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File: 17G
S.H.

TATALINA LRRS
ALASKA

ADMINISTRATIVE RECORD
COVER SHEET

AR File Number 14

File: 17A-37-4
S.H.
14
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United States Air Force
611th Air Support Group/
Civil Engineering Squadron

Elmendorf AFB, Alaska

Final

UST Release Investigation Report

Tatalina LRRS,
Alaska

16 JANUARY 1996

TATALINA LRRS RELEASE INVESTIGATION
CONTRACT NO F41624-94-D-7080
DELIVERY ORDER NO 0005

TABLE OF CONTENTS

1.0 INTRODUCTION

This report was prepared in accordance with the statement of work (SOW) for delivery order (DO) No. 0005, AFCEE Contract No. F41624-94-D-8070, titled "Site Assessment and Release Investigation UST Work at Four LRRS, FY95". This report entails the work performed in the Tatalina phase of the project on September 18 and 19, 1995

1.1 Site History

Tatalina LRRS is located 220 air miles northwest of Anchorage , Alaska, (Figure 1) in the interior Kuskokwim Mountains near McGrath, Alaska. The U.S. Air Force (USAF) facility has been in operation since the 1950s when it was an Aircraft Control and Warning (ACW) site. The station (Figure 2) converted to Long Range Radar (LRR) in 1983.

In October and November of 1993, 11 CEOS/CEOR removed and closed out the 275 gallon gasoline underground storage tank (UST) associated with the water gallery pump. CEOS/CEOR indicated that gasoline contaminated soil had been found. Seventy cubic yards of soil were excavated and stockpiled in a containment near the onsite landfill. The UST was buried two feet below ground surface (bgs) with the tank floor at five feet in depth.

This release investigation was a required action (Appendix A) necessary to bring the Air Force into compliance with state regulations.

1.2 Scope of Work

The objective of this project was to conduct a site assessment with intrusive sampling to identify soil contamination A drill rig was used for soil boring and samples were collected for field screening and laboratory analysis Also, sampling of the water gallery cistern and previously stockpiled material was performed as part of the site assessment.

2.0 FIELD WORK

Field work at the Tatalina LRRS water gallery ust (Figure 3) site included the following

- Mobilization
- Soil Boring
- Field Sampling
- Contractor Generated Wastes
- Demobilization

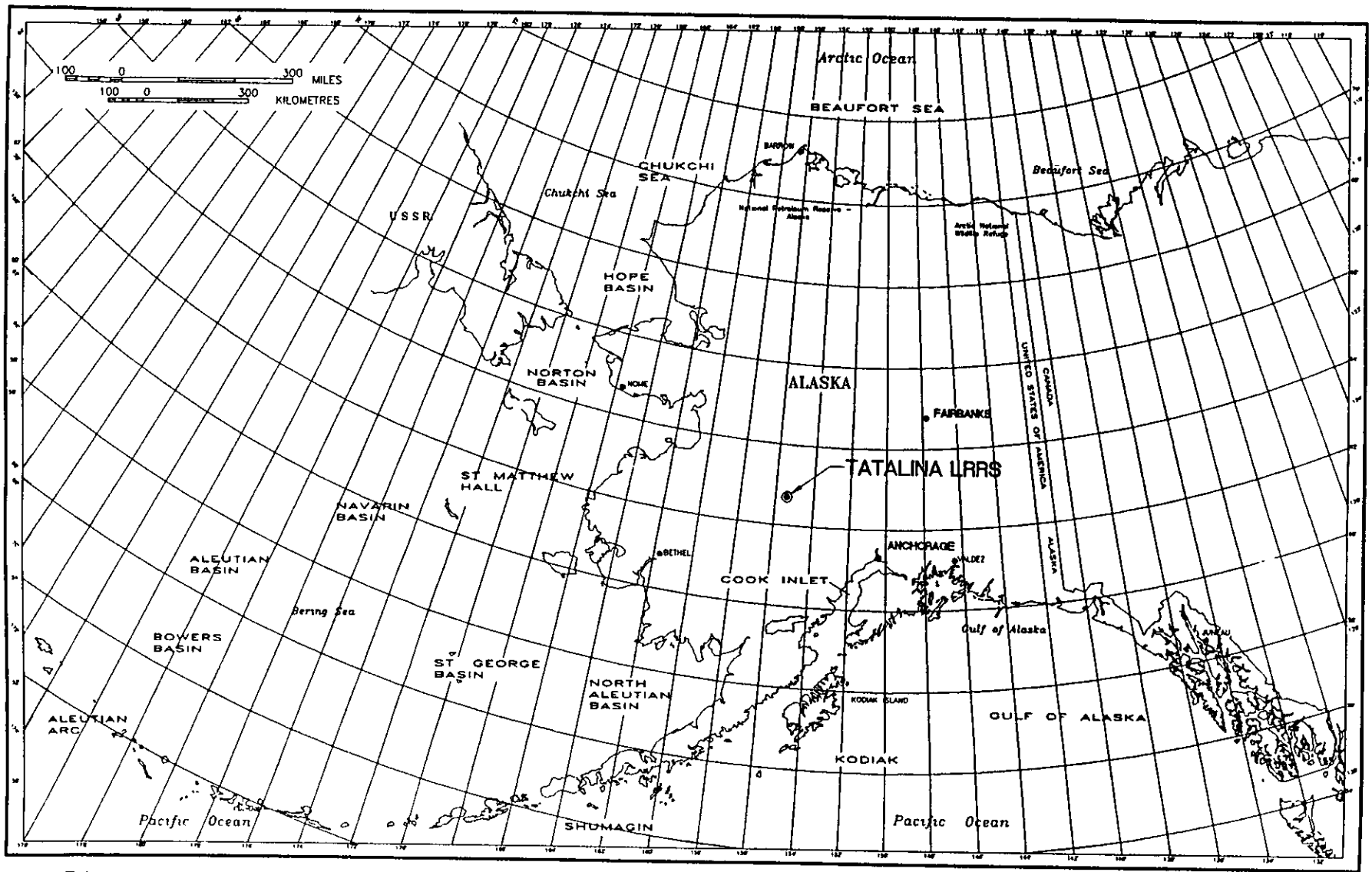
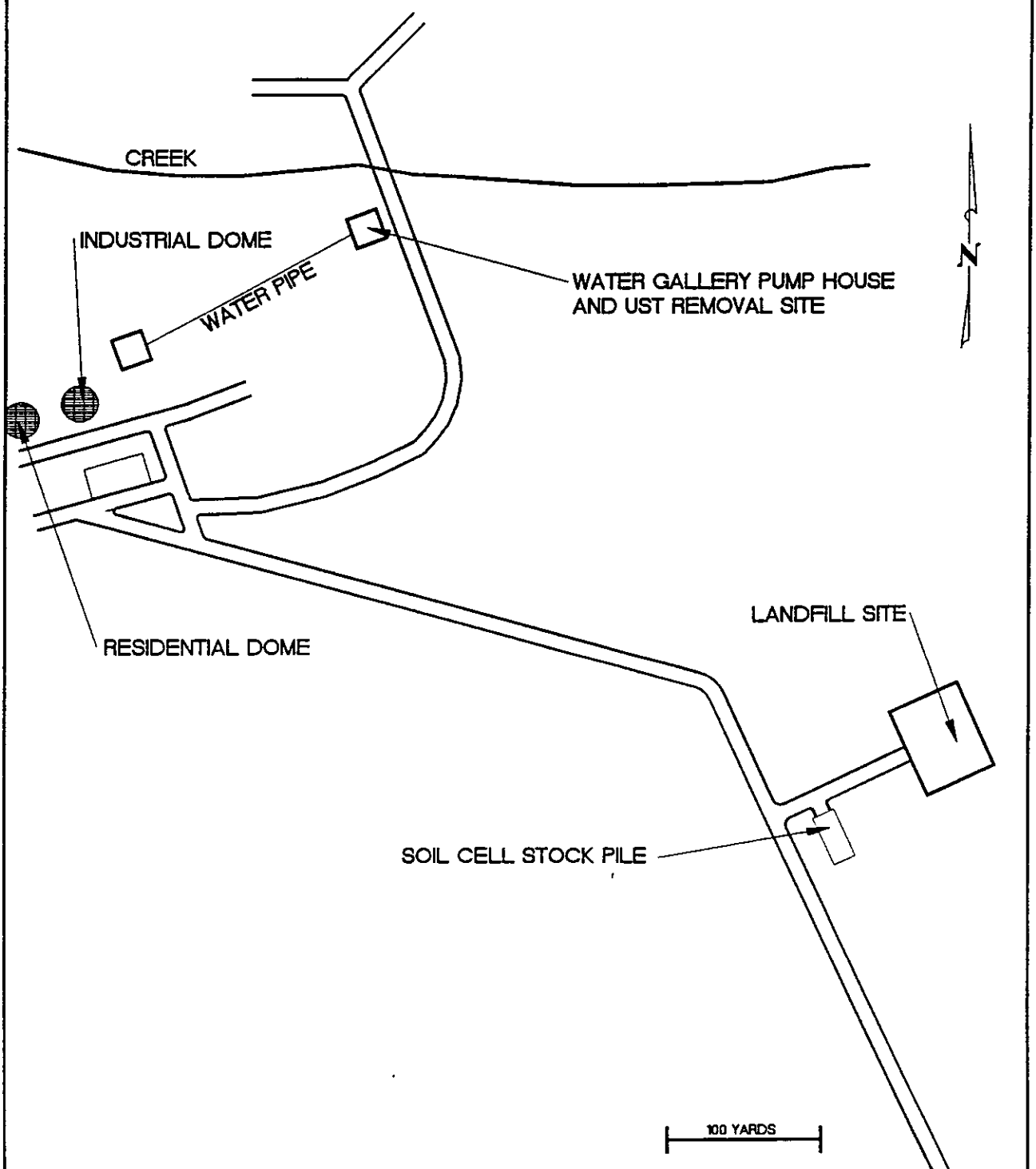


FIGURE 1 TATALINA LRRS - LOCATION MAP

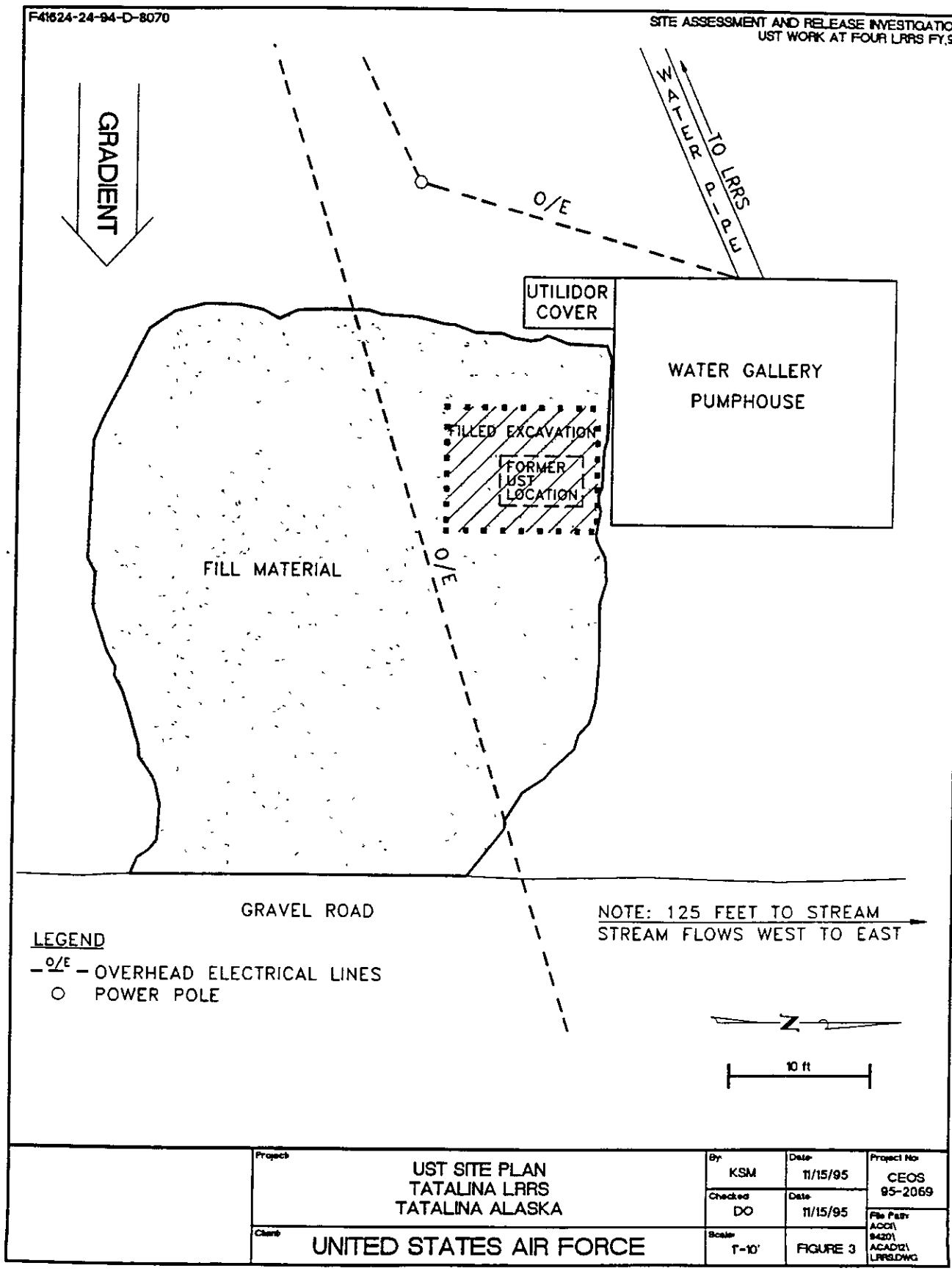
CONTRACT NO.F41624-94-D-8070 (DO NO 0005)

F41624-24-94-D-8070

SITE ASSESSMENT AND RELEASE INVESTIGATION
UST WORK AT FOUR LRRS FY,95



Project: LRRS SITE MAP TATALINA LRRS TATALINA ALASKA	By: KSM	Date: 01/09/96	Project No: CEOS 95-2069
	Checked: DO	Date: 01/09/96	File Path: ACC\ 9420\ ACAD12\ LRRS.DWG
Client: UNITED STATES AIR FORCE	Scale:	FIGURE 2	


F41624-24-94-D-8070
SITE ASSESSMENT AND RELEASE INVESTIGATION
UST WORK AT FOUR LRRS FY,95
GRADIENT
WATER LINE TO LRRS
O/E
UTILIDOR COVER
WATER GALLERY PUMPHOUSE
FILLED EXCAVATION
FORMER UST LOCATION
FILL MATERIAL
O/E
GRAVEL ROAD
NOTE: 125 FEET TO STREAM
STREAM FLOWS WEST TO EAST
LEGEND
-O/E- OVERHEAD ELECTRICAL LINES
O POWER POLE
N
10 ft
Project
UST SITE PLAN
TATALINA LRRS
TATALINA ALASKA
Client
UNITED STATES AIR FORCE
By: KSM
Date: 11/15/95
Checked: DO
Date: 11/15/95
Scale: 1"=10'
FIGURE 3
Project No: CEOS 95-2069
File Path: ACCI\ 9420\ ACAD12\ LRRSLDWG

2.1 Mobilization

ACCI and Hughes Drilling equipment and personnel flew from Anchorage to Tatalina by Southern Air Transport via L-100 aircraft. Bob Garland (AFCEE) and Sgt Denny Frazier (USAF) arrive via charter aircraft

2.2 Soil Boring

A total of four soil boring locations (Figure 4) were placed in down and up gradient positions around the former location of the UST with one boring located in the center of the filled excavation. The direction of ground water flow direction was assumed to be parallel with the adjacent stream. Site Superintendent Jeff Carlstrom (ACCI) marked the locations with ground paint. Borings were advanced with a truck mounted CME 45 drill rig using an eight inch hollow stem auger operated by Gary Wilson and Pat Smith (Hughes Drilling). Soil samples were collected using a 3" O.D. split spoon sampler driven with a 300 pound automatic hammer. Once a soil boring was completed the borehole was backfilled with the auger cuttings. A plug of bentonite was placed at the bottom and at the top of each hole.

The site geology is generally clayey gravels and clays with a perched water table at ten feet and ground water at 17 feet.

2.3 Field Sampling

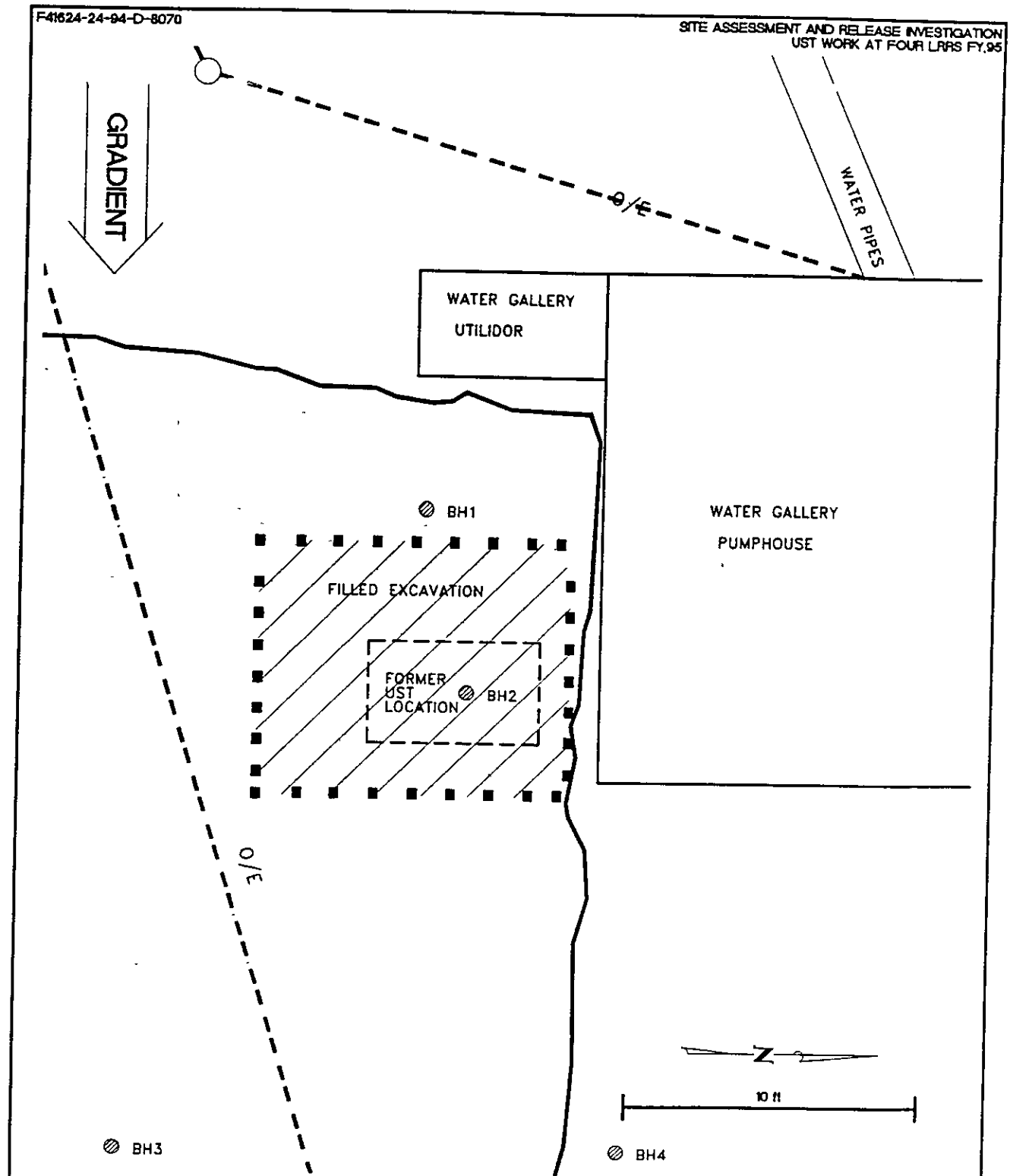
All sample collection, field screening, documentation, and sample handling was performed in accordance with Section 4 of ACCI's ADEC approved Quality Assurance Program Plan. Field sampling consisted of soil (stockpile and boring) and water (gallery cistern and equipment rinsate) samples.

