTX SW846-8021B	50-150	08/01/00	08/02/00	MAH
Semivolatile Organic Fuels Department								
Diesel Range Organics	10.3 U	10.3	mg/Kg	AK102 DRO		08/02/00	08/03/00	MCM
Surrogates								
5a Androstane <surr>	78.9		%	AK102 DRO	60-120	08/02/00	08/03/00	MCM

CT&E Environmental Services Inc.

CT&E Ref.#	1003449004	Client PO#	
Client Name	Rockwell Engineering & Construction	Printed Date/Time	08/08/2000 14:14
Project Name/#	239 INA Street	Collected Date/Time	08/01/2000 16:00
Client Sample ID	S3	Received Date/Time	08/01/2000 16:51
Matrix	Soil/Solid	Technical Director	Stephen C. Ede
Ordered By		Released By	Shawn Parton

Sample Remarks:

DRO/RRO - Unknown hydrocarbon with several peaks.

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Solids								
Total Solids	89.5		%	SM20 2540G			08/02/00	AKL
Volatile Fuels Department								
Benzene	0.0467 U	0.0467	mg/Kg	BTX SW846-8021B		08/01/00	08/02/00	MAH
Toluene	0.187 U	0.187	mg/Kg	BTX SW846-8021B		08/01/00	08/02/00	MAH
Ethylbenzene	0.187 U	0.187	mg/Kg	BTX SW846-8021B		08/01/00	08/02/00	MAH
P & M -Xylene	0.187 U	0.187	mg/Kg	BTX SW846-8021B		08/01/00	08/02/00	MAH
o-Xylene	0.187 U	0.187	mg/Kg	BTX SW846-8021B		08/01/00	08/02/00	MAH
Surrogates								
1,4-Difluorobenzene <Surr>	86.5		%	BTX SW846-8021B	60-120	08/01/00	08/02/00	MAH
4-Bromofluorobenzene <Surr>	87.3		%	BTX SW846-8021B	50-150	08/01/00	08/02/00	MAH
Semivolatile Organic Fuels Department								
Diesel Range Organics	17.1	16.5	mg/Kg	AK102 DRO		08/02/00	08/03/00	MCM
Surrogates								
5a Androstane <surr>	74.5		%	AK102 DRO	60-120	08/02/00	08/03/00	MCM

CT&E Environmental Services Inc.

CT&E Ref.#	1003449005	Client PO#	
Client Name	Rockwell Engineering & Construction	Printed Date/Time	08/08/2000 14:14
Project Name/#	239 INA Street	Collected Date/Time	08/01/2000 16:15
Client Sample ID	S4	Received Date/Time	08/01/2000 16:51
Matrix	Soil/Solid	Technical Director	Stephen C. Ede
Ordered By		Released By	Shawn Paxton

Sample Remarks:

DRO - Pattern consistent with weathered middle distillate.
GRO/BTEX - Surrogate recovery is biased high due to matrix interference. Results not affected.

Parameter	Results		PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Solids									
Total Solids	78.3			%	SM20 2540G			08/02/00	AKL
Volatile Fuels Department									
Benzene	0.0956 U		0.0956	mg/Kg	BTX SW846-8021B		08/01/00	08/02/00	MAH
Toluene	0.714		0.382	mg/Kg	BTX SW846-8021B		08/01/00	08/02/00	MAH
Ethylbenzene	2.64		0.382	mg/Kg	BTX SW846-8021B		08/01/00	08/02/00	MAH
P & M -Xylene	11.3		0.382	mg/Kg	BTX SW846-8021B		08/01/00	08/02/00	MAH
o-Xylene	2.25		0.382	mg/Kg	BTX SW846-8021B		08/01/00	08/02/00	MAH
Surrogates									
1,4-Difluorobenzene <Surr>	92.6			%	BTX SW846-8021B	60-120	08/01/00	08/02/00	MAH
4-Bromofluorobenzene <Surr>	277	!		%	BTX SW846-8021B	50-150	08/01/00	08/02/00	MAH
Semivolatile Organic Fuels Department									
Diesel Range Organics	780		28.1	mg/Kg	AK102 DRO		08/03/00	08/04/00	MCM
Surrogates									
5a Androstane <surr>	80.9			%	AK102 DRO	60-120	08/03/00	08/04/00	MCM

REPORTS TO: MARK ROCKWELL ... INA ST. ... 457-7625

SITE: 239 INA ST

INVOICE TO:

FAX NO: (907) 457-7620

P.O. NUMBER:

PAGE 1 OF 1

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	No. CONTAINERS	SAMPLE TYPE C = COMP G = GRAB	Preservatives Used: HCL / Analysis Required: BTEX	Preservatives Used: HCL / Analysis Required: DRO	REMARKS
	MW1	8/8/00	14:15	WATER	4	G	X	X	
	T.B	8/8/00	—	WATER	2	—	X		

Collected/Relinquished By: (1)	Date 8/9/00	Time 11:50	Received By: [signature]
Relinquished By: (2) [signature]	Date 8/9/00	Time 16:45	Received By: [signature]
Relinquished By: (3) [signature]	Date	Time	Received By:
Relinquished By: (4)	Date 8/10	Time 1051	Received For Laboratory By: [signature]

Shipping Carrier:

Shipping Ticket No: HAND

Data Deliverables Required: (Level I circled) Level I Level II Level III

Samples Received Cold? (Circle) YES (circled) NO

Temperature °C: 2.4°C + 2.9°C

Chain of Custody Seal: (Circle) N/A

INTACT BROKEN ABSENT

Requested Turnaround Time and Special Instructions: STANDARD TAT

... W. Potter Drive Anchorage, AK 99518 Tel: (907) 562-2343 Fax: (907) 561-5301
... Peger Road Fairbanks, AK 99701 Tel: (907) 474-8656 Fax: (907) 474-9685

CT&E Environmental Services Inc.

