Location (Fort Stewart or Hunter Army Airfield), Georgia





Corrective Action Plan - Part B

Former Aboveground Storage Tanks 7001 & 7003 Bulk Fuel Facility – HAA-09 Release #3 Hunter Army Airfield, Savannah, GA Facility ID No. 9-025113*3

March 9, 2009

Army Environmental Command Under Contract Number W91ZLK-05-D-0015 D.O.0003



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Corrective Action Plan – Part B Former ASTs 7001 & 7003 (Bulk Fuel Facility: HAA-09) Release #3 Facility ID No. 9-025113*3

Hunter Army Air Field Savannah, Georgia

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Date: March 9, 2009

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Corrective Action Plan – Part B Former ASTs 7001 & 7003 (Bulk Fuel Facility – HAA-09)

Release #3

Facility ID No. 9-025113*3

Acronyms

ACL Alternate Concentration Limit
ATL Alternate Threshold Level

AT123D Analytical Transient 1,2,3-Dimensional

AST Aboveground Storage Tanks

ASTM American Society of Testing Material

BFF Bulk Fuel Facility
BGS Below Ground Surface
BLS Below Land Surface

BTEX Benzene, Toluene, Ethylbenzene, And Xylenes

CAP Corrective Action Plan

COPC Chemical of Potential Concern
C&D Construction and Demolition
DAF Dilution Attenuation Factor
DPT Direct Push Technology
DPW Directorate of Public Works
DRO Diesel Range Organics
EFR Enhanced Fluid Recovery

ft Feet

FP Free Product

F&T Fate and Transport

GA EPD Georgia Environmental Protection Division

GRO Gasoline Range Organics

GUST Georgia Underground Storage Tank

HAAF Hunter Army Airfield

IWQS In-Stream Water Quality Standard LNAPL Light Non-Aqueous Phase Liquid

NFA No Further Action

PAH Polyaromatic Hydrocarbon PID Photo Ionization Detector

ppm Parts per million

i

Corrective Action Plan – Part B Former ASTs 7001 & 7003 (Bulk Fuel Facility – HAA-09)

Release #3 Facility ID No. 9-025113*3

List of Acronyms (continued)

PVC Polyvinyl Chloride

RBCA Risk-Based Corrective Action

SAIC Science Applications International Corporation

SESOIL Seasonal Soil

TCLP Toxicity Characteristic Leaching Procedure
USEPA United States Environmental Protection Agency

UST Underground Storage Tank
VOC Volatile Organic Compounds

Corrective Action Plan – Part B Former ASTs 7001 & 7003 (Bulk Fuel Facility – HAA-09) Release #3 Facility ID No. 9-025113*3

1. Corrective Action Plan Certification - Part B

Facility Name	Former AS	T 7001/70	003 (HAA-9)	Street Address:	Bulk Fuel Facility		
Facility ID:	9-025113*3	Citus	Hunter Army	Communication	Cl. d	7: 0 1	21100
racinty iD.	9-023113**3	City:	Airfield	County:	Chatham	_ Zip Code:	31409
Latitude:	32° 00′ 54″	Longitud	le: 81° 08′ 26″				
Submitted by	UST Owner/Operat	or:		Prepared by	y Consultant/0	Contractor:	
Name:	Tressa Rutland/ E	nvironmer	ital Branch	Name:	Charles	Bertz	
Company:	U. S. Army/HQ 3	d, Inf. Div	. (Mech)	Company:	ARCAD	DIS	
Address:	DPW ENRD ENV	J. Br. (Fry)	Address:	801 Cor	porate Center D	r.
	1550 Frank Cochi	an Drive,	Bldg. 1137		Suite 30	0	
City:	Fort Stewart	State:	GA	City:	Raleigh	State:	NC
Zip Code:	31314-4927	_		Zip Code:	27607		
Telephone:	(912) 767-2010			Telephone:	(919) 85	4-1282	
satis Man	I hereby certify that the information contained in this p satisfies all criteria and requirements of rule 391-3-15-6 Management. Name: Tressa Rutland			plan and in all the	e attachments ia Rules for U	is true, accurate Inderground Sto	e, and the plan rage tank
Sign	ature:			Date:			
B. REGISTERED PROFESSIONAL ENGINEER OR PROFESSIONAL GEOLOGIST CERTIFICAL I hereby certify that I have directed and supervised the fieldwork and preparation of this plan in accordance Rules and Regulations. As a registered professional geologist and/or professional engineer, I certify that I at qualified groundwater professional, as defined by the Georgia State Board of Professional Geologists. All of information and laboratory data in this plan and in all of the attachments are true, accurate, compared with applicable State Rules and Regulations. Name: Scott Bostian, PE Signature: Date: 3 1 0 0 0 9 Check all boxes that apply. Attach supporting documentation, i.e. narrative, figures, tables, maps, with supporting documentation, i.e. narrative, figures, tables, maps, with supporting documentation.					ordance with State that I am a s. All of the coordance		
check all bo	xes that apply. At	tach supp	orting documental locumentation sho	tion, i.e. narrati	ve, figures,	tables, maps,	ring/well logs,
tion, for all li	omo checked. Bup	Porting U	ocumentation sho	ara de un ce-110	ne punched a	and prepared II	i comormity with

the guidance document "Underground Storage Tank (UST) Release: Corrective Action Plan-Part B (CAP-B)

Content", GUST 7B.

Corrective Action Plan – Part B Former ASTs 7001 & 7003 (Bulk Fuel Facility – HAA-09)

Release #3 Facility ID No. 9-025113*3

1. Corrective Action Plan Certification - Part B

Facility Nam	e: Former A	AST 7001/	7003 (HAA-9)	Street Address:	Bulk Fue	el Facility	
Facility ID:	9-025113*3	City:	Hunter Army Airfield	County:	Chatham	Zip Code:	31409
Latitude:	32° 00′ 54″	_ Longiti	ude: 81° 08′ 26	<u>"</u>			
Submitted by	/ UST Owner/Open	rator:		Prepared by	y Consultant/Co	ntractor:	
Name:	Tressa Rutland/		ental Branch	Name:	Charles Be		
Company:	U. S. Army/HQ	3d, Inf. D	iv. (Mech)	Company:	ARCADIS		
Address:	DPW ENRD EN	VV. Br. (Fr	y)	Address:	801 Corpo	rate Center D	r.
	1550 Frank Coc	hran Drive	e, Bldg. 1137		Suite 300		
City:	Fort Stewart	State:	GA	City:	Raleigh	State:	NC
Zip Code:	31314-4927		-	Zip Code:	27607		
Telephone:	(912) 767-2010			Telephone:	(919) 854-	1282	
Ma Na	nnagement. me: <u>Tressa Rutlan</u>	d	nents of rule 391-3-1	3-09 of the Georgi	la Rules for Olic		nage talik
	. REGISTERED PROFESSIONAL ENGINEER OR PROFESSIONAL GEOLOGIST CERTIFICATION						
Ru qua info	les and Regulation alified groundwate	s. As a reg r profession atory data		geologist and/or pr e Georgia State Bo	rofessional engi- oard of Profession	neer, I certify onal Geologis	that I am a
Na	me: Scott Bostian,	PE_					
	gnature:						
Da	te:					Georgia	Stamp or Seal

Check all boxes that apply. Attach supporting documentation, i.e. narrative, figures, tables, maps, boring/well logs, etc., for all items checked. Supporting documentation should be three-hole punched and prepared in conformity with the guidance document "Underground Storage Tank (UST) Release: Corrective Action Plan-Part B (CAP-B) Content", GUST 7B.

II.		SITE INVESTIGATION REPORT							
		Not Applicable The extent of contamination, and the local & site hydrogeology							
		requirements have been fulfilled under the CAP Part A, therefore additional SIR							
		reporting is not necessary.							
	X	Extent of Contamination:							
		X Soil ☐ Groundwater ☐ Free Product ☐ Surface water							
	X	Local and Site Hydrogeology:							
		■ Documentation of Local Groundwater Conditions							
		X Stratigraphic Boring Logs							
		Stratigraphic Cross Sections							
		X Referenced or Documented Calculations of Relevant Aquifer Parameters							
		☑ Direction of Groundwater Flow							
		X Table of Monitoring Well Data							
		X Potentiometric Map							
		X Flow Net Superimposed on a Base Map							
III.	RE	MEDIAL ACTION PLAN							
	A.	. Corrective Action Completed or In-Progress:							
		☐ Not Applicable							
		X Recovery/Removal of Free Product (Non-Aqueous Phase Hydrocarbons)							
		Remediation/Treatment of Contaminated Soils							
		Other (specify)							
	В.	Objectives of Corrective Action:							
		No Further Action							
		■ Remove Free Product That Exceeds One-Eighth Inch							
		Remediate Groundwater Contamination That Exceeds:							
		Maximum Contaminant Levels (MCLs)							
		OR							
		In-stream Water Quality Standards							
	В.	Objectives of Corrective Action (CONTINUED):							
		X Remediate Soil Contamination That Exceeds:							
		Threshold Values Listed In Table A							

	OR
	☐ Threshold Values Listed In Table B
	OR
	X Alternate Threshold Levels (ATLs) (Reference CAP A App. I)
	Provide Risk-Based Corrective Action (Reference CAP B App. I):
	X Remediate Soil and/or Groundwater Contamination That Exceeds Alternate
	Concentration Limits (ACLs) and Monitor Residual Contaminants
	OR
	Monitor Soil and/or Groundwater Contamination That Exceeds Levels In Rule –
	391-3-1509(3).
C.	Design and Operation of Corrective Action Systems:
	▼Soil ▼Groundwater ▼Free Product □Surface water □Not Applicable
D.	Implementation (MUST INCLUDE THE FOLLOWING):
	NOTE: If No Further Action is proposed and none of the following apply, a brief
	explanation must be provided with the signed Certificate of Completion.
	► Milestone schedule for proposed site activities
	► Inspection and preventive maintenance schedule for all specialized remediation
	equipment
	AND / OR
	Monitoring/sampling and reporting plan for measuring interim progress and project completion
	► Plan to decommission equipment/wells and close site

IV.		PUBLIC NOTICE:								
		Not Applicable The Corrective Action Objectives submitted and approved under								
		the CAP-Part A have not changed.								
		Certified Letters to Adjacent, Potentially Affected Property Owners and Local Officials								
	X	Legal Notice in Newspaper, as approved by EPD								
		Other EPD-approved Method (specify)								
V.	CL	LAIM FOR REIMBURSEMENT (For GUST Trust Fund sites only)								
	X	Not Applicable (specify)								
		GUST Trust Fund Application - (attach if applicable)								
		Cost Proposal:								
		A Total of All Costs Incurred To Date (MUST INCLUDE THE FOLLOWING):								
		► Invoices and Proofs-of-Payment For All Costs Incurred To Date								
		► Invoices itemized on the GUST-4D								
		► All Non-Eligible Costs Clearly Identified as such								
		► Incurred Costs Itemized per GUST-92 form or EPD provided form/specifications								
		☐ A Total of Estimated Costs To Complete Corrective Action								
		► Estimated Costs Itemized per GUST-92 form or EPD provided form or specifications								
		☐ Total Project Costs								
		Proposed Schedule For Reimbursement								
		Lump Sum Payment Upon Completion Of Corrective Action								
		OR								
		Interim Payments With Final Payment Upon Completion								
		OR								
		EPD Established Payment Schedule								

Corrective Action Plan – Part B Former ASTs 7001 & 7003 (Bulk Fuel Facility – HAA-09) Release #3

Facility ID No. 9-025113*3

2. Site Investigation Report

This Corrective Action Plan (CAP) Part-B addresses Release #3 at the Bulk Fuel Facility (BFF) at Hunter Army Airfield (HAAF), Georgia. The BFF is approximately 600 by 1,200 feet and covers an area of approximately 16.5 acres (Figure 1). Currently, the facility contains two aboveground storage tanks (ASTs) for the storage of Jet Propellant-8 with capacities of approximately 500,000 gallons each, aboveground and underground piping, and off-loader and pump stations for the distribution of fuel to and from the tanks. Previously, remediation activities have been conducted in the area to address contamination identified as Release #1 and Release #2. Release #1 consisted of contamination associated with former Underground Storage Tank (UST) 117, Facility ID #9-025113*1, which was located near Building 7002. The UST was abandoned in place on September 30, 1996. A soil gas survey was conducted in January 1999 to identify areas of significant contaminant concentrations (SAIC 1999). A CAP-Part A investigation was conducted in December 1999 and January 2000 and a CAP-Part B investigation was conducted from November 2000 to March 2001 to determine the extent of petroleum contamination at the site. Thirty-four monitoring wells, seven soil borings, and six vertical-profile borings were installed during these investigations, and surface water and sediment samples were collected from Lamar Canal. The CAP-Part B Report for Former Underground Storage Tank 117, Building 7002, Facility ID #9-025113*1, Bulk Fuel Facility (HAA-09), Hunter Army Airfield, Georgia (SAIC 2001) was submitted to Georgia Environmental Protection Division (GA EPD) UST Management Program in July 2001. The report recommended that seven monitoring wells (i.e., BF-MW-19, BF-MW-20, BF-MW-21R, BF-MW-22, BF-MW-32, BF-MW-33, and BF-MW 34) be sampled on a semiannual basis for benzene, toluene, ethylbenzene, xylenes (BTEX) and naphthalene (constituents of potential concern in groundwater).

In July 2002 and January 2003, free product was observed in well BF-MW-E5, which is located in the vicinity of AST 7009. This tank is approximately 500 feet northeast of AST 7003, where the Release #1 groundwater plume was being monitored. Free product had not been observed in this well during the CAP-Part B investigation for Release #1. During that investigation, the BTEX and polyaromatic hydrocarbon (PAH) constituents detected in the well were below the maximum contaminant level, the In-Stream Water Quality Standard (IWQS), and the alternate concentration limit (ACL) and groundwater monitoring of the area was recommended. It was apparent that there were two separate releases at the BFF. For clarification, Release #1 was associated with the groundwater plume in the vicinity of AST 7003 where the original semiannual monitoring only program was conducted. Georgia EPD granted no further action for

Corrective Action Plan – Part B Former ASTs 7001 & 7003 (Bulk Fuel Facility – HAA-09) Release #3

Facility ID No. 9-025113*3

Release #1 in correspondence dated October 6, 2003 (Lewis, 2003). Release #2 is associated with the free product observed in well BF-MW-E5, which is in the vicinity of AST 7009 and has been assigned Facility ID #9-025113*2. Free product removal activities are currently being conducted for Release #2 in well BF-MW-E5.

UST 117 was closed in place on September 30, 1996. CAPE Environmental removed UST 117 in May 2006. No concrete pad, dispenser island, or fuel piping was found in association with UST 117 during this removal. The concrete foundations of former ASTs 7001 and 7003 were also removed by CAPE Environmental in May 2006. AST 7005 was removed in October 2007. During the removal of the concrete foundations of former ASTs 7001 and 7003 in May 2006, free product was discovered approximately 3 to 4 feet below ground surface (ft bgs) at the former location of AST 7003. This was identified as Release #3. Four 2-foot diameter sumps were installed by CAPE Environmental in the area of former AST 7003 to collect free product. A subcontractor to HAAF, Griffin Services, was contracted to measure the level of free product in the sumps and pump the free product on a routine basis from May through August 2006. In an effort to delineate free product associated with Release #3, forty-two (42) 1.625-inch diameter monitoring points (FP-1 through FP-42) were installed on approximate 50-foot centers in the area of former ASTs 7001 and 7003 in November 2006 (Figure 2).

In February 2006, 23 monitoring wells associated with Release #1 (MW-01, MW-02, MW-03, MW-06 through 14, MW-17, MW-18, MW-20, MW-21R, MW-22, MW-23, MW-28, MW-29, MW-30, MW-31, and MW-32) located throughout the BFF were abandoned (Figure 3). The abandonment was documented in the Completion Report for Former Underground Storage Tank 117, Bulk Fuel Facility (HAA-09), Facility ID #9-025113*1, Hunter Army Airfield, Georgia, dated April 2006. Six monitoring wells (MW-15, MW-16, MW-19, MW-24, MW-33, and MW-34) located around the perimeter of the site that could not be located initially were abandoned in January 2008. Monitoring wells around Tank 7009 were left for potential future use for monitoring associated with Release #2.

In December 2008, liquid levels were measured in the 42 Free Product (FP) monitoring points and 4 sumps. Measurements indicated free product in a number of points and two sumps in the area around former AST 7003 and free product in one monitoring point around former AST 7001.

Corrective Action Plan – Part B Former ASTs 7001 & 7003 (Bulk Fuel Facility – HAA-09) Release #3 Facility ID No. 9-025113*3

2.1 Regional, Local, and Site Hydrogeology

A discussion of the regional, local, and site hydrogeology was presented in the CAP Part A, Former Underground Storage Tank 117, Building 7002, Facility Identification Number 9-025113*1, Bulk Fuel Facility (HAA-09) Hunter Army Airfield, Georgia (SAIC 2000), which addressed Release #1. The area impacted by Release #1 is predominantly the same as that impacted by Release #3 and the following hydrogeology and geological information is applicable to Release #3. The geology and hydrogeology are summarized below.

2.1.1 Groundwater Usage

According to the Groundwater Pollution Susceptibility Map of Georgia (GA EPD 1992), the impacted area is located within an average or higher groundwater pollution susceptibility area. Five public groundwater supply wells are located within a 2-mile radius of the site. Four of these wells (PWS #1, PWS #2, PWS #3, and PWS #4A) are located within the confines of HAAF. The other well (PWS #25) is located approximately 0.8 mile northwest of the site in Savannah, Georgia. All the groundwater supply wells are classified as public wells and supply water either to HAAF or the City of Savannah for drinking and non-drinking purposes. These wells range in depth from approximately 300 feet to 600 feet deep and draw groundwater from the Principal Artesian (also known as the Floridian) Aquifer. A complete discussion of the water supply wells at HAAF and those near the site is provided in Appendix D. Locations of the wells within the 2-mile radius and within a 500-foot radius are also presented in Figure D-1 in Appendix D.

2.1.2 Aguifer Description

As presented in the CAP Part A (SAIC 2000), which addressed Release #1, the hydrogeology in the vicinity of HAAF is mostly influenced by two aquifer systems. These are referred to as the principal artesian (Floridan) aquifer and the surficial aquifer (Miller 1990). The principal artesian aquifer is the lowermost hydrologic unit and is regionally extensive from South Carolina to Georgia, Alabama, and most of Florida. Known elsewhere as the Floridan, this aquifer, approximately 800 feet in total thickness, is composed primarily of Tertiary-age limestone, including the Bug Island Formation, the Ocala Group, and the Suwannee Limestone. Groundwater from the Floridan is used primarily for drinking water (Arora 1984).

Corrective Action Plan – Part B Former ASTs 7001 & 7003 (Bulk Fuel Facility – HAA-09)

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The confining layer for the Floridan aquifer is the phosphatic clay of the Hawthorn Group. There are minor occurrences of aquifer material within the Hawthorn Group. However, they have limited utilization (Miller 1990). The surficial aquifer overlies the Hawthorn confining unit.

The surficial aquifer consists of widely varying amounts of sand and clay. This aquifer is primarily used for domestic lawn and agricultural irrigation. The top of the water table ranges from approximately 2 to 10 ft bgs (Miller 1990). Groundwater in the surficial aquifer system is under unconfined, or water table, conditions. Locally, however, thin clay beds create confined or semiconfined conditions. Groundwater encountered at HAAF UST/AST investigation sites is part of the surficial aquifer system.

Based on the facts that all public and non-public water supply wells draw water from the Floridan aquifer and that the Hawthorn confining unit separates the Floridan aquifer from the surficial aquifer, it is concluded that there is not likely to be hydraulic interconnection between HAA-09 sites (and associated plumes) and water supply withdrawal points.

2.1.3 Surface Water

The water resources survey conducted during the CAP-Part A Site Investigation for Release #1 is presented in Appendix D (SAIC 2000). The information was revised and updated as noted. Surface water bodies including Lamar Canal, Pond 29, and several unnamed drainage ditches are located within a 1-mile radius of the site and are shown in Appendix D. Lamar Canal is located approximately 180 feet south-southeast (downgradient) of the Release #3 area. A series of storm drains and catch basins are located along the southern border of the BFF. They were formerly used to drain the bermed area around each of the ASTs (Figure 3). One of the storm drains is located approximately 120 feet from the area of greatest soil and groundwater contamination in the vicinity of AST 7003. The invert elevation of the storm drain is unknown; however, based on shallow depth to the water table, it is assumed that the storm drain is below the water table. Therefore, the storm drain is considered as a preferential pathway. Based on the location of Lamar Canal relative to the associated plumes, the site is classified as being located less than 500 feet from a surface water body.

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Facility ID No. 9-025113*3

2.1.4 Site Stratigraphy

As determined from soil borings drilled during the UST 117 CAP-Part A and CAP-Part B Site Investigations, the lithology present within 15 feet of the surface at the site appears to correlate with the regional stratigraphic section. The lithology underlying the area consists of interbedded layers of sand with varying amounts of silt and clay concluded to be part of the Satilla Formation. Soil groups at HAAF include the Chipley, Leon, Etabelle, Kershaw, Pelham, Albany, Wahee, and Ogeechee (Wilkes et al.1974). Boring logs for wells installed as part of the Site Investigation for the June 2000 CAP – Part A and the July 2001 CAP – Part B for UST 117 and not abandoned are provided in Appendix C.

2.1.5 Direction of Groundwater Flow

Water level measurements were collected during the CAP-Part A site investigation after monitor well installation in January 2000 and during CAP-Part B site investigation groundwater sampling activities in March 2001. Water level measurements were also taken during subsequent monitoring events. Groundwater at the site was determined to flow generally to the southeast. Groundwater potentiometric surface measurements taken in January 2003 and January 2005 are presented on Figures 4a and 4b, respectively.

2.2 Horizontal and Vertical Extent of Contamination

The extent of petroleum-related contamination in the form of free product associated with Release #3 was delineated by activities performed in 2006 and 2008. A summary of the results from these activities is presented below.

2.2.1 Delineation of Soil Contamination

Forty-two (42) 1.625-inch diameter free product monitoring points (FP-1 through FP-42) were installed on approximate 50-foot centers in the area of former ASTs 7001 and 7003 in November 2006 (Figure 2). During the installation, a Photo Ionization Detector (PID) was used to obtain volatile organic compound (VOC) concentrations from the borehole. Readings ranged from less than one part per million (ppm) to 1,400 ppm. The results are presented on Figure 5. Although the method used is imprecise, the results are useful in providing an initial estimate of impacted soil area. The impacted area estimated from these data corresponds in general with the area where free product was detected.

Corrective Action Plan – Part B Former ASTs 7001 & 7003 (Bulk Fuel Facility – HAA-09)

Release #3 Facility ID No. 9-025113*3

As part of the corrective actions described in Section III, horizontal and vertical extent of soil contamination, including soil contamination at or below the water table, will be delineated to non-detect via analysis of samples taken with Direct Push Technology (DPT). The samples will be analyzed with field and laboratory methods. After the investigation with DPT is complete, horizontal and vertical components of subsurface soil contamination will be displayed on site maps and cross-sections. All analytical data will be summarized in tabular form. Detailed description of the investigation scope is presented in Section III.

Refer to the CAP-Part A (SAIC 2000) and the CAP-Part B (SAIC 2001) for UST 117, for documentation of the previous soil delineation and assessment activities associated with Release #1 in the same area.

2.2.2 Delineation of Groundwater Contamination

There has not been any groundwater sampling conducted in the area since January 2003. Because most of the monitoring wells in the area of former ASTs 7001 and 7003 were abandoned in early 2006 and the rest in 2008, there is not any groundwater contaminant concentration data subsequent to the May 2006 discovery of the contamination designated as Release #3. These monitoring wells were associated with Release #1 and were abandoned based on the granting by Georgia EPD of No Further Action (NFA) status for Release #1. The vertical and horizontal extent of groundwater contamination will be assessed with DPT in conjunction with the delineation of soil contamination. The extent will be determined for each BTEX and PAH constituent. Isoconcentration contours will be plotted on a site map. After excavation and site restoration, monitoring wells will be installed as described in Section III. Previous vertical profile borings for Release #1 (CAP-Part A) investigation indicated that contamination was limited to the upper interval of the shallow aquifer and a similar distribution is anticipated for Release #3.

Refer to the CAP-Part A (SAIC 2000) and the CAP-Part B (SAIC 2001) for UST 117 for detailed documentation of the previous groundwater delineation and assessment activities associated with Release #1.

2.2.3 Delineation of Free Product

After discovery of free product during removal of the foundation for former AST 7003 (Release #3), four 2-foot sumps were installed in the former AST 7003 area to collect free product. Griffin Services was contracted to measure the level of free product in the

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sumps and to extract free product on a routine basis starting in May 2006 and continuing through August 2006. The results of these activities are in Appendix F.

In order to delineate free product associated with Release #3, 42 monitoring points (FP-01 through FP-42) were installed on approximate 50-foot centers in the area of former ASTs 7001 and 7003 in November 2006. The monitoring points were constructed with 1.625-inch diameter polyvinyl chloride (PVC) 0.010-slot screen and installed from ground surface to 4.5 ft bgs. Filter pack sand was poured around the annulus between the borehole and screen. The locations of the free product monitoring points are presented in Figure 2. Free product monitoring point construction diagrams are included in Appendix E (SAIC 2007). No liquid (water or free product) was measured in the monitoring points after installation in November 2006. Free product removal or monitoring activities were not conducted in 2007.

Liquid levels were measured in the sumps and monitoring points in December 2008. Free product was detected in monitoring points FP-04, FP-05, FP-06, FP-08, FP-13, FP-37 and FP-38. Free product was detected in Sump 1 and Sump 4 at 0.21 feet and 0.12 feet, respectively. Sheen was observed in monitoring point FP-40 and Sumps 2 and 3. The free product detections are illustrated on Figure 6. After additional data are obtained on free product distribution with DPT investigation, site figures will be created presenting the estimated horizontal and vertical extent of the free product.

2.2.4 Delineation of Surface Water and Sediment Contamination

Results from the surface water and sediment samples collected during the CAP–Part A investigation for Release #1 indicated that the surface water in Lamar Canal was not being impacted by contamination from the BFF. Therefore, additional samples were not recommended (SAIC 2000) and surface water and sediment samples have not been collected since. The need for surface water samples or sediment samples will be evaluated based on contaminant concentrations in downgradient wells and fate and transport modeling.

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3. Remedial Action Plan

3.1 Corrective Action Completed or in Progress

3.1.1 Recovery/Removal of Free Product

Four 2-foot sumps were installed in the area of the removed AST 7003 foundation to collect free product in May 2006. A subcontractor to HAAF was contracted to measure the level of free product in the sumps and to pump the free product on a routine basis starting in May 2006 and continuing through August 2006. The pumping activities were documented in the Third Annual Monitoring and Free Product Removal Report (SAIC July 2007) and a table of results from that report is included as Appendix F.

Forty-two free product monitoring points were installed in November 2006. The monitoring points contained no free product or other liquids when measured in November 2006. No free product removal activities were conducted in 2007 or 2008.

3.1.2 Remediation/Treatment of Contaminated Backfill Material and Native Soil

The concrete foundations of former ASTs 7001 and 7003 and UST 117 were removed by CAPE Environmental in May 2006. During the removal of the concrete foundations, free product was discovered approximately 3 to 4 ft bgs at former location of AST 7003. Soil that was excavated to recover and remove the UST and concrete pads was temporarily staged on the site to determine approval for reuse as backfill material. Analytical results from the soil samples indicated positive detections of BTEX (estimated value) and gasoline range organics (GRO). The contaminated soil was removed as part of these activities.

3.2 Objectives of Corrective Action

3.2.1 Remove Free Product That Exceeds One-Eighth Inch at the Former AST 7001/7003 (Release #3)

In 2006, free product was detected in excess of 1/8 inch. Four 2-foot sumps were installed and free product recovery was performed from May through August 2006. In 2006, the maximum free product thickness in the sumps was 0.88 foot. Forty-two monitoring points were installed in November 2006, but liquid was not detected. Liquid levels were measured again in December 2008 and free product in excess of 1/8-inch thickness was observed in monitoring points FP-04, FP-05, FP-06, FP-08, FP-08, FP-09, FP-09,

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37, FP-38, Sump 1 and Sump 4 in the area of Former AST 7003. Free product in excess of 1/8 inch was also measured in FP-13, which is in the area of Former AST 7001.

The objective of free product removal activities will be the aggressive elimination of saturated and unsaturated soil containing free product such that free product in excess of 1/8-inch thick will not be present. Free product removal activities will include excavation of soil containing free product. The excavation interval will encompass the historic smear zone. The excavation will remain open and will be monitored for free product recharge. Vacuum enhanced free product recovery actions will be initiated if free product is detected.

3.2.2 Remediate Groundwater Contamination at the Former AST 7001/7003 (Release #3)

Groundwater contamination will be remediated to In-Stream Water Quality Standards (IWQS) or ACLs. Monitoring wells in the vicinity of Former AST 7003 have been abandoned and cannot be sampled. Monitoring wells will be installed after excavation to determine the extent, if any, of groundwater contamination exceeding IWQS or ACLs. The estimated optimal monitoring well locations are shown on Figure 7. Monitoring well locations will be evaluated and adjusted after the DPT investigation and excavation are complete. ACLs will be calculated based on the sampling data from the DPT Investigation and the new monitoring wells. Based on the location of the free product associated with Release #3, the ACLs will likely be similar to values calculated for Release #1. A groundwater monitoring plan will be included in the report on DPT Investigation and Excavation.

3.2.3 Remediate Soil Contamination at the Former AST 7001/7003 (Release #3)

Soil contamination will be reduced to below Alternate Threshold Limits (ATLs). The corrective action for soil remediation will include direct push soil borings installed in the area where free product was measured in the monitoring points (Figure 8). Based on concentrations and distribution of soil contamination from this investigation, ATLs will be calculated for Release #3. As with groundwater ACLs, these values will likely be comparable to those calculated for Release #1 based on similar contaminant and receptor locations. The extent of soil contamination with concentrations exceeding the ATL will be determined from the analytical results and presented on figures included in the subsequent report.

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Excavation activities will remove source material (free product) and soil with concentrations exceeding the ATLs. The estimated location of this excavation is provided on Figure 9. Additionally, an oxygen source will be applied to the bottom of the excavation to enhance biodegradation of residual contamination.

3.2.4 Provide Risk-Based Corrective Action

During the development of the CAP for Release #1, a risk-based approach was used to determine the need for further action at the site. Due to the nature of the contamination, which is similar to Release #3, the risk-based approach was limited to human health concerns. Ecological risk concerns are negligible because of the land use surrounding the site. During evaluation for Release #1, the analytical results from surface water and sediment sampling in the drainage ditch indicated that habitat potentially associated with Lamar Canal was not impacted by the former AST operations. Additional sampling of surface water/sediment will be determined based on sampling results from downgradient monitor wells that will be installed after excavation activities are complete.

The methods for assessing human health concern for the site were derived from Georgia Underground Storage Tank (GUST) CAP-Part B guidance (GA EPD 1995) and GA EPD guidance (1996). The detailed risk-based corrective action (RBCA) evaluation and calculations will be performed after additional soil and groundwater data are collected as previously described.

3.2.4.1 Potential Receptor Survey

The exposure assessment identifies any potentially complete pathways between the contaminant source and potential receptors. This involves identifying potential current and future receptors, release mechanisms through which contamination might come into contact with the receptors, and routes of exposure through which receptors might be exposed.

The Former AST 7001 and 7003 sites are located within an active military installation and within an access-controlled fence. Lamar Canal is located approximately 180 feet south-southeast (downgradient) of the site. A series of storm drains and catch basins are located along the southern border of the BFF and were used to drain the area around the former ASTs. One of these storm drains is located 120 feet from former AST 7003 location.

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No connection between site contamination and current off-site receptors was identified during current or previous evaluations. Site contamination associated with Release #1 migrated to the surficial aquifer only, and Release #3 will likely behave similarly. The Hawthorne Group, which is approximately 90 feet of clay, separates the surficial aquifer from the deep drinking water aquifer, the Floridian aquifer. The Hawthorn Group, a thick and highly effective confining unit, separates the water supply wells from the surficial aquifer.

Current on-site receptors have not been identified for the site. Potential future on-site receptors might include industrial workers and military residents. Potential future on-site industrial receptors may come in direct contact with site soil contamination during construction or excavation activities. No near-term on-site receptors are likely to come into contact with groundwater unless the surficial aquifer discharges into the catch basin or Lamar Canal (SAIC 2001).

3.2.4.2 Screening for Chemicals of Potential Concern

3.2.4.2.1 Screening Methodology

The purpose of a risk evaluation screening is to identify the chemicals of potential concern (COPCs) and areas of concern at a site. Free product associated with Release #3 has been identified and remedial action will be implemented. The first step in the risk process will use screening levels that are readily obtainable and that, due to their conservative nature, can be used with a high degree of confidence to indicate site risk status.

3.2.4.2.2 Site-Specific Levels

Detections exceeding the conservative generic screening levels are considered to be COPCs. ATLs and ACLs will be developed, when appropriate, for the COPCs using site-specific information from fate and transport modeling and applicable regulatory levels.

3.2.4.2.3 Alternate Threshold Levels

The ATLS will be calculated if soil data indicate that residual soil contamination concentrations exceed the GUST Soil Threshold Levels. Benzene, ethylbenzene, toluene and xylenes were identified as COPCs for soil for Release #1. ATL calculations for Release #1 for these compounds are presented in Appendix G for

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reference. These ATLs for soil at the site were determined in the previous CAP for Release #1, and ATLs calculated for Release #3 will likely be similar.

3.2.4.2.4 Alternate Concentration Limits

The ACLs will be calculated if groundwater concentrations in the monitor wells exceed IWQS values or risk-based screening criteria. The ACLs will be based on analytical data from the monitor wells installed in the "hot-spots" after excavation. For Release #1, benzene and naphthalene were identified as COPCs for groundwater at the site. Benzene and naphthalene were modeled to the potential downgradient location where a receptor may come in contact with migrating site contamination. This was determined to be a storm drain located 120 feet downgradient from the center of the source area (abandoned Monitor Well MW-22). Based on the current free product distribution, the center of the source area for Release #3 will likely be roughly the same location. For release #1, fate and transport modeling was used to develop a site-specific dilution attenuation factor (DAF) between the source and receptor location. The modeling results estimated a DAF for benzene of 8.9 and a DAF of 126.3 for naphthalene. Compound specific regulatory levels or risk-based screening criteria were used in conjunction with site-specific DAFs identified for the potential migration of contaminants from the site to determine the ACL for each compound. The ACL calculations for Release #1 are included for reference in Appendix G.

3.2.4.2.5 Fate and Transport Model

As described above, DAFs were calculated for Release #1 and will be recalculated after DPT sampling, monitoring well sampling and excavation data for Release #3 are available. DAFs between the source and the receptor locations specific to Release #3 will be developed. Fate and transport models such as analytical transient 1,2,3-dimensional (AT123D) or other appropriate model are used as tools for developing DAFs. The application of fate and transport models at any release site must ensure that the modeling results are protective of human health and the environment. Therefore, the selection process of a predictive model at the release site will consider its performance, characteristics, and applicability to the site being considered. If the maximum soil concentration of a COPC at the site is above the water table, modeling of leaching to groundwater by percolating rainwater will be performed using seasonal soil (SESOIL) or other appropriate model in order to determine the predicted maximum concentration in the leachate at the water table interface and the soil ATLs. The potential receptor is a storm drain approximately 120 feet southwest of the site. This storm drain is part of a series of drains used to drain the bermed areas around the

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ASTs at the BFF. These drains empty into Lamar Canal. This is the nearest possible location at which a receptor might encounter migrating groundwater contamination due to a possible hydraulic connection between the groundwater and the surface water in Lamar Canal (SAIC 2001). The fate and transport modeling results from the CAP-Part B for UST 117 (Release 1) are presented in Appendix H for reference.

3.2.4.2.6 Conclusions and Recommendations

The initial goal of the proposed remedial approach will be removal of free product so that no hydrocarbon layer which exceeds 1/8 inch in thickness is detected in the monitoring points, sumps or monitoring wells.

Along with free product removal, soil contamination exceeding ATLs will be also be excavated and transported off site. Groundwater concentrations will be monitored to ensure levels are less than the ACLs or IWQS and are attenuating.

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4. Design and Operation of Corrective Action

Prior to any invasive site work (direct push sampling, excavation, monitor well installation), all required permits and utility clearances will be obtained.

The data available on groundwater elevations consisted of data sets from the CAP Part A Site Investigation (SAIC 2000) for Release #1 in January 2000 through water level data recorded as part of the monitor well abandonment in February 2006. The data show that depth to water in the area of former AST 7003 (based on MW-20, MW-21, MW-22, MW-23) has ranged from 1.5 to 4 ft bgs). The depth to water in the area of former AST 7001 (based on MW-17) has ranged from 1.3 to 3.1 ft bgs. The free product monitoring points installed in the area of former ASTs 7001 and 7003 were measured in November 2006 and recorded as containing no liquid. The points were installed with screen to depth of 4.5 ft bgs. Groundwater elevations from monitor wells were not available to confirm the groundwater elevations during that time. Water levels in those same points ranged from 1.5 to 3 ft bgs in December 2008. Based on the preceding information, the smear zone is estimated to be within 1 to 5 ft bgs.

4.1 Investigation

The goal of the DPT investigation is to define the limits of soil with petroleum hydrocarbon contamination that exceeds the regulatory limits. All soil within these limits will be excavated and transported off-site as described below. Therefore, there will be fewer DPT locations in areas where light non-aqueous phase liquid (LNAPL) is known to be present and more points as the investigation steps out from the known LNAPL areas. The vertical extent of the investigation will include the smear zone to evaluate all source mass. In selected "hotspot" locations, groundwater samples will be taken to establish vertical extent for subsequent monitor well installation.

Liquid levels will be measured in free product monitor points and sumps prior to starting DPT investigation. Approximately 25 DPT points will be installed in the vicinity of former ASTs 7001 and 7003 to delineate the free product and impacted soil. Groundwater samples will also be taken to evaluate vertical and horizontal impacts and to guide location and screen interval selection for monitor wells that will be installed after excavation related activities are completed. The first set of DPT points will be at the estimated limits of free product. Subsequent DPT points will be located based on the first set of screening results such that the extent of contaminated soil is defined. Approximately five DPT points will be installed in the area known to be impacted by free product to verify vertical free product distribution. DPT for soil and free product

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investigation will continue until vertical and horizontal distribution of source contamination is defined. Field screening results will be used to determine extent of contamination and guide selection of locations for sample collection for laboratory analysis. Screening results will be obtained through visual inspection of soil samples, measurement of VOC headspace concentrations and other methods if necessary. For each 2-foot interval, soil grab samples will be collected in glass jars and covered with aluminum foil. After allowing at least 15 minutes for volatilization and temperature equilibration, the headspace VOC concentration will be measured with a PID with the proper lamp (11.7 eV) to quantify the VOCs.

DPT locations for contaminated soil delineation will extend to a depth of 5 to 7 ft bgs. Samples will be collected at intervals determined with field screening equipment. A second set of twinned temporary borings will be installed to collect sample tubes from the subset of initial borings that showed elevated vapors but were outside the area obviously impacted by LNAPL. When no VOCs are detected during screening, a laboratory confirmatory sample will be taken at the interval just above the water table. When VOCs are detected in one or more of the borehole intervals, samples for laboratory analysis will be selected from the most contaminated interval. Soil samples will be analyzed for United States Environmental Protection Agency (USEPA) Method 8260B and USEPA Method 8270C in accordance with GUST Guidance. Please note that because groundwater samples will be collected at the worst-case locations, soil samples will not be analyzed for USEPA Method 8015B-GRO and diesel range organics (DRO).

Two soil borings in the area with the highest VOC concentrations will be advanced into the water table to collect groundwater samples for vertical delineation. A screen-point sampler will be advanced to 15 feet to collect groundwater quality samples. The average depth for the initial collection of groundwater samples will be approximately 4 to 5 ft bgs. Samples will also be collected at 5-foot intervals to 15 ft bgs. Two locations will be selected downgradient of the source areas for collecting groundwater samples at 5-foot intervals to a total depth of 15 ft bgs. Groundwater samples will be analyzed for USEPA Method 8260B and USEPA Method 8270C. Please note that previous vertical investigations in the area for Release #1 determined that dissolved contamination was located predominantly above 15 ft bgs and that the Hawthorne Formation was encountered at approximately 40 ft bgs.

Soil samples will also be taken during the DPT Investigation for analysis of additional parameters (e.g., toxicity characteristic leaching procedure [TCLP]) as required for

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transportation and disposal of contaminated soil and water in accordance with applicable regulations.

4.2 Excavation

Contaminated soil will be excavated in the areas impacted above the applicable limits as determined utilizing the DPT field and laboratory data sets. The depth of the excavation will be determined based on DPT results and historical water table fluctuations (smear zone). The initial estimate of excavation depth is 5 feet but this depth will be adjusted based on field results. Free product points and product recovery sumps in the area targeted for excavation will be removed during excavation. All excavations will be sloped to prevent collapse. The slope angle will be no greater than 2H:1V (angle of repose for sand). Dewatering pumps will be utilized to allow effective excavation of entire smear zone depth. Storage tanks will be brought to the site for containment of water extracted from the excavation

All excavated soils that could potentially be reused will be stockpiled on polyethylene sheeting covering a perimeter of hay bales or bermed soil to prevent runoff of sediments. Because of the shallow water table and related high smear zone, reuse of soil is not anticipated. Any soil potentially returned to the excavation will be sampled for laboratory analysis by USEPA Methods 8260 and 8270. Each stockpile considered for reuse will be sampled in accordance with USEPA guidance procedures.

Based on the investigation results, the horizontal and vertical limits of soil contaminated above applicable limits will be established. Soil within that area will be excavated and directly loaded into trucks for transportation to an off-site disposal facility.

In case of transportation interruptions, contaminated soil will be placed on bermed lined storage areas or, if the quantity is small, in plastic-lined construction roll-offs. The storage areas and/or roll-offs will be staged in accordance with direction from HAAF personnel and in compliance with all applicable regulations.

Any construction debris that is encountered will be transported for disposal in a construction and demolition (C&D) waste landfill.

After excavation activities are complete, soil samples will be taken from the bottom of the excavation and from the sidewalls of the excavation for field screening. If screening results or visual examination indicate the presence of residual soil

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contamination, samples will taken for analysis by USEPA Method 8260 and USEPA Method 8270. At a minimum, confirmation samples for laboratory analysis will be taken from each sidewall and the bottom of the excavation in accordance with GUST guidance. The effectiveness of bottom samples will evaluated based on relative water level.

The excavated area will be maintained open for free product evaluation. The area around the excavation will be marked with warning tape and access will be controlled. Enhanced fluid recovery (EFR) events may be performed to address any free product that is detected in the excavation. Backfilling of the excavation will commence following completion of the removal of the impacted soil and verification of free product removal. An oxygen-releasing compound will be applied to the bottom of the excavation along with approximately 1 foot of coarse sand. Although unlikely, if the excavation bottom is above the water table, the oxygen-releasing material will be hydrated. After verification of acceptable contaminant levels, uncontaminated soil, if any, will be returned to the excavation. Soil from an approved borrow source will comprise the remainder of the backfill. The remediation area will be cleaned of all sediment and debris. All areas will be graded to match existing conditions.

4.3 Installation of Monitoring Wells

At least four groundwater monitor wells will be installed after backfill and compaction activities are completed. The estimated optimal locations for the wells are shown on Figure 7. Monitor well locations and number will be evaluated and adjusted if necessary based on data from investigation and excavation. The wells will be installed by utilizing hollow-stem auger drilling techniques to a depth of approximately 15 ft bgs. The wells will be constructed with 2-inch schedule 40 PVC pipe and screened from 3 to 13 ft bgs. Monitoring wells installed in areas previously impacted by free product will be 4-inch schedule 40 PVC pipe with the same screen interval. Screen interval will also be adjusted if necessary based on investigation and excavation data. The wells will be finished with flush-mount surface completions. Each well will be developed to ensure filter packs are clear and free of fines. Well installation will be performed under the supervision of a Professional Engineer or Professional Geologist registered in Georgia. Monitor well installation will be in accordance with the Georgia Environmental Protection Division Manual for Groundwater Monitoring.

Monitor wells installed at the site will be sampled semiannually for analysis of COPCs. Sampling will continue to ensure concentrations are below either IWQS or ACLs as designated by the regulatory agency and are attenuating.

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4.4 Implementation

4.4.1 Milestone Schedule

A milestone schedule for the proposed corrective action has been prepared. A Gantt chart showing milestone activities and anticipated duration is provided in Figure 10. HAAF will notify GA EPD of any significant changes to the schedule and will provide GA EPD with an updated Gantt chart, as necessary.

4.4.2 Progress Reporting

A semiannual progress report will include:

- 1. Project summary
- 2. Activities and assessment of existing conditions
- 3. Analytical data
- 4. Site ranking
- 5. Conclusions and recommendations on corrective action status.

4.4.3 Certificate of Completion Report

A completion report will be prepared at the conclusion of the corrective action and post-remediation monitoring work. The report will summarize the corrective actions accomplished and provide data confirming achievement of the remediation objectives set forth in Section III.B. The report will be submitted within 30 days of completing all corrective actions specified in this plan. The completion report will include the following certification:

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"I hereby certify that the Corrective Action Plan–Part B, dated February 2, 2009, for Hunter Army Airfield, Former AST 7003 site (Release #3), Facility ID #9-025113*3, including any and all certified amendments/addenda thereto, has been implemented in accordance with the schedules, specifications, sampling programs, and conditions contained therein and that the plan's stated objectives have been met."

Signature (Owner/Operator)

4.4.4 Inspection Schedule and Preventative Maintenance Program

The current plan does not require the installation of a permanent remediation system for HAA-09 Release #3. Thus, on-site inspection and preventative maintenance are not applicable.

4.4.5 Periodic Monitoring

Monitoring wells will be measured and sampled on a semiannual basis until groundwater contaminant concentrations are below the regulatory limit.

4.4.6 Effectiveness of Corrective Action

Monitor wells will be measured to verify effective removal of free product. Groundwater samples will be collected from each monitoring well to document groundwater contaminant concentrations. Groundwater contaminant concentrations will be evaluated for trends and progress toward remediation goals.

4.4.7 Confirmatory Soil Sampling Plan

For the former AST 7001 and 7003 site (Release #3), excavation of soil is planned in accordance with limits determined by DPT investigation. Confirmatory sampling of the excavation associated with excavation of soil will be performed with field screening and samples for laboratory analysis.

4.4.8 Stockpiled Bulk Soil Sampling

For the former AST 7001 and 7003 site (Release #3), stockpiled soil will not be generated by this corrective action. The soil will have been characterized with DPT investigation prior to excavation and will be directly loaded into trucks.

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4.4.9 Monitoring Only Termination Conditions

The proposed remedial approach, which includes excavation will remove free product such that no measurable floating hydrocarbon layer (that which exceeds 1/8 inch in thickness) is detected in monitoring points. Soil contamination will be reduced to below threshold applicable limits with excavation and off-site disposal. Groundwater will be monitored to ensure contaminant concentrations are below applicable limits.

4.4.10 Post-Completion Site Restoration Activities

There will be no permanent equipment or systems located at the site as part of this remediation. The excavated area will be backfilled and properly compacted. The area will be graded to match existing.

4.5 Public Notification

The former ASTs 7001 and 7003 site is located entirely within the confines of HAAF, which is part of the Fort Stewart Military Reservation, a federal facility. The U. S. Government owns all of the property contiguous to the site. The Fort Stewart Directorate of Public Works (DPW) will comply with the public notice requirements defined by GA EPD guidance by publishing an announcement in the Savannah Morning News.

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5. Claim for Reimbursement

HAAF is a federally owned facility and has funded the investigation for the former AST 7003 site (Release #3), Facility ID #9-025113*3 using U. S. Department of Defense Environmental Restoration Funds. Application for GUST Trust Fund reimbursement is not being pursued at this time.

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Tables

Table 1 Historical Groundwater Elevations CAP-Part B

Former Aboveground Storage Tanks 7001 & 7003 Bulk Fuel Facility (HAA-09) Hunter Army Airfield, Georgia

			D 41 6	Depth to Free			
		Top of Casing	Depth of Screened	Product	Depth to		Corrected
	Date	Elevation	Interval	(ft BTOC)	Water	Product	Elevation ^a
Wall Number			(ft BGS)	(It BTOC)	(ft BTOC)		
Well Number	Measured	(ft AMSL)		l toring Event – J		Thickness (ft)	(ft AMSL)
BF-MW-01	7/11/2002	15.47	3.5 – 12.5	3/4	4.04	0	11.43
BF-MW-02	7/11/2002	16.24	3.5 – 13.0	3/4	3.88	0	12.36
BF-MW-03	7/11/2002	16.39	3.6 – 13.1	3/4	3.88	0	12.51
BF-MW-04	7/11/2002	17.11	2.8 – 12.3	3/4	4.63	0	12.48
BF-MW-05	7/11/2002	16.99	2.9 – 12.4	3/4	4.40	0	12.59
BF-MW-06	7/11/2002	16.80	2.7 - 12.2	3/4	4.26	0	12.54
BF-MW-07	7/11/2002	16.74	2.9 – 12.4	3/4	4.44	0	12.3
BF-MW-08	7/11/2002	16.40	2.3 - 11.8	3/4	4.00	0	12.4
BF-MW-09	7/11/2002	16.60	2.9 - 12.4	3/4	4.62	0	11.98
BF-MW-10	7/11/2002	15.33	2.3 - 11.8	3/4	3.56	0	11.77
BF-MW-11	7/11/2002	15.42	2.3 - 11.8	3/4	3.52	0	11.9
BF-MW-12	7/11/2002	16.35	3.0 - 12.5	3/4	4.79	0	11.56
BF-MW-13	7/11/2002	13.72	2.3 - 11.8	3/4	4.84	0	8.88
BF-MW-14	7/11/2002	15.26	28 - 12.3	3/4	5.04	0	10.22
BF-MW-15	7/11/2002	15.01	2.5 - 12.0	3/4	3.56	0	11.45
BF-MW-16	7/11/2002	12.61	2.7 – 12.2	3/4	4.74	0	7.87
BF-MW-17	7/11/2002	13.15	3.0 – 12.5	3/4	3.08	0	10.07
BF-MW-18	7/11/2002	12.99	3.4 – 12.9	3/4	3.80	0	9.19
BF-MW-19	7/11/2002	13.88	2.0 – 11.5	3/4	3.61	0	10.27
BF-MW-20	7/11/2002	14.79	2.2 – 11.7	3/4	3.38	0	11.41
BF-MW-21R BF-MW-22	7/11/2002 7/11/2002	14.57	4.8 - 14.8 $2.4 - 11.9$	3/4	3.55 3.19	0	11.02
		14.60		3/4		0	11.41
BF-MW-23 BF-MW-25	7/11/2002 7/11/2002	14.74 13.60	$\frac{2.7 - 12.2}{3.6 - 13.1}$	3/ ₄ 3/ ₄	3.13 3.90	0	9.7
BF-MW-27	7/11/2002	14.90	2.5 – 12.0	74 3/ ₄	2.72	0	12.18
BF-MW-28	7/11/2002	15.49	2.0 - 12.0 2.0 - 11.5	7/4 3/ ₄	4.07	0	11.42
BF-MW-29	7/11/2002	14.49	2.0 – 11.5	74 3/ ₄	2.82	0	11.67
BF-MW-30	7/11/2002	14.19	1.9 – 11.4	3/4	2.85	0	11.34
BF-MW-31	7/11/2002	14.46	1.5 – 11.0	3/4	3.53	0	10.93
BF-MW-32	7/11/2002	15.74	1.4 – 11.2	3/4	5.12	0	10.62
BF-MW-33	7/11/2002	13.95	1.6 – 11.4	3/4	4.75	0	9.2
BF-MW-34	7/11/2002	14.87	3.1 – 13.1	3/4	5.24	0	9.63
BF-MW-E1	7/11/2002	14.00	4.6 – 14.6	,-	3.77	0	10.23
BF-MW-E2	7/11/2002	13.76	3.94 - 13.94	3/4	3.91	0	9.85
BF-MW-E3	7/11/2002	13.99	4.4 - 14.4	3/4	4.31	0	9.68
BF-MW-E4	7/11/2002	13.88	4.6 – 14.6	3/4	4.42	0	9.46
BF-MW-E5	7/11/2002	14.00	4.8 - 14.8	4.34	4.41	0.07	9.65 <i>a</i>
BF-MW-E6	7/11/2002	13.76	3.7 – 13.7	3/4	3.69	0	10.07
				toring Event – J		,	
BF-MW-01	1/27/2003	15.47	3.5 – 12.5	3/4	3.71	0	11.76
BF-MW-03	1/27/2003	16.39	3.6 – 13.1	3/4	3.79	0	12.6
BF-MW-09	1/27/2003	16.60	2.9 – 12.4	3/4	4.29	0	12.31
BF-MW-12	1/27/2003	16.35	3.0 – 12.5	3/4	4.39	0	11.96
BF-MW-17	1/27/2003	13.15	3.0 – 12.5	3/4	2.47	0	10.68
BF-MW-18	1/27/2003	12.99	3.4 – 12.9	3/4	3.32	0	9.67
BF-MW-19	1/27/2003	13.88	2.0 – 11.5	3/4	3.38	0	10.5
BF-MW-20 BF-MW-21R	1/27/2003 1/27/2003	14.79 14.57	2.2 - 11.7 $4.8 - 14.8$	3/4	3.08 3.45	0	11.71 11.12
BF-MW-21R	1/27/2003	14.57	2.4 – 11.9	3/ ₄ 3/ ₄	3.45	0	11.12
BF-MW-22 BF-MW-23	1/27/2003	14.60	2.4 – 11.9		3.05	0	11.62
BF-MW-25	1/27/2003	13.60	3.6 - 13.1	3/ ₄ 3/ ₄	3.72	0	9.88
BF-MW-26	1/27/2003	13.62	2.4 – 11.9		2.01	0	9.88
BF-MW-28	1/27/2003	15.62	2.4 – 11.9	3/ ₄ 3/ ₄	4.02	0	11.61
BF-MW-32	1/27/2003	15.74	1.4 – 11.2	%4 3/4	4.02	0	10.86
BF-MW-33	1/27/2003	13.74	1.6 – 11.4	74 3/ ₄	4.54	0	9.41
D1-1VI VV -33	1/2//2003	13.73	1.0 - 11.4	7/4	4.34	U	7.41

Table 1 Historical Groundwater Elevations CAP-Part B

Former Aboveground Storage Tanks 7001 & 7003 Bulk Fuel Facility (HAA-09) Hunter Army Airfield, Georgia

			D4h6	Depth to Free			
		Top of Casing	Depth of Screened	Product	Depth to		Corrected
	Date	Elevation	Interval	(ft BTOC)	Water	Product	Elevation ^a
XX/-11 X/				(It BIOC)			
Well Number	Measured	(ft AMSL)	(ft BGS)		(ft BTOC)	Thickness (ft)	(ft AMSL)
BF-MW-E1	1/27/2003	14.00	4.6 – 14.6	27	3.99	0	10.01
BF-MW-E2	1/27/2003	13.76	3.94 – 13.94	3/4	4.02	0	9.74
BF-MW-E3	1/27/2003	13.99	4.4 – 14.4	3/4	4.38	0	9.61
BF-MW-E4	1/27/2003	13.88	4.6 – 14.6	3/4	4.22	0	9.66
BF-MW-E5	1/27/2003	14.00	4.8 – 14.8	4.44	4.54	0.1	9.46
BF-MW-E6	1/27/2003	13.76	3.7 – 13.7	3/4	3.87	0	9.89
DE MW 01	7/16/2004			itoring Event – .	•	0 1	11.05
BF-MW-01		15.47	3.5 – 12.5	3/4	4.42	0	11.05
BF-MW-02	7/16/2004	16.24	3.5 – 13.0	3/4	4.06		12.18
BF-MW-03	7/16/2004	16.39	3.6 – 13.1	3/4	4.01	0	12.38
BF-MW-04	7/16/2004	17.11	2.8 – 12.3	3/4	4.72	0	12.39
BF-MW-05	7/16/2004	16.99	2.9 – 12.4	3/4	4.52	0	12.47
BF-MW-06	7/16/2004	16.80	2.7 – 12.2	3/4	5.42	0	11.38
BF-MW-07	7/16/2004	16.74	2.9 – 12.4	3/4	4.46	0	12.28
BF-MW-08	7/16/2004	16.40	2.3 – 11.8	3/4	4.18	0	12.22
BF-MW-09	7/16/2004	16.60	2.9 – 12.4	3/4	4.52	0	12.08
BF-MW-10	7/16/2004	15.33	2.3 – 11.8	3/4	3.53	0	11.8
BF-MW-11	7/16/2004	15.42	2.3 – 11.8	3/4	3.32	0	12.1
BF-MW-12	7/16/2004	16.35	3.0 – 12.5	3/4	4.77	0	11.58
BF-MW-13	7/16/2004	13.72	2.3 – 11.8	3/4	5.00	0	8.72
BF-MW-14	7/16/2004	15.26	28 – 12.3	3/4	5.14	0	10.12
BF-MW-15	7/16/2004	15.01	2.5 - 12.0	NM	NM	NM	NM
BF-MW-16	7/16/2004	12.61	2.7 – 12.2	NM	NM	NM	NM
BF-MW-17	7/16/2004	13.15	3.0 – 12.5	3/4	3.14	0	10.01
BF-MW-18	7/16/2004	12.99	3.4 – 12.9	3/4	4.02	0	8.97
BF-MW-19	7/16/2004	13.88	2.0 – 11.5	3/4	3.98	0	9.9
BF-MW-20	7/16/2004	14.79	2.2 - 11.7	3/4	3.27	0	11.52
BF-MW-21R	7/16/2004	14.57	4.8 - 14.8	3/4	3.56	0	11.01
BF-MW-22	7/16/2004	14.60	2.4 – 11.9	3/4	3.02	0	11.58
BF-MW-23	7/16/2004	14.74	2.7 - 12.2	3/4	3.03	0	11.71
BF-MW-25	7/16/2004	13.60	3.6 – 13.1	NM	NM	NM	NM
BF-MW-27	7/16/2004	14.90	2.5 - 12.0	3/4	2.74	0	12.16
BF-MW-28	7/16/2004	15.49	2.0 - 11.5	3/4	4.02	0	11.47
BF-MW-29	7/16/2004	14.49	2.0 - 11.5	3/4	2.71	0	11.78
BF-MW-30	7/16/2004	14.19	1.9 – 11.4	3/4	2.84	0	11.35
BF-MW-31	7/16/2004	14.46	1.5 - 11.0	3/4	3.46	0	11
BF-MW-32	7/16/2004	15.74	1.4 - 11.2	3/4	5.24	0	10.5
BF-MW-33	7/16/2004	13.95	1.6 - 11.4	3/4	4.88	0	9.07
BF-MW-34	7/16/2004	14.87	3.1 – 13.1	3/4	4.92	0	9.95
BF-MW-35	7/16/2004	14.94	2.4 - 12.4	3/4	3.91	0	11.03
BF-MW-36	7/16/2004	15.16	2.6 - 12.6	3/4	5.90	0	9.26
BF-MW-37	7/16/2004	16.07	2.3 - 12.3	3/4	5.07	0	11
BF-MW-E1	7/16/2004	14.00	4.6 – 14.6		3.92	0	10.08
BF-MW-E2	7/16/2004	13.76	3.94 – 13.94	3/4	4.64	0	9.12
BF-MW-E3	7/16/2004	13.99	4.4 - 14.4	3/4	4.64	0	9.35
BF-MW-E4	7/16/2004	13.88	4.6 - 14.6	3/4	4.80	0	9.08
BF-MW-E5	7/16/2004	14.00	4.8 - 14.8	4.48	5.71	1.23	9.37 <i>a</i>
BF-MW-E6	7/16/2004	13.76	3.7 - 13.7	3/4	3.87	0	9.89
	ı			oring Event – Ja		, -	
BF-MW-01	1/12/2005	15.47	3.5 - 12.5	3/4	3.90	0	11.57
BF-MW-02	1/12/2005	16.24	3.5 - 13.0	3/4	3.85	0	12.39
BF-MW-03	1/12/2005	16.39	3.6 – 13.1	3/4	3.80	0	12.59
BF-MW-04	1/12/2005	17.11	2.8 - 12.3	3/4	4.56	0	12.55
DE 15771.05	1/12/2005	16.99	2.9 – 12.4	3/4	4.51	0	12.48
BF-MW-05	-,,,						
BF-MW-05 BF-MW-06	1/12/2005	16.80	2.7 - 12.2	3/4	3.91	0	12.89

Table 1 Historical Groundwater Elevations CAP-Part B

Former Aboveground Storage Tanks 7001 & 7003 Bulk Fuel Facility (HAA-09) Hunter Army Airfield, Georgia

	Date	Top of Casing Elevation	Depth of Screened Interval	Depth to Free Product (ft BTOC)	Depth to Water	Product	Corrected Elevation ^a
Well Number	Measured	(ft AMSL)	(ft BGS)		(ft BTOC)	Thickness (ft)	(ft AMSL)
BF-MW-08	1/12/2005	16.40	2.3 – 11.8	3/4	3.93	0	12.47
BF-MW-09	1/12/2005	16.60	2.9 - 12.4	3/4	4.56	0	12.04
BF-MW-10	1/12/2005	15.33	2.3 – 11.8	3/4	3.48	0	11.85
BF-MW-11	1/12/2005	15.42	2.3 – 11.8	3/4	3.38	0	12.04
BF-MW-12	1/12/2005	16.35	3.0 - 12.5	3/4	4.63	0	11.72
BF-MW-13	1/12/2005	13.72	2.3 – 11.8	3/4	3.49	0	10.23
BF-MW-14	1/12/2005	15.26	28 - 12.3	3/4	4.41	0	10.85
BF-MW-15	1/12/2005	15.01	2.5 - 12.0	NM	NM	NM	NM
BF-MW-16	1/12/2005	12.61	2.7 – 12.2	NM	NM	NM	NM
BF-MW-17	1/12/2005	13.15	3.0 - 12.5	3/4	3.07	0	10.08
BF-MW-18	1/12/2005	12.99	3.4 - 12.9	3/4	3.83	0	9.16
BF-MW-19	1/12/2005	13.88	2.0 – 11.5	3/4	3.85	0	10.03
BF-MW-20	1/12/2005	14.79	2.2 - 11.7	3/4	3.22	0	11.57
BF-MW-21R	1/12/2005	14.57	4.8 - 14.8	3/4	3.55	0	11.02
BF-MW-22	1/12/2005	14.60	2.4 - 11.9	3/4	3.20	0	11.4
BF-MW-23	1/12/2005	14.74	2.7 - 12.2	3/4	3.19	0	11.55
BF-MW-25	1/12/2005	13.60	3.6 - 13.1	3/4	4.28	0	9.32
BF-MW-27	1/12/2005	14.90	2.5 - 12.0	3/4	3.27	0	11.63
BF-MW-28	1/12/2005	15.49	2.0 - 11.5	3/4	4.21	0	11.28
BF-MW-29	1/12/2005	14.49	2.0 - 11.5	3/4	2.78	0	11.71
BF-MW-30	1/12/2005	14.19	1.9 – 11.4	3/4	2.90	0	11.29
BF-MW-31	1/12/2005	14.46	1.5 - 11.0	3/4	3.39	0	11.07
BF-MW-32	1/12/2005	15.74	1.4 - 11.2	3/4	5.02	0	10.72
BF-MW-33	1/12/2005	13.95	1.6 - 11.4	NM	NM	NM	NM
BF-MW-34	1/12/2005	14.87	3.1 - 13.1	3/4	4.95	0	9.92
BF-MW-35	1/12/2005	14.94	2.4 - 12.4	3/4	3.76	0	11.18
BF-MW-36	1/12/2005	15.16	2.6 - 12.6	3/4	5.69	0	9.47
BF-MW-37	1/12/2005	16.07	2.3 - 12.3		4.87	0	11.2
BF-MW-E1	1/12/2005	14.00	4.6 – 14.6		4.09	0	9.91
BF-MW-E2	1/12/2005	13.76	3.94 – 13.94	3/4	4.28	0	9.48
BF-MW-E3	1/12/2005	13.99	4.4 - 14.4	3/4	4.72	0	9.27
BF-MW-E4	1/12/2005	13.88	4.6 – 14.6	3/4	5.18	0	8.7
BF-MW-E5	1/12/2005	14.00	4.8 - 14.8	sheen	4.90	sheen	9.1
BF-MW-E6	1/12/2005	13.76	3.7 - 13.7	3/4	3.99	0	9.77

NOTES:

 $^{\it a}$ Corrected groundwater elevation based on a product density of 880 kg/m $^{\it 3}.$

AMSL Above mean sea level.
BGS Below ground surface.
BTOC Below top of casing.
NM Not measured.

Table 2 Groundwater Elevations in Free Product Monitoring Points - December 2008 CAP-Part B

Former Aboveground Storage Tanks 7001 & 7003 Bulk Fuel Facility (HAA-09) Hunter Army Airfield, Georgia

	1	Top of	Depth of		Depth to		Corrected
		Casing	Screened	Depth to	Free	Product	Groundwater
Well		Elevation	Interval	Water	Product	Thickness	Elevation ^a
Number	Date Measured		(ft BGS)	(ft BTOC)	(ft BTOC)	(ft)	(ft AMSL)
Number	Date Measureu		. ,	ints around 7		(11)	(It ANISL)
FP-01	12/11/2008	b	1.3 – 4.5	2.50		0	b
FP-02	12/11/2008	b	1.3 – 4.5	1.58		0	b
FP-03	12/11/2008	b	1.3 – 4.5	1.95		0	b
FP-04**	12/11/2008	b	1.3 – 4.5	6.00	1.55	4.45	b
FP-05	12/11/2008	b	1.3 – 4.5	1.95	1.1	0.85	b
FP-06	12/11/2008	b	1.3 – 4.5	2.25	1.49	0.76	b
FP-07	12/11/2008	b	1.3 – 4.5	1.77		0	b
FP-08	12/11/2008	b	1.3 - 4.5	1.54	1.45	0.09	b
FP-09	12/11/2008	b	1.3 – 4.5	NM	NM	0	b
FP-15	12/11/2008	b	1.3 - 4.5	1.40		0	b
FP-16	12/11/2008	b	1.3 - 4.5	2.76		0	b
FP-17	12/11/2008	b	1.3 - 4.5	NM	NM	0	b
FP-18	12/11/2008	b	1.3 - 4.5	2.27		0	b
FP-19	12/11/2008	b	1.3 - 4.5	1.35		0	b
FP-20	12/11/2008	b	1.3 - 4.5	1.34		0	b
FP-21	12/11/2008	b	1.3 - 4.5	1.49		0	b
FP-22	12/11/2008	b	1.3 - 4.5	1.34		0	b
FP-23	12/11/2008	b	1.3 - 4.5	2.44		0	b
FP-24	12/11/2008	b	1.3 - 4.5	2.49		0	b
FP-37	12/11/2008	b	1.3 - 4.5	2.71	0.8	1.91	b
FP-38	12/11/2008	b	1.3 - 4.5	1.50	1.33	0.17	b
FP-39	12/11/2008	b	1.3 - 4.5	1.76		0	b
FP-40	12/11/2008	b	1.3 - 4.5	2.02	sheen	0	b
FP-41	12/11/2008	b	1.3 - 4.5	1.60		0	b
FP-42	12/11/2008	b	1.3 - 4.5	2.07		0	b
Sump-1	12/11/2008	b	1.3 - 4.5	2.49	2.28	0.21	b
Sump-2	12/11/2008	b	1.3 - 4.5	3.03	sheen	0	b
Sump-3	12/11/2008	b	1.3 - 4.5	2.54	sheen	0	b
Sump-4	12/11/2008	b	1.3 – 4.5	2.55	2.43	0.12	b
	10/45/2000	M 0		ints around 7	001		b
FP-10	12/16/2008	b	1.3 – 4.5	1.3		0	b b
FP-11	12/16/2008	b	1.3 – 4.5	1.09		0	b b
FP-12	12/16/2008	b	1.3 – 4.5	0.95		0	b b
FP-13	12/16/2008	b	1.3 – 4.5	1.23	1.13	0.10	b b
FP-14	12/16/2008	b	1.3 – 4.5	0.91		0	b b
FP-25	12/16/2008	b	1.3 – 4.5	1.95		0	b
FP-26	12/16/2008	b	1.3 – 4.5	1.00		0	b
FP-27	12/16/2008	b	1.3 – 4.5	1.64		0	b
FP-28	12/16/2008	b	1.3 – 4.5	0.9		0	b
FP-29	12/16/2008	b	1.3 – 4.5	0.80		0	b
FP-30	12/16/2008	b	1.3 – 4.5	1.53		0	b
FP-31	12/16/2008	υ	1.3 - 4.5	1.63		0	U

Table 2

Groundwater Elevations in Free Product Monitoring Points - December 2008 CAP-Part B

Former Aboveground Storage Tanks 7001 & 7003 Bulk Fuel Facility (HAA-09) Hunter Army Airfield, Georgia

Well Number	Date Measured	Top of Casing Elevation (ft AMSL)	Depth of Screened Interval (ft BGS)	Depth to Water (ft BTOC)	Depth to Free Product (ft BTOC)	Product Thickness (ft)	Corrected Groundwater Elevation ^a (ft AMSL)
FP-32	12/16/2008	b	1.3 - 4.5	1.99		0	b
FP-33	12/16/2008	b	1.3 - 4.5	NM	NM	0	b
FP-34	12/16/2008	b	1.3 - 4.5	2.6		0	b
FP-35	12/16/2008	b	1.3 - 4.5	2,34		0	b
FP-36	12/16/2008	b	1.3 - 4.5	1.89		0	b

NOTES:

BGS Below ground surface.
NAD North American Datum.