Selected soil samples based on field screening results were submitted under chain of custody (COC) to Analytica Alaska in Anchorage. The soil samples and equipment rinsate were submitted as ADEC deliverables with a 14 day turnaround time and tested for the following parameters

- gasoline range organics (GRO) by AK 101
- benzene, toluene, ethylbenzene, and xylenes (BTEX) by EPA Method 8020
- lead by EPA Method 7421

The cistern water samples were tested for volatile organics (VOs) by EPA Method 524 2 and lead

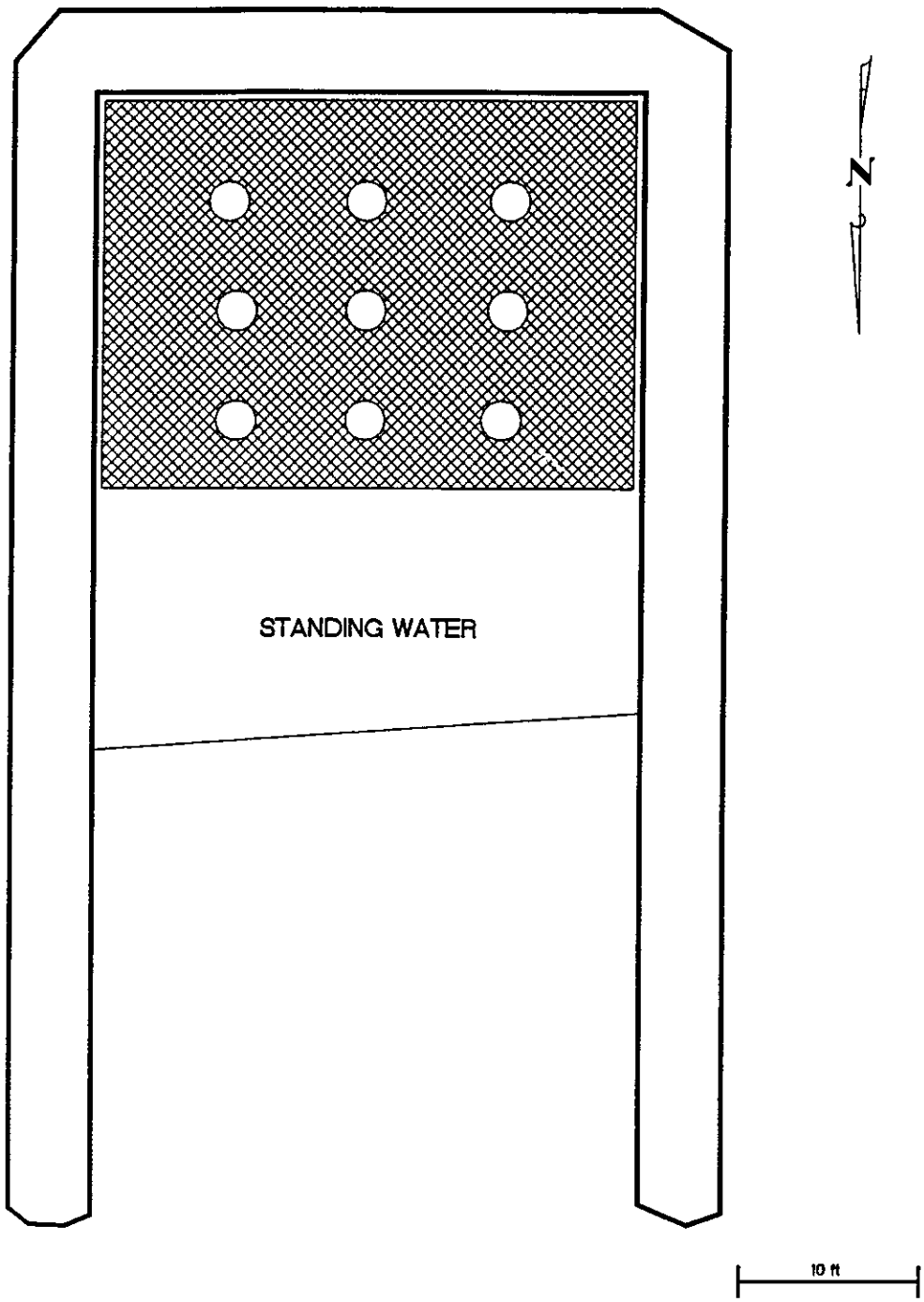
The 70 cubic yard contaminated soil stockpile (Figure 5) was uncovered and sampled in nine locations to composite three samples (three locations to each sample) This allowed a random sampling that quantified the average level of contamination in the pile


F41624-24-94-D-8070
SITE ASSESSMENT AND RELEASE INVESTIGATION
UST WORK AT FOUR LRRS FY,95
GRADIENT
WATER PIPES
O/E
WATER GALLERY
UTILIDOR
WATER GALLERY
PUMPHOUSE
BH1
FILLED EXCAVATION
FORMER
UST
LOCATION
BH2
O/E
BH3
BH4
N
10 ft
Project
BORING LOCATIONS
TATALINA LRRS
TATALINA ALASKA
Client
UNITED STATES AIR FORCE
By
KSM
Date
11/15/95
Checked
DO
Date
11/15/95
Scale
2"=10'
FIGURE 4
Project No
CEOS
95-2069
File Path
ACOI\
6420\
ACAD12\
LRRS.DWG

F41624-24-94-D-8070

SITE ASSESSMENT AND RELEASE INVESTIGATION
UST WORK AT FOUR LRRS FY,95

THREE RANDOM SAMPLES COMPOSITED FROM THREE HOLES EACH



Project: SOIL STOCKPILE SAMPLE LOCATIONS TATALINA LRRS TATALINA ALASKA	By: KSM	Date: 01/09/96	Project No: CEOS 95-2069
	Checked: DO	Date: 01/09/96	File Path: ACCT\ 8420\ ACAD12\ LRRS.DWG
Client: UNITED STATES AIR FORCE	Scale:	FIGURE 5	

The soil borings were advanced to 17 feet below ground surface (BGS) where ground water occurred Field samples were collected with a split spoon from four, seven, nine and 17 feet for a total of five samples per boring. The samples were logged with the time, depth, blow count, and geological characteristics. A portion of each sample was placed in a ziplock bag for field screening with a Photovac HL 2000 photoionization detector (PID). Another portion of the sample was placed in an 8 ounce amber jar using a stainless steel spoon, filled to zero headspace and marked with the boring number, time, and depth The filled jar was then placed in a cooler packed with blue ice.

After the bagged portion had sat a minimum of 15 minutes it was field screened with the PID. The reading was noted in the field book with the other sample information. PID measurements for the site were uniformly low, ranging from 1.5 to 5.2 ppm.

Between sample collection, the split spoon was decontaminated using a tapwater/Alconox wash and a distilled water rinse. An equipment rinsate was collected during the course of sampling. This was submitted with the soil samples and also analyzed for GRO, BTEX and lead.

Samples were selected for laboratory analysis from the five, seven and 17 foot levels in each borehole on the basis of the former USTs depth and higher PID readings at ground water.

The cistern water samples were collected with a teflon baler Both a primary and a duplicate sample were collected. Purging of the cistern prior to sampling was not feasible

2.4 Contractor Generated Waste

All used personal protective equipment, towel wipes, and field screening ziplock bags were treated as solid waste and disposed of at the Tatalina LRRS landfill Wash and rinse water from decontamination activities was treated on site with an activated carbon filter system. The water showed no sheen prior to treatment and after two filtrations it was released on the ground on site.

2.5 Demobilization

AFCEE and USAF personnel returned to Anchorage via commercial charter The site superintendent returned to Anchorage with the laboratory samples via McGrath on Mark Air Express. The remaining personnel flew on to work at Cape Newenham LRRS via Southern Air Transport.

3.0 LABORATORY ANALYTICAL RESULTS

The analytical results for the soil stockpile samples were below method detection limits in GRO. One sample resulted in low levels of toluene (0.06 mg/Kg) and xylene (0 049 mg/Kg) The lead levels were within the natural range of soil

The analytical results for the soil boring samples indicate that contamination is below method detection limits for GRO in all but one sample, which measured 6.8 mg/Kg, and came from a depth of 5 feet at the center of the UST location Most of the samples were below method detection limits for Total BTEX, however those that did result in measurable quantities were well below 10 ppm. Benzene was found just above the method detection limit in only one sample, the same that registered the GRO reading. Again, lead levels were not above normal for area soils.

The equipment rinsate sample demonstrated that tool decontamination was performed correctly with nondetects in all parameters but xylene which resulted in 2 ug/L.

The water cistern samples, analyzed for lead and VOs, revealed traces of contamination which are below regulatory limits. One sample resulted in a level of lead of 4.5 ug/L (EPA regulatory limit 15 ppb) . The VOs analysis yielded levels of dichloromethane at 0.001 mg/L and 1,3-dichloropropane at 0.0011 mg/L (EPA regulatory limits 0.005 ppm).

The analytical sample results are presented on Table 1.

4.0 CONCLUSION

The boring sample results from the assessment performed at the Tatalina LRRS on September 18 and 19, 1995 showed soil contamination from the removed UST to be minimal. As prescribed by the State of Alaska at the most stringent cleanup level, Level A, Total BTEX contamination allowed is 10 mg/Kg and 0.1 mg/Kg for benzene. The highest measurement for Total BTEX was 0.097 mg/Kg in toluene and 0.026 mg/Kg for benzene. All samples were clean in GRO except for one which measured 6.8 mg/Kg. GRO contamination allowed under Level A is 50 mg/K. These results are below the Level A action level for cleanup

The UST excavation soil stockpile showed traces of Total BTEX in one sample, below Level A action levels We recommend the stockpile soil be used as fill.

It is recommended that final closure for the Tatalina LRRS UST site be applied for with the ADEC.

TABLE 1
ANALYTICAL RESULTS FOR SOIL / WATER SAMPLES
TATALINA LRRS

SAMPLE NO. SOIL	Depth in Feet	LEAD (mg/Kg)	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenezene (mg/Kg)	Xylene (mg/Kg)	Total BTEX (mg/Kg)	GRO (mg/Kg)
BORING NO. 1								
TAT-BH1-5-07	5	12	ND (0.20)	0.018	ND (0.20)	0.035	0.053	ND (2.0)
TAT-BH1-7-08	7	11	ND (0.24)	ND (0.24)	ND (0.24)	ND (0.040)	ND (0.060)	ND (2.4)
TAT-BH1-15-09	15	15	ND (0.20)	0.038	ND (0.20)	ND (0.050)	0.038	ND (2.0)
BORING NO. 2								
TAT-BH2-5-10	5	14	0.026	0.097	ND (0.20)	0.065	0.188	6.8
TAT-BH2-7-11	7	11	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.40)	ND (0.60)	ND (2.0)
TAT-BH2-15-12	15	6	ND (0.20)	0.041	ND (0.20)	ND (0.40)	0.041	ND (2.0)
BORING NO. 3								
TAT-BH3-5-13	5	11	ND (0.20)	0.023	ND (0.20)	ND (0.40)	0.023	ND (2.0)
TAT-BH3-7-14	7	12	ND (0.20)	0.031	ND (0.20)	0.049	0.08	ND (2.0)
TAT-BH3-15-15	15	7	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.40)	ND (0.60)	ND (2.0)
BORING NO. 4								
TAT-BH4-5-16	5	11	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.40)	ND (0.60)	ND (2.0)
TAT-BH4-7-17	7	9.2	ND (0.22)	ND (0.22)	ND (0.22)	ND (0.44)	ND (0.66)	ND (2.2)
TAT-BH4-7-18FD	7	7.6	ND (0.23)	ND (0.23)	ND (0.23)	ND (0.47)	ND (0.69)	ND (2.3)
TAT-BH4-15-19	15	11	ND (0.20)	0.052	ND (0.20)	0.051	0.103	ND (2.0)
STOCKPILE								
TAT-SP-01		19	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.40)	ND (0.60)	ND (2.0)
TAT-SP-02		14	ND (0.20)	ND (0.20)	ND (0.20)	ND (0.40)	ND (0.60)	ND (2.0)
TAT-SP-03		13	ND (0.20)	0.06	ND (0.20)	0.049	0.055	ND (2.0)

WATER	LEAD ug/L	Benzene ug/L	Toluene ug/L	Ethylbenezene ug/L	Xylene ug/L	Total BTEX ug/L	GRO ug/L
EQIP. RINSATE							
TAT-ER-04		ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	2 ug/L	ND (100)

CISTERN	LEAD ug/L	Volatile Organics: Benzene mg/L	Toluene mg/L	Ethylbenezene mg/L	Xylene mg/L	GRO mg/L	Dichloromethane mg/L	1,3-Dichloropropane mg/L
TAT-CIS-05	4.5	ND(0.00	ND(0.00050)	ND(0.00050)	ND(0.00050)	ND(0.00050)	0 001	ND(0.00050)
TAT-CIS-06	ND(1.0)	ND(0.00	ND(0.00050)	ND(0.00050)	ND(0.00050)	ND(0.00050)	ND(0.00050)	0.0011

TAT = Tatalina SP = Stockpile BH1 = Borehole no. 1 5 = Depth of sample in feet 07 = Seventh sample from site
ER = Equipment Rinsate CIS = Cistern ND = Nondetect (# ####) = Method Detection Limit

APPENDIX A

ADEC LETTER OF REQUEST FOR CORRECTIVE ACTION

STATE OF ALASKA

WALTER J. HICKEL, GOVERNOR

DEPT. OF ENVIRONMENTAL CONSERVATION

SOUTHCENTRAL REGIONAL OFFICE
CONTAMINATED SITE PROGRAMS
DEPT. OF DEFENSE FACILITIES
3601 C STREET, SUITE 1334
ANCHORAGE, AK 99503

TELEPHONE: (907) 563-6529
FAX: (907) 273-4331

April 19, 1994

Department of the Air Force
Attn: Joseph Millhouse
11 CEOS/CEOR
21885 2nd Street
Elmendorf AFB, AK 99506-4420

RE: Tank Closure Report, Wellhouse UST, Tatalina Lange Range Radar Site
UST Facility ID#: 769; UST #:3065-1; Spill #93-2-5-00-306-61

Dear Mr. Millhouse:

We received the report referenced above on March 1, 1994. It summarized closure of a 275 gallon gasoline UST. Approximately 70 cubic yards of petroleum impacted soil were excavated and placed in a containment cell near the landfill. Our review of the report generated several questions which need to be addressed.

Analytical results

Section 4.0 of the report should contain a sub-section describing the field screening and analytical results. A table should be included which clearly shows the sample number, sample matrix, sample depth or location, field screening results and analytical results and any qualifiers on the data. The table that is in the report does not provide sample depths, analytical methods, results, or any qualifiers.

Section 4.3 states closure samples were analyzed for diesel range organics and BTEX. Since gasoline was the contaminant of concern, samples should have been analyzed for gasoline range organics and BTEX, which in fact appears to be the case. The reference to DRO appears to be an error.

The laboratory report for samples from the drinking water show lead was non-detectable at a concentration of 1.0 mg/L. Since the drinking water standard for lead is in the low part per billion range, please check to see if the units reported are correct.

System configuration

It is not clear how much of the former lines were located underground. The diagram(s) should clearly show the location of all underground piping along with the tank and the location of all field screening and sampling points.

Quality Assurance/Quality Control

The Quality Control Summary shows some of the data quality objectives were not met. However, no discussion or explanation of how this effects the usability of the data included in the report. The department requests clarification of this issue.

The report states trip blanks consisted of water and sand (separate samples for each matrix). Typically, trip blanks consist of water samples prepared by the laboratory which then accompany the remainder of the sample containers through the entire shipping, handling, and analysis process. It is not clear whether the lab prepared the blanks or if the samplers prepared them. It appears some contaminants were found in the blanks, which further leads me to believe the samples may not have originated in the laboratory. If this is not the case, some cross contamination of samples may have occurred. Please provide clarification on how the trip blank were prepared.

It appears that holding times and sample preservation temperatures were exceeded on the confirmation samples. If this is the case the samples are not valid. Studies have shown that exceeding holding times and allowable sample temperatures significantly affects analytical results. The department requests clarification of the usability of the data.

Drinking water source protection

The former tank was located almost directly above the drinking water collection gallery. The report states the excavation went through a confining (semi-confining) layer and groundwater upwelled into the excavation. Petroleum contaminated soil was, or had been, located in the excavation. Therefore, the department recommends the Air Force conduct additional monitoring for BTEX in the drinking water.

Stockpiled Soil

Approximately 70 cubic yards of petroleum impacted soil were excavated and stockpiled in a lined containment cell near the landfill. The report does not include any sampling or field screening data from this soil or plans for future treatment of the soil. Please forward any additional information and future plans for treatment of the soil.

Conclusion

Due to the items noted above, the department cannot approve the report as submitted. The department requests clarification and submittal of the additional information by May 15, 1994. If you have any questions regarding this letter, please do not hesitate to contact me at 563-6529.

Sincerely,

John Halverson
DoD Oversight Program

JH:el (SCRO) IHNTATALINA SOR

cc: Linda Neuchterlein, UST Database Manager, ADEC

APPENDIX B

ANALYTICAL DATA

ANALYTICA ALASKA INC
811 W 8th Avenue, Anchorage, AK 99501 • (907) 258-2155 • FAX (907) 258-6634

ACCI
301 ARCTIC SLOPE AVE.
ANCHORAGE, AK 99518
1-907-267-6233/FX 349-4213
Attn: MR. JIM BATES

Order #: A5-09-074
Date: 01/04/96 12:14
Work ID: TATALINA
Date Received: 09/20/95
Date Completed: 10/10/95

SAMPLE IDENTIFICATION

Sample Number	Client Description
01	TAT-SP-01
02	TAT-SP-02
03	TAT-SP-03
04	TAT-BH1-5-07
05	TAT-BH1-7-08
06	TAT-BH1-15-09
07	TAT-BH2-5-10
08	TAT-BH2-7-11

Sample Number	Client Description
09	TAT-BH2-15-12
10	TAT-BH3-5-13
11	TAT-BH3-7-14
12	TAT-BH3-15-15
13	TAT-BH4-5-16
14	TAT-BH4-7-17
15	TAT-BH4-7-18
16	TAT-BH4-15-19

Enclosed are the analytical results for the submitted samples. All analyses met quality assurance objectives, except where noted in the case narratives. If you have any questions regarding the analyses, please feel free to call

Earl L. Crapps
Laboratory Supervisor

The submitted samples exhibit trace levels of volatile contamination.

All results are reported on a dry weight basis. The EPA recommended analytical and extraction holding times are met for all of the samples. The QC data are indicative of acceptable method and instrument performance. The method blanks are within acceptable limits. The samples were received properly packed at 5° C and were refrigerated upon receipt.

STANDARD SUMMARY

COMPOSITION AND CALIBRATION CONCENTRATION

METHOD 418.1 (Total Petroleum Hydrocarbons)

Standard Calibration
Composition: Total Petroleum Hydrocarbons Reference Oil
37.5% n-Hexadecane
37.5% iso-Octane
25% Chlorobenzene

Calibration: 200 ppm upper linear range,
100 ppm, 50 ppm, 25 ppm,
5 ppm, low standard

Internal Calibration Verification (ICV):
Separate Source TPH Reference Oil: 166 ppm

No internal standard or surrogates

METHOD 8020/BTEX

Composition: Commercial 8020 standard containing Benzene, Toluene, Ethylbenzene, Xylenes, Chlorobenzene, and the Dichlorobenzenes.

Calibration: 200 ppb upper linear range
150 ppb, 100 ppb, 50 ppb
5 ppb low standard

Internal Standard: α,α,α-Trifluorotoluene at 100 ppb
Surrogate: p-Bromofluorobenzene at 100 ppb

Modified Method 8015 (VPH)\AK101

Composition: Commercial Grade Gasoline (Integration range C6-C10)

Calibration: 2,000 ppb upper linear range
1500 ppb, 1000 ppb, 500 ppb,
100 ppb, 50 ppb low standard

Surrogates: α,α,α-Trifluorotoluene at 100 ppb
p-Bromofluorobenzene at 100 ppb

Modified Method 8100/AK102

Composition: Commercial Grade Diesel (Integration range C10-C28)

Calibration: 2,500 ppm upper linear range
2,000 ppm, 1,500 ppm, 1,000 ppm
500 ppm, 250 ppm, 100 ppm,
50 ppm low standard

Internal Standard: No internal standards
Surrogate: O-Terphenyl at 50 ppm

CALIBRATION SUMMARY

Analysis: BTEX\VPH (Instrument B)

Initial Calibration	08/29/95
Continuing Calibration	09/27/95
	09/28/95

Order # A5-09-074
Analytica, Inc.