SAMPLE RECEIPT FORM

CT&E WO#:

Yes	No	
	✓	Are samples **RUSH**, priority, or *within 72 hrs* of **hold time**?
		If yes, have you done *e-mail notification*?
	✓	Are samples *within 24 hrs* of **hold time** or **due date**?
		If yes, have you *spoken with* Supervisor?
✓ (scr. 8/9/00)	✓	Are there any **problems** (e.g., ids, analyses)?
✓		Were samples preserved correctly and pH verified?
		Has Project Manager been notified of problems?
✓		Is this an ACOE/AFCEE/ADEC project? (ADEC circled)
✓		Will a **data package** be required? LEVEL I
	✓	If this is for PWS, provide **PWSID**.
✓		Is there a **quote** for this project? 4795
	✓	Will **courier** charges apply?

Completed by (sign): [signature] (print): STEPHANIE FOGGLIA

*** The following *must* be completed for *all* ACOE & AFCEE projects: ***

Yes	No		Notes:
		Is cooler temperature 4 ± C?	
		thermometer used:	
		Was there an airbill, etc? note #:	
		Was cooler sealed with custody seals? #/where?	
		Were seals intact upon arrival?	
		Was there a COC with cooler?	
		Was the COC filled out properly?	
		Did the COC indicate ACOE/AFCEE project?	
		Did the COC and samples correspond?	
		Were samples screened with Geiger counter?	
		Were all samples packed to prevent breakage? packing material:	
		Were all samples unbroken and clearly labelled?	
		Were all samples sealed in separate plastic bags?	
		Were all bottles for volatiles free of headspace?	
		Were correct container/sample sizes submitted?	
		Was client notified of problems? (specify below)	

Individual contacted:

Date & Time: Phone/Fax #:

Due Date: 8/18/00
Received Date/Time: 8/9/00 11:50
Cooler Temperature: 2.4°C + 2.9°C
Sample Condition: Good (circled) / Poor
Matrix of each Sample:

1	" "	#001-002
	" "	
	" "	
	" "	
1	Trip Blank	#002
	MS/MSD	

Additional Sample Remarks:
#001-002 AK101s/_____ 8260s field pres'd?
_____ Field-filtered for dissolved_____?
_____ Lab-filter for dissolved_____?
_____ Ref Lab required?

Notes: 3.7 °C Anch
Custody seals intact

# of each Container Received:

#	Container	Preservation
	950 ml amber	unpres'd
2	950 ml amber	w/ HCl
	500 ml amber	w/ H2SO4
	1L cubies	unpres'd
	1L cubies	w/ HNO3
	1L cubies	w/ H2SO4
	1L cubies	w/ NaOH + ZnAc
	120 ml coli	bottles
	60 ml	Nalg
	8 oz amber	unpres'd
	4 oz amber	unpres'd
	4 oz w/ septa	w/ MeOH
4	40 ml vials	w/ HCl
	Other (specify)	
	Other (specify)	

#/Log In Proofed by:

Form Number: F004
Printed: 7/12/9

CT&E Environmental Services Inc.

T&E Ref.#	1003473001
lient Name	Rockwell Engineering & Construction
roject Name/#	239 Ina St.
lient Sample ID	MW1
latrix	Water (Surface, Eff., Ground)
rdered By	

Client PO#	
Printed Date/Time	08/22/2000 13:12
Collected Date/Time	08/08/2000 14:15
Received Date/Time	08/09/2000 11:50
Technical Director	Stephen C. Ede

Released By Shawn Paxton

mple Remarks:
DRO - Pattern consistent with weathered middle distillate.

rameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
olatile Fuels Department								
nzene	0.000739	0.000500	mg/L	BTX SW846-8021B		08/15/00	08/16/00	MAH
luene	0.00894	0.00200	mg/L	BTX SW846-8021B		08/15/00	08/16/00	MAH
hylbenzene	0.0116	0.00200	mg/L	BTX SW846-8021B		08/15/00	08/16/00	MAH
& M -Xylene	0.0244	0.00200	mg/L	BTX SW846-8021B		08/15/00	08/16/00	MAH
Xylene	0.0237	0.00200	mg/L	BTX SW846-8021B		08/15/00	08/16/00	MAH
rrogates								
4-Difluorobenzene <Surr>	88.6		%	BTX SW846-8021B	60-120	08/15/00	08/16/00	MAH
Bromofluorobenzene <Surr>	139		%	BTX SW846-8021B	50-150	08/15/00	08/16/00	MAH
emivolatile Organic Fuels Department								
esel Range Organics	1.84	0.297	mg/L	AK102 DRO		08/11/00	08/17/00	MCM
rrogates								
Androstane <surr>	114		%	AK102 DRO	60-120	08/11/00	08/17/00	MCM

CT&E Environmental Services Inc.

:T&E Ref.#	1003473002		
'lient Name	Rockwell Engineering & Construction	Client PO#	
'roject Name/#	239 Ina St.	Printed Date/Time	08/22/2000 13:12
lient Sample ID	T.B	Collected Date/Time	08/08/2000 0:00
latrix	Water (Surface, Eff., Ground)	Received Date/Time	08/09/2000 11:50
rdered By		Technical Director	Stephen C. Ede

Released By Shawn Poston

mple Remarks:

ameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
latile Fuels Department								
zene	0.000500 U	0.000500	mg/L	BTX SW846-8021B		08/15/00	08/16/00	MAH
ene	0.00200 U	0.00200	mg/L	BTX SW846-8021B		08/15/00	08/16/00	MAH
lbenzene	0.00200 U	0.00200	mg/L	BTX SW846-8021B		08/15/00	08/16/00	MAH
M -Xylene	0.00200 U	0.00200	mg/L	BTX SW846-8021B		08/15/00	08/16/00	MAH
lene								
ogates								
:fluorobenzene <Surr>	86.6		%	BTX SW846-8021B		08/15/00	08/16/00	MAH
nofluorobenzene <Surr>	103		%	BTX SW846-8021B		08/15/00	08/16/00	MAH

Case Narrative

Customer: ROCKWEL **Rockwell Engineering & Construction**

Project: 1003474 **239 Ina St**

1003474001 PS

BTEX - Surrogate recoveries are biased high due to matrix interference. Results not affected.
DRO - Pattern consistent with middle distillate.