NAVD North American Vertical Datum.

PVC Polyvinyl chloride.

NM Not measured because well was in a low lying area covered in water

 $^{^{\}it b}$ Elevations were not surveyed.

^{**} Measurement listed was verified as accurate but appears anomalous. Liquid levels will be confirmed in next gauging activity

Figures

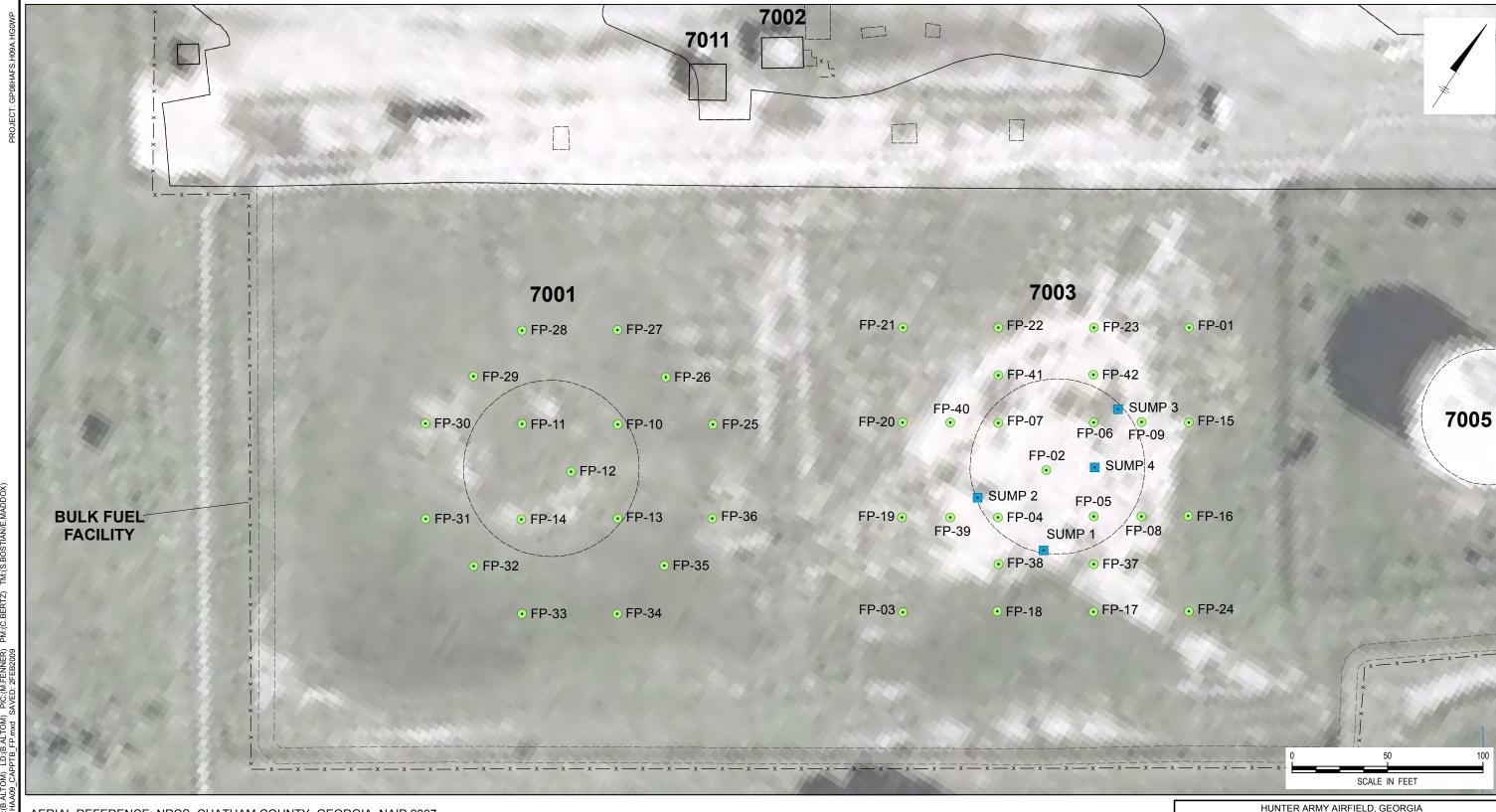
REFERENCE:
DIGITAL RASTER GRAPHIC COUNTY MOSAIC FROM NRCS,
CHATHAM COUNTY. FILE NAME: DRG_S_GA051.SID
USGS Topographic Quadrangles, Garden City and Savannah, Georgia.

HUNTER ARMY AIRFIELD, GEORGIA FORMER ASTS 7001 AND 7003 BULK FUEL FACILITY (HAA-09 – RELEASE #3) CORRECTIVE ACTION PLAN – PART B

Site Location Map



FIGURE



LEGEND:

Sump

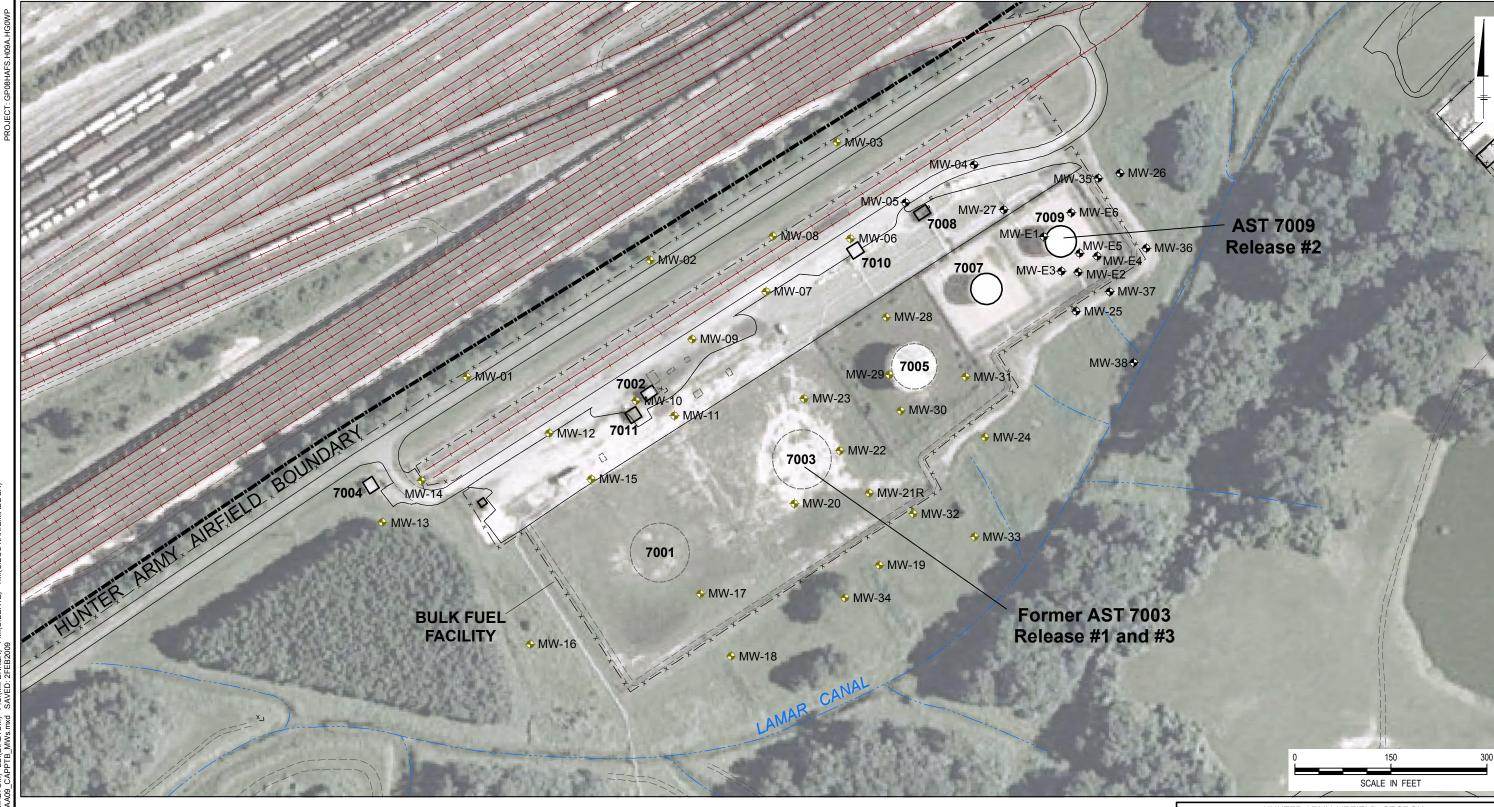
Free-Product Monitoring Point

HUNTER ARMY AIRFIELD, GEORGIA FORMER ASTS 7001 AND 7003 BULK FUEL FACILITY (HAA-09 – RELEASE #3) CORRECTIVE ACTION PLAN – PART B

Location of Free-Product Monitoring Points



FIGURE



LEGEND:

- Monitor Well (active)
- Monitor Well (abandoned)

HUNTER ARMY AIRFIELD, GEORGIA FORMER ASTS 7001 AND 7003 BULK FUEL FACILITY (HAA-09 – RELEASE #3) CORRECTIVE ACTION PLAN – PART B

Site Map with Monitor-Well Locations



FIGURE

AERIAL REFERENCE: NRCS, CHATHAM COUNTY, GEORGIA, NAIP 2007. REFERENCE: Third Annual Monitoring and Free-Product Removal Report (SAIC 2007).

LEGEND:

- Monitor Well (CAP Part A)
- Monitor Well (CAP Part B)
- Potentiometric Contour Line (ft, amsl)
- Direction of Groundwater Flow
- 11.72 Water-Level Elevation, (ft, amsl) Measured January 12, 2005

HUNTER ARMY AIRFIELD, GEORGIA
FORMER ASTS 7001 AND 7003
BULK FUEL FACILITY (HAA-09 - RELEASE #3)
CORRECTIVE ACTION PLAN - PART B

Groundwater Potentionmetric Surface Map January 2005



FIGURE

4a

AERIAL REFERENCE: NRCS, CHATHAM COUNTY, GEORGIA, NAIP 2007. REFERENCE: Third Annual Monitoring and Free-Product Removal Report (SAIC 2007).

LEGEND:

- Monitor Well (CAP Part A)
- Monitor Well (CAP Part B)
- Potentiometric Contour Line (ft, amsl)
- Direction of Groundwater Flow
- 9.67 Water-Level Elevation, (ft, amsl) Measured January 12, 2005

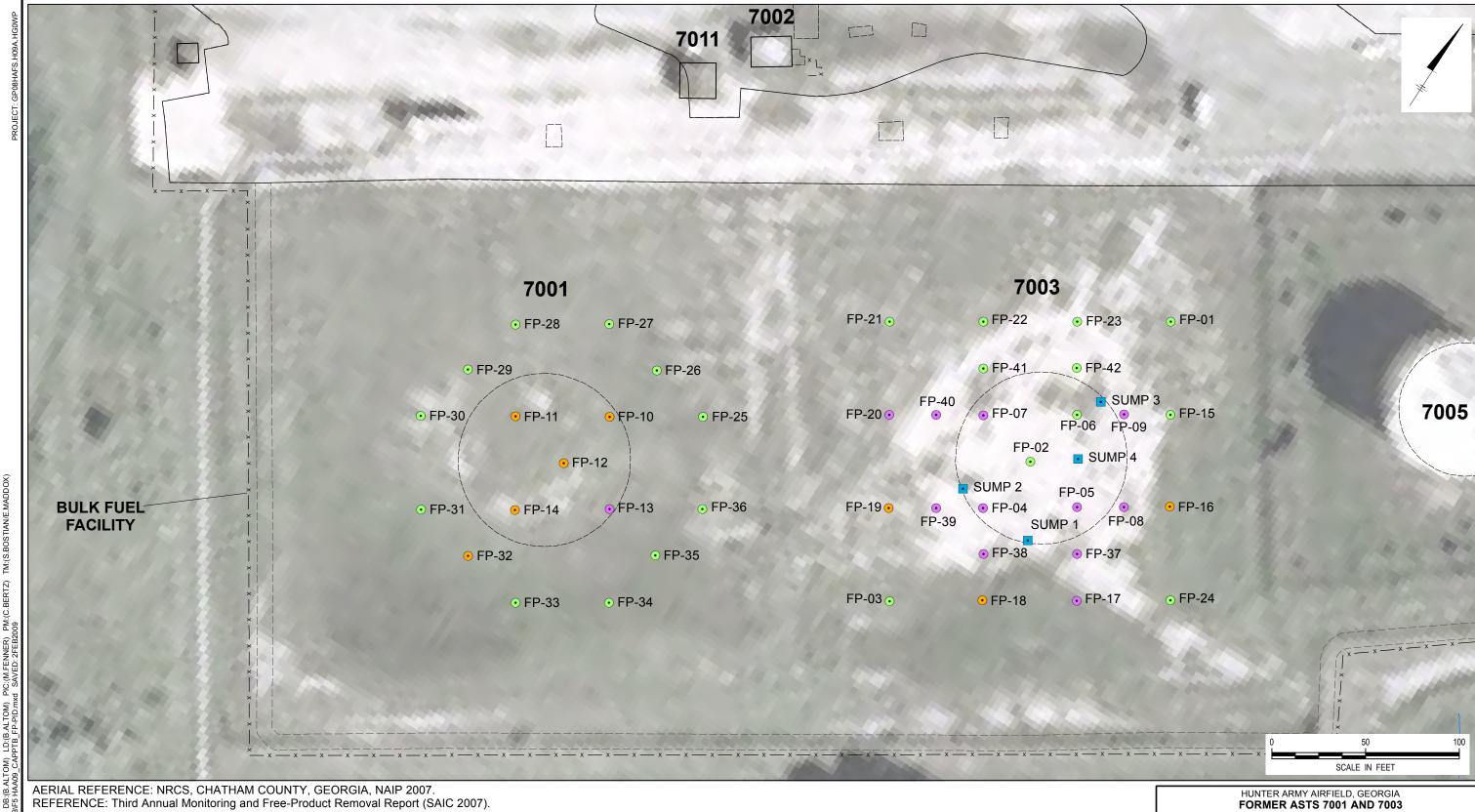
HUNTER ARMY AIRFIELD, GEORGIA
FORMER ASTS 7001 AND 7003
BULK FUEL FACILITY (HAA-09 - RELEASE #3)
CORRECTIVE ACTION PLAN - PART B

Groundwater Potentionmetric Surface Map January 2003



FIGURE

4b



LEGEND:

Sump

Free-Product Monitoring Point

PID Readings

• 1-10 ppm

• >10-100 ppm

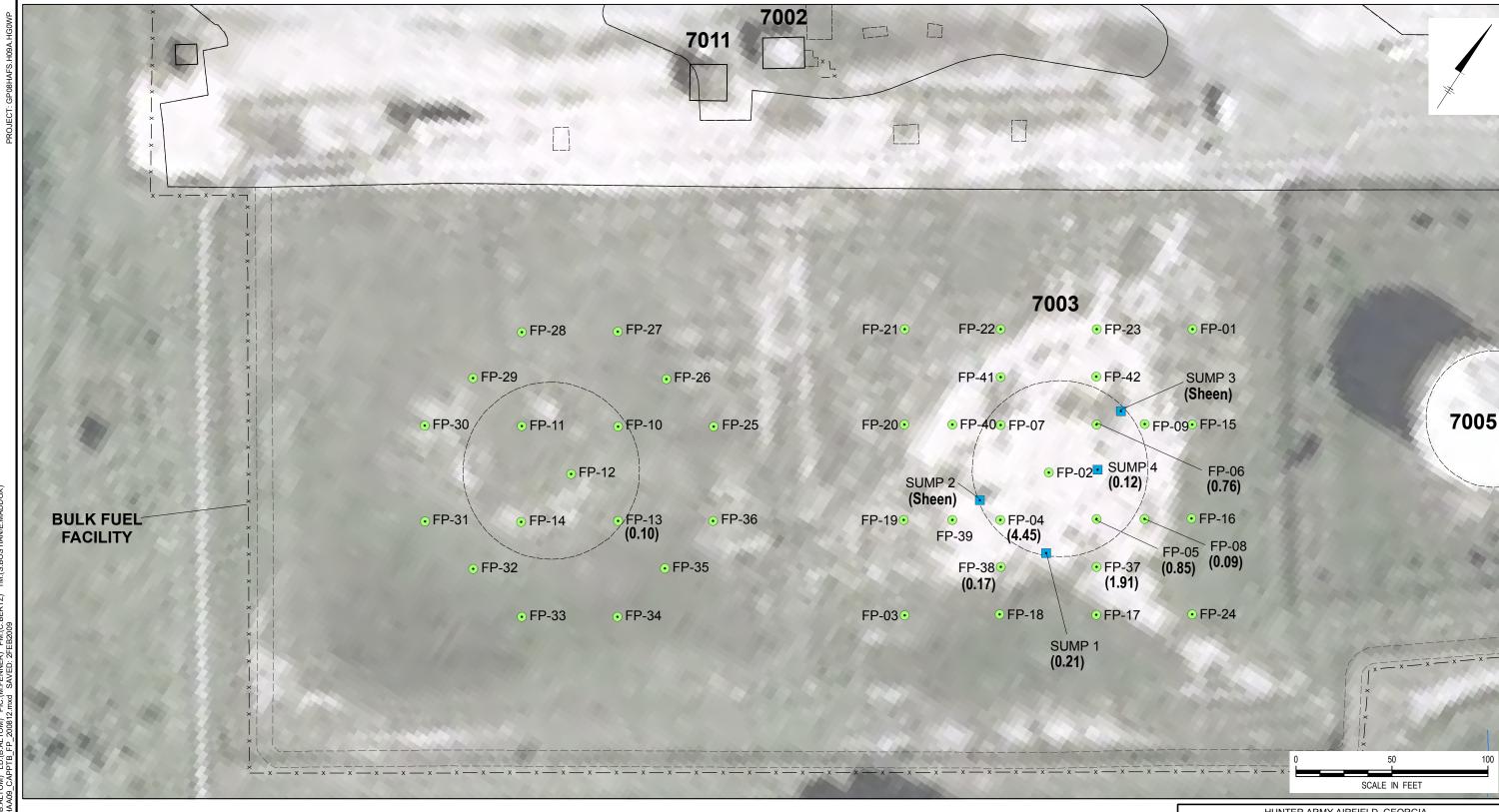
• >100 ppm

FORMER ASTS 7001 AND 7003
BULK FUEL FACILITY (HAA-09 – RELEASE #3)
CORRECTIVE ACTION PLAN – PART B

PID Results from Free-Product Monitoring Locations



FIGURE



Sum

Free-Product Monitoring Point

(0.10) Free-Product Thickness (ft)

HUNTER ARMY AIRFIELD, GEORGIA FORMER ASTS 7001 AND 7003 BULK FUEL FACILITY (HAA-09 – RELEASE #3) CORRECTIVE ACTION PLAN – PART B

Free-Product Thickness at Monitoring Points (December 2008)



FIGURE

LEGEND:

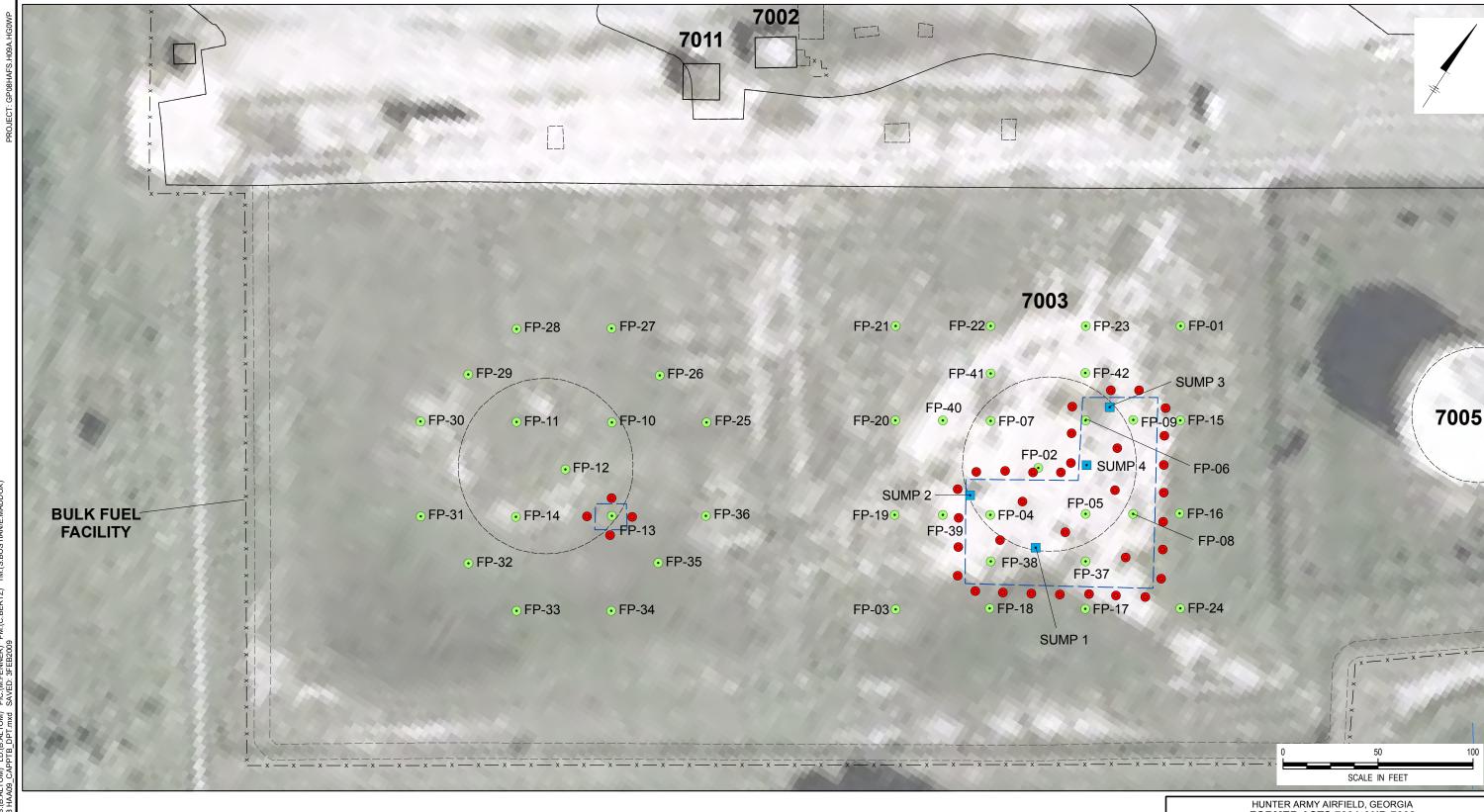
Proposed Monitor Well

HUNTER ARMY AIRFIELD, GEORGIA FORMER ASTS 7001 AND 7003 BULK FUEL FACILITY (HAA-09 – RELEASE #3) CORRECTIVE ACTION PLAN – PART B

Proposed Monitor-Well Locations



FIGURE



LEGEND:

Sum

• Free-Product Monitoring Point

Proposed Initial Geoprobe Sample Point (Subsequent points will be moved in or out based on results)

Initial Estimate of Free-Product Extent

HUNTER ARMY AIRFIELD, GEORGIA
FORMER ASTS 7001 AND 7003
BULK FUEL FACILITY (HAA-09 – RELEASE #3)
CORRECTIVE ACTION PLAN – PART B

Proposed Direct Push Sampling Locations



FIGURE

LEGEND:

Estimated Extent of Excavation Area (Areas will be adjusted based on DPT sampling results.)

HUNTER ARMY AIRFIELD, GEORGIA FORMER ASTS 7001 AND 7003 BULK FUEL FACILITY (HAA-09 – RELEASE #3) CORRECTIVE ACTION PLAN – PART B

Estimated Excavation Area



FIGURE

HAA-09 Bulk Fuel Facility Schedule Fort Stewart and Hunter Army Airfield

FIGURE 10

ID	WBS	Task Name	Duration	Start	Finish	2008 2009 2010 2011 2012 2012 2011 2012 2013 Qtr 1 Qtr 2 Qtr 3 Qtr 4 Qtr 3 Qtr 4
0	0	HAA 09: BULK FUEL FACILITY	987 days	Mon 10/6/08	Thu 8/23/12	Qu Qu 2 Qu 3 Qu 4 Qu 1 Qu 2 Qu 3 Qu 4 Qu
1	1	Data Evaluation	60 days	Mon 10/6/08	Wed 12/31/08	
2	2	Water Level Measurements	2 days	Mon 12/8/08	Tue 12/9/08	
3	3	HAA 09 CAP Part B	175 days	Fri 1/2/09	Tue 9/8/09	
4	3.1	Prepare Draft HAA 09 CAP Part B	23 days	Fri 1/2/09	Tue 2/3/09	
5	3.2	Army Review of Draft Report	20 days	Wed 2/4/09	Tue 3/3/09	
6	3.3	ARCADIS Revisions	10 days	Wed 3/4/09	Tue 3/17/09	
7	3.4	GAEPD Review of Draft Report	45 days	Wed 3/18/09	Tue 5/19/09	
8	3.5	·	10 days	Wed 5/20/09	Wed 6/3/09	
9	3.6	Army Review of Final Report	20 days	Thu 6/4/09	Wed 7/1/09	
10	3.7		10 days	Thu 7/2/09	Thu 7/16/09	
11	3.8	GAEPD Review of Final Report	45 edays	Thu 7/16/09	Sun 8/30/09	
12	3.9	Regulatory Approval HAA 09 CAP Part B	1 day	Tue 9/8/09	Tue 9/8/09	
13	4	HAA 09 EXCAVATION	57 days	Wed 10/21/09	Wed 1/13/10	
14	4.1	Excavation Mobilization	2 days	Wed 10/21/09	Thu 10/22/09	
15	4.2	Excavation Implementation	45 days	Fri 10/23/09	Tue 12/29/09	
16	4.3	Restoration Completion	5 days	Wed 12/30/09	Wed 1/6/10	
17	4.4	Remedy In Place	0 days	Wed 1/13/10	Wed 1/13/10	
18	5	HAA 09 Annual Monitoring and Reporting	540 days	Mon 7/12/10	Thu 8/23/12	
19	5.1	HAA 09 Annual Monitoring	515 days	Mon 7/12/10	Thu 7/19/12	
20	5.1.1	HAA 09 Annual Monitoring Year 1	5 days	Mon 7/12/10	Fri 7/16/10	
21	5.1.2	HAA 09 Annual Monitoring Year 2	5 days	Wed 7/13/11	Tue 7/19/11	
22	5.1.3	HAA 09 Annual Monitoring Year 3	5 days	Fri 7/13/12	Thu 7/19/12	
23	5.2	HAA 09 Annual Reporting	535 days	Mon 7/19/10	Thu 8/23/12	
24	5.2.1	HAA 09 Annual Reporting Year 1	25 days	Mon 7/19/10	Fri 8/20/10	
25	5.2.2	HAA 09 Annual Reporting Year 2	25 days	Wed 7/20/11	Tue 8/23/11	
26	5.2.3	HAA 09 Annual Reporting Year 3	25 days	Fri 7/20/12	Thu 8/23/12	



Task Duration

Summary

ARCADIS

Appendix A

Historical Analytical Tables – CAP-Part A and B Results (CAP Part B Report for Release #1)

Chatham County, Facility ID: 9-025113*1 Former UST 117, Building 7002 Hunter Army Airfield

TABLE 3a: CAP-PART A GROUNDWATER ANALYTICAL RESULTS (VOLATILE ORGANIC COMPOUNDS)

Sample	Sample	Depth	Date	Benzene	Toluene	Ethylbenzene	Xylenes	Total BTEX
Location	1	(ft BGS)	Sampled	(ug/L)	(Hg/L)	(J/gh)	(µg/L)	(Hg/L)
MW-04	BF0412	8.5 to 12.5	12/03/99	1.0 U	0.33 3	1.0 U	3.0 U	0.33
MW-05	BF0512	8.0 to 12.0	12/03/99	1.0 U	0.51 3	1.0 U	3.0 U	0.51
MW-07	BF0712	6.5 to 10.5	12/02/99	1.0 U	1.0 U	4.4 ==	2.13	6.5
MW-09	BF0912	8.5 to 12.5	12/03/99	1.0 UI	0.42 3	1.4 =	3.0 U	1.82
MW-10	BF1012	6.0 to 10.0	12/02/99	4.8=	0.53 J	÷ 5′6	3.8 ==	18.63
MW-12	BF1212	8.0 to 12.0	12/04/99	1.0 UJ	0.36 J	1.0 UJ	3.0 UJ	0.36
MW-15	BF1512	6.0 to 10.0	12/02/99	0.07	1.0 U	1.0 U	1.3 J	1.3
MW-17	BF1712	3.04 to 12.50	12/08/99	0,44 3	1.0 🖰	2.0=	14.2 =	16.64
MW-20	BF2012	2.2 to 11.70	12/07/99	0.60 3	1.0 U	3.1 =	21.0 =	24.70
MW-21	BF2112	3.4 to 12.9	12/07/99	130 ==	2.8 =	14.7=	710=	857.50
MW-22	BF2212	2.43 to 11.9	12/07/99	553 =	0.86 J	86.7 =	352 =	992.56
MW-23	BF2312	2.73 to 12.19 12/07/99	12/07/99	1.1 =	1.0 U	0.48 J	1,4 J	2.98
MW-29	BF2912	5.7 to 10.7 01/11/99	01/11/99	1.0 UJ	0.40 3	1.0 UJ	376 J	376.4
Ma	aximum Co	Maximum Contaminant Level ²	el²	5	1,000	700	10,000	NRC
S-uI	tream Wat	In-Stream Water Quality Standard	dard					
	(Chapter	(Chapter 391-3-6.03) ³		71.28	200,000	28,718	NRC	NRC
All	ternate Con	Alternate Concentration Level	Ġ.	634.4	ΑN	ΑN	NA	NRC

Only the samples with detected BTEX concentrations are listed on the table. A complete summary of the groundwater analytical data is provided on Table VIII-A, Appendix VIII.

**U.S.: Environmental Protection Agency maximum contaminant level.

**Georgia Environmental Protection Division (OA FPD) in-stream Water Quality Standards (Chapter 391-3-6.03).

**Refer to Appendix VI for the Atternate Concentration Level (ACL), calculations.

**Refer to Appendix VI for the Atternate Concentration Level (ACL), calculations.

**The total value reported represents the sum of all detected compounds. NOTE

BGS - Below ground surface.
BTEX. Lebrance, clubylebrasene, and xylene.
NA - Not applicable; AGJ, not calculated.
NRC - No regulatory criteria.

Laboratory Qualifiers

U - Indicates the compound was not detected at the concentration reported.

J - Indicates the value for the compound is an estimated value.

JJ - Indicates the compound was not detected at the reported concentration and the concentration was estimated.

- Indicates the compound was detected at the concentration reported.

Bold values exceed the applicable standard.

Indicated values exceed the ACL.

Chatham County, Facility ID: 9-025113*1 Former UST 117, Building 7002 Hunter Army Airfield

TABLE 3a: CAP-PART A GROUNDWATER ANALYTICAL RESULTS' (continued) (VOLATILE ORGANIC COMPOUNDS)

(ugL) (ugL) (ugL) (ugL) (ugL) (ugL) (ugl) (ugg)
0.30 1 1.010 1.000
0.30 J 1.0 U 0.40 J 1.0 U 0.35 J 1.0 U 0.33 J 1.0 U 0.33 J 1.0 U 0.28 J 1.0 U 0.28 J 1.0 U 0.28 J 1.0 U 0.42 J 1.0 U 0.42 J 1.0 U 0.42 J 1.0 U 0.70 J 0.22 J 0.70 J 0.22 J 0.70 J 0.22 J 0.70 J 0.22 J 0.51 J 1.0 U 0.51 J 1.0 U 0.51 J 1.0 U 0.51 J 1.0 U 0.45 J 1.0 U 0.58 J 1.0 U
0.401 1.0 U 0.36 J 1.0 U 0.35 J 1.0 U 0.33 J 1.0 U 0.28 J 1.0 U 0.42 J 1.0 U 0.42 J 0.6 J 0.42 J 1.0 U 0.58 J 1.0 U 0.43 J 1.0 U 0.44 J 0.15 J 0.45 J 1.0 U 0.47 J 0.16 J 0.47 J 0.12 J 0.58 J 1.0 UJ 0.47 J 0.16 J 0.47 J 0.16 J 0.47 J 0.12 J 0.58 J 1.0 UJ 0.47 J 0.12 J 0.58 J 1.0 UJ 0.58 J 1.0 UJ 0.58 J 1.0 UJ 0.12 J
0.35 J 1.0 U 0.33 J 1.0 U 0.38 J 1.0 U 0.37 J 1.0 U 0.28 J 1.0 U 0.28 J 1.0 U 0.42 J 1.0 U 0.70 J 0.2 J 0.70 J 0.0 J 0.51 J 1.0 U 0.51 J 1.0 U 0.52 J 1.0 U 0.53 J 1.0 U 0.43 J 1.0 U 0.44 J 0.15 J 0.45 J 1.0 U 0.47 J 0.16 J 0.47 J 0.16 J 0.47 J 0.16 J 0.48 J 1.0 U 0.47 J 0.16 J 0.48 J 1.0 U 0.47 J 0.16 J 0.47 J 0.16 J 0.48 J 1.0 U 0.47 J 0.16 J 0.48 J 1.0 U 0.47 J 0.16 J 0.47 J 0.16 J 0.60 J 0.12 J 0.58 J 1.0 U 0.60 J 0.12 J 0.58 J 1.0 U 0.60 J 0.12 J 0.60 J 0.12 J
0.35 J 1.0 U 0.80 J 1.0 U 0.31 J 1.0 U 0.37 J 1.0 U 0.28 J 1.0 U 0.28 J 1.0 U 0.42 J 1.0 U 0.42 J 1.0 U 0.42 J 0.6 J 0.67 J 0.6 J 0.61 J 0.0 U 0.58 J 1.0 U 0.58 J 1.0 U 0.58 J 1.0 U 0.44 J 0.15 J 0.44 J 0.15 J 0.44 J 0.15 J 0.44 J 0.15 J 0.44 J 0.15 J 0.45 J 0.0 J 0.60 J 0.10 J
0.33 J 1.0 U 0.80 J 1.0 U 0.31 J 1.0 U 0.28 J 1.0 U 0.28 J 1.0 U 0.42 J 1.0 U 0.42 J 0.16 J 0.42 J 0.16 J 0.70 J 0.16 J 0.55 J 1.0 U 0.55 J 1.0 U 0.44 J 0.15 J 0.44 J 0.15 J 0.44 J 0.15 J 0.44 J 0.15 J 0.45 J 1.0 UJ 0.45 J 1.0 UJ 0.47 J 0.16 J 0.60 J 0.12 J 0.58 J 1.0 UJ 0.60 J 0.12 J 0.58 J 1.0 UJ 0.60 J 0.12 J 0.58 J 0.10 J 0.60 J 0.12 J 0.58 J 0.10 J 0.60 J 0.12 J 0.58 J 0.0 UJ 0.60 J 0.12 J 0.58 J 0.0 UJ 0.70 J 0.12 J 0.58 J 0.0 UJ 0.70 J 0.12 J 0.70 J 0.12 J
0.86) 1.0 U 0.31 J 1.0 U 0.28 J 1.0 UJ 0.42 J 1.0 UJ 0.42 J 1.0 UJ 0.42 J 1.0 UJ 0.70 J 0.16 J 1.0 UJ 0.79 J 1.0 UJ 0.51 J 1.0 UJ 0.56 J 0.44 J 0.46 J 1.0 UJ 0.45 J 1.0 UJ 0.58 J 1.0 UJ 0.58 J 1.0 UJ 0.58 J 1.0 UJ 0.70 J 0.12 J 0.70 J 0.12 J 0.70 J 0.12 J 0.70 J 0.12 J
0.31 1 1.0 U 0.37 1 1.0 U 0.28 1 1.0 U 0.42 1 1.0 U 0.44 1 1.0 U 0.79 1 1.0 U 0.51 1 1.0 U 0.47 1 0.15 1 0.47 1 0.15 1 0.47 1 0.15 1 0.47 1 0.15 1 0.58 1 1.0 U 0.47 1 0.15 1 0.50 1 0.15 1 0.58 1 1.0 U 0.47 1 0.15 1 0.58 1 1.0 U 0.58 1 1.0 U
0.28.7.1 1.0 U 0.28.1 1.0 U 0.42.1 1.0 U 0.44.1 1.0 U 0.70.1 0.22.1 0.42.7 0.16.1 0.70.1 1.0 U 0.51.1 1.0 U 0.51.1 1.0 U 0.58.1 1.0 U 0.44.1 0.15.1 0.44.1 0.15.1 0.44.1 0.15.1 0.44.1 0.15.1 0.44.1 0.15.1 0.44.1 0.15.1 0.58.1 1.0 U 0.47.1 0.16.1 0.48.1 1.0 U 0.47.1 0.16.1 0.48.1 1.0 U 0.47.1 0.16.1 0.47.1 0.16.1 0.47.1 0.16.1 0.47.1 0.16.1 0.47.1 0.16.1 0.47.1 0.16.1 0.47.1 0.16.1 0.47.1 0.16.1
0.28 J 1.0 UJ 0.28 J 1.0 UJ 0.42 J 1.0 UJ 0.42 J 1.0 UJ 0.42 J 1.0 UJ 0.42 J 1.0 UJ 0.58 J 1.0 UJ 0.58 J 1.0 UJ 0.58 J 1.0 UJ 0.58 J 1.0 UJ 0.44 J 0.15 J 0.60 J 0.10 J 0.58 J 1.0 UJ 0.60 J 0.10 J 0.58 J 0.0 J 0.12 J 0.58 J 0.70 J 0.12 J 0.56 J 0.15 J 0.70 J 0.12 J 0.56 J 0.12 J 0.70 J 0.70 J 0.12 J 0.70 J 0.7
0.28.1 1.0 U.1 0.42.1 1.0 U.0 0.04.1 1.0 U.1 0.42.1 0.16.1 1.0 U.1 1.0 U.1 0.58.1 1.0 U.1 0.58.1 1.0 U.1 0.48.1 1.0 U.1 0.58.1 1.0 U.1
0.42
0.44
0.70 J 0.22 J 0.42 J 0.42 J 0.10 U 0.79 J 1.0 U 0.58 J 1.0 U 0.58 J 1.0 U 0.44 J 0.45 J 0.47 J 0.47 J 0.47 J 0.15 J 0.47 J 0.16 J 0.47 J 0.16 J 0.18 J 0.47 J 0.16 J 0.18
0.421 0.161 1.0U 1.0U 0.511 1.0U 0.581 1.0U 0.581 0.441 0.461 0.111 0.471 0.161 0.471 0.161 0.471 0.161 0.471 0.161 0.601 0.101 0.581 1.0U 0.581 1.0U 0.581 0.121 0.581 0.121 0.581 0.121
1.0 U
0.791 1.0 U 0.51 1.0 UJ 0.581 1.0 UJ 0.563 0.44 J 0.43 1 1.0 UJ 0.43 1 1.0 UJ 0.45 1 0.05 J 0.60 1 0.15 J 0.60 1 0.12 J 0.70 1 0.12 J 0.58 1 1.0 UJ 0.70 1 0.12 J 0.58 1 1.0 UJ 0.70 1 0.12 J 0.58 1 1.0 UJ 0.70 1 0.12 J 0.58 1 0.0 UJ 0.58 1 0.0 U
0.58.1 1.0 UJ 0.58.1 1.0 UJ 0.56.1 0.44.1 0.45.1 1.0 UJ 0.45.1 0.16.1 0.16.1 0.16.1 0.16.1 0.10.1 0.
0.58 J 1.0 U 0.56 J 0.44 J 0.46 J 0.11 J 0.47 J 1.0 UJ 0.47 J 0.15 J 0.47 J 0.15 J 0.60 J 0.10 J 0.70 J 0.12 J 0.70 J 0.12 J 0.78 J 0.12 J 0.58 J 0.12 J 0.56 J 0.12 J
0.56 J 0.44 J 0.46 J 0.48 J 0.48 J 0.48 J 1.0 UJ 0.47 J 0.16 J 0.44 J 0.15 J 0.44 J 0.15 J 0.10 J 0.35 J 0.12 J 0.58 J 0.12 J 0.58 J 0.12 J 0.56 J 0.15 J 0.
0.46 1 0.11 1 0.04 1 1 0.04 1 1 0.04 1 0.45 1 1.0 UJ 0.44 1 0.16 1 0.05
0.43 J 1.0 UJ 0.45 J 1.0 UJ 0.47 J 0.16 J 0.44 J 0.15 J 0.60 J 1.0 UJ 0.70 J 0.12 J 0.58 J 1.0 UJ 0.78 J 0.12 J 0.78 J 0.12 J
0.45 1 1.0 UJ 0.47 1 0.16 J 0.64 J 0.15 J 0.60 J 0.12 J 0.70 J 0.12 J 0.58 J 1.0 UJ 0.74 J 0.12 J 0.56 J 0.12 J 1.000 700
0.471 0.16 J 0.44 J 0.15 J 0.66 J 1.0 U J 0.70 J 0.12 J 0.58 J 1.0 U J 0.74 J 0.12 J 0.56 J 0.15 J 1,000 700
0.44 J 0.15 J 0.06 J 0.10 J 0.35 J 1.0 UJ 0.70 J 0.12 J 0.74 J 0.12 J 0.56 J 0.15 J 0.56 J 0.15 J 0.56 J 0.15 J 0.
0.60 J 0.10 J 0.10 J 0.35 J 1.0 UJ 0.12 J 0.12 J 0.12 J 0.12 J 0.12 J 0.12 J 0.15 J 0.
0.35 J 1.0 U3 0.70 J 0.12 J 0.58 J 1.0 U3 0.56 J 0.12 J 0.56 J 0.15 J 1.000 700
0.70 J 0.12 J 0.58 J 1.0 UJ 0.74 J 0.12 J 0.56 J 0.15 J 1.000 700
0.58.3 1.0 UJ 0.74.3 0.12.3 0.56.3 0.15.7 1,000 700
0.74 j 0.12 j 0.56 j 0.15 j 1,000 700
0.563 0.15 J
1,000 700
71.28 200,000 28,718 NKC
634.4 NA NA NA

Only the samples with detected BTEX concentrations are listed on the table. A complete summary of the groundwater analytical data is provided on Table Vill-A, Appendix VIII.

*U.S. Environmental Protection A gency maximum contaminant level
*Georgia Environmental Protection A gency maximum contaminant level
*Georgia Environmental Protection Division III is strong the strong of the Protection Division III is strong to the Alternate Concentration Liver (ACLL) calculations.

*The total value reported represents the sum of all detected compounds. NOTE:

NA - Not applicable; ACL not calculated. NRC - No regulatory criteria.

BGS - Befow ground surface. BTEX - Benzene, toluene, ethylbenzene, and xylene.

U - Indicates the compound was not detected at the concentration reported.

1 - Indicates the value for the compound is an estimated value.

11 - Indicates the compound was not detected at the reported concentration and the concentration was estimated.

21 - Indicates the compound was detected at the concentration reported.

22 - Indicates the compound was detected at the concentration reported.

23 - Indicated values exceed the applicable standard.

10 - Indicated values exceed the ACL. Laboratory Qualifiers

Chatham County, Facility ID: 9-025113*1 Former UST 117, Building 7002 Hunter Army Airfield

TABLE 3b: CAP-PART A GROUNDWATER ANALYTICAL RESULTS' (POLYNUCLEAR AROMATIC HYDROCARBONS)

Total PAHs ⁶	(µg/L)	5.8	41.20	2.0	18.30	101.0	NRC		NRC	Can
 Total	8rl)	5	41	2.	18	10	Ż		Ż	Ž
/L)	BDL,									
Detected PAH Compounds (µg/L)	$BD\Gamma_{2}$									
d PAH Corr	BDL									
Detecte	Naphthalene	5.8=	41.20=	2.0 ==	18.30=	101 ==	NRC		NRC	820.0
Date	Sampled	12/02/99	12/02/99	12/07/99	12/07/99	12/07/99	e.j.²	lard		14
Depth	(ft BGS)	6.5 to 10.5	6.0 to 10.0	BF2012 2.2 to 11.70	3.4 to 12.9	MW-22 BF2212 2,43 to 11.93	Maximum Contaminant Level ²	In-Stream Water Quality Standard	(Chapter 391-3-6.03) ³	Alternate Concentration Level
Sample	£	BF0712	BF1012	BF2012	BF2112	BF2212	ximum C	tream Wat	(Chapter	emate Co.
Sample Sample	Location	MW-07	MW-10	MW-20	MW-21 BF2112	MW-22	Ä	S-III-S		ıl A

NOTE

Only the samples with detected PAH concentrations are listed on the table. A complete summary of the groundwater analytical data is provided on Table VIII-A, Appendix VIII.

**J.S. Environmental Protection Agency maximum contaminant level.

**J.S. Environmental Protection Agency maximum contaminant level.

**Dengia Environmental Protection Division (GA EDD) In-stream Water (Mailty Standards (Chapter 391-3-6.03).

**During the CAP-Part A investigation, the ACL was revised based on site conditions. The new calculated ACL is 820.9.

**Refer to Appendix VI for the ACL calculations.

**SBD: - Below detection limit, Refer to Appendix VIII.

**Table VIII-A, for complete list of PAH results.

**The fotal value reported represents the sum of all detected compounds.

BGS - Below ground surface. NRC - No regulatory criteria. PAHs - Polynuclear aromatic hydrocarbons.

Laboratory Qualifiers

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

TABLE 2e: CAP-PART B SOIL ANALYTICAL RESULTS (VOLATILE ORGANIC COMPOUNDS)

Sample	Sample	Depth	Date	Benzene	Toluene	Ethylbenzene	Xvlenes	Total BTEX	TPH-DRO	TPH-GRO
Location	ID	(ft BGS)	Sampled	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
SB-32	BF3211	0.0 to 2.3	11/30/00	0.0016 U	0.00043.1	0.0016 U	0.0047 U	0.00043	0.81 U	0.118 U
SB-33	BF3311	0.0 to 2.1	11/30/00	0.0018 U	0.00079 J	0.0018 U	0.0053 U	0.00079	2.5 U	0.118 U
SB-34	BF3411	0.5 to 2.2	11/30/00	0.0013 U	0.00044 J	0.0013 U	0.0039 U	0.00044	1.4 U	0.113 U
SB-35	BF3511	0.0 to 2.0	11/30/00	0.0019 U	0.00062 J	0.0019 U	0.0056 U	0.00062	41.6 =	0.0644 J
SB-36	BF3611	0.0 to 2.0	11/30/00	0.0039 =	0.0388 ==	0.134 =	1.960 =	2.137	829 ==	1320 =
SB-37	BF3711	0.0 to 3.5	11/30/00	0.0018 =	0.00099 J	0.0064 ==	0.0362 =	0.0454	8.6 =	0.843 ==
SB-37	BF37135	0.0 to 3.5	11/30/00	0.0026 =	0.0012 J	0.0104 =	0.0474 =	0.0616	8.1 =	0.285 ==
SB-38	BF3811	0.0 to 3.4	11/30/00	0.0763 J	0.185 U	1.620 =	4.630 =	6.3263	1660 =	3240.0 J
	/	hold Levels ²	l	0.005	0.400	0.370	20.0	NRC	NRC	NRC
		reshold Levels	3	0.387	12.210	61.850	74.6	NRC	NRC	NRC

Only the samples with detected BTEX concentrations are listed on the table. A complete summary of the soil analytical data is provided in Appendix V. Georgia Department of Natural Resources (GA DNR) Applicable Soil Threshold Levels (i.e., Table A, column 1).

Refer to Appendix VI for the Alternate Threshold Level calculations.

The total value reported represents the sum of all detected compounds. A total is not reported if all the compounds are below the laboratory detection limits.

Duplicate sample.

BGS - Below ground surface. BTEX - Benzenc, toluene, ethylbenzene, and xylene.

NRC - No regulatory criteria.

TPH-DRO - Total petroleum hydrocarbon-diesel-range organics.

TPH-ORO - Total petroleum hydrocarbon-gasoline-range organics.

- <u>Laboratory Qualifiers</u>
 U Indicates the compound was not detected at the concentration reported.
- to indicates the value for the compound is an estimated value.
 UI Indicates the compound was not detected at the reported concentration and the concentration was estimated.
 = Indicates that the compound was not detected at the reported concentration and the concentration was estimated.
 Indicates that the compound was detected at the concentration reported.
 Bold values exceed the applicable standard.

BDL - Below detection limit; volatile organic compounds were not detected above the laboratory detection limit.

TABLE 2d: CAP-PART B SOIL ANALYTICAL RESULTS¹ (POLYNUCLEAR AROMATIC HYDROCARBONS)

									Detec	ed PAH C	ompounds (mg/kg)						
Sample Location	Sample ID	Depth (fi BGS)	Date Sampled	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b) fluoranthene	Benzo(g.h,i) perylene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a.h) anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd) pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAHs ³ (mg/kg)
\$B-36	BF3611	0.0 to 2.0	11/30/00	0.0384 U	0.0384 U	0.0384 U	0.0384 U	0.0384 U	0.0384 U	0.0384 U	0.0384 U	0.0384 U	0.0384 U	0.0384 U	0.457 ≈	0.0384 년	0.0384 U	0.457
SB-37	BF3711	0.0 to 3.5	11/30/00	0.0391 U	0.0391 U	0.0391 U	0.0391 U	0.0391 U	0.0391 U	0.0391 U	0.0391 U	0.0391 U	0.0391 U	0.0391 U		0.0391 U	0.0391 U	0.0224
SB-37	BF37134	0.0 to 3.5	11/30/00	0.0494 =	0.258 ==	0.229 =	0.245 ≈	0.129 ==	0.213 =	0.244 =	0.0505 ==	0.497 =	0.0396 U		0.0396 U	0.0746 ×	0.472 ==	2.582
\$8-38	BF3811	0.0 to 3.4	11/30/00	0.163 U	0.163 U	0.163 U	0.163 U	0.163 U	0.163 U	0.163 U	0.163 U	0.163 U	0.163 U	0.163 U	6.810 ≃	0.163 U	0.163 U	6.810
MW-32	BF321B	2.0 to 3.3	12/01/00	0.0359 U	0.0359 ป	0.0359 U	0.0359 U	0.0359 U		0.0359 U	0.0359 U	0.0359 U	0.0359 U		0.0371 =	0.0359 U	0.0359 U	0.0371 3.016
MW-E13	MW-01-01	0.0 to 2.0	01/11/00	0.086 J	0.740 3	0.0076 U	0.015 ()	0.015 U	0.0076 U			0.970 J	0.180 J	0.0076 U		0.490 J	0.550 J 1.8 J	9 922
MW-E1	MW-01-02	2.0 to 4.0	01/11/00	0.290 J	2.0 J	0.0082 U	0.040 J	0.016 U	0.052 J	0.320 J	0.016 U	3.01	0.620 J	0.0082 U	0.300 J	0.310 J	0.420 J	1.605
MW-E1,	MW-01-033	0.0 to 1.0	01/11/00	0.060 J	0.008 U	0.008 U	0.015 U	0.015 U	0.008 U	0.085 J	0.015 U	0.660 J	0.130 J	0.008 U	0.080 U	0.0079 U	0.0079 U	0.0252
MW-E2'	MW-02-01	0.0 to 2.0	01/11/00	0.0079 U	0.0079 U	0.0079 U	0.015 U	0.017 =	0.0079 U	0.0079 U	0,015 U	0.015 U	0.0079 U	0.0082 =	0.079 U	0.0089 =	0.0073 U	0.0589
MW-E35	MW-03-01	0.0 to 2.8	01/11/00	0.0083 U	0.0083 U	0.020 J	0.016 U	0.016 U		0.0083 U		0.016 U	0.0083 U	0.030 =	0.083 U 0.0084 U	0.0089 U		0.121
MW-E45	MW-04-01	0.0 to 2.0	01/11/00	0.0084 U	0.0084 U	0.0084 U	0.025 =	0.016 U	0.096 J	0.0084 U	0.016 U	0.016 U	0.0084 U		****	0.0084 U	0.0087 U	0.024
MW-E45	MW-04-02	2.0 to 4.0	01/11/01	0.0087 U	9.0087 U	0.0087 U	0.024 ~	0.017 U		0.0087 U	0.017 U	0.017 U	0.0087 U	0.0087 U	0.0087 U	0.0087 U	0.0087 U	0.155
MW-E53	MW-05-01	0.0 to 2.0	01/11/00	0.0078 U		0.0078 U		0.023 J		0.0078 L	0.015 U	0.040 ≈	0.0078 U	0.0078 U	0.078 U	0.0078 U	0.092 J	0.133
MW-E5	MW-05-02	2.0 to 4.0	01/11/00	0.0085 U	0.0085 U	0.0085 U	0.016 U	0.016 U	0.240 =	0.0085 U	0.016 U	0.016 (0.0085 U	0.0085 U	0.085 U			0.240
	Applicable	Standards ²		NΑ	NA	0.660	0.820	NA	1.6	0.660	1.5	NA	NA	0.660	NA_	NA	NA	NRC

NOTES: ¹Only the samples with detected PAH concentrations are listed on the table. A complete summary of the soil analytical data is provided in Appendix V.

²Georgia Department of Natural Resources (GA DNR) Applicable Soil Threshold Levels (i.e., Table A, column 1).

³The total value reported represents the sum of all detected compounds.

*Duplicate sample.

*Soil boring installed by Earth Tech.

BDL - Below detection limit; PAH compounds were not detected above the laboratory detection limit.

BGS - Below ground surface.

NA - Not applicable, the health-based threshold level exceeds the expected soil concentration under free-product conditions.

Laboratory Qualifiers

- U Indicates the compound was not detected at the concentration reported.

 J Indicates the value for the compound is an estimated value.

 UJ Indicates the compound was not detected at the reported concentration and the concentration was estimated.

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

 Bold values exceed the applicable standard.

NRC - No regulatory criteria. PAHs - Polynuclear aromatic hydrocarbons.

Chatham County, Facility ID: 9-025113*1 Former UST 117, Building 7002 Hunter Army Airfield

TABLE 3c: CAP-PART B GROUNDWATER ANALYTICAL RESULTS' (VOLATILE ORGANIC COMPOUNDS)

												*****															 5
Total BTEX	(µg/L)	0.21	10.99	15.8	15.73	0.58	0.79	1.85	12.5	12.7	1003.7	696.7	107.23	225.75	1.0	0.94	0.36	1.44	0.30	0.78	0.29	1.2	40.8	NRC		NRC	NRC
Xylenes	(µg/L)	3.0 U	3.0 U	2.9 J	3==	3.0 U	0.64 J	1.6 J	7.3 ==	7.7=	734 ==	662 =	106 ≔	115=	3.0 U	3.0 U	0.36 J	0.45 3	3.0 U	0.3 J	3.0 U	0.36 J	= 0.61	10,000		NRC	ž
Ethylbenzene	(µg/L)	0.21 J	= 6.9	10.1 =	= 6.6	0.18 J	0.15 U	0.25 J	2.1 =	2.3 =	17.4 =-	128.0 =	0.88 J].[=	1.0 U	1.0 U	Ω01	0.99 J	1.0 U	1.0 U	1.0 U	0.28 J	17.2 =	700		28,718	NA A
Toluene	(µg/L)	1.0 U	0.29 3	0.4 J	0.63 J	0.4 J	1.0 U	1.0 U	1.0 U	1.0 U	1.3 ==	5.7=	1.0 U	0.65 J	1.0 U	1.0 U	1.0 U	1.0 U	0.3 3	0.48 J	0.29 J	0.27 3	1.0 ==	1,000		200,000	NA
Benzene	(µg/L)	1.0 U	3.8 =	2.4=	2.2 ==	1.0 U	1.0 U	1.0 U	 	2.7=	251 =	174=	0.35 J	109 J	1.0=	0.94 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.29 J	3.6 =	S		71.28	634.4
Date	Sampled	12/02/00	12/02/00	12/02/00	12/02/00	12/02/00	12/02/00	12/02/00	12/03/00	12/03/00	12/02/00	12/02/00	12/03/00	12/01/00	12/01/00	12/01/00	12/01/00	12/01/00	12/02/00	12/02/00	12/02/00	12/02/00	12/02/00	cl²	dard		ej.
Depth	(fi BGS)	2.9 to 12.4	2.9 to 12.4	2.3 to 11.8	2.3 to 11.8	2.3 to 11.8	2.7 to 12.2	3.0 to 12.5	2.2 to 11.7	2.2 to 11.7	3.4 to 12.9	2.4 to 11.9	2.0 to 11.5	1.4 to 11.0	1.6 to 11.2	1.6 to 11.2	3.1 to 13.3	4.6 to 14.6	3.94 to 13.94	4.4 to 14.4	4.4 to 14.4	4.6 to 14.6	4.8 to 14.8	Maximum Contaminant Level ²	In-Stream Water Quality Standard	(Chapter 391-3-6.03) ³	Alternate Concentration Level
Sample	`≙	BF0722	BF0922	BF1022	BF1024	BF1122	BF1622	BF1722	BF2022	BF2024	BF2122	BF2222	BF2922	BF3222	BF3322	BF33246	BF3422	BFE122	BFE222	BFE322	BFE324	BFE433	BFE522	aximum Cc	tream Wate	(Chapter	ternate Cor
Sample	Location	MW-07	MW-09	MW-10	MW-10	MW-11	MW-16	MW-17	MW-20	MW-20	MW-21	MW-22	MW-29	MW-32	MW-33	MW-33	MW-34	MW-E1	MW-E2	MW-E3	MW-E3	MW-E4	MW-E5	Ŭ	In-S	سعدي	Ą

'Only the samples with detected BTEX concentrations are listed on the table. A complete summary of the groundwater analytical data is provided on Table VIII-B. Appendix VIII.

²U.S. Environmental Protection Agency maximum contaminant level.

³Coorgia Environmental Protection Division (AC EPI) In-stream Water Quality Standards (Chapter 391-3-6.03).

**Refer to Appendix VI for the Altermate Concentration Level.(ACU, calculations.

**The total value reported represents the sum of all detected compounds.

Duplicate sample NOTE:

BGIS - Below ground surface.
BTEX - Buscare, olivene, elitybleorizene, and xylene.
NA - Not applicable; ACL not calculated.
NRC - No regulatory criteria.

Laboratory Qualifiers

U - Indicates the compound was not detected at the concentration reported.

J - Indicates the value for the compound is an estimated value.

JJ - Indicates the compound was not detected at the reported concentration and the concentration was estimated.

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

Bold values exceed the applicable standard.

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Chatham County, Facility ID: 9-025113*1 Former UST 117, Building 7002 Hunter Army Airfield

TABLE 34: CAP-PART B GROUNDWATER ANALYTICAL RESULTS
(POLYNUCLEAR AROMATIC HYDROCARBONS)

Sample	Sample	Depth	Date	Dete	cted PAH C	Detected PAH Compounds (µg/L)	/L)	Total PAHs ⁶
Location	<u>.</u>	(ft BGS)	Sampled	Acenaphthene	Fluorene	Fluorene Naphthalene	Phenanthrene	(µg/L)
MW-07	BF0722	2.9 to 12.4	12/02/00	BDI.	BDE	4.8=	BDL	4.8
MW-09	BF0922	2.9 to 12.4	12/02/00	BDL	BDL	7,1=	BDL	7.1
MW-10	BF1022	2.3 to 11.8	12/02/00	BDL	BDL	23.4 ==	BDL	23.4
MW-10	BF10247	2.3 to 11.8	12/02/00	BDL	BDL	22.2 =	BDL	22.2
MW-11	BF1122	2.3 to 11.8	12/02/00	BDL	BDL	0.64 J	BDL	0.64
MW-20	BF2022	2.2 to 11.7	12/03/00	BDL	TOS	7.8=	BDL	7.8
MW-20	BF20247	2.2 to 11.7	12/03/00	BDL	BDL	7.4 ==	BDL	7.4
MW-21	BF2122	3.4 to 12.9	12/02/00	BDL	BDL	22 =	BDL	22
MW-22	BF2222	2.4 to 11.9	12/02/00	BDL	BDL	528 ==	BDL	528
MW-30	BF3022	1.9 to 11.4	12/03/00	BDL	TOS	0.653	BDL	0.65
MW-31	BF3122	1.5 to 11.0	12/03/00	BDL	TOS	0.58 J	BDL	0.58
MW-32	BF3222	1.4 to 11.0	12/01/00	BDL	BDL	2.0=	BDL	2.0
MW-E1	BFE122	4.6 to 14.6	12/01/00	2.2 =	= †	9.1=	BDL	15.3
MW-ES	BFE522	4.8 to 14.8	12/02/00	0.55 J	= [16.6=	0.73 J	18.88
M	aximum Cor	Maximum Contaminant Level ²	e] ²	NRC	NRC	NRC	NRC	NRC
S-m	Tream Water	in-Stream Water Quality Standard	dard					
	(Chapter	(Chapter 391-3-6) ³		NRC	14,000	NRC	NRC	NRC
Aí	iternate Conc	Aitemate Concentration Level4	el ⁴	NA	NA	820.9	Ϋ́Z	NRC

'Only the samples with detected PAH concentrations are listed on the table. A complete summary of the groundwater analytical data is provided on Table VIII-A, Appendix VIII.

*U.S. Environmental Protection Agency transitium contaminant level.

*Googlis Environmental Protection Division (OA EPD) in-stream Water Quality Standards (Chapter 391-3-6.03).

*Refer to Appendix VI for the Alternate Concentration Level calculations.

*BDL - Below detection limit; PAH compounds were not detected above the laboratory detection limit; Refer to Appendix VIII.

Table VIII-B, for complete list of PAH results.

*Determine the processors the sum of all detected compounds. NOTE

BCS - Below ground surface. NRC - No regulatory criteria. PAHs - Polynucicar aromatic hydrocarbons.

Laboratory Qualifiers

- = Indicates the compound was detected at the concentration reported. J Indicates the value for the compound is an estimated value.

TABLE 4: CAP-PART A/B FREE PRODUCT REMOVAL

	Monit	Monitoring Well Number: MW-221	(W-22 ^t	
Groundwater Elev. (ft MSL)		Product Thickness (ft)	Product Thickness Corrected Water Elev. (ft MSL)	Product Removed (gal)
10.61	4i	0.58'	10.03	0.066
11.30		0	11.30	0
11.40		0	11.40	0
			TOTAI	990 0

NOTE: MSL - Mean sea level.

¹Free product was found in MW-22 only on December 1, 2000. On this date, all product was pumped from the well resulting in the recovery of approximately 0.066 gal. Free product has not been detected in any of the other wells located at this site.

TABLE 8: SOIL DATA RISK-BASED SCREENING RESULTS (continued)

Location	1			SB-34	\$B-35	SB-36	SB-37	SB-37	SB-38	MW-32	MW-33	MW-34
Sample ID	1	Risk-based		BF3411	BF3511	BF3611	BF3711	BF3713 ³	BF3811	BF321B	BF331B	BF341B
Date Collected		Screening	Leaching to	11/30/00	11/30/00	11/30/00	11/30/00	11/30/00	11/30/00	12/01/00	12/01/00	12/01/00
Depth (ft BGS)	Standards	Level"	Groundwater"	0.5 to 2.2	0.0 to 2.0	0.0 to 2.0	0.0 to 3.5	0.0 to 3.5	0.0 to 3.4	2.0 to 3.3	4.0 to 6.2	8.0 to 9.0
VOCs	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Benzene	0.005	104.1	0.0018	0.0013 U	0.0019 U	0.0039 =	0.0018 ==	0.0026 =	0.0763 J	0.0021 U	0.0012 U	0.0015 U
Toluene	0.400	408,800	8.79	0.00044 J	0.00062 J	0.0388 =	J 66000'0	0.00123	0.185 U	0.0018 J	0.0012 U	0.0015 U
Ethylbenzene	0.370	204,400	14.98	0.0013 U	0.0019 U	0.134 =	0.0064 =	0.0104 =	1.620 =	0.0021U	0.0012 U	0.0015 U
Xylenes	20.0	408,800	170.20	0.0039 U	0.0056 U	1.960 =	0.0362 =	0.0474 =	4.630 =	0.0062U	0.0037 U	0.0044 U
TPH-DRO	NRC	**		1.4 ป	41.6 =	829 ≈	8.6=	8.1 #	1660 ≈	0.61 U	2.2 U	1.5 U
TPH-GRO	NRC		**	0.113 U	0.0644 J	1320.0=	0.843 ==	0.285 ≔	3240.0 J	0.190 =	0.124 U	0.118 U
PAHs	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
2-Chloronaphthalene	N/A ³	40,880	0.15	0.0377 U	0.0360 U	0.0384 U	0.0391 U	0.0396 U	0.163 U	0.0359 U	0.0415 U	0.0392 U
Acenaphthene	N/A ²	122,640	104.83	9.0377 U	0.0360 U	0.0384 U	0.0391 U	0.0396 U	0.163 U	0.0359 U	0.0415 U	0.0392 び
Acenaphthylene	N/A ²	61,320	682.90	0.0377 U	0.0360 U	0.0384 U	0.0391 U	0.0396 U	0.163 U	0.0359 U	0.0415 U	0.0392 U
Anthracene	N/A ²	613,200	465.60	0.0377 ∪	0.0360 U	0.0384 U	0.0391 U	0.0494 =	0.163 U	0.0359 U	0.0415 U	0.0392 U
Benzo(a)anthracene	N/A²	7.8	1.46	0.0377 €	0.0360 U	0.0384 U	0.0391 U	0.258 =	0.163 U	0.0359 U	0.0415 U	0.0392 U
Benzo(a)pyrene	0.660	0.78	0.37	0.0377 U	0.0360 U	0.0384 U	0.0391 U	0.229 =	0.163 U	0.0359 U	0.0415 U	0.0392 U
Benzo(b) fluoranthene	0.820	7.8	4.51	0.0377 U	0.0360 U	0.0384 U	0.0391 U	0.245 =	0.163 U	0.0359 U	0.0415 U	0.0392 U
Benzo(g,h,i)perylene	N/A ²			0.0377 U	0.0360 U	0.0384 U	0.0391 U	0.129 =	0.163 U	0.0359 U	0.0415 U	0.0392 U
Benzo(k)fluoranthene	1.6	78.4	45.14	0.0377 ∪	0.0360 U	0.0384 U	0.0391 U	0.213 =	0.163 U	0.0359 U	0.0415 U	0.0392 U
Chrysene	0.660	784	146.09	0.0377 U	0.0360 U	0.0384 U	0.0391 U	0.244 =	0.163 U	0.0359 U	0.0415 U	0.0392 U
Dibenzo(a,h)anthracene	1.5	0.78	1.39	0.0377 U	0.0360 U	0.0384 U	0.0391 U	0.0505 =	0.163 U	0.0359 U	0.0415 U	0.0392 U
Fluoranthene	N/A²	81.760	6254.6	0.0377 U	0.0360 U	0.0384 U	0.0391 U	0.497 =	0.163 U	0.0359 U	0.0415 U	0.0392 U
Pluorene	N/A ²	81,760	135.29	0.0377 U	0.0360 U	0.0384 U	0.0391 U	0.0396 U	0.163 U	0.0359 U	0.0415 U	0.0392 U
Indeno(1,2,3-cd)pyrene	0.660	7.8	12.73	0.0377 U	0.0360 U	0.0384 U	0.0391 U	0.121 =	0.163 U	0.0359 U	0.0415 U	0.0392 U
Naphthalene	N/A ²	40,880	0.15	0.0377 U	0.0360 U	0.457 =	0.0224 J	0.0396 U	6.810 =	0.0371 =	0.0415 U	0.0392U
Phonanthrone ⁴	N/A²	61,320	682.00	0.0377 U	0.0360 U	0.0384 U	0.0391 U	0.0746 =	0.163 U	0.0359 U	0.0415 U	0.0392 U
Pyrene	N/A ²	61,320	682.00	0.0377 U	0.0360 U	0.0384 U	0.0391 U	0.472 =	0.163 U	0.0359 U	0.0415 U	0.0392 U

NOTE: Georgia Department of Natural Resources (GA DNR) Applicables Soil Threshold Levels (i.e., Table A, column 1).

