GILFILIAN ENGINEERING & ENVIRONMENTAL TESTING, INC.

Professional Environmental Consultants

2605 Denali Street, Suite 203 • Anchorage, Alaska 99503-2749
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UST SITE ASSESSMENT REPORT

FOR

Student Transportation

3580 Tudor Road, Anchorage, Alaska
ADEC UST Facility #3089

Prepared For

Julia Flodin
Project Manager
Anchorage School District
1301 Labar Street
Anchorage, Alaska 99507

GE^{2}T Project No. 97007

February 26, 1998

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February 27, 1998

Julia Flodin
Anchorage School District
1301 Labar Street
Anchorage, AK 99515

RE: UST Site Assessment Report
Student Transportation, 3580 East Tudor Road, Anchorage
ADEC UST Facility #3089
GE^{2}T Project #97007A

Dear Ms. Flodin:

Attached is the UST Site Assessment Report for Student Transportation. The site assessment was conducted during removal of five underground storage tanks in December 1997. This report also includes results of soil testing conducted as USTs #1 and #2 were uncovered for tank tightness testing and one test hole dug in October 1997.

Contaminated soil was encountered around USTs #1, #2 and #4 and placed onto a lined stockpile on site. Contaminated soil from around the waste oil tank (UST #5) was placed into a separate stockpile. A letter was sent on February 26, 1998, to ADEC requesting approval to transport the stockpiled soil to ASR for thermal treatment.

Contamination remains in place beneath USTs #1, 2, 4 and 5. A release investigation and corrective action need to be implemented in these areas. No contamination above Category A cleanup levels was encountered around UST #3.

If you have any comments or need additional information, please call me at 277-2021. Thank you for the opportunity to be of service.

Sincerely,

Linda M. Anderson for

Janet Bartel, P.E.
Environmental Engineer

c: Lynne Bush, ADEC

97007/UST Cover Letter-Student Transportation.jeb

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1.0 INTRODUCTION

1.1 *Purpose and Scope*

This underground storage tank (UST) site assessment report was prepared by Gilfilian Engineering & Environmental Testing, Inc. (GE^2T) on behalf of the Anchorage School District (ASD) for their Student Transportation facility. The subject site, UST facility #3089 is located at 3580 East Tudor Road, Anchorage, Alaska (see Figure 1: Vicinity Map). The purpose of this site assessment was to investigate the environmental impact from five USTs during their removal. For all of the USTs, the associated product piping was removed and assessed only to the edge of the excavations. One gasoline dispenser near UST #2 was removed; the rest were left in-place.

The scope of work for the site investigation included assessing soils adjacent to the tanks, dispenser and piping for petroleum hydrocarbon contamination, performing field screening on soil samples and collecting soil samples for laboratory analyses. Field procedures and methods were conducted in accordance with 18 AAC 78 and the Alaska Department of Environmental Conservation (ADEC) Underground Storage Tank Procedures Manual.

1.2 *Project Organization*

- Owner/Operator – Anchorage School District, Anchorage, Alaska. Julia Flodin, Project Manager, is the responsible party for all UST related environmental concerns.
- Third Party Environmental Assessment – Janet Bartel, an Environmental Engineer with GE^2T, conducted the site assessment.
- ADEC UST Certified Contractor - RA Environmental, conducted the UST removal. Randy Easley, with Oil Spill Consultants, was the on-site UST certified worker.
- ADEC Certified Laboratory – Columbia Analytical Services., of Anchorage, Alaska performed the analytical testing of the soil samples.
- Product Disposal - Remaining product and sludge from the tanks was disposed of by Alaska Pollution Control. The USTs were disposed of by Schnitzer Steel in Anchorage. Disposal receipts are included in Appendix D.

2.0 BACKGROUND

All five USTs formerly located at the Student Transportation facility were removed from the ground during December 23-31, 1997. The capacity and product stored in each of the USTs are listed below.

Tank Number	Tank Size (gallons)	Product Stored
1	15,000	Diesel (formerly gasoline)
2	10,000	Gasoline (formerly diesel)
3	4,000	Gasoline
4	12,000	Gasoline
5	1,000	Waste Oil

In October 1997, the four USTs being actively used for fuel or waste oil storage (USTs #1, 2, 3 & 5) were tank tightness tested. Three of the USTs, #1, 2 and 5, failed the tank tightness testing. One UST, #3, passed and continued to be used through December 1997. USTs #1 and 2 were uncovered, isolated and re-tested, also in October 1997. Both USTs failed the re-test.

During excavation to uncover the top of USTs #1 and 2, material that registered above threshold levels on the PID was loaded directly into dump trucks and transported to Anchorage Sand and Gravel for thermal treatment. The total volume of soil transported for treatment was 58.58 tons.

On October 22, 1997, when UST #1 was re-tested for tank tightness, a test-hole was excavated with a Hitachi 200 backhoe at the location shown in Figure 3. The purpose of the test hole was to assess the soil near the USTs and to determine the depth to ground water. Ground water was encountered at 10.5 feet below grade. Analytical soil samples collected at 8 feet and 10.5 feet show elevated levels of BTEX, GRO and DRO. Sample results are included in Appendix C.

3.0 SITE ASSESSMENT

During the UST removals, soil was screened using a portable Photovac HL-2020 photoionization detector (PID) calibrated in the field to a 102 ppm isobutylene standard. PID measurements were made on soil from above, below and adjacent to the tanks and piping to detect the presence of volatile petroleum hydrocarbons.

The USTs and piping were assessed as they were uncovered. All USTs were measured and inspected after they were removed from the ground. The five USTs were single wall, steel tanks. There was minor to moderate amounts of rusting, staining, and pitting. No visible holes or cracks were observed. Careful visual inspection of the tank welds and exterior surfaces showed no indications of leakage from the tanks.

Ground water was encountered below all of the USTs at approximately 11 feet below grade. Soil samples were collected within 6 inches of the ground water interface in each excavation.

3.1 *USTs #1, 2 and 4*

The top of UST #1 was found at 3.5 feet below grade. The tank had a 15,000-gallon capacity, measuring 7.9 feet in diameter by 40.3 feet in length. Four suction product lines ran from the east end of the UST to the dispenser islands located west of UST #1. A strong diesel odor was noticed and high PID readings obtained in the soil below the pipe fittings from these lines. Gray stained soil was present in the soil below the piping to the edges and base of the UST. Thorough visual inspection of the UST itself showed the tank to be in very good condition. There was minimal pitting and rusting and no visible holes.

UST #2 was a 10,000-gallon capacity UST measuring 7.9 feet in diameter by 27.2 feet in length. The top of the UST was found at 3.7 feet below grade. During excavation, gasoline contaminated soil was encountered around the fill pipe, below the vent joints at the tank top and around the 18-inch diameter manhole, below the lid. There was also slight contamination around the suction pipe foot valves. The tank itself was in excellent condition, with no pitting or rusting.

The dispenser located immediately south of UST #2 was removed. The soil beneath the dispenser was removed as part of the UST #2 excavation and stockpiled with the contaminated soil on site.

A single concrete slab was encountered beneath USTs #1 and #2 with both USTs securely anchored to it. The shape of the slab roughly parallels the outside edges of the two USTs. It is estimated to be 6 inches thick and is located approximately 12 feet below grade. The entire concrete anchor was left in place.

UST #4 was installed before the other USTs on-site and had not been used to store petroleum product for some time. After USTs #1 and 2 were installed, the gasoline was pumped from UST #4 and it was filled with water and idled. During excavation, stained soil was encountered beneath joints in the product lines running above UST #4 (from the dispensers to USTs #1 and 2). There was an open bung in the top of the UST, presumably where the product line was once connected. Field screening indicated the presence of some contaminated soil along the sides and at the base of the UST. The UST itself was rusty with a minor amount of pitting. There were no visible holes or cracks.

Headspace PID readings collected during the site assessment and analytical test results are shown on Figure 4. Based on field observations, subsurface soils in the vicinity of USTs #1, 2 and 4 were found to consist of the following:

Depth Below Grade	Soil Type
0 – 0.2'	Organic mat
0.2 – 5'	Silty sandy gravel
5 - 8'	Clean sandy gravel
8 - 12'	Gravelly sand
Below 12'	Stiff silt

During the UST removal, material suspected of being contaminated was stockpiled on site following 18 AAC 78.311 regulations for a long-term stockpile. The total volume of gasoline and diesel contaminated soil currently stockpiled on-site from this excavation is estimated to be approximately 550 cubic yards.

Soil beneath all three USTs had evidence of hydrocarbon contamination. The apparent cause of contamination was leakage at loose fittings and overfills. No attempt was made to chase the contamination for site cleanup. The material excavated was that which was necessary to remove the USTs and conduct the site assessment. All piping was capped at the west edge of the excavation. Four of the dispensers and the remaining product piping were left in place.

3.2 *UST #3*

UST #3, located east of the bus maintenance garage, was a 4,000 gallon UST used to provide fuel to a single gasoline dispenser (see Figure 5). The UST was removed from the ground on December 31, 1997. The product and vent lines were capped at the west edge of the excavation and left in place, as was the dispenser.

The top of the tank was buried 3.7 feet below the ground surface. The UST measured 6.3 feet in diameter by 17.2 feet in length. The tank was rusted and moderately pitted, with a large amount of soil firmly adhered to the sides. There were no visible holes or leaks.

Ground water was encountered below the UST, at approximately 11 feet below grade. There was no sheen or visible signs of contamination. Two soil samples were collected below the centerline of the UST at the ground water interface.

Field screening of the soils around the piping and UST did not indicate any areas of problematic contamination. Analytical soil testing from beneath the UST and the product line showed only trace or non-detectable levels of BTEX and GRO.

3.3 *UST #5*

UST #5 was a 1,000-gallon waste oil tank that had a remote fill inside the garage as well as a vertical fill pipe at the tank. The vent pipe was connected with a T joint to the remote fill line. A threaded connection in a horizontal section of the

remote fill line, located above the tank, was found with the ends butted together, but not threaded. There was black staining on soil beneath this joint, and on soil around the vertical fill pipe.

Soil excavated from around UST #5 was placed in a separate stockpile on 20-mil liner and covered with the same liner material. The stockpile is estimated to contain approximately 50 cubic yards of soil.

Based on field observations, subsurface soils were found to consist of the following:

Depth Below Grade	Soil Type
0 – 4.5'	Silty sandy gravel
4.5 – 5.5'	Clean sand
5.5 - 7'	Clean sandy gravel
7 - 11'	Gravelly sand
Below 11'	Stiff silt

The western edge of the excavation was 3.7 feet from the wall of the Student Transportation garage. The remote fill pipe and the vent pipe were cut and capped at approximately 4 feet east of the garage wall and left in place. The sump inside the building that drained to the UST through the remote fill pipe was also left in place.

Ground water was encountered just below the base of the UST while conducting the site assessment. One soil sample was collected beneath each end of the UST, within 6 inches of the ground water table. Analytical testing of the soil sample beneath the fill end show elevated DRO and RRO concentrations.

4.0 ANALYTICAL TESTING

The soil samples collected for this site assessment consisted of discrete grab samples collected at the locations shown in Figures 4, 5 and 6. Guidelines set forth in the ADEC September 22, 1995 UST procedures manual were followed for the collection, analysis, and interpretation of the samples. The samples were analytically tested for one or more of the following parameters:

- Gasoline Range Organics (GRO) by method AK 101;
- Benzene, Toluene, Ethylbenzene & Toluene (BTEX) by EPA method 8020;
- Diesel Range Organics (DRO) by method AK 102;
- Residual Range Organics (RRO) by method AK 103;
- Polychlorinated Biphenyls (PCBs) by EPA method 8080;
- Halogenated Volatile Organics (HVOs) by EPA method 8010;

- Arsenic by EPA method 7060;
- Cadmium by EPA method 6010;
- Chromium by EPA method 6010 and/or
- Lead by EPA method 7420.

A summary of results and a copy of the laboratory analytical reports are included in Appendix C. Analytical results are also shown on Figures 4, 5 and 6.

Trip blanks and decontamination water samples were analytically tested for GRO and BTEX. The trip blanks showed non-detectable contaminant levels, which indicates that contaminants were not introduced during the laboratory testing process. The decontamination water samples contained non-detectable BTEX and GRO, except for a trace level of xylene.

The laboratory QC indicators for extraction, holding times, calibration, method blanks, surrogate recovery, and completeness are all within an acceptable range. Three duplicate soil samples were collected to document the validity of the testing procedure. The table below provides a comparison of the precision for each of the duplicate sample sets.

Field Quality Control Precision Summary

Sample #:	3	4	S1	S2	S9	S10
GRO, mg/kg	2,800	3,400	9	10	100	92
Precision, %	19		11		8	
BTEX, mg/kg	776	908	0.145	0.33	40.4	38.5
Precision, %	16		78		5	
DRO, mg/kg	-	-	7,500	8,400	-	-
Precision, %	-		11		-	
RRO, mg/kg	-	-	14,000	16,000	-	-
Precision, %	-		13		-	
PCBs, mg/kg	-	-	ND	ND	-	-
Precision, %	-		0		-	
HVOs, mg/kg	-	-	ND	ND	-	-
Precision, %	-		0		-	
Arsenic, mg/kg	-	-	8	8	-	-
Precision, %	-		0		-	
Cadmium, mg/kg	-	-	ND (1)	2	-	-
Precision, %	-		67		-	
Chromium, mg/kg	-	-	31	35	-	-
Precision, %	-		12		-	
Lead, mg/kg	-	-	120	80	-	-
Precision, %	-		40		-	

5.0 CONCLUSIONS AND RECOMMENDATIONS

Contaminated soil remains in place below USTs #1, 2, 4 and 5. The source of the contamination appears to be overfills and loose fittings in the piping associated with the UST system formerly on-site. The ADEC matrix score for this site indicates that Category A cleanup levels may be required (see Figure 7). If there are no potential ground water receptors located within ½ mile of the site, lower cleanup levels could be justified.

USTs #1, 2 and 4 were removed from one joint excavation. Analytical soil results show that the highest amount of contamination on site was around the fill pipe of UST #2. This soil was removed from the ground and stockpiled. BTEX, GRO and DRO concentrations above Category A cleanup levels remain beneath USTs #1 and 2. Benzene and BTEX concentrations above Category A cleanup levels remain beneath UST #4.

UST #3 was contained in a separate excavation. Confirmation sampling shows that contaminants were either not detected or were detected at trace concentrations. No further cleanup action is needed in the vicinity of UST #3.

The waste oil UST, #5, has elevated levels of DRO and RRO in the soil beneath the north (fill) end of the UST. The source of contamination at UST #5 appeared to be overfills and a break in the remote fill line. A further release investigation and cleanup is recommended.

The shallow subsurface soils at this site consist primarily of sandy gravel and gravelly sand underlain by a stiff silt starting at approximately 11 - 12 feet below grade. The water table was encountered in all of the UST excavations at approximately 11 feet below grade. It is likely that the ground water has been impacted by petroleum contamination.

Measured lead concentrations beneath the gasoline USTs, #1 - #4, were all non-detectable with a detection limit of 20 mg/kg. There are no indications of problems associated with lead contamination at this site.

Based on the findings reported above, we recommend initiating a further release investigation to help define the extent of contamination. After evaluating the extent of both the soil and ground water contamination, a plan for corrective action should be prepared.

Appendix A

Figures

1 Vicinity Map
2 Location Plan
3 UST #1, #2 and #4 Site Plan
4 UST #1, #2 and #4 Sample Locations
5 UST #3 Site Plan and Sample Locations
6 UST #5 Site Plan and Sample Locations
7 ADEC Matrix Scoresheet
8 Site Photos
9 Site Photos
10 Site Photos
11 Site Photos

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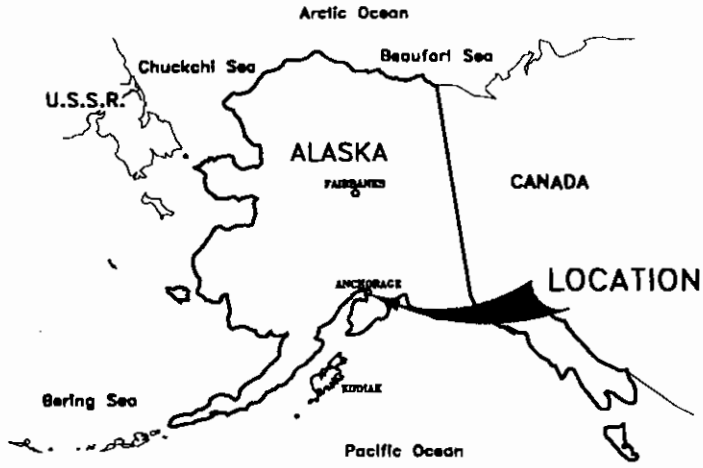


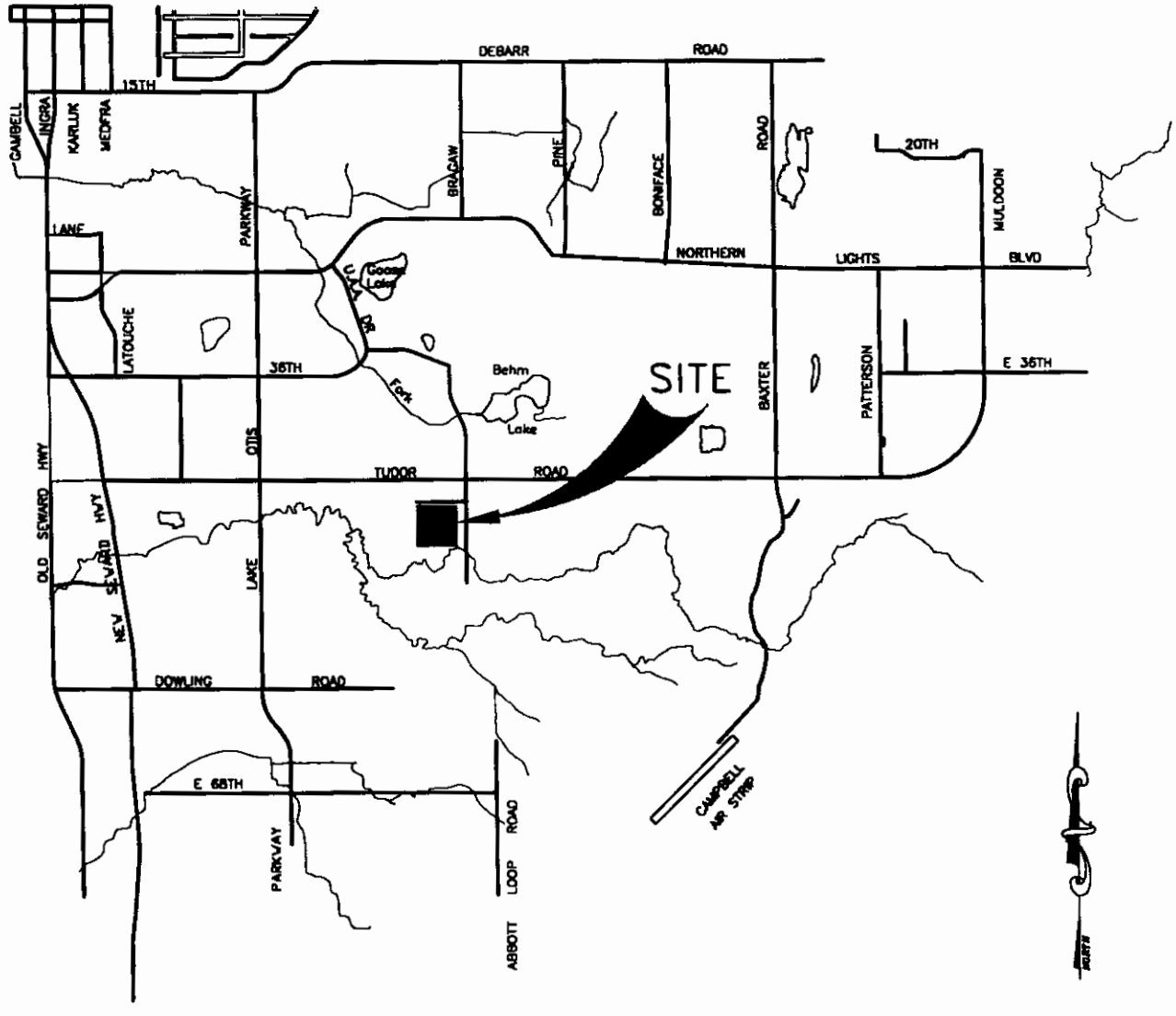


FIGURE 1. VICINITY MAP

GILFILIAN ENGINEERING & ENVIRONMENTAL TESTING, INC.
2605 Denali St., Suite 203, Anchorage, Alaska 99503-2749