1003474002 PS

BTEX - Surrogate recoveries are biased high due to matrix interference. Results not affected.
DRO - Pattern consistent with middle distillate.

1003474004 PS

BTEX - Surrogate recovery is biased high due to matrix interference. Results not affected.
DRO - Pattern consistent with weathered middle distillate

1003474005 PS

DRO - Pattern consistent with middle distillate.
BTEX - Surrogate recoveries are biased high due to matrix interference. Results not affected.

322370 LCS

DRO LCS/LCSD - Surrogate is biased high due to interference by method required petroleum spike.

322371 LCSD

DRO LCS/LCSD - Surrogate is biased high due to interference by method required petroleum spike.

2 of 2 Sep #5

Post-it® Fax Note 7671 | Date 9/27/00 | # of pages ▶ 17
To J.M Rodes | From Heather Goodman
Co./Dept. ST STRIKE | Co. ROCKWELL E&C
Phone # 541-673-9892 | Phone # 907-457-7625
Fax # 541-673-1739 | Fax # 907-457-7620

CHAIN OF CUSTODY RECORD

1003474

CT&E Environmental Services Inc.
Laboratory Division

(1) CLIENT: 1ST STRIKE ENVIRONMENTAL
CONTACT: MARK ROCKWELL PHONE NO: (907) 457 7625
PROJECT: 239 INA ST SITE: 239 INA ST
REPORTS TO: MARK ROCKWELL FAX NO: (907) 457 7620
INVOICE TO: SAME
P.O. NUMBER:

CT&E Reference:

PAGE 1 OF 2

(2)

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	No. CONTAINERS	SAMPLE TYPE C-COMP G-GRAB	Preservatives Used	MEOH	Analysis Required (3) DRO	BTEX	REMARKS
(1)	S5	8/04/00	10:40	SOIL	2	G			✓	✓	
(2)	S6	8/04/00	10:40	SOIL	2	G			✓	✓	
(3)	S7	8/08/00	0920	SOIL	2	G			✓	✓	
(4)	S8	8/8/00	12:25	SOIL	2	G			✓	✓	
(5)	S9	8/8/00	12:35	SOIL	2	G			✓	✓	
(6)	S10	8/8/00	13:30	SOIL	2	G			✓	✓	
(7)	S11	8/8/00	13:55	SOIL	2	G			✓	✓	
(8)	S12	8/8/00	14:00	SOIL	2	G			✓	✓	
(9)	S13	8/8/00	15:45	SOIL	2	G			✓	✓	
(10)	S14	8/8/00	15:50	SOIL	2	G			✓	✓	

(5)

Collected/Relinquished By: (1)	Date	Time	Received By:
HEATHER GRONAU	8/04/00	10:30	Susan Vogt
Relinquished By: (2) Susan Vogt	Date 8/9/00	Time 11:50	Received By: Steph A. Ifft
Relinquished By: (3) Steph A. Ifft	Date 8/9/00	Time 16:45	Received By:
Relinquished By: (4)	Date 8/10	Time 1045	Received For Laboratory By: Dan Hartman

(4)

Shipping Carrier:
Shipping Ticket No: HAND
Samples Received Cold? (Circle) YES NO
Temperature °C: 3.4C
Data Deliverables Required
Level I Level II Level III
Chain of Custody Seal: (Circle) N/A
INTACT BROKEN ABSENT
Requested Turnaround Time and Special Instructions:
STANDARD TAT

200 W. Potter Drive Anchorage, AK 99518 Tel: (907) 562-2343 Fax: (907) 561-5301
3180 Peger Road Fairbanks, AK 99701 Tel: (907) 474-8658 Fax: (907) 474-9685

White - Retained by Lab (Project File) Yellow - Returned with Report Pink - Retained by Sampler

0-720

CHAIN OF CUSTODY RECORD

1003474

CT&E Environmental Services Inc.
Laboratory Division

CLIENT: 1ST STRIKE ENVIRONMENTAL
CONTACT: MARK ROCKWELL PHONE NO: (907) 457-7625
PROJECT: 239 INA STREET SITE: 239 INA STREET
REPORTS TO: MARK ROCKWELL FAX NO: (907) 457-7620
INVOICE TO: SAME P.O. NUMBER:

CT&E Reference:

PAGE 2 OF 2

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	No. CONTAINERS	SAMPLE TYPE C = COMP G = GRAB	DRO	BTEX	REMARKS
(11)	S15	8/9/00	10:50	SOIL	2	G	x	x	
(12)	S16	8/9/00	10:55	SOIL	2	G	x	x	
(13)	T.B.	8/9/00	–	SOIL	1	–		x	

Preservatives Used / Analysis Required (3)

Relinquished	Date	Time	Received By
Collected/Relinquished By: (1) [signature]	8/9/00	11:50	Received By: [signature]
Relinquished By: (2) [signature]	8/9/00	16:45	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	8/10/00	0848	Received For Laboratory By: [signature]

Shipping Carrier:
Shipping Ticket No: HAND
Data Deliverables Required: (Level I) Level II Level III
Samples Received Cold? (Circle) (YES) NO
Temperature °C: 3.4°C
Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT — N/A
Requested Turnaround Time and Special Instructions: STANDARD TAT

200 W. Potter Drive Anchorage, AK 99518 Tel: (907) 562-2343 Fax: (907) 561-5301
3180 Peger Road Fairbanks, AK 99701 Tel: (907) 474-8656 Fax: (907) 474-9685

White - Retained by Lab (Project File) Yellow - Returned with Report Pink - Retained by Sa[mpler]

CT&E Environmental Services Inc.

