FINAL

CORRECTIVE ACTION PLAN - PART A REPORT
FOR
UNDERGROUND STORAGE TANKS 257-260
FACILITY ID #0-890037
BUILDING 430
FORT STEWART, GEORGIA

Prepared for:

U.S. Army Corps of Engineers - Savannah District
and
Fort Stewart Directorate of Public Works
Under Contract Number DACA21-95-D-0022
Delivery Order 0024

Prepared by:

Science Applications International Corporation
800 Oak Ridge Turnpike
Oak Ridge, Tennessee 37831

March 1999

DOCUMENT 1

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List of Abbreviations and Acronyms

ACE	Anderson Columbia Environmental, Inc.
ACL	alternate concentration limit
AMSL	above mean sea level
ATL	alternate threshold level
BGS	below ground surface
BTEX	benzene, toluene, ethylbenzene, and xylene
BTOC	below top of casing
CAP	Corrective Action Plan
DPW	Directorate of Public Works
EPA	U.S. Environmental Protection Agency
FID	flame ionization detector
GA EPD	Georgia Environmental Protection Division
ID	inside diameter
IDW	investigation-derived waste
MCL	maximum contaminant level
MSL	mean sea level
N/A	not applicable
NRC	no regulatory criteria
OVM	organic vapor meter
PAH	polynuclear aromatic hydrocarbon
PID	photoionization detector

PVC	polyvinyl chloride
SAIC	Science Applications International Corporation
TPH	total petroleum hydrocarbon
USACE	U.S. Army Corps of Engineers
USGS	U.S. Geological Survey
UST	underground storage tank
USTMP	Underground Storage Tank Management Program
VOC	volatile organic compound

CORRECTIVE ACTION PLAN PART A

Facility Name: USTs 257-260, Building 430 Street Address: Hero Rd between Bundy Ave & W. 15th St

Facility ID: 0-890037 City: Fort Stewart County: Liberty Zip Code: 31314

Latitude: 31°52'17" Longitude: 81°36'35"

Submitted by UST Owner/Operator:
Name: Thomas C. Fry/ Environmental Branch
Company: U.S. Army/HQ 3d, Inf. Div (Mech)
Address: DPW ENRD ENV. Br. (Fry)
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Prepared by Consultant/Contractor:
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Company: SAIC
Address: P.O. Box 2502
City: Oak Ridge State: TN
Zip Code: 37831
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I. PLAN CERTIFICATION:

A. UST Owner/Operator Certification

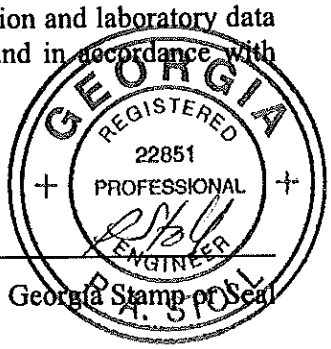
I hereby certify that the information contained in this plan and in all the attachments is true, accurate, and the plan satisfies all criteria and requirements of rule 391-3-15-09 of the Georgia Rules for Underground Storage Tank Management.

Name: THOMAS C. FRY
Signature: Thomas C. Fry Date: 03/25/99

B. Registered Professional Engineer or Professional Geologist Certification

I hereby certify that I have directed and supervised the field work and preparation of this plan, in accordance with State Rules and Regulations. As a registered professional geologist and/or professional engineer, I certify that I am a qualified groundwater professional, as defined by the Georgia State Board of Professional Geologists. All of the information and laboratory data in this plan and in all of the attachments are true, accurate, complete, and in accordance with applicable State Rules and Regulations.

Name: Patricia A. Stoll
Signature: Patricia A. Stoll
Date: 3/23/99



Georgia Stamp or Seal

General: READ THE GUIDANCE DOCUMENT FOR CAP PART-A BEFORE COMPLETING THIS FORM. FAILURE TO READ THE GUIDANCE DOCUMENT WILL MOST LIKELY RESULT IN PREPARATION OF AN UNACCEPTABLE REPORT. All text, figures, and tables requested in their respective sections should be prepared strictly in accordance with the Georgia EPD CAP-A guidance document. Please fill out this form as provided. Do not change the size of the fields or alter the placement of each section on each page.
(Appendix I: All Report Figures)
(Appendix II: All Report Tables)

II. INITIAL RESPONSE REPORT

A. Initial Abatement

Were initial abatement actions initiated? YES ____ NO X
If Yes, please summarize. If No, please explain why not.

Actions were not required to abate imminent hazards and/or emergency conditions at the USTs 257 - 260 site. Therefore, contaminant migration and release prevention, fire and vapor migration, or emergency free product removal was not performed prior to, or during, the removal of USTs 257 – 260.

B. Free Product Removal

(Table 1: Summary of Free Product Removal – must include Free Product thickness in each well in which it was detected, and volume of product removed)

Free Product Detected? YES ____ NO X
If Yes, please summarize free product recovery efforts.

Continuing free product recovery proposed? YES ____ NO X
If yes, please indicate the method and frequency of removal.

C. Tank History

List current and former UST's operated at site based on owner/operator knowledge consistent with EPA 7530-1 Form). Systems must be illustrated on Figure 2 (Site Plan), as described in section D below.

CURRENT UST SYSTEMS (if applicable)

Tank ID Number	Capacity (gal)	Substance Stored	Age (yrs)	Meets 1998 Upgrade Standards (Yes/No)
N/A	N/A	N/A	N/A	N/A

FORMER UST SYSTEMS (if applicable)

Tank ID Number	Capacity (gal)	Substance Stored	Date Removed
257	10,000	Gasoline	3/17/93
258	10,000	Gasoline	3/23/93
259	10,000	Gasoline	3/23/93
260	10,000	Gasoline	3/23/93

D. Initial Site Characterization

(Figure 1: Vicinity/Location Map)
(Figure 2: Site Plan)

1. Regulated Substance Released (gasoline, diesel, used oil, etc.): gasoline
Discuss how this determination was made and circumstances of discovery.

Characterization of petroleum-related contamination at the site was initiated during UST system closure activities on March 12 - 23, 1993, by Anderson Columbia Environmental, Inc (ACE). After removing the tank and in-place closure of the ancillary piping, 15 soil samples were collected from the tank pit (Figure 7) and analyzed by a flame ionization detector (FID). The closure report indicates that FID readings for the 15 soil samples exceeded 5000 ppm and that the soil was very contaminated; no soil samples were submitted for laboratory analysis during tank closure activities.

2. Source(s) of Contamination: Unknown; piping leakage or tank overflow suspected
Discuss how this determination was made.

A detailed schematic diagram illustrating the former USTs 257 - 260 and ancillary piping as configured during operation is presented in Figure 2. During removal activities by ACE, no holes in the tank were reported. Therefore, the source of contamination is believed to have been piping leakage and/or tank overflow.

3. Local Water Resources

(Figure 3: Quadrangle Map – Public and Private drinking water and surface water)
(Appendix III: Water resources survey documentation, including, but not limited to: USGS database search, interview forms, and documentation of field survey)

a. *Site located in high/average* X *OR low* ____ *groundwater pollution susceptibility area?*

b. *Water Supplies within applicable radii?* YES X NO ____
If yes,
   i. *Nearest public water supply located within:* 1750 *feet*
   ii. *Nearest down-gradient public water supply located within:* 1750 *feet*
   iii. *Nearest non-public water supply located within:* >2,640 *feet*
   iv. *Nearest down-gradient non-public water supply located within:* >2,640 *feet*

c. *Surface Water Bodies and sewers:*
   i. *Nearest surface water located within* 1000 *feet*
   ii. *Nearest down-gradient surface water located within* 1000 *feet*
   iii. *Nearest storm or sanitary sewer located within:* 10 *feet*
   iv. *Depth to bottom of sewer at a point nearest the plume* est. 4-6 *feet*

4. Impacted Environmental Media

a. *Soil Impacted*
(Table 2: Soil Analysis Results)
(Figure 4: Soil Quality Map)
(Appendix IV: Soil Boring Logs)
(Appendix V: Soil Laboratory Reports)
(Appendix VI: ATL Calculations, if applicable)

Provide a brief discussion of soil sampling.

Continuous soil cores were collected at 2.0-foot intervals during the installation of 10 boreholes. Field headspace gas analyses were performed on each sample to determine the organic vapor concentration. Two soil samples were selected from each borehole for laboratory chemical analysis of benzene, toluene, ethylbenzene, and xylenes (BTEX); total petroleum hydrocarbons (TPH); and polynuclear aromatic hydrocarbons (PAH). In boreholes where organic vapors were detected, one sample was collected from the 2.0-foot interval where the highest vapor concentration was recorded, and the other from the deepest 2.0-foot interval with the lowest concentration. If organic vapors were not detected, one sample was collected from the 2.0-foot interval nearest the midpoint of the boring, and the other from the 2.0-foot interval located immediately above the water table. Refer to Attachment A for complete documentation of the technical approach implemented during this investigation.

i. Soil contamination above applicable threshold levels?

YES X NO _____

If yes, indicate highest concentrations in soil along with locations and depths detected.

Benzene exceeded applicable threshold levels in borings 76-01, 76-02, 76-03, 76-05, 76-09, and 76-10 (Figures 4a and 4b). The benzene concentrations ranged from 0.0108 to 15.7 mg/kg in the samples from these boreholes with the highest contamination observed in sample 760921 at a depth of 4.0 to 5.5 ft BGS. Benzene contamination was not detected below 22.0 ft BGS in the vertical profile boring (76-05). Toluene and ethylbenzene also exceeded applicable threshold levels in borings 76-02, 76-09, and 76-10.

ii. ATLs calculated? YES _____ NO X

If yes, present ATLs.

iii. If ATL's calculated, is soil contamination above ATL's?

YES _____ NO _____ N/A X

b. Groundwater Impacted
(Table 3: Groundwater Analysis Results)
(Figure 5: Groundwater Quality Map)
(Appendix VII: Monitoring Well Details)
(Appendix VIII: Groundwater Laboratory Results)

Provide a brief discussion of groundwater sampling.

At each borehole location, except the vertical profile boring, one groundwater sample was collected from the water table to approximately 5.0 feet below the water table using a direct-push sampling device. At the vertical profile location (76-05), soil samples were collected every 5 feet below the water table until several soil sample intervals indicated a headspace gas measurement of zero. Chemical parameters for groundwater samples submitted for laboratory analysis included BTEX and PAH. Refer to Attachment A for complete documentation of the technical approach used to collect groundwater samples.

i. Groundwater contamination above MCLs? YES X NO _____

ii. Groundwater contamination above In-Stream Water Quality Standards?

YES X NO _____

If yes, indicate highest concentrations in groundwater along with the locations.

Benzene, toluene, ethylbenzene, and total xylenes were detected in all the borings except 76-04. BTEX concentrations exceeded MCLs in 9 of 10 samples, 4 of 10 samples, 4 of 10 samples, and 2 of 10 samples, respectively. The highest BTEX concentrations were in 32,700 µg/L in 76-09, 97,800 µg/L in 76-09, 5,210 µg/L in 76-10, and 28,400 µg/L in 76-10, respectively.

c. *Surface Water Impacted?* YES _____ NO X

If Yes, indicate concentration(s) of surface water sample(s) taken from the surface water body/bodies impacted.

d. *Point of Withdrawal Impacted?* YES _____ NO _____ N/A X

If Yes, indicate concentration(s) of water sample(s) taken from withdrawal point(s).

5. Other Geologic/Hydrogeologic Data

a. *Depth to Groundwater (ft BTOC):* 9.09 to 11.42 *(Table 4: Groundwater Elevations)*
b. *Groundwater Flow Direction:* southeast *(Figure 6: Potentiometric Surface Map)*
c. *Hydraulic Gradient* 0.0103 ft/ft
d. *Geophysical Province:* coastal plain
e. *Unique geologic/hydrological conditions:* The Hawthorn Formation acts as a confining unit between the surficial and Floridan aquifers

6. Corrective Action Completed or In-Progress (if applicable)
(Table 5: UST System Closure Sampling)
(Figure 7: UST System Closure Sampling)
(Appendix IX: Contaminated Soil Disposal Manifests)

a. *Underground Storage Tank (UST) System Closure:* N/A _____

If applicable, summarize UST system closure activities conducted.

ACE removed USTs 257 - 260 on March 12 - 23, 1993. The UST piping was drained into the tank, and all gasoline was subsequently removed using a vacuum truck and/or compressor-driven barrel vacuum device. A backhoe was used to excavate down to the tank top. The ancillary piping was closed in-place due to the fact that it is covered with asphalt. In-place closure consisted of purging the line and grouting the ends at the tanks and dispensers. After the tank atmosphere was tested with a combustible gas indicator, all accessible tank openings were capped and the tank was lifted from the excavation pit. The tanks were triple rinsed, cut up, and sold as scrap metal to Savannah Steel.

b. Excavation and Treatment/Disposal of Backfill Materials and Native Soils

Check one: *No UST removal performed* ____
Returned to UST excavation ____
Excavated soils treated or disposal off site X

If soils were excavated, summarize excavation and treatment/disposal activities:

It should be noted that all contaminated soil removed during the entire project (i.e., all USTs removed under contract with ACE, to include clean and non-clean closures) was tested in accordance with the disposal facility requirements and transported to Kedesh, Inc., Highway 84, Ludowici, GA, 31316. Approximately 225 cubic yards of nonhazardous, contaminated soil was excavated from this site.

7. Site Ranking:

Environmental Site Sensitivity Score: *25450*
(Appendix X: Site Ranking Form)

8. Conclusions and Recommendations

Complete applicable section below, one section only

a. No Further Action Required (if applicable) N/A X
(provide justification)

b. Monitoring Only (if applicable) N/A X
(provide justification)

c. CAP-B (if applicable) N/A ____
(provide justification)

BTEX concentrations in groundwater exceed their respective MCLs and the horizontal extent of groundwater contamination was not determined during the CAP-Part A investigation. The vertical extent of contamination in the former tank pits was determined during the CAP-Part A investigation (76-05). However, vertical delineation within the boundaries of the entire site has not been determined (see Section IV.A.2.b).

III. MONITORING ONLY PLAN (if applicable): N/A X

A. Monitoring points

B. Period/Frequency of monitoring and reporting

C. Monitoring Parameters

D. Milestone Schedule

E. Scenarios for site closure or CAP-Part B

IV. SITE INVESTIGATION PLAN (if applicable): N/A _____
(Figure 8: Proposed additional boring/monitoring well location)

A. Proposed Investigation of Horizontal and Vertical Extent of Contamination In:

1. Soil N/A _____

The USTs 257-260 site (Facility ID #0-890037) and UST 261 (Facility ID #9-089118) are registered with GAEPD under separate facility identification numbers, although they are located within 60 feet of each other at the closest point (i.e., piping for USTs 257-260 and former UST 261 tank pit). Thus, due to the close proximity of the two sites and the fact that the groundwater contamination plume encompasses both sites, Fort Stewart proposes to combine the CAP-Part B investigations into one investigation for both sites. The field investigation will include the installation of 12 soil borings as indicated in Figure 8. At each boring, two soil samples will be collected based on PID/FID readings and the borings will be completed as shallow monitoring wells. If the proposed sampling strategy does not achieve horizontal delineation of contamination, then additional borings/wells will be installed.

2. Groundwater

a. Free Product N/A _____

Each of the 12 soil borings will be converted to a monitoring well. The wells will be screened across the water table with 3 feet of screen above the water table in order to detect the presence of free product. All monitoring wells will be completed flush with the ground surface.

b. Dissolved phase NA _____

One groundwater sample will be collected from each monitoring well and analyzed for BTEX and PAH. To further characterize the vertical extent of contamination at the site, 76-21 and 76-22 will be drilled to a depth of approximately 40 feet BGS and soil samples will be analyzed for BTEX, PAH, TPH-DRO, and TPH-GRO.

3. Surface Water N/A X

Two surface water and sediment samples will be collected from the drainage swale located east of the site that runs parallel to Hero Road. These samples will be analyzed for BTEX, PAH, and TPH (sediment only).

B. Proposed Investigation of Vadose Zone And Aquifer Characteristics:

A geotechnical soil sample was collected from the site during the CAP-Part A investigation and analyzed for permeability, porosity, grain size distribution, moisture content, bulk density, specific gravity, and total organic carbon (Tables V-A and VI-A). Each of the groundwater samples collected will be analyzed for dissolved iron. A slug test will be performed in three of the monitoring wells to determine the saturated horizontal hydraulic conductivity. This information will be utilized in the fate and transport modeling or remediation system design.

V. PUBLIC NOTICE

(Figure 9. Tax Map)
(Appendix XI: Copies of public notification letters & certified return receipts or newspaper notice if approved)

USTs 257 - 260, Building 430 is located within the confines of Fort Stewart Military Reservation, a federal facility. The U.S. Government owns all of the property contiguous to the site. The Fort Stewart Directorate of Public Works (DPW) has complied with the public notice requirements defined by GA EPD guidance by publishing an announcement in the *Savannah Morning News* on July 19 and 26, 1998.

VI. CLAIM FOR REIMBURSEMENT (for GUST Trust Fund sites only): N/A X

(Appendix XII: GUST Trust Fund Reimbursement Application and Claim for reimbursement)

Fort Stewart is a federally owned facility and has funded the investigation for the USTs 257-260 site, Building 430, Facility ID #0-890037, using Environmental Restoration Account Funds. Application for Georgia Underground Storage Tank Trust Fund reimbursement is not being pursued at this time.

APPENDIX I

REPORT FIGURES

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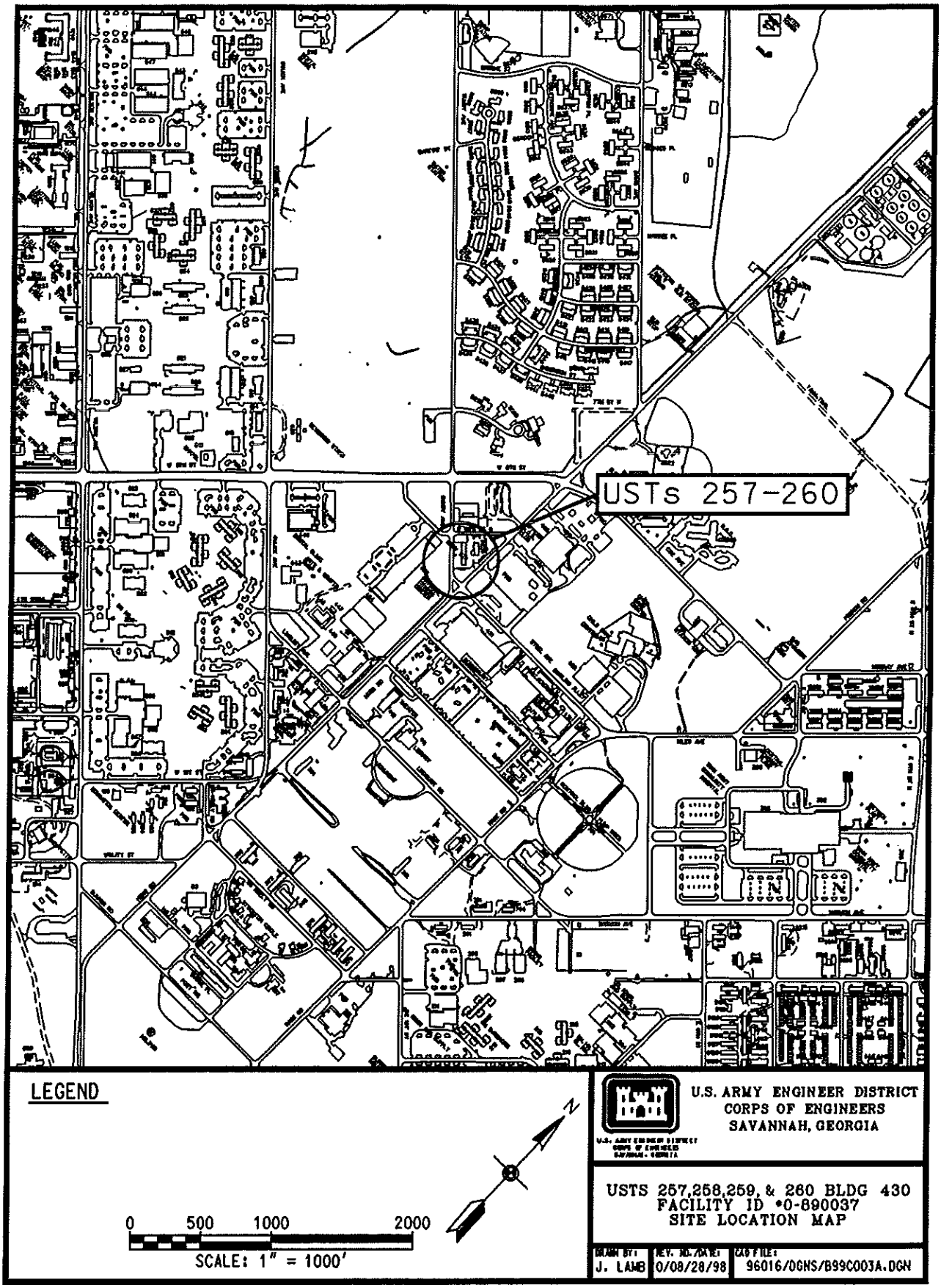


Figure 1. Location Map of Fort Stewart, Liberty County, Georgia

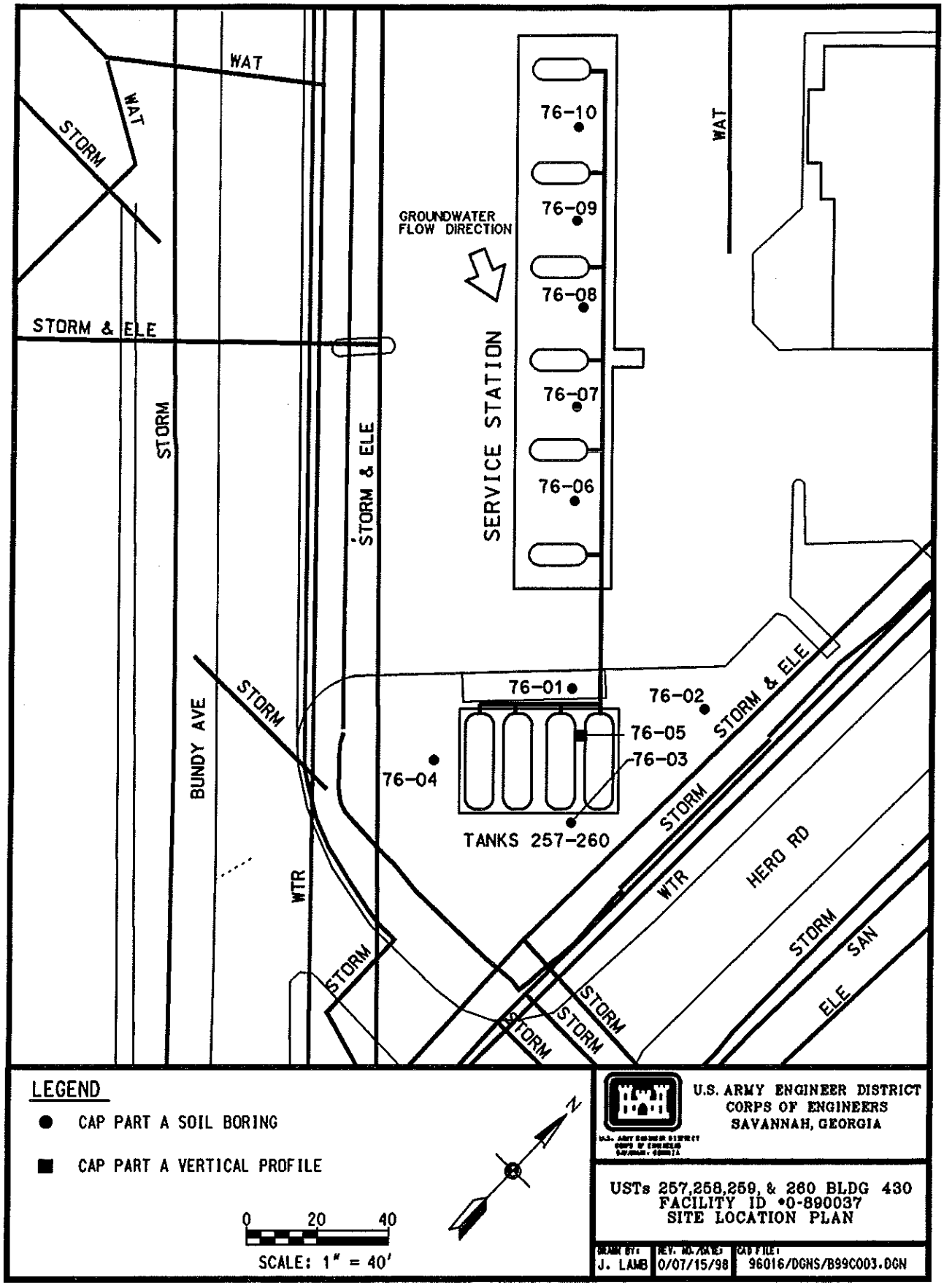


Figure 2. Site Plan for the USTS 257 - 260, Building 430 Site Investigation

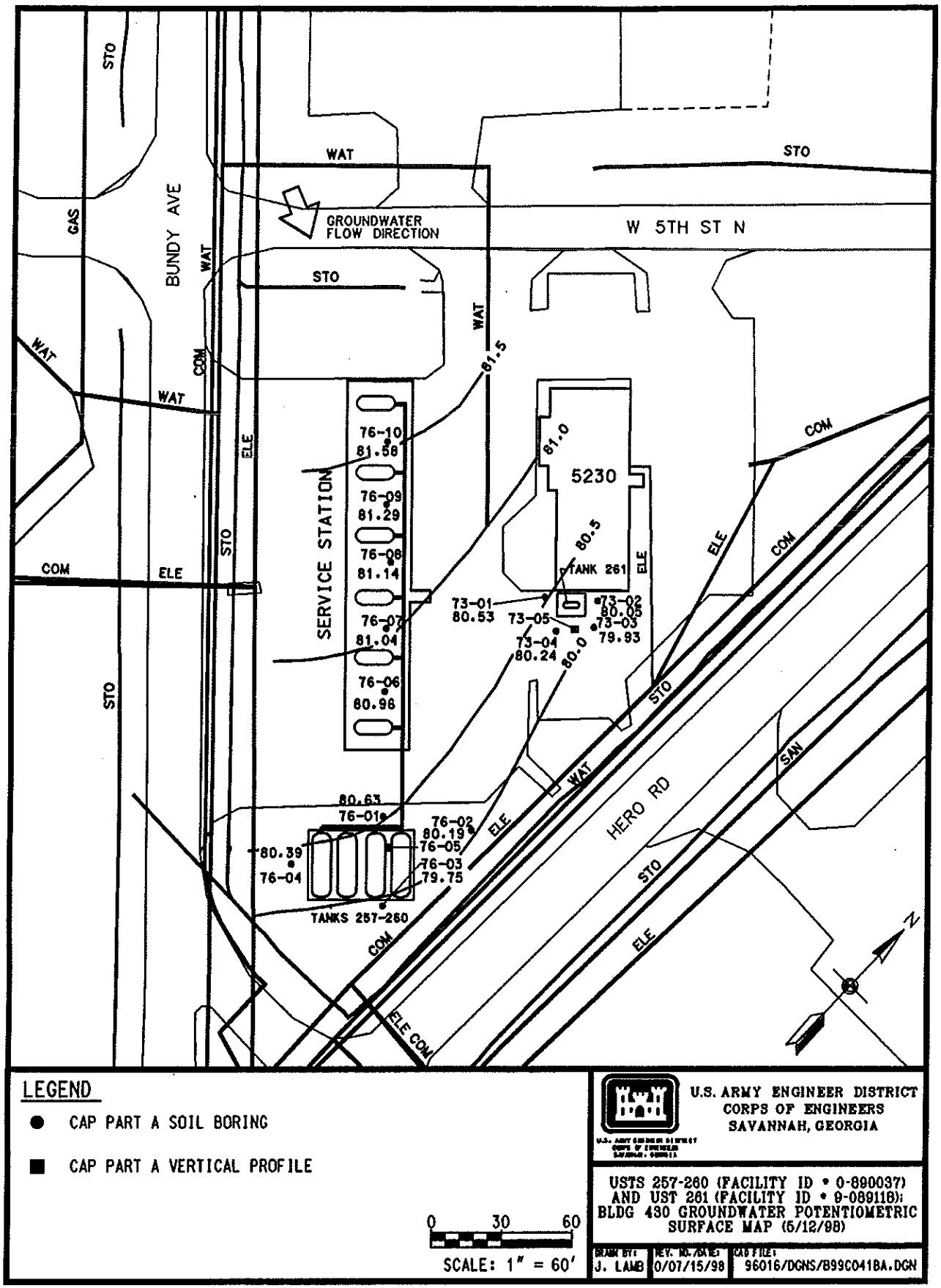


Figure 6. Potentiometric Surface Map of the USTS 257 - 260, Building 430 Site

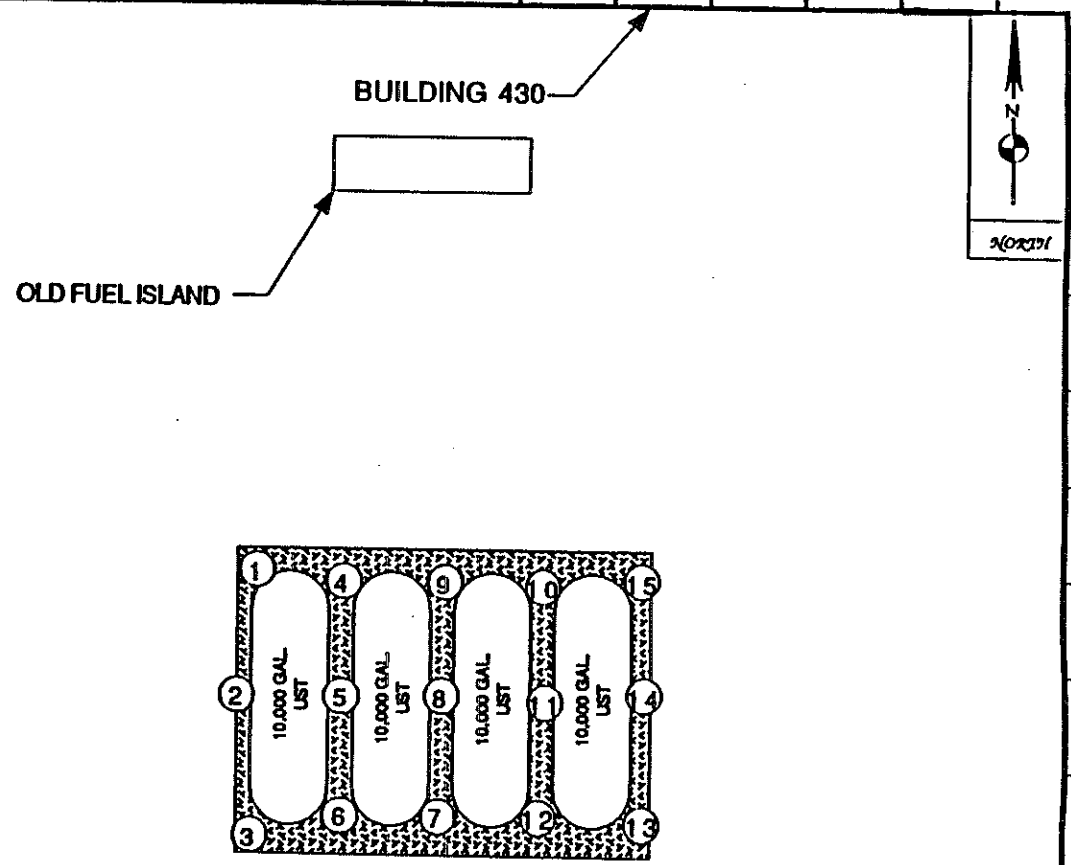
Headspace Analysis

Instrument: FID Serial #: 7633

Source: TANK PIT Temp.: 75°

PID Correlation: 50 ppm 500 ppm

Sample	Depth	PID	FID	Methane	VOA
1	2'		5000+	0	
2	4'		5000+	0	
3	3'		5000+	0	
4	6'		5000+	0	
5	2'		5000+	0	
6	4'		5000+	0	
7	3'		5000+	0	
8	6'		5000+	0	
9	2'		5000+	0	
10	4'		5000+	0	
11	6'		5000+	0	
12	2'		5000+	0	
13	4'		5000+	0	
14	6'		5000+	0	
15	3'		5000+	0	



LEGEND/REF. DRWG'S

ANDERSON COLUMBIA
ENVIRONMENTAL, INC.
P. O. BOX 1386 LAKE CITY, FLORIDA 32056 (904) 755-1196

DR. JLC CH'D. SRC DR. APP. MHM
ENGR. _____ ENGR'G DEPT. _____
DATE 3/22/93 SCALE 1"=20'

U.S. Army Corp of Engineers
Fort Stewart, Georgia
Building 430

Figure 7. UST System Closure Sampling Locations at the USTS 257 - 260, Building 430 Site

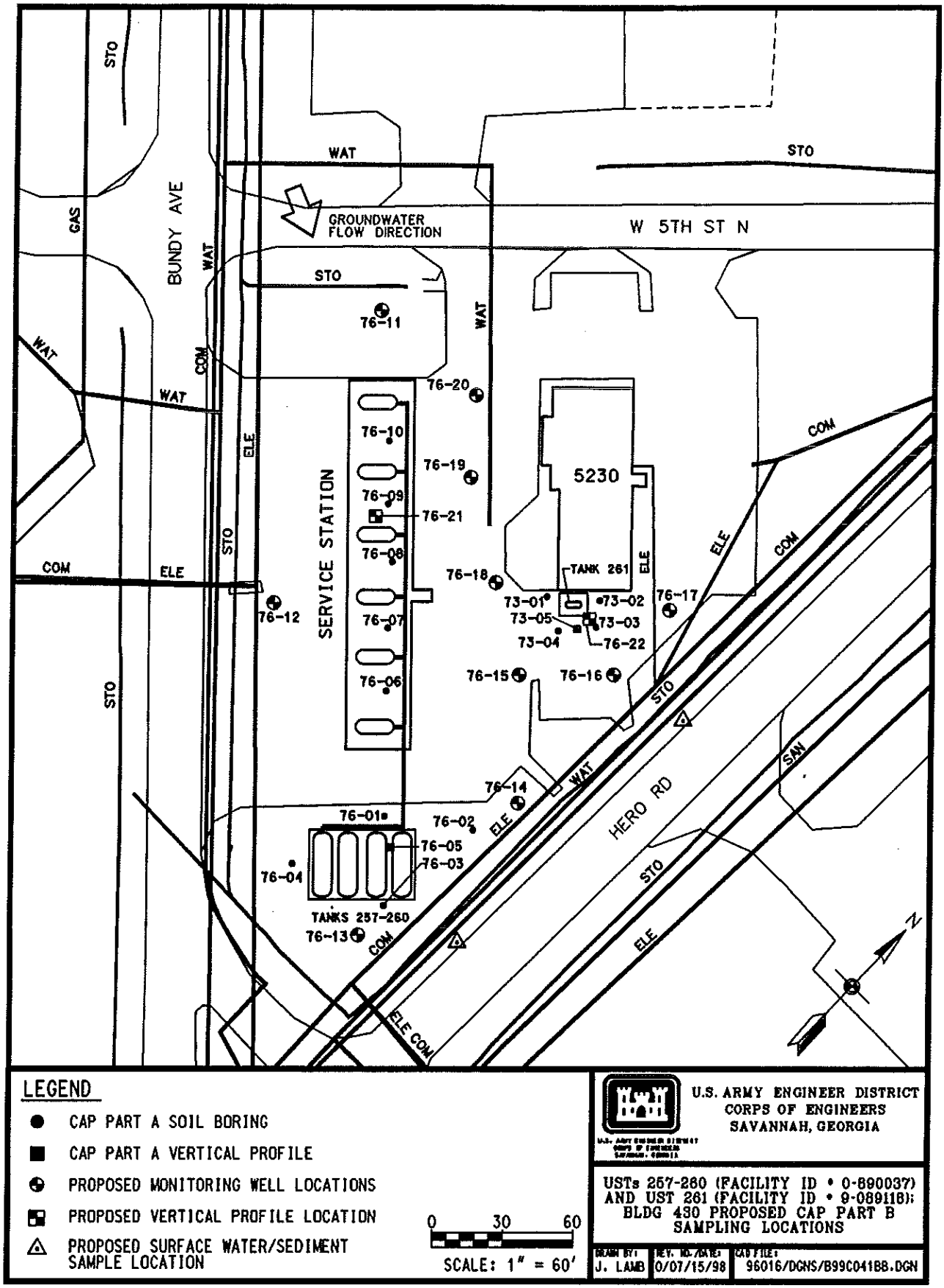


Figure 8. Proposed Additional Boring/Monitoring Well Locations

No tax map is available for Fort Stewart Military Reservation, which is a government owned facility.