SCALE:	N.T.S.
DATE:	02/24/98
GEI PROJECT NO.	97007

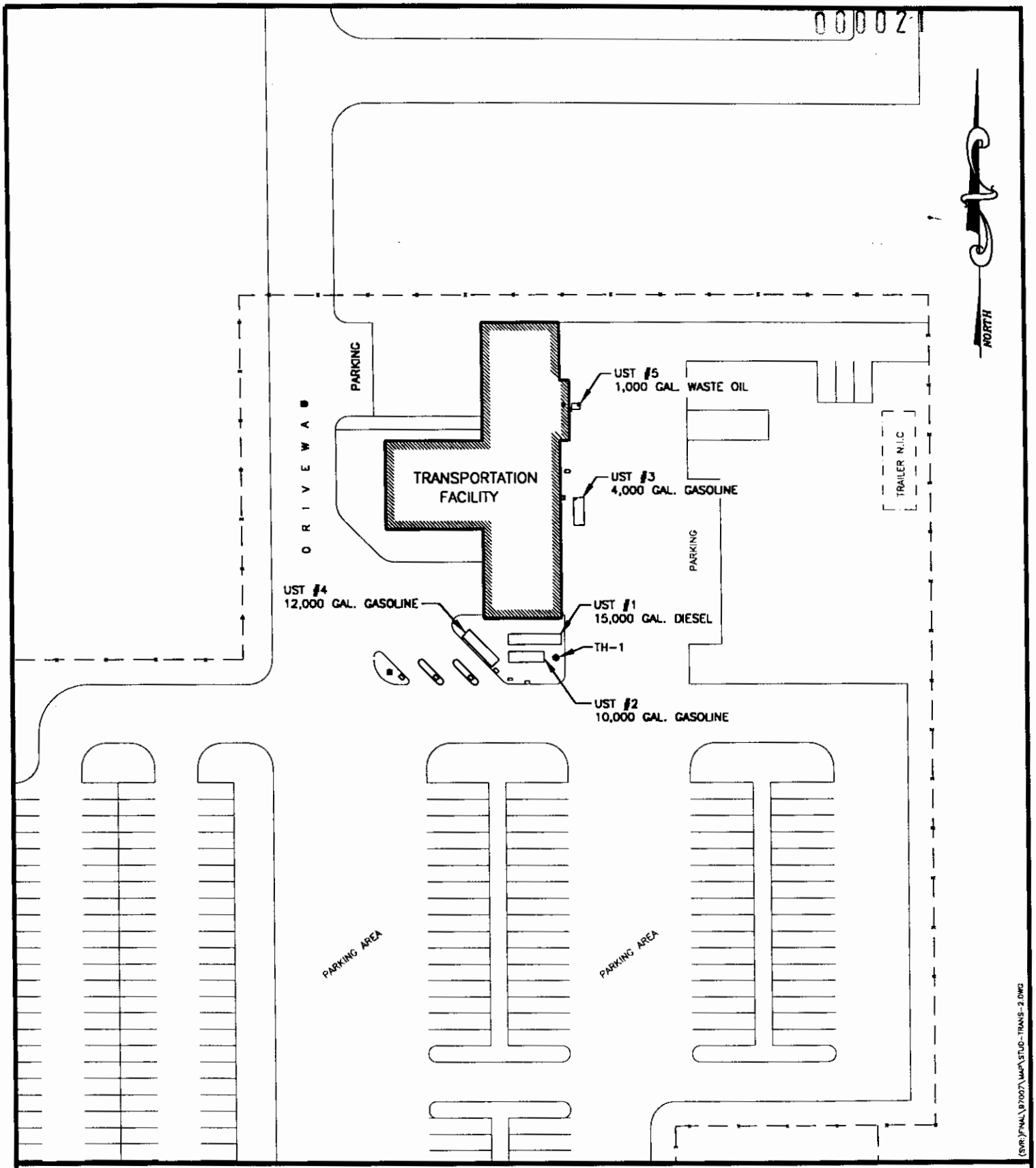


FIGURE II. SITE MAP

GILFILIAN ENGINEERING & ENVIRONMENTAL TESTING, INC.
2605 Denali St., Suite 203, Anchorage, Alaska 99503-2749

SCALE:	1"= 80'
DATE:	02/24/98
PROJECT NO.	97007E

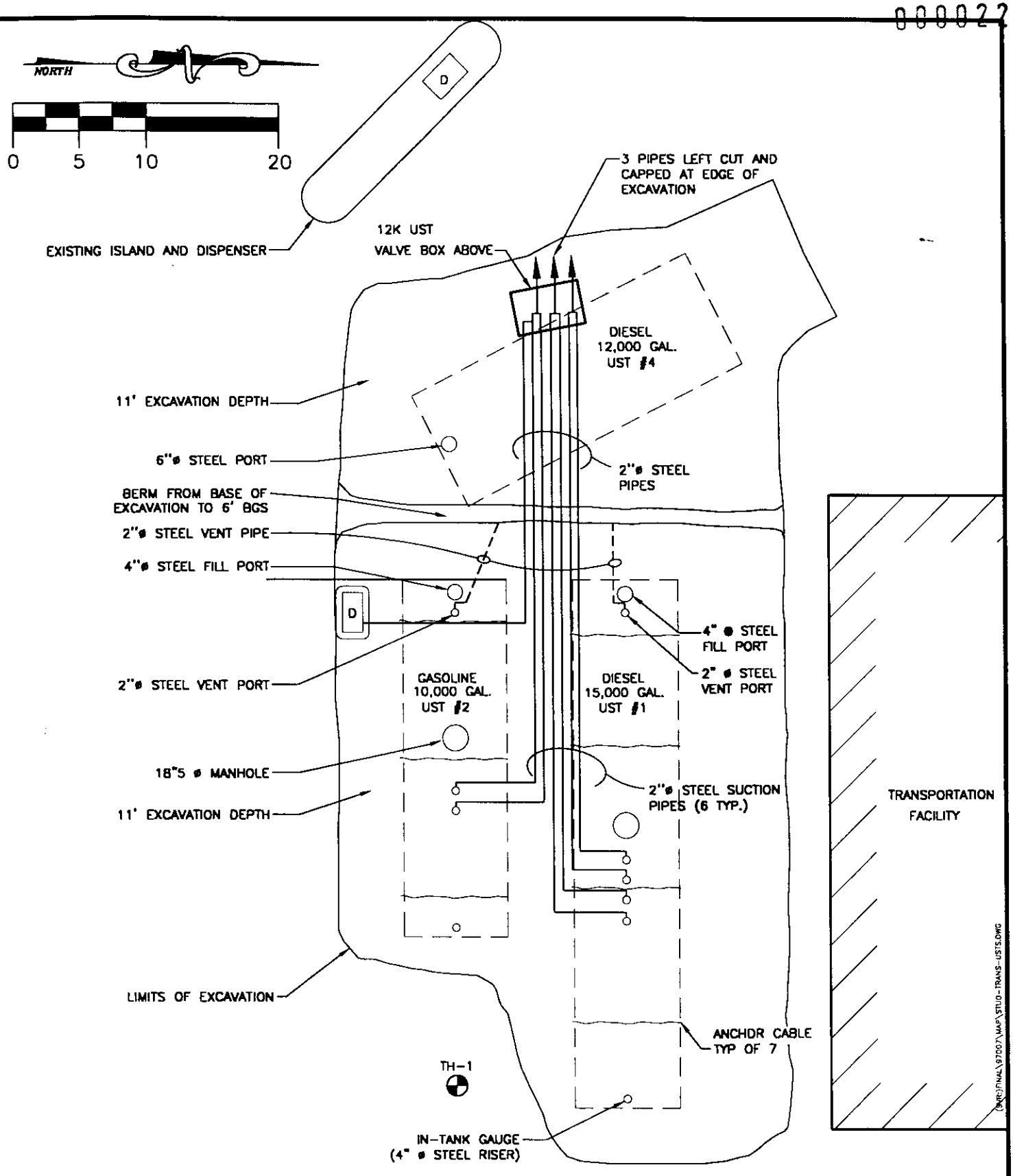
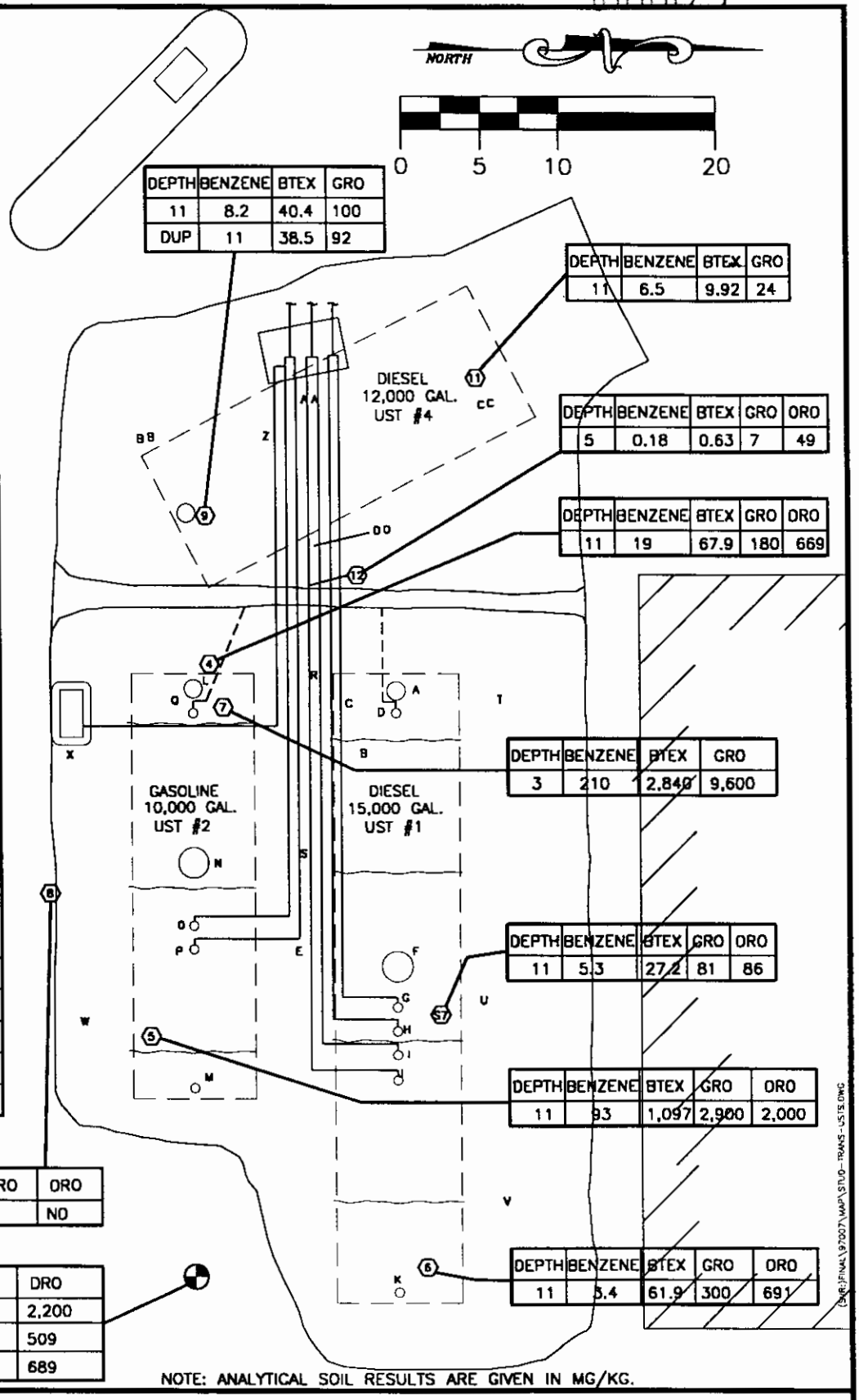


FIGURE III. UST # 1, 2, and 4 SITE PLAN

GILFILIAN ENGINEERING & ENVIRONMENTAL TESTING, INC.
2605 Denali St., Suite 203, Anchorage, Alaska 99503-2749

SCALE:	1"= 10'
DATE:	02/26/98
PROJECT NO.	97007A



LOCATION	DEPTH (FEET)	PID
A	0.5	1,405
B	1.5	391
C	1.0	400
D	3	>2,000
E	2.5	>2,000
F	3.5	>2,000
G	2.5	1,824
H	2.5	>2,000
I	2.5	>2,000
J	3.5	>2,000
K	3	123
L	1.5	1,121
M	3	12
N	3.5	72,000
O	3	831
P	3	122
Q	3	1,938
R	4	>2,000
S	6	>2,000
T	6	>2,000
U	8	>2,000
V	8	>2,000
W	8	>2,000
X	8	>2,000
Y	9 5.5 3.0	<2,000 1,880 1,120
Z	1.5	16
AA	2	130
BB	6	1,400
CC	3	36
DD	4	1,060

NOTE: ANALYTICAL SOIL RESULTS ARE GIVEN IN MG/KG.

FIGURE IV. UST # 1, 2, and 4 SAMPLE LOCATIONS

GILFILIAN ENGINEERING & ENVIRONMENTAL TESTING, INC.
2605 Denali St., Suite 203, Anchorage, Alaska 99503-2749

SCALE: 1"= 10'

DATE: 02/27/98

PROJECT NO. 97007A

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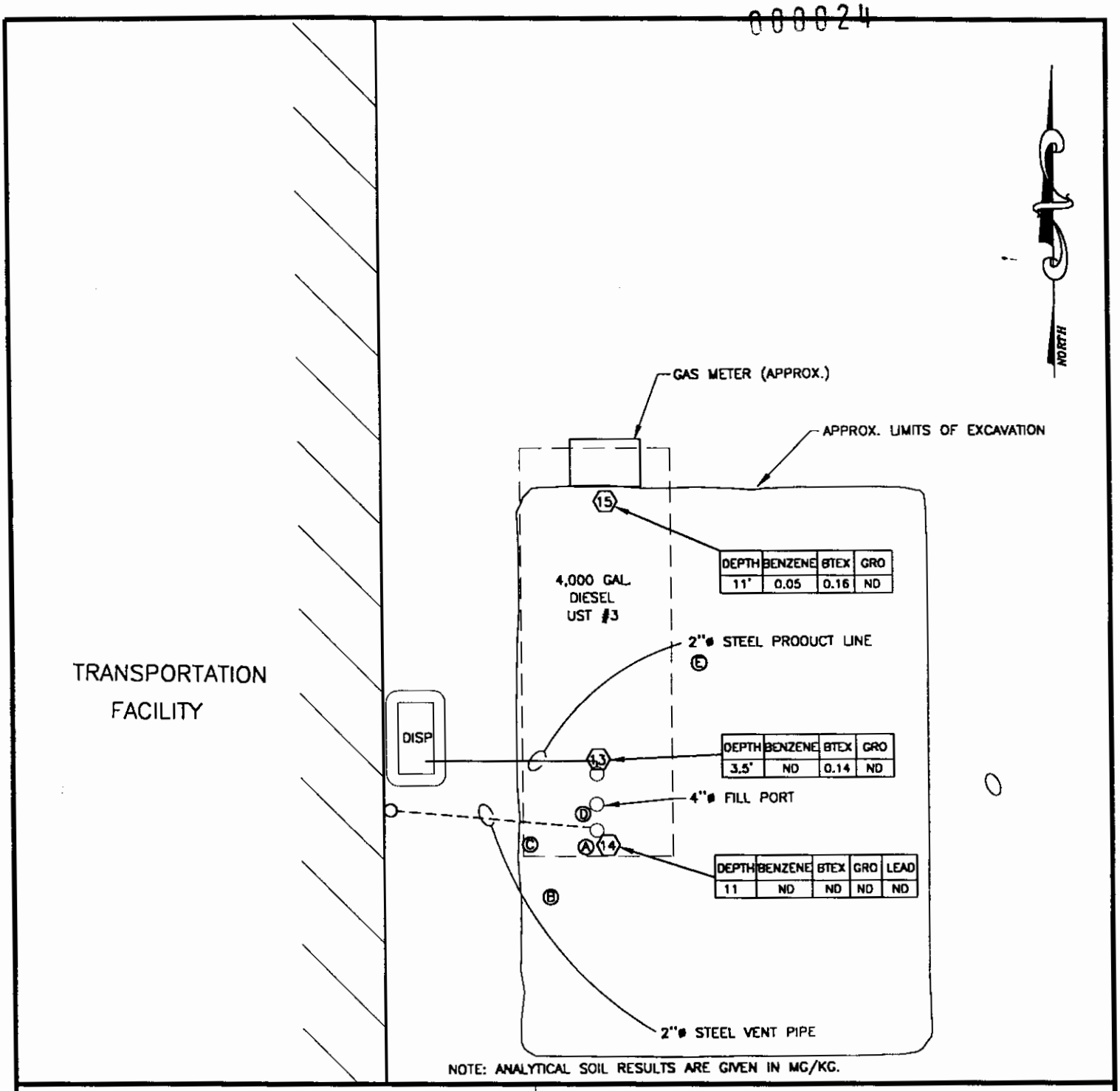

NOTE: ANALYTICAL SOIL RESULTS ARE GIVEN IN MG/KG.