SAMPLE RECEIPT FORM

1003474

CT&E WO#:

Yes	No	
	✓	Are samples **RUSH**, priority, or *within 72 hrs* of **hold time**?
		If yes, have you done *e-mail notification*?
	✓	Are samples *within 24 hrs* of **hold time** or **due date**?
		If yes, have you *spoken with* Supervisor?
	✓	Are there any **problems** (e.g., ids, analyses)?
✓		Were samples preserved correctly and pH verified?
✓		Has Project Manager been notified of problems?
✓		Is this an ACOE/AFCEE/ADEC project? (ADEC circled)
✓		Will a **data package** be required? LEVEL I
	✓	If this is for PWS, provide **PWSID**.
✓		Is there a **quote** for this project? 4795
	✓	Will **courier** charges apply?

Completed by (sign): [signature] (print): STEPHANIE FOGGIA

*** The following *must* be completed for *all* ACOE & AFCEE projects: ***

Yes	No		Notes:
		Is cooler temperature 4 ± C?	
		thermometer used:	
		Was there an airbill, etc? note #:	
		Was cooler sealed with custody seals?	
		#/where?	
		Were seals intact upon arrival?	
		Was there a COC with cooler?	
		Was the COC filled out properly?	
		Did the COC indicate ACOE/AFCEE project?	
		Did the COC and samples correspond?	
		Were samples screened with Geiger counter?	
		Were all samples packed to prevent breakage?	
		packing material:	
		Were all samples unbroken and clearly labelled?	
		Were all samples sealed in separate plastic bags?	
		Were all bottles for volatiles free of headspace?	
		Were correct container/sample sizes submitted?	
		Was client notified of problems? (specify below)	

Individual contacted:

Date & Time: Phone/Fax #:

Due Date: 8/18/00

Received Date/Time: 8/9/00 11:56

Cooler Temperature: 3.4°C

Sample Condition: Good / Poor (Good circled)

Matrix of each Sample:

2	" "	#001-013
	" "	
	" "	
	" "	
2	Trip Blank	#013
	MS/MSD	

Additional Sample Remarks:

- 2 AK101s/____ 8260s field pres'd?
- Field-filtered for dissolved____?
- Lab-filter for dissolved____?
- Ref Lab required?

Notes: 3.5 °C Longer, Custody seals intact

# of each Container Received:

#	Container	Preservation
	950 ml amber	unpres'd
	950 ml amber	w/ HCl
	500 ml amber	w/ H_2SO_4
	1L cubies	unpres'd
	1L cubies	w/ HNO_3
	1L cubies	w/ H_2SO_4
	1L cubies	w/ NaOH + ZnAc
	120 ml coli	bottles
	60 ml	Nalg
12	8 oz amber	unpres'd
	4 oz amber	unpres'd
13	4 oz w/ septa	w/ MeOH
	40 ml vials	w/ HCl
	Other (specify)	
	Other (specify)	

#/Log In Proofed by:

Form Number: F00.

CT&E Environmental Services Inc.

CT&E Ref.#	1003474001	**Client PO#**	
Client Name	Rockwell Engineering & Construction	**Printed Date/Time**	08/23/2000 10:58
Project Name/#	239 Ina St	**Collected Date/Time**	08/04/2000 10:40
Client Sample ID	S5	**Received Date/Time**	08/09/2000 11:50
Matrix	Soil/Solid	**Technical Director**	Stephen C. Ede
Ordered By		**Released By**	S Thomas Poston

Sample Remarks:

GRO/BTEX - Surrogate recoveries are biased high due to matrix interference. Results not affected.
DRO - Pattern consistent with middle distillate.

Parameter	Results		PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Solids									
Total Solids	79.5			%	SM20 2540G			08/10/00	AKL
Volatile Fuels Department									
Benzene	0.231		0.0478	mg/Kg	BTX SW846-8021B		08/04/00	08/17/00	MAH
Toluene	10.3		0.191	mg/Kg	BTX SW846-8021B		08/04/00	08/18/00	MAH
Ethylbenzene	35.3		0.191	mg/Kg	BTX SW846-8021B		08/04/00	08/18/00	MAH
P & M -Xylene	141		0.191	mg/Kg	BTX SW846-8021B		08/04/00	08/18/00	MAH
o-Xylene	113		0.191	mg/Kg	BTX SW846-8021B		08/04/00	08/18/00	MAH
Surrogates									
1,4-Difluorobenzene <Surr>	125	!		%	BTX SW846-8021B	60-120	08/04/00	08/17/00	MAH
4-Bromofluorobenzene <Surr>	6890	!		%	BTX SW846-8021B	50-150	08/04/00	08/18/00	MAH
Semivolatile Organic Fuels Department									
Diesel Range Organics	10400		183	mg/Kg	AK102 DRO		08/11/00	08/17/00	ELB
Surrogates									
5a Androstane <surr>	83.5			%	AK102 DRO	60-120	08/11/00	08/17/00	ELB

CT&E Environmental Services Inc.

CT&E Ref.#	1003474002	Client PO#	
Client Name	Rockwell Engineering & Construction	Printed Date/Time	08/23/2000 10:58
Project Name/#	239 Ina St	Collected Date/Time	08/04/2000 10:40
Client Sample ID	S6	Received Date/Time	08/09/2000 11:50
Matrix	Soil/Solid	Technical Director	Stephen C. Edc
Ordered By		Released By	Shawn Paxton

Sample Remarks:

GRO/BTEX - Surrogate recoveries are biased high due to matrix interference. Results not affected.
DRO - Pattern consistent with middle distillate.

