REVISED FINAL



CORRECTIVE ACTION PLAN PROGRESS REPORT FOR CALENDAR YEAR 2002





3d Inf Div (Mech)

SOLID WASTE MANAGEMENT UNIT 27F: 3D ENGINEER BRIGADE, NORTHWEST OF BUILDING 1340 AT FORT STEWART, GEORGIA

Prepared for



US Army Corps of Engineers® SAVANNAH DISTRICT

Contract No. DACA21-02-D-0004 Delivery Order 0015

December 2005



REVISED FINAL

CORRECTIVE ACTION PLAN PROGRESS REPORT FOR CALENDAR YEAR 2002 FOR THE SOLID WASTE MANAGEMENT UNIT 27F: 3D ENGINEER BRIGADE, NORTHWEST OF BUILDING 1340 AT FORT STEWART, GEORGIA

Prepared for

U.S. Army Corps of Engineers Savannah District Under Contract DACA21-02-D-0004 Delivery Order Number 0015

Prepared by

Science Applications International Corporation 151 Lafayette Drive Oak Ridge, TN 37830

December 2005

SCIENCE APPLICATIONS INTERNATIONAL CORPORATION

contributed to the preparation of this document and should not be considered an eligible contractor for its review.

CERTIFICATION

This Corrective Action Plan Progress Report for Calendar Year 2002 for the Solid Waste Management Unit 27F: 3d Engineer Brigade Northwest of Building 1340 at Fort Stewart, Georgia, has been prepared in accordance with Title 40, Code of Federal Regulations, Part 264 and Hazardous Waste Facility Permit No. HW-045(S&T), as renewed August 14, 1997.

The undersigned certifies that I am a qualified groundwater scientist who has received a baccalaureate or postgraduate degree in the natural sciences or engineering and that I have sufficient training and experience in groundwater hydrology and related fields, as demonstrated by state registration and completion of accredited university courses, to enable me to make sound professional judgments regarding groundwater monitoring and contaminant fate and transport. I further certify that this report was prepared by myself or by a subordinate working under my direction.

FESSION Patricia A. Stoll, P.E.

Technical Manager Science Applications International Corporation

CONTENTS

FIG	URES	5	vii
TAE	BLES		vii
ACF	RONY	/MS	ix
1.0	INT	RODUCTION	1
	1.1	SITE BACKGROUND AND OPERATIONAL HISTORY	1
	1.2	SUMMARY OF PHASE I AND II RCRA FACILITY INVESTIGATIONS	1
	1.3	CORRECTIVE ACTION PLAN FOR SWMU 27F	5
	1.4	REPORT ORGANIZATION	9
2.0	SUR	FACE SOIL SAMPLING AND EVALUATION	9
3.0	GRC	OUNDWATER SAMPLING AND EVALUATION	
	3.1	GROUNDWATER SURFACE ELEVATIONS AND DIRECTION	
	3.2	FREE PRODUCT MEASUREMENTS	13
	3.3	GROUNDWATER ANALYTICAL RESULTS	13
	3.4	GROUNDWATER ANALYSIS	
4.0	UPD	OATE OF FATE AND TRANSPORT MODEL	
5.0	CON	ICLUSIONS AND RECOMMENDATIONS	22
5.0	51	CONCLUSIONS	22
	5.1	5.1.1 Surface Soil Results for CY 2002	24
		5.1.1 Surface Soft Results for CY 2002	24
		5.1.2 Undate of Fate and Transport Model	24
	52	RECOMMENDATIONS	26
	0.2		20
6.0	REF	ERENCES	
APP	END	IX A ANALYTICAL RESULTS AND CHAIN-OF-CUSTODY FORMS	A-1
APP	END	IX B PROTOCOL FOR ESTABLISHING REMEDIAL LEVELS	B-1
APP	END	IX C TO BE PROVIDED	C-1

FIGURES

1	Location Map for SWMU 27F, Northwest of Building 1340	3
2	Site Features and Phase II RFI Sampling Locations at SWMU 27F, Northwest of	
	Building 1340	4
3	Supplemental Sampling Locations for SWMU 27F, Northwest of Building 1340	6
4	Estimated Areas of Potential Soil and Groundwater Contamination, SWMU 27F,	
	Northwest of Building 1340	8
5	Summary of Surface Soil and Groundwater Analytical Results for September 2002,	
	SWMU 27F, Northwest of Building 1340	11
6	Groundwater Potentiometric Surface Map for Shallow Wells for CY 2002, SWMU 27F,	
	Northwest of Building 1340	15
7	Predicted Concentration of Benzene in Groundwater Below the Source Using AT123D	
	Modeling, SWMU 27F, Northwest of Building 1340	23
8	Estimated Area of Benzene Groundwater Contamination for CY 2002, SWMU 27F,	
	Northwest of Building 1340	25

TABLES

1	Remedial Levels for Surface Soil, SWMU 27F, Northwest of Building 1340	7
2	Remedial Levels for Groundwater, SWMU 27F, Northwest of Building 1340	7
3	Summary of Analytes Detected in Surface Soil (September 2002), SWMU 27F	12
4	Field Parameter Measurements During Groundwater Sampling (September 2002),	
	SWMU 27F	13
5	Water Level Data for Monitoring Wells (September 2002), SWMU 27F	14
6	Summary of Analytes Detected in Groundwater (September 2002), SWMU 27F	16
7	Results of Site-Related Contaminant Evaluation of CY 2002 Groundwater, SWMU 27F	19
8	Summary of Input Parameter Used for AT123D Modeling, SWMU 27F	21
9	Dilution Attenuation Factors, SWMU 27F	22
10	Summary of Results from Previous and Updated Modeling, SWMU 27F	24

ACRONYMS

AT123D	Analytical Transient 1-, 2-, 3-Dimensional
BGS	below ground surface
BHHRA	baseline human health risk assessment
CAP	Corrective Action Plan
COC	constituent of concern
COPC	constituent of potential concern
CY	calendar year
DPT	direct-push technology
GEPD	Georgia Environmental Protection Division
HHCOC	human health constituent of concern
HI	hazard index
ILCR	incremental lifetime cancer risk
MCL	maximum contaminant level
OWS	oil/water separator
PAH	polynuclear aromatic hydrocarbon
RBC	risk-based concentration
RCRA	Resource Conservation and Recovery Act
RFI	RCRA facility investigation
SRC	site-related constituent
SVOC	semivolatile organic compound
SWMU	solid waste management unit
USACE	U.S. Army Corps of Engineers
VOC	volatile organic compound

1.0 INTRODUCTION

This report presents results from the soil and groundwater monitoring for calendar year (CY) 2002 and an updated fate and transport model for Solid Waste Management Unit (SWMU) 27F: 3d Engineer Brigade, northwest of Building 1340 at Fort Stewart, Georgia. This report was prepared in accordance with the requirements of the addendum for SWMU 27F to the revised final Phase II Resource Conservation and Recovery Act (RCRA) facility investigation (RFI) report for 16 SWMUs (SAIC 2001) and the final Corrective Action Plan (CAP) for the site (SAIC 2002). The revised final Phase II RFI for 16 SWMUs was issued in April 2000 (SAIC 2000).

This report has been prepared by Science Applications International Corporation for the U.S. Army Corps of Engineers (USACE), Savannah District under contract DACA21-02-D-0004, delivery order 0015. The soil and groundwater sampling was conducted in accordance with the Sampling and Analysis Plan for 16 SWMUs (SAIC 1997), which was developed in accordance with USACE Guidance EM 200-1-3.

1.1 SITE BACKGROUND AND OPERATIONAL HISTORY

SWMU 27F, northwest of Building 1340, is one of two oil/water separators (OWSs) that support the vehicle maintenance activities of the 3d Engineer Brigade and one of 32 OWSs distributed across 29 sites that support the vehicle maintenance facilities within the garrison area (Figure 1). The OWS is located along the northwestern boundary of the motorpool area, approximately 200 ft northwest of Building 1340 (Figure 2). The OWS was closed in 2001. The closure consisted of placing plywood over the metal grates covering the OWS and plugging the drains located at the adjacent, covered maintenance pad from which the OWS received wastewater. Maintenance activities for military vehicles were performed at the maintenance pad. Floor drains from the maintenance pad are piped to the OWS; however, as part of the closure activities, these drains were plugged. The effluent from the OWS discharged to the Industrial Wastewater Treatment Plant, and the oil was pumped out of the holding unit and burned at the Central Energy Plant. No surface water or sediment pathways exist at this site.

1.2 SUMMARY OF PHASE I AND II RCRA FACILITY INVESTIGATIONS

A Phase I RFI was conducted at SWMU 27F, northwest of Building 1340, in January 1998 [see the revised final Phase II RFI report (SAIC 2000) for the results]. During the Phase I RFI, direct-push technology (DPT) techniques were used to collect four soil and groundwater samples at the site. These samples were analyzed for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), and lead. The Phase I RFI concluded that the vertical and horizontal extents of potential groundwater contamination had not been determined and recommended additional groundwater screening and the installation of shallow and possibly deep groundwater monitoring wells at the site (upgradient and downgradient).

A Phase II RFI was conducted in October 1999 consisting of initial screening using DPT techniques followed by the installation of 11 monitoring wells (8 shallow and 3 deep) at the site. One shallow and one deep monitoring well (MW1/MW2) were installed upgradient (background). In addition, a recovery well (MW12) was installed to recover potential free product identified on a clay lens encountered at approximately 8 ft below ground surface (BGS) (Figure 2).



Figure 1. Location Map for SWMU 27F, Northwest of Building 1340



Figure 2. Site Features and Phase II RFI Sampling Locations at SWMU 27F, Northwest of Building 1340

The Phase II RFI concluded that benzo(a) pyrene was a human health constituent of concern (HHCOC) in surface soil. The extent of benzo(a) pyrene in surface soil was confined to a single location near the OWS. In addition, benzene and bis(2-ethylhexyl)phthalate were identified as HHCOCs in groundwater. The bis(2-ethylhexyl)phthalate concentration was believed to be the result of field or laboratory contamination.

To further define the extent of groundwater contamination, Fort Stewart recommended the installation of six new shallow monitoring wells (MW13 through MW18) downgradient of the source area and the resampling of the groundwater at all new and existing monitoring wells prior to the development of the CAP. The six new wells were installed in December 2000 (Figure 3). Thirteen shallow monitoring wells [six of which were installed in accordance with the recommendations of the final revised final Phase II RFI report (SAIC 2000)] and four deep monitoring wells were low-flow sampled in January 2001 as part of the supplemental data collection (Figure 3). The groundwater samples were analyzed for VOCs and SVOCs. In addition, MW12, the monitoring well installed above the clay layer that occurs at approximately 8 ft BGS, was checked for free product. Floating product was identified in MW12. Approximately 0.05 ft of a thick, black, viscous material was indicated in MW12 during the measurement of the water level in May 2001. The material was removed with an absorbent sock. The material did not readily recharge in MW12.

Five VOCs (2-butanone, 4-methyl-2-pentanone, benzene, ethylbenzene, and total xylenes) were detected in shallow groundwater at SWMU 27F and considered to be site-related constituents (SRCs). Benzene also exceeded its maximum contaminant level (MCL) of $5 \mu g/L$.

Five SVOCs (2-methylnaphthalene, 4-methylphenol, carbazole, fluorene, and naphthalene) were detected in shallow groundwater at SWMU 27F. No VOCs or SVOCs were detected in the deep groundwater during the supplemental sampling at SWMU 27F.

The Phase II investigation concluded that benzene and carbazole were considered to be constituents of concern (COCs) in groundwater at SWMU 27F. The following constituents were considered to be COCs in surface soil: arsenic, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, and dibenzo(a,h)anthracene. Remedial levels were set for each COC. The remedial levels for soil and groundwater are presented in Tables 1 and 2, respectively. The maximum detected concentrations of arsenic, benzo(a)anthracene, benzo(b)fluoranthene, and dibenzo(a,h)anthracene in soil and carbazole in groundwater were below their respective remedial levels. Benzo(a)pyrene in surface soil and benzene in groundwater were identified as COCs at SWMU 27F requiring remediation. The Phase II estimated areal extents of soil and groundwater contamination at SWMU 27F are presented in Figure 4.

1.3 CORRECTIVE ACTION PLAN FOR SWMU 27F

In accordance with the recommendations of the Phase II RFI, a CAP was developed for SWMU 27F to evaluate potential remedial alternatives to address HHCOCs in surface soil [benzo(*a*)pyrene] and groundwater (benzene) (SAIC 2002).

Corrective action technologies were identified for benzo(*a*)pyrene in surface soil and benzene in groundwater at SWMU 27F. The screened technologies for surface soil and groundwater were combined to form remedial alternatives to meet the remedial response objectives for soil and groundwater. The remedial response objectives for SWMU 27F were to reduce the present concentrations of the site COCs in soil [benzo(*a*)pyrene] and groundwater (benzene) to the remedial levels presented in the revised final addendum (SAIC 2001) to the revised final Phase II RFI report (SAIC 2000). In addition, MW12 would be monitored during the performance of the selected remedy to determine if the 0.05 ft of thick, black, viscous material represents an active source of potential contamination.



Figure 3. Supplemental Sampling Locations for SWMU 27F, Northwest of Building 1340

		Maximum Detected	Risk-Based Remedial Levels ILCR		Surface Soil Background	
COC	Units	Concentration	1×10^{-6}	1×10^{-5}	Concentration	
Arsenic	mg/kg	4.40	1.01	10.12	2.1	
Benzo(<i>a</i>)anthracene	mg/kg	3.94	0.89	8.93	0	
Benzo(<i>a</i>)pyrene	mg/kg	2.43	0.09	0.89	0	
Benzo(b)fluoranthene	mg/kg	2.88	0.89	8.93	0	
Dibenzo(<i>a</i> , <i>h</i>)anthracene	mg/kg	0.54	0.09	0.89	0	

Table 1. Remedial Levels for Surface Soil, SWMU 27F, Northwest of Building 1340

COC = Constituent of concern.

ILCR = Incremental lifetime cancer risk.

SWMU = Solid waste management unit.

Bold indicates values are recommended remedial levels.

Table 2. Remedial Levels for Groundwater,	SWMU 27F, Northwest of Building 1340
---	--------------------------------------

		Maximum Detected	Risk- Remedia IL	Based al Levels CR	Maximum Contaminant	Quantification	
COC	Units	Concentration	1×10^{-6}	1×10^{-5}	Level	Limits	
Benzene	µg/L	61	NA	NA	5	2	
Carbazole	µg/L	5.7	3.5	34.9	ND	9.6	

COC = Constituent of concern.

ILCR = Incremental lifetime cancer risk.

NA = Not applicable; remedial level for groundwater defaults to the maximum contaminant level.

ND = No data; this constituent does not have a maximum contaminant level.

SWMU = Solid waste management unit.

Bold indicates values are recommended remedial levels.

The three remedial alternatives were

- Alternative 1: monitored natural attenuation for surface soil and groundwater;
- Alternative 2: monitored natural attenuation for surface soil and specialized bacteria addition for groundwater; and
- Alternative 3: excavation for surface soil and enhanced bioremediation with oxygen injection for groundwater.

The selected corrective action alternative for treatment of soil and groundwater was monitored natural attenuation. This alternative was selected for remediation because it would effectively achieve the remedial levels in a reasonable period of time and would do so cost-effectively. Modeling predicted that monitored natural attenuation would achieve the soil remedial level in approximately 2 years from October 1999. Modeling also predicted that monitored natural attenuation would achieve the groundwater remedial levels in less than 6 years from January 2001. An additional year was added as a contingency.



Figure 4. Estimated Areas of Potential Soil and Groundwater Contamination, SWMU 27F, Northwest of Building 1340

The conceptual design for monitored natural attenuation consisted of the following:

- Land-use restrictions to prohibit disturbance of surface and subsurface soil, use of groundwater, hunting, recreational activities, and construction within the property boundaries.
- Monitored natural attenuation of surface soil located around MW10. Only two soil sampling events were expected to be required.
- Monitored natural attenuation of groundwater. During the monitored natural attenuation period, 13 shallow surficial groundwater wells (MW1, MW3, MW4, MW5, MW6, MW7, MW9, MW10, MW14, MW15, MW16, MW17, and MW18) would be sampled to verify the benzene concentrations are declining, that concentrations of other potential SRCs not detected to date do not present a risk to human health and are not increasing with time, and that active biodegradation is occurring.
- With the Georgia Environmental Protection Division's (GEPD's) concurrence, all groundwater monitoring wells would be abandoned when concentrations were below remedial levels and the remediation was determined to be complete.

The CAP and its selected alternative were issued to GEPD on July 23, 2002, for its review.

1.4 REPORT ORGANIZATION

The report organization presented in this section provides an outline of the information required by the soil and groundwater monitoring for CY 2002. This report is organized as follows:

- Chapter 1.0: site background, operational history, and summary of Phase I and II RFIs; supplemental sampling for CYs 1998, 1999, and 2001; and the CAP,
- Chapter 2.0: CY 2002 surface soil sampling and data evaluation,
- Chapter 3.0: CY 2002 groundwater monitoring sampling and data evaluation,
- Chapter 4.0: update of fate and transport model,
- Chapter 5.0: conclusions and recommendations, and
- Chapter 6.0: references.

Appendix A contains the chain-of-custody forms and the analytical results for the CY 2002 soil and groundwater monitoring at SWMU 27F. Appendix B contains the protocol approved by GEPD for establishing remedial levels after GEPD has approved the RFI and CAP. Appendix C contains the input and output files from modeling.

2.0 SURFACE SOIL SAMPLING AND EVALUATION

Two surface soil samples (0 to 1 ft BGS) were collected on September 23, 2002, from around MW10 (see Figure 5) using a hand auger. The two surface soil samples were analyzed for SVOCs to confirm that the remedial level for benzo(a) pyrene had been achieved and that additional COCs were not detected. A



summary of the analytical results are presented in Table 3 and Figure 5. The complete analytical results and chain-of-custody forms are presented in Appendix A.

Station		Maximum Detected	Remedial Level	7J-SS-01	7J-SS-02					
Sample ID	Reference	Concentration from	Established by	7J7111	7J7211					
Date	Background	Phase II RFI	Phase II RFI	09/23/02	09/23/02					
Depth (ft) BGS	Criteria	(SAIC 2001)	(SAIC 2001)	0 to 1	0 to 1					
Semivolatile Organic Compounds, mg/Kg										
Benzo(a)pyrene	0	2.43	0.89	< 0.0357	0.0924					
Fluoranthene	0	10.5		< 0.0357	0.0576					
Indeno(1,2,3-cd)pyrene	0	0.976		< 0.0357	0.0489					
Pyrene	0	8.22		< 0.0357	0.0677					

Table 3 Summar	v of Analyta	e Detected in	Surface Soil	(Sontombor	2002)	SWMU 27F
Table 5. Summar	y of Analyte	s Detected III	Surface Soll	(September	2002),	SWIND 2/F

BGS = Below ground surface.

RCRA = Resource Conservation and Recovery Act.

RFI = RCRA facility investigation.

SWMU = Solid waste management unit.

Four SVOCs—benzo(a)pyrene, fluoranthene, indeno(1,2,3-cd)pyrene, and pyrene—were detected in the surface soil sample SS02 at concentrations of 0.0924 mg/kg, 0.0576 mg/kg, 0.0489 mg/kg, and 0.0677 mg/kg, respectively. No SVOCs were detected at the SS01 surface soil location. SRCs were determined using the protocol discussed in Chapter 5.0 of the Phase II RFI report (SAIC 2000). Organic constituents were identified as SRCs if they were simply detected (because organic constituents are generally from anthropogenic sources). Benzo(a)pyrene, fluoranthene, indeno(1,2,3-cd)pyrene, and pyrene are SRCs in surface soil because they were detected above reference background criteria.

A protocol and a decision flowchart for evaluating concentrations of SRCs identified in media collected after the establishment of remedial levels through either an RFI report and/or a CAP were approved by GEPD in an e-mail dated May 4, 2001 (Appendix B). The maximum concentrations of fluoranthene, indeno(1,2,3-cd)pyrene, and pyrene were below the maximum concentrations detected during the Phase II RFI (Table 3); therefore, in accordance with the protocol, these constituents do not require further evaluation. The maximum concentration of benzo(a)pyrene was below its remedial level (0.89 mg/kg) established in the addendum to the revised final RFI report (Table 3) (SAIC 2001). The remedial level for benzo(a)pyrene in surface soil has been met; therefore, final/confirmatory sampling can be scheduled in accordance with the recommendations in the CAP (SAIC 2002).

3.0 GROUNDWATER SAMPLING AND EVALUATION

Thirteen shallow monitoring wells (MW1, MW3, MW4, MW5, MW6, MW7, MW9, MW10, MW14, MW15, MW16, MW17, and MW18) at SWMU 27F were low-flow sampled between September 19 and 23, 2002. Figure 5 shows the locations of these monitoring wells. MW1 (upgradient) represents the shallow surficial groundwater background well. The groundwater samples were analyzed for VOCs, SVOCs, and natural attenuation parameters. SVOCs were included because they were detected in groundwater [but below risk-based concentrations (RBCs; EPA 2002)] and because they are characteristic of the material or waste disposed of at the now-abandoned OWS, the presumed source of the contamination.

Conductivity, pH, temperature, dissolved oxygen, and oxidation-reduction potential were measured during well purging for the collection of all groundwater samples. In addition, ferrous iron was analyzed during groundwater sampling collection using a Hach Kit. Table 4 summarizes the field data collected during the groundwater sampling at SWMU 27F. Measurements of water levels were taken at the monitoring wells. Water level measurements and groundwater elevations are presented in Table 5.

Field Reading at Monitoring Well												
Well No.	Date	рН (s.u.)	Conductivity (mS/cm)	Temperature (°C)	Turbidity (NTUs)	DO (mg/L)	Redox (mV)	Ferrous Iron (mg/L)				
MW1	09/19/02	4.04	53	27.13	6.8	0.36	251	1.1				
MW3	09/20/02	4.59	30	28.75	6.7	0.56	251	1.0				
MW4	09/20/02	4.89	0.058	26.22	9.2	0.49	263	3.8				
MW5	09/19/02	4.19	44	28.79	2.7	0.69	243	0.8				
MW6	09/20/02	4.22	47	25.28	8.6	0.16	269	0.1				
MW7	09/19/02	5.01	0.068	25.78	9.6	0.58	172	3.2				
MW9	09/19/02	5.38	70	28.32	7.0	1.58	283	0.4				
MW10	09/23/02	4.72	80	24.88	4.2	2.8	140	2.8				
MW14	09/19/02	4.13	0.047	27.64	9.4	0.38	196	1.8				
MW15	09/19/02	4.18	44	27.75	3.7	0.48	294	0.8				
MW16	09/20/02	5.05	64	28.20	10.2	0.56	232	0.8				
MW17	09/19/02	4.57	70	27.30	9.5	0.31	278	0.6				
MW18	09/19/02	4.48	62	29.02	7.2	0.49	255	1.8				

Table 4. Field Parameter Measurements During Groundwater Sampling (September 2002), SWMU 27F

DO = Dissolved oxygen. NTU = Nephelometric turbidity unit. Redox = Oxidation-reduction potential. s.u. = Standard unit.

SWMU = Solid waste management unit.

3.1 GROUNDWATER SURFACE ELEVATIONS AND DIRECTION

The water level measurements (see Table 5) from the monitoring wells were used to develop a shallow groundwater potentiometric map for SWMU 27F. Figure 6 presents the groundwater elevations and the potentiometric map for the shallow surficial groundwater. The shallow surficial groundwater flow was primarily to the west/southwest, with an average horizontal hydraulic gradient of 0.0054 ft/ft.

3.2 FREE PRODUCT MEASUREMENTS

Free product measurements were performed prior to measuring water levels in each well using an interface probe. No measurable free product was identified in groundwater in any of the monitoring wells. However, the interface probes came out of MW10 and MW12 with a sticky oily film on them.

3.3 GROUNDWATER ANALYTICAL RESULTS

The results from the chemical analysis of groundwater are presented in Table 6 and Figure 5. The complete analytical results and chain-of-custody forms are presented in Appendix A. SRCs in

Well No.	Date	Screened Interval (ft BGS)	Depth to Water (ft below MP)	Elevation of Measuring Point (ft AMSL)	Elevation of Potentiometric Surface (ft AMSL)
MW1	09/19/02	9.30 to 19.30	8.36	69.16	60.80
MW2	09/19/02	28.80 to 38.80	8.54	69.27	60.73
MW3	09/19/02	10.40 to 20.40	7.70	68.45	60.75
MW4	09/19/02	5.90 to 15.90	7.48	68.02	60.54
MW5	09/19/02	8.80 to 18.80	7.27	67.99	60.72
MW6	NR	8.70 to 18.70	NR	67.88	NA
MW7	09/19/02	10.00 to 20.00	7.46	68.14	60.68
MW8	09/19/02	30.90 to 40.90	7.72	68.34	60.62
MW9	09/19/02	10.30 to 20.30	7.75	68.46	60.71
MW10	09/19/02	11.00 to 21.00	7.97	68.70	60.73
MW11	09/19/02	29.40 to 39.40	7.98	68.66	60.68
MW12	09/19/02	5.00 to 9.70	7.67	68.74	61.07
MW13	NR	4.10 to 14.10	NR	67.26	NA
MW14	09/19/02	2.90 to 12.90	7.08	67.76	60.68
MW15	09/19/02	3.80 to 13.80	7.31	68.03	60.72
MW16	09/19/02	5.0 to 15.0	6.34	67.64	61.30
MW17	09/19/02	4.90 to 14.90	7.40	69.08	61.68
MW18	09/19/02	4.90 to 14.90	6.80	67.49	60.69

Table 5. Water Level Data for Monitoring Wells (September 2002), SWMU 27F

AMSL = Above mean sea level. BGS = Below ground surface. NA = Not available. NR = Not recorded.

MP = Measuring point (top of casing). SWMU = solid waste management unit.

groundwater were determined using the protocol discussed in Chapter 5.0 of the revised final Phase II RFI report (SAIC 2000). Organic constituents were identified as SRCs if they were simply detected (because organic constituents are generally from anthropogenic sources).

VOCs. Five VOCs (1,2-dichloroethene, benzene, ethylbenzene, toluene, and total xylenes) were estimated or detected in downgradient groundwater at SWMU 27F during the CY 2002 sampling. Benzene, ethylbenzene, and total xylenes were detected in six wells (MW4, MW7, MW9, MW10, MW14, and MW18). 1,2-Dichloroethene was estimated in MW7 and MW10. Toluene was estimated in only MW7. No VOCs were detected in MW3, MW5, MW6, MW15, MW16, or MW17 or the site-specific background location, MW1.

Benzene was detected or estimated in 6 of 12 downgradient groundwater samples at concentrations ranging from 0.38J μ g/L at MW18 to 57.3 μ g/L at MW14. Benzene was detected above its MCL (5 μ g/L) at MW14.

Ethylbenzene was detected or estimated in 6 of 12 downgradient groundwater samples. The concentrations of ethylbenzene in the shallow aquifer ranged from 0.25J μ g/L at MW9 to 2.9 μ g/L at MW14.

Total xylenes were detected in 6 of 12 downgradient groundwater samples at concentrations ranging from $1 \mu g/L$ at MW18 to 27.8 $\mu g/L$ at MW14.

1,2-Dichloroethene was estimated in 2 of 12 downgradient groundwater samples at concentrations of 0.68J μ g/L at MW7 and 0.97J μ g/L at MW10.

Toluene was estimated in 1 of 12 downgradient groundwater samples at a concentration of 0.98J μ g/L at MW7.



Figure 6. Groundwater Potentiometric Surface Map for Shallow Wells, for CY 2002 SWMU 27F, Northwest of Building 1340

Table 6. Summary of Analytes Detected in Groundwater (September 2002), SWMU 27F

Station			MW1 ^a	MW3	MW4	MW5	MW6	MW7	MW9	MW10
Sample ID	Reference		754173	7J4373	7J4473	7J4573	7J4673	7J4773	7J4973	7J4A73
Date	Background		09/19/02	09/19/02	09/20/02	09/19/02	09/20/02	09/19/02	09/19/02	09/23/02
Sample Type	Criteria	MCL	Grab	Grab	Grab	Grab	Grab	Grab	Grab	Grab
			Volatile (Drganic Com	pounds (µg/	/L)				
1,2-Dichloroethene	0		<1	<1	<1	<1	<1	0.68 J	<1	0.97 J
Benzene	0	5	<1	<1	0.53 J	<1	<1	4.3	4.4	2.9
Ethylbenzene	0	700	<1	<1	2.7	<1	<1	0.68 J	0.25 J	1
Toluene	0	1,000	<1	<1	<1	<1	<1	0.98 J	<1	<2
Xylenes, Total	0	10,000	<1	<1	9.6	<1	<1	1.8	1.7	3.8
			Semivolatile	e Organic Co	ompounds (J	lg/L)	_	_		
2-Methylnaphthalene	0		<1	<1	33.4	<1	<1	1.3	1.4	4.1
4-Methylphenol	0		<10.4	<10.2	<10.2	<10.5	<10.1	<10.6	<10.5	0.8 J
Acenaphthene	0		<1	<1	1.4	<1	<1	<1.1	<1	<1
Bis(2-	0	6	<10.4	2.1 J	<10.2	<10.5	<10.1	3.2 J	2.7 J	<10.3
ethylhexyl)phthalate										
Carbazole	0		<10.4	<10.2	1.2 J	<10.5	<10.1	<10.6	<10.5	<10.3
Dibenzofuran	0		<10.4	<10.2	1.2 J	<10.5	<10.1	<10.6	<10.5	<10.3
Fluorene	0		<1	<1	2.6	<1	<1	<1.1	<1	<1
Naphthalene	0		<1	1 J	15.5	<1	0.16 J	1.4	3.2	2.6
Phenanthrene	0		<1	<1	3.9	<1	<1	<1.1	<1	0.76 J
				Metals (µg	g/L)					
Iron	4,378		1,000 J	581	5,890	422 J	134	12,300 J	329 J	2,950
				Anions (µ	g/L)					
Nitrate	500	10,000	<100	118	<100	<100	<100	127	132	<100
Sulfate	26,717.5		1,110	1,200	1,150	493	811	644	1,800	<400
			M	liscellaneous	(µg/L)					
Carbon Dioxide			448,000	77,300	353,000	<2,000	<2,000	238,000	152,000	121,000
			Volati	le Organic G	ases (µg/L)					
Methane	0		23.2 J	14.3 J	35.7	15.6 J	89.5	190	24.7 J	196

Station			MW14	MW15	MW16	MW17	MW18
Sample ID	Reference		7J4E73	7J4F73	7J4G73	7J4H73	7J4J73
Date	Background		09/19/02	09/19/02	09/20/02	09/19/02	09/19/02
Sample Type	Criteria	MCL	Grab	Grab	Grab	Grab	Grab
	Va	latile Organ	ic Compoun	nd, (μg/L)			
1,2-Dichloroethene	0		<1	<1	<1	<1	<1
Benzene	0	5	57.3	<1	<1	<1	0.38 J
Ethylbenzene	0	700	2.9	<1	<1	<1	0.37 J
Toluene	0	1,000	<1	<1	<1	<1	<1
Xylenes, Total	0	10,000	27.8	<1	<1	<1	1
Semivolatile Organic Compounds (µg/L)							
2-Methylnaphthalene	0		32	<1	<1	<1.1	5.1
4-Methylphenol	0		<10.5	<10.4	<10.3	<10.6	<10.5
Acenaphthene	0		<1	<1	<1	<1.1	<1
Bis(2-ethylhexyl)phthalate	0	6	<10.5	<10.4	<10.3	1.4 J	<10.5
Carbazole	0		4.4 J	<10.4	<10.3	<10.6	<10.5
Dibenzofuran	0		<10.5	<10.4	<10.3	<10.6	<10.5
Fluorene	0		2.4	<1	<1	<1.1	0.54 J
Naphthalene	0		45.9	<1	<1	1 J	4.9
Phenanthrene	0		3.5	<1	<1	<1.1	0.73 J
		Me	tals (µg/L)				
Iron	4378		1,460 J	419 J	582	270 J	1,800 J
Anions (µg/L)							
Nitrate	500	10,000	<100	<100	<100	265	150
Sulfate	26,717.5		2,800	466	10,800	5,720	5,100
Miscellaneous (µg/L)							
Carbon Dioxide			2,000	<2,000	104,000	188,000	118,000
Volatile Organic Gases (µg/L)							
Methane	0		138	77.5	<25	23.2 J	95.1

Table 6. Summary of Analytes Detected in Groundwater (September 2002), SWMU 27F (continued)

^{*a*}Site-specific background location. J = estimated value.