LOCATION	DEPTH (FT.)	PID	LOCATION	DEPTH (FT.)	PID
Ⓐ	2'	0	⑬	3.5'	140
Ⓑ	7'	85	⑭	11'	128
Ⓒ	8'	112	⑮	11'	21
Ⓓ	3.5'	44			
Ⓔ	8	130			

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FIGURE V. UST #3 SITE PLAN AND SAMPLE LOCATIONS

GILFILIAN ENGINEERING & ENVIRONMENTAL TESTING, INC.
2605 Denali St., Suite 203, Anchorage, Alaska 99503-2749

SCALE: 1"= 6'

DATE: 02/26/98

PROJECT NO. 97007A

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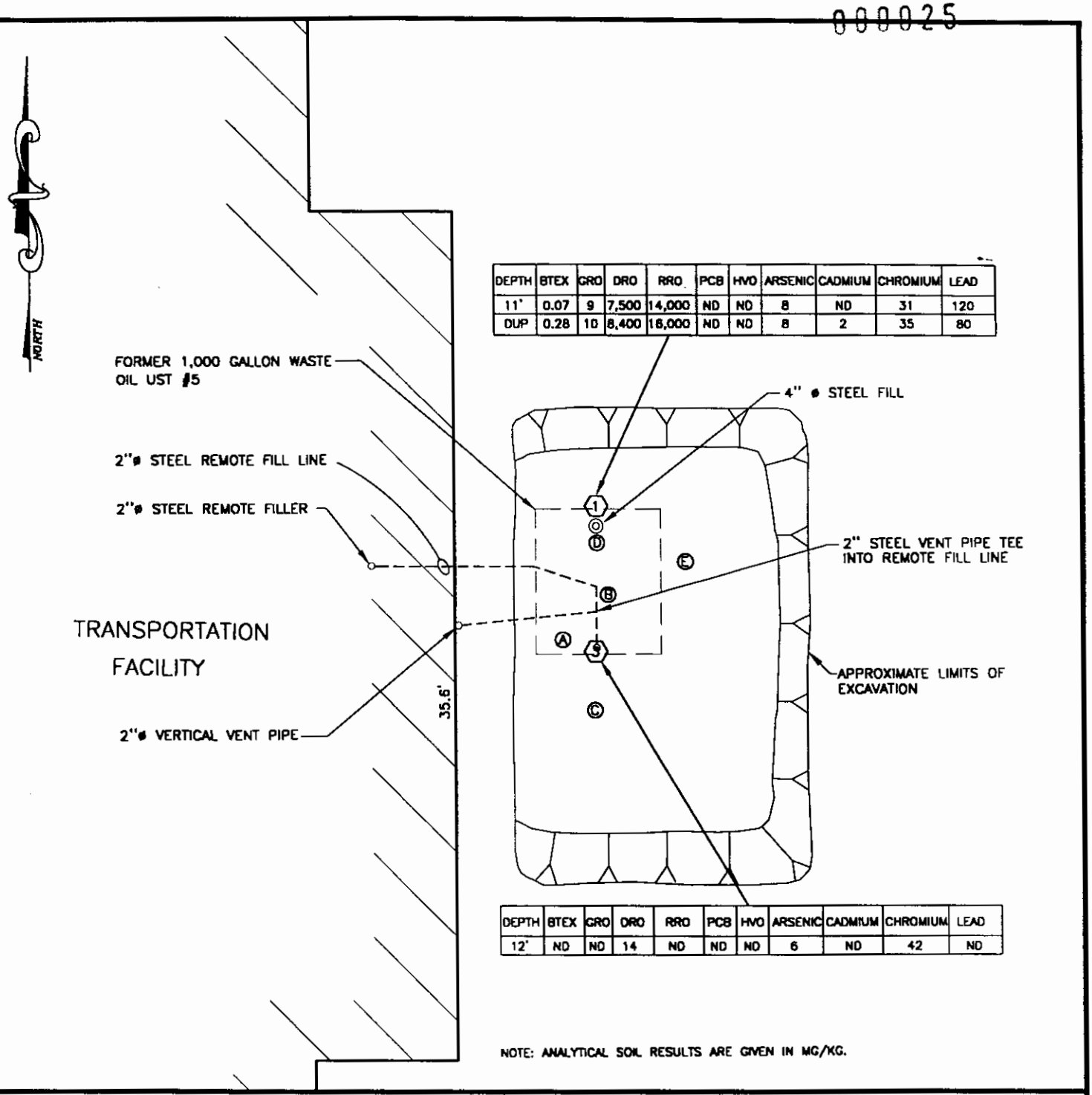


DEPTH	BTEX	GRO	DRO	RRO	PCB	HVO	ARSENIC	CADMIUM	CHROMIUM	LEAD
11'	0.07	9	7,500	14,000	ND	ND	8	ND	31	120
DUP	0.28	10	8,400	16,000	ND	ND	8	2	35	80

DEPTH	BTEX	GRO	DRO	RRO	PCB	HVO	ARSENIC	CADMIUM	CHROMIUM	LEAD
12'	ND	ND	14	ND	ND	ND	6	ND	42	ND

NOTE: ANALYTICAL SOIL RESULTS ARE GIVEN IN MG/KG.

LOCATION	DEPTH (FT.)	PID
Ⓐ	4'	0
Ⓑ	4'	0
Ⓒ	5.5'	0
Ⓓ	5'	0
Ⓔ	6.5'	0
Ⓕ	8'	0

LOCATION	DEPTH (FT.)	PID
①	11'	0
③	12'	0

(SVR:)FINAL\97007\MAP\STUD-TRANS-USTS.DWG

FIGURE VI. UST #5 SITE PLAN AND SAMPLE LOCATIONS

GILFILIAN ENGINEERING & ENVIRONMENTAL TESTING, INC.
2605 Denali St., Suite 203, Anchorage, Alaska 99503-2749

SCALE: 1"= 6'

DATE: 02/26/98

PROJECT NO. 97007A

Figure 7

Student Transportation
ADEC MATRIX SCORE SHEET

1. Depth to Subsurface Water		
< 5 Feet	[10]	
5-15 feet	[8]	
15-25 feet	[6]	10
25-50 feet	[4]	
>50 feet	[1]	
2. Mean Annual Precipitation		
>40 inches	[10]	
25-40 inches	[8]	3
15-25 inches	[3]	
<15 inches	[1]	
3. Soil Type (Unified Soil Classification)		
Clean, coarse-grained soils	[10]	
Coarse-grained soils with fines	[8]	8
Fine-grained soils (low OC)	[3]	
Fine-grained soils (high OC)	[1]	
4. Potential Receptors		
Public well within 1000 feet, or		
Private well(s) within 500 feet	[15]	
Municipal/priv well w/i 1/2 mile	[12]	
Municipal/priv well w/i 1 mile	[8]	12
No known well within 1/2 mile	[6]	
No known well within 1 mile	[4]	(assumed)
Non-potable ground water	[1]	
5. Volume of Contaminated Soil		
>500 cubic yards	[10]	
100-500 cubic yards	[8]	10
25-100 cubic yards	[5]	
>De Minimis-25 cubic yards	[2]	
De Minimis	[0]	

Matrix Score	Cleanup Level in mg/kg			
	Diesel	Gasoline/unknown		
43	diesel range petroleum hydrocarbons	gasoline range petroleum hydrocarbons	Benzene	BTEX
Category A >40	100	50	0.1	10
Category B 27-40	200	100	0.5	15
Category C 21-26	1000	500	0.5	50
Category D <20	2000	1000	0.5	100

Figure 8

Exposing the top of UST #1 (right) and UST #2 (left)

Excavating between UST #1 (left) and UST #2 (right)

Figure 9

Looking south at valve box on top of UST #4

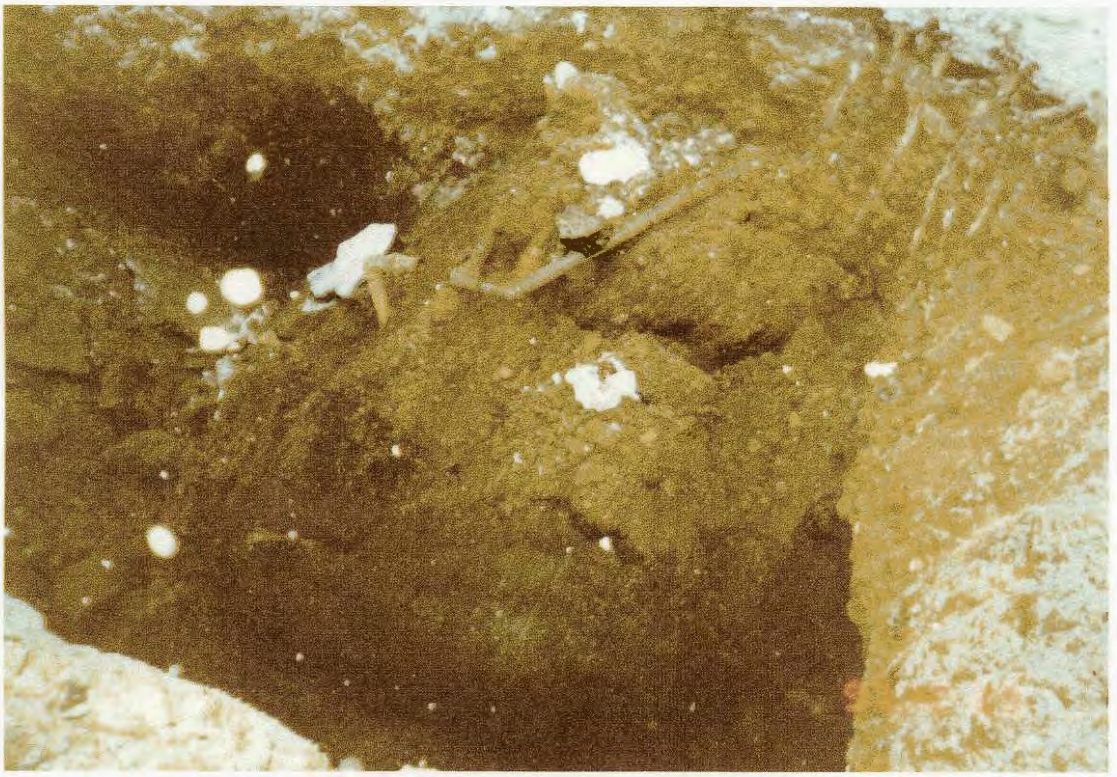
Excavating UST #4; Note product lines from USTs #1 and 2

Figure 10

Starting excavation work at UST #3

Exposing the south end of UST #3

Figure 11



Excavating UST #5; disconnected lines on top of tank were found butted together, but not threaded

UST #5

Appendix B

ADEC Site Assessment Summary Form

APPENDIX B
ADEC Storage Tank Program
Site Assessment & Release Investigation Summary Form

This document summarizes information from site assessments and release investigation reports that are required by Alaska's Underground Storage Tanks Regulations (18 AAC 78). It is intended to ensure minimum requirements are met when submitting full reports to ADEC. It cannot be substituted for comprehensive site assessment or release investigation reports. Site assessments (as defined in AS 46.03.450) are conducted to check for the presence or absence of petroleum contamination. If contamination of soil or groundwater is identified then a release investigation is required. Site assessments and release investigations must be conducted by a qualified impartial third party (as defined in 18 AAC 78) and in accordance with chapter two of the Underground Storage Tanks Procedures Manual (UST Manual).

How to fill out this form

Type or print in ink the requested information and sign in ink the "signature" blocks on page 7. Please attach this form to the comprehensive site assessment or release investigation report (or include it in the report introduction) and submit it to the nearest ADEC field operations office (Juneau, Anchorage, Fairbanks or Soldotna).

1. GENERAL INFORMATION

Purpose of Site assessment/ Release investigation: Closure
(Closure, Change-in-service, Suspected or confirmed release, Compliance check, Other)

Owner of site:
Anchorage School District — (907) 348-5221
Name of company/legal entity that owns the site — Phone number
1301 Labar Street — Anchorage, Alaska 99515
Mailing address — City, State, Zip code

Operator of site:
Anchorage School District — (907) 348-5221
Name of company/legal entity that operates the site — Phone number
1301 Labar Street — Anchorage, Alaska 99515
Mailing address of operator — City, State, Zip code

Location of site:
Student Transportation
Name of site (e.g. John Doe's Service Station) — Phone number
3580 East Tudor Road — Anchorage, Alaska
Physical address of site (be as specific as possible) — City, State, Zip code

Legal description of site — Section/township/range
Bus maintenance & parking — 3089
Type of business at site — Facility ID # / Tank ID number(s)

Financial Assistance Applications filed (this site only)
☐ Site assessment/ tightness test ☐ Tank cleanup ☐ Tank upgrade ☐ Tank closure

Reports on file with ADEC:
☐ Tightness test ☒ Closure notice ☒ Post Closure Notice ☒ Oil & Hazardous Materials Incident Report Form

2. SYSTEM AND TANK STATUS

Describe the status, size, and contents of the tanks that have been at the site:

Tank ID Number:	Tank No. 1	Tank No. 2	Tank No. 3	Tank No. 4	Tank No. 5
Tank status (check one) Currently in use					
Temporarily closure					
Closed/left in place					
Closed/removed	X	X	X	X	X
Total capacity (gallons)	15,000	10,000	4,000	12,000	1,000
Contents (diesel, etc)	Diesel	Gas	Gas	Gas	Waste Oil

3. FIRM CONDUCTING SITE ASSESSMENT AND RELEASE INVESTIGATION

Gilfilian Engineering and Environmental Testing, Inc. — Name of firm
(907) 277-2021 — Phone number

2605 Denali Street, Suite 203 — Mailing address
Anchorage, Alaska 99503 — City, State, Zip code

Janet Bartel, Environmental Engineer — Site assessment supervisor(s)
Janet Bartel — Person(s) collecting samples

4. SITE HISTORY

Based on the best available knowledge, please check the appropriate box below:

Y	N	
X		Was soil contamination observed or identified?
	X	Was groundwater contamination observed or identified?
		Did inventory control or prior tank repairs indicate a possible release?
X		Has a tank tightness test been performed on any USTs on the site?
X		Have any of the facility's USTs or piping ever failed a tightness test?
	X	Have there been any previous site assessments performed at this site?
		Do previous site assessments indicate any contamination has occurred?

If the answer to any of these questions is yes, please describe (or attach copy of report discussion). Give dates and circumstances, use continuation sheet if necessary:

See attached report.

5. FIELD SCREENING ANALYSIS

Date(s) of field screening: 10/22-12/31 1997 Temperature(s) during screening: 5-40°F
Estimated wind speeds: 0-5 mph Weather (clear, raining, etc): cloudy, rain, snow
Type of field detection instrument used: Photoionization detector
Brand: Photovac Model: HL-2020 Date calibrated: Daily
Number of tests: 63 Range of results: 0 – 2,000+
If an instrument wasn't used, what field detection method was used? _____
Number of tests: _____ Range of results: _____

6. COLLECTION OF SOIL SAMPLES

For site assessments done for USTs remaining in place
Check the appropriate boxes below (if not applicable, leave blank):

Y	N	
__	__	Were samples taken from borings (or test pits) within 5 feet of the UST?
__	__	Were samples collected from within 2 feet below the bottom of the UST?
__	__	Were dispensers connected to the UST system?
__	__	Were samples taken from borings (or test pits) adjacent to dispensers?
__	__	Were samples taken from borings (or test pits) adjacent to piping?

How many borings/pits were made? _____ How many samples were analyzed? _____

For site assessments done at excavation and removal of USTs:
Check the appropriate boxes below (if not applicable, leave blank):

Y	N	
X	__	Were any areas of obvious contamination identified or observed?
X	__	Were samples taken from areas of obvious contamination?
X	__	Were at least two discrete analytical samples taken from excavated pit area?
__	__	Was at least one sample taken from below each dispensing island's piping?
X	__	Was at least one sample taken from the piping trench?
X	__	Were the samples referenced above collected taken from native soil within two feet below the bottom of the tank pit or dispenser/piping trench?
X	__	If multiple tanks were removed, were at least three samples collected?
X	__	Were additional samples collected for each 250 square feet of excavated pit over 250 square feet?

Number of distinct points sampled: 14 Estimated excavation's surface area: 2,800 sq ft

For all site assessments
Check the appropriate boxes below:

Y	N	
X	__	Were field duplicate samples collected and analyzed?
X	__	Were all samples kept at the appropriate temperature until analysis?
X	__	Were all samples extracted & analyzed within recommended holding times?
X	__	Did chain-of-custody/transfer logs accompany samples to laboratory?

7. LABORATORY ANALYSIS OF SOIL SAMPLES

(see Table 1 of UST Procedures Manual or Table G of 18 AAC 78.800(b))

Identify the possible contaminants (gas, BTEX, diesel, etc.): BTEX, gasoline, diesel waste oil

Please list the analytical methods used to detect these contaminants in the soil samples, the number of samples analyzed by each method, and the range of results for each method:

Possible product	Analytical method	Number of samples	Range of results	Location(s) of sample point(s) W/highest level of contamination
BTEX	EPA 8020	14	ND – 2,840 mg/kg	Near UST #2 Fill Pipe
Gasoline	AK101	14	ND – 9,600 mg/kg	Near UST #2 Fill Pipe
Diesel	AK 102	14	ND – 7,500 mg/kg	Below UST #5
RRO	AK 103	2	ND – 14,000 mg/kg	Below UST #5
PCBs	EPA 8080	2	Not Detected	
HVOs	EPA 8010	2	Not Detected	
metals	6010-7060	2	ND – 120 mg/kg	Lead – below UST #5

8. GROUNDWATER INVESTIGATION

Check the appropriate boxes below:

Y	N	
X	__	Was groundwater encountered during the excavation or drilling work?
__	X	Were borings drilled/pits dug at least five feet below the USTs bottom?
X	__	Is groundwater or seasonal high water table known or suspected to exist within five feet of the bottom of the USTs?
X	__	Were samples taken from borings drilled/test pits dug to this water level?
X	__	Were all these samples analyzed within recommended holding times?

How many groundwater/saturated-soil samples were collected & analyzed? 10
How many of these samples were taken from the top 6" of water table? 10
How many field QC samples were analyzed? 2 (Trip blanks) 2 (Duplicates) 2 (Decon blanks)

9. LABORATORY ANALYSIS OF GROUNDWATER SAMPLES

(see Table 1 of UST Procedures Manual or Table G of 18 AAC 78.800(b))

Identify the possible contaminants at the site: _____

Identify the analytical methods used to detect these contaminants in the water samples, the number of samples analyzed by each method, and the range of results for each method:

Analytical method	Number of samples	Range of Results (ppm)	Location(s) of sample point(s) W/highest level of contamination

Check the appropriate boxes below (if not applicable, leave blank):

Y	N	
X	__	Were tanks cleaned in accordance with API 2015 (Cleaning Petroleum Storage Tanks)?
X	__	Were the tanks and piping removed and disposed in accordance with API 1604 (Removal and disposal of used petroleum Storage tanks)?

Where were the tanks and piping disposed? Schnitzel Steel

Where was the tank sludge and rinsewater disposed? Alaska Pollution Control

11. STOCKPILES

Check the appropriate boxes below:

Y	N	
X	__	Is any soil stockpiled at the site?
X	__	Are soils stockpiled in accordance with 18 AAC 78.311?

12. RELEASE INVESTIGATION

Check the appropriate box below:

Y	N	
X	__	Was any petroleum contamination identified during site assessment? (Answer "yes" if any evidence a release occurred; if no, proceed to item 13)

If contamination was found, what was matrix score for site? A
(Attach completed matrix score sheet to this form)

When did release occur? Unknown (Date & time) When was release confirmed? 10/22/97 (Date & time)

When was ADEC notified? 10/23/97 (Date & time) List ADEC staff notified: Oil & Hazardous (Name)
Materials Incident Report Form submitted

What is status of UST that prompted the investigation?

In use	Out-of-use, product still in system	Out-of-use; system empty	Permanently closed	Removed
				X

Briefly describe (or attach copy of report discussion) the steps taken to prevent further migration of the release and steps taken to monitor and mitigate fire and safety hazards: Report attached

13. SITE SKETCH

000037

Sketch the site in the space below. Alternatively, attach a site map to the back of the form. The sketch (or accompanying narrative) should include the following information:

- locations of all USTs. piping. and dispensers
- distances from tanks to nearby structures
- property line locations
- location and dimensions of excavation(s)
- type of backfill used to surround system
- locations of any known historical releases
- locations of any observed contamination
- location of any boreholes and test pits
- soil types
- field screening locations and readings
- sampling locations. depths. & sample ID numbers
- water wells and monitoring wells (if present)
- depth to groundwater/seasonal high groundwater
- locations of any stockpiled soils
- north arrow
- bar scale (specify feet or meters)

For release investigations, in addition to the above information, show the groundwater gradient; surface drainages (including potential hydraulic connections with groundwater) and utility trenches.

Site maps included.

14. QUALITY ASSURANCE

000038

Check the appropriate boxes below:

Y	N	
__	X	Were there deviations from Chapter 2 of the UST Procedures Manual? (Note that any deviations must be documented in a section of the comprehensive report)
X	__	Is a field quality control summary included in the reports?
X	__	Is a laboratory QC summary included in the report for all samples used to verify cleanup levels have been met?

15. CERTIFICATION

The following certification is to be signed by the assessment firm's principal investigator or Quality Assurance Officer:

I certify that except as specifically noted in this report, all statements and data appearing in this report are in conformance with the provisions of Chapter 2 of the UST Procedures Manual.