Not applicable; the health-based threshold level exceeds the expected soil concentration under free-product conditions.

Volatile teporting levels were not achieved in the sample due to the inherently high concentration under free-products (TPH-DRO/TPH-GRO) in the sample. Therefore, the concentrations are reported as less than the elevated detection limits.

Duplicate sample.

*Protective of soil exposure during industrial land use.

Protective of groundwater ingestion. Used a dilution attenuation factor of 20.

BGS - Below ground surface.

NRC No regulatory criteria.

PAHs - Polynuclear aromatic hydrocarbons.

Bold values exceed soil threshold levels.

Laboratory Qualifiers

Values based on naphthalene as a surrogate chemical.

*Values based on pyrene as a surrogate chemical.

*THI-DRO - Total petroleum hydrocarbon-dasoline-range organics.

TPH-DRO - Total petroleum hydrocarbon-gasoline-range organics.

VOCs - Volatile organic compounds.

Underlined values indicate results exceeding leaching to groundwater screening levels.

Laboratory Qualifiers

U - Indicates the compound was not detected at the concentration reported.

J - Indicates the value for the compound is an estimated value.

UJ - Indicates the compound was not detected at the reported concentration and the concentration was estimated. = - Indicates the compound was detected at the concentration reported.

TABLE 9: GROUNDWATER DATA RISK-BASED SCREENING LEVELS (continued)

Location			· · · · · · · · · · · · · · · · · · ·	MW-20			1						
Sample ID	Federal			MW-20 BF2012	MW-20 BF2014 ³	MW-21 BF2112	MW-22 BF2212	MW-23 BF2312	MW-24 BF2412	MW-25 BF2512	MW-26 BF2612	MW-27 BF2712	MW-28 BF2812
Date Collected	SDWA			12/ 7/99	12/7/99	12/07/99	12/07/99	12/07/99	12/ 02/99	12/02/99	12/02/99	01/11/99	01/11/99
Depth (fl BGS)	MCL1	IWQS ²	Risk-based"			3.4 to 12.9		2.7 to 12.2			7.2 to 12.2		
VOCs	με/L	µg/L	μg/L	րե/լ	μg/L	μg/L	ug/L	μg/L	ug/L	ur/L	րե/լ	μg/L	μg/L
Benzene	5	71.28	0.36	0.60 J	0.59 /	130 =	553 ≈].]=	1.0 U	1.0 U	1.0 U	1.0.UJ	1.0 U
Toluene	1,000	200,000	750	1.0 U	1.0 U	2.8 =	0.86 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U
Ethylbenzene	700	28.718	1,300	3.1 ≖	3.0 ≃	14.7 =	86.7 =	0.48 J	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U
Xylenes	10.000	NRC	12,000	21.0 =	20.4 =	710=	352 =	1.4 J	3.0 U	3.0 U	3.0 U	3.0 UJ	3.0 U
PAHs	μg/L	μg/L	μg/L	μ <u>ջ</u> /L	րջ/Լ	µ9/L	μg/L	μg/L	րջ/Լ	ug/L	μg/L	μg/L	jig/L
2-Chloronaphthalene*	NRC	NRC	6.5	I.I U	0.95 €	0.95 U	1.0 U	1.0 U	9.9 UJ	9.8 UJ	10.0 U	1.10	1.0 UJ
Acenaphthene	NRC	NRC	365	ULL	0.95 ป	0.95 U	1.0 U	1.0 U	0.99 UJ	0.98 UJ	1.0 U	1.1 U	1.0 UJ
Acenaphthylene	NRC	NRC	182.5	1.1 8	0.95 U	0.95 じ	1.0 U	1.0 U	0.99 UJ	0.98 UJ	1.0 U	1.1 U	1.0 UJ
Anthracene	NRC	110,000	182.5	1.1 ប	0.95 ∪	0.95 U	1.0 U	1.0 U	0.99 UJ	0.98 UJ	1.0 U	1.1 Մ	1.0 UJ
Benzo(a)anthracene	NRC	0.0311	0.092	<u>1.1 U</u>	0.95 U	0.95 U	1.0 U	1.0 U	0.99 UJ	0.98 UJ	1.0 U	1.1 U	1.0.UJ
Benzo(a)pyrene	0.2	0.0311	0.00092	<u>1.1 U</u>	0.95 U	0.95 U	1.0 U	1.0 U	0.99 UJ	0.98 UJ	1.0 U	<u>1.1 U</u>	<u>1.0 UJ</u>
Benzo(b)fluoranthene	NRC	NRC	0.0092	<u> L1 Մ</u>	0.95 U	0.95 U	<u>1.0 U</u>	1.0 U	0.99 UJ	0.98 UJ	1.0 U	<u>1.1 U</u>	1.0 UJ
Benzo(g,h,i)perylene	NRC	NRC		1.19	0.95 U	0.95 U	1.0 U	1.0 U	0.99 UJ	0.98 UJ	1.0 U	1.1 U	1.0 UJ
Benzo(k)fluoranthene	NRC	0.0311	0.92	<u>1.1 U</u>	0.95 U	0.95 U	1.0 U	1.0 U	0.99 UJ	0.98 UJ	1.0 U	<u>1.1 U</u>	1.0 UJ
Chrysene	NRC	0.0311	9.2	1.1 U	0.95 U	0.95 U	1.0 U	1.0 U	0.99 UJ	0.98 UJ	1.0 U	1.1 U	1.0 UJ
Dibenzo(a,h)anthracene	NRC	0.0311	0.0092	1.1 U	0,95 U	0.95 U	1.0 0	1.0 0	0.99 UJ	0.98 UJ	1.0 U	1.1 U	1.0 U3
Fluoranthene	NRC	370	1,460	1.10	0.95 U	0.95 U	1.0 U	1.0 U	0.99 UJ	0.98 UJ	1.0 U	1.1 U	1.0 UJ
Fluorene	NRC	14,000	243	1.10	0.95 ป	0.95 U	1.0 ∪	1.0 U	0.99 ปม	0.98 UJ	1.0 U	1.1 U	1.003
Indeno(1,2,3-cd)pyrene	NRC'	0.0311	0.092	1.1 U	0.95 U	0.95 U	1.0 U	1.0 U	0.99 UJ	0.98 UJ	1.0 U	1,1 U	1.0 UJ
Naphthalene	NRC	NRC	6.5	2.0 =	2.6 =	18.3 =	101 =	1.0 U	0.99 UJ	0.98 UJ	1.0 U	1.1 U	1.0 UJ
Phenanthrene ^e	NRC	NRC	182.5	เมย	0.95 Ų	0.95 U	1.0 U	1.0 U	0.99 UJ	0.98 UJ	1.0 U	1.1 U	1.0 UJ
Pyrene	NRC	11,000	182.5	1.1 ป	0.95 U	0.95 U	1.0 U	1.0 U	0.99 UJ	0.98 ปร	1.0 U	1.1 U	1.0 UJ

NOTE:

- U.S. Environmental Protection Agency Safe Drinking Water Act (SDWA) maximum contaminant level.

 Georgia Environmental Protection Division (GA EPD) In-stream Water Quality Standards (Chapter 391-3-6.03).

 Duplicate sample.

 Protective of tap water ingestion by a resident.

 Values based on naphthalene as a surrogate chemical.

 Values based on pyrene as a surrogate chemical.

 BGIS Below ground surface.

 WW Monitoring well.

 NRC No regulatory criteria.

 Bold values indicate results exceeding Georgia IWQS.

 Laboratory Qualifiers.

 Underlined values indicate results

Laboratory Qualifiers
U - Indicates the compound was not detected at the concentration reported.
J - Indicates the value for the compound is an estimated value.

PAHs - Polynuclear aromatic hydrocarbons.
VOCs - Volatile organic compounds.
VP - Vertical profile.
Underlined values indicate results exceeding risk-based screening levels.

 \overline{U} J - Indicates the compound was not detected at the reported concentration and the concentration was estimated. \approx - Indicates the compound was detected at the concentration reported.

TABLE 9: GROUNDWATER DATA RISK-BASED SCREENING LEVELS (continued)

Location				MW-29	MW-30	MW-30	MW-31	VP-2	VP-2	VP-2	VP-2	VP-2	VP-2
Sample ID	Federal		i	BF2912	BF3012	BF3014 ³	BF3112	BFV212	BFV222	BFV232	BFV242	BFV244 ³	BFV252
Date Collected	SDWA			01/11/99	01/11/99	01/11/99	01/10/99	12/04/99	12/04/99	12/ 04/99	12/04/99	12/04/99	12/04/99
Depth (ft BGS)	MCL'	IMÓ23	Risk-based ^e	5.7 to 10.7	5.9 to 10.9	5.9 to 10.9	5.7 to 10.7	12.0 to 17.0	17.0 to 22.0	22.0 to 27.0			
VOCs	นย/เ	μg/L	με/Ն	μg/L	րջ/Լ	μg/L	ug/L	μg/L	µg/L	ug/L	μg/L	ug/L	μg/L
Benzene	5	71.28	0.36	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0.0	<u>1.0 Ü</u>	<u>1.0 U</u>	0.22 J	0.24 J	1.0 U
Toluene	000,1	200,000	750	0.40 J	1.0 U	1.0 U	1.0 U	0.42 J	1.0 U	0.30 J	0.40 J	0.27 3	0.36 J
Ethylbenzene	700	28,718	1,300	1.0 UI	1.0 ប	1.0 U	1.0 U	1.0 U .	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Xylenes	10,000	NRC	12,000	376 J	3.0 ∪	3.0 U	3.0 ∪	3.0 U	3.0 ∪	3.0 U	3.0 U	3.0 U	3.0 U
PAHs	ng/L	ug/L	<u> </u>	ug/L	μg/L	μg/L.	յւբ/Լ_	ug/L	μg/L	µg/L	րջ/Լ.	με/L .	μg/L
2-Chloronaphthalene"	NRC	NRC	6.5	1.0 UJ	1.0 U	1.0 UJ	1.1 UJ	1.0 U	1.0 U	1.0 U	1.0 U	0.99 U	1.0 U
Accnaphthene	NRC	NRC	365	1.0 UJ	1.0 U	1.0 UJ	1.1 UJ	1.00	1.0 U	1.0 U	1.0 U	0.99 U	1.0 U
Acenaphthylene	NRC	NRC	182.5	1.0 UJ	1.0 U	1.0 UJ	1.1 UJ	1.00	1.0 U	1.0 ∪	1.0 U	0.99 U	1.0 U
Anthracene	NRC	110,000	182.5	1.0 UJ	U 0.1	1.0 UJ	1.1 UJ	1.00	1.0 U	1.0 ∪	1.0 U	0.99 U	1.0 U
Benzo(a)anthracene	NRC	0.0311	0.092	1.0 UJ	1.0 U	1.0 UJ	1.1 UJ	1.0 U	1.0 U	1.0 U	1,0 U	0.99 U	1.0 U
Benzo(a)pyrene	0.2	0.0311	0.00092	1.0 UJ	1.0 U	1.0 UJ	1.1 UJ	1.0 U	<u>1.0 U</u>	1.0 U	1.0 U	0.99 U	<u>1.0 U</u>
Benzo(b)fluoranthene	NRC	NRC	0.0092	1.0 UJ	1.0.11	1.0 UJ	1.1 UJ	1.00	1.0.U	1.0 U	1.0 U	0.99 U	<u>1,0 U</u>
Benzo(g,h,i)perylene	NRC	NRC		1.0 UJ	1.0 U	1.0 U3	1.1 UJ	1.0 U	1.0 U	1.0 U	1.0 U	0.99 U	1.0 U
Benzo(k)fluoranthene	NRC	0.0311	0.92	1.0 UJ	1.0 U	1.0 ().1	1.1 UJ	1.0 U	1.0 U	1.0 U	1.0 U	0.99 U	1.0 U
Chrysene	NRC	0.0311	9.2	1.0 UJ	1.0 U	1.0 UJ	1.1 UJ	1.0 U	1.0 U	1.0 U	1.0 U	0.99 U	1.0 U
Dibenzo(a,h)anthracene	NRC	0.0311	0.0092	1.0 UJ	1.0 U	1.0 UJ	1.1 UJ	1.0 U	1.0 U	1.0 U	1.0 U	0.99 U	1.0 U
Fluoranthene	NRC	370	1,460	1.0 UJ	1.0 U	1.0 UJ	เมเม	1.0 U	1.0 U	1.0 U	1.0 U	0.99 U	1.0 U
Fluorene	NRC	14,000	243	1.0 UJ	1.0 U	1.0 UJ	1.1 U3	1.0 U	1.0 ∪	1.0 U	1.0 U	0.99 U	1.0 U
Indeno(1,2,3-cd)pyrene	NRC	0.0311	0.092	1.0 UJ	1.0 U	1.0 UJ	<u>1.1 UJ</u>	1.0 U	1.0 U	1.0 U	1.0 U	0.99 U	<u>U 0.1</u>
Naphthalene	NRC	NRC	6.5	1.0 UJ	1.0 U	1.0 UJ	1.1 UJ	1.0 U	1.0 U	1.0 U	1.0 U	0.99 ∪	1.0 U
Phenanthrene ^c	NRC	NRC	182.5	1.0 UJ	1.0 U	1.0 UJ	1.103	1.0 U	1.0 U	1.0 U	1.0 ∪	0.99 U	1.0 U
Pyrene	NRC	11.000	182.5	1.0 UJ	1.0 U	1.0 UJ	1.1 U	1.0 U	1.0 U	1.0 U	1.0 U	0.99 U	1.0 U

NOTE:

**U.S. Environmental Protection Agency Safe Drinking Water Act (SDWA) maximum contaminant level.

**Georgia Environmental Protection Division (GA EPD) In-stream Water Quality Standards (Chapter 391-3-6.03).

**Duplicate sample.

**Protective of tap water ingestion by a resident.

**Values based on naphthalene as a surrogate chemical.

**Values based on pryrene as a surrogate chemical.

*BGS - Below ground surface.

**WW - Monitoring well.

**NRC - No regulatory criteria.

**RC - No regulatory criteria.

**Bold values indicate results exceeding Georgia IWQS.

Laboratory Qualifiers.

Underlined values indicate results.

U - Indicates the compound was not detected at the concentration reported.

1 - Indicates the value for the compound is an estimated value.

PAHs - Polynuclear aromatic hydrocarbons.
VOCs - Volatile organic compounds.
VP - Ventical profile.
Underlined values indicate results exceeding risk-based screening levels.

UJ - Indicates the compound was not detected at the reported concentration and the concentration was estimated. \approx - Indicates the compound was detected at the concentration reported.

TABLE 9: GROUNDWATER DATA RISK-BASED SCREENING LEVELS (continued)

Location			<u> </u>	1402 1 ×	1437.10	1.007.10	1437.50	1 1111 20	1637.21	MW-22	MW-23	MW-24	MW-25
Sample ID	Pederal			MW-17 BF1722	MW-18 BF1822	MW-19 BF1922	MW-20 BF2022	MW-20 BF2024 ³	MW-21 BF2122	BF2222	MW-23 BF2322	BF2422	BF2522
Date Collected	SDWA			12/02/00	12/02/00	12/02/00	12/03/00	12/03/00	12/02/00	12/02/00	12/02/00	12/02/00	12/02/00
Depth (ft BGS)	MCL!	IWQS2	Risk-based"		3.4 to 12.9			2.2 to 11.7		2.4 to 11.9	2.7 to 12.2	7.5 to 12.5	3.6 to 13.1
VQCs	ug/L	μg/L	με/Լ	μg/L	µg/L	μg/L	μe/L	ug/L	μe/L	µg/L	ug/L	ug/L	μg/L
Benzene	5	71.28	0.36	1.0 U	1.0 U	1.015	3.1 ≂	2.7 =	251 ==	174 ≍	1.0 U	1.0 ∪	1.0 U
Toluene	1,000	200,000	750	1.0 U	}.3 ==	5.7 ∞	1.0 U	1.0 U	1.0 U				
Ethylbenzene	700	28,718	1.300	0.25 J	1.0 U	1.0 U	2.1 =	2.3 =	[7.4 ==	128 ==	1.0 U	1.0 U	1.0 U
Xylenes	10,000	NRC	12,000	1.63	3.0 U	3.0 €	7.3 ≈	7.7 =	734 =	662 ≃	3.0 U	3.0 U	3.0 U
PAHs	με/Լ_	μg/L	µg/L	μg/L	μg/ L	μg/L	μg/L	ug/L	μg/L	µg/L	μg/L	րջ/Լ	µg/L
2-Chloronaphthalench	NRC	NRC	6.5	1.0 U	1.0 U	0.98 U	0.99 U	1.0 U	1.0 U	19.0 U	0.95 U	0.96 U	0.98 U
Acenaphthene	NRC	NRC	365	1.0 U	1.0 U	0.98 ป	0.99 U	1.0 U	1.0 U	19.0 U	0.95 U	0.96 U	0.98 U
Acenaphthylene	NRC	NRC	182.5	1.0 U	1.00	0.98 ป	0.99 ∪	1.0 U	1.00	, 19.0 U	0.95 U	0.96 U	0.98 U
Anthracene	NRC	110,000	182.5	1.0 U	1.0 U	0.98 U	0.99 U	1.0 ∪	1.0 U	19.0 U	0.95 U	0.96 U	0.98 U
Benzo(a)anthracene	NRC	0.0311	0.092	1.0 U	1.0 U	0.98 U	0.99 U	1.0 U	1.0 U	19.0 U	0.95 U	<u>0.96 U</u>	0.98 U
Benzo(a)pyrene	0.2	0.0311	0.00092	1.0 U	1.0 U	<u>0.98 U</u>	0.99 U	1.0 U	<u>U.0.1</u>	19.0 U	0.95 U	0.96 U	0.98 U
Benzo(b)fluoranthene	NRC	NRC	0.0092	1.0 U	1.0 U	0.98 U	0.99 U	1.0 U	1.0 U	19.0 U	0.95 U	0.96 U	0.98 U
Benzo(g,h,i)perylene	NRC	NRC		1.0 U	1.0 U	0.98 U	0.99 U	1.0 €	1.0 ម	19.0 U	0.95 U	0.96 U	0.98 ∪
Benzo(k)fluoranthene	NRC	0.0311	0.92	1.0 U	1.0 U	0.98 U	0.99 U	1.0 U	1.0 U	19.0 U	0.95 U	0.96 U	0.98 U
Chrysene	NRC	0.0311	9.2	1.0 U	1.0 U	0.98 U	0.99 U	1.0 U	1.0 U	19.0 U	0.95 U	0.96 U	0.98 U
Dibenzo(a,h)anthracene	NRC	0.0311	0.0092	1,0 U	1.0 U	0.98 U	0.99 U	1.0 U	1.0 U	19.0 U	0.95 U	0.96 U	0.98 U
Fluoranthene	NRC	370	1,460	1.0 U	1.0 U	0.98 U	0.99 U	1.0 U	1.00	19.0 U	0.95 U	0.96 U	0.98 U
Fluorene	NRC	14.000	243	1.0 U	1.00	0.98 U	0.99 U	1.0 U	1.0 U	19.0 U	0.95 U	0.96 U	0.98 U
Indeno(1,2,3-cd)pyrene	NRC	0.0311	0.092	<u>U 0.1</u>	1.0 U	0.98 U	0.99 U	1.0 U	1.0 U	19.0 U	0.95 U	0.96 U	0.98 U
Naphthalene	NRC	NRC	6.5	1.0 U	1.0 U	0.98 U	7.8 ≃	7.4 =	22=	528 ≃	0.95 U	0.96 U	0.98 U
Phenanthrenc'	NRC	NRC	182.5	1.0 บ	1.0 U	0.98 บ	0.99 U	1.0 U	1.0 U	19.0 U	0.95 U	0.96 U	0.98 U
Pyrene	NRC	11.000	182.5	1.0 U	1.0 U	0.98 U	0.99 U	1.0 U	1.0 U	19.0 U	0.95 U	0.96 U	0.98 U

NOTE:

U.S. Environmental Protection Agency Safe Drinking Water Act (SDWA) maximum contaminant level.

*Georgia Environmental Protection Division (GA EPD) In-stream Water Quality Standards (Chapter 391-3-6.03).

*Duplicate sample.

*Values based on naphthalene as a surrogate chemical.

*Values based on pyrene as a surrogate chemical.

*Georgia Environmental Protection Division (GA EPD) In-stream Water Quality Standards (Chapter 391-3-6.03).

*Values based on partner as a surrogate chemical.

*Georgia Environmental Protection Division (GA EPD) In-stream Water Quality Standards (Chapter 391-3-6.03).

*PAHs - Polymuclear aromatic hy VOCs - Volatile organic composition (VP - Vertical profile.

*Values based on pyrene as a surrogate chemical.

*VAL

U - Indicates the compound was not detected at the concentration reported.

J - Indicates the value for the compound is an estimated value.

PAHs - Polynuclear aromatic hydrocarbons. VOCs - Volatile organic compounds. VP - Vertical profile. Undertined values indicate results exceeding risk-based screening levels.

U3 - Indicates the compound was not detected at the reported concentration and the concentration was estimated. π - Indicates the compound was detected at the concentration reported.

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Appendix B

Documented Calculations of Aquifer Characteristics (CAP Part A Report for Release #1)

1.0 OTHER GEOLOGIC AND HYDROGEOLOGIC DATA

The following information is presented to provide supplemental information to Appendix X (Site Ranking Form) of the Corrective Action Plan (CAP)-Part A form and provides detailed information relating to the geologic and hydrogeologic conditions at Hunter Army Airfield (HAAF) to support determinations of groundwater flow pathway(s) or direction(s) and contaminant transport.

1.1 REGIONAL GEOLOGY

Southeast Georgia is located within the Coastal Plain Physiographic Province of the Southeast United States (Clark and Zisa 1976). In this region, the thickness of southeastward dipping, subsurface strata ranges from 0 feet at the fall line, located approximately 350 miles inland from the Atlantic coast, to approximately 4,200 feet below land surface (BLS) at the coast. Herrick (1961) provides detailed lithologic descriptions of the stratigraphic units encountered during the installation of water and petroleum exploration wells in Chatham County. The well log of GGS Well 125, located on White Bluff Road, 700 feet west and 0.3 miles north of Buckhalter Road, Savannah, provides one of the more complete lithologic descriptions of upper Eocene, Miocene, and Pliocene to Recent sedimentary strata in Chatham County.

The upper Eocene (Ocala Limestone) section of GGS Well 125 is approximately 225 feet thick and dominated by light-gray to white, fossiliferous limestone. The Miocene section is approximately 250 feet thick and consists of limestone with a 160-feet-thick cap of dark green phosphatic clay. This clay is regionally extensive and is known to occupy the Coosawatchie Formation of the Hawthorn Group (Furlow 1969; Arora 1984; Huddlestun 1988). The interval from approximately 80 feet to the surface is Pliocene to Recent in age and composed primarily of sand interbedded with clay and silt. This section is occupied by the Satilla and Cypresshead Formations (Huddlestun 1988).

1.2 LOCAL GEOLOGY

HAAF is located within the Barrier Island Sequence District of the Coastal Plain Physiographic Province of the Southeast United States (Clark and Zisa 1976). The Barrier Island Sequence District in Chatham and Bryan Counties is characterized by the existence of several marine terraces (step-like topographic surfaces that decrease in elevation toward the coast). These marine terraces, and their associated deposits, are the results of sea level fluctuations that occurred during the Pleistocene Epoch. The surficial (Quaternary) deposits in Chatham and Bryan Counties, in decreasing elevation and age, are part of the Okefenokee, Wicomico, Penholoway, Pamlico, and Silver Bluff terrace complexes (Wilkes et al. 1974; GA DNR 1976; Huddlestun 1988).

HAAF, as well as most of Chatham County, is underlain by the Pleistocene Pamlico Terrace. The Pleistocene Satilla Formation (formerly known as the Pamlico Formation) consists of deposits of the Pamlico Terrace complex and other terrace complexes in the region (Huddlestun 1988). The Satilla Formation is a lithologically heterogeneous unit that consists of variably bedded to non-bedded sand and variably bedded silty to sandy clay. During the Pleistocene, these sand and clay deposits were formed in offshore and inner continental shelf, barrier island, and marsh/lagoonal-type environments (Huddlestun 1988). According to the Geologic Map of Georgia (GA DNR 1976), clay beds of marsh origin, which were deposited on the northwest side of the former Pamlico Barrier Island complex, exist in the western quarter of HAAF. Very fine- to

coarse-grained sand deposits of barrier island origin are more common throughout the remaining areas of HAAF.

Based on the coring and sampling of unconsolidated strata at HAAF during the CAP-Part A investigations, it is concluded that all former underground storage tanks (USTs) were buried within the Satilla Formation, which is overlain by various soil types. Soil groups at HAAF include the Chipley, Leon, Ellabelle, Kershaw, Pelham, Albany, Wahee, and Ogeechee (Wilkes et al. 1974).

1.3 REGIONAL AND LOCAL HYDROGEOLOGY

The hydrogeology in the vicinity of HAAF is mostly influenced by two aquifer systems. These are referred to as the Principal (Floridan) Aquifer and the Surficial Aquifer (Miller 1990). The Principal Aquifer is the lowermost hydrologic unit and is regionally extensive from South Carolina through Georgia, Alabama, and most of Florida. Known elsewhere as the Floridan, this aquifer, approximately 800 feet in total thickness, is composed primarily of Tertiary-age limestone including the Bug Island Formation, the Ocala Group, and the Suwannee Limestone. Groundwater from the Floridan is used primarily for drinking water (Arora 1984). According to Miller (1990), one of the largest cones of depression produced in the Upper Floridan Aquifer exists directly beneath Savannah, Georgia. Net water-level decline in the Floridan system, between the predevelopment period and 1980, exceeded 80 feet beneath Savannah. In addition, according to 1980 estimates, more than 500 million gallons of water per day were withdrawn from the Floridan for public and industrial use in southeast Georgia, more than any other region.

The confining layer for the Principal (Floridan) Aquifer is the phosphatic clay of the Hawthorn Group. There are minor occurrences of aquifer material within the Hawthorn Group; however, they have limited utilization (Miller 1990). The Surficial Aquifer overlies the Hawthorn confining unit.

The Surficial Aquifer consists of widely varying amounts of sand and clay, ranging from 55 to 150 feet in thickness, and is composed primarily of the Satilla and Cypresshead Formations in the Savannah vicinity (Arora 1984). This aquifer is primarily used for domestic lawn and agricultural irrigation. The top of the water table ranges from approximately 2 to 10 feet below ground level (Miller 1990). Groundwater in the Surficial Aquifer system is under unconfined, or water table, conditions. However, locally, thin clay beds create confined or semiconfined conditions, as is the case at HAAF where thin, surficial clay beds are present in the west quadrant (GA DNR 1976).

Groundwater encountered at all the UST investigation sites is part of the Surficial Aquifer system. Based on the fact that all public and non-public water supply wells draw water from the Principal (Floridan) Aquifer, and that the Hawthorn confining unit separates the Principal Aquifer from the Surficial Aquifer, it is concluded that there is no hydraulic interconnection between UST sites (and associated plumes, if applicable) and water supply withdrawal points (Figure X-A).

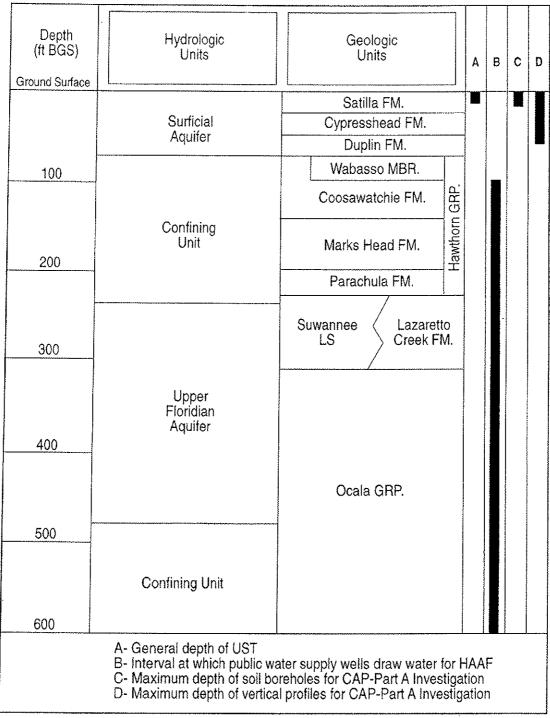
1.4 GEOLOGIC AND HYDROGEOLOGIC CONDITIONS AT THE FORMER UST 117, BUILDING 7002, SITE

According to Wilkes et al. (1974), the soil common at the Bulk Fuel Facility consists of the Chipley-Urban land complex (Cuc). This complex contains 40 to 70 percent Chipley soils and 20 to 40 percent Urban Land soils. The surface layer of this complex is very dark grayish brown to gray, with the underlying layer being olive brown to light yellowish brown mottled with gray.

A seasonal high water table is 15 to 36 inches below the surface. In places, the soil profile has been altered due to the cutting, filing, and grading activities resulting from urban development (Wilkes et al. 1974).

During direct-push sampling events at the Former UST 117 site, three major unconsolidated sediment types were encountered (Figures 4b and 4c, Appendix I). These include: (1) poorly graded sand with silt; (2) clay with silt and sand; and (3) moderately to well graded, clean quartz sand.

Groundwater encountered at the site is part of the Surficial Aquifer System. Based on the fact that all public and non-public water supply wells draw water from the Principal (Floridan) Aquifer, and that the Hawthorn confining unit separates the Principal Aquifer from the Surficial Aquifer, it is concluded that there is no hydraulic interconnection between the Surficial Aquifer (and associated groundwater plumes) located beneath the Former UST 117 site and identified water supply withdrawal points.



31-102797-063

Figure X-A. Generalized Stratigraphy of Chatham County, Georgia

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Appendix C

Soil Boring Logs/Well Construction Diagram MW Installation (CAP Part A for Release #1)

HTRW DRILLING LO)G	Ballan	rali Co	rps	HOU. STABILLY
1 COMPANY NAME	}	2 ORALL SUBCONTRACTOR	Middle +	own	SIGELY SIGETS
HAAF BUCK	Fuel facil	ity "F	ilk Filel	Facilita	
SANGE OF BRILLER JOHN &	biselhoff	6 MANUF.	CTURERS DESIGNATION OF DRE	5400	2
SIZES AND TYPES OF DRELLING AND SAMPLING EOUTPMENT		# HOLE LO		201	
4 x 24 mai	te liners	2 W U V SURFAC	E ELEVATINA 7.3 A		
2/6" Well Joth	ne Vogo.	10 DATES	TTT 2 00	II. DATE COMPLETED	3100
1: OVERBURDEN THICKNESS	Than T.D	15. DEPTH	GROUNDIVATER ENCOUNTERED	1 101	3 99
IN DEPTH DRILLED INTO RUCK	VA		Of Satura		e@ 9.1/86
14 TOTAL DEPTH OF HOLE 12	\$ B65	17. OTHER	UL PLEICE C WATER LEVEL MEASUREMENTS (elay bove 69.	1-Wlupto 5
IN CHOTECHNICAL SAMPLES	DISTURBED	CEBRUTZIGAU	19 TOTAL NUMBER OF CORE 8	OXES	
20 SAMPLES FOR CHEMOCAL ANALYSIS	.1	CTALS OTHER (SPE	1	OTHER (SPECIFY)	21 TOTAL CORE
22. DISPOSITION OF HOLE		SRO/MUIST, PAH TO DRING WELL OTHER (SPE	HINO PAH	ISPECTOR /	RECOVERY .
LOCATION SKETCH/COMMENTS			- Wocker	Jones	40
			SCAL	C.	
		11-			
2	er page	9/-	1 76.5	60 g	
OJECT AND	BFF HAA	40		HOLENO	: : :
		- 711/4			

í		DRILLING	GLOG J		1	, 10	HI STORIO R CO A LA	7 00
rumet 7	A		CUT CTOR	affur I	Smit	1	$\frac{200}{11}$	- 78
10 V L13		IB VCHREEN OF MATERIALA ICI	FIGUS SCRISSING RUSHITA (D)	1	I ANALYTICAL SAMITLI NO		REMARKS (G)	
		1 riss. L	overwe			STAR	+ 1255	E
	\exists	Concrete core		1			H 1300	
	\exists	SC) Clayey Sand	,			1	4. Ø	
1,4	<u>'</u>	the gr. sand	P			1 .	2,8	E 1.4
	=	Slightly moist firm to				[COS S	1.3	E '
	=	104R 3/1 Verydeigry	- ·				of from	
2.7.]	(Sc) clayer Sand mottled in beginning to be mottled in	P				Concrete	Eax
		(color change) dyell	Josh bon.	•				E-2, Ø
-	=		Ø			(20.	depace -3.51365 b.6 Ppm	
7 1.	===	Se clayey Sand (Color) Change)				N.Oc	-3.5 (BG)	E
3.4	3	as above but now Predominantly 104R4/6 dk yellowish brown	B			P:	16 ppm	<u>=</u> 3.8
_		dk yellowish brown	Ψ			(β . Ψ	E
		1/24						
4.4-	١,							E 4,\$
' '	7	((ocor change) ponphish	6	 		Street 30	0	F'/
-		Sc) Clary Dand (color change) peoplesh fine gr sand soft of frm by 4/4 of signify moist	7			FILISH 130	5	
1/4	-1	CD- Lean Clay	<u></u>			RUN <	f. Ø	E
5.7]	firm to hand, dense	Ø			REC.	4. ø	E 5,4
_		high plasticity, moist	,			<i>wss</i>	Ø . I ·	E
	=	trace finegr Sand	Ø			/we a	ester hole =	
6.7	\exists	54311 Venedk				1 12	,φ.,σ.	E60
'		grey mottled w/	./			Meady	Jack	E
	₹,	250 yR414 dive brown	φ		,	4-6	am,	E
7.0		(21090 mottling)	Educy line			@ Ø.1 f	1 6-805	E, /
11.1-].		A A) and	par	= 1 ¢
	10	moitted color gives who are	P			1000	6.1 ppm	E
			nsh V	IK		لق ا	pm pace 6'-8'855 \$.1 ppm	
8.7-		Fine gr Sand firm to	φ	Thrus	B. & 29.1	malytical &	Sample	E 8.0
		hard. Slightly moist	J	12-3 95	BF0411 B, SO1314	START	_	- - -
		low plasticity	Ø		11.15	FINISH		
9.5=	1	104R 3/1 Very dark grey		HS 12355	Water.	RUN	4,8	
9.4	50	1) Suty Sand - Mediacian	a 🔏	Mini	25-712	REC	A'C	<u> </u>
		SATURATED CENTINE !! MONTH	r' P		# BF0412		7.16	- !
Ε,	30	- Clayer Sand firm	· (X		@1320	headsp	12 (pm	
- 1 p. 10 -		moist-singletymoust	sh brown	IV 16	Y		12 pm	= 10.0
•		HAAF-BFF	2.004	1 A - 1 O		000	K d	1.4
		Dr P				1 SB-8	77	

PK	олст	#1	ΛC	BEF	DRILLIN	IG LOG		10-6	7 163	1 VISABLE 56-4	7 0.5
	ELLV IAI	DEMIN (H)	MI -	(2) (2)	MATIRIALS	FTI LD SCRULNING	GEOTI, CHRAMTE ON CORU HOX NO	ANALYTICAL SAMPLE NO			7 99
		11.0	West	5 5481	2nd. Play r. STZ San Il white	A	George Sounds 10-11-Bas #BF0411	Sampling Superied Superied Brank	Į.		
		13.4	Both	not allect	coring core		# 2-3-59	12-399		m of Run3	[- 2.\$ - 3,\$
							- +		B.0.3,	13,8/B63	14.3
						My	S149				
						2/2/	φ ² '			-	
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			Р ИОЛ.СТ	AAH	F-Bul	k Fuel	V-17 Faciliti	1	SB.	<u>+</u>	-

			DISTRICT					
HTR	W DRILLING LO)G	2	<u> soua</u>	nna	h Co	^ps	1104.000 k
1 PROÆCT	SAIC	***************************************	2 DRAT SCRCOP		AIC-	Mind	Lewo tie	SHEET SHEETS
L	HAAF- BF	<u>-</u> E		4 EOCATO	Bulk	Fuel	facility	
NAME OF	John the	schoff		II .	CTURERS DESIG	CHATION OF DRILL	788	
SIZEN ANT ANTI SAMPL	TOPE: OF FIRELING UNG EQUIPMENT			# HOLE LEG	XTION/	maj)	
4		cries w aceta	te linos	4 SURFACE	ELEVATION	11100		
SC		ng Rodr'- Vell Sowen Cae	ny	10 DATE ST			II. DATE COMPLETED	
12 OVERBUR	CHEN THOCKNESS		\ A		ROUNDWATER	ENCOUNTERED	12-3-	99
IV DEPTH DE	MOSTON THE	en total dog	ofh.	15+	Satura	itid co	rc @ 7.5'	B65.
	EPTH OF HOLE			4,0	0' B65	imped	cafter well	Linst.
	13,\$'	B65		17. OTHER V	VATER LEVEL M	EASUREMENTS (SPE	CIFY)	
7	MCAL SAPPLES # BF \$511	DISTURGED	UNDISTURI	BED)	19 TOTAL NUI	MBER OF CORE BOXE	Å	
	FOR CHELOCAL ANALYSIS BADSIL 3 FBF0512		ETXES	OTHER (SPEC	_	THER (SPECIFY)	OTHER (SPECIFY)	21 TOTAL CORE RECOVERY
22. DISPOSITIO			ORING WELL	OTHER (SPEC	5-M2 STVK	SONATURA OF INSPE	PAHTPIN-DI	SO PN
LOCATIO	ON SKETCH/COMMENTS		× I			ROTTER	1 mus	<u> </u>
EXCATIO	N SKETCH/COMMENTS					SCALE:	NONE	-
×		$-X \rightarrow X$	$\pm \times$		\times	+×+	- X - X	
	P	2 meter T	300 d					
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<u> </u>		$\chi \rightarrow \chi$	<u>/</u> /	Aer	<i>y</i>		gass	
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COUARD	\ \ \ \ \		((())		1661	6/11/17	:(\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	
SHAKE			cecui	((11)	1616	((11/1	1.16(111)	7/11/11
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ROJECT		<u> </u>			!' !			
	HAAF RILL	Fuel Facilit	<u>u</u>			1	OLENO MS	-
ENG FORN	1 5056-R. AUG 94	1 0 januar	<u>~j</u>				Proponer	it CECW-EG)

	1	DRILLING	GLOGIZ	//	7		DOLENDMINE OR - MC	→
PROJECT	MAA		VITICITY DECL	141 1	Smit	4 ;	WIII 2 43	1 7
filly (A)	त्रक सम्बद्ध	IN SCRIPTION MATERIALS (1)	FTI 3.D SCREENING RESCRITS	GEOTT, CITS A MITH TO ONL CONDITION NO	ANALYTICAL SAMPLENO		REMARAN (G)	- '
	2.4	Concete 60- Clayey Sand Med > fine gr. sand, firm > hard, moist nonpasses dr. chine brown 80- Clayey Sand Att fine gr sand w/ lean clay mos.	Sppm Sppm	d)	SAMPI NO	FINIS REC LOS HEA	1940 511: 1945 : 4.0 : 3.4 5: \$.6 \$.6-Convert	1. \$ 2.\$
	37 11	Plean clay mter FIRM > HARD - Sthetly Moist Q.5 4 3/2 builds. greyish brown CD- Cean Clay	Pppm Pppm			Hen	4.2 ppm	E
	١,١	Soft, moist Danse, high plasticity trace and of fine gr. Sand Color is predomine 5y 311 Very dh gruy w) <10% Streeking wi	ppm		5.5	144! 145! (STATE 4. 4.	S: START S: FILVISH WE after welling P O: RUN = O: RUN = O: RUC I LOSS	1. ×
	制	9 5 up 1/1/ 21 2 1	ser & ppm	George III	Cample ASP 1450	-	SAACE 4'-6'865 1. & PPM SPACE 6'-8'B65 15.5 & PPM	16, ×
	\$:p = \frac{1}{50}	Bottom of CoxIna	F Oppm		£.≠	START FINIS	A DIO	814
		PROJECT COPYTERE		N/ 20	10 CC	RUN REC LOSS	COURCE	-9.K -10.6
		HAF Buck Fr	vel to	celeta	ļ	S.R.	-05	,

1/22	DRILLING	GLOG //	(1 ,1		11037 808	411× SB-05	٦ , _
FULL DOMEST	EN WHITHING MATTHUS	PTILID SCRIPTING	The La	mill	Sull? 2	30/3	10
(A) (N)	(C)	RUSIN TS (D)	GEOTE É SAMPLE GRICORU ROX PRI BI	ANALYTICAL SAMPLENO (I)	l (F)	MARKS V (G)	100
11.9	DID SCT COPE COLLECT TO COLLECT TO PUSH TO PUSHALL DIPSTALL JOHN TO THE TOM TO THE			B. & Change in a			19.5
137	13' WE				BIO.B.	13.ØB6S	[]3, <i>j</i> [
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	HAAF - B.F.F	,	IV-21		SB-	Ø5	_

HTRW DRILLING LOG	DISTRICT	Vannah		SE 25/M
SHIC	: DRAL SUBÇO: SA 1	VIRACTOR C		SHEET SHEETS
CAD POSTA BEF HAG		BULK FUEL FA	Curry 11.	VIER AAF
SAME OF DRALER HI ROOT		6 MANUFACTURERS DESIGNATION OF D GLOOP FULL 540	RDI	rese Hal
	4.687 ceach macrack	# HOLE LOCATION	4	<u> </u>
2.25 INCH O.D., & FT LENGTH STEE	INCH ON STEW SCRIFTU L CASING FUR	V SURFACE ELEVATION		
WELL INSTALLATION		TBID 134 SUV		······
12 OVERBURDEN THICKNESS		17/42/99	11 DATE COMPLETED . 7 GZ/9	9
NA		15. DEPTH GROUNDWATER ENCOUNTERE	SATURATED 70	 الخار
NAMES INTO ROCK		16 DEPTH TO WATER AND ELAPSED TIME 5.3 1-7 1345 AF	AFTER DRILLING COMPLETED	(DEPTH VICO
TOTAL DEPTH OF HOLE 13.5 FT BGS.		17. OTHER WATER LEVEL MEASUREMENT	'S (SPECIFY)	
GEOTECHNICAL SAMPLES DISTURB	1	The state of the s		CURTION .
SAMPLES FOR CHEMICAL ANALYSIS & 3TEXPT	N/A PHARDO	PRESERVICE OPERAGE OF THE COMMENT OF	OTHER (SPECIFY)	21 TOTAL CORE
13F 25 11 / BF25 12 1/1 INSPOSITION OF HOLE BACKFILLEI	I / Ø MONTTORING WELL	1 / Ø Ø / / OTHER (SPECIFY) 13. SIGNATURE OF		RECOVERY S
Mentor 4 Well	NAWES	21.4.	Hull	
OCATION SKETCH/COMMENTS		SCA	LE:	
SCENO FOR	a market of the state of	102 2020		
L AST 7007	ALPHANT FOR	AST /W/		
 	× FENCE	X		
↑ \$ 55	25 /MW 25		7	
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F 1	12	7	N	
\$ 11	#			
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V 1	LAMAR CAN			
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	/ N	JOUPEP.		
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)JECT			HOLENO	
BFF, CAP- 4, HU	UTER ARMY	AIRFIELD	5B-Z5/1	1 Mw-7=
FORM 5056-R, AUG 94			(Propose	

(Proponent CECW-EG)

AV AJ	2. —	BEE HHH-09 HAMP IN CHITTHONIS MATERIALS CL. CH, MOIST SOFT ROSTS; AND GRASS, THE CH. FIRM TO HARD, MOIST, FAT CLAY WITH SAND, MODE PLASTICITY IDYR2/I black to ORGANIC RICH NO CECINERY	PREDOCRESHON RESIDENTS ON PRESENTS FS: C.O. HS: Q.O. FS: Q.O. FS: Q.O.	GEOTICH SAMTION ON CORIL HOX NO.	AMAI YTICAI SAMTII NO O1 N/A	STUP : 053 STUP : 0500 RUN: 4.6. RELOV. 3.7 FT
		CH. FIRM TO HARD, MOIST, FAT CLAY WITH SAND, MODE PLASSICITY 10482/1 black to 10483/3 dark to ORGANIC RICH	PAC BRAIN BZ: Q.Q. PS: Q.Q. HS: Q.Q. HS: Q.Q. FS: Q.Q. FS: Q.Q.	NIN	SAMITE NO BY	574RT:0758 5 TOIT 0800 RUN: 4.0.
		10482/1 blick to 10483/3 dark to ORGANIC RICH	FS, Q.Q	N/A	NA	
2		NO.				!
2	, =	recevery		B12561 A		
4		SAME AS ABOVE	82.00 FS:0.4 HS:0.4	GECTECH 514MPLE 3.6-5.6 6825	i/n	STURT: 0803 STOP 6865 RUN: 4.6 FT RECON: 4.6 FT
4		CH - FIRM, MOIST, FHT CHTY WITH SHND, HIGH PLAST, MOTTLED COLOR 104R 3/3 DIMEK BROW - & 164R SII GRAY GRA CH : SOFT, VERY MO	FS:0.4 FS:0.4 HS:0.5 HO. CONT.	NA	8-25041 56-7.6 FT 865 0816 SOIL SHMIRE BF2511	
\$		SHIND (20% Fire graned) SHIND (20% Fire graned) SP. SM: Pourly sort Sand with sitt we 7.5 4R 5/0 GREY SOIL NOT COLLECTE	52: 0.0	NIA	BF298-1 BF2512 7.6-12.6 FT BG; WATER	START . 6815 STOP: 6876
P 60.		FOR DESCRIPTION.			3.1	PUSHING STEEL STREEN FOR WHTER SHMPLE COLLECTION TO 12.0 FT BG15

OICE	car.A.	DRILLI	VG LOG			11011, S12019 12 5 / New - 25	7 /
FILV	CAP-H J	SFF. HHUREN, HHAF	MINICTOR Z Lital			MILLS 30+3	7 4
(4)	4.6	DESCRIPTION OF MATERIALS (C)	FTCLD SCREENING RESULTS (D)	GEOTICE SAMPLE OR CORL BOX NO (E)	ANALYTICAL SAMELLINI (f)	REMARKS (G)	7
		SOIL NOT	NIA	N/A	BF25121	SEE PREMOUS PAGE	10
		COLLECTED	707	10/14	CONT'D	/ce 1100000000000000000000000000000000000	E
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		FOR DESCRIPTION					
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	12 -		N/A	NIA			E
			'			TIME /WATER THE	F-/
]			0900 5.3 FT BGS	F
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			BZ-Q.6	,	Y	START DESIGN	-
Į	/3		100.00	1/A		START COROS	F
ĺ						PUSH ZZ5 INCH	F-/
	3					STEEL CASING TO	F
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	ĺ	CAP. PART A, BFF	HHA-QÂ	HARL		513-25 /mw-25	
		- ''	· · · · · ·	CHOM FIFT	1	212 -1/ LMM-C?	

HTRW DRILLING LO)G	USAC	E - Savo	aunah	HOW. NIMBUR 5B-26/H
SAIC		SAIC	VTRACTOR		SHEET SHEETS
CAP - PART A	BFF HAA-09		A LONGATION	EVEL EACHTER IN	_
NAME OF DEALER ROOT			T A WILLIAM TO LONGER	EVEL FACILITY HAY	1-09 HAA
SIZEN AND TYPES OF DRELLING 3.5 C	ENGTH 1.0 IN O.D	STEEL	# HOLE LOCATION	90BE 5400	
SHUME WLELTION : 4.	TTEN FOREER FOR OFT LENGTH: 7 -14	WATER	SB-ZG		
DAMETER SOIL MACEC			TBD 6	y Surveyor	
			12/02/9	11. DATE COMPLETED 12/02/	57E)
OVERBURDEN THICKNESS			15. DEPTH GROUND	WATER ENCOUNTERED + BGS to Saturated	
N/A			16. DEPTH TO WATE	R AND ELAPSED TIME AFTER DRILLING COMPL	ETED ETED
E TOTAL DEPTH OF HOLE			17. OTHER WATER L	PGS, 35 milliter EVEL MEASUREMENTS (SPECETY)	······
12.5 feet	DISTURBED	UNDISTURI		AL NUMBER OF CORE BOXES	
BF2611		NA	<u>- </u>	14	
BF2611 BF2612	(/)	/ ,	-PBF-18F5EV) 1 / 0	OTHER ISPECT	RECOVERY
CHAPTERING OF HOLE		RING WELL	OTHER (SPECIFY)	13. SIGNATURE OF PISPECTOR Little Hauf	
OCATION SKETCH/COMMENTS	6 MW-26			SCALE: /1-1	CA!
				/ -	80
			∠ GR	ASS / /	
			<u></u>		
	where.		y conca	ETE ROAR	
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CAP - PARTA,	REE ILAA	<u> </u>	٠ ـ ـ ـ ـ ـ ـ ـ ـ ـ ـ ـ ـ ـ ـ ـ ـ ـ ـ ـ	16 HOLENO	<u> </u>
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(Proponent CECW-EG)

wesser 1 .	CAPA 2	DRILLIN				58.26 /MW-26	7 (
MILL (7	- (to) + (eleien	HUTTETTIR THE	thulfeel		MAI Z e + 3	\subset \vdash
(A)	du du	CD CANALTA MICHOLITH IN PROCESSION OF REL	RISTA TO THE RESTANCE OF THE PARTY OF THE PA	GEOTECH SAMPLI GR CONU HOX NO (I')	ANALYTICAL SAMILL NO	REMARKS (G)	1
	- c	L/OH - ORGANIC RICH FOR SOIL , MOIST SOFT GREPATIONAL CONTACT H - FIRM , MOIST FAT CLAY W/ SAND (FINE GRAINE) ORGANIC RICH	BZ=0.0 FS=0.0 HS=0.0	N/A	N/4 3	START: 1242 STOP: 1244 PUN: 4.0 FY RECUVERY: 3.2 FT	
		. — — — GRADATIONAL CON 4- ELASTIC SILT; EE DESCRIPTION BELOW	F5 = 0.0 H5 = 0.8	Nla	BYZG11 1 1.2-3.2 SOIL SAMEN 1248		- 2
	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	No RELOVERY - Elastic Silt	N/4 BZ=0.0	, BFZ6 11 1	NA NA		
	SF W	Sand and clay, Very soft, plastic MOIST 104R 2/2 VERY DAEK BROWN 	FS = 0.00 HS = 0.0	4.Q-6.Q GEOTELH SAMPLE 1255		TART 1245 TOP 1247 PUN: 4.6 FT RECOVERY: 4.8 FT	S
	6	coarse grained said. OVR4/6 Park yellows brown. SHARP CONT. 1/SP FINE GRANED	ts=0.0 HS=0.0	NA NA	N/A		
8	7 - 1	ELL GORTED SAND NTERBEDDED NTERBEDDED NTERBEDDED NTH SATURATED FORE AND (Fine to medium around) DVR1/2 LIGHT GREY GRADATIONAL COUT 2-SM + CLAY			BFZ612 A 7.2-12.2 WATER SAMPLE 1315		- 7.
9		POORLY SORTED FINE SAND SILT INTERSEDDED WITH CLAY LAMINATIONS LIGHT GRAY AND DARK GREEN, WET SOIL NOT COLLECTED FOR DESCRIPTION	13Z=0.0	NA	570 570 1	ART:1255 0 P:1305 PUSHED STEEL SCREEN TO Z.Z FT BGS HND PULLED UP .5 FEET FOR ROUNDWATER	- S. 9.
10	······································	CAP. PART A, BF	IV-1	04	Z Hota	AMPLE COLLECTION NO SB-Z6/MW-Z6	- - - / C

WOULT	(no i	DRILLIN	G LOG			8-26/MW-2	4
HIV	CAP A	BFF 444-09, HAAF	MIN CTOS Stale			MIII 30 F 3	
(A)	10	a'i	FILED SCREENING, RESULTS (D) (DOM)	GEOTICII SAMPLI GR CORLHIIX NII (I.)	ANALYTICAL SAMPLE NO	REMARK:	
		SOIL NET COLLECTED FOR DESCRIPTION	B7:00	NA	BFZ61ZA CONTIO	See previous page	
	12			NA		TIME/WITTER THEGEI 1330/4.85 1340/4.3	<u> </u>
	13	—— (D: ———			NA	1340 4.3 START: 1330 WEN STOP: 1350 ENSTAUCE	
			The state of the s	Joz 199			
]/						
		CAP A, BFF HA	İV-	105		SB-26/MW-26	E_
	1	CAP A REF JA	AM HAR	6	1 10	OLI NO	

l							0	ISTRICT							·							NOU 5
HTRW DR	ULLIN	IG LO	G						>	ava	mh	al	1							11	iou. sr	
GA COMPANY NAME	10		 				1	OSELL NO	BCON	TRACTO	Ŗ									5	HEFT	SHEETS
CA	(P - '	Dank	IA				4 LOCATION									1 0	-3					
SAME OF DRILLER	Roi							BFF HAA · 69 HA						A	+F							
- SIZES AND TYPE: OF	CIRCLING	1-10	0 D/	3.50	ENC	ord		Geoprobe 5400														
ANTINAMPLING EQUIPA	JG FOR	STEE	v 54	zeea	J. Z.	25	oit	STE	EL	5	B-7	7	0	ט ד ע	5106	E OF	8	ERI	۸ /	47	AST	70
4-6	7 LEN	JGTH,	2-12	OD	M	ncr	4 2000	RE		v stre	BO	EVXTI	ion M	Si	WV	eyo	7					
	- Inda								\neg	IS DA	TE STAN	(LEI)			,	- 	11, 0	TE CO	WOUET			
12 OVERBURDEN THOCK	OVERBURDIEN THOCKNESS									15. DE	THUR	יינואטי	VATER	ENCOI	UNTERI		وسول ت		<u> </u>		سي . ه	
13 DEPTH DRALLED INTO	O ROCK		****	~~	-					16. DEF	TH TO					E AFTER				-	NE	
14 TOTAL DEPTH OF HO) [F]				•				\dashv		ER WA	TER LE	VEL M	EASUR	EMENT	2 (ZPEC	FY)		***************************************			
IN GEOTECHNICAL SAN	PLE S		······································	DISTUR	needo		Т.	UNDE	STURB	<u>_ ん</u>		TOTA	U. NI IN	GER O	F CORE	BOXES		<u>.</u>		·		
BF 2 20 SAMPLES FOR CHEM	BF 27 11 AMPLES FOR CHEMOCAL ANALYSIS B INEX									ODJEE (l	/	U A	-								
GF 2711 22. DESPOSITION OF HOLE	BF2711 /BF2712 1/2							Z G WELL		975H 1/	10		- (SPECIF C		OTHER (SPECIFY)				RECOVE	AL CORE
	MW - 27						4TOKIN	G WELL	+-	OTHER (SPECIFY	<u>`</u>	23. \$	IGNAT	URE OF	Til	IU I	A	als	/		
LOCATION SKET	CH/COM)	MENTS	8 8	orn	٥٩	w	AMI	ربی			·······				SCA	LE:	14	/ / ·	: بد	3 Z	1	····
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(Proponent CECW-EG)

ENG FORM 5056-R, AUG 94

PROJECT /	CAD B	DRILLING				100 1 NEMBURS-27] ~
fair.	CAP PART	A BEF HAA-OT HAAF	MILE SCREENING	GIOTI, CH SAMPLE	ANALYTICAL	SIELS ZOF] ;
101		(C)	RESULTATION OF THE PROPERTY OF	OR CONU: HEIX NO	SAMELE NO	(6)	
		No	87:00	NA	NA	START: 1416 STOP: 1417 RUN: 4.0 FT RECOVERY: Q FT	
	3	RECOVERY		NA	NA	NU RECOVERY.	
	CLA VE	1 14 16 616	BZ: O. O \$5: O. O HS: O. O	NA 842411 7	NA BEZTIA	START: 1418 STOP: 1420 RUN: 4.8 FT RECOV: 4.0 FT	
	CH MO	gradational contact FAT CLAY,	FS. Q.Q HS:Q.Q	1425 5.0-7.0 66076CH 5AMPLE	1425 5.0- 40 502L SAMPLE		
	J WE	SP/CH INTERBEDDED LL GRADEN SAND TH POORLY GRADEN D AND SILT,	-	NA	BF2712 1455 7.0-120 FT WATER		7
	gra gra and poor	T. 10 VR 7/1 (Light by) for well ded sand. gray for ly graded sand, e glaveonitic ers present (green).	BE: 0.0	NA ·	SAMPLE	START: 1425 SOIL STOP: 1428 CORE 8-12 RUN: 4.0 FT RECOVER: 4.0 FT START: 1445 STEEL STOP: 1455 SCREEN PUSHED TO 12 FEET FOR WATER SAMPLE	- 8
1.10	PROJ	CAP- PART A, BF	IV- F HAA-00		- X	11013 NO 5B-Z7	- 10

CAT	P-A BFFHAR-OS HADE!	J LOG	F-1 11.11		THE STREET ST-27
om Ki Ph	THE RIPTION OF MATERIALS	- Mu	GUOTICH SANDET	ANALYTICAL	RIMANIX GG
11	SAME AS ABOVE WITH WOOD FRAGMENT	BZ:0.0	NA	BP2112 CONT'D	SEE PREVIOUS PAGE
	CH- FAT CLAY WET GREY GLEY 4/1	BZ:0.0		NA	START: 1525 STOP: 1540 WELL INSTAUED.
13-111111111111111111111111111111111111					
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			111100	·	
					-
		SAME AS ABOVE WITH WOOD FRAGMENT CH - FAT CLAY WET GREY GLEY 4/1 13 13	SAME AS ABOVE WITH WOOD FRAGMENT CH - FAT CLAY WET GREY GLEY 4/1 BZ: 0.0 13	SAME AS ABOVE WITH WOOD FRAMENT CH - FAT CLAY WET GREY GLEY 4/1 BZ: 6-6	SAME AS ABOVE WITH WOOD PRAGMENT CH - FAT CLAY WET GREY GLEY 4/1 BZ: O-C NA AMERICAN MORTHON MORTH

	нТ	RW	DRI	LLI	NG	ro	G					Cisi	RICT:	6	avo	n/)	ah								но. 5	E NUA	3 /	<u> </u>
air, assission		MPANY I				4 I					_	2.0	RILL SL	JBCO!	NTRAC	TOR:	51	II	C						SHEE	<u> </u>	or _/	<u> </u>
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l	1 NA)	ARC TYP	es of o	AKLING (T	F	3"	11/9	refe To	Loci	2 5	(anj	clec	-		8. HO	E FOC	OITA	ł;	Ţ	3/5/	_							
I		STEED AND TYPES OF DARLING STEED AND TYPES OF DARLING STEED AND FOUNDERS ACRE TO THE STEED AND ET												9. SU	RFACE	ELEV	ATION:											
														10. 0/	TE ST	ARTE): //·	-30	1-00	2	11. DA	TE CO	MPLET	red:	-30	<u> 77-</u>	24	
			EN TH	ICKNE	SS		NA								15. DE	этн с	ROUN	IOWAT	ER EN	CCUN	TEREC): 	4,	02				
	13.06	12. OVERBURGEN THICKNESS NA 13. CEPTH CRILLED INTO ROCK									alar li*			16, 06	PTH T	O WA	TER A	10 EL/	PSED	TIME /	AFTER	ORILL	ING C	OMPLE	TED:			
	14 10	TAL CEP	TH CF	HOLE			_ <u>:_¥_£</u>		20				······································		17. 01	HER V	VATER	R LEVE	L MEA	SURE	MENTS	SPE	CIFY):	4 4				
		OTECHN		AMPLI	ES	NA)		ISTUR			Ī	UNDIS	TURB	ED	T,	9. TOT	'AL NU	MBER	CF CC	RE 90	XES	1	14				*****
	18. GE	MES FOR	O-EFIC	AL ANA	Y515	1 1 1		v	юс			سو <u>ت</u> ارج			OTHER I	SPECIF	λı	01	HER (S	ECIFY		отн	ER ISPE	C:FY1		. TOTAL		
							-		EX FILLED		400	TORING	'AVEL I	<u> </u>	OTHER	59#C!#	Y 1	21. SI	GNATU/	TE OF IN	SPECTO	28 D				COVE		
	27 3158	оѕтон С	FHOLE				18		DITE	2	40.4	· CAMO		†									11DA		pyll	1/2	_	
	LOCA	TION	SKET	rch/(COM	MENT	rs	50	ee	10	7 719(2	3				SCALE:			LE:				;				
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OA CHECK BY: Uprumy; COOSTU 14/198

		HTRW DRILL		-61	·····	HULE NUMBER 58-35	ļ
)(EC	r: ·		SPECTOR J	76	T	SHEET / OF	
٧.	DEFTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)	
		Grave-					- -
ĺ		STLTY SAND (SM), 20%, silt, fine grained, dry, huprounded, very silt,	7,3 ppm				
		silt, time grained, dry,	/////				_
	' =	Gray, 104R-5/1					
	=	(1)					-
	;	Clayer SAND (SC), 15%	[-	
	: =	clay, fine grained, moist,					
	Ξ	Drown, (10/2-4/3),					
		motiled with brownish					
		YELLOW, 1048-619					-
***************************************	' 극	SILTY SAND (SM) 20% nut, fine grained, soft, dry, Yellowing Brown, 1048-5/4					
	\exists	Time grained, soff, dry,					_
		,	<u> </u>	<u></u>			
	٠ =	No Recovery				Z WT= AO	
	=						
	=	FAT CLAY (CH). LA					
	, ∃	FAT CLAY (CH), Goff, Wat, Oliva Gray, 54-4/2 mothed with					
	, =	54-4/2 mittal with					=
		Leilow, OTR-1/8					-
		iellow, 107R-118			772447	•	
	•						-
	3,	Godina to LAMON FATCLAN					_
	=======================================	(CA) fine around 254	-				_
	, ∃	(and, Fign), wet, medium					
	目	Ginding to SANDY FATCLAY, (CH), fine grained, 25% (and, Firm, wet, medium planticity, Light Olive					
		6ray, 5Y-6/9					
	#	No Recovery					
	• =	110 NECOULY				Bottom of Hole = 8.0'	
						Vellam of Maja - 8, W	
	, 🗏						
	=						
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<u></u>	• -		TV/_10	1		1	

HTRW DRILLING LOG	OISTRICT:	bavonnah		HOLE NUMBER						
1, COMPANY NAME: SAIC	2 CRILL SUBCO		TC.		SHEET 1 OF 1					
1 PROJECT:		4. LOCATION: HAAF								
S NAME OF DRILLER: M. BESCH	,	6. MANUFACTURERS DESIGNATION OF DRILL POSTABLE GEORGE								
1. SIZES AND TYPES OF DRILLING A MOSAMPLING ECHIPPER ACCEPTAGE ALIPMENT ACCEPTAGE ALIPMENT	der	6. HOLE LOCATION: BFF								
		9. SURFACE ELEV	/ATION:							
		10. DATE STARTED	0:11-30-00	11. DATE COMPLETE	ED: 11-30-00					
12. OVERBUROEN THICKNESS NA			NOWATER ENCOUNTERS	011						
13. DEPTH ORILLED INTO ROCK		16. OEPTH TO WA	TER AND ELAPSED TIME	AFTER DRILLING CO	MPLETED:					
14. TOTAL DEPTH OF HOLE 6.0.		17. OTHER WATER	R LEVEL MEASUREMEN	rs (specify):						
18, GEOTECHNICAL SAMPLES NA DISTURBED	UNCISTURB	ED 19. TOT	TAL NUMBER OF CORE 8	OXES MA						
33 SAMPLES FOR CHEMICAL ANALYSIS VOC		OTHER ISPECIEM	OTHER (SPECIFY)	OTHER ISPECIEM	25. TOTAL CORE					
3. DISPOSMON OF HOLE BACKFILLED VONT		OTHER ISPECIEYS	23. SIGNATURE OF INSPECT	TON Hammin	And hoto					
LOCATION SKETCH/COMMENTS Top Porge	91		SCALE:		.					
720 767300	<i>91</i>									

HTRW DRILLING LOG				HOLE NUMBER								
1. COMPANY NAME: SAIC		2. DRILL SUBCONT	NANNAH RACTOR:		SHEET LOF L							
1 PROJECT:		4.	LOCATION:	HAAF	\mathcal{F}_{v}	ctable						
I NAME OF DRILLER: M. BOLK		d.	MANUFACTURE	RS DESIGNATION OF DR	in Gooksobe	5400						
13 // 0/	accu Gere 600 ate liner	ndler s.										
,		9.	SURFACE ELEV	ATION:		- Conditions						
		10	. DATE STARTE	11-30-00	11. DATE COMPLETE	=0/1-30-ac						
12. OVERBURGEN THICKNESS MA				OWATER ENCOUNTERE	25/							
13. DEPTH DRILLED INTO ROCK		16	. OEPTH TO WA	TER AND ELAPSED TIME	AFTER DRILLING CO	MPLETED:						
14. TOTAL DEPTH OF HOLE	0'	17	. OTHER WATER	I LEVEL MEASUREMENT	s (specify):							
18. GEOTECHNICAL SAMPLES MA	DISTURBED	UNDISTURBED	19, 707	AL NUMBER OF CORE B	OXES NA							
TO SAMPLES FOR CHEMICAL ANALYSIS	BTEX	ETALS OTH	ER ISPECIEM	OTHER ISPECIEM TOH-GRO	OTHER (SPECIEM)	21. TOTAL CORE						
II. DISPOSITION OF HOLE	······································	ORING WELL OTH	ER (SPECIFY)	23. SIGNATURE OF INSPECT	Kenmor	hollotter !						
LOCATION SKETCH/COMMENTS	See Page	. 91		SCALE:		.						
	TTT											

ECT	Γ:	,	SPECTOR TK	GEOTECH	ANALYTICAL	SHEET OF
çı.	(6)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	SAMPLE OR CORE BOX	SAMPLE NO.	(0)
		GRAVEL With Coarse Sand SILTY SAND (SM), 1590 Wilt, fine grained, soft, dry, Dark Brown, 1048-3/9 HC odor No Recovery	15.4 ppm		BF3711	:
		dry, Dark Brown, 1018-38	,			
	1	HC oder		. <u></u>		
		in necovary		•		
	1					
	,	JANDYCLAY (CH), 35% fine and low planticity, Firm, moist, Park Brown, 1818-3/9				
		Girding to CLAY (CH) high				₹W1=3,5'
	4	Grading to CLAY (CH) high planticity, firm, mountains wat, Dark Gray, 1048-4/1,				-
		HC odor				,
	5					
						Bottom of hole = 6.00
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HTRW DRILLING LOG	DISTRICT: Sau	ANIAH			HOLE NUMBER
COMPANY NAME SAIC	2 CRILL SUBCONTRA	CTOR:	IC		SHEET OF
1 PROJECT:	4. LG	CATION:	HAAF		
I NAME OF ORILLER: M. Borck	6. M/	ANUFACTURER	S DESIGNATION OF OR	ILL. Potable	Geolope_
	moler s. H	OLE LOCATION:	BFF		
MO SET	9. 51	JRFACE ELEVA	ITION:		
	10.0	ATE STARTED:	11-30-00	11, DATE COMPLET	TED://-300-00
DEPOSISCEN THICKNESS A/A		···	OWATER ENCOUNTER	ED: 3,4'	
12. OVERBURGEN THICKNESS NA 13. CEPTH DRILLED INTO ROCK	16.0	EPTH TO WAT	ER AND ELAPSED TIME	E AFTER DRILLING C	CMPLETED:
///7	17.0	OTHER WATER	LEVEL MEASUREMEN	TS (SPEC:FY):	
14 TOTAL DEPTH OF HOLE				4/0	
18 GEOTECHNICAL SAMPLES MA DISTURBED	UNCISTURBED		AL NUMBER OF CORE	OTHER (SPECIFY)	21. TOTAL CORE
TO SAMPLES FOR CHEMICAL AMALYSTS VOC BTEX	VETALS OTHER	RISPECIM	OTHER (SPECIFY)	TPH-GRO	AECOVERY
. 3 313703111011 1	TORNO WELL OTHE	R (SPECIEY)	23, SIGNATURE OF INSPEC	Torin _	To the the
LOCATION SKETCH/COMMENTS	<u>'</u>	· · · · · · · · · · · · · · · · · · ·	SCALE:	1-10	.
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TV-18



Proj	ect l	Vame	: H	AA	F	RULK	CUEL				Project Nurr	ber: Earth Tech Wells
Bore	hole	Loca	ation	: Bu	داد	FUEL	A QOTE	<u> </u>	rea	Borehole No. Mw	\$ \	Sheet 1. of
Drilli	ng A	genc	<mark>у:</mark> Д	ربيا	عداه	EEN	VIRONA	イビ ルア	A L	Driller: RICHARD A	λοονεν	
Drilli	ng E	quip	nent			1.1. F				Date Started: (/11/o	O Depth	(feet):
Drilli	ng l	Metho	. J	42Y	1/5	<u>, 2</u>				Date Finished: \////	Depth Bedroo	to ck (feet): ん/A
Drilli	ng F	luid		SIA			_		-	Number of Samples:	Depth	
Com	pleti	on In	lorm	ation	•		•			Borehole Diameter (in): 6/2	Flores	ion
	Γ		amp	via.		Floid /	Analysis	1 .		Logged by: C.E.OWE	ρς	
E ~	-	Ī	,]	T	 	1	L	OG	Checked by:	Date:	
Depth (feet)	Number	Interval	Blow Count	Recovery	Time	FID (ppm) S/B*	PID (ppm) S/B*	Graphic	USCS or Rock Type	Lithologic Descr	ription	Remarks
-	ı	0-2	7	12			527.0		·	FINE TAND, SILT, BROWN TOTAL) V	
-	2.	2,4		24	_		24.0			FINE SAND, TRICE SILT 7,5 YR NY WET	LT. CIRAL	
5 -		-	-	_	_							TO 14
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-		_										
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* S/B = Sample reading / background reading;

NA = not analyzed

Form F



Proje	ict N	lame:	H	AAI	F <u> </u>	BULK F	OEL				Project Numb	er. Early Tech
	orehole Location: BULK FUEL STORAGE AR Irilling Agency: ALLIALICE ENVIRONMENTAL									Borehole No. Mw-	7	Sheet 1. of
Drillir	ıg A	genc	γ: Α ι	المالم	المرد	ミビル	URODA	1671.	IL.	Driller RICHARD M	V3000	
Drillin						obile.				Date Started: (/II/oc	Depth (feet):
Drillir	Drilling Method: 1750 /55									Date Finished: \/(1/o	o k (feet):	
Drillin				۸۱۵					_	Number of Samples:	Depth t	٥ ,
Comp	oletic	on Inf					•			Borehole Dlameter (in): 6/2"	Elevation and Da	
	····					, · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·			Logged by: K.E.OWE		
		S	amp	le		Field A	nalysis	LC	og	Checked by:	Date:	
Depth (feet)	Number	Interval	Blow Count	Явсоивлу	Time	FID (ppm) S/B*	PID (ppm) S/B*	Graphic	USCS or Rock Type	Lithologic Descri		Remarks
	ł	0.2	7 2 4	8.,			3.1			K.FIDE SAMO, SICH, DK. B -7.5483/2 WET	Spom H	Bollene (H PO BOLE
11	て.	2-4	67	74		-	5.0			V. FINE SAND, SICH PIN	LISL GRAY	7
5 -		 	11 - 7. 3	18. 						V.FINE SANS, SILTY, C		
	<u> </u>	<u> </u>	4 -				て. 6			7,742 5/2 WET		STOP TS, AUGEL
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30-	1								<u> </u>			



Proj	ect i	Vame	: }	AA	F	BULK	TOEL			Project Number: Earth Tech
Bore	hole	Loc	ation	: Bu	الد	FUEL	AQOT2	5.C /	rea	Borehole No. Mw 3 Sheet 1. of /
Drilli	ng A	gend	Α ^{:γ:}	LL,	ALIC	e E N	VIRONI	7U3N	A L	Driller: RICHARD MOONEY
Drilli	ng E	quip	meni	:	<u> M</u>	obile 1			Date Started: (/ 1 / OO Depth (feet):	
Drilli	ng l	Meth	od: \	127	9/s	<u></u>	······	·····	Date Finished: \/\(\lambda\) \/\(\lambda\) Depth to Bedrock (feet): \(\mathcal{D}\)/\(\lambda\)	
Drilli	ng F	luid		<u>υ1</u> Δ					Number of Samples: Z Depth to Water (feet): 6	
Com	pieti	on in	form	ation	:		•			Borehole Diameter (in): 6 /2 " Elevation and Datum:
	T	·						,		Logged by: K.E.OWE PS
		5	amp	ole T	·	Field #	naiysis	L.(og	Checked by: Date:
Depth (feet)	Number	Interval	Blow Count	Recovery	Time	FID (ppm) S/B*	PID (ppm) S/B*	Graphic	USCS or Rock Type	Lithologic Description Remarks
	١	٥٠٤	7445	8			11.6	-		TICH SAND, TOME CALVELY V. DADIC CAMI TYRNS MOIST TO
-	2.	2.4	125	2,"			43.4			FINE SAND, SILTY, LT CRAY
5 -	_	-	755	Iz"	_		ر ا ا			FINE SANA, SOME SILT, CRAY
=										STOP SS, AUGER
10 -		-							•	
-										TD 14'
15 -				:						
				<u> </u> 						
-										
20 -										
25 -										
30-									<u> </u>	
Key			S/E	3 = S	ampi	e reading	/ backgro	ound re	ading:	NA = not analyzed Form F.