MCL = Maximum contaminant level.

NOL = Matanian containing to con NA = Not analyzed. SWMU = Solid waste management unit. Bold indicates concentrations equal to or above reference background criteria.

Benzene; ethylbenzene; total xylenes; 1,2-dichloroethene; and toluene are considered to be SRCs from the CY 2002 groundwater sampling.

SVOCs. Nine SVOCs, including three polynuclear aromatic hydrocarbons (PAHs) (acenaphthene, fluorene, and phenanthrene), a phthalate [bis(2-ethylhexyl)phthalate], carbazole, dibenzofuran, naphthalene, 2-methylnaphthalene, and 4-methylphenol were detected or estimated in groundwater during the CY 2002 sampling. The following constituents were detected in only one groundwater sample: acenaphthene (1.4 μ g/L at MW4), dibenzofuran (1.2J μ g/L at MW4), and 4-methylphenol (0.8J μ g/L at MW10).

2-Methylnaphthalene was detected in 6 of 12 downgradient groundwater samples at concentrations ranging from $1.3 \mu g/L$ at MW7 to $33.4 \mu g/L$ at MW4.

Naphthalene was detected or estimated in 9 of 12 downgradient groundwater samples at concentrations ranging from 0.16J μ g/L at MW6 to 45.9 μ g/L at MW14.

Bis(2-ethylhexyl)phthalate was detected or estimated in 4 of 12 downgradient groundwater samples at concentrations ranging from 1.4J μ g/L at MW17 to 3.2J μ g/L at MW7.

Carbazole was estimated in 2 of 12 downgradient groundwater samples at concentrations of 1.2J μ g/L at MW4 and 4.4J μ g/L at MW14.

Fluorene was detected or estimated in 3 of 12 downgradient groundwater samples at concentrations ranging from 0.54J μ g/L at MW18 to 2.6 μ g/L at MW4.

Phenanthrene was detected or estimated in 4 of 12 downgradient groundwater samples at concentrations ranging from $0.73J \mu g/L$ at MW18 to $3.9 \mu g/L$ at MW4.

SVOCs were not detected in MW5, MW6, MW15, or MW16. Two SVOCs, phenanthrene and naphthalene, were estimated in the site-specific background location (MW1) at concentrations of $2.1J \mu g/L$ and $1U \mu g/L$, respectively.

All of the nine SVOCs detected in groundwater during the CY 2002 sampling [bis(2-ethylhexyl)phthalate, carbazole, dibenzofuran, naphthalene, 2-methylnaphthalene, 4-methylphenol, acenaphthene, fluorene, and phenanthrene] are considered to be SRCs from the CY 2002 groundwater sampling.

Natural Attenuation Parameters. The groundwater samples were analyzed for the following natural attenuation parameters during CY2002 sampling: iron, nitrate, sulfate, carbon dioxide, and methane.

Iron, the only metal analyzed, was detected in all 12 downgradient groundwater samples at concentrations ranging from 134 μ g/L at MW6 to 12,300J μ g/L at MW7. The concentrations at MW7 (12,300J μ g/L) and MW4 (5,890 μ g/L) exceed the U.S. Environmental Protection Agency Region III RBC of 4,378 μ g/L (Table 7).

Nitrate was detected in 5 of 12 samples at concentrations ranging from 118 μ g/L at MW3 to 265 μ g/L at MW17. Sulfate was detected in 11 of 12 samples at concentrations ranging from 466 μ g/L at MW15 to 10,800 μ g/L at MW16.

Carbon dioxide was detected in 8 of 12 downgradient groundwater samples at concentrations ranging from 77,300 μ g/L at MW3 to 353,000 μ g/L at MW4.

Table 7. Results of Site-Related Contaminant Evaluation of CY 2002 Groundwater, SWMU 27F

Analyte	Previous Maximum Detected	Station of Previous Maximum Detect	CY 2002 Maximum Detected	CY 2002 Station at Maximum Detect	Present Remedial Level (µg/L)	New COC?	Justification		
Volatile Organic Compounds (µg/L)									
Benzene	61	MW14	57.3	MW14	5	No	Remedial level exists. Continue remediation proposed in CAP		
Semivolatile Organic Compounds (µg/L)									
2-Methylnapthalene	31.9	MW14	33.4	MW4	*	No	Continue monitoring as proposed in CAP in accordance with protocol (Appendix B)		
Carbazole	5.7	MW14	4.4	MW14	34.9	No	Remediation level exists. Concentration below remedial level proposed in CAP. Remediation complete		
Naphthalene	37.2	MW14	45.9	MW14	*	No	Continue monitoring as proposed in CAP in accordance with protocol (Appendix B)		

CAP = Corrective Action Plan.

COC = Constituent of concern.

CY = Calendar year.

SRC = Site-related constituent.

SWMU = Solid waste management unit.

*No remedial level was established in the Phase II Resource Conservation and Recovery Act facility investigation because the human health baseline risk assessment indicated that the calculated risk was below the incremental lifetime cancer risk of 1×10^{-6} and the hazard index of 1.0; therefore, the constituent was not a risk driver and was dismissed.

Methane was detected in 11 of 12 downgradient groundwater samples at concentrations ranging from an estimated value of 14.3J μ g/L at MW3 to 196 μ g/L at MW10. Methane was also estimated in the site-specific background location at a concentration of 23.2J μ g/L.

3.4 GROUNDWATER ANALYSIS

The analysis of the groundwater analytical data presented in this section followed the protocol and decision flowchart approved by GEPD for evaluating SRCs identified in groundwater collected after the establishment of remedial levels through either an RFI report and/or a CAP (Appendix B). SRCs in groundwater from the CY 2002 sampling event included five VOCs and nine SVOCs. The VOCs were 1,2-dichloroethene; benzene; ethylbenzene; toluene; and total xylenes. The SVOCs included three PAHs (acenaphthene, fluorene, and phenanthrene), one phthalate [bis(2-ethylhexyl)phthalate], carbazole, dibenzofuran, naphthalene, 2-methylnaphthalene, and 4-methylphenol (Table 6). The results of the SRC evaluation are summarized in Table 7 and are discussed below.

Benzene. Benzene was identified as a groundwater COC in the revised final Phase II RFI addendum report (SAIC 2001) and the CAP (SAIC 2002). A remedial level of 5 μ g/L was established in the Phase II RFI. Benzene concentrations continue to exceed the remedial level and will be remediated under the corrective action proposed in the CAP (SAIC 2002).

2-Methylnaphthalene. 2-Methylnaphthalene was not identified as a groundwater COC in the revised final Phase II RFI addendum report (SAIC 2001); however, 2-methylnaphthalene was identified as a constituent of potential concern (COPC) but was dismissed during the baseline human health risk assessment (BHHRA) because the calculated risk was below the incremental lifetime cancer risk (ILCR) of 1×10^{-6} and the hazard index (HI) of 1.0. During the CY 2002 sampling, the maximum detection of 33.4 µg/L was slightly higher than the CY 2001 maximum detection of 31.9 µg/L. The concentration of 2-methylnaphthalene at MW4 was 33.4 µg/L during CY 2002, which is approximately twice the concentration of 15.6 µg/L measured in CY 2001. The concentration of 2-methylnaphthalene at MW14 was 32 µg/L in CY 2002 compared to 31.9 µg/L in CY 2002 and CY 2001. In accordance with the protocol for evaluating constituents in groundwater after approval of the RFI report or CAP (Appendix B), a single elevated value requires confirmation of the result during the next groundwater monitoring sampling event before it can be established as a COC requiring the development of a remedial level; therefore, 2-methylnaphthalene will continue to be monitored under the corrective action proposed in the CAP (SAIC 2002).

Carbazole. Carbazole was identified as a groundwater COC in the revised final Phase II RFI addendum report (SAIC 2001) and in the CAP (SAIC 2002). A remedial level of 34.9 μ g/L was derived. The maximum detected concentration of carbazole (4.4 μ g/L) was below the approved remedial level of 34.9 μ g/L; therefore, the corrective action for carbazole has been achieved.

Naphthalene. Naphthalene was not identified as a groundwater COC in the revised final Phase II RFI addendum report (SAIC 2001) or the CAP (SAIC 2002); however, it was identified as a COPC but dismissed during the BHHRA because the calculated risk was below the ILCR of 1×10^{-6} and the HI of 1.0. During the CY 2002 sampling, the maximum detection of 45.9 µg/L was slightly higher than the CY 2001 maximum detection of 37.2 µg/L. According to the protocol for evaluating constituents in groundwater after approval of the RFI report (Appendix B), a single elevated value requires confirmation of the results during the next groundwater monitoring sampling event; therefore, naphthalene will continue to be monitored under the corrective action proposed in the CAP (SAIC 2002).

4.0 UPDATE OF FATE AND TRANSPORT MODEL

Fate and transport modeling was used to evaluate monitored natural attenuation as the selected remedial alternative for soil and groundwater contamination for the CAP at SWMU 27F, and the results were presented in Section 2.15 and Appendix G of that report (SAIC 2002). The sampling data used in the analysis were analytical data obtained up to January 2001. The soil and groundwater results from CY 2002 were used to validate and/or update the transport model, as necessary.

No update of the modeling for benzo(*a*)pyrene in soil was necessary because the maximum concentration in soil detected during CY 2002 was below the remedial level established in the Phase II RFI.

Benzene, carbazole, 2-methylnaphthalene, and naphthalene were identified as SRCs from the CY 2002 groundwater sampling. Of these only benzene exceeded its remedial level; therefore, the fate and transport model was updated for benzene in groundwater. The concentrations of 2-methylnaphthalene and naphthalene detected during CY 2002 need to be confirmed before they are established as groundwater COCs. Fate and transport modeling was not performed on carbazole because it was below its remedial level. Table 8 presents a summary of the inputs for both the previous and the updated modeling for benzene in groundwater. Table C-1 in Appendix C provides a list of the updated model's inputs together with an explanation for each input. The groundwater results for benzene from CY 2002 were used to validate and/or update the transport model, as discussed in the following paragraph. The input and output files for the model are presented in Appendix C.

	Benzene		
Parameter	Previous Modeling	Updated Modeling	
Release rate (mg/hour)	7.34	Variable	
Plume size $(m \times m)$	11×14	10×6	
Bulk density (g/cc)	1.69	1.69	
Effective porosity (%)	20	20	
Hydraulic conductivity (m/hour)	0.055	0.055	
Hydraulic gradient (m/m)	0.0009	0.0054	
Kd (L/kg)	0.5589	0.5589	
Longitudinal dispersivity (m)	15	10	
Transverse dispersivity (m)	5	5	
Vertical dispersivity (m)	1.5	1	
Molecular diffusion (m ² /hour)	3.53E-06	3.53E-06	
Biodegradation rate (hour ⁻¹)	4.01E-05	4.01E-05	

Table 8. Summary of Input Parameter Used forAT123D Modeling, SWMU 27F

AT123D = Analytical Transient 1-, 2-, and 3-Dimensional. SWMU = Solid waste management unit.

The maximum groundwater concentration of benzene from the CY 2002 groundwater sampling was 57.3 μ g/L (MW14). The Analytical Transient 1-, 2-, 3-Dimensional (AT123D) Model was recalibrated to this new concentration with the revised horizontal hydraulic gradient observed during CY 2002 sampling. Because the maximum concentration of benzene did not decrease significantly from January 2001 to September 2002, it can be concluded that contaminant loading (source) did not stop completely. It was assumed, however, that contaminant loading was continuing at a decreased rate from the residual

contamination that might be present at the site (even after removal of the soil contamination); therefore, the model was calibrated by adjusting the loading rates and the source size. Contaminant loading was assumed to stop 4.5 years after January 2001 (Figure 7 and Table C-1, in Appendix C). As with the previous modeling results (SAIC 2002), the updated modeling indicates that benzene migration from SWMU 27F will not be of concern at the nearest receptor location (man-made drainage ditch approximately 450 ft southwest of the site). Based on the updated fate and transport modeling, the benzene concentration is not expected to exceed its MCL beyond 82 ft downgradient from the source (Table 9). The updated modeling results also indicate that the groundwater concentration of benzene at the source will be below its remedial level (MCL) within 8 years (from January 2001) (Figure 7), which is slightly longer than the 6.5 years (from January 2001) estimated by modeling based on the CY 2001 data.

	Predicted Maximum	
Distance to	Concentration of Benzene in	
Receptor	Groundwater	
(ft)	(µg/L)	DAF
0	60.0	1.00
13	53.5	1.12
16	47.7	1.26
20	41.3	1.45
33	22.3	2.69
39	17.2	3.49
49	12.1	4.96
66	7.25	8.28
82	4.50	13.33
98	3.78	15.9
115	1.62	37.0
131	0.95	63
148	0.55	109
164	0.32	188
197	0.17	353
230	0.07	845
262	0.03	2034
328	0.005	11583

Table 9. Dilution Attenuation Factors, SWMU 27	Table 9. Diluti	on Attenuatio	on Factors.	SWMU	27F
--	-----------------	---------------	-------------	------	-----

DAF = Dilution attenuation factor.

SWMU = Solid waste management unit.

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 CONCLUSIONS

Both surface soil and groundwater were collected during the CY 2002 sampling event in accordance with the selected remedial alternative recommended for SWMU 27F (SAIC 2002). The conclusions below are presented by medium sampled during the CY 2002 event.



Figure 7. Predicted Concentration of Benzene in Groundwater Below the Source Using AT123D Modeling, SWMU 27F, Northwest of Building 1340

5.1.1 Surface Soil Results for CY 2002

Four SVOCs—benzo(*a*)pyrene, fluoranthene, indeno(1,2,3-cd)pyrene, and pyrene—were detected in the surface soil and were considered SRCs from the CY 2002 sampling. Of these only one, benzo(*a*)pyrene, was a site COC in surface soil. The maximum concentration of benzo(*a*)pyrene was below its remedial level (0.89 mg/kg); therefore, the remedial level for benzo(*a*)pyrene in surface soil has been met, and corrective action is complete. The remaining SRCs were detected below their maximum concentrations from previous sampling events; therefore, no further evaluation is required.

5.1.2 Groundwater Results for CY 2002

Constituents detected in groundwater during the CY 2002 groundwater sampling event included five VOCs and nine SVOCs. The VOCs were 1,2-dichloroethene; benzene; ethylbenzene; toluene; and total xylenes. The SVOCs included three PAHs (acenaphthene, fluorene, and phenanthrene), one phthalate carbazole, dibenzofuran, naphthalene, [bis(2-ethylhexyl)phthalate], 2-methylnaphthalene, and 4-methylphenol. Benzene and carbazole have established remedial levels developed in the Phase II RFI report of 5 μ g/L and 34.9 μ g/L, respectively. The concentration of benzene remains above its remedial level; therefore, corrective action is not complete for that constituent. The maximum concentration of carbazole (5.5 μ g/L) was below its remedial level (34.9 μ g/L); therefore, corrective action for this constituent is considered complete. 2-Methylnaphthalene and naphthalene were sporadically detected and at only slightly higher concentrations than during previous investigations. The concentrations of 2-methylnaphthalene and naphthalene need to be confirmed before the constituents can be established as COCs or removed from further evaluation. Figure 8 presents the estimated nature and extent of groundwater contamination based on CY 2002 groundwater sampling.

5.1.3 Update of Fate and Transport Model

The modeling performed in the CAP for SWMU 27F to evaluate the fate and transport and natural attenuation of benzene was calibrated/verified with the CY 2002 groundwater concentrations. The updated fate and transport modeling indicated that benzene would not impact the nearest receptor location (man-made drainage ditch approximately 450 ft southwest of the site). In addition, the modeling determined that the concentrations of benzene would be reduced to below its remedial level by natural attenuation processes within approximately 8 years from January 2001 (Table 10), which is a slightly longer timeframe than that predicted in the CAP (i.e., 6.5 years from January 2001).

	Previous Modeling		Updated Modeling		
		Natural		Natural	
		Attenuation Time		Attenuation Time	
Constituent of	Concern at	(Years from	Concern at	(Years from	
Potential Concern	Receptor?	January 2001)	Receptor?	January 2001)	
Benzene	No	6.5	No	8	

Table 10	Summary	of Results f	from Previous	and Undated	Modeling.	SWMU 27F
Table 10.	Summary	of ficiality i	ii om i i cylous	and Opually	i mouching,	DWINIU 2/1

SWMU = Solid waste management unit.



Figure 8. Estimated Area of Benzene Groundwater Contamination for CY 2002, SWMU 27f, Northwest of Building 1340
5.2 **RECOMMENDATIONS**

Benzo(a)pyrene was detected below its remedial level in surface soil during the surface soil sampling performed September 2002. Confirmatory surface soil sapling will be performed during the next annual groundwater event to confirm that benzo(a)pyrene levels have remained below its remedial level. Two surface soil samples will be collected and analyzed for SVOCs.

Annual groundwater monitoring of the 13 shallow monitoring wells will continue. These wells [MW1 (background), MW3, MW4, MW5, MW6, MW7, MW9, MW10, MW14, MW15, MW16, MW17, and MW18] are located within, downgradient of, or near the contaminant plumes (Figure 8) at SWMU 27F and represent a groundwater network to monitor the characteristics and potential migration of the contaminant plume at SWMU 27F. The groundwater should be sampled using low-flow techniques and analyzed for VOCs and SVOCs. The results of the annual groundwater sampling will be submitted annually to GEPD in a CAP progress report until remedial levels have been achieved.

The results of the next annual groundwater sampling event will confirm the timeframe for achieving remedial levels for benzene and whether naphthalene and 2-methylnaphthalene represent a risk to human health and require the development of remedial levels.

6.0 REFERENCES

- EPA (U.S. Environmental Protection Agency) 2002. *EPA Region III Risk-based Concentration Table*, EPA Region III, Hazardous Site Cleanup Division, http://www.epa.gov/reg3hwmd/risk/riskmenu.htm.
- GEPD (Georgia Environmental Protection Division) 1996. Guidance for Selecting Media Remediation Levels at RCRA Solid Waste Management Units, Georgia Environmental Protection Division, Atlanta, Georgia, November.
- SAIC (Science Applications International Corporation) 1997. Sampling and Analysis Plan for Phase II RCRA Facility Investigation of 16 Solid Waste Management Units at Fort Stewart, Georgia (Revised Final), October.
- SAIC 2000. Phase II RCRA Facility Investigation Report for 16 Solid Waste Management Units at Fort Stewart, Georgia (Revised Final), April.
- SAIC 2001. Addendum for SWMU 27F: 3d Engineer Brigade, Northwest of Building 1340 to the Revised Final Phase II RCRA Facility Investigation Report for 16 Solid Waste Management Units at Fort Stewart, Georgia (Revised Final), June.
- SAIC 2002. Corrective Action Plan for the 3d Engineering Brigade, Northwest of Building 1340 (Solid Waste Management Unit 27F) at Fort Stewart Military Reservation, Fort Stewart, Georgia (Final), July.

APPENDIX A

ANALYTICAL RESULTS AND CHAIN-OF-CUSTODY FORMS

THIS PAGE INTENTIONALLY LEFT BLANK.

State of Georgia

Environmental Laboratory Accreditation

Name of Laboratory:	General Engineering Laboratories, Inc.						
Address:	P.O. Box 30712 2040 Savage Road Charleston, SC 29417						
Contact: Telephone number: Fax number:	Bob Pullano (843) 556-8171 (843) 766-1178						

#1 Accrediting Authority: State of South Carolina

Accreditation Number: SC-10120001

Effective Date: Extension granted while recertification in process

Expiration Date: —

Accreditation Scope: SDWA, CWA, RCRA, CERCLA

#2 Accrediting Authority: State of Florida

Accreditation Number: E-87156

Effective Date: July 1, 2001

Expiration Date: June 30, 2003

Accreditation Scope: SDWA, CWA, RCRA, CERCLA

THIS PAGE INTENTIONALLY LEFT BLANK.

ANALYTICAL DATA

THIS PAGE INTENTIONALLY LEFT BLANK.

Northing: 684433.2503 Coord System: GA83East

Easting: 821537.7857 Method:

Station: 7J-MW-01 Sample ID: 7J4173 Date Collected: 09/19/2002

Media: Groundwater

Analysis	Chemical	Resu	t Units	Lab Qual	Data Qual	Validation Code	Detection Limit	Dilution
Common Anions	General Engineering Laboratory							
EPA 300.0	Nitrate	0.1	MG/L	U	U		0.1	1
	Nitrite	0.1	MG/L	U	U		0.1	1
	Sulfate	1.11	MG/L		=		0.4	1
General Chemistry	General Engineering Laboratory							
SM4500-CO2	Carbon Dioxide	448	MG/L		=		2	1
EPA 376.2	Sulfide	0.5	MG/L	U	U		0.5	10
Inorganics	General Engineering Laboratory						0.0	10
SW846 6010	Iron	1000	UG/L	N	.1	101	2 11	1
Semi-Volatile	General Engineering Laboratory					101	2.11	
Organics								
SW846 8270C	1,2,4-Trichlorobenzene	10.4	UG/L	U	U		10.4	1
	1,2-Dichlorobenzene	10.4	UG/L	U	U		10.4	1
	1,3-Dichlorobenzene	10.4	UG/L	U	U		10.4	1
	1,4-Dichlorobenzene	10.4	UG/L	U	U		10.4	1
	2,4,5-Trichlorophenol	10.4	UG/L	U	U		10.4	1
	2,4,6-1 richlorophenol	10.4	UG/L	U	U		10.4	1
		10.4	UG/L	U	U		10.4	1
	2,4-Dimethylphenol	10.4	UG/L	U	U		10.4	1
	2,4-Dinitrophenol	20.8	UG/L	U	U		20.8	1
	2,4-Dinitrotoluene	10.4	UG/L	U	U		10.4	1
	2,6-Dinitrotoluene	10.4	UG/L	U	U		10.4	1
	2-Chloronaphthalene	1	UG/L	U	U		· 1	1
	2-Chiorophenol	10.4	UG/L	U	U		10.4	1
	2-Methyl-4,6-dinitrophenol	10.4	UG/L	U	U		10.4	1
	2-Methylabaral	1	UG/L	U	U		1	1
		10.4	UG/L	U	U		10.4	1
		10.4	UG/L	U	U		10.4	1
	2-Nurophenol	10.4	UG/L	U	U		10.4	1
	3,3-Dichlorobenzidine	10.4	UG/L	U	U		10.4	1
	4 Promonhonul should athen	10.4	UG/L	U	U		10.4	1
	4-biomophenyi phenyi ether	10.4	UG/L	U	U		10.4	1
	4-Chloroppilips	10.4	UG/L	U	U		10.4	1
	4-Chlorophonyl phonyl other	10.4	UG/L	U	U		10.4	1
	4-Onlorophenyi phenyi ether	10.4	UG/L	U	U		10.4	1
	4-Nitroapilino	10.4	UG/L	U	U		10.4	1
	4-Nitrophenol	10.4	UG/L	0	0		10.4	1
	Acenaphthene	10.4			0		10.4	1
	Acenaphthylene	1	UG/L	U	0		1	1
	Anthracene	1	UG/L	0	0		1	1
	Benz(a)anthracene		UG/L	0	0		1	1
	Benzenemethanol	10.4	UG/L	0	0		1	1
	Benzo(a)pyrene	10.4		0	0		10.4	1
	Benzo(b)fluoranthene	1	UG/L		0		1]
	Benzo(ahi)pervlene	1	UG/L		0		1	1
	Benzo(k)fluoranthene	1			0		1	1
	Benzoic acid	20.8	UG/L		U		1]
	Bis(2-chloroethoxy)methane	10.4	UG/L	0	0		20.8	1
	Bis(2-chloroethyl) ether	10.4			0		10.4	1
	Bis(2-Chloroisopropyl)Ether	10.4	UG/L				10.4	1
	Bis(2-ethylbeyyl)obthalata	10.4	UG/L		1		10.4	1
							10.4	
	Butyl benzyl ohthalate	10.4	UG/L	ŭ	ŭ		10.4	1

11/08/2002

Page 1

1 + ⁴ Int.

Station: 7J-MW-01 Sample ID: 7J4173 Date Collected: 09/19/2002

Media: Groundwater Field Sample Type: Grab

Analysis	Chemical	Result Units	Lab Qual	Data Qual	Validation Detection Code Limit	Dilution	
Semi-Volatile	General Engineering Laboratory						
SW846 8270C	Chrysene	1 110/1		- 11			
011040 02100	Di-n-butyl obthalate	10.4 UG/L	0	0	10.4	1	
	Di-n-octylphthalate	10.4 UG/L			10.4	1	
	Dibenz(a h)anthracene	1 UG/L			10.4		
	Dibenzofuran	10.4 UG/L			10.4	1	
	Diethyl phthalate	10.4 UG/L			10.4	1	
	Dimethyl phthalate	10.4 UG/L			10.4	1	
	Diphenylamine	10.4 UG/L			10.4	1	
	Fluoranthene	1 116/1			10.4	1	
	Fluorene	1 UG/L		1	1	1	
	Hexachlorobenzene	10.4 UG/L		U U	10.4	1	
	Hexachlorobutadiene	10.4 UG/L	U U	i i	10.4	1	
	Hexachlorocyclopentadiene	10.4 UG/L			10.4	1	
	Hexachloroethane	10.4 UG/L			10.4	1	
	Indeno(1.2.3-cd)pyrene	1 UG/L			10.4	1	
	Isophorone	10.4 UG/L	, ii		10.4	1	
	N-Nitroso-di-n-propylamine	10.4 UG/L	ŭ	i i	10.4	1	
	Naphthalene	1 UG/			10.4	1	
	Nitrobenzene	10.4 UG/			10.4	1	
	Pentachlorophenol	10.4 UG/	0		10.4	1	
	Phenanthrene	1 116/1	0		10.4	1	
	Phenol	10.4 UG/	0		1	1	
	Pyrene	1 110/1	0	0	10.4	4	
Volatile Organic	General Engineering Laboratory	1 00/2	0	0			e. Sainte
SW846 3810	Methane	23.2 UG/L	L	J	25	1	— (
/olatile Organics	General Engineering Laboratory				20	· · · · · · · · · · · · · · · · · · ·	
SW846 8260B	1,1,1-Trichloroethane	1 UG/L	U	U	1	1	
	1,1,2,2-Tetrachloroethane	1 UG/L	Ŭ	ŭ	1	1	
	1,1,2-Trichloroethane	1 UG/L	ŭ	ŭ	1	1	
	1,1-Dichloroethane	1 UG/L	ŭ	ŭ	1	1	
	1,1-Dichloroethene	1 UG/L	ŭ	ü	1	1	
	1.2-Dibromoethane	1 UG/L	ũ	ŭ	4	1	
	1.2-Dichloroethane	1 UG/L	U U			1	
	1.2-Dichloroethene	1 UG/L	ŭ	ü		1	
	1.2-Dichloropropane	1 UG/L	ŭ	ŭ		1	
	2-Butanone	5 UG/L	ii ii	ŭ	5	1	
	2-Hexanone	5 UG/L	U U	ü	5	1	
	4-Methyl-2-pentanone	5 UG/L	ü	ü	5	1	
	Acetone	5 UG/L	ŭ	ü	5	1	
	Benzene	1 UG/			5	1	
	Bromochloromethane	1 UG/L				1	
	Bromodichloromethane	1 UG/L	1				
	Bromoform	1 UG/L			1		
	Bromomethane	1 UG/L				·]	
	Carbon disulfide	5 110/1	0		1	1	
	Carbon tetrachloride	1 110/1			D	1	
	Chlorobenzene	1 110/1			1		
	Chloroethane	1 100/1	0	0	1	1	
	Chloroform	1 UG/L	0	U	1	1	
	Chloromethane	1 UG/L	U	0	1	1	
	cis-1 3-Dichloroproposo	1 UG/L	U	0	1	1	
	Dibromochloromethese	1 UG/L	U	U	1	1	
	Ethylhopzopo	1 UG/L	U	U	1	1	
	Euryidenzene Mothulono shinida	1 UG/L	U	U	1	1	1
	styrepe	5 UG/L	U	U	5	1	Ć
1/08/2002	etytene	I UG/L	U	U	1	1	6
1/06/2002						Page 2	
		A-8					
	-						h. h

SW846 8260B	Tetrachloroethene	1 UG/L	U	U	1	1
	Toluene	1 UG/L	U	U	1	1
	trans-1,3-Dichloropropene	1 UG/L	U	U	1	1
	Trichloroethene	1 UG/L	U	U	1	1
	Vinyl chloride	1 UG/L	U	U	1	1
	Xylenes, Total	1 UG/L	U	U	1	1

Station: 7J-N Sample ID: 7J43 Date Collected: 09/2	1W-03 873 Med 0/2002 Field Sample Ty	lia: Ground						-
		pe: Grab	water	2.2				
Analysis	Chemical	Result	Units	Lab Qual	Data Valic Qual Co	dation Detection	Dilution	
Common Anions	General Engineering Laboratory						Different	
EPA 300.0	Nitrate	0,118	MG/L		=	0.1	1	
	Nitrite	0.1	MG/L		U	0.1	1	
	Sulfate	1.2	MG/L		=	0.4	1	
General Chemistry	General Engineering Laboratory					0.1		_
SM4500-CO2	Carbon Dioxide	77.3	MG/I		=	2	1	
EPA 376.2	Sulfide	0.05	MG/L	11		0.05	1	
Inorganics	General Engineering Laboratory	0.00	more		0	0.05		
SW846 6010	Iron	581	UG/I		=	2.14	1	
Semi-Volatile Organics	General Engineering Laboratory		UGIL			2.11	1	
SW846 8270C	1,2,4-Trichlorobenzene	10.2	UG/L	U	U	10.2	1	
	1,2-Dichlorobenzene	10.2	UG/L	ŭ	Ū	10.2	1	
	1,3-Dichlorobenzene	10.2	UG/L	U	Ŭ	· 10.2	1	
	1,4-Dichlorobenzene	10.2	UG/L	Ŭ	Ū	10.2	1	
	2,4,5-Trichlorophenol	10.2	UG/L	U	Ū	10.2	1	
	2,4,6-Trichlorophenol	10.2	UG/L	U	Ŭ	10.2	1	
	2,4-Dichlorophenol	10.2	UG/L	Ū	ŭ	10.2	1	
	2,4-Dimethylphenol	10.2	UG/L	ŭ	ŭ	10.2	1	
	2,4-Dinitrophenol	20.4	UG/L	Ŭ	Ŭ	20.4	1	
	2,4-Dinitrotoluene	10.2	UG/L	ŭ	ŭ	10.2	1	
	2,6-Dinitrotoluene	10.2	UG/L	ŭ	ŭ	10.2		
	2-Chloronaphthalene	1	UG/L	ŭ	Ŭ	10.2	1	
	2-Chlorophenol	10.2	UG/L	ŭ	ŭ	10.2	1	
	2-Methyl-4,6-dinitrophenol	10.2	UG/L	ŭ	Ŭ	10.2	1	
	2-Methylnaphthalene	1	UG/L	ŭ	ŭ	10.2	1	
	2-Methylphenol	10.2	UG/L	U	U	10.2	i	
	2-Nitroaniline	10.2	UG/L	Ŭ	ŭ	10.2	1	
	2-Nitrophenol	10.2	UG/L	U	Ŭ	10.2	1	
	3,3'-Dichlorobenzidine	10.2	UG/L	Ŭ	Ŭ	10.2	1	
	3-Nitroaniline	10.2	UG/L	Ū	Ŭ	10.2	1	
	4-Bromophenyl phenyl ether	10.2	UG/L	Ŭ	Ŭ	10.2	1	
	4-Chloro-3-methylphenol	10.2	UG/L	ũ	ŭ	10.2	1	
	4-Chloroaniline	10.2	UG/L	ŭ	ŭ	10.2	1	
	4-Chlorophenyl phenyl ether	10.2	UG/I	ŭ	ü	10.2	1	
	4-Methylphenol	10.2	UG/L	u U	ŭ	10.2	1	
	4-Nitroaniline	10.2	UG/L	ŭ	ü	10.2		
	4-Nitrophenol	10.2	UG/L		ŭ	10.2	1	
	Acenaphthene	1	UG/L		ŭ	10.2	1	
	Acenaphthylene	1	UG/L	11	ü	1	1	
	Anthracene	1	UG/L		ü	1	1	
	Benz(a)anthracene	1	UG/L		ü	1	1	
	Benzenemethanol	10.2	UG/L		U U	10.2	1	
	Benzo(a)pyrene	10.2	UG/L		U U	10.2	4	
	Benzo(b)fluoranthene	1	UG/L		ŭ	1	1	

11/08/2002

Page 3

i.