ACCI
TEST RESULTS by SAMPLE

Sample: 01A TAT-SP-01 Collected: 09/18/95 Matrix: SOIL

Test Description	Method	Result	Limit	Units		Analyzed
BTEX in soil by EPA 8020.	8020\5030					
Benzene	8020\5030	ND	0.020	mg/Kg		09/27/95
Toluene	8020\5030	ND	0.020	mg/Kg		09/27/95
Ethylbenzene	8020\5030	ND	0.020	mg/Kg		09/27/95
Xylenes, Total	8020\5030	ND	0.040	mg/Kg		09/27/95
Surrogates, % Recovery						
p-Bromofluorobenzene		112	Min:	60	Max:	130
GRO\VPH in soil by AK101.	5030\AK101					
VPH	5030\AK101	ND	2.0	mg/Kg		09/27/95
Surrogates, % Recovery						
α,α,α-Trifluorotoluene		96	Min:	50	Max:	150
p-Bromofluorobenzene		113	Min:	50	Max:	150

Sample: 02A TAT-SP-02 Collected: 09/18/95 Matrix: SOIL

Test Description	Method	Result	Limit	Units		Analyzed
BTEX in soil by EPA 8020.	8020\5030					
Benzene	8020\5030	ND	0.020	mg/Kg		09/27/95
Toluene	8020\5030	ND	0.020	mg/Kg		09/27/95
Ethylbenzene	8020\5030	ND	0.020	mg/Kg		09/27/95
Xylenes, Total	8020\5030	ND	0.040	mg/Kg		09/27/95
Surrogates, % Recovery						
p-Bromofluorobenzene		110	Min:	60	Max:	130
GRO\VPH in soil by AK101.	5030\AK101					
VPH	5030\AK101	ND	2.0	mg/Kg		09/27/95
Surrogates, % Recovery						
α,α,α-Trifluorotoluene		97	Min:	50	Max:	150
p-Bromofluorobenzene		113	Min:	50	Max:	150

Sample: 03A TAT-SP-03 Collected: 09/18/95 Matrix: SOIL

Test Description	Method	Result	Limit	Units		Analyzed
BTEX in soil by EPA 8020.	8020\5030					
Benzene	8020\5030	ND	0.020	mg/Kg		09/27/95
Toluene	8020\5030	0.060	0.020	mg/Kg		09/27/95
Ethylbenzene	8020\5030	ND	0.020	mg/Kg		09/27/95
Xylenes, Total	8020\5030	0.049	0.040	mg/Kg		09/27/95
Surrogates, % Recovery						
p-Bromofluorobenzene		109	Min:	60	Max:	130
GRO\VPH in soil by AK101	5030\AK101					
VPH	5030\AK101	ND	2.0	mg/Kg		09/27/95
Surrogates, % Recovery						
α,α,α-Trifluorotoluene		95	Min:	50	Max:	150
p-Bromofluorobenzene		110	Min:	50	Max	150

Order # A5-09-074
Analytica, Inc.

ACCI
TEST RESULTS by SAMPLE

Sample: 04A TAT-BH1-5-07 Collected: 09/18/95 Matrix: SOIL

Test Description	Method	Result	Limit	Units		Analyzed
BTEX in soil by EPA 8020.	8020\5030					
Benzene	8020\5030	ND	0.020	mg/Kg		09/27/95
Toluene	8020\5030	0.018	0.017	mg/Kg		09/27/95
Ethylbenzene	8020\5030	ND	0.020	mg/Kg		09/27/95
Xylenes, Total	8020\5030	0.035	0.034	mg/Kg		09/27/95
Surrogates, % Recovery						
p-Bromofluorobenzene		110	Min:	60	Max:	130
GRO\VPH in soil by AK101.	5030\AK101					
VPH	5030\AK101	ND	2.0	mg/Kg		09/27/95
Surrogates, % Recovery						
α,α,α-Trifluorotoluene		97	Min:	50	Max:	150
p-Bromofluorobenzene		111	Min:	50	Max:	150

Sample: 05A TAT-BH1-7-08 Collected: 09/18/95 Matrix: SOIL

Test Description	Method	Result	Limit	Units		Analyzed
BTEX in soil by EPA 8020.	8020\5030					
Benzene	8020\5030	ND	0.024	mg/Kg		09/27/95
Toluene	8020\5030	ND	0.024	mg/Kg		09/27/95
Ethylbenzene	8020\5030	ND	0.024	mg/Kg		09/27/95
Xylenes, Total	8020\5030	ND	0.050	mg/Kg		09/27/95
Surrogates, % Recovery						
p-Bromofluorobenzene		112	Min:	60	Max:	130
GRO\VPH in soil by AK101.	5030\AK101					
VPH	5030\AK101	ND	2.4	mg/Kg		09/27/95
Surrogates, % Recovery						
α,α,α-Trifluorotoluene		95	Min:	50	Max:	150
p-Bromofluorobenzene		112	Min:	50	Max:	150

Sample: 06A TAT-BH1-15-09 Collected: 09/18/95 Matrix: SOIL

Test Description	Method	Result	Limit	Units		Analyzed
BTEX in soil by EPA 8020.	8020\5030					
Benzene	8020\5030	ND	0.020	mg/Kg		09/27/95
Toluene	8020\5030	0.038	0.020	mg/Kg		09/27/95
Ethylbenzene	8020\5030	ND	0.020	mg/Kg		09/27/95
Xylenes, Total	8020\5030	ND	0.040	mg/Kg		09/27/95
Surrogates, % Recovery						
p-Bromofluorobenzene		111	Min:	60	Max.	130
GRO\VPH in soil by AK101.	5030\AK101					
VPH	5030\AK101	ND	2.0	mg/Kg		09/27/95
Surrogates, % Recovery						
α,α,α-Trifluorotoluene		95	Min:	50	Max:	150
p-Bromofluorobenzene		111	Min:	50	Max:	150

Sample: 07A TAT-BH2-5-10 Collected: 09/18/95 Matrix: SOIL

Test Description	Method	Result	Limit	Units		Analyzed
BTEX in soil by EPA 8020.	8020\5030					
Benzene	8020\5030	0.026	0.020	mg/Kg		09/27/95
Toluene	8020\5030	0.097	0.020	mg/Kg		09/27/95
Ethylbenzene	8020\5030	ND	0.020	mg/Kg		09/27/95
Xylenes, Total	8020\5030	0.065	0.040	mg/Kg		09/27/95
Surrogates, % Recovery						
p-Bromofluorobenzene		105	Min:	60	Max:	130
GRO\VPH in soil by AK101.	5030\AK101					
VPH	5030\AK101	6.8	2.0	mg/Kg		09/27/95
Surrogates, % Recovery						
α,α,α-Trifluorotoluene		104	Min:	50	Max:	150
p-Bromofluorobenzene		113	Min:	50	Max:	150

Sample: 08A TAT-BH2-7-11 Collected: 09/18/95 Matrix: SOIL

Test Description	Method	Result	Limit	Units		Analyzed
BTEX in soil by EPA 8020.	8020\5030					
Benzene	8020\5030	ND	0.020	mg/Kg		09/27/95
Toluene	8020\5030	ND	0.020	mg/Kg		09/27/95
Ethylbenzene	8020\5030	ND	0.020	mg/Kg		09/27/95
Xylenes, Total	8020\5030	ND	0.040	mg/Kg		09/27/95
Surrogates, % Recovery						
p-Bromofluorobenzene		112	Min:	60	Max:	130
GRO\VPH in soil by AK101.	5030\AK101					
VPH	5030\AK101	ND	2.0	mg/Kg		09/27/95
Surrogates, % Recovery						
α,α,α-Trifluorotoluene		95	Min:	50	Max:	150
p-Bromofluorobenzene		112	Min.	50	Max:	150

Sample: 09A TAT-BH2-15-12 Collected: 09/18/95 Matrix: SOIL

Test Description	Method	Result	Limit	Units		Analyzed
BTEX in soil by EPA 8020.	8020\5030					
Benzene	8020\5030	ND	0.020	mg/Kg		09/28/95
Toluene	8020\5030	0.041	0.020	mg/Kg		09/28/95
Ethylbenzene	8020\5030	ND	0.020	mg/Kg		09/28/95
Xylenes, Total	8020\5030	ND	0.040	mg/Kg		09/28/95
Surrogates, % Recovery						
p-Bromofluorobenzene		110	Min:	60	Max:	130
GRO\VPH in soil by AK101.	5030\AK101					
VPH	5030\AK101	ND	2.0	mg/Kg		09/28/95
Surrogates, % Recovery						
α,α,α-Trifluorotoluene		97	Min:	50	Max:	150
p-Bromofluorobenzene		111	Min.	50	Max:	150

Sample: 13A TAT-BH4-5-16 Collected: 09/19/95 Matrix: SOIL

Test Description	Method	Result	Limit	Units		Analyzed
BTEX in soil by EPA 8020.	8020\5030					
Benzene	8020\5030	ND	0.020	mg/Kg		09/28/95
Toluene	8020\5030	ND	0.020	mg/Kg		09/28/95
Ethylbenzene	8020\5030	ND	0.020	mg/Kg		09/28/95
Xylenes, Total	8020\5030	ND	0.040	mg/Kg		09/28/95
Surrogates, % Recovery						
p-Bromofluorobenzene		112	Min:	60	Max:	130
GRO\VPH in soil by AK101.	5030\AK101					
VPH	5030\AK101	ND	2.0	mg/Kg		09/28/95
Surrogates, % Recovery						
α,α,α-Trifluorotoluene		96	Min:	50	Max:	150
p-Bromofluorobenzene		111	Min:	50	Max:	150

Sample: 14A TAT-BH4-7-17 Collected: 09/19/95 Matrix: SOIL

Test Description	Method	Result	Limit	Units		Analyzed
BTEX in soil by EPA 8020.	8020\5030					
Benzene	8020\5030	ND	0.022	mg/Kg		09/28/95
Toluene	8020\5030	ND	0.022	mg/Kg		09/28/95
Ethylbenzene	8020\5030	ND	0.022	mg/Kg		09/28/95
Xylenes, Total	8020\5030	ND	0.044	mg/Kg		09/28/95
Surrogates, % Recovery						
p-Bromofluorobenzene		110	Min:	60	Max:	130
GRO\VPH in soil by AK101.	5030\AK101					
VPH	5030\AK101	ND	2.2	mg/Kg		09/28/95
Surrogates, % Recovery						
α,α,α-Trifluorotoluene		96	Min:	50	Max:	150
p-Bromofluorobenzene		110	Min:	50	Max:	150

Sample: 15A TAT-BH4-7-18 Collected: 09/19/95 Matrix: SOIL

Test Description	Method	Result	Limit	Units		Analyzed
BTEX in soil by EPA 8020.	8020\5030					
Benzene	8020\5030	ND	0.023	mg/Kg		09/28/95
Toluene	8020\5030	ND	0.023	mg/Kg		09/28/95
Ethylbenzene	8020\5030	ND	0.023	mg/Kg		09/28/95
Xylenes, Total	8020\5030	ND	0.047	mg/Kg		09/28/95
Surrogates, % Recovery						
p-Bromofluorobenzene		111	Min:	60	Max:	130
GRO\VPH in soil by AK101.	5030\AK101					
VPH	5030\AK101	ND	2.3	mg/Kg		09/28/95
Surrogates, % Recovery						
α,α,α-Trifluorotoluene		93	Min:	50	Max:	150
p-Bromofluorobenzene		109	Min:	50	Max:	150

Order # A5-09-074 ACCI Page 8
Analytica, Inc. TEST RESULTS by SAMPLE

Sample: 10A TAT-BH3-5-13 Collected: 09/19/95 Matrix: SOIL

Test Description	Method	Result	Limit	Units		Analyzed
BTEX in soil by EPA 8020.	8020\5030					
Benzene	8020\5030	ND	0.020	mg/Kg		09/28/95
Toluene	8020\5030	0.023	0.020	mg/Kg		09/28/95
Ethylbenzene	8020\5030	ND	0.020	mg/Kg		09/28/95
Xylenes, Total	8020\5030	ND	0.040	mg/Kg		09/28/95
Surrogates, % Recovery						
p-Bromofluorobenzene		113	Min:	60	Max:	130
GRO\VPH in soil by AK101.	5030\AK101					
VPH	5030\AK101	ND	2.0	mg/Kg		09/28/95
Surrogates, % Recovery						
α,α,α-Trifluorotoluene		94	Min:	50	Max:	150
p-Bromofluorobenzene		111	Min:	50	Max:	150

Sample: 11A TAT-BH3-7-14 Collected: 09/19/95 Matrix: SOIL

Test Description	Method	Result	Limit	Units		Analyzed
BTEX in soil by EPA 8020.	8020\5030					
Benzene	8020\5030	ND	0.020	mg/Kg		09/28/95
Toluene	8020\5030	0.031	0.020	mg/Kg		09/28/95
Ethylbenzene	8020\5030	ND	0.020	mg/Kg		09/28/95
Xylenes, Total	8020\5030	0.049	0.040	mg/Kg		09/28/95
Surrogates, % Recovery						
p-Bromofluorobenzene		110	Min:	60	Max:	130
GRO\VPH in soil by AK101.	5030\AK101					
VPH	5030\AK101	ND	2.0	mg/Kg		09/28/95
Surrogates, % Recovery						
α,α,α-Trifluorotoluene		95	Min:	50	Max:	150
p-Bromofluorobenzene		110	Min:	50	Max:	150

Sample: 12A TAT-BH3-15-15 Collected: 09/19/95 Matrix: SOIL

Test Description	Method	Result	Limit	Units		Analyzed
BTEX in soil by EPA 8020.	8020\5030					
Benzene	8020\5030	ND	0.020	mg/Kg		09/28/95
Toluene	8020\5030	ND	0.020	mg/Kg		09/28/95
Ethylbenzene	8020\5030	ND	0.020	mg/Kg		09/28/95
Xylenes, Total	8020\5030	ND	0.040	mg/Kg		09/28/95
Surrogates, % Recovery						
p-Bromofluorobenzene		114	Min:	60	Max:	130
GRO\VPH in soil by AK101.	5030\AK101					
VPH	5030\AK101	ND	2.0	mg/Kg		09/28/95
Surrogates, % Recovery						
α,α,α-Trifluorotoluene		93	Min:	50	Max:	150
p-Bromofluorobenzene		109	Min:	50	Max	150

Sample: 16A TAT-BH4-15-19 Collected: 09/19/95 Matrix: SOIL

Test Description	Method	Result	Limit	Units		Analyzed
BTEX in soil by EPA 8020.	8020\5030					
Benzene	8020\5030	ND	0.020	mg/Kg		09/28/95
Toluene	8020\5030	0.052	0.020	mg/Kg		09/28/95
Ethylbenzene	8020\5030	ND	0.020	mg/Kg		09/28/95
Xylenes, Total	8020\5030	0.051	0.040	mg/Kg		09/28/95
Surrogates, % Recovery						
p-Bromofluorobenzene		113	Min:	60	Max:	130
GRO\VPH in soil by AK101.	5030\AK101					
VPH	5030\AK101	ND	2.0	mg/Kg		09/28/95
Surrogates, % Recovery						
α,α,α-Trifluorotoluene		92	Min:	50	Max:	150
p-Bromofluorobenzene		109	Min:	50	Max:	150

10/10/95 16:47:28

QA/QC Summary Report

Work Order: A509074 Client: ACCI

BLANK

Seq.	Sample ID	Test Code	Class/ Sub/Dup	Matrix/ Sub	Ref Seq	Spk Seq	Dilution	Weight	Volume	Conv. Factor	Flag	Ver
2	METH BLANK	BTX_8S	B P	S			1.0	1.0	1.0	1.0		PAW

Analytes	Result		Detection Limit			Specs Low	Specs High					V
BENZENE	ND		0.001									Y
TOLUENE	ND		0.001									Y
ETHYLBENZENE	ND		0.001									Y
XYLENES, TOTAL	ND		0.002									Y
P-BROMOFLUOROBENZENE	0.111		0.001	0.100	111	70	120					Y

SPIKE

Seq.	Sample ID	Test Code	Class/ Sub/Dup	Matrix/ Sub	Ref Seq	Spk Seq	Dilution	Weight	Volume	Conv. Factor	Flag	Ver
4	K509074-01A	BTX_8S	K M	S	3		20	6.1224	1.0	1.0		PAW

Analytes	Result	Unspiked Result	Detection Limit	Spike Value	Rec-overy	Specs Low	Specs High					V
BENZENE	0.903	ND	0.018	0.905	99.8	70	120					Y
TOLUENE	0.929	ND	0.018	0.905	103	70	120					Y
ETHYLBENZENE	0.936	ND	0.018	0.905	103	70	120					Y
XYLENES, TOTAL	1.956	ND	0.036	1.811	108	70	120					Y
P-BROMOFLUOROBENZENE	2.000	2.021	0.018	1.811	110	70	120					Y

SPIKE DUPLICATE

Seq.	Sample ID	Test Code	Class/ Sub/Dup	Matrix/ Sub	Ref Seq	Spk Seq	Dilution	Weight	Volume	Conv. Factor	Flag	Ver
5	K509074-01A	BTX_8S	K M D	S	3	4	20	6.1224	1.0	1.0		PAW

Analytes	Result	Unspiked Result	Detection Limit	Spike Value	Rec-overy	Specs Low	Specs High	RPD Specs Low	RPD Specs High	Reference Recovery	RPD	V
BENZENE	0.924	ND	0.018	0 905	102	70	120		20	99.8	2 18	Y
TOLUENE	0.949	ND	0.018	0.905	105	70	120		20	103	1 92	Y
ETHYLBENZENE	0.952	ND	0 018	0.905	105	70	120		20	103	1 92	Y
XYLENES, TOTAL	1.975	ND	0.036	1.811	109	70	120		20	108	0 922	Y
P-BROMOFLUOROBENZENE	1.980	2.021	0.018	1.811	109	70	120		20	110	0 913	Y

CONTROL

Seq.	Sample ID	Test Code	Class/ Sub/Dup	Matrix/ Sub	Ref Seq	Spk Seq	Dilution	Weight	Volume	Conv. Factor	Flag	Ver
1	CCVS	BTX_8S	T I	S			1.0	1.0	1.0	1.0		PAW

Analytes	Result	Theoretical Value	Detection Limit	Spike Value	Rec-overy	Specs Low	Specs High					V
BENZENE	0 052	0.050	0 001		104	85	115					Y
TOLUENE	0.053	0.050	0.001		106	85	115					Y
ETHYLBENZENE	0 053	0.050	0.001		106	85	115					Y
XYLENES, TOTAL	0 162	0.150	0.002		108	85	115					Y
P-BROMOFLUOROBENZENE	0.107	0.100	0.001	0 100	107	85	115					Y

0012

Method 8020 from Test Methods for Evaluating Solid Waste, USEPA SW-846, third edition, September 1986, is used for the analysis of volatile organics; benzene, toluene, ethylbenzene, xylenes (BTEX) in a solid matrix.

Method AK101 from the State of Alaska, Department of Environmental Conservation (ADEC), Underground Storage Tank Regulations 18 AAC 78, January 14, 1993; is referenced for the analysis of gasoline range organics\volatile petroleum hydrocarbons (GRO\VPH).