* S/B = Sample reading / background reading;

NA = not analyzed

Form F



											i		
Proje	Project Name: HAAF BULK FUEL Borehole Location: BULK FUEL STORAGE AREA Borehole No. MW-YE Sheet 1 of 1												
									A	Borehole No. Mw-Y	4	Sheet 1 of	
Drillin	ng A	genc	r: /) LL	LAL	NE E	20180	vive	Driller: RICHARD	Magne	٠		
Drilling Equipment: Mol. 8-59									Date Started: 1/11/6	o Depth	(feet): \U		
Drillia	ng N	/letho	d:	H3.	A /s	<u> </u>			Date Finished: 1/11/0	Depth Bedroo	to *× (feet): しん		
Drillia	ng F	luid	ىر	IA					_	Number of Samples:	Depth Water		
Com	oletic	on inf					•			Borehole Diameter (in): 6 1/2	. Elevati		
										Logged by: K. Z. OL	ज्या <u>अ</u> र्		
		S	amp	le		Fleid A	nalysis	L	OG	Checked by:	Date:		
Depth (feet)	Number	Interval	Blow Count	Recovery	Tlme	FID (ppm) S/B*	PiD (ppm) S/B*	Graphic	USCS or Rock Type	Lithologic Desc	ription	Remarks	
	1	0-2	707	12") BE	::::::::::::::::::::::::::::::::::::::	7.4			FINE SAND, SILT, DK. RE DAMPI SYR'SI4	DOISH BROW	2)	
1	I	L _ :	7677	18.	- -		 Z.6			FILTY CLAY, DK RESSIS	H BROWN	-	
			ユーマ					_		SARVI DANS SIL	I, CLEAT		
5	_	L _	3	12.			0.0			FINE ZANNI ZOME ZILT			
_			אין היואני מיני	14"			e), <i>u</i>			- 21841 PREZYBULZOWS ZICK	,	4	
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* S/B = Sample reading / background reading;

Key

NA = not analyzed

Farm F.



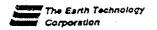
Proje	ber: Earth Tech Wells											
Bore	hole	Loc	ation	: B0	راد	FUEL	<u> </u>	*E_{	rea	Borehole No. Mwぶ	-	Sheet 1 of /
Drilli	ng A	geno	γ: <u>Α</u>	رالما	<u> ملاه</u>	ヒビル	VIRONA	743X	Driller: RICHARD MOONEY			
Drilling Equipment: Mobils 8-57										Date Started: (/11/00	Depth ((feet):
Drillin	ng I	Metho	od: /	42X	1/5	2			Date Finished: \/\(\lambda\)/11/00	Depth t	to k (feet): トル/A	
Drillia	ng F	luid	ļ	۸۱۵	•				Number of Samples: Z	Depth t		
Com	pleti	on in	form	ation			,			Borehole Diameter (in): 6/2"	Elevation and Da	on
<u> </u>						· · · · · · · · · · · · · · · · · · ·				Logged by: K.E.OWEL	20	
		S	amp	le	1	<u> </u>	naiysis	L.C	OG	Checked by:	Date:	
Depth (feet)	Number	Inferval	Blow Count	Recovery	Time	FID (ppm) S/B*	PID (ppm) S/8*	Graphic	USCS or Rock Type	Lithologic Descrip	otion	Remarks
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* S/B = Sample reading / background reading;

NA = not analyzed

Form F.



Proje	ct N	ame:	HA	1 <i>A</i> F	- R	ULK F	OEL			Project Numb	er. Earth Tech wells	
								.E A	Rea	Borehole No. Mw-Y		Sheet 1. of
Drilling Agency: ALLIANCE ENVIRONMENTAL									1	Driller: RICHARD MOODEY		
Drilling Equipment: Mobile 8-59									Date Started: (/\t/o	Date Started: (/ 1 / OO Depth (feet):		
Drilling Method: 1424 /22									Date Finished: \/\(\lambda\)	Depth to	o c (feet):	
Drilling Fluid 61A									Number of Samples: Z	Depth to		
Comp	oletic	n Info					•			Borehole Diameter (in): 6/2	Slovetie	n
										Logged by: K.E.OWE		
		S	amp	e		Fleid A	nalysis	L	OG	Checked by:	Date:	
Depth (feet)	Number	Interval	Blow Count	Явсочелу	Time	FID (ppm) S/8*	PID (ppm) S/B*	Graphic	USCS or Rock Type	Lithologic Desc	ription	Remarks
	-1	0-2	747	12	·		8.7			V.FINE SAND, CICT, BR -7. TYR Y/3 DAMP	برين	
=	2.		2570°L	 24			3.E			V.FILE SAND, SILT, BL 7,548 4/12 DAM	BROWN	
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L ₃₀ - Key	<u>-1</u>		· s/	<u> </u> B = \$	Samp	ole readir	ng / backo	l ground	reading	; NA = not analyze	d	Form F.

*S/B = Sample reading / background reading;

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Appendix D

Water Resources Survey Documentation

Appendix D

Water Resources Survey Documentation

1.0 Local Water Resources

As required by the Georgia Department of Natural Resources (GA DNR) Underground Storage Tank (UST) Corrective Action Plan Guidance (GA DNR 1998), a water resource survey documenting information for public and non-public water supply wells, surface water bodies, underground utilities, and potential receptors was conducted at the Bulk Fuel Facility in 1998 for the CAP Part-A for the Former UST 117, Building 7002. The information presented in this section provides and update the supporting documentation from the previous report.

1.1 Water Supply Well Survey

The water supply well survey was conducted using the following requirements:

- Determine if HAAF is located in an area of average or higher groundwater pollution susceptibility (GA DNR 1976).
- Locate all public supply wells, which exist within a 2 mile radius of the sites being investigated.
- Locate all non-public supply wells that exist within 0.5 miles of the sites being investigated.
- Locate all supply wells nearest and downgradient of the sites being investigated.

To update the previous water supply well survey, the following agencies were contacted: Fort Stewart Directorate of Public Works (FS DPW), the City of Savannah Bureau of Water Operations, and conducting a U.S. Geological Survey (USGS) database search to determine if any water supply wells exist within a 2-mile radius of the Bulk Fuel Facility at HAAF (Figure IV-1). An updated summary is provided below.

1.1.1 Fort Stewart Directorate of Public Works Survey Summary

According to the current FS DPW, nine water supply wells are located within the confines of the HAAF area (Figure IV-1). The pump rate of these well have the potential to provide up to 3,890 gallons per minute (gpm) of water to occupants of the HAAF installation. The FS DPW did not have any information on the company that installed the well, driller's log showing as-built information and subsurface geologic data. The FS DPW provided well locations, pump rates, treatment methods, casing depths, and total depths for eight of the nine wells at HAAF (Table IV-1).

Wells #1 and #2, both public water supply wells located in the cantonment area of HAAF, which is the main water supply system at the HAAF installation. Well 1, located at Building 711 on the corner of Moore Road and Douglass Street, is a 12-inch diameter well with 100-hp turbine pump serving a 100,000-gallon elevated storage tank (Tank 1) through 10-inch lines. Well #2, located at Building 1205

on the corner of Neal Street and Strachan Road, is a 12-inch diameter well with a 100-hp turbine pump serving a 200,000-gallon elevated tank (Tank #2) through 10-inch lines. Water from Well #2 is also injected with 500,000 gallon elevated storage tank (Tank #3) located on Middleground Road behind noncommissioned officer (NCO) family housing. This tank provides potable water to 694 service connections, which are used by an average of at least 5,000 individuals on a yearly basis (SAIC 2001).

Wells #3, #4a, #7 are public supply wells located outside the cantonment area of HAAF. Well #3, is located at Building 8455, is a 4.0-inch diameter well with 1.0-hp turbine pump serving a 1,000-gallon hydropneumatic storage tank through 1.5-inch galvanized steel lines. Water from Well #3 is treated with calcium hypochlorite solution and is consumed by approximately 25 people during daytime on a yearly basis. Well #4A located at Building 8581 at the 117th Air National Guard Facility, is a 4.0-inch diameter well. Pumpage is accomplished with a 0.75-hp turbine pump with 80gpm capacity. Well #4A provides water for approximately 50 people per day on a yearly basis. Well #7 is located at Building 8703 on the Forest River, west of Rio Road. Well #7 is a 4.0-inch well with a 3.0-hp submersible pump serving a 5,000-gallon hydropneumatic tank through 2.0-inch galvanized steel lines. Well #7 serves approximately 500 people, on a part-time basis. Sanitary protection for Wells #3, #4A, and #7 is provided by a pump motor block, concrete slab, sealed well head, and screened casing vent (SAIC 2001).

Based on GA DR criteria Wells #5, #8, #9 are classified as a non-public supply well because it serves potable water to less than 25 occupants per day and it has less than 15 service connections. Well #10 is a non-potable water source that is used to clean the military equipment at the wash-rack facility, see Table IV-1 for well construction details.

1.1.2 City of Savannah Bureau of Water operations Survey Summary

Based on the information provided by the City of Savannah, only water supply well # 25 exists in a 2-mile radius of the Bulk Fuel Facility. The City of Savannah did not have the drillers log, but well construction details are provided on Figure IV-2.

1.1.3 U.S. Geological Survey Summary

A review of the U.S. Geological (USGS) records was performed for wells identified within the search radius to identify well use and well construction information (Table IV-3). A total of 10 water supply wells are located within the 2-mile radius of the Bulk Fuel Facility, three wells are reported as public wastewater treatment facilities.

2.0 Surface Water Bodies

Surface water(s) in the State of Georgia, as defined by *Rules and Regulations for Water Quality Control, Chapter 391-3-6* (GA DNR 1998), shall mean any and all river, streams, creeks, branches, lakes, reservoirs, ponds, drainage systems, springs producing 100,000 gallons per day, and all other bodies of surface water, natural or artificial, lying within or forming a part of the boundaries of the State which are not entirely confined and retained completely upon the property of a single individual, partnership, or corporation.

Surface water at HAAF include Hallstrom Lake, Lamar Canal, Buckhalter Canal, Springfield Canal, Pond 29, and an unnamed pond located at the southeast boundary of the HAAF installation (Figure 1). Several unnamed drainage ditches exist throughout HAAF. Most of the ditches drain southwest into the little Ogeechee River, which is part of the Lower Ogeechee watershed. The remaining drainage ditches located on the east side of the HAAF installation and flow east and eventually drain into the Vernon River, which is located on the southeast of the HAAF installation (SAIC 2001).

Surface water bodies at HAAF and adjacent areas are not used as public water supplies. The ponds and lakes are perennial, whereas most of the drainage ditches are intermittent. Most of the drainage canals and ditches are at least partially enclosed in culverts.

Table IV-3 Water Supply Well Information Provided by USGS CAP-Part B

Former Aboveground Storage Tanks 7001 & 7003 Bulk Fuel Facility (HAA-09) Hunter Army Airfield, Georgia

Agency	Site Number	Site Name	Site Type	Well depth	Hole depth	Year Drilled	Public or Non- Public Supply
USGS	3.20002E+14	36Q287	Well	370	370	1951	Unk
USGS	3.20003E+14	36Q292	Well	375	Unk	Unk	Unk
USGS	3.20017E+14	36Q291	Well	180	Unk	Unk	Unk
USGS	3.20019E+14	36Q284	Well	623	625	1959	Unk
USGS	3.20058E+14	36Q290	Well	300	300	1926	Unk
USGS	3.20103E+14	36Q289	Well	360	360	1958	Unk
USGS	3.20115E+14	36Q286	Well	555	555	1942	Unk
USGS	3.20119E+14	36Q112	Well	508	508	1925	Unk
USGS	3.20145E+14	36Q285	Well	504	504	1940	Unk
USGS	3.2015E+14	36Q164	Well	375	375	1958	Unk
USGS	3.20227E+14	36Q302	Well	540	540	1973	Unk
USGS	3.20243E+14	37Q096	Well	346	346	1936	Unk
USGS	3.20258E+14	37Q033	Well	568	568	1947	Unk
USGS	3.20308E+14	36Q125	Well	341	341	1938	Unk
USGS	3.20314E+14	36Q017	Well	448	476	1953	Unk
USGS	3.20317E+14	37Q175	Well	561	613	1957	Unk

Notes:

USGS - U.S. Geological Survey

Unk - Unknown

Table IV-1 Water Supply Well Information Provided by the Fort Stewart/HAAF DPW CAP-Part B

Former Aboveground Storage Tanks 7001 & 7003 Bulk Fuel Facility (HAA-09) Hunter Army Airfield, Georgia

								Public or
					Pump	Number of		Non-
		Year	Bore	Casing	Rate	Service		Public
Building	Well ID	Drilled	Depth	Depth	(gpm)	Connections	Population	Supply
711	1	1941	550	250	1,300	525	1951	Public
1205	2	1941	600	250	1,300	525	Unk	Public
8455	3	1951	360	40	30	2	Unk	Public
8581	4A	Unk	300	92	80	10	1959	Public
8641	5	1955	380	85	30	Unk	1926	Non-public
8703	7	1980	450	330	70	8	1958	Public
8632	8	1956	370	255	80	5	1942	Non-public
8654	9	Unk	600	255	1,000	Unk	1925	Non-public
8464	10	Unk	Unk	Unk	Unk	N/A	1940	Non-public

Notes:

USGS - U.S. Geologica

Unk - Unknown

N/A - Not Applicable

gpm - gallons per minute

HAAF - Hunter Army Airfield

Table IV-2 Water Supply Well Information Provided by the City of Savannah Bureau of Water Operations CAP-Part B

Former Aboveground Storage Tanks 7001 & 7003 Bulk Fuel Facility (HAA-09) Hunter Army Airfield, Georgia

Well ID	Year Drilled	Bore Depth	Casing Depth	Pump Rate (gpm)	Number of Service Connections	Population ¹	Public or Non- Public Supply ¹
WEII ID			<u> </u>			_	
1	Unk	1006	300	1,362	Unk	Unk	Public
6	Unk	750	240	1,500	Unk	Unk	Public
9	Unk	710	267	2700	Unk	Unk	Public
13	Unk	1000	270	2200	Unk	Unk	Public
14	Unk	800	338	571	Unk	Unk	Public
15	Unk	414	252	1000	Unk	Unk	Public
23	Unk	639	320	1056	Unk	Unk	Public
25	Unk	540	287	1,120	Unk	Unk	Public
27	Unk	550	321	1468	Unk	Unk	Public
42	Unk	550	260	2100	Unk	Unk	Public

Notes:

Unk - Unknown

gpm - gallons per minute

All wells are part of the same public water supply system serving the population of the City of Savannah

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Appendix E

Free Product Monitoring Points Construction Diagrams (SAIC 2006)

		·					
HTRW DRILLING LOG		DISTRICT:	Savanno	ol_		HOLE NUMBER	
1. COMPANY NAME: SAC		2. DRILL SUBCO	ONTRACTOR:	1C		SMEET LOFZ	
1. PROJECT: BULK Fuels Pro	duct Deline	ation	4. LOCATION: HE	4AF/BUIK	K Fuds Fa	cility	46
6, NAME OF DRILLER: W. Parker/			6. MANUFACTURES	RS DESIGNATION OF D	PRILL: GIENEN		יוכן
P. SIZES AND TYPES OF DRILLING APPRICA	20 CIGS PT	ole	8. HOLE LOCATION	Tank 7	\$\$3 SI	ife.	
Z-in diami		pm_	9. SURFACE ELEVA	ATION:	<u> </u>		
avgen,	· · · · · · · · · · · · · · · · · · ·		10. DATE STARTED	Pillololo	11. DATE COMPLET	red/	
12 OVERBURDEN THICKNESS	NIA	···-	15. DEPTH GROUN	IDWATER ENCOUNTE	RED:		
13. DEPTH DRILLED INTO ROCK	NIA		16. DEPTH TO WA	TER AND ELAPSED TIR	ME AFTER DRILLING C	OMPLETED:	
14, TOTAL DEPTH OF HOLE	6 PH		17. OTHER WATER	R LEVEL MEASUREME	NTS (SPECIFY):		
18, GEOTECHNICAL SAMPLES	DATIMED	upbistu	19. TO	TAL NUMBER OF CORE	BOXES 107/	4-	
TO DAMPLES FOR CHEMICAL ANALYSIS	VOC N/A-	METALS WIA	OTHER (SPEGIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %	
## DISPOSITION OF HOLE		NITORING WELL	other (specify) Fivel Point,	23. SIGNATURE OF INSI	PECTOR		
4	FORMER UST 11 OF 20 O	20 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	EDZS PA	POLOGO PO	ON THE PROPERTY OF THE PARTY OF	MWESSWIN	
			D-5			. 	ك

		HTRW DR	RILLING	LOG .)	 HOLE NUMBER /	
PROJECT	BUK	Fuels Product Del.	INSPEC	"	an/4.1	r .	SHEET Z OF	<u> </u>
ELEV.	DEPTH	DESCRIPTION OF MATERIALS	н	EADSPACE CREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)	
	3	Joorly Graded Sand with Clay (SPSC) Trace Grapl, loose Moist medium Grained subingul Grained subingul Apelliwish Drown 1.5-5.0 Paorly Graded San Clayey Sand (SC) fine grained, subbing firm moist, grain 2 40% fines	ade 31h	D-				

HTRW DRILLING LOG	DISTRICT:	Savannot		HOLE NUMBER ドアーゆて
1. COMPANY NAME: SAKC	2. DRILL SUBC	SA		SHEET 1 OF Z
3. PROJECT BULK Fuels Product D	elineation	4. LOCATION: //	AAF/Bulk Fuels	Facility,
6 NAME OF DRILLER: W. Porker/R. Ledbeth		6. MANUFACTURERS	S DESIGNATION OF DRILL: GENERA	al 219 H
1 SIZES AND TYPES OF DRILLING GENERAL Z		8. HOLE LOCATION:	Tank 7003:	, ,
	-stem	9. SURFACE ELEVAT		
auger.		40 0475 6740750	11. DATE COMPLE	TED: ///
		10. DATE STARTED:	11/10/06	11/10/06
12 OVERBURDEN THICKNESS N/4			OWATER ENCOUNTERED:	
13. DEPTH DRILLED INTO ROCK		16. DEPTH TO WATE	ER AND ELAPSED TIME AFTER DRILLING (COMPLETED:
14. TOTAL DEPTH OF HOLE S. P.		17. OTHER WATER	LEVEL MEASUREMENTS (SPECIFY):	
18 GEOTECHNICAL SAMPLES DALLY	Standan dis	19. TOTA	AL NUMBER OF CORE BOXES 1/1	
TO BAMPLES FOR CHEMICAL ANALYSIS VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY) OTHER (SPECIFY)	21 TOTAL CORE RECOVERY %
# DISPOSITION OF HOLE BACKFALED	MONITORING WELL	OTHER ISPECIFY FUEL POINT	23. SIGNATURE OF INSPECTOR	
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LOCATION SKETCHICOWINENTS				
		 		
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	<u> </u>	HTRW DRILLI		110 11 11.	<u>/</u>	HOLE NUMBER FP-62	4
		······································	SPECTOR /	GEOTECH	ANALYTICAL	REMARKS	4
ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	SAMPLE OR CORE BOX	SAMPLE NO.	(G)	1
	(B)		RESULTS A		(F)	(G)	

HTRW DRILLING LOG	DISTRICT:	obile ?	Savanah	HOLE NUMBER
1, COMPANY NAME: SAIC	2. DRILL SUBCO	NTRACTOR:	41C	SMEET 1 OF Z
18 PROJECT: BULK Fuels Product Del,	nearby.	4. LOCATION:	MAF	<i>H</i>
& NAME OF DRILLER: W. Per Ber/ K. Ledber	Har I	6. MANUFACTURERS	S DESIGNATION OF DRILL: General	1 310 5
# BOZES AND TYPES OF DRILLING GENEROL ZIG	Hole	8. HOLE LOCATION:	Tank 7003 Site	e
Z-in diam solid-st	en	9. SURFACE ELEVAT	1	
auger.		10. DATE STARTED:	11. DATE COMPLE	TED: 11/11/01/6
			#14.4	1/1/4/2
19. OVERBURDEN THICKNESS NIA			DWATER ENCOUNTERED: ///	XOMPLETED:
19. DEPTH DRILLED INTO ROCK		Dry	13 days	
14, TOTAL DEPTH OF HOLE 5.4 Pt		17. OTHER WATER	LEVEL MEASUREMENTS (SPECIFY):	
14. GEOTECHNICAL SAMPLES	Mudistron	DE D 19. TOTA	AL NUMBER OF CORE BOXES 1011	4
A SAMPLES FOR CHEMICAL ANALYSIS VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY) OTHER (SPECIFY)	21, TOTAL CORE RECOVERY %
	NITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF WSPEOTOR	el.
		vel Point	Minathy	
LOCATION SKETCH/COMMENTS	<u></u>		SCALE:	, , , , , , , , , , , , , , , , , , ,
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. NAME OF DRILL						-									•				ner					_ \ _\ \ \
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i) OVERBURDEN	N THICKNESS			114		•				+			ROUNE						NI					\dashv
10 DEPTH DRILLI	ED INTO ROCK		N	/A						1	6. DEP	$\sum_{}^{\text{TH TC}}$	raw C	ER ANI	$\frac{3}{3}$	SED TO	IME AF	TER I	ORILLIN	4G CO	MPLE	red:		
H TOTAL DEPTH	H OF HOLE		5.0	b f	21-					1	7. OTF	IER W	ATER	•			TETNE		IFY):					
11 GEOTECHNIC	CAL SAMPLES			Æ	Hydrate	40			u yd is	ylnt€	•	19	TOT/	T NUV	BER C	OF COF	RE BOX	ES	N	11	F_			
35 SAMPLES FOR CH	HEMICAL ANALYS	ilS		V)	c,	_	- N	ETALS	_	0	THER (S		2	ОТ	IEA (SPI	CIFY)		OTHE	A (SPEC	ēΥ)		TOTAL		
# IMPOSITION OF	HOLE			BACKE				ORING I			THER (S	PECIF		23.51	METYPA	E OF IN	PEOTO	P (and a	0	<u> </u>			\exists
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	HTRW DRILL		(V /)	(D)_	HOLE NUMBER FP 44
		SPECTOR IN	GEOTECH	ANALYTICAL	SHEET \geq OF \geq
IILEV. DEP	(C)	SCREENING RESULTS	SAMPLE OR CORE BOX	SAMPLE NO. (F)	(G)
2	Very dark gray (1048) 3/1) silty sand! moist, Bl. packed, F- to M-gray (1086) 5/1) sandy clay: moist rel. soft, med. plast:; sand & za76. Moisture content	RESULTS	NIA	NA	Very moist.
5	End of Boring.		7D= 5	D PL	

I.						
HTRW DRILLING LOG		DISTRICT:	lobile	Savann	α	HOLE NUMBER FP-Ø5
1. COMPANY NAME: SAIC		2. DRILL SUBCO		•		SHEET OF Z
1 PMOJECT: BUK FUELS PR	educt Deline	ahon.		AAF/BU	1KFoels	Fac.
NAME OF DRILLER: W. Parko	r/K. Ledbett	ter		RS DESIGNATION OF D		
# NOTES AND TYPES OF DRILLING GIENE	ger wit	Hole	8. HOLE LOCATION	N. Tank 79	435it	e
Zin, diam.		em	9. SURFACE ELEV			
auger.			10. DATE STARTE	D: 11/11/06	11. DATE COMPLET	ED: /////06
# OVERBURDEN THICKNESS /	11A			NOWATER ENCOUNTER		11/11/00
		• .		TER AND ELAPSED TIM		OMPLETED:
	NIA		Dry	(()		
1 TOTAL DEPTH OF HOLE	5, 0 Pt		17. OTHER WATE	R LEVEL MEASUREMEN	TS (SPECIFY):	
16 GEOTECHNICAL SAMPLES	distribution	Uproisty	19. TO	TAL NUMBER OF CORE	BOXES NIE	,
AMPLES FOR CHEMICAL ANALYSIS	V/24	METALS!	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE
म् । MEPOSITION OF HOLE	BACKFILLED MON	ITORING WELL	OTHER ISPECIFY	23. SIGNATURE OF INSPI	ether col	-
LOCATION SKETCH/COMMENTS	<u> </u>		ver lant	SCALE		
SOCK TION SKETCH/COMMENTS		-	 	JOALE	· .	
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	*				HOLE NUMBER	FD-OSC)
marca 12 11s	HTRW DRIL	LING LOG	2 4 7	1 OP	SHEET Z OF	
PROJECT: 150-171	DESCRIPTION OF MATERIALS	INSPECTOR 1	mothy C	ANALYTICAL	SHEET _ OF	<u> </u>
(A) · (B)	(C)	SCREENING RESULTS	SAMPLE OR CORE BOX	SAMPLE NO. (F);	(G)	
2	Very dark gray (1098 3/1) silty sand: dry rel. loose, F-to M-grad. Dork yellowish- brown (1048 4/6) silty sand: moist Sl. packed, F-to M-grad. End of Boning.	PID reading at B/H—collor=427ppm.	7= 50	N/A V Rt.		

i ii ii

DISTRICT: Savannak HOLE NUMBER HTRW DRILLING LOG 2. DRILL SUBCONTRACTOR: 1,00MPANY NAME: SAIC 4. LOCATION: HAAF BULK Foods Fac.

6. MANUFACTURERS DESIGNATION OF DRILL: GENERAL 210 Digg. AMOUECT: Bolk Foods Product Delineation. SHEB AND TYPES OF DRILLING GRAPUS ZICO HONE

THE AND TYPES OF DRILLING GRAPUS ZICO HONE

TO AMPRING EQUIPMENT DIGGER, WITH

Tolin, diam, Solid-stem 8. HOLE LOCATION: Tank 70935ite 9. SURFACE ELEVATION: avaer. 11. DATE COMPLETED: // // / // 10. DATE STARTED: / / / / / / / / 11 OVERBURDEN THICKNESS 11/4 15. DEPTH GROUNDWATER ENCOUNTERED: 16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED:

3 doug 5.

17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): NIA 13. DEPTH DRILLED INTO ROCK 5,0 Rt 11 TOTAL DEPTH OF HOLE Aust proces MOISTANDED 19. TOTAL NUMBER OF CORE BOXES # GEOTECHNICAL SAMPLES OTHER (SPECIFY) 21. TOTAL CORE OTHER (SPECIFY) M NAMPLES FOR CHEMICAL ANALYSIS OTHER (SPECIFY) RECOVERY % OTHER (SPECIFY)
FUEL KOINT BACKFILLED MONITORING WELL H DIEPOSITION OF HOLE **LOCATION SKETCH/COMMENTS**

		HTRW DRIL		· · · · · · · · · · · · · · · · · · ·	- (6)	HOLE NUMBER FP-
ROJEC	r: Ynood	ect Delineation.	INSPECTOR (o Krey	SHEET Z OF Z
filev. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANAÉYTICAL SAMPLE NO. (F)	REMARKS (G)
		Black (104R =/1) sill sand: dry, rel loose, massivr	**			
and the second s	3	Yellow-brown (1491) 5/B) sand: moist to wet, rel. loose, m-grad.	NIA	NIA	NIA	Strong Fuel odor.
· :	4	Very dark gray (164% 3/1) sandy ctay: mois	<u> </u>		5.4	01
	7	and of Boning	7	70 =		
	9		I	D-16		

<u> </u>		·	
HTRW DRILLING LOG	DISTRICT: Sai V	annah	HOLE NUMBER
100MPANY NAME: SAIC	2. DRILL SUBCONTRAC	SAIC	SHEET LOFZ
A PROJECT: BULK Fuels Product Del;	infation: 4.100	CATION: HAAF/BULK	Fuels Fac.
* NAME OF DRILLER: W. Parker/R. Ladlor Ha		NUFACTURERS DESIGNATION OF DRILL: GENE	
HATEB AND TYPES OF DRILLING CAPTURE ZIG 1		LE LOCATION: TONK 7003	Site
Z-in, diam. Solid-Stel		RFACE ELEVATION:	
ovger.			WINGER 11/1/4
	10. DA	7/1/40	MPLETED: [1] /1/0/6
18 OVERBURDEN THICKNESS WA		EPTH GROUNDWATER ENCOUNTERED: 1/1	
DEPTH DRILLED INTO ROCK	16. DE	EPTH TO WATER AND ELAPSED TIME AFTER DRILL	ING COMPLETED:
H TOTAL DEPTH OF HOLE 5. 4 ft	17. 01	THER WATER LEVEL MEASUREMENTS (SPECIFY):	
M GEOTECHNICAL SAMPLES	under vinde	19. TOTAL NUMBER OF CORE BOXES	1/4
	<u> </u>	(SPECIFY) OTHER (SPECIFY) OTHER (SPE	CIFY) 21. TOTAL CORE RECOVERY %
	NITORING WELL OTHER	(SPECIFY) 23. SECURIURE OF INSTECTOR)
F. 1	Fuel	Point Ameethy of	
LOCATION SKETCH/COMMENTS		SCALE:	
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HTRW DRILLING LOG BOLEVIUMER PROF SOSPECTOR GLOVE THE CORE SHEET Z OF Z BOLEVIUMER PROF SHEET Z OF Z BOLEVIUMER PROF SHEET Z OF Z BOLEVIUMER PROF SHEET Z OF Z BOLEVIUMER SHEET Z OF Z BOLEVIUMER PROF SHEET Z OF Z BOLEVIUM PROF SHEET Z OF Z BOLEVIUM PROF SHEET Z OF Z BOLEVIUM PROF SHEET Z OF Z BOLEVIUM PROF SHEET Z OF Z BOLEVIUM PROF SHEET Z OF Z BOLEVIUM PROF SHEET Z BOLEVIUM PROF SHEET Z BOLEVIUM PROF SHEET Z BOLEVIUM PROF SHEET Z BOLEVIUM PROF SHEET Z BOL	!												- 4-1	~ r'
SECRETION OF MATERIALS DEPTH SECRETION OF MATERIALS DEPTH SAMPLE OF SAMPLE	-									(K)			~ \$ 7	35
Wendark gray (1878) I Very dark gray (1878) I Very dark gray (1878) I Very dark gray (1878) I Very locate, F. to Mangard, many organics, I Moisture content Increases with depth. The day Greenist gray (56) Find of Boning The body, middly Find of Boning The body past	ROJECT	r: Bulk	Fuels	Product	Del.	IN:	SPECTOR (in						V
Moisture content increases with depth. PD reading at B/H collar= 1346 ppm. Greenist gray (Sq. spi) sandy cloy moist to bort, midd. past. Find of Boning	GLEV. (A)	(B)		(C)		<u> </u>	SCREENING		SAMPLE	SAMPLE NO.		REMARKS (G)		
* 4 1 1 11 <u>-11</u> X 1 1	たいできない。 「「「「「「「「「「「「「「「「」」」」」、「「「」」」、「「」」、「「」」	2	Mois incredit de Green 5/1):	dark a silty 5 cose, more of the coses opth.	routen and to want	5G	PD reading at B/H collar	3	N/A TO =	N/A	Gyv	avelly		

HTRW DRILLING LOG	Davanhah FP	NUMBER - ゆ 包
OOMPANY NAME: SALC	1	1 of Z
MOJECT: Bulk Fords Product Delir		s
HAME OF DRILLER: W. Parker/K. Ledbotto	6. MANUFACTURERS DESIGNATION OF DRILL: GATERAL	214 /
WITE AND TYPES OF DRILLING GIENARO ZICH	Acre 8. HOLE LOCATION: POR 7003 51+0	
	STEM 9. SURFACE ELEVATION:	•
augen.	3. 3011 PDE EEE PROOF	
	10. DATE STARTED: //// dla 11. DATE COMPLETED: ///	11/06
TO OVERBURDEN THICKNESS N/14	15, DEPTH GROUNDWATER ENCOUNTERED: 11/14	
N DEPTH DRILLED INTO ROCK	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETE	ED:
10TAL DEPTH OF HOLE B, DP	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY):	
CEOTECHNICAL SAMPLES AUSTUMED	INDISTURBED 19. TOTAL NUMBER OF CORE BOXES NA	
AMPLES FOR CHEMICAL ANALYSIS VOC.	METALS 1 OTHER (SPECIFY) OTHER (SPECIFY) OTHER (SPECIFY) 21. TO	OTAL CORE
	MITORINO WELL OTHER (SPECIFY) 23. SKINGTONE OF THE PECTURE (M)	OVERY %
BACKPELED MO	Fuel Point auester office	
LOCATION SKETCH/COMMENTS	SCALE:	>
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1/9/Calhian 1.35	Ketch.	
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TO OUT ON	. 12.1K		NG LOG SPECTOR 12'r	H. C	Clau	HOLE NUMBER FP-68	NΨ
FLEV.	DEPTH	DESCRIPTION OF MATERIALS	HEADSPACE	GEOTECH	ANALYTICAL	REMARKS	
(A)	(8)	(C)	SCREENING RESULTS	SAMPLE OR CORE BOX	SAMPLE NO. (F)	(G)	
	3	Very dark grow (10) 16 3/1) silty sond dry to moist, F-to M- gravelly. Black sitty sand Very dark gray sand (As Above) Green-gray (56, 5/1) clay: moist, med. plost	PID reading at BIH collar= 1070 ppm	NA		Strong product	
	8	End of Boning.	D-	7D = 5	OP.		

							,
HTRW DRILLING LOG	:	DISTRICT:	, avanno		-	HOLE NUMBER	
OOMPANY NAME: SAIC		2. DRILL SUBCO	INTRACTOR:	1C		SHEET LOFZ	
MOJECT: Bulk Fuels Produce	ct Deline			IAAF/Bu	IK Fuel	5 Fac,	
HAME OF DRILLER W. Parker/K. 1	Ledbetter			RS DESIGNATION OF DE			Ho
THE AND TYPES OF DRILLING GIPTIPTO		tole	B. HOLE LOCATION	* Tank	70003	Site	
E Z-in diam.	shid-sten	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	 		7420	-, ,,,	┨
augen.			9. SURFACE ELEV	ATION:			-
•			10. DATE STARTED	11/11/06	11. DATE COMPLET	ED: /////doc	
OVERBURDEN THICKNESS N/A			15. DEPTH GROUN	NOWATER ENCOUNTER	ED: N/4		
TO DEPTH DRILLED INTO ROCK			16. DEPTH TO WA	TER AND ELAPSED TIME		OMPLETED:	
M 10TAL DEPTH OF HOLE 6.0	2t-		17. OTHER WATER	R LEVEL MEASUREMEN	TS (SPECIFY):		
# 0EOTECHNICAL SAMPLES	DISTUMBED	photolica	19. TO	FAL NUMBER OF CORE I	BOXES N/	A	
A AMPLES FOR CHEMICAL ANALYSIS	····	METALS/	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE]
M DREPOSITION OF HOLE BA	/// 	TORING WELL	OTHER ISPECIFY	23 CHATURE OF HISPE	CT(OR) () ()	RECOVERT A	1
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OCATION SKETCH/COMMENTS				SCALE:			
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		. H	TRW, DRILLI	NG LOG		<i>(</i> 0)	HOLE NUM	BER FP-49	4	5
PROJECT	r. Bulk	Fods Product	Del. INS	SPECTOR I'm	nothy Co	offey_	SHEET Z	OF Z	· ·	, · · · · · · · · · · · · · · · · · · ·
(LEV.	DEPTH (B)	DESCRIPTION OF M (C)	ATERIALS	HEADSPACE SCREENING BESTILTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO.	REMARKS (G)	;		
	_	Veng dark gi 3/1) silty e rel. 1005e, M-grad. Block (10% silty sand: F-grad, sl		RESULTS	NIA	NA	gravelle	7		·
	4	Very dork g 3/1) sandy a sliplastic. End of	ray(109R clay: moist,	PID reading at BIH collar= 275 ppm	7>=	50	Rt.			Control of the Contro
	6								سراسياسياسي	
	9									
	10			D-	22			· ·		

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DISTRICT Savannot **HTRW DRILLING LOG** IMOJECT: BULK Fuels Product Delineations. 4. LOCATION: HAAF/BULK Fuels Fac. COMPANY NAME: 2. DRILL SUBCONTRACTOR: NAME OF DRILLER: WI Parker/K. Ladbetter 6. MANUFACTURERS DESIGNATION OF DRILL: 8. HOLE LOCATION: Tank 7001 Site. 9. SURFACE ELEVATION: 11. DATE COMPLETED: /////\$6 10. DATE STARTED: 11/11/06 15. DEPTH GROUNDWATER ENCOUNTERED: WIA W OVERBURDEN THICKNESS N DEPTH DRILLED INTO ROCK 16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: 5.0 Rt. H TOTAL DEPTH OF HOLE Aus JUANED UNDISTURBED CEOTECHNICAL SAMPLES 19. TOTAL NUMBER OF CORE BOXES MANPLES FOR CHEMICAL ANALYSIS METALS V/A OTHER (SPECIFY) OTHER (SPECIFY) 21. TOTAL CORE E MPOSITION OF HOLE MONITORING WELL BACKFILLED Fuel Point **LOC**ATION SKETCH/COMMENTS

	· (2.11.	HTRW DRIL	LING LOG	} 	<i>(P)</i>	HOLE NUMBER FP-19
ECT	DEPTH	Fuels Product Del.	INSPECTOR	nothy Co	otter	SHEET Z OF Z
·	(B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANÁEYTIČAL SAMPLE NO. (F)	REMARKS (G)
+		Brownish - 48/00/1046	\	I.	Ä	
	=	Brownish - yellow (1047 46) send i dry, rel 1005e, F- to M-grad		M	/\	
		loose, F- to M-gmd	l.	' `		
	Ξ	-				
	ı	<u> </u>				
	_	Very dark gray (168% 3/1) silly sandida	<		\ '	Esp. loose Sand (caving)
	=	3/1) silty sandiday				card (cavina)
		to moist, loose,	7			Jank Coart
. [, =	F-grnd.			!	
		-				
	=	,			1 11	
				NIA	NIH	
	_				· r	
	3	0: 12/11/00/21	-KHŹ	1.		
·	_	Black (104R 2/1) silty sand: moist to wet, sl. packed, Fignal, "dirty".	reading			
- [_	silty sand: moist	at B/H	1 .]		
	=	to wet, sl. packed,	collor=			
- 1	<u>-</u>	Figme, "dirty",	17 ppm.			
	=	·	'`		.	
- 1			·			
	Ξ			V	Y	
-	, =	Very dork groy clay to		1		
`	' -	sandy clay.			· .	\cap_i
	_	C . C P		110=	5.0	Ft
	· —	End of Boring	\			
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TF	W	DI	RIL	LIN	IG	LC	G						DISTR	ICT:	5	ave	ni	20	<u>L</u>				٠						
СОМ	PANY	' NAN	IE:	5,	41	C					·		2. DRII	LL SUE	CONT	RACTO)R: S/	410	2							SHEET	1	» <u>Z</u>	
PRO	JECT	B	ال	< F	ve	1	P	$r \infty$	duc	7	50	ירע'ו	24	on.	4.	LOCA				1/6	301	IK	Fu	, وا	5	Fa	c.,		
HAM	E OF	DRIL	LER:	<u>,</u> W,	Po	vK	er,	1K	L	db	atto	· · ·		,	6.	MANU	FACTI	URER	S DESI	/` GNATI	ON OF	DRIL	. G	1617	en	21	Z	iф	
1716 10 AA	AND T	TYPES 3 EQU	OF DRI	LLING	_		1611				<u>ان</u>		<i>to</i> l	٣	8.	HOLE	LOCA	TION:	Ta	nk	7	φο	1 /	5	ite	₽,			
	2		<u>۲، (</u>				د۵	3	ناح	d-	5	C)	<u>`</u>		9	. SURF	ACE E	LEVA	TION:				•						
4.	_		va	2	<u>, , </u>		.,						·''		1	0. DAT	E STA	RTED:	11/1	1/0	 6	1	1. DAT	E CO	APLET	ED: [/	///	#G	
ÒV	ERBL	JRDE	N THK	KNES	ss		N	A							1	5. DEP	TH GF	ROUNE	OWATE	A ENC	COUNT	ERED:	: /	NI	4		<u>' '</u>	•	
_			ED IN)/ p							1	6. DEP	тн тс	WATI	ER AN	D ELA	SED T	IME A	FZER	DRILLI	NG CC	MPLE	TED:		
		•	·							$\overline{\alpha}$					+	7. OTH		12:	<u> </u>	\				4	<u> </u>	•			\dashv
, 10) AL (DEPT	H OF I	1ULE			5	S, C	<i>p</i>	RH							En W.	AIEN.	vEL		UI IUMI	1	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			,			_
Q1	OTE	CHN	CAL S	AMPLI	ES				M	H BAR	ED.		4	Aud/s			1				OF COP	RE 80.			1//	1			\dashv
*	PLES	FOR	HEMIC	AL ANA	LYSIS				/cγ̈́,			\ <u></u>	7/A		0	THER (S	PECIFY A			ER (SP		1		A (SPE	OFY)	_	COVER		_
	POSIT	ION O	F HOLE						BACKF	ELLED	+	MONIT	ORING	WELL		THER IS		}-	23. SIG	of fre	4γγγ ξο ι 11 1	SPEO	型 \$24	<u></u>	Du	1-			
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	. (< 1	HTRW DRI K Foels Product Del.		7 16 -) [[]	HOLE NUMBER FP-1
			INSPECTOR /	mothy C	OTTEY	SHEET Z OF Z
LEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
		Brownish-yellow (104R 4/6) sandid rel. 1005e, F- to M-grad, grovelly.	(C)			
	2			NIA	NIA	
A CONTRACTOR OF THE PARTY OF TH	3	Black (104R 3/1) Silty sand: mois to wet, F-grad, s packed, "dirty", mossive / uniform	PID reading at 13/14 collar= zet ppm			
	5			\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		·
	6	End of Boring	Ĵ'	175=	5.0 A	
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DJECT:		Fuels Product Del.		mothy () (Par	HOLE NUMBER FP-13 SHEET \geq OF \geq
EV. A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAD SAMPLE NO.	REMARKS (G)
	111111111111111111111111111111111111111	Brownish-yelow (14) 6/6) sand: dry F- to M-grand, rel. 1005e, gravelly.				
-		Yellow (167 R 7/8) sand: dry, mass/unit 13lack (164 R 2/1) Silty Sand: moist to wet, F-grand, sl. packed, "dirty"	PI)	NIA	NIA	
	4 =====================================	sl. packed, "dirty"	collar= 92ppm		\ \ \	
***	6	End of Boring	5		5.0	P.H.
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œ	MP	ΑN	Y NAN	νE:	4	ĵ,	Al	0	- -		•			2.	DRI	LL SU	BCON	TRAC	TOR: ∠	5A	10	>						SHE	ET	_oF_Z	2
PA	OJI	ECT	B	ال	K 1	É	rel	5	Pre	do	+	D _i		nec	3 -1	'or	۱ ا	4. LOC	ATION	·H/	4A	=/	Bi	ılk	< F.	00	5	Fa	く ,		
NA.	ME	OF	DRIL	LER:	ω	ij,		_			ed										RS DE								Ζ,	d	
1 1 2 1 V C 1	AMS	LiNe	G EQU	OF DR	τ .		T.	161 Sig	90	<u>~</u>	21	ارق	77	lei			_	8. HOL	E LOC	ATION	1:10	int	<u>′</u>	7¢	Ø1	′ <	5,4	, ج			٠
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0	ΝE	RBL	JADE	N THI	CKNE	SS		,	Λ'/,	4								15. DE	PTH G	ROUN	IDWAT	ER EN	ICOUN	TERE):	10	IA	•		•	
10	EP	THI	DRILL	ED IN	то я	OCI	к		N.	14								16. DE	РТН Т	QWA.	TER AI	10 EL	PSED 3	TIME	AFTER	DRILL	LING C	OMPL	ETED:		
N Y	от	AL [DEPT	H OF	HOLE			ź	5,0		Rt			,			\perp		HER V	VATER	LEVE	LMEA	SURE	MENTS	(SPE	CIFY):					
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				HEMIC	AL AN	ALYS	SIS.			/	ж Д		,	MET O/	ALS A			/U/		Y)	4	\sum_{i}	PECIFY	١		ER (SPI	CIFY)	_	ECOVE	L CORE	*
10	SPC	SITI	ON OF	HOLE						BACK	FILLED		МО	NITÓR	ING V	VELL		OTHER!			.23. bi	#	AE OF E	The d	OR	42	4		<u> </u>		
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OJECT		110815	troduct Del.	INSPECTOR /		Hey	SHEET Z OF Z
EV. A)	DEPTH (B)		RIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
		Brawni	shyellow (10 nd: dry, refer to m-	1702	Y	1	
	-	(96) Sai	nd dry, r	ا، اح		│	
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	¹	mnr c	ongani'os.				
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	_				NIA	MA	
		101-12	(109R 2/1)				
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	3	51119	541 EX: MOIS	,, Pi			
.]	_	massi'u	aleal Farn	d beading		.]	
. ["dirty	(109K =/1) sand: mois re/uniform; ckal, F-grn	at B/H		.	
	=	an Z	•	Collar =	1		
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	=		•	1340			
	=			ppm	V		
					Y	¥	Strong product
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HTRW DRILLING LOG		DISTRICT:	Savan	nah	·	HOLE NUMBER
LCOMPANY NAME: SAIC	•	2. DRILL SUBC	CONTRACTOR:	SAIC		SHEET 1 OF
& PROJECT: Bulk Fuels Product	-Nelin	pation		HAAF/B	olk Fuels	Fac.
I NAME OF DRILLER: W. Parker/K. Le				TURERS DESIGNATION C		
TARES AND TYPES OF DRILLING GENERAL BOBAMPLING EQUIPMENT	ZIO	_ !		ATION: Pank		
Z-in dian 501	10-510	<u></u>	† · · · · · ·		1441 =	77 101
anger.			9. SURFACE E			
			10. DATE STA	ARTED: 11/11/04	11. DATE COMPLE	TED: /////06/6
OVERBURDEN THICKNESS NIA	•		15. DEPTH G	ROUNDWATER ENCOUN	TERED: 10/14	
NO DEPTH DRILLED INTO ROCK			7	O WATER AND ELAPSED	TIME AFTER DRILLING C	OMPLETED:
N TOTAL DEPTH OF HOLE 6.4	-	-	17. OTHER W	VATER LEVEL MEASUREN		
M GEOTECHNICAL SAMPLES	4,840	UMUSTU	PHBED 19). TOTAL NUMBER OF CO	RE BOXES /U/K	<u> </u>
P SAMPLES FOR CHEMICAL ANALYSIS VOC.		METALS	OTHER (SPECIFY	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE
≜ DISPOSITION OF HOLE BACKFILLEI		TORING WELL	OTHER (SPECIFY	O . 23. No partine OF the	вистой /	RECOVERY %
2			Fuel Poin			
CATION SKETCH/COMMENTS			,	SCA	LE:	7
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	- 	HTRW DRILL		1	(77)	HOLE NUMBER FP-14
			SPECTOR IN		offey	SHEET \geq OF \geq
ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	1 1	Brownish-gellow (109R 6/6) Sand: dry, rel. 1005e, F. to M-grad, avavelly, minr org- anics.				
	2	-	·			
	3.	Black (10 PR 2/1), silty sand: moist, massive/uniform, F-grad, sl. packed,	PID	NIA	NIA	- - - - - - - - - - - - - - - - - - -
	111111111	"dirty".	at B/A collor= 32 ppm			
	5	End of Boning		10=	5.0	RH.
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DISTRICT: Savannal HOLE NUMBER HTRW DRILLING LOG 1 COMPANY NAME: 2. DRILL SUBCONTRACTOR: I PROJECT: BULK Fuels Product Delineation 4. LOCATION: HAAF/BULK FUELS Fac. I NAME OF DRILLER: W. Parker/K. Ledbetter 6. MANUFACTURERS DESIGNATION OF DRILL: General Zid 9. SURFACE ELEVATION: avaer. 10. DATE STARTED: 11/11/06 11. DATE COMPLETED: // // // M. OVERBURDEN THICKNESS 15. DEPTH GROUNDWATER ENCOUNTERED: 16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: 19 DEPTH DRILLED INTO ROCK 5.0 Rt 17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): M TOTAL DEPTH OF HOLE *Bustulle* AND STRANED **報 GEOTECHNICAL SAMPLES** 19. TOTAL NUMBER OF CORE BOXES # SAMPLES FOR CHEMICAL ANALYSIS OTHER (SPECIFY) 21. TOTAL CORE RECOVERY DISPOSITION OF HOLE BACKFILLED Fuel Hoint LOCATION SKETCH/COMMENTS SCALE: 14622 414/1

	(7 11.		LING LOG) 	7 (P)	HOLE NUMBER FP-15
			INSPECTOR (\)	nothy (stey	SHEET Z OF Z
EV. A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	, REMARKS (G)
	111111111	Yellowish-brown (1011) B/6) sand: dry, F- to M-grad, rel. loose man organics.				
-						
	2	Black (104R 2/1) Silty sanch moist, sl. packed, massive, uniform, "dirty".	/	NIA	NIA	
	3		PIL			
	11111111		reading at B/H collar=			
	1111111	Very darkgray (10)/ 3/1) Sandy clay: moist, sl. plastic.	R / PPM	\ \\	1	·
	5	End of Boring.	1	(F) -	5. O. Rt	·
	1111	Ziza di Rating.				
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HTRW DRILLING LOC	3	DISTRICT: SQV	annah		HOLE NUMBER		
1, COMPANY NAME: SAIC		2. DRILL SUBCONTRAC			SHEET 1 OF Z		
1 PROJECT: BULK FURS F	Product Deli.	neation, 4.100	CATION: HALF/B	UK Fuel:	s Fac.		
I NAME OF DRILLER: W. Parker			NUFACTURERS DESIGNATION OF E				
	neral ZICA,	HOLD BHO	ELOCATION: PONK 7				
Z-in diams	2000 WILL	-on-			7, 10,		
avger.		9. SUF	RFACE ELEVATION:	·			
		10. DA	TE STARTED: 11/11/66	11. DATE COMPLETE	ED: 4/11/06		
IL OVERBURDEN THICKNESS	UIA	15. DE	PTH GROUNDWATER ENCOUNTE	RED: N/A			
13. DEPTH DRILLED INTO ROCK	NIA	16. DE	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED:				
H. TOTAL DEPTH OF HOLE	5.0 Pt	17. 07	HER WATER LEVEL MEASUREMEN				
II GEOTECHNICAL SAMPLES	Austrigeto	Mudistumbed	19. TOTAL NUMBER OF CORE	BOXES ()//			
MAMPLES FOR CHEMICAL ANALYSIS	voc,	METALS OTHER	SPECIFY) OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE		
7 DISPOSITION OF HOLE	1	NITORING WELL OTHER	(SPECIFY) 23. SET WHURE OF INSP	1700	RECOVERY %		
		Fuel 1		In so le	1		
LOCATION SKETCH/COMMENT	rs		SCALE	711	7		
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PROJEC"	T: [3,]/	HTRW DRILL		Al. (HOLE NUMBER FP-16
ELEV.	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO.	SHEET ZOF Z REMARKS (G)
	-	Very dark gray (10th 3/1) silty sand: dry, rel. loose, grovelly. Black (10th 2/1) Silty sand: dry to moist, mossive.				Very hard/paked gravellager
	7111111111111	very dark gray (10 FR 3/1) sandy clay! moist to wet, sl. plastic.				
	111111		PID reading at B/H collar= 65ppm.			
	5	Greenish-gray (5G 5/1) clay: moist to wet, med. plast. End of Boning.			5.4 A	
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HTRW DRILLING LOG	oistrict: Sal	vannal		•	HOLE NUMBER	
1. COMPANY NAME: SAIC	2. DRILL SUBCONTRACTOR:				SHEET 1 OF Z	
1 PROJECT: Bulk Fuels Product Deline	pation. 4.			IK Fuels	Fac.	
I. NAME OF DRILLER: W. Parker/K. Ledbette				DRILL: Genen	,	
1. SIZES AND TYPES OF DRILLING GIGNERAL ZIG	-,,, _,					
Z-in diam Selid-St	01-	SURFACE ELEVAT				
augen				· · · · · · · · · · · · · · · · · · ·		\dashv
	10). DATE STARTED:	11/11/06	11. DATE COMPLET		
12. OVERBURDEN THICKNESS W/A	15	15. DEPTH GROUNDWATER ENCOUNTERED: N/A				_
13. DEPTH DRILLED INTO ROCK N/A	16	16. DEPTH TOWATER AND ELAPSED TIME AFTER DRILLING COMPLETED:				
14. TOTAL DEPTH OF HOLE 5. ϕ Ct.	17	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY):				
18. GEOTECHNICAL SAMPLES PISTURBED	UNAUSTURBLE	UNUSTURBED 19. TOTAL NUMBER OF CORE BOXES VI				\exists
IN SAMPLES FOR CHEMICAL ANALYSIS VOC.	METARS OTI	HER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE	
		OTHER (SPECIFY) 23 SERVITURE OF INSPECTOR				
	FU	pelloinf	Millett	my soully	-	_
LOCATION SKETCH/COMMENTS			SCALE			
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PROJECT 12.1	HTRW DRILL		$\rightarrow h$	2 b)	HOLE NUMBER FP-17
ELEV. DEPTH	DESCRIPTION OF MATERIALS		GEOTECH C	ANALYTICAL	SHEET Z OF Z REMARKS
(A) (B)	, (C)	HEADSPACE SCREENING RESULTS	SAMPLE OR CORE BOX	SAMPLE NO. (F)	REMARKS (G)
2	Hellowish-brown (104 R GID) Sond! dry, loose, F. fo M-grad. Block (104 R 2/1) Silty Band! dry to moist, mossive funit, F-grad, "dirty". Venydark gray (107 R 3/1) Sandy Clay! moist towet, sl. plastic. Rad of Borring.	PID	A I NIA I TO =		

HTRW DRILLING LOG	DISTRICT: Savannah	· · · ·	HOLE NUMBER			
1. COMPANY NAME: SAIC	2. DRILL SUBCONTRACTOR:		SHEET 1 OF Z			
3: PROJECT: BULK Fuels Product Deliv		273.0				
5. NAME OF DRILLER: W. Parker/ K. Ledbe		6. MANUFACTURERS DESIGNATION OF DRILL: General ZIA				
7. SIZES AND TYPES OF DRILLING CHENERAL ZICK AND SAMPLING EQUIPMENT DISGREY WITH		1 7003 Si-				
Z-in, solial stem	9. SURFACE ELEVATION:					
	10. DATE STARTED: /////	dG 11. DATE COMPLET	TED: /////\$6			
12. OVERBURDEN THICKNESS NIA	15. DEPTH GROUNDWATER	ENCOUNTERED: NIA	-			
13. DEPTH DRILLED INTO ROCK	16. DEPTH TO WATER AND E	Bapsed time after drilling of	OMPLETED:			
14. TOTAL DEPTH OF HOLE S, Ø R+	17. OTHER WATER LEVEL MI	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY):				
18. GEOTECHNICAL SAMPLES	UNDSTARBED 19. TOTAL NUMBE	ER OF CORE BOXES 11/1	4			
10. SAMPLES FOR CHEMICAL ANALYSIS VOC	TALS OTHER (SPECIFY) OTHER	(SPECIFY) OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %			
······································	RING WELL OTHER (SPECIFY) 23. 51 (4)	TURE OF INSPECTOR	RECOVER! %			
LOCATION SKETCH/COMMENTS	Fuel Point C	SCALE:	5			
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HTRW DRILLING LOG	DISTRICT:	20 Vann	a.		HOLE NUMBER	
1. COMPANY NAME: SAIC	2. DRILL SUBC	CONTRACTOR	A) C		SHEET LOF Z	
3. PROJECT: BULK Fuels Product Del.	neations		AAF/BU	K Fuel:	s For	
's NAME OF DRILLER: W. Parker/K. Ledbet			RS DESIGNATION OF DRIL			
7. SIZES AND TYPES OF DRILLING GENERAL ZIG	Hole		N: Tank 700]
AND SAMPLING EQUIPMENT Digager with Z-In diam. Solid-5	en	9. SURFAÇE ELEV				\dashv
augen.		·				\dashv
			<u>. () · ·</u>	.1.1	red: 11 / 11 / Ø/6	<u>-</u>
12. OVERBURDEN THICKNESS WIA	·	·	NDWATER ENCOUNTERED			
13. DEPTH DRILLED INTO ROCK		16. DEPTH-TO WA	ATER AND ELAPSED TIME A	FTER DRILLING CO	OMPLETED:	
14. TOTAL DEPTH OF HOLE S. P.		17. OTHER WATE	R LEVEL MEASUREMENTS	(SPECIFY):		
18. GEOTECHNICAL SAMPLES ASTURBED	Obugis 1	yrtag D 19. TO	TAL NUMBER OF CORE BO	xes ///	7A	
20. SAMPLES FOR CHEMICAL ANALYSIS VOC	METALS V/A	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21, TOTAL CORE RECOVERY %	
22. DISPOSITION OF HOLE BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNAT BRE OF INSPEC		RECOVERT 78	-
		Fuel Point	Thank !	Marin		_
LOCATION SKETCH/COMMENTS			SCALE:			
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		HTRW DRILL	NG LOG		-60	HOLE NUMBER FP-19
PROJECT	1.13d K	Fuels Fred. Delineation, IN	SPECTOR 1im	10thy Co	HEY	SHEET Z OF Z
ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
		Yellowish-brown (104R 5/8) sand: dry; F- to M-grad, relilose, mor organics grades to: Very darkgray (104R 3/1) silfy sand, sl. packed, moist, F- to m-grad.		WA	11/4	
	4	Black (10 TR 2/1) silly sand. Gray (14 YR 5/1) clay sund moist to wet. Very dark gray (10 YR 3/1) silty sandy clay: moist to wet, sliplast.	PID reodina at B/H collan= 35ppm			
	7	End of Boning.			5,¢ Pt.	
	9		D-4	2		

HTRW DRILLING LOG		DISTRICT:	Savoni	nak			HOLE NUMBER	
1. COMPANY NAME: SAIC		2. DRILL SUBC	ONTRACTOR:	5/41C			SHEETOF	2
3. PROJECT: BUR FUELS Produt D	elinea	tion.	4. LOCATION	HAAF	Bulk	Fuds	Fac:	
5. NAME OF DRILLER: W. Parker/K. Ledl			L		ATION OF DRILL:			5 H
7. SIZES AND TYPES OF DRILLING GIENEICE	WILL WILL	de_	8. HOLE LOC	ATION: Tay	nR 700	13 S	ite.	
		en	9. SURFACE	· · · · · · · · · · · · · · · · · · ·			. <u>-</u>	
augen.			10 DATE ST	ARTED: ////	100/. 11.	DATE COMPLET	red: 11/11/0	<u></u>
12. OVERBURDEN THICKNESS NIA			 		, , ,	NIA		-
	·	·	+	ROUNDWATER E				
13. DEPTH DRILLED INTO ROCK			10. DEF 111.	Dry/	APSED TIMEVAFT	45.		
14. TOTAL DEPTH OF HOLE $\mathcal{S}_i \phi \mathcal{P}$	+		17. OTHER V	VATER LEVEL ME	ASUREMENTS (SI	PEGIFY):		
18. GEOTECHNICAL SAMPLES DIATE	héto	uydsty	RSED 1	9. TOTAL NUMBE	R OF CORE BOXE	s NI	14	
20. SAMPLES FOR CHEMICAL ANALYSIS VOC.		METALS	OTHER (SPECIF	n bihen	(SPECIFY) C	THER (SPECIFY)	21, TOTAL CO	
22. DISPOSITION OF HOLE BACKFILLS		ITORING WELL	OTHERUSPECIF	23. 510	TURE OF INSPECTION	Cll	>	
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LOCATION SKETCH/COMMENTS				,		· ·		
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	_ _	HTRW DRIL	I ING LOG			HOLE NUMBER F	PZO .
PROJEC	r BJK		INSPECTOR /im	wothy Co	Pen	SHEET Z OF Z	
ELEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)	1.46
-	1 1 1 1 1 1 1 1 1 1	Very dark gray (147R 3/1) silty sand! dry F- to M-grad, rel. 1005e, mar organics	\frac{1}{2}				
		Lt. brownish-grey (107R %) sand: dr 1005P, massive, M-gr	nd.	NIA	NA		
	4	Very dark gray sill sund (As Above),	collor= 118ppm	V			
	5	Greenish-gray (565) clay to sandy clay End of Boring.		B= 5	7,¢ RL.		· · · · · · · · · · · · · · · ·
	7						
	8						
	10		D-44	4			