Figure 9. Tax Map

APPENDIX II

REPORT TABLES

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TABLE 1: FREE PRODUCT REMOVAL

Monitoring Well Number: N/A				
Date of Measurement	Groundwater Elev. (ft AMSL)	Product Thickness (ft)	Corrected Water Elev. (ft AMSL)	Product Removed (gal)
No Free Product Detected				
			TOTAL	NONE

Monitoring Well Number: N/A				
Date of Measurement	Groundwater Elev. (ft AMSL)	Product Thickness (ft)	Corrected Water Elev. (ft AMSL)	Product Removed (gal)
No Free Product Detected				
			TOTAL	NONE

NOTE:
AMSL Above mean sea level.

TABLE 2a: SOIL ANALYTICAL RESULTS
(VOLATILE ORGANIC COMPOUNDS)

Sample Location	Sample ID	Depth (ft BGS)	Date Sampled	Benzene (mg/kg)		Toluene (mg/kg)		Ethyl-benzene (mg/kg)		Xylenes (mg/kg)		Total BTEX (mg/kg)	TPH-DRO (mg/kg)		TPH-GRO (mg/kg)	
76-01	760111	2.0- 4.0	05/10/98	0.0119	=	0.174	J	0.0468	=	0.366	J	0.5987	3.4	U	0.755	J
76-01	760121	6.0 - 8.0	05/10/98	0.289	J	0.127	J	2.55	J	5.28	J	8.246	271	=	1330	=
76-02	760211	7.0 - 8.0	05/08/98	12.8	J	32.9	J	24.2	J	126	J	195.9	1550	=	2310	=
76-02	760221	15.0 - 16.0	05/08/98	0.0108	J	0.138	J	0.0363	J	0.339	J	0.5241	0.91	UJ	0.441	J
76-03	760311	7.0 - 8.0	05/08/98	0.0753	J	0.168	J	0.527	J	5.44	J	6.2103	173	=	48	=
76-03	760321	13.0 - 14.0	05/08/98	0.0692	J	0.142	J	0.24	J	0.409	J	0.8602	4.3	=	1.78	=
76-04	760411	2.0 - 3.0	05/08/98	0.0021	U	0.0327	=	0.0021	U	0.0063	U	0.0432	2.6	U	1.05	UJ
76-04	760421	12.0 - 13.0	05/08/98	0.0026	U	0.0579	=	0.0026	U	0.0077	U	0.0708	1.5	UJ	0.173	J
76-05	760511	6.0 - 8.0	05/09/98	0.05	U	0.05	U	0.0855	J	0.374	J	0.5595	15.4	=	53.7	=
76-05	760521	10.0 - 12.0	05/09/98	0.0313	J	0.0326	J	0.0265	J	0.36	J	0.4504	3.2	U	1.72	J
76-05	760531	12.0 - 14.0	05/09/98	0.0127	=	0.0383	=	0.0141	=	0.101	=	0.1661	3.4	U	0.264	J
76-05	760541	20.0 - 22.0	05/09/98	0.0138	=	0.015	=	0.0155	=	0.0293	J	0.0736	2.7	U	0.0915	J
76-05	760551	30.0 -32.0	05/09/98	0.0051	U	0.124	=	0.0105	=	0.0041	J	0.1437	1.3	U	1.28	UJ
76-05	760561	40.0 - 42.0	05/12/98	0.0049	UJ	0.0721	J	0.0096	J	0.0039	J	0.0905	3.4	U	0.16	J
76-05	760571	55.0 - 57.0	05/09/98	0.0046	UJ	0.0046	UJ	0.0046	UJ	0.014	UJ	ND	1.1	U	1.16	U
76-05	760581	57.0 - 59.0	05/09/98	0.0027	UJ	0.0027	UJ	0.0027	UJ	0.0081	UJ	ND	1.6	UJ	1.35	UJ
76-06	760621	2.0 - 4.0	05/09/98	0.0037	J	0.16	J	0.118	J	0.0671	J	0.3488	59.7	=	1.89	J
76-06	760611	4.0 - 6.0	0509/98	0.0043	U	0.0048	J	0.0043	U	0.013	U	0.0264	2.9	U	0.524	J
76-07	760711	0.0 - 2.0	05/09/98	0.0012	U	0.0316	=	0.0144	J	0.0577	=	0.1049	0.58	UJ	0.313	J
76-07	760721	4.0 - 5.5	05/09/98	0.0011	U	0.0193	=	0.0175	J	0.103	=	0.1409	1.2	UJ	1.63	J
76-08	760811	0.0 - 2.0	05/09/98	0.00055	U	0.0025	=	0.0022	U	0.0066	U	0.01185	1.6	UJ	1.1	U
76-08	760821	2.0 - 4.0	05/09/98	0.0017	J	0.0035	=	0.0044	J	0.0065	J	0.0161	7.8	=	0.297	J
76-09	760911	0.0 - 2.0	05/09'98	0.0398	J	0.19	J	0.051	J	0.341	J	0.6218	3.2	U	2.03	=
76-09	760921	4.0 - 5.5	05/09/98	15.7	J	325	J	117	J	594	J	1051.7	818	=	2820	J
76-10	761011	0.0 - 2.0	05/10/98	0.0011	U	0.0044	U	0.0044	U	0.0136	=	0.0235	1.1	U	0.576	J
76-10	761021	4.0 - 5.2	05/10/98	0.351	J	18.4	J	18.6	J	110	J	147.351	124	=	1270	=
Applicable Standards[1]				0.008		6.0		10		700		NRC	NRC		NRC	

NOTES:

Field work was conducted prior to the new CAP-A guidance published in May 1998, thus the new analytical methods were not used.

[1] Georgia Department of Natural Resources Applicable Soil Threshold Levels (Table A, Column 2)
BGS Below ground surface
BTEX Benzene, toluene, ethylbenzene, and xylene
DRO Diesel Range Organics
GRO Gasoline Range Organics
NRC No regulatory criteria
TPH Total petroleum hydrocarbon

Laboratory Qualifiers

U Indicates that the compound was not detected above the reported sample quantitation limit
UJ Indicates that the compound was not detected above an approximated sample quantitation limit
J Indicates that the value for the compound was an estimated value.
= Indicates that the compound was detected at the concentration reported.

TABLE 2b: SOIL ANALYTICAL RESULTS
(POLYNUCLEAR AROMATIC HYDROCARBONS)

Sample Location	Sample ID	Depth (ft BGS)	Date Sampled	Detected PAH Compounds (mg/kg)																										Total PAHs (mg/kg)
				naphthalene		acenaphthylene		fluorene		phenanthrene		anthracene		fluoranthene		pyrene		benzo (a) anthracene		chrysene		benzo (b) fluoranthene		benzo (k) fluoranthene		benzo (a) pyrene		benzo (g,h,i) perylene		
76-01	760111	2.0- 4.0	05/10/98					0.01	J	0.037	J			0.04	J	0.075	J													0.1621
76-01	760121	6.0 - 8.0	05/10/98	2.5	=					0.181	J	0.042	J	0.124	J	0.143	J			0.063	J	0.033	J	0.016	J					3.1021
76-02	760211	7.0 - 8.0	05/08/98	22	=																									22
76-02	760221	15.0 - 16.0	05/08/98																											ND
76-03	760311	7.0 - 8.0	05/08/98	2.7	=																									2.7
76-03	760321	13.0 - 14.0	05/08/98	0.143	J																									0.143
76-04	760411	2.0 - 3.0	05/08/98																											ND
76-04	760421	12.0 - 13.0	05/08/98																											ND
76-05	760511	6.0 - 8.0	05/09/98	0.37	J																									0.37
76-05	760521	10.0 - 12.0	05/09/98	0.0509	J																									0.0509
76-05	760531	12.0 - 14.0	05/09/98																											ND
76-05	760541	20.0 - 22.0	05/09/98																											ND
76-05	760551	30.0 -32.0	05/09/98																											ND
76-05	760561	40.0 - 42.0	05/12/98																											ND
76-05	760571	55.0 - 57.0	05/09/98																											ND
76-05	760581	57.0 - 59.0	05/09/98																											ND
76-06	760621	2.0 - 4.0	05/09/98			0.421	J	1.16	J	7.03	=	0.522	J	4.32	J	6.33	J	2.400	J	2.650	J	1.930	J	0.932	J	1.390	J	1.180	J	30.265
76-06	760611	4.0 - 6.0	05/09/98	0.0221	J																									0.0221
76-07	760711	0.0 - 2.0	05/09/98																											ND
76-07	760721	4.0 - 5.5	05/09/98																											ND
76-08	760811	0.0 - 2.0	05/09/98																											ND
76-08	760821	2.0 - 4.0	05/09/98	0.312	J																									0.312
76-09	760911	0.0 - 2.0	05/09'98	0.0284	J	0.011	J	0.012	J	0.083	J	0.009	J	0.084	J	0.139	J	0.052	J	0.065	J									0.4836
76-09	760921	4.0 - 5.5	05/09/98	23.1	=			0.366	=	0.382	=																			23.848
76-10	761011	0.0 - 2.0	05/10/98																											ND
76-10	761021	4.0 - 5.2	05/10/98	3.56	=					0.302	J																			3.862
Applicable Standards[1]				NRC		NRC		NRC		NRC		NRC		NRC		NRC		NRC		NRC		NRC		NRC		NRC		NRC		NRC

NOTES:

Field work was conducted prior to the new CAP-A guidance published in May 1998, thus the new analytical methods were not used.

Detection limits are provided in Summary Table V-A.

[1] Georgia Department of Natural Resources Applicable Soil Threshold Levels, Table A, Column 2)

[2] ND - Not detected; refer to Appendix V, Table V-A, for complete list of PAH results

BGS Below ground surface

N/A Not applicable

PAH Polynuclear aromatic hydrocarbon

Laboratory Qualifiers

U Indicates that the compound was not detected above the reported sample quantitation limit

UJ Indicates that the compound was not detected above an approximated sample quantitation limit

J Indicates that the value for the compound was an estimated value

= Indicates that the compound was detected at the concentration reported

TABLE 3a: GROUNDWATER ANALYTICAL RESULTS
(VOLATILE ORGANIC COMPOUNDS)

Sample Location	Sample ID	Depth (ft BGS)	Date Sampled	Benzene (µg/l)		Toluene (µg/l)		Ethyl - benzene (µg/l)		Xylenes (µg/l)		Total BTEX (µg/l)
76-01	760112	7.0	05/10/98	3210	=	10700	=	1830	=	9510	=	25250
76-02	760212	9.0	05/08/98	1540	=	3090	=	945	=	5060	=	10635
76-03	760312	10.0	05/08/98	356	J	67.1	J	238	J	2450	J	3111.1
76-04	760412	11.0	05/08/98	2	U	2	U	2	U	6	U	ND
76-05	760522	10.0	05/08/98	159	=	512	=	889	=	7870	=	9430
76-05	760532	15.0	05/08/98	675	=	68.6	=	180	=	1640	=	2563.6
76-06	760612	6.0	05/09/98	138	J	15.3	J	183	J	439	J	775.3
76-07	760712	5.5	05/09/98	432	=	100	U	759	=	2970	=	4261
76-08	760812	5.7	05/09/98	7590	=	499	=	1420	=	1320	=	10829
76-09	760912	5.5	05/10/98	32700	=	97800	=	4450	=	22700	=	157650
76-10	761012	5.2	05/10/98	4240	J	17600	J	5210	J	28400	J	55450
Applicable Standards[1]				5		700		1000		10000		NRC

TABLE 3b: GROUNDWATER ANALYTICAL RESULTS
(POLYNUCLEAR AROMATIC HYDROCARBONS)

Sample Location	Sample ID	Depth (ft BGS)	Date Sampled	Detected PAH Compounds (µg/l)								Total PAH (µg/l)
				naphthalene		fluoranthene		phenanthrene				
76-01	760112	7.0	05/10/98	991 =				11.4 J				1002.4
76-02	760212	9.0	05/08/98	236 =		0.52 J						236.52
76-03	760312	10.0	05/08/98	156 =								156
76-04	760412	11.0	05/08/98									ND
76-05	760522	10.0	05/08/98	352 =								352
76-05	760532	15.0	05/08/98	93.4 =								93.4
76-06	760612	6.0	05/09/98	93.1 =								93.1
76-07	760712	5.5	05/09/98	17.9 =								17.9
76-08	760812	5.7	05/09/98	265 =								265
76-09	760912	5.5	05/10/98	644 =								644
76-10	761012	5.2	05/10/98	817 =								817
Applicable Standards[1]				NRC		NRC		NRC				NRC

NOTE:

Field work was conducted prior to the new CAP-A guidance published in May 1998, thus the new analytical methods were not used.

[1] U.S. Environmental Protection Agency maximum contaminant level
BTEX Benzene, toluene, ethylbenzene, and xylene
BGS Below ground surface
N/A Not applicable
NRC No regulatory criteria
PAH Polynuclear aromatic hydrocarbon

Laboratory Qualifiers

U Indicates the compound was not detected at the concentration reported
UJ Indicates that the compound was not detected above an approximated sample quantitation limit
J Indicates the value for the compound is an estimated value
= Indicates the compound was detected at the concentration reported

TABLE 4: GROUNDWATER ELEVATIONS

Well Number	Date Measured	Ground Surface Elev. (ft MSL)	Top of Casing Elev. (ft MSL)	Depth of Screened Interval (ft BGS)	Depth of Free Product (ft BTOC)	Water Depth (ft BTOC)	Product Thickness (ft)	Specific Gravity Adjustment	Corrected Groundwater Elev. (ft MSL)
76-01	05/13/98	87.28	90.27	3.0 - 13.0	N/A	9.09	N/A	N/A	80.63
76-02	05/13/98	86.26	88.36	6.0 - 16.0	N/A	10.50	N/A	N/A	80.11
76-03	05/13/98	85.71	88.48	6.0 - 16.0	N/A	10.19	N/A	N/A	79.75
76-04	05/13/98	85.63	88.37	6.0 - 16.0	N/A	9.58	N/A	N/A	80.39
76-06	05/13/98	87.98	88.73	2.0 - 12.0	N/A	11.00	N/A	N/A	80.96
76-07	05/13/98	88.00	89.12	2.0 - 12.0	N/A	10.55	N/A	N/A	81.04
76-08	05/13/98	87.92	88.37	2.0 - 12.0	N/A	11.12	N/A	N/A	81.14
76-09	05/13/98	87.91	87.91	2.0 - 12.0	N/A	11.42	N/A	N/A	81.29
76-10	05/13/98	87.85	89.89	2.0 - 12.0	N/A	9.09	N/A	N/A	81.58

NOTE:

MSL	Mean sea level
BGS	Below ground surface
BTOC	Below top of casing
N/A	Not applicable

TABLE 5a: UST SYSTEM CLOSURE[1] - SOIL ANALYTICAL RESULTS
(VOLATILE ORGANIC COMPOUNDS)

Sample Location	Depth (ft BGS)	Date Sampled	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH (mg/kg)	TPH DRO (mg/kg)	TPH GRO (mg/kg)
NO ANALYTICAL DATA WAS PRESENTED IN THE CLOSURE REPORT										
Applicable Standards[2]			0.008	6	10	700	NRC	NRC	NRC	NRC

TABLE 5b: UST SYSTEM CLOSURE[1] - SOIL ANALYTICAL RESULTS
(POLYNUCLEAR AROMATIC HYDROCARBONS)

Sample Location	Depth (ft BGS)	Date Sampled	Detected PAH Compounds (mg/kg)							Total PAHs (mg/kg)
NO ANALYTICAL DATA WAS PRESENTED IN THE CLOSURE REPORT										
Applicable Standards[2]			NRC	NRC	NRC	NRC	NRC	NRC	NRC	NRC

NOTE:

[1] Underground storage tank system closure performed by Anderson Columbia Environmental, Inc. (1996)
[2] Georgia Department of Natural Resources Applicable Soil Threshold Levels (Table A, Column 2)
[3] Not applicable; the health-based threshold level is exceeded only if free product exists
BDL Below detection limit
BGS Below ground surface
BTEX Benzene, toluene, ethylbenzene, and xylene
NRC No regulatory criteria.
PAH Polynuclear aromatic hydrocarbon.

Laboratory Qualifiers

U Indicates the compound was not detected at the concentration reported
UJ Indicates that the compound was not detected above an approximated sample quantitation limit
J Indicates the value for the compound is an estimated value
= Indicates the compound was detected at the concentration reported

TABLE 6a: UST SYSTEM CLOSURE[1] - GROUNDWATER ANALYTICAL RESULTS
(VOLATILE ORGANIC COMPOUNDS)

Sample Location	Depth (ft BGS)	Date Sampled	Benzene (mg/L)	Toluene (mg/L)	Ethyl -benzene (mg/L)	Xylenes (mg/L)	Total BTEX (mg/L)
P-430 #1	N/A	3/22/93	ANALYTICAL RESULTS NOT INCLUDED IN CLOSURE REPORT				
P-430 #2	N/A	3/22/93	12.2 =	63.6 =	39.9 =	110 =	225.7
Applicable Standards[2]			5,000	700,000	1,000,000	10,000,000	NRC

TABLE 6b: UST SYSTEM CLOSURE[1] - GROUNDWATER ANALYTICAL RESULTS
(POLYNUCLEAR ANALYTICAL RESULTS)

Sample Location	Depth (ft BGS)	Date Sampled	Detected PAH Compounds (µg/L)				Total PAHs (µg/L)
NO ANALYTICAL DATA WAS PRESENTED IN THE CLOSURE REPORT							
Applicable Standards[2]							NRC

NOTE:

1	Underground storage tank system closure performed by Anderson Columbia Environmental, Inc. (1996)
2	U.S. Environmental Protection Agency maximum contaminant levels
BGS	Below ground surface
BTEX	Benzene, toluene, ethylbenzene, and xylene
N/A	Not applicable
ND	Not detected
NR	Not required; PAH analysis was not requested for these samples
NRC	No regulatory criteria.

Laboratory Qualifiers

U	Indicates the compound was not detected at the concentration reported
UJ	Indicates that the compound was not detected above an approximated sample quantitation limit
J	Indicates the value for the compound is an estimated value
=	Indicates the compound was detected at the concentration reported

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APPENDIX III

WATER RESOURCES SURVEY DOCUMENTATION

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WATER RESOURCES SURVEY DOCUMENTATION

1.0 LOCAL WATER RESOURCES

As required by the GA EPD UST CAP-Part A guidance, a water resource survey documenting information for public and non-public water supply wells, surface water bodies, underground utilities, and potential receptors was conducted for the Fort Stewart UST investigation sites. The information presented in this appendix provides the supporting documentation for Section II.D.3 of the CAP-Part A Form.

1.1 WATER SUPPLY WELL SURVEY

The water supply well survey was conducted using the following GA EPD guidelines/requirements:

- Fort Stewart is located in an area of average or higher groundwater pollution susceptibility.
- Locate all public supply wells as defined by GA EPD that exist within 2 miles of the investigation sites.
- Locate all non-public supply wells that exist within 0.5 miles of the investigation sites.
- Locate all supply wells nearest the investigation sites.
- Locate all wells downgradient of the investigation sites.

A total of seven groundwater supply wells are located within a 2-mile radius of the Fort Stewart garrison area. Six of these wells are located within the confines of the garrison area. The other well is located at Wright Army Airfield, approximately 1.2 miles northeast of the garrison area. All of the groundwater supply wells are classified as public wells that supply water to Fort Stewart for drinking and nondrinking purposes. These wells are approximately 450 feet deep and draw groundwater from the Principal Artesian (also known as the Floridan) aquifer. Chlorine and fluoride are added into the groundwater at the well heads prior to being pumped into storage tanks and/or water towers, according to Fort Stewart DPW personnel. The location of these wells, along with a 500-foot radius drawn around each well, is shown in Figure 3.

1.2 SURFACE WATER BODIES

Surface water(s) in the State of Georgia, as defined by Rules and Regulations for Water Quality Control, Chapter 391-3-6, shall mean any and all rivers, streams, creeks, branches, lakes, reservoirs, ponds, drainage systems, springs producing 100,000 gallons per day, and all other bodies of surface water, natural or artificial, lying within or forming part of the boundaries of the State that are not entirely confined and retained completely upon the property of a single individual, partnership, or corporation. The surface water body survey was conducted using the following GA EPD guidelines/requirements:

- surface water bodies that exist within 1 mile of the investigation sites,
- all surface water bodies nearest the investigation sites if these bodies lie outside the 1-mile radius of concern,

- all surface water bodies downgradient of the investigation sites, and
- the storm and sanitary sewers adjacent to the investigation sites.

Several surface water bodies are located within a 1-mile radius of the Fort Stewart garrison area. These are shown in Figure 3 and include Mill Creek, Taylors Creek, Peacock Creek, Childpen's Pond, and two unnamed ponds. Mill Creek extends along the western side of the garrison area and flows into Taylors Creek located approximately 0.75 miles northwest of the garrison area. Taylors Creek then flows northward approximately 3.5 miles to its confluence with Canoochee Creek. Peacock Creek originates near the east corner of the garrison area and flows southward from the garrison. Mill Creek, Taylors Creek, and Peacock Creek all have natural streambeds and exhibit perennial flow.

Childpen's Pond is located at the northwest end of the garrison area. The two unnamed ponds are located at the northwest end of the facility golf course in the vicinity of Childpen's Pond. All of the ponds are isolated water bodies that are relatively small in size, measuring less than 500 feet in diameter.

Typically, surface water run-off from the UST site moves over the existing concrete and asphalt cover to the Fort Stewart storm water drainage system. Since petroleum contamination at the sites primarily impacts surficial groundwater, the surface water run-off pathway is not a viable contaminant transport mechanism because of the concrete acting as a barrier and the location of the nearest surface water body.

2.0 POTENTIAL RECEPTOR SURVEY SUMMARY OF THE USTs 257 - 260 SITE

A field potential receptor survey was conduced for the USTs 257 - 260 site in May 1998. The site and adjacent areas were surveyed for locations of surface water bodies, utility lines, and basements. Basements do not exist in the buildings adjacent to the site. Additional information, provided by DPW, was used to determine the location of the nearest public and non-public water supply wells and downgradient surface water bodies not located during the field survey.

2.1 Water Supply Wells Near the USTs 257 – 260 site

The USTs 257 - 260 site is located approximately 1750 feet north (upgradient) of Well #2. Therefore, the USTs 257 – 260 site is classified as being located greater than 500 feet to a withdrawal point. The nearest downgradient water supply well is Well #2.

2.2 Surface Water Bodies Near the USTs 257 - 260 Site

At the closest point, an unnamed tributary that flows into Taylors Creek northeast of the Garrison Area is located approximately 1000 feet east of the USTS 257 - 260 site. In the direction of groundwater flow, this tributary is located approximately 1,000 feet east of the USTS 257 - 260 site. Based on the distances between the UST and the nearest surface water body, the site is classified as being located greater than 500 feet to a downgradient surface water body. In addition to these surface water bodies there are drainage swales that run parallel to Hero Road and are located each of the site.

2.3 Underground Utility Lines Near the UST 261 Site

Underground utilities are located 10 feet east (downgradient) of the site and run parallel to Hero Road. The depth of these lines are estimated to be approximately 4 to 6 feet BGS.

APPENDIX IV

SOIL BORING LOGS

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HTRW DRILLING LOG

HOLE NUMBER 76-01

PROJECT: Fort Stewart USTs

INSPECTOR H. Brown

SHEET 1 OF 1

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	0	ASPHALT				
		silty SAND (SM), fine to medium grained, soft, moist, black (10YR2/1)	158ppm			
	1	silty SAND (SM), fine to medium grained, soft, moist, dark grayish brown (10YR4/2)				
	2					
	3	silty SAND (SM), fine to medium grained, soft, moist, light gray (2.5Y4/2)	8.2ppm		Soil Sample 760111	
	4	silty SAND (SM), fine to medium grained, soft, moist, black (10YR2/1)				
	5		>2500ppm		Soil Sample 760121	
	6					
	7		>2500ppm			▽ WET BELOW 7.0 FT BGS
	8					PUSHED TO 13.0 FT BGS TO SET TEMPORARY PIEZOMETER
	9					COLLECTED GROUNDWATER SAMPLE 760112 FROM TEMPORARY PIEZOMETER SCREENED AT 3.0 FT TO 13.0 FT BGS
	10					

HTRW DRILLING LOG

HOLE NUMBER 76-02

PROJECT: Fort Stewart USTs | INSPECTOR L. Mercado | SHEET 1 OF 2

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	0–2	SAND, well graded, fine grained, 20% silt, no dry strength, dry, very dark grayish brown (10YR3/2)	8.1 ppm at 0-1 FT 5.4 ppm at 1-2 FT			
	2–4	SAND, well graded, subangular, 20% silt, no dry strength, dry, greenish gray (10G6/1)	335 ppm at 2-3 FT >2500 ppm at 3-4 FT			
	4–7	SAND, well graded, subrounded, 10% silt, no dry strength, loose, dry, very pale brown (10YR7/3)	>2500 ppm at 4-5 FT 460 ppm at 5-6 FT >2500 ppm at 6-7 FT			
	7–10	SAND with silt, 30% silt, fine sand, subrounded, low dry strength, moist	>2500 ppm at 7-8 FT >2500 ppm at 8-9 FT 107 ppm at 9-10 FT		7-8 FT Soil Sample 760211	

HTRW DRILLING LOG

HOLE NUMBER 76-02

PROJECT: Fort Stewart USTs

INSPECTOR L. Mercado

SHEET 2 OF 2

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	11		126 ppm at 10-11 FT 104.5 ppm at 11-12 FT			▼ Wet below 11.5 FT BGS
	12	SAND, well graded, 10% silt, fine to medium grained sand, subrounded, low dry strength, moist, dark yellowish brown (10YR 3/4)	152 ppm 12-13 FT			
	13		176 ppm 13-14 FT			
	14		134 ppm 14-15 FT			
	15		32 ppm 15-16 FT		15-16 FT Soil Sample 760221	
	16					End of drilling at 16 FT BGS. Set piezometer
	17					
	18					
	19					
	20					

HTRW DRILLING LOG

HOLE NUMBER 76-03

PROJECT: Fort Stewart USTs | INSPECTOR L. Mercado | SHEET 1 OF 2

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	0-2	SAND, well graded, fine sand, subrounded, 20% silt, loose, no dry strength, dry, dark grayish brown (2.5 Y 4(2))	N/A 9.7 ppm 1-2 FT			
	2-4	SAND, well graded, fine to medium sand, subrounded, 10% silt, loose, no dry strength, dry, light reddish gray (2.5YR7/1)	N/A 17.2 ppm 3-4 FT			
	4-5	SAND, well graded, fine to medium sand, rounded, 10% silt, loose, no dry strength, dry, pale yellow (2.5 Y 7/4)	14.4 ppm 4-5 FT			
	5-8	SAND, with silt, fine sand, subrounded, 25% silt, dense, moist, black (10YR2/1)	93.6 ppm 5-6 FT >2500 ppm 6-7 FT >2500 ppm 7-8 FT		7-8 FT Soil Sample 760311	
	8-10	Shelby Tube 8-10 FT		8-10 FT Soil Sample 760331		Wet below 10 FT BGS

HTRW DRILLING LOG

HOLE NUMBER 76-03

PROJECT: Fort Stewart USTs | INSPECTOR L. Mercado | SHEET 2 OF 2

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	10	SAND with silt, as above, but wet	1125 ppm 10-11 FT			
	11		195 ppm 11-12 FT			
	12		856 ppm 12-13 FT			
	13	SAND, medium grained, 10% silt, dense, subrounded, wet, dark reddish brown (2.5YR3/4)	69.2 ppm 13-14 FT		13-14 FT Soil Sample 760321	
	14		542 ppm 14-15 FT			
	15		164 ppm 15-16 FT			
	16					End of drilling at 16 FT BGS Set piezometer
	17					
	18					
	19					
	20					

HTRW DRILLING LOG

HOLE NUMBER 76-04

PROJECT: Fort Stewart USTs | INSPECTOR L. Mercado | SHEET 1 OF 2

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	0	SAND, well graded, fine sand, 10% silt, subrounded, no dry strength, dry, Yellow (5Y7/6)	3.8 ppm 0-1 FT			
	1	SAND, well graded, fine sand, 15% silt, subrounded, no dry strength, dry, gray (5Y6/1)	3.8 ppm 1-2 FT			
	2					
	3	SAND, well graded, fine sand, 15% silt, subrounded, no dry strength, dry pale yellow (5Y8/4)	19.8 ppm 2-3 FT		2-3 FT Soil Sample 760411	
			11.2 ppm 3-4 FT			
	4		5.2 ppm 4-5 FT			
	5	SAND, with silt, fine sand, rounded, 30% silt, low dry Strength, moist, black (5Y2.5/1)	17.5 ppm 5-6 FT			
	6		5.8 ppm 6-7 FT			
	7		17.3 ppm 7-8 FT			
	8		5.1 ppm 8-9 FT			
	9		4.6 ppm 9-10 FT			
	10					

HTRW DRILLING LOG

HOLE NUMBER 76.04

PROJECT: Fort Stewart USTs | INSPECTOR L. Mercado | SHEET 2 OF 2

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	11		3.6ppm 10-11 FT			Wet below 11.0 FT BGS
	12		6.0ppm 11-12 FT			
	13	SAND, well graded, fine to medium sand, 15% silt, low to medium dry strength, wet, dark yellowish brown (10YR3/4)	0ppm 12-13FT		12-13FT Soil Sample 760421	
	14		0ppm 13-14FT			
	15		1.4ppm 14-15FT			
	16					End of drilling at 16FT BGS. Set piezometer
	17					
	18					
	19					
	20					

HTRW DRILLING LOG

HOLE NUMBER 76-05

PROJECT Fort Stewart USTs | INSPECTOR L. Mercado | SHEET 1 of 6

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	0–2	SAND, fine grained, 20% silt, subrounded, loose, dry, (2.5Y5/2,) grayish brown	3.5 ppm			Ran 4.0 Rec. 4.0
	2–4	SAND, fine grained, 10% silt, subrounded, loose, dry, (2.5Y 7/2) light gray	347 ppm			
	4–6	SAND, fine grained, 35% silt, subrounded, medium density, dry, (5Y 2.5/1) black	613 ppm			Ran 4.0 Rec. 4.0
	6–8		712 ppm		Soil Sample 76-05-11	
	8–10	as above wet	20.6 ppm			Ran 4.0 Rec. 4.0 ▼ Wet below 10.0 FT BGS

HTRW DRILLING LOG

HOLE NUMBER 76-05

PROJECT Fort Stewart USTs | INSPECTOR L. Mercado | SHEET 2 of 6

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO. (E)	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	11	SAND with silt, as above, but fine to medium sand, dense sand, wet, (5Y2.5/1) black	25.0ppm			
	12					
	13		61.5 ppm		Soil Sample 760531	Ran 2.0, Rec. 2.0
	14	SAND, fine to medium grained, subrounded, dense, wet, dark reddish brown				
	15		20.3ppm			Ran 2.0, Rec. 2.0
	16	SAND, fine to medium grained, subrounded, medium dense, 10% silt, wet, (7.5YR5/8) Strong brown				
	17		8.7ppm			Ran 2.0, Rec. 2.0
	18					
	19		11.3ppm			Ran 2.0, Rec. 2.0
	20					

HTRW DRILLING LOG

PROJECT	Fort Stewart USTs	INSPECTOR	L. Mercado	HOLE NUMBER	76-05
				SHEET	3 of 6

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
	21	SAND, fine to medium grained, subrounded, medium dense, trace of quartz gravel (5%) some moderate cementation, no reaction with HCl, wet, (7.5YR4/6) strong brown.	9.2 ppm		Soil Sample 76054	Ran 2.0, Rec. 1.8
	22					
	23		8.7 ppm			Ran 2.0, Rec. 1.5
	24	SAND, fine to medium grained, 10% silt, medium dense, wet, (2.5Y6/4) light yellowish brown				Augered to 25ft BGS
	25		47.2 ppm			Ran 4.0, Rec. 4.0
	26					
	27		50.5 ppm			
	28					
	29		N/A			Augered to 30.0ft BGS
	30					

HTRW DRILLING LOG

HOLE NUMBER: 76-05

PROJECT: Fort Stewart USTs | INSPECTOR: L. Mercado | SHEET: 4 of 6

ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO. (E)	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	30–31	SAND, fine to medium grained, subrounded, medium dense, 10% silt, wet (5Y 5/1) gray			Soil Sample 760551	Ran 4.0, Rec. 4.0
	31–32		11.0ppm			
	32–33					
	33–34		9.3ppm			
	34–35					Augered to 35.0 FT BGS
	35–36		23.6ppm			Ran 4.0, Rec. 2.0
	36–37					
	37–38		17.5ppm			
	38–39					
	39–40		N/A			Augered to 40.0 FT BGS

HTRW DRILLING LOG

PROJECT	INSPECTOR	HOLE NUMBER
Fort Stewart USTs	L. Mercado	76-05
		SHEET 5 of 6

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO. (E)	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	41	SAND, fine to medium grained, subrounded, medium dense, wet, (5Y5/1) gray	40.2ppm		Soil Sample 190561	Ran 4.0, Rec 1.0 Augered to 45FT BGS
	42					
	43		40.2ppm			
	44					Ran 4.0 Rec 2.5 Augered to 50FT BGS
	45	as above, 15% silt, wet	15.9ppm			
	46					
	47		15.5ppm			
	48					
	49		N/A			
	50					

HTRW DRILLING LOG

HOLE NUMBER 76-05

PROJECT Fort Stewart USTs | INSPECTOR L. Mercado | SHEET 6 of 6

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	51	SAND, fine to medium grained, subrounded, medium dense, wet, (5Y5/1) gray	15.2ppm			Ran 4.0, Rec 3.5 Augered to 55 FT BGS
	52					
	53		10.7ppm			
	54					
	55		5.8ppm		Soil Sample 760571	Ran 4.0 Rec 3.5
	56					
	57	sandy CLAY, low plasticity, no dilatency medium toughness, fine sand, moist, (10GY4/1) dark greenish gray	5.0ppm		Soil Sample 760581	
	58					
	59					End of drilling at 59 FT BGS
	60					

HTRW DRILLING LOG

HOLE NUMBER 76-06

PROJECT: Fort Stewart USTs

INSPECTOR J. K. Ledbetter

SHEET 1 OF 1

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	0	Concrete				
	1	Sandy SILT, 5% fine grained sand, soft, moist, black (10YR2/1)	13.9 ppm			
	2	Clayey SAND, 10% clay, medium grained, firm, low plasticity, moist, yellowish brown (10YR5/4)				
	3	Sandy SILT, 5% fine to medium grained sand, firm, moist, dark brown (10YR3/3)	157 ppm		Soil Sample 760621	
	4					
	5	SAND, fine grained, soft, moist, light gray (10YR 7/2)	88.9 ppm		Soil Sample 760611	
	6					▼ Wet below 6.0 FT BGS
	7	SAND, fine grained, firm, wet, black (10YR2/1)				
	8					
	9					Pushed to 12.0 FT Set piezometer
	10					

HTRW DRILLING LOG

HOLE NUMBER 76-07

PROJECT: Fort Stewart USTs

INSPECTOR J. K. Ledbetter

SHEET 1 OF 1

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	0	Concrete				
	1	sandy SILT, 5% fine grained sand, soft, moist, black (10YR 2/1)	11.7 ppm		Soil Sample 760711	
	2	clayey SAND, 10% clay, medium grained, firm, low plasticity, moist, yellowish brown (10YR 5/4) mottled with gray (10YR 6/1)				
	3	SAND, fine grained, firm to soft, moist, light gray (10YR 7/2)	157 ppm			
	4					
	5		277 ppm		Soil Sample 760721	Wet below 5.5 FT BGS
	6					
	7	increasing SILT, color grading to black (10YR 2/1)				
	8					Pushed to 12.0 FT Set piezometer
	9					
	10					