CONTROL

Seq.	Sample ID	Test Code	Class/ Sub/Dup	Matrix/ Sub	Ref Seq	Spk Seq	Dilution	Weight	Volume	Conv. Factor	Flag	Ver
15	CCVS	BTX_8S	T I	S			1.0	1.0	1.0	1.0		PAW

Analytes	Result	Theoretical Value	Detection Limit	Spike Value	Recovery	Specs Low	Specs High					V
BENZENE	0.052	0.050	0.001		104	85	115					Y
TOLUENE	0.052	0.050	0.001		104	85	115					Y
ETHYLBENZENE	0.052	0.050	0.001		104	85	115					Y
XYLENES, TOTAL	0.160	0.150	0.002		107	85	115					Y
P-BROMOFLUOROBENZENE	0.108	0.100	0.001	0.100	108	85	115					Y

CONTROL

Seq.	Sample ID	Test Code	Class/ Sub/Dup	Matrix/ Sub	Ref Seq	Spk Seq	Dilution	Weight	Volume	Conv. Factor	Flag	Ver
23	CCVS	BTX_8S	T I	S			1.0	1.0	1.0	1.0		PAW

Analytes	Result	Theoretical Value	Detection Limit	Spike Value	Recovery	Specs Low	Specs High					V
BENZENE	0.052	0.050	0.001		104	85	115					Y
TOLUENE	0.053	0.050	0.001		106	85	115					Y
ETHYLBENZENE	0.053	0.050	0.001		106	85	115					Y
XYLENES, TOTAL	0.162	0.150	0.002		108	85	115					Y
P-BROMOFLUOROBENZENE	0.108	0.100	0.001	0.100	108	85	115					Y

BLANK

Seq.	Sample ID	Test Code	Class/ Sub/Dup	Matrix/ Sub	Ref Seq	Spk Seq	Dilution	Weight	Volume	Conv. Factor	Flag	Ver
2	METH BLANK	VPH_S	B P	S			1.0	1.0	1.0	1.0		PAW

Analytes	Result	Detection Limit			Specs Low	Specs High					V
VPH	ND	0.100									Y
α,α,α-TRIFLUOROTOLUENE	0.094	0.001	0.100	94.0	50	150					Y
P-BROMOFLUOROBENZENE	0.110	0.001	0.100	110	50	150					Y

SPIKE

Seq.	Sample ID	Test Code	Class/ Sub/Dup	Matrix/ Sub	Ref Seq	Spk Seq	Dilution	Weight	Volume	Conv. Factor	Flag	Ver
4	K509074-01A	VPH_S	K M	S	3		20	6.1224	1.0	1.0		PAW

Analytes	Result	Unspiked Result	Detection Limit	Spike Value	Recovery	Specs Low	Specs High					V
VPH	9.421	ND	1.811	9.054	104	70	120					Y
α,α,α-TRIFLUOROTOLUENE	1.828	1.747	0.018	1.811	101	50	150					Y
P-BROMOFLUOROBENZENE	2.037	2.040	0.018	1.811	112	50	150					Y

10/10/95 16:47:28

QA/QC Summary Report

Work Order: A509074 Client: ACCI

SPIKE DUPLICATE

Seq.	Sample ID	Test Code	Class/ Sub/Dup	Matrix/ Sub	Ref Seq	Spk Seq	Dilution	Weight	Volume	Conv. Factor	Flag	Ver
5	K509074-01A	VPH_S	K M D	S	3	4	20	6.1224	1.0	1.0		PAW

Analytes	Result	Unspiked Result	Detection Limit	Spike Value	Rec-overy	Specs Low	Specs High	RPD Specs Low	RPD Specs High	Reference Recovery	Reference RPD	V
VPH	9.203	ND	1.811	9.054	102	70	120		20	104	1.94	Y
α,α,α-TRIFLUOROTOLUENE	1.752	1.747	0.018	1.811	96.7	50	150		20	101	4.35	Y
P-BROMOFLUOROBENZENE	1.996	2.040	0.018	1.811	110	50	150		20	112	1.80	Y

CONTROL

Seq.	Sample ID	Test Code	Class/ Sub/Dup	Matrix/ Sub	Ref Seq	Spk Seq	Dilution	Weight	Volume	Conv. Factor	Flag	Ver
1	CCVS	VPH_S	T I	S			1.0	1.0	1.0	1.0		PAW

Analytes	Result	Theoretical Value	Detection Limit	Spike Value	Rec-overy	Specs Low	Specs High	V
VPH	0.504	0.500	0.100	0.500	101	75	125	Y
α,α,α-TRIFLUOROTOLUENE	0.106	0.100	0.001	0.100	106	75	125	Y
P-BROMOFLUOROBENZENE	0.113	0.100	0.001	0.100	113	75	125	Y

CONTROL

Seq.	Sample ID	Test Code	Class/ Sub/Dup	Matrix/ Sub	Ref Seq	Spk Seq	Dilution	Weight	Volume	Conv. Factor	Flag	Ver
15	CCVS	VPH_S	T I	S			1.0	1.0	1.0	1.0		PAW

Analytes	Result	Theoretical Value	Detection Limit	Spike Value	Rec-overy	Specs Low	Specs High	V
VPH	0.480	0.500	0 100	0.500	96.0	75	125	Y
α,α,α-TRIFLUOROTOLUENE	0.104	0.100	0.001	0.100	104	75	125	Y
P-BROMOFLUOROBENZENE	0 111	0.100	0.001	0.100	111	75	125	Y

CONTROL

Seq.	Sample ID	Test Code	Class/ Sub/Dup	Matrix/ Sub	Ref Seq	Spk Seq	Dilution	Weight	Volume	Conv. Factor	Flag	Ver
23	CCVS	VPH_S	T I	S			1.0	1.0	1.0	1.0		PAW

Analytes	Result	Theoretical Value	Detection Limit	Spike Value	Rec-overy	Specs Low	Specs High	V
VPH	0.516	0.500	0.100	0.500	103	75	125	Y
α,α,α-TRIFLUOROTOLUENE	0.108	0.100	0.001	0.100	108	75	125	Y
P-BROMOFLUOROBENZENE	0.116	0.100	0.001	0.100	116	75	125	Y

ANALYTICA ALASKA INC
811 W. 8th Avenue, Anchorage, AK 99501 • (907) 258-2155 • FAX (907) 258-6634

ACCI
301 ARCTIC SLOPE AVE.
ANCHORAGE, AK 99518
1-907-267-6233/FX 349-4213
Attn: MR. JEFF CARLSTROM

Order #: A5-09-076
Date: 10/10/95 17:02
Work ID: TATALINA
Date Received: 09/21/95
Date Completed: 10/10/95

SAMPLE IDENTIFICATION

Sample Number	Client Description
01	TAT-ER-04
02	TRIP BLANK

Enclosed are the analytical results for the submitted samples. All analyses met quality assurance objectives, except where noted in the case narratives. If you have any questions regarding the analyses, please feel free to call.

Earl L. Crapps
Laboratory Supervisor

Sample TAT-ER-04 exhibits trace levels of xylene contamination.

The EPA recommended analytical and extraction holding times are met for all of the samples. The quality control (QC) data is from another sample set of similar matrix prepared and analyzed concurrently with your samples. The QC data are indicative of acceptable method and instrument performance. The method blanks are within acceptable limits. The samples were received properly packed at 5° C and were refrigerated upon receipt.

STANDARD SUMMARY

COMPOSITION AND CALIBRATION CONCENTRATION

METHOD 418.1 (Total Petroleum Hydrocarbons)

Standard Calibration
Composition: Total Petroleum Hydrocarbons Reference Oil
37.5% n-Hexadecane
37.5% iso-Octane
25% Chlorobenzene

Calibration: 200 ppm upper linear range,
100 ppm, 50 ppm, 25 ppm,
5 ppm, low standard

Internal Calibration Verification (ICV):
Separate Source TPH Reference Oil: 166 ppm

No internal standard or surrogates

METHOD 8020/BTEX

Composition: Commercial 8020 standard containing Benzene, Toluene, Ethylbenzene, Xylenes, Chlorobenzene, and the Dichlorobenzenes.

Calibration: 200 ppb upper linear range
150 ppb, 100 ppb, 50 ppb
5 ppb low standard

Internal Standard: α,α,α-Trifluorotoluene at 100 ppb
Surrogate: p-Bromofluorobenzene at 100 ppb

Modified Method 8015/(VPH)

Composition: Commercial Grade Gasoline (Integration range C6-C10)

Calibration: 2,000 ppb upper linear range
1500 ppb, 1000 ppb, 500 ppb,
100 ppb, 50 ppb low standard

Surrogates: α,α,α-Trifluorotoluene at 100 ppb
p-Bromofluorobenzene at 100 ppb

Modified Method 8100

Composition: Commercial Grade Diesel (Integration range C10-C28)

Calibration: 2,500 ppm upper linear range
2,000 ppm, 1,500 ppm, 1,000 ppm
500 ppm, 250 ppm, 100 ppm,
50 ppm low standard

Internal Standard: No internal standards
Surrogate: O-Terphenyl at 50 ppm

CALIBRATION SUMMARY

Analysis: BTEX\VPH (Instrument A)	
Initial Calibration	08/28/95
Continuing Calibration	09/28/95

Order # A5-09-076 ACC: Page 5
Analytica, Inc. TEST RESULTS by SAMPLE

Sample: 01A TAT-ER-04 Collected: 09/19/95 Matrix: WATER

Test Description	Method	Result	Limit	Units		Analyzed
BTEX in liquid by EPA 8020	8020\5030					
Benzene	8020\5030	ND	1.0	µg/L		09/28/95
Toluene	8020\5030	ND	1.0	µg/L		09/28/95
Ethylbenzene	8020\5030	ND	1.0	µg/L		09/28/95
Xylenes, Total	8020\5030	2	2.0	µg/L		09/28/95
Surrogates, % Recovery						
p-Bromofluorobenzene		101	Min:	70	Max:	120
GRO\VPH in water by AK101.	5030\AK101					
VPH	5030\AK101	ND	100	µg/L		09/28/95
Surrogates, % Recovery						
α,α,α-Trifluorotoluene		98	Min:	50	Max:	150
p-Bromofluorobenzene		102	Min:	50	Max:	150

Sample: 02A TRIP BLANK Collected: Matrix: WATER

Test Description	Method	Result	Limit	Units		Analyzed
BTEX in liquid by EPA 8020	8020\5030					
Benzene	8020\5030	ND	1.0	µg/L		09/28/95
Toluene	8020\5030	ND	1.0	µg/L		09/28/95
Ethylbenzene	8020\5030	ND	1.0	µg/L		09/28/95
Xylenes, Total	8020\5030	ND	2.0	µg/L		09/28/95
Surrogates, % Recovery						
p-Bromofluorobenzene		102	Min:	70	Max:	120

Method 8020 from Test Methods for Evaluating Solid Waste, USEPA SW-846, third edition, September 1986, is used for the analysis of volatile organics; benzene, toluene, ethylbenzene, xylenes (BTEX) in an aqueous matrix.

Method AK101 from the State of Alaska, Department of Environmental Conservation (ADEC), Underground Storage Tank Regulations 18 AAC 78, is used for the analysis of gasoline range organics\volatile petroleum hydrocarbons (GRO\VPH).

10/10/95 17:03:07 QA/QC Summary Report Page 1

Work Order: A509076 Client: ACCI

BLANK

Seq.	Sample ID	Test Code	Class/ Sub/Dup	Matrix/ Sub	Ref Seq	Spk Seq	Dilution	Weight	Volume	Conv. Factor	Flag	Ver
2	METH BLANK	BTX_6W	B P	W			1.0	1.0	1.0	1.0		PAW

Analytes	Result		Detection Limit			Specs Low	High					V
BENZENE	ND		1.0									Y
TOLUENE	ND		1.0									Y
ETHYLBENZENE	ND		1.0									Y
XYLENES, TOTAL	ND		2.0									Y
P-BROMOFLUOROBENZENE	99.6		1.0	100.0	99.6	70	120					Y

SPIKE

Seq.	Sample ID	Test Code	Class/ Sub/Dup	Matrix/ Sub	Ref Seq	Spk Seq	Dilution	Weight	Volume	Conv. Factor	Flag	Ver
4	K509081-01A	BTX_6W	K M	W	3		1.0	1.0	1.0	1.0		PAW

Analytes	Result	Unspiked Result	Detection Limit	Spike Value	Rec- overy	Specs Low	High					V
BENZENE	49.5	ND	1.0	50.0	99.0	39	150					Y
TOLUENE	50.2	ND	1.0	50.0	100	46	148					Y
ETHYLBENZENE	51.3	ND	1.0	50.0	103	32	160					Y
XYLENES, TOTAL	107.6	ND	2.0	100.0	108	32	160					Y
P-BROMOFLUOROBENZENE	100.2	102.1	1.0	100.0	100	70	120					Y

SPIKE DUPLICATE

Seq.	Sample ID	Test Code	Class/ Sub/Dup	Matrix/ Sub	Ref Seq	Spk Seq	Dilution	Weight	Volume	Conv. Factor	Flag	Ver
5	K509081-01A	BTX_6W	K M D	W	3	4	1.0	1.0	1.0	1.0		PAW

Analytes	Result	Unspiked Result	Detection Limit	Spike Value	Rec- overy	Specs Low	High	RPD Specs Low	High	Reference Recovery	RPD	V
BENZENE	49 7	ND	1.0	50.0	99.4	39	150		20	99 0	0.403	Y
TOLUENE	51 2	ND	1.0	50.0	102	46	148		20	100	1.98	Y
ETHYLBENZENE	52.0	ND	1.0	50.0	104	32	160		20	103	0.966	Y
XYLENES, TOTAL	109.0	ND	2.0	100.0	109	32	160		20	108	0.922	Y
P-BROMOFLUOROBENZENE	101 3	102.1	1.0	100.0	101	70	120		20	100	0.995	Y

CONTROL

Seq.	Sample ID	Test Code	Class/ Sub/Dup	Matrix/ Sub	Ref Seq	Spk Seq	Dilution	Weight	Volume	Conv. Factor	Flag	Ver
1	CCVS	BTX_6W	T I	W			1.0	1.0	1.0	1.0		PAW

Analytes	Result	Theoretical Value	Detection Limit	Spike Value	Rec- overy	Specs Low	High					V
BENZENE	50.7	50.0	1.0		101	90	110					Y
TOLUENE	52 3	50.0	1.0		105	90	110					-
ETHYLBENZENE	53.4	50.0	1.0		107	90	110					Y
XYLENES, TOTAL	165 5	150.0	2.0		110	90	110					Y
P-BROMOFLUOROBENZENE	102.1	100.0	1 0	100.0	102	70	120					Y

CONTROL

Seq.	Sample ID	Test Code	Class/ Sub/Dup	Matrix/ Sub	Ref Seq	Spk Seq	Dilution	Weight	Volume	Conv. Factor	Flag	Ver
12	CCVS	BTX_6W	T I	W			1.0	1.0	1.0	1.0		PAW

Analytes	Result	Theoretical Value	Detection Limit	Spike Value	Recovery	Specs Low	Specs High					V
BENZENE	50.9	50.0	1.0		102	90	110					Y
TOLUENE	52.3	50.0	1.0		105	90	110					Y
ETHYLBENZENE	53.1	50.0	1.0		106	90	110					Y
XYLENES, TOTAL	164.7	150.0	2.0		110	90	110					Y
P-BROMOFLUOROBENZENE	102.4	100.0	1.0	100.0	102	70	120					Y

BLANK

Seq.	Sample ID	Test Code	Class/ Sub/Dup	Matrix/ Sub	Ref Seq	Spk Seq	Dilution	Weight	Volume	Conv. Factor	Flag	Ver
2	METH BLANK	VPH_W	B P	W			1.0	1.0	1.0	1.0		PAW

Analytes	Result	Detection Limit				Specs Low	Specs High					V
VPH	ND	100										Y
α,α,α-TRIFLUOROTOLUENE	99.7	1.0	100.0	99.7		80	120					Y
P-BROMOFLUOROBENZENE	103.7	1.0	100.0	104		80	120					Y

SPIKE

Seq.	Sample ID	Test Code	Class/ Sub/Dup	Matrix/ Sub	Ref Seq	Spk Seq	Dilution	Weight	Volume	Conv. Factor	Flag	Ver
4	K509081-01A	VPH_W	K M	W	3		1.0	1.0	1.0	1.0		PAW

Analytes	Result	Unspiked Result	Detection Limit	Spike Value	Recovery	Specs Low	Specs High					V
VPH	454	ND	100	500	90.8	70	120					Y
α,α,α-TRIFLUOROTOLUENE	102.8	102.1	1.0	100.0	103	50	150					Y
P-BROMOFLUOROBENZENE	102.5	105.8	1.0	100.0	103	50	150					Y

SPIKE DUPLICATE

Seq.	Sample ID	Test Code	Class/ Sub/Dup	Matrix/ Sub	Ref Seq	Spk Seq	Dilution	Weight	Volume	Conv. Factor	Flag	Ver
5	K509081-01A	VPH_W	K M D	W	3	4	1.0	1.0	1.0	1.0		PAW

Analytes	Result	Unspiked Result	Detection Limit	Spike Value	Recovery	Specs Low	Specs High	RPD Specs Low	RPD Specs High	Reference Recovery	RPD	V
VPH	455	ND	100	500	91.0	70	120		20	90.8	0.220	Y
α,α,α-TRIFLUOROTOLUENE	101.7	102.1	1.0	100.0	102	50	150		20	103	0.976	Y
P-BROMOFLUOROBENZENE	101.4	105.8	1.0	100.0	101	50	150		20	103	1.96	Y

CONTROL

Seq.	Sample ID	Test Code	Class/ Sub/Dup	Matrix/ Sub	Ref Seq	Spk Seq	Dilution	Weight	Volume	Conv. Factor	Flag	Ver
1	CCVS	VPH_W	T I	W			1.0	1.0	1.0	1.0		PAW

Analytes	Result	Theoretical Value	Detection Limit	Spike Value	Rec-overy	Specs Low	Specs High					V
VPH	512	500	100	500	102	75	125					Y
α,α,α-TRIFLUOROTOLUENE	106.9	100.0	1.0	100.0	107	50	150					Y
P-BROMOFLUOROBENZENE	107.8	100.0	1.0	100.0	108	50	150					Y

CONTROL

Seq.	Sample ID	Test Code	Class/ Sub/Dup	Matrix/ Sub	Ref Seq	Spk Seq	Dilution	Weight	Volume	Conv. Factor	Flag	Ver
9	CCVS	VPH_W	T I	W			1.0	1.0	1.0	1.0		PAW

Analytes	Result	Theoretical Value	Detection Limit	Spike Value	Rec-overy	Specs Low	Specs High					V
VPH	485	500	100	500	97.0	75	125					Y
α,α,α-TRIFLUOROTOLUENE	100.6	100.0	1.0	100.0	101	50	150					Y
P-BROMOFLUOROBENZENE	101.3	100.0	1.0	100.0	101	50	150					Y

ANALYTICA
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ACCI
301 Arctic Slope Avenue
Anchorage, AK 99518
(907)267-6233fax(907)349-4213
Attn: Jeff Carlstrom

Order #: 95-09-166
Date: 10/02/95 15:28
Work ID: Tatalina
Date Received: 09/21/95
Date Completed: 09/30/95

SAMPLE IDENTIFICATION

Sample Number	Client Description
01	TAT-SP-01
02	TAT-SP-02
03	TAT-SP-03
04	TAT-BH1-5-07
05	TAT-BH1-7-08
06	TAT-BH1-15-09
07	TAT-BH2-5-10
08	TAT-BH2-7-11
09	TAT-BH2-15-12
10	TAT-BH3-5-13
11	TAT-BH3-7-14
12	TAT-BH3-15-15
13	TAT-BH4-5-16
14	TAT-BH4-7-17
15	TAT-BH4-7-18
16	TAT-BH4-15-19
17	TAT-ER-04
18	TAT-CIS-05
19	TAT-CIS-06

Enclosed are the analytical results for the submitted sample(s). Please review the CASE NARRATIVE for a discussion of any data and/or quality control issues. A listing of data qualifiers and analytical codes is located on the TEST METHODOLOGIES page at the end of the report.

If you have any questions regarding the analyses, please feel free to call.

Sincerely,

James D. Robinson
Project Manager

Samples were prepared and analyzed according to methods outlined in the following references:

- Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, EPA Publications SW-846 [Third Edition (September, 1986), as amended by Update I (September, 1994)]

All analyses meet quality assurance objectives.

Order # 95-09-166
ANALYTICA, INC.

ACCI
TEST RESULTS by SAMPLE

Sample: 01A TAT-SP-01 Collected: 09/18/95 Matrix: SOIL

Test Description	Method	Result	Q	Limit	Units	Analyzed
LEAD, Total	SW 7421	19		0.54	mg/Kg-DRY	09/27/95
PERCENT MOISTURE	ASTM D2216	7.50		0.1	WT%	09/29/95

Sample: 02A TAT-SP-02 Collected: 09/18/95 Matrix: SOIL

Test Description	Method	Result	Q	Limit	Units	Analyzed
LEAD, Total	SW 7421	14		0.22	mg/Kg-DRY	09/27/95
PERCENT MOISTURE	ASTM D2216	8.60		0.1	WT%	09/29/95

Sample: 03A TAT-SP-03 Collected: 09/18/95 Matrix: SOIL

Test Description	Method	Result	Q	Limit	Units	Analyzed
LEAD, Total	SW 7421	13		0.22	mg/Kg-DRY	09/27/95
PERCENT MOISTURE	ASTM D2216	9.10		0.1	WT%	09/29/95

Sample: 04A TAT-BH1-5-07 Collected: 09/18/95 Matrix: SOIL

Test Description	Method	Result	Q	Limit	Units	Analyzed
LEAD, Total	SW 7421	12		0.22	mg/Kg-DRY	09/27/95
PERCENT MOISTURE	ASTM D2216	9.40		0.1	WT%	09/29/95

Sample: 05A TAT-BH1-7-08 Collected: 09/18/95 Matrix: SOIL

Test Description	Method	Result	Q	Limit	Units	Analyzed
LEAD, Total	SW 7421	11		0.26	mg/Kg-DRY	09/27/95
PERCENT MOISTURE	ASTM D2216	23.8		0.1	WT%	09/29/95

Sample: 06A TAT-BH1-15-09 Collected: 09/18/95 Matrix: SOIL

Test Description	Method	Result	Q	Limit	Units	Analyzed
LEAD, Total	SW 7421	15		0.22	mg/Kg-DRY	09/27/95
PERCENT MOISTURE	ASTM D2216	10.7		0.1	WT%	09/29/95

Sample: 07A TAT-BH2-5-10 Collected: 09/18/95 Matrix: SOIL

Test Description	Method	Result	Q	Limit	Units	Analyzed
LEAD, Total	SW 7421	14		0.21	mg/Kg-DRY	09/27/95
PERCENT MOISTURE	ASTM D2216	6.40		0.1	WT%.	09/29/95

Sample: 08A TAT-BH2-7-11 Collected: 09/18/95 Matrix: SOIL

Test Description	Method	Result	Q	Limit	Units	Analyzed
LEAD, Total	SW 7421	11		0.24	mg/Kg-DRY	09/27/95
PERCENT MOISTURE	ASTM D2216	16.0		0.1	WT%	09/29/95

Order # 95-09-166
ANALYTICA, INC.