Parameter	Results		PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Solids									
Total Solids	77.9			%	SM20 2540G			08/10/00	AKL
Volatile Fuels Department									
Benzene	0.101		0.0158	mg/Kg	BTX SW846-8021B		08/04/00	08/17/00	MAH
Toluene	5.95		0.0632	mg/Kg	BTX SW846-8021B		08/04/00	08/21/00	MAH
Ethylbenzene	18.4		0.0632	mg/Kg	BTX SW846-8021B		08/04/00	08/21/00	MAH
P & M -Xylene	79.9		0.0632	mg/Kg	BTX SW846-8021B		08/04/00	08/21/00	MAH
o-Xylene	59.8		0.0632	mg/Kg	BTX SW846-8021B		08/04/00	08/21/00	MAH
Surrogates									
1,4-Difluorobenzene <Surr>	132	!		%	BTX SW846-8021B	60-120	08/04/00	08/17/00	MAH
4-Bromofluorobenzene <Surr>	11100	!		%	BTX SW846-8021B	50-150	08/04/00	08/21/00	MAH
Semivolatile Organic Fuels Department									
Diesel Range Organics	18600		174	mg/Kg	AK102 DRO		08/11/00	08/17/00	ELB
Surrogates									
5a Androstane <surr>	90.6			%	AK102 DRO	60-120	08/11/00	08/17/00	ELB

CT&E Environmental Services Inc.

CT&E Ref.#	1003474003	**Client PO#**	
Client Name	Rockwell Engineering & Construction	**Printed Date/Time**	08/23/2000 10:58
Project Name/#	239 Ina St	**Collected Date/Time**	08/08/2000 9:20
Client Sample ID	S7	**Received Date/Time**	08/09/2000 11:50
Matrix	Soil/Solid	**Technical Director**	**Stephen C. Ede**
Ordered By		**Released By**	

Sample Remarks:

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Solids								
Total Solids	96.2		%	SM20 2540G			08/10/00	AKL
Volatile Fuels Department								
Benzene	0.0365 U	0.0365	mg/Kg	BTX SW846-8021B		08/08/00	08/18/00	MAH
Toluene	0.146 U	0.146	mg/Kg	BTX SW846-8021B		08/08/00	08/18/00	MAH
Ethylbenzene	0.146 U	0.146	mg/Kg	BTX SW846-8021B		08/08/00	08/18/00	MAH
P & M -Xylene	0.146 U	0.146	mg/Kg	BTX SW846-8021B		08/08/00	08/18/00	MAH
o-Xylene	0.146 U	0.146	mg/Kg	BTX SW846-8021B		08/08/00	08/18/00	MAH
Surrogates								
1,4-Difluorobenzene <Surr>	84.3		%	BTX SW846-8021B	60-120	08/08/00	08/18/00	MAH
4-Bromofluorobenzene <Surr>	91.4		%	BTX SW846-8021B	50-150	08/08/00	08/18/00	MAH
Semivolatile Organic Fuels Department								
Diesel Range Organics	13.4 U	13.4	mg/Kg	AK102 DRO		08/11/00	08/17/00	ELB
Surrogates								
5a Androstane <surr>	64.8		%	AK102 DRO	60-120	08/11/00	08/17/00	ELB

CT&E Environmental Services Inc.

CT&E Ref.#	1003474004	**Client PO#**	
Client Name	Rockwell Engineering & Construction	**Printed Date/Time**	08/23/2000 11:39
Project Name/#	239 Ina St	**Collected Date/Time**	08/08/2000 12:25
Client Sample ID	S8	**Received Date/Time**	08/09/2000 11:50
Matrix	Soil/Solid	**Technical Director**	**Stephen C. Ede**
Ordered By		**Released By**	Shawn Poston

Sample Remarks:

GRO/BTEX - Surrogate recovery is biased high due to matrix interference. Results not affected.
DRO - Pattern consistent with weathered middle distillate.

Parameter	Results		PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Solids									
Total Solids	96.2			%	SM20 2540G			08/10/00	AKL
Volatile Fuels Department									
Benzene	0.0604		0.0494	mg/Kg	BTX SW846-8021B		08/08/00	08/17/00	MAH
Toluene	2.52		0.988	mg/Kg	BTX SW846-8021B		08/08/00	08/18/00	MAH
Ethylbenzene	13.0		0.988	mg/Kg	BTX SW846-8021B		08/08/00	08/18/00	MAH
P & M -Xylene	45.7		0.988	mg/Kg	BTX SW846-8021B		08/08/00	08/18/00	MAH
o-Xylene	24.0		0.988	mg/Kg	BTX SW846-8021B		08/08/00	08/18/00	MAH
Surrogates									
1,4-Difluorobenzene <Surr>	95.4			%	BTX SW846-8021B	60-120	08/08/00	08/17/00	MAH
4-Bromofluorobenzene <Surr>	2130	!		%	BTX SW846-8021B	50-150	08/08/00	08/18/00	MAH
Semivolatile Organic Fuels Department									
Diesel Range Organics	53.0		13.1	mg/Kg	AK102 DRO		08/11/00	08/17/00	ELB
Surrogates									
5a Androstane <surr>	75			%	AK102 DRO	60-120	08/11/00	08/17/00	ELB

CT&E Environmental Services Inc.

CT&E Ref.#	1003474005	**Client PO#**	
Client Name	Rockwell Engineering & Construction	**Printed Date/Time**	08/23/2000 10:58
Project Name/#	239 Ina St	**Collected Date/Time**	08/08/2000 12:35
Client Sample ID	S9	**Received Date/Time**	08/09/2000 11:50
Matrix	Soil/Solid	**Technical Director**	Stephen C. Ede
Ordered By		**Released By**	S Thomas Paxton

Sample Remarks:

DRO - Pattern consistent with middle distillate.
GRO/BTEX - Surrogate recovery is biased high due to matrix interference. Results not affected.