HTRW DRILLING LOG

HOLE NUMBER 76-08

PROJECT: Fort Stewart USTs

INSPECTOR J.K. Ledbetter

SHEET 1 OF 1

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	0	Concrete				
	1	Clayey SAND, 10% clay, medium grained, low plasticity, firm, moist, yellowish brown (10YR5/4) mottled with gray (10YR6/1)	43.3ppm		Soil Sample 760811	
	2					
	3	SAND, fine grained, soft, moist, light brownish gray (10YR6/2)	210ppm		Soil Sample 760821	
	4					
	5		115ppm			
	6					▼ Wet below 5.7 FT BGS
	7					
	8	SAND, fine grained soft, wet, black (10YR2/1)	0ppm			
	9					Pushed to 12.0 FT and set piezometer
	10					

HTRW DRILLING LOG

HOLE NUMBER 76-09

PROJECT: Fort Stewart USTs | INSPECTOR K. LEDBETTER | SHEET 1 OF 1

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
		CONCRETE				
	1	clayey SAND (SC), 10% clay, medium grained, subrounded, low plasticity, firm, moist, yellowish brown (10YR5/4) mottled with yellowish red (5YR5/8) and gray (5YR6/1)	918 ppm		Soil Sample 760911	
	2					
	3	SAND (SW), fine grained, soft, moist, brown (10YR4/3)	>2500 ppm			
	4	color grading to light brownish gray (10YR6/2)				
	5		>2500 ppm		Soil Sample 760921	▽ WET BELOW 5.5 FT BGS
	6	color grading to black (10YR2/1)				
	7					
	8					PUSHED TO 12.0 FT BGS TO SET TEMPORARY PIEZOMETER.
	9					COLLECTED GROUNDWATER SAMPLE 760912 FROM TEMPORARY PIEZOMETER SCREENED AT 2.0 TO 12.0 FT BGS
	10					

HTRW DRILLING LOG

HOLE NUMBER 76-10

PROJECT: Fort Stewart USTs | INSPECTOR K. LEDBETTER | SHEET 1 OF 1

ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
		CONCRETE				
	1–2	clayey SAND (SC), 10% clay, low plasticity, medium grained, subrounded, firm, moist, yellowish brown (10YR5/4) mottled with yellowish red (5YR5/8) and gray (5YR6/1)	177ppm		Soil Sample 761011	
	3	SAND (SW), fine grained, soft, moist, brown (10YR4/3)	>2500ppm			
	4	color grading to light brownish gray (10YR6/2)				STRONG HYDROCARBON ODOR
	5		>2500ppm		Soil Sample 761021	▽ WET BELOW 5.2 FT BGS
	6–7	color grading to black (10YR2/1)				
	8–9					PUSHED TO 12.0 FT BGS TO SET TEMPORARY PIEZOMETER COLLECTED GROUNDWATER SAMPLE 761012 FROM TEMPORARY PIEZOMETER SCREENED AT 2.0 TO 12.0 FT BGS
	10					

APPENDIX V

SOIL LABORATORY REPORTS

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TABLE V-A. SUMMARY OF SOIL ANALYTICAL RESULTS

Station:	Georgia UST	76-01	76-01	76-02	76-02	76-03	76-03	76-04
Sample ID:	Corrective	760111	760121	760211	760221	760311	760321	760411
Sample Interval:	Action	2.0' - 4.0'	6.0' - 8.0'	7.0' - 8.0'	15.0' - 16.0'	7.0' - 8.0'	13.0' - 14.0'	2.0' - 3.0'
Collection Date:	Levels for Soil[1]	10-May-98	10-May-98	08-May-98	08-May-98	08-May-98	08-May-98	08-May-98
Units:	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
VOLATILE ORGANIC COMPOUNDS								
Benzene	0.008	**0.0119 J**	**0.289 J**	**12.8 J**	**0.0108 J**	**0.0753 J**	**0.0692 J**	0.0021 U
Toluene	6	0.174 J	0.127 J	**32.9 J**	0.138 J	0.168 J	0.142 J	0.0327 =
Ethylbenzene	10	0.0468 =	2.55 J	**24.2 J**	0.0363 J	0.527 J	0.24 J	0.0021 U
Xylenes, Total	700	0.366 J	5.28 J	126 J	0.339 J	5.44 J	0.409 J	0.0063 U
POLYNUCLEAR AROMATIC HYDROCARBONS								
2-Chloronaphthalene	NRC	0.365 U	0.356 U	0.402 U	0.404 U	0.415 U	0.388 U	0.347 U
Acenaphthene	NRC	0.365 U	0.356 U	0.402 U	0.404 U	0.415 U	0.388 U	0.347 UJ
Acenaphthylene	NRC	0.365 U	0.356 U	0.402 U	0.404 U	0.415 UJ	0.388 U	0.347 U
Anthracene	NRC	0.365 U	0.0418 J	0.402 U	0.404 U	0.415 U	0.388 U	0.347 U
Benzo(a)anthracene	NRC	0.365 U	0.356 U	0.402 U	0.404 U	0.415 U	0.388 U	0.347 U
Benzo(a)pyrene	NRC	0.365 U	0.356 U	0.402 U	0.404 U	0.415 U	0.388 U	0.347 U
Benzo(b)fluoranthene	NRC	0.365 U	0.0332 J	0.402 U	0.404 U	0.415 U	0.388 U	0.347 U
Benzo(g,h,i)perylene	NRC	0.365 U	0.356 U	0.402 U	0.404 U	0.415 U	0.388 U	0.347 U
Benzo(k)fluoranthene	NRC	0.365 U	0.0164 J	0.402 U	0.404 U	0.415 U	0.388 U	0.347 U
Chrysene	NRC	0.365 U	0.0627 J	0.402 U	0.404 U	0.415 U	0.388 U	0.347 U
Dibenzo(a,h)anthracene	NRC							
Fluoranthene	NRC	0.0404 J	0.124 J	0.402 U	0.404 U	0.415 U	0.388 U	0.347 U
Fluorene	NRC	0.0097 J	0.356 U	0.369 J	0.404 U	0.415 U	0.388 U	0.347 U
Indeno(1,2,3-cd)pyrene	NRC	0.365 U	0.356 U	0.402 U	0.404 U	0.415 U	0.388 U	0.347 U
Naphthalene	NRC	0.365 U	2.5 =	22 =	0.404 U	2.7 =	0.143 J	0.347 U
Phenanthrene	NRC	0.0366 J	0.181 J	0.402 U	0.404 U	0.415 U	0.388 U	0.347 U
Pyrene	NRC	0.0754 J	0.143 J	0.402 U	0.404 U	0.415 U	0.388 U	0.347 U
OTHER ANALYTES								
Lead	NRC		12.8 J		5.3 =		5.9 U	
Total Organic Carbon	NRC						18300 =	
TPH-Diesel Range Organics	NRC	3.4 U	271 =	1550 =	0.91 UJ	173 =	4.3 =	2.6 U
TPH-Gasoline Range Organics	NRC	0.755 J	1330 =	2310 =	0.441 J	48 =	1.78 =	1.05 UJ

NOTE:

Field work was conducted prior to the new CAP-A guidance published in May 1998, thus the new analytical methods were not used.

1 Georgia Department of Natural Resources Applicable Soil Threshold Levels (Table A, Column 2)

Bold values exceed GUST soil threshold levels

NRC No regulatory criteria

QA/QC samples were collected. The laboratory data sheets have been included in this appendix, but the results are not summarized.

Laboratory Qualifiers

U Indicates that the compound was not detected above the reported sample quantitation limit

UJ Indicates that the compound was not detected above an approximated sample quantitation limit

J Indicates that the value for the compound was an estimated value.

= Indicates that the compound was detected at the concentration reported.

TABLE V-A. continued

Station:	Georgia UST	76-04	76-05	76-05	76-05	76-05	76-05	76-05
Sample ID:	Corrective	760421	760511	760521	760531	760541	760551	760561
Sample Interval:	Action	12.0' - 13.0'	6.0' - 8.0'	10.0' - 12.0'	12.0' - 14.0'	20.0' - 22.0'	30.0' - 32.0'	40.0' - 42.0'
Collection Date:	Levels for Soil[1]	08-May-98	9-May-98	9-May-98	9-May-98	9-May-98	9-May-98	9-May-98
Units:	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
VOLATILE ORGANIC COMPOUNDS								
Benzene	0.008	0.0026 U	**0.05 U**	**0.0313 J**	**0.0127 =**	**0.0138 =**	0.0051 U	0.0049 UJ
Toluene	6	0.0579 =	0.05 U	0.0326 J	0.0383 =	0.015 =	0.124 =	0.0721 J
Ethylbenzene	10	0.0026 U	0.0855 J	0.0265 J	0.0141 =	0.0155 =	0.0105 =	0.0096 J
Xylenes, Total	700	0.0077 U	0.374 J	0.36 J	0.101 =	0.0293 J	0.0041 J	0.0039 J
POLYNUCLEAR AROMATIC HYDROCARBONS								
2-Chloronaphthalene	NRC	0.424 U	0.417 U	0.412 U	0.429 U	0.397 U	0.424 U	0.398 U
Acenaphthene	NRC	0.424 U	0.417 U	0.412 U	0.429 U	0.397 U	0.424 U	0.398 U
Acenaphthylene	NRC	0.424 UJ	0.417 U	0.412 U	0.429 U	0.397 U	0.424 U	0.398 U
Anthracene	NRC	0.424 U	0.417 U	0.412 U	0.429 U	0.397 U	0.424 U	0.398 U
Benzo(a)anthracene	NRC	0.424 U	0.417 U	0.412 U	0.429 U	0.397 U	0.424 U	0.398 U
Benzo(a)pyrene	NRC	0.424 U	0.417 U	0.412 U	0.429 U	0.397 U	0.424 U	0.398 U
Benzo(b)fluoranthene	NRC	0.424 U	0.417 U	0.412 U	0.429 U	0.397 U	0.424 U	0.398 U
Benzo(g,h,i)perylene	NRC	0.424 U	0.417 U	0.412 U	0.429 U	0.397 U	0.424 U	0.398 U
Benzo(k)fluoranthene	NRC	0.424 U	0.417 U	0.412 U	0.429 U	0.397 U	0.424 U	0.398 U
Chrysene	NRC	0.424 U	0.417 U	0.412 U	0.429 U	0.397 U	0.424 U	0.398 U
Dibenzo(a,h)anthracene	NRC							
Fluoranthene	NRC	0.424 U	0.417 U	0.412 U	0.429 U	0.397 U	0.424 U	0.398 U
Fluorene	NRC	0.424 U	0.417 U	0.412 U	0.429 U	0.397 U	0.424 U	0.398 U
Indeno(1,2,3-cd)pyrene	NRC	0.424 U	0.417 U	0.412 U	0.429 U	0.397 U	0.424 U	0.398 U
Naphthalene	NRC	0.424 U	0.37 J	0.0509 J	0.429 U	0.397 U	0.424 U	0.398 U
Phenanthrene	NRC	0.424 U	0.417 U	0.412 U	0.429 U	0.397 U	0.424 U	0.398 U
Pyrene	NRC	0.424 U	0.417 U	0.412 U	0.429 U	0.397 U	0.424 U	0.398 U
OTHER ANALYTES								
Lead	NRC	8.7 =	6.1 J				4.7 =	3.5 =
Total Organic Carbon	NRC							
TPH-Diesel Range Organics	NRC	1.5 UJ	15.4 =	3.2 U	3.4 U	2.7 U	1.3 U	3.4 U
TPH-Gasoline Range Organics	NRC	0.173 J	53.7 =	1.72 J	0.264 J	0.0915 J	1.28 UJ	0.16 J

NOTE:

Field work was conducted prior to the new CAP-A guidance published in May 1998, thus the new analytical methods were not used.

1 Georgia Department of Natural Resources Applicable Soil Threshold Levels (Table A, Column 2)

Bold values exceed GUST soil threshold levels

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QA/QC samples were collected. The laboratory data sheets have been included in this appendix, but the results are not summarized.

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UJ Indicates that the compound was not detected above an approximated sample quantitation limit

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= Indicates that the compound was detected at the concentration reported.

TABLE V-A. continued

Station:	Georgia UST	76-05	76-05	76-06	76-06	76-07	76-07	76-08
Sample ID:	Corrective	760571	760581	760621	760611	760711	760721	760811
Sample Interval:	Action	55.0' - 57.'0	57.0' 0 59.0'	2.0' - 4.0'	4.0' - 6.0'	0.0' - 2.0'	4.0' - 5.5'	0.0' - 2.0'
Collection Date:	Levels for Soil[1]	9-May-98	9-May-98	9-May-98	9-May-98	9-May-98	9-May-98	9-May-98
Units:	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
VOLATILE ORGANIC COMPOUNDS								
Benzene	0.008	0.0046 UJ	0.0027 UJ	0.0037 J	0.0043 U	0.0012 U	0.0011 U	0.00055 U
Toluene	6	0.0046 UJ	0.0027 UJ	0.16 J	0.0048 J	0.0316 =	0.0193 =	0.0025 =
Ethylbenzene	10	0.0046 UJ	0.0027 UJ	0.118 J	0.0043 U	0.0144 J	0.0175 J	0.0022 U
Xylenes, Total	700	0.014 UJ	0.0081 UJ	0.0671 J	0.013 U	0.0577 =	0.103 =	0.0066 U
POLYNUCLEAR AROMATIC HYDROCARBONS								
2-Chloronaphthalene	NRC	0.382 U	0.446 U	7.000 U	0.354 U	0.386 U	0.365 U	0.366 U
Acenaphthene	NRC	0.382 U	0.446 U	7.000 U	0.354 U	0.386 U	0.365 U	0.366 U
Acenaphthylene	NRC	0.382 U	0.446 U	0.421 J	0.354 U	0.386 U	0.365 U	0.366 U
Anthracene	NRC	0.382 U	0.446 U	0.522 J	0.354 U	0.386 U	0.365 U	0.366 U
Benzo(a)anthracene	NRC	0.382 U	0.446 U	2.400 J	0.354 U	0.386 U	0.365 U	0.366 U
Benzo(a)pyrene	NRC	0.382 U	0.446 U	1.390 J	0.354 U	0.386 U	0.365 U	0.366 U
Benzo(b)fluoranthene	NRC	0.382 U	0.446 U	1.930 J	0.354 U	0.386 U	0.365 U	0.366 U
Benzo(g,h,i)perylene	NRC	0.382 U	0.446 U	1.180 J	0.354 U	0.386 U	0.365 U	0.366 U
Benzo(k)fluoranthene	NRC	0.382 U	0.446 U	0.932 J	0.354 U	0.386 U	0.365 U	0.366 U
Chrysene	NRC	0.382 U	0.446 U	2.650 J	0.354 U	0.386 U	0.365 U	0.366 U
Dibenzo(a,h)anthracene	NRC							
Fluoranthene	NRC	0.382 U	0.446 U	4.32 J	0.354 U	0.386 U	0.365 U	0.366 U
Fluorene	NRC	0.382 U	0.446 U	1.16 J	0.354 U	0.386 U	0.365 U	0.366 U
Indeno(1,2,3-cd)pyrene	NRC	0.382 U	0.446 U	7.00 U	0.354 U	0.386 U	0.365 U	0.366 U
Naphthalene	NRC	0.382 U	0.446 U	7.00 U	0.0221 J	0.386 U	0.365 U	0.366 U
Phenanthrene	NRC	0.382 U	0.446 U	7.03 =	0.354 U	0.386 U	0.365 U	0.366 U
Pyrene	NRC	0.382 U	0.446 U	6.33 J	0.354 U	0.386 U	0.365 U	0.366 U
OTHER ANALYTES								
Lead	NRC		7.1 J	4.5 J			1.5 J	
Total Organic Carbon	NRC						1700 =	
TPH-Diesel Range Organics	NRC	1.1 U	1.6 UJ	59.7 =	2.9 U	0.58 UJ	1.2 UJ	1.6 UJ
TPH-Gasoline Range Organics	NRC	1.16 U	1.35 UJ	1.41 =	0.524 J	0.313 J	1.63 J	1.1 U

NOTE:

Field work was conducted prior to the new CAP-A guidance published in May 1998, thus the new analytical methods were not used.

1 Georgia Department of Natural Resources Applicable Soil Threshold Levels (Table A, Column 2)

Bold values exceed GUST soil threshold levels

NRC No regulatory criteria

QA/QC samples were collected. The laboratory data sheets have been included in this appendix, but the results are not summarized.

Laboratory Qualifiers

U Indicates that the compound was not detected above the reported sample quantitation limit

UJ Indicates that the compound was not detected above an approximated sample quantitation limit

J Indicates that the value for the compound was an estimated value.

= Indicates that the compound was detected at the concentration reported.

TABLE V-A. continued

Station:	Georgia UST	76-08	76-09	76-09	76-10	76-10
Sample ID:	Corrective	760821	760911	760921	761011	761021
Sample Interval:	Action	2.0' - 4.0'	0.0' - 2.0'	4.0' - 5.5'	0.0' - 2.0'	4.0' - 5.2'
Collection Date:	Levels for Soil[a]	9-May-98	10-May-98	10-May-98	10-May-98	10-May-98
Units:	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
VOLATILE ORGANIC COMPOUNDS						
Benzene	0.008	0.0017 J	**0.0398 J**	**15.7 J**	0.0011 U	**0.351 J**
Toluene	6	0.0035 =	0.19 J	**325 J**	0.0044 U	**18.4 J**
Ethylbenzene	10	0.0044 J	0.051 J	**117 J**	0.0044 U	**18.6 J**
Xylenes, Total	700	0.0065 J	0.341 J	594 J	0.0136 =	110 J
POLYNUCLEAR AROMATIC HYDROCARBONS						
2-Chloronaphthalene	NRC	0.351 U	0.366 U	0.361 U	0.366 U	0.365 U
Acenaphthene	NRC	0.351 U	0.366 U	0.361 U	0.366 U	0.365 U
Acenaphthylene	NRC	0.351 U	0.0108 J	0.361 U	0.366 U	0.365 U
Anthracene	NRC	0.351 U	0.0092 J	0.361 U	0.366 U	0.365 U
Benzo(a)anthracene	NRC	0.351 U	0.0524 J	0.361 U	0.366 U	0.365 U
Benzo(a)pyrene	NRC	0.351 U	0.366 U	0.361 U	0.366 U	0.365 U
Benzo(b)fluoranthene	NRC	0.351 U	0.366 U	0.361 U	0.366 U	0.365 U
Benzo(g,h,i)perylene	NRC	0.351 U	0.366 U	0.361 U	0.366 U	0.365 U
Benzo(k)fluoranthene	NRC	0.351 U	0.366 U	0.361 U	0.366 U	0.365 U
Chrysene	NRC	0.351 U	0.0649 J	0.361 U	0.366 U	0.365 U
Dibenzo(a,h)anthracene	NRC					
Fluoranthene	NRC	0.351 U	0.0838 J	0.361 U	0.366 U	0.365 U
Fluorene	NRC	0.351 U	0.0123 J	0.366 =	0.366 U	0.365 U
Indeno(1,2,3-cd)pyrene	NRC	0.351 U	0.366 U	0.361 U	0.366 U	0.365 U
Naphthalene	NRC	0.312 J	0.0284 J	23.1 =	0.366 U	3.56 =
Phenanthrene	NRC	0.351 U	0.0828 J	0.382 =	0.366 U	0.302 J
Pyrene	NRC	0.351 U	0.139 J	0.361 U	0.366 U	0.365 U
OTHER ANALYTES						
Lead	NRC	1.7 U		13.7 J		2.7 J
Total Organic Carbon	NRC	5080 =		2420 =		1790 =
TPH-Diesel Range Organics	NRC	7.8 =	3.2 U	818 =	1.1 U	124 =
TPH-Gasoline Range Organics	NRC	0.297 J	2.03 =	2820 J	0.576 J	1270 =

NOTE:

Field work was conducted prior to the new CAP-A guidance published in May 1998, thus the new analytical methods were not used.

[1] Georgia Department of Natural Resources Applicable Soil Threshold Levels (Table A, Column 2)

Bold values exceed GUST soil threshold levels

NRC No regulatory criteria

QA/QC samples were collected. The laboratory data sheets have been included in this appendix, but the results are not summarized.

Laboratory Qualifiers

U Indicates that the compound was not detected above the reported sample quantitation limit

UJ Indicates that the compound was not detected above an approximated sample quantitation limit

J Indicates that the value for the compound was an estimated value.

= Indicates that the compound was detected at the concentration reported.

2-41

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760111

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4006S

Matrix: (soil/water) SOIL Lab Sample ID: 9805295-20

Sample wt/vol: 10.0 (g/mL) G Lab File ID: 2I6012

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: not dec. 9 Date Analyzed: 05/16/98

GC Column: J&W DB-624(PID) ID: 0.53 (mm) Dilution Factor: 2.0

Soil Extract Volume:_____(ml) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
71-43-2	Benzene	11.9	P	J MΦ8
108-88-3	Toluene	174	P	J MΦ8
100-41-4	Ethylbenzene	46.8		J MΦ8
1330-20-7	Xylenes (total)	366	P	J MΦ8

DATA VALIDATION COPY

FORM I VOA

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760111

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4006S

Matrix: (soil/water) SOIL Lab Sample ID: 9805295-20

Sample wt/vol: 30.1 (g/mL) G Lab File ID: 2T544

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: 9 decanted: (Y/N) N Date Extracted: 05/14/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/16/98

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

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CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
91-20-3	naphthalene	365	U
91-58-7	2-chloronaphthalene	365	U
209-96-8	acenaphthylene	365	U
83-32-9	acenaphthene	365	U
86-73-7	fluorene	9.7	J
85-01-8	phenanthrene	36.6	J
120-12-7	anthracene	365	U
206-44-0	fluoranthene	40.4	J
129-00-0	pyrene	75.4	J
56-55-3	benzo(a)anthracene	365	U
218-01-9	chrysene	365	U
205-99-2	benzo(b)fluoranthene	365	U
207-08-9	benzo(k)fluoranthene	365	U
50-32-8	benzo(a)pyrene	365	U
193-39-5	indeno(1,2,3-cd)pyrene	365	U
53-70-3	dibenz(a,h)anthracene	365	U
191-24-2	benzo(g,h,i)perylene	365	U

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

760111

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4006S

Matrix: (soil/water) SOIL Lab Sample ID: 9805295-20

Sample wt/vol: 30.4 (g/mL) G Lab File ID: 5C60026

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: 9 decanted: (Y/N) N Date Extracted:05/19/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/23/98

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q	
	Diesel Range Organics	3.4	B	U FØ1, FØ7

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760111

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4006S

Matrix: (soil/water) SOIL Lab Sample ID: 9805295-20

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 3I7028

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: not dec. 9 Date Analyzed: 05/18/98

GC Column: J&W DB-624(FID) ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
	----------Gasoline Range Organics	755	J	J F01, F08

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FORM I VOA

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760121RE

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4006S

Matrix: (soil/water) SOIL Lab Sample ID: 9805295-15

Sample wt/vol: 10.0 (g/mL) G Lab File ID: 2I5031

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: not dec. 8 Date Analyzed: 05/16/98

GC Column: J&W DB-624(PID) ID: 0.53 (mm) Dilution Factor: 50.0

Soil Extract Volume:_____(ml) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
71-43-2	Benzene	289	P	J
108-88-3	Toluene	127	P	
100-41-4	Ethylbenzene	2550	P	
1330-20-7	Xylenes (total)	5280	P	

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FORM I VOA

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760121

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4006S

Matrix: (soil/water) SOIL Lab Sample ID: 9805295-15

Sample wt/vol: 30.5 (g/mL) G Lab File ID: 2T539

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: 8 decanted: (Y/N) N Date Extracted: 05/14/98

Concentrated Extract Volume: 1.00 (mL) Date Analyzed: 05/16/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH 11

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CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
91-20-3	naphthalene	2500	
91-58-7	2-chloronaphthalene	356	U
209-96-8	acenaphthylene	356	U
83-32-9	acenaphthene	356	U
86-73-7	fluorene	356	U
85-01-8	phenanthrene	181	J
120-12-7	anthracene	41.8	J
206-44-0	fluoranthene	124	J
129-00-0	pyrene	143	J
56-55-3	benzo(a)anthracene	356	U
218-01-9	chrysene	62.7	J
205-99-2	benzo(b)fluoranthene	33.2	J
207-08-9	benzo(k)fluoranthene	16.4	J
50-32-8	benzo(a)pyrene	356	U
193-39-5	indeno(1,2,3-cd)pyrene	356	U
53-70-3	dibenz(a,h)anthracene	356	U
191-24-2	benzo(g,h,i)perylene	356	U

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FORM 1 Science Applications11-MAY-1998 SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

760121

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4006S

Matrix: (soil/water) SOIL Lab Sample ID: 9805295-15

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 5D3004

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: 8 decanted: (Y/N) N Date Extracted:05/19/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/27/98

Injection Volume: 1.0(uL) Dilution Factor: 50.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q	
	----------Diesel Range Organics	271	B	= F01, F08

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760121

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4006S

Matrix: (soil/water) SOIL Lab Sample ID: 9805295-15

Sample wt/vol: 10.0 (g/mL) G Lab File ID: 3J1012

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: not dec. 8 Date Analyzed: 05/18/98

GC Column: J&W DB-624(FID) ID: 0.53 (mm) Dilution Factor: 2000.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
----------	Gasoline Range Organics	1330000		=

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FORM I VOA

Form 1: Inorganic Analyses Data Sheet

SDG No.: FS4006S

Method Type: Total Metals

Sample ID: 9805295-15

Client ID: 760121

Contract: SAIC00598 Lab Code: GEL Case No.: SAS No.:

Matrix: SOIL Date Received: 5/11/98 Level: LOW

% Solids: 92.00

CAS No.	Analyte	Concentration	Units	C	Qual	M	DL	Instrument ID	Analytical Run
7439-92-1	Lead	12.8	mg/kg	J	P(J)	P	0.10	TJA61 Trace ICPAES	980514a-1

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760125

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4014W

Matrix: (soil/water) GROUNDH2O Lab Sample ID: 9805308-19

Sample wt/vol: 10.00 (g/ml) ML Lab File ID: 2J2028

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: not dec. _____ Date Analyzed: 05/20/98

GC Column: J&W DB-624(PID) ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	2.0	U
108-88-3	Toluene	2.0	U
100-41-4	Ethylbenzene	2.0	U
1330-20-7	Xylenes (total)	6.0	U

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760125

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4012W

Matrix: (soil/water) GROUNDH2O Lab Sample ID: 9805304-06

Sample wt/vol: 950.0 (g/mL) ML Lab File ID: 1T312

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: _____ decanted: (Y/N)___ Date Extracted:05/13/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/13/98

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
91-20-3	naphthalene	10.5	U
91-58-7	2-chloronaphthalene	10.5	U
208-96-8	acenaphthylene	10.5	U
83-32-9	acenaphthene	10.5	U
86-73-7	fluorene	10.5	U
85-01-8	phenanthrene	10.5	U
120-12-7	anthracene	10.5	U
206-44-0	fluoranthene	10.5	U
129-00-0	pyrene	10.5	U
56-55-3	benzo(a)anthracene	10.5	U
218-01-9	chrysene	10.5	U
205-99-2	benzo(b)fluoranthene	10.5	U
207-08-9	benzo(k)fluoranthene	10.5	U
50-32-8	benzo(a)pyrene	10.5	U
193-39-5	indeno(1,2,3-cd)pyrene	10.5	U
53-70-3	dibenz(a,h)anthracene	10.5	U
191-24-2	benzo(g,h,i)perylene	10.5	U

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FORM 1 Science Applications11-MAY-1998 SAMPLE NO.
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

760125

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4012W

Matrix: (soil/water) GROUNDH2O Lab Sample ID: 9805304-06

Sample wt/vol: 1020 (g/mL) ML Lab File ID: 5B40017

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: _____ decanted: (Y/N)___ Date Extracted:05/14/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/14/98

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/L	Q	
	----------Diesel Range Organics_____	0.024	JB	U FD1,FD6

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760125

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4014W

Matrix: (soil/water) GROUNDH2O Lab Sample ID: 9805308-19

Sample wt/vol: 10.00 (g/ml) ML Lab File ID: 3J1072

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: not dec. _____ Date Analyzed: 05/20/98

GC Column: J&W DB-624(FID) ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
	----------Gasoline Range Organics	500	U	UJ CØ5

DATA VALIDATION COPY

FORM I VOA

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760211

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4004S

Matrix: (soil/water) SOIL Lab Sample ID: 9805292-03

Sample wt/vol: 10.0 (g/mL) G Lab File ID: 2I3036

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: not dec. 17 Date Analyzed: 05/14/98

GC Column: J&W DB-624(PID) ID: 0.53 (mm) Dilution Factor: 500.0

Soil Extract Volume:_____(ml) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
71-43-2	Benzene	12800	P
108-88-3	Toluene	32900	P
100-41-4	Ethylbenzene	24200	P
1330-20-7	Xylenes (total)	126000	P

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FORM I VOA

FORM 1 Science Applications11-MAY-1998 SAMPLE NO.
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

760211

b Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4004S

Matrix: (soil/water) SOIL Lab Sample ID: 9805292-03

Sample wt/vol: 30.4 (g/mL) G Lab File ID: 5C20020

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: 17 decanted: (Y/N) N Date Extracted:05/13/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/20/98

Injection Volume: 1.0(uL) Dilution Factor: 500.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q
	----------Diesel Range Organics	1550	B

= F01, F08

DATA VALIDATION COPY

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760211

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4004S

Matrix: (soil/water) SOIL Lab Sample ID: 9805292-03

Sample wt/vol: 10.0 (g/mL) G Lab File ID: 3I606

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: not dec. 17 Date Analyzed: 05/16/98

GC Column: J&W DB-624(FID) ID: 0.53 (mm) Dilution Factor: 2000.0

Soil Extract Volume:_10000__(uL) Soil Aliquot Volume: __5_____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
	----------Gasoline Range Organics_____	2310000	_____	=

DATA VALIDATION COPY

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760211

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4004S

Matrix: (soil/water) SOIL Lab Sample ID: 9805292-03

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 4T210

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: 17 decanted: (Y/N) N Date Extracted: 05/12/98

Concentrated Extract Volume: 1.00 (mL) Date Analyzed: 05/12/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
91-20-3	naphthalene	22000 ~~12600~~	~~E~~ D	=
91-58-7	2-chloronaphthalene	402	U	U
208-96-8	acenaphthylene	402	U	U
83-32-9	acenaphthene	402	U	U
86-73-7	fluorene	402	U	U
85-01-8	phenanthrene	369	J	J
120-12-7	anthracene	402	U	U
206-44-0	fluoranthene	402	U	↓
129-00-0	pyrene	402	U	
56-55-3	benzo(a)anthracene	402	U	
218-01-9	chrysene	402	U	
205-99-2	benzo(b)fluoranthene	402	U	
207-08-9	benzo(k)fluoranthene	402	U	
50-32-8	benzo(a)pyrene	402	U	
193-39-5	indeno(1,2,3-cd)pyrene	402	U	
53-70-3	dibenz(a,h)anthracene	402	U	
191-24-2	benzo(g,h,i)perylene	402	U	

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760221

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4004S

Matrix: (soil/water) SOIL Lab Sample ID: 9805292-07

Sample wt/vol: 10.0 (g/mL) G Lab File ID: 2I3020

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: not dec. 18 Date Analyzed: 05/13/98

GC Column: J&W DB-624(PID) ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(ml) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q		
71-43-2	Benzene	10.8		J	G01
108-88-3	Toluene	138			
100-41-4	Ethylbenzene	36.3			
1330-20-7	Xylenes (total)	339			

DATA VALIDATION COPY

G01

FORM I VOA

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760221

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4004S

Matrix: (soil/water) SOIL Lab Sample ID: 9805292-07

Sample wt/vol: 30.2 (g/mL) G Lab File ID: 4T214

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: 18 decanted: (Y/N) N Date Extracted: 05/12/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/12/98

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
91-20-3	naphthalene	404	U
91-58-7	2-chloronaphthalene	404	U
208-96-8	acenaphthylene	404	U
83-32-9	acenaphthene	404	U
86-73-7	fluorene	404	U
85-01-8	phenanthrene	404	U
120-12-7	anthracene	404	U
206-44-0	fluoranthene	404	U
129-00-0	pyrene	404	U
56-55-3	benzo(a)anthracene	404	U
218-01-9	chrysene	404	U
205-99-2	benzo(b)fluoranthene	404	U
207-08-9	benzo(k)fluoranthene	404	U
50-32-8	benzo(a)pyrene	404	U
193-39-5	indeno(1,2,3-cd)pyrene	404	U
53-70-3	dibenz(a,h)anthracene	404	U
191-24-2	benzo(g,h,i)perylene	404	U

U

FORM 1 Science Applications11-MAY-1998 SAMPLE NO.
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

760221

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4004S

Matrix: (soil/water) SOIL Lab Sample ID: 9805292-07

Sample wt/vol: 30.1 (g/mL) G Lab File ID: 5B40043

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: 18 decanted: (Y/N) N Date Extracted:05/13/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/15/98

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q	
	----------Diesel Range Organics	0.91	JB	UJ F01, F06

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760221

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4004S

Matrix: (soil/water) SOIL Lab Sample ID: 9805292-07

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 3I5012

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: not dec. 18 Date Analyzed: 05/15/98

GC Column: J&W DB-624(FID) ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
	Gasoline Range Organics	441	J

J

DATA VALIDATION COPY

FORM I VOA

Form I: Inorganic Analyses Data Sheet

SDG No.: FS4004S

Method Type: Total Metals

Sample ID: 9805292-07

Client ID: 760221

Contract: SAIC00598 Lab Code: GEL Case No.: SAS No.:

Matrix: SOIL Date Received: 5/11/98 Level: LOW

% Solids: 82.00

CAS No.	Analyte	Concentration	Units	C	Qual	M	DL	Instrument ID	Analytical Run
7439-92-1	Lead	5.3	mg/kg	=		P	0.11	TJA61 Trace ICPAES	980517-1

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

DATA VALIDATION COPY

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760311DL

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4004S

Matrix: (soil/water) SOIL Lab Sample ID: 9805292-19

Sample wt/vol: 10.0 (g/mL) G Lab File ID: 2I4014

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: not dec. 20 Date Analyzed: 05/14/98

GC Column: J&W DB-624(PID) ID: 0.53 (mm) Dilution Factor: 20.0

Soil Extract Volume: _____(ml) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG		Q	
71-43-2	Benzene	75.3	DP	J	G01, M08
108-88-3	Toluene	168	DP	J	G01, M08
100-41-4	Ethylbenzene	527	D	J	G01
1330-20-7	Xylenes (total)	5440	DP	J	G01, M08

DATA VALIDATION COPY

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FORM I VOA

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

760311

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4004S

Matrix: (soil/water) SOIL Lab Sample ID: 9805292-19

Sample wt/vol: 30.1 (g/mL) G Lab File ID: 4T308

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: 20 decanted: (Y/N) N Date Extracted: 05/12/98

Concentrated Extract Volume: 1.00 (mL) Date Analyzed: 05/13/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
91-20-3	naphthalene	2700		U
91-58-7	2-chloronaphthalene	415	U	
208-96-8	acenaphthylene	415	U	UJ C05
83-32-9	acenaphthene	415	U	U
86-73-7	fluorene	415	U	
85-01-8	phenanthrene	415	U	
120-12-7	anthracene	415	U	
206-44-0	fluoranthene	415	U	
129-00-0	pyrene	415	U	
56-55-3	benzo(a)anthracene	415	U	
218-01-9	chrysene	415	U	
205-99-2	benzo(b)fluoranthene	415	U	
207-08-9	benzo(k)fluoranthene	415	U	
50-32-8	benzo(a)pyrene	415	U	
193-39-5	indeno(1,2,3-cd)pyrene	415	U	
53-70-3	dibenz(a,h)anthracene	415	U	
191-24-2	benzo(g,h,i)perylene	415	U	

FORM 1 Science Applications11-MAY-1998 SAMPLE NO.
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

760311

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4004S

Matrix: (soil/water) SOIL Lab Sample ID: 9805292-19

Sample wt/vol: 30.5 (g/mL) G Lab File ID: 5C20021

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: 20 decanted: (Y/N) N Date Extracted:05/13/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/20/98

Injection Volume: 1.0(uL) Dilution Factor: 50.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q
	Diesel Range Organics	173	B

= FØ1, FØ8

DATA VALIDATION COPY

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760311

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4004S

Matrix: (soil/water) SOIL Lab Sample ID: 9805292-19

Sample wt/vol: 10.0 (g/mL) G Lab File ID: 3I607

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: not dec. 20 Date Analyzed: 05/16/98

GC Column: J&W DB-624(FID) ID: 0.53 (mm) Dilution Factor: 50.0

Soil Extract Volume: 10000 (uL) Soil Aliquot Volume: 50 (uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
	----------Gasoline Range Organics	48000	D	=

DATA VALIDATION COPY

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760321

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4005S

Matrix: (soil/water) SOIL Lab Sample ID: 9805294-04

Sample wt/vol: 10.0 (g/mL) G Lab File ID: 2I4025

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: not dec. 14 Date Analyzed: 05/14/98

GC Column: J&W DB-624(PID) ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(ml) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
71-43-2	Benzene	69.2		J GØ1
108-88-3	Toluene	142 ~~310~~	~~E D~~	J GØ1
100-41-4	Ethylbenzene	240 ~~342~~	~~E D~~	J GØ1
1330-20-7	Xylenes (total)	409		J GØ1

DATA VALIDATION COPY

USE

J GØ1

FORM I VOA

V-33

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760321

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4005S

Matrix: (soil/water) SOIL Lab Sample ID: 9805294-04

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 2T320

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: 14 decanted: (Y/N) N Date Extracted: 05/12/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/13/98

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
91-20-3	naphthalene	143	J
91-58-7	2-chloronaphthalene	388	U
209-96-8	acenaphthylene	388	U
83-32-9	acenaphthene	388	U
86-73-7	fluorene	388	U
85-01-8	phenanthrene	388	U
120-12-7	anthracene	388	U
206-44-0	fluoranthene	388	U
129-00-0	pyrene	388	U
56-55-3	benzo(a)anthracene	388	U
218-01-9	chrysene	388	U
205-99-2	benzo(b)fluoranthene	388	U
207-08-9	benzo(k)fluoranthene	388	U
50-32-8	benzo(a)pyrene	388	U
193-39-5	indeno(1,2,3-cd)pyrene	388	U
53-70-3	dibenz(a,h)anthracene	388	U
191-24-2	benzo(g,h,i)perylene	388	U

J U

FORM 1 Science Applications11-MAY-1998 SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

760321

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4005S

Matrix: (soil/water) SOIL Lab Sample ID: 9805294-04

Sample wt/vol: 30.8 (g/mL) G Lab File ID: 5B50011

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: 14 decanted: (Y/N) N Date Extracted:05/13/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/14/98

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q	
	----------Diesel Range Organics	4.3		= F01, F08

DATA VALIDATION COPY

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VOLATILE ORGANICS ANALYSIS DATA SHEET

760321

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4005S

Matrix: (soil/water) SOIL Lab Sample ID: 9805294-04

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 3I705

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: not dec. 14 Date Analyzed: 05/17/98

GC Column: J&W DB-624(FID) ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
	----------Gasoline Range Organics_____	1780	_____	=

DATA VALIDATION
COPY

FORM I VOA

DATA VALIDATION COPY

Client: Science Applications International Corp.
P.O. Box 2502
800 Oak Ridge Turnpike
Oak Ridge, Tennessee 37831
Contact: Ms. Lorene Rollins
Project Description: CAP-Part A for UST Sites (Task Order No. 8)

cc: SAIC00598

Report Date: June 01, 1998

Sample ID	: 760321
Lab ID	: 9805294-04
Matrix	: Soil
Date Collected	: 05/08/98
Date Received	: 05/11/98
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
General Chemistry											
TOTAL ORGANIC CARBON (TOC)		18300 = F01, F08	24.1	100	mg/kg	1.0	LIB	05/27/98	1507	122938	1

M = Method	Method-Description
M 1	SW846 9060 modified

Notes:
The qualifiers in this report are defined as follows:
ND indicates that the analyte was not detected at a concentration greater than the detection limit.
J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
U indicates that the analyte was not detected at a concentration greater than the detection limit.
* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories standard operating procedures. Please direct any questions to your Project Manager, Valerie Davis at (803) 769-7391.