Janet Bartel — (Print name)
Environmental Engineer — (Title)
Janet Bartel — (Signature)
2-11-98 — (Date)

The following certification is to be signed by the UST owner/operator (or designated representative):

I certify that I have personally examined and am familiar with the information in this and all attached documents and based on my inquiry of the individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

Mike Franks — (Print name)
Representative — (Title)
Michael W. Franks — (Signature)
2/13/98 — (Date)
1301 Labar Street — (Street Address)
Anchorage, Alaska 99515 — (City, State, Zip)

16. ATTACHMENTS

Please check the boxes showing any comprehensive reports attached to this summary:

X	Site Assessment Report (include if no release investigation is needed)
____	Release Investigation Report (include if release investigation is needed)

Appendix C

Analytical Sample Results

Analytical Soil Sample Results
Anchorage School District Student Transportation
USTs #1-4 and Test Hole #1

Sample #	Location	Depth (feet)	Date Collected	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Xylenes (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	Lead (mg/kg)	PID
S6	UST #1	11	12/29/97	3.4	18	8.5	32	300	691	ND (20)	2,000+
S7	UST #1	11	12/29/97	5.3	10	2.8	9.1	81	86	ND (20)	2,000+
S12	UST #1	5	12/29/97	0.18	0.22	ND (0.05)	0.20	7	49	NT	130
7	UST #2	3	10/27/97	210	1,000	230	1,400	9,600	NT	NT	2,000+
S4	UST #2	11	12/29/97	19	24	3.9	21	180	669	ND (20)	2,000+
S5	UST #2	11	12/29/97	93	420	94	490	2,900	2,000*	ND (20)	2,000+
S8	UST #2	6	12/29/97	0.99	1.46	0.13	0.62	9	ND (10)	NT	580
S13	UST #3	3.5	12/31/97	ND (0.05)	0.07	ND (0.05)	ND (0.05)	ND (5)	NT	NT	140
S14	UST #3	11	12/31/97	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (5)	NT	ND (20)	128
S15	UST #3	11	12/31/97	0.05	0.06	ND (0.05)	ND (0.05)	ND (5)	NT	NT	21
S9	UST #4	11	12/29/97	8.2	15	3.2	14	100	NT	ND (20)	2,000+
S10	Duplicate of sample #S9			11	15	2.6	9.9	92	NT	NT	-
S11	UST #4	11	12/29/97	6.5	1.0	0.52	1.9	24	NT	ND (20)	560
2	TH-1	8	10/22/97	32	270	140	680	4,800	2,200	NT	1,246
3	TH-1	10.5	10/22/97	31	230	85	430	2,800	504	NT	2,000+
4	Duplicate of sample #3			38	270	100	500	3,400	689	NT	--
Trip Blank			10/27/97	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (5)	NT	NT	NA
Trip Blank			12/31/97	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (5)	NT	NT	NA-
Category B Cleanup Level				0.5	NA	NA	NA	100	200	NA	NA

• Results due to the end of gasoline eluting in the diesel range
NA = Not Applicable
ND = Not Detected above the practical quantitation limit indicated in parentheses
NT = Not Tested

Analytical Soil Sample Results
Anchorage School District Student Transportation
UST #5

Sample #	S1	S2	S3	Method Blank
Location	Below North End	Duplicate of #S1	Below South End	-
Depth Below Grade (feet)	11	11	12	-
Date Collected	12/23/97	12/23/97	12/23/97	-
Benzene (mg/kg)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
Toluene (mg/kg)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
Ethylbenzene (mg/kg)	ND (0.05)	0.05	ND (0.05)	ND (0.05)
Xylenes (mg/kg)	0.07	0.23	ND (0.05)	ND (0.05)
GRO (mg/kg)	9	10	ND (5)	ND (5)
DRO (mg/kg)	7,500	8,400	14	ND (10)
RRO (mg/kg)	14,000	16,000	ND (100)	ND (100)
PCBs (mg/kg)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
HVOs (mg/kg)	ND	ND	ND	ND
Arsenic (mg/kg)	8	8	6	ND (1)
Cadmium (mg/kg)	ND (1)	2	ND (1)	ND (1)
Chromium (mg/kg)	31	35	42	ND (2)
Lead (mg/kg)	120	80	ND (20)	ND (20)

ND = Not Detected above the practical quantitation limit indicated in parentheses, HVO quantitation limits are shown on lab reports

Analytical Water Sample Results
Anchorage School District Student Transportation

Sample #	Description	Date Collected	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	Xylenes (µg/l)	GRO (µg/l)
W2	Equipment Rinse	10/27/97	ND (1)	ND (1)	ND (1)	1	ND (50)
W-1	Equipment Rinse	12/30/97	ND (1)	ND (1)	ND (1)	ND (1)	ND (50)
W-2	Trip Blank	12/23-31/97	ND (1)	ND (1)	ND (1)	ND (1)	ND (50)

ND = Not Detected above the practical quantitation limit indicated in parentheses

GE #

Columbia Analytical Services, Inc.

December 12, 1997 Service Request No: A9701005

Julia Flodin
Anchorage School District
1301 Labar Street
Anchorage, AK 99515

Re: ASD-Bus Barn/97007A

Dear Julia:

Enclosed are the results of the rush sample(s) submitted to our laboratory on October 10, 1997. Preliminary results were transmitted via facsimile on November 6, 1997. For your reference, these analyses have been assigned our service request number A9701005.

All analyses were performed according to our laboratory's quality assurance program. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for use of less than the complete report. Results apply only to the samples analyzed.

Please call if you have any questions. My extension is 0821.

Respectfully submitted,

COLUMBIA ANALYTICAL SERVICES, INC.

Mike Shelton

Mike Shelton
Laboratory Manager

MIS/jas

710 Business Park Blvd., Ste. 24 • Anchorage, AK 99503-7100 • 907-563-0846 • Fax 907-563-2973

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	Anchorage School District	**Service Request No.:**	A9701005
Project:	ASD-Bus Barn/97007A	**Date Received:**	10/29/97
Sample Matrix:	Soil, Water		

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of Columbia Analytical Services, Inc. (CAS). This report contains analytical results for sample(s) designated for Tier I data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses.

All EPA recommended holding times have been met for analyses in this sample delivery group.

Approved by MLS **Date** 12/12/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Anchorage School District
Project: ASD - Bus Barn/97007A
Sample Matrix: Soil

Service Request: A9701005
Date Collected: 10/22/97
Date Received: 10/29/97

Gasoline Range Organics (GRO)

Prep Method: AK101PR
Analysis Method: AK101.0
Test Notes:

Units: mg/Kg (ppm)
Basis: Dry

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
2	A9701005-001	500	0.3	100	10/22/97	11/6/97	4800	C
3	A9701005-002	500	0.3	100	10/22/97	11/6/97	2800	C
4	A9701005-003	500	0.3	100	10/22/97	11/6/97	3400	C
7	A9701005-004	2000	0.3	400	10/22/97	11/6/97	9600	C
Trip Blank	A9701005-006	5	0.3	1	NA	11/6/97	ND	
Method Blank	A971104-SB1	5	0.3	1	11/4/97	11/4/97	ND	

C The MRL is elevated because the sample required dilution.

Approved By: _____ Date: 12-2-97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Anchorage School District	**Service Request:**	A9701005
Project:	ASD - Bus Barn/97007A	**Date Collected:**	10/27/97
Sample Matrix:	Water	**Date Received:**	10/29/97

Gasoline Range Organics (GRO)

Prep Method:	EPA 5030A	**Units:**	ug/L (ppb)
Analysis Method:	AK101.0	**Basis:**	NA
Test Notes:			

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
W-2	A9701005-005	50	5	1	NA	10/31/97	ND	

Approved By: RM Date: 12-2-97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Anchorage School District	**Service Request:**	A9701005
Project:	ASD - Bus Barn/97007A	**Date Collected:**	10/22/97
Sample Matrix:	Soil	**Date Received:**	10/29/97

Aromatic Volatile Organics

Sample Name:	2	Units:	mg/Kg (ppm)
Lab Code:	A9701005-001	Basis:	Dry
Test Notes:	C		

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Benzene	AK101PR	8020A	5	0.01	100	10/22/97	11/6/97	32	
Toluene	AK101PR	8020A	5	0.01	100	10/22/97	11/6/97	270	
Ethylbenzene	AK101PR	8020A	5	0.01	100	10/22/97	11/6/97	140	
Xylenes, Total	AK101PR	8020A	5	0.03	100	10/22/97	11/6/97	680	

C The MRL is elevated because the sample required dilution.

Approved By: _____ Date: 12-2-97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Anchorage School District	**Service Request:**	A9701005
Project:	ASD - Bus Barn/97007A	**Date Collected:**	10/22/97
Sample Matrix:	Soil	**Date Received:**	10/29/97

Aromatic Volatile Organics

Sample Name:	3	**Units:**	mg/Kg (ppm)
Lab Code:	A9701005-002	**Basis:**	Dry
Test Notes:	C		

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Benzene	AK101PR	8020A	5	0.01	100	10/22/97	11/6/97	31	
Toluene	AK101PR	8020A	5	0.01	100	10/22/97	11/6/97	230	
Ethylbenzene	AK101PR	8020A	5	0.01	100	10/22/97	11/6/97	85	
Xylenes, Total	AK101PR	8020A	5	0.03	100	10/22/97	11/6/97	430	

C The MRL is elevated because the sample required dilution.

Approved By: _____ Date: 12-2-97

Analytical Report

Client:	Anchorage School District	**Service Request:**	A9701005
Project:	ASD - Bus Barn/97007A	**Date Collected:**	10/22/97
Sample Matrix:	Soil	**Date Received:**	10/29/97

Aromatic Volatile Organics

Sample Name:	4	Units:	mg/Kg (ppm)
Lab Code:	A9701005-003	Basis:	Dry
Test Notes:	C		

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Benzene	AK101PR	8020A	5	0.01	100	10/22/97	11/6/97	38	
Toluene	AK101PR	8020A	5	0.01	100	10/22/97	11/6/97	270	
Ethylbenzene	AK101PR	8020A	5	0.01	100	10/22/97	11/6/97	100	
Xylenes, Total	AK101PR	8020A	5	0.03	100	10/22/97	11/6/97	500	

C The MRL is elevated because the sample required dilution.

Approved By: _____ Date: 12-2-97

Analytical Report

Client:	Anchorage School District	**Service Request:**	A9701005
Project:	ASD - Bus Barn/97007A	**Date Collected:**	10/27/97
Sample Matrix:	Soil	**Date Received:**	10/29/97

Aromatic Volatile Organics

Sample Name:	7	Units:	mg/Kg (ppm)
Lab Code:	A9701005-004	Basis:	Wet
Test Notes:	C		

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Benzene	AK101PR	8020A	20	0.01	400	10/22/97	11/6/97	210	
Toluene	AK101PR	8020A	20	0.01	400	10/22/97	11/6/97	1000	
Ethylbenzene	AK101PR	8020A	20	0.01	400	10/22/97	11/6/97	230	
Xylenes, Total	AK101PR	8020A	20	0.03	400	10/22/97	11/6/97	1400	

C The MRL is elevated because the sample required dilution.

Approved By: Rm Date: 12-2-97

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Anchorage School District	**Service Request:**	A9701005
Project:	ASD - Bus Barn/97007A	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	10/29/97

Aromatic Volatile Organics

Sample Name:	Trip Blank	Units:	mg/Kg (ppm)
Lab Code:	A9701005-006	Basis:	Dry
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Benzene	AK101PR	8020A	0.05	0.01	1	NA	11/6/97	ND	
Toluene	AK101PR	8020A	0.05	0.01	1	NA	11/6/97	ND	
Ethylbenzene	AK101PR	8020A	0.05	0.01	1	NA	11/6/97	ND	
Xylenes, Total	AK101PR	8020A	0.05	0.03	1	NA	11/6/97	ND	

Approved By: RM Date: 12-2-97

1522/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Anchorage School District	**Service Request:**	A9701005
Project:	ASD - Bus Barn/97007A	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA

Aromatic Volatile Organics

Sample Name:	Method Blank	**Units:**	mg/Kg (ppm)
Lab Code:	A971104-SB1	**Basis:**	Dry
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Benzene	EPA 5030A	8020A	0.05	0.01	1	11/4/97	11/4/97	ND	
Toluene	EPA 5030A	8020A	0.05	0.01	1	11/4/97	11/4/97	ND	
Ethylbenzene	EPA 5030A	8020A	0.05	0.01	1	11/4/97	11/4/97	ND	
Xylenes, Total	EPA 5030A	8020A	0.05	0.03	1	11/4/97	11/4/97	ND	

Approved By: _____ Date: 12-2-97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Anchorage School District	**Service Request:**	A9701005
Project:	ASD - Bus Barn/97007A	**Date Collected:**	10/27/97
Sample Matrix:	Water	**Date Received:**	10/29/97

Aromatic Volatile Organics

Sample Name:	W-2	**Units:**	ug/L (ppb)
Lab Code:	A9701005-005	**Basis:**	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Benzene	EPA 5030A	8020A	1	0.2	1	NA	10/31/97	ND	
Toluene	EPA 5030A	8020A	1	0.2	1	NA	10/31/97	ND	
Ethylbenzene	EPA 5030A	8020A	1	0.2	1	NA	10/31/97	ND	
Xylenes, Total	EPA 5030A	8020A	1	0.2	1	NA	10/31/97	1	

Approved By: _____ Date: 12-2-97

Analytical Report

Client: Anchorage School District
Project: ASD - Bus Barn/97007A
Sample Matrix: Soil

Service Request: A9701005
Date Collected: 10/22/97
Date Received: 10/29/97

Diesel Range Organics (DRO)

Prep Method: EPA 3540
Analysis Method: AK102.0
Test Notes:

Units: mg/Kg
Basis: Dry

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
2	A9701005-001	50	5	5	11/5/97	11/12/97	2200	C
3	A9701005-002	10	5	1	11/5/97	11/11/97	504	
4	A9701005-003	10	5	1	11/5/97	11/11/97	689	
Method Blank	A971105-SB1	10	5	1	11/5/97	11/11/97	ND	

C The MRL is elevated because the sample required diluting.

Approved By: Wendy Dawson Date: 11/18/97

LABORATORY QC RESULTS

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Anchorage School District
Project: ASD - Bus Barn/97007A
Sample Matrix: Soil

Service Request: A9701005
Date Collected: 10/22/97
Date Received: 10/29/97
Date Extracted: 10/22/97
Date Analyzed: 11/6/97

Surrogate Recovery Summary
Gasoline Range Organics (GRO)

Prep Method: AK101PR
Analysis Method: AK101.0

Units: PERCENT
Basis: NA

Sample Name	Lab Code	Test Notes	Percent Recovery 4-Bromofluorobenzene
2	A9701005-001		108
3	A9701005-002		109
4	A9701005-003		107
7	A9701005-004		106
Trip Blank	A9701005-006		100
Method Blank	A971104-SB1		98

CAS Acceptance Limits: 57-137

Approved By: _____ Date: 12-2-97

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Anchorage School District
Project: ASD - Bus Barn/97007A
Sample Matrix: Water

Service Request: A9701005
Date Collected: 10/27/97
Date Received: 10/29/97
Date Extracted: NA
Date Analyzed: 10/31/97

Surrogate Recovery Summary
Gasoline Range Organics (GRO)

Prep Method: EPA 5030A
Analysis Method: 8015M

Units: PERCENT
Basis: NA

Sample Name	Lab Code	Test Notes	Percent Recovery 1,4-Difluorobenzene
W-2	A9701005-005		107

CAS Acceptance Limits: 60-130

Approved By: _____ Date: 12-2-97

SURJ/020597p
01005VOA.RL4 - SUR 12/2/97

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Anchorage School District
Project: ASD - Bus Barn/97007A
Sample Matrix: Soil

Service Request: A9701005
Date Collected: 10/22/97
Date Received: 10/29/97
Date Extracted: 10/22/97
Date Analyzed: 11/6/97

Surrogate Recovery Summary
Aromatic Volatile Organics

Prep Method: AK101PR
Analysis Method: 8020A

Units: PERCENT
Basis: NA

Sample Name	Lab Code	Test Notes	Percent Recovery 4-Bromofluorobenzene
2	A9701005-001		95
3	A9701005-002		95
4	A9701005-003		97
7	A9701005-004		95
Trip Blank	A9701005-006		88
Method Blank	A971104-SB1		87

CAS Acceptance Limits: 76-120

Approved By: _____ Date: 12-2-97

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Anchorage School District
Project: ASD - Bus Barn/97007A
Sample Matrix: Water

Service Request: A9701005
Date Collected: 10/27/97
Date Received: 10/29/97
Date Extracted: NA
Date Analyzed: 10/31/97

Surrogate Recovery Summary
Aromatic Volatile Organics

Prep Method: EPA 5030A
Analysis Method: 8020A

Units: PERCENT
Basis: NA

Sample Name	Lab Code	Test Notes	Percent Recovery 1,4-Difluorobenzene
W-2	A9701005-005		95

CAS Acceptance Limits: 76-120

Approved By: _____ Date: 12-2-97

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Anchorage School District
Project: ASD - Bus Barn/97007A
Sample Matrix: Soil

Service Request: A9701005
Date Collected: 10/22/97
Date Received: 10/29/97
Date Extracted: 11/5/97
Date Analyzed: 11/11/97

Surrogate Recovery Summary
Diesel Range Organics (DRO)

Prep Method: EPA 3540
Analysis Method: AK102.0

Units: PERCENT
Basis: NA

Sample Name	Lab Code	Test Notes	Percent Recovery p-Terphenyl
2	A9701005-001		102
3	A9701005-002		87
4	A9701005-003		98
Method Blank	A971105-SB1		110

CAS Acceptance Limits: 50-150

Approved By: MB Date: 11/24/97

Columbia Analytical Services, Inc.

CHAIN OF CUSTODY/LABORATORY ANALYSIS REPORT FORM

4710 Business Park Blvd., SUITE 24 • Anchorage, AK 99503 • (907) 563-0846 • FAX (907) 563-2973

DATE _____ PAGE _____ OF _____

PROJECT NAME ASD - Bus Barn • 97007A

PROJECT MGR Julia Flodin

COMPANY/ADDRESS Gilfilian Eng. & Env. Testing, Inc.
2605 Denali Street
Anchorage, Alaska 99503 PHONE 277-2021
FAX 274-8683

SAMPLERS SIGNATURE Steve Rebillard

	SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	NUMBER OF CONTAINERS	Base/Neu/Acid Organics GC/MS 625/8270	Volatile Organics GC/MS 624/8240	Halogenated or Aromatic Volatiles 601/8010 ☐ 602/8020 ☐	Pesticides/PCBs 608/8080 ☐ PCBs Only 608/8080 ☐	Total Petroleum Hydrocarbons EPA 418.1	GRO/8015M ☐ BTEX/8020 ☐	Hydrocarbon Scan C10 - C40 AK101:	GRO ☐ BTEX ☐	DRO/8100M ☐ DRO/AK102 ☐	RRO/8100M ☐ RRO/AK103 ☐	TCLP Metals ☐ VOA ☐	Semi Pest/ VOA ☐ Herb ☐	pH, Cond, Cl, SO_4, PO_4, F, Br NO_2, NO_3 (circle)	NH_3-N, COD, Total-P, TKN, TOC Cyanide (circle)	Metals (total or dissolved) List Below				REMARKS
1	2	10/22	1850		Soil	2							X	X											
2	3	10/22	1915		Soil	2							X	X											
3	4	10/22	1930		Soil	2							X	X											
4	7	10/27	1525		Soil	2							X												
5	W-2	10/27	1330		water	2							X												
6	Trip Blank					1							X												

RELINQUISHED BY:
Steve Rebillard
Signature
Steve Rebillard
Printed Name
GE²T
Firm
10/29/97 1118
Date/Time

RECEIVED BY:
Sherry Long
Signature
Sherry Long
Printed Name
CAS/AK
Firm
10/29/97 11.18
Date/Time

RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

TURNAROUND REQUIREMENTS
___ 1 day ___ 2 day ___ 5 day
X Standard (10-15 working days)
___ Provide Verbal Preliminary Results
X Provide FAX preliminary Results
Requested Report Date _____

REPORT REQUIREMENTS
___ I. Routine Report
___ II. Report (includes DUP.MAS. MSD, as required, may be charged as samples)
___ III. Data Validation Report (includes All Raw Data)
___ IV. CLP Deliverable Report
___ ADEC Deliverables
___ ACOE Deliverables

INVOICE INFORMATION:
P.O.# _____
Bill To _____

SAMPLE RECEIPT:
Temp: 2.3°C
Airbill #: _____
Shipping VIA: _____
Shipping to: _____
Condition: _____
COC Seals: HD
Lab No: _____

SPECIAL INSTRUCTIONS/COMMENTS:
Invoice ASD - Attn. Julia Flodin
Fax results to GE²T, follow with Hard Copy

DISTRIBUTION: WHITE - return to originator; YELLOW - lab; PINK - retained by originator

400-5

Columbia Analytical Services, Inc.
Cooler Receipt and Preservation From

Client: Anchorage School District Work order: A9701005
Project: ASD - Bus Barn/97007A
Cooler received on: 10/29/97 and opened on 10/29/97 by Sherry Long

		Yes	No	N/A
1	Were custody seals on outside of cooler?	☐	☐	☒
	If yes, how many and where?	Samples were hand delivered.		
	Were signature and date correct?	☒	☐	☐
2	Were custody papers properly filled out (ink, signed, etc....)?	☒	☐	☐
3	Did all bottles arrive in good condition (unbroken, etc....)?	☒	☐	☐
4	Were all bottle labels correct (analysis, preservation, etc....)?	☒	☐	☐
5	Did all bottle labels and tags agree with custody papers?	☒	☐	☐
6	Were correct bottles used for test indicated?	☒	☐	☐
7	Were VOA vials checked for absence of air bubbles, and noted?	☒	☐	☐
8	Temperature of cooler upon receipt	2.3 Degrees C		

Explain any discrepancies:

		Yes	No
pH	Reagent		
12	NaOH		
2	HNO_3		
2	H_2SO_4		

Yes = all samples OK
No = Samples were preserved at lab as listed

Comments:

Sample I.D.	Reage	Vol.