Parameter	Results		PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Solids									
Total Solids	90.1			%	SM20 2540G			08/10/00	AKL
Volatile Fuels Department									
Benzene	0.257 U		0.257	mg/Kg	BTX SW846-8021B		08/08/00	08/18/00	MAH
Toluene	7.60		0.0515	mg/Kg	BTX SW846-8021B		08/08/00	08/21/00	MAH
Ethylbenzene	28.8		0.0515	mg/Kg	BTX SW846-8021B		08/08/00	08/21/00	MAH
P & M -Xylene	121		0.0515	mg/Kg	BTX SW846-8021B		08/08/00	08/21/00	MAH
o-Xylene	66.0		0.0515	mg/Kg	BTX SW846-8021B		08/08/00	08/21/00	MAH
Surrogates									
1,4-Difluorobenzene <Surr>	3.9	!		%	BTX SW846-8021B	60-120	08/08/00	08/18/00	MAH
4-Bromofluorobenzene <Surr>	16900	!		%	BTX SW846-8021B	50-150	08/08/00	08/21/00	MAH
Semivolatile Organic Fuels Department									
Diesel Range Organics	6370		169	mg/Kg	AK102 DRO		08/11/00	08/17/00	ELB
Surrogates									
5a Androstane <surr>	101			%	AK102 DRO	60-120	08/11/00	08/17/00	ELB

CT&E Environmental Services Inc.

CT&E Ref.#	1003474006	**Client PO#**	
Client Name	Rockwell Engineering & Construction	**Printed Date/Time**	08/23/2000 10:58
Project Name/#	239 Ina St	**Collected Date/Time**	08/08/2000 13:30
Client Sample ID	S10	**Received Date/Time**	08/09/2000 11:50
Matrix	Soil/Solid	**Technical Director**	Stephen C. Ede
Ordered By		**Released By**	

Sample Remarks:

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Solids								
Total Solids	96.2		%	SM20 2540G			08/10/00	AKL
Volatile Fuels Department								
Benzene	0.0121 U	0.0121	mg/Kg	BTX SW846-8021B		08/08/00	08/18/00	MAH
Toluene	0.0483 U	0.0483	mg/Kg	BTX SW846-8021B		08/08/00	08/18/00	MAH
Ethylbenzene	0.0483 U	0.0483	mg/Kg	BTX SW846-8021B		08/08/00	08/18/00	MAH
P & M -Xylene	0.0483 U	0.0483	mg/Kg	BTX SW846-8021B		08/08/00	08/18/00	MAH
o-Xylene	0.0483 U	0.0483	mg/Kg	BTX SW846-8021B		08/08/00	08/18/00	MAH
Surrogates								
1,4-Difluorobenzene <Surr>	85.8		%	BTX SW846-8021B	60-120	08/08/00	08/18/00	MAH
4-Bromofluorobenzene <Surr>	78.9		%	BTX SW846-8021B	50-150	08/08/00	08/18/00	MAH
Semivolatile Organic Fuels Department								
Diesel Range Organics	16.9 U	16.9	mg/Kg	AK102 DRO		08/11/00	08/17/00	ELB
Surrogates								
5a Androstane <surr>	61.4		%	AK102 DRO	60-120	08/11/00	08/17/00	ELB

CT&E Environmental Services Inc.

CT&E Ref.#	1003474007	**Client PO#**	
Client Name	Rockwell Engineering & Construction	**Printed Date/Time**	08/23/2000 10:58
Project Name/#	239 Ina St	**Collected Date/Time**	08/08/2000 13:55
Client Sample ID	S11	**Received Date/Time**	08/09/2000 11:50
Matrix	Soil/Solid	**Technical Director**	Stephen C. Ede
Ordered By		**Released By**	

Sample Remarks:

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Solids								
Total Solids	95.0		%	SM20 2540G			08/10/00	AKL
Volatile Fuels Department								
Benzene	0.0139 U	0.0139	mg/Kg	BTX SW846-8021B		08/08/00	08/17/00	MAH
Toluene	0.0556 U	0.0556	mg/Kg	BTX SW846-8021B		08/08/00	08/17/00	MAH
Ethylbenzene	0.0556 U	0.0556	mg/Kg	BTX SW846-8021B		08/08/00	08/17/00	MAH
P & M -Xylene	0.0829	0.0556	mg/Kg	BTX SW846-8021B		08/08/00	08/17/00	MAH
o-Xylene	0.0699	0.0556	mg/Kg	BTX SW846-8021B		08/08/00	08/17/00	MAH
Surrogates								
1,4-Difluorobenzene <Surr>	84		%	BTX SW846-8021B	60-120	08/08/00	08/17/00	MAH
4-Bromofluorobenzene <Surr>	147		%	BTX SW846-8021B	50-150	08/08/00	08/17/00	MAH
Semivolatile Organic Fuels Department								
Diesel Range Organics	13.9 U	13.9	mg/Kg	AK102 DRO		08/11/00	08/17/00	ELB
Surrogates								
5a Androstane <surr>	61.3		%	AK102 DRO	60-120	08/11/00	08/17/00	ELB

CT&E Environmental Services Inc.

CT&E Ref.#	1003474008	**Client PO#**	
Client Name	Rockwell Engineering & Construction	**Printed Date/Time**	08/23/2000 10:58
Project Name/#	239 Ina St	**Collected Date/Time**	08/08/2000 14:00
Client Sample ID	S12	**Received Date/Time**	08/09/2000 11:50
Matrix	Soil/Solid	**Technical Director**	Stephen C. Ede
Ordered By		**Released By**	Shane Paton

Sample Remarks:

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Solids								
Total Solids	95.5		%	SM20 2540G			08/10/00	AKL
Volatile Fuels Department								
Benzene	0.0131 U	0.0131	mg/Kg	BTX SW846-8021B		08/08/00	08/17/00	MAH
Toluene	0.0525 U	0.0525	mg/Kg	BTX SW846-8021B		08/08/00	08/17/00	MAH
Ethylbenzene	0.0525 U	0.0525	mg/Kg	BTX SW846-8021B		08/08/00	08/17/00	MAH
P & M -Xylene	0.0525 U	0.0525	mg/Kg	BTX SW846-8021B		08/08/00	08/17/00	MAH
o-Xylene	0.0525 U	0.0525	mg/Kg	BTX SW846-8021B		08/08/00	08/17/00	MAH
Surrogates								
1,4-Difluorobenzene <Surr>	84.4		%	BTX SW846-8021B	60-120	08/08/00	08/17/00	MAH
4-Bromofluorobenzene <Surr>	86.6		%	BTX SW846-8021B	50-150	08/08/00	08/17/00	MAH
Semivolatile Organic Fuels Department								
Diesel Range Organics	15.6 U	15.6	mg/Kg	AK102 DRO		08/11/00	08/17/00	ELB
Surrogates								
5a Androstane <surr>	74.2		%	AK102 DRO	60-120	08/11/00	08/17/00	ELB

CT&E Environmental Services Inc.