ACCI
TEST RESULTS by SAMPLE

Sample: 09A TAT-BH2-15-12 Collected: 09/18/95 Matrix: SOIL

Test Description	Method	Result	Q	Limit	Units	Analyzed
LEAD, Total	SW 7421	6.0		0.22	mg/Kg-DRY	09/27/95
PERCENT MOISTURE	ASTM D2216	7.90		0.1	WT%	09/29/95

Sample: 10A TAT-BH3-5-13 Collected: 09/19/95 Matrix: SOIL

Test Description	Method	Result	Q	Limit	Units	Analyzed
LEAD, Total	SW 7421	11		0.22	mg/Kg-DRY	09/27/95
PERCENT MOISTURE	ASTM D2216	11.1		0.1	WT%	09/29/95

Sample: 11A TAT-BH3-7-14 Collected: 09/19/95 Matrix: SOIL

Test Description	Method	Result	Q	Limit	Units	Analyzed
LEAD, Total	SW 7421	12		0.23	mg/Kg-DRY	09/27/95
PERCENT MOISTURE	ASTM D2216	12.7		0.1	WT%	09/29/95

Sample: 12A TAT-BH3-15-15 Collected: 09/19/95 Matrix: SOIL

Test Description	Method	Result	Q	Limit	Units	Analyzed
LEAD, Total	SW 7421	7.0		0.23	mg/Kg-DRY	09/27/95
PERCENT MOISTURE	ASTM D2216	12.5		0.1	WT%	09/29/95

Sample: 13A TAT-BH4-5-16 Collected: 09/19/95 Matrix: SOIL

Test Description	Method	Result	Q	Limit	Units	Analyzed
LEAD, Total	SW 7421	11		0.22	mg/Kg-DRY	09/27/95
PERCENT MOISTURE	ASTM D2216	8.60		0.1	WT%	09/29/95

Sample: 14A TAT-BH4-7-17 Collected: 09/19/95 Matrix: SOIL

Test Description	Method	Result	Q	Limit	Units	Analyzed
LEAD, Total	SW 7421	9.2		0.26	mg/Kg-DRY	09/27/95
PERCENT MOISTURE	ASTM D2216	22.1		0.1	WT%	09/29/95

Sample: 15A TAT-BH4-7-18 Collected: 09/19/95 Matrix: SOIL

Test Description	Method	Result	Q	Limit	Units	Analyzed
LEAD, Total	SW 7421	7.6		0.24	mg/Kg-DRY	09/27/95
PERCENT MOISTURE	ASTM D2216	18.2		0.1	WT%	09/29/95

Sample: 16A TAT-BH4-15-19 Collected: 09/19/95 Matrix: SOIL

Test Description	Method	Result	Q	Limit	Units	Analyzed
LEAD, Total	SW 7421	11		0.22	mg/Kg-DRY	09/27/95
PERCENT MOISTURE	ASTM D2216	8.70		0.1	WT%	09/29/95

Sample: 17A TAT-ER-04 Collected: 09/19/95 Matrix: WATER

Test Description	Method	Result	Q	Limit	Units	Analyzed
LEAD, Total	SW 7421	ND		1.0	ug/L	09/27/95

Sample: 18A TAT-CIS-05 Collected: 09/19/95 Matrix: WATER

Test Description	Method	Result	Q	Limit	Units	Analyzed
LEAD, Total	SW 7421	4.5		1.0	ug/L	09/27/95

Sample: 19A TAT-CIS-06 Collected: 09/19/95 Matrix: WATER

Test Description	Method	Result	Q	Limit	Units	Analyzed
LEAD, Total	SW 7421	ND		1.0	ug/L	09/27/95

Order # 95-09-166
ANALYTICA, INC.

ACCI
TEST METHODOLOGIES

THE FOLLOWING CODES APPLY TO THE ANALYTICAL REPORT

RESULT field...
- ND = not detected at the reported limit
- NA = analyte not applicable (see case narrative/methods for discussion)

Q (qualifier) field...

GENERAL:
- * = Recovery or %RPD outside method specifications
- H = value is estimated due to analysis run outside EPA holding times
- E = reported concentration is above the instrument calibration range
- D = analyte was diluted to bring within instrument calibration range or to remove matrix interferences

ORGANIC ANALYSIS DATA QUALIFIERS:
- B = analyte was detected in the laboratory method blank
- J = analyte was detected above the instrument detection limit (IDL) but below the analytical reporting limit (CRDL)

INORGANIC ANALYSIS DATA QUALIFIERS:
- B = analyte was detected above the instrument detection limit (IDL) but below the analytical reporting limit (CRDL)
- A = post digestion spike did not meet criteria (70-130%), therefore the reporting limit was raised by a factor of two to reflect spike failure
- S = reported value determined by the Method of Standard Additions

ACCI
TEST METHODOLOGIES

3050_G	Acid Digestion of Sediments, Sludges, and Soils for GFAA Metals	METHOD: 3050A
GFAATW	Acid Digestion of Aqueous Samples and Extracts for Total Metals for Analysis by Graphite Furnace Atomic Absorption (GFAA) Spectroscopy according to EPA 200.0 and/or SW-846.	METHOD: 200.0/3020A
PB_GTS:	LEAD, Total (GFAA)	METHOD: 7421
PB_GTW:	LEAD, Total (GFAA)	METHOD: 7421
PMOIST:	PERCENT MOISTURE	METHOD: ASTM D2216

Order # 95-09-166
ANALYTICA, INC.

ACCI
DATES REPORT

Sample: 01A TAT-SP-01 Matrix: SOIL

Analysis	Method	Collected	Received	TCLP date	Extracted	Analyzed
LEAD, Total	SW 7421	09/18/95	09/21/95	NA	09/26/95	09/27/95
PERCENT MOISTURE	ASTM D2216	09/18/95	09/21/95	NA		09/29/95

Sample: 02A TAT-SP-02 Matrix: SOIL

Analysis	Method	Collected	Received	TCLP date	Extracted	Analyzed
LEAD, Total	SW 7421	09/18/95	09/21/95	NA	09/26/95	09/27/95
PERCENT MOISTURE	ASTM D2216	09/18/95	09/21/95	NA		09/29/95

Sample: 03A TAT-SP-03 Matrix: SOIL

Analysis	Method	Collected	Received	TCLP date	Extracted	Analyzed
LEAD, Total	SW 7421	09/18/95	09/21/95	NA	09/26/95	09/27/95
PERCENT MOISTURE	ASTM D2216	09/18/95	09/21/95	NA		09/29/95

Sample: 04A TAT-BH1-5-07 Matrix: SOIL

Analysis	Method	Collected	Received	TCLP date	Extracted	Analyzed
LEAD, Total	SW 7421	09/18/95	09/21/95	NA	09/26/95	09/27/95
PERCENT MOISTURE	ASTM D2216	09/18/95	09/21/95	NA		09/29/95

Sample: 05A TAT-BH1-7-08 Matrix: SOIL

Analysis	Method	Collected	Received	TCLP date	Extracted	Analyzed
LEAD, Total	SW 7421	09/18/95	09/21/95	NA	09/26/95	09/27/95
PERCENT MOISTURE	ASTM D2216	09/18/95	09/21/95	NA		09/29/95

Sample: 06A TAT-BH1-15-09 Matrix: SOIL

Analysis	Method	Collected	Received	TCLP date	Extracted	Analyzed
LEAD, Total	SW 7421	09/18/95	09/21/95	NA	09/26/95	09/27/95
PERCENT MOISTURE	ASTM D2216	09/18/95	09/21/95	NA		09/29/95

Sample: 07A TAT-BH2-5-10 Matrix: SOIL

Analysis	Method	Collected	Received	TCLP date	Extracted	Analyzed
LEAD, Total	SW 7421	09/18/95	09/21/95	NA	09/26/95	09/27/95
PERCENT MOISTURE	ASTM D2216	09/18/95	09/21/95	NA		09/29/95

Sample: 08A TAT-BH2-7-11 Matrix: SOIL

Analysis	Method	Collected	Received	TCLP date	Extracted	Analyzed
LEAD, Total	SW 7421	09/18/95	09/21/95	NA	09/26/95	09/27/95
PERCENT MOISTURE	ASTM D2216	09/18/95	09/21/95	NA		09/29/95

Order # 95-09-166
ANALYTICA, INC.

ACCI
DATES REPORT

Sample: 09A TAT-BH2-15-12 Matrix: SOIL

Analysis	Method	Collected	Received	TCLP date	Extracted	Analyzed
LEAD, Total	SW 7421	09/18/95	09/21/95	NA	09/26/95	09/27/95
PERCENT MOISTURE	ASTM D2216	09/18/95	09/21/95	NA		09/29/95

Sample: 10A TAT-BH3-5-13 Matrix: SOIL

Analysis	Method	Collected	Received	TCLP date	Extracted	Analyzed
LEAD, Total	SW 7421	09/19/95	09/21/95	NA	09/26/95	09/27/95
PERCENT MOISTURE	ASTM D2216	09/19/95	09/21/95	NA		09/29/95

Sample: 11A TAT-BH3-7-14 Matrix: SOIL

Analysis	Method	Collected	Received	TCLP date	Extracted	Analyzed
LEAD, Total	SW 7421	09/19/95	09/21/95	NA	09/26/95	09/27/95
PERCENT MOISTURE	ASTM D2216	09/19/95	09/21/95	NA		09/29/95

Sample: 12A TAT-BH3-15-15 Matrix: SOIL

Analysis	Method	Collected	Received	TCLP date	Extracted	Analyzed
LEAD, Total	SW 7421	09/19/95	09/21/95	NA	09/26/95	09/27/95
PERCENT MOISTURE	ASTM D2216	09/19/95	09/21/95	NA		09/29/95

Sample: 13A TAT-BH4-5-16 Matrix: SOIL

Analysis	Method	Collected	Received	TCLP date	Extracted	Analyzed
LEAD, Total	SW 7421	09/19/95	09/21/95	NA	09/26/95	09/27/95
PERCENT MOISTURE	ASTM D2216	09/19/95	09/21/95	NA		09/29/95

Sample: 14A TAT-BH4-7-17 Matrix: SOIL

Analysis	Method	Collected	Received	TCLP date	Extracted	Analyzed
LEAD, Total	SW 7421	09/19/95	09/21/95	NA	09/26/95	09/27/95
PERCENT MOISTURE	ASTM D2216	09/19/95	09/21/95	NA		09/29/95

Sample: 15A TAT-BH4-7-18 Matrix: SOIL

Analysis	Method	Collected	Received	TCLP date	Extracted	Analyzed
LEAD, Total	SW 7421	09/19/95	09/21/95	NA	09/26/95	09/27/95
PERCENT MOISTURE	ASTM D2216	09/19/95	09/21/95	NA		09/29/95

Sample: 16A TAT-BH4-15-19 Matrix: SOIL

Analysis	Method	Collected	Received	TCLP date	Extracted	Analyzed
LEAD, Total	SW 7421	09/19/95	09/21/95	NA	09/26/95	09/27/95
PERCENT MOISTURE	ASTM D2216	09/19/95	09/21/95	NA		09/29/95

Order # 95-09-166
ANALYTICA, INC.

ACCI
DATES REPORT

Sample: 17A TAT-ER-04 Matrix: WATER

Analysis	Method	Collected	Received	TCLP date	Extracted	Analyzed
LEAD, Total	SW 7421	09/19/95	09/21/95	NA	09/25/95	09/27/95

Sample: 18A TAT-CIS-05 Matrix: WATER

Analysis	Method	Collected	Received	TCLP date	Extracted	Analyzed
LEAD, Total	SW 7421	09/19/95	09/21/95	NA	09/25/95	09/27/95

Sample: 19A TAT-CIS-06 Matrix: WATER

Analysis	Method	Collected	Received	TCLP date	Extracted	Analyzed
LEAD, Total	SW 7421	09/19/95	09/21/95	NA	09/25/95	09/27/95

QA/QC REPORT
METHOD BLANK SUMMARY
10/02/95

PAGE: 1
ORDER#: 9509166

CLIENT: ACCI_AK

SAMPLE ID	ANALYTE	PREP DATE	RESULT	LIMIT	QC SPECS UPPER
Method Blank	LEAD, Total	09/25/95	ND	1.0	
Method Blank	LEAD, Total	09/26/95	ND	0.10	

METHOD BLANK SPIKE SUMMARY

SAMPLE ID	ANALYTE	PREP DATE	RESULT	LIMIT	SPIKE	REF VAL	%RECOVERY	QC SPECS LOW	QC SPECS UPPER
Blank Spike	LEAD, Total	09/25/95	20.3	1.0	20	ND	102	80	120
Blank Spike	LEAD, Total	09/26/95	1.93	0.10	2.0	ND	96.5	80	120

MATRIX SPIKE SUMMARY

SAMPLE ID	ANALYTE	PREP DATE	RESULT	LIMIT	SPIKE	REF VAL	%RECOVERY	QC SPECS LOW	QC SPECS UPPER
9509166-01A	LEAD, Total	09/26/95	18.5	0.50	2.0	17.5	50.0 *	70	130

SAMPLE DUPLICATE SUMMARY

SAMPLE ID	ANALYTE	PREP DATE	RESULT	LIMIT	REF VAL	%RPD	QC SPECS UPPER
9509166-01A	LEAD, Total	09/26/95	15.1	0.50	17.5	14.7	20

LEAD RAW DATA

270995A.GF-A

Analytica, Inc.

Graphite Furnace Worksheet

Std	Conc.	Abs.
1	0.0	0.000
2	5.0	0.027
3	50.0	0.233
4	100.0	0.447
R		0.99976

Analyte: Pb 283.3 nm Run Date: 09/27/95 08:15:52
Matrix: W
Analyst: YMD
Instrument: Perkin-Elmer 5000/BZ LGN: 9509151/159/166/178. 9509158/178/166.
ICV Source: #95
EBS Run ID: GFAA1950927010000 Reviewer: ~~RF 9/28/95~~

ID	Sample ID	Conc. 1	Conc. 2	Avg. Conc. (ppb)	% RSD	Serial D.F.	Prep D.F.	Final Conc.	Flags	Comments
1	ICV	38.50	37.90	38.20	1.6	5.0		191.00		Recovery :102.7% TV : 186.0
2	ICB	0.30	0.20	0.25				1.00	U	
3	CRA	3.10	3.20	3.15				3.15		Recovery :105.0% TV : 3.0
4	MB-9500822	0.00	-0.10	-0.05				1.00	U	
5	MB-9500822+	18.70	19.00	18.85	1.6			18.85		Recovery : 94.3%
6	MBS-9500822	19.30	19.20	19.25	0.5			19.25		Recovery : 96.3% TV : 20.00
7	MBS-9500822+	38.30	38.60	38.45	0.8			38.45		Recovery : 96.0%
8	9509151-01D	2.50	1.90	2.20				2.20	B	
9	9509151-01D+	23.10	23.50	23.30	1.7			23.30		Recovery :105.5%
10	D509151-01D	2.30	2.30	2.30				2.30	B	
11	D509151-01D+	21.80	22.20	22.00	1.8			22.00		Recovery : 98.5%
12	S509151-01D	23.20	23.00	23.10	0.9			23.10		Recovery :104.5%
13	CCV	53.30	53.00	53.15	0.6			53.15		Recovery :106.3% TV : 50.0
14	CCB	0.30	0.00	0.15				1.00	U	
15	9509151-02D	0.10	0.20	0.15				1.00	U	
16	9509151-02D+	20.30	20.40	20.35	0.5			20.35		Recovery :101.8%
17	9509151-03D	0.10	0.00	0.05				1.00	U	
18	9509151-03D+	20.70	20.90	20.80	1.0			20.80		Recovery :104.0%
19	9509151-01C	0.20	-0.10	0.05				1.00	U	
20	9509151-01C+	20.80	20.90	20.85	0.5			20.85		Recovery :104.3%
21	9509151-02C	0.10	0.10	0.10				1.00	U	
22	9509151-02C+	20.60	20.70	20.65	0.5			20.65		Recovery :103.3%
23	9509151-03C	0.10	0.10	0.10				1.00	U	
24	9509151-03C+	20.90	21.00	20.95	0.5			20.95		Recovery :104.8%
25	CCV	52.50	52.00	52.25	1.0			52.25		Recovery :104.5% TV : 50.0
26	CCB	0.40	0.10	0.25				1.00	U	
27	9509159-01E	0.50		0.50				1.00	U	QC with 9509160. Batch no 9500821
28	9509159-01E+	19.70		19.70				19.70		Recovery : 98.5%
29	9509159-02E	0.30		0.30				1.00	U	
30	9509159-02E+	19.70		19.70				19.70		Recovery : 98.5%
31	9509166-17A	0.50		0.50				1.00	U	

9/2

ID	Sample ID	Conc. 1	Conc. 2	Avg. Conc. (ppb)	% RSD	Serial D.F.	Prep D.F.	Final Conc.	Flags	Comments
32	9509166-17A+	19.30		19.30				19.30		Recovery : 96.5%
33	9509166-18A	4.50		4.50				4.50		
34	9509166-18A+	23.30		23.30				23.30		Recovery : 94.0%
35	9509166-19A	0.60		0.60				1.00	U	
36	9509166-19A+	19.70		19.70				19.70		Recovery : 98.5%
37	9509178-06A	0.10		0.10				1.00	U	
38	9509178-06A+	19.10		19.10				19.10		Recovery : 95.5%
39	CCV	52.20		52.20				52.20		Recovery :104.4% TV : 50.0
40	CCB	0.60		0.60				1.00	U	
41	ZZZZZ	2.50		2.50				~~2.50~~	B	DNU 9/27/95
42	MB-9500834	0.10		0.10				1.00	U	
43	MB-9500834+	19.10		19.10				19.10		Recovery : 95.5%
44	MBS-9500834	19.10		19.10				19.10		Recovery : 95.5% TV : 20.00
45	9509158-01A	26.60		26.60				26.60		
46	9509158-01A+	45.40		45.40				45.40		Recovery : 94.0%
47	D509158-01A	31.70		31.70				31.70		
48	D509158-01A+	50.40		50.40				50.40		Recovery : 93.5%
49	S509158-01A	48.40		48.40				48.40		Recovery :109.0%
50	9509158-02A	28.70		28.70				28.70		
51	9509158-02A+	47.00		47.00				47.00		Recovery : 91.5%
52	9509158-03A	28.50		28.50				28.50		
53	9509158-03A+	46.90		46.90				46.90		Recovery : 92.0%
54	9509158-04A	27.30		27.30				27.30		
55	9509158-04A+	45.70		45.70				45.70		Recovery : 92.0%
56	9509158-05A	35.10		35.10				35.10		
57	9509158-05A+	54.00		54.00				54.00		Recovery : 94.5%
58	9509158-06A	28.30		28.30				28.30		
59	9509158-06A+	48.00		48.00				48.00		Recovery : 98.5%
60	CCV	52.80		52.80				52.80		Recovery :105.6% TV : 50.0
61	CCB	0.60		0.60				1.00	U	
62	9509158-07A	39.70		39.70				39.70		
63	9509158-07A+	58.80		58.80				58.80		Recovery : 95.5%
64	9509158-08A	32.60		32.60				32.60		
65	9509158-08A+	51.20		51.20				51.20		Recovery : 93.0%
66	9509158-09A	37.80		37.80				37.80		
67	9509158-09A+	56.30		56.30				56.30		Recovery : 92.5%
68	9509158-10A	24.90		24.90				24.90		
69	9509158-10A+	44.50		44.50				44.50		Recovery : 98.0%

ID	Sample ID	Conc. 1	Conc. 2	Avg. Conc. (ppb)	% RSD	Serial D.F.	Prep D.F.	Final Conc.	Flags	Comments
70	9509158-11A	32.30		32.30				32.30		
71	9509158-11A+	50.90		50.90				50.90		Recovery : 93.0%
72	9509178-01A	316.90		316.90			Y	~~316.90~~		Dilute-10X.
73	9509178-01A+	365.20		365.20				365.20		Recovery :241.5%
74	9509178-02A	27.20		27.20				27.20		
75	9509178-02A+	46.30		46.30				46.30		Recovery : 95.5%
76	9509178-03A	41.20		41.20				41.20		
77	9509178-03A+	60.40		60.40				60.40		Recovery : 96.0%
78	9509178-04A	32.60		32.60				32.60		
79	9509178-04A+	51.90		51.90				51.90		Recovery : 96.5%
80	9509178-05A	28.10		28.10				28.10		
81	9509178-05A+	47.30		47.30				47.30		Recovery : 96.0%
82	CCV	52.70		52.70				52.70		Recovery :105.4% TV : 50.0
83	CCB	0.40		0.40				1.00	U	
84	9509178-01A	22.10		22.10		10.0		221.00		
85	9509178-01A+	40.60		40.60				40.60		Recovery : 92.5%
86	9509166-01A	15.70		15.70		10.0	Y	~~157.00~~		DNU for check.
87	MB-9500833	0.30		0.30				1.00	U	
88	MB-9500833+	18.60		18.60				18.60		Recovery : 93.0%
89	MBS-9500833	19.30		19.30				19.30		Recovery : 96.5% TV : 20.00
90	9509166-01A	34.90		34.90		5.0		174.50		
91	9509166-01A+	52.70		52.70				52.70		Recovery : 89.0%
92	D509166-01A	30.10		30.10		5.0		150.50		
93	D509166-01A+	48.10		48.10				48.10		Recovery : 90.0%
94	S509166-01A	37.00		37.00		5.0		185.00		Recovery : 52.5%
95	CCV	52.20		52.20				52.20		Recovery :104.4% TV : 50.0
96	CCB	0.50		0.50				1.00	U	
97	9509166-02A	11.70		11.70		10.0		117.00		DNU for Check
98	9509166-03A	11.00		11.00		10.0		110.00		
99	9509166-04A	10.30		10.30		10.0		103.00		
100	9509166-05A	7.30		7.30		10.0	Y	73.00		
101	9509166-06A	11.60		11.60		10.0		116.00		
102	9509166-07A	11.50		11.50		10.0		115.00		
103	9509166-08A	8.60		8.60		10.0		86.00		
104	9509166-09A	5.20		5.20		10.0		52.00		
105	9509166-10A	9.20		9.20		10.0		92.00		
106	9509166-11A	9.30		9.30		10.0		93.00		
107	9509166-12A	5.40		5.40		10.0		54.00	U	