HOLE NUMBER DISTRICT: HTRW DRILLING LOG Savannal FP-Z 2. DRILL SUBCONTRACTOR: COMPANY NAME: SAIC SAIC MODERT Bulk Fuels Product Delineation BULK Forts Fac. 6. MANUFACTURERS DESIGNATION OF DRILL: General 214 S. HAME OF DRILLER: W. Parkar 9. SURFACE ELEVATION: 11. DATE COMPLETED: 11/11/06 10. DATE STARTED: ///1/ \$6 NIA 15, DEPTH GROUNDWATER ENCOUNTERED: II. OVERBURDEN THICKNESS 1្នុំ ព្រំ[្រំក្អា DRILLED INTO ROCK 5. OP+ 17. OTHER WATER LEVEL MEASUREMENTS (SPECIF H. TOTAL DEPTH OF HOLE platures UNDISTORBED 19, TOTAL NUMBER OF CORE BOXES 11 OCOTECHNICAL SAMPLES 21, TOTAL CORE OTHER (SPEC METALS NU/ MANUEL FOR CHEMICAL ANALYSIS RECOVERY MONITORING WELL FUEL POINT BACKFILLED THE POSITION OF HOLE LOCATION SKETCH/COMMENTS FORMER UST 117 **⊕ MW≣19** RW234 MW-16 ⊕ D-45

			I DIC I CC			HOLE NUMBER FP 2
00000	- D .1 12	Fools Product Del.	INSPECTOR / I'm	nothy Co	Rai	SHEET Z OF Z
LBV.	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	1	Black (104'R Z/1) sill sand: dry, F-grat, rel. loose, mar organics.	۲			
•	3	Very dark gray (144, 3/1) silty sand (145 Above) Brownish- yellow (10 6/8) to gray (1048 5/1 soud to clay sand dry to moist, non to sl. plastic, F- to	YR PD rading	NIA	NIA	
		Brown - yellow su clay moist to wet, mothed End of Boring.	md s	TD=	5.0 PL	
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· ·	. 12.51	KFUES Product Del.	LING LOG INSPECTOR INV	noth. Co	Rey_	HOLE NUMBER FP 3
ROJECT ELTV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING	GEOTTECH SAMPLE	ANALYTISAL SAMPLE NO.	REMARKS (G)
	(B)		SCREENING RESULTS  A. PID reading at Polit collar= 3 ppm  3:	SAMPLE OR CORE BOX	SAMPLE NO. (F)	

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ITRW DRILLING LOG		DISTRICT:	ovanna		HOLE NUMBER	
COMPANY NAME: SAIC		2. DRILL SUBCC		_		SHEET 1 OF Z
MOJECT: BULK FURS F	roduct Doline	ation.	4. LOCATION: H	AAF/BUK	Fuels	Fac.
NAME OF DRILLER: W. Parka				AS DESIGNATION OF DRILL		
ter said in coo. bitectio.	-, , ,	HOLP	8. HOLE LOCATION	Tank 700	83 Si-	te.
Z-in and		i'am,	9. SURFACE ELEVA			
	٦		10. DATE STARTED	11/11/46 1	1. DATE COMPLET	ED: 11/11/06
OVERBURDEN THICKNESS	UIA		<del></del>	IDWATER ENCOUNTERED		
13 DEPTH DRILLED INTO ROCK	UA		16. DEPTH TO WA	TER AND ELAPSED TIME	FTER DRILLING O	OMPLETED:
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Very dark gray (16/18)  Very dark gray (16/18)  3/1) silty satiology  F. to M-grad, rel.  1 loose, mar organics,  Grave layer  Grave layer  Grave layer  Grave layer  Grave layer  Gray (16/18 (1)) and brown - yelles silver/rele mottled sandy clay:  motst plastic.  End of Bonna.  TD = 6.0 Pt.	TROJEC	T: [Sul K	(Fuels K	reduct 1	Del INS			offey_	S		<u></u>	4
Very dark gray (10th 31) sithy state day F to M-grad, rel.  F to M-grad, rel.  Grave (10th 41) south  Grave (10th 41) south  Grave (10th 41) south  Grave (10th 41) south  Grave (10th 41) and  Grave (10th 41) and  Thrown yellow (10th 46)  most, plastic.  End of Boning.  To = 5.0 ft.		. (B)		(C)		SCREENING	SAMPLE	SAMPLE NO.				
Gray (10th 41) and worst, plastic.  Gray (10th 41) and brown, 100st, plastic.  End of Boning.  Hord-packed grave!  NIA NIA  NIA  NIA  NIA  NIA  NIA  NIA	\$ 6		Very da	rk grav	1 (10/1R		1	,				Ē
Gray (10th 41) and worst, plastic.  Gray (10th 41) and brown, 100st, plastic.  End of Boning.  Hord-packed grave!  NIA NIA  NIA  NIA  NIA  NIA  NIA  NIA		] =	3/13/51	Ity say	J.dry		N					F
Gray (10th 41) and worst, plastic.  Gray (10th 41) and brown, 100st, plastic.  End of Boning.  Hord-packed grave!  NIA NIA  NIA  NIA  NIA  NIA  NIA  NIA		1 =	F- hold	l-arnd	rel.					1		E
Gray (10th 41) and worst, plastic.  Gray (10th 41) and brown, 100st, plastic.  End of Boning.  Hord-packed grave!  NIA NIA  NIA  NIA  NIA  NIA  NIA  NIA	l)	<u> </u>	12000	mnro	rgonics,					¥		E
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Garay (10) R (1) and brown-yellow (10) Robb Month of Sandy clay:  monst, plastic.  End of Boring.  To = 5, \$\phi\$ ft.		=	unto	rm, 10	057	reading		\ \	1			E
Gray (10 ) and brown - yellow (10 ) in with a sandy clay:  End of Boring.  End of Boring.		] =	Kurabiy			at 10/17						
Gray (104R 41) and brown-yellow (104R46) mothled sandy clay: morst, plastic.  End of Boning.  TD = 5.0 Pt.		=	3			didon-						=
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End of Boning.  To = 5.0 ft.	and the same	-	brown-	yellow(	104R90	}	<b> </b>	·				_
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HTRW DRILLING LOG	DISTRICT:	Sovann	ah	HOLE NUMBER
OOMPANY NAME: SAIC	2. DRILL SUBC	ONTRACTOR: 5/	HC	SHEET 1 OF Z
MANOUECT BULK Fools Product De	ineution.	4. LOCATION:	AAF/BUIR FUE	Is Fac.
NAME OF DRILLER: W. Parker/K. Leabet	7	6: MANUFACTURER	IS DESIGNATION OF DRILL: GENE	ral 216
THE AND TYPES OF DRILLING GIERPICE 210	Hole		Tank 7003	
	Jam.	9. SURFACE ELEVA	TION:	
	·	10. DATE STARTED	$\mathcal{L}^{-1}(I^{-1})$	MPLETED: 11/12/06
NO OVERBURDEN THICKNESS NA		15. DEPTH GROUN	DWATER ENCOUNTERED:	1/A
DEPTH DRILLED INTO ROCK		16. DEPTH TO WAT	TER AND ELAPSED TIME AFTER DRILL	ING COMPLETED:
14 TOTAL DEPTH OF HOLE S. & PL		17. OTHER WATER	LEVEL MEASUREMENTS (SPECIFY)	. ,
in deotechnical samples desputated	Andiero	HBED 19. TOT	AL NUMBER OF CORE BOXES $\mathcal{U}$	IA
B SAMPLES FOR CHEMICAL ANALYSIS VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY) OTHER (SPE	21. TOTAL CORE RECOVERY %
# DMPOSITION OF HOLE BACKFILLED	MONITORING WELL	OTHER ISPECIFY	23. STORURE OF INSPECTOR	200
LOCATION SKETCH/COMMENTS		,	SCALE:	7
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<u></u>		HTRW DRIL	LING LOG -	7 ( )	<u> </u>	HOLE NUMBER FP-24
ROJEC	r: BJK		INSPECTOR I'm	nothy (c	Hay,	SHEET Z OF Z
1,6V. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	2	Dark yellow-brown (1478 4/6) sand: dry, rel. 10056, F. to M-grad.  Black (1078 2/1) silty sand: dry to moist, v. F-grad, rel. packed, "dirty"  Dark bluish-gray (1 4/1) clay! moist to wet, sticky, plast (20% sand.	PID reading at 10/14 collar=	NIA	NIA	
	5	End of Boring		TD =	5.0 \$	

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HTRW DRILLING LOG		DISTRICT:	avannal	<u>ــــــــــــــــــــــــــــــــــــ</u>		HOLE NUMBER	',
COMPANY NAME: SAIC		2. DRILL SUBCO	ONTRACTOR:	41C		SHEET 1 0F Z	ļ
MOJECT: BULK Foels Pro	oduct Deline	eation.	4. LOCATION:	AAF/Bu	1K Fuels	Foc.	44.
A NAME OF DRILLER: W. Parker			6. MANUFACTURE	RS DESIGNATION OF	DRILL: Gener	al Zid	He
FEETS AND TYPES OF DRILLING GIENE	enol ZIO	HO16	8. HOLE LOCATION	N: Tank	7 <del>443</del> 51	To,	`
MO AMPLING EQUIPMENT Digg	apr with				71001	10,	1
avaer.	1, <u>30, 0</u>	<u> </u>	9. SURFACE ELEV	ATION:			4
			10. DATE STARTE	D: 11/12/06	11, DATE COMPLET	TED: 11/12/06	
** ANCORPORN THICKNESS	NA	<del></del>	15 DEPTH GROUI	NDWATER ENCOUNT	ERED: NA	,	1
			· · · · · · · · · · · · · · · · · · ·		IME AFTER DRILLING C	OMPLETED:	1
1) DEPTH DRILLED INTO ROCK	NIA		16. DEPTH D	my/2	days.		-
H TOTAL DEPTH OF HOLE 5	: \$ Pt.			R LEVEL MEASUREM			
M GEOTECHNICAL SAMPLES	pristry/protec	MUNETRE	BED 19. TO	TAL NUMBER OF COF	RE BOXES NIA		
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	HTRW DRII		7-10	) (22:	HOLE NUMBER F P Z
BLEV, DEPTH	K Fuels Product Del. Description of materials	INSPECTOR 1	GEOTECH SAMPLE	ANALYTICAL SAMPLE NO.	SHEET Z OF Z  REMARKS (G)
(A) (B)	Very dork gray (10) 3/1) silty sand: dn rel. 1005e, F- to M-grad; grovelly.	SCREENING RESULTS		SAMPLE NO. (F)	
4	Dorkgray (104R 4/1) sandy clay: moist, med. plass rel. soft.		<b>Y</b>		
7	End of Boring.		10=	5.0 ft	
8 _			D-56		

HTRW DRILLING LOG	DISTRICT:	Savanna	h		HOLE NUMBER	
COMPANY NAME: SAIC	2. DRILL SUBC	ONTRACTOR:	1C		SHEET LOF Z	
MINUECT: BOLK Fields Product De	ineations.	4. LOCATION: //	AKF/BOIK	Fuels	Fac,	Holo.
THAME OF DRILLER: W. Parker/K. Ledbel	ter,	6. MANUFACTURER	AS DESIGNATION OF DRILL:	Grener	al 216	Digger
MAMPLING EQUIPMENT DIGGE WI	Hole -	8. HOLE LOCATION	Tank 700	か1 Si	le,	
Z-in, diam. 3011d-	stan	9. SURFACE ELEVA			<del></del>	
3		10. DATE STARTED	11/12/06 11.	DATE COMPLET	ED: /1/12/06	
OVERBURDEN THICKNESS NIA		15. DEPTH GROUN	DWATER ENCOUNTERED:	NIA		]
MOPTH DRILLED INTO ROCK		16. DEPTH-TO WAT	TER AND ELAPSED TIME AF	TER DRILLING CO	OMPLETED:	
101AL DEPTH OF HOLE 5.4 RT		17. OTHER WATER	LEVEL MEASUREMENTS (S	SPECIFY):		
TO GEOTECHNICAL SAMPLES ASSUMED	yoltu	PRED 19. TOT	AL NUMBER OF CORE BOX	ES NIA		]
A AMPLES FOR CHEMICAL ANALYSIS VOC	METALS W/A	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %	
PRIPOSITION OF HOLE BACKFILLED	MONITORING WELL	OTHER ISPECIFY,	23. SIGNATURE OF WSPECTEDS	w off	4	]
COCATION SKETCH/COMMENTS	<u> </u>	10(110,1111)	SCALE:	7 116	7	1
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<u> </u>	5 11	HTRW DRILL		7 Fil /	$\mathcal{M}$	HOLE NUMBER FA	<u> </u>
	T:1301K	<del></del>		nothy C	offey.	SHEET ZOF Z	
(A)	(B)	DESCRIPTION OF MATERIALS (C)	SCREENING	SAMPLE	SAMPLE NO.	(G)	
	1	Dark yellow-brown (1047R 4/6) sand: dry, loose,  Very dork gray (1047R 3/1) silty sand 1 dry to moist, rel. loose,  F. to M-grad.  Encl of Boring.	Padina at Bit Color= <   ppm	GEOTECH SAMPLE OR CORE BOX	(F)		

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HTRW DRILLING LOG	DISTRICT:	ovann	ah .		HOLE NUMBER	
DOMPANY NAME: SAIC	2. DRILL SUBCO	ONTRACTOR: SAIC	2		SHEET 1 OF Z	
MOJECT: Bulk Fuels Product Deliv	mation	4. LOCATION:	AAF/BUIK	Fuels H	Fac.	],,,
FHAME OF DRILLER: W. Parker/K. Ledbette	9	6. MANUFACTURE	ERS DESIGNATION OF DRILL: (	Genera	1 210	Hole
FARES AND TYPES OF DRILLING General ZIO	Hole		n. Tank 700		1	1 - SP.
Z-In. Clom. Solid-5	tan	9. SURFACE ELEV	VATION:			1 .
auger,		10. DATE STARTE	ED: 11/12/06 11.0	ATE COMPLETE	D: 11/12/06	
TOVERBURDEN THICKNESS N/A		<del></del>	7 7 -	NA	7. 7	
			ATER AND ELAPSED TIME AFTE		MPLETED:	1
N/A		Do	ry/z da	<u> </u>		_
F 10TAL DEPTH OF HOLE 6.0 RH		17. OTHER WATE	ER LEVEL MEASUREMENTS (SP	ECIFY):		
TO OF OTECHNICAL SAMPLES DE DE	yNolstof	BED 19. TO	OTAL NUMBER OF CORE BOXES	NIA	<del>,</del>	
# SAMPLES FOR CHEMICAL ANALYSIS VOC.	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	THER (SPECIFY)	21. TOTAL CORE RECOVERY %	. }
	NITORING WELL	OTHER ISPECIFY	23. SATURE OF INSPECTOR	ox len		
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€ '. 0.6.100=	62 1	12 12	NG LOG	7 10	<u> </u>	HOLE NUMBER FP-3 SHEET Z OF Z	<b>*</b>
	DEPTH	DESCRIPTION OF MATERIALS	SPECTOR / / ;	GEOTECH	ANALYTICAL SAMPLE NO.	REMARKS	-
1A)	(B)	(C)	SCREENING RESULTS	SAMPLE OR CORE BOX	SAMPLE NO. (F)	(G)	
10)	1 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		PID reading at 13/At collor=	SAMPLE	(F)	(G)	
	5	Phoshic.  Road of Boning.		73> E	X DPH		

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ITRW DRILLING LOG	DISTRICT:	ovanna	L		HOLE NUMBER	, , ,
COMPANY NAME: SAIC	2. DRILL SUBCONT	TRACTOR:	HC.		SHEET OF	
MOJECT: Bulk Fuels Product Deli	reation 4	4. LOCATION;	4AF/BUI	K Fuels	Fac,	1.66
FAME OF DRILLER: W. Parker/K. Ledbetter			IS DESIGNATION OF D		<del>- ,                                     </del>	Hole Disgen
FIFE AND TYPES OF DRILING GENEROL 210	<del>/_/</del> _		Tank	<del></del>		حقي.
E-in diami solve	100	9. SURFACE ELEVA	<del></del>	· · · · · · · · · · · · · · · · · · ·		
augen.		10. DATE STARTED	11/12/06	11. DATE COMPLET	ED: 11/12/06	
FOVERBURDEN THICKNESS NA			DWATER ENCOUNTER	0/.1		
TOPPTH ORILLED INTO ROCK WIA		_	TERI AND ELAPSED TIM			
			LEV <del>ÉL ME</del> ASUREMEN	TS (SPECIFY):	<u> </u>	1
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TO THE CHNICAL SAMPLES CHECKED	y/Ib/\$/T/ABE		AL NUMBER OF CORE	OTHER (SPECIFY)	21. TOTAL CORE	-
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BACKFILLED BACKFILLED		OTHERUSPECIFY OF POINT	23. SOUNTURE OF MASH	M Offer		4
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)EC	r: 1301	R Foels Product Del.	INSPECTOR I'm		Tey-	SHEET Z OF Z
AV. A)	DEPTH (B),	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
		Dork gray (1048 4/1) cloy sand: moist. Very dark gray (1046 3/1) silty sond: dry	₹			
	2	to moist, F-to M-grad, rd. loose				
المنازية ومنسسة والمرازعات	3 /=	12 /110 4/		NIA	NIA	
	4	Dork groy (104R4/, Sordy clay: moist plostic.	CO1101 -			
	5	Greenish-gray (5G 5/1) clay/sandy clay: moist, soft plastic.	/ LIppm		\	
		Endrof Boring.		TD=	5.4 Pt	
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	8					
	9 _					
	10	-		D-62		

ITRW DRILLING LOG	DISTRICT: SOVO	innah	-	HOLE NUMBER
COMPANY NAME: SAIC	2. DRILL SUBCONTRAC		•	SHEET 1 OF Z
I MOJECT: BULK Fuels Product Deliv	neation 4.100	ATION: HAAF/BUI	1K Fuels	Fac.
Frame of DRILLER: W. Parker/K. Ledbetter	6. MAN	UFACTURERS DESIGNATION OF D	PRILL GAMERE	al 214
MAND TYPES OF DRILLING GIENPICO ZIA		ELOCATION: Jank		
	9. SUF	FACE ELEVATION:		
avger.	10. DA	TE STARTED: 11/12/06	11. DATE COMPLET	TED: 11/12/06
WOVERBURDEN THICKNESS N/A	15. DE	PTH GROUNDWATER ENCOUNTER	RED: NIA	<del>-                                    </del>
MIPTH DRILLED INTO ROCK 11/14	16. DE	PTH TO WATER AND ELAPSED TIME	ME AFTER DRILLING C	
N TOTAL DEPTH OF HOLE 5. P RT	17. 0	THER WATER LEVEL MEASUREMEN	( \	-
FOTECHNICAL SAMPLES AND LED	ALD/STORBED	19. TOTAL NUMBER OF CORE	BOXES N/A	- <del></del>
MANULES FOR CHEMICAL ANALYSIS VOC	METALS OTHER	(SPECIFY) OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE
	NITORING WELL OTHER	(SPECIFY) 23 CHATURE OF INSP	ECTÓR 2	RECOVERY %
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OCATION SKETCH/COMMENTS	<u>., , ,,</u>	JUALE	·· ·	
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	. 72 1		LLING LOG	<del>7 11 0</del>	<del>()</del>	HOLE NUMBER F.P. 3\$
KOJEC LUIV.	T: 150	K Fuels Product Del.  DESCRIPTION OF MATERIALS	INSPECTOR ( )	nothy Co	ANALYTICAL	SHEET Z OF Z  REMARKS
(A)	(B)	(C)	SCREENING RESULTS	SAMPLE OR CORE BOX	SAMPLE NO. (F)	(G)
	1	Very dark gray (104k 3/1) silty sand: di to moist, F-toM- grad, rel. 10050.	re			Gravel loyer
And the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second s	,			NA	NIA	
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	⁴ . —	shiff, plastic, not sand < 20%.	61 H			
	6	End of Bonin	5	1D = 5	· O Rt	
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DISTRICT: Sovanno HOLE NUMBER TRW DRILLING LOG FP-31 COMPANY NAME: SAIC 2. DRILL SUBCONTRACTOR: ALOCATION: HAAF/ BULK FUELS FORC. MOJECT: Bulk Fuels Product Delineation. 6. MANUFACTURERS DESIGNATION OF DRILL: General Z/& THAME OF DRILLER: W. Parker/K. Ledbetter B. HOLE LOCATION: Tank 7001 Site HE AND TYPES OF DRILLING = 2-in 9. SURFACE ELEVATION: avaer. 11. DATE COMPLETED: /// /Z/d/c 10. DATE STARTED: 11/12/06 15. DEPTH GROUNDWATER ENCOUNTERED: NA 10/14 OVERBURDEN THICKNESS 16, DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: DEPTH DRILLED INTO ROCK Zdays. 17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): 6. \$ PH TOTAL DEPTH OF HOLE DISTURSED UNDISTUMBED 19. TOTAL NUMBER OF CORE BOXES # OLOTECHNICAL SAMPLES 21, TOTAL CORE (QTHER (SPECIFY) OTHER (SPECIFY) OTHER (SPECIFY) MAMPLES FOR CHEMICAL ANALYSIS METALS RECOVERY NA MONITORING WELL # PRPOSITION OF HOLE BACKFILLED Fuel Point SCALE: OCATION SKETCH/COMMENTS allian 1 Ĉ.

表		HTRW DRILLI	NG LOG		$\alpha$	HOLE NUMBER FP-3	Ľ
TROJEC	r. B. 18	Fues Product Deli IN	SPECTOR	mothy Co	Hay	SHEET Z OF Z	·
LLIIV. L(A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECT SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)	
		Dork yellow-brown (104R 4/6) Si'lty sand.  Black (104R 2/1) Silty sand.  Dark gray (104R 4/1)  Si'lty sand: dry to woist, F. to M-grad, i'rel. 10050.  Dark gray (104R 4/1)  Sandy clay: moist, rel. Stiff, ploshic.		NIA			
	8	End of Boning	D	1B=	S.4 P		

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<b>CO</b> MPANY NAI	ME:	5A	C										ITRACI	OR.	— Si	,				AFTER DRILLING COMPLETED:  AFTER DRILLING COMPLETED:  ASSOCIATION OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE SECOND OF THE	of_ <u></u>	_ _				
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OVERBURDE					1/4								15. DE	PTH G	ROUN	DWAT	ER EN	COUNT	ERED	:	/0/	4				
DEPTH DRILL	LED INT	O ROC	K	1	U/	4						16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED:														
TOTAL DEPT	H OF H	OLE		_	$\mathcal{A}$	P	<u>L</u>						17. OT	HER V	VATER	LEVE	MEAS									_
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	_ 0 1	HTRW DRIL		7 (1) 7	- (T)	HOLE NUMBER FP 3
DIEC			INSPECTOR /11/	· · · · · ·	offey -	SHEET ZOF Z
RV, A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
		Venydark gray (107R 31) silty clay sand moist, massive, F. to M-grad, non- plostic, sl. packed.		lx	<b>X</b>	
		3/1 silly clay sand	:		/\	
	=	moist mossive, F	`			
٠	, =	to M-grad, non-				•
		blostic, sl. packed.	•			
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	' =	DINA (16R	-110			
		1121012 - 3100 31.70	neading at B/H			
-,	=	of the state of the	collar =			
	], =	SOFI Ploshic,	89 ppm	]		
	* =	Bluish-gray (10B 5/1) clay: moist, soft, plostic, sand < 10%.	- 1 H	]. }		-
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		End of Boning.			D 4 01	
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oistrict: Savannal HOLE NUMBER ITRW DRILLING LOG LOOMPANY NAME: .2. DRILL SUBCONTRACTOR: SAIC MOJECT: Bulk Fuels Product Delineation. 4. LOCATION: HAAF/BULK FUELS FAC. THAME OF DRILLER: W. Parker/K. Ledbetter 6. MANUFACTURERS DESIGNATION OF DRILL: GENEROL B. HOLE LOCATION: JOHK 7001 9. SURFACE ELEVATION: 11. DATE COMPLETED: ///Z/\$ 10. DATE STARTED: 11/12/46 NIA 10/64 OVERBURDEN THICKNESS 15. DEPTH GROUNDWATER ENCOUNTERED: DEPTH DRILLED INTO ROCK NIA 5 0 Pt TOTAL DEPTH OF HOLE 17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): DATINA UMBUSTUMBED 19. TOTAL NUMBER OF CORE BOXES NIA DEOTECHNICAL SAMPLES OTHER (SPECIFY) 10/A WETALS 21. TOTAL CORE MANUES FOR CHEMICAL ANALYSIS RECOVERY POSITION OF HOLE BACKFILLED MONITORING WELL OTHER (SPECIFY) Fuel Point CATION SKETCH/COMMENTS SCALE: 10 Caron 

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OJECT	r: Bulk	HTRW DR Freds Product Del.	ILLING LOG	nothy Col	Peu-	HOLE NUMBER FP-33
EV. A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	, , , , , , , , , , , , , , , , , , , ,	Very dark gray-bra (10 4R 7/2) silty cla Sand: dry to mois R. to M-grad, re 10050, mar organia	en H			
	<u> </u>	;		NIA	NA	
	3	Dark bluish-gray (1) u/i) clay! morst, plastic, sand = 1				
· .	4 <u></u>	Dorkgran-gray (1664/1) clay/sa clay: moist, plast sand 5 25%	Zppm.			
	6	Rnd of Borir	•	1D=	6. A A	<b>L</b>
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	10		D-′	70		

TRW DRILLING LOG	DISTRICT: SOVO	ennoh	·	HOLE NUMBER	\( \mathcal{V} \)			
COMPANY NAME: SAIC	2. DRILL SUBCONTRAC	TOR: SAIC		SHEET 1 OF Z				
IMOJECT: Bulk Fuels Product Deline		ATION: HAAF/BU	IK Foels	Fac,				
NAME OF DRILLER: W. Parker/K. Ledbetter	- 6. MAN	IUFACTURERS DESIGNATION OF	DRILL: Genero	el 21¢	Hole Diggen			
HARES AND TYPES OF DRILLING GIERERA ZIG	Holer 8. HOL	OLE 8. HOLE LOCATION: TOLD TANK S.						
Z-in diants solid-s	9. SUF	IFACE ELEVATION:		<del></del>				
1	10. DA	TE STARTED: H/12/46	11. DATE COMPLET	TED: 11/12/06				
OVERBURDEN THICKNESS 10114	15. DE	PTH GROUNDWATER ENCOUNTI	ERED: NIA	-				
DEPTH DRILLED INTO ROCK	16. DE	PTH TO WATER AND ELAPSED T	IME AFTER DRILLING C	OMPLETED:				
17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY):								
GEOTECHNICAL SAMPLES DESTURBED	Moderaneco	19. TOTAL NUMBER OF COR	E BOXES NIA		<u> </u>			
E PAMPLES FOR CHEMICAL ANALYSIS VOC	METALS OTHER	SPECIFY) OTHER (SPECIFY)	OTHER (SPECIFY)	21, TOTAL CORE RECOVERY %				
	TORING WELL OTHER	(SPECIFY) 23. SIGNATURE OF INS	петоб ))	//	1			
	Fuel	bint dinet	1 30 1		┥			
IOCATION SKETCH/COMMENTS		SCAL	E:	7				
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		HTRW DRIL	LING LOG		<u> </u>	HOLE NUMBER FP-34
ROJECT	: 1301	K Fuels Product Del.	INSPECTOR IN	othy Cot	fey-	SHEET Z OF Z
LEV. (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE - SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	1	Very dorkgray-brn (1078 3/2) silty do sand: moist, non- plastic, F- to M-gn sl. packed,	J d,		N	•
	,	grades to: sandy clay: moist to wet, sl. plastic.		NIA	NIA	
	3   111   111	Dark bluish grow (1013 4/1) clay: moi plastic, £10% som	reading stat B/H dicolbr= 3ppm			
	5 =	Dork green-gray (104 4/1) sandy clay: moist, plast 520% sand, End of Boring.	ic,	1D=5	A R+	
	.6	Encor wing.		, , , , , ,		
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TRW DRILLING LOG		DISTRICT:	Sovonnal			HOLE NUMBER
COMPANY NAME: SAIC		2. DRILL SUBÇO	ONTRACTOR:	41C		BHEETOF
MOJECT BULK Fuels Product	- Delinea	1		HAAF/BUIL	Fuels	Fac.
NAME OF DRILLER: W. Parker/K.				RS DESIGNATION OF DRIL		
WES AND TYPES OF DRILLING GIENERO	214	Holp		* Tank 79		
Diagram Z-in dram.	50 d-5	en	9. SURFACE ELEV			<u> </u>
auger:			,			
	_		10. DATE STARTE	0:11/12/06 1		ED: 11 12/06
OVERBURDEN THICKNESS NAME			15. DEPTH GROUN	NOWATER ENCOUNTERED	NIA	
DEPTH DRILLED INTO ROCK			16. DEPTH-TO WA	TER AND EXAPSED TIME A	FTER DRILLING CO	OMPLETED:
TOTAL DEPTH OF HOLE 6. C	S Rt		17. OTHER WATER	R LEVEC MEASUREMENTS	/	
*	DACON PROFILE	uyds/u/	19. TO	TAL NUMBER OF CORE BO	xes 1)/A	
MAMPLES FOR CHEMICAL ANALYSIS		METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE
		TORING WELL	OTHER (SPECIEY)	23. SKING FURE OF INSPERIE		RECOVERY %
		ĸ	vel Points	Munich	r / D	7
OCATION SKETCH/COMMENTS				SCALE:		7
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IECT. I	<u>રે. ત્ર</u>	HTRW DRILL		7 A O	<u> </u>	HOLE NUMBER FP 35	
JECT: [º	тн	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING	GEOFFERI SAMPLE	ANALYTISAL SAMPLE NO.	SHEET ZOF Z  REMARKS (G)	
1		Very darkgray-brown (1048 3/2) Silfyclou Sand! moist, non- plastic, F to M-grad sl. packed!	RESULTS	OR CORE BOX			
3		Dark bluish-gray (10B 4/1) clay: moist ploshic,  Dork green-gray (10) 411) and brown- yellow (107R 6/8) mottled sandy clay	at-B/H collar=	NIA	NA		
5		End of Boning.	D-	TID = 2	5, \$ P.L.		

							y=====			
HTRW DRILLING LOG		DISTRICT: <	Savani	nah			HOLE NUMBE	R (=		
1.COMPANY NAME:		2. DRILL SUBCO	ONTRACTOR:	41C	,		SHEET <u>/</u> OF	2		
I PROJECT: Bolk Fods Produ	xt Deline	3000	4. LOCATION	HAAI	=/Bull	Y Fods	Fac ,			
I NAME OF DRILLER: W. Parker/K.					/			/ L		
FIZES AND TYPES OF DRILING CHENCE		Tele	6. MANUFACTURERS DESIGNATION OF DRILL: GARAGE ZIG							
NO SAMPLING EQUIPMENT DIGGET	solid-sta	<del>m</del>	9. SURFACE		· · · //	<del>7-1-</del>	77 1			
auger,		:		·	7		1/-/	·		
	<del></del>		10. DATE ST	ARTED: ///Z	146 1"	. DATE COMPLET	(ED: 11/12/9	16		
1). OVERBURDEN THICKNESS ///	4		15. DEPTH G	ROUNDWATER	ENCOUNTERED:	NA				
S) DEPTH DRILLED INTO ROCK	A		16. DEPTH T	O WATER AND E	LAPSED TIME AF	TER DRILLING C	OMPLETED:			
14 TOTAL DEPTH OF HOLE 5.	\$ PH		17. OTHER V	WATER LEVEL MI	EASUREMENTS (\$	- / <b>\</b>				
is GEOTECHNICAL SAMPLES	of soften	Substa	10 1 10ED 1	9. TOTAL NUMBE	ER OF CORE BOX	es /U//	4			
16 SAMPLES FOR CHEMICAL ANALYSIS	voc .	METALS,	OTHER (SPECIF			OTHER (SPECIFY)	21, TOTAL CO			
	7.5 3	C/A-	OTHER (SPECIF	FY) , 23. SIGN	THRE OF INSPECTOR		RECOVERY			
		17	vel Poi	nH C	Mound	An Co	The state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the s			
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(A) (B) (C) SCREENING SAMPLE S.  Tank yellow-brown (104/R  4/6) Band: dry, F-to  M-grad, rel. 1005e;  grovelly.  Brown-yellow (144/R6/E)  sand: dry, F-to M-grad,  rel. 1005e.	HOLE NOM	OF Z
Dank gray (1648 4/1)  Strown - yellow (1648 8/1)  Sand: dry, F. to M-grad  rel. 10056.  Vary dark gray (1648 3/1)  Sitty sand: morst,  F. to M-gran, sl.  packed.  Dark gray (1648 4/1) collar:  to v. dork gray  (1648 3/1) cloy:  rel. stiff, moist,  sticky, plostic.	VALYTICAL REMARK AMPLE NO. (G)	
Vary dark gray (10 YR3/1)  Sifty sand: moist,  F- to M-grn, sl. reading  at B/H  Dark gray (10 YR4/1) collar:  to v. dark gray (1ppm  (10 Y R 3/1) cloy:  rel. stiff, moist,  sticky, plastic.	Gravelly	>
Dark gray (16484/1) collar = to v. dark gray (1ppm (10483/1) cloy!  rel. stiff, moist, sticky, plastic.	WA	
sticky, plastic.		
1	Very tou	gh 1
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D-76		

HOLE NUMBER HTRW DRILLING LOG Savannal FP-37 2. DRILL SUBCONTRACTOR: 1. COMPANY NAME: 4. LOCATION: HAAF/BULK Fuels Facilit I NAME OF DRILLER: W. Parker/K. Ledbetta General 9. SURFACE ELEVATION: 11. DATE COMPLETED: 11/12/06 10. DATE STARTED: 11/12/06 12. OVERBURDEN THICKNESS 15. DEPTH GROUNDWATER ENCOUNTERED: 16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: 13 DEPTH ORILLED INTO ROCK 5, \$ PH 14. TOTAL DEPTH OF HOLE 17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): 19. TOTAL NUMBER OF CORE BOXES 18. GEOTECHNICAL SAMPLES N SAMPLES FOR CHEMICAL ANALYSIS OTHER (SPECIFY) OTHER (SPECIFY) 21. TOTAL CORE RECOVERY # DISPOSITION OF HOLE tuel Paint LOCATION SKETCH/COMMENTS SCALE: Be -101

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		HTRW DRILL	ING LOG	را، ح	$\sim$ $\sim$	HOLE NUMBER F12-37	24
PROJEC	T.BJK		SPECTOR 1	inco thy	offer	SHEET Z OF Z	0.7
ELEV.	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING	GEOTECH SAMPLE	ANALYTICAL SAMPLE NO.	REMARKS (G)	
			RESULTS	OR CORE BOX	(F)	(0)	
	ŀ∃	park yellowish-brown		<b>)</b>	<u>                                   </u>		F
		Dark yellowish-brown (1647446) sandidry Fr to M-grad, rel.		<b>/</b> /\	'/\@		E_
	=	F- to M-grad, rel.					E
	, _=	10050.	. 1			1	F
		Venu dorkaray (104R	<b> </b>				
and the second		Very dark gray (10) R 3/1) sand; morst, F- to M-grand, sl. packed.					E
	=	to Marind, St. packed.	.				_
Andre and the		10 11 1		′		•	F
E \	2 -	Kub Ilamad		, ,			E
	=	brown (144R 4/6)	.]	NIA	NIA		E
		brown (1411 76)			' ' '		<u> </u>
		sand/siltysond:	,				<u>ا</u> ،
	3 _	moist, sl. packed,	PID				<u> </u>
	=	F- to M-grade	reading at B/H		<u> </u>	strong product	<b>L</b> .
	_=	, , <u> </u>	at B/H			odor.	<b>F</b>
		,	collar=				E
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HTRW DRILLING LOG	DISTRICT:	avannat	_		HOLE NUMBER	
1. COMPANY NAME: SAIC	2. DRILL SUBCO	and the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second s	1C		SHEET 1 OF 2	
3. PROJECT: BUK Fels Product Del,	neutron	4. LOCATION: HA	HAF/BULK FO	iels Fa	zilitu_	
S. NAME OF DRILLER: WiParky /K. Ledbett	<del>/ ··· ·- ·-</del>		S DESIGNATION OF DRILL:			] {
1. SIZES AND TYPES OF DRILLING General 214	ide		Tank 760		ite,	7
DIGGET 23717	lem				; E,	-
augen.		9. SURFAÇE ÉLÉVAT	TION:		·- · · · · · · · · · · · · · · · · · ·	
, ,		10. DATE STARTED:	11/12/06 11	DATE COMPLET	ED: 11/12/06	
12. OVERBURDEN THICKNESS NIA		15. DEPTH GROUND	OWATER ENCOUNTERED:	NA		7
12 PERTU PRILLED INTO DOCK		16. DEPTH_TO WATE	ER AND ELAPSED TIME AF	TER DRILLING CO	OMPLETED:	1
MA		Dru	1 Zda			_
14. TOTAL DEPTH OF HOLE 6, \$\phi \alpha\tau\$.		17. OTHER WATER	LEVEL MEASUREMENTS (S	SPECIFY):	· · <u>·</u>	
18. GEOTECHNICAL SAMPLES DETROPOSED	Uprojst/up	19. TOTA	AL NUMBER OF CORE BOX	s NIA		
10. SAMPLES FOR CHEMICAL ANALYSIS VOC	METALS VIA	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE	
22. DISPOSITION OF HOLE BACKFILLED	WONITORING WELL	OTHER (SPECIFY)	23. SOUSTURE OF INSPECTOR	M	RECOVERY %	$\dashv$
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LOCATION SKETCH/COMMENTS			SCALE:	2010	,	
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	65 11		LLING LOG	<del>~ 1\\ 7</del>	<del>916</del>	HOLE NUMBER FP-3
DIECT.	DEPTH	(Foels Hodget Del.	·	mothy (	ottey	SHEET Z OF Z
»	(B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	SAMPLE OR CORE BOX	SAMPLE NO.  (F)	REMARKS (G)
一十	_	Darkyellow-brown		1	Ϋ́	
		Darkyellow-brown (164/24/6) sand:		<i> </i>  \	<b>│</b>	
		dr. 10058		'\	' '	
ł	_	dry, rel. loose, F- to M-grad.				
	1 _		320			
	=	Very dark gray (14				
		3/1) sand: 51 pack	red)			
	=	F-toM-grad.		(		
	, _	•	·		1	
		Black (164R 2/1)		NIA	1 MA	
1	. =	silfy sand! dry	to	NIFF	NA	·
		moist, Figurd,			1	
	, =	Black (164R 2/1) silty sand: dry moist, Figurd, sl. pocked.	0.7			
	' <del>-</del>	Very dark gray (19	PID Drift seeding			Idan strang
	_		L 1at 15/14			Very strong product odor.
		3/1) sand! mois	, collar=			product oddi.
	_	to wet, Sh. pack	1400			
	4 _	F- to M-good.	ppm			
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HTRW DRILLING LOG		DISTRICT:	ovannol	~		HOLE NUMBER	
1, COMPANY NAME: SAIC	4	2. DRILL SUBCO	ONTRACTOR:	HC	2 sheet <u>1</u> or ≥		
3. PROJECT: BULK FUES PR		ations,	4. LOCATION: HA	1AF/Bulk	Fuds 1	Facility.	
S. NAME OF DRILLER: W. Parker/	K. Ledbetter		6. MANUFACTURE	RS DESIGNATION OF DRI	u: <i>Gener</i> a	1 2100	
7. SIZES AND TYPES OF DRILLING GENE'S AND SAMPLING EQUIPMENT DISC.	gen with	e	8. HOLE LOCATION	Tank 70	ø3 S	ite.	
z-in, diam? auger.	- solid - stei	<u>~</u>	9. SURFACÉ ELEV	ATION:			
			10. DATE STARTED	11/12/06	11. DATE COMPLET	TED: 11/12/06	
12. OVERBURDEN THICKNESS	NA	•	15. DEPTH GROUN	IDWATER ENCOUNTERE	o: NIA		
13. DEPTH DRILLED INTO ROCK	NIA			TER AND ELAPSED TIME		OMPLETED:	
.14. TOTAL DEPTH OF HOLE	5, 0 Pt			R LEVEL MEASUREMENTS			
18. GEOTECHNICAL SAMPLES	gle de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya della companya della companya de la companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya della companya de	Up dus Yu	19. TOT	AL NUMBER OF CORE B	oxes 10/1	4	
20, SAMPLES FOR CHEMICAL ANALYSIS	Voc N/A-	METALS UNA	OTHER (SPECIFY)	COTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %	
22. DISPOSITION OF HOLE	<del>                                     </del>	NITORING WELL	OTHERUSPECIFYI	23. THE PRIVATE OF INSPEC			
LOCATION SKETCH/COMMENTS	<u> </u>	17	OF FOIR	SCALE:			
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220120	- (2.JV	HTRW DRILL	LING LOG		200	HOLE NUMBER FP 39	47
PROJEC ELEV.	T: IOUIN	Fuels Froduct Del. 1	NSPECTOR   IN	GEOTECH	ANALYTICAL	SHEET Z OF Z	, ,
(A)	(B)	. (C)	SCREENING RESULTS	SAMPLE OR CORE BOX	SAMPLE NO. (F)	(G)	
	2	Very darkgray (10) k 3/1) silty sand: mois sl. packed, F- to M-grad.  Greenish-gray (14 BG 5/1) sandy ckey; moisf, rel. soft, med. plast.	RESULTS	NA		Strong product oder.	
	5	End of Boring.	D-8	D= 5,	S Rt.		

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HTRW DRILLING LOG	DISTRICT: Savannah FP-40				HOLE NUMBER
1. COMPANY NAME: SAIC	2. DRILL SUBCO	SAI	C		SHEET 1 OF 2
3. PROJECT: BULK Fuels Product De	lineation.	4. LOCATION: H	AAF Bul	k Fuels	Fac.
5. NAME OF DRILLER: W. Parker/K. Ledbothe		6. MANUFACTUREF	IS DESIGNATION OF D	RILL: Genero	el 2100 5
7. SIZES AND TYPES OF DRILLING GENERA ZIO )-	tole.		Tonk		
Z-in, dram solid-ste	m	9. SURFACE ELEVA	ATION:	<u> </u>	
augen.		10. DATE STARTED	n/iz/ch/c	11. DATE COMPLET	TED: 11/12/0%
12. OVERBURDEN THICKNESS		<del></del>	DWATER ENCOUNTER	1111	
		<del></del>	TER AND ELAPSED TIM	E AFTER DRILLING C	OMPLETED:
NIA _		Dry	/ Zda	45	
14. TOTAL DEPTH OF HOLE 6. P.	ļ	17. OTHER WATER	LEVEL MEASUREMEN	TS (SPECIFY):	<u> </u>
18. GEOTECHNICAL SAMPLES	ujuloskruk	19. TOT	AL NUMBER OF CORE	BOXES NIA	(-
20. SAMPLES FOR CHEMICAL ANALYSIS VOC	METALS IO//A	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %
	ONITORING WELL	OTHER (SPECIFY)	CONTRACTOR NEPE	CTGG	
LOCATION SKETCH/COMMENTS	11	ver join t	SCALE	2005	7
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		. HTRW DRILL	NG LOG	<u> </u>	- 00	HOLE NUMBER FP-40
OJECT	r: Bulk		SPECTOR / ir	nothy (	30Hey	SHEET Z OF Z
EV. A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	1.1	Hardork yell-brn (1078 4/6) sandidry,		1	Á	· · · · · · · · · · · · · · · · · · ·
	_	(10 PR 4/6) sandidry		IN.		
		F- to M-grad, rel.				
l		10058.				
	1 —	11 20 1 1 20 1 1 1 1 1 1 1 1 1 1 1 1 1 1	•			•
·	=	Very part brown (14)		'		
		Very pole brown (14) R 7/4) sand: dry, v. 10050, mossive, M-				
		grad.			[ [	
	2	J				
	=			11/1	, , ,	
				NIA	NIA	
	_	Olive brown (2:54 4/3) sand ! maist, Sl. pocked, F. to			[	
	3 -	4/3) sand! moist,	PID	1		•
		Sl. pocked, F. to	pradina			
	_	m-grnd.	at B/H			
	-		coller=			
	_		14¢ ppm			
	4		I A PAN	\ \ !.		·
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:		alve brown sendy.		l V	Y .	
- :	=	olive brown sandy clay : moist, med. plast.			'	
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	=	End of Boring.		TD= 5.	\$ Rt.	
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HTRW DRILLING LOG	DISTRICT:	Sovannak				
1, COMPANY NAME: SAIC	2. DRILL SUBC	ONTRACTOR:	1C		SHEET 1 OF 2	
3 PROJECT: BUKFUELS Product Delir	iration	4. LOCATION: H		14d =		
6 NAME OF DRILLER: W. Parker K. Ladbotta.		6. MANUFACTURE	RS DESIGNATION OF D	PAILL: GENEN	al 214	Hole Digger
I BIZES AND TYPES OF DRILLING GENERAL ZICH HE AND SAMPLING EQUIPMENT Diager with		8. HOLE LOCATION	* Tank 7	\$\$3 S,	te	على ا
Z-in- diam. 25010-5+0	m	9. SURFACE ELEV	ATION:	-		
augen.		10. DATE STARTED	0:11/12/66	11. DATE COMPLET	TED: 11/12/06	. h
12 OVERBURDEN THICKNESS NIA		15. DEPTH GROUN	NOWATER ENCOUNTE	RED: N/A	<u> </u>	
13, DEPTH DRILLED INTO ROCK NIA		16. DEPTH TO WA	TER AND ELAPSED TIP	AE AFTER DRILLING C	OMPLETED:	
14, TOTAL DEPTH OF HOLE S. P.L.		17. OTHER WATER	R LEVEL MEASUREME	NTS (SPECIFY):		_
10. GEOTECHNICAL SAMPLES DETAINED	y Mary Ty	19. TO	TAL NUMBER OF CORE	BOXES NIA	<del>'                                    </del>	
TO BAMPLES FOR CHEMICAL ANALYSIS VOC.	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY %	_
	ONITORING WELL	OTHER (SPECIFY)	23 STONATURE OF INST	ECTOR COMPLY	·	
- CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOUS CONTINUOU	12	ver point	SCALE	_ Z W <	7.	7
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	·	HTRW DRII	INGLOG		~~	HOLE NUMBERFP-41
POIEC	r Prilk	Fuels Product Del.	INSPECTOR 1	nothy (6	Heir	SHEET Z OF Z
ELEV.	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	1	Dork vollow-brn (104/k 4/6) sand: dry rel. 10054, F- to Magnad. Vary dork gray (104/ 3/1) silty sandidry fo moist, F- to Magnad. grad, sl. packed.	R			
	2		PIIZ,	NIA	NIA	
	4	Olive brown (2.57)	reading at 13/H Collar= 6 ppm			
	5	sandy clay: moist, sl. soft, sl. plast, mothled. End of Boring		TD=5	\$ R+	
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						HOLE NUMBERFP- 42
	17.16	HTRW DRIL		7 1 0	$\widehat{\mathcal{U}}_{\alpha}$	SHEET Z OF Z
EV. A)	DEPTH (B)	Fuels Product Deli Description of Materials	HEADSPACE SCREENING RESULTS	GEOTECH SAMPLE OR CORE BOX	ANALYTICAL SAMPLE NO.	REMARKS (G)
	_ =	Darkyellow-brown (164/ 4/6) Sand: dry, rel, 1005e, F-to M-grad. Very dork gray (104/ 3/1) silfy sand: dry t moist, K-to M-grad.	?			
	3	Block (10 YR =1) silt sand: moist, F-gra sl. pockad, mossive. becoming:		NIA	NIA	
	4	clayey: moist; sl. plastic.  Bluish-groy (1085) clay: moist, plosti rel. soft, Sand E	at 13/14 collar =			
	5 -	rel. soft, sand &		TD= 5	* O P+.	
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	7					
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PROJECT: Bulk Fuel Facility DELIVERY ORDER: 0066
MONITORING WELL ID: PP-\$1
INSTALLATION START: DATE: 1/10/06, TIME: 1700
INSTALLATION FINISH: DATE: 11/10/06 TIME: 1330
ANNULAR SPACE MATERIALS INVENTORY:
GRANULAR FILTER PACK: TYPE: W.G.#1 QUANTITY: 5 165  BENTONITE SEAL: TYPE: DST Rasy Seal QUANTITY: 1-2 165
BENTONITE SEAL: TYPE: DST Basy Seal QUANTITY: 1-2 165
GROUT: TYPE: NIA QUANTITY: NIA
DESCRIPTION OF WELL SCREEN:
SLOT SIZE (inches): 4.41 SLOT CONFIGURATION: Horizontal
TOTAL OPEN AREA PER FOOT OF SCREEN:
OUTSIDE DIAMETER: 178-in. NOMINAL INSIDE DIAMETER: 158-in.
SCHEDULE/THICKNESS: School 44 COMPOSITION: PYC
MANUFACTURER: ECT Manufacturing.
TYPE OF MATERIAL BETWEEN BOTTOM OF BORING AND SCREEN: Native Formations
DESCRIPTION OF WELL CASING:
OUTSIDE DIAMETER: 1787h. NOMINAL INSIDE DIAMETER: 1987h.
SCHEDULE/THICKNESS: School 40 COMPOSITION: PVC
MANUFACTURER: PCT Manufacturing
JOINT DESIGN AND COMPOSITION: Flush-threaded/slip-cap on bottom
CENTRALIZERS DESIGN AND COMPOSITION:
DESCRIPTION OF PROTECTIVE CASING:
NOMINAL INSIDE DIAMETER: 670 COMPOSITION: Steel.
SPECIAL PROBLEMS ENCOUNTERED DURING WELL CONSTRUCTION AND THEIR RESOLUTION:
Was all well screen and casing material used for construction free of foreign matter (e.g., adhesive tape, labels, soil,
etc.)? YES [/] NO [ ]
Was all well screen and casing material used for construction free of unsecured couplings, ruptures, and other physical
breakage and/or defects? YES [/] NO [ ]
Is deformation or bending of the installed well screen and casing minimized to the point of allowing the insertion and
retrieval of a 1.0-inch bailer throughout the entire length of the completed well? YES M NO [ ]
QUANTITY OF APPROVED WATER USED FOR FILTER PACK ENPLACEMENT: NOWE
RECORDED BY: Wholf fam 11/27/06 QA CHECK BY:
(Signature & Date)

MONITORING WELL **DELIVERY ORDER NO: 0066** PROJECT: Bulk Fuel Facility END: 11/10/06 BEGIN: ///10/06 WELL NUMBER: FP-01 COORDINATES: N: REFERENCE POINT: _ ELEVATION: DATUM/UNITS: E: Ground Surface. DATUM/UNITS: ELEV DEPTH (BGS) STEEL PROTECTIVE CASING WITH COVER TOP OF PVC FLUSH JOINT RISER WITH WATERTIGHT LOCKING CAP GROUND SURFACE PROTECTIVE CASING TYPE: Steel Flush-mount Box

BOTTOM OF SURFACE CASING re GAP BACKFILL MATERIAL TYPE: Concrete 22 1003 Quik-crete brand. RISER CASING DIA:(IN) / 787/2. FD, 17/8-1/2.0D TYPE: School. 40 PVC 6.6 ANNULAR SEAL TYPE: Cananular bentonite DOI Easy Seal 1.4 TOP OF FILTER PACK V.S. Silica Company TOP OF SCREEN DIA: HINI 1987h. TYPE: Sloffed configuration: Horizontal **BOTTOM OF SCREEN** 4.5 BOTTOM OF SUME 5.6 BOTTOM OF HOLE HOLE DIA: (IN) D-92

PROJECT: Bulk Fuel Facility	DELIVERY ORDER: 0066			
MONITORING WELL ID: FP-PZ				
INSTALLATION START: DATE: 1/16/06	TIME: 14/00			
INSTALLATION FINISH: DATE: 11/10/66	TIME: 1408 TIME: 1545			
ANNULAR SPACE MATERIALS INVENTORY:	- d			
GRANULAR FILTER PACK: TYPE: W.G. #	1 QUANTITY: 6 165			
BENTONITE SEAL: TYPE: DST Co	54 500 QUANTITY: 1-2/65			
GRANULAR FILTER PACK: TYPE: W.G. #  BENTONITE SEAL: TYPE: DST GO  GROUT: TYPE: NIP	4 QUANTITY: NIA			
DESCRIPTION OF WELL SCREEN:	·			
SLOT SIZE (inches): $\phi$ , $\phi$ / SLOT CO	INFIGURATION: Horizontal			
TOTAL OPEN AREA PER FOOT OF SCREEN:	NIA			
OUTSIDE DIAMETER: 178-in. NOMINA	L INSIDE DIAMETER: 198-in.			
SCHEDULE/THICKNESS: Sched. 40	COMPOSITION: PVC			
MANUEACTURED, FCT Monutcocts	20/ma_			
TYPE OF MATERIAL BETWEEN BOTTOM OF BORING	AND SCREEN: Native Formations.			
DESCRIPTION OF WELL CASING:				
OUTSIDE DIAMETER: 176-in. NOMINA SCHEDULE/THICKNESS: School. 44	L INSIDE DIAMETER: 13/8-1/n.			
SCHEDULE/THICKNESS: Sched. 40	COMPOSITION: PVC			
MANUFACTURER: ECT Manufact	uring.			
JOINT DESIGN AND COMPOSITION: Plush- the	readed/slip-cap on bottom.			
CENTRALIZERS DESIGN AND COMPOSITION:	VIA .			
DESCRIPTION OF PROTECTIVE CASING:				
NOMINAL INSIDE DIAMETER: 6-/n	composition: <u>Steel</u>			
SPECIAL PROBLEMS ENCOUNTERED DURING WELL				
Signer.				
Was all well screen and casing material used for construct	ion free of foreign matter (e.g., adhesive tape, labels, soil,			
# ## ## PES [V] NO [ ]				
Was all well screen and casing material used for construct	tion free of unsecured couplings, ruptures, and other physical			
breakage and/or defects? YES [/] NO [ ]	•			
Is deformation or bending of the installed well screen and	casing minimized to the point of allowing the insertion and			
retrieval of a 1.0-inch bailer throughout the entire length of the completed well? YES (1 NO [ ]				
QUANTITY OF APPROVED WATER USED FOR FILTER PACK ENPLACEMENT: NOWE				
	•			
RECORDED BY: // Cyff for 11/27/06	QA CHECK BY:(Signature & Date)			
Signature & Date/	D-93			

PROJECT: Bulk Fuel Facility	DELIVERY ORDER: 0066				
MONITORING WELL ID: FP-43					
INSTALLATION START: DATE: 11/11/66					
INSTALLATION FINISH: DATE: 11/11/66	TIME: <u> </u>				
ANNULAR SPACE MATERIALS INVENTORY:					
GRANULAR FILTER PACK: TYPE: W.G. #  BENTONITE SEAL: TYPE: DST Eas	1 QUANTITY: 5/65				
BENTONITE SEAL: TYPE: DST Eas	QUANTITY: 1-2 165				
GROUT: TYPE: VIA	QUANTITY: 10114				
DESCRIPTION OF WELL SCREEN:	, 1 1				
SLOT SIZE (inches): 4,4 SLOT CONF	IGURATION: Horizontol				
TOTAL OPEN AREA PER FOOT OF SCREEN: NIF	<u>+</u>				
OUTSIDE DIAMETER: 1 76~in NOMINAL I	NSIDE DIAMETER: 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				
SCHEDULE/THICKNESS: Sched. 40	COMPOSITION: PVC				
SCHEDULE/THICKNESS: Sched. 4¢  MANUFACTURER: ECT Manufacturi					
TYPE OF MATERIAL BETWEEN BOTTOM OF BORING AN	ID SCREEN:				
DESCRIPTION OF WELL CASING:	5/				
OUTSIDE DIAMETER: 17/8-in. NOMINAL I	NSIDE DIAMETER: 1 78 - in .				
	7				
MANUFACTURER: ECT Manufactur	ing.				
JOINT DESIGN AND COMPOSITION: Flush- H					
CENTRALIZERS DESIGN AND COMPOSITION:	<u> </u>				
DESCRIPTION OF PROTECTIVE CASING:	- t 1				
NOMINAL INSIDE DIAMETER: 5-10 CO	IMPOSITION: Steel.				
SPECIAL PROBLEMS ENCOUNTERED DURING WELL CONSTRUCTION AND THEIR RESOLUTION:					
None,					
i( <del></del>					
Was all well screen and casing material used for construction	free of foreign matter (e.g., adhesive tape, labels, soil,				
otc.)? YES NO [ ]					
Was all well screen and casing material used for construction free of unsecured couplings, ruptures, and other physical					
breakage and/or defects? YES NO []					
Is deformation or bending of the installed well screen and casing minimized to the point of allowing the insertion and					
retrieval of a 1.0-inch bailer throughout the entire length of the completed well? YES NO []					
QUANTITY OF APPROVED WATER USED FOR FILTER PACK ENPLACEMENT:					
" RECORDED BY William 11/12/06	QA CHECK BY: Ways H. Valler 11/27/06				
(Signature & Date)	(Signature & Date)				
·	D-95				

MONITORING WELL **DELIVERY ORDER NO: 0066** PROJECT: Bulk Fuel Facility FD-03 END: 11/11/46 WELL NUMBER: BEGIN: /1/11/06 **COORDINATES:** N: REFERENCE POINT: E ELEVATION: DATUM/UNITS: E: DATUM/UNITS: DEPTH STEEL PROTECTIVE CASING WITH COVER TOP OF PVC FLUSH JOINT RISER WITH WATERTIGHT LOCKING CAP GROUND SURFACE PROTECTIVE CASING TYPE: Steel Flush-mount Box

BOTTOM OF SURFACE CASING TYPE: CONCRETE. Quik-crete Branch RISER CASING DIA:(IN) / 5/8-in. ID, 176-in. 05 TYPE: School. 40 PVC Ф.6 TOP OF SEAL ANNULAR SEAL TYPE: DSI Easy Seal Gronular Bentonite. 1,0 TOP OF FILTER PACK FILTER PACK TYPE: WG#1 Filpro Sond U.S. Silical Company 1,3 TOP OF SCREEN DIA: (IN) /5/8-in. TYPE: Slottod CONFIGURATION: BOTTOM OF SCREEN **BOTTOM OF SUMP** BOTTOM OF HOLE HOLE DIA: (IN)

PROJECT: Bulk Fuel Facility DELIVERY-ORDER: 0066				
MONITORING WELL ID: FP-44				
INSTALLATION START: DATE: 11/11/46 TIME: 4874				
INSTALLATION FINISH: DATE: /// // db TIME: 4828				
ANNULAR SPACE MATERIALS INVENTORY:				
GRANULAR FILTER PACK: TYPE: #1 W.G. QUANTITY: 5 165.				
BENTONITE SEAL: TYPE: DST Gasy Searl QUANTITY: 1-Z 165.				
GROUT: TYPE: NIA QUANTITY: NIA				
DESCRIPTION OF WELL SCREEN:				
SLOT SIZE (inches): 4 4 SLOT CONFIGURATION: Horizontal				
TOTAL OPEN AREA PER FOOT OF SCREEN: NIT				
OUTSIDE DIAMETER: 1 18-in. NOMINAL INSIDE DIAMETER: 158-in.				
schedule/thickness: School, 40 composition: PVC				
MANUFACTURER: ECT Manufacturing.				
TYPE OF MATERIAL BETWEEN BOTTOM OF BORING AND SCREEN: Native formations.				
DESCRIPTION OF WELL CASING:				
OUTSIDE DIAMETER: 1787. NOMINAL INSIDE DIAMETER: 1587.				
schedule/thickness: Sched 46 composition: PVC				
MANUFACTURER: ECT Manufacturing.				
JOINT DESIGN AND COMPOSITION: Flush-threwded/slip-cap on bottom				
CENTRALIZERS DESIGN AND COMPOSITION:				
DESCRIPTION OF PROTECTIVE CASING:				
NOMINAL INSIDE DIAMETER: 5-in. COMPOSITION: 5+eel				
SPECIAL PROBLEMS ENCOUNTERED DURING WELL CONSTRUCTION AND THEIR RESOLUTION:				
! None				
Was all well screen and casing material used for construction free of foreign matter (e.g., adhesive tape, labels, soil,				
erc.)? YES M NO []				
Was all well screen and casing material used for construction free of unsecured couplings, ruptures, and other physical				
breakage and/or defects? YES X NO []				
Is deformation or bending of the installed well screen and casing minimized to the point of allowing the insertion and				
retrieval of a 1.0-inch bailer throughout the entire length of the completed well? YES NO []				
QUANTITY OF APPROVED WATER USED FOR FILTER PACK ENPLACEMENT:				
RECORDED BY: Washing of us 11/12/06  QA CHECK BY: Washing 11/12/06  (Signature & Date)  D-97				

PROJECT: Bulk Fuel Facility	MONITORING WELL DELIVERY ORDER NO: 0066	
WELL NUMBER: FP- \$4	BEGIN: 11/11/46 END: 11/	11/06 x
COORDINATES: N:	· · · · · · · · · · · · · · · · · · ·	
E: DATUM/UNITS:	Ground Surface	DATUM/UNITS
STEEL P	ROTECTIVE CASING WITH COVER	DEPTH ELEV
	TOP OF PVC FLUSH JOINT RISER WITH WATERTIGHT LOCKING CAP	
	<b>⊋</b>	,
	GROUND SURFACE	<b>-</b>  0
	PROTECTIVE CASING DIA: (IN) 5-10	**
A. L. C. C. C. C. C. C. C. C. C. C. C. C. C.	TYPE: Steel Aust-mount Box	0.6
	BOTTOM OF SURFACE CASING	10.0
	TYPE: BACKFILL MATERIAL	y 2
	TYPE: Concrete.	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
	Quik-crete Brand.	41.
	RISER CASING	committee The committee The committee committee committee The committee committee committee committee committee committee The committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee committee
	DIA:(IN)/98-in TO, 17/8-in. OD	
	TYPE: Sched. 40 PVC	6.6
	TOP OF SEAL	140
	TYPE: DSI Basy Seal	12
	Granular Bentonite.	1
		1,0
	TOP OF FILTER PACK	•
	FILTER PACK  TYPE: W.G., #   F.   D.CO Sam.)	
	U.S. Silica Company	
	TOP OF SCREEN	1.3
	SCREEN	
	DIA: HIN! / 5/8-in. TYPE: Slotted	
	SLOT SIZE: CONFIGURATION: \$\Phi \theta l - i'n . Hori Fontal.	4.5
	BOTTOM OF SCREEN	<del></del>
	BOTTOM OF SUMP	4.5
	BOTTOM OF HOLE	5.4
HOLE DIA: (IN)	D-98	

PROJECT: Bulk Fuel Facility DELIVERY ORDER: 0066				
MONITORING WELL ID: FP-05				
INSTALLATION START: DATE: 11/11/06 TIME: 4837				
INSTALLATION FINISH: DATE: 11/11/06 TIME: 0854 0839				
ANNULAR SPACE MATERIALS INVENTORY:				
GRANULAR FILTER PACK: TYPE: WG.#1 QUANTITY: 5 165				
BENTONITE SEAL: TYPE: DST Easy Stal QUANTITY: 1-2 165				
BENTONITE SEAL:  TYPE: DST Fasy Seal QUANTITY: 1-2 165  GROUT:  TYPE: N/A QUANTITY: N/A				
DESCRIPTION OF WELL SCREEN:				
SLOT SIZE (inches): 4.41 SLOT CONFIGURATION: Horizontal				
TOTAL OPEN AREA PER FOOT OF SCREEN: NIA				
OUTSIDE DIAMETER: 17/8-in. NOMINAL INSIDE DIAMETER: 15/8-in.				
SCHEDULE/THICKNESS: School 46 COMPOSITION: PVC				
MANUFACTURER: ECT Manufacturing.				
TYPE OF MATERIAL BETWEEN BOTTOM OF BORING AND SCREEN: Native Formations.				
DESCRIPTION OF WELL CASING:				
OUTSIDE DIAMETER: 17/8-in NOMINAL INSIDE DIAMETER: 15/8-in.				
schedule/Thickness: Sched. 44 composition: PVC				
MANUFACTURER: ECT Manufactoring.				
Joint Design and Composition: Plush - Hreaded Slip-cap on bottom				
CENTRALIZERS DESIGN AND COMPOSITION:				
DESCRIPTION OF PROTECTIVE CASING:				
NOMINAL INSIDE DIAMETER: 5-in. COMPOSITION: Steel.				
BPECIAL PROBLEMS ENCOUNTERED DURING WELL CONSTRUCTION AND THEIR RESOLUTION:				
None:				
Was all well screen and casing material used for construction free of foreign matter (e.g., adhesive tape, labels, soil,				
•Ic./?_YES M NO []				
Was all well screen and casing material used for construction free of unsecured couplings, ruptures, and other physical				
breakage and/or defects? YES NO []				
In deformation or bending of the installed well screen and casing minimized to the point of allowing the insertion and				
retrieval of a 1.0-inch bailer throughout the entire length of the completed well? YES NO [ ]				
QUANTITY OF APPROVED WATER USED FOR FILTER PACK ENPLACEMENT: None.				
RECORDED BY: Must be sty 11/12/06 QA CHECK BY: Wing A. Vala 11/22/06				
(Signature & Date)  D-99				

ROJECT: Bulk Fuel Facility	MONITORING WELL DELIVERY ORDER NO: 00	066	
TELL NUMBER: FP-\$5	BEGIN: 11/11/46	END: /1/11/06	
OORDINATES: N: E: ATUM/UNITS:	REFERENCE POINT: El		ví⊤s: ैं
	Ground Surface	. DEPTH	ELEV
STEE	L PROTECTIVE CASING WITH COVER  TOP OF PVC FLUSH WATERTIGHT LOCE	(BGS) I JOINT RISER WITH KING CAP	
	GROUND SURFA	_	
	PROTECTIVE CASING DIA: (IN)		
	TYPE: Steel Flush- BOTTOM OF SURFACE CASING	mount Box \$,6	fs.
	TYPE: CONONETC.		STATE OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY
	Quik-grete B	Brand	The state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the s
	RISER CASING  DIA:(IN) / 5/8-in. ID, / 7/6		**************************************
	TYPE: Sched, 40 P	vc	13 m
	ANNULAR SEAL TYPE: AST BOSY SEA	ael.	* Annahadan
	Granular Benton	nite.	*
	TOP OF FILTER PACK	7,0	
	TYPE: W. Gy. # F./p U.S. S.: Lica Com	no Sand.	Manager and American
	TOP OF SCREEN	pony. 1.3	,
	SCREEN DIA: (IN) 1987h. TYPE: 5/0/	facl.	
	SLOT SIZE: CONFIGURATION:		4
	BOTTOM OF SCREEN	4,5	
	BOTTOM OF SUMP	4,5 5,φ	
HOLE DIA: (IN)	D-100		1

MONITORING WELL ID: FP-06				
INSTALLATION START: DATE: 11/11/46 TIME: 4849				
INSTALLATION FINISH: DATE: 11/11/06 TIME: 0854				
ANNULAR SPACE MATERIALS INVENTORY:				
GRANULAR FILTER PACK: TYPE: W.G. #1 QUANTITY: 5/55				
BENTONITE SEAL: TYPE: DST Easy Seal QUANTITY: 1-2165  GROUT: TYPE: N/A QUANTITY: N/A				
GROUT: TYPE: N/A QUANTITY: N/4				
DESCRIPTION OF WELL SCREEN:				
SLOT SIZE (inches): 6.01 SLOT CONFIGURATION: Horizontal				
TOTAL OPEN AREA PER FOOT OF SCREEN: WIA				
OUTSIDE DIAMETER: 17/8-in. NOMINAL INSIDE DIAMETER: 15/8-in.				
schedule/thickness: Schod. 40 composition: PVC				
MANUFACTURER: ECT Manufacturing				
TYPE OF MATERIAL BETWEEN BOTTOM OF BORING AND SCREEN: Native Formations				
DESCRIPTION OF WELL CASING:				
OUTSIDE DIAMETER: 178-in. NOMINAL INSIDE DIAMETER: 198-in. SCHEDULE/THICKNESS: Sched. 44 COMPOSITION: PVC				
SCHEDULE/THICKNESS: $\frac{5ched.49}{}$ composition: $\frac{FVC}{}$				
MANUFACTURER: ECT Manufacturing				
JOINT DESIGN AND COMPOSITION: Flush-threaded/slip-cap on bottom				
CENTRALIZERS DESIGN AND COMPOSITION: None				
DESCRIPTION OF PROTECTIVE CASING:				
NOMINAL INSIDE DIAMETER: 5-in. COMPOSITION: 5+cel.				
SPECIAL PROBLEMS ENCOUNTERED DURING WELL CONSTRUCTION AND THEIR RESOLUTION:				
Was all well screen and casing material used for construction free of foreign matter (e.g., adhesive tape, labels, soil,				
#10.37 YES X NO [ ]				
Was all well screen and casing material used for construction free of unsecured couplings, ruptures, and other physical				
brenkage and/or defects? YES X NO [ ]				
Is deformation or bending of the installed well screen and casing minimized to the point of allowing the insertion and				
NO[]				
QUANTITY OF APPROVED WATER USED FOR FILTER PACK ENPLACEMENT:				
RECORDED BY Signature & Date)  OA CHECK BY: Wurft www 1/27/06  (Signature & Date)  D-101				