Reviewed By

Form 1: Inorganic Analyses Data Sheet

DATA VALIDATION COPY

SDG No.: FS4005S

Method Type: Total Metals

Sample ID: 9805294-04

Client ID: 760321

Contract: SAIC00598 Lab Code: GEL Case No.: SAS No.:

Matrix: SOIL Date Received: 5/11/98 Level: LOW

% Solids: 86.00

CAS No.	Analyte	Concentration	Units	C	Qual	M	DL	Instrument ID	Analytical Run
7439-92-1	Lead	5.9	mg/kg		U F01, F07	P	0.10	TJA61 Trace ICPAES	980517-1

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760411

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4004S

Matrix: (soil/water) SOIL Lab Sample ID: 9805292-10

Sample wt/vol: 10.0 (g/mL) G Lab File ID: 2I3023

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: not dec. 5 Date Analyzed: 05/13/98

GC Column: J&W DB-624(PID) ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(ml) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
71-43-2	Benzene	2.1	U
108-88-3	Toluene	32.7	
100-41-4	Ethylbenzene	2.1	U
1330-20-7	Xylenes (total)	6.3	U

CC = U

DATA VALIDATION COPY

FORM I VOA

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760411

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4004S

Matrix: (soil/water) SOIL

Sample wt/vol: 30.3 (g/mL) G

Lab Sample ID: 9805292-10

Level: (low/med) LOW

Lab File ID: 4T217

% Moisture: 5 decanted: (Y/N) N

Date Received: 05/11/98

Concentrated Extract Volume: 1.00(mL)

Date Extracted: 05/12/98

Injection Volume: 1.0(uL)

Date Analyzed: 05/13/98

GPC Cleanup: (Y/N) N pH: 7.0

Dilution Factor: 1.0

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
91-20-3	naphthalene	347	U
91-58-7	2-chloronaphthalene	347	U
208-96-8	acenaphthylene	347	U
83-32-9	acenaphthene	347	U
86-73-7	fluorene	347	U
85-01-8	phenanthrene	347	U
120-12-7	anthracene	347	U
206-44-0	fluoranthene	347	U
129-00-0	pyrene	347	U
56-55-3	benzo(a)anthracene	347	U
218-01-9	chrysene	347	U
205-99-2	benzo(b)fluoranthene	347	U
207-08-9	benzo(k)fluoranthene	347	U
50-32-8	benzo(a)pyrene	347	U
193-39-5	indeno(1,2,3-cd)pyrene	347	U
53-70-3	dibenz(a,h)anthracene	347	U
191-24-2	benzo(g,h,i)perylene	347	U

U
UJ C#S
U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

760411

ab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4004S

Matrix: (soil/water) SOIL Lab Sample ID: 9805292-10

Sample wt/vol: 30.5 (g/mL) G Lab File ID: 5B40046

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: 5 decanted: (Y/N) N Date Extracted:05/13/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/16/98

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q	
	Diesel Range Organics	2.6	B	U F01, F07

DATA VALIDATION COPY

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760411

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4004S

Matrix: (soil/water) SOIL Lab Sample ID: 9805292-10

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 3I4032

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: not dec. 5 Date Analyzed: 05/15/98

GC Column: J&W DB-624(FID) ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
	----------Gasoline Range Organics	1050	U	UJ G02

DATA VALIDATION COPY

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FORM I VOA

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760421

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4004S

Matrix: (soil/water) SOIL Lab Sample ID: 9805292-15

Sample wt/vol: 10.0 (g/mL) G Lab File ID: 2I3029

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: not dec. 22 Date Analyzed: 05/13/98

GC Column: J&W DB-624(PID) ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(ml) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
71-43-2	Benzene	2.6	U	U
108-88-3	Toluene	57.9		=
100-41-4	Ethylbenzene	2.6	U	U
1330-20-7	Xylenes (total)	7.7	U	U

DATA VALIDATION COPY

FORM I VOA

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760421

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4004S

Matrix: (soil/water) SOIL Lab Sample ID: 9805292-15

Sample wt/vol: 30.2 (g/mL) G Lab File ID: 4T304

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: 22 decanted: (Y/N) N Date Extracted: 05/12/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/13/98

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
91-20-3	naphthalene	424	U	U
91-58-7	2-chloronaphthalene	424	U	↓
208-96-8	acenaphthylene	424	U	UJ Cφ5
83-32-9	acenaphthene	424	U	U
86-73-7	fluorene	424	U	↓
85-01-8	phenanthrene	424	U	
120-12-7	anthracene	424	U	
206-44-0	fluoranthene	424	U	
129-00-0	pyrene	424	U	
56-55-3	benzo(a)anthracene	424	U	
218-01-9	chrysene	424	U	
205-99-2	benzo(b)fluoranthene	424	U	
207-08-9	benzo(k)fluoranthene	424	U	
50-32-8	benzo(a)pyrene	424	U	
193-39-5	indeno(1,2,3-cd)pyrene	424	U	
53-70-3	dibenz(a,h)anthracene	424	U	
191-24-2	benzo(g,h,i)perylene	424	U	

FORM I SV-1

OLM03.0

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

760421

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4004S

Matrix: (soil/water) SOIL Lab Sample ID: 9805292-15

Sample wt/vol: 30.3 (g/mL) G Lab File ID: 5B40047

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: 22 decanted: (Y/N) N Date Extracted: 05/13/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/16/98

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q
	----------Diesel Range Organics	1.5	JB

UJ FQ1, FQ6

DATA VALIDATION COPY

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760421

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4004S

Matrix: (soil/water) SOIL Lab Sample ID: 9805292-15

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 3I4033

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: not dec. 22 Date Analyzed: 05/15/98

GC Column: J&W DB-624(FID) ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
	----------Gasoline Range Organics	173	J	J

DATA VALIDATION COPY

FORM I VOA

Form 1: Inorganic Analyses Data Sheet

SDG No.: FS4004S

Method Type: Total Metals

Sample ID: 9805292-15

Client ID: 760421

Contract: SAIC00598 Lab Code: GEL Case No.: SAS No.:

Matrix: SOIL Date Received: 5/11/98 Level: LOW

% Solids: 78.00

CAS No.	Analyte	Concentration	Units	C	Qual	M	DL	Instrument ID	Analytical Run
7439-92-1	Lead	8.7	mg/kg	=		P	0.12	TJA61 Trace ICPAES	980517-1

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760511

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4006S

Matrix: (soil/water) SOIL Lab Sample ID: 9805295-13

Sample wt/vol: 10.0 (g/mL) G Lab File ID: 2I5033

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: not dec. 20 Date Analyzed: 05/16/98

GC Column: J&W DB-624(PID) ID: 0.53 (mm) Dilution Factor: 20.0

Soil Extract Volume:_____(ml) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
71-43-2	Benzene	50.0	U	U
108-88-3	Toluene	50.0	U	U
100-41-4	Ethylbenzene	85.5	P	J MØ8
1330-20-7	Xylenes (total)	374	P	J MØ8

DATA VALIDATION COPY

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FORM I VOA

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760511

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4006S

Matrix: (soil/water) SOIL Lab Sample ID: 9805295-13

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 2T537

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: 20 decanted: (Y/N) N Date Extracted: 05/14/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/16/98

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
91-20-3	naphthalene	370	J
91-58-7	2-chloronaphthalene	417	U
209-96-8	acenaphthylene	417	U
83-32-9	acenaphthene	417	U
86-73-7	fluorene	417	U
85-01-8	phenanthrene	417	U
120-12-7	anthracene	417	U
206-44-0	fluoranthene	417	U
129-00-0	pyrene	417	U
56-55-3	benzo(a)anthracene	417	U
218-01-9	chrysene	417	U
205-99-2	benzo(b)fluoranthene	417	U
207-08-9	benzo(k)fluoranthene	417	U
50-32-8	benzo(a)pyrene	417	U
193-39-5	indeno(1,2,3-cd)pyrene	417	U
53-70-3	dibenz(a,h)anthracene	417	U
191-24-2	benzo(g,h,i)perylene	417	U

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FORM I SV-1

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FORM 1 Science Applications11-MAY-1998 SAMPLE NO.
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

760511

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4006S

Matrix: (soil/water) SOIL Lab Sample ID: 9805295-13

Sample wt/vol: 30.1 (g/mL) G Lab File ID: 5C60017

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: 20 decanted: (Y/N) N Date Extracted:05/19/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/23/98

Injection Volume: 1.0(uL) Dilution Factor: 3.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q
	----------Diesel Range Organics_____	15.4	B

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DATA VALIDATION
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VOLATILE ORGANICS ANALYSIS DATA SHEET

760511

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4006S

Matrix: (soil/water) SOIL Lab Sample ID: 9805295-13

Sample wt/vol: 10.0 (g/mL) G Lab File ID: 3J1010

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: not dec. 20 Date Analyzed: 05/18/98

GC Column: J&W DB-624(FID) ID: 0.53 (mm) Dilution Factor: 20.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
	----------Gasoline Range Organics_____	53700	_____	=

DATA VALIDATION
COPY

SDG No.: FS4006S

Method Type: Total Metals

DATA VALIDATION COPY

Sample ID: 9805295-13

Client ID: 760511

Contract: SAIC00598 Lab Code: GEL Case No.: SAS No.:

Matrix: SOIL Date Received: 5/11/98 Level: LOW

% Solids: 80.00

CAS No.	Analyte	Concentration	Units	C	Qual	M	DL	Instrument ID	Analytical Run
7439-92-1	Lead	6.1	mg/kg	J	Pϕ2	P	0.12	TJA61 Trace ICPAES	980514a-1

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760521

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4009S

Matrix: (soil/water) SOIL Lab Sample ID: 9805301-08

Sample wt/vol: 10.0 (g/mL) G Lab File ID: 2J1027

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: not dec. 19 Date Analyzed: 05/18/98

GC Column: J&W DB-624(PID) ID: 0.53 (mm) Dilution Factor: 2.0

Soil Extract Volume:_____(ml) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
71-43-2	Benzene	31.3	P	J GΦI, MΦS
108-88-3	Toluene	32.6		J GΦI
100-41-4	Ethylbenzene	26.5		↓ ↓
1330-20-7	Xylenes (total)	360		

use

FORM I VOA

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COPY

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
760521

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4009S

Matrix: (soil/water) SOIL Lab Sample ID: 9805301-08

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 2U118

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: 19 decanted: (Y/N) N Date Extracted: 05/14/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/18/98

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
91-20-3	naphthalene	50.9	J
91-58-7	2-chloronaphthalene	412	U
209-96-8	acenaphthylene	412	U
83-32-9	acenaphthene	412	U
86-73-7	fluorene	412	U
85-01-8	phenanthrene	412	U
120-12-7	anthracene	412	U
206-44-0	fluoranthene	412	U
129-00-0	pyrene	412	U
56-55-3	benzo(a)anthracene	412	U
218-01-9	chrysene	412	U
205-99-2	benzo(b)fluoranthene	412	U
207-08-9	benzo(k)fluoranthene	412	U
50-32-8	benzo(a)pyrene	412	U
193-39-5	indeno(1,2,3-cd)pyrene	412	U
53-70-3	dibenz(a,h)anthracene	412	U
191-24-2	benzo(g,h,i)perylene	412	U

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FORM 1 Science Applications11-MAY-1998 SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

760521

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4009S

Matrix: (soil/water) SOIL Lab Sample ID: 9805301-08

Sample wt/vol: 30.7 (g/mL) G Lab File ID: 5C30024

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: 19 decanted: (Y/N) N Date Extracted:05/14/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/20/98

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q
	Diesel Range Organics	3.2	B

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760521

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4009S

Matrix: (soil/water) SOIL

Lab Sample ID: 9805301-08

Sample wt/vol: 5.0 (g/mL) G

Lab File ID: 3J1056

Level: (low/med) LOW

Date Received: 05/11/98

% Moisture: not dec. 19

Date Analyzed: 05/19/98

GC Column: J&W DB-624(FID) ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume:_____(uL)

Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
	----------Gasoline Range Organics	1720	J

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FORM I VOA

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760531

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4009S

Matrix: (soil/water) SOIL Lab Sample ID: 9805301-04

Sample wt/vol: 10.0 (g/mL) G Lab File ID: 2J1022

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: not dec. 23 Date Analyzed: 05/18/98

GC Column: J&W DB-624(PID) ID: 0.53 (mm) Dilution Factor: 2.0

Soil Extract Volume:_____(ml) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
71-43-2	Benzene	12.7	
108-88-3	Toluene	38.3	
100-41-4	Ethylbenzene	14.1	
1330-20-7	Xylenes (total)	101	

FORM I VOA

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760531

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4009S

Matrix: (soil/water) SOIL Lab Sample ID: 9805301-04

Sample wt/vol: 30.3 (g/mL) G Lab File ID: 2U114

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: 23 decanted: (Y/N) N Date Extracted: 05/14/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/18/98

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
91-20-3	naphthalene	429	U
91-58-7	2-chloronaphthalene	429	U
209-96-8	acenaphthylene	429	U
83-32-9	acenaphthene	429	U
86-73-7	fluorene	429	U
85-01-8	phenanthrene	429	U
120-12-7	anthracene	429	U
206-44-0	fluoranthene	429	U
129-00-0	pyrene	429	U
56-55-3	benzo(a)anthracene	429	U
218-01-9	chrysene	429	U
205-99-2	benzo(b)fluoranthene	429	U
207-08-9	benzo(k)fluoranthene	429	U
50-32-8	benzo(a)pyrene	429	U
193-39-5	indeno(1,2,3-cd)pyrene	429	U
53-70-3	dibenz(a,h)anthracene	429	U
191-24-2	benzo(g,h,i)perylene	429	U

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FORM 1 Science Applications11-MAY-1998 SAMPLE NO.
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

760531

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4009S

Matrix: (soil/water) SOIL Lab Sample ID: 9805301-04

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 5C30018

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: 23 decanted: (Y/N) N Date Extracted:05/14/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/19/98

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q
	----------Diesel Range Organics_____	3.4	B

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760531

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4009S

Matrix: (soil/water) SOIL Lab Sample ID: 9805301-04

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 3J3013

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: not dec. 23 Date Analyzed: 05/20/98

GC Column: J&W DB-624(FID) ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
	Gasoline Range Organics	264	J

J

FORM I VOA

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760541

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4009S

Matrix: (soil/water) SOIL Lab Sample ID: 9805301-06

Sample wt/vol: 10.0 (g/mL) G Lab File ID: 2J1038

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: not dec. 16 Date Analyzed: 05/19/98

GC Column: J&W DB-624(PID) ID: 0.53 (mm) Dilution Factor: 2.0

Soil Extract Volume: _____(ml) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
71-43-2	Benzene	13.8	
108-88-3	Toluene	15.0	
100-41-4	Ethylbenzene	15.5	
1330-20-7	Xylenes (total)	29.3	P

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FORM I VOA

DATA VALIDATION COPY

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760541

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4009S

Matrix: (soil/water) SOIL Lab Sample ID: 9805301-06

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 2U116

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: 16 decanted: (Y/N) N Date Extracted: 05/14/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/18/98

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
91-20-3	naphthalene	397	U
91-58-7	2-chloronaphthalene	397	U
209-96-8	acenaphthylene	397	U
83-32-9	acenaphthene	397	U
86-73-7	fluorene	397	U
85-01-8	phenanthrene	397	U
120-12-7	anthracene	397	U
206-44-0	fluoranthene	397	U
129-00-0	pyrene	397	U
56-55-3	benzo(a)anthracene	397	U
218-01-9	chrysene	397	U
205-99-2	benzo(b)fluoranthene	397	U
207-08-9	benzo(k)fluoranthene	397	U
50-32-8	benzo(a)pyrene	397	U
193-39-5	indeno(1,2,3-cd)pyrene	397	U
53-70-3	dibenz(a,h)anthracene	397	U
191-24-2	benzo(g,h,i)perylene	397	U

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FORM 1 Science Applications11-MAY-1998 SAMPLE NO.
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

760541

ab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4009S

Matrix: (soil/water) SOIL Lab Sample ID: 9805301-06

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 5C30022

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: 16 decanted: (Y/N) N Date Extracted:05/14/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/20/98

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q
	Diesel Range Organics	2.7	B

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EPA VALIDATION COPY

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760541

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4009S

Matrix: (soil/water) SOIL Lab Sample ID: 9805301-06

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 3J1054

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: not dec. 16 Date Analyzed: 05/19/98

GC Column: J&W DB-624(FID) ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
	----------Gasoline Range Organics	91.5	J	J

FORM I VOA

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760551

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4009S

Matrix: (soil/water) SOIL Lab Sample ID: 9805301-13

Sample wt/vol: 10.0 (g/mL) G Lab File ID: 2J1032

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: not dec. 22 Date Analyzed: 05/19/98

GC Column: J&W DB-624(PID) ID: 0.53 (mm) Dilution Factor: 2.0

Soil Extract Volume:_____(ml) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
71-43-2	Benzene	5.1	U	U = 5.1
108-88-3	Toluene	124		
100-41-4	Ethylbenzene	10.5		
1330-20-7	Xylenes (total)	4.1	J	

FORM I VOA

DATA VALIDATION COPY

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760551

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4009S

Matrix: (soil/water) SOIL Lab Sample ID: 9805301-13

Sample wt/vol: 30.2 (g/mL) G Lab File ID: 2U204

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: 22 decanted: (Y/N) N Date Extracted: 05/14/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/19/98

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
91-20-3	naphthalene	424	U
91-58-7	2-chloronaphthalene	424	U
209-96-8	acenaphthylene	424	U
83-32-9	acenaphthene	424	U
86-73-7	fluorene	424	U
85-01-8	phenanthrene	424	U
120-12-7	anthracene	424	U
206-44-0	fluoranthene	424	U
129-00-0	pyrene	424	U
56-55-3	benzo(a)anthracene	424	U
218-01-9	chrysene	424	U
205-99-2	benzo(b)fluoranthene	424	U
207-08-9	benzo(k)fluoranthene	424	U
50-32-8	benzo(a)pyrene	424	U
193-39-5	indeno(1,2,3-cd)pyrene	424	U
53-70-3	dibenz(a,h)anthracene	424	U
191-24-2	benzo(g,h,i)perylene	424	U

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FORM 1 Science Applications11-MAY-1998 SAMPLE NO.
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

760551

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4009S

Matrix: (soil/water) SOIL Lab Sample ID: 9805301-13

Sample wt/vol: 30.2 (g/mL) G Lab File ID: 5C6006

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: 22 decanted: (Y/N) N Date Extracted:05/14/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/22/98

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q
	----------Diesel Range Organics	1.3	JB

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760551

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4009S

Matrix: (soil/water) SOIL Lab Sample ID: 9805301-13

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 3J1062

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: not dec. 22 Date Analyzed: 05/20/98

GC Column: J&W DB-624(FID) ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
	Gasoline Range Organics	1280	U	UJ C45

FORM I VOA

DATA ... COPY

Form 1: Inorganic Analyses Data Sheet

SDG No.: FS4009S

Method Type: Total Metals

Sample ID: 9805301-13

Client ID: 760551

Contract: SAIC00598 Lab Code: GEL Case No.: SAS No.:

Matrix: SOIL Date Received: 5/11/98 Level: LOW

% Solids: 78.00

CAS No.	Analyte	Concentration	Units	C	Qual	M	DL	Instrument ID	Analytical Run	Qual.
7439-92-1	Lead	4.7	mg/kg			P	0.12	TJA61 Trace ICPAES	980517-1	=

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760561

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4009S

Matrix: (soil/water) SOIL Lab Sample ID: 9805301-16

Sample wt/vol: 10.0 (g/mL) G Lab File ID: 2J1035

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: not dec. 18 Date Analyzed: 05/19/98

GC Column: J&W DB-624(PID) ID: 0.53 (mm) Dilution Factor: 2.0

Soil Extract Volume:_____(ml) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
71-43-2	Benzene	4.9	U	UJ K01
108-88-3	Toluene	72.1		J K01
100-41-4	Ethylbenzene	9.6		J K01
1330-20-7	Xylenes (total)	3.9	J	J K01

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FORM I VOA

DATA VALIDATED COPY

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760561

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4009S

Matrix: (soil/water) SOIL Lab Sample ID: 9805301-16

Sample wt/vol: 30.6 (g/mL) G Lab File ID: 2U207

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: 18 decanted: (Y/N) N Date Extracted: 05/14/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/19/98

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
91-20-3	naphthalene	398	U
91-58-7	2-chloronaphthalene	398	U
209-96-8	acenaphthylene	398	U
83-32-9	acenaphthene	398	U
86-73-7	fluorene	398	U
85-01-8	phenanthrene	398	U
120-12-7	anthracene	398	U
206-44-0	fluoranthene	398	U
129-00-0	pyrene	398	U
56-55-3	benzo(a)anthracene	398	U
218-01-9	chrysene	398	U
205-99-2	benzo(b)fluoranthene	398	U
207-08-9	benzo(k)fluoranthene	398	U
50-32-8	benzo(a)pyrene	398	U
193-39-5	indeno(1,2,3-cd)pyrene	398	U
53-70-3	dibenz(a,h)anthracene	398	U
191-24-2	benzo(g,h,i)perylene	398	U

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FORM 1 Science Applications11-MAY-1998 SAMPLE NO.
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

760561

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4009S

Matrix: (soil/water) SOIL Lab Sample ID: 9805301-16

Sample wt/vol: 30.1 (g/mL) G Lab File ID: 5C6009

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: 18 decanted: (Y/N) N Date Extracted:05/14/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/22/98

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q	
	----------Diesel Range Organics	3.4	B	U F01, F07

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760561

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4009S

Matrix: (soil/water) SOIL Lab Sample ID: 9805301-16

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 3J3018

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: not dec. 18 Date Analyzed: 05/20/98

GC Column: J&W DB-624(FID) ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
	Gasoline Range Organics	160	J	J

FORM I VOA

DATA VALIDATION COPY

Form 1: Inorganic Analyses Data Sheet

SDG No.: FS4009S

Method Type: Total Metals

Sample ID: 9805301-16

Client ID: 760561

Contract: SAIC00598 Lab Code: GEL Case No.: SAS No.:

Matrix: SOIL Date Received: 5/11/98 Level: LOW

% Solids: 82.00

CAS No.	Analyte	Concentration	Units	C	Qual	M	DL	Instrument ID	Analytical Run	Qual.
7439-92-1	Lead	3.5	mg/kg			P	0.11	TJA61 Trace ICPAES	980517-1	=

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

RLM 7/16/98

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760571

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4009S

Matrix: (soil/water) SOIL Lab Sample ID: 9805301-07

Sample wt/vol: 10.0 (g/mL) G Lab File ID: 2J1039

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: not dec. 14 Date Analyzed: 05/19/98

GC Column: J&W DB-624(PID) ID: 0.53 (mm) Dilution Factor: 2.0

Soil Extract Volume:_____(ml) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
71-43-2	Benzene	4.6	U
108-88-3	Toluene	4.6	U
100-41-4	Ethylbenzene	4.6	U
1330-20-7	Xylenes (total)	14.0	U

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FORM I VOA

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760571

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4009S

Matrix: (soil/water) SOIL Lab Sample ID: 9805301-07

Sample wt/vol: 30.4 (g/mL) G Lab File ID: 2U117

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: 14 decanted: (Y/N) N Date Extracted: 05/14/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/18/98

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
91-20-3	naphthalene	382	U
91-58-7	2-chloronaphthalene	382	U
209-96-8	acenaphthylene	382	U
83-32-9	acenaphthene	382	U
86-73-7	fluorene	382	U
85-01-8	phenanthrene	382	U
120-12-7	anthracene	382	U
206-44-0	fluoranthene	382	U
129-00-0	pyrene	382	U
56-55-3	benzo(a)anthracene	382	U
218-01-9	chrysene	382	U
205-99-2	benzo(b)fluoranthene	382	U
207-08-9	benzo(k)fluoranthene	382	U
50-32-8	benzo(a)pyrene	382	U
193-39-5	indeno(1,2,3-cd)pyrene	382	U
53-70-3	dibenz(a,h)anthracene	382	U
191-24-2	benzo(g,h,i)perylene	382	U

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FORM I Science Applications11-MAY-1998 SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

760571

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4009S

Matrix: (soil/water) SOIL Lab Sample ID: 9805301-07

Sample wt/vol: 30.2 (g/mL) G Lab File ID: 5C30023

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: 14 decanted: (Y/N) N Date Extracted:05/14/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/20/98

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q
	----------Diesel Range Organics	1.1	JB

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DATA VALIDATION COPY

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760571

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4009S

Matrix: (soil/water) SOIL Lab Sample ID: 9805301-07

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 3J1055

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: not dec. 14 Date Analyzed: 05/19/98

GC Column: J&W DB-624(FID) ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
	----------Gasoline Range Organics	1160	U

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FORM I VOA

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760581

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4006S

Matrix: (soil/water) SOIL Lab Sample ID: 9805295-12

Sample wt/vol: 10.0 (g/mL) G Lab File ID: 2I4035

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: not dec. 26 Date Analyzed: 05/15/98

GC Column: J&W DB-624(PID) ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(ml) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
71-43-2	Benzene	2.7	U
108-88-3	Toluene	2.7	U
100-41-4	Ethylbenzene	2.7	U
1330-20-7	Xylenes (total)	8.1	U

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DATA VALIDATION COPY

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FORM I VOA

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760581

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4006S

Matrix: (soil/water) SOIL

Sample wt/vol: 30.3 (g/mL) G

Lab Sample ID: 9805295-12

Level: (low/med) LOW

Lab File ID: 2T536

% Moisture: 26 decanted: (Y/N) N

Date Received: 05/11/98

Concentrated Extract Volume: 1.00(mL)

Date Extracted:05/14/98

Injection Volume: 1.0(uL)

Date Analyzed: 05/16/98

GPC Cleanup: (Y/N) N pH: 7.0

Dilution Factor: 1.0

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CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
91-20-3	naphthalene	446	U
91-58-7	2-chloronaphthalene	446	U
209-96-8	acenaphthylene	446	U
83-32-9	acenaphthene	446	U
86-73-7	fluorene	446	U
85-01-8	phenanthrene	446	U
120-12-7	anthracene	446	U
206-44-0	fluoranthene	446	U
129-00-0	pyrene	446	U
56-55-3	benzo(a)anthracene	446	U
218-01-9	chrysene	446	U
205-99-2	benzo(b)fluoranthene	446	U
207-08-9	benzo(k)fluoranthene	446	U
50-32-8	benzo(a)pyrene	446	U
193-39-5	indeno(1,2,3-cd)pyrene	446	U
53-70-3	dibenz(a,h)anthracene	446	U
191-24-2	benzo(g,h,i)perylene	446	U

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FORM 1 Science Applications11-MAY-1998 SAMPLE NO.
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

760581

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4006S

Matrix: (soil/water) SOIL Lab Sample ID: 9805295-12

Sample wt/vol: 30.6 (g/mL) G Lab File ID: 5C60016

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: 26 decanted: (Y/N) N Date Extracted:05/19/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/23/98

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q
	Diesel Range Organics	1.6	JB

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DATA VALIDATION
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760581

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4006S

Matrix: (soil/water) SOIL Lab Sample ID: 9805295-12

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 3I7019

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: not dec. 26 Date Analyzed: 05/17/98

GC Column: J&W DB-624(FID) ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
	----------Gasoline Range Organics	1350	U	UJ G02

DATA VALIDATION COPY

FORM I VOA

Form I: Inorganic Analyses Data Sheet

DATA VALIDATION COPY

SDG No.: FS4006S

Method Type: Total Metals

Sample ID: 9805295-12

Client ID: 760581

Contract: SAIC00598 Lab Code: GEL Case No.: SAS No.:

Matrix: SOIL Date Received: 5/11/98 Level: LOW

% Solids: 74.00

CAS No.	Analyte	Concentration	Units	C	Qual	M	DL	Instrument ID	Analytical Run
7439-92-1	Lead	7.1	mg/kg	J	P Φ2	P	0.13	TJA61 Trace ICPAES	980514a-1

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760611

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4006S

Matrix: (soil/water) SOIL Lab Sample ID: 9805295-19

Sample wt/vol: 10.0 (g/mL) G Lab File ID: 2I6011

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: not dec. 8 Date Analyzed: 05/16/98

GC Column: J&W DB-624(PID) ID: 0.53 (mm) Dilution Factor: 2.0

Soil Extract Volume:_____(ml) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
71-43-2	Benzene	4.3	U	U
108-88-3	Toluene	4.8	P	J
100-41-4	Ethylbenzene	4.3	U	U
1330-20-7	Xylenes (total)	13.0	U	U

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DATA VALIDATION COPY

FORM I VOA

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760611

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4006S

Matrix: (soil/water) SOIL Lab Sample ID: 9805295-19

Sample wt/vol: 30.7 (g/mL) G Lab File ID: 2T543

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: 8 decanted: (Y/N) N Date Extracted: 05/14/98

Concentrated Extract Volume: 1.00 (mL) Date Analyzed: 05/16/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	Q
91-20-3	naphthalene	22.1	J	J
91-58-7	2-chloronaphthalene	354	U	U
209-96-8	acenaphthylene	354	U	
83-32-9	acenaphthene	354	U	
86-73-7	fluorene	354	U	
85-01-8	phenanthrene	354	U	
120-12-7	anthracene	354	U	
206-44-0	fluoranthene	354	U	
129-00-0	pyrene	354	U	
56-55-3	benzo(a)anthracene	354	U	
218-01-9	chrysene	354	U	
205-99-2	benzo(b)fluoranthene	354	U	
207-08-9	benzo(k)fluoranthene	354	U	
50-32-8	benzo(a)pyrene	354	U	
193-39-5	indeno(1,2,3-cd)pyrene	354	U	
53-70-3	dibenz(a,h)anthracene	354	U	
191-24-2	benzo(g,h,i)perylene	354	U	

FORM 1 Science Applications11-MAY-1998 SAMPLE NO.
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

760611

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4006S

Matrix: (soil/water) SOIL Lab Sample ID: 9805295-19

Sample wt/vol: 30.5 (g/mL) G Lab File ID: 5C60025

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: 8 decanted: (Y/N) N Date Extracted:05/19/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/23/98

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q	
----------Diesel Range Organics_____	2.9	B	U F01, F07

DATA VALIDATION
COPY

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760611

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4006S

Matrix: (soil/water) SOIL Lab Sample ID: 9805295-19

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 3I7027

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: not dec. 8 Date Analyzed: 05/18/98

GC Column: J&W DB-624(FID) ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
	----------Gasoline Range Organics	524	J	J F01, F08

DATA VALIDATION COPY

FORM I VOA

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760621

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4006S

Matrix: (soil/water) SOIL Lab Sample ID: 9805295-14

Sample wt/vol: 10.0 (g/mL) G Lab File ID: 2I5020

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: not dec. 7 Date Analyzed: 05/15/98

GC Column: J&W DB-624(PID) ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(ml) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q		
71-43-2	Benzene	3.7	P	J	GΦI, KΦI, MΦ8
108-88-3	Toluene	160	P	J	GΦI, KΦI, MΦ8
100-41-4	Ethylbenzene	118		J	GΦI, KΦI
1330-20-7	Xylenes (total)	67.1	P	J	GΦI, KΦI, MΦ8

DATA VALIDATION
COPY

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FORM I VOA

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760621

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4006S

Matrix: (soil/water) SOIL Lab Sample ID: 9805295-14

Sample wt/vol: 30.7 (g/mL) G Lab File ID: 2T715

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: 7 decanted: (Y/N) N Date Extracted: 05/14/98

Concentrated Extract Volume: 5.00 (mL) Date Analyzed: 05/17/98

Injection Volume: 1.0 (uL) Dilution Factor: 4.0

GPC Cleanup: (Y/N) N pH: 7.0

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
91-20-3	naphthalene	7000	U
91-58-7	2-chloronaphthalene	7000	U
209-96-8	acenaphthylene	421	J
83-32-9	acenaphthene	7000	U
86-73-7	fluorene	1160	J
85-01-8	phenanthrene	7030	
120-12-7	anthracene	522	J
206-44-0	fluoranthene	4320	J
129-00-0	pyrene	6330	J
56-55-3	benzo(a)anthracene	2400	J
218-01-9	chrysene	2650	J
205-99-2	benzo(b)fluoranthene	1930	J
207-08-9	benzo(k)fluoranthene	932	J
50-32-8	benzo(a)pyrene	1390	J
193-39-5	indeno(1,2,3-cd)pyrene	7000	U
53-70-3	dibenz(a,h)anthracene	7000	U
191-24-2	benzo(g,h,i)perylene	1180	J

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FORM I SV-1

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760621RE

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4006S

Matrix: (soil/water) SOIL Lab Sample ID: 9805295-14

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 3J1017

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: not dec. 7 Date Analyzed: 05/19/98

GC Column: J&W DB-624(FID) ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
	----------Gasoline Range Organics	1410		=

DATA VALIDATION
COPY

FORM I VOA

FORM 1 Science Applications11-MAY-1998 SAMPLE NO.
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