RAW DATA

TOTAL SOLIDS
EPA METHOD 160.3

Continued From Page 064

Rate/Unit	Pag	wo #	wet wt	tare	tare+dry	Dry	% Solid	Comments
1/4 mc	X-1	A9701004-5	16.46	0.97	16.68	15.71	95.41	
	1-2	A9701004-2	12.07	0.96	12.40	11.44	94.78	
	-3	1028-3	13.68	0.97	13.37	12.40	90.64	
	-4	1028-4	14.38	0.97	14.36	13.39	93.12	
	-5	1028-5	15.26	0.96	15.21	14.25	93.38	
1/6 mc	X-1	A9700443	17.99	0.96	14.60	13.64	75.82	Standing H2O
	-2	-7	14.74	0.97	11.85	10.88	73.61	
	-3	-13	17.37	0.96	13.53	12.57	72.37	
	-4	-14	11.28	0.95	8.86	7.91	70.12	
	-5	-19	13.63	0.97	12.19	11.22	82.32	
	-6	-21	14.25	0.97	8.38	7.41	52.00	
	-7	-24	16.60	0.96	12.69	11.73	70.66	
	-8	-26	14.16	0.96	10.79	9.83	67.33	
	-9	-27	17.12	0.97	13.34	12.37	72.25	
	-10	-30	16.20	0.97	13.93	12.96	80.00	
	-11	-33	15.52	0.97	12.02	11.05	71.20	
	-12	A9701003-1	15.97	0.97	14.30	13.33	95.42	
	-13	-2	17.16	0.97	16.98	16.01	93.30	
	-14	-3	13.32	0.96	13.56	12.60	94.59	
	-15	-4	20.35	0.96	20.07	19.11	93.91	
	-16	-5	12.30	0.97	12.64	11.67	94.68	
	-17	A9701005-1	11.96	0.97	11.74	10.77	89.9	out 1600 11-6-97
	-18	-2	12.96	0.97	11 68	10.71	82.6	
	-19	-3	14.22	0.96	12.73	11.77	82.8	
	-20	A9701012-1	10.00	0.97	9.12	8.15	81.50	
	-21	-1600	11.32	0.96	10.88	9.92	87.40	
	-22	-2	11.57	0.96	10.45	9.49	85.57	
	-23	-3	10.79	0.96	7.56	6.60	61.17	
	-24	-4	11.12	0.96	9.27	8.31	74.73	
	-25	-5	16.70	0.96	14.21	13.25	79.34	
	-26	-6	14.78	0.96	11.50	10.54	71.31	
	-27	-7	11.19	0.96	9.05	8.09	72.30	
	-28	-1600	14.00	0.96	11.00	10.04	71.71	
1/6 mc	A-1	A9710311	10.26	0.97	10.54	9.57	93.3	
	A-2	-2	13.16	0.97	13.33	12.36	93.9	
	A-3	A9710326	11.55	0.96	13.08	9.84	78.27	

Continued on Page

Read and Understood By

000023

Signed Date Signed Date

Columbia Analytical Services, Inc.

January 22, 1998

Service Request No: A9701166

Julia Flodin
Anchorage School District
1301 Labar Street
Anchorage, AK 99515

Re: ASD Student Transportation

Dear Julia:

Enclosed are the results of the rush sample(s) submitted to our laboratory on December 29, 1997. Preliminary results were transmitted via facsimile on January 1, 1998. For your reference, these analyses have been assigned our service request number A9701166.

All analyses were performed according to our laboratory's quality assurance program. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for use of less than the complete report. Results apply only to the samples analyzed.

Please call if you have any questions. My extension is 0821.

Respectfully submitted,

COLUMBIA ANALYTICAL SERVICES, INC.

Mike Shelton

Mike Shelton
Laboratory Manager

MIS/jas

cc: Janet Bartel, Gilfilian Engineering

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	Anchorage School District	**Service Request No.:**	A9701166
Project:	ASD Student Transportation	**Date Received:**	12/29/97
Sample Matrix:	Soil		

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of Columbia Analytical Services, Inc. (CAS). This report contains analytical results for sample(s) designated for Tier I data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses.

All EPA recommended holding times have been met for analyses in this sample delivery group.

The analyses for 8010 were performed in our Kelso, Washington laboratory. The service request number for this work is K9709585.

Approved by /TTS **Date** 1/21/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Anchorage School District
Project: ASD Student Transportation
Sample Matrix: Soil

Service Request: A9701166
Date Collected: 12/23/97
Date Received: 12/29/97

Aromatic Volatile Organics

Sample Name: S1
Lab Code: A9701166-001
Test Notes:

Units: mg/Kg (ppm)
Basis: Dry

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Benzene	AK101PR	8020A	0.05	0.01	1	12/23/98	12/30/98	ND	
Toluene	AK101PR	8020A	0.05	0.01	1	12/23/98	12/30/98	ND	
Ethylbenzene	AK101PR	8020A	0.05	0.01	1	12/23/98	12/30/98	ND	
Xylenes, Total	AK101PR	8020A	0.05	0.03	1	12/23/98	12/30/98	0.07	

Approved By: _____ Date: 01/05/99

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Anchorage School District	**Service Request:**	A9701166
Project:	ASD Student Transportation	**Date Collected:**	12/23/97
Sample Matrix:	Soil	**Date Received:**	12/29/97

Aromatic Volatile Organics

Sample Name:	S2	Units:	mg/Kg (ppm)
Lab Code:	A9701166-002	Basis:	Dry
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Benzene	AK101PR	8020A	0.05	0.01	1	12/23/98	12/30/98	ND	
Toluene	AK101PR	8020A	0.05	0.01	1	12/23/98	12/30/98	ND	
Ethylbenzene	AK101PR	8020A	0.05	0.01	1	12/23/98	12/30/98	0.05	
Xylenes, Total	AK101PR	8020A	0.05	0.03	1	12/23/98	12/30/98	0.23	

Approved By: _____ Date: 01/05/98

000011

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Anchorage School District	**Service Request:**	A9701166
Project:	ASD Student Transportation	**Date Collected:**	12/23/97
Sample Matrix:	Soil	**Date Received:**	12/29/97

Aromatic Volatile Organics

Sample Name:	S3	Units:	mg/Kg (ppm)
Lab Code:	A9701166-003	Basis:	Dry
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Benzene	AK101PR	8020A	0.05	0.01	1	12/23/98	12/30/98	ND	
Toluene	AK101PR	8020A	0.05	0.01	1	12/23/98	12/30/98	ND	
Ethylbenzene	AK101PR	8020A	0.05	0.01	1	12/23/98	12/30/98	ND	
Xylenes, Total	AK101PR	8020A	0.05	0.03	1	12/23/98	12/30/98	ND	

Approved By: _____ Date: 01/05/98

000012

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Anchorage School District	**Service Request:**	A9701166
Project:	ASD Student Transportation	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA

Aromatic Volatile Organics

Sample Name:	Method Blank	Units:	mg/Kg (ppm)
Lab Code:	A971229-SB1	Basis:	Dry
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Benzene	AK101PR	8020A	0.05	0.01	1	12/23/98	12/29/98	ND	
Toluene	AK101PR	8020A	0.05	0.01	1	12/23/98	12/29/98	ND	
Ethylbenzene	AK101PR	8020A	0.05	0.01	1	12/23/98	12/29/98	ND	
Xylenes, Total	AK101PR	8020A	0.05	0.03	1	12/23/98	12/29/98	ND	

Approved By: _____ Date: 01/05/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Anchorage School District	**Service Request:**	A9701166
Project:	ASD Student Transportation	**Date Collected:**	12/23/97
Sample Matrix:	Soil	**Date Received:**	12/29/97

Gasoline Range Organics (GRO)

Prep Method:	AK101PR	**Units:**	mg/Kg (ppm)
Analysis Method:	AK101.0	**Basis:**	Dry
Test Notes:			

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
S1	A9701166-001	5	0.3	1	12/23/98	12/30/98	9	
S2	A9701166-002	5	0.3	1	12/23/98	12/30/98	10	
S3	A9701166-003	5	0.3	1	12/23/98	12/30/98	ND	
Method Blank	A971229-SB1	5	0.3	1	12/29/98	12/29/98	ND	

Approved By: _____ Date: 01/05/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Anchorage School District
Project: ASD Student Transportation
Sample Matrix: Soil

Service Request: A9701166
Date Collected: 12/23/97
Date Received: 12/29/97

Diesel Range Organics (DRO)

Prep Method: EPA 3540
Analysis Method: AK102.0
Test Notes:

Units: mg/Kg
Basis: Dry

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
S1	A9701166-001	200	5	20	12/29/97	1/21/98	7500	C,X
S2	A9701166-002	200	5	20	12/29/97	1/21/98	8400	C,X
S3	A9701166-003	10	5	1	12/29/97	1/21/98	14	
Method Blank	A971229-SB1	10	5	1	12/29/97	1/20/98	ND	

C The MRL is elevated because the sample required diluting.
X Result primarily due to the front end of higher boiling material eluting in the diesel range.

Approved By: Amy Gray Date: 01-22-98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Anchorage School District	**Service Request:**	A9701166
Project:	ASD Student Transportation	**Date Collected:**	12/23/97
Sample Matrix:	Soil	**Date Received:**	12/29/97

Residual Range Organics (RRO)

Prep Method:	EPA 3540	Units:	mg/Kg
Analysis Method:	AK103.0	Basis:	Dry
Test Notes:			

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
S1	A9701166-001	800	10	20	12/29/97	1/18/98	14000	C
S2	A9701166-002	800	10	20	12/29/97	1/18/98	16000	C
S3	A9701166-003	100	10	1	12/29/97	1/18/98	ND	
Method Blank	A971229-SB1	100	10	1	12/29/97	1/18/98	ND	

C The MRL is elevated because the sample required diluting.

Approved By: Amy Gray Date: 01-22-98

000015

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Gilfilian Engineering & Env. Testing, In
Project: ASD Student Transportation
Sample Matrix: Soil

Service Request: K9709585
Date Collected: 12/23/97
Date Received: 12/29/97
Date Extracted: 12/31/97

Halogenated Volatile Organic Compounds
EPA Methods 5030A/8010B
Units: mg/Kg (ppm)
Dry Weight Basis

	Sample Name:	S1	S2	S3
	Lab Code:	K9709585-001	K9709585-002	K9709585-003
	Date Analyzed:	12/31/97	12/31/97	12/31/97
Analyte	**MRL**			
Dichlorodifluoromethane (CFC 12)	0.1	ND	ND	ND
Chloromethane	0.1	ND	ND	ND
Vinyl Chloride	0.05	ND	ND	ND
Bromomethane	0.05	ND	ND	ND
Chloroethane	0.05	ND	ND	ND
Trichlorofluoromethane (CFC 11)	0.05	ND	ND	ND
1,1-Dichloroethene	0.05	ND	ND	ND
Trichlorotrifluoroethane (CFC 113)	0.05	ND	ND	ND
Methylene Chloride	0.5	ND	ND	ND
trans-1,2-Dichloroethene	0.05	ND	ND	ND
cis-1,2-Dichloroethene	0.05	ND	ND	ND
1,1-Dichloroethane	0.05	ND	ND	ND
Chloroform	0.05	ND	ND	ND
1,1,1-Trichloroethane (TCA)	0.05	ND	ND	ND
Carbon Tetrachloride	0.05	ND	ND	ND
1,2-Dichloroethane	0.05	ND	ND	ND
Trichloroethene (TCE)	0.05	ND	ND	ND
1,2-Dichloropropane	0.05	ND	ND	ND
Bromodichloromethane	0.05	ND	ND	ND
2-Chloroethyl Vinyl Ether	0.5	ND	ND	ND
trans-1,3-Dichloropropene	0.05	ND	ND	ND
cis-1,3-Dichloropropene	0.05	ND	ND	ND
1,1,2-Trichloroethane	0.05	ND	ND	ND
Tetrachloroethene (PCE)	0.05	ND	ND	ND
Dibromochloromethane	0.05	ND	ND	ND
Chlorobenzene	0.05	ND	ND	ND
Bromoform	0.05	ND	ND	ND
1,1,2,2-Tetrachloroethane	0.05	ND	ND	ND
1,3-Dichlorobenzene	0.1	ND	ND	ND
1,4-Dichlorobenzene	0.1	ND	ND	ND
1,2-Dichlorobenzene	0.1	ND	ND	ND

000007

Approved By: MM Date: 1/5/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Gilfilian Engineering & Env. Testing, In
Project: ASD Student Transportation
Sample Matrix: Soil

Service Request: K9709585
Date Collected: 12/23/97
Date Received: 12/29/97
Date Extracted: 12/31/97

Halogenated Volatile Organic Compounds
EPA Methods 5030A/8010B
Units: mg/Kg (ppm)
Dry Weight Basis

	Sample Name:	**Method Blank**
	Lab Code:	K971231-MB
	Date Analyzed:	12/31/97
Analyte	**MRL**	
Dichlorodifluoromethane (CFC 12)	0.1	ND
Chloromethane	0.1	ND
Vinyl Chloride	0.05	ND
Bromomethane	0.05	ND
Chloroethane	0.05	ND
Trichlorofluoromethane (CFC 11)	0.05	ND
1,1-Dichloroethene	0.05	ND
Trichlorotrifluoroethane (CFC 113)	0.05	ND
Methylene Chloride	0.5	ND
trans-1,2-Dichloroethene	0.05	ND
cis-1,2-Dichloroethene	0.05	ND
1,1-Dichloroethane	0.05	ND
Chloroform	0.05	ND
1,1,1-Trichloroethane (TCA)	0.05	ND
Carbon Tetrachloride	0.05	ND
1,2-Dichloroethane	0.05	ND
Trichloroethene (TCE)	0.05	ND
1,2-Dichloropropane	0.05	ND
Bromodichloromethane	0.05	ND
2-Chloroethyl Vinyl Ether	0.5	ND
trans-1,3-Dichloropropene	0.05	ND
cis-1,3-Dichloropropene	0.05	ND
1,1,2-Trichloroethane	0.05	ND
Tetrachloroethene (PCE)	0.05	ND
Dibromochloromethane	0.05	ND
Chlorobenzene	0.05	ND
Bromoform	0.05	ND
1,1,2,2-Tetrachloroethane	0.05	ND
1,3-Dichlorobenzene	0.1	ND
1,4-Dichlorobenzene	0.1	ND
1,2-Dichlorobenzene	0.1	ND

Approved By: MM Date: 1/5/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Anchorage School District	**Service Request:**	A9701166
Project:	ASD Student Transportation	**Date Collected:**	12/23/97
Sample Matrix:	Soil	**Date Received:**	12/29/97

Total Metals

Sample Name:	S1	Units:	mg/Kg (ppm)
Lab Code:	A9701166-001	Basis:	Dry
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Arsenic	EPA 3050A	7060	1	0.2	1	12/31/97	1/2/98	8	
Cadmium	EPA 3050A	6010A	1	0.4	1	12/31/97	1/5/98	ND	
Chromium	EPA 3050A	6010A	2	0.6	1	12/31/97	1/5/98	31	
Lead	EPA 3050A	6010A	20	4	1	12/31/97	1/5/98	120	

Approved By: J. Shrup DNM Date: 1.5.98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

000077

Client:	Anchorage School District	**Service Request:**	A9701166
Project:	ASD Student Transportation	**Date Collected:**	12/23/97
Sample Matrix:	Soil	**Date Received:**	12/29/97

Total Metals

Sample Name:	S2	**Units:**	mg/Kg (ppm)
Lab Code:	A9701166-002	**Basis:**	Dry
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Arsenic	EPA 3050A	7060	1	0.2	1	12/31/97	1/2/98	8	
Cadmium	EPA 3050A	6010A	1	0.4	1	12/31/97	1/5/98	2	
Chromium	EPA 3050A	6010A	2	0.6	1	12/31/97	1/5/98	35	
Lead	EPA 3050A	6010A	20	4	1	12/31/97	1/5/98	80	

Approved By: J. Shaya DNR Date: 1.5.98

000004

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Anchorage School District	**Service Request:**	A9701166
Project:	ASD Student Transportation	**Date Collected:**	12/23/97
Sample Matrix:	Soil	**Date Received:**	12/29/97

Total Metals

Sample Name:	S3	Units:	mg/Kg (ppm)
Lab Code:	A9701166-003	Basis:	Dry
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Arsenic	EPA 3050A	7060	1	0.2	1	12/31/97	1/2/98	6	
Cadmium	EPA 3050A	6010A	1	0.4	1	12/31/97	1/5/98	ND	
Chromium	EPA 3050A	6010A	2	0.6	1	12/31/97	1/5/98	42	
Lead	EPA 3050A	6010A	20	4	1	12/31/97	1/5/98	ND	

Approved By: J. Strup Date: 1.5.98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Anchorage School District	**Service Request:**	A9701166
Project:	ASD Student Transportation	**Date Collected:**	12/23/97
Sample Matrix:	Soil	**Date Received:**	12/29/97

Total Metals

Sample Name:	Method Blank`	Units:	mg/Kg (ppm)
Lab Code:	A971231-SB1	Basis:	Dry
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Arsenic	EPA 3050A	7060	1	0.2	1	12/31/97	1/2/98	ND	
Cadmium	EPA 3050A	6010A	1	0.4	1	12/31/97	1/5/98	ND	
Chromium	EPA 3050A	6010A	2	0.6	1	12/31/97	1/5/98	ND	
Lead	EPA 3050A	6010A	20	4	1	12/31/97	1/5/98	ND	

Approved By: J. Sharp Date: 1.5.98

1S44/042895
01166ICP.DG1 - mb 1/5/98

Columbia Analytical Services inc.

February 19, 1998 Service Request No: A9701166

Julia Flodin
Anchorage School District
1301 Labar Street
Anchorage, AK 99515

Re: ASD Student Transportation

Dear Julia:

Enclosed are the results of the PCB originally requested for samples submitted to our laboratory on December 29, 1998. The service request number for this work is A9701166.