PROJECT: Bulk Fuel Facility	MONITORING WELL DELIVERY ORDER NO: 00	66	
NELL NUMBER: PP-Φ6	BEGIN: 1/11/0/6	END: /////	166 6
COORDINATES: N: E: DATUM/UNITS:	REFERENCE POINT: - EL Ground Surfac	EVATION: DAT	TUM/UNITS:
<del></del>	1910010 301 70C	<u>e.</u>	DEPTH ELEV
STEE	L PROTECTIVE CASING WITH COVER  TOP OF PVC FLUSH WATERTIGHT LOCKI		(BGS)
	GROUND SURFAC	DE .	<b>\$</b> 0.000 €
	PROTECTIVE CASING		0
	TYPE: Steel Flush-m. BOTTOM OF SURFACE CASING	ount Bex	b.6
	Type: Concrete.  Quik-crete		2
	Quik-crete	Brand.	
	RISER CASING DIA:(IN)/98-14, ID, 176	7/n:0/2	
	TYPE: Sched. 40 1	ove II	6.6
	TOP OF SEAL  ANNULAR SEAL		4,6
	TYPE: Granulor Bent DSI Easy Sece		
	DST 6059 JEC		1.4
- Carry	TOP OF FILTER PACK  FILTER PACK		· <b></b>
	TYPE: W.G.#1 F. U.S. Silica Com	pony.	10
	TOP OF SCREEN	<u> </u>	1.3
	DIA: (IN) / 5/87'n . TYPE: Slot	tacl.	
	slot size: configuration: Φ.Φ(-in Honiz	ontal.	4.5
	BOTTOM OF SCREEN	1	45
	BOTTOM OF SUMP  BOTTOM OF HOLE		5·\$
HOLE DIA: (IN)	D-102		

PROJECT: Bulk Fuel Facility	DELIVERY ORDER: 0066
MONITORING WELL ID: FP-\$7	
INSTALLATION START: DATE: 11/11/06	TIME: <u>4941</u>
INSTALLATION FINISH: DATE: 11/11/06	TIME: $\phi 9 \phi 9$
ANNULAR SPACE MATERIALS INVENTORY:	,
GRANULAR FILTER PACK: TYPE: W.G. #	1 QUANTITY: 5 /65.
BENTONITE SEAL: TYPE: DST Ease	QUANTITY: 1-2 165.  QUANTITY: N/14
GROUT: TYPE: VIA	QUANTITY:
DESCRIPTION OF WELL SCREEN:	
SLOT SIZE (inches): 中心 SLOT CONFI	
TOTAL OPEN AREA PER FOOT OF SCREEN:	4
OUTSIDE DIAMETER: 17/8-in NOMINAL IN	
schedule/Thickness: Sched 40	
MANUFACTURER: ECT Manufactur	ing.
TYPE OF MATERIAL BETWEEN BOTTOM OF BORING AN	
DESCRIPTION OF WELL CASING:	, 5/2
DESCRIPTION OF WELL CASING:  OUTSIDE DIAMETER: 1/6-in NOMINAL IN SCHEDULE/THICKNESS: School 44	ISIDE DIAMETER: 1 18-in
MANUFACTURER: ECT Manufacturi Joint Design and Composition: Flush-H	$\frac{nq}{2}$
CENTRALIZERS DESIGN AND COMPOSITION:	A
DESCRIPTION OF PROTECTIVE CASING:	el and
, NOMINAL INSIDE DIAMETER: 6-, cor	
BPECIAL PROBLEMS ENCOUNTERED DURING WELL CO	NSTRUCTION AND THEIR RESOLUTION:
Harman	
VIII	
Was all well screen and casing material used for construction	free of foreign matter to a adhesive tone labele sail
	rree of foreign matter (e.g., adhesive tape, labels, soll,
No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.   No.	free of uneacured counlings runtures and other physical
breakage and/or defects? YES NO [ ]	nee of unsecured couplings, ruptures, and other physical
Is deformation or bending of the installed well screen and case	ing minimized to the point of allowing the insertion and
intrieval of a 1.0-inch bailer throughout the entire length of the	
QUANTITY OF APPROVED WATER USED FOR FILTER PA	11-40
The state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the s	
AECORDED BY Justin Dly 11/13/46	QA CHECK BY: Mayo 1 / an 11/27/06
(Signature Date)	(Signature & Date)

MONITORING WELL PROJECT: Bulk Fuel Facility **DELIVERY ORDER NO: 0066** WELL NUMBER: FP-67 END: 11/11/66 BEGIN: ///11/06 **COORDINATES:** N: REFERENCE POINT: **ELEVATION:** DATUM/UNITS: E: Ground Surface. **DATUM/UNITS:** ELEV DEPTH (BGS) STEEL PROTECTIVE CASING WITH COVER TOP OF PVC FLUSH JOINT RISER WITH WATERTIGHT LOCKING CAP GROUND SURFACE PROTECTIVE CASING DIA: (IN) 5-12 4.6 BACKFILL MATERIAL Concrete Quik-crete Brand. DIA:(IN) 15/8-in, ID, 17/8-in. OD TYPE: School. 40 PVC \$.6 ANNULAR SEAL TYPE: Granclor Bentonito DSI Easy Seal 1.0 TOP OF FILTER PACK TYPE:W.GI#1 Filpro Sand. U.S. Silica Company TOP OF SCREEN DIA: (IN) 15/8-in TYPE: STOHED BOTTOM OF SCREEN BOTTOM OF SUMP BOTTOM OF HOLE +1 Z-in. D-104

PROJECT: Bulk Fuel Facility	DELIVERY ORDER: 0066				
MONITORING WELL ID: FP-48					
INSTALLATION START: DATE: /// 1/ 66	TIME:				
INSTALLATION FINISH: DATE: 11/11/46	TIME:				
ANNULAR SPACE MATERIALS INVENTORY:					
GRANULAR FILTER PACK: TYPE: ₩. G. #	QUANTITY: 5 165				
BENTONITE SEAL: TYPE: DSI EOS  GROUT: TYPE: N/A	Seal QUANTITY: 1-2 165				
GROUT: TYPE:	QUANTITY: MIA				
DESCRIPTION OF WELL SCREEN:					
SLOT SIZE (inches): $\cancel{\phi}$ . $\cancel{\psi}$ SLOT CON					
TOTAL OPEN AREA PER FOOT OF SCREEN:	<u>//4:</u>				
OUTSIDE DIAMETER: 17/8-in. NOMINAL	INSIDE DIAMETER: 15/8-in.				
SCHEDULE/THICKNESS: Sched . 40	COMPOSITION: PVC				
- MANUFACTURER: ECT Monufact	oring.				
TYPE OF MATERIAL BETWEEN BOTTOM OF BORING A	IND SCREEN: Native Formations				
DESCRIPTION OF WELL CASING:	.5/				
OUTSIDE DIAMETER: 17/8-1, NOMINAL	INSIDE DIAMETER: 198-in.				
SCHEDULE/THICKNESS: Sched. 44	COMPOSITION:				
MANUFACTURER: ECT Manufacto	101011				
JOINT DESIGN AND COMPOSITION: Flush-	threaded slip-cap on bottom				
CENTRALIZERS DESIGN AND COMPOSITION:	)//-				
DESCRIPTION OF PROTECTIVE CASING:  NOMINAL INSIDE DIAMETER: 5-10 C					
SPECIAL PROBLEMS ENCOUNTERED DURING WELL C	ONSTRUCTION AND THEIR RESOLUTION:				
TONE.					
Was all well screen and casing material used for construction	n free of foreign metter (e.g. adhesive tage lahels soil				
elc./? YES (% NO [ ]	Tree or rolling matter (e.g., admestive tupe, labore, com,				
•	n free of unsecured couplings motures, and other physical				
Was all well screen and casing material used for construction free of unsecured couplings, ruptures, and other physical					
) If deformation or bending of the installed well screen and casing minimized to the point of allowing the insertion and					
Patrieval of a 1.0-inch bailer throughout the entire length of the completed well? YES NO [ ]					
QUANTITY OF APPROVED WATER USED FOR FILTER PACK ENPLACEMENT:					
RECORDED BY: Night of the 11/13/46 QA CHECK BY: Night of the 11/27/06  (Signature & Bate)  D-105  (Signature & Date)					

ROJECT: Bulk Fuel Facility	MONITORING WELL DELIVERY ORDER NO: 00	66	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
VELL NUMBER: PP-Ø8	BEGIN: 11/11/46	END: ///// 6/	a. <b>t</b> -A
OORDINATES: N: E: ATUM/UNITS:		EVATION: DATUM/UN	NTS:- [™]
STEE	EL PROTECTIVE CASING WITH COVER  TOP OF PVC FLUSH WATERTIGHT LOCK	DEPTH (BGS)	ELEV 3
	GROUND SURFA	CE0	
	DIA: (IN) 5-17 TYPE: Steel Flush-me	ount Box 0.6	
	TYPE: Concrete Quik-crete	Brancl.	**************************************
	DIA: IIII 198-in. FD, 178  TYPE: Schad. 40 F		
	TOP OF SEAL  ANNULAR SEAL  TYPE: GIVON ULOY DEN	4.6	#35# rd.me u.e.com u.e.com u.e.com
	DSI Easy Se	1,0	5° 1
	TYPE: W.Gy. #1 Fill	pro Sond	44
	TOP OF SCREEN  SCREEN  DIA: (IN) / 5/8-7/1, TYPE: 5/0		
	SLOT SIZE: CONFIGURATION:	1 1	
	BOTTOM OF SUMP	1.500 4.5 4.5 5.0	
HOLE DIA: (IN)	BOTTOM OF HOLE D-106	7-2-	ista

<b> </b>				
PROJECT: Bulk Fuel Facility	DELIVERY ORDER: 0066			
MONITORING WELL ID: $FP-\Phi9$				
INSTALLATION START: DATE: 11/11/06	TIME: $4933$			
INSTALLATION FINISH: DATE: 11/11/46	TIME: _ ゆ944			
ANNULAR SPACE MATERIALS INVENTORY:				
GRANULAR FILTER PACK: TYPE: W.G. #1	QUANTITY: 5 155,			
GRANULAR FILTER PACK: TYPE: いら、# 1  BENTONITE SEAL: TYPE: ひこまない  GROUT: TYPE: ハル	Seal QUANTITY: 1-2 165.			
GROUT: TYPE: 10/14	QUANTITY: NIA			
DESCRIPTION OF WELL SCREEN:				
SLOT SIZE (inches): $4, 4$ SLOT CONFI	GURATION: Herizontal			
TOTAL OPEN AREA PER FOOT OF SCREEN:				
OUTSIDE DIAMETER: 17/8-in- NOMINAL IN	ISIDE DIAMETER: 15/6-in.			
schedule/thickness: Sched. 44	COMPOSITION: PVC			
MANUFACTURER: ECT Mondacturi				
TYPE OF MATERIAL BETWEEN BOTTOM OF BORING AN	D SCREEN: Native Formations			
DESCRIPTION OF WELL CASING:				
OUTSIDE DIAMETER: 178-in NOMINAL IN				
schedule/thickness: Schod. 40				
MANUFACTURER: ECT Manufacturin				
JOINT DESIGN AND COMPOSITION: Flush-	threadock/slip-cap on bottom			
CENTRALIZERS DESIGN AND COMPOSITION:	1/4			
DESCRIPTION OF PROTECTIVE CASING:	. 1.			
NOMINAL INSIDE DIAMETER: 67/n . COM	MPOSITION: Steel			
*PECIAL PROBLEMS ENCOUNTERED DURING WELL CO	NSTRUCTION AND THEIR RESOLUTION:			
None,				
Was all well screen and casing material used for construction in	free of foreign matter (e.g., adhesive tape, labels, soil,			
#10.17 YES NO [ ]				
Was all well screen and casing material used for construction	free of unsecured couplings, ruptures, and other physical			
Wenkage and/or defects? YES NO [ ]	•			
** dolormation or bending of the installed well screen and case	•			
Folitieval of a 1.0-inch bailer throughout the entire length of the completed well? YES NO []				
QUANTITY OF APPROVED WATER USED FOR FILTER PACK ENPLACEMENT:				
process and must be aller 1/13/de	QA CHECK BY: Way 1 / 12406			
(Signature & Date)	(Signature & Date)			

STEEL PROTECTIVE CASING WITH COVER  STEEL PROTECTIVE CASING WITH COVER  TOP OF PVC FLUSH JOINT RISER WITH WATERTICHT LOCKING CAP  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE CASING  DIA:(IN) 5-1/1  TYPE: BACKFILLMATERIAL  COVERED  ON, K-Crete Brand  DIA:(IN) 1/8-1/1. OD  TYPE: Schad. 40 PVC  TOP OF SLAT  ANNULAR SEAL  TYPE: Granular benton: te  DAT RASY Ball  I.D  TOP OF FILTER PACK	MONITORING WELL acility DELIVERY ORDER NO: 0066	PROJECT: Bulk Fuel Facility
REFERENCE POINT: ELEVATION: DATUM/UNITS  BYOURD SUFFACE  STEEL PROTECTIVE CASING WITH COVER  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  O  DIA: (RN 5-1/1)  TYPE: See Flush mount Box  BOTTOM OF SURFACE CASING  DIA: (RN 5-1/1)  TYPE: COVERTE  QU, K-Crete Branch  DIA: (RN 15-1/1)  RISER CASING  DIA: (RN 15-1/1)  TYPE: Sched). 40. PVC  TOP OF SEAL  TYPE: Graphulay benton tell  TYPE: Graphulay benton tell  TYPE: Graphulay benton tell  TYPE: Graphulay benton tell  TYPE: Graphulay benton tell  TYPE: Graphulay benton tell  TYPE: Graphulay benton tell  TYPE: Graphulay benton tell  TYPE: Graphulay benton tell  TYPE: Graphulay benton tell  TYPE: Graphulay benton tell  TYPE: Graphulay benton tell  TYPE: Graphulay benton tell  TYPE: Graphulay benton tell  TYPE: Graphulay benton tell  TYPE: Graphulay benton tell  TYPE: Graphulay benton tell  TYPE: Graphulay benton tell  TYPE: Graphulay benton tell  TYPE: Graphulay benton tell  TYPE: Graphulay benton tell  TYPE: Graphulay benton tell  TYPE: Graphulay benton tell  TYPE: Graphulay benton tell  TYPE: Graphulay benton tell  TYPE: Graphulay benton tell  TYPE: Graphulay benton tell  TYPE: Graphulay benton tell  TYPE: Graphulay benton tell  TYPE: Graphulay benton tell  TYPE: Graphulay benton tell  TYPE: Graphulay benton tell  TYPE: Graphulay benton tell  TYPE: Graphulay benton tell  TYPE: Graphulay benton tell  TYPE: Graphulay benton tell  TYPE: Graphulay benton tell  TYPE: Graphulay benton tell  TYPE: Graphulay benton tell  TYPE: Graphulay benton tell  TYPE: Graphulay benton tell  TYPE: Graphulay benton tell  TYPE: Graphulay benton tell  TYPE: Graphulay benton tell  TYPE: Graphulay benton tell  TYPE: Graphulay benton tell  TYPE: Graphulay benton tell  TYPE: Graphulay benton tell  TYPE: Graphulay benton tell  TYPE: Graphulay benton tell  TYPE: Graphulay benton tell  TYPE: Graphulay benton tell  TYPE: Graphulay benton tell  TYPE: Graphulay benton tell  TYPE: Graphulay benton tell  TYPE: Graphulay benton tell  TYPE: Graphulay benton tell  TYPE: Graphulay benton te	ВЕGIN: 1/11/d6 END: 1/11/d6 34	WELL NUMBER: PP-49
STEEL PROTECTIVE CASING WITH COVER  TOP OF PVC FLUSH JOINT RISER WITH WATERTICHT LOCKING CAP  GROUND SURFACE  O  DIA: (IN) 5-in.  TYPE: Sheed Flush-mount Box BACKFILLMATERIAL  TYPE: Coverble Boilton of Surface casing  DIA: (IN) 156-in. TD, 176-in. OD  TYPE: Scheed. 40 PVC  ANNULAR SEAL  TYPE: Granular benton: te  Dof Filter Pack  TOP OF FILTER PACK  TOP OF FILTER PACK	REFERENCE POINT: ELEVATION: DATUM/UNITS:	E:
DIA: (IN) 5-in.  TYPE Steel Flush-mount Box.  BOTTOM OF SURFACE CASING  TYPE: Coverate  Boik-crete Brandi  RISER CASING  DIA: (IN) 15/8-in. AD, 17/8-in. OD  TYPE: Sched. 40 PVC  TOP OF SEAL  ANNULAR SEAL  TYPE: Granular Bal  TYPE: Granular Bal  TYPE: Granular Bal  TYPE: Granular Bal  TYPE: Granular Bal  TYPE: Granular Bal  TOP OF FLTER PACK	STEEL PROTECTIVE CASING WITH COVER  TOP OF PVC FLUSH JOINT RISER WITH	
BACKFILLMATERIAL  TYPE: CONCrete  Do, K-crete Branch  RISER CASING  DIA:INI 1 58-in. TD, 1 18-in. OD  TYPE: Sched. 40 PVC  TOP OF SEAL  ANNULAR SEAL  TYPE: Granular benton: fe  DGT Rasy Beal  TOP OF FILTER PACK	DIA: (IN) 5-in.  Type Steel Flush-mount Box. 0.6	
TOP OF FILTER PACK	TYPE: CONCrete	
TYPE: Granular bentonite  DET Rosy Beal  TOP OF FILTER PACK  FILTER PACK	RISER CASING  DIA: INI 15/8-in. ID, 17/8-in. OD  TYPE: School. 40 PVC	
TYPE: W. G. #1 Filpho Sond	DST Rasy Beal 1.0	
TOP OF SCREEN	U.S. Silica Company.	
SCREEN  DIA: (IN) 15/8-1/1_ TYPE: Slotted  SLOT SIZE: CONFIGURATION: /  O. Ol-in. Herizontal  BOTTOM OF SCREEN  4,5	DIA: (IN) 15/6-1/2. TYPE: STOFFED  SLOT SIZE: CONFIGURATION:	
BOTTOM OF SUMP 4.5	BOTTOM OF SUMP	

PROJECT: Bulk Fuel Facility	DELIVERY ORDER: 0066
MONITORING WELL ID: FP-14	
la	TIME: 1966
NSTALLATION FINISH: DATE: 11/11/06	TIME: 1412
ANNULAR SPACE MATERIALS INVENTORY:	
GRANULAR FILTER PACK: TYPE: W.G.#1	QUANTITY: 5/65,
BENTONITE SEAL: TYPE: DST Easy	Seel QUANTITY: 1-Z 165.
GRANULAR FILTER PACK: TYPE: W.G.#1  BENTONITE SEAL: TYPE: DST Easy  GROUT: TYPE: NIA	QUANTITY: NIA
DESCRIPTION OF WELL SCREEN:	
SLOT SIZE (inches): $\frac{d \cdot \phi I}{}$ SLOT CONFIG	suration: Horizontal
TOTAL OPEN AREA PER FOOT OF SCREEN: NIA	
OUTSIDE DIAMETER: 178-in. NOMINAL INS	SIDE DIAMETER: 15/8-in.
schedule/Thickness: School 40  MANUFACTURER: ECT Manufacturing	COMPOSITION: PVC
MANUFACTURER: ECT Manufactoring	
TYPE OF MATERIAL BETWEEN BOTTOM OF BORING AND	SCREEN: Native Formations,
DESCRIPTION OF WELL CASING:	
OUTSIDE DIAMETER: 17/8 in NOMINAL IN	SIDE DIAMETER: 13/8-in.
schedule/Thickness: Sched. 44	
MANUFACTURER: ECT Manufacturi'r	
JOINT DESIGN AND COMPOSITION: Flosh- H	
CENTRALIZERS DESIGN AND COMPOSITION:	τ
DESCRIPTION OF PROTECTIVE CASING:	-1: 1
NOMINAL INSIDE DIAMETER: 6-1'n. COM	POSITION: Steel
SPECIAL PROBLEMS ENCOUNTERED DURING WELL CON	ISTRUCTION AND THEIR RESOLUTION:
None.	
Was all well screen and casing material used for construction fr	ee of foreign matter (e.g., adhesive tape, labels, soil,
(ic.)? IYES X NO []	•
Was all well screen and casing material used for construction fr	ree of unsecured couplings, ruptures, and other physical
weakage and/or defects? YES ( NO [ )	· .
deformation or bending of the installed well screen and casin	_
willeval of a 1.0-inch bailer throughout the entire length of the	11
OUANTITY OF APPROVED WATER USED FOR FILTER PAGE	CK ENPLACEMENT: None
THE OD Willshop	a aurou py Way off Vale ulastal
(Signature & Date)	QA CHECK BY: // / / / / / / / / // / // // // // //
D-1	09

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WELL NUMBER: PD-10  BEGIN: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06  END: 11/11/06		·	چەنى 	- E
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REFERENCE POINT: ELEVATION: DATUM/UNITS:  REFERENCE POINT: ELEVATION: DATUM/UNITS:  GROUND SUPPOCE  STELL PROTECTIVE CASING WITH COVER  TOP OF PUG PLUSH JOINT RISER WITH WATER DICK CANNO  DIA: (NI) FOR PUG PLUSH JOINT RISER WITH WATER DICK CANNO  DIA: (NI) FOR PUG PLUSH JOINT RISER WITH WATER DICK CANNO  DIA: (NI) FOR PUG PLUSH JOINT RISER WITH WATER DICK CANNO  DIA: (NI) FOR PUG PLUSH JOINT RISER WITH WATER DICK CANNO  DIA: (NI) FOR PUG PLUSH JOINT RISER WITH WATER DICK CANNO  DIA: (NI) FOR PUG PLUSH JOINT RISER WITH WATER DICK CANNO  DIA: (NI) FOR PUG PLUSH JOINT RISER WITH WATER DICK CANNO  DIA: (NI) FOR PUG PLUSH JOINT RISER WITH WATER DICK CANNO  DIA: (NI) FOR PUG PLUSH JOINT RISER WITH WATER DICK CANNO  DIA: (NI) FOR PUG PLUSH JOINT RISER WITH WATER DICK CANNO  TOP OF FILTER PACK  TYPE & GRAPH ACK TYPE & GRAPH  TOP OF FILTER PACK TYPE & GRAPH  TOP OF FILTER PACK TYPE & GRAPH  TOP OF FILTER PACK TYPE & GRAPH  TOP OF FILTER PACK TYPE & GRAPH  TOP OF SCHEEN  DIA: (NI) FOR PUG PLUSH JOINT RISER WITH WATER DICK CANNO  TOP OF FILTER PACK TYPE & GRAPH  TOP OF FILTER PACK TYPE & GRAPH  TOP OF FILTER PACK TYPE & GRAPH  TOP OF FILTER PACK TYPE & GRAPH  TOP OF FILTER PACK TYPE & GRAPH  TOP OF FILTER PACK TYPE & GRAPH TOP OF FILTER PACK TYPE & GRAPH TOP OF FILTER PACK TYPE & GRAPH TOP OF FILTER PACK TYPE & GRAPH TOP OF FILTER PACK TYPE & GRAPH TOP OF FILTER PACK TYPE & GRAPH TOP OF FILTER PACK TYPE & GRAPH TOP OF FILTER PACK TYPE & GRAPH TOP OF FILTER PACK TYPE & GRAPH TOP OF FILTER PACK TYPE & GRAPH TOP OF FILTER PACK TYPE & GRAPH TOP OF FILTER PACK TYPE & GRAPH TOP OF FILTER PACK TYPE & GRAPH TOP OF FILTER PACK TYPE & GRAPH TOP OF FILTER PACK TYPE & GRAPH TOP OF FILTER PACK TYPE & GRAPH TOP OF FILTER PACK TYPE & GRAPH TOP OF FILTER PACK TYPE & GRAPH TOP OF FILTER PACK TYPE & GRAPH TOP OF FILTER PACK TYPE & GRAPH TOP OF FILTER PACK TYPE & GRAPH TOP OF FILTER PACK TYPE & GRAPH TOP OF FILTER PACK TYPE & GRAPH TOP OF FILTER PACK TYPE & GRAPH TOP OF FILTER PACK TYPE & GRAPH TOP OF FILTER PACK TYPE & GRAPH TYPE & GRAPH T	- · · · · · · · · · · · · · · · · · · ·	. ,		
E: REFERENCE POINT: ELEVATION: DATUM/UNITS: 48 S  GROUND SUNFACE  STEEL PROTECTIVE CASING WITH COVER  ORAL (N) 5-11  TYPE: SHOEL HUSE CASING  DIAMON 1/8-11  TYPE: CONCRETE Brand  DIAMON 1/8-11  TYPE: CONCRETE Brand  DIAMON 1/8-11  TYPE: SHOEL HUSE PROTECTIVE CASING  DIAMON 1/8-11  TYPE: SHOEL HUSE PROTECTIVE CASING  DIAMON 1/8-11  TYPE: SHOEL HUSE PROTECTIVE CASING  DIAMON 1/8-11  TYPE: SHOEL HUSE PROTECTIVE CASING  DIAMON 1/8-11  TYPE: SHOEL HUSE PROTECTIVE CASING  DIAMON 1/8-11  TYPE: SHOEL HUSE PROTECTIVE CASING  DIAMON 1/8-11  TYPE: SHOEL HUSE PROTECTIVE CASING  DIAMON 1/8-11  TYPE: SHOEL HUSE PROTECTIVE CASING  DIAMON 1/8-11  TYPE: SHOEL HUSE PROTECTIVE CASING  DIAMON 1/8-11  TYPE: SHOEL HUSE PROTECTIVE CASING  DIAMON 1/8-11  TYPE: SHOEL HUSE PROTECTIVE CASING  DIAMON 1/8-11  TYPE: SHOEL HUSE PROTECTIVE CASING  DIAMON 1/8-11  TYPE: SHOEL HUSE PROTECTIVE CASING  DIAMON 1/8-11  TOP OF SEAL  TOP OF SEAL  TOP OF SEAL  TOP OF SEAL  DIAMON 1/8-11  TOP OF SEALE  DIAMON 1/8-11  TOP OF SCHEEN  SUTTOM OF SCHEEN  BOTTOM OF SCHEEN  BOTTOM OF SCHEEN  BOTTOM OF SCHEEN  BOTTOM OF SCHEEN  SUTTOM OF SCHEEN  BOTTOM OF SCHEEN  BOTTOM OF SCHEEN  BOTTOM OF SCHEEN  BOTTOM OF SCHEEN  BOTTOM OF SCHEEN  BOTTOM OF SCHEEN  BOTTOM OF SCHEEN  BOTTOM OF SCHEEN  BOTTOM OF SCHEEN  BOTTOM OF SCHEEN  BOTTOM OF SCHEEN  BOTTOM OF SCHEEN  BOTTOM OF SCHEEN  BOTTOM OF SCHEEN  BOTTOM OF SCHEEN  BOTTOM OF SCHEEN  BOTTOM OF SCHEEN  BOTTOM OF SCHEEN  BOTTOM OF SCHEEN  BOTTOM OF SCHEEN  BOTTOM OF SCHEEN  BOTTOM OF SCHEEN  BOTTOM OF SCHEEN  BOTTOM OF SCHEEN  BOTTOM OF SCHEEN  BOTTOM OF SCHEEN  BOTTOM OF SCHEEN  BOTTOM OF SCHEEN  BOTTOM OF SCHEEN  BOTTOM OF SCHEEN  BOTTOM OF SCHEEN  BOTTOM OF SCHEEN  BOTTOM OF SCHEEN  BOTTOM OF SCHEEN  BOTTOM OF SCHEEN  BOTTOM OF SCHEEN  BOTTOM OF SCHEEN  BOTTOM OF SCHEEN  BOTTOM OF SCHEEN  BOTTOM OF SCHEEN  BOTTOM OF SCHEEN  BOTTOM OF SCHEEN  BOTTOM OF SCHEEN  BOTTOM OF SCHEEN  BOTTOM OF SCHEEN  BOTTOM OF SCHEEN  BOTTOM OF SCHEEN  BOTTOM OF SCHEEN  BOTTOM OF SCHEEN  BOTTOM OF SCHEEN  BOTTOM OF SCHEEN  BOTTOM OF SCHEE		BEGIN: 11/11/06 END: 11/	11/06	erdy (E) , with its
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BOTTOM OF HOLE	DATUM/UNITS:	ROTECTIVE CASING WITH COVER  TOP OF PVC FLUSH JOINT RISER WITH WATERTIGHT LOCKING CAP  GROUND SURFACE  DIA: (IN) 5-in.  TYPE: Sheel Flush-mount Box  BOTTOM OF SURFACE CASING  TYPE: CONCRETE  DOI'N-CYPE BROWN.  RISER CASING  DIA: (IN) 5/8-in. FD, 17/8-in. O'S  TYPE: Shed. HD PVC  TOP OF SEAL  ANNULAR SEAL  TYPE: GITPHURY BONDON, fp  DST FOST SEAL  TOP OF FILTER PACK  FILTER PACK  TYPE: W. G. # 1 F, Ipro Sond  U.S. S; I'C a Company  TOP OF SCREEN  DIA: (IN) 19/8-in. TYPE: Slothed.  SCREEN  DIA: (IN) 19/8-in. TYPE: Slothed.  SLOT SIZE: CONFIGURATION: HOW ZONTAL	DEPTH (BGS)  4.6	
BOTTOM OF HOLE		BOTTOM OF SUMP	7.3	
HOLE DIA: (IN) $\longrightarrow$ $Z-i$ $\longrightarrow$ $D-110$		BOTTOM OF HOLE	\$7.0	- 144 - 144 - 144 - 144
	HOLE DIA: (IN)			,; ,;

PROJECT: Bulk Fuel Facility	DELIVERY ORDER: 0066			
MONITORING WELL ID: FP-11				
INSTALLATION START: DATE: 11/11/46				
INSTALLATION START: DATE: 11/11/46	TIME: 1ゆとろ			
ANNULAR SPACE MATERIALS INVENTORY:	. 1			
GRANULAR FILTER PACK: TYPE: W.G.#	QUANTITY: $5/65$ .			
BENTONITE SEAL: TYPE: DSI Eos	QUANTITY: 1-2 165.  QUANTITY: NIA			
BENTONITE SEAL:  GROUT:  TYPE: N/A	QUANTITY: N/A			
DESCRIPTION OF WELL SCREEN:				
SLOT SIZE (inches): 4.41 SLOT CON				
TOTAL OPEN AREA PER FOOT OF SCREEN:				
OUTSIDE DIAMETER: 17/6-in NOMINAL				
schedule/thickness: Sched. 44				
MANUFACTURER: ECT Manufacturin	na,			
TYPE OF MATERIAL BETWEEN BOTTOM OF BORING A				
OUTSIDE DIAMETER: 176-in NOMINAL SCHEDULE/THICKNESS: School 40				
OUTSIDE DIAMETER: 1 1/6-in NOMINAL	INSIDE DIAMETER: 198-in.			
MANUFACTURER: ECT Manu Ractor	ring.			
JOINT DESIGN AND COMPOSITION: Flush-	threaded slip-cap on bottom.			
CENTRALIZERS DESIGN AND COMPOSITION:	)/A.			
DESCRIPTION OF PROTECTIVE CASING:	· /			
-NOMINAL INSIDE DIAMETER: 6 in 1 C	OMPOSITION: Steel.			
PECIAL PROBLEMS ENCOUNTERED DURING WELL C	ONSTRUCTION AND THEIR RESOLUTION:			
None.				
	<u> </u>			
Was all well screen and casing material used for construction	free of foreign matter (e.g., adhesive tape, labels, soil,			
(nc.)? YES ( NO [ ]				
Was all well screen and casing material used for construction	free of unsecured couplings, ruptures, and other physical			
Preskage and/or defects? YES NO [ ]				
deformation or bending of the installed well screen and ca				
intrieval of a 1.0-inch bailer throughout the entire length of the completed well? YES NO []				
DUANTITY OF APPROVED WATER USED FOR FILTER	PACK ENPLACEMENT: None			
AECORDED BY: Minother offer 11/13/06	QA CHECK BY: Nays H. Van 11/2406			
(Signature>& 'Date)	/(Signature & Date). '			

MONITORING WELL **DELIVERY ORDER NO: 0066** PROJECT: Bulk Fuel Facility WELL NUMBER: FP-11 END: 11/11/06 BEGIN: 11/11/06 COORDINATES: N: ELEVATION: DATUM/UNITS: **E**: Ground Surface. DATUM/UNITS: TEEL PROTECTIVE CASING WITH COVER TOP OF PVC FLUSH JOINT RISER WITH WATERTIGHT LOCKING CAP **GROUND SURFACE** PROTECTIVE CASING # GEOTE MPLE! TYPE: CONCRETE # \$4₽OSI Quik-crete Brand. f**Ö**CATI RISER CASING DIA: (INI / 9/8-in. ID, / 1/6-in. O) TYPE: School. 40 6.6 ANNULAR SEAL TYPE: Granular bentonite DSI Easy Seal. 1,0 TYPE: W.G. #1 Filpro Sand U.S. Silica Company - TOP OF SCREEN DIA: (IN)/5/6-In. TYPE: Slotted. configuration: Horizontal BOTTOM OF HOLE HOLE DIA: (IN)

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PROJECT: Bulk Fuel Facility	DELIVERY ORDER: 0066
MONITORING WELL ID: PP-1Z	
NSTALLATION START: DATE: 11/11/46	TIME: _ /ゆる!
NSTALLATION FINISH: DATE: 11/11/46	TIME: 1046
NNULAR SPACE MATERIALS INVENTORY:	
GRANULAR FILTER PACK: TYPE: W.G. #	1 QUANTITY: 5/65
BENTONITE SEAL: TYPE: DST Fasy	Seal QUANTITY: 1-2 165
GRANULAR FILTER PACK: TYPE: W.GI. #  BENTONITE SEAL: TYPE: DST Easy  GROUT: TYPE: NIA	QUANTITY: NIA
DESCRIPTION OF WELL SCREEN:	
SLOT SIZE (inches): $4,41$ SLOT CONF	IGURATION: Horizontal
TOTAL OPEN AREA PER FOOT OF SCREEN:	4.
OUTSIDE DIAMETER: 17/8-in. NOMINAL II	NSIDE DIAMETER: 198-in.
SCHEDULE/THICKNESS: School 44	COMPOSITION: PVC
MANUFACTURER: ECT Manufacturing	<del></del>
TYPE OF MATERIAL BETWEEN BOTTOM OF BORING AN	ND SCREEN: Native Formations,
DESCRIPTION OF WELL CASING:	
OUTSIDE DIAMETER: 17/8-10 NOMINAL II	
schedule/Thickness: Sched. 44	COMPOSITION:
MANUFACTURER: ECT Manufactorin	
JOINT DESIGN AND COMPOSITION:	threader /slip-cap on bottom.
CENTRALIZERS DESIGN AND COMPOSITION:	NA
DESCRIPTION OF PROTECTIVE CASING:	- ^ /
- NOMINAL INSIDE DIAMETER: <u>5-in.</u> co	IMPOSITION: Steel
PECIÁL PROBLEMS ENCOUNTERED DURING WELL CO	ONSTRUCTION AND THEIR RESOLUTION:
-None.	
	·
Was all well screen and casing material used for construction	free of foreign matter (e.g., adhesive tape, labels, soil,
NO[]	
Was all well screen and casing material used for construction	free of unsecured couplings, ruptures, and other physical
Mankage and/or defects? YES NO [ ]	·
Huleformation or bending of the installed well screen and case	
Attleval of a 1.0-inch bailer throughout the entire length of the	
QUANTITY OF APPROVED WATER USED FOR FILTER P.	ACK ENPLACEMENT: None
1 - 4 ( )00 what	
AECORDED BY: Well of 11/13/46	QA CHECK BY: (Signature & Date)
Ctailliatine a hard)	0-113

ROJECT: Bulk Fuel Facility	MONITORING WELL DELIVERY ORDER NO: 0066	<u> </u>
VELL NUMBER: FP-17	BEGIN: 11/11/06 END: /	1/11/06 :
COORDINATES: N:	REFERENCE POINT: ELEVATION:	DATUM/UNITS:
DATUM/UNITS:	Ground Sorface.	) N
HOLE DIA: (IN)	STEEL PROTECTIVE CASING WITH COVER  TOP OF PVC FLUSH JOINT RISER WITH WATERTIGHT LOCKING CAP  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  BOTTOM OF SURFACE CASING  BACKFILL MATERIAL  TYPE: CONCrete  GUIK-Crete  BURNOL.  RISER CASING  DIA:(IN) 156-in. ID., 176-in. OD.  TYPE: Sched. 4d. PVC  TOP OF SEAL  ANNULAR SEAL  TYPE: GIPPINION BENHANI TO  DST Eas Seal.  TOP OF FILTER PACK  FILTER PACK  TYPE: W.G. #1 F. Ipro Sond.  U.S. S. Irca Company  TOP OF SCREEN  DIA:(IN) 188-in. TYPE: Slotted.  SCREEN  DIA:(IN) 188-in. TYPE: Slotted.  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN	

PROJECT: Bulk Fuel Facility DELIVERY ORDER: 0066
MONITORING WELL ID: FP-13
INSTALLATION START: DATE: 11/11/06 TIME: 1055
INSTALLATION FINISH: DATE: 11/11/46 TIME: 1459
ANNULAR SPACE MATERIALS INVENTORY:
GRANULAR FILTER PACK: TYPE: W.G.#1 QUANTITY: 5/65  BENTONITE SEAL: TYPE: DST Easy Seal QUANTITY: 1-2 165  GROUT: TYPE: NIA QUANTITY: NIA
BENTONITE SEAL: TYPE: DST Easy Seal QUANTITY: 1-2 165
GROUT: TYPE: NIA QUANTITY: NIA
DESCRIPTION OF WELL SCREEN.
SLOT SIZE (inches): did SLOT CONFIGURATION: Horizontal
TOTAL OPEN AREA PER FOOT OF SCREEN: NIA
OUTSIDE DIAMETER: 176-in NOMINAL INSIDE DIAMETER: 158-in
schedule/thickness: Sched. 44 composition: PVC
MANUFACTURER: ECT Manufacturing.
TYPE OF MATERIAL BETWEEN BOTTOM OF BORING AND SCREEN: Native Formations,
DESCRIPTION OF WELL CASING:
OUTSIDE DIAMETER: 1/8-in NOMINAL INSIDE DIAMETER: 15/8-in.
schedule/thickness: School 46 composition: PVC.
outside diameter: 17/8-in. Nominal inside diameter: 15/8-in.  schedule/thickness: School 46 composition: PVC.  MANUFACTURER: ECT Manufacturing.
JOINT DESIGN AND COMPOSITION: Flush-threadod/slip-cop on bottom.
CENTRALIZERS DESIGN AND COMPOSITION:
DESCRIPTION OF PROTECTIVE CASING:
NOMINAL INSIDE DIAMETER: 5-in, COMPOSITION: Steel.
SPECIAL PROBLEMS ENCOUNTERED DURING WELL CONSTRUCTION AND THEIR RESOLUTION:
None
Was all well screen and casing material used for construction free of foreign matter (e.g., adhesive tape, labels, soil,
tetc./7 YES NO[]
Was all well screen and casing material used for construction free of unsecured couplings, ruptures, and other physical
Abroakage and/or defects? YES NO [ ]
in deformation or bending of the installed well screen and casing minimized to the point of allowing the insertion and
mitdeval of a 1.0-inch bailer throughout the entire length of the completed well? YES NO [ ]
QUANTITY OF APPROVED WATER USED FOR FILTER PACK ENPLACEMENT: None.
MECORDED BY: Sweeting office 11/13/06 QA CHECK BY: Way H. Jan 1/24/06
(Signature & Date) D-115 (Signature & Date)

	MONITORING INC.		
PROJECT: Bulk Fuel Facility	MONITORING WELL DELIVERY ORDER NO: 0066		
WELL NUMBER: FP-13	BEGIN: 11/11/46	END: 11/11/66	
COORDINATES: N:	REFERENCE POINT: ELEVA	l	INITS
E: DATUM/UNITS:	Ground Surface,	TION. DATOWING	Juli 3.
STEEL P	ROTECTIVE CASING WITH COVER	DEPTH (BGS)	ELEV
	TOP OF PVC FLUSH JOINT I		
			SHE SHE SHE
	GROUND SURFACE		
\$ 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 - 1.45 -	PROTECTIVE CASING DIA: (IN) 5-/n ,	,	internal author
2. July 2. S. S. S. S. S. S. S. S. S. S. S. S. S.	TYPE: Stad Flost mount  BOTTOM OF SURFACE CASING	130x 0.6	>
	BACKFILL MATERIAL	<del></del> -	
	TYPE: Concrete.		
	quik-crete br	and.	
			000
	RISER CASING  DIA:(IN) 156-in. FD; 178-in		
	TYPE: Sched, 40 PV		3
	sinear 40 PV	p.Le	
	TOP OF SEAL  ANNULAR SEAL		
	TYPE: Granulor bento	onite!	
	DSI Easy Seal		3
		1.0	
	TOP OF FILTER PACK		
	TYPE: W. GI. #1 F. low	San Q.	
	TYPE: W. GI, #1 F. Ipro U.S. Silica Compo	ong.	
	TOP OF SCREEN	1,3	)
	SCREEN	<del>:                                    </del>	
	DIA: (IN) 15/8-in, TYPE: Slotted	2	1.
	SLOT SIZE: CONFIGURATION:	$f \circ f$	45.4
	SLOT SIZE: CONFIGURATION: HONT	tontal 4,6	5
	BOTTOM OF SCREEN	·	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	BOTTOM OF SUMP	4,4	
	◆ BOTTOM OF HOLE	. Sig	
HOLE DIA: (IN)	D-116		
.,,,,,	D-110		

<b> </b>		3.5
PROJECT: Bulk Fuel Facility	DELIVERY ORDER: 00	<b>366</b>
MONITORING WELL ID: FP-14	· ·	
INSTALLATION START: DATE: 11/11/06	TIME: _// &	_
INSTALLATION FINISH: DATE: 11/11/06	TIME:	
ANNULAR SPACE MATERIALS INVENTORY:		
GRANULAR FILTER PACK: TYPE: W.G.ギ	L QUANTITY:	5/bs.
GRANULAR FILTER PACK: TYPE: W.G.#  BENTONITE SEAL: TYPE: DSI Eas  GROUT: TYPE: N/A	sy Seed QUANTITY: 1- 3	z 166.
GROUT: TYPE: NA	QUANTITY:	J14
DESCRIPTION OF WELL SCREEN:		
SLOT SIZE (inches): $\phi_i \phi_l$ SLOT COM	IFIGURATION: Horizontal	
TOTAL OPEN AREA PER FOOT OF SCREEN:		
OUTSIDE DIAMETER: 176-In. NOMINAL	INSIDE DIAMETER: 15/8-in	, ===
schedule/Thickness: School 40	COMPOSITION:	<u> </u>
schedule/thickness: School 40 manufacturer: ECT Manufacturi type of material between bottom of boring a	ra,	_
TYPE OF MATERIAL BETWEEN BOTTOM OF BORING A	and screen: Native 1	formations,
DESCRIPTION OF WELL CASING:		
outside diameter: 17/8-in. Nominal schedule/thickness: School 40	INSIDE DIAMETER: 17/8-in	, <del>.</del>
SCHEDULE/THICKNESS: School 40	COMPOSITION: PV	<u> </u>
MANUFACTURER: ECT Manufactur	ing.	1 41
JOINT DESIGN AND COMPOSITION: Flush-	threaded/slip-	cap on bottom,
CENTRALIZERS DESIGN AND COMPOSITION:	JIA	· · · · · · · · · · · · · · · · · · ·
DESCRIPTION OF PROTECTIVE CASING:	i i	
NOMINAL INSIDE DIAMETER: 5-in. C	OMPOSITION: <u>Steel.</u>	
SPECIAL PROBLEMS ENCOUNTERED DURING WELL O	ONSTRUCTION AND THEIR RE	SOLUTION:
None		
Was all well screen and casing material used for construction	n free of foreign matter (e.g., adhe	esive tape, labels, soil,
(etc.)? YES ( NO [ )		
Was all well screen and casing material used for construction	n free of unsecured couplings, rup	tures, and other physical
breakage and/or defects? YES NO[]		•
hedeformation or bending of the installed well screen and c		_
ntrieval of a 1.0-inch bailer throughout the entire length of		
QUANTITY OF APPROVED WATER USED FOR FILTER	PACK ENPLACEMENT:	ne:
RECORDED BY: Smaller offer 11/13/06	QA CHECK BY: Want	Valu 11/27/06
Claignature WVate	)-117 (Sign:	ature Q Date)

So

PROJECT: Bulk Fuel Facility	MONITORING WELL DELIVERY ORDER NO: 006	66	
VELL NUMBER: FP-14	BEGIN: 11/11/06	END: 11/11/06	
COORDINATES: N:		VATION: DATUM/U	A Service Control
E: DATUM/UNITS:	Ground Surface.		16.3
		DEPTH (BGS)	FELEV P
STEEL	PROTECTIVE CASING WITH COVER  TOP OF PVC FLUSH J		114
	WATERTIGHT LOCKIN	IG CAP	
	GROUND SURFAC	E	
	PROTECTIVE CASING DIA: (IN) 5/n,		
	TYPE: Steel Flush-m	ount BOX \$,6	
	BOTTOM OF SURFACE CASING		*
	BACKFILL MATERIAL TYPE: CONCIDENCE	<u> </u>	5.4
	Doik-crote b	, , , , , , , , , , , , , , , , , , ,	
	1401K-chete b	warex'	****
	RISER CASING		SOE
	DIA:(IN) / 3674, ID, 176	E .1	
	TYPE: Sched 40. 1	PVC 1	0
	TOP OF SEAL	4.4	
	ANNULAR SEAL	/ /	
	Type: Giranular be	~ 11	કે. આ જો⊀ કો વ્યાપ્
	DSI Easy Se		, ***
	TOP OF FILTER PACK	1.4	>   
	FILTER PACK		4
	TYPE:WG#1 Filp	pro Sand	
	U.S. Silica Con	mpany. 1.3	
	TOP OF SCREEN		19 19 19 19 19 19 19 19 19 19 19 19 19 1
	SCREEN	(/ ()	F 4
	DIA: (IN) / 1/8 Tin. TYPE: Slot	<b>l</b> 1	<b>4</b> 省方。 <b></b>
	SLOT SIZE: CONFIGURATION:	201201	4
	BOTTOM OF SCREEN	4,5	5
		4,5	1 1
	BOTTOM OF SUMP	<u> </u>	L
	BOTTOM OF HOLE	<u>5</u> 4	2
HOLE DIA: (IN) - Z-IN,	D-118		

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PROJECT: Bulk Fuel Facility	DELIVERY ORDER: 0066
MONITORING WELL ID: FP-15	
INSTALLATION START: DATE: 11/11/46	TIME: 1758
	TIME: 13¢7
ANNULAR SPACE MATERIALS INVENTORY	· · · · · · · · · · · · · · · · · · ·
GRANULAR FILTER PACK: TYPE: 😢 🕒 🗲	#1 QUANTITY: 5/65
BENTONITE SEAL: TYPE: DSI Ea	sy Seal QUANTITY: 1-Z 165.
GRANULAR FILTER PACK: TYPE: W.G. *  BENTONITE SEAL: TYPE: DST Ea  GROUT: TYPE: N/A	QUANTITY: NIA
DESCRIPTION OF WELL SCREEN:	
SLOT SIZE (inches): $\phi$ , $\phi$ ! SLOT COI	NFIGURATION: Itorizontal
TOTAL OPEN AREA PER FOOT OF SCREEN: $$	1/4
outside diameter: 178-in. Nominal schedule/thickness: Sched. 44	INSIDE DIAMETER: 15/6-in
schedule/thickness: Sched. 40	COMPOSITION: PVC
MANUFACTURER: <u>ECT Monufactor</u> TYPE OF MATERIAL BETWEEN BOTTOM OF BORING A	cing.
TYPE OF MATERIAL BETWEEN BOTTOM OF BORING	AND SCREEN: Native Formations
DESCRIPTION OF WELL CASING:	•
OUTSIDE DIAMETER: 17/8-1/2 NOMINAL	. INSIDE DIAMETER: 13/8-in.
schedule/thickness: Sched. 44 manufacturer: ECT Monufactu	COMPOSITION: PYC.
MANUFACTURER: ECT Monufacto	oring.
JOINT DESIGN AND COMPOSITION: Flush-	threaded /slip-cap on bottom.
CENTRALIZERS DESIGN AND COMPOSITION:	U/A
DESCRIPTION OF PROTECTIVE CASING:	· · · · · ·
NOMINAL INSIDE DIAMETER: $6$ -in.	composition: Steel.
SPECIAL PROBLEMS ENCOUNTERED DURING WELL	CONSTRUCTION AND THEIR RESOLUTION:
Very hard/packed gravel	layer: move drilling location
Was all well screen and casing material used for construction	n free of foreign matter (e.g., adhesive tape, labels, soil,
etc.)? YES [X NO [ ]	·
Was all well screen and casing material used for construction	n free of unsecured couplings, ruptures, and other physical
i breakage and/or defects? YES NO[]	
is deformation or bending of the installed well screen and c	asing minimized to the point of allowing the insertion and
Netrieval of a 1.0-inch bailer throughout the entire length of	the completed well? YES [X] NO [ ]
QUANTITY OF APPROVED WATER USED FOR FILTER	PACK ENPLACEMENT:
RECORDED BY with offer 11/13/06	DA CHECK BY: Mayor H. Vash
4 <del>Signature</del> <b>(Date)</b>	O-119 (Signature & Date)

PROJECT: Bulk Fuel Facility	MONITORING WELL DELIVERY ORDER NO: 006	66	
WELL NUMBER: FP-15	BEGIN: 11/11/066	END: 11/11/66	n.
COORDINATES: N:	<u> </u>	VATION: DATUM/UN	TS:
DATUM/UNITS:	Ground Surface		7 4
		DEPTH (BGS)	*~ ELEV
STEEL	PROTECTIVE CASING WITH COVER  TOP OF PVC FLUSH JO	OINT RISER WITH	, it is
	WATERTIGHT LOCKIN	IG CAP	
	GROUND SURFACE	E	
			N d
	PROTECTIVE CASING DIA: (IN) 57/h		
10 A	TYPE: Steel Flush-mc	ount Box 0,6	
	BOTTOM OF SURFACE CASING		
	BACKFILL MATERIAL TYPE: CONCNEL-C		
	Quik-crete bo	and I	,
	CANV-CIELS OF	4	म् वे ^{स्त}
	RISER CASING		14 .4 12
	DIA:(IN) / 98-in. 70, 178-	<b>I</b> 1	4,
	TYPE: Sched: 40	p.6	, s
	TOP OF SEAL		7.1 
	annular seal Type Garanolar bent	lonite	20 mm
	DOIL Easy SA		يو. شيطه ع
		1.0	
	TOP OF FILTER PACK		اهداد در پاها است
	FILTER PACK	Son Son O	**************************************
	U.S. Silica Co	InDahu	
	TOP OF SCREEN	1/3	
			•
	DIA: (IN) /56-in, TYPE: STOT	Her Q.	
	· · · · · · · · · · · · · · · · · · ·		
	SLOT SIZE; CONFIGURATION:	prizontal 4,5	
	BOTTOM OF SCREEN		
	BOTTOM OF SUMP	4,5	
		5,0	2
HOLE DIA: (IN)	BOTTOM OF HOLE		7 "
HOLE DIA: (IN)	D-120		

PROJECT: Bulk Fuel Facility	DELIVERY ORDER: 0066
MONITORING WELL ID: FP-16	
INSTALLATION START: DATE: 11/11/46	TIME: 1323
INSTALLATION FINISH: DATE: 11/11/46	TIME: 133¢
ANNULAR SPACE MATERIALS INVENTORY:	
GRANULAR FILTER PACK: TYPE: W.G.#1	QUANTITY: 5 /bs.
BENTONITE SEAL: TYPE: DST Easy Se	QUANTITY: 5 /55.
BENTONITE SEAL:  TYPE: DST Easy Sea	QUANTITY: N/A
DESCRIPTION OF WELL SCREEN:	
SLOT SIZE (inches): $\phi \phi l$ SLOT CONFIGUR	RATION: Horizontal
TOTAL OPEN AREA PER FOOT OF SCREEN: WIA	·
OUTSIDE DIAMETER: 178-in NOMINAL INSID	DE DIAMETER: 15/8-in,
SCHEDULE/THICKNESS: School 44	COMPOSITION: PYC
MANUFACTURER: ECT Manufactoring.	
TYPE OF MATERIAL BETWEEN BOTTOM OF BORING AND S	CREEN: Native Formations,
DESCRIPTION OF WELL CASING:	
OUTSIDE DIAMETER: 176-in NOMINAL INSID	
SCHEDULE/THICKNESS: School 44	COMPOSITION: PVC
MANUFACTURER: ECT Manufacturing	<del>,</del>
JOINT DESIGN AND COMPOSITION: Flush - Har	readed/slip-cap on bottom.
CENTRALIZERS DESIGN AND COMPOSITION:	7
DESCRIPTION OF PROTECTIVE CASING:	
- NOMINAL INSIDE DIAMETER: 5-in- COMPO	sition: <u>Steet.</u>
SPECIAL PROBLEMS ENCOUNTERED DURING WELL CONST	TRUCTION AND THEIR RESOLUTION:
Encounter hard/backed grow	el layer: break up rocks
Jusing hammer and bor.	
Was all well screen and casing material used for construction free	of foreign matter (e.g., adhesive tape, labels, soil,
PIG.//2 YES NO[]	
Was all well screen and casing material used for construction free	of unsecured couplings, ruptures, and other physical
threakage and/or defects? YES NO []	•
th deformation or bending of the installed well screen and casing in	•
netrieval of a 1.0-inch bailer throughout the entire length of the co	<b>'</b> 1.
QUANTITY OF APPROVED WATER USED FOR FILTER PACK	ENPLACEMENT: None,
AECORDED BY: Country of the 11/13/de QA (Signature & Date) D-121	CHECK BY: May 1/2406 (Signature & Date)

PROJECT: Bulk Fuel Facility	MONITORING WELL DELIVERY ORDER NO: 00	66	
WELL NUMBER: FP-16	BEGIN: 11/11/46	END: 11/11/0/6	
COORDINATES: N: E: DATUM/UNITS:	REFERENCE POINT: ELI	EVATION: DATUM/UNITS:	
	STEEL PROTECTIVE CASING WITH COVER  TOP OF PVC FLUSH . WATERTIGHT LOCK!		
The state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the s	PROTECTIVE CASING  DIA: (IN) 5-in I  TYPE: Steel Flush-me  BOTTOM OF SURFACE CASING		
	BACKFILL MATERIAL TYPE: CONCINETE.  QUIK-CNETE	brand.	
	TYPE: School. HO  TOP OF SEAL  ANNULAR SEAL	PVC \$16	- Marie
	TYPE: Garanular ber DSIP Easy Se	reli I-p	The second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second secon
	TYPE: WG.# LF.	pro Sand.	: ::::::::::::::::::::::::::::::::::::
	SCREEN  DIA: (IN) / 5/87/n. TYPE: Slo  SLOT SIZE: CONFIGURATION:  \$\phi\$, \$\phi -in\$, \$\frac{1}{2}\$	l. !	· · · · · · · · · · · · · · · · · · ·
	BOTTOM OF SCREEN  BOTTOM OF SUMP  BOTTOM OF HOLE	4.5 5.0	
HOLE DIA: (IN)	-i'n, D-122		

PROJECT: Bulk Fuel Facility # DELIVERY	ORDER: • 0066	
MONITORING WELL ID: FP-17		
INSTALLATION START: DATE: 11/11/06 TIME: 1	1338 :	
INSTALLATION FINISH: DATE: $\frac{n/n/\phi_{\phi}}{\sqrt{\phi_{\phi}}}$ TIME: $\frac{1}{\sqrt{\phi_{\phi}}}$	344	
ANNULAR SPACE MATERIALS INVENTORY:		
GRANULAR FILTER PACK: TYPE: 60.61. #1 QL	JANTITY: 5 165.	
BENTONITE SEAL: TYPE: DST Easy Secol OL	JANTITY: 1-2 165,	
GRANULAR FILTER PACK: TYPE: CO.G. # 1 QL  BENTONITE SEAL: TYPE: DST Fast Sect QL  GROUT: TYPE: N/A QL  DESCRIPTION OF WELL SCREEN:	JANTITY: N/A	
SLOT SIZE (inches): $\frac{\cancel{\phi}, \cancel{\phi}}{}$ SLOT CONFIGURATION: $\cancel{H}$	orizonta (	
TOTAL OPEN AREA PER FOOT OF SCREEN: NIA		
OUTSIDE DIAMETER: 17/8-10 NOMINAL INSIDE DIAMETE	R: 15/6-in.	
SCHEDULE/THICKNESS: Sched. 40 COMPOSIT	TION: PVC	
MANUFACTURER: ECT Manufacturing.		
TYPE OF MATERIAL BETWEEN BOTTOM OF BORING AND SCREEN:	Native Formations,	
DESCRIPTION OF WELL CASING:	E1	
OUTSIDE DIAMETER: 1767h. NOMINAL INSIDE DIAMETE SCHEDULE/THICKNESS: School 40 COMPOSIT	:R: <u>/ ³/8 - in ,</u>	
SCHEDULE/THICKNESS: School 40 COMPOSIT	TION: PVC	
MANUFACTURER: ECT Manufacturing.	11.1	
JOINT DESIGN AND COMPOSITION: Flush-threaded	2/slip-cap on bottom	١.
CENTRALIZERS DESIGN AND COMPOSITION:		
DESCRIPTION OF PROTECTIVE CASING:	-1 1	
NOMINAL INSIDE DIAMETER: 5 in COMPOSITION:	steel.	<del></del>
SPECIAL PROBLEMS ENCOUNTERED DURING WELL CONSTRUCTION	AND THEIR RESOLUTION:	
Mone:	<u> </u>	_
	· · · · · · · · · · · · · · · · · · ·	
Was all well screen and casing material used for construction free of foreign r	matter (e.g., adhesive tape, labels, soil,	
Fitc./? YES [X NO []		•
Was all well screen and casing material used for construction free of unsecure	ed couplings, ruptures, and other physical	1
breakage and/or defects? YES 💢 NO [ ]		
h deformation or bending of the installed well screen and casing minimized t		
etrieval of a 1.0-inch bailer throughout the entire length of the completed we		
RECORDED BY:  Signature & Date)  D-123	MENT: Nove,  1: Way H. Valla 1/27/06  (Signature & Date)	<del></del>

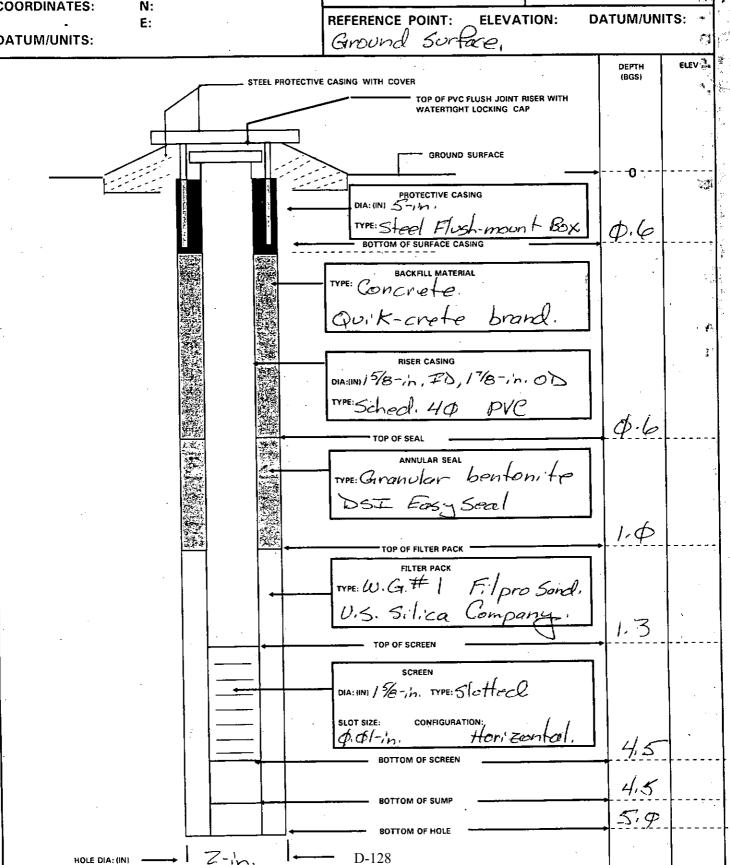
PROJECT: Bulk Fuel Facility	DNITORING WELL DELIVERY ORDER NO: 0066	
WELL NUMBER: FP-17	BEGIN: ////////////////////////////////////	11/66
COORDINATES: N: E:		DATUM/UNITS:
DATUM/UNITS:	Ground Surface.	44
		DEPTH ELEV
STEEL PROTEC	TOP OF PVC FLUSH JOINT RISER WITH	
	WATERTIGHT LOCKING CAP	
	GROUND SURFACE	
		→ · O
	PROTECTIVE CASING	
- Te	TYPE Stad Flud-mount BOX.	4.6
	BOTTOM OF SURFACE CASING	
	TYPE: CONCINCTO	
	TYPE: CONCINETE.  Ouik-crete brand,	
	3	
	RISER CASING	
	DIA:(IN) / 5/8-in. ID, 17/8-in. OD  TYPE: School. 40 DVC	
	Sched 40 PVC	4.6
	TOP OF SEAL  ANNULAR SEAL	
	TYPE: Granular bentonite	
	DET Easy Seel	
		1.0
	TOP OF FILTER PACK	
	TYPE:W G,# / Filono Sand,	
	U.S. Silica Conpany	1 7
	TOP OF SCREEN	1,3
	SCREEN	1
	DIA: (IN) 15/8-in. TYPE: Slotted	
	sLOT SIZE: CONFIGURATION: Hori Eantal.	
	BOTTOM OF SCREEN	4,5
		4,5
	BOTTOM OF SUMP	5.0
	BOTTOM OF HOLE	- 1 2'P
HOLE DIA: (IN) - Z-15,		

PROJECT: Bulk Fuel Facility DELIVERY	ORDER: 0066
MONITORING WELL ID: FP-18	to the time a proposal section of the second section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the sectio
INSTALLATION START: DATE: 11/11/66 TIME: 13	357
INSTALLATION FINISH: DATE: 11/11/06 TIME: 14	<u> </u>
ANNULAR SPACE MATERIALS INVENTORY:	
GRANULAR FILTER PACK: TYPE: W.G. #1 QUA  BENTONITE SEAL: TYPE: DST Easy Seal QUA  GROUT: TYPE: N/A QUA	INTITY: 5 /65
BENTONITE SEAL: TYPE: DST Easy Seal QUA	INTITY: 1-2 165
GROUT: TYPE: NIA QUA	INTITY: WIA
DESCRIPTION OF WELL SCREEN:	, ,
SLOT SIZE (inches): $\phi$ , $\phi$ ! SLOT CONFIGURATION: $H_{c}$	prizontal
TOTAL OPEN AREA PER FOOT OF SCREEN:	
OUTSIDE DIAMETER: 178-in. NOMINAL INSIDE DIAMETER:	15/8-in.
schedule/Thickness: Sched. 44 composition	IN: <i>PVC</i>
MANUFACTURER: BCT Manufacturing.	
TYPE OF MATERIAL BETWEEN BOTTOM OF BORING AND SCREEN:	Vative Formations
DESCRIPTION OF WELL CASING:	*
OUTSIDE DIAMETER: 176-70 NOMINAL INSIDE DIAMETER:	13/8-in.
SCHEDULE/THICKNESS: Sched 46 COMPOSITION	N: <u>PVC</u>
MANUFACTURER: ECT Monufacturing.	
JOINT DESIGN AND COMPOSITION: Flush-horaded	/slip-cap on bottom.
CENTRALIZERS DESIGN AND COMPOSITION:	
DESCRIPTION OF PROTECTIVE CASING:	.1 1
NOMINAL INSIDE DIAMETER: 5-10 COMPOSITION: 5	
SPECIAL PROBLEMS ENCOUNTERED DURING WELL CONSTRUCTION A	ND THEIR RESOLUTION:
None.	
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**************************************	
Was all well screen and casing material used for construction free of foreign material used for construction free of foreign material used for construction free of foreign material used for construction free of foreign material used for construction free of foreign material used for construction free of foreign material used for construction free of foreign material used for construction free of foreign material used for construction free of foreign material used for construction free of foreign material used for construction free of foreign material used for construction free of foreign material used for construction free of foreign material used for construction free of foreign material used for construction free of foreign material used for construction free of foreign material used for construction free of foreign material used for construction free of foreign material used for construction free of foreign material used for construction free of foreign material used for construction free of foreign material used for construction free of foreign material used for construction free of foreign material used for construction free of foreign material used for construction free of foreign material used for construction free of foreign material used for construction free of foreign material used for construction free of foreign material used for construction free of foreign material used for construction free of foreign material used for construction free of foreign material used for construction free of foreign material used for construction free of foreign material used for construction free of foreign material used for construction free of foreign material used for construction free of foreign material used for construction free of foreign material used for construction free of foreign material used for construction free of foreign material used for construction free of foreign material used for construction free of foreign material used for construction free of foreign material used for construction free of fo	tter (e.g., adhesive tape, labels, soil,
### NO []	
Was all well screen and casing material used for construction free of unsecured	couplings, ruptures, and other physical
breakage and/or defects? YES NO [ ]	
Is deformation or bending of the installed well screen and casing minimized to tretrieval of a 1.0-inch bailer throughout the entire length of the completed well?	
QUANTITY OF APPROVED WATER USED FOR FILTER PACK ENPLACEME	NI:
RECORDED BY: Junetty offin 11/14/06 QA CHECK BY:	Wand H. W. H wholah
(Signature & Date) D-125	(Signature & Date)

DELIVERY ORDER NO: 0066		1997 1 299
BEGIN: ///11/\$6 END:	11/11/06	
REFERENCE POINT: FLEVATION:	DATUM/UNI	
Ground Surface	,	**
	DEPTH (RGS)	ELEV
TOP OF PVC FLUSH JOINT RISER WITH	15507	74.A.
WATERTIGHT LOCKING CAP		
GROUND SURFACE		
-		
PROTECTIVE CASING DIA: (IN) 5-15,		4
	c   d.6	- American
BOTTOM OF SURFACE CASING		
TYPE: COINC POLO		
		-87
CYVIK-crete brand:		
RISER CASING	$\neg \mid  \mid$	331
	7	4
TYPE: Sched. 40 PVC		* 5
TOP OF SEAL	$ \varphi$ , $\varphi$	
ANNULAR SEAL	$\neg \mid  \mid$	8
TYPE: Granular bentonite	-	
DSI Easy Seal	,	
TOP OF FILTER PACK	1.Φ	 
FILTER PACK	$\exists$	
TYPE: W. G. # / F. Ipro Sam	Q	
U.S. Silica Compony	.     , 2	
TOP OF SCREEN	<del></del>	
SCREEN		A STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STA
1 1		4.4
SLOT SIZE: CONFIGURATION:	/	. b
	<u>"</u>   4,5"	l l
BOTTOM OF SCHEEN	را <u>د</u>	
BOTTOM OF SUMP	413	}
BOTTOM OF HOLE	<u> 3</u> ,Φ	
「日本の日本の日本の日本の日本の日本の日本の日本の日本の日本の日本の日本の日本の日	TOP OF FILTER PACK  TOP OF FILTER PACK  TOP OF FILTER PACK  TOP OF SCREEN  SOTTOM OF SURPACE  TOP OF SCREEN  SOTTOM OF SURPACE  TOP OF SCREEN  SOTTOM OF SURPACE  SCREEN  DIA: (IN)	GROUND SURFACE.  TEEL PROTECTIVE CASING WITH COVER  TOP OF PVC FLUSH JOINT RISER WITH WATERTIGHT LOCKING CAP  GROUND SURFACE  ON PROTECTIVE CASING  DIA: (IN) 5-7),  TYPE: SHAP Flush-mount box.  BOTTOM OF SURFACE CASING  TYPE: CONC. (Perce)  OU. K-Crebe brand.  TYPE: Grandor benkon: he  TYPE: Grandor benkon: he  LST Easy Seal.  TYPE: W.G. # Filoro Sand.  U.S. Silica Compony.  TOP OF SCREEN  SCREEN  DIA: (IN) / For, TYPE: Slotted.  SLOT SIZE: CONFIGURATION: hor zonkol.  BOTTOM OF SCREEN  BOTTOM OF SUMP  BOTTOM OF SUMP  BOTTOM OF SUMP  BOTTOM OF SUMP  BOTTOM OF SUMP