760621

Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4006S

Matrix: (soil/water) SOIL Lab Sample ID: 9805295-14

Sample wt/vol: 30.4 (g/mL) G Lab File ID: 5D3003

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: 7 decanted: (Y/N) N Date Extracted:05/19/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/27/98

Injection Volume: 1.0(uL) Dilution Factor: 15.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q	
	----------Diesel Range Organics	59.7	B	= FØ1, FØ8

DATA VALIDATION
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Form 1: Inorganic Analyses Data Sheet

SDG No.: FS4006S

Method Type: Total Metals

Sample ID: 9805295-14

Client ID: 760621

Contract: SAIC00598 Lab Code: GEL Case No.: SAS No.:

Matrix: SOIL Date Received: 5/11/98 Level: LOW

% Solids: 93.00

CAS No.	Analyte	Concentration	Units	C	Qual	M	DL	Instrument ID	Analytical Run
7439-92-1	Lead	4.5	mg/kg		J P W2	P	0.10	TJA61 Trace ICPAES	980514a-1

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

DATA VALIDATION COPY

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760711

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4007S

Matrix: (soil/water) SOIL Lab Sample ID: 9805298-01

Sample wt/vol: 10.0 (g/mL) G Lab File ID: 2I7021

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: not dec. 14 Date Analyzed: 05/17/98

GC Column: J&W DB-624(PID) ID: 0.53 (mm) Dilution Factor: 2.0

Soil Extract Volume:_____(ml) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
71-43-2	Benzene	1.2	U
108-88-3	Toluene	31.6	
100-41-4	Ethylbenzene	14.4	P
1330-20-7	Xylenes (total)	57.7	

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DATA VALIDATION COPY

FORM I VOA

V-93

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760711

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4007S

Matrix: (soil/water) SOIL Lab Sample ID: 9805298-01

Sample wt/vol: 30.1 (g/mL) G Lab File ID: 1U307

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: 14 decanted: (Y/N) N Date Extracted: 05/15/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/20/98

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
91-20-3	naphthalene	386	U
91-58-7	2-chloronaphthalene	386	U
208-96-8	acenaphthylene	386	U
83-32-9	acenaphthene	386	U
86-73-7	fluorene	386	U
85-01-8	phenanthrene	386	U
120-12-7	anthracene	386	U
206-44-0	fluoranthene	386	U
129-00-0	pyrene	386	U
56-55-3	benzo(a)anthracene	386	U
218-01-9	chrysene	386	U
205-99-2	benzo(b)fluoranthene	386	U
207-08-9	benzo(k)fluoranthene	386	U
50-32-8	benzo(a)pyrene	386	U
193-39-5	indeno(1,2,3-cd)pyrene	386	U
53-70-3	dibenz(a,h)anthracene	386	U
191-24-2	benzo(g,h,i)perylene	386	U

U

FORM 1 Science Applications11-MAY-1998 SAMPLE NO.
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

760711

Lo Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4007S

Matrix: (soil/water) SOIL Lab Sample ID: 9805298-01

Sample wt/vol: 30.7 (g/mL) G Lab File ID: 5C50012

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: 14 decanted: (Y/N) N Date Extracted:05/18/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/23/98

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q
	----------Diesel Range Organics	0.58	JB

UJ F01, F06

DATA VALIDATION COPY

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760711

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4007S

Matrix: (soil/water) SOIL Lab Sample ID: 9805298-01

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 3J1021

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: not dec. 14 Date Analyzed: 05/19/98

GC Column: J&W DB-624(FID) ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
	----------Gasoline Range Organics_____	313	J	J C05

DATA VALIDATION
COPY

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760721

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4007S

Matrix: (soil/water) SOIL Lab Sample ID: 9805298-03

Sample wt/vol: 10.0 (g/mL) G Lab File ID: 2I708

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: not dec. 9 Date Analyzed: 05/17/98

GC Column: J&W DB-624(PID) ID: 0.53 (mm) Dilution Factor: 2.0

Soil Extract Volume:_____(ml) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
71-43-2	Benzene	1.1	U
108-88-3	Toluene	19.3	
100-41-4	Ethylbenzene	17.5	P
1330-20-7	Xylenes (total)	103	

U
U
M08

DATA VALIDATION COPY

FORM I VOA

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760721

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4007S

Matrix: (soil/water) SOIL Lab Sample ID: 9805298-03

Sample wt/vol: 30.1 (g/mL) G Lab File ID: 1U309

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: 9 decanted: (Y/N) N Date Extracted: 05/15/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/20/98

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
91-20-3	naphthalene	365	U
91-58-7	2-chloronaphthalene	365	U
208-96-8	acenaphthylene	365	U
83-32-9	acenaphthene	365	U
86-73-7	fluorene	365	U
85-01-8	phenanthrene	365	U
120-12-7	anthracene	365	U
206-44-0	fluoranthene	365	U
129-00-0	pyrene	365	U
56-55-3	benzo(a)anthracene	365	U
218-01-9	chrysene	365	U
205-99-2	benzo(b)fluoranthene	365	U
207-08-9	benzo(k)fluoranthene	365	U
50-32-8	benzo(a)pyrene	365	U
193-39-5	indeno(1,2,3-cd)pyrene	365	U
53-70-3	dibenz(a,h)anthracene	365	U
191-24-2	benzo(g,h,i)perylene	365	U

U

FORM 1 Science Applications11-MAY-1998 SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

760721

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4007S

Matrix: (soil/water) SOIL Lab Sample ID: 9805298-03

Sample wt/vol: 30.5 (g/mL) G Lab File ID: 5C50016

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: 9 decanted: (Y/N) N Date Extracted:05/18/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/23/98

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q
	----------Diesel Range Organics	1.2	JB

UJ F01, F06

DATA VALIDATION COPY

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760721

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4007S

Matrix: (soil/water) SOIL Lab Sample ID: 9805298-03

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 3J1023

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: not dec. 9 Date Analyzed: 05/19/98

GC Column: J&W DB-624(FID) ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
	----------Gasoline Range Organics	1630		J C05

DATA VALIDATION COPY

FORM I VOA

F960075

Client: Science Applications International Corp.
P.O. Box 2502
800 Oak Ridge Turnpike
Oak Ridge, Tennessee 37831
Contact: Ms. Lorene Rollins
Project Description: CAP-Part A for UST Sites (Task Order No. 8)

DATA VALIDATION COPY

cc: SAIC00598

Report Date: June 01, 1998

Sample ID	: 760721
Lab ID	: 9805298-03
Matrix	: Soil
Date Collected	: 05/09/98
Date Received	: 05/11/98
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	M
General Chemistry												
TOTAL ORGANIC CARBON (TOC)		1700	= F01, F08	24.1	100	mg/kg	1.0	LIB	05/27/98	1535	122938	1

M = Method	Method-Description
M 1	SW846 9060 modified

Notes:
The qualifiers in this report are defined as follows:
ND indicates that the analyte was not detected at a concentration greater than the detection limit.
J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
U indicates that the analyte was not detected at a concentration greater than the detection limit.
* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories standard operating procedures. Please direct any questions to your Project Manager, Valerie Davis at (803) 769-7391.

Reviewed By

9805298-03

Form 1: Inorganic Analyses Data Sheet

DATA VALIDATION COPY

SDG No.: FS4007S

Method Type: Total Metals

Sample ID: 9805298-03

Client ID: 760721

Contract: SAIC00598 Lab Code: GEL Case No.: SAS No.:

Matrix: SOIL Date Received: 5/11/98 Level: LOW

% Solids: 91.00

CAS No.	Analyte	Concentration	Units	C	Qual	M	DL	Instrument ID	Analytical Run
7439-92-1	Lead	1.5	mg/kg	J	P02	P	0.10	TJA61 Trace ICPAES	980514a-1

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760811

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4005S

Matrix: (soil/water) SOIL Lab Sample ID: 9805294-06

Sample wt/vol: 10.0 (g/mL) G Lab File ID: 2I605

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: not dec. 9 Date Analyzed: 05/16/98

GC Column: J&W DB-624(PID) ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(ml) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
71-43-2	Benzene	0.55	U	U
108-88-3	Toluene	2.5		=
100-41-4	Ethylbenzene	2.2	U	U
1330-20-7	Xylenes (total)	6.6	U	U

DATA VALIDATION COPY

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760811

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4005S

Matrix: (soil/water) SOIL Lab Sample ID: 9805294-06

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 2T403

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: 9 decanted: (Y/N) N Date Extracted: 05/12/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/14/98

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
91-20-3	naphthalene	366	U
91-58-7	2-chloronaphthalene	366	U
209-96-8	acenaphthylene	366	U
83-32-9	acenaphthene	366	U
86-73-7	fluorene	366	U
85-01-8	phenanthrene	366	U
120-12-7	anthracene	366	U
206-44-0	fluoranthene	366	U
129-00-0	pyrene	366	U
56-55-3	benzo(a)anthracene	366	U
218-01-9	chrysene	366	U
205-99-2	benzo(b)fluoranthene	366	U
207-08-9	benzo(k)fluoranthene	366	U
50-32-8	benzo(a)pyrene	366	U
193-39-5	indeno(1,2,3-cd)pyrene	366	U
53-70-3	dibenz(a,h)anthracene	366	U
191-24-2	benzo(g,h,i)perylene	366	U

U

FORM 1 Science Applications11-MAY-1998 SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

760811

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4005S

Matrix: (soil/water) SOIL Lab Sample ID: 9805294-06

Sample wt/vol: 30.2 (g/mL) G Lab File ID: 5B50015

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: 9 decanted: (Y/N) N Date Extracted:05/13/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/14/98

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q	
	Diesel Range Organics	1.6	J	UJ F01, F06

DATA VALIDATION COPY

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760811

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4005S

Matrix: (soil/water) SOIL Lab Sample ID: 9805294-06

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 3I7016

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: not dec. 9 Date Analyzed: 05/17/98

GC Column: J&W DB-624(FID) ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
	----------Gasoline Range Organics	1100	U	U

DATA VALIDATION COPY

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760821

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4005S

Matrix: (soil/water) SOIL Lab Sample ID: 9805294-05

Sample wt/vol: 10.0 (g/mL) G Lab File ID: 2I5021

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: not dec. 5 Date Analyzed: 05/15/98

GC Column: J&W DB-624(PID) ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(ml) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
71-43-2	Benzene	1.7	J	J
108-88-3	Toluene	3.5		
100-41-4	Ethylbenzene	4.4	P	J MΦ8
1330-20-7	Xylenes (total)	6.5	P	J MΦ8

DATA VALIDATION COPY

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760821

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4005S

Matrix: (soil/water) SOIL Lab Sample ID: 9805294-05

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 2T321

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: 5 decanted: (Y/N) N Date Extracted: 05/12/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/13/98

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
91-20-3	naphthalene	312	J
91-58-7	2-chloronaphthalene	351	U
209-96-8	acenaphthylene	351	U
83-32-9	acenaphthene	351	U
86-73-7	fluorene	351	U
85-01-8	phenanthrene	351	U
120-12-7	anthracene	351	U
206-44-0	fluoranthene	351	U
129-00-0	pyrene	351	U
56-55-3	benzo(a)anthracene	351	U
218-01-9	chrysene	351	U
205-99-2	benzo(b)fluoranthene	351	U
207-08-9	benzo(k)fluoranthene	351	U
50-32-8	benzo(a)pyrene	351	U
193-39-5	indeno(1,2,3-cd)pyrene	351	U
53-70-3	dibenz(a,h)anthracene	351	U
191-24-2	benzo(g,h,i)perylene	351	U

J
U

FORM 1 Science Applications11-MAY-1998 SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

760821

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4005S

Matrix: (soil/water) SOIL Lab Sample ID: 9805294-05

Sample wt/vol: 30.1 (g/mL) G Lab File ID: 5B50037

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: 5 decanted: (Y/N) N Date Extracted:05/13/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/15/98

Injection Volume: 1.0(uL) Dilution Factor: 2.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q
	----------Diesel Range Organics	7.8	

= FØ1, FØ8

DATA VALIDATION COPY

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VOLATILE ORGANICS ANALYSIS DATA SHEET

760821

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4005S

Matrix: (soil/water) SOIL Lab Sample ID: 9805294-05

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 3I706

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: not dec. 5 Date Analyzed: 05/17/98

GC Column: J&W DB-624(FID) ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
	Gasoline Range Organics	297	J	J

DATA VALIDATION COPY

FORM I VOA

DATA VALIDATION COPY

Client: Science Applications International Corp.
P.O. Box 2502
800 Oak Ridge Turnpike
Oak Ridge, Tennessee 37831
Contact: Ms. Lorene Rollins
Project Description: CAP-Part A for UST Sites (Task Order No. 8)

cc: SAIC00598

Report Date: June 01, 1998

Sample ID	: 760821
Lab ID	: 9805294-05
Matrix	: Soil
Date Collected	: 05/09/98
Date Received	: 05/11/98
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
General Chemistry											
TOTAL ORGANIC CARBON (TOC)		5080 = F01, F08	24.1	100	mg/kg	1.0	LIB	05/27/98	1520	122938	1

M = Method	Method-Description
M 1	SW846 9060 modified

Notes:
The qualifiers in this report are defined as follows:
ND indicates that the analyte was not detected at a concentration greater than the detection limit.
J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
U indicates that the analyte was not detected at a concentration greater than the detection limit.
* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories standard operating procedures. Please direct any questions to your Project Manager, Valerie Davis at (803) 769-7391.

Reviewed By

Form 1: Inorganic Analyses Data Sheet

DATA VALIDATION COPY

SDG No.: FS4005S

Method Type: Total Metals

Sample ID: 9805294-05

Client ID: 760821

Contract: SAIC00598 Lab Code: GEL Case No.: SAS No.:

Matrix: SOIL Date Received: 5/11/98 Level: LOW

% Solids: 95.00

CAS No.	Analyte	Concentration	Units	C	Qual	M	DL	Instrument ID	Analytical Run
7439-92-1	Lead	1.7	mg/kg	U	F01, F06	P	0.10	TJA61 Trace ICPAES	980517-1

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760911

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4006S

Matrix: (soil/water) SOIL Lab Sample ID: 9805295-17

Sample wt/vol: 10.0 (g/mL) G Lab File ID: 2I4041

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: not dec. 9 Date Analyzed: 05/15/98

GC Column: J&W DB-624(PID) ID: 0.53 (mm) Dilution Factor: 2.0

Soil Extract Volume:_____(ml) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
71-43-2	Benzene	39.8	P	J MΦ8, GΦ1
108-88-3	Toluene	190		J GΦ1
100-41-4	Ethylbenzene	51.0	P	J GΦ5, MΦ8,
1330-20-7	Xylenes (total)	341		J GΦ1 GΦ1

DATA VALIDATION COPY

FORM I VOA

SEMIVOLATILE ORGANICS 1B ANALYSIS DATA SHEET

EPA SAMPLE NO.

760911

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4006S

Matrix: (soil/water) SOIL Lab Sample ID: 9805295-17

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 2T541

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: 9 decanted: (Y/N) N Date Extracted: 05/14/98

Concentrated Extract Volume: 1.00 (mL) Date Analyzed: 05/16/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N RL: 7

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	Q
91-20-3	naphthalene	28.4	J	J
91-58-7	2-chloronaphthalene	366	U	U
209-96-8	acenaphthylene	10.8	J	J
83-32-9	acenaphthene	366	U	U
86-73-7	fluorene	12.3	J	J
85-01-8	phenanthrene	82.8	J	|
120-12-7	anthracene	9.2	J	|
206-44-0	fluoranthene	83.8	J	|
129-00-0	pyrene	139	J	|
56-55-3	benzo(a)anthracene	52.4	J	|
218-01-9	chrysene	64.9	J	|
205-99-2	benzo(b)fluoranthene	366	U	U
207-08-9	benzo(k)fluoranthene	366	U	|
50-32-8	benzo(a)pyrene	366	U	|
193-39-5	indeno(1,2,3-cd)pyrene	366	U	|
53-70-3	dibenz(a,h)anthracene	366	U	|
191-24-2	benzo(g,h,i)perylene	366	U	|

FORM 1 Science Applications11-MAY-1998 SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

760911

Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4006S

Matrix: (soil/water) SOIL Lab Sample ID: 9805295-17

Sample wt/vol: 30.8 (g/mL) G Lab File ID: 5D3006

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: 9 decanted: (Y/N) N Date Extracted:05/19/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/27/98

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q	
	----------Diesel Range Organics	3.2	B	U F01, F07

DATA VALIDATION
COPY

VOLATILE ORGANICS 1A ANALYSIS DATA SHEET

EPA SAMPLE NO.

760911

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4006S

Matrix: (soil/water) SOIL Lab Sample ID: 9805295-17

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 3J1015

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: not dec. 9 Date Analyzed: 05/19/98

GC Column: J&W DB-624 (FID) ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	Gasoline Range Organics	2030	=

DATA VALIDATION COPY

FORM I VOA

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760921DL

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4007S

Matrix: (soil/water) SOIL Lab Sample ID: 9805298-05

Sample wt/vol: 10.0 (g/mL) G Lab File ID: 2J1018

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: not dec. 8 Date Analyzed: 05/18/98

GC Column: J&W DB-624(PID) ID: 0.53 (mm) Dilution Factor: 2000.0

Soil Extract Volume: 10 (ml) Soil Aliquot Volume: 5 (uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
71-43-2	Benzene	15700	DP
108-88-3	Toluene	325000	DP
100-41-4	Ethylbenzene	117000	DP
1330-20-7	Xylenes (total)	594000	DP

J G01, M08

DATA VALIDATION COPY

J G01

use

FORM I VOA

V-117

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760921

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4007S

Matrix: (soil/water) SOIL Lab Sample ID: 9805298-05

Sample wt/vol: 30.1 (g/mL) G Lab File ID: 1U311

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: 8 decanted: (Y/N) N Date Extracted: 05/15/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/20/98

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
91-20-3	naphthalene	23100 ~~7800~~	E D
91-58-7	2-chloronaphthalene	361	U
208-96-8	acenaphthylene	361	U
83-32-9	acenaphthene	361	U
86-73-7	fluorene	366	
85-01-8	phenanthrene	382	
120-12-7	anthracene	361	U
206-44-0	fluoranthene	361	U
129-00-0	pyrene	361	U
56-55-3	benzo(a)anthracene	361	U
218-01-9	chrysene	361	U
205-99-2	benzo(b)fluoranthene	361	U
207-08-9	benzo(k)fluoranthene	361	U
50-32-8	benzo(a)pyrene	361	U
193-39-5	indeno(1,2,3-cd)pyrene	361	U
53-70-3	dibenz(a,h)anthracene	361	U
191-24-2	benzo(g,h,i)perylene	361	U

= U = U

use

DATA VALIDATION COPY

FORM 1 Science Applications11-MAY-1998 SAMPLE NO.
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

760921

Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4007S

Matrix: (soil/water) SOIL Lab Sample ID: 9805298-05

Sample wt/vol: 30.3 (g/mL) G Lab File ID: 5D2004

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: 8 decanted: (Y/N) N Date Extracted:05/18/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/27/98

Injection Volume: 1.0(uL) Dilution Factor: 200.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q
	Diesel Range Organics	818	B

= F01, F08

DATA VALIDATION COPY

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760921DL

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4007S

Matrix: (soil/water) SOIL Lab Sample ID: 9805298-05

Sample wt/vol: 10.0 (g/mL) G Lab File ID: 3J1036

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: not dec. 8 Date Analyzed: 05/19/98

GC Column: J&W DB-624(FID) ID: 0.53 (mm) Dilution Factor: 2000.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
	----------Gasoline Range Organics	2820000	D	J G01

DATA VALIDATION COPY

use

FORM I VOA

DATA VALIDATION COPY

Client: Science Applications International Corp.
P.O. Box 2502
800 Oak Ridge Turnpike
Oak Ridge, Tennessee 37831
Contact: Ms. Lorene Rollins
Project Description: CAP-Part A for UST Sites (Task Order No. 8)

cc: SAIC00598 Report Date: June 01, 1998

Sample ID	: 760921
Lab ID	: 9805298-05
Matrix	: Soil
Date Collected	: 05/10/98
Date Received	: 05/11/98
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	M
General Chemistry												
TOTAL ORGANIC CARBON (TOC)		2420	= F01, F08	24.1	100	mg/kg	1.0	LIB	05/27/98	1649	122938	1

M = Method	Method-Description
M 1	SW846 9060 modified

Notes:
The qualifiers in this report are defined as follows:
ND indicates that the analyte was not detected at a concentration greater than the detection limit.
J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
U indicates that the analyte was not detected at a concentration greater than the detection limit.
* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories standard operating procedures. Please direct any questions to your Project Manager, Valerie Davis at (803) 769-7391.

Reviewed By

9805298-05

DATA VALIDATION COPY

Form 1: Inorganic Analyses Data Sheet

SDG No.: FS4007S

Method Type: Total Metals

Sample ID: 9805298-05

Client ID: 760921

Contract: SAIC00598 Lab Code: GEL Case No.: SAS No.:

Matrix: SOIL Date Received: 5/11/98 Level: LOW

% Solids: 92.00

CAS No.	Analyte	Concentration	Units	C	Qual	M	DL	Instrument ID	Analytical Run
7439-92-1	Lead	13.7	mg/kg		J P@2	P	0.10	TJA61 Trace ICPAES	980514a-1

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

761011

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4007S

Matrix: (soil/water) SOIL Lab Sample ID: 9805298-02

Sample wt/vol: 10.0 (g/mL) G Lab File ID: 2I7022

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: not dec. 9 Date Analyzed: 05/17/98

GC Column: J&W DB-624(PID) ID: 0.53 (mm) Dilution Factor: 2.0

Soil Extract Volume:_____(ml) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
71-43-2	Benzene	1.1	U
108-88-3	Toluene	4.4	U
100-41-4	Ethylbenzene	4.4	U
1330-20-7	Xylenes (total)	13.6	

U

DATA VALIDATION COPY

FORM I VOA

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

761011

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4007S

Matrix: (soil/water) SOIL Lab Sample ID: 9805298-02

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 1U308

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: 9 decanted: (Y/N) N Date Extracted: 05/15/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/20/98

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
91-20-3	naphthalene	366	U
91-58-7	2-chloronaphthalene	366	U
208-96-8	acenaphthylene	366	U
83-32-9	acenaphthene	366	U
86-73-7	fluorene	366	U
85-01-8	phenanthrene	366	U
120-12-7	anthracene	366	U
206-44-0	fluoranthene	366	U
129-00-0	pyrene	366	U
56-55-3	benzo(a)anthracene	366	U
218-01-9	chrysene	366	U
205-99-2	benzo(b)fluoranthene	366	U
207-08-9	benzo(k)fluoranthene	366	U
50-32-8	benzo(a)pyrene	366	U
193-39-5	indeno(1,2,3-cd)pyrene	366	U
53-70-3	dibenz(a,h)anthracene	366	U
191-24-2	benzo(g,h,i)perylene	366	U

U

FORM 1 Science Applications11-MAY-1998 SAMPLE NO.
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

761011

Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4007S

Matrix: (soil/water) SOIL Lab Sample ID: 9805298-02

Sample wt/vol: 30.5 (g/mL) G Lab File ID: SC50013

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: 9 decanted: (Y/N) N Date Extracted:05/18/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/23/98

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q	
	----------Diesel Range Organics	1.1	B	U F01, F07

DATA VALIDATION COPY

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

761011

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4007S

Matrix: (soil/water) SOIL Lab Sample ID: 9805298-02

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 3J1022

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: not dec. 9 Date Analyzed: 05/19/98

GC Column: J&W DB-624(FID) ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
	Gasoline Range Organics	576	J	J Cϕ5

DATA VALIDATION COPY

FORM I VOA

V-126

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

761021RE

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4007S

Matrix: (soil/water) SOIL Lab Sample ID: 9805298-06

Sample wt/vol: 10.0 (g/mL) G Lab File ID: 2I7019

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: not dec. 9 Date Analyzed: 05/17/98

GC Column: J&W DB-624(PID) ID: 0.53 (mm) Dilution Factor: 1000.0

Soil Extract Volume: 10 (ml) (B611F7) Soil Aliquot Volume: 10 (uL (B611F8)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
71-43-2	Benzene	351	J	J G01
108-88-3	Toluene	18400		
100-41-4	Ethylbenzene	18600		
1330-20-7	Xylenes (total)	110000		

DATA VALIDATION COPY

J G01

use

FORM I VOA

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

761021

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4007S

Matrix: (soil/water) SOIL Lab Sample ID: 9805298-06

Sample wt/vol: 30.1 (g/mL) G Lab File ID: 1U312

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: 9 decanted: (Y/N) N Date Extracted: 05/15/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/20/98

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
91-20-3	naphthalene	3560	
91-58-7	2-chloronaphthalene	365	U
208-96-8	acenaphthylene	365	U
83-32-9	acenaphthene	365	U
86-73-7	fluorene	365	U
85-01-8	phenanthrene	365	U
120-12-7	anthracene	302	J
206-44-0	fluoranthene	365	U
129-00-0	pyrene	365	U
56-55-3	benzo(a)anthracene	365	U
218-01-9	chrysene	365	U
205-99-2	benzo(b)fluoranthene	365	U
207-08-9	benzo(k)fluoranthene	365	U
50-32-8	benzo(a)pyrene	365	U
193-39-5	indeno(1,2,3-cd)pyrene	365	U
53-70-3	dibenz(a,h)anthracene	365	U
191-24-2	benzo(g,h,i)perylene	365	U

U = U / J U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.: 761021

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4007S

Matrix: (soil/water) SOIL Lab Sample ID: 9805298-06

Sample wt/vol: 30.3 (g/mL) G Lab File ID: 5D40043

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: 9 decanted: (Y/N) N Date Extracted:05/18/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/29/98

Injection Volume: 1.0(uL) Dilution Factor: 40.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q
	----------Diesel Range Organics	124	B

= FØ1, FØ8

DATA VALIDATION COPY

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

761021

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4007S

Matrix: (soil/water) SOIL Lab Sample ID: 9805298-06

Sample wt/vol: 10.0 (g/mL) G Lab File ID: 3J1040

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: not dec. 9 Date Analyzed: 05/19/98

GC Column: J&W DB-624(FID) ID: 0.53 (mm) Dilution Factor: 1000.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
	----------Gasoline Range Organics	1270000		=

DATA VALIDATION COPY

FORM I VOA

DATA VALIDATION COPY

Client: Science Applications International Corp.
P.O. Box 2502
800 Oak Ridge Turnpike
Oak Ridge, Tennessee 37831
Contact: Ms. Lorene Rollins
Project Description: CAP-Part A for UST Sites (Task Order No. 8)

cc: SAIC00598

Report Date: June 01, 1998

Sample ID	: 761021
Lab ID	: 9805298-06
Matrix	: Soil
Date Collected	: 05/10/98
Date Received	: 05/11/98
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
General Chemistry											
TOTAL ORGANIC CARBON (TOC)		1790 = F01, F08	24.1	100	mg/kg	1.0	LIB	05/29/98	1739	122938	1

M = Method	Method-Description
M 1	SW846 9060 modified

Notes:
The qualifiers in this report are defined as follows:
ND indicates that the analyte was not detected at a concentration greater than the detection limit.
J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
U indicates that the analyte was not detected at a concentration greater than the detection limit.
* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories standard operating procedures. Please direct any questions to your Project Manager, Valerie Davis at (803) 769-7391.

Reviewed By

Form 1: Inorganic Analyses Data Sheet

DATA VALIDATION COPY

SDG No.: FS4007S

Method Type: Total Metals

Sample ID: 9805298-06

Client ID: 761021

Contract: SAIC00598 Lab Code: GEL Case No.: SAS No.:

Matrix: SOIL Date Received: 5/11/98 Level: LOW

% Solids: 91.00

CAS No.	Analyte	Concentration	Units	C	Qual	M	DL	Instrument ID	Analytical Run
7439-92-1	Lead	2.7	mg/kg	J	P Φ2	P	0.10	TJA61 Trace ICPAES	980514a-1

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

An Employee-Owned Company
Science Applications International Corporation
800 Oak Ridge Turnpike, Oak Ridge, TN 37831 (423) 481-4600

1 of 2

CHAIN OF CUSTODY RECORD

COC NO.: GA1301 3

PROJECT NAME: Fort Stewart New CAP Part A UST Investigation 9305

PROJECT NUMBER: 01-0331-04-9305-200

PROJECT MANAGER: Patty Stoll

Sampler (Signature) Laura Lumley (Printed Name) Laura Lumley

Sample ID	Date Collected	Time Collected	Matrix	BTEX	PAH	TOC	BTEX, GRO	PAH, DRO	PAH, DRO, Lead	PAH, TPH	PAH, TPH, Lead	PAH, TPH, Lead, TOC	No. of Bottles/ Vials:
660221	5/8/96	900	Soil				1		1				2
~~660217~~	~~5/8/96~~	~~900~~											
630221	5/9/96	1045		1							1		2
760211	5/8/96	1005					1	1					2
630121	5/9/96	935		1							1		2
660211	5/8/96	910					1	1					2
750111	5/16/96	1335					1		1				2
760221	5/8/96	1015					1		1				2
750113	5/16/96	1335					1		1				2
750121	5/16/96	1345					1	1					2
760411	5/16/96	1310					1	1					2
730211	5/10/96	1230		1						1			2
630211	5/9/96	1045		1						1			2

V-133

REQUESTED PARAMETERS

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Raod Charleston, SC 29417

PHONE NO: (803) 556-8171

OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
Laura Lumley	5/11/96		
COMPANY NAME: SAIC	1130	COMPANY NAME:	
RECEIVED BY: B Coulter	Date/Time 5/11/96	RELINQUISHED BY:	Date/Time
COMPANY NAME: GEL	1130	COMPANY NAME:	
RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
COMPANY NAME:		COMPANY NAME:	

TOTAL NUMBER OF CONTAINERS:

Cooler ID: #165

Cooler Temperature: 4°C

FEDEX NUMBER:

SAIC An Employee-Owned Company
Science Applications International Corporation
800 Oak Ridge Turnpike, Oak Ridge, TN 37831 (423) 481-4600

2 of 2

CHAIN OF CUSTODY RECORD

COC NO.: GAB013

PROJECT NAME: Fort Stewart New CAP Part A UST Investigation 9405

PROJECT NUMBER: 01-0331-04-~~9305~~-200

PROJECT MANAGER: Patty Stoll

Sampler (Signature): Laura Lumley (Printed Name): Laura Lumley

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Raod, Charleston, SC 29417

PHONE NO: (803) 556-8171

Sample ID	Date Collected	Time Collected	Matrix	BTEX	PAH	TOC	BTEX, GRO	PAH, DRO	PAH, DRO, Lead	PAH, TPH	PAH, TPH, Lead	PAH, TPH, Lead, TOC	PAH, DRO, Lead, TOC	No. of Bottles/ Vials	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
730121	5/10/96	1120	Soil	—							—			2	
690421	5/10/96	915		—							1			2	
760421	5/8/96	1320					1	1						2	
900721	5/8/96	1205					1	1						2	
900521	5/8/96	945					1	1						2	
900621	5/8/96	1040					1	1						2	
760311	5/8/96	1600					1	1						2	
900711	5/8/96	1155					1	1						2	
900511	5/8/96	945					1	1						2	
900611	5/8/96	1050					1	1						2	
750421	5/8/96	1625					1						1	2	
760321	5/8/96	1610					1						1	2	
760421	5/9/96	1455					1						1	2	

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
Laura Lumley	5/11/96		
COMPANY NAME: SAIC	1130	COMPANY NAME:	
RECEIVED BY: PS Hocker	Date/Time 5-11-96	RELINQUISHED BY:	Date/Time
COMPANY NAME: GEL	1130	COMPANY NAME:	
RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
COMPANY NAME:		COMPANY NAME:	

TOTAL NUMBER OF CONTAINERS: 50

Cooler Temperature: 4°C

Cooler ID: #165

FEDEX NUMBER:

An Employee-Owned Company
Science Applications International Corporation
800 Oak Ridge Turnpike, Oak Ridge, TN 37831 (423) 481-4600

1 & 2

CHAIN OF CUSTODY RECORD

COC NO.: GA 0814

PROJECT NAME: Fort Stewart New CAP Part A UST Investigation 9405

PROJECT NUMBER: 01-0331-04-9305-200

PROJECT MANAGER: Patty Stoll

Sampler (Signature): Laura Lumley (Printed Name): Laura Lumley

Sample ID	Date Collected	Time Collected	Matrix	BTEX	PAH	TOC	BTEX, GRO	PAH, DRO	PAH, DRO, Lead	PAH, TPH	PAH, TPH, Lead	PAH, TPH, Lead, TOC	No. of Bottles/ Vials:
760811	5/9/96	1855	Soil				1	1					2
750211	5/6/96	1900					1	1					2
750411	5/6/96	1650					1	1					2
770211	5/8/96	1725					1	1					2
770411	5/8/96	1555					1	1					2
750221	5/6/96	1905					1		1				2
770421	5/8/96	1615					1		1				2
770221	5/8/96	1735					1		1				2
690111	5/9/96	1540		1						1			2
640221	5/9/96	1500		1							1		2
730521	5/9/96	915		1						1			2
730531	5/9/96	935		1						1			2
690411	5/10/96	910		1						1			2

REQUESTED PARAMETERS

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Raod, Charleston, SC 29417

PHONE NO: (803) 556-8171

OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
Laura Lumley	5/11/96		
COMPANY NAME: SAIC	1130	COMPANY NAME:	
RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
[signature]	5-11-96	[signature]	
COMPANY NAME: GEL	1130	COMPANY NAME:	
RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
COMPANY NAME:		COMPANY NAME:	

TOTAL NUMBER OF CONTAINERS:

Cooler Temperature: 4°C

Cooler ID: #131

FEDEX NUMBER:

V-135

An Employee-Owned Company
Science Applications International Corporation
800 Oak Ridge Turnpike, Oak Ridge, TN 37831 (423) 481-4600

1 of 2

CHAIN OF CUSTODY RECORD

COC NO.: GAB017

PROJECT NAME: Fort Stewart New CAP Part A UST Investigation 9405

PROJECT NUMBER: 01-0331-04-~~9305~~-200

PROJECT MANAGER: Patty Stoll

Sampler (Signature) (Printed Name)

Sample ID	Date Collected	Time Collected	Matrix	BTEX	PAH	TOC	BTEX, GRO	PAH, DRO	PAH, DRO, Lead	PAH, TPH	PAH, TPH, Lead	PAH, TPH, Lead, TOC	No. of Bottles/ Vials:
750521	5/9/96	1430	soil				1	1			1		2
750561	5/9/96	1912					1	1			1		2
750541	5/9/96	1655					1	1			1		2
750581	5/9/96	905					1	1			1		2
750571	5/9/96	856					1	1			1		2
~~750531~~	~~5/10/96~~	~~1926~~											
760551	5/10/96	1405					1	1			1		2
710411	5/10/96	1730					1	1			1		2
760111	5/10/96	1725					1	1			1		2
760531	5/9/96	1100					1	1			1		2
750311	5/10/96	1920					1	1			1		2
760541	5/9/96	1200					1	1			1		2
760571	5/9/96	1905					1	1			1		2

REQUESTED PARAMETERS

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Raod Charleston, SC 29417

PHONE NO: (803) 556-8171

OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time	TOTAL NUMBER OF CONTAINERS:	Cooler Temperature: 4°C
COMPANY NAME: SAIC	5/11/96 1130	COMPANY NAME:		Cooler ID: #387	FEDEX NUMBER:
RECEIVED BY:	Date/Time	RELINQUISHED BY:	Date/Time		
COMPANY NAME: GEL	5/11/96 1130	COMPANY NAME:			
RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time		
COMPANY NAME:		COMPANY NAME:			

V-136

An Employee-Owned Company
Science Applications International Corporation
800 Oak Ridge Turnpike, Oak Ridge, TN 37831 (423) 481-4600

1 of 2

CHAIN OF CUSTODY RECORD

COC NO.: GA15017

PROJECT NAME: Fort Stewart New CAP Part A UST Investigation 9805

PROJECT NUMBER: 01-0331-04-9305-200

PROJECT MANAGER: Patty Stoll

Sampler (Signature): Laura Lumley (Printed Name): Laura Lumley

Sample ID	Date Collected	Time Collected	Matrix	BTEX	PAH	TOC	BTEX, GRO	PAH, DRO	PAH, DRO, Lead	PAH, TPH	PAH, TPH, Lead	PAH, TPH, Lead, TOC	No. of Bottles/ Vials:
760521	5/9/98	1040	Soil				1	1					2
750531	5/9/98	1830					1	1					2
760571	5/10/98	1830					1		1				2
760531	5/10/98	1715					1	1					2
750511	5/9/98	1615					1		1				2
760551	5/9/98	1530					1		1				2
760121	5/10/98	1750					1		1				2
750321	5/10/98	1925					1		1				2
760561	5/9/98	1715					1		1				2