All analyses were performed according to our laboratory's quality assurance program. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for use of less than the complete report. Results apply only to the samples analyzed.

Please call if you have any questions. My extension is 0821.

Respectfully submitted,

COLUMBIA ANALYTICAL SERVICES, INC.

Mike Shelton

Mike Shelton
Laboratory Manager

MIS/jas

cc: Janet Bartell, Gilfilian Engineering

4710 Business Park Blvd., Ste. 24 ▪ Anchorage, AK 99503-7100 ▪ 907-563-0846 ▪ Fax 907-563-2973

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	Anchorage School District	**Service Request No.:**	A9701166
Project:	ASD Student Transportation	**Date Received:**	12/29/97
Sample Matrix:	Soil		

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of Columbia Analytical Services, Inc. (CAS). This report contains analytical results for sample(s) designated for Tier I data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses.

Due to a sample log in error PCBs were not analyzed and reported with our original report. Samples were extracted and analyzed past recommended holding time for this test. The EPA3540 extracts prepared for DRO (extracted within holding time) were also analyzed for PCBs. The testing of both sets of sample extracts yielded identical results. We reported the second set which were associated with valid control samples.

Approved by MS **Date** 2/19/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Anchorage School District	**Service Request:**	A9701166
Project:	ASD Student Transportation	**Date Collected:**	12/23/97
Sample Matrix:	Soil	**Date Received:**	12/29/97

Polychlorinated Biphenyls (PCBs)

Sample Name:	S1	Units:	mg/kg (ppm)
Lab Code:	A9701166-001	Basis:	Dry
Test Notes:	H		

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Aroclor 1016	EPA 3540	8081	0.1	0.03	1	1/29/98	2/9/98	ND	
Aroclor 1221	EPA 3540	8081	0.1	0.03	1	1/29/98	2/9/98	ND	
Aroclor 1232	EPA 3540	8081	0.1	0.03	1	1/29/98	2/9/98	ND	
Aroclor 1242	EPA 3540	8081	0.1	0.03	1	1/29/98	2/9/98	ND	
Aroclor 1248	EPA 3540	8081	0.1	0.03	1	1/29/98	2/9/98	ND	
Aroclor 1254	EPA 3540	8081	0.1	0.03	1	1/29/98	2/9/98	ND	
Aroclor 1260	EPA 3540	8081	0.1	0.03	1	1/29/98	2/9/98	ND	

H The extraction was performed 23 days past the recommended hold time; see case narrative.

Approved By: Amy Gray Date: 02-10-98

000003

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Anchorage School District	**Service Request:**	A9701166
Project:	ASD Student Transportation	**Date Collected:**	12/23/97
Sample Matrix:	Soil	**Date Received:**	12/29/97

Polychlorinated Biphenyls (PCBs)

Sample Name:	S2	Units:	mg/kg (ppm)
Lab Code:	A9701166-002	Basis:	Dry
Test Notes:	H		

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Aroclor 1016	EPA 3540	8081	0.1	0.03	1	1/29/98	2/9/98	ND	
Aroclor 1221	EPA 3540	8081	0.1	0.03	1	1/29/98	2/9/98	ND	
Aroclor 1232	EPA 3540	8081	0.1	0.03	1	1/29/98	2/9/98	ND	
Aroclor 1242	EPA 3540	8081	0.1	0.03	1	1/29/98	2/9/98	ND	
Aroclor 1248	EPA 3540	8081	0.1	0.03	1	1/29/98	2/9/98	ND	
Aroclor 1254	EPA 3540	8081	0.1	0.03	1	1/29/98	2/9/98	ND	
Aroclor 1260	EPA 3540	8081	0.1	0.03	1	1/29/98	2/9/98	ND	

H — The extraction was performed 23 days past the recommended hold time; see case narrative.

Approved By: Amy Gray Date: 02-10-98

000084

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Anchorage School District	**Service Request:**	A9701166
Project:	ASD Student Transportation	**Date Collected:**	12/23/97
Sample Matrix:	Soil	**Date Received:**	12/29/97

Polychlorinated Biphenyls (PCBs)

Sample Name:	S3	Units:	mg/kg (ppm)
Lab Code:	A9701166-003	Basis:	Dry
Test Notes:	H		

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Aroclor 1016	EPA 3540	8081	0.1	0.03	1	1/29/98	2/9/98	ND	
Aroclor 1221	EPA 3540	8081	0.1	0.03	1	1/29/98	2/9/98	ND	
Aroclor 1232	EPA 3540	8081	0.1	0.03	1	1/29/98	2/9/98	ND	
Aroclor 1242	EPA 3540	8081	0.1	0.03	1	1/29/98	2/9/98	ND	
Aroclor 1248	EPA 3540	8081	0.1	0.03	1	1/29/98	2/9/98	ND	
Aroclor 1254	EPA 3540	8081	0.1	0.03	1	1/29/98	2/9/98	ND	
Aroclor 1260	EPA 3540	8081	0.1	0.03	1	1/29/98	2/9/98	ND	

H — The extraction was performed 23 days past the recommended hold time; see case narrative.

Approved By: Amy Gray Date: 02-10-98

000005

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Anchorage School District	**Service Request:**	A9701166
Project:	ASD Student Transportation	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA

Polychlorinated Biphenyls (PCBs)

Sample Name:	Method Blank	Units:	mg/kg (ppm)
Lab Code:	A970129-SB1	Basis:	Dry
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Aroclor 1016	EPA 3540	8081	0.1	0.03	1	1/29/98	2/9/98	ND	
Aroclor 1221	EPA 3540	8081	0.1	0.03	1	1/29/98	2/9/98	ND	
Aroclor 1232	EPA 3540	8081	0.1	0.03	1	1/29/98	2/9/98	ND	
Aroclor 1242	EPA 3540	8081	0.1	0.03	1	1/29/98	2/9/98	ND	
Aroclor 1248	EPA 3540	8081	0.1	0.03	1	1/29/98	2/9/98	ND	
Aroclor 1254	EPA 3540	8081	0.1	0.03	1	1/29/98	2/9/98	ND	
Aroclor 1260	EPA 3540	8081	0.1	0.03	1	1/29/98	2/9/98	ND	

Approved By: Amy Gray Date: 02-10-98

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Anchorage School District
Project: ASD Student Transportation
Sample Matrix: Soil

Service Request: A9701166
Date Collected: 12/23/97
Date Received: 12/29/97
Date Extracted: 1/29/98
Date Analyzed: 2/9/98

Surrogate Recovery Summary
Polychlorinated Biphenyls (PCBs)

Prep Method: EPA 3540
Analysis Method: 8081

Units: PERCENT
Basis: NA

Sample Name	Lab Code	Test Notes	Percent Recovery Decachlorobiphenyl
S1	A9701166-001		109
S2	A9701166-002		106
S3	A9701166-003		107
Method Blank	A970129-SB1		113

CAS Acceptance Limits: 44-132

Approved By: Amy Gray Date: 02-10-98

LABORATORY QC RESULTS

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Gilfilian Engineering & Env. Testing, In
Project: ASD Student Transportation
Sample Matrix: Soil

Service Request: K9709585
Date Collected: 12/23/97
Date Received: 12/29/97
Date Extracted: 12/31/97
Date Analyzed: 12/31/97,1/1/98

Surrogate Recovery Summary
Halogenated Volatile Organic Compounds
EPA Methods 5030A/8010B

Sample Name	Lab Code	Percent Recovery Bromochloromethane
S1	K9709585-001	111
S2	K9709585-002	108
S3	K9709585-003	109
Method Blank	K971231-MB	104

CAS Acceptance Limits: 70-130

Approved By: _____ Date: 1/21/98

SURI/111594

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Anchorage School District
Project: ASD Student Transportation
Sample Matrix: Soil

Service Request: A9701166
Date Collected: 12/23/97
Date Received: 12/29/97
Date Extracted: 12/23/98
Date Analyzed: 12/30/98

Surrogate Recovery Summary
Gasoline Range Organics (GRO)

Prep Method: AK101PR
Analysis Method: AK101.0

Units: PERCENT
Basis: NA

Sample Name	Lab Code	Test Notes	Percent Recovery 4-Bromofluorobenzene
S1	A9701166-001		109
S2	A9701166-002		107
S3	A9701166-003		81
Method Blank	A971229-SB1		103

CAS Acceptance Limits: 60-132

Approved By: _____ Date: 01/05/98

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Anchorage School District
Project: ASD Student Transportation
Sample Matrix: Soil

Service Request: A9701166
Date Collected: 12/23/97
Date Received: 12/29/97
Date Extracted: 12/23/98
Date Analyzed: 12/30/98

Surrogate Recovery Summary
Aromatic Volatile Organics

Prep Method: AK101PR
Analysis Method: 8020A

Units: PERCENT
Basis: NA

Sample Name	Lab Code	Test Notes	Percent Recovery 4-Bromofluorobenzene
S1	A9701166-001		94
S2	A9701166-002		89
S3	A9701166-003		71
Method Blank	A971229-SB1		97

CAS Acceptance Limits: 60-135

Approved By: _____ Date: 01/05/98

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Anchorage School District	**Service Request:**	A9701166
Project:	ASD Student Transportation	**Date Collected:**	12/23/97
Sample Matrix:	Soil	**Date Received:**	12/29/97
		Date Extracted:	12/29/97
		Date Analyzed:	1/21/98

Surrogate Recovery Summary
Diesel Range Organics (DRO)

Prep Method:	EPA 3540	Units:	PERCENT
Analysis Method:	AK102.0	Basis:	NA

Sample Name	Lab Code	Test Notes	Percent Recovery p-Terphenyl
S1	A9701166-001	A	266
S2	A9701166-002	A	251
S3	A9701166-003		100
Method Blank	A971229-SB1		114

CAS Acceptance Limits: 50-150

A Outside acceptance limits due to matrix interferences.

Approved By: Amy Gray Date: 01-22-98

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Anchorage School District	**Service Request:**	A9701166
Project:	ASD Student Transportation	**Date Collected:**	12/23/97
Sample Matrix:	Soil	**Date Received:**	12/29/97
		Date Extracted:	12/29/97
		Date Analyzed:	1/18/98

Surrogate Recovery Summary
Residual Range Organics (RRO)

Prep Method:	EPA 3540	Units:	PERCENT
Analysis Method:	AK103.0	Basis:	NA

Sample Name	Lab Code	Test Notes	Percent Recovery n-Triacontane
S1	A9701166-001		141
S2	A9701166-002		145
S3	A9701166-003		97
Method Blank	A971229-SB1		99

CAS Acceptance Limits: 50-150

A Outside acceptance limits due to matrix interferences.

Approved By: Amy Gray Date: 01-22-98

Columbia Analytical Services, Inc.
Cooler Receipt and Preservation From

Client: Anchorage School District Work order: A9701166
Project: ASD Student Transportation
Cooler received on: 12/29/97 and opened on 12/29/97 by Donna Chance

		Yes	No	N/A
1	Were custody seals on outside of cooler?	o	o	x
	If yes, how many and where? Hand Delivered			
	Were signature and date correct?	x	o	o
2	Were custody papers properly filled out (ink, signed, etc....)?	x	o	o
3	Did all bottles arrive in good condition (unbroken, etc....)?	x	o	o
4	Were all bottle labels correct (analysis, preservation, etc....)?	x	o	o
5	Did all bottle labels and tags agree with custody papers?	x	o	o
6	Were correct bottles used for test indicated?	x	o	o
7	Were VOA vials checked for absence of air bubbles, and noted?	o	o	x
8	Temperature of cooler upon receipt	2.7 Degrees C		

Explain any discrepancies:

		Yes	No
pH	Reagent		
12	NaOH		
2	HNO_3		
2	H_2SO_4		

Yes = all samples OK
No = Samples were preserved at lab as listed

Comments:

Sample I.D.	Reage	Vol.

A970 1166

Columbia Analytical Services, Inc.

CHAIN OF CUSTODY/LABORATORY ANALYSIS REPORT FORM

4710 Business Park Blvd., SUITE 24 • Anchorage, AK 99503 • (907) 563-0846 • FAX (907) 563-2973

DATE _____ PAGE 1 OF 1

PROJECT NAME ASD Student Transportation

PROJECT MGR. Janet Bartel

COMPANY/ADDRESS Gilfilian Engineering

2605 Denali St

Anchorage 99503 PHONE 277-2021

FAX 274-8683

SAMPLERS SIGNATURE Janet Bartel

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	NUMBER OF CONTAINERS	Base/Neu/Acid Organics GCMS 625/8270	Volatile Organics GCMS 624/8240	Halogenated or Aromatic Volatiles 601/8010 602/8020	Pesticides/PCBs 608/8080 PCBs Only 608/8080	Total Petroleum Hydrocarbons EPA 418.1	GRO/8015M BTEX/8020	Hydrocarbon Scan C10 - C40 AK101: GRO BTEX	DRO/8100M RRO/8100M DRO/AK102 RRO/AK103	TCLP Metals VOA Semi Pest/ VOA Herb	pH, Cond, Cl, SO_4, PO4, F, Br NO_2, NO_3 (circle)	NH_3-N, COD, Total-P, TKN, TOC Cyanide (circle)	Metals (total or dissolved) List Below As, Cd, Cr, Pb				REMARKS
1164-1 S1	12/23/97	14:35		soil	5			✓	✓			✓	✓				✓				
-2 S2	"	15 15		"	5			✓	✓			✓	✓				✓				
-3 S3	"	15 30		"	4			✓	✓			✓	✓				✓				

RELINQUISHED BY:
Signature: Janet Bartel
Printed Name: Janet Bartel
Firm: GE²T
Date/Time: 12/29/97 9:10

RECEIVED BY:
Signature: Donna Chance
Printed Name: Donna Chance
Firm: SCAS/AK
Date/Time: 12-29-97 9:10

RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

TURNAROUND REQUIREMENTS
___ 1 day ___ 2 day ___ 5 day
___ Standard (10-15 working days)
___ Provide Verbal Preliminary Results
___ Provide FAX preliminary Results
Requested Report Date _____

REPORT REQUIREMENTS
___ I. Routine Report
___ II. Report (includes DUP.MAS. MSD, as required, may be charged as samples)
___ III. Data Validation Report (includes All Raw Data)
___ IV. CLP Deliverable Report
___ ADEC Deliverables
___ ACOE Deliverables

INVOICE INFORMATION:
P.O.# _____
Bill To _____

SAMPLE RECEIPT:
Temp: 2.7°C
Airbill #: _____
Shipping VIA: _____
Shipping to: _____
Condition: _____
COC Seals: HD
Lab No: _____

SPECIAL INSTRUCTIONS/COMMENTS:
Anchorage School District Project

DISTRIBUTION WHITE - return to originator YELLOW - lab PINK - retained by originator

400-5

Columbia Analytical Services, Inc.

January 23, 1998

Service Request No: A9701173

Julia Flodin
Anchorage School District
1301 Labar Street
Anchorage, AK 99515

Re: ASD Student Transportation

Dear Julia:

Enclosed are the results of the rush sample(s) submitted to our laboratory on December 31, 1997. Preliminary results were transmitted via facsimile on January 8, 1998. For your reference, these analyses have been assigned our service request number A9701173.

All analyses were performed according to our laboratory's quality assurance program. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for use of less than the complete report. Results apply only to the samples analyzed.

Please call if you have any questions. My extension is 0821.

Respectfully submitted,

COLUMBIA ANALYTICAL SERVICES, INC.

Mike Shelton

Mike Shelton
Laboratory Manager

MIS/jas

cc: Janet Bartel, Gilfilian Engineering

4710 Business Park Blvd Ste 24 ▪ Anchorage AK 99503-7100 ▪ 907-563-0846 ▪ Fax 907-563-2973

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	Anchorage School District	**Service Request No.:**	A9701173
Project:	ASD Student Transportation	**Date Received:**	12/31/97
Sample Matrix:	Soil, Water		

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of Columbia Analytical Services, Inc. (CAS). This report contains analytical results for sample(s) designated for Tier I data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses.

All EPA recommended holding times have been met for analyses in this sample delivery group.

Approved by MS **Date** 1/23/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Anchorage School District
Project: ASD Student Transportation
Sample Matrix: Soil

Service Request: A9701173
Date Collected: 12/30/97
Date Received: 12/31/97

Lead

Prep Method: EPA 3050A
Analysis Method: 7420
Test Notes:

Units: mg/Kg (ppm)
Basis: Dry

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Method Blank	A980105-SB1	20	10	1	1/5/98	1/6/98	ND	
S-4	A9701173-001	20	10	1	1/5/98	1/6/98	ND	
S-5	A9701173-002	20	10	1	1/5/98	1/6/98	ND	
S-6	A9701173-003	20	10	1	1/5/98	1/6/98	ND	
S-7	A9701173-004	20	10	1	1/5/98	1/6/98	ND	
S-9	A9701173-006	20	10	1	1/5/98	1/6/98	ND	
S-11	A9701173-008	20	10	1	1/5/98	1/6/98	ND	
S-14	A9701173-011	20	10	1	1/5/98	1/6/98	ND	

Approved By: J. Shaya-Daly Date: 1.6.98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Anchorage School District
Project: ASD Student Transportation
Sample Matrix: Soil

Service Request: A9701173
Date Collected: 12/30/97
Date Received: 12/31/97

Gasoline Range Organics (GRO)

Prep Method: AK101PR
Analysis Method: AK101.0
Test Notes:

Units: mg/Kg (ppm)
Basis: Dry

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
S-4	A9701173-001	25	0.3	5	12/30/97	1/8/98	180	C
S-5	A9701173-002	1000	0.3	200	12/30/97	1/8/98	2900	C
S-6	A9701173-003	50	0.3	10	12/30/97	1/8/98	300	C
S-7	A9701173-004	10	0.3	2	12/30/97	1/6/98	81	C
S-8	A9701173-005	5	0.3	1	12/30/97	1/13/98	9	
S-9	A9701173-006	25	0.3	5	12/30/97	1/6/98	100	C
S-10	A9701173-007	25	0.3	5	12/30/97	1/6/98	92	C
S-11	A9701173-008	10	0.3	2	12/30/97	1/8/98	24	C
S-12	A9701173-009	5	0.3	1	12/30/97	1/8/98	7	
S-13	A9701173-010	5	0.3	1	12/30/97	1/8/98	ND	
S-14	A9701173-011	5	0.3	1	12/30/97	1/8/98	ND	
S-15	A9701173-012	5	0.3	1	12/30/97	1/8/98	ND	
Soil Trip Blank	A9701173-015	5	0.3	1	12/30/97	1/6/98	ND	
Method Blank	A970102-SB1	5	0.3	1	12/30/97	1/2/98	ND	

C The MRL is elevated because the sample required diluting.

Approved By: _____ Date: 01/23/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Anchorage School District	**Service Request:**	A9701173
Project:	ASD Student Transportation	**Date Collected:**	12/30/97
Sample Matrix:	Soil	**Date Received:**	12/31/97

Aromatic Volatile Organics

Sample Name:	S-4	Units:	mg/Kg (ppm)
Lab Code:	A9701173-001	Basis:	Dry
Test Notes:	C		

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Benzene	AK101PR	8020A	0.25	0.01	5	12/30/97	1/8/98	19	
Toluene	AK101PR	8020A	0.25	0.01	5	12/30/97	1/8/98	24	
Ethylbenzene	AK101PR	8020A	0.25	0.01	5	12/30/97	1/8/98	3.9	
Xylenes, Total	AK101PR	8020A	0.25	0.03	5	12/30/97	1/8/98	21	

C The MRL is elevated because the sample required diluting.