1.1

Station: 7J-MW-03 Sample ID: 7J4373 Date Collected: 09/20/2002

Media: Groundwater Field Sample Type: Grab

Analysis	Chemical	Result	Units	Lab Qua	Data I Qual	Validation Code	Detection Limit	Dilution	
Semi-Volatile Organics	General Engineering Laboratory								
SW846 8270C	Benzo(ghi)perylene	1	UG/L	L	U		1	1	
	Benzo(k)fluoranthene	1	UG/L	L	U		1	1	
	Benzoic acid	20.4	UG/L	U	U		20.4	1	
	Bis(2-chloroethoxy)methane	10.2	UG/L	U	U		10.2	1	
	Bis(2-chloroethyl) ether	10.2	UG/L	U	U		10.2	1	
	Bis(2-Chloroisopropyl)Ether	10.2	UG/L	U	U		10.2	1	
	Bis(2-ethylhexyl)phthalate	2.1	UG/L	J	J		10.2	1	
	Butyl benzyl phthalate	10.2	UG/L	U	U		10.2	1	
	Carbazole	10.2	UG/L	U	U		10.2	1	
	Chrysene	1	UG/L	U	U		1	1	
	Di-n-butyl phthalate	10.2	UG/L	U	U		10.2	1	
	Di-n-octylphthalate	10.2	UG/L	U	U		10.2	1	
	Dibenz(a,h)anthracene	1	UG/L	U	U		1	1	
	Dibenzofuran	10.2	UG/L	U	U		10.2	1	
	Diethyl phthalate	10.2	UG/L	U	U		10.2	1	
	Dimethyl phthalate	10.2	UG/L	U	U		10.2	1	
	Diphenylamine	10.2	UG/L	U	U		10.2	1	
	Fluoranthene	1	UG/L	U	U		1	1	
	Fluorene	1	UG/L	Ũ	U		1	1	
	Hexachlorobenzene	10.2	UG/L	Ũ	U		10.2	1	
	Hexachlorobutadiene	10.2	UG/L	Ŭ	Ū		10.2	1	
	Hexachlorocyclopentadiene	10.2	UG/L	U	U		10.2	1	
	Hexachloroethane	10.2	UG/L	U	U		10.2	1	
	Indeno(1,2,3-cd)pyrene	1	UG/L	ŭ	Ū		. 1	1	
	Isophorone	10.2	UG/L	Ŭ	Ŭ		10.2	1	C
	N-Nitroso-di-n-propylamine	10.2	UG/I	Ŭ	ŭ		10.2	1	1
	Naphthalene	1	UG/L	J.	J.		10.2		
	Nitrobenzene	10.2	UG/L	ũ	ŭ		10.2	1	
	Pentachlorophenol	10.2	UG/L	U U	U U		10.2	1	
	Phenanthrene	10.2	UG/L	u u	U U		10.2	1	
	Phenol	10.2	UG/L				10 2	1	
	Pyrene	1	UG/L	ŭ			10.2	1	
/olatile Organic	General Engineering Laboratory		00/12						
SW846 3810	Methane	14.3	UG/L	J	J		25	1	
/olatile Organics	General Engineering Laboratory								
SW846 8260B	1,1,1-Trichloroethane	1	UG/L	U	U		1	1	
	1,1,2,2-Tetrachloroethane	1	UG/L	U	U		1	1	
	1,1,2-Trichloroethane	1	UG/L	U	U		1	1	
	1,1-Dichloroethane	1	UG/L	Ű	U		1	1	
	1.1-Dichloroethene	1	UG/L	Ū	ū		1	1	
	1,2-Dibromoethane	1	UG/L	ũ	ŭ		1	1	
	1,2-Dichloroethane	1	UG/L		ŭ		1	1	
	1,2-Dichloroethene	1	UG/L	U U	U.		1	1	
	1.2-Dichloropropane	1	UG/I		U U		1	1	
	2-Butanone	5	UG/I		. ii		5	1	
	2-Hexanone	5	UG/L				5	1	
	4-Methyl-2-pentanone	5					5	1	
	Acetone	54	UG/L	0		E04 E07	5	1	
	Benzene		UG/L	ĨĨ		F04,F07	5	1	
	Bromochloromethane	-	UG/L	0			1	-	
	Bromodichloromethane		UG/L	0				4	
	Bromoform	1		0	0		1	1	
	Bromomethere	1	UG/L	0	U		1	1	
	Corbon digulfida	1	UG/L	U	0		1	1	245
	Carbon disulfide	5	UG/L	U	U		5	1	1
	Carbon letrachioride	1	UG/L	U	U		1	1	2
1/08/2002								Page 4	
		A-10	ě.						
		11-10	N						

-

SW846 8260B	Chlorobenzene	1 UG/L	U	U	1	1
	Chloroethane	1 UG/L	U	U	1	1
	Chloroform	1 UG/L	U	U	1	1
	Chloromethane	1 UG/L	U	U	1	1
	cis-1,3-Dichloropropene	1 UG/L	U	U	1	1
	Dibromochloromethane	1 UG/L	U	U	1	1
	Ethylbenzene	1 UG/L	U	U	1	1
	Methylene chloride	5 UG/L	U	U	5	1
	Styrene	1 UG/L	U	U	1	1
	Tetrachloroethene	1 UG/L	U	U	1	1
	Toluene	1 UG/L	U	U	1	1
	trans-1,3-Dichloropropene	1 UG/L	U	U	1	1
	Trichloroethene	1 UG/L	U	U	1	1
	Vinyl chloride	1 UG/L	U	U	1	1
	Xylenes, Total	1 UG/L	U	U	1	1

Station: 7J-MW-04			Northing: 6 Coord System: 0	684325.3415 GA83East	Easting: 821527.6047 Method:		
Station: 7J-M Sample ID: 7J44 Date Collected: 09/2	1W-04 173 Me 0/2002 Field Sample T	edia: Groundwat	er	Data Valid	ation Datastics		
Analysis	Chemical	Result Un	nits Qual	Qual Co	de Limit	Dilution	
Common Anions	General Engineering Laborator	у					
EPA 300.0	Nitrate	0.1 M	G/L U	U	0.1	1	
	Nitrite	0.1 M	G/L U	U	0.1	1	
	Sulfate	1.15 M	G/L	=	0.4	1	
General Chemistry	General Engineering Laborator	у					
SM4500-CO2	Carbon Dioxide	353 M	G/L	=	2	1	
EPA 376.2	Sulfide	0.05 M	G/L U	U	0.05	1	
norganics	General Engineering Laborator	у					
SW846 6010	Iron	5890 UC	G/L	=	2 11	1	
Semi-Volatile Organics	General Engineering Laborator	y			4		
SW846 8270C	1,2,4-Trichlorobenzene	10.2 UC	G/L U	U	10.2	1	
	1,2-Dichlorobenzene	10.2 UC	G/L U	U	10.2	1	
	1,3-Dichlorobenzene	10.2 UC	S/L U	U	10.2	1	
	1,4-Dichlorobenzene	10.2 UC	G/L U	U	10.2	1	
	2,4,5-Trichlorophenol	10.2 UC	G/L U	U	10.2	1	
	2,4,6-Trichlorophenol	10.2 UC	G/L U	U	10.2	1	
	2,4-Dichlorophenol	10.2 UC	G/L U	U	10.2	1	
	2,4-Dimethylphenol	10.2 UC	G/L U	U	10.2	1	
	2,4-Dinitrophenol	20.4 UC	G/L U	U	20.4	1	
	2,4-Dinitrotoluene	10.2 UG	G/L U	U	10.2	1	
	2,6-Dinitrotoluene	10.2 UC	G/L U	U	10.2	1	
	2-Chloronaphthalene	1 UG	G/L U	U	1	1	
	2-Chlorophenol	10.2 UG	G/L U	U	10.2	1	
	2-Methyl-4,6-dinitrophenol	10.2 UG	S/L U	U	10.2	1	
	2-Methylnaphthalene	33.4 UG	G/L	=	1	1	
	2-Methylphenol	10.2 UG	S/L U	U	10.2	1	
	2-Nitroaniline	10.2 UG	S/L U	U	10.2	1	
	2-Nitrophenol	10.2 UG	S/L U	U	10.2	1	
	3,3'-Dichlorobenzidine	10.2 UG	S/L U	U	10.2	1	
	3-Nitroaniline	10.2 UG	S/L U	U	10.2	1	
	4-Bromophenyl phenyl ether	10.2 UG	S/L U	U	10.2	1	
	4-Chloro-3-methylphenol	10.2 UG	S/L U	U	10.2	1	
	4-Chloroaniline	10.2 UG	S/L U	U	10.2	1	
	4-Chlorophenyl phenyl ether	10.2 UG	S/L U	U	10.2	1	
	4-Methylphenol	10.2 UG	G/L U	U	10.2	1	

11/08/2002

Page 5

Station: 7J-MW-04 Sample ID: 7J4473 Date Collected: 09/20/2002

Media: Groundwater Field Sample Type: Grab

Analysis	Chemical	Result Units	Qual Qual Code	E Limit	Dilution	
Semi-Volatile	General Engineering Laboratory					
Drganics	4 Nitroapiline	10.2 110/		10.0		
00040 02700	4-Nitrophenol	10.2 UG/L		10.2	1	
	Acenaphthene	1.4 UG/L	5 5	10.2	1	
	Acenaphthylene	1 UG/L	υu	1	1	
	Anthracene	1 UG/L	υŬ	1	1	
	Benz(a)anthracene	1 UG/L	Ū Ū	1	1	
	Benzenemethanol	10.2 UG/L	UU	10.2	1	
	Benzo(a)pyrene	1 UG/L	υŪ	1	1	
	Benzo(b)fluoranthene	1 UG/L	υυ	1	1	
	Benzo(ghi)perylene	1 UG/L	UU	1	1	
	Benzo(k)fluoranthene	1 UG/L	υυ	1	1	
	Benzoic acid	20.4 UG/L	υυ	20.4	1	
	Bis(2-chloroethoxy)methane	10.2 UG/L	υυ	10.2	1	
	Bis(2-chloroethyl) ether	10.2 UG/L	υυ	10.2	1	
	Bis(2-Chloroisopropyl)Ether	10.2 UG/L	υυ	10.2	1	
	Bis(2-ethylhexyl)phthalate	10.2 UG/L	υυ	10.2	1	
	Butyl benzyl phthalate	10.2 UG/L	υυ	10.2	1	
	Carbazole	1.2 UG/L	JJ	10.2	1	
	Chrysene	1 UG/L	υυ	1	1	
	Di-n-butyl phthalate	10.2 UG/L	υυ	10.2	1	
	Di-n-octyphthalate	10.2 UG/L	υυ	10.2	1	
	Dibenz(a,n)anthracene	1 UG/L	U U	1	1	
	Dibenzoturan	1.2 UG/L	JJ	10.2	1	
	Directly i phthalate	10.2 UG/L	0 0	. 10.2	1	
	Dimethyl phinalate	10.2 UG/L	0 0	10.2	1	
	Elucrophone	10.2 UG/L	0 0	10.2	1	
	Fluoranciere		0 0	1	1	
	Heyachlorobenzene	2.0 UG/L		1	1	
	Hexachlorobutadiene	10.2 UG/L	0 0	10.2	1	
	Hexachlorocyclopentadiene	10.2 UG/L		10.2	1	
	Hexachloroethane	10.2 UG/L		10.2		
	Indeno(1,2,3-cd)pyrene	1 UG/L		10.2	1	
	Isophorone	10.2 UG/L		10.2	1	
	N-Nitroso-di-n-propylamine	10.2 UG/L	11 11	10.2	1	
	Naphthalene	15.5 UG/L	-	10.2	1	
	Nitrobenzene	10.2 UG/L	U U	10.2	1	
	Pentachlorophenol	10.2 UG/L	U U	10.2	1	
	Phenanthrene	3.9 UG/L	=	10.2	1	
	Phenol	10.2 UG/L	U U	10.2	1	
-	Pyrene	1 UG/L	υυ	1	1	
olatile Organic	General Engineering Laboratory					
W846 3810	Methane	35.7 UG/L	=	25	1	
olatile Organics	General Engineering Laboratory					
W846 8260B	1,1,1-Trichloroethane	1 UG/L	UU	1	1	
	1,1,2,2-Tetrachloroethane	1 UG/L	υυ	1	1	
	1,1,2-Irichloroethane	1 UG/L	υυ	1	1	
	1,1-Dichloroethane	1 UG/L	υυ	1	1	
	1,1-Dichloroethene	1 UG/L	υυ	1	1	
	1,2-Dipromoethane	1 UG/L	U U	1	1	
	1,2-Dichloroethane	1 UG/L	U U	1	1	
		1 UG/L	UU	1	1	
	1,2-Dichloropropane	1 UG/L	0 0	1	1	
	2-butanone 2-Hexanone	5 UG/L	0 0	5	1	
1/08/2002	2 Headilone	5 UG/L	0 0	5	1	
1/08/2002				3	Page 6	
		A-12				
						in her
	-					-

SW846 8260B	4-Methyl-2-pentanone	5	UG/L	U	U	5	1	
	Acetone	5	UG/L	U	U	5	1	
	Benzene	0.53	UG/L	J	J	1	1	
	Bromochloromethane	1	UG/L	U	U	1	1	
	Bromodichloromethane	1	UG/L	U	U	1	1	
	Bromoform	1	UG/L	U	U	1	1	
	Bromomethane	1	UG/L	U	U	1	1	
	Carbon disulfide	5	UG/L	U	U	5	1	
	Carbon tetrachloride	1	UG/L	U	U	1	1	
	Chlorobenzene	1	UG/L	U	U	1	1	
	Chloroethane	1	UG/L	U	U	1	1	
	Chloroform	1	UG/L	U	U	1	1	
	Chloromethane	1	UG/L	U	U	1	1	
	cis-1,3-Dichloropropene	1	UG/L	U	U	1	1	
	Dibromochloromethane	1	UG/L	U	U	1	1	
	Ethylbenzene	2.7	UG/L		=	1	1	
	Methylene chloride	5	UG/L	U	U	5	1	
	Styrene	1	UG/L	U	U	1	1	
	Tetrachloroethene	1	UG/L	U	U	1	1	
	Toluene	1	UG/L	U	U	1	1	
	trans-1,3-Dichloropropene	1	UG/L	U	U	1	1	
	Trichloroethene	1	UG/L	υ	U	1	1	
	Vinyl chloride	1	UG/L	U	U	1	1	
	Xylenes, Total	9.6	UG/L		=	1	1	

Station: 7J-MW-05			Coor	Northing: 6 d System: (684314 GA83E	l.9375 ast	Easting: 82 Method:	1614.3624	
Station: 7J-M Sample ID: 7J45 Date Collected: 09/1	W-05 73 M 9/2002 Field Sample	edia: Groundv Type: Grab	vater		-		8		
Analysis	Chemical	Result	Units	Lab Qual	Data Qual	Validatio Code	n Detection Limit	Dilution	
Common Anions	General Engineering Laborato	ry							
EPA 300.0	Nitrate	0.1	MG/L	U	U		0.1	1	
	Nitrite	0.1	MG/L	U	U		0.1	1	
	Sulfate	0.493	MG/L		=		0.4	1	
General Chemistry	General Engineering Laborato	ry							
SM4500-CO2	Carbon Dioxide	2	MG/L	U	U		2	1	
EPA 376.2	Sulfide	0.05	MG/L	Ū	U		0.05	1	
Inorganics	General Engineering Laborato	ry							
SW846 6010	Iron	422	UG/L	N	J	101	2 11	1	
Semi-Volatile Organics	General Engineering Laborato	ry					2.11		
SW846 8270C	1,2,4-Trichlorobenzene	10.5	UG/L	U	U		10.5	1	
	1,2-Dichlorobenzene	10.5	UG/L	U	U		10.5	1	
	1,3-Dichlorobenzene	10.5	UG/L	U	U		10.5	1	
	1,4-Dichlorobenzene	10.5	UG/L	U	U		10.5	1	
	2,4,5-Trichlorophenol	10.5	UG/L	U	U		10.5	1	
	2,4,6-Trichlorophenol	10.5	UG/L	U	U		10.5	1	
	2,4-Dichlorophenol	10.5	UG/L	U	U		10.5	1	
	2,4-Dimethylphenol	10.5	UG/L	υ	U		10.5	1	
	2,4-Dinitrophenol	21	UG/L	U	U		21	1	
	2,4-Dinitrotoluene	10.5	UG/L	U	U		10.5	1	
	2,6-Dinitrotoluene	10.5	UG/L	U	U		10.5	1	
	2-Chloronaphthalene	1	UG/L	U	U		1	1	
	2-Chlorophenol	10.5	UG/L	U	U		10.5	1	
	2-Methyl-4,6-dinitrophenol	10.5	UG/L	U	U		10.5	1	
	2-Methylnaphthalene	1	UG/L	υ	U		1	1	
	2-Methylphenol	10.5	UG/L	U	U		10.5	1	

11/08/2002

Page 7

+ |., m]-

Station: 7J-MW-05 Sample ID: 7J4573 Date Collected: 09/19/2002

Media: Groundwater Field Sample Type: Grab

Analysis	Chemical	Result Units	Qual Qual Code	Limit Dilution	
Semi-Volatile Organics	General Engineering Laboratory				
SW846 8270C	2-Nitroaniline	10.5 UG/L	υυ	10.5 1	
	2-Nitrophenol	10.5 UG/L	υυ	10.5 1	
	3,3'-Dichlorobenzidine	10.5 UG/L	υυ	10.5 1	
	3-Nitroaniline	10.5 UG/L	υu	10.5 1	
	4-Bromophenyl phenyl ether	10.5 UG/L	υυ	10.5 1	
	4-Chloro-3-methylphenol	10.5 UG/L	υυ	10.5 1	
	4-Chloroaniline	10.5 UG/L	U U	10.5 1	
	4-Chlorophenyl phenyl ether	10.5 UG/L	U U	10.5 1	
		10.5 UG/L	0 0	10.5 1	
	4-Nitrophonol	10.5 UG/L	0 0	10.5 1	
	Acenanhthene	1 UG/L	0 0	10.5 1	
	Acenaphthylene	1 UG/L		1 1	
	Anthracene	1 UG/L	0 0	1 1	
	Benz(a)anthracene	1 UG/L	0 0	1 1	
	Benzenemethanol	10.5 UG/L	ŭ ŭ	10.5 1	
	Benzo(a)pyrene	1 UG/L	υü	1 1	
	Benzo(b)fluoranthene	1 UG/L	Ū Ū	1 1	
	Benzo(ghi)perylene	1 UG/L	υŪ	1 1	
	Benzo(k)fluoranthene	1 UG/L	UU	1 1	
	Benzoic acid	21 UG/L	υυ	21 1	
	Bis(2-chloroethoxy)methane	10.5 UG/L	UU	10.5 1	
	Bis(2-chloroethyl) ether	10.5 UG/L	υυ	10.5 1	
	Bis(2-Chloroisopropyl)Ether	10.5 UG/L	υυ	. 10.5 1	
	Bis(2-ethylhexyl)phthalate	10.5 UG/L	υυ	10.5 1	1
	Butyl benzyl phthalate	10.5 UG/L	υυ	10.5 1	
	Carbazole	10.5 UG/L	UU	10.5 1	
	Di-p-butyl phthelete	1 UG/L	0 0	1 1	
	Di-n-octylopthalate	10.5 UG/L	0 0	10.5 1	
	Dibenz(a h)anthracene	1 10/	0 0	10.5 1	
	Dibenzofuran	10.5 UG/L		10.5 1	
	Diethyl ohthalate	10.5 UG/L		10.5 1	
	Dimethyl phthalate	10.5 UG/L	U U	10.5 1	
	Diphenylamine	10.5 UG/L	U U	10.5 1	
	Fluoranthene	1 UG/L	Ū Ū	1 1	
	Fluorene	1 UG/L	Ŭ Ŭ	1 1	
	Hexachlorobenzene	10.5 UG/L	UU	10.5 1	
	Hexachlorobutadiene	10.5 UG/L	υu	10.5 1	
	Hexachlorocyclopentadiene	10.5 UG/L	υu	10.5 1	
	Hexachloroethane	10.5 UG/L	υυ	10.5 1	
	Indeno(1,2,3-cd)pyrene	1 UG/L	υυ	1 1	
	Isophorone	10.5 UG/L	UU	10.5 1	
	N-Nitroso-di-n-propylamine	10.5 UG/L	υυ	10.5 1	
	Naphthalene	1 UG/L	υυ	1 1	
	Nitrobenzene	10.5 UG/L	υυ	10.5 1	
	Pentachlorophenol	10.5 UG/L	υυ	10.5 1	
	Phenanthrene	1 UG/L	UU	1 1	
	Pyrene	10.5 UG/L		10.5 1	
Volatile Organic	General Engineering Laboratory	T UG/L	0 0	1 1	
Gases	Leader any meeting caporatory				
SW846 3810	Methane	15.6 UG/L	JJ	25 1	
SW846 9260D	General Engineering Laboratory	4.100			
3W040 020UB	1, 1, 1-1 richloroethane	1 UG/L	0 0	1 1	(
	, , , , , , , , , - , et achioroethane	T UG/L	0 0	1 1	
1/08/2002				Page 8	
		A-14			
	_				- P
	-				-

SW846 8260B	1,1,2-Trichloroethane	1 UG/L	U	U		1	1	
	1,1-Dichloroethane	1 UG/L	U	U		1	1	
	1,1-Dichloroethene	1 UG/L	U	U		1	1	
	1,2-Dibromoethane	1 UG/L	U	U		1	1	
	1,2-Dichloroethane	1 UG/L	U	U		1	1	
	1,2-Dichloroethene	1 UG/L	U	U		1	1	
	1,2-Dichloropropane	1 UG/L	U	U		1	1	
	2-Butanone	5 UG/L	U	U		5	1	
	2-Hexanone	5 UG/L	U	U		5	1	
	4-Methyl-2-pentanone	5 UG/L	U	U		5	1	
	Acetone	5 UG/L	U	υ		5	1	
	Benzene	1 UG/L	U	U		1	1	
	Bromochloromethane	1 UG/L	U	U		1	1	
	Bromodichloromethane	1 UG/L	U	U		1	1	
	Bromoform	1 UG/L	U	U		1	1	
	Bromomethane	1 UG/L	U	U		1	1	
	Carbon disulfide	5 UG/L	U	U		5	1	
	Carbon tetrachloride	1 UG/L	U	U		1	1	
	Chlorobenzene	1 UG/L	U	U		1	1	
	Chloroethane	1 UG/L	U	U		1	1	
	Chloroform	1 UG/L	U	U		1	1	
	Chloromethane	1 UG/L	U	U		1	1	
	cis-1,3-Dichloropropene	1 UG/L	U	U		1	1	
	Dibromochloromethane	1 UG/L	U	U		1	1	
	Ethylbenzene	1 UG/L	U	U		1	1	
	Methylene chloride	5 UG/L	U	U		5	1	
	Styrene	1 UG/L	U	U		1	1	
	Tetrachloroethene	1 UG/L	U	U		1	1	
	Toluene	1 UG/L	U	U		1	1	
	trans-1,3-Dichloropropene	1 UG/L	U	U		1	1	
	Trichloroethene	1 UG/L	U	U	¥1	1	1	
	Vinyl chloride	1 UG/L	U	U		1	1	
	Xylenes, Total	1 UG/L	U	U		1	1	

Station: 7J-MW-06			Northing: 684253.3277 Coord System: GA83East					1526.0826
Station: 7J-M Sample ID: 7J46 Date Collected: 09/2	W-06 73 0/2002 Field Sampl	Media: Groundwater Field Sample Type: Grab		Lab			Detection	
Analysis	Chemical	Result	Units	Qual	Qual	Code	Limit	Dilution
Common Anions	General Engineering Labora	tory						
EPA 300.0	Nitrate	0.1	MG/L	U	U		0.1	1
	Nitrite	0.1	MG/L	U	U		0.1	1
	Sulfate	0.811	MG/L		=		0.4	1
General Chemistry	General Engineering Labora	tory						
SM4500-CO2	Carbon Dioxide	2	MG/L	U	U		2	1
EPA 376.2	Sulfide	0.05	MG/L	U	U		0.05	1
Inorganics	General Engineering Labora	tory						
SW846 6010	Iron	134	UG/L		=		2.11	1
Semi-Volatile Organics	General Engineering Labora	tory						
SW846 8270C	1,2,4-Trichlorobenzene	10.1	UG/L	U	U		10.1	1
	1,2-Dichlorobenzene	10.1	UG/L	U	U		10.1	1
	1,3-Dichlorobenzene	10.1	UG/L	U	U		10.1	1
	1,4-Dichlorobenzene	10.1	UG/L	U	U		10.1	1
	2,4,5-Trichlorophenol	10.1	UG/L	U	U		10.1	1
	2,4,6-Trichlorophenol	10.1	UG/L	U	U		10.1	1
	2,4-Dichlorophenol	10.1	UG/L	U	U		10.1	1