PROJECT: Bulk Fuel Facility	DELIVERY ORDER: 0066
MONITORING WELL ID: FP-19	The A there is a martine larger to a real for good to reasonable and touch the second to
INSTALLATION START: DATE: 11/11/46	TIME: 1437
INSTALLATION FINISH: DATE: 1/1/06	TIME: 1440b
ANNULAR SPACE MATERIALS INVENTORY:	, <u>, , , , , , , , , , , , , , , , , , </u>
GRANULAR FILTER PACK: TYPE: (4 3. Cg. #)	QUANTITY: 5165
BENTONITE SEAL: TYPE: DET EOSA	Seel QUANTITY: 1-2/65
BENTONITE SEAL: TYPE: DET Easy GROUT: TYPE: NIA	QUANTITY: NIA
DESCRIPTION OF WELL SCREEN:	
SLOT SIZE (inches): $\phi.\phi!$ SLOT CONFI	guration: Horizontal
TOTAL OPEN AREA PER FOOT OF SCREEN:	4
OUTSIDE DIAMETER: 176-in. NOMINAL IN	SIDE DIAMETER: 15/8-in.
SCHEDULE/THICKNESS: Sched, 44	COMPOSITION: PVC
MANUFACTURER: ECT Monufactorin	1.
MANUFACTURER: ECT Monufactoring TYPE OF MATERIAL BETWEEN BOTTOM OF BORING AN	DSCREEN: Native Formations
DESCRIPTION OF WELL CASING:	
OUTSIDE DIAMETER: 17/6-in. NOMINAL IN	ISIDE DIAMETER: 15/8-in.
SCHEDULE/THICKNESS: School 40	
MANUFACTURER: ECT Manufacturi	
JOINT DESIGN AND COMPOSITION: Flush-	threaded / slip-cap on bottom
CENTRALIZERS DESIGN AND COMPOSITION:	/A
DESCRIPTION OF PROTECTIVE CASING:	-1 (
NOMINAL INSIDE DIAMETER: Sin. COM	MPOSITION: <u>Steel</u>
SPECIAL PROBLEMS ENCOUNTERED DURING WELL COI	NSTRUCTION AND THEIR RESOLUTION:
t- None.	
	·
Was all well screen and casing material used for construction f	ree of foreign matter (e.g., adhesive tape, labels, soil,
etc./? YES [V] NO[]	
Was all well screen and casing material used for construction to	ree of unsecured couplings, ruptures, and other physical
breakage and/or defects? YES NO []	
Is deformation or bending of the installed well screen and casi	
retrieval of a 1.0-inch bailer throughout the entire length of the	
RECORDED BY: (Signature & Date)  OUANTITY OF APPROVED WATER USED FOR FILTER PA	QA CHECK BY: Way H. May 11/27/06

MONITORING WELL **DELIVERY ORDER NO: 0066** PROJECT: Bulk Fuel Facility WELL NUMBER: PP-19 END: 11/11/06 BEGIN: 11/11/066 **COORDINATES:** N: REFERENCE POINT: **ELEVATION:** E: Ground Surface, DATUM/UNITS: DEPTH (BGS) STEEL PROTECTIVE CASING WITH COVER TOP OF PVC FLUSH JOINT RISER WITH WATERTIGHT LOCKING CAP



PROJECT: Bulk Fuel Facility	DELIVERY ORDER: 0066
MONITORING WELL ID: FP-24	
INSTALLATION START: DATE: 11/11/46 INSTALLATION FINISH: DATE: 11/11/46	
INSTALLATION FINISH: DATE: 11/11/44	TIME: 1516
ANNULAR SPACE MATERIALS INVENTORY:	,
. GRANULAR FILTER PACK: TYPE: ₩. G. #1	QUANTITY: 5/65
BENTONITE SEAL: TYPE: DST Gasa	Seal QUANTITY: 1-2 165
GRANULAR FILTER PACK: TYPE: W. G. #    BENTONITE SEAL: TYPE: DST Gaso  GROUT: TYPE: NIA	QUANTITY: MA
. DESCRIPTION OF WELL SCREEN:	
SLOT SIZE (inches): $4.41$ SLOT CONF	IGURATION: Hon zonto
TOTAL OPEN AREA PER FOOT OF SCREEN: NIV-	
OUTSIDE DIAMETER: 178-in NOMINAL I	NSIDE DIAMETER: 15/6-in.
schedule/thickness: Sched. 46	COMPOSITION: PVC
MANUFACTURER: ECT Manufactoring TYPE OF MATERIAL BETWEEN BOTTOM OF BORING AN	<u> </u>
TYPE OF MATERIAL BETWEEN BOTTOM OF BORING AN	ND SCREEN: Native Formations.
DESCRIPTION OF WELL CASING:	<u> </u>
OUTSIDE DIAMETER: 178-in, NOMINAL I SCHEDULE/THICKNESS: School, 44	NSIDE DIAMETER: 15/6-in
MANUFACTURER: ECT Manufacturing	1 11
JOINT DESIGN AND COMPOSITION: Flush	treaded / slip-cap on bottom.
CENTRALIZERS DESIGN AND COMPOSITION:	4.
DESCRIPTION OF PROTECTIVE CASING:	-1 1
NOMINAL INSIDE DIAMETER: 5-in co	IMPOSITION: Steel,
SPECIAL PROBLEMS ENCOUNTERED DURING WELL CO	ONSTRUCTION AND THEIR RESOLUTION:
Mone.	
	·
Was all well screen and casing material used for construction	free of foreign matter (e.g., adhesive tape, labels, soil,
etc./? YES NO[]	
Was all well screen and casing material used for construction	free of unsecured couplings, ruptures, and other physical
breakage and/or defects? YES NO [ ]	
ts deformation or bending of the installed well screen and case	sing minimized to the point of allowing the insertion and
retrieval of a 1.0-inch bailer throughout the entire length of the	
QUANTITY OF APPROVED WATER USED FOR FILTER P.	ACK ENPLACEMENT: None
RECORDED BY: Wester 11/14/66	QA CHECK BY: May 11/27/06
(Signature & Date)	0-129 (Signature & Date)

ROJECT: Bulk Fuel Facility  DELIVERY ORDER NO: 0068  VELL NUMBER: FP-ZD  BEGIN: JIJGG  REFERENCE POINT: ELEVATION: DATUMIUNITS: CORDINATES: N: E: REFERENCE POINT: ELEVATION: DATUMIUNITS: CORDINATES: N: GROWN SUPPLIES WITH  TOP OF FULL JOINT RESERVITH  WATERTIGHT LOCKING CAPPING  OALINI JETTOM OF BURNAL SAME  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACITY MATERIA  TYPE CAPACI		MONITORING WELL		<u> </u>
REFERENCE POINT: ELEVATION: DATUM/UNITS:  CHARM SCHARCE  STEEL PROTECTIVE CASING WITH COVER  ORIGINO SURFACE  ORIGINATE SHARE  ORIGINO SURFACE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE  ORIGINATE SHARE	ROJECT: Bulk Fuel Facility	MONITORING WELL  DELIVERY ORDER NO: 0	066	i k
REFERENCE POINT: ELEVATION: DATUM/UNITS:  BATUM/UNITS:  STELL MOTECTIVE CASING WITH COURT  TOP OF PUT HELEN JOHN MERR WITH  WATERTICHE LASING  DALEN STELL MOTECTIVE CASING  TYPE SCHOOL SURFACE  DALEN STELL MOTECTIVE CASING  TYPE SCHOOL SURFACE  DALEN STELL MOTECTIVE CASING  TYPE SCHOOL SURFACE  DALEN SCHOOL SURFACE  DALEN SCHOOL SURFACE  DALEN SCHOOL SURFACE  DALEN SCHOOL SURFACE  DALEN SCHOOL SURFACE  DALEN SCHOOL SURFACE  DALEN SCHOOL SURFACE  TYPE CONTROL SURFACE  TYPE CONTROL SURFACE  TYPE CONTROL SURFACE  TOP OF REER PACK  TYPE W.G. #1 Flore Sand  DALEN SCHOOL  TOP OF SCHEEN  DALEN SCHOOL  SOFT SINCE  DALEN SCHOOL  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SON SCHOOL  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINCE  SOFT SINC	VELL NUMBER: FP-ZØ	BEGIN: ululo60	END: 11/11/06	
STEEL PROTECTIVE CASING WITH COVER  TOP OF PACE BLUSH JOHN RISER WITH WATERTICHEL LOCKING CAP  PROTECTIVE CASING  THE STATE PROTECTIVE CASING  THE CONTROL OF MURIFACE CASING  TYPE CONTROL OF MURIFACE CASING  TYPE CONTROL OF MURIFACE CASING  TYPE CONTROL OF MURIFACE CASING  TYPE CONTROL OF MURIFACE CASING  TYPE CONTROL OF MURIFACE CASING  TYPE CONTROL OF MURIFACE CASING  TYPE CONTROL OF MURIFACE CASING  TYPE CONTROL OF MURIFACE CASING  TOP OF PACE AND ADDRESS  TOP OF PACE ADDRESS  TOP OF PACE ADDRESS  TOP OF PACE ADDRESS  TOP OF PACE ADDRESS  TOP OF SCREEN  J. D.  BOTTOM OF SCREEN  J. D.  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF S				IITE:
STEEL PROTECTIVE CASING WITH COVER INTO OF INCE PLUSH JOHN RESER WITH WATERTICH LOCKING CAP  RECTION OF SURFACE CASING  DALEN STATE  TYPE CONCRETE  BACKFILL MATERIAL  TYPE CONCRETE  BACKFILL MATERIAL  TYPE CONCRETE  TOP OF SEAL  ANNUAS SEAL  TYPE CARANGOV BATHON FOR THE DATA  ANNUAS SEAL  TYPE CARANGOV BATHON FOR THE DATA  TOP OF SEAL  TOP OF SEAL  TOP OF SCREEN  OAK HILL FROM COMPANIA  TOP OF SCREEN  SCREEN  OAK HILL FROM COMPANIA  BOTTOM OF SCREEN  SCREEN  SOLIC ONPOQUANTION:  \$4.5  SOTTOM OF SCREEN  SOLIC ONPOQUANTION:  \$4.5  SOTTOM OF SCREEN  SOLIC ONPOQUANTION:  \$5.9  SOTTOM OF SCREEN  SOLIC ONPOQUANTION:  \$5.9  SOTTOM OF SCREEN  SOLIC ONPOQUANTION:  \$5.9  SOTTOM OF SCREEN  SOLIC ONPOQUANTION:  \$5.9  SOTTOM OF SCREEN  SOLIC ONPOQUANTION:  \$5.9  SOLIC ONPOQUANTION:  \$5.9  SOLIC ONPOQUANTION:  \$5.9  SOLIC ONPOQUANTION:  \$5.9  SOLIC ONPOQUANTION:  \$5.9  SOLIC ONPOQUANTION:  \$5.9  SOLIC ONPOQUANTION:  \$5.9  SOLIC ONPOQUANTION:  \$5.9  SOLIC ONPOQUANTION:  \$5.9  SOLIC ONPOQUANTION:  \$5.9  SOLIC ONPOQUANTION:  \$5.9  SOLIC ONPOQUANTION:  \$5.9  SOLIC ONPOQUANTION:  \$5.9  SOLIC ONPOQUANTION:  \$5.9  SOLIC ONPOQUANTION:  \$5.9  SOLIC ONPOQUANTION:  \$5.9  SOLIC ONPOQUANTION:  \$5.9  SOLIC ONPOQUANTION:  \$5.9  SOLIC ONPOQUANTION:  \$5.9  SOLIC ONPOQUANTION:  \$5.9  SOLIC ONPOQUANTION:  \$5.9  SOLIC ONPOQUANTION:  \$5.9  SOLIC ONPOQUANTION:  \$5.9  SOLIC ONPOQUANTION:  \$5.9  SOLIC ONPOQUANTION:  \$5.9  SOLIC ONPOQUANTION:  \$5.9  SOLIC ONPOQUANTION:  \$5.9  SOLIC ONPOQUANTION:  \$5.9  SOLIC ONPOQUANTION:  \$5.9  SOLIC ONPOQUANTION:  \$5.9  SOLIC ONPOQUANTION:  \$5.9  SOLIC ONPOQUANTION:  \$5.9  SOLIC ONPOQUANTION:  \$5.9  SOLIC ONPOQUANTION:  \$5.9  SOLIC ONPOQUANTION:  \$5.9  SOLIC ONPOQUANTION:  \$5.9  SOLIC ONPOQUANTION:  \$5.9  SOLIC ONPOQUANTION:  \$5.9  SOLIC ONPOQUANTION:  \$5.9  SOLIC ONPOQUANTION:  \$5.9  SOLIC ONPOQUANTION:  \$5.9  SOLIC ONPOQUANTION:  \$5.9  SOLIC ONPOQUANTION:  \$5.9  SOLIC ONPOQUANTION:  \$5.9  SOLIC ONPOQUANTION:  \$5.9  SOLIC ONPOQUANTION:  \$5.9  SOLIC ONPOQUANTION:  \$5.9  SOLIC ONPOQUANTION:  \$5.9  SOLIC ONPOQUANTIO		Ground Surface	C	5.4 
TOP OF PRESENT MICH WATERTICH LOCKING CAP  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OR STOTION OF SURFACE CASING  OLIGH STOTION OF SURFACE CASING  OLIGH STOTION OF SURFACE CASING  OLIGH STOTION OF SURFACE  OLIGH STOTION OF SURFACE  TYPE: Concrete brand:  OLIGH STOTION OF SURFACE  TYPE: Concrete brand:  OLIGH STOTION OF SURFACE  TYPE: Concrete brand:  OLIGH STOTION OF SURFACE  TYPE: Concrete brand:  OLIGH STOTION OF SURFACE  TOP OF FRITER PACK  TOP OF FRITER PACK  TOP OF SCREEN  SCREEN  OLIGH STOTION OF SURFACE  OLIGH STOTION OF SURFACE  SUTTOM OF SURFACE  OLIGH STOTION OF SURFACE  SUTTOM OF SURFACE  SUTTOM OF SURFACE  SUTTOM OF SURFACE  SUTTOM OF SURFACE  SUTTOM OF SURFACE  SUTTOM OF SURFACE  SUTTOM OF SURFACE  SUTTOM OF SURFACE  SUTTOM OF SURFACE  SUTTOM OF SURFACE  SUTTOM OF SURFACE  SUTTOM OF SURFACE  SUTTOM OF SURFACE  SUTTOM OF SURFACE  SUTTOM OF SURFACE  SURFACE  SURFORM OF SURFACE  SURFACE  SURFACE  SURFORM OF SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFACE  SURFA		STEEL PROTECTIVE CASING WITH COVER		ELEV 👯
DURING STAND  DURING STAND  DURING STAND  DURING STAND  DURING SUPPRECASING  BACKPLI MATERIAL  TYPE: CONCRETE  DURING TOP OF SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE: BY ANNALAR SEAL  TYPE:		TOP OF PVC FLUS		
PROTECTIVE CASHING  DOA: IN 57:11  TYPE-STEM FLUSH-MOWN BOX  BOTTOM OF SURFACE CASHING  TYPE: CONCRETE  OMAINIT FB-11, TD, 178-11, OB  TYPE: BOYAND AND BEAL  ANNULAR SEAL  TYPE: BYANDLAY BEAL  TYPE: BYANDLAY BEAL  TYPE: BYANDLAY BEAL  TYPE: W.G. #FT  U.S. S. I.K. Company  TOP OF FRIER PACK  TYPE: W.G. #FT  TOP OF SCREEN  SCREEN  SCREEN  SCREEN  DIA: INIT FB-11, TYPE: SI offed  SOTTOM OF SURFACE  DIA: ON FORMER  BOTTOM OF SURFACE  SOTTOM OF SURFACE  BOTTOM OF SUMP  BOTTOM OF SUMP  SOTTOM OF SUMP  SOTTOM OF SUMP  SOTTOM OF SUMP  SOTTOM OF SUMP  SOTTOM OF SUMP				].
TOPE STATE FLOSH MATERIAL  BOTTON OF SURFACE CASING  TYPE: CONCRETE BROWN  TYPE: CONCRETE BROWN  TOPE: SCHOOL 44 AND  TOPO OF SEAL  TOP OF FATER PACK  TYPE: GIVENUL 85 ACEL.  TOP OF FATER PACK  FILTER PACK  TYPE: W. G. + F. I pro Sord:  U. S. S. II'CA Company  TOP OF SCREEN  SCREEN  DAA: INI I BROWN  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF SURPA  BOTTOM OF		GROUND SURF	ACE	
TOP OF FLIER PACK  TYPE: GENERAL FLOSH MATERIAL  DAI K-Crote brand  THERE CASHIG  DIABBIT FB-7n, TD, 17B-7n. OD  TYPE: Sched. 4D AND  TOP OF SEAL  TOP OF FLIER PACK  FLIER PACK  TYPE: W.G. + F. Ipro Sord:  U.S. S. Il'Ca Company  TOP OF SCREEN  SCREEN  DAI-IBNI JB-7n, TYPE: Slotted.  SLOT SIZE. COMPANY  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  S.D.  BOTTOM OF SCREEN  S.D.  S.D.  BOTTOM OF SCREEN  S.D.  S.D.  BOTTOM OF SCREEN		PROTECTIVE CASING		्रा
BOTTOM OF SURFACE CASING  BACKILL MATERIAL  TYPE: CONCRETE  QUI K-CRETE Brand  DIA-1811/158-71, TD, 178-71, OB  TYPE: Sched. 40 PVC  TOP OF SEAL  ANNULAR SEAL  TYPE: CONTROL OF BRACK  FILTER PACK  TYPE: W. G. #1 F. I pro Sand.  U. S. S. I ica Company  TOP OF SCREEN  DIA-1811/158-71, TYPE: SI STHED  SCREEN  DIA-1811/158-71, TYPE: SI STHED  SOTTOM OF SUMP  BOTTOM OF SUMP  BOTTOM OF SUMP  SOTTOM OF SUMP  SOTTOM OF HOLE	- u - 1'48'	DIA: (IN) 57/n	10	
RISER CASING  OLAHINI FB. In. TD, I B. In. OD  TYPE: Cheal. 40 PMC  TOP OF SEAL  ANNULAR SEAL  TYPE: Chanvior bentonite  DST Easy Scal.  I TOP OF FILTER PACK  TYPE: W.G. #1 Filpro Sondi  U.S. S. I'ca Company  TOP OF SCREEN  DIA: INIT JB. In. TYPE: SI OHEAL  SCREEN  DIA: INIT JB. In. TYPE: SI OHEAL  BOTTOM OF SUMP  BOTTOM OF SUMP  BOTTOM OF SUMP  SCREEN  BOTTOM OF SUMP  SCREEN  SONTOM OF SUMP  SOTTOM OF SUMP  SOTTOM OF SUMP  SOTTOM OF SUMP	*.		ount 130x. 0,6	.
RISER CASING  OLAHINI FB VIN. TD, I B VIN. OD  TYPE: Grand ov bentonite  DST Easy Scal.  TOP OF FILTER PACK  FILTER PACK  TYPE: W.G. #I Filpre Sord.  U.S. Silica Company  TOP OF SCREEN  DIA: INI 1 FB VIN. TYPE: SI offect  SCREEN  DIA: INI 1 FB VIN. TYPE: SI offect  SCREEN  DIA: INI 1 FB VIN. TYPE: SI offect  BOTTOM OF SUMP  BOTTOM OF SUMP  BOTTOM OF SUMP  BOTTOM OF SUMP  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN		BACKFILL MATERIAL		
RISER CASING  OIA:INI 1 1 1 7 1 7 1 1 1 1 1 1 1 1 1 1 1 1 1		TYPE: Concrete		
RISER CASING  DIA-INI 1 1 1 7 1 7 1 1 1 1 1 1 1 1 1 1 1 1 1		Quik-crete 1	orand.	
DIA: INI 1 1 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2				1
TYPE: Sched. 40 AVC  TOP OF SCAL  ANNULAR SEAL  TYPE: Grandov bentonite  DST Easy Sæel.  TOP OF FILTER PACK  FILTER PACK  TYPE: W.G. # Filpro Sandi  U.S. S. Ilica Company  TOP OF SCREEN  DIA: IIIN 1 76-in. Type: Slotted  SCREEN  DIA: IIIN 1 76-in. Type: Slotted  SLOT SIZE: CONFIGURATION: # Hor: Fourtal  ### ### ### ### ### ### #### ########		CALLETTE .		
TOP OF SEAL  ANNULAR SEAL  TYPE: BYANULOV BENTON: te  DST Easy Seel.  1. \$\phi\$  TOP OF FILTER PACK  FILTER PACK  TYPE: W. Ga. #1 F. I pro Sond.  U. S. S. I. ica Company  TOP OF SCREEN  DIA: IIII 1 / 76-in. TYPE: SI of Head.  SLOT SIZE: CONFIGURATION: \$\phi\$, \$\phi - in. \text{ Hori Fontal}\$ 4.5  BOTTOM OF SCREEN  BOTTOM OF SCREEN  4.5				
ANNULAR SEAL  TYPE: BYANULOV BENLONI'+E  DST Easy Seel.  1. \$\phi\$  TOP OF FILTER PACK  FILTER PACK  TYPE: W. G. #1 F.   pro Sandi  U. S. S.   l'ca Company  TOP OF SCREEN  SCREEN  DIA: IIN1   78-in. TYPE: 8   offed.  SLOT SIZE: CONFIGURATION: #0. \$\phi - \text{in.} \text{ Four East and } \text{ 4.5}  BOTTOM OF SCREEN  BOTTOM OF SUMP  BOTTOM OF HOLE		Jeneal 40	A Co	
TYPE: Granular bentonite  DST Easy Seed.  1. D  TOP OF FILTER PACK  FILTER PACK  TYPE: W.G. # Filpro Sond,  U.S. Silica Company  TOP OF SCREEN  SCREEN  DIA: INI 1 / 5/6-in, TYPE: Slotted.  SLOT SIZE: CONFIGURATION: Hori Fourtal  ### ### ### ### ### ### ### ### ### #		TOP OF SEAL	4.4	-
TOP OF FILTER PACK  FILTER PACK  FILTER PACK  FILTER PACK  TYPE: W. G., #1 F. I pro Sordi  U. S. S. I ca Company  TOP OF SCREEN  SCREEN  DIA: IINI 1 78-in. TYPE: Slotted.  SLOT SIZE: CONFIGURATION: Hori Tourtal  ##5  BOTTOM OF SCREEN  ##5  BOTTOM OF SCREEN  ##5		ANNULAR SEAL	ntonite	
TOP OF FILTER PACK  FILTER PACK  TYPE: W.G. # / F, / pro Sand,  U.S. S, / l'ca Company  TOP OF SCREEN  SCREEN  DIA: IINI 1 56-in. TYPE: Slotted.  SLOT SIZE: CONFIGURATION: Horizontal  ### ### ### ### ### ### ### ### ### #				. ]
TOP OF FILTER PACK  FILTER PACK  TYPE: W.G. #1 Filpro Sandi  U.S. S. li'ca Company  TOP OF SCREEN  SCREEN  DIA: IINI   576-in. TYPE: Slotted  SLOT SIZE: CONFIGURATION: Hori Fourtal  #4.5  BOTTOM OF SCREEN  BOTTOM OF SUMP  SOME SOME SOME SOME SOME SOME SOME SOME	Day of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of			] ]
TYPE: W. G. #1 Filpro Sandi  U. S. Silica Company  TOP OF SCREEN  SCREEN  DIA: HIN1 / 5/6-in. TYPE: Slotted.  SLOT SIZE: CONFIGURATION: Hori Fourtal  4,5  BOTTOM OF SCREEN  4,5  BOTTOM OF HOLE		TOP OF FILTER PACK	<u>Γ</u> .Ψ.	
TOP OF SCREEN  SCREEN  DIA: IINI / 7/8-in. Type: Stothad.  SLOT SIZE: CONFIGURATION: Hori Fourtal  4,5  BOTTOM OF SCREEN  BOTTOM OF SUMP  BOTTOM OF HOLE		FILTER PACK		
TOP OF SCREEN  SCREEN  DIA: IINI / 7/8-in. Type: Stothad.  SLOT SIZE: CONFIGURATION: Hori Zoutal.  4,5  BOTTOM OF SCREEN  BOTTOM OF SUMP  BOTTOM OF HOLE		TYPE: W. Ca. H / F, 1	pro Sandi	
SCREEN  DIA: IINI / 5/6-in. TYPE: Slotted.  SLOT SIZE: CONFIGURATION: Hori Fourtal  4.5  BOTTOM OF SCREEN  4.5  BOTTOM OF HOLE		0.5.5.1/ca Vo	mpany 13	
DIA: IIN] i 5/8-in. TYPE: Slotted.  SLOT SIZE: CONFIGURATION: Hori Zoutal 4,5  BOTTOM OF SCREEN  BOTTOM OF SUMP  SIGN SIZE: CONFIGURATION: Hori Zoutal 4,5  BOTTOM OF HOLE		TOP OF SCREEN		
SLOT SIZE: CONFIGURATION: Hori Fourtal 4,5  BOTTOM OF SUMP  BOTTOM OF HOLE  SLOT SIZE: CONFIGURATION: Hori Fourtal 4,5  BOTTOM OF HOLE				
BOTTOM OF SUMP  BOTTOM OF HOLE  BOTTOM OF HOLE  Herizontal  4,5  5.0		DIA: (IN) /3/8-1/n, TYPE: 5/0	ottack.	
BOTTOM OF SCREEN  BOTTOM OF SUMP  BOTTOM OF HOLE  7.5  4,5			Har Zout !	.
BOTTOM OF SUMP  BOTTOM OF HOLE  4, 5  5, $\phi$		_	4,5	
BOTTOM OF HOLE 5.4		SOTTONI OF SORLER		
BOTTOM OF HOLE		BOTTOM OF SUMP —		
HOLE DIA: JIN D-130		BOTTOM OF HOLE -	<u> </u>	
	HOLE DIA: IINI	D-130		

*	William water a most strategy was a series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series of the series o	
PROJECT: Bulk Fuel Facility	DELIVERY, ORDER: 0066	
MONITORING WELL ID: FP-21	· · · · · · · · · · · · · · · · · · ·	
NSTALLATION START: DATE: 11/11/4	6 тіме: <u>154ф</u>	
INSTALLATION FINISH: DATE: ///u/	φ6 TIME: 1545	
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA		
GRANULAR FILTER PACK: TYPE: 4	$0.6. \pm 1$ QUANTITY: $5 - 166$	
BENTONITE SEAL: TYPE:	O.G.#1 QUANTITY: 5 165.  SI Easy Seal QUANTITY: 1-Z 165  NIA QUANTITY: NIA	
GROUT: TYPE: _	OIA QUANTITY: NIA	
DESCRIPTION OF WELL SCREEN:		
<b>?</b>	SLOT CONFIGURATION: Horizonto	
TOTAL OPEN AREA PER FOOT OF SCREET		
OUTSIDE DIAMETER: 1 1/8-in	NOMINAL INSIDE DIAMETER: 13/8-in.	
schedule/thickness: Sched	$\frac{4\phi}{}$ composition: $\frac{19VC}{}$	
MANUFACTURER: ECT Monuf	ectoring	
TYPE OF MATERIAL BETWEEN BOTTOM OF		
DESCRIPTION OF WELL CASING:	.5/2 1	
OUTSIDE DIAMETER: 1 1/8-in.	NOMINAL INSIDE DIAMETER: 1987h	
OUTSIDE DIAMETER: 1 1/8-in. NOMINAL INSIDE DIAMETER: 15/8-in.  SCHEDULE/THICKNESS: Sched 40 COMPOSITION: PVC		
MANUFACTURER: ECT Manu	factoring.	
JOINT DESIGN AND COMPOSITION:		
CENTRALIZERS DESIGN AND COMPOSITION	:	
DESCRIPTION OF PROTECTIVE CASING:	ما (	
NOMINAL INSIDE DIAMETER: 6-in	composition: Steel.	
SPECIAL PROBLEMS ENCOUNTERED DURIN	G WELL CONSTRUCTION AND THEIR RESOLUTION:	
None.		
<u></u>		
	construction free of foreign matter (e.g., adhesive tape, labels, soil,	
ntc.// YES X NO[]	d c c d d d d d d d d d d d d d d d d d	
	construction free of unsecured couplings, ruptures, and other physical	
breakage and/or defects? YES NO[]	and easing minimized to the point of allowing the insertion and	
	reen and casing minimized to the point of allowing the insertion and	
QUANTITY OF APPROVED WATER USED FO	RELITER PACK ENPLACEMENT: NO[]	
RECORDED BY: Signature & Date)	14 Φ6 QA CHECK BY: Way A Varley 11/27/06 (Signature & Date)	
· ·		

D-131

Ľ	PROJECT: Bulk Fuel Facility DELIVERY ORDER: 0066
1	MONITORING WELL ID: PP-ZZ
ĺ	NSTALLATION START: DATE: 11/11/6/ TIME: 1554
į	NSTALLATION FINISH: DATE: 11/11/06 TIME: 1558
	ANNULAR SPACE MATERIALS INVENTORY:
i	GRANULAR FILTER PACK: TYPE: 6.6 #1 QUANTITY: 5 165
į.	GRANULAR FILTER PACK: TYPE: W.G. #1 QUANTITY: 5 165  BENTONITE SEAL: TYPE: DST Easy Seal QUANTITY: 1-2 165  GROUT: TYPE: NIA QUANTITY: NIA
ų.	GROUT: TYPE: VIA QUANTITY: VIA
	DESCRIPTION OF WELL SCREEN:
1.15	SLOT SIZE (inches): $\phi, \phi l$ SLOT CONFIGURATION: Horizontal
9	TOTAL OPEN AREA PER FOOT OF SCREEN:
	OUTSIDE DIAMETER: 17/8-in. NOMINAL INSIDE DIAMETER: 15/8-in.
1	SCHEDULE/THICKNESS: Sched. 40 COMPOSITION: WC
7	OUTSIDE DIAMETER: 17/8-in. NOMINAL INSIDE DIAMETER: 15/8-in.  SCHEDULE/THICKNESS: Sched. 40 COMPOSITION: PVC  MANUFACTURER: ECT Manufacturing.  MANUFACTURER: POTTOM OF RODING AND SCREEN: Washing Formations.
	TYPE OF MATERIAL BETWEEN BOTTOM OF BORING AND SCREEN: Native Formations.
	DESCRIPTION OF WELL CASING:
	OUTSIDE DIAMETER: 178-in NOMINAL INSIDE DIAMETER: 158-in.
	SCHEDULE/THICKNESS: Sched. 40 COMPOSITION: PVC
į	MANUFACTURER: ECT Manufacturing.
- 7	JOINT DESIGN AND COMPOSITION: Flush- threaded/slip-cop on botton
-	CENTRALIZERS DESIGN AND COMPOSITION:
-	DESCRIPTION OF PROTECTIVE CASING:
as Visited	NOMINAL INSIDE DIAMETER: 5-in. COMPOSITION: Stee!
	SPECIAL PROBLEMS ENCOUNTERED DURING WELL CONSTRUCTION AND THEIR RESOLUTION:
of the same	None
,	Was all well screen and casing material used for construction free of foreign matter (e.g., adhesive tape, labels, soil,
1	#IC.]? YES NO [ ]  Was all well screen and casing material used for construction free of unsecured couplings, ruptures, and other physical
	hroakage and/or defects? YES NO [ ]
. 1	la deformation or bending of the installed well screen and casing minimized to the point of allowing the insertion and
. i	retrieval of a 1.0-inch bailer throughout the entire length of the completed well? YES NO [ ]
- '	QUANTITY OF APPROVED WATER USED FOR FILTER PACK ENPLACEMENT:
4	RECORDED BY: Western Stray 11/14/06 QA CHECK BY: Wings H. Farly 11/17/06 (Signature & Date)
	(Signature & D 133

MONITORING WELL **DELIVERY ORDER NO: 0066** PROJECT: Bulk Fuel Facility WELL NUMBER: FP-ZZ END: 4/1/06 BEGIN: 11/11/46 N: COORDINATES: DATUM/UNITS: REFERENCE POINT: **ELEVATION:** E: Ground Sonface DATUM/UNITS: DEPTH STEEL PROTECTIVE CASING WITH COVER TOP OF PVC FLUSH JOINT RISER WITH WATERTIGHT LOCKING CAP GROUND SURFACE 4.6 TYPE: CONCRETE brondi Quik-crete RISER CASING DIA:1111/5/8-11.70, 17/8-11.00 TYPE: Sched 40 PVC TOP OF SEAL ANNULAR SEAL TYPE: Granular bentonite Seal. 1.0 TYPE: U.G. #1 Filpro Sand. U.S. Silica Company TOP OF SCREEN DIA: (IN) 15/67 h. TYPE: Slotted configuration: Horizontal SLOT SIZE: Φ. Øl-in. 4.5 BOTTOM OF SCREEN 4.5 **BOTTOM OF SUMP** 5.0 BOTTOM OF HOLE - HOLE DIA: (IN) - Z-In.

The state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the s	and the manufacture of the first of the second second second second second second second second second second
PROJECT: Bulk Fuel Facility	DELIVERY, ORDER: 0066
MONITORING WELL ID: PP-23	
INSTALLATION START: DATE:	11/11/06 TIME: 1639 11/11/06 TIME: 1645
INSTALLATION FINISH: DATE:_	11/11/46 TIME: 1645
ANNULAR SPACE MATERIALS INVENT	TORY:
	TYPE: $\omega = 1$ QUANTITY: $30$ $65$
BENTONITE SEAL:	TYPE: DST Easy Seal QUANTITY: 4-5/65.  TYPE: NIA QUANTITY: NIA
GROUT:	TYPE: NIA QUANTITY: NIA
DESCRIPTION OF WELL SCREEN:	
SLOT SIZE (inches): $\frac{\phi, \phi l}{}$	SLOT CONFIGURATION: Hon' Fonta
TOTAL OPEN AREA PER FOOT OF	SCREEN:
OUTSIDE DIAMETER: 178-in	NOMINAL INSIDE DIAMETER: 18/8-in,
schedule/Thickness: Sch	20.40 composition: PVC
MANUFACTURER: ECT N	lani Mactanina
TYPE OF MATERIAL BETWEEN BOTTO	OM OF BORING AND SCREEN: Native Formations.
DESCRIPTION OF WELL CASING:	
OUTSIDE DIAMETER: 18-in	NOMINAL INSIDE DIAMETER: 15/8-in
	od. 40 composition: VC
MANUFACTURER: ECT Ma	notactoring.
JOINT DESIGN AND COMPOSITION:	Flush-threaded/slip cap on bottom.
CENTRALIZERS DESIGN AND COMPO	DSITION:
DESCRIPTION OF PROTECTIVE CASI	VG:
NOMINAL INSIDE DIAMETER:	5-in, composition:Stee!
RPECIAL PROBLEMS ENCOUNTERED	DURING WELL CONSTRUCTION AND THEIR RESOLUTION:
Encounter hard/ jusé 3-in, diam.	pocked gravel loyer, or large rock
Jusé 3-in, diam.	auger.
Was all well screen and casing material L	used for construction free of foreign matter (e.g., adhesive tape, labels, soil,
€ 60.17 YES NO [ ]	
Was all well screen and casing material is	used for construction free of unsecured couplings, ruptures, and other physical
Imankage and/or defects? YES NO	
11 /	d well screen and casing minimized to the point of allowing the insertion and
fetrleval of a 1.0-inch bailer throughout	the entire length of the completed well? YES [X NO [ ]
QUANTITY OF APPROVED WATER U	SED FOR FILTER PACK ENPLACEMENT:
BECORDED BY	Des 11/14/06 QA CHECK BY: Wand H. Kaller 11/27/06
RECORDED BY (Signature &	D-135 (Signature & Date)
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	the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second secon
PROJECT: Bulk Fuel Facility	ELIVERY ORDER 0066
MONITORING WELL ID: FP-74	
INSTALLATION START: DATE: 11/12/46 1	rime: <u>6745</u>
INSTALLATION FINISH: DATE: 11/12/06	TIME: 0754
ANNULAR SPACE MATERIALS INVENTORY:	, .
GRANULAR FILTER PACK: TYPE: W.G.#/	QUANTITY: $3\phi/6s$
BENTONITE SEAL: TYPE: DSI Easy See	21 QUANTITY: 4-5/55
GRANULAR FILTER PACK: TYPE: W.G.#/ BENTONITE SEAL: TYPE: DST Easy See GROUT: TYPE: NIA	QUANTITY:/U/A
DESCRIPTION OF WELL SCREEN:	, 1 1
SLOT SIZE (inches): $\phi \phi l$ SLOT CONFIGURA	ATION: Horizontal
TOTAL OPEN AREA PER FOOT OF SCREEN: WA	
OUTSIDE DIAMETER: 176-in NOMINAL INSIDE	
schedule/Thickness: Sched. 40	COMPOSITION: PVC
MANUFACTURER: ECT Manufacturing.	
TYPE OF MATERIAL BETWEEN BOTTOM OF BORING AND SO	CREEN: Native Formations, '
DESCRIPTION OF WELL CASING:	. 5/
OUTSIDE DIAMETER: 176-in. NOMINAL INSIDE	DIAMETER: 178-in
schedule/Thickness: School 44	COMPOSITION: PVC
MANUFACTURER: ECT Manufacturing.	77. L
Joint Design and Composition: Plush- threads	1/Slip cap on bottom.
CENTRALIZERS DESIGN AND COMPOSITION:	
DESCRIPTION OF PROTECTIVE CASING:	-1 1
NOMINAL INSIDE DIAMETER: 6-in COMPOS	
BPECIAL PROBLEMS ENCOUNTERED DURING WELL CONST	
Encounter hard/packed grav	iel layer: Use 3-in. diam.
Lauger.	
Was all well screen and casing material used for construction free	of foreign matter (e.g., adhesive tape, labels, soil,
#1c.17 YES M NO[]	
Was all well screen and casing material used for construction free	of unsecured couplings, ruptures, and other physical
hreakage and/or defects? YES NO[]	•
is deformation or bending of the installed well screen and casing n	<u>*</u> "
retrieval of a 1.0-inch bailer throughout the entire length of the col	1.0
QUANTITY OF APPROVED WATER USED FOR FILTER PACK	ENPLACEMENT:
RECORDED BY: Signature & Date)  OA  (Signature & Date)	CHECK BY: Wing A. Van 11/27/06 (Signature & Date)
- III 127	

PROJECT: Bulk Fuel Facility DELIVERY ORDER: 0066
MONITORING WELL ID: FP-25
INSTALLATION START: DATE: 11/12/46 TIME: 4845
INSTALLATION FINISH: DATE: 11/12/06 TIME: 0850
ANNULAR SPACE MATERIALS INVENTORY:
GRANULÁR FILTER PACK: TYPE: W.G.#1 QUANTITY: 5 /65.
GRANULÁR FILTER PACK: TYPE: W.G. # 1 QUANTITY: 5 /65.  BENTONITE SEAL: TYPE: DST Easy Seal. QUANTITY: 1-2 /65.  GROUT: TYPE: N/A QUANTITY: N/A
GROUT: TYPE: N/A QUANTITY: N/A
DESCRIPTION OF WELL SCREEN:
SLOT SIZE (inches): 4.01 SLOT CONFIGURATION: Honizontal
TOTAL OPEN AREA PER FOOT OF SCREEN:
OUTSIDE DIAMETER: 176-in NOMINAL INSIDE DIAMETER: 15/8-in.
schedule/Thickness: Sched. 40 composition: PVC
MANUFACTURER: ECT Manufacturing.
TYPE OF MATERIAL BETWEEN BOTTOM OF BORING AND SCREEN: Native Formations,
DESCRIPTION OF WELL CASING:
OUTSIDE DIAMETER: 17/8-in. NOMINAL INSIDE DIAMETER: 15/8-in.
schedule/Thickness: Schad. 40 composition: PVC
MANUFACTURER: ECT Manufacturing
JOINT DESIGN AND COMPOSITION: Flush-threaded / Slip-cop on bottom.
CENTRALIZERS DESIGN AND COMPOSITION:
DESCRIPTION OF PROTECTIVE CASING:
NOMINAL INSIDE DIAMETER: 6-in. COMPOSITION: 5+ee.
SPECIAL PROBLEMS ENCOUNTERED DURING WELL CONSTRUCTION AND THEIR RESOLUTION:
Mone.
Was all well screen and casing material used for construction free of foreign matter (e.g., adhesive tape, labels, soil,
#IC.]? YES NO []
Was all well screen and casing material used for construction free of unsecured couplings, ruptures, and other physical
htenkage and/or defects? YES NO [ ]
In the formation or bending of the installed well screen and casing minimized to the point of allowing the insertion and
Fitheval of a 1.0-inch bailer throughout the entire length of the completed well? YES X NO []
OUANTITY OF APPROVED WATER USED FOR FILTER PACK ENPLACEMENT:
TSignature & Date)  QA CHECK BY: Winglif land 11/27/06  (Signature & Date)
(Signature & Date)

MRTit MONITORING WELL PROJECT: Bulk Fuel Facility **DELIVERY ORDER NO: 0066** PP-Z5 END: 4/13/06 WELL NUMBER: BEGIN: 11/12/66 **COORDINATES:** N: REFERENCE POINT: **ELEVATION: DATUM/UNITS:** E: Ground Surface DATUM/UNITS: DEPTH ELEV ¥ STEEL PROTECTIVE CASING WITH COVER TOP OF PVC FLUSH JOINT RISER WITH WATERTIGHT LOCKING CAP ii) OVERE GROUND SURFACE 4**. о**бРТН PROTECTIVE CASING BACKFILL MATERIAL
TYPE: CONCRETE B BAPOSI Quik-crete brand. LOCAT RISER CASING DIA:(IN) 15/8-in. PD, 17/8-in. OD. TYPE: Sched, 40 \$.6 TOP OF SEAL ANNULAR SEAL TYPE: Granular bentonite DSI Eosy Seal 1,0 TOP OF FILTER PACK FILTER PACK U.S. Silica Company 1.3 - TOP OF SCREEN DIA: (IN) /5/8-in, TYPE: Slotted configuration: Horizontal. BOTTOM OF SCREEN 4,5 BOTTOM OF SUMP 5,0 BOTTOM OF HOLE HOLE DIA: (IN) - 1 Z-in,

PROJECT: Bulk Fuel Facility DÉLÎVERY ORDER: 0066 4
MONITORING WELL ID: PP-26
INSTALLATION START: DATE: 11/12/06 TIME: 090/
INSTALLATION FINISH: DATE: 11/12/06 TIME: 0906
ANNULAR SPACE MATERIALS INVENTORY:
GRANULAR FILTER PACK: TYPE: $\omega G^{\#}/$ QUANTITY: $5/66$
GROUT: TYPE: DST Easy Said QUANTITY: 1-2 165.  QUANTITY: NIA.
GROUT: TYPE: N/A QUANTITY: N/A
DESCRIPTION OF WELL SCREEN:
SLOT SIZE (inches): $\phi$ , $\phi$   SLOT CONFIGURATION: Horizontal
TOTAL OPEN AREA PER FOOT OF SCREEN: NAME OF SCREEN:
OUTSIDE DIAMETER: 1/8-1/2 NOMINAL INSIDE DIAMETER: 1/8-1/2
schedule/thickness: Sched. 44 composition: PVC
MANUFACTURER: ECT Manufacturing.
TYPE OF MATERIAL BETWEEN BOTTOM OF BORING AND SCREEN: Native Formations.
DESCRIPTION OF WELL CASING:
OUTSIDE DIAMETER: 178 in NOMINAL INSIDE DIAMETER: 15/8-in.
SCHEDULE/THICKNESS: School 40 COMPOSITION: PVC
MANUFACTURER: ECT Manufacturing.
Joint Design and Composition: Flush-threaded/slip-cap on bottom.
CENTRALIZERS DESIGN AND COMPOSITION:
DESCRIPTION OF PROTECTIVE CASING:
NOMINAL INSIDE DIAMETER: 6/n. composition: Steel
PPECIAL PROBLEMS ENCOUNTERED DURING WELL CONSTRUCTION AND THEIR RESOLUTION:
None
The state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the s
Was all well screen and casing material used for construction free of foreign matter (e.g., adhesive tape, labels, soil,
PIC.J? YES NO[]
Was all well screen and casing material used for construction free of unsecured couplings, ruptures, and other physical
hmakage and/or defects? YES NO [ ]
to deformation or bending of the installed well screen and casing minimized to the point of allowing the insertion and
tellieval of a 1.0-inch bailer throughout the entire length of the completed well? YES M NO []
QUANTITY OF APPROVED WATER USED FOR FILTER PACK ENPLACEMENT: None
NECORDED BY: New 11/14/06  OA CHECK BY: Name of the 11/12/06  (Signature & Date)

		<del></del>	
ROJECT: Bulk Fuel Facility	MONITORING WELL DELIVERY ORDER NO: 0066		
VELL NUMBER: PP-76	BEGIN: U/12/06 END	: 11/12/06	31
OORDINATES: N:	REFERENCE POINT: ELEVATION:	DATUM/UNI	TS:
ATUM/UNITS:	Ground Surface.		TO SAME
STEE	PROTECTIVE CASING WITH COVER	DEPTH (BGS)	ELEV
	TOP OF PVC FLUSH JOINT RISER WI WATERTIGHT LOCKING CAP	тн	
	$\supseteq$		- THE
	GROUND SURFACE	0	ng ng
	PROTECTIVE CASING DIA: (IN) 5-15-1		en to
	TYPE: Steel Flush-mount E	3× 0.6	
	BOTTOM OF SURFACE CASING		
	TYPE: CONCRETE.		
	Quik-crete branch		
	Gur-crete brance,		4 100
	RISER CASING		**
	DIA:(IN) 198-in. ID, 178-in. OF	>	38: B
		J 6.6	
	TOP OF SEAL  ANNULAR SEAL	, 7	
	Type: Granular Bentonit		
	DSI Easy Socal.		
	TOP OF FILTER PACK	Ι,φ	
	TYPE: W.GI.#/ Filpro Son	عک. 📗	*
	U.S. Silica Company	1,3	
	TOP OF SCREEN		
	DIA: (IN) / 5/8 in, Type: 5/0HeQ		4,
		, ,	<b>\$</b>
	SLOT SIZE: CONFIGURATION: Horizon+	4.5	
	BOTTOM OF SCREEN	4,5	1
	BOTTOM OF SUMP		
	BOTTOM OF HOLE	5.6	
HOLE DIA: (IN)	D-142		

MONITORING WELL INSTALLATION LOG
PROJECT: Bulk Fuel Facility DELIVERY ORDER: 0066
MONITORING WELL ID: FP-Z7
INSTALLATION START: DATE: 11/12/06 TIME: 0914
INSTALLATION FINISH: DATE: 11/12/06 TIME: 0919
ANNULAR SPACE MATERIALS INVENTORY:
GRANULAR FILTER PACK: TYPE: W.G.#   QUANTITY: 5 165,  BENTONITE SEAL: TYPE: DST Easy Seal QUANTITY: 1-Z-165.  GROUT: TYPE: NIA QUANTITY: NIA
BENTONITE SEAL: TYPE: DST Easy Seal QUANTITY: 1-7-165.
GROUT: TYPE: NA QUANTITY: NA
DESCRIPTION OF WELL SCREEN:
SLOT SIZE (inches): $\phi, \phi 1$ SLOT CONFIGURATION: Horizontal
TOTAL OPEN AREA PER FOOT OF SCREEN: N/A
NOMINAL INSIDE DIAMETER: 198-16
schedule/Thickness: School 40 composition: PC
- SCHEDULE/THICKNESS: School 4th composition: PC
TYPE OF MATERIAL BETWEEN BOTTOM OF BORING AND SCREEN: Native Formations.
DESCRIPTION OF WELL CASING:
OUTSIDE DIAMETER: 17/8-in. NOMINAL INSIDE DIAMETER: 15/8-in.
schedule/Thickness: School 44 composition: PVC
MANUFACTURER: ECT Manufactoring.
Joint Design and composition: Flosh-threaded/slip-cap on bottom.
CENTRALIZERS DESIGN AND COMPOSITION:
DESCRIPTION OF PROTECTIVE CASING:
NOMINAL INSIDE DIAMETER: 5-in composition: Steel
SPECIAL PROBLEMS ENCOUNTERED DURING WELL CONSTRUCTION AND THEIR RESOLUTION:
Was all well screen and casing material used for construction free of foreign matter (e.g., adhesive tape, labels, soil,
elc./? YES NO[]
Was all well screen and casing material used for construction free of unsecured couplings, ruptures, and other physical
breakage and/or defects? YES NO [ ]
n deformation or bending of the installed well screen and casing minimized to the point of allowing the insertion and
retrieval of a 1.0-inch bailer throughout the entire length of the completed well? YES NO []
QUANTITY OF APPROVED WATER USED FOR FILTER PACK ENPLACEMENT:
RECORDED BY:  (Signature & Date)  OA CHECK BY: Wing / Furb 11/27/06  (Signature & Date)
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PROJECT: Bulk Fuel Facility DELIVERY ORDER: 0066
MONITORING WELL ID: FP-28
INSTALLATION START: DATE: 11/12/66 TIME: $\Phi926$
INSTALLATION FINISH: DATE: 11/12/06 TIME: 4934
ANNULAR SPACE MATERIALS INVENTORY:
GRANULAR FILTER PACK: TYPE: W.G.#1 QUANTITY: 5/65.
BENTONITE SEAL:  TYPE: DST Easy Sea ( QUANTITY: 1-Z 165  GROUT:  TYPE: N/A QUANTITY: N/A
GROUT: TYPE: NA QUANTITY: NA
DESCRIPTION OF WELL SCREEN:
SLOT SIZE (inches): 4,41 SLOT CONFIGURATION: Hon Zonta
TOTAL OPEN AREA PER FOOT OF SCREEN: N/A
OUTSIDE DIAMETER: 176-in NOMINAL INSIDE DIAMETER: 158-in
schedule/thickness: Sched. 40 composition: PVC
- MANUFACTURER: ECT Manufacturing.
TYPE OF MATERIAL BETWEEN BOTTOM OF BORING AND SCREEN: Native Formations,
DESCRIPTION OF WELL CASING:
OUTSIDE DIAMETER: 176-in NOMINAL INSIDE DIAMETER: 15/8-in
SCHEDULE/THICKNESS: School 40 COMPOSITION: PVC
MANUFACTURER: ECT Manufacturing.
JOINT DESIGN AND COMPOSITION: Plush threaded Slip-cap on bottom,
CENTRALIZERS DESIGN AND COMPOSITION:
DESCRIPTION OF PROTECTIVE CASING:
***NOMINAL INSIDE DIAMETER: 6-1/21 COMPOSITION: 5+001
APECIAL PROBLEMS ENCOUNTERED DURING WELL CONSTRUCTION AND THEIR RESOLUTION:
None
Was all well screen and casing material used for construction free of foreign matter (e.g., adhesive tape, labels, soil,
#10.17 YES 1/1 NO []
Net all well screen and casing material used for construction free of unsecured couplings, ruptures, and other physical
Preakage and/or defects? YES ♥ NO [ ]
Note: It deformation or bending of the installed well screen and casing minimized to the point of allowing the insertion and
Matrieval of a 1.0-inch bailer throughout the entire length of the completed well? YES NO []
QUANTITY OF APPROVED WATER USED FOR FILTER PACK ENPLACEMENT: None,
ARCORDED BY: Timether colors 11/14/66 QA CHECK BY: Wing H. Hum 11/27/06
(Signature & Date)  D-145

MONITORING WELL **DELIVERY ORDER NO: 0066** PROJECT: Bulk Fuel Facility END: 11/12/06 WELL NUMBER: 11/12/00 BEGIN: N: **COORDINATES: ELEVATION:** DATUM/UNITS: REFERENCE POINT: E: Ground Sonface **DATUM/UNITS:** DEPTH (BGS) STEEL PROTECTIVE CASING WITH COVER TOP OF PVC FLUSH JOINT RISER WITH WATERTIGHT LOCKING CAP GROUND SURFACE 10TAL DIA: (IN) 5-17 ф.6 TYPE: Concret RISER CASING DIA:(IN) 19/8-in, ID, 17/8-in, OD TYPE: School, 40 de la TOP OF SEAL lip TOP OF FILTER PACK FILTER PACK U.S. Silica Company. TOP OF SCREEN DIA: IIN) / 8-in. TYPE: Slotted configuration: Horr Zoutal SLOT SIZE: \$41-in 1 BOTTOM OF SCREEN **BOTTOM OF SUMP** BOTTOM OF HOLE Z-in. D-146

PROJECT: Bulk Fuel Facility DELIVERY ORDER: 0066
MONITORING WELL ID: PP-29
WSTALLATION START: DATE: 11/12/06 TIME: 6939
NSTALLATION FINISH: DATE: 11/12/66 TIME: 4943
ANNULAR SPACE MATERIALS INVENTORY:
GRANULAR FILTER PACK: TYPE: $\omega G \# I$ QUANTITY: $5/65$
BENTONITE SEAL: TYPE: DST Easy Seal QUANTITY: 1-7 165
GRANULAR FILTER PACK: TYPE: W.G.#1 QUANTITY: 5 165.  BENTONITE SEAL: TYPE: DST Easy Seal QUANTITY: 1-Z 165.  GROUT: TYPE: NIA QUANTITY: NIA
DESCRIPTION OF WELL SCREEN:
SLOT SIZE (inches): 4.01 SLOT CONFIGURATION: Horizontal
TOTAL OPEN AREA PER FOOT OF SCREEN: NIA
OUTSIDE DIAMETER: 1/8-in NOMINAL INSIDE DIAMETER: 19/8-in.
schedule/thickness: School. 40 composition: TVC
Type of Material Between Bottom of Boring and Screen: Native Formations.
TYPE OF MATERIAL BETWEEN BOTTOM OF BORING AND SCREEN: Notive formations.
DESCRIPTION OF WELL CASING:
OUTSIDE DIAMETER: 178-in. NOMINAL INSIDE DIAMETER: 15/8-in.
schedule/Thickness: Bched 40 composition: WC
schedule/Thickness: Behed 40 composition: PVC  MANUFACTURER: ECT Manufacturing.
JOINT DESIGN AND COMPOSITION: Plush threadow / Slip-Cop on bottom,
CENTRALIZERS DESIGN AND COMPOSITION:
DESCRIPTION OF PROTECTIVE CASING:
NOMINAL INSIDE DIAMETER: Srin. composition: Steel
*PECIAL PROBLEMS ENCOUNTERED DURING WELL CONSTRUCTION AND THEIR RESOLUTION:
Wone.
Was all well screen and casing material used for construction free of foreign matter (e.g., adhesive tape, labels, soil,
PIO. J7 YES NO [ ]
Was all well screen and casing material used for construction free of unsecured couplings, ruptures, and other physical
hrwikege and/or defects? YES 1/4 NO [ ]
Industrial with the desired with the state of the installed well screen and casing minimized to the point of allowing the insertion and
#Irleval of a 1.0-inch bailer throughout the entire length of the completed well? YES NO [ ]
QUANTITY OF APPROVED WATER USED FOR FILTER PACK ENPLACEMENT:
ALCORDED BY: Swellow 11/11/06 QA CHECK BY: Wing / fruh 1/27/06
(Signature & Date) D-147

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ROJECT: Bulk Fuel Facility	MONITORING WELL DELIVERY ORDER NO: 0066	meets of the second
ELL NUMBER: FP-29	BEGIN: 11/12/06 END: 11/1	2/06
OORDINATES: N:		ATUM/UNITS:
ATUM/UNITS:	Ground Surface	ATOM/ONTO
STE	PROTECTIVE CASING WITH COVER	DEPTH ELEV.
	TOP OF PVC FLUSH JOINT RISER WITH WATERTIGHT LOCKING CAP	
	GROUND SURFACE	0
<u> </u>	PROTECTIVE CASING DIA: (IN) 5-12	<b>33</b> 3
	TYPE: Steel Flush-mount Box	4.6
	BOTTOM OF SURFACE CASING	
	TYPE: CONCRETE	A A
	Quik-crete brand.	
	RISER CASING	
	DIA:1111/18-11. TD, 18-12.00	. \$\frac{\partial}{2} \\ \frac{\partial}{2}
	TYPE: Schadule 40 PVC	8.6
	TOP OF SEAL  ANNULAR SEAL	ψω   · · · · · · · · · · · · · · · · · ·
	TYPE Granular bentonite	
	DSI Easy Serol.	
	TOP OF FILTER PACK →	1.0
	FILTER PACK	2 4
	U.S. Silica Componer	- क्यूं राज्यस्थित
	TOP OF SCREEN	1.3
	SCREEN	
	DIA: (IN) / %-in. TYPE: 310 He Q	
	SLOT SIZE: CONFIGURATION: HON' ZONTO	
	BOTTOM OF SCREEN	4.2
	BOTTOM OF SUMP	4.5
	BOTTOM OF HOLE	5· <b>∮</b>
HOLE DIA: (IN)	D-148	*
·	<u> </u>	1

	Market Market
PROJECT: Bulk Fuel Facility DELIVERY ORDER: 10066	ZONW E
MONITORING WELL ID: FD-30	
NSTALLATION START: DATE: $11/12/46$ TIME: $4955$	
NSTALLATION FINISH: DATE: 11/12/66 TIME: 4958	
ANNULAR SPACE MATERIALS INVENTORY:	•
GRANULAR FILTER PACK: TYPE: W.G.#1  BENTONITE SEAL: TYPE: DST Easy Seal QUANTITY: 1-2 165,  GROUT: TYPE: NIA QUANTITY: NIA	
BENTONITE SEAL: TYPE: DST Eosy See QUANTITY: 1-2 /55,	
GROUT: TYPE: N/A QUANTITY: N/A	
DESCRIPTION OF WELL SCREEN:	. •
SLOT SIZE (inches): 4.41 SLOT CONFIGURATION: Horizontal	
TOTAL OPEN AREA PER FOOT OF SCREEN: W/A	
OUTSIDE DIAMETER: 176-in: NOMINAL INSIDE DIAMETER: 158-in:	
schedule/Thickness: School 40 composition: PVC  MANUFACTURER: ECT Manufacturing.	
MANUFACTURER: ECT Manufacturing.	
TYPE OF MATERIAL BETWEEN BOTTOM OF BORING AND SCREEN: Native Formations	3,
DESCRIPTION OF WELL CASING:	
SCHEDULE/THICKNESS: Sched. 46 COMPOSITION: PVC	
schedule/thickness: Sched. 40 composition: PVC	
MANUFACTURER: ECT Manufacturing	•
VOINT DESIGN AND COMPOSITION: Flush-threaded / slip-cap on botto.	<u>m</u>
CENTRALIZERS DESIGN AND COMPOSITION:	
DESCRIPTION OF PROTECTIVE CASING:	4
NOMINAL INSIDE DIAMETER: 5-10 COMPOSITION: 5+001	<del></del>
PECIAL PROBLEMS ENCOUNTERED DURING WELL CONSTRUCTION AND THEIR RESOLUTION:	o .
Stick the auger: use pipe whench to unthread	<u> </u>
Continue augoring.	
	<del></del>
Was all well screen and casing material used for construction free of foreign matter (e.g., adhesive tape, labels,	. soil,
inc. 17 YES NO []	
Was all well screen and casing material used for construction free of unsecured couplings, ruptures, and other	physical
heakage and/or defects? YES NO [ ]	
In the formation or bending of the installed well screen and casing minimized to the point of allowing the insert	ion and
Mitrieval of a 1.0-inch bailer throughout the entire length of the completed well? YES NO []	
DUANTITY OF APPROVED WATER USED FOR FILTER PACK ENPLACEMENT: None	
MECORDED BY: Question of 11/14/06 QA CHECK BY: Mby 1/1. Vinly 1/1	12/16
(Signature & Date)	- HON
D-149	

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ROJECT: Bulk Fuel Facility	MONI	ITORING WELL DELIVERY ORDER NO: 0066		
VELL NUMBER: FP-34		BEGIN: 11/12/06	END: 11/12/0	6 1.
OORDINATES: N: E: OATUM/UNITS:	•	REFERENCE POINT: ELEVA Ground Scarface	ATION: DATUM	Alexander (1995)
	STEEL PROTECTIV	TOP OF SEAL  TOP OF PVC FLUSH JOINT WATERTIGHT LOCKING CO  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  ANALYMATERIAL  TYPE: Concrete bray  RISER CASING  DIA:(IN) 15/8-in, ID, 17/8-in  TYPE: Sched, HOP  TOP OF SEAL  ANNULAR SEAL  TYPE: Granular bent  BST Easy Sea	TRISER WITH CAP  ON POX D,  On to on to	
		TOP OF FILTER PACK  FILTER PACK  TYPE: W.G. #1 Filpi  U.S. Silica Com	ro Sond	3
	Tage of State of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Control of Contr	TOP OF SCREEN  SCREEN  DIA: (IN) /5/87/n. TYPE: 5/0#4	Q	
	There yes	SLOT SIZE: CONFIGURATION:		5
	Z-in.	BOTTOM OF SUMP  BOTTOM OF HOLE	ir. 51	5 ° 44 Ø

PROJECT: Bulk Fuel Facility DELIVERY ORDER: 0066
MONITORING WELL ID: FP-31
NSTALLATION START: DATE: $11/12/\phi c$ TIME: $1/\phi/3$
ASTALLATION FINISH: DATE: 11/12/4/5 TIME: 14/6
ANNULAR SPACE MATERIALS INVENTORY:
GRANULAR FILTER PACK: TYPE: W. G. #1 QUANTITY: 5165
BENTONITE SEAL:  TYPE: DST Easy Seal QUANTITY: 1-2 165.  TYPE: NIA QUANTITY: NIA
GROUT: TYPE: VIA QUANTITY: VIA
DESCRIPTION OF WELL SCREEN:
SLOT SIZE (inches): 4.01 SLOT CONFIGURATION: for izontal
TOTAL OPEN AREA PER FOOT OF SCREEN: WIA
OUTSIDE DIAMETER: 18/8-in.
schedule/Thickness: Sched 40 composition: PVC
MANUFACTURER: ECT Manufacturing.
TYPE OF MATERIAL BETWEEN BOTTOM OF BORING AND SCREEN: Native Formations.
DESCRIPTION OF WELL CASING:
OUTSIDE DIAMETER: 178-in NOMINAL INSIDE DIAMETER: 15/8-in.
SCHEDULE/THICKNESS: Sched. 44 COMPOSITION: PVC
MANUFACTURER: ECT Manufacturing. JOINT DESIGN AND COMPOSITION: Flugh-threaded/slip-cap on bottom.
CENTRALIZERS DESIGN AND COMPOSITION:
DESCRIPTION OF PROTECTIVE CASING:  NOMINAL INSIDE DIAMETER: 5-in. COMPOSITION: 5feet
SPECIAL PROBLEMS ENCOUNTERED DURING WELL CONSTRUCTION AND THEIR RESOLUTION:
Mone:
Was all well screen and casing material used for construction free of foreign matter (e.g., adhesive tape, labels, soil,
inc./? YES X NO []
Was all well screen and casing material used for construction free of unsecured couplings, ruptures, and other physical
₩eskage and/or defects? YES NO []
Landson and the installed well screen and casing minimized to the point of allowing the insertion and
No [ ]
QUANTITY OF APPROVED WATER USED FOR FILTER PACK ENPLACEMENT: None
AECORDED BY: Swother oly 1/15/46 QA CHECK BY: Way 1/1. June 11/27/02
(Signature & Date) (Signature & Date)

PROJECT: Bulk Fuel Facility	MONITORING WELL DELIVERY ORDER NO: 0066	75.08.0
WELL NUMBER: FP-31	BEGIN: 11/12 (Φ6 END:	11/12/06
COORDINATES: N:		· +3
E: DATUM/UNITS:	Ground Surface.	DATUM/UNITS:
STEEL	ROTECTIVE CASING WITH COVER	DEPTH ELEV
	TOP OF PVC FLUSH JOINT RISER WITH WATERTIGHT LOCKING CAP	
	7	4.00 (1995)
	GROUND SURFACE	
<u> </u>	PROTECTIVE CASING DIA: (IN) 5-/2	7
	TYPE: Steel Flush-mount Box	d.6
	BOTTOM OF SURFACE CASING	
	TYPE: CONCORE TO	
	Quik-crete brand.	
	quin crei c. prana.	
	PISER CASING  DIA:(IN) /5/8-in. FD, 13/8-in. OD	
	TYPE: Sched. 40 PVC	
	*	1 66
	TOP OF SEAL  ANNULAR SEAL	7
	TYPE: Gironular bentonite DSI Easy Seal.	
	DSI Easy Sool.	
	TOP OF FILTER PACK	J. p
		7
-	TYPE: W.G. # Filpro Sord	1 \
	U.S. Dilica Company	] , 2   -1
	TOP OF SCREEN	
	DIA: (IN) / 5/8-in. TYPE: Blothe Q.	1
	SLOT SIZE: CONFIGURATION: POPI ZONTO	4.6
	BOTTOM OF SCREEN	- 1'O
	BOTTOM OF SUMP	4,5
	BOTTOM OF HOLE	5.p.
HOLE DIA: (IN) - Z-in.	D-152	

PROJECT: Bulk Fuel Facility DELIVERY ORDER: 0066
MONITORING WELL ID: PP-3Z
NSTALLATION START: DATE: 11/12/66 TIME: 1043  NSTALLATION FINISH: DATE: 11/12/66 TIME: 1047
NSTALLATION FINISH: DATE: 1/12/66 TIME: 1047
ANNULAR SPACE MATERIALS INVENTORY:
GRANULAR FILTER PACK: TYPE: W.G.#1 QUANTITY: 5/65.  BENTONITE SEAL: TYPE: DST Easy Seal QUANTITY: 1-Z 1/65.  GROUT: TYPE: NIA QUANTITY: NIA.
BENTONITE SEAL: TYPE: DST Easy Seal QUANTITY: 1-Z 165.
*GROUT: TYPE: N/A QUANTITY: N/A.
DESCRIPTION OF WELL SCREEN:
SLOT SIZE (inches): 4.41 SLOT CONFIGURATION: Horizontal
TOTAL OPEN AREA PER FOOT OF SCREEN: NIA OUTSIDE DIAMETER: 15/8-in. NOMINAL INSIDE DIAMETER: 15/8-in.  SCHEDULE/THICKNESS: Sched. 40 COMPOSITION: PVC
OUTSIDE DIAMETER: 1/8-in. NOMINAL INSIDE DIAMETER: 13/8-in.
schedule/Thickness: School 40 composition: PVC
MANUFACTURER: ECT Manufacturing.  14PE OF MATERIAL BETWEEN BOTTOM OF BORING AND SCREEN: Notive Formations.
DESCRIPTION OF WELL CASING:
outside diameter: 17/8-in. Nominal inside diameter: 15/8-in.  schedule/thickness: Sched. 44 composition: PVC
SCHEDULE/THICKNESS: SCHOOL 40 COMPOSITION: PYC
MANUFACTURER: ECT Manufactoring.
JOINT DESIGN AND COMPOSITION: Flush-Threaded Slip-cap on bottom,
CENTRALIZERS DESIGN AND COMPOSITION:
DESCRIPTION OF PROTECTIVE CASING:
NOMINAL INSIDE DIAMETER: 5-in   COMPOSITION: Steel
SPECIAL PROBLEMS ENCOUNTERED DURING WELL CONSTRUCTION AND THEIR RESOLUTION:
None,
Was all well screen and casing material used for construction free of foreign matter (e.g., adhesive tape, labels, soil,
(#10.)? YES X NO [ ]
Was all well screen and casing material used for construction free of unsecured couplings, ruptures, and other physical
indeformation or bending of the installed well screen and casing minimized to the point of allowing the insertion and
QUANTITY OF APPROVED WATER USED FOR FILTER PACK ENPLACEMENT:
WORNTITT OF AFFROVED WATER USED FOR FILTER PACK ENPLACEMENT:
MICORDED BY: Junelle 3/1/5/06 QA CHECK BY: Ward / Park 1/17/06
(Signature & Date) D-153 (Signature & Date)
$\nu$ -100