REQUESTED PARAMETERS

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Raod Charleston, SC 29417

PHONE NO: (803) 556-8171

OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
Laura Lumley	5/11/98		
COMPANY NAME: SAIC	1130	COMPANY NAME:	
RECEIVED BY: Bruchs	Date/Time 5/11/98	RELINQUISHED BY:	Date/Time
COMPANY NAME: GEC	1130	COMPANY NAME:	
RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
COMPANY NAME:		COMPANY NAME:	

TOTAL NUMBER OF CONTAINERS: 42

Cooler Temperature: 4°C

Cooler ID: #387

FEDEX NUMBER:

V-137

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Science Applications International Corporation
800 Oak Ridge Turnpike, Oak Ridge, TN 37831 (423) 481-4600

1 of 2

CHAIN OF CUSTODY RECORD

COC NO.: GAB015

PROJECT NAME: Fort Stewart New CAP Part A, UST Investigation 9805

PROJECT NUMBER: 01-0331-04-9385-200

PROJECT MANAGER: Patty Stoll

Sampler (Signature) Laura Lumley (Printed Name) Laura Lumley

Sample ID	Date Collected	Time Collected	Matrix	BTEX	PAH	TOC	BTEX, GRO	PAH, DRO	PAH, DRO, Lead	PAH, TPH	PAH, TPH, Lead	PAH, TPH, Lead, TOC	PAH, DRO, Lead, TOC	No. of Bottles/ Vials:
760581	5/9/96	1910	Soil				1		1					2
760511	5/9/96	1020					1		1					2
760621	5/9/96	1705					1		1					2
760121	5/10/96	1705					1		1					2
780311	5/10/96	1430					1	1						2
760911	5/10/96	1305					1	1						2
760211	5/10/96	1625					1	1						2
760611	5/9/96	1710					1	1						2
760111	5/10/96	1700					1	1						2
760711	5/9/96	1810					1	1						2
760111	5/10/96	1410					1	1						2
760721	5/9/96	1820					1					1		2
760221	5/10/96	1605	↓				1					1		2

REQUESTED PARAMETERS

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Raod Charleston, SC 29417

PHONE NO: (803) 556-8171

OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
Laura Lumley	5/11/96		
COMPANY NAME: SAIC	1130	COMPANY NAME:	
RECEIVED BY: B Lockhart	Date/Time 5/11/96	RELINQUISHED BY:	Date/Time
COMPANY NAME: GEL	1130	COMPANY NAME:	
RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
COMPANY NAME:		COMPANY NAME:	

TOTAL NUMBER OF CONTAINERS:

Cooler ID: # 261

Cooler Temperature: 4°C

FEDEX NUMBER:

An Employee-Owned Company
Science Applications International Corporation
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212

CHAIN OF CUSTODY RECORD

COC NO.: GA15 015

PROJECT NAME: Fort Stewart New CAP Part A UST Investigation 9605

PROJECT NUMBER: 01-0331-04-9305-200

PROJECT MANAGER: Patty Stoll

Sampler (Signature): Laura Lumley (Printed Name): Laura Lumley

Sample ID	Date Collected	Time Collected	Matrix	BTEX	PAH	TOC	BTEX, GRO	PAH, DRO	PAH, DRO, Lead	PAH, TPH	PAH, TPH, Lead	PAH, TPH, Lead, TOC	PAH, DRO, Lead, TOC	No. of Bottles/ Vials:
760921	5/10/98	1310	soil				1		1		1		1	2
761021	5/10/98	1415					1		1		1		1	2
760321	5/10/98	1455					1		1		1		1	2
760591	5/10/98	1646					1	1	1		1		1	2
760561	5/10/98	1619					1	1	1		1		1	2
760541	5/10/98	1736					1	1	1		1		1	2
760521	5/10/98	1705					1	1	1		1		1	2
710421	5/10/98	1735					1		1		1		1	2
760511	5/10/98	1700					1		1		1		1	2

REQUESTED PARAMETERS

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Raod Charleston, SC 29417

PHONE NO: (803) 556-8171

OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
Laura Lumley	5/11/98		
COMPANY NAME: SAIC	1130	COMPANY NAME:	
RECEIVED BY:	Date/Time	RELINQUISHED BY:	Date/Time
	5/11/98		
COMPANY NAME: GEL	1130	COMPANY NAME:	
RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
COMPANY NAME:		COMPANY NAME:	

TOTAL NUMBER OF CONTAINERS: 44

Cooler ID: #261

Cooler Temperature: 4°C

FEDEX NUMBER:

V-139

PERMEABILITY TEST ANALYSIS (ASTM D5084)

Project : Fort Stewart

Location of Project : CAP Part A

Description of Soil : Dark Brown Silty Sand

Job # : 98066
Date of Testing: 5/26-6/5/98
Tested by: CA
Boring # :
Sample # : 760331
Sample Depth : 8-10'

Sample Type (Undisturbed or Remolded)
Standard Proctor:
Maximim Dry Density: _____ pcf
Optimum Moisture Content: _____ %

% Sample Compaction: _____ %
Sample Dry Density: _____ pcf
Sample Moisture Content: _____ %
Sample Wet Density: _____ pcf

Sample Permeation:

De-Aired Water
% Saturation: 96 %
Cell Pressure: 80 psi
Lower Pressure: 76 psi
Upper Pressure: 75 psi
Gradient: 10.83

Sample Dimensions		
	Before	After
Length (cm)	6.50	5.50
Diameter (cm)	4.70	4.60
Water Content (%)	23.8	27
Weight (g)	197.3	194.1

Constant Head Calculation:

$$K = [V(t_1,t_2)\ LR_T]/[P_BAt]\ (cm/sec)$$

$V(t_1,t_2)$ = Volume of flow from t_1 to t_2 (cm^2)
L = Length of Sample = 6.50 cm
A = Area of Sample = 17.35 cm^2
t = $t_2 - t_1$ (sec)
P_B = Bias Pressure = 1 psi x 70.37 cm/psi $_{(cm - H2O)}$ 70.37 cm
R_T = Temperature correction = 0.931

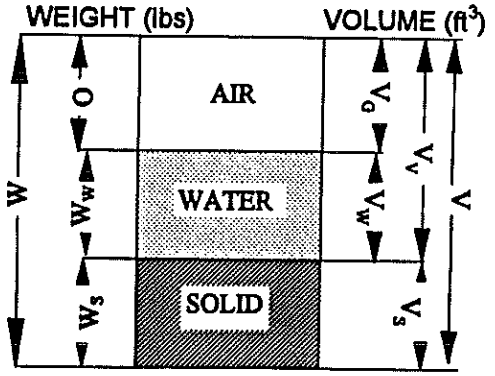
t_2 (sec)	t_1 (sec)	$(t_2 - t_1)$ (sec)	V (cm^3)	$[LR_T]/[P_BA]$ (cm^3)	K (cm/sec)
40	20	20	0.6	4.96E-03	1.49E-04
60	40	20	0.6	4.96E-03	1.49E-04
80	60	20	0.6	4.96E-03	1.49E-04
100	80	20	0.5	4.96E-03	1.24E-04

K_{avg} = 1.43E-04 cm/sec

SPECIFIC GRAVITY AND POROSITY

PROJECT: Fort Stewart
LOCATION OF PROJECT: CAP Part A
DESCRIPTION OF SOIL: Dark Brown Silty Sand
TESTED BY: B.J. Vance

JOB NO.: 98066
SAMPLE NO: 760331
DEPTH OF SAMPLE: 8-10ft.
DATE OF TESTING: 6/22/98



W = 0.99317
$W_W = W - W_S$ = 0.21158
$W_S = Y_d * V$ = 0.7816

V = 0.01170
$V_W = W_W/Y_W$ = 0.0034
$V_S = W_S/G_S * Y_W$ = 0.0048
$V_G = V - (V_S + V_W)$ = 0.00350
$V_V = V_G + V_W$ 0.0069

MEASUREMENTS OF TUBE/CAN

HEIGHT= 19.1 cm
DIAMETER= 4.7 cm

CALCULATED VOLUME OF TUBE/CAN

V= 331.37 cm^3
0.01170 ft^3

WT. OF TUBE/CAN + WET SOIL= 826.10 g
WEIGHT OF TUBE/CAN= 375.6 g
WEIGHT OF WET SOIL= 450.50 g
W = 0.99317 lb

MOISTURE CONTENT

M_{CWS} =	23.00	g	M_C =	15.02	g
M_{CDS} =	21.30	g	M_S =	6.28	g
M_W =	1.70	g	w =	27.1	%

Wet Density, $Y_m = W / V$

Dry Density, $Y_d = W_s / V$ or $Y_d = Y_m / (1+ w)$	
double check	$Y_d = Y_m / (1+ w)$
$Y_d = W_s / V$	Y_m= 84.86 lbs/ft^3
Y_d= 66.78 lbs/ft^3	Y_d= 66.78 lbs/ft^3

Void Ratio, $e = V_V/V_S$
e = 1.4307

Porosity, $n = V_V / V$
n = 0.59

Specific Gravity = 2.6

Degree of Saturation, $S = V_W/V_V$
S = 0.4919

GRAIN SIZE ANALYSIS-SIEVE (ASTM D422)

Project FORT STEWART Job No. 98066

Location of Project CAP Part A Sample No. #760331

Description of Soil Black Silty Sand Depth of Sample 8-10' Boring No.

Tested By BV Date of Testing 5/26/88

Sample preparation procedures outlined in ASTM D421 and D2217.

Nominal diameter of largest particle	Approximate minimum Wt. of sample, g
No. 10 sieve	200
No. 4 sieve	500
3/4 in.	1500

X-3

Weight of sample used, M_{ws}= 343.60 g

M_{cwe}	M_{cds}	M_c	M_w	M_s	w %	M_{ws}	M_s
	454.90	111.30					

Sieve analysis and grain shape

Sieve no.	Diam. (mm)	Wt. retained	% retained	Σ % retained	% passing
3"					
2"					
1 1/2 "					
3/4"					
3/8"					
#4					
#10		0.20	0.06	0.06	99.94
#20		1.92	0.56	0.62	99.38
#40		6.23	1.82	2.44	97.56
#60		30.68	8.97	11.41	88.59
#140		234.96	68.72	80.13	19.87
#200		51.30	15.01	95.14	4.86
pan		16.60	4.86	100.0	0
		341.89			

% retained = (Wt. retained/W_s) · 100

% passing = 100 - Σ % retained.

APPENDIX VI

ALTERNATE THRESHOLD LEVEL (ATL) CALCULATIONS

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Calculations of alternate threshold levels are not required at this time for the USTs 257 - 260 site. However, the geotechnical data collected during the CAP-Part A investigation are presented in Table VI-A.

VI-A. Geotechnical Results for Soil Samples Collected at the USTS 257 - 260 Site

	76-03
Sample ID	760331
Depth Interval (ft BGS)	8.0' – 10.0'
Grain size analysis - % Fines	5
Grain size analysis - % Sand	95
Grain size analysis - % Gravel	0
Liquid Limit	NP
Plastic Limit	NP
Plasticity Index	NP
Natural Moisture Content (%)	27.1
Permeability (cm/sec)	1.43×10^{-4}
Porosity	0.59
Specific Gravity	2.61

NP = Nonplastic.

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APPENDIX VII

MONITORING WELL DETAILS

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Monitoring wells were not installed as part of the CAP-Part A investigation. Temporary piezometers were installed at the USTs 257 - 260 site. Refer to Figures 4 and 5 (Appendix I) for locations.

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APPENDIX VIII

GROUNDWATER LABORATORY RESULTS

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TABLE VIII-A. SUMMARY OF GROUNDWATER ANALYTICAL RESULTS

Station:			76-01	76-02	76-03	76-04	76-05	76-05
Sample ID:	Federal	In Stream	760112	760212	760312	760412	760522	760532
Sample Interval:		Water Quality	3' - 13'	6' - 16'	6' - 16'	6' - 16'	7' - 12'	12' - 17'
Collection Date:	SDWA MCLs[1]	Criteria	10-May-98	10-May-98	8-May-98	8-May-98	8-May-98	8-May-98
Units:	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
VOLATILE ORGANIC COMPOUNDS								
Benzene	5	71.28	**3210 =**	**1540 =**	**356 J**	2 U	**159 =**	**675 =**
Toluene	1000	200,000	**10700 =**	**3090 =**	67.1 J	2 U	512 =	68.6 =
Ethylbenzene	700	28,718	**1830 =**	**945 =**	238 J	2 U	**889 =**	180 =
Xylenes, Total	10000	–	9510 =	5060 =	2450 J	6 U	7870 =	1640 =
POLYNUCLEAR AROMATIC HYDROCARBONS								
2-Chloronaphthalene		–	20 U	20.2 U	10.2 U	10 U	13.5 U	10.5 U
Acenaphthene		–	20 U	20.2 U	10.2 U	10 U	13.5 U	10.5 U
Acenaphthylene		–	20 U	20.2 U	10.2 U	10 U	13.5 U	10.5 U
Anthracene		110,000	20 U	20.2 U	10.2 U	10 U	13.5 U	10.5 U
Benzo(a)anthracene		0.0311	20 U	20.2 U	10.2 U	10 U	13.5 U	10.5 U
Benzo(a)pyrene	0.2	0.0311	**20 U**	**20.2 U**	**10.2 U**	**10 U**	**13.5 U**	**10.5 U**
Benzo(b)fluoranthene		–	20 U	20.2 U	10.2 U	10 U	13.5 U	10.5 U
Benzo(g,h,i)perylene		–	20 U	20.2 U	10.2 U	10 U	13.5 U	10.5 U
Benzo(k)fluoranthene		0.0311	20 U	20.2 U	10.2 U	10 U	13.5 U	10.5 U
Chrysene		0.0311	20 U	20.2 U	10.2 U	10 U	13.5 U	10.5 U
Dibenzo(a,h)anthracene		0.0311	20 U	20.2 U	10.2 U	10 U	13.5 U	10.5 U
Fluoranthene		370	20 U	20.2 U	10.2 U	10 U	13.5 U	10.5 U
Fluorene		14,000	20 U	0.52 J	10.2 U	10 U	13.5 U	10.5 U
Indeno(1,2,3-cd)pyrene		0.0311	20 U	20.2 U	10.2 U	10 U	13.5 U	10.5 U
Naphthalene		–	991 =	236 =	156 =	10 U	352 =	93.4 =
Phenanthrene		–	11.4 J	20.2 U	10.2 U	10 U	13.5 U	10.5 U
Pyrene		11,000	20 U	20.2 U	10.2 U	10 U	13.5 U	10.5 U

NOTES:

Field work was conducted prior to the new CAP-A guidance published in May 1998, thus the new analytical methods were not used.

1 U.S. Environmental Protection Agency maximum contaminant level

2 GAEPD water quality standards (Chapter 391-3-6.03)

Bold values exceed MCLs

QA/QC samples were collected. The laboratory data sheets have been included in this appendix, but the results are not summarized.

Laboratory Qualifiers

U Indicates the compound was not detected at the concentration reported

UJ Indicates that the compound was not detected above an approximated sample quantitation limit

J Indicates the value for the compound is an estimated value

= Indicates the compound was detected at the concentration reported

TABLE VIII-A. continued

Station:		76-06	76-07	76-08	76-09	76-10
Sample ID:		760612	760712	760812	760912	761012
Sample Interval:	Federal	2' - 12'	2' - 12'	2' - 12'	2' - 12'	2' - 12'
Collection Date:	SDWA MCLs	09-May-98	09-May-98	09-May-98	10-May-98	10-May-98
Units:	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
VOLATILE ORGANIC COMPOUNDS						
Benzene	5	**138 J**	**432 =**	**7590 =**	**32700 =**	**4240 J**
Toluene	1000	15.3 J	100 U	499 =	**97800 =**	**17600 J**
Ethylbenzene	700	183 J	**759 =**	**1420 =**	**4450 =**	**5210 J**
Xylenes, Total	10000	439 J	2970 =	1320 =	**22700 =**	**28400 J**
POLYNUCLEAR AROMATIC HYDROCARBONS						
2-Chloronaphthalene	–	10.5 U	10.6 U	10.6 U	20 U	42.1 U
Acenaphthene	–	10.5 U	10.6 U	10.6 U	20 U	42.1 U
Acenaphthylene	–	10.5 U	10.6 U	10.6 U	20 U	42.1 U
Anthracene	–	10.5 U	10.6 U	10.6 U	20 U	42.1 U
Benzo(a)anthracene	–	10.5 U	10.6 U	10.6 U	20 U	42.1 U
Benzo(a)pyrene	0.2	**10.5 U**	**10.6 U**	**10.6 U**	**20 U**	**42.1 U**
Benzo(b)fluoranthene	–	10.5 U	10.6 U	10.6 U	20 U	42.1 U
Benzo(g,h,i)perylene	–	10.5 U	10.6 U	10.6 U	20 U	42.1 U
Benzo(k)fluoranthene	–	10.5 U	10.6 U	10.6 U	20 U	42.1 U
Chrysene	–	10.5 U	10.6 U	10.6 U	20 U	42.1 U
Dibenzo(a,h)anthracene	–	10.5 U	10.6 U	10.6 U	20 U	42.1 U
Fluoranthene	–	10.5 U	10.6 U	10.6 U	20 U	42.1 U
Fluorene	–	10.5 U	10.6 U	10.6 U	20 U	42.1 U
Indeno(1,2,3-cd)pyrene	–	10.5 U	10.6 U	10.6 U	20 U	42.1 U
Naphthalene	–	93.1 =	17.9 =	265 =	644 =	817 =
Phenanthrene	–	10.5 U	10.6 U	10.6 U	20 U	42.1 U
Pyrene	–	10.5 U	10.6 U	10.6 U	20 U	42.1 U

NOTES:

Field work was conducted prior to the new CAP-A guidance published in May 1998, thus the new analytical methods were not used.

[1] U.S. Environmental Protection Agency maximum contaminant level

[2] GAEPD water quality standards (Chapter 391-3-6.03)

Bold values exceed MCLs

QA/QC samples were collected. The laboratory data sheets have been included in this appendix, but the results are not summarized.

Laboratory Qualifiers

U Indicates the compound was not detected at the concentration reported

UJ Indicates that the compound was not detected above an approximated sample quantitation limit

J Indicates the value for the compound is an estimated value

= Indicates the compound was detected at the concentration reported

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760112

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4013W

Matrix: (soil/water) GROUNDH2O Lab Sample ID: 9805307-11

Sample wt/vol: 10.00 (g/ml) ML Lab File ID: 2J1047

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: not dec. _____ Date Analyzed: 05/20/98

GC Column: J&W DB-624(PID) ID: 0.53 (mm) Dilution Factor: 100.0

Soil Extract Volume:_____(ml) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	3210	
108-88-3	Toluene	10700	
100-41-4	Ethylbenzene	1830	
1330-20-7	Xylenes (total)	9510	

DATA VALIDATION COPY

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760112

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4012W

Matrix: (soil/water) GROUNDH2O Lab Sample ID: 9805304-07

Sample wt/vol: 250.0 (g/mL) ML Lab File ID: 1T313

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 05/13/98

Concentrated Extract Volume: 0.50(mL) Date Analyzed: 05/13/98

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
91-20-3	naphthalene	991 ~~382~~	~~E~~ D
91-58-7	2-chloronaphthalene	20.0	U
208-96-8	acenaphthylene	20.0	U
83-32-9	acenaphthene	20.0	U
86-73-7	fluorene	20.0	U
85-01-8	phenanthrene	11.4	J
120-12-7	anthracene	20.0	U
206-44-0	fluoranthene	20.0	U
129-00-0	pyrene	20.0	U
56-55-3	benzo(a)anthracene	20.0	U
218-01-9	chrysene	20.0	U
205-99-2	benzo(b)fluoranthene	20.0	U
207-08-9	benzo(k)fluoranthene	20.0	U
50-32-8	benzo(a)pyrene	20.0	U
193-39-5	indeno(1,2,3-cd)pyrene	20.0	U
53-70-3	dibenz(a,h)anthracene	20.0	U
191-24-2	benzo(g,h,i)perylene	20.0	U

SRF 1/6/98

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760212

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4013W

Matrix: (soil/water) GROUNDH2O Lab Sample ID: 9805307-08

Sample wt/vol: 10.00 (g/ml) ML Lab File ID: 2J1053

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: not dec. _____ Date Analyzed: 05/20/98

GC Column: J&W DB-624(PID) ID: 0.53 (mm) Dilution Factor: 25.0

Soil Extract Volume:_____(ml) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	1540	
108-88-3	Toluene	3090	
100-41-4	Ethylbenzene	945	
1330-20-7	Xylenes (total)	5060	

DATA VALIDATION COPY

FORM I VOA

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760212

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4010W

Matrix: (soil/water) GROUNDH2O Lab Sample ID: 9805302-05

Sample wt/vol: 990.0 (g/mL) ML Lab File ID: 2T503

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: _____ decanted: (Y/N) _____ Date Extracted: 05/12/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/15/98

Injection Volume: 1.0(uL) Dilution Factor: 2.0

GPC Cleanup: (Y/N) N pH: 7.0

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
91-20-3	naphthalene	236	
91-58-7	2-chloronaphthalene	20.2	U
209-96-8	acenaphthylene	20.2	U
83-32-9	acenaphthene	20.2	U
86-73-7	fluorene	0.52	J
85-01-8	phenanthrene	20.2	U
120-12-7	anthracene	20.2	U
206-44-0	fluoranthene	20.2	U
129-00-0	pyrene	20.2	U
56-55-3	benzo(a)anthracene	20.2	U
218-01-9	chrysene	20.2	U
205-99-2	benzo(b)fluoranthene	20.2	U
207-08-9	benzo(k)fluoranthene	20.2	U
50-32-8	benzo(a)pyrene	20.2	U
193-39-5	indeno(1,2,3-cd)pyrene	20.2	U
53-70-3	dibenz(a,h)anthracene	20.2	U
191-24-2	benzo(g,h,i)perylene	20.2	U

11 U → J U

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760312RE

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4015W

Matrix: (soil/water) GROUNDH2O Lab Sample ID: 9805309-09

Sample wt/vol: 10.00 (g/ml) ML Lab File ID: 2J3030

Level: (low/med) LOW Date Received: 05/11/98

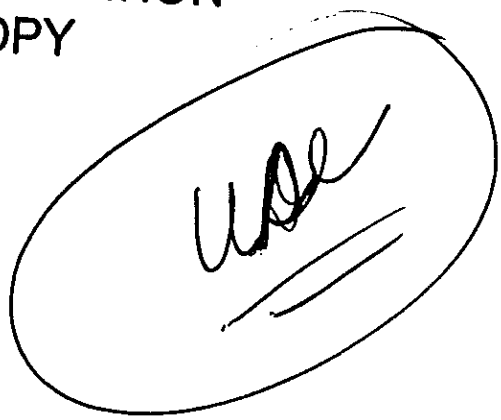
% Moisture: not dec. _____ Date Analyzed: 05/21/98

GC Column: J&W DB-624(PID) ID: 0.53 (mm) Dilution Factor: 5.0

Soil Extract Volume:_____(ml) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q		
71-43-2	Benzene	356		J	G01
108-88-3	Toluene	67.1			
100-41-4	Ethylbenzene	238			
1330-20-7	Xylenes (total)	2450			

DATA VALIDATION COPY



G01

FORM I VOA

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

760312

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4010W

Matrix: (soil/water) GROUNDH2O Lab Sample ID: 9805302-13

Sample wt/vol: 980.0 (g/mL) ML Lab File ID: 2T420

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: _____ decanted: (Y/N) _____ Date Extracted: 05/12/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/15/98

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
91-20-3	naphthalene	156 ~~154~~	D
91-58-7	2-chloronaphthalene	10.2	U
209-96-8	acenaphthylene	10.2	U
83-32-9	acenaphthene	10.2	U
86-73-7	fluorene	10.2	U
85-01-8	phenanthrene	10.2	U
120-12-7	anthracene	10.2	U
206-44-0	fluoranthene	10.2	U
129-00-0	pyrene	10.2	U
56-55-3	benzo(a)anthracene	10.2	U
218-01-9	chrysene	10.2	U
205-99-2	benzo(b)fluoranthene	10.2	U
207-08-9	benzo(k)fluoranthene	10.2	U
50-32-8	benzo(a)pyrene	10.2	U
193-39-5	indeno(1,2,3-cd)pyrene	10.2	U
53-70-3	dibenz(a,h)anthracene	10.2	U
191-24-2	benzo(g,h,i)perylene	10.2	U

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SRR 7/7/98

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760412

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4015W

Matrix: (soil/water) GROUNDH2O Lab Sample ID: 9805309-03

Sample wt/vol: 10.00 (g/ml) ML Lab File ID: 2J307

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: not dec. _____ Date Analyzed: 05/20/98

GC Column: J&W DB-624(PID) ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(ml) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	2.0	U
108-88-3	Toluene	2.0	U
100-41-4	Ethylbenzene	2.0	U
1330-20-7	Xylenes (total)	6.0	U

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DATA VALIDATION COPY

FORM I VOA

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760412

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4010W

Matrix: (soil/water) GROUNDH2O Lab Sample ID: 9805302-02

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 2T409

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 05/12/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/14/98

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
91-20-3	naphthalene	10.0	U
91-58-7	2-chloronaphthalene	10.0	U
209-96-8	acenaphthylene	10.0	U
83-32-9	acenaphthene	10.0	U
86-73-7	fluorene	10.0	U
85-01-8	phenanthrene	10.0	U
120-12-7	anthracene	10.0	U
206-44-0	fluoranthene	10.0	U
129-00-0	pyrene	10.0	U
56-55-3	benzo(a)anthracene	10.0	U
218-01-9	chrysene	10.0	U
205-99-2	benzo(b)fluoranthene	10.0	U
207-08-9	benzo(k)fluoranthene	10.0	U
50-32-8	benzo(a)pyrene	10.0	U
193-39-5	indeno(1,2,3-cd)pyrene	10.0	U
53-70-3	dibenz(a,h)anthracene	10.0	U
191-24-2	benzo(g,h,i)perylene	10.0	U

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760416

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4015W

Matrix: (soil/water) GROUNDH2O Lab Sample ID: 9805309-13

Sample wt/vol: 10.00 (g/ml) ML Lab File ID: 2J3021

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: not dec. _____ Date Analyzed: 05/20/98

GC Column: J&W DB-624(PID) ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(ml) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	2.0	U
108-88-3	Toluene	2.0	U
100-41-4	Ethylbenzene	2.0	U
1330-20-7	Xylenes (total)	6.0	U

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DATA VALIDATION COPY

FORM I VOA

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760416

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4010W

Matrix: (soil/water) GROUNDH2O Lab Sample ID: 9805302-01

Sample wt/vol: 980.0 (g/mL) ML Lab File ID: 2T408

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: _____ decanted: (Y/N)___ Date Extracted:05/12/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/14/98

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
91-20-3	naphthalene	10.2	U
91-58-7	2-chloronaphthalene	10.2	U
209-96-8	acenaphthylene	10.2	U
83-32-9	acenaphthene	10.2	U
86-73-7	fluorene	10.2	U
85-01-8	phenanthrene	10.2	U
120-12-7	anthracene	10.2	U
206-44-0	fluoranthene	10.2	U
129-00-0	pyrene	10.2	U
56-55-3	benzo(a)anthracene	10.2	U
218-01-9	chrysene	10.2	U
205-99-2	benzo(b)fluoranthene	10.2	U
207-08-9	benzo(k)fluoranthene	10.2	U
50-32-8	benzo(a)pyrene	10.2	U
193-39-5	indeno(1,2,3-cd)pyrene	10.2	U
53-70-3	dibenz(a,h)anthracene	10.2	U
191-24-2	benzo(g,h,i)perylene	10.2	U

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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760522

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4011W

Matrix: (soil/water) GROUNDH2O Lab Sample ID: 9805303-02

Sample wt/vol: 740.0 (g/mL) ML Lab File ID: 4T408

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: _____ decanted: (Y/N) _____ Date Extracted: 05/12/98

Concentrated Extract Volume: 1.00 (mL) Date Analyzed: 05/14/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
91-20-3	naphthalene	352 ~~274~~	ED
91-58-7	2-chloronaphthalene	13.5	U
208-96-8	acenaphthylene	13.5	U
83-32-9	acenaphthene	13.5	U
86-73-7	fluorene	13.5	U
85-01-8	phenanthrene	13.5	U
120-12-7	anthracene	13.5	U
206-44-0	fluoranthene	13.5	U
129-00-0	pyrene	13.5	U
56-55-3	benzo(a)anthracene	13.5	U
218-01-9	chrysene	13.5	U
205-99-2	benzo(b)fluoranthene	13.5	U
207-08-9	benzo(k)fluoranthene	13.5	U
50-32-8	benzo(a)pyrene	13.5	U
193-39-5	indeno(1,2,3-cd)pyrene	13.5	U
53-70-3	dibenz(a,h)anthracene	13.5	U
191-24-2	benzo(g,h,i)perylene	13.5	U

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SRR 7/9/98

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760522

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4015W

Matrix: (soil/water) GROUNDH2O Lab Sample ID: 9805309-06

Sample wt/vol: 10.00 (g/ml) ML Lab File ID: 2J3033

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: not dec. _____ Date Analyzed: 05/21/98

GC Column: J&W DB-624(PID) ID: 0.53 (mm) Dilution Factor: 25.0

Soil Extract Volume:_____(ml) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	159	
108-88-3	Toluene	512	
100-41-4	Ethylbenzene	889	
1330-20-7	Xylenes (total)	7870	

DATA VALIDATION COPY

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760514

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4015W

Matrix: (soil/water) GROUNDH2O Lab Sample ID: 9805309-01

Sample wt/vol: 10.00 (g/ml) ML Lab File ID: 2J3025

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: not dec. _____ Date Analyzed: 05/20/98

GC Column: J&W DB-624(PID) ID: 0.53 (mm) Dilution Factor: 25.0

Soil Extract Volume:_____(ml) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L		Q
71-43-2	Benzene		206	
108-88-3	Toluene		728	
100-41-4	Ethylbenzene		1200	
1330-20-7	Xylenes (total)		10300	

DATA VALIDATION COPY

FORM I VOA

VIII-17

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760514

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4010W

Matrix: (soil/water) GROUNDH2O Lab Sample ID: 9805302-17

Sample wt/vol: 840.0 (g/mL) ML Lab File ID: 2T508

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 05/12/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/15/98

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
91-20-3	naphthalene	302 ~~198~~ ED	
91-58-7	2-chloronaphthalene	11.9	U
209-96-8	acenaphthylene	11.9	U
83-32-9	acenaphthene	1.3	J
86-73-7	fluorene	11.9	U
85-01-8	phenanthrene	11.9	U
120-12-7	anthracene	11.9	U
206-44-0	fluoranthene	11.9	U
129-00-0	pyrene	11.9	U
56-55-3	benzo(a)anthracene	11.9	U
218-01-9	chrysene	11.9	U
205-99-2	benzo(b)fluoranthene	11.9	U
207-08-9	benzo(k)fluoranthene	11.9	U
50-32-8	benzo(a)pyrene	11.9	U
193-39-5	indeno(1,2,3-cd)pyrene	11.9	U
53-70-3	dibenz(a,h)anthracene	11.9	U
191-24-2	benzo(g,h,i)perylene	11.9	U

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SRP 1/7/98

15 of 90

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760532

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4015W

Matrix: (soil/water) GROUNDH2O Lab Sample ID: 9805309-04

Sample wt/vol: 10.00 (g/ml) ML Lab File ID: 2J3026

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: not dec. _____ Date Analyzed: 05/20/98

GC Column: J&W DB-624(PID) ID: 0.53 (mm) Dilution Factor: 5.0

Soil Extract Volume:_____(ml) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	675	
108-88-3	Toluene	68.6	
100-41-4	Ethylbenzene	180	
1330-20-7	Xylenes (total)	1640	

DATA VALIDATION COPY

FORM I VOA

VIII-19

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760532

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4011W

Matrix: (soil/water) GROUNDH2O Lab Sample ID: 9805303-01

Sample wt/vol: 950.0 (g/mL) ML Lab File ID: 4T407

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 05/12/98

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/14/98

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
91-20-3	naphthalene	93.4	
91-58-7	2-chloronaphthalene	10.5	U
208-96-8	acenaphthylene	10.5	U
83-32-9	acenaphthene	10.5	U
86-73-7	fluorene	10.5	U
85-01-8	phenanthrene	10.5	U
120-12-7	anthracene	10.5	U
206-44-0	fluoranthene	10.5	U
129-00-0	pyrene	10.5	U
56-55-3	benzo(a)anthracene	10.5	U
218-01-9	chrysene	10.5	U
205-99-2	benzo(b)fluoranthene	10.5	U
207-08-9	benzo(k)fluoranthene	10.5	U
50-32-8	benzo(a)pyrene	10.5	U
193-39-5	indeno(1,2,3-cd)pyrene	10.5	U
53-70-3	dibenz(a,h)anthracene	10.5	U
191-24-2	benzo(g,h,i)perylene	10.5	U

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760612

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4013W

Matrix: (soil/water) GROUNDH2O Lab Sample ID: 9805307-06

Sample wt/vol: 10.00 (g/ml) ML Lab File ID: 2J1016

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: not dec. _____ Date Analyzed: 05/19/98

GC Column: J&W DB-624(PID) ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(ml) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	138	P
108-88-3	Toluene	15.3	P
100-41-4	Ethylbenzene	183 ~~237~~	EP
1330-20-7	Xylenes (total)	439	P

J M Φ8, GΦ1

SRR #17198

DATA VALIDATION COPY

FORM I VOA

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760612

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4011W

Matrix: (soil/water) GROUNDH2O Lab Sample ID: 9805303-07

Sample wt/vol: 950.0 (g/mL) ML Lab File ID: 4T413

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: _____ decanted: (Y/N) _____ Date Extracted: 05/12/98

Concentrated Extract Volume: 1.00 (mL) Date Analyzed: 05/14/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
91-20-3	naphthalene	93.1	
91-58-7	2-chloronaphthalene	10.5	U
208-96-8	acenaphthylene	10.5	U
83-32-9	acenaphthene	10.5	U
86-73-7	fluorene	10.5	U
85-01-8	phenanthrene	10.5	U
120-12-7	anthracene	10.5	U
206-44-0	fluoranthene	10.5	U
129-00-0	pyrene	10.5	U
56-55-3	benzo(a)anthracene	10.5	U
218-01-9	chrysene	10.5	U
205-99-2	benzo(b)fluoranthene	10.5	U
207-08-9	benzo(k)fluoranthene	10.5	U
50-32-8	benzo(a)pyrene	10.5	U
193-39-5	indeno(1,2,3-cd)pyrene	10.5	U
53-70-3	dibenz(a,h)anthracene	10.5	U
191-24-2	benzo(g,h,i)perylene	10.5	U

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FORM I SV-1

OLM03.0

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760712

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4013W

Matrix: (soil/water) GROUNDH2O Lab Sample ID: 9805307-05

Sample wt/vol: 10.00 (g/ml) ML Lab File ID: 2J1040

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: not dec. _____ Date Analyzed: 05/19/98

GC Column: J&W DB-624(PID) ID: 0.53 (mm) Dilution Factor: 50.0

Soil Extract Volume:_____(ml) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	432	
108-88-3	Toluene	100	U
100-41-4	Ethylbenzene	759	
1330-20-7	Xylenes (total)	2970	

DATA VALIDATION COPY

FORM I VOA

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760712

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4011W

Matrix: (soil/water) GROUNDH2O Lab Sample ID: 9805303-04

Sample wt/vol: 940.0 (g/mL) ML Lab File ID: 4T410

Level: (low/med) LOW DATA VALIDATION COPY Date Received: 05/11/98

% Moisture: _____ decanted: (Y/N) Date Extracted: 05/12/98

Concentrated Extract Volume: 1.00 (mL) Date Analyzed: 05/14/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
91-20-3	naphthalene	17.9	
91-58-7	2-chloronaphthalene	10.6	U
208-96-8	acenaphthylene	10.6	U
83-32-9	acenaphthene	10.6	U
86-73-7	fluorene	10.6	U
85-01-8	phenanthrene	10.6	U
120-12-7	anthracene	10.6	U
206-44-0	fluoranthene	10.6	U
129-00-0	pyrene	10.6	U
56-55-3	benzo(a)anthracene	10.6	U
218-01-9	chrysene	10.6	U
205-99-2	benzo(b)fluoranthene	10.6	U
207-08-9	benzo(k)fluoranthene	10.6	U
50-32-8	benzo(a)pyrene	10.6	U
193-39-5	indeno(1,2,3-cd)pyrene	10.6	U
53-70-3	dibenz(a,h)anthracene	10.6	U
191-24-2	benzo(g,h,i)perylene	10.6	U