11/08/2002

Page 9

f |* tub

1.1

Station: 7J-MW-06 Sample ID: 7J4673 Date Collected: 09/20/2002

Media: Groundwater Field Sample Type: Grab

Analysis	Chemical	Result	Units	Lab [Qual 0	Data Valida Qual Cod	ation Detection	Dilution	
Semi-Volatile	General Engineering Laborator	/						
SW846 8270C	2.4-Dimethylphenol	10.1	UG/L	U	U	10.1	1	
	2,4-Dinitrophenol	20.2	UG/L	U	U	20.2	1	
	2,4-Dinitrotoluene	10.1	UG/L	U	U	10.1	1	
	2,6-Dinitrotoluene	10.1	UG/L	U	U	10.1	1	
	2-Chloronaphthalene	1	UG/L	U	U	1	1	
	2-Chlorophenol	10.1	UG/L	U	U	10.1	1	
	2-Methyl-4,6-dinitrophenol	10.1	UG/L	U	U	10.1	1	
	2-Methylnaphthalene	1	UG/L	U	U	1	1	
	2-Methylphenol	10.1	UG/L	U	U	10.1	1	
	2-Nitroaniline	10.1	UG/L	U	U	10.1	1	
	2-Nitrophenol	10.1	UG/L	U	U	10.1	1	
	3,3'-Dichlorobenzidine	10.1	UG/L	U	U	10.1	1	
	3-Nitroaniline	10.1	UG/L	U	U	10.1	1	
	4-Bromophenyl phenyl ether	10.1	UG/L	U	U	10.1	1	
	4-Chloro-3-methylphenol	10.1	UG/L	U	U	10.1	1	
	4-Chloroaniline	10.1	UG/L	U	U	10.1	1	
	4-Chlorophenyl phenyl ether	10.1	UG/L	U	U	10.1	1	
	4-Methylphenol	10.1	UG/L	U	U	10.1	1	
	4-Nitroaniline	10.1	UG/L	U	U	10.1	1	
		10.1	UG/L	U	U	10.1	1	
	Acenaphthelene	1	UG/L	U	U	1	1	
	Acenaphthylene	1	UG/L	U	U	1	1	
	Anunacerie Benz(a)anthracene	1			U	1	1	
	Benzenemethanol	10.1	UG/L	0	0	. 1	1	
	Benzo(a)nyrene	10.1		0	0	10.1	1	
	Benzo(b)fluoranthene	1				1	1	
	Benzo(ghi)pervlene	1	UG/L	Ц	U U	1	1	
	Benzo(k)fluoranthene	1	UG/L	ŭ	ŭ	1	1	
	Benzoic acid	20.2	UG/L	ŭ	ŭ	20.2	1	
	Bis(2-chloroethoxy)methane	10.1	UG/L	Ŭ	ŭ	10.1	1	
	Bis(2-chloroethyl) ether	10.1	UG/L	ŭ	ŭ	10.1	1	
	Bis(2-Chloroisopropyl)Ether	10.1	UG/L	U	U	10.1	1	
	Bis(2-ethylhexyl)phthalate	10.1	UG/L	U	U	10.1	1	
	Butyl benzyl phthalate	10.1	UG/L	U	U	10.1	1	
	Carbazole	10.1	UG/L	U	U	10.1	1	
	Chrysene	1	UG/L	U	U	1	1	
	Di-n-butyl phthalate	10.1	UG/L	U	U	10.1	1	
	Di-n-octylphthalate	10.1	UG/L	U	U	10.1	1	
	Dibenz(a,h)anthracene	1	UG/L	U	U	1	1	
	Dibenzofuran	10.1	UG/L	U	U	10.1	1	
	Diethyl phthalate	10.1	UG/L	U	U	10.1	1	
	Dimethyl phthalate	10.1	UG/L	U	U	10.1	1	
	Diphenylamine	10.1	UG/L	U	U	10.1	1	
	Fluoranthene	1	UG/L	U	U	1	1	
	Fluorene	1	UG/L	U	U	1	1	
	Hexachlorobenzene	10.1	UG/L	U	U	10.1	1	
		10.1	UG/L	U	U	10.1	1	
	Hexachiorocyclopentadiene	10.1	UG/L	U	U	10.1	1	
		10.1	UG/L	U	0	10.1	1	
	Isophorope	1	UG/L	0	0	1	1	
	N-Nitroso-di-n-propularina	10.1	UG/L	0		10.1	1	
	Nanhthalene	0.16		U	0	10.1	1	
	Nitrobenzene	10.10	UG/L	J	J	10.1	1	
	Pentachlorophenol	10.1	UG/L		ü	10.1	1	
				0	9	10.1		

11/08/2002

Station: 7J-MW-06 Sample ID: 7J4673 Date Collected: 09/20/2002

Media: Groundwater Field Sample Type: Grab

Analysis	Chemical	Result	Units	Lab Qual	Qual	Code	Limit	Dilution	
Semi-Volatile Organics	General Engineering Laboratory								
SW846 8270C	Phenanthrene	1	UG/L	U	U		1	1	
	Phenol	10.1	UG/L	U	U		10.1	1	
	Pyrene	1	UG/L	U	U		1	1	
Volatile Organic Gases	General Engineering Laboratory								
SW846 3810	Methane	89.5	UG/L		=		25	1	
Volatile Organics	General Engineering Laboratory								
SW846 8260B	1,1,1-Trichloroethane	1	UG/L	U	U		1	1	
	1,1,2,2-Tetrachloroethane	1	UG/L	Ŭ	U		1	1	
	1,1,2-Trichloroethane	1	UG/L	Ŭ	U		1	1	
	1,1-Dichloroethane	1	UG/L	U	U		1	1	
	1,1-Dichloroethene	1	UG/L	U	U		1	1	
	1,2-Dibromoethane	1	UG/L	U	Ū		1	i	
	1,2-Dichloroethane	1	UG/L	U	U		1	1	
	1,2-Dichloroethene	1	UG/L	Ŭ	U		1	1	
	1,2-Dichloropropane	1	UG/L	U	Ŭ		1	1	
	2-Butanone	5	UG/L	Ŭ	U		5	1	
	2-Hexanone	5	UG/L	U	Ū		5	1	
	4-Methyl-2-pentanone	5	UG/L	Ŭ	Ū		5	1	
	Acetone	5	UG/L	Ŭ	Ū		5	1	
	Benzene	1	UG/L	U	Ŭ		1	1	
	Bromochloromethane	1	UG/L	U	U		1	1	
	Bromodichloromethane	1	UG/L	U	Ū		1	1	
	Bromoform	1	UG/L	Ŭ	Ū		. 1	1	
	Bromomethane	1	UG/L	Ū	Ū		1	1	
	Carbon disulfide	5	UG/L	Ŭ	Ŭ		5	1	
	Carbon tetrachloride	1	UG/L	Ű	Ū		1	1	
	Chlorobenzene	1	UG/L	Ŭ	Ŭ		i		
	Chloroethane	1	UG/L	Ŭ	ŭ		1	1	
	Chloroform	1	UG/L	ŭ	Ŭ		1	1	
	Chloromethane	1	UG/L	Ŭ	ŭ		1	1	
	cis-1,3-Dichloropropene	1	UG/L	ŭ	ŭ		1	1	
	Dibromochloromethane	1	UG/L	ŭ	U.		i	1	
	Ethylbenzene	1	UG/L	ŭ	ŭ		1	1	
	Methylene chloride	5	UG/I	U.	ü		5	1	
	Styrene	1	UG/L	ŭ	ŭ		1	1	
	Tetrachloroethene	1	UG/L		ŭ		1	1	
	Toluene	1	UG/L	ŭ	ŭ		-	1	
	trans-1,3-Dichloropropene	1	UG/I	ŭ	U.		1	1	
	Trichloroethene	1	UG/L	11	ŭ		1	1	
	Vinvl chloride	1	UG/L	ii ii	ü		1	1	
	Xylenes, Total	1	UG/L	Ŭ	Ŭ		1	1	

Station: 7J-MW-07 Northing: 684315.2029 Easting: 821556.6547 Coord System: GA83East Method: Station: 7J-MW-07 Media: Groundwater Sample ID: 7J4773 Date Collected: 09/19/2002 Field Sample Type: Grab Lab Data Validation Detection Qual Qual Code Limit Chemical Analysis **Result Units** Dilution **Common Anions General Engineering Laboratory** EPA 300.0 Nitrate 0.127 MG/L 0.1 = 1 Nitrite 0.1 MG/L υ υ 0.1 1 11/08/2002 Page 11

1

--

Sample ID: 7J47	773 Me	dia: Groundwater				
Date Collected: 09/1	9/2002 Field Sample T	/pe: Grab	Lab Da	An Malidadian	Datastica	
Analysis	Chemical	Result Units	Qual Qu	ial Code	Limit	Dilution
Common Anions	General Engineering Laboratory	1				
EPA 300.0	Sulfate	0.644 MG/L		=	0.4	1
General Chemistry	General Engineering Laboratory	1				
	Carbon Dioxide	238 MG/L		=	2	1
EPA 376.2	Sulfide	0.05 MG/L	U	U	0.05	1
Inorganics	General Engineering Laboratory					
SW846 6010	Iron	12300 UG/L	N	J 101	2.11	1
Semi-Volatile Organics	General Engineering Laboratory					
SW846 8270C	1.2.4-Trichlorobenzene	10.6 UG/L	U	U	10.6	1
	1,2-Dichlorobenzene	10.6 UG/L	ŭ	ŭ	10.6	1
	1,3-Dichlorobenzene	10.6 UG/L	Ŭ	Ŭ	10.6	1
	1.4-Dichlorobenzene	10.6 UG/L	Ŭ	Ŭ	10.6	1
	2,4,5-Trichlorophenol	10.6 UG/L	Ŭ	ŭ	10.6	1
	2,4,6-Trichlorophenol	10.6 UG/L	Ū	U	10.6	1
	2,4-Dichlorophenol	10.6 UG/L	Ū	Ū	10.6	1
	2,4-Dimethylphenol	10.6 UG/L	Ŭ	Ū	10.6	1
	2,4-Dinitrophenol	21.3 UG/L	Ū	Ū	21.3	1
	2,4-Dinitrotoluene	10.6 UG/L	U	U	10.6	1
	2,6-Dinitrotoluene	10.6 UG/L	U	U	10.6	1
	2-Chloronaphthalene	1.1 UG/L	U	U	1.1	1
	2-Chlorophenol	10.6 UG/L	U	U	10.6	1
	2-Methyl-4,6-dinitrophenol	10.6 UG/L	U	U	10.6	1
	2-Methylnaphthalene	1.3 UG/L		=	1.1	1
	2-Methylphenol	10.6 UG/L	U	U	10.6	1
	2-Nitroaniline	10.6 UG/L	U	U	10.6	1
	2-Nitrophenol	10.6 UG/L	U	U	10.6	1
	3,3'-Dichlorobenzidine	10.6 UG/L	U	U	10.6	1
	3-Nitroaniline	10.6 UG/L	U	U	10.6	1
	4-Bromophenyl phenyl ether	10.6 UG/L	U	U	10.6	1
	4-Chloro-3-methylphenol	10.6 UG/L	U	U	10.6	1
	4-Chloroaniline	10.6 UG/L	U	U	10.6	1
	4-Chlorophenyl phenyl ether	10.6 UG/L	U	U	10.6	1
	4-Methylphenol	10.6 UG/L	U	U	10.6	1
	4-Nitroaniline	10.6 UG/L	U	υ	10.6	1
	4-Nitrophenol	10.6 UG/L	U	U	10.6	1
	Acenaphthene	1.1 UG/L	U	U	1.1	1
	Acenaphthylene	1.1 UG/L	U	U	1.1	1
	Anthracene	1.1 UG/L	U	U	1.1	1
	Benz(a)anthracene	1.1 UG/L	U	U	1.1	1
	Benzenemethanol	10.6 UG/L	U	U	10.6	1
	Benzo(a)pyrene	1.1 UG/L	U	U	1.1	1
	Benzo(b)fluoranthene	1.1 UG/L	U	U	1.1	1
	Benzo(ghi)perylene	1.1 UG/L	U	U	1.1	1
	Benzo(k)fluoranthene	1.1 UG/L	U	U	1.1	1
	Benzoic acid	21.3 UG/L	U	U	21.3	1
	Bis(2-chloroethoxy)methane	10.6 UG/L	U	U	10.6	1
	Bis(2-chloroethyl) ether	10.6 UG/L	U	U	10.6	1
	Bis(2-Chloroisopropyl)Ether	10.6 UG/L	U	U	10.6	1
	Bis(2-ethylhexyl)phthalate	3.2 UG/L	J	J	10.6	1
	Butyl benzyl phthalate	10.6 UG/L	U	U	10.6	1
	Carbazole	10.6 UG/L	U	U	10.6	1
	Chrysene	1.1 UG/L	U	U	1.1	1
	Di-n-butyl phthalate	10.6 UG/L	Ŭ	U	10.6	1
	Di-n-octylphthalate	10.6 UG/L	U	U	10.6	1
	Dibenz(a,h)anthracene	1.1 UG/L	Ŭ	U	1.1	1
	Dibenzofuran	10.6 UG/L	ũ	U	10.6	1

11/08/2002

Station: 7J-MW-07

Page 12

L_{in}ul (

 Station:
 7J-MW-07

 Sample ID:
 7J4773

 Date Collected:
 09/19/2002

Media: Groundwater Field Sample Type: Grab

Analysis	Chemical	Result	Units	Lab Qual	Data Qual	Validation Code	Detection Limit	Dilution	
Semi-Volatile Organics	General Engineering Laboratory								
SW846 8270C	Diethyl phthalate	10.6	UG/L	U	U		10.6	1	
	Dimethyl phthalate	10.6	UG/L	U	U		10.6	1	
	Diphenylamine	10.6	UG/L	U	U		10.6	1	
	Fluoranthene	1.1	UG/L	U	U		1.1	1	
	Fluorene	1.1	UG/L	U	U		1.1	1	
	Hexachlorobenzene	10.6	UG/L	U	U		10.6	1	
	Hexachlorobutadiene	10.6	UG/L	U	U		10.6	1	
	Hexachlorocyclopentadiene	10.6	UG/L	U	U		10.6	1	
	Hexachloroethane	10.6	UG/L	U	U		10.6	1	
	Indeno(1,2,3-cd)pyrene	1.1	UG/L	U	U		1.1	1	
	Isophorone	10.6	UG/L	U	U		10.6	1	
	N-Nitroso-di-n-propylamine	10.6	UG/L	U	U		10.6	1	
	Naphthalene	1.4	UG/L		=		1.1	1	
	Nitrobenzene	10.6	UG/L	U	U		10.6	1	
	Pentachlorophenol	10.6	UG/L	U	U		10.6	1	
	Phenanthrene	1.1	UG/L	U	U		1.1	1	
	Phenol	10.6	UG/L	U	U		10.6	1	
	Pyrene	1.1	UG/L	U	U		1.1	1	
Volatile Organic Gases	General Engineering Laboratory								
SW846 3810	Methane	190	UG/L		=		25	1	
Volatile Organics	General Engineering Laboratory								
SW846 8260B	1,1,1-Trichloroethane	1	UG/L	U	U		1	1	
	1,1,2,2-Tetrachloroethane	1	UG/L	U	U		· 1	1	
	1,1,2-Trichloroethane	1	UG/L	U	U		1	1	
	1,1-Dichloroethane	1	UG/L	U	U		1	1	
	1,1-Dichloroethene	1	UG/L	U	U		1	1	
	1,2-Dibromoethane	1	UG/L	U	U		1	1	
	1,2-Dichloroethane	1	UG/L	U	U		1	1	
	1,2-Dichloroethene	0.68	UG/L	J	J		1	1	
	1,2-Dichloropropane	1	UG/L	U	U		1	1	
	2-Butanone	5	UG/L	U	U		5	1	
	2-Hexanone	5	UG/L	U	U		5	1	
	4-Methyl-2-pentanone	5	UG/L	U	U		5	1	
	Acetone	5	UG/L	J	U	F04,F06	5	1	
	Benzene	4.3	UG/L		=		1	1	
	Bromochloromethane	1	UG/L	U	U		1	1	
	Bromodichloromethane	1	UG/L	U	U		1	1	
	Bromoform	1	UG/L	U	U		1	1	
	Bromomethane	1	UG/L	U	U		1	1	
	Carbon disulfide	5	UG/L	U	U		5	1	
	Carbon tetrachloride	1	UG/L	U	U		1	1	
	Chlorobenzene	1	UG/L	U	U		1	1	
	Chloroethane	1	UG/L	U	U		1	1	
	Chloroform	1	UG/L	U	U		1	1	
	Chloromethane	1	UG/L	U	U		1	1	
	cis-1,3-Dichloropropene	1	UG/L	U	U		1	1	
	Dibromochloromethane	1	UG/L	U	U		1	1	
	Ethylbenzene	0.68	UG/L	J	J		1	1	
	Methylene chloride	5	UG/L	U	U		5	1	
	Styrene	1	UG/L	U	U		1	1	
	Tetrachloroethene	1	UG/L	U	U		1	1	
	Toluene	0.98	UG/L	J	J		1	1	÷
	trans-1,3-Dichloropropene	1	UG/L	U	U		1	1	
	Trichloroethene	1	UG/L	U	U		1	1	
	Vinyl chloride	1	UG/L	U	U		1	1	

11/08/2002

SW846 8260B	Xylenes, Total	1.8	UG/L		=		1	1	
Station: 7J-MW-09			Coc	Northing: 6 ord System: (68434 GA83E	7.3714 East Me	sting: 82 thod:	1587.8497	
Station: 7J-M	1W-09								
Sample ID: 7J49	73 Medi	a: Ground	water						
Date Collected: 09/1	9/2002 Field Sample Typ	e: Grab							
Analysis	Chemical	Popult	Unite	Lab	Data	Validation De	tection	Dilution	
Analysis		Result	Units	Quai	Qual	Code	Limit	Dilution	
Common Anions	General Engineering Laboratory	0.400			-				
EPA 300.0	Nitrate	0.132	MG/L		=		0.1	1	
	Nitrite	0.1	MG/L	U	U		0.1	1	
Canaral Chamistry	Sullate	1.8	MG/L		=		0.4	1	
SM4500 CO2	Certera Disvide	450	MOU		The second		-		
SIM4500-CO2	Carbon Dioxide	152	MG/L	Ω.	=		2	1	
LFA 370.2	General Engineering Laboratory	0.05	MG/L	0			0.05	1	<u> </u>
SWR46 6010	Iron	200	110/1	N		104	0.44		
Semi-Volatile	General Engineering Laboratory	329	UG/L	N	J	101	2.11	1	
Organics	General Engineering Laboratory								
SW846 8270C	1.2.4-Trichlorobenzene	10.5	UG/I	U	U		10.5	1	
	1,2-Dichlorobenzene	10.5	UG/L	Ū	Ū		10.5	1	
	1,3-Dichlorobenzene	10.5	UG/L	U	U		10.5	1	
	1,4-Dichlorobenzene	10.5	UG/L	U	U		10.5	1	
	2,4,5-Trichlorophenol	10.5	UG/L	U	U		10.5	1	
	2,4,6-Trichlorophenol	10.5	UG/L	U	U		10.5	1	
	2,4-Dichlorophenol	10.5	UG/L	U	U		10.5	1	
	2,4-Dimethylphenol	10.5	UG/L	U	U		10.5	1	
	2,4-Dinitrophenol	21	UG/L	U	U		21	1	(
	2,4-Dinitrotoluene	10.5	UG/L	U	U		10.5	1	
	2,6-Dinitrotoluene	10.5	UG/L	U	U		10.5	1	
	2-Chloronaphthalene	1	UG/L	U	U		1	1	
	2-Chlorophenol	10.5	UG/L	U	U		10.5	1	
	2-Methyl-4,6-dinitrophenol	10.5	UG/L	U	U		10.5	1	
	2-Methylnaphthalene	1.4	UG/L		=		1	1	
	2-Methylphenol	10.5	UG/L	U	U		10.5	1	
	2-Nitroaniline	10.5	UG/L	U	U		10.5	1	
	2-Nitrophenol	10.5	UG/L	U	U		10.5	1	
	3,3-Dichlorobenzidine	10.5	UG/L	U	U		10.5	1	
	4. Bromonhonul phonul other	10.5	UG/L	0	0		10.5	1	
	4-Biomophenyi phenyi ether	10.5	UG/L	0	0		10.5	1	
	4-Chloroaniline	10.5	UG/L	0			10.5	1	
	4-Chlorophenyl phenyl ether	10.5	UG/L	0			10.5	1	
	4-Methylphenol	10.5	UG/L	U U	U.		10.5	1	
	4-Nitroaniline	10.5	UG/L	Ŭ	ü		10.5	1	
	4-Nitrophenol	10.5	UG/L	Ŭ	ŭ		10.5	1	
	Acenaphthene	1	UG/L	Ŭ	Ŭ		1	1	
	Acenaphthylene	1	UG/L	U	U		1	1	
	Anthracene	1	UG/L	U	U		1	1	
	Benz(a)anthracene	1	UG/L	Ū	U		1	1	
	Benzenemethanol	10.5	UG/L	U	U		10.5	1	
	Benzo(a)pyrene	1	UG/L	U	U		1	1	
	Benzo(b)fluoranthene	1	UG/L	U	U		1	1	
	Benzo(ghi)perylene	1	UG/L	U	U		1	1	
	Benzo(k)fluoranthene	1	UG/L	U	U		1	1	
	Benzoic acid	21	UG/L	U	U		21	1	
	Bis(2-chloroethoxy)methane	10.5	UG/L	U	U		10.5	1	
	Bis(2-chloroethyl) ether	10.5	UG/L	U	U		10.5	1	1

11/08/2002

Page 14

4 P.

Station: 7J-MW-09 Sample ID: 7J4973 Date Collected: 09/19/2002

Media: Groundwater Field Sample Type: Grab

Analysis	Chemical	Result	Units	Lab Qual	Data Qual	Validation Code	Detection Limit	Dilution	
Semi-Volatile Organics	General Engineering Laboratory								
SW846 8270C	Bis(2-Chloroisopropyl)Ether	10.5	UG/L	U	U		10.5	1	
	Bis(2-ethylhexyl)phthalate	2.7	UG/L	J	J		10.5	1	
	Butyl benzyl phthalate	10.5	UG/L	U	U		10.5	1	
	Carbazole	10.5	UG/L	U	U		10.5	1	
	Chrysene	1	UG/L	U	U		1	1	
	Di-n-butyl phthalate	10.5	UG/L	U	υ		10.5	1	
	Di-n-octylphthalate	10.5	UG/L	U	U		10.5	1	
	Dibenz(a,h)anthracene	1	UG/L	U	U		1	1	
	Dibenzofuran	10.5	UG/L	U	U		10.5	1	
	Diethyl phthalate	10.5	UG/L	U	U		10.5	1	
	Dimethyl phthalate	10.5	UG/L	U	U		10.5	1	
	Diphenylamine	10.5	UG/L	U	U		10.5	1	
	Fluoranthene	1	UG/L	U	U		1	1	
	Fluorene	1	UG/L	U	U		1	1	
	Hexachlorobenzene	10.5	UG/L	U	U		10.5	1	
	Hexachlorobutadiene	10.5	UG/L	U	U		10.5	1	
	Hexachlorocyclopentadiene	10.5	UG/L	U	U		10.5	1	
	Hexachloroethane	10.5	UG/L	U	U		10.5	1	
	Indeno(1,2,3-cd)pyrene	1	UG/L	U	U		1	1	
	Isophorone	10.5	UG/L	U	U		10.5	1	
	N-Nitroso-di-n-propylamine	10.5	UG/L	U	U		10.5	1	
	Naphthalene	3.2	UG/L		=		1	1	
	Nitrobenzene	10.5	UG/L	U	U		10.5	1	
	Pentachlorophenol	10.5	UG/L	U	U		- 10.5	1	
	Phenanthrene	1	UG/L	U	U		1	1	
	Phenol	10.5	UG/L	Ŭ	U.		10.5	1	
	Pyrene	1	UG/L	Ŭ	U		1	1	
Volatile Organic Gases	General Engineering Laboratory								
SW846 3810	Methane	24.7	UG/L	J	J		25	1	
Volatile Organics	General Engineering Laboratory								
SW846 8260B	1,1,1-Trichloroethane	1	UG/L	U	U		1	1	
	1,1,2,2-Tetrachloroethane	1	UG/L	U	U		1	1	
	1,1,2-Trichloroethane	1	UG/L	U	U		1	1	
	1,1-Dichloroethane	1	UG/L	U	U		1	1	
	1,1-Dichloroethene	1	UG/L	U	U		1	1	
	1,2-Dibromoethane	1	UG/L	U	U		1	1	
	1,2-Dichloroethane	1	UG/L	U	U		1	1	
	1,2-Dichloroethene	1	UG/L	U	U		1	1	
	1,2-Dichloropropane	1	UG/L	U	U		1	1	
	2-Butanone	5	UG/L	U	U		5	1	
	2-Hexanone	5	UG/L	U	U		5	1	
	4-Methyl-2-pentanone	5	UG/L	U	U		5	1	
	Acetone	12.6	UG/L		U	F04,F07	5	1	
	Benzene	4.4	UG/L		=		1	1	
	Bromochloromethane	1	UG/L	U	U		1	1	
	Bromodichloromethane	1	UG/L	ŭ	ŭ		1	1	
	Bromoform	1	UG/L	ŭ	u		1	1	
	Bromomethane	1	UG/L	U U	ŭ		1	1	
	Carbon disulfide	5	UG/I		ŭ		5	1	
	Carbon tetrachloride	1	UG/I				1	1	
	Chlorobenzene	1	UG/L		11		1	1	
	Chloroethane	1	UG/L		1		1	4	
	Chloroform	1	UG/L				1	1	
	Chloromethane	1	UG/	0			1	1	
	cis_1 3-Dichloropropopo		UG/L	0			1	1	
	UIS-1.3-DICHOLODIODELLE			0	- U				

11/08/2002

-

Page 15

- 101-

SW846 8260B	Dibromochloromethane	1	UG/L	U	U	1	1
	Ethylbenzene	0.25	UG/L	J	J	1	1
	Methylene chloride	5	UG/L	U	U	5	1
	Styrene	1	UG/L	U	U	1	1
	Tetrachloroethene	1	UG/L	U	U	1	1
	Toluene	1	UG/L	U	U	1	1
	trans-1,3-Dichloropropene	1	UG/L	U	U	1	1
	Trichloroethene	1	UG/L	U	U	1	1
	Vinyl chloride	1	UG/L	U	U	1	1
	Xylenes, Total	1.7	UG/L		=	1	1

Station: 7J-MW-10

Station: 7J-MW-10			Coo	Northing: (rd System: (: 684362.9094 : GA83East		Easting: 821540.8005 Method:		
Station: 7J-M Sample ID: 7J4A Date Collected: 09/2	IW-10 223 Me 3/2002 Field Sample Ty	dia: Ground /pe: Field Du	water uplicate	1 ab	Dete		Deterio		
Analysis	Chemical	Result	Units	Qual	Qual	Code	Limit	Dilution	
Common Anions	General Engineering Laboratory								
EPA 300.0	Nitrate	0.1	MG/L	U	U		0.1	1	
	Nitrite	0.1	MG/L	U	U		0.1	1	
	Sulfate	0.4	MG/L	U	U		0.4	1	
General Chemistry	General Engineering Laboratory								
SM4500-CO2	Carbon Dioxide	135	MG/L		=		2	1	
EPA 376.2	Sulfide	0.05	MG/L	U	U		0.05	1	
Inorganics	General Engineering Laboratory								
SW846 6010	Iron	2930	UG/L		=		2.11	1	
Semi-Volatile Organics	General Engineering Laboratory								
SW846 8270C	1,2,4-Trichlorobenzene	10.2	UG/L	U	U		10.2	1	
	1,2-Dichlorobenzene	10.2	UG/L	U	U		10.2	1	
	1,3-Dichlorobenzene	10.2	UG/L	U	U		10.2	1	
	1,4-Dichlorobenzene	10.2	UG/L	U	U		10.2	1	
	2,4,5-Trichlorophenol	10.2	UG/L	U	U		10.2	1	
	2,4,6-Trichlorophenol	10.2	UG/L	U	U		10.2	1	
	2,4-Dichlorophenol	10.2	UG/L	U	U		10.2	1	
	2,4-Dimethylphenol	10.2	UG/L	U	U		10.2	1	
	2,4-Dinitrophenol	20.4	UG/L	U	Ŭ		20.4	1	
	2,4-Dinitrotoluene	10.2	UG/L	U	U		10.2	1	
	2,6-Dinitrotoluene	10.2	UG/L	U	U		10.2	1	
	2-Chloronaphthalene	1	UG/L	U	U		1	1	
	2-Chlorophenol	10.2	UG/L	U	U		10.2	1	
	2-Methyl-4,6-dinitrophenol	10.2	UG/L	U	U		10.2	1	
	2-Methylnaphthalene	4.7	UG/L		=		1	1	
	2-Methylphenol	10.2	UG/L	U	U		10.2	1	
	2-Nitroaniline	10.2	UG/L	U	U		10.2	1	
	2-Nitrophenol	10.2	UG/L	U	U		10.2	1	
	3,3'-Dichlorobenzidine	10.2	UG/L	U	U		10.2	1	
	3-Nitroaniline	10.2	UG/L	U	U		10.2	1	
	4-Bromophenyl phenyl ether	10.2	UG/L	U	U		10.2	1	
	4-Chloro-3-methylphenol	10.2	UG/L	U	U		10.2	1	
	4-Chloroaniline	10.2	UG/L	Ū.	Ū		10.2	1	
	4-Chlorophenyl phenyl ether	10.2	UG/L	Ŭ	Ū		10.2	1	
	4-Methylphenol	0.85	UG/L	L	J		10.2	1	
	4-Nitroaniline	10.2	UG/L	Ŭ	Ū		10.2	1	
	4-Nitrophenol	10.2	UG/L	Ŭ	U		10.2	1	
	Acenaphthene	1	UG/L	Ŭ	U		1	1	
	Acenaphthylene	1	UG/L	U	U		1	1	
	Anthracene	1	UG/L	U	U		1	1	