CT&E Ref.#	1003474009	Client PO#	
Client Name	Rockwell Engineering & Construction	Printed Date/Time	08/23/2000 10:58
Project Name/#	239 Ina St	Collected Date/Time	08/08/2000 15:45
Client Sample ID	S13	Received Date/Time	08/09/2000 11:50
Matrix	Soil/Solid	Technical Director	Stephen C. Ede
Ordered By		Released By	Shawn Paton

Sample Remarks:

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Solids								
Total Solids	86.3		%	SM20 2540G			08/10/00	AKL
Volatile Fuels Department								
Benzene	0.0158 U	0.0158	mg/Kg	BTX SW846-8021B		08/08/00	08/17/00	MAH
Toluene	0.0631 U	0.0631	mg/Kg	BTX SW846-8021B		08/08/00	08/17/00	MAH
Ethylbenzene	0.0631 U	0.0631	mg/Kg	BTX SW846-8021B		08/08/00	08/17/00	MAH
P & M -Xylene	0.0631 U	0.0631	mg/Kg	BTX SW846-8021B		08/08/00	08/17/00	MAH
o-Xylene	0.0631 U	0.0631	mg/Kg	BTX SW846-8021B		08/08/00	08/17/00	MAH
Surrogates								
1,4-Difluorobenzene <Surr>	86.4		%	BTX SW846-8021B	60-120	08/08/00	08/17/00	MAH
4-Bromofluorobenzene <Surr>	74.9		%	BTX SW846-8021B	50-150	08/08/00	08/17/00	MAH
Semivolatile Organic Fuels Department								
Diesel Range Organics	19.0 U	19.0	mg/Kg	AK102 DRO		08/11/00	08/17/00	ELB
Surrogates								
5a Androstane <surr>	67		%	AK102 DRO	60-120	08/11/00	08/17/00	ELB

CT&E Environmental Services Inc.

CT&E Ref.#	1003474010	**Client PO#**	
Client Name	Rockwell Engineering & Construction	**Printed Date/Time**	08/23/2000 10:58
Project Name/#	239 Ina St	**Collected Date/Time**	08/08/2000 15:50
Client Sample ID	S14	**Received Date/Time**	08/09/2000 11:50
Matrix	Soil/Solid	**Technical Director**	Stephen C. Ede
Ordered By		**Released By**	Shawn Preston

Sample Remarks:

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Solids								
Total Solids	84.8		%	SM20 2540G			08/10/00	AKL
Volatile Fuels Department								
Benzene	0.0155 U	0.0155	mg/Kg	BTX SW846-8021B		08/08/00	08/17/00	MAH
Toluene	0.0618 U	0.0618	mg/Kg	BTX SW846-8021B		08/08/00	08/17/00	MAH
Ethylbenzene	0.0618 U	0.0618	mg/Kg	BTX SW846-8021B		08/08/00	08/17/00	MAH
P & M -Xylene	0.0618 U	0.0618	mg/Kg	BTX SW846-8021B		08/08/00	08/17/00	MAH
o-Xylene	0.0618 U	0.0618	mg/Kg	BTX SW846-8021B		08/08/00	08/17/00	MAH
Surrogates								
1,4-Difluorobenzene <Surr>	86.6		%	BTX SW846-8021B	60-120	08/08/00	08/17/00	MAH
4-Bromofluorobenzene <Surr>	63.6		%	BTX SW846-8021B	50-150	08/08/00	08/17/00	MAH
Semivolatile Organic Fuels Department								
Diesel Range Organics	19.3 U	19.3	mg/Kg	AK102 DRO		08/11/00	08/17/00	ELB
Surrogates								
5a Androstane <surr>	82.2		%	AK102 DRO	60-120	08/11/00	08/17/00	ELB

CT&E Environmental Services Inc.

CT&E Ref.#	1003474011	**Client PO#**	
Client Name	Rockwell Engineering & Construction	**Printed Date/Time**	08/23/2000 10:58
Project Name/#	239 Ina St	**Collected Date/Time**	08/09/2000 10:50
Client Sample ID	S15	**Received Date/Time**	08/09/2000 11:50
Matrix	Soil/Solid	**Technical Director**	Stephen C. Ede
Ordered By		**Released By**	Shawn Patton

Sample Remarks:

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Solids								
Total Solids	95.5		%	SM20 2540G			08/10/00	AKL
Volatile Fuels Department								
Benzene	0.0145 U	0.0145	mg/Kg	BTX SW846-8021B		08/09/00	08/17/00	MAH
Toluene	0.0581 U	0.0581	mg/Kg	BTX SW846-8021B		08/09/00	08/17/00	MAH
Ethylbenzene	0.0581 U	0.0581	mg/Kg	BTX SW846-8021B		08/09/00	08/17/00	MAH
P & M -Xylene	0.0581 U	0.0581	mg/Kg	BTX SW846-8021B		08/09/00	08/17/00	MAH
o-Xylene	0.0581 U	0.0581	mg/Kg	BTX SW846-8021B		08/09/00	08/17/00	MAH
Surrogates								
1,4-Difluorobenzene <Surr>	87.4		%	BTX SW846-8021B	60-120	08/09/00	08/17/00	MAH
4-Bromofluorobenzene <Surr>	82.2		%	BTX SW846-8021B	50-150	08/09/00	08/17/00	MAH
Semivolatile Organic Fuels Department								
Diesel Range Organics	15.7 U	15.7	mg/Kg	AK102 DRO		08/11/00	08/17/00	ELB
Surrogates								
5a Androstane <surr>	76.6		%	AK102 DRO	60-120	08/11/00	08/17/00	ELB