Approved By: _____ Date: 01/22/98

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Anchorage School District
Project: ASD Student Transportation
Sample Matrix: Water

Service Request: A9701173
Date Collected: 12/30/98
Date Received: 12/31/97

Gasoline Range Organics (GRO)

Prep Method: EPA 5030A
Analysis Method: AK101PR
Test Notes:

Units: ug/L (ppb)
Basis: NA

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
W-1	A9701173-013	50	5	1	NA	1/6/98	ND	
W-2 Trip Blank	A9701173-014	50	5	1	NA	1/6/98	ND	
Method Blank	A980105-WB1	50	5	1	NA	1/5/98	ND	

Approved By: _____ Date: 01/22/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Anchorage School District	**Service Request:**	A9701173
Project:	ASD Student Transportation	**Date Collected:**	12/30/97
Sample Matrix:	Soil	**Date Received:**	12/31/97

Aromatic Volatile Organics

Sample Name:	S-5	**Units:**	mg/Kg (ppm)
Lab Code:	A9701173-002	**Basis:**	Dry
Test Notes:	C		

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Benzene	AK101PR	8020A	10	0.01	200	12/30/97	1/8/98	93	
Toluene	AK101PR	8020A	10	0.01	200	12/30/97	1/8/98	420	
Ethylbenzene	AK101PR	8020A	10	0.01	200	12/30/97	1/8/98	94	
Xylenes, Total	AK101PR	8020A	10	0.03	200	12/30/97	1/8/98	490	

C The MRL is elevated because the sample required diluting.

Approved By: _____ Date: 01/22/98

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Anchorage School District	**Service Request:**	A9701173
Project:	ASD Student Transportation	**Date Collected:**	12/30/97
Sample Matrix:	Soil	**Date Received:**	12/31/97

Aromatic Volatile Organics

Sample Name:	S-6	Units:	mg/Kg (ppm)
Lab Code:	A9701173-003	Basis:	Dry
Test Notes:	C		

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Benzene	AK101PR	8020A	0.5	0.01	10	12/30/97	1/8/98	3.4	
Toluene	AK101PR	8020A	0.5	0.01	10	12/30/97	1/8/98	18	
Ethylbenzene	AK101PR	8020A	0.5	0.01	10	12/30/97	1/8/98	8.5	
Xylenes, Total	AK101PR	8020A	0.5	0.03	10	12/30/97	1/8/98	32	

C The MRL is elevated because the sample required diluting.

Approved By: _____ Date: 01/23/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Anchorage School District	**Service Request:**	A9701173
Project:	ASD Student Transportation	**Date Collected:**	12/30/97
Sample Matrix:	Soil	**Date Received:**	12/31/97

Aromatic Volatile Organics

Sample Name:	S-7	Units:	mg/Kg (ppm)
Lab Code:	A9701173-004	Basis:	Dry
Test Notes:	C		

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Benzene	AK101PR	8020A	0.1	0.01	2	12/30/97	1/6/98	5.3	
Toluene	AK101PR	8020A	0.1	0.01	2	12/30/97	1/6/98	10	
Ethylbenzene	AK101PR	8020A	0.1	0.01	2	12/30/97	1/6/98	2.8	
Xylenes, Total	AK101PR	8020A	0.1	0.03	2	12/30/97	1/6/98	9.1	

C The MRL is elevated because the sample required diluting.

Approved By: _____ Date: 01/22/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Anchorage School District
Project: ASD Student Transportation
Sample Matrix: Soil

Service Request: A9701173
Date Collected: 12/30/97
Date Received: 12/31/97

Aromatic Volatile Organics

Sample Name: S-8
Lab Code: A9701173-005
Test Notes:

Units: mg/Kg (ppm)
Basis: Dry

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Benzene	AK101PR	8020A	0.05	0.01	1	12/30/97	1/13/98	0.99	
Toluene	AK101PR	8020A	0.05	0.01	1	12/30/97	1/13/98	1.46	
Ethylbenzene	AK101PR	8020A	0.05	0.01	1	12/30/97	1/13/98	0.13	
Xylenes, Total	AK101PR	8020A	0.05	0.03	1	12/30/97	1/13/98	0.62	

Approved By: _____ Date: 01/22/98

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Anchorage School District	**Service Request:**	A9701173
Project:	ASD Student Transportation	**Date Collected:**	12/30/97
Sample Matrix:	Soil	**Date Received:**	12/31/97

Aromatic Volatile Organics

Sample Name:	S-9	Units:	mg/Kg (ppm)
Lab Code:	A9701173-006	Basis:	Dry
Test Notes:	C		

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Benzene	AK101PR	8020A	0.25	0.01	5	12/30/97	1/6/98	8.2	
Toluene	AK101PR	8020A	0.25	0.01	5	12/30/97	1/6/98	15	
Ethylbenzene	AK101PR	8020A	0.25	0.01	5	12/30/97	1/6/98	3.2	
Xylenes, Total	AK101PR	8020A	0.25	0.03	5	12/30/97	1/6/98	14	

C The MRL is elevated because the sample required diluting.

Approved By: _____ Date: 01/22/98

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Anchorage School District	**Service Request:**	A9701173
Project:	ASD Student Transportation	**Date Collected:**	12/30/97
Sample Matrix:	Soil	**Date Received:**	12/31/97

Aromatic Volatile Organics

Sample Name:	S-10	Units:	mg/Kg (ppm)
Lab Code:	A9701173-007	Basis:	Dry
Test Notes:	C		

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Benzene	AK101PR	8020A	0.25	0.01	5	12/30/97	1/6/98	11	
Toluene	AK101PR	8020A	0.25	0.01	5	12/30/97	1/6/98	15	
Ethylbenzene	AK101PR	8020A	0.25	0.01	5	12/30/97	1/6/98	2.6	
Xylenes, Total	AK101PR	8020A	0.25	0.03	5	12/30/97	1/6/98	9.9	

C The MRL is elevated because the sample required diluting.

Approved By: _____ Date: 01/22/98

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Anchorage School District	**Service Request:**	A9701173
Project:	ASD Student Transportation	**Date Collected:**	12/30/97
Sample Matrix:	Soil	**Date Received:**	12/31/97

Aromatic Volatile Organics

Sample Name:	S-11	Units:	mg/Kg (ppm)
Lab Code:	A9701173-008	Basis:	Dry
Test Notes:	C		

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Benzene	AK101PR	8020A	0.1	0.01	2	12/30/97	1/8/98	6.5	
Toluene	AK101PR	8020A	0.1	0.01	2	12/30/97	1/8/98	1.0	
Ethylbenzene	AK101PR	8020A	0.1	0.01	2	12/30/97	1/8/98	0.52	
Xylenes, Total	AK101PR	8020A	0.1	0.03	2	12/30/97	1/8/98	1.9	

C The MRL is elevated because the sample required diluting.

Approved By: _____ Date: 01/23/98

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Anchorage School District	**Service Request:**	A9701173
Project:	ASD Student Transportation	**Date Collected:**	12/30/97
Sample Matrix:	Soil	**Date Received:**	12/31/97

Aromatic Volatile Organics

Sample Name:	S-12	Units:	mg/Kg (ppm)
Lab Code:	A9701173-009	Basis:	Dry
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Benzene	AK101PR	8020A	0.05	0.01	1	12/30/97	1/8/98	0.18	
Toluene	AK101PR	8020A	0.05	0.01	1	12/30/97	1/8/98	0.22	
Ethylbenzene	AK101PR	8020A	0.05	0.01	1	12/30/97	1/8/98	ND	
Xylenes, Total	AK101PR	8020A	0.05	0.03	1	12/30/97	1/8/98	0.20	

Approved By: _____ Date: 01/22/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Anchorage School District	**Service Request:**	A9701173
Project:	ASD Student Transportation	**Date Collected:**	12/30/97
Sample Matrix:	Soil	**Date Received:**	12/31/97

Aromatic Volatile Organics

Sample Name:	S-13	Units:	mg/Kg (ppm)
Lab Code:	A9701173-010	Basis:	Dry
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Benzene	AK101PR	8020A	0.05	0.01	1	12/30/97	1/8/98	ND	
Toluene	AK101PR	8020A	0.05	0.01	1	12/30/97	1/8/98	0.07	
Ethylbenzene	AK101PR	8020A	0.05	0.01	1	12/30/97	1/8/98	ND	
Xylenes, Total	AK101PR	8020A	0.05	0.03	1	12/30/97	1/8/98	ND	

Approved By: _____ Date: 01/12/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Anchorage School District	**Service Request:**	A9701173
Project:	ASD Student Transportation	**Date Collected:**	12/30/97
Sample Matrix:	Soil	**Date Received:**	12/31/97

Aromatic Volatile Organics

Sample Name:	S-14	Units:	mg/Kg (ppm)
Lab Code:	A9701173-011	Basis:	Wet
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Benzene	AK101PR	8020A	0.05	0.01	1	12/30/97	1/8/98	ND	
Toluene	AK101PR	8020A	0.05	0.01	1	12/30/97	1/8/98	ND	
Ethylbenzene	AK101PR	8020A	0.05	0.01	1	12/30/97	1/8/98	ND	
Xylenes, Total	AK101PR	8020A	0.05	0.03	1	12/30/97	1/8/98	ND	

Approved By: _____ Date: 01/22/98

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Anchorage School District	**Service Request:**	A9701173
Project:	ASD Student Transportation	**Date Collected:**	12/30/97
Sample Matrix:	Soil	**Date Received:**	12/31/97

Aromatic Volatile Organics

Sample Name:	S-15	Units:	mg/Kg (ppm)
Lab Code:	A9701173-012	Basis:	Dry
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Benzene	AK101PR	8020A	0.05	0.01	1	12/30/97	1/8/98	0.05	J
Toluene	AK101PR	8020A	0.05	0.01	1	12/30/97	1/8/98	0.06	
Ethylbenzene	AK101PR	8020A	0.05	0.01	1	12/30/97	1/8/98	ND	
Xylenes, Total	AK101PR	8020A	0.05	0.03	1	12/30/97	1/8/98	ND	

J Estimated value

Approved By: _____ Date: 01/22/98

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Anchorage School District	**Service Request:**	A9701173
Project:	ASD Student Transportation	**Date Collected:**	12/30/97
Sample Matrix:	Soil	**Date Received:**	12/31/97

Aromatic Volatile Organics

Sample Name:	Soil Trip Blank	Units:	mg/Kg (ppm)
Lab Code:	A971173-015	Basis:	Dry
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Benzene	AK101PR	8020A	0.05	0.01	1	12/30/97	1/6/98	ND	
Toluene	AK101PR	8020A	0.05	0.01	1	12/30/97	1/6/98	ND	
Ethylbenzene	AK101PR	8020A	0.05	0.01	1	12/30/97	1/6/98	ND	
Xylenes, Total	AK101PR	8020A	0.05	0.03	1	12/30/97	1/6/98	ND	

Approved By: _____ Date: 01/22/98

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Anchorage School District	**Service Request:**	A9701173
Project:	ASD Student Transportation	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA

Aromatic Volatile Organics

Sample Name:	Method Blank	Units:	mg/Kg (ppm)
Lab Code:	A980102-SB1	Basis:	Dry
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Benzene	EPA 5030A	8020A	0.05	0.01	1	1/2/98	1/2/98	ND	
Toluene	EPA 5030A	8020A	0.05	0.01	1	1/2/98	1/2/98	ND	
Ethylbenzene	EPA 5030A	8020A	0.05	0.01	1	1/2/98	1/2/98	ND	
Xylenes, Total	EPA 5030A	8020A	0.05	0.03	1	1/2/98	1/2/98	ND	

Approved By: _____ Date: 04/22/98

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Anchorage School District	**Service Request:**	A9701173
Project:	ASD Student Transportation	**Date Collected:**	12/30/98
Sample Matrix:	Water	**Date Received:**	12/31/97

Aromatic Volatile Organics

Sample Name:	W-1	Units:	ug/L (ppb)
Lab Code:	A9701173-013	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Benzene	EPA 5030A	8020A	1	0.2	1	NA	1/6/98	ND	
Toluene	EPA 5030A	8020A	1	0.2	1	NA	1/6/98	ND	
Ethylbenzene	EPA 5030A	8020A	1	0.2	1	NA	1/6/98	ND	
Xylenes, Total	EPA 5030A	8020A	1	0.2	1	NA	1/6/98	ND	

Approved By: _____ Date: 01/22/98

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Anchorage School District	**Service Request:**	A9701173
Project:	ASD Student Transportation	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	12/31/97

Aromatic Volatile Organics

Sample Name:	W-2 Trip Blank	Units:	ug/L (ppb)
Lab Code:	A9701173-014	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Benzene	EPA 5030A	8020A	1	0.2	1	NA	1/6/98	ND	
Toluene	EPA 5030A	8020A	1	0.2	1	NA	1/6/98	ND	
Ethylbenzene	EPA 5030A	8020A	1	0.2	1	NA	1/6/98	ND	
Xylenes, Total	EPA 5030A	8020A	1	0.2	1	NA	1/6/98	ND	

Approved By: _____ Date: 01/22/98

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1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Anchorage School District	**Service Request:**	A9701173
Project:	ASD Student Transportation	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

Aromatic Volatile Organics

Sample Name:	Method Blank	Units:	ug/L (ppb)
Lab Code:	A980105-WB1	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Benzene	EPA 5030A	8020A	1	0.2	1	NA	1/5/98	ND	
Toluene	EPA 5030A	8020A	1	0.2	1	NA	1/5/98	ND	
Ethylbenzene	EPA 5030A	8020A	1	0.2	1	NA	1/5/98	ND	
Xylenes, Total	EPA 5030A	8020A	1	0.2	1	NA	1/5/98	ND	

Approved By: _____ Date: 01/22/98

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Anchorage School District	**Service Request:**	A9701173
Project:	ASD Student Transportation	**Date Collected:**	12/30/98
Sample Matrix:	Soil	**Date Received:**	12/31/97

Diesel Range Organics (DRO)

Prep Method:	EPA 3540	Units:	mg/Kg
Analysis Method:	AK102.0	Basis:	Dry
Test Notes:			

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
S-4	A9701173-001	10	5	1	1/5/98	1/7/98	669	
S-5	A9701173-002	100	5	10	1/5/98	1/8/98	2000	X,C
S-6	A9701173-003	10	5	1	1/5/98	1/7/98	691	
S-7	A9701173-004	10	5	1	1/5/98	1/7/98	86	
S-8	A9701173-005	10	5	1	1/5/98	1/8/98	ND	
S-12	A9701173-009	10	5	1	1/5/98	1/8/98	49	
Method Blank	A980105-SB1	10	5	1	1/5/98	1/7/98	ND	

X	Results due to the end of gasoline eluting in the diesel range.
C	The MRL is elevated because the sample required diluting.

Approved By: _____ Date: 1/23/98

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LABORATORY QC RESULTS

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Anchorage School District
Project: ASD Student Transportation
Sample Matrix: Soil

Service Request: A9701173
Date Collected: 12/30/97
Date Received: 12/31/97
Date Extracted: 12/30/97
Date Analyzed: 1/8/98

Surrogate Recovery Summary
Gasoline Range Organics (GRO)

Prep Method: AK101PR
Analysis Method: AK101.0

Units: PERCENT
Basis: NA

Sample Name	Lab Code	Test Notes	Percent Recovery 4-Bromofluorobenzene
S-4	A9701173-001		106
S-5	A9701173-002	X	NA
S-6	A9701173-003	X	NA
S-7	A9701173-004		82
S-8	A9701173-005		101
S-9	A9701173-006		85
S-10	A9701173-007		78
S-11	A9701173-008		63
S-12	A9701173-009		91
S-13	A9701173-010		97
S-14	A9701173-011		96
S-15	A9701173-012		87
Soil Trip Blank	A9701173-015		101
Method Blank	A970102-SB1		103

CAS Acceptance Limits: 60-132

X Surrogate recovery outside acceptance limits due to matrix interference.

Approved By: _____ Date: 01/23/98

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Anchorage School District	**Service Request:**	A9701173
Project:	ASD Student Transportation	**Date Collected:**	12/30/98
Sample Matrix:	Water	**Date Received:**	12/31/97
		Date Extracted:	NA
		Date Analyzed:	1/6/98

Surrogate Recovery Summary
Gasoline Range Organics (GRO)

Prep Method:	EPA 5030A	Units:	PERCENT
Analysis Method:	AK101PR	Basis:	NA

Sample Name	Lab Code	Test Notes	Percent Recovery 1,4-Difluorobenzene
W-1	A9701173-013		100
W-2 Trip Blank	A9701173-014		97
Method Blank	A980105-WB1		94

CAS Acceptance Limits: 60-130

Approved By: _____ Date: 1/22/98

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Anchorage School District
Project: ASD Student Transportation
Sample Matrix: Soil

Service Request: A9701173
Date Collected: 12/30/97
Date Received: 12/31/97
Date Extracted: 12/30/97
Date Analyzed: 1/8/98

Surrogate Recovery Summary
Aromatic Volatile Organics

Prep Method: AK101PR
Analysis Method: 8020A

Units: PERCENT
Basis: NA

Sample Name	Lab Code	Test Notes	Percent Recovery 4-Bromofluorobenzene
S-4	A9701173-001		79
S-5	A9701173-002	X	NA
S-6	A9701173-003	X	150
S-7	A9701173-004		77
S-8	A9701173-005		95
S-9	A9701173-006		75
S-10	A9701173-007		70
S-11	A9701173-008	X	57
S-12	A9701173-009		86
S-13	A9701173-010		91
S-14	A9701173-011		90
S-15	A9701173-012		82
Soil Trip Blank	A9701173-015		94
Method Blank	A980102-SB1		98

CAS Acceptance Limits: 60-135

X Surrogate recovery outside acceptance limits due to matrix interference.

Approved By: _____ Date: 01/23/98

000027

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Anchorage School District	**Service Request:**	A9701173
Project:	ASD Student Transportation	**Date Collected:**	12/30/98
Sample Matrix:	Water	**Date Received:**	12/31/97
		Date Extracted:	NA
		Date Analyzed:	1/6/98

Surrogate Recovery Summary
Aromatic Volatile Organics

Prep Method:	EPA 5030A	Units:	PERCENT
Analysis Method:	8020A	Basis:	NA

Sample Name	Lab Code	Test Notes	Percent Recovery 1,4-Difluorobenzene
W-1	A9701173-013		95
W-2 Trip Blank	A9701173-014		95
Method Blank	A980105-WB1		94

CAS Acceptance Limits: 76-120

Approved By: _____ Date: 01/22/98

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Anchorage School District
Project: ASD Student Transportation
Sample Matrix: Soil

Service Request: A9701173
Date Collected: 12/30/98
Date Received: 12/31/97
Date Extracted: 1/5/98
Date Analyzed: 1/7/98

Surrogate Recovery Summary
Diesel Range Organics (DRO)

Prep Method: EPA 3540
Analysis Method: AK102.0

Units: PERCENT
Basis: NA

Sample Name	Lab Code	Test Notes	Percent Recovery p-Terphenyl
S-4	A9701173-001		86
S-5	A9701173-002		83
S-6	A9701173-003		84
S-7	A9701173-004		74
S-8	A9701173-005		84
S-12	A9701173-009		93
Method Blank	A970105-SB1		82

CAS Acceptance Limits: 50-150

Approved By: _____ Date: 1/23/98

Columbia Analytical Services, Inc.
Cooler Receipt and Preservation From

Client: Anchorage School District Work order: A9701173

Project: ASD Student Transportation

Cooler received on: 12/31/97 and opened on 12/31/97 by Sherry Long

		Yes	No	N/A
1	Were custody seals on outside of cooler?	o	o	x
	If yes, how many and where? Hand Delivered			
	Were signature and date correct?	x	o	o
2	Were custody papers properly filled out (ink, signed, etc....)?	x	o	o
3	Did all bottles arrive in good condition (unbroken, etc....)?	x	o	o
4	Were all bottle labels correct (analysis, preservation, etc....)?	x	o	o
5	Did all bottle labels and tags agree with custody papers?	x	o	o
6	Were correct bottles used for test indicated?	x	o	o
7	Were VOA vials checked for absence of air bubbles, and noted?	x	o	o
8	Temperature of cooler upon receipt	5.4 Degrees C		

Explain any discrepancies:

		Yes	No
pH	Reagent		
12	NaOH		
2	HNO_3		
2	H_2SO_4		

Yes = all samples OK
No = Samples were preserved at lab as listed

Comments:

Sample I.D.	Reage	Vol.