ID	Sample ID	Conc. 1	Conc. 2	Avg. Conc. (ppb)	% RSD	Serial D.F.	Prep D.F.	Final Conc.	Flags	Comments
108	9509166-13A	9.30		9.30		10.0		93.00		DNA for check
109	9509166-14A	6.40		6.40		10.0		64.00		
110	9509166-15A	5.50		5.50		10.0		55.00		
111	9509166-16A	9.10		9.10		10.0		91.00		
112	CCV	52.00		52.00				52.00		Recovery :104.0% TV : 50.0
113	CCB	0.40		0.40				1.00	U	
114	9509166-02A	62.90		62.90		2.0		125.80		
115	9509166-02A+	81.50		81.50				81.50		Recovery : 93.0%
116	9509166-03A	59.50		59.50		2.0		119.00		
117	9509166-03A+	78.80		78.80				78.80		Recovery : 96.5%
118	9509166-04A	56.40		56.40		2.0		112.80		
119	9509166-04A+	75.30		75.30				75.30		Recovery : 94.5%
120	9509166-05A	41.60		41.60		2.0		83.20		
121	9509166-05A+	59.60		59.60				59.60		Recovery : 90.0%
122	9509166-06A	64.80		64.80		2.0		129.60		
123	9509166-06A+	82.90		82.90				82.90		Recovery : 90.5%
124	9509166-07A	64.50		64.50		2.0		129.00		
125	9509166-07A+	82.40		82.40				82.40		Recovery : 89.5%
126	9509166-08A	45.70		45.70		2.0		91.40		
127	9509166-08A+	64.20		64.20				64.20		Recovery : 92.5%
128	9509166-09A	27.70		27.70		2.0		55.40		
129	9509166-09A+	46.40		46.40				46.40		Recovery : 93.5%
130	9509166-10A	51.10		51.10		2.0		102.20		
131	9509166-10A+	69.40		69.40				69.40		Recovery : 91.5%
132	CCV	54.00		54.00				54.00		Recovery :108.0% TV : 50.0
133	CCB	0.40		0.40				1.00	U	
134	9509166-11A	50.90		50.90		2.0		101.80		
135	9509166-11A+	69.60		69.60				69.60		Recovery : 93.5%
136	9509166-12A	30.60		30.60		2.0		61.20		
137	9509166-12A+	48.80		48.80				48.80		Recovery : 91.0%
138	9509166-13A	51.40		51.40		2.0		102.80		
139	9509166-13A+	70.28		70.20				70.20		Recovery : 94.0%
140	9509166-14A	35.70		35.70		2.0		71.40		
141	9509166-14A+	54.60		54.60				54.60		Recovery : 94.5%
142	9509166-15A	31.20		31.20		2.0		62.40		
143	9509166-15A+	50.10		50.10				50.10		Recovery : 94.5%
144	9509166-16A	51.20		51.20		2.0		102.40		
145	9509166-16A+	68.60		68.60				68.60		Recovery : 87.0%

ID	Sample ID	Conc. 1	Conc. 2	Avg. Conc. (ppb)	% RSD	Serial D.F.	Prep D.F.	Final Conc.	Flags	Comments
146	CCV	48.10		48.10				48.10		Recovery : 96.2% TV : 50.0
147	CCB	0.10		0.10				1.00	U	
148		0.00		0.00				1.00	U	
[illegible]		0.00		0.00				1.00	U	
150		0.00		0.00				1.00	U	

Flag Descriptions: U Reading Below Instrument Detection Limit
B Reading Below CRA

```
*
    0.277
    0.000 AZ
   -0.272
    0.000 AZ
    0.001
    0.000 AZ
    0.000
    0.000 AZ
   -0.000
    0.000 AZ
   -0.002
    0.000 AZ
    0.001
    0.000 AZ
    0.000
    0.000 AZ
    0.001
    0.000 AZ
   -0.002
    0.000 AZ
    0.002
    0.000 AZ
    0.002
    0.000 AZ
   -0.003
    0.000 AZ
   -0.000
    0.008
    0.000 AZ
   -0.007
    0.000 AZ
    0.001
    0.000 AZ
    0.000
    0.000 AZ
   -0.000
    0.000 AZ
   -0.000
    0.000 AZ
    0.001
    0.000 AZ
   -0.000
    0.000 AZ
   -0.000
   -0.001
    0.000 AZ
    0.028
    0.026
    0.027 AV
    5.24 CV
     5.0 S1
    42.9 C
    43.2 C
    43.1 AV
    0.49 CV
```

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pb.

9509151/159/166/178.

9509158/178/166

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5000/BZ

9/27/95

14 58

16	20.3	AV
	0.35	CV
	0.1	
	0.0	
17	0.0	AV
	06	ER
	20.7	
	20.9	
18	20.8	AV
	0.68	CV
	0.2	
	-0.1	
19	0.1	AV
	06	ER
	20.8	
	20.9	
20	20.8	AV
	0.34	CV
	0.1	
	0.1	
21	0.1	AV
	0.00	CV
	20.6	
	20.7	
22	20.7	AV
	0.34	CV
	0.1	
	0.1	
23	0.1	AV
	0.00	CV
	20.9	
	21.0	
24	21.0	AV
	0.34	CV
	52.5	
	52.0	
25	52.3	AV
	0.68	CV
	0.4	
	0.1	
26	0.2	AV
	84.85	CV
27	0.5	
28	19.7	
29	0.3	
30	19.7	
31	0.5	
32	19.3	
33	4.5	
34	23.3	
35	0.6	
36	19.7	
37	0.1	
38	19.1	
39	52.2	
40	0.6	
41	2.5	
42	0.1	
43	19.1	
44	19.1	
45	26.6	
46	45.4	
47	31.7	
48	50.4	

pge 3 of 5
pb.
9509151/159/166/178.
9509158/178/166.
Y—
5000/BE
9/27/95

51	47.	
52	28.5	
53	46.9	
54	27.3	
55	45.7	
56	35.1	
57	54.0	
58	28.3	
59	48.0	
60	52.8	
61	0.6	
62	39.7	
63	58.8	
64	32.6	
65	51.2	
66	37.8	
67	56.3	
68	24.9	
69	44.5	
70	32.3	
71	50.9	
72	316.9	C
73	365.2	C
74	27.2	
75	46.3	
76	41.2	
77	60.4	
78	32.6	
79	51.9	
80	28.1	
81	47.3	
82	52.7	
83	0.4	
84	22.1	
85	40.6	
86	15.7	
87	0.3	
88	18.6	
89	19.3	
90	34.9	
91	52.7	
92	30.1	
93	48.1	
94	37.0	
95	52.2	
96	0.5	
97	11.7	
98	11.0	
99	10.3	
100	7.3	
101	11.6	
102	11.5	
103	8.6	
104	5.2	
105	9.2	
106	9.3	
107	5.4	
108	9.3	
109	6.4	
110	5.5	
111	9.1	
112	52.0	
113	0.4	
114	62.9	

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pb.

9509151/159/166/178.
9509158/178/166

5000/132

9/27/95

117	78.8
118	56.4
119	75.3
120	41.6
121	59.6
122	64.8
123	82.9
124	64.5
125	82.4
126	45.7
127	64.2
128	27.7
129	46.4
130	51.1
131	69.4
132	54.0
133	0.4
134	50.9
135	69.6
136	30.6
137	48.8
138	51.4
139	70.2
140	35.7
141	54.6
142	31.2
143	50.1
144	51.2
145	68.6
146	48.1
147	0.1

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pb.
95-09151/159/166/178.
95-09158/178/166.
y —
5.000/132
9/27/95

PERCENT MOISTURE RAW DATA

PERCENT MOISTURE WORKSHEET

BATCH NO.: 9500114 PREP CODE: PMOIST PREP DATE: 09/29/95

CREATED: 09/29/95 UPDATED: 09/30/95 BY: JF

OVEN TEMPERATURE (C): 110

SAMPLE ID	TARE WT (g)	WETSAMP WT+TARE	WETSAMP WT(g)	DRYSAMP WT+TARE	DRYSAMP WT(g)	PERCENT MOISTURE
				2.29		
MB-9500114	2.29			8.08	0.89	13.3
9509211-01A	2.30	8.97	6.67	7.73	0.90	14.2
D509211-01A	2.29	8.63	6.34	8.13	0.47	7.50
9509166-01A	2.31	8.60	6.29	8.57	0.59	8.60
9509166-02A	2.30	9.16	6.86	8.61	0.63	9.10
9509166-03A	2.30	9.24	6.94	8.79	0.67	9.40
9509166-04A	2.31	9.46	7.15	7.39	1.59	23.8
9509166-05A	2.31	8.98	6.67	7.47	0.62	10.7
9509166-06A	2.31	8.09	5.78	8.63	0.43	6.40
9509166-07A	2.30	9.06	6.76	7.96	1.08	16.0
9509166-08I	2.29	9.04	6.75	8.95	0.57	7.90
9509166-09A	2.29	9.52	7.23	7.72	0.68	11.1
9509166-10A	2.29	8.40	6.11	7.98	0.82	12.7
9509166-11A	2.32	8.80	6.48	7.96	0.81	12.5
9509166-12A	2.29	8.77	6.48	8.32	0.57	8.60
9509166-13A	2.29	8.89	6.60	7.11	1.37	22.1
9509166-14A	2.29	8.48	6.19	7.83	1.23	18.2
9509166-15A	2.30	9.06	6.76	8.48	0.59	8.70
9509166-16A	2.31	9.07	6.76	4.03	0.28	13.9
9509134-01A	2.30	4.31	2.01	8.28	1.01	14.4
9509172-02A	2.30	9.29	6.99			

14 63

ANALYTICA

CHAIN OF CUSTODY RECORD

FAX (303) 420-1434

CLIENT NAME: [illegible]

CLIENT ADDRESS: 361 Arctic Slope Ave., Anch AK 99518

TELEPHONE: 267-6350/6033

FAX: 349-4213

CLIENT CONTACT: [illegible]

PROJECT NAME/DESCRIPTION: Tatalina

P.O NO:

Sample Matrix (circle one)

(NOTE: use one Chain of Custody per matrix)

TESTS REQUESTED: 8020 FX, 8015, 7[illegible], 52[illegible], 20[illegible]

DATE	TIME	CLIENT ID		Tests
9/19	1130	TAT-BH4-5-16	2 4oz	↓ ↓ ↓
9/19	1145	TAT-BH4-7-17	↓	
9/19	1150	TAT-BH4-7-18		
[illegible]	[illegible]	[illegible]		
9/19	[illegible]	TAT-CR-04	[illegible]	
9/19	1057	TAT-CS-05		X X
9/19	1102	TAT-CS-06		X X

Rec'd 1 L per [illegible]

Rec 40ml vials listed on this COC

Called AK Confirmed Cold [illegible] only 1 bottle [illegible]

RDS

CSN ______

LGN ______

LOC ______

DUE ______

MEANS OF DELIVERY: [illegible]

COMMENTS: ADEC Standard Time

Pb To AEL for Analysis

9/20/95 Seals intact

Rec'd @ 5°C

Dropped off by Jeff C

RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME	RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME
[illegible]	9/20/95 840 AM	[illegible]	9/20/95 840 AM	Brad Olson AAT	9/20/95 13:50	[illegible]	9/21/95 [illegible]

ANALYTICA INCORPORATED
18000 W Highway 72
Golden, Colorado 80403
(303) 420-4449 or 1-800 873-8707
FAX: (303) 420-1434

CHAIN OF CUSTODY RECORD

CLIENT NAME ACCI

CLIENT CONTACT Jeff Carlstrom

PB-GTS
10W2

CLIENT ADDRESS 301 Arctic Slp Ave
Anch AK 99518

PROJECT ID/DESCRIPTION Tatalina

TELEPHONE 267-6350/6233

FAX 349-4213

P.O NO

Sample Matrix (circle one)
WATER **(SOIL)** OIL SLUDGE
OTHER (specify)
(NOTE: use one Chain of Custody per matrix)

TESTS REQUESTED

DATE	TIME	CLIENT ID	NO OF BOTTLES	8020 BTEX	8015 GRO	7421 Lead
9/18	1155	TAT-SP-01	2 4oz	✓	✓	✓
9/18	1158	TAT-SP-02	↓	↓	↓	↓
9/18	1201	TAT-SP-03	↓	↓	↓	↓
9/18	1400	TAT-BH1-5-07'	↓	↓	↓	↓
9/18	1412	TAT-BH1-7-08	↓	↓	↓	↓
9/18	1452	TAT-BH1-15-09	↓	↓	↓	↓
9/18	1602	TAT-BH2-5-10	↓	↓	↓	↓
9/18	1610	TAT-BH2-7-11	↓	↓	↓	↓
9/18	1626	TAT-BH2-15-12	↓	↓	↓	↓
9/19	0854	TAT-BH3-5-13	↓	↓	↓	↓
9/19	0945	TAT-BH3-7-14	↓	↓	↓	↓
9/19	1020	TAT-BH3-15-15	↓	↓	↓	↓

Rec'd only (1) 125 ml Jar for Soil used [illegible]
9/21 RCB for Pb analy. CCS

ANALYTICA USE ONLY
CSN A50606
LGN 9509166
LOC Homer 2 + E-4
QC ADEC
PM Jim R.
DUE 9/21/95

COMMENTS ADEC Standard time
Pb to AEL for analysis. RB

9/20/95 seals intact (B)
Rec'd @ 5°C (B)

MEANS OF DELIVERY Fed Exp. 7340272843
Dropped off by Jeff C.

RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME	RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME
Jeff Carlstrom	9/20/95 8:40 AM	[signature]	9/20/95 8:40 AM	Bruce Olson AAT	9/20/95 13.50	[signature]	9/21/95 0955

CASE NARRATIVE

Company Name: **Analytica Alaska Inc.**
Project Name: **Tatalina**
CT&E Work Order Number: **95. 4157**

CT&E Sample#	Client Sample#	Analysis Requested
01	TAT-CIS-05	Volatile Organics by EPA 524.2
02	TAT-CIS-06	Volatile Organics by EPA 524.2

Prepared By (Signature) [signature]
(Print Name) Luzviminda C Hornig
(Date) 10-10-95

Laboratory Supervisor Review & Approval (Signature) [signature]
(Print Name) Stephen C. Ede
(Date) 10-11-95

95.4157

Army Corp of Engineers Project: ☐ YES ☒ NO Chem Lab Ref

Lab Due Date: 9/28 (10/2)

Computer W/O#: 18264

(new) Account #:

Client Name: ANALYTICAL

Ordered By: JEFF CARLSTROM

Via: HC

Purchase Order#:

Requisition#:

Extraction Date: 10/3

Holding Time: 14

Date Due: 9/29 (10/3)

Sample Received: 9/22 Time: 1130

Date Collected: 9/19 Time:

Address:

Paid (Ck#) _____ (Cash)_____

Amount $: _____

Send Additional Reports to:

Phone #: _____ Fax : _____

_____ Phone #: _____ Fax #: _____

Special Instructions:

Sample #	Description	Matrix	Test Code	Parameter	Amount
4	SEE COC (1-2)	1	12005	524.2	
3	QC SUMMARY	5	10150	ORG	

EP Tox (GC) GC Prep H2O Metals Micro O/G Oils QC

Sample Remarks:

Chain Of Custody: Y Tags: N

Custody Seals: (broken) N (intact) N

Rec'd By. JM

Logged By: JM

Entered By:

Proofed By:

95.4157

Temp. of Samples:

Sample Condition: (Good) Fair Poor

Sample Containers:

(2) - 40mL VOA

CT&E Environmental Services Inc.
Laboratory Division

Laboratory Analysis Report

CT&E Ref.# 95.4157-1
Matrix WATER
Client Sample ID TAT-CIS-05

Client Name ANALYTICA ALASKA INC
Ordered By JEFF CARLSTROM
Project Name TATALINA
Project#
PWSID UA

WORK Order 18264
Printed Date 09/30/95 @ 07
Collected Date 09/19/95 @ 10:5
Received Date 09/22/95 @ 11:

Technical Director STEPHEN C. EDE

Released By

Sample Remarks: SAMPLE COLLECTED BY: J.C.

Parameter	Results	QC Qual	Units	Method	Allowable Limits	Ext. Date	Anal Date
Volatile Organic Chem				EPA 502.2/524.2			
1,1,1 Trichloroethane	0.00050	U	mg/L	EPA 502.2/524.2	0.200	09/27/95	09/27/9
1,1 Dichloroethylene	0.00050	U	mg/L	EPA 502.2/524.2	0.0070	09/27/95	09/27/9
1,2 Dichloroethane	0.00050	U	mg/L	EPA 502.2/524.2	0.0050	09/27/95	09/27/9
Carbon Tetrachloride	0.00050	U	mg/L	EPA 502.2/524.2	0.0050	09/27/95	09/27/9
Vinyl Chloride	0.00050	U	mg/L	EPA 502.2/524.2	0.0020	09/27/95	09/27/9
Benzene	0.00050	U	mg/L	EPA 502.2/524.2	0.0050	09/27/95	09/27/9
1,4-Dichlorobenzene	0.00050	U	mg/L	EPA 502.2/524.2	0.0750	09/27/95	09/27/9
Trichloroethylene	0.00050	U	mg/L	EPA 502.2/524.2	0.0050	09/27/95	09/27/9
TTHM	0.00050	U	mg/L	EPA 502.2/524.2	0.100	09/27/95	09/27/9
Bromobenzene	0.00050	U	mg/L	EPA 502.2/524.2		09/27/95	09/27/9
Bromochloromethane	0.00050	U	mg/L	EPA 502.2/524.2		09/27/95	09/27/9
Bromodichloromethane	0.00050	U	mg/L	EPA 502.2/524.2		09/27/95	09/27/9
Bromoform	0.00050	U	mg/L	EPA 502.2/524.2		09/27/95	09/27/9
Bromomethane	0.00050	U	mg/L	EPA 502.2/524.2		09/27/95	09/27/9
n-Butylbenzene	0.00050	U	mg/L	EPA 502.2/524.2		09/27/95	09/27/9
sec-Butylbenzene	0.00050	U	mg/L	EPA 502.2/524.2		09/27/95	09/27/9
tert-Butylbenzene	0.00050	U	mg/L	EPA 502.2/524.2		09/27/95	09/27/9
Chlorobenzene	0.00050	U	mg/L	EPA 502.2/524.2		09/27/95	09/27/9
Chlorodibromomethane	0.00050	U	mg/L	EPA 502.2/524.2		09/27/95	09/27/9
Chloroethane	0.00050	U	mg/L	EPA 502.2/524.2		09/27/95	09/27/9
Chloroform	0.00050	U	mg/L	EPA 502.2/524.2		09/27/95	09/27/9
Chloromethane	0.00050	U	mg/L	EPA 502.2/524.2		09/27/95	09/27/9
12Dibromo-3-Chloropropa	0.00050	U	mg/L	EPA 502.2/524.2		09/27/95	09/27/9
o-Chlorotoluene	0.00050	U	mg/L	EPA 502.2/524.2		09/27/95	09/27/9
p-Chlorotoluene	0.00050	U	mg/L	EPA 502.2/524.2		09/27/95	09/27/9
Dibromomethane	0.00050	U	mg/L	EPA 502.2/524.2		09/27/95	09/27/9
m-Dichlorobenzene	0.00050	U	mg/L	EPA 502.2/524.2		09/27/95	09/27/9
o-Dichlorobenzene	0.00050	U	mg/L	EPA 502.2/524.2		09/27/95	09/27/9
Dichlorodifluoromethane	0.00050	U	mg/L	EPA 502.2/524.2		09/27/95	09/27/9
1,1-Dichloroethane	0.00050	U	mg/L	EPA 502.2/524.2		09/27/95	09/27/9
cis-1,2-Dichloroethylen	0.00050	U	mg/L	EPA 502.2/524.2		09/27/95	09/27/9
trans-1,2-Dichloroethyl	0.00050	U	mg/L	EPA 502.2/524.2		09/27/95	09/27/9
Dichloromethane	0.0010		mg/L	EPA 502.2/524.2		09/27/95	09/27/9
1,2-Dichloropropane	0.00050	U	mg/L	EPA 502.2/524.2		09/27/95	09/27/9
1,3-Dichloropropane	0.00050	U	mg/L	EPA 502.2/524.2		09/27/95	09/27/9
2,2-Dichloropropane	0.00050	U	mg/L	EPA 502.2/524.2		09/27/95	09/27/9