11/08/2002

Page 16

1

÷

Station: 7J-MW-10 Sample ID: 7J4A23 Date Collected: 09/23/2002

Media: Groundwater Field Sample Type: Field Duplicate

Analysis	Chemical	Resul	t Units	Lab Qual	Data Qual	Validation Code	Detection Limit	Dilution	
Semi-Volatile Organics	General Engineering Laboratory								
SW846 8270C	Benz(a)anthracene	1	UG/L	U	U		1	1	
	Benzenemethanol	10.2	2 UG/L	U	U		10.2	1	
	Benzo(a)pyrene	1	UG/L	U	U		1	1	
	Benzo(b)fluoranthene	1	UG/L	U	U		1	1	
	Benzo(ghi)perylene	1	UG/L	U	U		1	1	
	Benzo(k)fluoranthene	1	UG/L	U	U		1	1	
	Benzoic acid	20.4	UG/L	U	U		20.4	1	
	Bis(2-chloroethoxy)methane	10.2	UG/L	U	U		10.2	1	
	Bis(2-chloroethyl) ether	10.2	UG/L	U	U		10.2	1	
	Bis(2-Chloroisopropyl)Ether	10.2	UG/L	U	U		10.2	1	
	Bis(2-ethylhexyl)phthalate	1.4	UG/L	J	J		10.2	1	
	Butyl benzyl phthalate	10.2	UG/L	U	U		10.2	1	
	Carbazole	0.57	UG/L	J	J		10.2	1	
	Chrysene	া	UG/L	U	U		1	1	
	Di-n-butyl phthalate	10.2	UG/L	U	U		10.2	1	
	Di-n-octylphthalate	10.2	UG/L	U	U		10.2	1	
	Dibenz(a,h)anthracene	1	UG/L	U	U		1	1	
	Dibenzofuran	10.2	UG/L	U	U		10.2	1	
	Diethyl phthalate	10.2	UG/L	U	U		10.2	1	
	Dimethyl phthalate	10.2	UG/L	U	U		10.2	1	
	Diphenylamine	10.2	UG/L	U	U		10.2	1	
	Fluoranthene	1	UG/L	U	Ŭ		1	1	
	Fluorene	1	UG/L	Ű	Ū		1	1	
	Hexachlorobenzene	10.2	UG/L	U	ŭ		10.2	1	
	Hexachlorobutadiene	10.2	UG/L	Ŭ	ŭ		10.2	1	
	Hexachlorocyclopentadiene	10.2	UG/L	Ŭ	ŭ		10.2	1	
	Hexachloroethane	10.2	UG/L	Ŭ	Ŭ		10.2	1	
	Indeno(1,2,3-cd)pyrene	1	UG/L	Ŭ	Ŭ		1	1	
	Isophorone	10.2	UG/L	U	ū		10.2	1	
	N-Nitroso-di-n-propylamine	10.2	UG/L	Ū	Ŭ		10.2	1	
	Naphthalene	2.9	UG/L		=		1	1	
	Nitrobenzene	10.2	UG/L	U	υ		10.2		
	Pentachlorophenol	10.2	UG/L	U	U		10.2	1	
	Phenanthrene	0.84	UG/L	J	J		1	1	
	Phenol	10.2	UG/L	U	Ŭ		10.2	1	
	Pyrene	1	UG/L	U	Ū		1	1	
Volatile Organic Gases	General Engineering Laboratory								
SW846 3810	Methane	235	UG/L		=		25	1	
Volatile Organics	General Engineering Laboratory								
SW846 8260B	1,1,1-Trichloroethane	1	UG/L	U	U		1	1	
	1,1,2,2-Tetrachloroethane	1	UG/L	U	U		1	1	
	1,1,2-Trichloroethane	1	UG/L	U	U		1	1	
	1,1-Dichloroethane	1	UG/L	U	U		1	1	
	1,1-Dichloroethene	1	UG/L	U	U		1	1	
	1,2-Dibromoethane	1	UG/L	U	U		1	1	
	1,2-Dichloroethane	1	UG/L	U	U		1	1	
	1,2-Dichloroethene	1	UG/L		=		1	1	
	1,2-Dichloropropane	1	UG/L	U	U		1	1	
	2-Butanone	5	UG/L	U	U		5	1	
	2-Hexanone	5	UG/L	Ū	U		5	1	
	4-Methyl-2-pentanone	5	UG/L	U	U		5	1	
	Acetone	5	UG/L	J	U	F04.F06	5	1	
	Benzene	2.9	UG/L	70	=		1	1	
	Bromochloromethane	1	UG/L	U	U		1	1	
	Bromodichloromethane	1	UG/L	Ū	U		1	1	
				10.000	1000				

11/08/2002

 ${\rm d} {\rm d} {\rm e}_{{\rm e}_{\rm s}}$

=

SW846 8260B	Bromoform	1	UG/L	U	U	1	1
	Bromomethane	1	UG/L	U	U	1	1
	Carbon disulfide	5	UG/L	U	U	5	1
	Carbon tetrachloride	1	UG/L	U	U	1	1
	Chlorobenzene	1	UG/L	U	U	1	1
	Chloroethane	1	UG/L	U	U	1	1
	Chloroform	1	UG/L	U	U	1	1
	Chloromethane	1	UG/L	U	U	1	1
	cis-1,3-Dichloropropene	1	UG/L	U	U	1	1
	Dibromochloromethane	1	UG/L	U	U	1	1
	Ethylbenzene	1.1	UG/L		=	1	1
	Methylene chloride	5	UG/L	U	U	5	1
	Styrene	1	UG/L	U	U	1	1
	Tetrachloroethene	1	UG/L	U	U	1	1
	Toluene	1.9	UG/L		U F04,F07	1	1
	trans-1,3-Dichloropropene	1	UG/L	U	U	1	1
	Trichloroethene	1	UG/L	U	U	1	1
	Vinyl chloride	1	UG/L	U	U	1	1
	Xylenes, Total	3.8	UG/L		=	1	1

Station: 7J-MW-10 Sample ID: 7J4A73 Date Collected: 09/23/2002

Media: Groundwater Field Sample Type: Grab

Analysis	Chemical	Result	Units	Lab Qua	Data I Qual	Validation Code	Detection Limit	Dilution	
Common Anions	General Engineering Laboratory								
EPA 300.0	Nitrate	0.1	MG/L	U	U		0.1	1	
	Nitrite	0.1	MG/L	Ū	Ū		0.1	1	
	Sulfate	0.4	MG/L	Ŭ	Ū		0.4	1	
General Chemistry	General Engineering Laboratory								_
SM4500-CO2	Carbon Dioxide	121	MG/L		=		. 2	1	
EPA 376.2	Sulfide	0.05	MG/L	Ŭ	U		0.05	1	(
norganics	General Engineering Laboratory						0.00		\
SW846 6010	Iron	2950	UG/I		=		2 11	1	
Semi-Volatile Organics	General Engineering Laboratory	2000	00/2				2.11		-
SW846 8270C	1,2,4-Trichlorobenzene	10.3	UG/L	U	U		10.3	1	
	1,2-Dichlorobenzene	10.3	UG/L	Ŭ	U		10.3	1	
	1,3-Dichlorobenzene	10.3	UG/L	U	U		10.3	1	
	1,4-Dichlorobenzene	10.3	UG/L	U	U		10.3	1	
	2,4,5-Trichlorophenol	10.3	UG/L	U	U		10.3	1	
	2,4,6-Trichlorophenol	10.3	UG/L	U	U		10.3	1	
	2,4-Dichlorophenol	10.3	UG/L	U	U		10.3	1	
	2,4-Dimethylphenol	10.3	UG/L	U	U		10.3	1	
	2,4-Dinitrophenol	20.6	UG/L	U	U		20.6	1	
	2,4-Dinitrotoluene	10.3	UG/L	U	U		10.3	4	
	2,6-Dinitrotoluene	10.3	UG/L	U	U		10.3	1	
	2-Chloronaphthalene	1	UG/L	U	U		1	1	
	2-Chlorophenol	10.3	UG/L	U	U		10.3	1	
	2-Methyl-4,6-dinitrophenol	10.3	UG/L	U	U		10.3	1	
	2-Methylnaphthalene	4.1	UG/L		=		1	1	
	2-Methylphenol	10.3	UG/L	U	U		10.3	1	
	2-Nitroaniline	10.3	UG/L	U	U		10.3	1	
	2-Nitrophenol	10.3	UG/L	U	U		10.3	1	
	3,3'-Dichlorobenzidine	10.3	UG/L	U	U		10.3	1	
	3-Nitroaniline	10.3	UG/L	U	U		10.3	1	
	4-Bromophenyl phenyl ether	10.3	UG/L	U	U		10.3	1	
	4-Chloro-3-methylphenol	10.3	UG/L	Ŭ	U		10.3	1	
	4-Chloroaniline	10.3	UG/L	U	U		10.3	1	
	4-Chlorophenyl phenyl ether	10.3	UG/L	U	U		10.3	1	
	4-Methylphenol	0.8	UG/L	J	J		10.3	1	
	4-Nitroaniline	10.3	UG/L	U	U		10.3	1	6

11/08/2002

Page 18

-

1 Inte

Station: 7J-MW-10 Sample ID: 7J4A73 Date Collected: 09/23/2002

Media: Groundwater Field Sample Type: Grab

Analysis	Chemical	Resul	t Units	Lab Qual	Data Qual	Validation Code	Detection Limit	Dilution	
Semi-Volatile Organics	General Engineering Laboratory								
SW846 8270C	4-Nitrophenol	10.3	B UG/L	U	U		10.3	1	
	Acenaphthene	1	UG/L	U	U		1	1	
	Acenaphthylene	1	UG/L	U	U		1	1	4
	Anthracene	1	UG/L	U	U		1	1	
	Benz(a)anthracene	1	UG/L	U	U		1	. 1	
	Benzenemethanol	10.3	UG/L	U	U		10.3	1	
	Benzo(a)pyrene	1	UG/L	U	U		1	1	
	Benzo(b)fluoranthene	1	UG/L	U	U		1	1	
	Benzo(ghi)perylene	1	UG/L	U	U		1	1	
	Benzo(k)fluoranthene	1	UG/L	U	U		1	1	
	Benzoic acid	20.6	UG/L	U	U		20.6	1	
	Bis(2-chloroethoxy)methane	10.3	UG/L	U	U		10.3	1	
	Bis(2-chloroethyl) ether	10.3	UG/L	U	U		10.3	1	
	Bis(2-Chloroisopropyl)Ether	10.3	UG/L	U	U		10.3	1	
	Bis(2-ethylhexyl)phthalate	10.3	UG/L	U	U		10.3	1	
	Butyl benzyl phthalate	10.3	UG/L	U	U		10.3	1	
	Carbazole	10.3	UG/L	U	U		10.3	1	
	Chrysene	1	UG/L	U	U		1	1	
	Di-n-butyl phthalate	10.3	UG/L	U	U		10.3	1	
	Di-n-octylphthalate	10.3	UG/L	U	U		10.3	1	
	Dibenz(a,h)anthracene	1	UG/L	U	U		1	1	
	Dibenzofuran	10.3	UG/L	U	U		10.3	1	
	Diethyl phthalate	10.3	UG/L	U	U		10.3	1	
	Dimethyl phthalate	10.3	UG/L	U	U		- 10.3	1	
	Diphenylamine	10.3	UG/L	U	U		10.3	1	
	Fluoranthene	1	UG/L	U	U		1	1	
	Fluorene	1	UG/L	U	U		1	1	
	Hexachlorobenzene	10.3	UG/L	U	U		10.3	1	
	Hexachiorobutadiene	10.3	UG/L	U	U		10.3	1	
	Hexachiorocyclopentadiene	10.3	UG/L	U	U		10.3	1	
	Hexachioroethane	10.3	UG/L	U	U		10.3	1	
	Indeno(1,2,3-cd)pyrene	10.0	UG/L	U	U		1	1	
	N Nitroso di a presulemine	10.3	UG/L	U	U		10.3	1	
	Nephthelene	10.3	UG/L	U	U		10.3	1	
	Nitrobenzene	2.0	UG/L	14			1	1	
	Reptachlaraphanal	10.3	UG/L	U	U		10.3	1	
	Penachiorophenoi	10.3	UG/L	U	U		10.3	1	
	Phenol	0.76	UG/L	J	J		1	1	
	Pyrene	10.3	UG/L	0	U		10.3	1	
Volatile Organic Gases	General Engineering Laboratory		UG/L	0	U		1	1	
SW846 3810	Methane	196	UG/L		=		25	1	
Volatile Organics	General Engineering Laboratory								
SW846 8260B	1,1,1-Trichloroethane	1	UG/L	U	U		1	1	
	1,1,2,2-Tetrachloroethane	1	UG/L	U	U		1	1	
	1,1,2-Trichloroethane	1	UG/L	U	U		1	1	
	1,1-Dichloroethane	1	UG/L	U	U		1	1	
	1,1-Dichloroethene	1	UG/L	U	U		1	1	
	1,2-Dibromoethane	1	UG/L	U	U		1	1	
	1,2-Dichloroethane	1	UG/L	Ŭ	U		1	1	
	1,2-Dichloroethene	0.97	UG/L	J	J		1	1	
	1,2-Dichloropropane	1	UG/L	Ū.	U		1	1	
	2-Butanone	5	UG/L	ŭ	U		5	1	
	2-Hexanone	5	UG/L	Ű	U		5	1	
	4-Methyl-2-pentanone	5	UG/L	Ű	U		5	1	

11/08/2002

-

Page 19

1 ⁴ hd.

SW846 8260B	Acetone	5 UG/L	J	U	F04,F06	5	1
	Benzene	2.9 UG/L		=		1	1
	Bromochloromethane	1 UG/L	U	U		1	1
	Bromodichloromethane	1 UG/L	U	U		1	1
	Bromoform	1 UG/L	U	U		1	1
	Bromomethane	1 UG/L	U	U		1	1
	Carbon disulfide	5 UG/L	U	U		5	1
	Carbon tetrachloride	1 UG/L	U	υ		1	1
	Chlorobenzene	1 UG/L	U	U		1	1
	Chloroethane	1 UG/L	U	U		1	1
	Chloroform	1 UG/L	U	U		1	1
	Chloromethane	1 UG/L	U	U		1	1
	cis-1,3-Dichloropropene	1 UG/L	U	U		1	1
	Dibromochloromethane	1 UG/L	U	υ		1	1
	Ethylbenzene	1 UG/L		=		1	1
	Methylene chloride	5 UG/L	U	U		5	1
	Styrene	1 UG/L	U	U		1	1
	Tetrachloroethene	1 UG/L	U	U		1	1
	Toluene	2 UG/L		U	F04,F07	1	1
	trans-1,3-Dichloropropene	1 UG/L	U	U		1	1
	Trichloroethene	1 UG/L	U	U		1	1
	Vinyl chloride	1 UG/L	U	U		1	1
	Xylenes, Total	3.8 UG/L		=		1	1

Station: 7J-MW-14			Northing:	684278 3	6.6255 Easting: 8	821569.0396 6
Station: 7J-M Sample ID: 7J4E Date Collected: 09/19	W-14 73 Media /2002 Field Sample Type	Co a: Groundwater a: Grab	ord System: (3A83E	ast Method:	
Analysis	Chemical	Result Units	Lab Qual	Data Qual	Validation Detection Code Limit	n Dilution
Common Anions	General Engineering Laboratory					
EPA 300.0	Nitrate Nitrite Sulfate	0.1 MG/L 0.1 MG/L 2.8 MG/L	U U	U U =	0.1 0.1 0.4	1 1
General Chemistry	General Engineering Laboratory					
SM4500-CO2 EPA 376.2	Carbon Dioxide Sulfide	2 MG/L 0.05 MG/L	U U	U U	2 0.05	1
Inorganics	General Engineering Laboratory					
SW846 6010 Semi-Volatile Organics	Iron General Engineering Laboratory	1460 UG/L	N	J	101 2.11	1
SW846 8270C	1,2,4-Trichlorobenzene 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene 2,4,5-Trichlorophenol 2,4-6-Trichlorophenol 2,4-Dinitrophenol 2,4-Dinitrophenol 2,4-Dinitrotoluene 2,6-Dinitrotoluene 2,6-Dinitrotoluene 2-Chloronaphthalene 2-Chlorophenol 2-Methyl-4,6-dinitrophenol 2-Methylnaphthalene	10.5 UG/L 10.5 UG/L		U U U U U U U U U U U U U U U U U U U	10.5 10.5 10.5 10.5 10.5 10.5 10.5 10.5	1 1 1 1 1 1 1 1 1 1 1 1 1

11/08/2002

Page 20

Total Sector

Station: 7J-MW-14 Sample ID: 7J4E73 Date Collected: 09/19/2002

Media: Groundwater Field Sample Type: Grab

Analysis	Chemical	Result	Units	Lab Qual	Data Qual	Validation Code	Detection Limit	Dilution	
Semi-Volatile Organics	General Engineering Laboratory								
SW846 8270C	2-Nitroaniline	10.5	UG/L	U	U		10.5	1	
	2-Nitrophenol	10.5	UG/L	U	U		10.5	1	
	3,3'-Dichlorobenzidine	10.5	UG/L	U	U		10.5	1	
	3-Nitroaniline	10.5	UG/L	U	U		10.5	1	
	4-Bromophenyl phenyl ether	10.5	UG/L	U	U		10.5	1	
	4-Chloro-3-methylphenol	10.5	UG/L	U	U		10.5	1	
	4-Chloroaniline	10.5	UG/L	U	U		10.5	1	
	4-Chlorophenyl phenyl ether	10.5	UG/L	U	U		10.5	1	
	4-Methylphenol	10.5	UG/L	U	U		10.5	1	
	4-Nitroaniline	10.5	UG/L	U	U		10.5	1	
	4-Nitrophenol	10.5	UG/L	U	U		10.5	1	
	Acenaphthene	1	UG/L	U	U		1	1	
	Acenaphthylene	1	UG/L	U	U		1	1	
	Anthracene	1	UG/L	U	U		1	1	
	Benz(a)anthracene	1	UG/L	U	U		1	1	
	Benzenemethanol	10.5	UG/L	U	U		10.5	1	
	Benzo(a)pyrene	1	UG/L	U	U		1	1	
	Benzo(b)fluoranthene	1	UG/L	U	U		1	1	
	Benzo(ahi)pervlene	1	UG/L	ŭ	ũ		1	1	
	Benzo(k)fluoranthene	1	UG/L	Ŭ	ŭ		1	1	
	Benzoic acid	21	UG/L	Ŭ	ŭ		21	1	
	Bis(2-chloroethoxy)methane	10.5	UG/L	Ű	ŭ		10.5	1	
	Bis(2-chloroethyl) ether	10.5	UG/L	ii ii	ŭ		10.5	1	
	Bis(2-Chloroisopropyl)Ether	10.5	UG/L	ŭ			10.5	1	
	Bis(2-ethylbexyl)nbthalate	10.5	UG/L				10.5	1	
	Butyl benzyl obthalate	10.5	UG/L				10.5	1	
	Carbazola	10.5		0	0		10.5	1	
	Chrisene	4.4	UG/L	1			10.5	1	
	Din butul obtholoto	10.5		0			10.5	1	
	Di-n-odiyi pitrialate	10.5	UG/L	0			10.5	1	
	Di-h-octyphinalate Diberz(a b)opthracene	10.5	UG/L	0	0		10.5	1	
	Dibenzefuren	10 5	UG/L	0			1	1	
	District and Distri	10.5	UG/L	0			10.5	1	
	Directly phinalate	10.5	UG/L	0	0		10.5	1	
	Dimethyl phthalate	10.5	UG/L	0	0		10.5	1	
	Diphenylamine	10.5	UG/L	0	0		10.5	1	
	Fluoranthene		UG/L	U	U		1	1	
	Fluorene	2.4	UG/L		=		1	1	
	Hexachlorobenzene	10.5	UG/L	0	U		10.5	1	
	Hexachiorobutadiene	10.5	UG/L	0	U		10.5	1	
	Hexachlorocyclopentadiene	10.5	UG/L	U	U		10.5	1	
	Hexachloroethane	10.5	UG/L	U	U		10.5	1	
	Indeno(1,2,3-cd)pyrene	1	UG/L	U	U		1	1	
	Isophorone	10.5	UG/L	U	U		10.5	1	
	N-Nitroso-di-n-propylamine	10.5	UG/L	U	U		10.5	1	
	Naphthalene	45.9	UG/L		=		1	1	
	Nitrobenzene	10.5	UG/L	U	U		10.5	1	
	Pentachlorophenol	10.5	UG/L	U	U		10.5	1	
	Phenanthrene	3.5	UG/L		=		1	1	
	Phenol	10.5	UG/L	U	U		10.5	1	
	Pyrene	1	UG/L	U	U		1	1	
Volatile Organic Gases	General Engineering Laboratory								
SW846 3810	Methane	138	UG/L		=		25	1	
Volatile Organics	General Engineering Laboratory								
SW846 8260B	1,1,1-Trichloroethane	1	UG/L	U	U		1	1	
	1,1,2,2-Tetrachloroethane	1	UG/L	11	11		1	1	

11/08/2002

SW846 8260B	1,1,2-Trichloroethane	1	UG/L	U	U	1	1	
	1,1-Dichloroethane	1	UG/L	U	U	1	1	
	1,1-Dichloroethene	1	UG/L	U	U	1	1	
	1,2-Dibromoethane	1	UG/L	U	U	1	1	
	1,2-Dichloroethane	1	UG/L	U	U	1	1	
	1,2-Dichloroethene	1	UG/L	U	U	1	1	
	1,2-Dichloropropane	1	UG/L	U	U	1	1	
	2-Butanone	5	UG/L	U	U	5	1	
	2-Hexanone	5	UG/L	U	U	5	1	
	4-Methyl-2-pentanone	5	UG/L	U	U	5	1	
	Acetone	5	UG/L	U	U	5	1	
	Benzene	57.3	UG/L		=	1	1	
	Bromochloromethane	1	UG/L	U	U	1	1	
	Bromodichloromethane	1	UG/L	U	U	1	1	
	Bromoform	1	UG/L	U	U	1	1	
	Bromomethane	1	UG/L	U	U	1	1	
	Carbon disulfide	5	UG/L	U	U	5	1	
	Carbon tetrachloride	1	UG/L	U	U	1	1	
	Chlorobenzene	1	UG/L	U	U	1	1	
	Chloroethane	1	UG/L	U	U	1	1	
	Chloroform	1	UG/L	U	U	1	1	
	Chloromethane	1	UG/L	U	U	1	1	
	cis-1,3-Dichloropropene	1	UG/L	U	U	1	1	
	Dibromochloromethane	1	UG/L	U	U	1	1	
	Ethylbenzene	2.9	UG/L		=	1	1	
	Methylene chloride	5	UG/L	U	U	5	1	
	Styrene	1	UG/L	U	U	1	1	
	Tetrachloroethene	1	UG/L	U	U	1	1	
	Toluene	1	UG/L	U	U	1	1	
	trans-1,3-Dichloropropene	1	UG/L	U	U	1	1	
	Trichloroethene	1	UG/L	U	U	· 1	1	
	Vinyl chloride	1	UG/L	υ	U	1	1	
	Xylenes, Total	27.8	UG/L		=	1	1	

Sample ID: 7J4F Date Collected: 09/19	73 Media 9/2002 Field Sample Type	: Ground : Grab	water	lah I	Data	Validation	Detection		
Analysis	Chemical	Result	Units	Qual	Qual	Code	Limit	Dilution	
Common Anions	General Engineering Laboratory								
EPA 300.0	Nitrate	0.1	MG/L	U	U		0.1	1	
	Nitrite	0.1	MG/L	U	U		0.1	1	
	Sulfate	0.466	MG/L		=		0.4	1	
General Chemistry	General Engineering Laboratory								
SM4500-CO2	Carbon Dioxide	2	MG/L	U	U		2	1	
EPA 376.2	Sulfide	0.05	MG/L	U	U		0.05	1	
norganics	General Engineering Laboratory								
SW846 6010	Iron	419	UG/L	N	J	101	2.11	1	
Semi-Volatile Drganics	General Engineering Laboratory								
SW846 8270C	1,2,4-Trichlorobenzene	10.4	UG/L	U	U		10.4	1	
	1,2-Dichlorobenzene	10.4	UG/L	U	U		10.4	1	
	1,3-Dichlorobenzene	10.4	UG/L	U	U		10.4	1	
	1,4-Dichlorobenzene	10.4	UG/L	U	U		10.4	1	
	2,4,5-Trichlorophenol	10.4	UG/L	U	U		10.4	1	
	2,4,6-Trichlorophenol	10.4	UG/L	υ	U		10.4	1	
	2,4-Dichlorophenol	10.4	UG/L	U	U		10.4	1	(
1/08/2002								Page 22	
		A-28							

Station: 7J-MW-15 Sample ID: 7J4F73 Date Collected: 09/19/2002

Media: Groundwater Field Sample Type: Grab

Analysis	Chemical	Result U	Jnits	Lab D Qual C	Data Validatio Qual Code	n Detection Limit	Dilution	
Semi-Volatile Organics	General Engineering Laboratory	/						
SW846 8270C	2,4-Dimethylphenol	10.4 L	JG/L	U	U	10.4	1	
	2,4-Dinitrophenol	20.8 L	JG/L	U	U	20.8	1	
	2,4-Dinitrotoluene	10.4 L	JG/L	U	U	10.4	1	
	2,6-Dinitrotoluene	10.4 L	JG/L	U	U	10.4	1	
	2-Chloronaphthalene	1 L	JG/L	U	U	1	1	
	2-Chlorophenol	10.4 L	JG/L	U	U	10.4	1	
	2-Methyl-4,6-dinitrophenol	10.4 L	JG/L	U	U	10.4	1	
	2-Methylnaphthalene	1 U	JG/L	U	U	1	1	
	2-Methylphenol	10.4 L	JG/L	U	U	10.4	1	
	2-Nitroaniline	10.4 U	JG/L	U	U	10.4	1	
	2-Nitrophenol	10.4 U	JG/L	U	U	10.4	1	
	3,3'-Dichlorobenzidine	10.4 U	JG/L	U	U	10.4	1	
	3-Nitroaniline	10.4 U	JG/L	U	U	10.4	1	
	4-Bromophenyl phenyl ether	10.4 U	JG/L	U	U	10.4	1	
	4-Chloro-3-methylphenol	10.4 U	JG/L	U	U	10.4	1	
	4-Chloroaniline	10.4 U	JG/L	U	U	10.4	1	
	4-Chlorophenyl phenyl ether	10.4 U	JG/L	U	U	10.4	1	
	4-Methylphenol	10.4 U	JG/L	U	U	10.4	1	
	4-Nitroaniline	10.4 U	JG/L	U	U	10.4	1	
	4-Nitrophenol	10.4 U	JG/L	U	U	10.4	1	
	Acenaphthene	1 U	JG/L	U	U	1	1	
	Acenaphthylene	1 U	JG/L	U	U	1	1	
	Anthracene	1 U	JG/L	U	U	1	1	
	Benz(a)anthracene	1 U	JG/L	U	U	- 1	1	
	Benzenemethanol	10.4 U	JG/L	U	U	10.4	1	
	Benzo(a)pyrene	1 U	JG/L	U	U	1	1	
	Benzo(b)fluoranthene	1 U	JG/L	U	U	1	1	
	Benzo(ghi)perylene	1 U	JG/L	U	U	1	1	
	Benzo(k)fluoranthene	1 U	JG/L	U	U	1	1	
	Benzoic acid	20.8 U	JG/L	U	U	20.8	1	
	Bis(2-chloroethoxy)methane	10.4 U	JG/L	U	U	10.4	1	
	Bis(2-chloroethyl) ether	10.4 U	JG/L	U	U	10.4	1	
	Bis(2-Chloroisopropyl)Ether	10.4 U	JG/L	U	U	10.4	1	
	Bis(2-ethylhexyl)phthalate	10.4 U	JG/L	U	U	10.4	1	
	Butyl benzyl phthalate	10.4 U	JG/L	U	U	10.4	1	
	Carbazole	10.4 U	JG/L	U	U	10.4	1	
	Chrysene	1 U	JG/L	U	U	1	1	
	Di-n-butyl phthalate	10.4 U	JG/L	U	U	10.4	1	
	Di-n-octylphthalate	10.4 U	JG/L	U	U	10.4	1	
	Dibenz(a,h)anthracene	1 U	JG/L	U	U	1	1	
	Dibenzofuran	10.4 U	JG/L	U	U	10.4	1	
	Diethyl phthalate	10.4 U	JG/L	U	U	10.4	1	
	Dimethyl phthalate	10.4 U	JG/L	U	U	10.4	1	
	Diphenylamine	10.4 U	JG/L	U	U	10.4	1	
	Fluoranthene	1 U	JG/L	U	U	1	1	
	Fluorene	1 U	IG/L	U	U	1	1	
	Hexachlorobenzene	10.4 U	IG/L	U	υ	10.4	1	
	Hexachlorobutadiene	10.4 U	IG/L	U	U	10.4	1	
	Hexachlorocyclopentadiene	10.4 U	IG/L	U	U	10.4	1	
	Hexachloroethane	10.4 U	IG/L	U	U	10.4	1	
	Indeno(1,2,3-cd)pyrene	1 U	IG/L	U	U	1	1	
	Isophorone	10.4 U	IG/L	U	U	10.4	1	
	N-Nitroso-di-n-propylamine	10.4 U	IG/L	U	U	10.4	1	
	Naphthalene	1 U	IG/L	υ	U	1	1	
	Nitrobenzene	10.4 U	IG/L	U	U	10.4	1	
	Pentachlorophenol	10.4 U	IG/L	U	U	10.4	1	

- 1

Page 23

Station: 7J-MW-15 Sample ID: 7J4F73 Date Collected: 09/19/2002

Media: Groundwater Field Sample Type: Grab

Analysis	Chemical	Result Units	Lab D Qual C	ata Valida	tion Detection	Dilution	
Semi-Volatile Organics	General Engineering Laboratory					Directori	
SW846 8270C	Phenanthrene	1 UG/L	U	U	1	1	
	Phenol	10.4 UG/L	Ŭ	ŭ	10.4	1	
	Pyrene	1 UG/L	ŭ	ŭ	10.4	1	
Volatile Organic Gases	General Engineering Laboratory						
SW846 3810	Methane	77.5 UG/L		=	25	1	
Volatile Organics	General Engineering Laboratory						
SW846 8260B	1,1,1-Trichloroethane	1 UG/L	U	U	1	1	
	1.1.2.2-Tetrachloroethane	1 UG/L	U	Ŭ	. 1	1	
	1.1.2-Trichloroethane	1 UG/L	ũ	Ŭ	1	1	
	1.1-Dichloroethane	1 UG/L	ŭ	ŭ	1	1	
	1.1-Dichloroethene	1 UG/L	ŭ	ŭ	1	1	
	1.2-Dibromoethane	1 UG/L	ŭ	ü	1	1	
	1.2-Dichloroethane	1 UG/L	ŭ	ŭ	1	1	
	1.2-Dichloroethene	1 UG/L	ŭ	ü	1	1	
	1.2-Dichloropropane	1 UG/L	Ŭ	ŭ	1	1	
	2-Butanone	5 UG/L	U U	ŭ	5	1	
	2-Hexanone	5 UG/L	ŭ	ŭ	5	1	
	4-Methyl-2-pentanone	5 UG/L	ŭ	ŭ	. 5	1	
	Acetone	5 UG/I	ŭ	ü	5	1	
	Benzene	1 UG/L	ŭ	ŭ	1	1	
	Bromochloromethane	1 UG/L	ŭ	ü	1	1	
	Bromodichloromethane	1 UG/L	ŭ	ŭ	i	1	
	Bromoform	1 UG/L	U U	ü		1	
	Bromomethane	1 UG/L		U U		1	
	Carbon disulfide	5 UG/L	U U	U U	5	1	
	Carbon tetrachloride	1 UG/L		ŭ	1	1	
	Chlorobenzene	1 UG/L	U U		1	1	
	Chloroethane	1 UG/L		1	1		
	Chloroform	1 UG/L		11	1	1	
	Chloromethane	1 UG/L	U U	ii ii	-	1	
	cis-1 3-Dichloropropene	1 UG/L	ŭ	U U	-	1	
	Dibromochloromethane	1 UG/L	ŭ	ü	1	1	
	Ethylbenzene	1 UG/L	U U	U U	1	1	
	Methylene chloride	5 UG/L		1	5	1	
	Styrene	1 UG/L			1	1	
	Tetrachloroethene	1 UG/L		U U	-	1	
	Toluene	1 UG/L	U U	ü	1	1	
	trans-1.3-Dichloropropene	1 UG/L		ü	-	1	
	Trichloroethene	1 UG/L		ü	4	1	
	Vinvl chloride	1 UG/L		11	1	1	
	Xvlenes Total	1 110/1		U U		1	
	Aylones, rolar	T UG/L	0	0	1	1	