Columbia Analytical Services, Inc.

A7A01173

CHAIN OF CUSTODY/LABORATORY ANALYSIS REPORT FORM

4710 Business Park Blvd., SUITE 24 • Anchorage, AK 99503 • (907) 563-0846 • FAX (907) 563-2973

DATE _____ PAGE 1 OF 2

PROJECT NAME: ASD Student Transportation
PROJECT MGR.: Janet Bartel
COMPANY/ADDRESS: Gilfilian Engineering
2605 Denali St
Anchorage
PHONE: 277-2021
FAX: 274-8683
SAMPLERS SIGNATURE: Janet Bartel

	SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	NUMBER OF CONTAINERS	Base/Neu/Acid Organics GC/MS 625/8270	Volatile Organics GC/MS 624/8240	Halogenated or Aromatic Volatiles 601/8010 ☐ 602/8020 ☐	Pesticides/PCBs 608/8080 ☐ PCBs Only 608/8080 ☐	Total Petroleum Hydrocarbons EPA 418.1	GRO/8015M ☐ BTEX/8020 ☐	Hydrocarbon Scan C10 - C40 AK101: GRO ☒ BTEX ☒	DRO/8100M ☐ DRO/AK102 ☒	RRO/8100M ☐ RRO/AK103 ☐	TCLP Metals ☐ VOA ☐	Semi Pest/ VOA ☐ Herb ☐	pH, Cond, Cl, SO_4, PO_4, F, Br NO_2, NO_3 (circle)	NH_3-N, COD, Total-P, TKN, TOC Cyanide (circle)	Metals (total or dissolved) List Below	Pb				REMARKS
1	S4	12/29/97	10:10		soil	3							✓	✓							✓				
2	S5	"	10:45			3							✓	✓							✓				
3	S6	"	11:35			3							✓	✓							✓				
4	S7	"	12:00			3							✓	✓							✓				
5	S8	"	12:10			2							✓	✓											
6	S9	"	17:00			2							✓								✓				
7	S10	"	17:00			2							✓												
8	S11	"	17:10			2							✓								✓				
9	S12	"	17:20			2							✓	✓											
10	S13	12/30/97	13:15		↓	2							✓												

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RELINQUISHED BY:
Janet Bartel
Signature
Janet Bartel
Printed Name
Gilfilian Eng
Firm
12/31/97 17:15
Date/Time

RECEIVED BY:
Sherry Cons
Signature
Sherry Cons
Printed Name
CAS / AK
Firm
12/31/97 17:15
Date/Time

RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

TURNAROUND REQUIREMENTS
___ 1 day ___ 2 day ___ 5 day
___ Standard (10-15 working days)
___ Provide Verbal Preliminary Results
___ Provide FAX preliminary Results
Requested Report Date _____

REPORT REQUIREMENTS
___ I. Routine Report
___ II. Report (includes DUP.MAS. MSD, as required, may be charged as samples)
___ III. Data Validation Report (includes All Raw Data)
___ IV. CLP Deliverable Report
___ ADEC Deliverables
___ ACOE Deliverables

INVOICE INFORMATION:
P.O.# _____
Bill To _____

SAMPLE RECEIPT:
Temp: 5.4
Airbill #: _____
Shipping VIA: _____
Shipping to: _____
Condition: _____
COC Seals: HP
Lab No: _____

SPECIAL INSTRUCTIONS/COMMENTS:
Anchorage School District Project

DISTRIBUTION: WHITE - return to originator; YELLOW - lab; PINK - retained by originator

400-5

A9701173

CHAIN OF CUSTODY/LABORATORY ANALYSIS REPORT FORM

Columbia Analytical Services, Inc. — 4710 Business Park Blvd., SUITE 24 • Anchorage, AK 99503 • (907) 563-0846 • FAX (907) 563-2973

DATE 12/31/97 PAGE 2 OF 2

PROJECT NAME ASD Student Transportation
PROJECT MGR. Janet Bartel
COMPANY/ADDRESS Gilfilian Engineering
PHONE 277-2021
FAX
SAMPLERS SIGNATURE Janet Bartel

	SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	NUMBER OF CONTAINERS	Base/Neu/Acid Organics GC/MS 625/8270	Volatile Organics GC/MS 624/8240	Halogenated or Aromatic Volatiles 601/8010 ☐ 602/8020 ☐	Pesticides/PCBs 608/8080 ☐ PCBs Only 608/8080 ☐	Total Petroleum Hydrocarbons EPA 418.1	GRO/8015M ☐ BTEX/8020 ☐	Hydrocarbon Scan C10 - C40 AK101: GRO BTEX	DRO/8100M ☐ RRO/8100M ☐ DRO/AK102 ☐ RRO/AK103 ☐	TCLP Metals ☐ VOA ☐ Semi VOA ☐ Pest/ Herb ☐	pH, Cond, Cl, SO_4, PO_4, F, Br NO_2, NO_3, (circle)	NH_3-N, COD, Total-P, TKN, TOC Cyanide (circle)	Metals (total or dissolved) List Below	Pb				REMARKS
11	S14	12/30/97	14:15		soil	3							✓						✓				
12	S15	"	14:35		"	2							✓										
13	W-1	"	14:40		water	2							✓										
14	W-2 trip blank				"	1							✓										
15	soil trip blank				soil	1							✓										

RELINQUISHED BY:
Signature: Janet Bartel
Printed Name: Janet Bartel
Firm: Gilfilian Eng
Date/Time: 12/31/97 17:15

RECEIVED BY:
Signature: Sherry Long
Printed Name: Sherry Long
Firm: CAS/AK
Date/Time: 12/31/97 17:15

RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

TURNAROUND REQUIREMENTS
___ 1 day ___ 2 day ___ 5 day
___ Standard (10-15 working days)
___ Provide Verbal Preliminary Results
___ Provide FAX preliminary Results
Requested Report Date

REPORT REQUIREMENTS
___ I. Routine Report
___ II. Report (includes DUP.MAS. MSD, as required, may be charged as samples)
___ III. Data Validation Report (includes All Raw Data)
___ IV. CLP Deliverable Report
___ ADEC Deliverables
___ ACOE Deliverables

INVOICE INFORMATION:
P.O.#
Bill To

SAMPLE RECEIPT:
Temp: 5.4 C
Airbill #:
Shipping VIA:
Shipping to:
Condition:
COC Seals: NO
Lab No:

SPECIAL INSTRUCTIONS/COMMENTS:
Anchorage School District Project

DISTRIBUTION: WHITE - return to originator; YELLOW - lab; PINK - retained by originator

400-5

000126

Appendix D

Disposal Receipts

ASR

000128

ALASKA SOIL RECYCLING
A Division of Anchorage Sand & Gravel Co. Inc.
1040 O'Malley Road • Anchorage, Alaska 99515
Phone (907) 349-3333 • FAX (907) 344-2844

INVOICE

Acct#	Anchorage School District		
1468	Maintenance Dept, 1301 Labar St.		
	Anchorage	AK	99515
Attn:	Ms. Julia Flodin		

Date	11/17/97
Project	Soil Disposal
	Student Transportation
	ITB#97-81-C

Qty	Description	Unit	Unit Price	TOTAL
58.58	Thermal Remediation	TON	$42.00	$2,460.36
			Total	$2,460.36

OK to pay
Jeff
12/2/97

Payment Terms:
Due Upon Receipt of Invoice

1% Service Charge on Balances over 30 days, but not in excess of lawful maximum.

This Memorandum a copy or duplicate covering the property named herein and is intended only for ...

000129 Shipper No. B 11318

Carrier No. AKD980984405

CHEMRON ALASKA

(Name of Carrier)

Date 11/3/97

TO: Consignee	Chemron Alaska AKD980984405
Street	13480 Hermann Ave
Destination	Palmer, AK
Route	

FROM: Shipper	Anchorage School District
Street	3580 Tudor Rd
Origin	Anchorage, Alaska
Emergency Response Phone No.	Vehicle Number

No. Shipping Units	HM*	Kind of Packaging, Description of Articles, Special Marks and Exceptions	Weight (subject to correction)	Rate	CHARGES
1	X	Tank, Gasoline, 3, UN 1203, PG II			
		40 Gallons - Gasoline	230#		
		Profile # 97-2078-C			
		Emergency Response #907-344-5636 ERG#			

*When transporting hazardous materials include the technical or chemical name for n.o.s. (not otherwise specified) or generic description of material with appropriate UN or NA number as defined in US DOT Emergency Communication Standard (HM-126C). Provide emergency response phone number in case of incident or accident in box above.

REMIT C.O.D. TO: ADDRESS:

COD Amt: $

C.O.D. FEE: PREPAID ☐ $ COLLECT ☐

NOTE – Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.
The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding
$ _____ per _____

This is to certify that the above named materials are properly classified, described, packaged, marked, and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.
_____ Signature

Subject to Section 7 of the conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement:
The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.
_____ (Signature of Consignor)

TOTAL CHARGES: $

FREIGHT CHARGES:
FREIGHT PREPAID except when box at right is checked
Check box if charges are to be collect ☐

RECEIVED, subject to the classifications and lawfully filed tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned and destined as indicated above which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment.

Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

NOTICE: Freight moving under this Bill of Lading is subject to the classifications and lawfully filed tariffs in effect on the date of this Bill of Lading. This notice supersedes and negates any claimed, alleged or asserted oral or written contract, promise, representation or understanding between the parties with respect to this freight, except to the extent of any written contract which establishes lawful contract carriage and is signed by authorized representatives of both parties to the contract.

SHIPPER	Anchorage School District
PER	
CUSTOMER SIGNATURE	

CARRIER	CHEMRON ALASKA
PER	
DATE	11/3/97

3

[redacted]

ALASKA POLLUTION CONTROL, INC.
P.O. Box 110374
ANCHORAGE, ALASKA 99511-0374

INVOICE

18080

(907) 344-5036
(907) 746-5036

TO Anchorage School District
Attn: Accounts Payable
1301 Labar St.
Anchorage,Alaska 99515

DATE	ORDER NO.
12/17/97	

SHIP TO
Site : 3580 Tudor Rd
* Tudor Bus Barn*
Jay Adams: 244-4214

FGK	12/22/97			PAY ON INVOICE			
>	(41802) Recyclable Petroleum Product						
70	Gallons - Gasoline				10	*	
0	Gallons - Diesel				10	0	
	* min $50.00 charge						
	Profile # 97-2078-C/ 97-383-C						
	WE ACCEPT VISA, MASTERCARD & DISCOVER Net 30 days. Customer agrees to pay a late charge on past due balance of 1½% per month and further agrees to pay reasonable attorneys fees and cost if collection is required.			Total		50	00

QUADRUPLICATE

Thank You!

[redacted]

RA ENVIRONMENTAL

Lakeview Professional Building
851 E. Westpoint Dr., Suite B2
Wasilla, Alaska 99654
Phone: (907) 376-8941
Fax: (907) 376-8942

n00131

To: Julia Flodin
Anchorage School District (ASD)
Facilities Maintenance Department
1301 Labar Street
Anchorage, AK 99515

26 January 1998
Serial Letter #0018

Subject: UST Destruction Certificate

DESTRUCTION CERTIFICATE

RA Environmental (RAE) Certifies that the following Underground Storage Tanks removed from the Student Transportation Facility have been destructed by RAE in accordance with all state and local regulations:

- 1000 gallon UST
- 4000 gallon UST
- 15,000gallon UST
- 10,000 gallon UST
- 12,000 gallon UST

Final disposal will occur when the subject USTs are loaded on the Schnitzer Steel barge arriving at the port of Anchorage 5-20-98 for final destination at Schnitzer Steel's recycling facility in Tacoma, Washington.

Sincerely,

Ronald D. DesGranges

Cc: TK
a:/asd/disposal.cert
RA

RA

RA Environmental
Lakeview Professional Bldg.
851 Westpoint Dr. Suite B2
Wasilla, Alaska 99654

FAX

To: Julia Flodin (Project Manager)

ASD

Phone: 907-348-5221
Fax: 907-348-5227

From: Ronald DesGranges

RA Environmental

Phone: 907 376-8941
Fax: 907 376-8942

Date: 1-27-98
Number of Pages: 1 including cover

Remarks:

Julia,

RA Environmental will provide the ASD with weight tickets from Schnitzer Steel upon the arrival of their 5-20-97 incoming barge. Schnitzer Steel weight tickets will provide gross weight of the destructed tanks only.

Please contact me if you have any questions.

Sincerely,

Ronald D. DesGranges

ORIGINAL WILL: ☐ BE HAND DELIVERED ☐ BE MAILED ☐ NOT FOLLOW

GILFILIAN ENGINEERING & ENVIRONMENTAL TESTING, INC.

Professional Environmental Consultants

2605 Denali Street, Suite 203 • Anchorage, Alaska 99503-2749
Tel: (907) 277-2021 • Fax: (907) 274-8683 • E-mail: ge2t@alaska.net

February 26, 1998

Sent Via Facsimile to (907) 269-7507
Original Mailed

Lynne Bush
Alaska Department of Environmental Conservation
555 Cordova Street
Anchorage, Alaska 99501

RE: Request for Approval to Haul Stockpiled Soil to ASR
Anchorage School District, Student Transportation
3580 East Tudor Road, Anchorage, Alaska
ADEC UST Facility #3089
GE^{2}T Project #97007A

Dear Ms. Bush:

On behalf of the Anchorage School District (ASD), Gilfilian Engineering & Environmental Testing, Inc. (GE^{2}T) is requesting the Department's approval to tranpsort contaminated soil from three separate stockpiles currently located at ASD's Student Transportation facility. The soil would be hauled to **Alaska Soil Recycling** (ASR) for thermal treatment. We will notify ADEC of the soil tonnage hauled upon completion of delivery.

Stockpile #1 contains approximately 50 yd^3 of soil that was excavated from around the waste oil UST (UST #5) in December 1997. The analytical soil results from samples collected beneath the UST are summarized in Table 1.

Stockpile #2 contains approximately 550 yd^3 of soil that was excavated from around the following USTs during removal in December 1997.

UST #1	15,000 gallon diesel (formerly gasoline)
UST #2	10,000 gallon gasoline (formerly diesel)
UST #4	12,000 gallon gasoline

The analytical soil results from samples collected around and beneath these USTs are summarized in Table 2. Complete laboratory reports for soil from these USTs, and UST #5, are being submitted under separate cover with the site assessment report.

Stockpile #3 contains approximately 10 yd^3 of soil that was excavated from the location of the former UST at Wendler Junior High School. The analytical soil results representative of this soil are summarized in Table 3.

ASD would like to transport the soil off-site next week. Please indicate your approval by signing below and return to me via facsimile at 274-8683.

Sincerely,

Janet Bartel

Janet Bartel, P.E.
Environmental Engineer

C: Julia Flodin, ASD

ADEC Approval _____ Date _____

Table 1

Analytical Soil Sample Results
Anchorage School District Student Transportation
UST #5

Sample #	S1	S2	S3	Method Blank
Location	Below North End	Duplicate of #S1	Below South End	-
Depth Below Grade (feet)	11	11	12	-
Date Collected	12/23/97	12/23/97	12/23/97	-
Benzene (mg/kg)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
Toluene (mg/kg)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
Ethylbenzene (mg/kg)	ND (0.05)	0.05	ND (0.05)	ND (0.05)
Xylenes (mg/kg)	0.07	0.23	ND (0.05)	ND (0.05)
GRO (mg/kg)	9	10	ND (5)	ND (5)
DRO (mg/kg)	7,500	8,400	14	ND (10)
RRO (mg/kg)	14,000	16,000	ND (100)	ND (100)
PCBs (mg/kg)	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
HVOs (mg/kg)	ND	ND	ND	ND
Arsenic (mg/kg)	8	8	6	ND (1)
Cadmium (mg/kg)	ND (1)	2	ND (1)	ND (1)
Chromium (mg/kg)	31	35	42	ND (2)
Lead (mg/kg)	120	80	ND (20)	ND (20)

ND = Not Detected above the practical quantitation limit indicated in parentheses, HVO quantitation limits are shown on lab reports

Table 2

000136

Analytical Soil Sample Results
Anchorage School District Student Transportation
USTs #1-4 and Test Hole #1

Sample #	Location	Depth (feet)	Date Collected	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Xylenes (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	Lead (mg/kg)	PID
S6	UST #1	11	12/29/97	3.4	18	8.5	32	300	691	ND (20)	2,000+
S7	UST #1	11	12/29/97	5.3	10	2.8	9.1	81	86	ND (20)	2,000+
S12	UST #1	5	12/29/97	0.18	0.22	ND (0.05)	0.20	7	49	NT	13(
7	UST #2	3	10/27/97	210	1,000	230	1,400	9,600	NT	NT	2,000+
S4	UST #2	11	12/29/97	19	24	3.9	21	180	669	ND (20)	2,000+
S5	UST #2	11	12/29/97	93	420	94	490	2,900	2,000*	ND (20)	2,000+
S8	UST #2	6	12/29/97	0.99	1.46	0.13	0.62	9	ND (10)	NT	580
S13	UST #3	3.5	12/31/97	ND (0.05)	0.07	ND (0.05)	ND (0.05)	ND (5)	NT	NT	140
S14	UST #3	11	12/31/97	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (5)	NT	ND (20)	128
S15	UST #3	11	12/31/97	0.05	0.06	ND (0.05)	ND (0.05)	ND (5)	NT	NT	21
S9	UST #4	11	12/29/97	8.2	15	3.2	14	100	NT	ND (20)	2,000+
S10	Duplicate of sample #S9			11	15	2.6	9.9	92	NT	NT	-
S11	UST #4	11	12/29/97	6.5	1.0	0.52	1.9	24	NT	ND (20)	560
2	TH-1	8	10/22/97	32	270	140	680	4,800	2,200	NT	1,246
3	TH-1	10.5	10/22/97	31	230	85	430	2,800	504	NT	2,000+
4	Duplicate of sample #3			38	270	100	500	3,400	689	NT	--
Trip Blank			10/27/97	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (5)	NT	NT	NA
Trip Blank			12/31/97	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (5)	NT	NT	NA-
Category B Cleanup Level				0.5	NA	NA	NA	100	200	NA	NA

• Results due to the end of gasoline eluting in the diesel range
NA = Not Applicable
ND = Not Detected above the practical quantitation limit indicated in parentheses
NT = Not Tested

Table 3

Anchorage School District
Wendler Junior High School
UST Removal
August 4, 1997

TABLE 1: SOIL ANALYTICAL TEST RESULTS

Sample #	Location	Depth (Feet bgs)	Concentration (Mg/Kg) GRO AK 101	Benzene	Ethylbenzene	Toluene	Total Xylenes	BTEX	DRO AK 102	PID
1	Product lines at UST	2	ND (3.2)	ND (0.016)	ND (0.016)	ND (0.016)	ND (0.016)	ND (0.064)	73.0	0
2	Vent line at UST	2	ND (2.9)	ND (0.014)	ND (0.014)	ND (0.014)	ND (0.014)	ND (0.056)	12.0	0
3	Fill end of UST	6	31	0.86	0.22	2.1	3.0	6.18	5.3	0
4	Duplicate of #3		ND (2.9)	ND (0.014)	ND (0.014)	0.036	ND (0.014)	0.057	9.0	--
5	East end of UST	6	ND (2.5)	ND (0.012)	ND (0.012)	ND (0.012)	ND (0.012)	ND (0.048)	15.0	0

TABLE 2: WATER ANALYTICAL TEST RESULTS

Sample #	Location	Concentration (µg/l) GRO AK 101	Benzene	Ethyl-benzene	Toluene	Total Xylenes	BTEX
W-1	Equip Rinse	ND (100)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (2.0)

NOTES: PID units are ppmv relative to calibration of PID with a 100 ppmv isobutylene standard
ND = not detected above practical quantitation limit indicated in parentheses