CT&E Environmental Services Inc

CT&E Ref.# 95.4157-1
Matrix WATER
Client Sample ID TAT-CIS-05

1,1-Dichloropropene	0.00050	U	mg/L	EPA 502.2/524.2	09/27/95	09/27/9
1,3-Dichloropropene	0.00050	U	mg/L	EPA 502.2/524.2	09/27/95	09/27/9
Ethylbenzene	0.00050	U	mg/L	EPA 502.2/524.2	09/27/95	09/27/9
Ethylene Dibromide(EDB)	0.00050	U	mg/L	EPA 502.2/524.2	09/27/95	09/27/9
Fluorotrichloromethane	0.00050	U	mg/L	EPA 502.2/524.2	09/27/95	09/27/9
Hexachlorobutadiene	0.00050	U	mg/L	EPA 502.2/524.2	09/27/95	09/27/9
Isopropylbenzene	0.00050	U	mg/L	EPA 502.2/524.2	09/27/95	09/27/9
p-Isopropyltoluene	0.00050	U	mg/L	EPA 502.2/524.2	09/27/95	09/27/9
Napthalene	0.00050	U	mg/L	EPA 502.2/524.2	09/27/95	09/27/9
n-Propylbenzene	0.00050	U	mg/L	EPA 502.2/524.2	09/27/95	09/27/9
Styrene	0.00050	U	mg/L	EPA 502.2/524.2	09/27/95	09/27/9
1112-Tetrachloroethane	0.00050	U	mg/L	EPA 502.2/524.2	09/27/95	09/27/9
1122-Tetrachloroethane	0.00050	U	mg/L	EPA 502.2/524.2	09/27/95	09/27/9
Tetrachloroethylene	0.00050	U	mg/L	EPA 502.2/524.2	09/27/95	09/27/9
Toluene	0.00050	U	mg/L	EPA 502.2/524.2	09/27/95	09/27/9
1,2,3-Trichlorobenzene	0.00050	U	mg/L	EPA 502.2/524.2	09/27/95	09/27/9
1,2,4-Trichlorobenzene	0.00050	U	mg/L	EPA 502.2/524.2	09/27/95	09/27/9
1,1,2-Trichloroethane	0.00050	U	mg/L	EPA 502.2/524.2	09/27/95	09/27/9
1,2,3-Trichloropropane	0.00050	U	mg/L	EPA 502.2/524.2	09/27/95	09/27/9
1,2,4-Trimethylbenzene	0.00050	U	mg/L	EPA 502.2/524.2	09/27/95	09/27/9
1,3,5-Trimethylbenzene	0.00050	U	mg/L	EPA 502.2/524.2	09/27/95	09/27/9
p & m Xylene	0.00050	U	mg/L	EPA 502.2/524.2	09/27/95	09/27/9
o-Xylene	0.00050	U	mg/L	EPA 502.2/524.2	09/27/95	09/27/9

* See Special Instructions Above
** See Sample Remarks Above
U - Undetected, Reported value is the practical quantification limit.
D - Secondary dilution.

UA - Unavailable
NA - Not Analyzed
LT - Less Than
GT - Greater Than

CT&E Environmental Services Inc.

CT&E Ref.# 95.4157-2
Matrix WATER
Client Sample ID TAT-CIS-06

Client Name ANALYTICA ALASKA INC
Ordered By JEFF CARLSTROM
Project Name TATALINA
Project#
PWSID UA

WORK Order 18264
Printed Date 10/11/95 @ 14:49 hrs
Collected Date 09/19/95 @ 11:02 hrs
Received Date 09/22/95 @ 11:30 hrs

Technical Director STEPHEN C. EDE

Released By

Sample Remarks: SAMPLE COLLECTED BY: J.C. CORRECTED RESULTS FOR DICHLOROMETHANE.

Parameter	Results	QC Qual	Units	Method	Allowable Limits	Ext. Date	Anal Date	Ini
Volatile Organic Chem				EPA 502.2/524.2				
1,1,1 Trichloroethan	0.00050	U	mg/L	EPA 502.2/524.2	0.200	09/27/95	09/27/95	KW
1,1 Dichloroethylene	0.00050	U	mg/L	EPA 502.2/524.2	0.0070	09/27/95	09/27/95	KW
1,2 Dichloroethane	0.00050	U	mg/L	EPA 502.2/524.2	0.0050	09/27/95	09/27/95	KW
Carbon Tetrachloride	0.00050	U	mg/L	EPA 502.2/524.2	0.0050	09/27/95	09/27/95	KW
Vinyl Chloride	0.00050	U	mg/L	EPA 502.2/524.2	0.0020	09/27/95	09/27/95	KW
Benzene	0.00050	U	mg/L	EPA 502.2/524.2	0.0050	09/27/95	09/27/95	KW
1,4-Dichlorobenzene	0.00050	U	mg/L	EPA 502.2/524.2	0.0750	09/27/95	09/27/95	KWM
Trichloroethylene	0.00050	U	mg/L	EPA 502.2/524.2	0.0050	09/27/95	09/27/95	KWM
TTHM	0.00050	U	mg/L	EPA 502.2/524.2	0.100	09/27/95	09/27/95	KWM
Bromobenzene	0.00050	U	mg/L	EPA 502.2/524.2		09/27/95	09/27/95	KWM
Bromochloromethane	0.00050	U	mg/L	EPA 502.2/524.2		09/27/95	09/27/95	KWM
Bromodichloromethane	0.00050	U	mg/L	EPA 502.2/524.2		09/27/95	09/27/95	KWM
Bromoform	0.00050	U	mg/L	EPA 502.2/524.2		09/27/95	09/27/95	KWM
Bromomethane	0.00050	U	mg/L	EPA 502.2/524.2		09/27/95	09/27/95	KWM
n-Butylbenzene	0.00050	U	mg/L	EPA 502.2/524.2		09/27/95	09/27/95	KWM
sec-Butylbenzene	0.00050	U	mg/L	EPA 502.2/524.2		09/27/95	09/27/95	KWM
tert-Butylbenzene	0.00050	U	mg/L	EPA 502.2/524.2		09/27/95	09/27/95	KWM
Chlorobenzene	0.00050	U	mg/L	EPA 502.2/524.2		09/27/95	09/27/95	KWM
Chlorodibromomethane	0.00050	U	mg/L	EPA 502.2/524.2		09/27/95	09/27/95	KWM
Chloroethane	0.00050	U	mg/L	EPA 502.2/524.2		09/27/95	09/27/95	KWM
Chloroform	0.00050	U	mg/L	EPA 502.2/524.2		09/27/95	09/27/95	KWM
Chloromethane	0.00050	U	mg/L	EPA 502.2/524.2		09/27/95	09/27/95	KWM
12Dibromo-3-Chloropropa	0.00050	U	mg/L	EPA 502.2/524.2		09/27/95	09/27/95	KWM
o-Chlorotoluene	0.00050	U	mg/L	EPA 502.2/524.2		09/27/95	09/27/95	KWM
p-Chlorotoluene	0.00050	U	mg/L	EPA 502.2/524.2		09/27/95	09/27/95	KWM
Dibromomethane	0.00050	U	mg/L	EPA 502.2/524.2		09/27/95	09/27/95	KWM
m-Dichlorobenzene	0.00050	U	mg/L	EPA 502.2/524.2		09/27/95	09/27/95	KWM
o-Dichlorobenzene	0.00050	U	mg/L	EPA 502.2/524.2		09/27/95	09/27/95	KWM
Dichlorodifluoromethane	0.00050	U	mg/L	EPA 502.2/524.2		09/27/95	09/27/95	KWM
1,1-Dichloroethane	0.00050	U	mg/L	EPA 502.2/524.2		09/27/95	09/27/95	KWM
cis-1,2-Dichloroethylen	0.00050	U	mg/L	EPA 502.2/524.2		09/27/95	09/27/95	KWM
trans-1,2-Dichloroethyl	0.00050	U	mg/L	EPA 502.2/524.2		09/27/95	09/27/95	KWM
Dichloromethane	0.00050	U	mg/L	EPA 502.2/524.2		09/27/95	09/27/95	KWM
1,2-Dichloropropane	0.00050	U	mg/L	EPA 502.2/524.2		09/27/95	09/27/95	KWM
1,3-Dichloropropane	0.0011		mg/L	EPA 502.2/524.2		09/27/95	09/27/95	KWM
2,2-Dichloropropane	0.00050	U	mg/L	EPA 502.2/524.2		09/27/95	09/27/95	KWM

CT&E Ref # 95.4157-2
Matrix WATER
Client Sample ID TAT-CIS-06

1,1-Dichloropropene	0.00050	U	mg/L	EPA 502.2/524.2	09/27/95	09/27/95	K
1,3-Dichloropropene	0.00050	U	mg/L	EPA 502.2/524.2	09/27/95	09/27/95	K
Ethylbenzene	0.00050	U	mg/L	EPA 502.2/524.2	09/27/95	09/27/95	K
Ethylene Dibromide(EDB)	0.00050	U	mg/L	EPA 502.2/524.2	09/27/95	09/27/95	K
Fluorotrichloromethane	0.00050	U	mg/L	EPA 502.2/524.2	09/27/95	09/27/95	K
Hexachlorobutadiene	0.00050	U	mg/L	EPA 502.2/524.2	09/27/95	09/27/95	K
Isopropylbenzene	0.00050	U	mg/L	EPA 502.2/524.2	09/27/95	09/27/95	K
p-Isopropyltoluene	0.00050	U	mg/L	EPA 502.2/524.2	09/27/95	09/27/95	K
Napthalene	0.00050	U	mg/L	EPA 502.2/524.2	09/27/95	09/27/95	K
n-Propylbenzene	0.00050	U	mg/L	EPA 502.2/524.2	09/27/95	09/27/95	K
Styrene	0.00050	U	mg/L	EPA 502.2/524.2	09/27/95	09/27/95	K
1112-Tetrachloroethane	0.00050	U	mg/L	EPA 502.2/524.2	09/27/95	09/27/95	K
1122-Tetrachloroethane	0.00050	U	mg/L	EPA 502.2/524.2	09/27/95	09/27/95	K
Tetrachloroethylene	0.00050	U	mg/L	EPA 502.2/524.2	09/27/95	09/27/95	K
Toluene	0.00050	U	mg/L	EPA 502.2/524.2	09/27/95	09/27/95	K
1,2,3-Trichlorobenzene	0.00050	U	mg/L	EPA 502.2/524.2	09/27/95	09/27/95	K
1,2,4-Trichlorobenzene	0.00050	U	mg/L	EPA 502.2/524.2	09/27/95	09/27/95	K
1,1,2-Trichloroethane	0.00050	U	mg/L	EPA 502.2/524.2	09/27/95	09/27/95	K
1,2,3-Trichloropropane	0.00050	U	mg/L	EPA 502.2/524.2	09/27/95	09/27/95	K
1,2,4-Trimethylbenzene	0.00050	U	mg/L	EPA 502.2/524.2	09/27/95	09/27/95	K
1,3,5-Trimethylbenzene	0.00050	U	mg/L	EPA 502.2/524.2	09/27/95	09/27/95	K
p & m Xylene	0.00050	U	mg/L	EPA 502.2/524.2	09/27/95	09/27/95	K
o-Xylene	0.00050	U	mg/L	EPA 502.2/524.2	09/27/95	09/27/95	K

* See Special Instructions Above
** See Sample Remarks Above
U = Undetected, Reported value is the practical quantification limit.
D = Secondary dilution.

UA = Unavailable
NA = Not Analyzed
LT = Less Than
GT = Greater Than

CT&E Environmental Services Inc.

CT&E Ref.# 95.4157-3
Matrix OTHER
Client Sample ID LEVEL 1 QA/QC DATA PACKAGE-ORGANICS

Client Name ANALYTICA ALASKA INC
Ordered By JEFF CARLSTROM
Project Name TATALINA
Project#
PWSID UA

WORK Order 18264
Printed Date 09/30/95 @ 07.22
Collected Date 09/19/95 @
Received Date 09/22/95 @ 11.30

Technical Director STEPHEN C. EDE

Released By

Sample Remarks: TECHNICAL/COMPLETENESS REQUIREMENTS MET EXCEPT FOR CONDITIONS LISTED.
**SEE QC SUMMARY SHEET.

Parameter	Results	QC Qual	Units	Method	Allowable Limits	Ext. Date	Anal Date
QA/QC Summary I Organics							
.....I. Receipt Sample received in good condition unless noted							
.....II. Holding Time All holding times met unless noted					Regulatory		
.....III. Analysis		**					
A. Calibration ...All criteria met							
B. Blanks ...All criteria met							
C. Spike Sample(s) ...All criteria met		**					
D. Duplicate Sample(s) ...All criteria met							
E. LabControl Sample(s) ...All criteria met		**NO					
F. Surrogate(s) ...All criteria met							
Certified by	K. MAHER						

* See Special Instructions Above
** See Sample Remarks Above
U = Undetected. Reported value is the practical quantification limit
D = Secondary Dilution

UA = Unavailable
NA = Not Analyzed
LT = Less Than
GT = Greater Than

ANALYTICA ALASKA INC

811 W. 8th Ave, Anchorage, AK 99501, (907) 258-2155, FAX: (907) 258-6634

325 Interlocken Parkway, Suite 200, Broomfield, Colorado 80021, (303) 469-8868, FAX: (303) 469-5254

LGN
CSN

Chain of Custody Record / Analysis Request

Company Name: ACCI

Company Address: 301 Arctic Slope Ave, Anchorage, AK 99518

Telephone: 267-6350/6233

FAX: 349-4213

Project Name: Tatalina

Report To: Mr. Jeff Carlstrom

Sampler: JC

P O Number: 1501076

Sample ID	Date Collected	Time Collected	Matrix	8 oz Glass	4 oz Glass	40 ml. VOAHCl	1 L Glass /	1 L Poly /	BTEX by 5030/8020 or 602	GRPH by 5030/8015M	DRPH by 3550/8100M	TPH by 3540/418.1	Metals by ICP (specify)	Metals by GFAA (specify)	TCLP by EPA 1311	Volatiles by EPA 8240 or 624	Semi-Volatiles by EPA 8270 or 625	PCB by EPA 8080 or 608	Vox by 524.2	Hold for Further Analysis	RUSH (see below)	LAB ID
(1) TAT-CIS 05	9/19	10:51	W		1														✓			
(2) TAT-CIS-06	9/19	11:02	W		1														✓			

95.4157

COMMENTS: Please write report to J Carlstrom @ ACCI.
1) Send report directly to: Brad Olson @ Analytica Alaska Inc
2) Send invoice directly to: " " " (see address above)

QA/QC LEVEL
- ✓ ADEC Deliverables Level III
- Standard

TURNAROUND
- 2 business days
- 5 business days
- 15 business days
- other ___ (#) business day

RELINQUISHED BY SAMPLER	RECEIVED BY	RELINQUISHED BY	RECEIVED BY:
Signature: [signature]	Signature: [signature]	Signature	Signature
Printed Name: Brad Olson	Printed Name: Jody L Maur	Printed Name	Printed Name
Firm: Analytica AK	Firm: CT&E	Firm	Firm
Date/Time: 9/22/95 8:30	Date/Time: 9/22/95 1130	Date/Time	Date/Time

ANALYTICA USE ONLY
- Airbill / Freight #
- Condition of Sample Containers
- Temp Received: °C Rud@ 4°C at 5° on 9/20/95
- # of Coolers: (1) cooler: Icy
- Seals

* plz note only (1) vial for analysis

PAGE 1 OF 1

14 72

APPENDIX C

SITE PHOTGRAPHS

F41624-24-94-D-8070

SITE ASSESSMENT AND RELEASE INVESTIGATION
UST WORK AT FOUR LRRS FY,95

UST REMOVAL STOCK PILE WITH SAMPLE LOCATIONS

Project: SITE PHOTOGRAPH TATALINA LRRS TATALINA ALASKA	By: KSM	Date: 11/15/95	Project No: 95-2069
	Checked: DO	Date: 11/15/95	File Path: ACC\1\9420\1\ACAD12\LRRS.DWG
Client: UNITED STATES AIR FORCE	Scale:		

F41624-24-94-D-8070

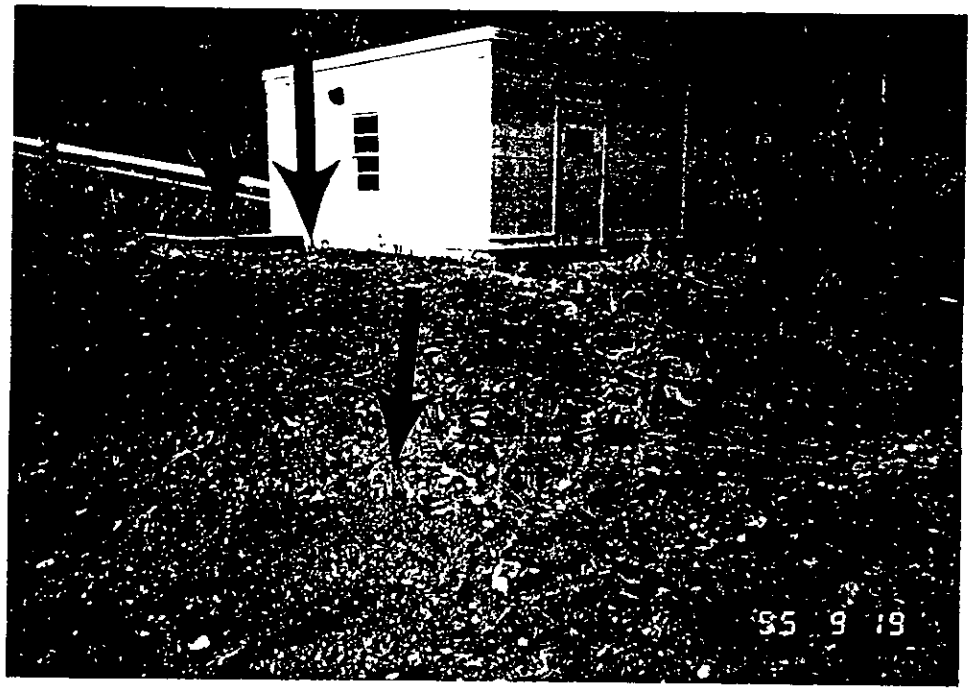
SITE ASSESSMENT AND RELEASE INVESTIGATION
UST WORK AT FOUR LRRS FY,95

DRILLING BOREHOLE #1 NEAR WATER GALLERY PUMPHOUSE

	Project: SITE PHOTOGRAPH TATALINA LRRS TATALINA ALASKA	By: KSM	Date: 11/15/95	Project No: CEOS 95-2069
		Checked: DO	Date: 11/15/95	File Path: ACCI\ 9420\ ACAD12\ LRRS.DWG
	Client: UNITED STATES AIR FORCE	Scale:		

POURING BENTONITE DOWN BOREHOLE #1

Project: SITE PHOTOGRAPH TATALINA LRRS TATALINA ALASKA		By: KSM	Date: 11/15/95	Project No: CEOS 95-2069
		Checked: DO	Date: 11/15/95	File Path: ACCT\ 9420\ ACAD12\ LRRS.DWG
Client: UNITED STATES AIR FORCE		Scale:		



WATER GALLERY PUMPHOUSE FROM SOUTHEAST WITH BOREHOLE LOCATIONS IN FOREGROUND

Project: SITE PHOTOGRAPH TATALINA LRRS TATALINA ALASKA		By: KSM	Date: 11/15/95	Project No: CEOS 95-2069
		Checked: DO	Date: 11/15/95	File Path: ACCI\ 94201\ ACADT2\ LRRS.DWG
Client: UNITED STATES AIR FORCE		Scale:		

APPENDIX D

BORING LOGS

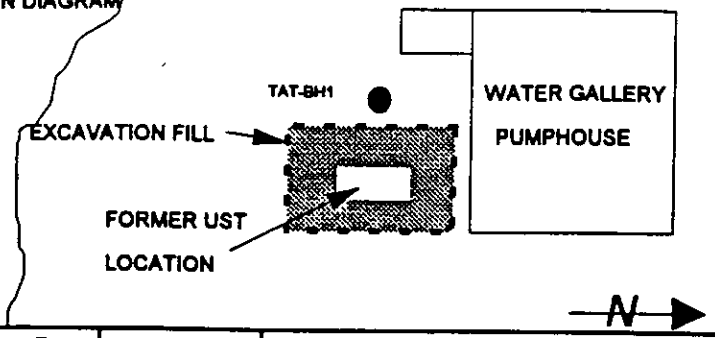
ACCI

ASRC CONTRACTING COMPANY, INC.