Station: 7J-MW-16			1	Northing:	684231 8	1.1668	Easting: 82	21565.7414	
			Coord	System:	GA83E	ast	Method:		
Station: 7J-	MW-16								
Sample ID: 7J4	G73	Media:	Groundwater						
Date Collected: 09/2	20/2002	Field Sample Type:	Grab						
Analysis	Chemical	1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.	Result Units	Lab Qua	Data I Qual	Validation Code	Detection	Dilution	
Common Anions	General Eng	ineering Laboratory						2.1.4.1011	- 1
EPA 300.0	Nitrate		0.1 MG/L	ι	JU		0.1	1	-(
11/08/2002								Page 24	

	:0/2002 Field Sample Type: Grab			Lab Data Validation Detection					
Analysis	Chemical	Result	Units	Qual	Qual	Code	Limit	Dilution	
Common Anions	General Engineering Laboratory								
EPA 300.0	Nitrite	0.1	MG/L	U	U		0.1	1	
	Sulfate	10.8	MG/L		=		0.4	1	
General Chemistry	General Engineering Laboratory								
SM4500-CO2	Carbon Dioxide	104	MG/L		=		2	1	
EPA 376.2	Sulfide	0.05	MG/L	U	U		0.05	1	
norganics	General Engineering Laboratory								
SW846 6010	Iron	582	UG/L		=		2.11	1	
Semi-Volatile	General Engineering Laboratory								
W846 8270C	124 Trichlorobenzene	10.2	LIG/I	11			10.2	4	
511040 02700	1.2-Dichlorobenzene	10.3		0	11		10.3	1	
	1.3-Dichlorobenzene	10.3	UG/L	0			10.3	1	
	1 4-Dichlorobenzene	10.3		0			10.3	4	
	2.4.5-Trichlorophenol	10.3		0			10.3	1	
	2.4.6-Trichlorophenol	10.3	UG/L	0	11		10.3		
	2 4-Dichlorophenol	10.3	UG/L	0			10.3	-	
	2 4-Dimethylphenol	10.3	UG/L	0			10.3	1	
	2 4-Dinitrophenol	20.6	UG/L		1		10.3	1	
	2 4-Dinitrotoluene	10.3	UG/L				20.0	4	
	2 6-Dinitrotoluene	10.3	UG/L				10.3	4	
	2-Chloropaphthalene	10.5					10.5	1	
	2-Chloronhanol	10.3		0			10.2	1	
	2-Methyl-4 6-dinitrophenol	10.3		0	0		10.3	1	
	2-Methylraphthalene	10.5		0	0		10.3	1	
	2-Methylobenol	10.2		0	0		1	1	
	2 Nitroapiling	10.3		0	0		10.3	1	
	2-Nitrophonol	10.3		0			10.3	1	
	2 2' Dichlorobonzidino	10.3	UG/L	0	0		10.3	1	
	3,3-Dichlorobenzidine	10.3	UG/L	0	0		10.3	1	
	4 Bromonhanul phonyl other	10.3	UG/L	0	0		10.3	1	
	4-Bromophenyi phenyi etner	10.3	UG/L	0	0		10.3	1	
	4-Chlorospiling	10.3	UG/L	0	U		10.3	1	
	4-Chlorophopul phopul other	10.3	UG/L	0	0		10.3	1	
	4-Chlorophenyl phenyl ether	10.3	UG/L	0	0		10.3	1	
	4-Methyphenol	10.3	UG/L	0	U		10.3	1	
	4-Nitrophenol	10.3		0	U		10.3	1	
	Acenanothene	10.3					10.3	1	
	Acenanthylene	1	UG/L		0		4	1	
	Anthracene	1	UG/L					1	
	Benz(a)anthracene	1	UG/I		11		4	1	
	Benzenemethanol	10.3	UG/L		1		10.2	1	
	Benzo(a)nyrene	10.3	UG/I	1			10.3	1	
	Benzo(b)fluoranthene	1	UG/L				1	4	
	Benzo(ahi)pervlene	1					1	-	
	Benzo(k)fluoranthene	1	UG/L					1	
	Benzoic acid	20.6	UG/L		0		20.0	1	
	Bis(2-chloroethoxy)methana	20.0	UGIL	0	0		20.6]	
	Bis(2-chloroethyl) ether	10.3	UG/L	0	0		10.3	1	
	Bis(2-Chloroisopropul)Ether	10.3		0	0		10.3	1	
	Bis(2-officioisopropyr)Ether	10.3	UC/L	U	0		10.3	1	
	Bubil hoppul abthciate	10.3	UG/L	U	U		10.3	1	
	Carbazala	10.3	UG/L	U	0		10.3	1	
	Christope	10.3	UG/L	U	0		10.3	1	
	Di n bubi obtalata	1	UG/L	U	0		1	1	
	Di-n-butyi primalate	10.3	UG/L	U	0		10.3	1	
	Di-n-octyphthalate	10.3	UG/L	U	U		10.3	1	

11/08/2002

Page 25

1.17

Station: 7J-MW-16 Sample ID: 7J4G73 Date Collected: 09/20/2002

Media: Groundwater Field Sample Type: Grab

Analysis	Chemical	Result Units	Qual Qual	Code Limit	Dilution
Semi-Volatile Organics	General Engineering Laboratory				
SW846 8270C	Dibenzofuran	10.3 UG/L	U U	10.3	1
	Diethyl phthalate	10.3 UG/L	υυ	10.3	1
	Dimethyl phthalate	10.3 UG/L	υυ	10.3	1
	Diphenylamine	10.3 UG/L	υυ	10.3	1
	Fluoranthene	1 UG/L	υυ	1	1
	Fluorene	1 UG/L	υu	1	1
	Hexachlorobenzene	10.3 UG/L	υυ	10.3	1
	Hexachlorobutadiene	10.3 UG/L	Ŭ Ŭ	10.3	1
	Hexachlorocyclopentadiene	10.3 UG/L	Ŭ Ŭ	10.3	1
	Hexachloroethane	10.3 UG/L	ŭ ŭ	10.3	1
	Indeno(1.2.3-cd)pyrene	1 UG/L	ŭ ŭ	1	1
	Isophorone	10.3 UG/L	ŭ ŭ	10.3	1
	N-Nitroso-di-n-propylamine	10.3 UG/L	u u	10.3	1
	Naphthalene	1 UG/L	u u	10.5	1
	Nitrobenzene	10.3 LIG/L	1 1	10.2	1
	Pentachlorophenol	10.3 UG/L	11 11	10.3	1
	Phenanthrene	1 UG/		10.5	1
	Phenol	10.3 UG/L		10.2	
	Pyrene	1 UG/L	1 1	10.5	1
olatile Organic Gases	General Engineering Laboratory	1 00/2	0 0		
W846 3810	Methane	25 UG/L	υυ	25	1
olatile Organics	General Engineering Laboratory				
W846 8260B	1,1,1-Trichloroethane	1 UG/L	υυ	· 1	1
	1,1,2,2-Tetrachloroethane	1 UG/L	υυ	1	1
	1,1,2-Trichloroethane	1 UG/L	υυ	1	1
	1,1-Dichloroethane	1 UG/L	υυ	1	1
	1,1-Dichloroethene	1 UG/L	υυ	1	1
	1,2-Dibromoethane	1 UG/L	υυ	1	1
	1,2-Dichloroethane	1 UG/L	u u	1	1
	1.2-Dichloroethene	1 UG/L	Ū Ū	1	1
	1.2-Dichloropropane	1 UG/L	u u	1	1
	2-Butanone	5 UG/L	ŭ ŭ	5	1
	2-Hexanone	5 UG/L	ŭ ŭ	5	1
	4-Methyl-2-pentanone	5 UG/L	u u	5	1
	Acetone	5 UG/L	0 0	5	1
	Benzene	1 UG/		1	1
	Bromochloromethane	1 UG/L		1	1
	Bromodichloromethane	1 UG/L	U U	1	1
	Bromoform	1 UG/L			1
	Bromomethane	1 UG/L	0 0	1	1
	Carbon disulfide	5 116/1	0 0	1	1
	Carbon tetrachloride	1 116/1	0 0	5	
	Chlorobenzene	1 110/1	0 0	1	1
	Chloroethane	1 100/1	0 0	1	
	Chloroform	1 UG/L	0 0	1	
	Chloromethane	1 UG/L	0 0	1	1
	cia 1.2 Diobloropasso	1 UG/L	0 0	1	1
		T UG/L	0 0	1	1
	Dibromochloromethane	1 UG/L	υυ	1	1
	Einyibenzene	1 UG/L	υυ	1	1
	Methylene chloride	5 UG/L	υυ	5	1
	Styrene	1 UG/L	υυ	1	1
	letrachloroethene	1 UG/L	υυ	1	1
	Ioluene	1 UG/L	υυ	1	1
	trans-1,3-Dichloropropene	1 UG/L	υυ	1	1
	Trichloroethene	1 UG/L	υυ	1	1

11/08/2002

1 to the

SW846 8260B	Vinyl chloride	1 UG/L	U	U	1	1	
	Xylenes, Total	1 UG/L	U	U	1	1	

Station: 7J-MW-17			Northing: 6 3	84226	6.5515 E	Easting: 82 8	1612.2886
		Co	ord System: (SA83E	ast N	lethod:	
Station: 7J-N Sample ID: 7J4F Date Collected: 09/1	1W-17 173 Me 9/2002 Field Sample T	dia: Groundwater /pe: Grab	Lab	Data	Validation	Detection	
Analysis	Chemical	Result Units	Qual	Qual	Code	Limit	Dilution
Common Anions	General Engineering Laboratory						
EPA 300.0	Nitrate	0.265 MG/L		=		0.1	1
	Nitrite	0.1 MG/L	U	U		0.1	1
	Sulfate	5.72 MG/L		=		0.4	1
General Chemistry	General Engineering Laboratory	·					
SM4500-CO2	Carbon Dioxide	188 MG/L		=		2	1
EPA 376.2	Sulfide	0.05 MG/L	U	U		0.05	1
Inorganics	General Engineering Laboratory						
SW846 6010	Iron	270 UG/L	N	J	101	2.11	1
Semi-Volatile	General Engineering Laboratory						
SW846 8270C	124-Trichlorobenzene	10.6 LIG/I		11		10.6	1
011040 02700	1.2-Dichlorobenzene	10.6 UG/L	11			10.0	4
	1.3-Dichlorobenzene	10.6 UG/L	1			10.6	1
	1 A-Dichlorobenzene	10.6 UG/L				10.6	1
	2.4.5-Trichloronbenol	10.6 UG/L	11			10.6	3
	2,4,5-Trichlorophenol	10.6 UG/L				10.6	1
	2.4.0-menorophenol	10.6 UG/L	0			10.6	
	2,4-Dichlorophenol	10.6 UG/L	0	0		10.0	1
	2,4-Dimethylphenol	10.6 UG/L	0			10.6	
	2,4-Dinitrophenol	21.3 UG/L	0			21.3	1
	2,4-Dinitrotoluene	10.6 UG/L	0	0		10.6	1
	2,6-Dinitrotoluene	10.6 UG/L	0	0		10.6	1
	2-Chlorophanal	1.1 UG/L	0	0		1.1	1
	2-Chiorophenol	10.6 UG/L	0	0		10.6	1
	2-Methyl-4,6-dinitrophenol	10.6 UG/L	0	0		10.6	1
	2-Methylnaphtnalene	1.1 UG/L	U	U		1.1	1
	2-Methylphenol	10.6 UG/L	0	U		10.6	1
	2-Nitroaniline	10.6 UG/L	U	U		10.6	1
	2-Nitrophenol	10.6 UG/L	U	U		10.6	1
	3,3-Dichlorobenzidine	10.6 UG/L	0	0		10.6	1
	3-INITROANIINE	10.6 UG/L	U	U		10.6	1
	4-bromophenyi phenyi ether	10.6 UG/L	U	U		10.6	1
	4-Chloro-3-methylphenol	10.6 UG/L	U	U		10.6	1
	4-Chlorophanul - hand athe	10.6 UG/L	U	U		10.6	1
	4-Uniorophenyi phenyi ether	10.6 UG/L	U	U		10.6	1
		10.6 UG/L	U	U		10.6	1
	4-INITroaniline	10.6 UG/L	0	U		10.6	1
		10.6 UG/L	U	U		10.6	1
	Acenaphthene	1.1 UG/L	U	U		1.1	1
	Acenaphthylene	1.1 UG/L	U	U		1.1	1
	Anthracene	1.1 UG/L	U	U		1.1	1
	Benz(a)anthracene	1.1 UG/L	U	U		1.1	1
	Benzenemethanol	10.6 UG/L	U	U		10.6	1
	Benzo(a)pyrene	1.1 UG/L	U	U		1.1	1
	Benzo(b)fluoranthene	1.1 UG/L	U	U		1.1	1
	Benzo(ghi)perylene	1.1 UG/L	U	U		1.1	1
	Benzo(k)fluoranthene	1.1 UG/L	υ	U		1.1	1
	Benzoic acid	21.3 UG/L	U	U		21.3	1

11/08/2002

Page 27

Station: 7J-MW-17 Sample ID: 7J4H73 Date Collected: 09/19/2002

Media: Groundwater Field Sample Type: Grab

Analysis	Chemical	Result	Units	Lab Qual	Data Qual	Validation Code	Detection Limit	Dilution	
Semi-Volatile	General Engineering Laboratory								
SW846 8270C	Bis(2-chloroethoxy)methane	10.6	UG/L	U	U		10.6	1	
	Bis(2-chloroethyl) ether	10.6	UG/L	U	U		10.6	1	
	Bis(2-Chloroisopropyl)Ether	10.6	UG/L	U	U		10.6	1	
	Bis(2-ethylhexyl)phthalate	1.4	UG/L	J	J		10.6	1	
	Butyl benzyl phthalate	10.6	UG/L	U	U		10.6	1	
	Carbazole	10.6	UG/L	U	U		10.6	1	
	Chrysene	1.1	UG/L	U	U		1.1	1	
	Di-n-butyl phthalate	10.6	UG/L	U	U		10.6	1	
	Di-n-octylphthalate	10.6	UG/L	U	U		10.6	1	
	Dibenz(a,h)anthracene	1.1	UG/L	U	U		1.1	1	
	Dibenzofuran	10.6	UG/L	U	U		10.6	1	
	Diethyl phthalate	10.6	UG/L	U	U		10.6	1	
	Dimethyl phthalate	10.6	UG/L	U	U		10.6	1	
	Diphenylamine	10.6	UG/L	U	U		10.6	1	
	Fluoranthene	1.1	UG/L	U	U		1.1	1	
	Fluorene	1.1	UG/L	U	U		1.1	1	
	Hexachlorobenzene	10.6	UG/L	U	U		10.6	1	
	Hexachlorobutadiene	10.6	UG/L	U	U		10.6	1	
	Hexachlorocyclopentadiene	10.6	UG/L	U	U		10.6	1	
	Hexachloroethane	10.6	UG/L	U	U		10.6	1	
	Indeno(1,2,3-cd)pyrene	1.1	UG/L	U	U		1.1	1	
	Isophorone	10.6	UG/L	U	U		10.6	1	
	N-Nitroso-di-n-propylamine	10.6	UG/L	U	U		10.6	1	
	Naphthalene	1	UG/L	J	J		. 1.1	1	
	Nitrobenzene	10.6	UG/L	U	U		10.6	1	
	Pentachlorophenol	10.6	UG/L	U	U		10.6	1	
	Phenanthrene	1.1	UG/L	U	U		1.1	1	
	Phenol	10.6	UG/L	U	U		10.6	1	
	Pyrene	1.1	UG/L	U	U		1.1	1	
olatile Organic Jases	General Engineering Laboratory								
W846 3810	Methane	23.2	UG/L	J	J		25	1	
olatile Organics	General Engineering Laboratory	*							
W846 8260B	1,1,1-Trichloroethane	1	UG/L	U	U		1	1	
	1,1,2,2-Tetrachloroethane	1	UG/L	U	U		1	1	
	1,1,2-Trichloroethane	1	UG/L	U	U		1	1	
	1,1-Dichloroethane	1	UG/L	U	U		1	1	
	1,1-Dichloroethene	1	UG/L	U	U		1	1	
	1,2-Dibromoethane	1	UG/L	U	U		1	1	
	1,2-Dichloroethane	1	UG/L	Ű	U		1	1	
	1,2-Dichloroethene	1	UG/L	ŭ	U		1	1	
	1,2-Dichloropropane	1	UG/L	ũ	u		1	1	
	2-Butanone	5	UG/L	ŭ	u		5	1	
	2-Hexanone	5	UG/L	ŭ	u		5	1	
	4-Methyl-2-pentanone	5	UG/L	ŭ	ŭ		5	1	
	Acetone	5	UG/L	ũ	ŭ		5	1	
	Benzene	1	UG/L	u U	u U		1	1	
	Bromochloromethane	1	UG/L	u u	U U		1	1	
	Bromodichloromethane	1	UG/L		U U		1	1	
	Bromoform	1	UG/L	U U			1	1	
	Bromomethane	1	UG/L		U		1	1	
	Carbon disulfide	5	UG/L		1		5	1	
	Carbon tetrachloride	1	UG/I				1	1	
	Chlorobenzene	1	UG/L		11		1	1	
	Chloroethane	1	UG/L		11		1	1	
	Chloroform	1	UG/L	U U	U		1	1	
1/08/2002	(a) and the strategy data and the strategy ()			5	5			Page 20	
100/2002								Page 28	
		A-34							

-

SW846 8260B	Chloromethane	1 UG/L	U	U	1	1
	cis-1,3-Dichloropropene	1 UG/L	U	U	1	1
	Dibromochloromethane	1 UG/L	U	U	1	1
	Ethylbenzene	1 UG/L	U	U	1	1
	Methylene chloride	5 UG/L	U	U	5	1
	Styrene	1 UG/L	U	U	1	1
	Tetrachloroethene	1 UG/L	U	U	1	1
	Toluene	1 UG/L	U	U	1	1
	trans-1,3-Dichloropropene	1 UG/L	U	U	1	1
	Trichloroethene	1 UG/L	U	U	1	1
	Vinyl chloride	1 UG/L	U	U	1	1
	Xylenes, Total	1 UG/L	U	U	1	1

Station: 7J-MW-18				Northing: 684270.2279			Easting: 821623.6053 3		
			Cod	ord System:	GA83E	East	Method:		
Station: 7J-M Sample ID: 7J4J Date Collected: 09/1	IW-18 73 Media: 9/2002 Field Sample Type	: Ground : Grab	water	Lah	Data	Validation	Detection	Ta and the second se	
Analysis	Chemical	Result	Units	Qua	I Qual	Code	Limit	Dilution	
Common Anions	General Engineering Laboratory								
EPA 300.0	Nitrate	0.15	MG/L		=		0.1	1	
	Nitrite	0.1	MG/L	L	J U		0.1	1	
	Sulfate	5.1	MG/L		=		0.4	1	
General Chemistry	General Engineering Laboratory								
SM4500-CO2	Carbon Dioxide	118	MG/L		=		2	1	
EPA 376.2	Sulfide	0.5	MG/L	L	J U		. 0.5	10	
norganics	General Engineering Laboratory								
SW846 6010	Iron	1800	UG/L	N	J	101	2.11	1	
Semi-Volatile Organics	General Engineering Laboratory								
SW846 8270C	1,2,4-Trichlorobenzene	10.5	UG/L	L	JU		10.5	1	
	1,2-Dichlorobenzene	10.5	UG/L	L	J U		10.5	1	
	1,3-Dichlorobenzene	10.5	UG/L	L	J U		10.5	1	
	1,4-Dichlorobenzene	10.5	UG/L	L	J U		10.5	1	
	2,4,5-Trichlorophenol	10.5	UG/L	L	JU		10.5	1	
	2,4,6-Trichlorophenol	10.5	UG/L	L	JU		10.5	1	
	2,4-Dichlorophenol	10.5	UG/L	L	J U		10.5	1	
	2,4-Dimethylphenol	10.5	UG/L	L	J U		10.5	1	
	2,4-Dinitrophenol	21	UG/L	L	U U		21	1	
	2,4-Dinitrotoluene	10.5	UG/L	L	U U		10.5	1	
	2,6-Dinitrotoluene	10.5	UG/L	L	J U		10.5	1	
	2-Chloronaphthalene	1	UG/L	L	U U		1	1	
	2-Chlorophenol	10.5	UG/L	ι	J U		10.5	1	
	2-Methyl-4,6-dinitrophenol	10.5	UG/L	L	U		10.5	1	
	2-Methylnaphthalene	5.1	UG/L		=		1	1	
	2-Methylphenol	10.5	UG/L	L	U		10.5	1	
	2-Nitroaniline	10.5	UG/L	L	U		10.5	1	
	2-Nitrophenol	10.5	UG/L	L	U		10.5	1	
	3,3'-Dichlorobenzidine	10.5	UG/L	L	U U		10.5	1	
	3-Nitroaniline	10.5	UG/L	L	U U		10.5	1	
	4-Bromophenyl phenyl ether	10.5	UG/L	L	U		10.5	1	
	4-Chloro-3-methylphenol	10.5	UG/L	L	U U		10.5	1	
	4-Chloroaniline	10.5	UG/L	L	U		10.5	1	
	4-Chlorophenyl phenyl ether	10.5	UG/L	L	U		10.5	1	
	4-Metnylphenol	10.5	UG/L	L	U		10.5	1	
	4-Nitroaniline	10.5	UG/L	L	U		10.5	1	
	4-Nitrophenol	10.5	UG/L	L	U		10.5	1	

11/08/2002

Page 29
Station: 7J-MW-18 Sample ID: 7J4J73 Date Collected: 09/19/2002

Media: Groundwater Field Sample Type: Grab

Analysis	Chemical	Result	Units	Lab Qual	Data Qual	Validation Code	Detection Limit	Dilution	
Semi-Volatile Organics	General Engineering Laboratory								
SW846 8270C	Acenaphthene	1	UG/L	U	U		1	1	
	Acenaphthylene	1	UG/L	U	U		1	1	
	Anthracene	1	UG/L	U	U		1	1	
	Benz(a)anthracene	1	UG/L	U	U		1	1	
	Benzenemethanol	10.5	UG/L	U	U		10.5	1	
	Benzo(a)pyrene	1	UG/L	U	U		1	1	
	Benzo(b)fluoranthene	1	UG/L	U	U		1	1	
	Benzo(ghi)perylene	1	UG/L	U	U		1	1	
	Benzo(k)fluoranthene	1	UG/L	U	U		1	1	
	Benzoic acid	21	UG/L	U	U		21	1	
	Bis(2-chloroethoxy)methane	10.5	UG/L	U	U		10.5	1	
	Bis(2-chloroethyl) ether	10.5	UG/L	U	U		10.5	1	
	Bis(2-Chloroisopropyl)Ether	10.5	UG/L	U	U		10.5	1	
	Bis(2-ethylhexyl)phthalate	10.5	UG/L	U	U		10.5	1	
	Butyl benzyl phthalate	10.5	UG/L	U	U		10.5	1	
	Carbazole	10.5	UG/L	U	U		10.5	1	
	Chrysene	1	UG/L	U	U		1	1	
	Di-n-butyl phthalate	10.5	UG/L	U	U		10.5	1	
	Di-n-octylphthalate	10.5	UG/L	U	U		10.5	1	
	Dibenz(a,h)anthracene	1	UG/L	U	U		1	1	
	Dibenzoturan	10.5	UG/L	U	0		10.5	1	
	Diethyl phthalate	10.5	UG/L	U	U		10.5	1	
	Dimethyl phthalate	10.5	UG/L	U	U		10.5	1	
	Diphenylamine	10.5	UG/L	0	U		. 10.5	1	
	Fluoranthene	1	UG/L	U	U		1	1	
	Fluorene	0.54	UG/L	J	J		1	1	
	Hexachlorobenzene	10.5	UG/L	U	0		10.5	1	
	Hexachlorobutadiene	10.5	UG/L	U	U		10.5	1	
	Hexachlorocyclopentadiene	10.5	UG/L	U	U		10.5	1	
	Hexachloroethane	10.5	UG/L	U	U		10.5	1	
	Indeno(1,2,3-cd)pyrene	10.5	UG/L	0	0		1	1	
	N Nitross di a propulamina	10.5	UG/L	0	0		10.5	1	
	N-Nicoso-di-n-propylamine	10.5	UG/L	U	U		10.5	1	
	Naphinalene	4.9	UG/L		=		105	1	
	Bestachlereshenel	10.5	UG/L	0	0		10.5	1	
	Pentachiorophenor	0.72	UGIL	0	0		10.5	1	
	Phenol	10.75		J 11	J		10.5	1	
	Pyrene	10.5	UG/L				10.5		
Volatile Organic Gases	General Engineering Laboratory		00/2	0	0		1		
SW846 3810	Methane	95.1	UG/L		=		25	1	
Volatile Organics	General Engineering Laboratory						20	/#	
SW846 8260B	1,1,1-Trichloroethane	1	UG/L	U	U		1	1	
	1,1,2,2-Tetrachloroethane	1	UG/L	Ū	U		1	1	
	1,1,2-Trichloroethane	1	UG/L	U	Ū		1	1	
	1,1-Dichloroethane	1	UG/L	U	U		1	1	
	1,1-Dichloroethene	1	UG/L	U	Ŭ		1	1	
	1.2-Dibromoethane	1	UG/L	Ŭ	Ū		1	1	
	1,2-Dichloroethane	1	UG/L	U U	ŭ		1	1	
	1.2-Dichloroethene	1	UG/L	Ŭ	Ŭ		1	1	
	1,2-Dichloropropane	1	UG/L	U U	ŭ		1	1	
	2-Butanone	5	UG/L		ŭ		5	1	
	2-Hexanone	5	UG/L	11	Ŭ		5	1	
	4-Methyl-2-pentanone	5	UG/L	U U	ŭ		5	1	
	Acetone	5	UG/L		ŭ		5	1	
					-		•		
11/08/2002								Page 30	

-

Page 30

SW846 8260B	Benzene	0.38	UG/L	J	J	1	1
	Bromochloromethane	1	UG/L	U	U	1	1
	Bromodichloromethane	1	UG/L	U	U	1	1
	Bromoform	1	UG/L	U	U	1	1
	Bromomethane	1	UG/L	U	U	1	1
	Carbon disulfide	5	UG/L	U	U	5	1
	Carbon tetrachloride	1	UG/L	U	U	1	1
	Chlorobenzene	1	UG/L	U	U	1	1
	Chloroethane	1	UG/L	U	U	1	1
	Chloroform	1	UG/L	U	U	1	1
	Chloromethane	1	UG/L	U	U	1	1
	cis-1,3-Dichloropropene	1	UG/L	U	U	1	1
	Dibromochloromethane	1	UG/L	U	U	1	1
	Ethylbenzene	0.37	UG/L	J	J	1	1
	Methylene chloride	5	UG/L	U	U	5	1
	Styrene	1	UG/L	U	U	1	1
	Tetrachloroethene	1	UG/L	U	U	1	1
	Toluene	1	UG/L	U	U	1	1
	trans-1,3-Dichloropropene	1	UG/L	U	U	1	1
	Trichloroethene	1	UG/L	U	U	1	1
	Vinyl chloride	1	UG/L	U	U	1	1
	Xylenes, Total	1	UG/L		=	1	1

Station: 7J-SS-01		Ne Coord S	orthing: N System:	NA		Easting: N/ Method:	A -	
Station: 7J- Sample ID: 7J Date Collected: 09/	SS-01 7111 Me 23/2002 Field Sample Ty	dia: Surface S ype: Grab	Soil		Depti	n: 0 - 1 FT		
Analysis	Chemical	Result I	Jnits	Lab Qual	Data Qual	Validation Code	Detection	Dilution
Semi-Volatile Organics	General Engineering Laboratory	1						
SW846 8270C	1,2,4-Trichlorobenzene	357 (JG/KG	U	U		357	1
	1,2-Dichlorobenzene	357 1	JG/KG	U	U		357	1
	1,3-Dichlorobenzene	357 1	JG/KG	U	U		357	1
	1,4-Dichlorobenzene	357 1	JG/KG	U	U		. 357	1
	2,4,5-Trichlorophenol	357 1	JG/KG	U	U		357	1
	2,4,6-Trichlorophenol	357 1	JG/KG	U	U		357	1
	2,4-Dichlorophenol	357 1	JG/KG	U	U		357	1
	2,4-Dimethylphenol	357 1	JG/KG	U	U		357	1
	2,4-Dinitrophenol	714 1	JG/KG	U	U		714	1
	2,4-Dinitrotoluene	357 1	JG/KG	U	U		357	1
	2,6-Dinitrotoluene	357 1	JG/KG	U	U		357	1
	2-Chloronaphthalene	35.7 1	JG/KG	U	U		35.7	1
	2-Chlorophenol	357 1	JG/KG	U	U		357	1
	2-Methyl-4,6-dinitrophenol	357 1	JG/KG	U	U		357	1
	2-Methyinaphthalene	35.7 1	JG/KG	U	U		35.7	1
	2-Methylphenol	357 1	JG/KG	U	U		357	1
	2-Nitroaniline	357 1	JG/KG	U	U		357	1
	2-Nitrophenol	357 1	JG/KG	U	U		357	1
	3,3'-Dichlorobenzidine	357 (JG/KG	U	U		357	1
	3-Nitroaniline	357 1	JG/KG	U	U		357	1
	4-Bromophenyl phenyl ether	357 1	JG/KG	U	U		357	1
	4-Chloro-3-methylphenol	357 1	JG/KG	U	U		357	1
	4-Chloroaniline	357 1	JG/KG	U	U		357	1
	4-Chlorophenyl phenyl ether	357 (JG/KG	U	U		357	1
	4-Methylphenol	357 1	JG/KG	U	U		357	1
	4-Nitroaniline	357 1	JG/KG	U	U		357	1
	4-Nitrophenol	357 1	JG/KG	U	U		357	1
	Acenaphthene	35.7 1	JG/KG	U	U		35.7	1