CT&E Ref.#	1003474012	**Client PO#**	
Client Name	Rockwell Engineering & Construction	**Printed Date/Time**	08/23/2000 10:58
Project Name/#	239 Ina St	**Collected Date/Time**	08/09/2000 10:55
Client Sample ID	S16	**Received Date/Time**	08/09/2000 11:50
Matrix	Soil/Solid	**Technical Director**	Stephen C. Ede
Ordered By		**Released By**	

Sample Remarks:

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Solids								
Total Solids	95.4		%	SM20 2540G			08/10/00	AKL
Volatile Fuels Department								
Benzene	0.0128 U	0.0128	mg/Kg	BTX SW846-8021B		08/09/00	08/17/00	MAH
Toluene	0.0511 U	0.0511	mg/Kg	BTX SW846-8021B		08/09/00	08/17/00	MAH
Ethylbenzene	0.0511 U	0.0511	mg/Kg	BTX SW846-8021B		08/09/00	08/17/00	MAH
P & M -Xylene	0.0511 U	0.0511	mg/Kg	BTX SW846-8021B		08/09/00	08/17/00	MAH
o-Xylene	0.0511 U	0.0511	mg/Kg	BTX SW846-8021B		08/09/00	08/17/00	MAH
Surrogates								
1,4-Difluorobenzene <Surr>	88.7		%	BTX SW846-8021B	60-120	08/09/00	08/17/00	MAH
4-Bromofluorobenzene <Surr>	72.7		%	BTX SW846-8021B	50-150	08/09/00	08/17/00	MAH
Semivolatile Organic Fuels Department								
Diesel Range Organics	15.0 U	15.0	mg/Kg	AK102 DRO		08/11/00	08/17/00	ELB
Surrogates								
5a Androstane <surr>	80.2		%	AK102 DRO	60-120	08/11/00	08/17/00	ELB

CT&E Environmental Services Inc.

CT&E Ref.#	1003474013	**Client PO#**	
Client Name	Rockwell Engineering & Construction	**Printed Date/Time**	08/23/2000 10:58
Project Name/#	239 Ina St	**Collected Date/Time**	08/09/2000 0:00
Client Sample ID	T.B	**Received Date/Time**	08/09/2000 11:50
Matrix	Soil/Solid	**Technical Director**	Stephen C. Edc
Ordered By		**Released By**	Shawn Preston

Sample Remarks:

Parameter	Results	PQL	Units	Method	Allowable Limits	Prep Date	Analysis Date	Init
Solids								
Total Solids	100		%	SM20 2540G			08/10/00	AKL
Volatile Fuels Department								
Benzene	0.0127 U	0.0127	mg/Kg	BTX SW846-8021B		08/09/00	08/17/00	MAH
Toluene	0.0509 U	0.0509	mg/Kg	BTX SW846-8021B		08/09/00	08/17/00	MAH
Ethylbenzene	0.0509 U	0.0509	mg/Kg	BTX SW846-8021B		08/09/00	08/17/00	MAH
P & M -Xylene	0.0509 U	0.0509	mg/Kg	BTX SW846-8021B		08/09/00	08/17/00	MAH
o-Xylene	0.0509 U	0.0509	mg/Kg	BTX SW846-8021B		08/09/00	08/17/00	MAH
Surrogates								
1,4-Difluorobenzene <Surr>	87.2		%	BTX SW846-8021B		08/09/00	08/17/00	MAH
4-Bromofluorobenzene <Surr>	83.9		%	BTX SW846-8021B		08/09/00	08/17/00	MAH

APPENDIX E

OIT, INC CERTIFICATES OF THERMAL REMEDIATION

OIT Inc.
P.O. Box 55878
North Pole, AK 99705
(907) 488-4899 • FAX (907) 488-4823

CERTIFICATION OF THERMAL TREATMENT

The undersigned hereby certifies that the below described material has been thermally treated and remediated to less than 50 PPM AK101, and 100 PPM AK102 in accordance with Alaska Department of Environmental Conservation Level A Clean-up Standards and under our ADEC Air Quality Permit No. 9531-AA008.

The material is described as follows:

Client:
Rockwell Engineering
1825 Woodbine
Fairbanks, Ak 99709

Project:
Thermal Remediation, Storage, Post-Testing, and final disposal of 140.31 tons POL Soil generated through cleanup acticvities at the Ina Street project in Fairbanks, AK

The test results demonstrating successful remediation are attached and described as follows:

Testing Lab:
Commercial Testing & Engineering
5633 B Street
Anchorage, Alaska 99518

Sample I.D. Number(s) / Test Result:

Stake	Lab Reference	Contract	AK101	AK102
S31	1003499003	00-034ROC	2.21 mg/Kg	10.2 mg/Kg

The undersigned further certifies that they are familiar with the information contained in this document and to the best of their knowledge and belief the information is true, complete and accurate.

Signature:

Sam V. Myers 09/19/2000

Sam V. Myers, Director of Marketing

1 of 2 sets (15 pp)

Post-it® Fax Note 7671 | Date 9/27/00 | # of pages 32
To Jim ROLES | From HEATHER GOLDMAN
Co./Dept. 1ST. STRIKE | Co. ROCKWELL E&C
Phone # 541-673-9892 | Phone # 907-457-7625
Fax # 541-673-1739 | Fax # 907 457-7620