OJECT: Tatalina LRRS

LOG OF BORING NO. TAT-BH1

OCATION DIAGRAM



☐ MONITORING WELL ☒ TEST BORING

LOGGED BY: Jeff Carlstrom (ACCI)

DRILLER: Gary Wilson (Hughes) RIG: CME 45

HAMMER WT: 300 lbs DROP: 30"

START TIME: 1335 DATE: 9/18/95

COMPLETE TIME: 1455 DATE: 9/18/95

WEATHER: High scattered clouds, 58°, wind NE to 5.

INSTRUMENTATION: PID - HL-2000 Microtip

DEPTH FT	BLOWS/6 IN	ANALYTICAL SAMPLES	MATERIAL DESCRIPTION	USC	GRAPHIC LOG	PID PPM	ODOR	WELL DIAGRAM
2	4,7,9,7		Brown, gravel w/ organics	PT		1.5	none	
5	6,9,8,7	TAT-BH1-5-07	Brown/grey, clayey gravel	GC		3.1	none	
7	5,7,9,5	TAT-BHI-7-08	Brown/grey, clayey gravel, clay layer at 10'	GC		3.9	none	
10	3,6,10,15		Brown clay, perched water @ 10'	OH		1.9	none	
17	13,25,38,65	TAT-BH1-15-09	Gray gravel , water @ 17'	GC		2.7	none	
			End of Boring @ 17'					

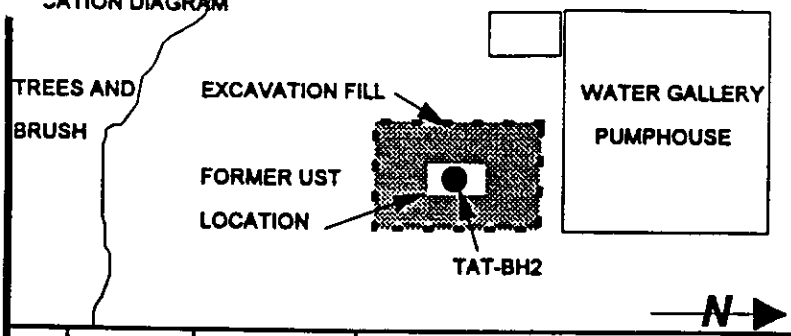
ACCI

ASRC CONTRACTING COMPANY, INC.

PROJECT: Tatalina LRRS

LOG OF BORING NO. TAT-BH2

CATION DIAGRAM



☐ MONITORING WELL ☒ TEST BORING

LOGGED BY: Jeff Carlstrom (ACCI)

DRILLER: Gary Wilson (Hughes) RIG: CME 45

HAMMER WT: 300 lbs DROP: 30"

START TIME: 1554 DATE: 9/18/95

COMPLETE TIME: 1630 DATE: 9/18/95

WEATHER: High scattered clouds, 58°, wind NE to 5.

INSTRUMENTATION: PID - HL 2000 Microtip

DEPTH FT	BLOWS/6 IN	ANALYTICAL SAMPLES	MATERIAL DESCRIPTION	USC	GRAPHIC LOG	PID PPM	ODOR	WELL DIAGRAM
2	3,2,1,3		Fill, slate fragments/gravel	GW		2	none	
5	3,2,1,3	TAT-BH2-5-10	Fill, slate fragments/gravel	GW		4	none	
7	3,5,4,4	TAT-BH2-7-11	Grey/brown, clayey gravel, w/ organics	GC		4.3	none	
10	1,5,4,4		Grey/brown, clayey gravel, w/ organics	GC		4.1	none	
17	10,22,40,73	TAT-BH2-15-12	Gray gravel, water @ 17'	GC		4	none	
			End of boring @ 17'					

ACCI

ASRC CONTRACTING COMPANY, INC.

!ECT: Tatalina LRRS

LOG OF BORING NO. TAT-BH3

☐ MONITORING WELL ☒ TEST BORING

LOGGED BY: Jeff Carlstrom (ACCI)

DRILLER: Gary Wilson (Hughes) RIG: CME 45

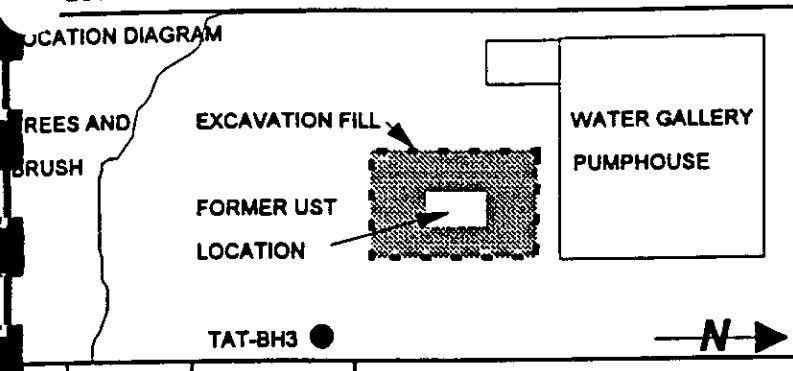
HAMMER WT: 300 lbs DROP: 30"

START TIME: 845 DATE: 9/19/95

COMPLETE TIME: 1025 DATE: 9/19/95

WEATHER: High scattered clouds, 40s' calm.

INSTRUMENTATION: PID - HL 2000 Microtip



DEPTH FT	BLOWS/6 IN	ANALYTICAL SAMPLES	MATERIAL DESCRIPTION	USC	GRAPHIC LOG	PID PPM	ODOR	WELL DIAGRAM
2	6,6,9,15		Brown soil w/ slate fragments/gravel	GW		2.7	none	
5	5,15,48,23	TAT-BH3-5-13	Brown slate fragments/gravel	GW		3.7	none	
7	7,7,8,11	TAT-BH3-7-14	Grey/brown slate gravel, water @ 9'	GC		4.2	none	
10	29,13,11		No sample	GC			none	
11	5,35,22,9		Grey clay over brown gravel			3.7		
17	13,19,12	TAT-BH3-15-15	Gray clay over slate, water @ 17'	GC		3.7	none	
			End of boring @ 17'					

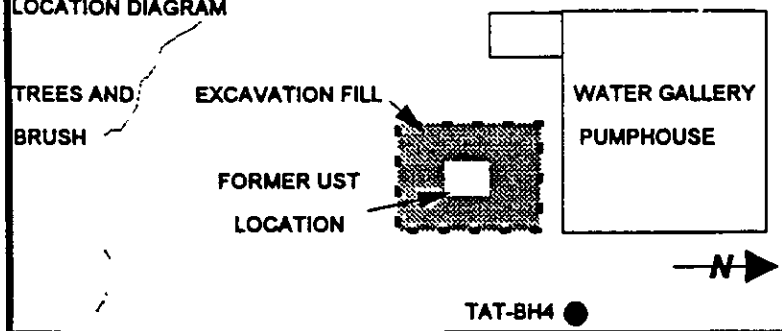
ACCI

ASRC CONTRACTING COMPANY, INC.

PROJECT: Tatalina LRRS

LOG OF BORING NO. TAT-BH4

LOCATION DIAGRAM



☐ MONITORING WELL ☒ TEST BOR

LOGGED BY: Jeff Carlstrom (ACCI)

DRILLER: Gary Wilson (Hughes) RIG: CME

HAMMER WT: 300 lbs DROP: 30

START TIME: 1115 DATE: 9/

COMPLETE TIME: 1320 DATE: 9/

WEATHER: High scattered clouds, 60s, calm.

INSTRUMENTATION: PID - HL 2000 Microtip

DEPTH FT	BLOWS/6 IN	ANALYTICAL SAMPLES	MATERIAL DESCRIPTION	USC	GRAPHIC LOG	PID PPM	ODOR	WELL
2	7,10,15,25		Gray brown soil w/ slate fragments/gravel	GC		3.9	none	
5	6,10,6	TAT-BH4-5-16	Brown gray clayey gravel w/ organics	GC		4	none	
7	3,12,11,13	TAT-BH4-7-17 TAT-BH4-7-18FD	Brown clay, water @ 9'	OH		3.8	none	
10	4,13,10		Brown gray clayey gravel	GC		3.1	none	
17	9,21,27,32	TAT-BH4-15-19	Slate w/ clay, water @ 14'	GC		52	none	
			End of boring @ 17'					

APPENDIX E

FIELD NOTES

"Rite in the Rain"
ALL-WEATHER WRITING PAPER

Name Jeff Carlstrom
ACCI

Address 301 Arctic Slope Ave #101
Anchorage AK 99503

Phone (907) 267-6750

Project Tatalina LRRS

14 85

DATE

9/17/95 Ouvest, 50s, E to 10.

1800 Arrive Tatalina LRRS

1930. Shown contaminated soil stockpile. It currently holds 5% (approx) of it capacity. 6" of water in the pile and Dirt holding down 20 mil liner I need a hand or better yet a loader to move the liner.

Jeff Calderon 9/17/95

14 86

2 9/18/95 Hi Scttrd Clds, 58°, NE to 5

0800 Chuck (Sta Chf) + Bob (Mech) go w/ me to pump house for locates. Borings marked.

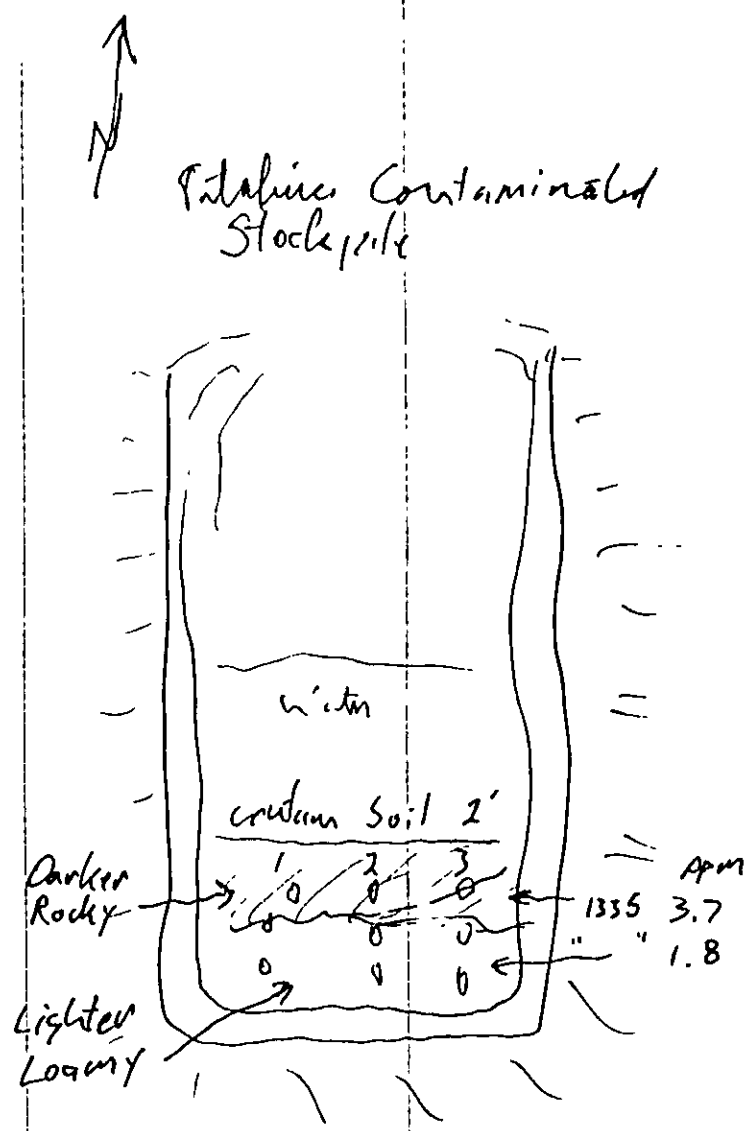
0900 Southern Air arrives w/ Drill rig and crew.

Get signed in @ Sta and off to set up rig.

0945 Curt + I @ Stock pile. Tubes some doing to get dirt off edges

1145 Top liner off. Water in soil and of Stock pile containment. Water down in pile 1'

Tat-SP-01 1155
Tat-SP-02 1158
Tat SP-03 1201



1200 Took samples of stockpile. ½ pile is darker Rocky w/ little to no organics. Other half is Regular dirt w/ rocks.
PID Dark Rocky : 3.8 light soil : 1.7
Bob Garland + Sgt Denny Frazier arrive Noon

1315 Set up on BH 1 @ pump hs.

BH 1

1335 Begin drilling easy @ Top w/ loose soil.

Time	#	BC	Geol	PID Time	PID
1348	BH1-1-2	4,7,9,7	Br Rky Orgs	1432	1.5
1400	1-2-5-7	6,9,8,7	BR/Gr Cly Rky	1437	3.1
1410	1-3 7-9	5,7,9,5	B/Gr Cly L 10' Rocky cms	1434	3.9
1419	1-4 10 12	3,6,10,15	BR Cly -11' 10' perch water	1452	1.9
1452	1 5 15-17	13,25,38,15	Gr RK soil in spaces Gr	1524	2.7

1536 Set up on BH2

BH2

1554 Begin drilling BH2

Time	#	BC	GEOL	PID Time	PID
1557	2-1 2-4	3,2,1,3	FILL slate Rky frags	1644	2.0
1602	2 2 5-7	3,2,1,3	FILL Slate Rck Frag	1644	4.0
1610	2-3 7-9	3,5,4,4	Rcky Cly GR/Br Water Cly w/org matl	1645	4.3
1616	2 4 10 12	1,5,4,4	Gr/Br Rcky Cly w/frags	1646	4.1
1626	2 5 15-17	10,23,AC,75	GR Rck Br Soil in Spaces	1707	4.0

Filter but sunrise so warmer

Water @ 9-10' again @ 17'

1508 Backfilled hole 1 w/ Bentonite to 8' and a surface cap.

1635 Backfill hole 2 w/ Bentonite to 8' and a surface cap.

1715 Up to camp.

[illegible] Castleton 9/18/95

9/19/95 Scattered Clds, 70s, Calm

0800 Drillers set up on BH 3

0845 Begin Drilling BH 3

BH 3

PID Background 0.4-0.6 Calm w/ Autumn smell.

Time	#	B.C.	Geol	PID Time	PID
0847	3 1.2-4	6,6,9,15	Br Soil Rocky (Silt)	0942	2.7
0854	3-2 5-7	5,15,49,23	Br Rocky/Slate	0943	3.7
0945	3 3 7-9	7,7,8,11	Br Gr Rocky Water @ 9'	1052	4.2
	18" spoon			1053	3.7
0950	3 4 9-11 Retry	29,13,11	No Sample	"	"
1002	3 4 11-13	5,35,42,9	Lt Gr Br w/ Gray Rocks	1053	3.7
1020	3 5 15-17	13,19,16	Lt Gr, Rocky, Silt, moist, Water @ 17'	1054	3.7

0915 Equip Rinsate Taken
Tat-ER-04

0920 Slow drilling, on rock that destroyed split spoon on 5-7'

0924 Refusal Drill rig is moved forward 2'

0925 B Garland shows me a drum by the creek. Ripped up w/ soil & plants growing out of it. Wants it in the landfill.

0930 Drilling resumes on BH 3

1035 Hole finished water at 9 + 14' (Accept for 2' diff) twin BH 1 + 2.
Hole backfilled w/ Bentonite to 8 ft w/ surface cap.

1057 Water Cistern Samples taken
TAT-~~06~~ CIS-05
1102 TAT-CIS-06 FD
~~Trip Blank TAT-TB-07~~

Warming 60's, Calm, Clear

1100 setting up on BH4

1115 begin drilling BH4

BH 4

	Time	#	B.C.	Geol	PID Time	PID
	1120	4-1-2-4	7,10,15,15	Br, Gr Rocky	1201	3.9
	1130	4-2-5-7	6,10,6	Br, Gr Cly soil Orgs Rocky	1210	4.0
FD taken	1145	4-3-7-9	3,12,11,13	Br Cly @ 5' Wet	1210	3.8
	1200	4-4-10-12	9,13,10	GR Cly w/ Wet Br w/Rocks	1211	3.1
	1215	4-5-15-17	7,21,27,32	Slate w/ Cly Water @ 14'	1335	5.2

1215 Lunch

Tatalina Pump House Samples
Selected from Boreholes

BH 1 1·2·5-7 = TAT-BH1-5-07

1·3·7-9 = TAT-BH1-7-08

1·5·15-17 = TAT-BH1-15-09

BH 2 2·2·5-7 = TAT-BH2-5-10

2 3·7-9 = TAT-BH2-7-11

2 5·15-17 = TAT-BH2-15-12

BH 3 3·2·5-7 = TAT-BH3-5-13

3·3·7-9 = TAT-BH3-7-14

3 5·15-17 = TAT-BH3-15-15

BH 4 4·2·5-7 = TAT-BH4-5-16

4·3·7·9 = TAT-BH4-7-17 & 18(FD)

4·5·15-17 = TAT-BH4-15-19

11

1210 Drilling BH 4 resumes

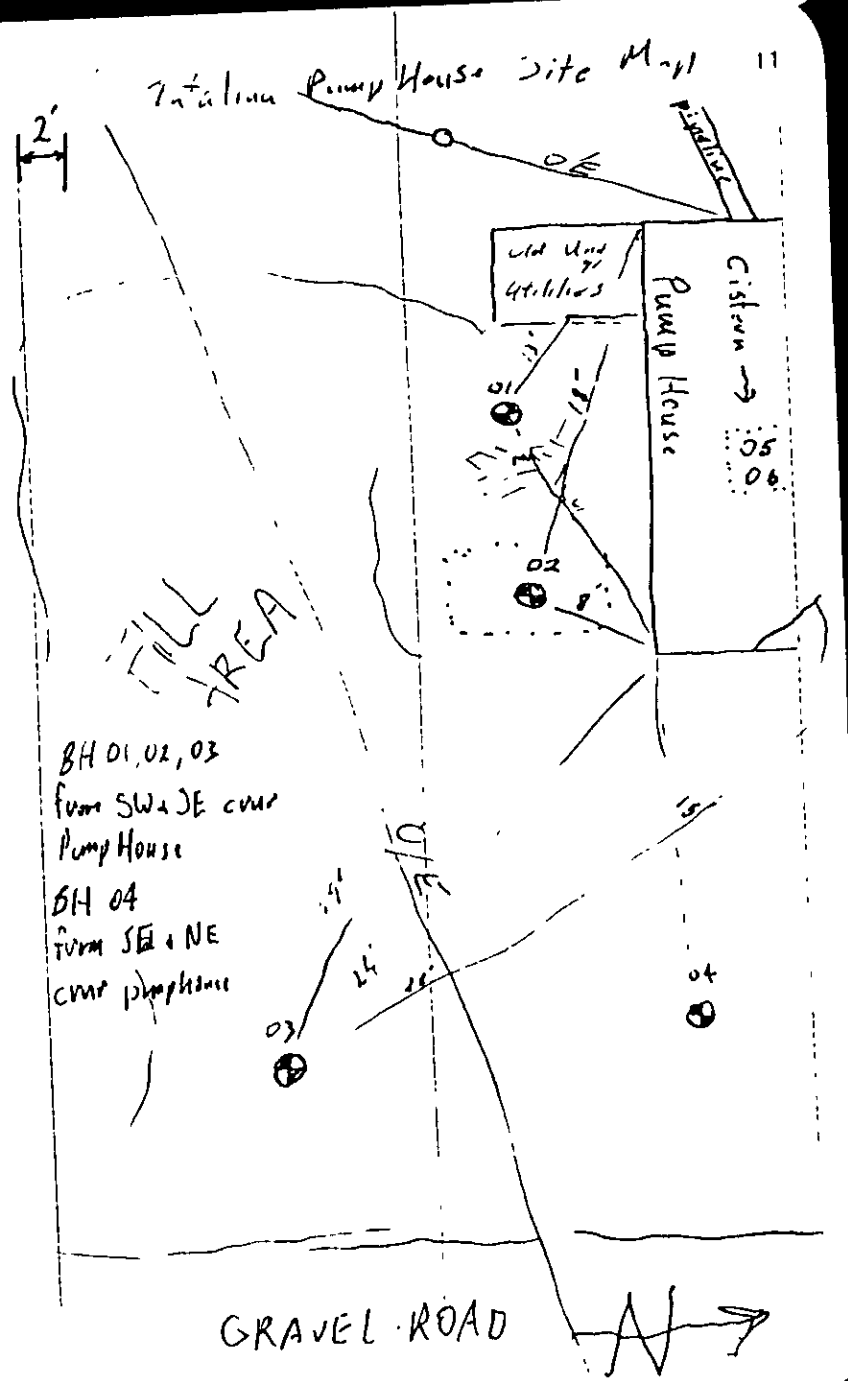
1325 Backfilled BH 4. Bentonite to 8', surface plug.

1340 Took site "After" photos and mapped locations/Site. Cleaned up

1430 Backfilled Stockpile top liner

Selected samples, chiel labeling and packaging.

Jeff Carlstrom 9/19/95



FINAL PAGE

ADMINISTRATIVE RECORD

FINAL PAGE