11/08/2002

1

Page 31

3

Station: 7J-SS-01 Sample ID: 7J7111 Date Collected: 09/23/2002

Media: Surface Soil Field Sample Type: Grab

Depth: 0 - 1 FT

Analysis	Chemical	Posuli	Unite	Lab D	ata Validat	tion Detection	Dilution	
Semi-Volatile	General Engineering Laboratory	Result	Units	Quart	adai cou	e Linn	Dilution	
Organics	Scherar Englisering Euseratory							
SW846 8270C	Acenaphthylene	35.7	UG/KG	U	U	35.7	1	
	Anthracene	35.7	UG/KG	U	U	35.7	1	
	Benz(a)anthracene	35.7	UG/KG	U	U	35.7	1	
	Benzenemethanol	357	UG/KG	U	U	357	1	
	Benzo(a)pyrene	35.7	UG/KG	U	U	35.7	1	
	Benzo(b)fluoranthene	35.7	UG/KG	U	U	35.7	1	
	Benzo(ghi)perylene	35.7	UG/KG	U	U	35.7	1	
	Benzo(k)fluoranthene	35.7	UG/KG	U	U	35.7	1	
	Benzoic acid	714	UG/KG	U	U	714	1	
	Bis(2-chloroethoxy)methane	357	UG/KG	U	U	357	1	
	Bis(2-chloroethyl) ether	357	UG/KG	U	U	357	1	
	Bis(2-Chloroisopropyl)Ether	357	UG/KG	U	U	357	1	
	Bis(2-ethylhexyl)phthalate	357	UG/KG	U	U	357	1	
	Butyl benzyl phthalate	357	UG/KG	U	U	357	1	
	Carbazole	357	UG/KG	U	U	357	1	
	Chrysene	35.7	UG/KG	U	U	35.7	1	
	Di-n-butyl phthalate	357	UG/KG	U	U	357	1	
	Di-n-octylphthalate	357	UG/KG	U	U	357	1	
	Dibenz(a,h)anthracene	35.7	UG/KG	U	U	35.7	1	
	Dibenzofuran	357	UG/KG	U	U	357	1	
	Diethyl phthalate	357	UG/KG	U	U	357	1	
	Dimethyl phthalate	357	UG/KG	U	U	357	1	
	Diphenylamine	357	UG/KG	U	U	357	1	
	Fluoranthene	35.7	UG/KG	U	U	. 35.7	1	
	Fluorene	35.7	UG/KG	U	U	35.7	1	
	Hexachlorobenzene	357	UG/KG	U	U	357	1	
	Hexachlorobutadiene	357	UG/KG	U	U	357	1	
	Hexachlorocyclopentadiene	357	UG/KG	U	U	357	1	
	Hexachloroethane	357	UG/KG	U	U	357	1	
	Indeno(1,2,3-cd)pyrene	35.7	UG/KG	U	U	35.7	1	
	Isophorone	357	UG/KG	U	U	357	1	
	N-Nitroso-di-n-propylamine	357	UG/KG	U	U	357	1	
	Naphthalene	35.7	UG/KG	U	U	35.7	1	
	Nitrobenzene	357	UG/KG	U	U	357	1	
	Pentachlorophenol	357	UG/KG	U	U	357	1	
	Phenanthrene	35.7	UG/KG	U	U	35.7	1	
	Phenol	357	UG/KG	U	U	357	1	
	Pyrene	35.7	UG/KG	U	U	35.7	1	

Station: 7J-SS	-02			N Coord S	orthing: N System:	IA		Easting: N/ Method:	A	
Station: Sample ID: Date Collected:	7J-SS-02 7J7211 09/23/2002	Media: Field Sample Type:	Surface Grab	e Soil		Depti	n: 0-0.5	FT		
Analysis	Chemical		Result	Units	Lab Qual	Data V Qual	Validation Code	Detection Limit	Dilution	
Semi-Volatile Organics	General Eng	ineering Laboratory								
	1,2,4-Trichlor	obenzene	367	UG/KG	U	U		367	1	
SW846 8270C	1,2-Dichlorob	enzene	367	UG/KG	U	U		367	1	
	1,3-Dichlorob	enzene	367	UG/KG	U	U		367	1	
	1,4-Dichlorob	enzene	367	UG/KG	U	U		367	1	12000
	2,4,5-Trichlor	rophenol	367	UG/KG	U	U		367	1	\Box
11/08/2002									Page 32	
			A-38							
										<u> </u>
	-									210.5

Station: 7J-SS-02 Sample ID: 7J7211 Date Collected: 09/23/2002

Media: Surface Soil Field Sample Type: Grab Depth: 0 - 0.5 FT

Analysis	Chemical	Result	Units	Lab Qual	Data V Qual	Validation Code	Detection Limit	Dilution	
Semi-Volatile Organics	General Engineering Laboratory								
SW846 8270C	2,4,6-Trichlorophenol	367	UG/KG	U	U		367	1	
	2,4-Dichlorophenol	367	UG/KG	U	U		367	1	
	2,4-Dimethylphenol	367	UG/KG	U	U		367	1	
	2,4-Dinitrophenol	735	UG/KG	U	U		735	1	
	2,4-Dinitrotoluene	367	UG/KG	U	U		367	1	
	2,6-Dinitrotoluene	367	UG/KG	υ	U		367	1	
	2-Chloronaphthalene	36.7	UG/KG	U	U		36.7	1	
	2-Chlorophenol	367	UG/KG	U	U		367	1	
	2-Methyl-4,6-dinitrophenol	367	UG/KG	U	U		367	1	
	2-Methylnaphthalene	36.7	UG/KG	U	U		36.7	1	
	2-Methylphenol	367	UG/KG	U	U		367	1	
	2-Nitroaniline	367	UG/KG	U	U		367	1	
	2-Nitrophenol	367	UG/KG	U	U		367	1	
	3,3'-Dichlorobenzidine	367	UG/KG	U	U		367	1	
	3-Nitroaniline	367	UG/KG	U	U		367	1	
	4-Bromophenyl phenyl ether	367	UG/KG	U	U		367	1	
	4-Chloro-3-methylphenol	367	UG/KG	U	U		367	1	
	4-Chloroaniline	367	UG/KG	U	U		367	1	
	4-Chlorophenyl phenyl ether	367	UG/KG	U	U		367	1	
	4-Methylphenol	367	UG/KG	U	U		367	1	
	4-Nitroaniline	367	UG/KG	ū	Ŭ		367	1	
	4-Nitrophenol	367	UG/KG	ŭ	Ŭ		367	1	
	Acenaphthene	36.7	UG/KG	Ŭ	ŭ		36.7	1	
	Acenaphthylene	36.7	UG/KG	ŭ	ŭ		36.7	1	
	Anthracene	36.7	LIG/KG	ü	ŭ		36.7	1	
	Benz(a)anthracene	36.7	UG/KG		ŭ		36.7	1	
	Benzenemethanol	367	UG/KG		ŭ		367	4	
	Benzo(a)pyrene	92 4	UG/KG	0	-		36.7	1	
	Benzo(b)fluoranthene	36.7	UG/KG	11			36.7	1	
	Benzo(obi)pep(epe	36.7	UG/KG				36.7	1	
	Benze(k)fluerenthene	26.7	UG/KG				30.7	1	
	Benzoic acid	725	UG/KG	0			30.7	1	
	Bic/2 chloroothow/)mothana	267	UG/KG	0			135	1	
	Bis(2-chloroethol) ether	307	UG/KG	0	0		307	1	
	Bis(2-Chloroicepreput)Ether	307	UG/KG	0	0		367		
	Bis(2-Chloroisopropyi)Ether	307	UG/KG	0	0		367	1	
	Bis(2-ethylnexyl)phthalate	307	UG/KG	0	U		367	1	
	Butyl benzyl phthalate	367	UG/KG	0	U		367	1	
	Carbazole	367	UG/KG	0	U		367	1	
	Chrysene Die beteile bibelete	36.7	UG/KG	0	U		36.7	1	
	Di-n-butyi phthalate	367	UG/KG	0	U		367	1	
	Di-n-octyiphthalate	367	UG/KG	0	U		367	1	
	Dibenz(a,h)anthracene	36.7	UG/KG	U	U		36.7	1	
	Dibenzoturan	367	UG/KG	U	U		367	1	
	Diethyl phthalate	367	UG/KG	U	U		367	1	
	Dimethyl phthalate	367	UG/KG	U	U		367	1	
	Diphenylamine	367	UG/KG	U	U		367	1	
	Fluoranthene	57.6	UG/KG		=		36.7	1	
	Fluorene	36.7	UG/KG	U	U		36.7	1	
	Hexachlorobenzene	367	UG/KG	U	U		367	1	
	Hexachlorobutadiene	367	UG/KG	U	U		367	1	
	Hexachlorocyclopentadiene	367	UG/KG	U	U		367	1	
	Hexachloroethane	367	UG/KG	U	U		367	1	
	Indeno(1,2,3-cd)pyrene	48.9	UG/KG		=		36.7	1	
	Isophorone	367	UG/KG	U	U		367	1	
	N-Nitroso-di-n-propylamine	367	UG/KG	U	U		367	1	
	Naphthalene	36.7	UG/KG	U	U		36.7	1	

11/08/2002

1 1

Page 33

11,11

Sample ID: 7J7211 Media: Surface Date Collected: 09/23/2002 Field Sample Type: Grab Analysis Chemical Result Sami Volatile Gaparal Engineering Laboratory	Soil	Lab	Dept	h: 0 - 0.5 FT			
Date Collected: 09/23/2002 Field Sample Type: Grab Analysis Chemical Result Sami-Valatila General Engineering Laboratory	11-14-	Lab	Dete				
Analysis Chemical Result	11-14-	Lab					
Sami Valatila General Engineering Laboratory	Units	Qual	Qual	Validation I Code	Limit	Dilution	
Organica General Engineering Laboratory							
SW846 8270C Nitrobenzene 367	UG/KG	U	U		367	1	
Pentachlorophenol 367	UG/KG	. ŭ	ŭ		367	1	
Phenanthrane 36.7	UG/KG	11	ŭ		36.7	1	
Phenol 367	UG/KG				367	1	
Pyrene 67.7	UG/KG	J	=		36.7	1	
Station: QC	Coo	Northing: / rd System: /	NA NA	E	asting: NA ethod:	¥.	
Station: 00	-						
Station: QC Sample ID: TB27F1 Media: Quality	Control						
Date Collected: 09/19/2002 Field Sample Type: Trip Blar	nk						
Analysis Chemical Result	Units	Lab Qual	Data Qual	Validation I Code	Detection Limit	Dilution	
Volatile Organics General Engineering Laboratory							
SW846 8260B 1,1,1-Trichloroethane 1	UG/L	U	U		1	1	
1,1,2,2-Tetrachloroethane 1	UG/L	U	U		1	1	
1,1,2-Trichloroethane 1	UG/L	U	υ		1	1	
1,1-Dichloroethane 1	UG/L	U	U		1	1	
1,1-Dichloroethene 1	UG/L	U	U		1	1	
1,2-Dibromoethane 1	UG/L	U	U		1	1	
1,2-Dichloroethane 1	UG/L	U	U		. 1	1	
1,2-Dichloroethene 1	UG/L	U	U		1	1	
1.2-Dichloropropane 1	UG/L	U	U		1	1	
2-Butanone 62.2	UG/I		=		5	1	
2-Hexanone 5	UG/L	U	U		5	1	
4-Methyl-2-pentanone 5	UG/L	ũ	ŭ		5	1	
Acetone 27.6	UG/L	0	=		5	1	
Benzene 1	UG/L				1	1	
Bromochloromethane	UG/L	0			-	1	
Bromodiobleromothano	UGIL	0			1	1	
Bromoform	UGIL	0			1	1	
Bromonothana	UG/L	0	0		1	1	
Bromometnane 1	UG/L	0	0		1	1	
Carbon disulide 5	UGIL	0			5	1	
Carbon tetrachionde 1	UG/L	0	0		1	1	
Chlorobenzene 1	UG/L	0	0		1	1	
Chloroethane 1	UG/L	U	U		1	1	
Chloroform 1	UG/L	U	U		1	1	
Chloromethane 1	UG/L	U	U		1	1	
cis-1,3-Dichloropropene 1	UG/L	U	U		1	1	
Dibromochloromethane 1	UG/L	U	U		1	1	
Ethylbenzene 1	UG/L	U	U		1	1	
Methylene chloride 5	UG/L	U	U		5	1	
Styrene 1	UG/L	U	U		1	1	
Tetrachloroethene 1	UG/L	U	U		1	1	
Toluene 1	UG/L	U	U		1	1	
trans-1,3-Dichloropropene 1	UG/L	U	U		1	1	
Trichloroethene 1	UG/L	Ŭ	U		1	1	
Vinyl chloride 1	UG/L	Ű	U		1	1	
Xylenes, Total	UG/L	U.	U		1	1	

11/08/2002

Page 34

1

1

4

Station: QC Sample ID: TB27F2 Date Collected: 09/20/2002

Media: Quality Control Field Sample Type: Trip Blank

			Lab Dat	a validation Detection	on
Analysis	Chemical	Result Units	Qual Qu	al Code Limi	t Dilution
Volatile Organics	General Engineering Laboratory		and the second second		
SW846 8260B	1,1,1-Trichloroethane	1 UG/L	U	U	1 1
	1,1,2,2-Tetrachloroethane	1 UG/L	U	U	1 1
	1,1,2-Trichloroethane	1 UG/L	U	U	1 1
	1,1-Dichloroethane	1 UG/L	U	U	1 1
	1,1-Dichloroethene	1 UG/L	U	U	1 1
	1,2-Dibromoethane	1 UG/L	U	U	1 1
	1,2-Dichloroethane	1 UG/L	U	U	1 1
	1,2-Dichloroethene	1 UG/L	U	U	1 1
	1,2-Dichloropropane	1 UG/L	U	U	1 1
	2-Butanone	5 UG/L	U	U	5 1
	2-Hexanone	5 UG/L	U	U	5 1
	4-Methyl-2-pentanone	5 UG/L	U	U	5 1
	Acetone	3.9 UG/L	J	J	5 1
	Benzene	1 UG/L	U	U	1 1
	Bromochloromethane	1 UG/L	U	U	1 1
	Bromodichloromethane	1 UG/L	U	U	1 1
	Bromoform	1 UG/L	U	U	1 1
	Bromomethane	1 UG/L	U	U	1 1
	Carbon disulfide	5 UG/L	U	U	5 1
	Carbon tetrachloride	1 UG/L	U	U	1 1
	Chlorobenzene	1 UG/L	U	U	1 1
	Chloroethane	1 UG/L	U	U	1 1
	Chloroform	1 UG/L	U	U	1 1
	Chloromethane	1 UG/L	U	U	1 1
	cis-1,3-Dichloropropene	1 UG/L	U	υ.	1 1
	Dibromochloromethane	1 UG/L	U	U	1 1
	Ethylbenzene	1 UG/L	U	U	1 1
	Methylene chloride	5 UG/L	U	U	5 1
	Styrene	1 UG/L	U	U	1 1
	Tetrachloroethene	1 UG/L	U	U	1 1
	Toluene	0.66 UG/L	J	J	1 1
	trans-1,3-Dichloropropene	1 UG/L	U	U	1 1
	Trichloroethene	1 UG/L	U	U	1 1
	Vinyl chloride	1 UG/L	U	U	1 1
	Xylenes, Total	1 UG/L	U	U	1 1

Station: QC Sample ID: TB27F3 Date Collected: 09/21/2002

Media: Quality Control Field Sample Type: Trip Blank

	6, 954). Alter o di	S. Marine and Marine and Marine	Lab I	Data Valida			
Analysis	Chemical	Result Units	Qual	Qual Co	de Limit	Dilution	
Volatile Organics	General Engineering Laboratory						
	1,1,1-Trichloroethane	1 UG/L	U	U	1	1	
SW846 8260B	1,1,2,2-Tetrachloroethane	1 UG/L	U	U	1	1	
	1,1,2-Trichloroethane	1 UG/L	U	U	1	1	
	1,1-Dichloroethane	1 UG/L	U	U	1	1	
	1,1-Dichloroethene	1 UG/L	U	U	1	1	
	1,2-Dibromoethane	1 UG/L	U	U	1	1	
	1,2-Dichloroethane	1 UG/L	U	U	1	1	
	1,2-Dichloroethene	1 UG/L	υ	U	1	1	
	1,2-Dichloropropane	1 UG/L	U	U	1	1	
	2-Butanone	5 UG/L	υ	U	5	1	
	2-Hexanone	5 UG/L	U	U	5	1	
	4-Methyl-2-pentanone	5 UG/L	U	U	5	1	
	Acetone	3.9 UG/L	J	J	5	1	
	Benzene	1 UG/L	U	U	. 1	1	

-

Page 35

Station: QC Sample ID: TB27F3 Date Collected: 09/21/2002

Media: Quality Control Field Sample Type: Trip Blank

			Lab Data	Validation	Detection		
Analysis	Chemical	Result Units	Qual Qual	Code	Limit	Dilution	
Volatile Organics	General Engineering Laboratory						
SW846 8260B	Bromochloromethane	1 UG/L	υυ		1	1	
	Bromodichloromethane	1 UG/L	υυ		1	1	
	Bromoform	1 UG/L	υυ		1	1	
	Bromomethane	1 UG/L	υυ		1	1	
	Carbon disulfide	5 UG/L	υυ		5	1	
	Carbon tetrachloride	1 UG/L	υυ		1	1	
	Chlorobenzene	1 UG/L	υυ		1	1	
	Chloroethane	1 UG/L	υυ		1	1	
	Chloroform	1 UG/L	υυ		1	1	
	Chloromethane	1 UG/L	υυ		1	1	
	cis-1,3-Dichloropropene	1 UG/L	υυ		1	1	
	Dibromochloromethane	1 UG/L	υυ		1	1	
	Ethylbenzene	1 UG/L	υυ		1	1	
	Methylene chloride	5 UG/L	υυ		5	1	
	Styrene	1 UG/L	υυ		1	1	
	Tetrachloroethene	1 UG/L	υυ		1	1	
	Toluene	0.62 UG/L	JJ		1	1	
	trans-1,3-Dichloropropene	1 UG/L	υυ		1	1	
	Trichloroethene	1 UG/L	υυ		1	1	
	Vinyl chloride	1 UG/L	υυ		1	1	
	Xylenes, Total	1 UG/L	υυ		1	1	

l trut

CHAIN-OF-CUSTODY FORMS

THIS PAGE INTENTIONALLY LEFT BLANK.

- HILLING - HILLING	- Contraction of the Contraction
Sec. 6	The Property of the Property o
	<u> </u>
	An Employee-Owned Company
Science Applications In	Remational Corporation

O								0.000	DE	OUES		DANAF	TEDC							
ROJECT NAME: 5	wmu	27F			Т	Т	Т	T		UUES	LIN	RAME	TERS	П		1		Eatlin Lobora	NA NA	AME:
ROJECT NUMBER:	01-1624	-04-40	181-100								DUPPIN		-					Criwring L LABORATOR	EN AC	AINinicing Langer
ROJECT MANAGER:	PATTY :	STOLL			STIM	NTENT				30.	22	10	Lean					Witmington 1	NC 2	alle Roan
ampler (Signature)	(Pi	inted Name)		H.			1 to	1	-1	AC	V V	10	.]					PHONE NO: M	TUN	452 5804
1725	$ \rightarrow \nu$	RAINAL	tucins	IN SI			0	LIS	3	H.		N U	R					843-	-5	56-8171
Sample ID	Date Collected	Time Collected	Matrix	GBA			SPEC	DBOB		Év	322	513	P					OVA SCREENING		OBSERVATIONS, COMMENTS. SPECIAL INSTRUCTIONS
754173	9-19-02	1230	GW	1						X			1				10	2	-	
754E73	9-19-02	1401	GW							X							5		-	
754#73	9-19-12	1430	SW							X							-	2	+	
754F73	9-19-02	1550	SW							X	1					1.5.2	5	2	-+	
754973	9-19-02	1805	Gw			1	-			X	in the second	2	1		50 F		6	2		
754573	9-19-02	1045	GW			110	S.	1000		X	1	200		-		3.41 1.41		2		
- A				~													1.	-		
45																		-		
	Val	Tol .														1			-	
	9,0																		-	
			/																-	
																	-		-	
ELINQUISHED BY:	Date	Time BEE	DE /	2/	-	-	Dat	e/Tir	ne	тот	AL NUN	ABER (OF CON		ERS:		2	Cooler Tempe	eratur	(P)
1725	9-2	o a Thin	VEL2	T		6	7-2	4 -	oz	Cool	er ID:					,	~		RER	
OMPANY NAME:	- 115	D COMP	NY NAME:			1	15	5			7	\$ G	300	1					JEN.	
ECEIVED BY			P	1	1	-4'														
	Date	HELINU		A	_	- 0	Dat C	e/1 m	ne 07		•									
OMPANY NAME:		COMP	NY NAME:	1		-1-		- /	~	Ţ										
			ALV			/	3	4	5											
ELINQUISHED BY:	Date	Time RECEIV	ED BY: A	1	1	0	Dat	e/Tir	ne	1										
		fand	with ma	va	lel	1	2/2	201	02											
OMPANY NAME:		COMP	NY NAME:				11.	_	۲ د -	ł								è.		

٠



CHAIN OF CUSTODY RECORD

SAIC.	An Employre Owned Con	чрлау																					20F	3	
800 Oak Ridge Turnpike. Oak Ri	idge, TN 37831 (4;	23 481-4600			Cł	IAI	N	DF (cu	ST	00)Y I	3EC	col	RD							COC NO .:	27FC	08	>
PROJECT NAME:	imu	27E							1	REQ	UES	TEC	BAR	AM	ETER	IS						LABORATORY	IAME:		ĺ
PROJECT NUMBER:	1-1624-	04-4981	-100									Sie En										Genie Laboratori Genie Cene	NALNEREING NDDRESS:	LABOR	ATOR
PROJECT MANAGER:	PATTY	STOLL			311	TENT		À.			2	a · cu			202						ials:	220 Old Dairy A Wilmington, NG 2040 SAVA	28405 28405 RD		
Sampler (Signature)	()	Printed Name)			1 DE	CON	E	A A			¥,	17		Jai	Н						les/ V	CHARLE STO	N, 5C, 294	117	
Un Vienenia Huce					HBE	TOR	TEAB		C C		山之	S F	3	5	X						Bott	843-55	6-8171		
Sample ID	Date Collected	Time Collected	Matrix	GRAI	E	MOIS		SPEG	-	7	ě v		2	30	6						Vo. of	OVA SCREENING	OBSERVATIONS, CO SPECIAL INSTRUC	MMENTS.	
754773	9-19-92	1721	GW								X	X	X								4				
754573	9-19-02	1200	GW								X	X	X								4				1
754173	9-19-02	1230	GW									X	X								2				
754273	9-19-92	1401	GW			CURREN						X	X						1		2				1
754473	9-19-02	1430	O GW									X	X								2				
774F73	9-19-00	1550	SW			100						X	X							-	2				
7.04973	9-19-02	1805	SW			0.400						X	X								2				
754573	9-19-02	1045	AN									X	X	•							2				
			/																						
	11	1																							
	ai	10-01																							
			1																						
RELINQUISHED BY:	Dan 9-7	te/Time RECEN	EDE	4	/		D	ate/T	ime 7	,	тот	AL N	UME	BER	OF C	ONT	AINE	RS:	ð	2		Cooler Temperate	L	- 14	
COMPANY NAME: GRO/SAIC	115	т сомр	ANY MAME:				7	50	7	1	Cool	er ID	#	ŧ,	63	85	~					FEDEX NUMBER:			
RECEIVED BY:	Dat	e/Time RELIN	SUISHED AV	/	2	1	Da	ate/Ti	me	1	-														
COMPANY NAME: COMPANY NAME:				~	T	_	7-	20-	00	4															
GEL					-	1	4	S																	
RELINQUISHED BY: Date/Time RECEIVED BY:			h.	1		B	nte/Ti	me														13			
COMPANY NAME:				<u>I</u> A	lh	a	9/	201	10	2	- 														
0		· · · · · · · · · · · · · · · · · · ·						10	25.	and	Ē														



800 Oak Ridge Turnpike, Oak Ridge, TN 37831 (423) 481-4600

CHAIN OF CUSTODY RECORD

3073 COC NO.: 27F008

PROJECT NAME: SUMMER DIE T		REQUESTED ARAMETERS LABORATORY NAME									NAME	٦					
wind of F							8					Τ	Π	1	Cotlin Laborator	ues_	
PROJECT NUMBER: 01-1624-04-4981-100							Su		L						LABORATORY	ADDRESS:	earce;
PROJECT MANAGER: PATTY STOLL	SH		臣		12		There		202					:sle	Witnington, NC	28405 28405	
Sampler (Signature) (Printed Name)		5 A	A A	1	3	1	2	3	1					s/ Vi	CHARLAST	UN, SC 29417	
Might VIELINIA MULLING	ENDER CIZI	MEABLE	1		1F	0	A	j j	AL					Bottle	PHONE NO: (91 \$43-55	01 452-5861	
Sample ID Date Collected Time Collected Matrix			HE I		17	N	SIC	R, P	0					0.0	OVA SCREENING	OBSERVATIONS, COMMENTS,	1
754173 9-19-02 1230 GW				X	X		~	X	X					C		SPECIAL INSTRUCTIONS	-
754573 7-19-02 1045 GW				X	X			X	X					1	2		-
754773 9-19-02 1721 9W				X	V			V	5				99999 922-5	6			-
754973 9-19-02 1805 64)				Y	V			5	Ŷ				265	4			4
754273 9-19-02 1401 61.)				Y	Ŷ	100	-	1	C V	N	1			4		-	
7×4F73 9-19-00 1550 GU				V	1		-	K	X	-				4			
7.54473 9-19-02 1430 611				1	1			X	X					6	1		
754573 9-19-02 1200 (1)					3			•	1		-			6			
TB27F1 9-19-02 0745 641				V				X	Y	-	-			6			
	-	-		1		-6			-			_		2			
JUN																	
9.20-00						_			_								
									_								1
RELINQUISHED BY: Date/Time Port	ay_					j.											1
Lange g-zo-oz filme	1	o	ate/T	ime	TC	DTAL	NUME	BER	OF C	ONTA	INER	S:	50	5	Cooler Temperat	ure:	
COMPANY NAME: 1151 COMPANY NAME:	V	17-	0-	2	TCo	oler I	D:	"	_	0	\sim				FEDEX NUMBER		
ARE/SAIC GEC		1/	15	V			7	#	/	10	0	-				9	
RECEIVED BY: Date/Time RELIVOUISHED BY:	1	Di	ate/Ti	ime	1												
Hoen El a	A	5-7	1	27_	ł		•										
COMPANY NAME: COMPANY NAME:		1,0	-1	_													
9EC	_	P	4	2													
Date/Time REALIVED BY:		Da	te/Ti	nje	1												3 5
COMPANY NAME	ndlf	19/	28/	102	ł												
COMPANY NAME:	1	1	<i>_</i>		L												
- GEL		11	54	<u>ts</u>													

	The second second second
	As Employee-Owned Compar
Science Applications	International Corporation

CHAIN OF CUSTODY RECORD

4	SAL	An Employee-Owned Compa	v																		lora
	800 Oak Ridge Tumpike, Oak R	Ridge, TN 37831 (423)	481-4600			СĤ	AIN	ØF	- CI	USI	rod	ODY RECORD								COC NO .:	27F009
		Swmu	-27F	-		Т		ł	Π	REG		ED P		ETEP	ns	Т	Π		Т	LABORATORY N General Engineeri	AME: ng Laboratory
	PROJECT NUMBER: DI-/(PROJECT MANAGER:	624-04 Patty Stoll	- 4981-	100		at	- 6	nc/wizi		Leal									Vials:	LABORATORY AI 2040 Savage Rao Charleston, SC 2	DDRESS: d 9407
	Sampler (Signature)	(Pr	inted Name)			E		alt		Ĵ									tties/	PHONE NO: (843) 556-8171
h	Sample ID	Date Collected	Time Collected	Matrix	Vec	TEI	SVO	A C C C	SULT TJUS	2:01									to. of Bo	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
	75 4373	9-215-02	1445	BW		2	X	1	1	ť †			İ			1	T		2		6759000
	754473	9-20-02	1311	GW		•	X					Π							2		002
	754673	9-20-02	1730	GW		i	X												2		003
	754673	9-20-02	1235	Gw		>	<												2	Ţ	5 004
	Z>4423	9-23-02	0850	GW		Þ	<												2		005
	Z\$ +A73	9-23-00	085Q	GW			<		1			6				14			8		5 000
	757211	9-23-02	1015	S		The second se	X								С. С				1		67591 001
	757111	9-23-02	1010	3			X		4										1		5 002
											_										
								_			_										
			L					1					+		-					VM 2302	
	RELINQUISHED BY:	Date	Time RECE	VED BY:				Da	te/Ti	me	TOT	AL NU	MBE	ROF	CON	TAIN	ERS:	lė	A.	Cooler Temperatu	ILG:
	COMBANY NAME:	e 11	3-02 30 COMP	ANY NAME:			_				Cool	er ID:	Ŧ	ŧ¢	DØ	2	7		14	FEDEX NUMBER	lo.
	RECEIVED BY	Date 9-2	e/Time RELIN ふっし	QUISHED BY:				Da	ite/Ti	me		2									2
	COMPANY MATT	- 11	30 COMP	ANY NAME:																	
1	COMPANY N	Date 9(2) 	Time RECEI	ANY NAME:		nd	ee	9/	23 45	102	,									i gani	\odot

·Z

THE	An Employee-Owned Company
Science Applications Interna	tional Corporation

800 Oak Ridge Tumpike, Oak Ridge, TN 37831 (423) 481-4600

4

CHAIN OF CUSTODY RECORD

20F2 COC NO .: 27F009

PROJECT NAME:		101 000	TODI RECORD		Frank
Swmu 27F		A RE	QUESTED PARAMETERS		LABORATORY NAME:
PROJECT NUMBER:		15m			General Engineering Laboratory
PROJECT MANAGER: Patty Stoll	13	marta .			LABORATORY ADDRESS: 2040 Savage Raod Charleston, SC 29407
Sampler (Signature) (Printed Name)	12	HA BH		Via	
VIEGINA MUCLIS	8195	LE C		Bottles	PHONE NO: (843) 556-8171
Sample ID Date Collected Time Collected Matrix	コエズ	5030		o o	OVA OBSERVATIONS, COMMENTS, SCREENING SPECIAL INSTRUCTIONS
754373 9-20-02 1445 AW	XX	XXXX		8	
754473 9-20-02 1311 GW	XX	XXXX		5	
754673 9-20-02 1730 GW	XX	XXXX		1 S	
754G73 9-20-02 1235 GW	XX	XXXX		8	
-> 327 F3 9-20-02 0745 W	X			12	67591 117 7877 50
-1- 4A23 9-23-02 0850 AW	XX	XXXX		Q	FISH DEF TBATFA
754473 9-2308 0850 GW	XX	XXXX		8	
1B27F3 9-21-02 0750 W	X		3.4	2	(259) NO
11 27					
4.00					
- P					
		1			
Date/Time RECEIVED BY:		Date/Time	TOTAL NUMBER OF CONTAINERS:	52	Cooler Temperature:
COMPANY NAME:		-	Cooler ID:		FEDEX NUMBER:
GEO/SAIC 1130 COMPANY NAME:			# 110		1
RECEIVED BY: DeterTime RELINQUISHED BY:		Date/Time			
COMPANY NAME:		-			r.
150 hours ghale Parton	Judoll	Date/Time			
COMPANY MAME:	ung	7/23/02			
0= 1441 OF1,		1452			

THIS PAGE INTENTIONALLY LEFT BLANK.