= U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760812

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4015W

Matrix: (soil/water) GROUNDH2O Lab Sample ID: 9805309-11

Sample wt/vol: 10.00 (g/ml) ML Lab File ID: 2J3031

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: not dec. _____ Date Analyzed: 05/21/98

GC Column: J&W DB-624(PID) ID: 0.53 (mm) Dilution Factor: 50.0

Soil Extract Volume:_____(ml) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	7590	
108-88-3	Toluene	499	
100-41-4	Ethylbenzene	1420	
1330-20-7	Xylenes (total)	1320	

DATA VALIDATION
COPY

FORM I VOA

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760812

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4011W

Matrix: (soil/water) GROUNDH2O Lab Sample ID: 9805303-08

Sample wt/vol: 940.00 (g/mL) ML Lab File ID: 4T414

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 05/12/98

Concentrated Extract Volume: 1.00 (mL) Date Analyzed: 05/14/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
91-20-3	naphthalene	265 ~~209~~ E D	= U
91-58-7	2-chloronaphthalene	10.6	U
208-96-8	acenaphthylene	10.6	U
83-32-9	acenaphthene	10.6	U
86-73-7	fluorene	10.6	U
85-01-8	phenanthrene	10.6	U
120-12-7	anthracene	10.6	U
206-44-0	fluoranthene	10.6	U
129-00-0	pyrene	10.6	U
56-55-3	benzo(a)anthracene	10.6	U
218-01-9	chrysene	10.6	U
205-99-2	benzo(b)fluoranthene	10.6	U
207-08-9	benzo(k)fluoranthene	10.6	U
50-32-8	benzo(a)pyrene	10.6	U
193-39-5	indeno(1,2,3-cd)pyrene	10.6	U
53-70-3	dibenz(a,h)anthracene	10.6	U
191-24-2	benzo(g,h,i)perylene	10.6	U

SRR 7/9/98

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760912

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4013W

Matrix: (soil/water) GROUNDH2O Lab Sample ID: 9805307-13

Sample wt/vol: 10.00 (g/ml) ML Lab File ID: 2J1051

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: not dec. _____ Date Analyzed: 05/20/98

GC Column: J&W DB-624(PID) ID: 0.53 (mm) Dilution Factor: 1000.0

Soil Extract Volume:_____(ml) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	Benzene	32700	
108-88-3	Toluene	97800	
100-41-4	Ethylbenzene	4450	
1330-20-7	Xylenes (total)	22700	

DATA VALIDATION COPY

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DATA VALIDATION COPY

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

760912

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4012W

Matrix: (soil/water) GROUNDH2O Lab Sample ID: 9805304-08

Sample wt/vol: 250.0 (g/mL) ML Lab File ID: 1T314

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 05/13/98

Concentrated Extract Volume: 0.50(mL) Date Analyzed: 05/13/98

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
91-20-3	naphthalene	644 ~~292~~	E D
91-58-7	2-chloronaphthalene	20.0	U
208-96-8	acenaphthylene	20.0	U
83-32-9	acenaphthene	20.0	U
86-73-7	fluorene	20.0	U
85-01-8	phenanthrene	20.0	U
120-12-7	anthracene	20.0	U
206-44-0	fluoranthene	20.0	U
129-00-0	pyrene	20.0	U
56-55-3	benzo(a)anthracene	20.0	U
218-01-9	chrysene	20.0	U
205-99-2	benzo(b)fluoranthene	20.0	U
207-08-9	benzo(k)fluoranthene	20.0	U
50-32-8	benzo(a)pyrene	20.0	U
193-39-5	indeno(1,2,3-cd)pyrene	20.0	U
53-70-3	dibenz(a,h)anthracene	20.0	U
191-24-2	benzo(g,h,i)perylene	20.0	U

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SRR 11/6/98

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

761012DL

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4015W

Matrix: (soil/water) GROUNDH2O Lab Sample ID: 9805309-12

Sample wt/vol: 10.00 (g/ml) ML Lab File ID: 2J3032

Level: (low/med) LOW Date Received: 05/11/98

% Moisture: not dec. _____ Date Analyzed: 05/21/98

GC Column: J&W DB-624(PID) ID: 0.53 (mm) Dilution Factor: 100.0

Soil Extract Volume:_____(ml) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L		Q
71-43-2	Benzene	4240	DP	J G01,M08
108-88-3	Toluene	17600	DP	
100-41-4	Ethylbenzene	5210	DP	
1330-20-7	Xylenes (total)	28400	DP	

DATA VALIDATION COPY

Use

G01

FORM I VOA

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

761012

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: FS4011W

Matrix: (soil/water) GROUNDH2O

Sample wt/vol: 950.0 (g/mL) ML Lab Sample ID: 9805303-19

Level: (low/med) LOW Lab File ID: 4U108

% Moisture: _____ decanted: (Y/N) DATA VALIDATION COPY Date Received: 05/11/98

Concentrated Extract Volume: 1.00 (mL) Date Extracted: 05/12/98

Injection Volume: 1.0 (uL) Date Analyzed: 05/18/98

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 4.0

use

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
91-20-3	naphthalene	817 ~~841~~	E D
91-58-7	2-chloronaphthalene	42.1	U
208-96-8	acenaphthylene	42.1	U
83-32-9	acenaphthene	42.1	U
86-73-7	fluorene	42.1	U
85-01-8	phenanthrene	42.1	U
120-12-7	anthracene	42.1	U
206-44-0	fluoranthene	42.1	U
129-00-0	pyrene	42.1	U
56-55-3	benzo(a)anthracene	42.1	U
218-01-9	chrysene	42.1	U
205-99-2	benzo(b)fluoranthene	42.1	U
207-08-9	benzo(k)fluoranthene	42.1	U
50-32-8	benzo(a)pyrene	42.1	U
193-39-5	indeno(1,2,3-cd)pyrene	42.1	U
53-70-3	dibenz(a,h)anthracene	42.1	U
191-24-2	benzo(g,h,i)perylene	42.1	U

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SRR 7/19/98

FORM I SV-1

OLM03.0

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CHAIN OF CUSTODY RECORD

COC NO.: GA3005

PROJECT NAME: Fort Stewart New CAP Part A UST Investigation 9405

PROJECT NUMBER: 01-0331-04-9305-200

PROJECT MANAGER: Patty Stoll

Sampler (Signature): Laura Lumley (Printed Name): Laura Lumley

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Raod, Charleston, SC 29417

PHONE NO: (803) 556-8171

Sample ID	Date Collected	Time Collected	Matrix	BTEX	PAH	TOC	BTEX, GRO	PAH, DRO	PAH, DRO, Lead	PAH, TPH	PAH, TPH, Lead	PAH, TPH, Lead, TOC	No. of Bottles/ Vials	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
760416	5/6/96	1335	water		2						2		2	
760412	5/6/96	1345			2						2		2	
750112	5/6/96	1400			2						2		2	
900512	5/6/96	945			2						2		2	
760212	5/6/96	1045			2						2		2	
660214	5/6/96	955			2						2		2	
660212	5/6/96	955	↓		1						2		1	

REQUESTED PARAMETERS

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time	TOTAL NUMBER OF CONTAINERS: 13	Cooler Temperature: 4° C
Laura Lumley	5/11/96				
COMPANY NAME: SAIC	1130	COMPANY NAME:		Cooler ID: # 546	FEDEX NUMBER:
RECEIVED BY:	Date/Time	RELINQUISHED BY:	Date/Time		
COMPANY NAME: GEL	5-11-96 1130	COMPANY NAME:			
RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time		
COMPANY NAME:		COMPANY NAME:			

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CHAIN OF CUSTODY RECORD

COC NO.: GAB 0006

PROJECT NAME: Fort Stewart New CAP Part A UST Investigation 9405

PROJECT NUMBER: 01-0331-04-~~9305~~-200

PROJECT MANAGER: Patty Stoll

Sampler (Signature): Laura Lumley (Printed Name): Laura Lumley

Sample ID	Date Collected	Time Collected	Matrix	BTEX	PAH	TOC	BTEX, GRO	PAH, DRO	PAH, DRO, Lead	PAH, TPH	PAH, TPH, Lead	PAH, TPH, Lead, TOC	No. of Bottles/ Vials:
600212	5/6/98	955	water		1								1
660112	5/6/98	935			2								2
750412	5/6/98	1640			2								2
900712	5/6/98	1200			2								2
900612	5/6/98	1115			2								2
750416	5/6/98	1630			2								2
760312	5/6/98	1630	↓		2								2

SS 5/11/98

REQUESTED PARAMETERS

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Raod Charleston, SC 29417

PHONE NO: (803) 556-8171

OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
Laura Lumley	5/11/98		
COMPANY NAME: SAIC	1130	COMPANY NAME:	
RECEIVED BY: B Kochte	Date/Time 5-11-98	RELINQUISHED BY:	Date/Time
COMPANY NAME: GEL	1130	COMPANY NAME:	
RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
COMPANY NAME:		COMPANY NAME:	

TOTAL NUMBER OF CONTAINERS: 13

Cooler Temperature: 4°C

Cooler ID: #469

FEDEX NUMBER:

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CHAIN OF CUSTODY RECORD

COC NO.: GA15 004

PROJECT NAME: Fort Stewart New CAP Part A UST Investigation 9605

PROJECT NUMBER: 01-0331-04-~~9305~~-200

PROJECT MANAGER: Patty Stoll

Sampler (Signature): Laura Lumley (Printed Name): Laura Lumley

Sample ID	Date Collected	Time Collected	Matrix	BTEX	PAH	TOC	BTEX, GRO	PAH, DRO	PAH, DRO, Lead	PAH, TPH	PAH, TPH, Lead	PAH, TPH, Lead, TOC	No. of Bottles/ Vials:	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
770412	5/8/98	1730	water		1								1	
640212	5/9/98	1530			2								2	
760532	5/8/98	1645			2								2	
760522	5/8/98	1745			2								2	
580214	5/10/98	1150			2								2	
760712	5/9/98	1840			2								2	
690112	5/9/98	1600			2								2	

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Raod Charleston, SC 29417

PHONE NO: (803) 556-8171

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
Laura Lumley	5/11/98		
COMPANY NAME: SAIC	1130	COMPANY NAME:	
RECEIVED BY:	Date/Time	RELINQUISHED BY:	Date/Time
[signature]	5-11-98		
COMPANY NAME: GEL	1130	COMPANY NAME:	
RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
COMPANY NAME:		COMPANY NAME:	

TOTAL NUMBER OF CONTAINERS: 13

Cooler Temperature: 4°C

Cooler ID: ~~11~~ 469

FEDEX NUMBER:

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CHAIN OF CUSTODY RECORD

COC NO.: GAB0009

PROJECT NAME: Fort Stewart New CAP Part A UST Investigation 9405

PROJECT NUMBER: 01-0331-04-~~9305~~-200

PROJECT MANAGER: Patty Stoll

Sampler (Signature): Laura Lumley (Printed Name): Laura Lumley

Sample ID	Date Collected	Time Collected	Matrix	BTEX	PAH	TOC	BTEX, GRO	PAH, DRO	PAH, DRO, Lead	PAH, TPH	PAH, TPH, Lead	PAH, TPH, Lead, TOC	No. of Bottles/ Vials:
770412	5/8/96	1730	water		1								1
640112	5/9/96	1445			1								1
690212	5/9/96	1700			2								2
760612	5/9/96	1750			2								2
760812	5/9/96	1930			2								2
690412	5/10/96	945			2								2
730212	5/10/96	1325			2								2
760912	5/10/96	1345	↓		1								1
	5/11/96												

REQUESTED PARAMETERS

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Raod Charleston, SC 29417

PHONE NO: (803) 556-8171

OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
Laura Lumley	5/11/96		
COMPANY NAME: SAIC	1130	COMPANY NAME:	
RECEIVED BY:	Date/Time	RELINQUISHED BY:	Date/Time
[signature]	5-11-96		
COMPANY NAME: GEL	1130	COMPANY NAME:	
RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
COMPANY NAME:		COMPANY NAME:	

TOTAL NUMBER OF CONTAINERS: 13

Cooler ID: 549

Cooler Temperature: 4°C

FEDEX NUMBER:

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CHAIN OF CUSTODY RECORD

COC NO.: GAI_011

PROJECT NAME: Fort Stewart New CAP Part A UST Investigation 9405

PROJECT NUMBER: 01-0331-04-~~9305~~-200

PROJECT MANAGER: Patty Stoll

Sampler (Signature) Laura Lumley (Printed Name) Laura Lumley

Sample ID	Date Collected	Time Collected	Matrix	BTEX	PAH	TOC	BTEX, GRO	PAH, DRO	PAH, DRO, Lead	PAH, TPH	PAH, TPH, Lead	PAH, TPH, Lead, TOC	No. of Bottles/ Vials
730312	5/10/98	1445	water		1								1
710416	5/10/98	1600			2								2
761012	5/10/98	1445			2								2
600212	5/10/98	1630			2								2
600214	5/10/98	1630			2								2
710412	5/10/98	1605			2								2
730412	5/10/98	1420			2								2

5/11/98

REQUESTED PARAMETERS

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Raod Charleston, SC 29417

PHONE NO: (803) 556-8171

OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
Laura Lumley	5/11/98		
COMPANY NAME: SAIC	1130	COMPANY NAME:	
RECEIVED BY:	Date/Time	RELINQUISHED BY:	Date/Time
B Lockhart	5-11-98		
COMPANY NAME: GEL	1130	COMPANY NAME:	
RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
COMPANY NAME:		COMPANY NAME:	

TOTAL NUMBER OF CONTAINERS: 13

Cooler Temperature: 4°C

Cooler ID: # 466

FEDEX NUMBER:

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CHAIN OF CUSTODY RECORD

COC NO.: GAB012

PROJECT NAME: Fort Stewart New CAP Part A UST Investigation 9405

PROJECT NUMBER: 01-0331-04-9305-200

PROJECT MANAGER: Patty Stoll

Sampler (Signature) Laura Lumley (Printed Name) Laura Lumley

Sample ID	Date Collected	Time Collected	Matrix	BTEX	PAH	TOC	BTEX, GRO	PAH, DRO	PAH, DRO, Lead	PAH, TPH	PAH, TPH, Lead	PAH, TPH, Lead, TOC	No. of Bottles/ Vials
760125	5/10/98	1900	water					3					3
750312	5/10/98	1945			2								2
760125	5/10/98	1735						3					3
760112	5/10/98	1705											2
760912	5/10/98	1345			2								1
640112	5/9/98	1445	↓		1								1

5/11/98

REQUESTED PARAMETERS

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Raod Charleston, SC 29417

PHONE NO: (803) 556-8171

OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
Laura Lumley	5/11/98 1130		
COMPANY NAME: SAIC		COMPANY NAME:	
RECEIVED BY:	Date/Time	RELINQUISHED BY:	Date/Time
COMPANY NAME: GEL	5-11-98 1130	COMPANY NAME:	
RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
COMPANY NAME:		COMPANY NAME:	

TOTAL NUMBER OF CONTAINERS: 12

Cooler ID: #424

Cooler Temperature: 4°C

FEDEX NUMBER:

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CHAIN OF CUSTODY RECORD

COC NO.: GA15007

PROJECT NAME: Fort Stewart New CAP Part A UST Investigation 9805

PROJECT NUMBER: 01-0331-04-~~9305~~-200

PROJECT MANAGER: Patty Stoll

Sampler (Signature) Laura Lumley (Printed Name) Laura Lumley

Sample ID	Date Collected	Time Collected	Matrix	BTEX	PAH	TOC	BTEX, GRO	PAH, DRO	PAH, DRO, Lead	PAH, TPH	PAH, TPH, Lead	PAH, TPH, Lead, TOC	No. of Bottles/ Vials:
750225	5/8/98	1400	water					3					3
630112	5/9/98	1025			2								2
770212	5/8/98	1740			2								2
750212	5/8/98	1915			2								2
760514	5/8/98	1745			2								2
630212	5/9/98	1250			2								2

5/11/98

REQUESTED PARAMETERS

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Raod Charleston, SC 29417

PHONE NO: (803) 556-8171

OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
Laura Lumley	5/11/98		
COMPANY NAME: SAIC	1130	COMPANY NAME:	
RECEIVED BY:	Date/Time	RELINQUISHED BY:	Date/Time
[signature]	5-11-98		
COMPANY NAME: GEL	1130	COMPANY NAME:	
RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
COMPANY NAME:		COMPANY NAME:	

TOTAL NUMBER OF CONTAINERS: 13

Cooler Temperature: 4°C

Cooler ID: # 462

FEDEX NUMBER:

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1045

CHAIN OF CUSTODY RECORD

COC NO.: GAB016

PROJECT NAME: Fort Stewart New CAP Part A UST Investigation 9305

PROJECT NUMBER: 01-0331-04-9305-200

PROJECT MANAGER: Patty Stoll

Sampler (Signature): Laura Lumley (Printed Name): Laura Lumley

Sample ID	Date Collected	Time Collected	Matrix	BTEX	PAH	TOC	BTEX, GRO	PAH, DRO	PAH, DRO, Lead	PAH, TPH	PAH, TPH, Lead	PAH, TPH, Lead, TOC	No. of Bottles/ Vials:	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
710416	5/10/96	1800	water	2									2	Unpreserved
780125	5/10/96	1900		2									2	
760125	5/10/96	1735					2						2	
710412	5/10/96	1605		2									2	
760112	5/10/96	1705		2									2	Unpreserved
900712	5/8/96	1200		2									2	
760912	5/10/96	1345		2									2	
730416	5/10/96	1430		2									2	
730312	5/10/96	1415		2									2	
730212	5/10/96	1325		2									2	
690212	5/1/96	1700		2									2	
760214	5/10/96	1150		2									2	
690412	5/10/96	945	↓	2									2	Unpreserved

REQUESTED PARAMETERS

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Raod Charleston, SC 29417

PHONE NO: (803) 556-8171

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
COMPANY NAME: SAIC	5/11/96 1130	COMPANY NAME:	
RECEIVED BY:	Date/Time	RELINQUISHED BY:	Date/Time
COMPANY NAME: EEL	5/11/96 1130	COMPANY NAME:	
RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
COMPANY NAME:		COMPANY NAME:	

TOTAL NUMBER OF CONTAINERS:

Cooler ID: # 388

Cooler Temperature: 4°C

FEDEX NUMBER:

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2015

CHAIN OF CUSTODY RECORD

COC NO.: GA1380/18

PROJECT NAME: Fort Stewart New CAP Part A UST Investigation 9905

PROJECT NUMBER: 01-0331-04-9305-200

PROJECT MANAGER: Patty Stoll

Sampler (Signature): Laura Lumley (Printed Name): Laura Lumley

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Raod, Charleston, SC 29417

PHONE NO: (803) 556-8171

Sample ID	Date Collected	Time Collected	Matrix	BTEX	PAH	TOC	BTEX, GRO	PAH, DRO	PAH, DRO, Lead	PAH, TPH	PAH, TPH, Lead	PAH, TPH, Lead, TOC	No. of Bottles/ Vials	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
730112	5/10/98	1135	water	2			2		2		2		10	
630112	5/11/98	1025		2			2		2		2		10	
560212	5/10/98	1150		2			2		2		2		10	
730412	5/10/98	1420		2			2		2		2		10	Unpreserved
760712	5/9/98	1640		2			2		2		2		10	
760612	5/9/98	1750		2			2		2		2		10	Unpreserved
630212	5/9/98	1250		2			2		2		2		10	Unpreserved
760212	5/6/98	1045		2			2		2		2		10	
770212	5/6/98	1740		2			2		2		2		10	
770412	5/6/98	1730		2			2		2		2		10	
750112	5/6/98	1400		2			2		2		2		10	
750212	5/6/98	1915		2			2		2		2		10	
750412	5/6/98	1640		2			2		2		2		10	

REQUESTED PARAMETERS

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time	TOTAL NUMBER OF CONTAINERS:	Cooler Temperature: 4°C
COMPANY NAME: SAIC	5/11/98 1130	COMPANY NAME:		Cooler ID: #388	FEDEX NUMBER:
RECEIVED BY:	Date/Time	RELINQUISHED BY:	Date/Time		
COMPANY NAME: GEL	5/11/98 1130	COMPANY NAME:			
RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time		
COMPANY NAME:		COMPANY NAME:			

SAIC An Employee-Owned Company
Science Applications International Corporation
800 Oak Ridge Turnpike, Oak Ridge, TN 37831 (423) 481-4600

CHAIN OF CUSTODY RECORD

COC NO.: GAB818

PROJECT NAME: Fort Stewart New CAP Part A UST Investigation 9805

PROJECT NUMBER: 01-0331-04-~~9305~~-200

PROJECT MANAGER: Patty Stoll

Sampler (Signature): Laura Lumley (Printed Name): Laura Lumley

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Raod, Charleston, SC 29417

PHONE NO: (803) 556-8171

Sample ID	Date Collected	Time Collected	Matrix	BTEX	PAH	TOC	BTEX, GRO	PAH, DRO	PAH, DRO, Lead	PAH, TPH	PAH, TPH, Lead	PAH, TPH, Lead, TOC	No. of Bottles/ Vials:	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
600112	5/10/96	1555	water	2									2	(Unpreserved)
760514	5/6/96	1745		2									2	
590112	5/10/96	1040		2									2	
760412	5/6/96	1345		2									2	
760532	5/6/96	1845		2									2	
600212	5/10/96	1630		2									2	
760522	5/8/96	1745		2									2	
640212	5/9/96	1530		2									2	
640112	5/9/96	1445		2									2	
760312	5/6/96	1630		2									2	
600214	5/10/96	1630		2									2	
760612	5/9/96	1930		2									2	
760112	5/10/96	1445	↓	2									2	

REQUESTED PARAMETERS

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time	TOTAL NUMBER OF CONTAINERS:	Cooler Temperature: 4.0 C
Laura Lumley	5/11/96				
COMPANY NAME: SAIC	1130	COMPANY NAME:		Cooler ID: #3886	FEDEX NUMBER:
RECEIVED BY: Brock Ls	Date/Time 5/11/96	RELINQUISHED BY:	Date/Time		
COMPANY NAME: GEC	1130	COMPANY NAME:			
RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time		
COMPANY NAME:		COMPANY NAME:			

5 of 5

An Employee-Owned Company
Applications International Corporation
800 Oak Ridge Turnpike, Oak Ridge, TN 37831 (423) 481-4600

CHAIN OF CUSTODY RECORD

COC NO.: GA 1 0018

PROJECT NAME: Fort Stewart New CAP Part A UST Investigation 9605

PROJECT NUMBER: 01-0331-04-~~9305~~-200

PROJECT MANAGER: Patty Stoll

Sampler (Signature): Laura Lumley (Printed Name): Laura Lumley

Sample ID	Date Collected	Time Collected	Matrix	BTEX	PAH	TOC	BTEX, GRO	PAH, DRO	PAH, DRO, Lead	PAH, TPH	PAH, TPH, Lead	PAH, TPH, Lead, TOC	No. of Bottles/ Vials:	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
760416	5/8/96	1335	water	2									2	

REQUESTED PARAMETERS

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Raod Charleston, SC 29417

PHONE NO: (803) 556-8171

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
Laura Lumley	5/11/96		
COMPANY NAME: SAIC	1130	COMPANY NAME:	
RECEIVED BY:	Date/Time	RELINQUISHED BY:	Date/Time
[illegible]	5/11/96		
COMPANY NAME: GEL	1130	COMPANY NAME:	
RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
COMPANY NAME:		COMPANY NAME:	

TOTAL NUMBER OF CONTAINERS: 106

Cooler ID: ~~11~~ 386

Cooler Temperature: 4°C

FEDEX NUMBER:

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APPENDIX IX

EXCAVATION OF CONTAMINATED SOIL AND SUPPORTING MANIFESTS

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All contaminated soil removed during the entire project (i.e., all USTs removed under contract with ACE, to include clean and non-clean closures) was tested and transported to Kedesh, Inc., Highway 84, Ludowici, GA 31316. The Installation has records of all manifests and weight tickets for this project. However, site/UST specific information is not available.

I certify that the above information is true and accurate. If GA EPD USTMP would like copies of all manifests and weight tickets for the numerous UST removal contracts that the Installation has conducted, the Installation will gladly forward copies to the USTMP.

Name: Thomas C. Fry
Title: Chief, Environmental Branch
Signature: Thomas C. Fry
Date: 03/25/99

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APPENDIX X

SITE RANKING FORM

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SITE RANKING FORM

Facility Name: USTs 257 - 260, Building 430 **Ranked by:** P. Stoll

County: Liberty **Facility ID #:** 0-890037 **Date Ranked:** 7/29/98

SOIL CONTAMINATION

A. Total PAHs –
Maximum Concentration found on the site
(Assume <0.660 mg/kg if only gasoline was stored on site)

☐	≤0.660 mg/kg	=	0
☐	>0.66 - 1 mg/kg	=	10
☐	>1 - 10 mg/kg	=	25
☒	>10 mg/kg	=	50

B. Total Benzene -
Maximum Concentration found on the site

☐	≤0.005 mg/kg	=	0
☐	>0.005 - .05 mg/kg	=	1
☐	>0.05 - 1 mg/kg	=	10
☐	>1 - 10 mg/kg	=	25
☒	>10 - 50 mg/kg	=	40
☐	>50 mg/kg	=	50

C. Depth to Groundwater
(bls = below land surface)

☐	>50' bls	=	1
☐	>25' - 50' bls	=	2
☒	>10' - 25' bls	=	5
☐	≤10' bls	=	10

Fill in the blanks: **(A. 50) + (B. 40) = (90) x (C. 5) = (D. 450)**

GROUNDWATER CONTAMINATION

E. Free Product (Nonaqueous-phase liquid hydrocarbons; See Guidelines For definition of "sheen").

☐	No free product	=	0
☒	Sheen - 1/8"	=	250
☐	>1/8" - 6"	=	500
☐	>6" - 1ft.	=	1,000
☐	For every additional inch, add another 100 points = 1,000 + _____		

F. Dissolved Benzene -
Maximum Concentration at the site
(One well must be located at the source of the release.)

☐	≤5 µg/L	= 0
☐	>5 - 100 µg/L	= 5
☐	>100 - 1,000 µg/L	= 50
☐	>1,000 - 10,000 µg/L	= 100
☒	>10,000 µg/L	= 250

Fill in the blanks: **(E. 250) + (F. 250) = (G. 500)**

POTENTIAL RECEPTORS (MUST BE FIELD-VERIFIED)

Distance from nearest contaminant plume boundary to the nearest downgradient and hydraulically connected Point of Withdrawal for water supply. **If the point of withdrawal is not hydraulically connected, evidence as outlined in the CAP-A guidance document MUST be presented to substantiate this claim.**

H. Public Water Supply

☐	Impacted	= 2000
☐	≤500'	= 500
☐	>500' - ¼ mi	= 25
☐	¼ mi - 1 mi	= 10
☐	>1 mi - 2 mi	= 2
✳ ☒	> 2 mi	= 0

For lower susceptibility areas only:

☐	>1 mi	= 0

I. Non-Public Water Supply

☐	Impacted	= 1000
☐	≤100'	= 500
☐	>100' - 500'	= 25
☐	>500' - ¼ mi	= 5
☐	>¼ - ½ mi	= 2
☒	>½ mi	= 0

For lower susceptibility areas only:

☐	>¼ mi	= 0

Note: If site is in lower susceptibility area, do not use the shaded areas.

✳ For justification that withdrawal point is not hydraulically connected, see page X-5.

J. Distance from nearest Contaminant Plume boundary to downgradient Surface Waters **OR UTILITY TRENCHES & VAULTS** (a utility trench may be omitted from ranking if its invert elevation is more than 5 feet above the water table)

☐	Impacted	= 500
☒	≤500'	= 50
☐	>500' - 1,000'	= 5
☐	>1,000'	= 1

K. Distance from any Free Product to basements and crawl spaces

☐	Impacted	= 500
☐	<500'	= 50
☐	>500' - 1,000'	= 5
☒	>1,000' or no free product.	= 0

Fill in the blanks: (H. 0) + (I. 0) + (J. 50) + (K. 0) = L. 50

(G. 500) x (L. 50) = M. 25000

(M. 25000)+ (D. 450) = N. 25450

P. **SUSCEPTIBILITY AREA MULTIPLIER**

☐ If site is located in a Low Ground-Water Pollution Susceptibility Area = 0.5

☒ All other sites = 1

Q. **EXPLOSION HAZARD**

Have any explosive petroleum vapors, possibly originating from this release, been detected in any subsurface structure (e.g., utility trenches, basements, vaults, crawl spaces, etc.)?

☐ Yes = 200,000

☒ No = 0

Fill in the blanks: (N. 25450) x (P. 1) = (25450) + (Q. 0)

= 25450

ENVIRONMENTAL SENSITIVITY SCORE

OTHER GEOLOGIC AND HYDROLOGIC DATA

The following information is presented to provide supplemental information to Section II.D.5 of the CAP-Part A form and provides detailed information relating to the geologic and hydrogeologic conditions at Fort Stewart to support determinations of groundwater flow pathway(s) or direction(s) and contaminant transport.

1.0 REGIONAL AND LOCAL GEOLOGY

Fort Stewart is located within the coastal plain physiographic province. This province is typified by nine southeastward dipping strata that increase in thickness from zero feet at the fall line located approximately 350 miles inland from the Atlantic coast, to approximately 4,200 feet at the coast. State geologic records describe a probable petroleum exploration well (the No. 1 Jelks-Rogers) located in the region as encountering crystalline basement rocks at a depth of 4254 feet BGS. This well provides the most complete record for Cretaceous, Tertiary, and Quaternary sedimentary strata in the region.

The Cretaceous section was found to be approximately 1,970 feet thick and dominated by clastics. The Tertiary section was found to be approximately 2,170 feet thick and dominated by limestone with a 175-foot thick cap of dark green phosphatic clay. This clay is regionally extensive and is known as the Hawthorn Group. The interval from approximately 110 feet to the surface is Quaternary in age and composed primarily of sand with interbeds of clay or silt. This section is undifferentiated into separate formations (Metcalf & Eddy 1996).

State geologic records contain information regarding a well drilled in October 1942, 1.8 miles north of Flemington at Liberty Field of Camp Stewart (now known as Fort Stewart). This well is believed to be an artesian well located approximately one-quarter mile north of the runway at Wright Army Airfield within the Fort Stewart Military Reservation. The log for this well describes a 410-foot section, the lowermost 110 feet of which consisted predominantly of limestone sediments, above which 245 feet of dark green phosphatic clay typical of the Hawthorn Group was encountered. The uppermost portion of the section was found to be Quaternary age interbedded sands and clays. The top 15 feet of these sediments were described as sandy clay (Metcalf & Eddy 1996).

The surface soil located throughout the Fort Stewart garrison area consists of Stilson loamy sand. The surface layer of this soil is typically dark grayish brown loamy sand measuring approximately 6 inches in depth. The surface layer is underlain by material consisting of pale yellow loamy sand and extends to a depth of approximately 29 inches. The subsoil is predominantly sandy clay loam and extends to a depth of 72 inches or more (Metcalf & Eddy 1996).

2.0 REGIONAL AND LOCAL HYDROGEOLOGY

The hydrogeology in the vicinity of Fort Stewart is dominated by two aquifers referred to as the Principal Artesian and the surficial aquifers. The Principal Artesian aquifer is the lowermost hydrologic unit and is regionally extensive from South Carolina through Georgia, Alabama, and most of Florida. Known elsewhere as the Floridan, this aquifer is composed primarily of Tertiary age limestone, including the Bug Island Formation, the Ocala Group, and the Suwannee Limestone. These formations are approximately 800 feet thick, and groundwater from this aquifer is used primarily for drinking water (Arora 1984).

The uppermost hydrologic unit is the surficial aquifer, which consists of widely varying amounts of sand and clay ranging from 55 to 150 feet in thickness. This aquifer is primarily used for domestic lawn and

agricultural irrigation. The top of the water table ranges from approximately 2 to 10 feet BGS (Geraghty and Miller 1993). The base of the aquifer corresponds to the top of the underlying dense clay of the Hawthorn Group. The Hawthorn Group was not encountered during drilling at this site, but is believed to be located at 40 to 50 feet BGS, thus the effective aquifer thickness would be approximately 35 to 45 feet. Soil surveys for Liberty and Long Counties describe the occurrence of a perched water table within the Stilson loamy sands present within Fort Stewart (Looper 1980).

The confining layer for the Principal Artesian aquifer is the phosphatic clay of the Hawthorn Group and ranges in thickness from 15 to 90 feet. The vertical hydraulic conductivity of this confining unit is on the order of 10^{-8} cm/sec. There are minor occurrences of aquifer material within the Hawthorn Group; however, they have limited utilization (Miller 1990). The Hawthorn Group has been divided into three formations: Cooswhatchie Formation, Markshead Formation, and the Parachula Formation, which are listed from youngest to oldest.

The Coosawhatchie Formation is composed predominantly of clay, but also has sandy clay, argillaceous sand, and phosphorite units. The formation is approximately 170 feet thick in the Savannah Georgia area. This unit disconformably overlies the Markshead Formation and is distinguished from the underlying unit by dark phosphatic clays or phosphorite in the lower part and fine-grained sand in the upper part.

The Marshead Formation is approximately 70 feet thick in the Savannah Georgia area and consists of light colored phosphatic, slightly dolomitic, argillacerous sand to fine-grained sandy clay with scattered beds of dolostone, limestone, and siliceous, and dolomitic and less calcareous.

The Parachula Formation consists of sand, clay, limestone, and dolomite, and is approximately 10 feet thick in the Savannah Georgia area. The Parachula Formation generally overlies the Suwannee Limestone in Georgia.

APPENDIX XI

PUBLIC NOTIFICATION

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STATE OF GEORGIA
CHATHAM COUNTY

Affidavit of Publication
___Savannah Morning News
___Savannah Evening Press

Personnally appeared before me, Joan T. Jenkins, to me known, who being sworn, deposes and says:

That he is the Classified Adv Supv of Southeastern Newspapers Corporation, a Georgia corporation, doing business in Chatham County, Georgia, under the trade name of Savannah Morning News/Savannah Evening Press, a daily newspaper published in said county;

That he is authorized to make affidavits of publication on behalf of said published corporation;

That said newspaper is of general circulation in said county and in the area adjacent thereto;

That he has reviewed the regular editions of the Savannah Morning News/Savannah Evening Press, published on 7-19, 1998, 7-26, 1998, _____, 1998, _____, 1998, and finds that the following Advertisement, to-wit:

PUBLIC NOTICE
Notification of Corrective Action Plan, Underground Storage Tank Releases, Fort Stewart, Georgia Area, Fort Stewart, Georgia
The United States Army Corps of Engineers and Fort Stewart Directorate of Public Works have prepared Corrective Action Plan (CAP) - Part A and Part B reports to assess the environmental impact of diesel, gasoline, or waste oil releases from numerous underground storage tanks (USTs) located at the above referenced property. These reports will be submitted to the Georgia Environmental Protection Division after September 30, 1998. A listing of the UST sites for which CAP - Part A and Part B reports have been prepared is presented at the end of this notification.
The Georgia rules for UST management require notification of the public most directly affected by the plans. If you would like a copy of any of the plans, please contact:
Commander, 3rd Infantry Division (Mechanized) and Fort Stewart, Attn: AFZP-DEV (T. Rutland), Building 1139, Fort Stewart, Georgia 31314-5000
A copy of each requested plan will be mailed at a nominal copying and shipping fee.
To make comments on any of the plans, or to examine the Georgia Environmental Protection Division's files, contact the Corrective Action Unit, Underground Storage Tank Management Program, Environmental Protection Division at 404-362-2687. The Underground Storage Tank Management Program will accept comments on the CAP - Part A and Part B reports up to 30 days after submittal to the Georgia Environmental Protection Division. Following is their mailing address: Corrective Action Unit, Underground Storage Tank Management Program, 4244 International Parkway, Suite 100, Atlanta, Georgia 30354
Fort Stewart CAP - Part A and Part B Underground Storage Tank Sites

Tank Number Facility ID Building
242, 9-089041, 241
244, 9-089041, 241
286, 9-089017, 1720
1008, 9-089081, 1350
948, 9-089118, 1339
214, 9-089015, 1503
215, 9-089015, 1503
123, 9-089092, 9123
106, 9-089032, 6923
111, 9-089085, 19109
118, 9-089070, 1239
36, 9-089014, 1512
37, 9-089014, 1512
94, 9-089074, 1328
4, 9-089065, 1840
5 and 6, 9-089066, 1824
52, 9-089050, 1062
X, 9-, 106501
1, 9-089064, 1842
18, 9-089011, 1720
20, 9-089011, 1720
28A, 9-089014, 1720
30-35, 9-089028, 1421
200-204, 9-089045, 241
261, 9-089118, 450
225, 9-089099, 4329
132, 9-089083, 7705
257-260, 9-089037, 430
2 and 3, 9-089065, 1840
87 and 88, 9-089073, 1245
48 and 49, 9-089054, 1175
226 and 227, 9-089042, 430

appeared in each of said editions.

Joan T. Jenkins
(Deponent)

Sworn to and subscribed before me this 28 day of July, 1998.

Lillie D. Lang
Notary Public, Chatham County, Georgia

LILLIE D. LANG
Notary Public, Chatham County, Ga.
My Commission Expires Apr. 8, 2001

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ATTACHMENT A

TECHNICAL APPROACH

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TECHNICAL APPROACH

1.0 INTRODUCTION

The overall objective of this project is to provide the engineering services required to produce Corrective Action Plans (CAPs) for the subject UST sites. These reports will conform to the site closure requirements of a CAP-Part A for sites in Georgia. The field investigations necessary to support the report preparation included the installation of temporary piezometers, soil borings, and associated sampling of soil and groundwater. Upon completion of the field investigations, a CAP-Part A will be prepared to meet Georgia Environmental Protection Division (GA EPD), Fort Stewart, and the U.S. Army Corps of Engineers (USACE)-Savannah requirements.

2.0 FIELD ACTIVITIES

The following sections detail the methodologies used for geoprobe drilling, sampling, and piezometer installation. A geologist from SAIC was on site at all times during operations. No drilling activities were undertaken until all utility clearances and permits had been obtained from Fort Stewart's utility personnel.

2.1 Subsurface Soil Sampling

2.1.1 Geoprobe Drilling

The geoprobe method was used during the project for the collection of soil samples. During all geoprobe drilling, soil samples were collected continuously on 4.0-foot centers from the ground surface to the bottom of the borehole. The total depth of each borehole was dictated by the depth where the water table was encountered.

2.1.2 Sample Collection

Soil samples for chemical analyses were collected from boreholes using 4.0-foot macro-core samplers. Upon retrieval of the sampling device, the soil core was split into two 2.0-foot sections using a stainless steel knife. A portion of each 2.0-foot section was collected for possible laboratory analysis. The remaining portion of each 2.0-foot section was used for field measurements.

Samples designated for possible laboratory analysis were collected from the section using a stainless steel spoon. The spoon was run lengthwise down the core to collect a sample representative of the entire core section. The portion of the sample designated for volatile organic analyses was placed into laboratory sample containers first, followed by placement of the remaining portion of the sample into the containers designated for other types of analyses. Sample containers designated for volatile organic analyses were filled so that minimal headspace was present in the containers. Headspace gas concentration measurements were made using a field organic vapor meter (OVM). Initially, soil from each 2.0-foot interval was placed into a glass jar, leaving some air space, and covered with aluminum foil to create an air-tight seal. The sample was allowed to volatilize for a minimum of 15 minutes. The sealed jar was punctured with the OVM probe and headspace gas drawn until the meter reading was stable. The concentration of the headspace gas was recorded to the nearest 0.1 part per million.

Immediately after collection of each sample and completion of bottle label information, each potential analytical sample container was placed into an ice-filled cooler to ensure preservation. A clean split-barrel sampling device was used to collect soil core from each interval of the project boreholes. Information regarding the criteria for selection of soil samples for off-site shipment to a laboratory for chemical analysis

is presented in Section 3.1.3 of the project Work Plan. Soil samples, which were not selected for laboratory analysis, were disposed of as investigation-derived waste.

2.2 Groundwater Sampling

2.2.1 Groundwater Collection

Collection of groundwater samples from geoprobe boreholes installed during Preliminary Groundwater and CAP-Part A investigations was accomplished using a geoprobe sampler or from temporary piezometers. The geoprobe sampler is a probe that allows the collection of a groundwater sample from a discrete undisturbed depth interval in a soil boring. Temporary piezometers were constructed of 1.0-inch inside diameter (ID) polyvinyl chloride (PVC) casing with a 5-foot or 10-foot screened interval. These piezometers were installed in the open borehole following completion of all drilling activities.

Each soil borehole was advanced to the top of the water table using direct push methods. For each borehole, the geoprobe sampler was lowered to the bottom of the borehole and driven through the undisturbed soil to a depth of approximately 3.0 feet below the water table. The outer casing of the geoprobe sampler was retracted to expose the screen and allow groundwater to enter the chamber. In cases where the geoprobe sampler could not be driven or where groundwater recovery through the geoprobe sampler was poor, the groundwater sample was collected through the temporary piezometer.

Groundwater samples were collected using a peristaltic pump or a 0.75-inch diameter stainless steel bailer. The portion of the sample designated for volatile organic analysis was poured into laboratory sample containers first, followed by pouring the remaining sample portion into containers designated for other types of chemical analyses. Sample containers designated for volatile organic analysis were filled so that no headspace was present in the containers.

2.2.2 Field Measurements

Groundwater field measurements performed during the project included measurement of static groundwater level, pH, specific conductance, and temperature. Measurement of groundwater levels in soil boreholes was accomplished through the installation of temporary PVC piezometers. A summary of the procedures and criteria to be used for groundwater sample field measurements is presented in the following sections.

Static Groundwater Level

Static groundwater level measurements were made using an electronic water level indicator. Initially, the indicator probe was lowered into each temporary piezometer casing until the alarm sounded and/or the indicator light illuminated. The probe was withdrawn several feet and slowly lowered again until the groundwater surface was contacted as noted by the alarm and/or indicator light. Water level measurements were estimated to the nearest 0.01 foot based on the difference between the nearest probe cord mark to the top of the piezometer casing.

The distance between the top of casing and the surrounding ground surface was taken into account in measuring the water level to within 0.01 foot. The static water level measurement procedure was repeated two or three times to ensure that the water level measurements were consistent (plus or minus 0.01 foot). If this was the case, then the first measured level was recorded as the depth to groundwater. If this was not the case, the procedure was repeated until consistent readings were obtained from three consecutive measurements.

pH, Specific Conductance, and Temperature

The pH, specific conductance, and temperature measurements were recorded for groundwater during groundwater sampling. The pH, temperature, and conductivity measurements were made using a combination meter designed to measure these parameters. A portion of each groundwater sample was retrieved from the PowerPunch sampler and poured into the collection cup. With the combination meter set in the pH mode, the meter electrode was swirled at a slow constant rate within the sample until the meter reading reached equilibrium. The sample pH was recorded to the nearest 0.1 pH unit. The pH measurement procedure was repeated, using a new sample each time, until the pH measurements were consistent (less than 0.2 pH units variation).

Upon completion of the pH measurement, conductivity and temperature measurements were made on a groundwater sample collected in the same manner as described above. With the combination meter set in the conductivity mode, the meter electrode was swirled at a slow constant rate within the sample until the meter reading reached equilibrium. Concurrently, a temperature probe was placed into the sample and allowed to reach equilibrium. The sample conductivity was recorded to the nearest 10 mmhos/cm and the temperature to the nearest 0.1° C. All recorded conductivity values were converted to conductance at 25° C. The conductivity and temperature measurement procedure was repeated a minimum of three times using a new sample each time, until the measurements are consistent (less than 10 percent variation for conductance and less than 0.5° C variation for temperatures).

2.3 Temporary Piezometer Installation

Following the collection of the groundwater sample, a 1.0-inch PVC piezometer, with a 5-foot or 10-foot screened section, was installed in the borehole to prevent the borehole from collapsing. These piezometers remained in the boreholes approximately 24-hours, after which time the static water level was measured.

2.4 Borehole Abandonment

Once the static water level was measured, the temporary piezometers were removed and the boreholes were abandoned. Abandonment was conducted in a manner precluding any current or subsequent fluid media from entering or migrating within the subsurface environment along the axis or from the endpoint of the borehole. Abandonment was accomplished by filling the entire volume of the borehole with grout.

2.5 Surveying

A topographic survey of the horizontal and vertical locations of all soil boreholes was conducted after completion of all field activities. The topographic survey was conducted by a surveyor registered in the state of Georgia.

The horizontal coordinates for each soil borehole were surveyed to the closest 1.0 foot and referenced to the State Plane Coordinate System. Ground elevations were surveyed to the closest 0.1 foot. Elevations were referenced to the National Geodetic Vertical Datum of 1983.

2.6 Decontamination Procedures

2.6.1 Geoprobe Equipment

Decontamination of equipment used for the drilling of boreholes was conducted within the temporary decontamination pad constructed at the central staging area. The decontamination pad was constructed so that all decontamination liquids were contained from the surrounding environment and were recovered for disposal as investigation-derived waste (IDW). The entire geoprobe vehicle and equipment was decontaminated once it arrived on site and the geoprobe sampling equipment was decontaminated after completion of each soil borehole. The equipment was decontaminated by removing the caked soil material from the exterior of equipment using a rod and/or brush, steam cleaning the interior and exterior of equipment, allowing the equipment to air dry as long as possible, and wrapping or covering the equipment in plastic.

2.6.2 Sampling Equipment

Decontamination of equipment used for soil sampling and collection of groundwater samples was conducted at the temporary decontamination area. Nondedicated equipment was decontaminated after each use. The sampling equipment was washed with potable water and phosphate-free detergent using various types of brushes required to remove particulate matter and surface films, followed by a potable water rinse, ASTM Type I or equivalent water rinse, isopropyl alcohol rinse, ASTM Type I or equivalent water rinse, allowed to air dry, and wrapped in plastic or aluminum foil.

In addition to the sampling equipment, field measurement instruments were also decontaminated between uses. Only those portions of each instrument that come into contact with potentially contaminated environmental media were decontaminated. Because of the delicate nature of these instruments, the decontamination procedure only involved initial rinsing of the instrument probes with ASTM Type I or equivalent water.

2.7 Documentation of field activities

All information pertinent to sampling activities, including instrument calibration data, was recorded in field logbooks. The logbooks were bound and the pages consecutively numbered. Entries in the logbooks were made in black permanent ink and included, at a minimum, a description of all activities, individuals involved in drilling and sampling activities, date and time of drilling and sampling, weather conditions, any problems encountered, and all field measurements. Sufficient information was recorded in the logbooks to permit reconstruction of all sampling activities.

3.0 SAMPLE HANDLING AND ANALYSIS

3.1 Analytical Program

Soil samples were screened for the presence of volatile vapors using a organic vapor analyzer (PID). The PID was calibrated daily using 100 parts per million (ppm) isobutylene. The headspace of each sample was measured approximately 15 minutes after collection.

For sites where the UST had contained waste oil, soil samples were analyzed for BTEX by method SW846-8020, PAH by method SW846-8270, and TPH by method SW846-9073. Groundwater samples were analyzed for BTEX by method SW 846-8240 and PAH by method SW 846-8270. All samples were sent to General Engineering Laboratories, Charleston, South Carolina.

For sites where the UST had contained gasoline or diesel, soil samples were analyzed for BTEX by method SW 846-8020, PAH by method SW 846-8270, and TPH by method SW 846-8015 (modified). Groundwater samples were analyzed for BTEX by method SW 846-8240 and PAH by method SW 846-8270. TPH analysis included both gasoline range organics and diesel range organics. All samples were sent to General Engineering Laboratories, Charleston, South Carolina.

Duplicate samples of soil and groundwater were collected throughout the project and represented approximately 10 percent of the total sample population. Rinsate blanks were collected to determine whether the sampling equipment was causing cross-contamination of the samples and represented approximately 5 percent of the total sample population. Duplicates and rinsates were submitted to General Engineering Laboratories, Charleston, South Carolina.

3.2 Sample Containers, Preservation, and Holding Times

The soil sample containers, preservatives, and holding times are summarized in Table A-1. The groundwater sample containers, preservatives, and holding times are summarized in Table A-2.

3.3 Sampling Packaging and Shipment

Each sample container was labeled, taped shut with electrical tape (except those containing samples designated for volatile organic analysis), and a initialed/dated custody seal was placed over the lid. Each sample bottle was placed into a separate plastic bag and sealed. The samples were placed upright in thermally insulated rigid-body coolers and surrounded by vermiculite to prevent breakage during shipment. In addition, samples were cooled to approximately 4° C with wet ice. These measures were taken to slow the decomposition and volatilization of contaminants during shipping and handling. The sample coolers were shipped to the analytical laboratory via courier service provided by the laboratory.

Table A-1. Summary of Sample Containers, Preservation Techniques, and Holding Times for Soil Samples Collected During the Site Investigation

Analyte Group	Container	Minimum Sample Size	Preservative	Holding Time
BTEX	1 – 4 oz jar with Teflon®-lined cap (no headspace)	20 g	Cool, 4°C	14 d
TPH-GRO	use same container as BTEX	20 g	Cool, 4°C	14 d
PAHs	1 – 8 oz jar with Teflon®-lined cap	90 g	Cool, 4°C	14 d (extraction) 40 d (analysis)
TPH-DRO	use same container as PAHs	90 g	Cool, 4°C	14 d (extraction) 40 d (analysis)
TPH	use same container as PAHs	90 g	Cool, 4°C	14 d (extraction) 40 d (analysis)
Metals (lead)	use same container as PAHs	20 g	Cool, 4°C	180 d

Table A-2. Summary of Sample Containers, Preservation Techniques, and Holding Times for Groundwater Samples Collected During the Site Investigation

Analyte Group	Container	Minimum Sample Size	Preservative	Holding Time
BTEX	2 – 40 mL glass vials with Teflon®-lined septum (no headspace)	40 mL	Cool, 4°C HCl to pH < 2	14 d
PAHs	2 – 1L amber glass bottle with Teflon®-lined lid	1000 mL	Cool, 4°C	7 d (extraction) 40 d (analysis)

ATTACHMENT B

REFERENCES

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Anderson Columbia Environmental Inc., 1996. Closure Report, Waste Oil Tank, Building P430, Tank 261, Facility ID: 9-089118, Fort Stewart, Georgia, October.

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Looper, Edward E., 1980. Soil Survey of Liberty and Long Counties, Georgia, U.S. Department of Agriculture, Soil Conservation Service.

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Miller, James A., 1990. Groundwater Atlas of the United States, U.S. Department of the Interior, U.S. Geological Survey, Hydrologic Inventory Atlas 730G.

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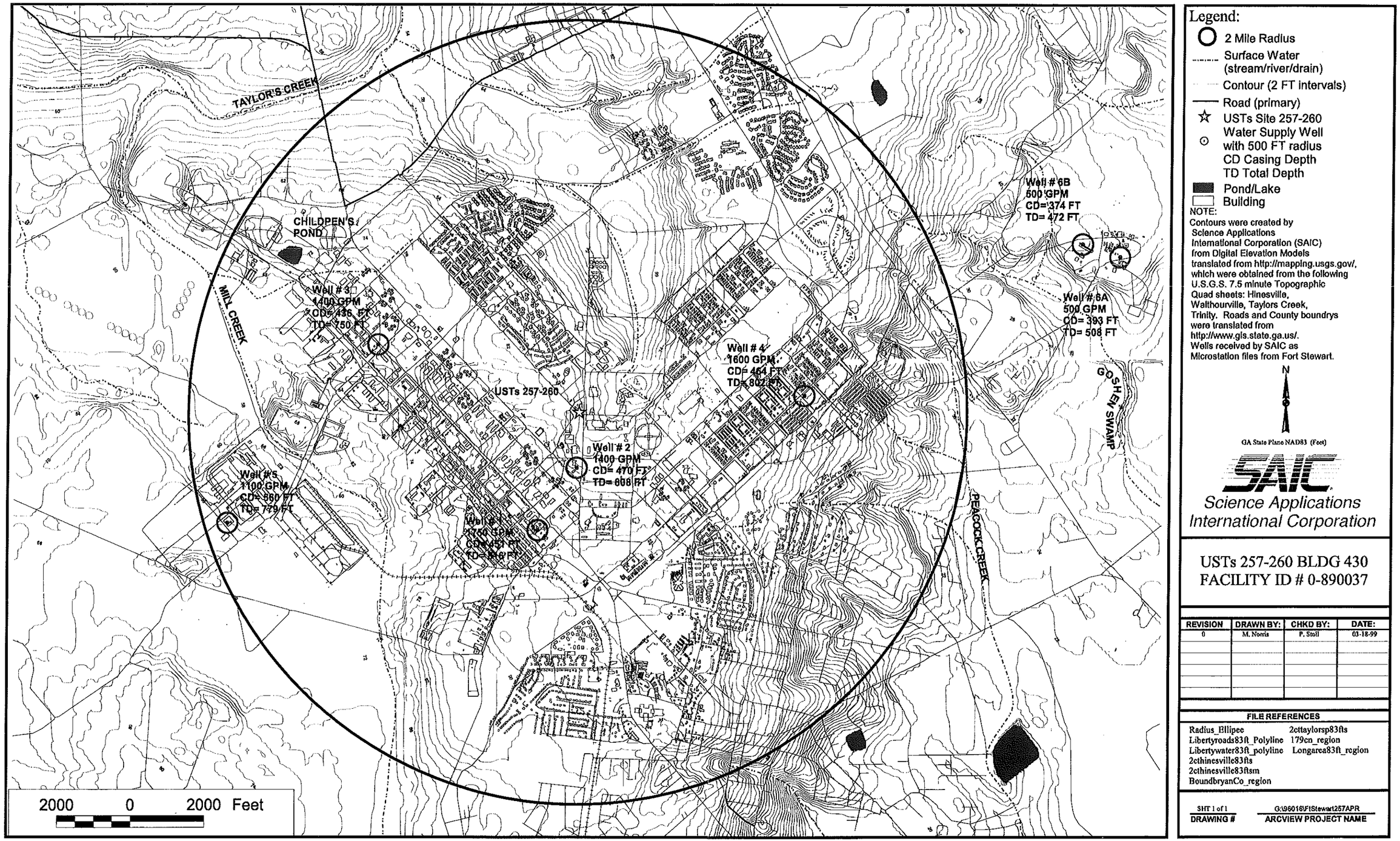

Legend:

- 2 Mile Radius
- Surface Water (stream/river/drain)
- Contour (2 FT intervals)
- Road (primary)
- USTs Site 257-260
- Water Supply Well with 500 FT radius
  CD Casing Depth
  TD Total Depth
- Pond/Lake
- Building

NOTE:
Contours were created by Science Applications International Corporation (SAIC) from Digital Elevation Models translated from http://mapping.usgs.gov/, which were obtained from the following U.S.G.S. 7.5 minute Topographic Quad sheets: Hinesville, Walthourville, Taylors Creek, Trinity. Roads and County boundrys were translated from http://www.gis.state.ga.us/. Wells received by SAIC as Microstation files from Fort Stewart.

N

GA State Plane NAD83 (Feet)

SAIC
Science Applications International Corporation

USTs 257-260 BLDG 430
FACILITY ID # 0-890037

REVISION	DRAWN BY:	CHKD BY:	DATE:
0	M. Norris	P. Stoll	03-18-99

FILE REFERENCES

Radius_Ellipee	2cttaylorsp83fts
Libertyroads83ft_Polyline	179cn_region
Libertywater83ft_polyline	Longarea83ft_region
2cthinesville83fts	
2cthinesville83ftsm	
BoundbryanCo_region	

SHT 1 of 1 — DRAWING #
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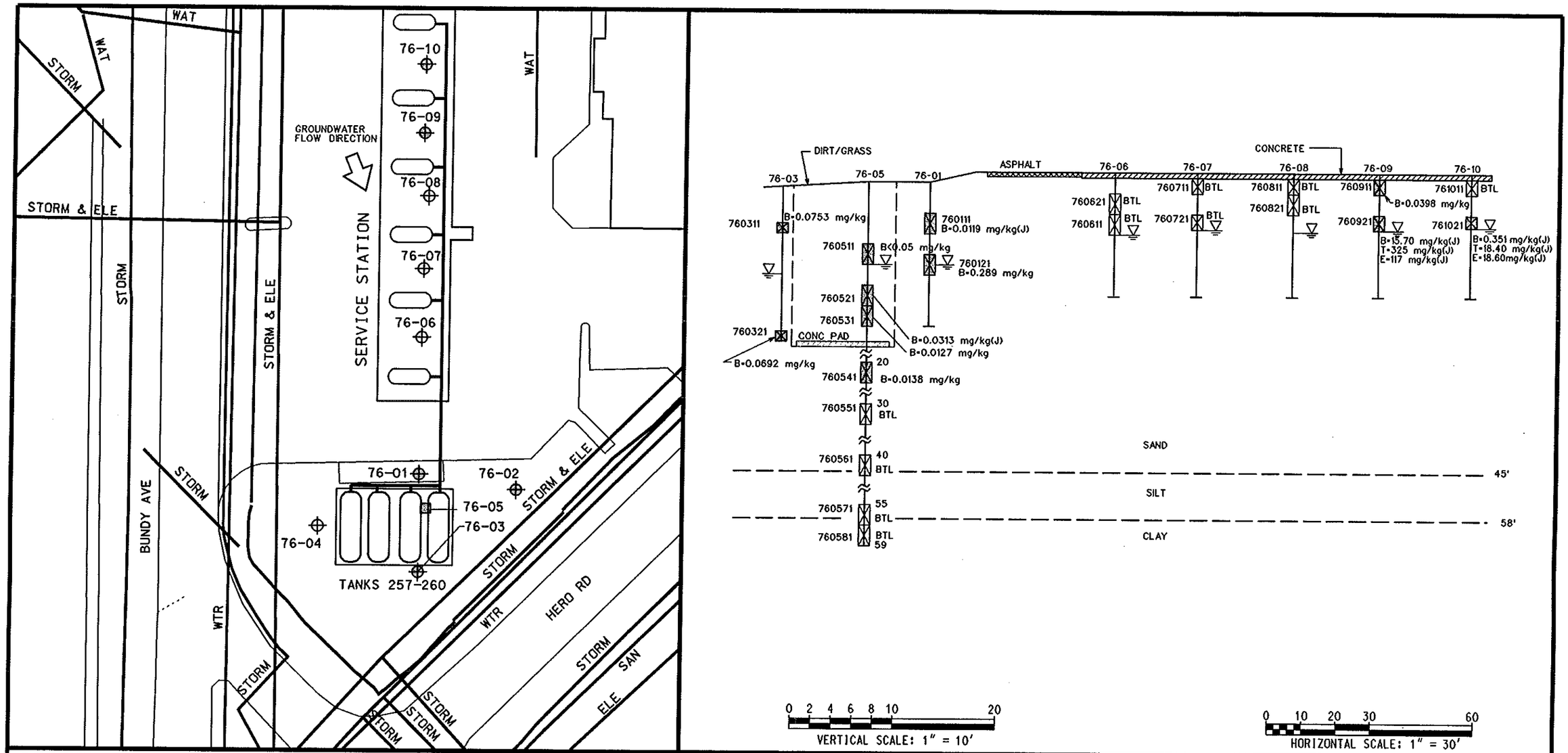
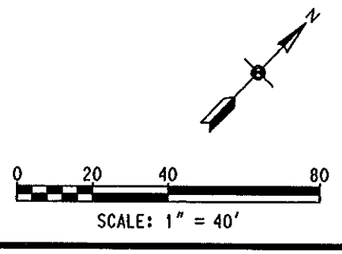
Figure 3. Map Showing Public and Private Drinking Water Sources and Surface Water Bodies at Fort Stewart, Liberty County, Georgia



LEGEND

- CAP-PART A INVESTIGATION BOREHOLE
- SOIL SAMPLE LOCATION EXCEEDING THRESHOLD LEVELS
- TANK REMOVAL SAMPLE LOCATION
- CAP PART A VERTICAL PROFILE WITH SOIL SAMPLES EXCEEDING THRESHOLD LEVELS
- SOIL SAMPLE INTERVAL AND SAMPLE ID
- SOIL SAMPLE INTERVAL EXCEEDING THRESHOLD LEVELS
- ESTIMATED LIMIT OF SOIL CONTAMINATION

B	BENZENE	THRESHOLD LEVELS
T	TOLUENE	B = 0.008 mg/kg
E	ETHYLBENZENE	T = 6.0 mg/kg
X	XYLENES, TOTAL	E = 10.0 mg/kg
BTL	BELOW THRESHOLD LEVELS	X = 700 mg/kg
	APPROXIMATE WATER LEVEL	



U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
SAVANNAH, GEORGIA

USTs 257,258,259, & 260 BLDG 430
FACILITY ID # 0-890037
SOIL SAMPLING LOCATIONS &
ANALYTICAL RESULTS

DRAWN BY:	REV. NO./DATE:	CAD FILE:
J. LAMB	0/08/28/98	96016/DGNS/B99C003DA.DGN

Figure 4a. Soil Quality Map of the USTS 257 - 260, Building 430 Site

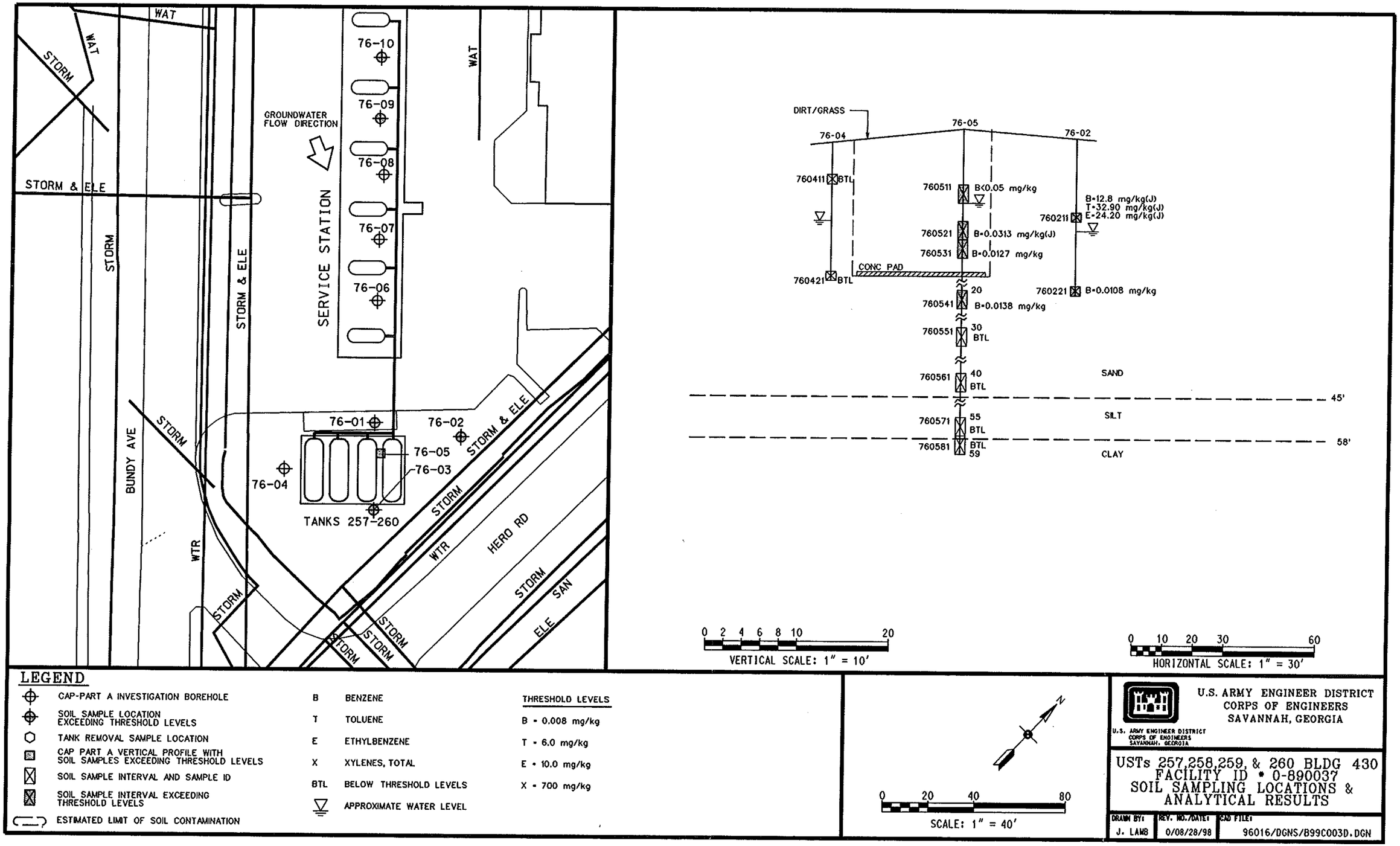


Figure 4b. Soil Quality Map of the USTS 257 - 260, Building 430 Site

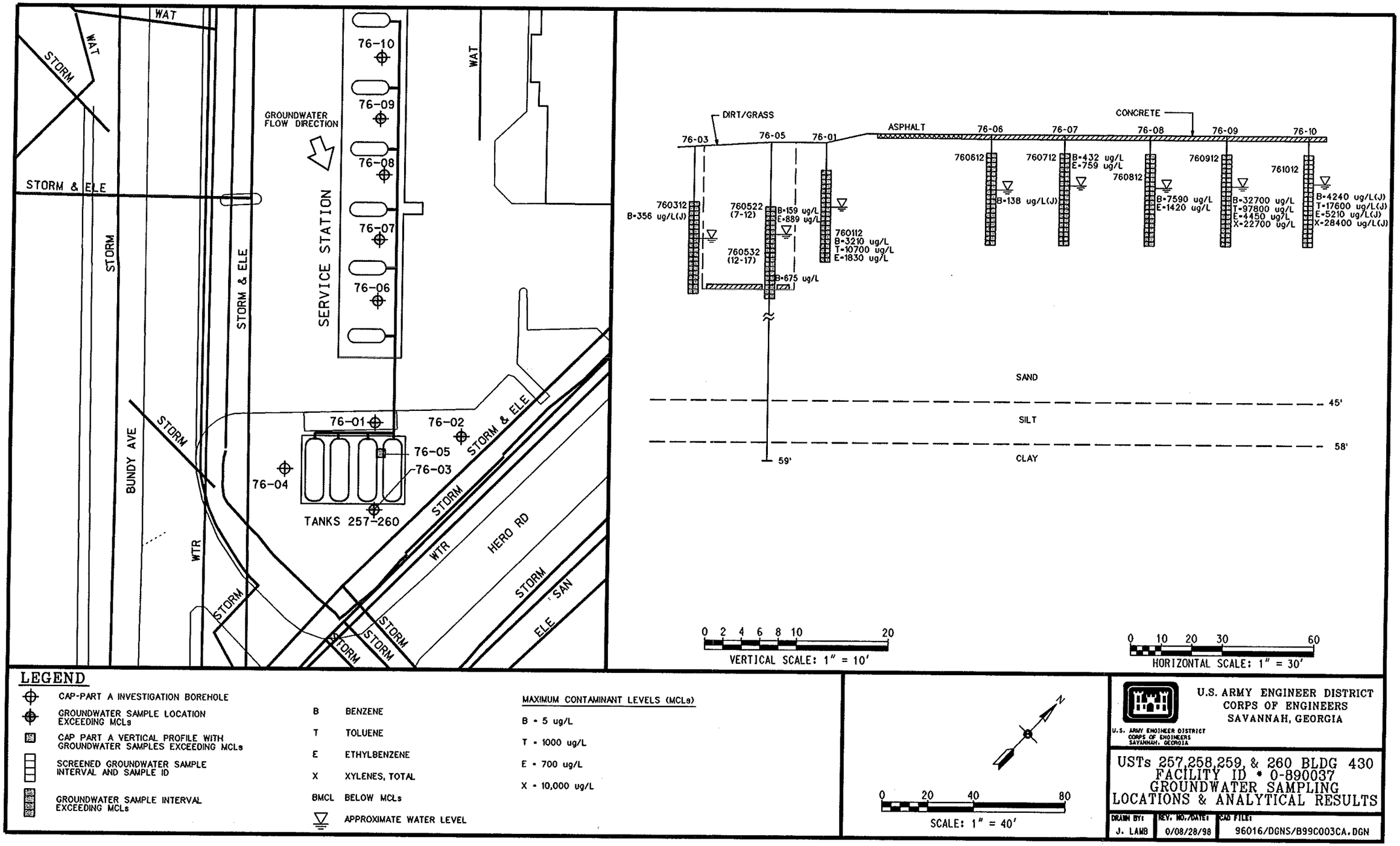


Figure 5a. Groundwater Quality Map of the USTS 257 - 260, Building 430 Site

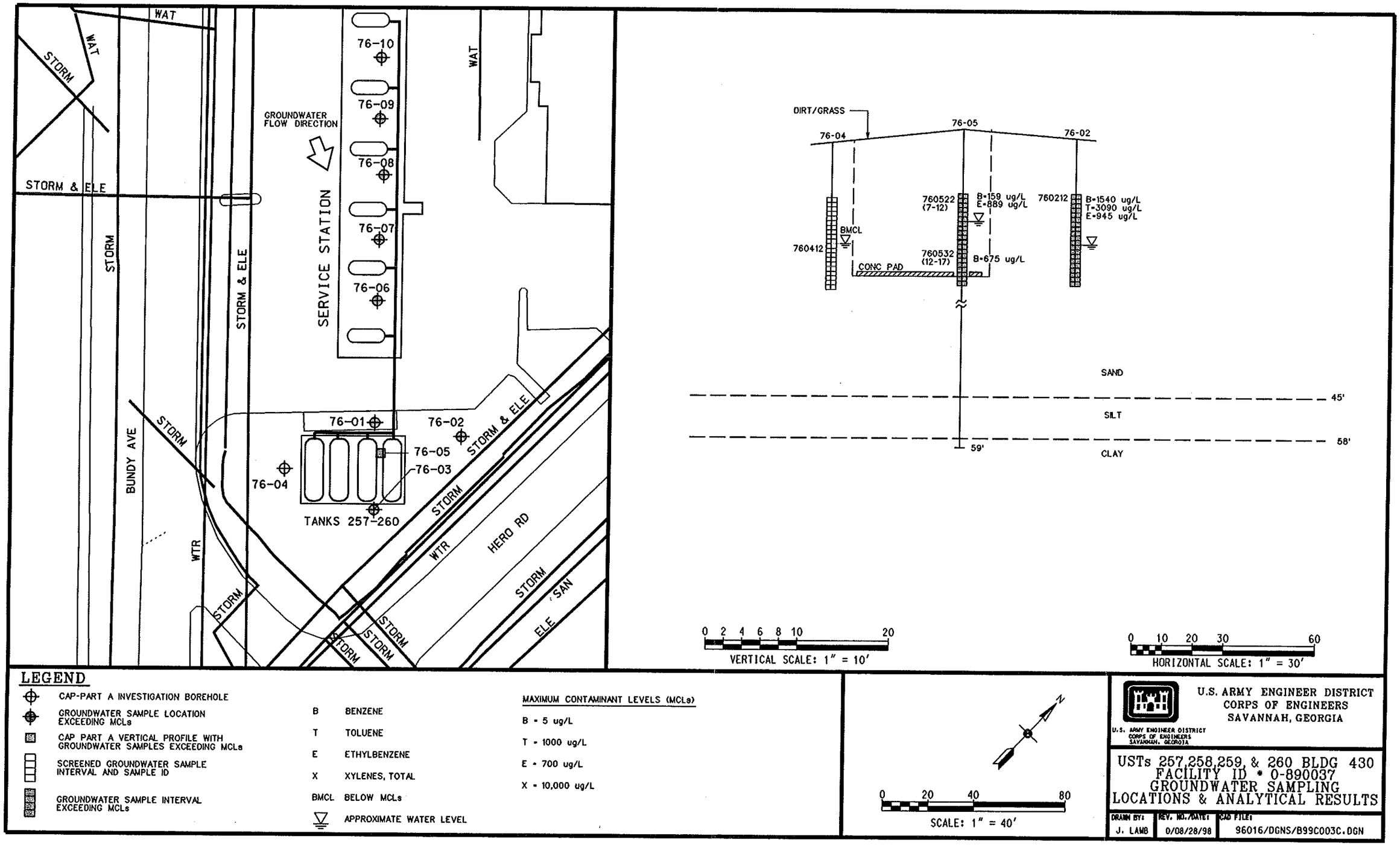


Figure 5b. Groundwater Quality Map of the USTS 257 - 260, Building 430 Site