APPENDIX B

PROTOCOL FOR ESTABLISHING REMEDIAL LEVELS

THIS PAGE INTENTIONALLY LEFT BLANK.

Longaker, Jeff

From: Sent:): ubject: Brent Rabon [brent_rabon@mail.dnr.state.ga.us] Friday, May 04, 2001 3:06 PM LittleDERA@aol.com Re: Written Description which accompanies flowchart



Protocol.doc

Melanie, GA EPD has reviewed the Protocol proposed by Fort Stewart in your e-mail and facsimile (Little to Rabon) dated 30 April 2001 and 2 May 2001, respectively. Based upon that review and in order to expedite resolution of this issue, I have modified your version of the Written Description to accompany the flowchart (See attachment) and propose that some text be added (in bold) and deleted (struck out). Please note that modification of the hazardous constituents definition in the Written Description will also require modification of the one (1) applicable block in the flowchart.

The majority of the requested modifications are an attempt to make the proposal more generic for SWMUs which are not addressed by the Phase II RFI Report for 16 SWMUs dated April 2000 (e.g., SWMU 13). I do realize, however, that Fort Stewart may elect to modify the text in order to be more SWMU-specific when including this Protocol into a Corrective Action Plan.

Please do not hesitate to contact me should you have any questions concerning this e-mail.

Thank you, Brent

>>> <LittleDERA@aol.com> 04/30/01 04:39PM >>>

THIS PAGE INTENTIONALLY LEFT BLANK.

PROTOCOL FOR EVALUATING ADDITIONALLY DETECTED CONSTITUENTS IN GROUNDWATER AFTER APPROVAL OF A RCRA FACILITY INVESTIGATION REPORT

B.1 INTRODUCTION

Groundwater monitoring is typically suggested for solid waste management units (SWMUs) that have been recommended for a corrective action other than institutional controls to determine either the groundwater characteristics prior to development of the Corrective Action Plan (CAP) and/or as part of the remedial alternative [e.g., monitored natural attenuation (MNA)] recommended in the CAP. Additional groundwater monitoring might result in more constituents being detected in groundwater and/or constituents being detected at concentrations higher than those evaluated in the Georgia Environmental Protection Division (GEPD)–approved Resource Conservation and Recovery Act (RCRA) facility investigation (RFI) report. Constituents identified as constituents of potential concern (COPCs) in the RFI report are evaluated in human health and ecological risk assessments, and their risk is quantified. COPCs determined to present a risk to human health and/or the environment are identified as constituents of concern (COCs), and remedial levels are developed. COCs indicated at concentrations above remedial levels (and the source media of the COCs) are identified in the CAP as constituents requiring remedial action. The following presents the potential methodology for evaluating additional constituents and/or constituents detected at concentrations higher than those previously detected and that might not have indicated risk or for which a remedial level might not have been developed in the Phase II RFI.

B.2 PROTOCOL

Groundwater sampling and monitoring results will be evaluated to determine if significant changes are occurring in the types and concentrations of constituents present in the groundwater. An evaluation protocol has been developed to assess the potential increases in the groundwater concentrations of constituents not identified as COCs in the GEPD–approved RFI report. The accompanying decision chart (Figure B-1) presents the decision points required in the evaluation.

Identification. Initially the data will be evaluated to determine what constituents, if any, have increased concentrations in groundwater but were not addressed as COCs in the RFI, which would include constituents that were not detected during the RFI groundwater sampling. The maximum detected concentration from the monitoring data will be compared to the maximum detected concentration listed in the RFI. If the concentration is elevated (i.e., greater than the maximum detected concentration reported in the RFI), further evaluation will be required to determine if this constituent should be addressed under the remedial action. All constituents not previously detected will be evaluated further.

Confirmation. Given that groundwater concentrations are likely to fluctuate, a single elevated value does not indicate that the concentration of the constituent is increasing over time. The value might be a statistical aberration or the result of a temporary change in environmental conditions. If the elevated concentration represents a single event, confirmation of the results is required, and no further evaluation of the constituent should be undertaken until the sampling results have been confirmed during the next groundwater monitoring sampling event.

Screening. Upon confirmation of the sampling results, the maximum concentration will be screened using the U.S. Environmental Protection Agency Region III risk-based concentrations (RBCs) for tap



Figure B-1. Protocol for Developing Remedial Level

water as described in Section 7.3.2 ("Screening Values for Groundwater") of the revised final Phase II RFI report for 16 SWMUs at Fort Stewart, Georgia (SAIC 2000). These screening values were used in the Phase II RFI to identify human health COPCs in groundwater and will identify those constituents that might have an adverse effect on human health. In addition, if the constituent is not listed in Title 40, *Code of Federal Regulations (CFR)*, Part 261, Appendix VIII or in 40 *CFR* 264, Appendix IX [see the definition of hazardous constituents in Section I.E of the Fort Stewart Hazardous Waste Facility Permit #HW-045(S&T)], then it will not be considered a hazardous constituent and will be eliminated.

Remedial Level Development. A remedial level will be derived for each constituent with a maximum concentration that exceeds the RBC. The remedial level will be derived using the protocols established for that site in the Phase II RFI. If a risk-based remedial level is derived for the constituent, the total risk for exposure to groundwater constituent concentrations equal to the remedial levels should not exceed a hazard index of 3 or an incremental lifetime cancer risk of 1×10^{-4} (GEPD 1996).

Documentation. Groundwater monitoring data collected to determine present characteristics prior to development of the CAP will be evaluated under the section "Supplemental Data Evaluation" in the CAP. The supplemental data evaluation will be presented as an appendix and summarized in Chapter 2.0 of the CAP. The evaluation of potential additional constituents and/or the detection of constituents at concentrations greater than previously reported and potential remedial level development will be presented in the supplemental data evaluation in the CAP.

Groundwater monitoring data collected as part of the selected and implemented remedial alternative will be reported to GEPD in CAP progress reports. The reporting period will be dictated by the remedial alternative being implemented. For example, MNA typically has an annual reporting schedule, while active remedial action alternatives (e.g., in situ chemical oxidation) may be reported after the performance of the remedial alternative and at subsequent intervals thereafter. The reports to be issued and the reporting schedule will be documented in the CAP. The evaluation of potential additional constituents and/or the detection of constituents at concentrations greater than previously reported and potential remedial level development will be presented in the CAP progress reports. This protocol will be presented and established in the operations and maintenance plan and MNA checklist (if MNA is selected), both of which will be appendices to the CAP.

B.3 REFERENCES

- GEPD (Georgia Environmental Protection Division) 1996. Guidance for Selecting Media Remediation Levels at RCRA Solid Waste Management Units, Atlanta, Georgia, November.
- SAIC (Science Applications International Corporation) 2000. Phase II RCRA Facility Investigation Report for 16 Solid Waste Management Units at Fort Stewart, Georgia (Revised Final), Oak Ridge, Tennessee, April.

THIS PAGE INTENTIONALLY LEFT BLANK.

APPENDIX C

SUMMARY OF AT123D MODELING

THIS PAGE INTENTIONALLY LEFT BLANK.

Table C-1. Summary of Input Parameteres Used for AT123D Modeling, SWMU 27F(Updated Modeling)

Parameters	Symbol	Units	Value	Source for Value
Aquifer				
Soil type	-	-	Silty Sand	Site geology (SAIC 2000)
Bulk density	ρ_{b}	g/cm ³	1.69	Geotechnical data (SAIC 2000)
Effective porosity	n _e	unitless	0.2	Silt (Mills et al. 1985)
Hydraulic conductivity	K	m/hour	0.0550	Adjusted through calibration (a,f)
Hydraulic gradient	Ι	m/m	0.0054	Section 3.1 (this report)
Organic carbon content	foc	%	0.6900	Geotechnical data (SAIC 2000)
Thickness	h	m	15.24	Site geology (SAIC 2000)
Receptor				
Distance to the compliance point	Х	ft	450	Distance to man-made drainage ditch (SAIC 2000)
Dispersivity, longitudinal	$\alpha_{\rm L}$	m	10	Adjusted through calibration (b,f)
Dispersivity, transverse	α_{T}	m	5	Adjusted through calibration (c,f)
Dispersivity, vertical	α_{v}	m	1	0.1 α _L
Benzene				
Organic carbon/water partition coefficient	Koc	L/kg	61.7000	EPA 1996
Soil/water partition coefficient	K _d	L/kg	0.5589	Adjusted through calibration (d,f)
Molecular diffusion	D*	m ² /hour	3.53E-06	EPA 1996
Degradation half-life	t _{1/2}	yr	2.00E+00	Howard et al. (1991)
Decay rate	λ	/hour	4.01E-05	$\lambda = \ln 2 / t_{1/2}$
Source size	L _x x L _y	m x m	10 x 6	Based on plume size, and adjusted through calibration
Release rate	R	mg/hour	Variable	Discussed later (e,f)

Footnotes

- a. Noted, K = 0.028 m/hour from geotechnical data (SAIC 2000).
- b. Noted, 0.1 X = 14 m.
- c. Noted, 0.3 $\alpha_L = 3$ m.
- d. Noted, K_{d*} =foc Koc = 0.4257.
- e. Applied consecutive loadings of 4.94 and 1.89 mg/hr for 8.75 and 2.75 year. Set this 11.5-year long loading to end on January 2001. Continued two consecutive loadings of 1.89 and 1.69 mg/hr for 2 and 2.5 year. Set this 4.5-year long loading to end on July 2005. Applied no loading beyond July
 f. Selected 2001 concentration at MW-14 and MW-10 for calibration.

References

- a. EPA, 1996. Soil Screening Guidance: Technical Background Document, EPA/540/R-95/128, May.
- b. Howard, P.H., R.S. Boethling, W.F. Jarvis, W.M. Meylan, and E.M. Michalenko, Environmental Degradation Rates, Lewis Publishers, Inc. Chelsea,
- c. Mills, W. B., D. B. Porcella, M. J. Ungs, S.A. Gherini, K. V. Summers, Lingfung Mok, G. L. Rupp, G. L. Bowie, and D. A. Haith, 1985. Water Quality Assessment: A Screening Procedure for Toxic and Conventional Pollutants, Parts II, EPA-600/6-85/002b, September, U. S. Environmental Protection Agency, Environmental Research Laboratory, Office of Research and Development, Athens, GA.
- d. SAIC 2000. Addendum for SWMU 27F: 3D Engineer Brigade, Northwest of Building 1340 to the Revised Final Phase II RCRA Facility Investigation Report for 16 Solid Waste Management Units at Fort Stewart, Georgia, August.

SWMU 27F Benzene (Input)

SWMU 27F Be	NMU 27F Benzene (2002 Calibrated)									
6 2	1 400	139 367	12 1	192 1	2 0	1 0				
15.24		-5.	5	- 3	3	0	2			
0.2	0.055	0.0054	10	5	1	5.589E-4				
3.53e-6	4.012E-5	1690	1000	0.001	730	140160	0			
-26	-18	-11	0	5	100					
0	12									
0										
4.94E-06	4.94E-06	4.94E-06	4.94E-06	4.94E-06	4.94E-06	4.94E-06	4.94E-06			
4.94E-06	4.94E-06	4.94E-06	4.94E-06	4.94E-06	4.94E-06	4.94E-06	4.94E-06			
4.94E-06	4.94E-06	4.94E-06	4.94E-06	4.94E-06	4.94E-06	4.94E-06	4.94E-06			
4.94E-06	4.94E-06	4.94E-06	4.94E-06	4.94E-06	4.94E-06	4.94E-06	4.94E-06			
4.94E-06	4.94E-06	4.94E-06	4.94E-06	4.94E-06	4.94E-06	4.94E-06	4.94E-06			
4.94E-06	4.94E-06	4.94E-06	4.94E-06	4.94E-06	4.94E-06	4.94E-06	4.94E-06			
4.94E-06	4.94E-06	4.94E-06	4.94E-06	4.94E-06	4.94E-06	4.94E-06	4.94E-06			
4.94E-06	4.94E-06	4.94E-06	4.94E-06	4.94E-06	4.94E-06	4.94E-06	4.94E-06			
4.94E-06	4.94E-06	4.94E-06	4.94E-06	4.94E-06	4.94E-06	4.94E-06	4.94E-06			
4.94E-06	4.94E-06	4.94E-06	4.94E-06	4.94E-06	4.94E-06	4.94E-06	4.94E-06			
4.94E-06	4.94E-06	4.94E-06	4.94E-06	4.94E-06	4.94E-06	4.94E-06	4.94E-06			
4.94E-06	4.94E-06	4.94E-06	4.94E-06	4.94E-06	4.94E-06	4.94E-06	4.94E-06			
4.94E-06	4.94E-06	4.94E-06	4.94E-06	4.94E-06	4.94E-06	4.94E-06	4.94E-06			
4.94E-06	1.89E-06	1.89E-06	1.89E-06	1.89E-06	1.89E-06	1.89E-06	1.89E-06			
1.89E-06	1.89E-06	1.89E-06	1.89E-06	1.89E-06	1.89E-06	1.89E-06	1.89E-06			
1.89E-06	1.89E-06	1.89E-06	1.89E-06	1.89E-06	1.89E-06	1.89E-06	1.89E-06			
1.89E-06	1.89E-06	1.89E-06	1.89E-06	1.89E-06	1.89E-06	1.89E-06	1.89E-06			
1.89E-06	1.89E-06	1.89E-06	1.89E-06	1.89E-06	1.89E-06	1.89E-06	1.89E-06			
1.89E-06	1.89E-06	1.89E-06	1.89E-06	1.89E-06	1.89E-06	1.89E-06	1.89E-06			
1.89E-06	1.89E-06	1.89E-06	1.89E-06	1.89E-06	1.89E-06	1.89E-06	1.89E-06			
1.89E-06	1.89E-06	1.69E-06	1.69E-06	1.69E-06	1.69E-06	1.69E-06	1.69E-06			
1.69E-06	1.69E-06	1.69E-06	1.69E-06	1.69E-06	1.69E-06	1.69E-06	1.69E-06			
1.69E-06	1.69E-06	1.69E-06	1.69E-06	1.69E-06	1.69E-06	1.69E-06	1.69E-06			
1.69E-06	1.69E-06	1.69E-06	1.69E-06	1.69E-06	1.69E-06	1.69E-06	1.69E-06			

SWMU 27F Benzene (Output)

SWMU 27F Benzene (2002 Calibrated)

NO. OF POINTS IN X-DIRECTION	6
NO. OF POINTS IN Y-DIRECTION	2
NO. OF POINTS IN Z-DIRECTION	1
NO. OF ROOTS: NO. OF SERIES TERMS	400
NO. OF BEGINNING TIME STEP	139
NO. OF ENDING TIME STEP	367
NO. OF TIME INTERVALS FOR PRINTED OUT SOLUTION	12
INSTANTANEOUS SOURCE CONTROL = 0 FOR INSTANT SOURCE	1
SOURCE CONDITION CONTROL = 0 FOR STEADY SOURCE	192
INTERMITTENT OUTPUT CONTROL = 0 NO SUCH OUTPUT	1
CASE CONTROL =1 THERMAL, = 2 FOR CHEMICAL, = 3 RAD	2

AQUIFER DEPTH, = 0.0 FOR INFINITE DEEP (METERS) ...0.1524E+02AQUIFER WIDTH, = 0.0 FOR INFINITE WIDE (METERS) ...0.0000E+00BEGIN POINT OF X-SOURCE LOCATION (METERS)-0.5000E+01END POINT OF X-SOURCE LOCATION (METERS)0.5000E+01BEGIN POINT OF Y-SOURCE LOCATION (METERS)-0.3000E+01END POINT OF Y-SOURCE LOCATION (METERS)0.3000E+01BEGIN POINT OF Z-SOURCE LOCATION (METERS)0.3000E+01BEGIN POINT OF Z-SOURCE LOCATION (METERS)0.2000E+01

POROSITY	0.2000E+00
HYDRAULIC CONDUCTIVITY (METER/HOUR)	0.5500E-01
HYDRAULIC GRADIENT	0.5400E-02
LONGITUDINAL DISPERSIVITY (METER)	0.1000E+02
LATERAL DISPERSIVITY (METER)	0.5000E+01
VERTICAL DISPERSIVITY (METER)	0.1000E+01
DISTRIBUTION COEFFICIENT, KD (M**3/KG)	0.5589E-03
HEAT EXCHANGE COEFFICIENT (KCAL/HR-M**2-DEGREE C)	0.0000E+00

MOLECULAR DIFFUSION MULTIPLY BY POROSITY (M**2/HR)	0.3530E-05
DECAY CONSTANT (PER HOUR)	0.4012E-04
BULK DENSITY OF THE SOIL (KG/M**3)	0.1690E+04
ACCURACY TOLERANCE FOR REACHING STEADY STATE	0.1000E-02
DENSITY OF WATER (KG/M**3)	0.1000E+04
TIME INTERVAL SIZE FOR THE DESIRED SOLUTION (HR)	0.7300E+03
DISCHARGE TIME (HR)	0.1402E+06
WASTE RELEASE RATE (KCAL/HR), (KG/HR), OR (CI/HR) .	0.0000E+00

LIST OF TRANSIENT SOURCE RELEASE RATE

0.494E-05	0.494E-05	0.494E-05	0.494E-05	0.494E-05	0.494E-05	0.494E-05	0.494E-05	0.494E-05	0.494E-05
0.494E-05	0.494E-05	0.494E-05	0.494E-05	0.494E-05	0.494E-05	0.494E-05	0.494E-05	0.494E-05	0.494E-05
0.494E-05	0.494E-05	0.494E-05	0.494E-05	0.494E-05	0.494E-05	0.494E-05	0.494E-05	0.494E-05	0.494E-05
0.494E-05	0.494E-05	0.494E-05	0.494E-05	0.494E-05	0.494E-05	0.494E-05	0.494E-05	0.494E-05	0.494E-05
0.494E-05	0.494E-05	0.494E-05	0.494E-05	0.494E-05	0.494E-05	0.494E-05	0.494E-05	0.494E-05	0.494E-05
0.494E-05	0.494E-05	0.494E-05	0.494E-05	0.494E-05	0.494E-05	0.494E-05	0.494E-05	0.494E-05	0.494E-05
0.494E-05	0.494E-05	0.494E-05	0.494E-05	0.494E-05	0.494E-05	0.494E-05	0.494E-05	0.494E-05	0.494E-05
0.494E-05	0.494E-05	0.494E-05	0.494E-05	0.494E-05	0.494E-05	0.494E-05	0.494E-05	0.494E-05	0.494E-05
0.494E-05	0.494E-05	0.494E-05	0.494E-05	0.494E-05	0.494E-05	0.494E-05	0.494E-05	0.494E-05	0.494E-05
0.494E-05	0.494E-05	0.494E-05	0.494E-05	0.494E-05	0.494E-05	0.494E-05	0.494E-05	0.494E-05	0.494E-05
0.494E-05	0.494E-05	0.494E-05	0.494E-05	0.494E-05	0.189E-05	0.189E-05	0.189E-05	0.189E-05	0.189E-05
0.189E-05	0.189E-05	0.189E-05	0.189E-05	0.189E-05	0.189E-05	0.189E-05	0.189E-05	0.189E-05	0.189E-05
0.189E-05	0.189E-05	0.189E-05	0.189E-05	0.189E-05	0.189E-05	0.189E-05	0.189E-05	0.189E-05	0.189E-05
0.189E-05	0.189E-05	0.189E-05	0.189E-05	0.189E-05	0.189E-05	0.189E-05	0.189E-05	0.189E-05	0.189E-05
0.189E-05	0.189E-05	0.189E-05	0.189E-05	0.189E-05	0.189E-05	0.189E-05	0.189E-05	0.189E-05	0.189E-05
0.189E-05	0.189E-05	0.189E-05	0.189E-05	0.189E-05	0.189E-05	0.189E-05	0.189E-05	0.189E-05	0.189E-05
0.189E-05	0.189E-05	0.169E-05							
0.169E-05	0.169E-05	0.169E-05	0.169E-05	0.169E-05	0.169E-05	0.169E-05	0.169E-05	0.169E-05	0.169E-05
0.169E-05	0.169E-05	0.169E-05	0.169E-05	0.169E-05	0.169E-05	0.169E-05	0.169E-05	0.169E-05	0.169E-05
0.169E-05	0.169E-05								

RETARDATION FACTOR	0.5723E+01
RETARDED DARCY VELOCITY (M/HR)	0.2595E-03
RETARDED LONGITUDINAL DISPERSION COEF. (M**2/HR)	0.2598E-02
RETARDED LATERAL DISPERSION COEFFICIENT $(M**2/HR)$.	0.1301E-02
RETARDED VERTICAL DISPERSION COEFFICIENT (M**2/HR).	0.2626E-03

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.0000E+00 HRS (ADSORBED CHEMICAL CONC. = 0.5589E+00 * DISSOLVED CHEMICAL CONC.)

		Z =	0.00			
					Х	
Y	-26.	-18.	-11.	0.	5.	100.
12.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Ο.	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.1007E+06 HRS (ADSORBED CHEMICAL CONC. = 0.5589E+00 * DISSOLVED CHEMICAL CONC.)

		Z = 0	0.00			
37		1.0	1 1	0	X	100
ĭ	-26.	-18.	-11.	0.	5.	100.
12.	0.158E-03	0.594E-03	0.161E-02	0.431E-02	0.489E-02	0.250E-06
Ο.	0.340E-03	0.165E-02	0.747E-02	0.598E-01	0.477E-01	0.341E-06

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.1095E+06 HRS (ADSORBED CHEMICAL CONC. = 0.5589E+00 * DISSOLVED CHEMICAL CONC.)

Z = 0.00

Y -26. -18. -11. 0. 5. 100.

12.	0.136E-03	0.492E-03	0.133E-02	0.363E-02	0.410E-02	0.407E-06
Ο.	0.283E-03	0.139E-02	0.676E-02	0.581E-01	0.457E-01	0.545E-06

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.1183E+06 HRS (ADSORBED CHEMICAL CONC. = 0.5589E+00 * DISSOLVED CHEMICAL CONC.)

		Z =	0.00			
Y	-26.	-18.	-11.	0.	X 5.	100.
12. 0.	0.116E-03 0.241E-03	0.421E-03 0.124E-02	0.116E-02 0.642E-02	0.325E-02 0.573E-01	0.364E-02 0.447E-01	0.596E-06 0.785E-06

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.1270E+06 HRS (ADSORBED CHEMICAL CONC. = 0.5589E+00 * DISSOLVED CHEMICAL CONC.)

Z = 0.00 Y -26. -18. -11. 0. Y -26. 0.374E-03 0.106E-02 0.300E-02 0.335E-02 0.802E-06 0. 0.213E-03 0.114E-02 0.596E-02 0.521E-01 0.409E-01 0.104E-05

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.1358E+06 HRS (ADSORBED CHEMICAL CONC. = 0.5589E+00 * DISSOLVED CHEMICAL CONC.)

		Z =	0.00			
					Х	
Y	-26.	-18.	-11.	0.	5.	100.
12.	0.892E-04	0.340E-03	0.976E-03	0.278E-02	0.310E-02	0.101E-05
Ο.	0.193E-03	0.106E-02	0.567E-02	0.511E-01	0.399E-01	0.130E-05

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.1445E+06 HRS (ADSORBED CHEMICAL CONC. = 0.5589E+00 * DISSOLVED CHEMICAL CONC.)

		Z = 0	0.00			
					Х	
Y	-26.	-18.	-11.	0.	5.	100.
12.	0.807E-04	0.294E-03	0.775E-03	0.200E-02	0.230E-02	0.125E-05
Ο.	0.207E-03	0.130E-02	0.693E-02	0.316E-01	0.310E-01	0.160E-05

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.1533E+06 HRS (ADSORBED CHEMICAL CONC. = 0.5589E+00 * DISSOLVED CHEMICAL CONC.)

Z =	0		0	0
-----	---	--	---	---

					Х	
Y	-26.	-18.	-11.	0.	5.	100.
12.	0.688E-04	0.219E-03	0.501E-03	0.115E-02	0.137E-02	0.151E-05
Ο.	0.288E-03	0.160E-02	0.538E-02	0.157E-01	0.175E-01	0.196E-05

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.1621E+06 HRS (ADSORBED CHEMICAL CONC. = 0.5589E+00 * DISSOLVED CHEMICAL CONC.)

		Z =	0.00			
					Х	
Y	-26.	-18.	-11.	0.	5.	100.
12.	0.539E-04	0.153E-03	0.318E-03	0.691E-03	0.836E-03	0.175E-05
Ο.	0.324E-03	0.134E-02	0.352E-02	0.873E-02	0.102E-01	0.231E-05

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.1708E+06 HRS (ADSORBED CHEMICAL CONC. = 0.5589E+00 * DISSOLVED CHEMICAL CONC.)

		Z =	0.00			
					Х	
Y	-26.	-18.	-11.	0.	5.	100.
12	0 3995-04	0 103E-03	0 2028-03	0 423E-03	0 516E-03	0 1968-05
0.	0.292E-03	0.981E-03	0.224E-02	0.511E-02	0.610E-02	0.263E-05

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.1796E+06 HRS (ADSORBED CHEMICAL CONC. = 0.5589E+00 * DISSOLVED CHEMICAL CONC.)

		Z =	0.00			
					Х	
Y	-26.	-18.	-11.	0.	5.	100.
12.	0.285E-04	0.685E-04	0.129E-03	0.262E-03	0.322E-03	0.212E-05
Ο.	0.232E-03	0.678E-03	0.142E-02	0.307E-02	0.372E-02	0.290E-05

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.1883E+06 HRS (ADSORBED CHEMICAL CONC. = 0.5589E+00 * DISSOLVED CHEMICAL CONC.)

		Z =	0.00			
					Х	
Y	-26.	-18.	-11.	0.	5.	100.
12.	0.198E-04	0.452E-04	0.820E-04	0.164E-03	0.202E-03	0.223E-05
Ο.	0.173E-03	0.456E-03	0.899E-03	0.188E-02	0.229E-02	0.313E-05

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.1971E+06 HRS

(ADSORBED CHEMICAL CONC. = 0.5589E+00 * DISSOLVED CHEMICAL CONC.)

		Z =	0.00			
					Х	
Y	-26.	-18.	-11.	0.	5.	100.
12.	0.136E-04	0.297E-04	0.524E-04	0.103E-03	0.128E-03	0.229E-05
Ο.	0.124E-03	0.303E-03	0.571E-03	0.116E-02	0.143E-02	0.335E-05

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.2059E+06 HRS (ADSORBED CHEMICAL CONC. = 0.5589E+00 * DISSOLVED CHEMICAL CONC.)

		Z = (0.00			
					Х	
Y	-26.	-18.	-11.	0.	5.	100.
12.	0.922E-05	0.194E-04	0.336E-04	0.652E-04	0.813E-04	0.229E-05
Ο.	0.863E-04	0.199E-03	0.364E-03	0.727E-03	0.899E-03	0.360E-05

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.2146E+06 HRS (ADSORBED CHEMICAL CONC. = 0.5589E+00 * DISSOLVED CHEMICAL CONC.)

Z = 0.00

Y -26. -18. -11. 0. 5. 100.

12.	0.620E-05	0.127E-04	0.216E-04	0.415E-04	0.518E-04	0.225E-05
Ο.	0.593E-04	0.131E-03	0.232E-03	0.457E-03	0.568E-03	0.390E-05

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.2234E+06 HRS (ADSORBED CHEMICAL CONC. = 0.5589E+00 * DISSOLVED CHEMICAL CONC.)

		Z = 0	0.00			
					Х	
Y	-26.	-18.	-11.	0.	5.	100.
12.	0.415E-05	0.829E-05	0.139E-04	0.265E-04	0.332E-04	0.217E-05
Ο.	0.403E-04	0.856E-04	0.149E-03	0.289E-03	0.360E-03	0.427E-05

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.2321E+06 HRS (ADSORBED CHEMICAL CONC. = 0.5589E+00 * DISSOLVED CHEMICAL CONC.)

Z = 0.00 Y -26. -18. -11. 0. Y -26. 0.541E-05 0.897E-05 0.170E-04 0.213E-04 0.204E-05 0. 0.271E-04 0.559E-04 0.955E-04 0.184E-03 0.230E-03 0.465E-05
DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.2409E+06 HRS (ADSORBED CHEMICAL CONC. = 0.5589E+00 * DISSOLVED CHEMICAL CONC.)

		Z =	0.00			
					Х	
Y	-26.	-18.	-11.	0.	5.	100.
12.	0.184E-05	0.354E-05	0.579E-05	0.109E-04	0.137E-04	0.188E-05
Ο.	0.182E-04	0.365E-04	0.615E-04	0.117E-03	0.147E-03	0.497E-05

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.2497E+06 HRS (ADSORBED CHEMICAL CONC. = 0.5589E+00 * DISSOLVED CHEMICAL CONC.)

		Z =	0.00			
					Х	
Y	-26.	-18.	-11.	0.	5.	100.
12.	0.122E-05	0.231E-05	0.375E-05	0.701E-05	0.882E-05	0.170E-05
Ο.	0.121E-04	0.238E-04	0.396E-04	0.751E-04	0.942E-04	0.515E-05

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.2584E+06 HRS (ADSORBED CHEMICAL CONC. = 0.5589E+00 * DISSOLVED CHEMICAL CONC.)

Z = 0.00

					Х	
Y	-26.	-18.	-11.	0.	5.	100.
12.	0.810E-06	0.151E-05	0.243E-05	0.452E-05	0.570E-05	0.149E-05
Ο.	0.807E-05	0.156E-04	0.256E-04	0.482E-04	0.605E-04	0.516E-05

STEADY STATE SOLUTION HAS NOT BEEN REACHED BEFORE FINAL SIMULATING TIME

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.2672E+06 HRS (ADSORBED CHEMICAL CONC. = 0.5589E+00 * DISSOLVED CHEMICAL CONC.)

		Z = (0.00			
					Х	
Y	267180.	-18.	-11.	0.	5.	100.
12.	0.536E-06	0.985E-06	0.158E-05	0.292E-05	0.368E-05	0.129E-05
0	0 536E-05	0 102E-04	0 166E-04	0 310E-04	0 390E-04	0 499E-05

THIS PAGE INTENTIONALLY LEFT BLANK.