WELL NUMBER: PD 32  BEGIN: W/12/66  END: W/12/66 22  COORDINATES: N: REFERENCE POINT: ELEVATION: DATUMIUNTS:  GYOUND SONFACE  OPPIN CONTROL CARROW WITH COURT  TOP OF PLUSH JOINT RESER WITH WATERFRONT LOCKING CARRO  UNINE STATE FLOW CARROW  ONLY STATE FLOW CARROW  ONLY STATE FLOW CARROW  ONLY STATE FLOW CARROW  ONLY STATE FLOW CARROW  ONLY STATE FLOW CARROW  ONLY STATE FLOW CARROW  TYPE: CONCRETE STATE FLOW  ONLY STATE FLOW  ONLY STATE FLOW  ONLY STATE FLOW  ONLY STATE FLOW  ONLY STATE FLOW  ONLY STATE FLOW  ONLY STATE FLOW  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY STATE  ONLY	PROJECT: Bulk Fuel Facility	MONITORING WELL DELIVERY ORDER NO: 0066	
REFERENCE POINT: ELEVATION: DATUMIUNITS: ME GROUND SURFACE  STELL PROTECTIVE CASING WITH COVER  ORGANIA SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  TYPE: Concrete branch  GROUND SURFACE  TYPE: Concrete branch  TOP OF RATER FACE  THE W. G. # 1 F.   pro Sand.  U. S. S. INTER FACE  TOP OF RATER FACE  TOP OF SATER FACE  TOP OF SATER FACE  TOP OF SATER FACE  THE W. G. # 1 F.   pro Sand.  U. S. S. INTER FACE  THE W. G. # 1 F.   pro Sand.  U. S. S. INTER FACE  TOP OF SATER FACE  TOP OF SATER FACE  TOP OF SATER FACE  THE W. G. # 1 F.   pro Sand.  U. S. S. INTER FACE  TOP OF SATER FACE  TOP OF SATER  DIAL RIVE   SOUTH ON SERIEN  SOUTION OF SURFACE  SOUTION OF SURFACE  SOUTION OF SURFACE  SOUTION OF NOBE  SOUTION OF NOBE  SOUTION OF NOBE  SOUTION OF NOBE  SOUTION OF NOBE  SOUTION OF NOBE  SOUTION OF NOBE  SOUTION OF NOBE  SOUTION OF NOBE  SOUTION OF NOBE  SOUTION OF NOBE  SOUTION OF NOBE  SOUTION OF NOBE  SOUTION OF NOBE  SOUTION OF NOBE  SOUTION OF NOBE  SOUTION OF NOBE  SOUTION OF NOBE  SOUTION OF NOBE  SOUTION OF NOBE  SOUTION OF NOBE  SOUTION OF NOBE  SOUTION OF NOBE  SOUTION OF NOBE  SOUTION OF NOBE  SOUTION OF NOBE  SOUTION OF NOBE  SOUTION OF NOBE  SOUTION OF NOBE  SOUTION OF NOBE  SOUTION OF NOBE  SOUTION OF NOBE  SOUTION OF NOBE  SOUTION OF NOBE  SOUTION OF NOBE  SOUTION OF NOBE  SOUTION OF NOBE  SOUTION OF NOBE  SOUTION OF NOBE  SOUTION OF NOBE  SOUTION OF NOBE  SOUTION OF NOBE  SOUTION OF NOBE  SOUTION OF NOBE  SOUTION OF NOBE  SOUTION OF NOBE  SOUTION OF NOBE  SOUTION OF NOBE  SOUTION OF NOBE  SOUTION OF NOBE  SOUTION OF NOBE  SOUTION OF NOBE  SOUTION OF NOBE  SOUTION OF NOBE  SOUTION OF			: 11/12/06
DATUM/UNITS:  Ground Sorface  STEEL PRIOTECTIVE CASING WITH COVER  TOP OF PURPLISH JOHN RISER WITH WATERITCH LOCKING CAP  GROUND BURFACE  GROUND BURFACE  GROUND BURFACE  GROUND BURFACE  GROUND BURFACE  GROUND BURFACE  GROUND BURFACE  GROUND BURFACE  GROUND BURFACE  GROUND BURFACE  GROUND BURFACE  GROUND BURFACE  GROUND BURFACE  GROUND BURFACE  GROUND BURFACE  GROUND BURFACE  GROUND BURFACE  GROUND BURFACE  GROUND BURFACE  GROUND BURFACE  GROUND BURFACE  GROUND BURFACE  GROUND BURFACE  GROUND BURFACE  FATER MACK  TYPE GROUND GROUND  TOP OF SCHEEN  DIALING 1986  TOP OF SCHEEN  DIALING 1986  TOP OF SCHEEN  DIALING 1986  TOP OF SCHEEN  DIALING 1986  TOP OF SCHEEN  DIALING 1986  TOP OF SCHEEN  DIALING 1986  TOP OF SCHEEN  DIALING 1986  TOP OF SCHEEN  DIALING 1986  TOP OF SCHEEN  DIALING 1986  TOP OF SCHEEN  DIALING 1986  TOP OF SCHEEN  DIALING 1986  DIALING 1986  TOP OF SCHEEN  DIALING 1986  DIALING 1986  TOP OF SCHEEN  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 1986  DIALING 198		<u> </u>	
STEEL PROTECTIVE CASING WITH COVER  TO OF PURSUAND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  ORGUND SURFACE  OR	· —-	· · · · · · · · · · · · · · · · · · ·	
ORDINO BURFACE  ORDINO STATE  THE SHEET FLOSH MOONT BOX  DIALIBLE STATE  TYPE: CONCRETE  CON K-CVETS  DIALIBLE STATE  TYPE: CONCRETE  CON K-CVETS  DIALIBLE STATE  TOP OF SEAL  TYPE: GHAM HO PYC  TOP OF SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TYPE: GHAM SEAL  TY	STEEL PRO		
OAZINI SUIFECTIVE CASINO  OAZINI STOTOM OF SUIFECT CASINO  TYPE Shed Flush mount Box  DIAGON OF SUIFECT CASINO  OXINI SOLOTOM OF SUIFECT CASINO  OXINI SOLOTOM OF SUIFECT CASINO  OXINI SOLOTOM OF SUIFECT CASINO  OXINI SOLOTOM OF SUIFECT CASINO  OXINI SUIFECT CASINO  OXINI SOLOTOM OF SUIFECT CASINO  OXINI SOLOTOM OF SUIFECT CASINO  OXINI SUIFECT CASINO  OXINI SOLOTOM OF SUIFECT CASINO  OXINI SOLOTOM OF SUIFECT CASINO  OXINI SOLOTOM OF SUIFECT CASINO  OXINI SOLOTOM OF SUIFECT  BOTTOM OF SUIFECT  BOTTOM OF SUIFECT  BOTTOM OF SUIFECT  OXINI SUIFECT  OXINI SUIFECT  OXINI SOLOTOM OF SUIFECT  BOTTOM OF SUIFECT  BOTTOM OF SUIFECT  BOTTOM OF SUIFECT  BOTTOM OF SUIFECT  BOTTOM OF SUIFECT  SUIFECT  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE  OXINI SUIFE			пн
DIA: IMP 5-7h, TYPE: Shed Floth mount Box  BOTTOM OF SUMPACE CASING  WASCAFFLA MATERIAL  TYPE: CONCUPE TO  DIA: IMP 1 1/8 - 11. OD  TOP OF SEAL  ANNULAR SEAL  TYPE: GITORNOLOF DEMANDE  DIA: IMP 1 1/8 - 11. OD  TOP OF SEAL  ANNULAR SEAL  TYPE: W. G. #1 F. I pro Sond.  D. S. Si'I ca Coupony  TOP OF SOREN  DIA: IMP 1 1/8 - 11. TYPE: SIOTHOUS  SCOREN  DIA: IMP 1 1/8 - 11. TYPE: SIOTHOUS  SIOT SIZE: CONFIGURATION: AD  BOTTOM OF SUMP  BOTTOM OF SUMP  BOTTOM OF SUMP  BOTTOM OF SUMP  BOTTOM OF SUMP  BOTTOM OF SUMP  BOTTOM OF SUMP  BOTTOM OF SUMP  BOTTOM OF SUMP  BOTTOM OF HOLE			4
DIA: INI 1 5 - IN TOP OF SCREEN  TYPE: Shed Flosh mount Bex  DISTRICT OF SUMPRICE CRAINED  TYPE: CONC ME HE  DISTRICT OF SUMPRICE CRAINED  TYPE: CONC ME HE  DISTRICT OF STALL  TYPE: Ched. 40 PVC  TOP OF SEAL  TYPE: Ched. 40 PVC  TOP OF SEAL  TYPE: Ched. 40 PVC  TOP OF SEAL  TYPE: Ched. 40 PVC  TOP OF SEAL  TYPE: W. G. #1 F. I pro Sond.  U. S. S. I ca Companya.  TOP OF SCREEN  DIA: INI 1 8 - In. TYPE: Slotted  SIOT SUEE CONFIGURATION: Hom Zontal  BOTTOM OF SUMP  BOTTOM OF SUMP  BOTTOM OF SUMP  BOTTOM OF SUMP  BOTTOM OF SUMP  BOTTOM OF SUMP  BOTTOM OF SUMP  BOTTOM OF SUMP  BOTTOM OF SUMP  BOTTOM OF SUMP  BOTTOM OF SUMP  BOTTOM OF SUMP  BOTTOM OF SUMP  BOTTOM OF SUMP  BOTTOM OF SUMP  BOTTOM OF SUMP  BOTTOM OF HOLE		GROUND SURFACE	
DIA: INI 5-th.  TYPE: Sted Flash mount Box  DISTOM OF SURFACE CASING  BACKFALL MATERIAL  TYPE: CONCUREDE  DIA: INI 185-th. D. 185-th. OD  TYPE: School Hap PVC  TOP OF SEAL  TYPE: GHRANNULAR SEAL  TYPE: GHRANNULAR SEAL  TYPE: GHRANNULAR SEAL  TYPE: W. G. H. F. I pro Sond.  U. S. S. I ca Company  TOP OF SCREEN  DIA: INI 185-th. TYPE: Slotted  SCREEN  DIA: INI 185-th. TYPE: Slotted  SOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SUMP  BOTTOM OF SUMP  BOTTOM OF SUMP  BOTTOM OF SUMP  BOTTOM OF SUMP		PROTECTIVE CASING	
TYPE: CONCRETE BRANCH MATERIAL  TYPE: CONCRETE BRANCH  RISER CASING  DIA:INA 1 FB-In. TD 1 1 B-In. OD  TYPE: Schad. HD PVC  TOP OF SEAL  ANNULAR SEAL  TYPE: Grannular benkon; HE  DST ROSY SOAL  TOP OF FILTER PACK  FILTER PACK  THERE W. G. H F. I pro Sond.  U. S. Si I ca Company  TOP OF SCREEN  DIA: UNI 1 B-In., TYPE: SIGHTAD  SUT SIZE: CONFIGURATION: HON ZONAL  BOTTOM OF SUMP  BOTTOM OF SUMP  BOTTOM OF SUMP  BOTTOM OF SUMP  SOTTOM OF SUMP  BOTTOM OF SUMP  SOTTOM OF SUMP  BOTTOM OF SUMP  SOTTOM OF SUMP  SOTTOM OF SUMP  SOTTOM OF SUMP  SOTTOM OF SUMP  SOTTOM OF SUMP  SOTTOM OF SUMP  SOTTOM OF SUMP  SOTTOM OF SUMP  SOTTOM OF SUMP  SOTTOM OF SUMP  SOTTOM OF SUMP  SOTTOM OF SUMP  SOTTOM OF SUMP  SOTTOM OF SUMP  SOTTOM OF SUMP  SOTTOM OF SUMP  SOTTOM OF SUMP  SOTTOM OF SUMP  SOTTOM OF SUMP  SOTTOM OF SUMP  SOTTOM OF SUMP  SOTTOM OF SUMP  SOTTOM OF SUMP  SOTTOM OF SUMP  SOTTOM OF SUMP  SOTTOM OF SUMP  SOTTOM OF SUMP  SOTTOM OF SUMP  SOTTOM OF SUMP  SOTTOM OF SUMP		DIA: (IN), 5-/h,	
RISER CASING  DIASINI 1 1/8 - IN. CD  TYPE: Sched. HQ PVC  TOP OF SEAL  TYPE: Grannular bendonite  DST ROSY Seal  TOP OF FILTER PACK  FILTER PACK  TYPE: W. G. #1 F. / pro Sond.  U.S. Silica Company  TOP OF SCREEN  DIA: (IN) 1 1/8 - In., TYPE: Slotted:  SLOT SIZE: CONFIGURATION: ADDRESS OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF STATE OF S			$\times$ $\varphi_{i}b$
RISER CASING  DIASHINI FORM TO, 178-in. OD  TYPE: Sched. HA PVP  TOP OF SEAL  TYPE: Grannular bentonite  DST ROSY Seal  TOP OF FILTER PACK  FILTER PACK  TYPE: W. G. #1 F. I pro Sond.  U.S. Silica Company  TOP OF SCREEN  DIA: LINI 178-in, TYPE: Slotted:  SLOT SIZE: CONFIGURATION:  DIA: LINI 178-in, TYPE: Slotted:  SLOT SIZE: CONFIGURATION:  DIA: DOTTOM OF SCREEN  BOTTOM OF SCREEN  #1,5		SACKFILL MATERIAL	
RISER CASING  DIASHINI FORM TO, 178-in. OD  TYPE: Sched. HA PVP  TOP OF SEAL  TYPE: Grannular bentonite  DST ROSY Seal  TOP OF FILTER PACK  FILTER PACK  TYPE: W. G. #1 F. I pro Sond.  U.S. Silica Company  TOP OF SCREEN  DIA: LINI 178-in, TYPE: Slotted:  SLOT SIZE: CONFIGURATION:  DIA: LINI 178-in, TYPE: Slotted:  SLOT SIZE: CONFIGURATION:  DIA: DOTTOM OF SCREEN  BOTTOM OF SCREEN  #1,5		TYPE: Concrete	
RISER CASING  DIASHINI FORM TO, 178-in. OD  TYPE: Sched. HA PVP  TOP OF SEAL  TYPE: Grannular bentonite  DST ROSY Seal  TOP OF FILTER PACK  FILTER PACK  TYPE: W. G. #1 F. I pro Sond.  U.S. Silica Company  TOP OF SCREEN  DIA: LINI 178-in, TYPE: Slotted:  SLOT SIZE: CONFIGURATION:  DIA: LINI 178-in, TYPE: Slotted:  SLOT SIZE: CONFIGURATION:  DIA: DOTTOM OF SCREEN  BOTTOM OF SCREEN  #1,5		Quik-crete brand	
DIA:INI 198-in. TD, 198-in. OD  TYPE: Sched. HAP PVC  TOP OF SEAL  ANNULAR SEAL  TYPE: GIPANNULAR JEAL  TOP OF FILTER PACK  FILTER PACK  TYPE: W. G. #1 F. I pro Sond.  U. S. S. I ca Company  TOP OF SCREEN  DIA: INI 198-in. TYPE: Slotted  SICT SIZE: CONFIGURATION: HON Zontal  BOTTOM OF SCREEN  BOTTOM OF SCREEN  #55			
TOP OF SEAL  TOP OF SEAL  ANNULAR SEAL  TYPE: GHANNULAR DENHON; HE  DST. ROSY Seal  TOP OF FILTER PACK  FILTER PACK  TYPE: W. G. #   F.   pro Sond.  U.S. Si   i ca Company  TOP OF SCREEN  DIA: (IN)			
TOP OF SEAL  ANNULAR SEAL  TYPE: Grannular bentonite  DS.T. EOSY, Soal  TOP OF FILTER PACK  FILTER PACK  TYPE: W. G. #   F.   pro Sond.  U. S. Si'lica Company.  TOP OF SCREEN  SCREEN  DIA: (IN)   # -in, type: Slotted  SLOT SIZE: CONFIGURATION: HON ZONTAL  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SUMP  SOTTOM OF HOLE		DIA:(IN) 78-10, 40, 18-10, 00	And harden
TOP OF SEAL  ANNULAR SEAL  TYPE: Grannular bendon; te  DSF Edsy Seal  TOP OF FILTER PACK  FILTER PACK  TYPE: W. G. # 1 F. I pro Sond.  U. S. Si I ca Company  TOP OF SCREEN  SCREEN  DIA: UND 1 // 8 - in, TYPE: Slotted:  SLOT SIZE: CONFIGURATION: Hom Zontal  ## Off-in:  BOTTOM OF SCREEN  ## 55		sched. 40 PrC	
TYPE: Grannular bentonite  DST EOSY Seal  TOP OF FILTER PACK  FILTER PACK  TYPE: W. G. #1 F. I pro Sand.  U.S. Silica Company  TOP OF SCREEN  SCREEN  JIA: (IN) 1 /6 - in, TYPE: Slotted  SLOT SIZE: CONFIGURATION: Hom Zonkal  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF SCREEN  BOTTOM OF HOLE  SOME SOURCE SEAL SEAL SEAL SEAL SEAL SEAL SEAL SEA			
TOP OF FILTER PACK  FILTER PACK  TYPE: W. G. # 1 F. I pro Sond.  U. S. Si I ca Company  TOP OF SCREEN  SCREEN  DIA: (IN) 1 / B - in, Type: Slotted.  SLOT SIZE: CONFIGURATION: Hon: Zonka!  ### ### ### ### ####################			6
TOP OF FILTER PACK  FILTER PACK  TYPE: W. G. #   F.   pro Sond.  U.S. Si   Ca Company.  TOP OF SCREEN  SCREEN  DIA: (IN)   7/8 - in, Type: Slotland.  SLOT SIZE: CONFIGURATION: Hon Zontal  4,5  BOTTOM OF SCREEN  4,5		DSF Easy Seal	4
TOP OF FILTER PACK  FILTER PACK  TYPE: W. G. #   F.   pro Sand.  U. S. Si'li'Ca Company  TOP OF SCREEN  SCREEN  DIA: (IN)   5/6-in, TYPE: Slotted  SLOT SIZE: CONFIGURATION: Hom Zontal  ### ### ### ### ### ### ############			
TYPE: W. G. #   F.   pro Sond.  U.S. Silica Company  TOP OF SCREEN  SCREEN  DIA: (IN)   //B-in, Type: Slotted:  SLOT SIZE: CONFIGURATION: Hom Zontal  BOTTOM OF SCREEN  # 5.			
SCREEN  DIA: (IN) 15/8-in, TYPE: Slotted  SLOT SIZE: CONFIGURATION: Hom Zontal  BOTTOM OF SCREEN  BOTTOM OF SUMP  BOTTOM OF HOLE  SCREEN  4,5		FILTER PACK	
SCREEN  DIA: (IN) 15/8-in, TYPE: Slotted  SLOT SIZE: CONFIGURATION: Hom Zontal  BOTTOM OF SCREEN  BOTTOM OF SUMP  BOTTOM OF HOLE  SCREEN  4,5		De Silve Parmer	2,
SCREEN  DIA: (IN) 1 % -in, TYPE: Slotted  SLOT SIZE: CONFIGURATION: Hon Zontal  BOTTOM OF SCREEN  BOTTOM OF SUMP  BOTTOM OF HOLE			1/3
DIA: (IN) 1 1/8 -in, Type: Slotted  SLOT SIZE: CONFIGURATION: Hon Zontal  4,5  BOTTOM OF SCREEN  BOTTOM OF SUMP  BOTTOM OF HOLE		TOP OF SCREEN	1
SLOT SIZE: CONFIGURATION:  ### Hon Zontal  4,5  BOTTOM OF SUMP  BOTTOM OF HOLE			1
BOTTOM OF SUMP  BOTTOM OF HOLE  # 5			
BOTTOM OF SCREEN  BOTTOM OF SUMP  BOTTOM OF HOLE		SLOT SIZE: CONFIGURATION: Hon' Zonte	21 11 1
BOTTOM OF SUMP  BOTTOM OF HOLE	· [7]		7,0
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BOTTOM OF HOLE			
HOLE DIA: (IN) $\longrightarrow$ $\bigcirc$ $\bigcirc$ $\bigcirc$ D-154		80TTOM OF HOLE	
· · · · · · · · · · · · · · · · · · ·	HOLE DIA: (IN)	D-154	2 APORT 190

	PROJECT: Bulk Fuel Facility
Ĺ	MONITORING WELL ID: PP-33
(	NSTALLATION START: DATE: WIZ 66 TIME: 1058
ĺ	NSTALLATION FINISH: DATE: 11/12/046 TIME: 1143-
į	MNULAR SPACE MATERIALS INVENTORY:
	GRANULAR FILTER PACK: TYPE: W.G. #1 - QUANTITY: 5/65.
100	BENTONITE SEAL:  TYPE: DSP Easy Seal QUANTITY: 1-2-165.  GROUT:  TYPE: NIA QUANTITY: NIA
	GROUT: TYPE: 10/A QUANTITY: 11/A
I	DESCRIPTION OF WELL SCREEN:
i	SLOT SIZE (inches): $\frac{\phi, \phi_1}{}$ SLOT CONFIGURATION: Horizontal TOTAL OPEN AREA PER FOOT OF SCREEN: ${}$ ${}$ ${}$
/	TOTAL OPEN AREA PER FOOT OF SCREEN: W/A
	OUTSIDE DIAMETER: 18-in. NOMINAL INSIDE DIAMETER: 15/8-in.
	schedule/Thickness: Sched. 46 composition: PVC
	MANUFACTURER: ECT Manufacturing
	TYPE OF MATERIAL BETWEEN BOTTOM OF BORING AND SCREEN: Native Formations,
	OUTSIDE DIAMETER: 16/8-in. NOMINAL INSIDE DIAMETER: 15/8-in.
	SCHEDULE/THICKNESS: School: 40 COMPOSITION: PVC
	MANUFACTURER: ECT Manufacturing.
Ì	JOINT DESIGN AND COMPOSITION: Plush-threaded/slip-cop on bottom,
	CENTRALIZERS DESIGN AND COMPOSITION: 107/4
	DESCRIPTION OF PROTECTIVE CASING:
	NÕMINAL INSIDE DIAMETER: 5-10. COMPOSITION: Stee
	SPECIAL PROBLEMS ENCOUNTERED DURING WELL CONSTRUCTION AND THEIR RESOLUTION:
	None.
1	
1	Was all well screen and casing material used for construction free of foreign matter (e.g., adhesive tape, labels, soil,
- And	PREJZ YES NO[]
	Was all well screen and casing material used for construction free of unsecured couplings, ruptures, and other physical
I	NO[]
1	deformation or bending of the installed well screen and casing minimized to the point of allowing the insertion and
	Cirleval of a 1.0-inch bailer throughout the entire length of the completed well? YES NO []
I	QUANTITY OF APPROVED WATER USED FOR FILTER PACK ENPLACEMENT:
I	ACCORDED BY: Junether of by 11/15/06 QA CHECK BY: New 1/2406
	(Signature & Date) D-155 (Signature & Date)
<b></b>	

WELL NUMBER: FP-33  BEGIN: 11/12/04  END: 11/10/06  REFERENCE POINT: ELEVATION: DATUM/UNITS: 4  GROUND SUPPLIES JOHN BERN WITH WATERIGHT LOCKING CAP  TOP OF PULLUS JOHN BERN WITH WATERIGHT LOCKING CAP  MALEN FROM THE THE ACCUMENT CARRIED WITH WATERIGHT LOCKING CAP  TYPE CARRIED FLOCKING CARRIED  TYPE CARRIED FLOCKING CARRIED  TYPE CARRIED FLOCKING CARRIED  TYPE CARRIED FLOCKING CARRIED  TYPE CARRIED FLOCKING CARRIED  TYPE CARRIED FLOCKING CARRIED  TYPE CARRIED FLOCKING CARRIED  TYPE CARRIED FLOCKING CARRIED  TYPE CARRIED FLOCKING CARRIED  TYPE CARRIED FLOCKING CARRIED  TYPE CARRIED FLOCKING CARRIED  TYPE CARRIED FLOCKING CARRIED  TYPE CARRIED FLOCKING CARRIED  TYPE CARRIED FLOCKING CARRIED  TYPE CARRIED FLOCKING CARRIED  TYPE CARRIED FLOCKING CARRIED  TYPE CARRIED FLOCKING CARRIED  TYPE CARRIED FLOCKING CARRIED  TYPE CARRIED FLOCKING CARRIED  TYPE CARRIED FLOCKING CARRIED  TYPE CARRIED FLOCKING CARRIED  TYPE CARRIED FLOCKING CARRIED  TYPE CARRIED FLOCKING CARRIED  TYPE CARRIED FLOCKING CARRIED  TYPE CARRIED FLOCKING CARRIED  TYPE CARRIED FLOCKING CARRIED  TYPE CARRIED FLOCKING CARRIED  TYPE CARRIED FLOCKING CARRIED  TYPE CARRIED FLOCKING CARRIED  TYPE CARRIED FLOCKING CARRIED  TYPE CARRIED FLOCKING CARRIED  TYPE CARRIED FLOCKING CARRIED  TYPE CARRIED FLOCKING CARRIED  TYPE CARRIED FLOCKING CARRIED  TYPE CARRIED FLOCKING CARRIED  TYPE CARRIED FLOCKING CARRIED  TYPE CARRIED FLOCKING CARRIED  TYPE CARRIED FLOCKING CARRIED  TYPE CARRIED FLOCKING CARRIED  TYPE CARRIED FLOCKING CARRIED  TYPE CARRIED FLOCKING CARRIED  TYPE CARRIED FLOCKING CARRIED  TYPE CARRIED FLOCKING CARRIED  TYPE CARRIED FLOCKING CARRIED  TYPE CARRIED FLOCKING CARRIED  TYPE CARRIED FLOCKING CARRIED  TYPE CARRIED FLOCKING CARRIED  TYPE CARRIED FLOCKING CARRIED  TYPE CARRIED FLOCKING CARRIED  TYPE CARRIED FLOCKING CARRIED  TYPE CARRIED FLOCKING CARRIED  TYPE CARRIED FLOCKING CARRIED  TYPE CARRIED FLOCKING CARRIED  TYPE CARRIED FLOCKING CARRIED FLOCKING CARRIED  TYPE CARRIED FLOCKING CARRIED  TYPE CARRIED FLOCKING CARRIED FLOCKING CARRIED  TYPE CARRI	MON PROJECT: Bulk Fuel Facility	ITORING WELL DELIVERY ORDER NO: 0066	And the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of t
E: REFERENCE POINT: ELEVATION: DATUM/UNITS:  Ground Sur Race  STEEL PROTECTIVE CASING WITH DOVER  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFACE  OROUND SURFA	WELL NUMBER: FP-33	BEGIN: 11/12/06	END: ////Z/46
STEEL PROTECTIVE CASING WITH COVER  TOP OF FIVE FLUSH JOINT RESER WITH  WARRISH LOCATED  BRAILEN STEEL PROTECTIVE CASING  VIEW SECT FLUSH MATERIAL  TYPE: CANCER FLUSH MATERIAL  TYPE: CANCER FLUSH MATERIAL  TYPE: SSHELL SUPPLY FLUSH MALE STEEL  ANALUS SEAL  TYPE: SSHELL SUPPLY FLUSH MALE STEEL  TOP OF SEAL SEAL  TOP OF SEAL SEAL  TOP OF SEAL SEAL  TOP OF SEAL SEAL  TOP OF SEAL SEAL  TOP OF SEAL SEAL  TOP OF SEAL SEAL  TOP OF SEAL SEAL  TOP OF SEAL SEAL  TOP OF SEAL SEAL  TOP OF SEAL SEAL  TOP OF SEAL SEAL  TOP OF SEAL SEAL  TOP OF SEAL SEAL  TOP OF SEAL SEAL  TOP OF SEAL SEAL  TOP OF SEAL SEAL  TOP OF SEAL SEAL  TOP OF SEAL SEAL  TOP OF SEAL SEAL  TOP OF SEAL SEAL  TOP OF SEAL SEAL  TOP OF SEAL SEAL  TOP OF SEAL SEAL  TOP OF SEAL SEAL  TOP OF SEAL SEAL  TOP OF SEAL SEAL  TOP OF SEAL SEAL  TOP OF SEAL SEAL  TOP OF SEAL SEAL  TOP OF SEAL SEAL  TOP OF SEAL SEAL  TOP OF SEAL SEAL  TOP OF SEAL SEAL  TOP OF SEAL SEAL  TOP OF SEAL SEAL  TOP OF SEAL SEAL  TOP OF SEAL SEAL  TOP OF SEAL SEAL  TOP OF SEAL SEAL  TOP OF SEAL SEAL  TOP OF SEAL SEAL  TOP OF SEAL SEAL  TOP OF SEAL SEAL  TOP OF SEAL SEAL  TOP OF SEAL SEAL  TOP OF SEAL SEAL  TOP OF SEAL SEAL  TOP OF SEAL SEAL  TOP OF SEAL SEAL  TOP OF SEAL SEAL  TOP OF SEAL SEAL  TOP OF SEAL SEAL  TOP OF SEAL SEAL  TOP OF SEAL SEAL  TOP OF SEAL SEAL  TOP OF SEAL SEAL  TOP OF SEAL SEAL SEAL  TOP OF SEAL SEAL SEAL SEAL SEAL SEAL SEAL SEAL	E:	REFERENCE POINT: ELEVAT	TION: DATUM/UNITS:
10-130	STEEL PROTECTI	TOP OF FULL PACK  TOP OF FILTER PACK  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SURFACE  TOP OF SURFACE  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCRE	INTERWITH  DEPTH (BOS)  INTERMITH  OD  ON  OD  OD  ON  OD  ON  OD  ON  OD  ON  OD  ON  OD  ON  OD  ON  OD  ON  OD  ON  OD  ON  OD  ON  OD  ON  OD  ON  OD  ON  OD  ON  OD  ON  OD  OD

PROJECT: Bulk Fuel Facility DELIVERY, ORDER: 0066
MONITORING WELL ID: FP-34
NSTALLATION START: DATE: 11/12/06 TIME: 11/2
NSTALLATION FINISH: DATE: 11/12/46 TIME: 1118
ANNULAR SPACE MATERIALS INVENTORY:
GRANULAR FILTER PACK: TYPE: W,G1.#1 QUANTITY: 5 165.
BENTONITE SEAL: TYPE: DST Easy Seal QUANTITY: 1-Z. 16S.  GROUT: TYPE: NIA QUANTITY: NIA
GROUT: TYPE: NIA QUANTITY: NIA
DESCRIPTION OF WELL SCREEN:
SLOT SIZE (inches): $\frac{\phi \cdot \phi \cdot }{}$ SLOT CONFIGURATION: Horizontal
TOTAL OPEN AREA PER FOOT OF SCREEN: NIA
OUTSIDE DIAMETER: 176-in. NOMINAL INSIDE DIAMETER: 156-in.
schedule/thickness: Sched. 44 composition: PVC
MANUFACTURER: ECT Manufacturing.
TYPE OF MATERIAL BETWEEN BOTTOM OF BORING AND SCREEN: Native Formations,
DESCRIPTION OF WELL CASING:
OUTSIDE DIAMETER: 18-in NOMINAL INSIDE DIAMETER: 15/8-in.
SCHEDULE/THICKNESS: Sched. 44 COMPOSITION: PYC
MANUFACTURER: ECT Manufacturing.
JOINT DESIGN AND COMPOSITION: Flush-threaded/ slip-cop on bottom.
CENTRALIZERS DESIGN AND COMPOSITION:
DESCRIPTION OF PROTECTIVE CASING:
NOMINAL INSIDE DIAMETER: $6 \cdot \phi$ composition: $5 + ee$
SPECIAL PROBLEMS ENCOUNTERED DURING WELL CONSTRUCTION AND THEIR RESOLUTION:
Mone.
Was all well screen and casing material used for construction free of foreign matter (e.g., adhesive tape, labels, soil,
[nc.]? YES [X] NO [ ]
Was all well screen and casing material used for construction free of unsecured couplings, ruptures, and other physical
NO []
deformation or bending of the installed well screen and casing minimized to the point of allowing the insertion and
initieval of a 1.0-inch bailer throughout the entire length of the completed well? YES NO []
QUANTITY OF APPROVED WATER USED FOR FILTER PACK ENPLACEMENT: 10hc
ALCORDED BY: The DAY 1/15/06 QA CHECK BY: May 1/12/06
(Signature & Date) (Signature & Date)
D-157

MONITORING WELL **DELIVERY ORDER NO: 0066** PROJECT: Bulk Fuel Facility END: /1/12/46 WELL NUMBER: FP 34 BEGIN: ///12/06 **COORDINATES:** N: REFERENCE POINT: **ELEVATION: DATUM/UNITS:** E: Ground Surface. DATUM/UNITS: * ELEV DEPTH STEEL PROTECTIVE CASING WITH COVER TOP OF PVC FLUSH JOINT RISER WITH WATERTIGHT LOCKING CAP GROUND SURFACE PROTECTIVE CASING DIA: (IN) 5-1/n, 1.6 TYPE: Concrete. Quik-crete brand. DIA:(11)/5/8-in. ID, 1/8-in. OD TYPE: Sched. 40 ANNULAR SEAL TYPE: Granular benton to TYPE: W. G. # 1 U.S. Silica TOP OF SCREEN DIA: IIN / 5/8-in. TYPE: Slotted CONFIGURATION: SLOT SIZE: BOTTOM OF HOLE HOLE DIA: (IN)

MONITORING WELL INSTALLATION LOG
Mark the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second
PROJECT: Bulk Fuel Facility DELIVERY ORDER: 0066
MONITORING WELL ID: FP-35
INSTALLATION START: DATE: 11/12/66 TIME: 1142
INSTALLATION FINISH: DATE: 11/12/46 TIME: 1152
ANNULAR SPACE MATERIALS INVENTORY:
GRANULAR FILTER PACK: TYPE: W.G. #1 QUANTITY: 5/65
BENTONITE SEAL: TYPE: DET Easy Secol QUANTITY: 1-2 (65)
GRANULAR FILTER PACK: TYPE: W.G. #1 QUANTITY: 5/65  BENTÓNITE SEAL: TYPE: DST Easy Secol QUANTITY: 1-2/65.  GROUT: TYPE: N/A QUANTITY: N/A
DESCRIPTION OF WELL SCREEN:
SLOT SIZE (inches): 4.01 SLOT CONFIGURATION: Horizontal
TOTAL OPEN AREA PER FOOT OF SCREEN:
OUTSIDE DIAMETER: 17/8-1h. NOMINAL INSIDE DIAMETER: 15/8-1h.
schedule/thickness: Sched. 44 composition: PVC
MANUFACTURER: ECT Mono Foctoring
TYPE OF MATERIAL BETWEEN BOTTOM OF BORING AND SCREEN: Native Formations.
DESCRIPTION OF WELL CASING:
outside diameter: 17/8-in nominal inside diameter: 15/6-in. schedule/thickness: Sched: 40 composition: PVC
schedule/thickness: $\frac{Sched}{Q}$ composition: $\frac{PVC}{Q}$
MANUFACTURER: ECT Manufacturing.
JOINT DESIGN AND COMPOSITION: Flush-threaded / slip-cap on bottom.
CENTRALIZERS DESIGN AND COMPOSITION:
DESCRIPTION OF PROTECTIVE CASING:
NOMINAL INSIDE DIAMETER: 5-1/n. COMPOSITION: Steel.
SPECIAL PROBLEMS ENCOUNTERED DURING WELL CONSTRUCTION AND THEIR RESOLUTION:
Auger gets stuck: loosen by unthreading using a
pipe wrench. Continue,
Was all well screen and casing material used for construction free of foreign matter (e.g., adhesive tape, labels, soil,
(eic.)? YES NO []
Was all well screen and casing material used for construction free of unsecured couplings, ruptures, and other physical
Preskage and/or defects? YES NO [ ]
is deformation or bending of the installed well screen and casing minimized to the point of allowing the insertion and
intrieval of a 1.0-inch bailer throughout the entire length of the completed well? YES [ NO [ ]
DUANTITY OF APPROVED WATER USED FOR FILTER PACK ENPLACEMENT: None
RECORDED BY: Sweether of lay 11/15/46 QA CHECK BY: Wings & Ville 11/27/06
(Signature & Pate) D-159 (Signature & Date)
$ u^{-1} \partial_{\mu} $

PROJECT: Bulk Fuel Facility	MONITORING WELL DELIVERY ORDER NO: 0066
WELL NUMBER: PP-35	BEGIN: 11/12/06 END: 11/12/06
COORDINATES: N:	Andrew Miles
E: DATUM/UNITS:	Ground Surface
DATOM/ONTO.	DEPTH DEPTH LELEV
STE	EEL PROTECTIVE CASING WITH COVER
	TOP OF PVC FLUSH JOINT RISER WITH WATERTIGHT LOCKING CAP
	GROUND SURFACE
	PROTECTIVE CASING
¥.7.	DIA:(IN) 5-1h
**************************************	TYPE: Steel Flush-mount Box. D.6.1
	BOTTOM OF SURFACE CASING
	TYPE: CONCVETO
	Quik-chete brandi
	RISER CASING
	DIA:(IN) 178-in, ID; 178-in, OD
	TYPE: School 40 PVC
	4.6
	TOP OF SEAL  ANNULAR SEAL
	TYPE Geranular bentonite
	DST FOSS SOOK
\(\frac{1}{2}\)	TOP OF FILTER PACK
*	FILTER PACK
	TYPE: W. GI, # 1. F. Ipro Sond
	U.S. Silica Conpany.
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	SCREEN
	DIA: (IN) 15/87h. TYPE: Softed
	SLOT SIZE: CONFIGURATION:
	D.Ol-in. Horizonteli 45
	BOTTOM OF SCREEN
	THE COMPANY OF THE STAND
	BOTTOM OF SUMP
	BOTTOM OF HOLE
HOLE DIA: (IN) - Z-in.	D-160

MONITORING WELL INSTALLATION LOG
PROJECT: Bulk Fuel Facility DELIVERY ORDER: 0066
MONITORING WELL ID: FP-36
INSTALLATION START: DATE: 11/12/06 TIME: 1326 INSTALLATION FINISH: DATE: 11/12/06 TIME: 1344 133)
INSTALLATION FINISH: DATE: 11/12/46 TIME: +344 133)
PANNIII AR SPACE MATERIAL CINIVENTARY.
GRANULAR FILTER PACK: TYPE: W.G. QUANTITY: 5/65  BENTONITE SEAL: TYPE: DST EOSYSEE QUANTITY: 1-Z 165  GROUT: TYPE: NIA QUANTITY: NIA
BENTONITE SEAL: TYPE: DST EOSY Seal QUANTITY: 1-Z 165
GROUT: TYPE: NIA QUANTITY: NIA
DESCRIPTION OF WELL SCREEN:
SLOT SIZE (inches): 4.41 SLOT CONFIGURATION: Horizontal
TOTAL OPEN AREA PER FOOT OF SCREEN:
OUTSIDE DIAMETER: 176-in. NOMINAL INSIDE DIAMETER: 15/8-in.
schedule/thickness: 3ched 40 composition: PVC
MANUFACTURER: ECT Manufactoring:
outside diameter: 176-in. Nominal inside diameter: 15/8-in. schedule/thickness: 3ched. 4d composition: PVC  MANUFACTURER: ECT Manufactoring:  TYPE OF MATERIAL BETWEEN BOTTOM OF BORING AND SCREEN: Native Formations
DESCRIPTION OF WELL CASING:
OUTSIDE DIAMETER: 1767h. NOMINAL INSIDE DIAMETER: 15/87h.
schedule/thickness: School 40 composition: PVC
MANUFACTURER: ECT Manufactoring.
MANUFACTURER: ECT Manufactoring.  MOINT DESIGN AND COMPOSITION: Flush-Throaded/Slip-cap on bottom
CENTRALIZERS DESIGN AND COMPOSITION:
DESCRIPTION OF PROTECTIVE CASING:
NOMINAL INSIDE DIAMETER: 6-in. composition: Steel.
PECIAL PROBLEMS ENCOUNTERED DURING WELL CONSTRUCTION AND THEIR RESOLUTION:
Auger got stuck; loosen using pipewrench,
and continue.
Was all well screen and casing material used for construction free of foreign matter (e.g., adhesive tape, labels, soil,
(nc.)? YES NO []
Was all well screen and casing material used for construction free of unsecured couplings, ruptures, and other physical
makage and/or defects? YES ☑ NO[]
deformation or bending of the installed well screen and casing minimized to the point of allowing the insertion and
Mitrieval of a 1.0-inch bailer throughout the entire length of the completed well? YES NO [ ]
QUANTITY OF APPROVED WATER USED FOR FILTER PACK ENPLACEMENT:
RECORDED BY: 1/24/66 QA CHECK BY: 1/27/06 MWW/ hum
(Signature & Date) D-161 (Signature & Date)

D-161

PROJECT: Bulk	Fuel Facility		MON	NITORING WELL DELIVERY ORDER NO: (	0066		
WELL NUMBER:		0	_ <del></del>	BEGIN: 11/12/06	END: [//	12/06	79 • 3°
COORDINATES:	N:					ATUM/UNI	
DATUM/UNITS:	<b>E:</b>			Ground Surface		JA I OWI/OM	ای: انگار کا
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		<del>-</del> - F					<i>μ</i>
			╢	GROUND SUF	RFACE		
				PROTECTIVE CASING			177
			<b>←</b>	TYPE: Steel Flush	mount-BOX.	0,6	s e
	ita			BOTTOM OF SURFACE CASING			
				TYPE: CONCROTO		.   ,	e
				TYPE: Concrete b	mno		Ĥ,
•	7 2 2 3			SHOW TO BEE D	TUTEL 1		104 /
	13 13 13			RISER CASING	6-1-0	*	
				TYPE: School 40		The second of the second	ž
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				TYPE: Genanular b		8 18 18 18 18 18 18 18 18 18 18 18 18 18	A.Tr
				DSI Easys	eal '	· is ,	Fol/Soc
	,			TOP OF FILTER PACK	Mary James	1.0	
				FILTER PACK	-/ - 1	*	13
			-	TYPE: W.G.#1 F U.S. Silica Coi	pro Sand	(	12
	·			TOP OF SCREEN	mpary,	1,3	A18 25
	•			SCREEN			*
		¥ 5.	25	DIA: (IN) / 987/n. TYPE: SI	offed "	e force	. VE
				SLOT SIZE: CONFIGURATION	Horizontal.	erde i pro	Sec. 1
	a-₹		on Take		· ···· · contal,	4.5	122
			7.04 2.04	BOTTOM OF SCREEN	* * 20	11/5	
				BOTTOM OF SUMP		5,0	-}
	N.		<u> </u>	BOTTOM OF HOLE		<u> </u>	
HOLE	DIA: (IN)	1 Z-iv	ղ,  ⊷	D-162		}	

MONITORING WELL INSTALLATION LOG
PROJECT: Bulk Fuel Facility DELIVERY ORDER: 0066
MONITORING WELL ID: FP-37
INSTALLATION START: DATE: $\frac{\mu/z/\phi_{6}}{\sqrt{2\pi}}$ TIME: $\frac{1353}{\sqrt{2}}$
INSTALLATION FINISH: DATE: 11/12/06 TIME: 1356
ANNULAR SPACE MATERIALS INVENTORY:
GRANULAR FILTER PACK: TYPE: W.G.#1 QUANTITY: 5/65.
BENTONITE SEAL:  TYPE: DST Easy Seal QUANTITY: 1-Z 165.  GROUT:  TYPE: NIA QUANTITY: NIA
GROUT: TYPE: NIA QUANTITY: NIA
DESCRIPTION OF WELL SCREEN:
SLOT SIZE (inches): $\phi \phi l$ SLOT CONFIGURATION: Horizon fal
TOTAL OPEN AREA PER FOOT OF SCREEN: WIA-
OUTSIDE DIAMETER: 178-in. NOMINAL INSIDE DIAMETER: 15/6-in.
- schedule/thickness: Sched. 40 composition: PVC
MANUFACTURER: ECT Manufactoring.
TYPE OF MATERIAL BETWEEN BOTTOM OF BORING AND SCREEN: _ Mative Formations
DESCRIPTION OF WELL CASING:
OUTSIDE DIAMETER: 178-in. NOMINAL INSIDE DIAMETER: 158-in.
schedule/thickness: School: 4¢ composition: PVC
MANUFACTURER: ECT Manufacturing
Joint Design and composition: Flush-threaded/slip-cap on bottom.
CENTRALIZERS DESIGN AND COMPOSITION: N/A
DESCRIPTION OF PROTECTIVE CASING:
NOMINAL INSIDE DIAMETER: 5-in COMPOSITION: 5/cel
SPECIAL PROBLEMS ENCOUNTERED DURING WELL CONSTRUCTION AND THEIR RESOLUTION:
None.
Was all well screen and casing material used for construction free of foreign matter (e.g., adhesive tape, labels, soil,
forc./? YES 🔼 NO [ ]
Was all well screen and casing material used for construction free of unsecured couplings, ruptures, and other physical
breakage and/or defects? YES (A NO []
Is deformation or bending of the installed well screen and casing minimized to the point of allowing the insertion and
netrieval of a 1.0-inch bailer throughout the entire length of the completed well? YES NO []
QUANTITY OF APPROVED WATER USED FOR FILTER PACK ENPLACEMENT:
RECORDED BY: Thrust office 1/24/06 QA CHECK BY: Way A. Yarlan 11/27/06
(Signature & Date)

D-163

MO PROJECT: Bulk Fuel Facility	ONITORING WELL DELIVERY ORDER NO: 0066
WELL NUMBER: FP-37	BEGIN: 11/12/06 END: 11/12/06
COORDINATES: N: E: DATUM/UNITS:	REFERENCE POINT: ELEVATION: DATUM/UNITS: Ground Surface.
STEEL PROTEC	TOP OF FILTER PACK  TOP OF FURE PACK  TOP OF FURE PACK  TOP OF FURE PACK  FILTER PACK  TUPE: W. G. # 1 Kipro Sand,  U. S. Silica Company  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN
	BOTTOM OF SCREEN  4.5  BOTTOM OF SUMP
HOLE DIA: (IN)	— ВОТТОМ ОГ НОLE  — D-164

### MONITORING WELL INSTALLATION LOG PROJECT: Bulk Fuel Facility MONITORING WELL ID: FP-38 DATE: 11/12/06 TIME: $14\phi3$ INSTALLATION START: TIME: 1447 DATE: 11/12/06 INSTALLATION FINISH: ANNULAR SPACE MATERIALS INVENTORY: TYPE: W.GI.#1 QUANTITY: 5 /65 **GRANULAR FILTER PACK:** TYPE: DSI ROSY Seed QUANTITY: 1-2 165. BENTONITE SEAL: GROUT: TYPE: WIA DESCRIPTION OF WELL SCREEN: SLOT SIZE (inches): 4.41 SLOT CONFIGURATION: Horizontal TOTAL OPEN AREA PER FOOT OF SCREEN: 10/A OUTSIDE DIAMETER: 17/8-in. NOMINAL INSIDE DIAMETER: 13/8-in. SCHEDULE/THICKNESS: School 44 COMPOSITION: PVC MANUFACTURER: ECT Manufacturing TYPE OF MATERIAL BETWEEN BOTTOM OF BORING AND SCREEN: Native Formations DESCRIPTION OF WELL CASING: outside diameter: 178-in. Nominal inside diameter: 15/8-in schedule/thickness: Sched. 44 composition: PVC MANUFACTURER: ECT Manufocturina JOINT DESIGN AND COMPOSITION: Flush-threaded / slip-cap on bottom. CENTRALIZERS DESIGN AND COMPOSITION: DESCRIPTION OF PROTECTIVE CASING: NOMINAL INSIDE DIAMETER: 5 in composition: Steel SPECIAL PROBLEMS ENCOUNTERED DURING WELL CONSTRUCTION AND THEIR RESOLUTION: * None. Was all well screen and casing material used for construction free of foreign matter (e.g., adhesive tape, labels, soil, etc./? YES 🔀 NO[] Was all well screen and casing material used for construction free of unsecured couplings, ruptures, and other physical breakage and/or defects? YES 💢 NO[] Is deformation or bending of the installed well screen and casing minimized to the point of allowing the insertion and retrieval of a 1.0-inch bailer throughout the entire length of the completed well? YES 1 NO [ ] QUANTITY OF APPROVED WATER USED FOR FILTER PACK ENPLACEMENT: None

D-165

RECORDED BY

PROJECT: Bulk Fuel Facility DELIVERY ORDER: 0066
MONITORING WELL ID: _ FP- 39
INSTALLATION START: DATE: 1/12/do TIME: 1414
INSTALLATION FINISH: DATE: 11/12/46 TIME: 1418
ANNULAR SPACE MATERIALS INVENTORY:
GRANULAR FILTER PACK: TYPE: W.G.#1 QUANTITY: 5 165,
BENTONITE SEAL: TYPE: DST Easy Seal QUANTITY: 1-2 165, GROUT: TYPE: NIA QUANTITY: NIA
GROUT: TYPE: NIA QUANTITY: NIA
DESCRIPTION OF WELL SCREEN:
SLOT SIZE (inches): 4.41 SLOT CONFIGURATION: Honzonto
TOTAL OPEN AREA PER FOOT OF SCREEN: N/A
OUTSIDE DIAMETER: 178-in NOMINAL INSIDE DIAMETER: 15/8-in
SCHEDULE/THICKNESS: Schad. 40 COMPOSITION: PVC
MANUFACTURER: ECT Manusacturing.
TYPE OF MATERIAL BETWEEN BOTTOM OF BORING AND SCREEN: Native Formations.
DESCRIPTION OF WELL CASING:
OUTSIDE DIAMETER: 178-in. NOMINAL INSIDE DIAMETER: 158-in.
SCHEDULE/THICKNESS: School, 40 COMPOSITION: PVC
MANUFACTURER: ECT Monutacturing
JOINT DESIGN AND COMPOSITION: Flush-threaded/slip-cop on bottom.
CENTRALIZERS DESIGN AND COMPOSITION:
DESCRIPTION OF PROTECTIVE CASING:
NOMINAL INSIDE DIAMETER: 5-in. composition: Sted.
SPECIAL PROBLEMS ENCOUNTERED DURING WELL CONSTRUCTION AND THEIR RESOLUTION:
- / - / - / - / - / - / - / - / - / - /
Was all well screen and casing material used for construction free of foreign matter (e.g., adhesive tape, labels, soil,
etc.]? YES NO[]
Was all well screen and casing material used for construction free of unsecured couplings, ruptures, and other physical
breakage and/or defects? YES NO [ ]
Is deformation or bending of the installed well screen and casing minimized to the point of allowing the insertion and
retrieval of a 1.0-inch bailer throughout the entire length of the completed well? YES NO[]
QUANTITY OF APPROVED WATER USED FOR FILTER PACK ENPLACEMENT: None.
RECORDED BY: Color (Signature & Date)  OA CHECK BY: Way H who was 17/06  O-167  OA CHECK BY: Way H who was 17/06  OB CHECK BY: Way H who was 17/06

DORDINATES:  REFERENCE POINT: ELEVATION: DATUM/UNITS:  GROUND SUFFACE,  STEEL PROTECTIVE CASING WITH COUVER  TOP OF PICTURE ASING  DATION OF SUPPLIES JOINT MEER WITH WATERTIGHT LOCKING CAP  GROUND SUPPLIES  GROUND SUPPLIES  GROUND SUPPLIES  DATION OF SUPPLIES  WATERLIA MATERIAL  TYPE: CONCrete brand.  TYPE: Sched Huskmount Box  DOLLING SP. In. ID., 176-in. OD  TYPE: Sched Huskmount Box  TOP OF PATER PACK  TYPE: CHARLES  ANNUAR SEAL  TYPE: CHARLES  ANNUAR SEAL  TYPE: CHARLES  ANNUAR SEAL  TYPE: CHARLES  TOP OF FATER PACK  TOP OF FATER PACK  TOP OF SCREEN  SCREEN  TOP OF SCREEN  SCREEN  TOP OF SCREEN  SCREEN  TOP OF SCREEN  SCREEN  TOP OF SCREEN  SCREEN  SCREEN  TOP OF SCREEN  SCREEN  TOP OF SCREEN  SCREEN  SCREEN  TOP OF SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  TOP OF SCREEN  SCREEN  SCREEN  TOP OF SCREEN  SCREEN  TOP OF SCREEN  SCREEN  TOP OF SCREEN  SCREEN  TOP OF SCREEN  SCREEN  TOP OF SCREEN  SCREEN  TOP OF SCREEN  SCREEN  TOP OF SCREEN  SCREEN  TOP OF SCREEN  SCREEN  TOP OF SCREEN  SCREEN  TOP OF SCREEN  SCREEN  TOP OF SCREEN  SCREEN  TOP OF SCREEN  SCREEN  TOP OF SCREEN  SCREEN  TOP OF SCREEN  SCREEN  TOP OF SCREEN  SCREEN  TOP OF SCREEN  SCREEN  TOP OF SCREEN  SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN  TOP OF SCREEN	REFERENCE POINT: ELEVATION: DATUM/UNITS:  CHOURD SUFFACE,  STEEL PROTECTIVE CASING WITH COVER  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE  OROUND SUFFACE
REFERENCE POINT: ELEVATION: DATUM/UNITS:  GROUND SUPFACE,  STEEL PROTECTIVE CASING WITH COVER  TOP OF PUT CLUSH JOINT RISER WITH WATERTIGHT LOCKING CAP  PROTECTIVE CASING  TYPE: Sched Flushmount Box  BOTTON OF SUPFACE CASING  TYPE: Concrete  Qu. K-Crete brand.  RISER CASING  OIA: HILL 786-IA. TD, 178-IA. OID  TYPE: Sched. HD PVC  TOP OF FATER PACK  FATER PACK  FATER PACK  TOP OF FATER PACK  TOP OF FATER PACK  SCREEN  DAI: SINI 188-IA. TYPE: Slotted.  TOP OF SCREEN  SCREEN  DAI: SINI 188-IA. TYPE: Slotted.	E: REFERENCE POINT: ELEVATION: DATUM/UNITS:  GROUND SUPPACE,  STEEL PROTECTIVE CASING WITH COVER  TOP OF PUC FLUSH JOINT RISER WITH WATERIGHT LOCKING CAP  OBJUND SURFACE  PROTECTIVE CASING  OLA: IN 5-71  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  DIA: MISER CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASING  TYPE: CANCAR CASI
STEEL PROTECTIVE CASING WITH COVER  TOP OF PUCTUUSH JOINT RESER WITH WATERTIGHT LOCKING CAP  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  BOTTON OF SURFACE CASING  TYPE: CONCEPT E  QU. K-Crete brand.  MISER CASING  DIA:INII / 58-in. ID.   17/8-in. OD  TYPE: Sched. H.D. PVC  TOP OF SEAL  ANNUARS SEAL  TYPE CASING  TOP OF FRIER PACK  FATER PACK  TYPE: W. G #F   F.   pro Sand.,  U.S. S.   lica Company  TOP OF SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  SCREEN  DA:INI / 48-in. TYPE: Slotted.	STEEL PROTECTIVE CASING WITH COVER  TOP OF PUC PLUSH JOINT RISER WITH WATERTICHT LOCKING CAP  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE  GROUND SURFACE
- di-in, Horizontal 4.5	DIA: (IN) / 98-in. TYPE: 5 otted

PROJECT: Bulk Fuel Facility DELIVERY ORDER: 0066
MONITORING WELL ID: FP-40
INSTALLATION START: DATE: 11/12/06 TIME: 1425
INSTALLATION FINISH: DATE: 11/12/06 TIME: 1430
ANNULAR SPACE MATERIALS INVENTORY:
GRANULAR FILTER PACK: TYPE: WG#1 QUANTITY: 5/65
BENTONITE SEAL: TYPE: DST Easy Seal QUANTITY: 1-Z 165.
GROUT: TYPE: NIA QUANTITY: NIA
DESCRIPTION OF WELL SCREEN:
SLOT SIZE (inches): did SLOT CONFIGURATION: Horizontal
TOTAL OPEN AREA PER FOOT OF SCREEN: N/A
OUTSIDE DIAMETER: 178-in. NOMINAL INSIDE DIAMETER: 158-in.
SCHEDULE/THICKNESS: School 40 COMPOSITION: PVC
MANUFACTURER: ECT Manufacturing.
TYPE OF MATERIAL BETWEEN BOTTOM OF BORING AND SCREEN: Native Formations.
DESCRIPTION OF WELL CASING:
OUTSIDE DIAMETER: 17/6-in. NOMINAL INSIDE DIAMETER: 15/8-in.
schedule/thickness: School 46 composition: PVC
MANUFACTURER: ECT Manufacturing.
JOINT DESIGN AND COMPOSITION: Flush-threaded/slip-cap on bottom,
CENTRALIZERS DESIGN AND COMPOSITION: NIA
DESCRIPTION OF PROTECTIVE CASING:
NOMINAL INSIDE DIAMETER: 5-in. composition: Steel
SPECIAL PROBLEMS ENCOUNTERED DURING WELL CONSTRUCTION AND THEIR RESOLUTION:
None.
Was all well screen and casing material used for construction free of foreign matter (e.g., adhesive tape, labels, soil,
etc.)? YES 74 NO[]
Was all well screen and casing material used for construction free of unsecured couplings, ruptures, and other physical
breakage and/or defects? YES NO [ ]
Is deformation or bending of the installed well screen and casing minimized to the point of allowing the insertion and
retrieval of a 1.0-inch bailer throughout the entire length of the completed well? YES NO [ ]
QUANTITY OF APPROVED WATER USED FOR FILTER PACK ENPLACEMENT: None,
DECORDED BY II/20/06 ON CHECK BY
RECORDED BY: (Signature & Date) QA CHECK BY: (Signature & Date)
D-169

ROJECT: Bulk Fuel Facility	MONITORING WELL DELIVERY ORDER NO: 00	066	
VELL NUMBER: FD-40	BEGIN: 11/12/46	END: ///2/	<i>b6</i>
OORDINATES: N: E: DATUM/UNITS:	REFERENCE POINT: EL Ground Surface		JM/UNITS:
HOLE DIA: (IN)	GROUND SURFACE  GROUND SURFACE  DIA: IINI 5-In.  TYPE: Steel Flush-M  BOTTOM OF SURFACE CASING  TYPE: CONC VETE  QUIK-CVETE  DIA: IINI 5/8-IN, ID, 17/6  TYPE: Ball  ANNULAR SEAL  TYPE: GIVENULAY  TOP OF FILTER PACK  FILTER PACK  TYPE: W.G. #   Fill  U.S. Silica Co  TOP OF SCREEN  DIA: IINI 1/8-In. TYPE: Slee  SLOT SIZE: CONFIGURATION:  Q. QI-In.  BOTTOM OF SUMP  BOTTOM OF SUMP	ACE  ACE  ADOINT RISER WITH  KING CAP  ADOINT BOX  A  Brand,  Brin, OD  PYC  A  A  A  A  A  A  A  A  A  A  A  A  A	1.6 1.6 4.5 5.0

	MONITORING WELL-INSTALLATION LOG	
	DOC FOT DULL FOR FOR STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF T	
	PROJECT: Bulk Fuel Facility DELIVERY ORDER: 0066	
	MONITORING WELL ID: FP-41	
	INSTALLATION START: DATE: $11/12/66$ TIME: $1457$ INSTALLATION FINISH: DATE: $11/12/66$ TIME: $1458$	
	INSTALLATION START: DATE: 11/12/06 TIME: 1457 INSTALLATION FINISH: DATE: 11/12/06 TIME: 1450	
	ANNULLAD COACE MATERIALS INVENTORY.	
	GRANULAR FILTER PACK: TYPE: W.G.#1 QUANTITY: 0/05	
	BENTONITE SEAL: TYPE: DST Easy Sea QUANTITY: 1-2 165	
	GROUT: TYPE: N/A QUANTITY: N/V+	
	DESCRIPTION OF WELL SCREEN:	
: ,	SLOT SIZE (inches): $\phi \cdot \phi$ SLOT CONFIGURATION: $for zonta$ (	
	TOTAL OPEN AREA PER FOOT OF SCREEN: 10/1/4	
*	OUTSIDE DIAMETER: 1/8-in NOMINAL INSIDE DIAMETER: 1/8-in	
· *	SCHEDULE/THICKNESS: School 40 COMPOSITION: PVC	
100	MANUFACTURER: ECT Manufacturing.	
٠.	TYPE OF MATERIAL BETWEEN BOTTOM OF BORING AND SCREEN: Native Formations,	
7	DESCRIPTION OF WELL CASING:	
	OUTSIDE DIAMETER: 1/8-in. NOMINAL INSIDE DIAMETER: 1/8-in.	
	SCHEDULE/THICKNESS: Sched: 40 COMPOSITION: PVC	
	MANUFACTURER: ET Manufacturia	
t		
٠		
•	None:	
DESCRIPTION OF WELL SCREEN:  SLOT SIZE (Inches): \$.\$\phi \$ SLOT CONFIGURATION: \$\frac{1}{1}\text{End}\$ A.\$\phi \$  TOTAL OPEN AREA PER FOOT OF SCREEN: \$\frac{1}{1}\text{A}\$ NOMINAL INSIDE DIAMETER: \$\frac{1}{1}\text{B} - in.}\$  SCHEDULE/THICKNESS: \$\frac{1}{1}\text{A}\$ COMPOSITION: \$\frac{1}{1}\text{CVC}\$  MANUFACTURER: \$\frac{1}{1}\text{B} - in.}\$  NOMINAL INSIDE DIAMETER: \$\frac{1}{1}\text{C} - in.}\$  DESCRIPTION OF WELL CASING:  OUTSIDE DIAMETER: \$\frac{1}{1}\text{C} - in.}\$  NOMINAL INSIDE DIAMETER: \$\frac{1}{1}\text{C} - in.}\$  SCHEDULE/THICKNESS: \$\frac{1}{1}\text{C}\$ COMPOSITION: \$\frac{1}{1}\text{C}\$ COMPOSITION: \$\frac{1}{1}\text{C}\$ COMPOSITION: \$\frac{1}{1}\text{C}\$ COMPOSITION: \$\frac{1}{1}\text{C}\$ COMPOSITION: \$\frac{1}{1}\text{C}\$ COMPOSITION: \$\frac{1}{1}\text{C}\$ COMPOSITION: \$\frac{1}{1}\text{C}\$ COMPOSITION: \$\frac{1}{1}\text{C}\$ COMPOSITION: \$\frac{1}{1}\text{C}\$ COMPOSITION: \$\frac{1}{1}\text{C}\$ COMPOSITION: \$\frac{1}{1}\text{C}\$ COMPOSITION: \$\frac{1}{1}\text{C}\$ COMPOSITION: \$\frac{1}{1}\text{C}\$ COMPOSITION: \$\frac{1}{1}\text{C}\$ COMPOSITION: \$\frac{1}{1}\text{C}\$ COMPOSITION: \$\frac{1}{1}\text{C}\$ COMPOSITION: \$\frac{1}{1}\text{C}\$ COMPOSITION: \$\frac{1}{1}\text{C}\$ COMPOSITION: \$\frac{1}{1}\text{C}\$ COMPOSITION: \$\frac{1}{1}\text{C}\$ COMPOSITION: \$\frac{1}{1}\text{C}\$ COMPOSITION: \$\frac{1}{1}\text{C}\$ COMPOSITION: \$\frac{1}{1}\text{C}\$ COMPOSITION: \$\frac{1}{1}\text{C}\$ COMPOSITION: \$\frac{1}{1}\text{C}\$ COMPOSITION: \$\frac{1}{1}\text{C}\$ COMPOSITION: \$\frac{1}{1}\text{C}\$ COMPOSITION: \$\frac{1}{1}\text{C}\$ COMPOSITION: \$\frac{1}{1}\text{C}\$ COMPOSITION: \$\frac{1}{1}\text{C}\$ COMPOSITION: \$\frac{1}{1}\text{C}\$ COMPOSITION: \$\frac{1}{1}\text{C}\$ COMPOSITION: \$\frac{1}{1}\text{C}\$ COMPOSITION: \$\frac{1}{1}\text{C}\$ COMPOSITION: \$\frac{1}{1}\text{C}\$ COMPOSITION: \$\frac{1}{1}\text{C}\$ COMPOSITION: \$\frac{1}{1}\text{C}\$ COMPOSITION: \$\frac{1}{1}\text{C}\$ COMPOSITION: \$\frac{1}{1}\text{C}\$ COMPOSITION: \$\frac{1}{1}\text{C}\$ COMPOSITION: \$\frac{1}{1}\text{C}\$ COMPOSITION: \$\frac{1}{1}		
	QUANTITY OF APPROVED WATER USED FOR FILTER PACK ENPLACEMENT:	
	BECORDED BY Wather ally 11/20/66 QA CHECK BY: Ning /+ Vanter 11/27/06	
	RECORDED BY (Signature & Date)  OA CHECK BY: // WWW /* JUNE (17 100)  (Signature & Date)	

MONITORING WELL **DELIVERY ORDER NO: 0066** PROJECT: Bulk Fuel Facility END: 11/12/06 FP-4 WELL NUMBER: BEGIN: 11/12/06 COORDINATES: N: **DATUM/UNITS: ELEVATION:** REFERENCE POINT: E: Ground Surface DATUM/UNITS: DEPTH (BGS) STEEL PROTECTIVE CASING WITH COVER TOP OF PVC FLUSH JOINT RISER WITH WATERTIGHT LOCKING CAP GROUND SURFACE PROTECTIVE CASING DIA: (IN) 5-17 4.6 TYPE: Steel Flush-mount BOX: BACKFILL MATERIAL TYPE: Concrete Quik-crete brand. RISER CASING DIA:(IN) /5/8-in. FD; 17/8-in. OD TYPE: Sched, 40 PVC D.6 TOP OF SEAL ANNULAR SEAL TYPE Giranular bentonite DST Easy Seal 1.6 TOP OF FILTER PACK FILTER PACK Filpro Sincli TYPE: W.GY,#1 U.S. Silica Con 1.3 TOP OF SCREEN DIA: (IN) /5/87 n. TYPE: Slotted  $\phi \phi l = h_c$ BOTTOM OF SCREEN ROTTOM OF SUMP BOTTOM OF HOLE - 1 Zini HOLE DIA: (IN) D-172

PROJECT: Bulk Fuel Facility DELIVERY ORDER: 0066
MONITORING WELL ID: PP-4Z
INSTALLATION START: DATE: 11/12/46 TIME: 1547
INSTALLATION FINISH: DATE: 11/12/46 TIME: 1524
ANNULAR SPACE MATERIALS INVENTORY:
GRANULAR FILTER PACK: TYPE: 心体, 样/ QUANTITY: 5 165
BENTONITE SEAL: TYPE: DET Easy Seal QUANTITY: 1-2/65.  GROUT: TYPE: NIA QUANTITY: NIA
GROUT: TYPE: NIA QUANTITY: NIA
DESCRIPTION OF WELL SCREEN:
SLOT SIZE (inches): 4.61 SLOT CONFIGURATION: Horizontal
TOTAL OPEN AREA PER FOOT OF SCREEN: WIA
OUTSIDE DIAMETER: 178-in NOMINAL INSIDE DIAMETER: 15/8-in.
schedule/thickness: Sched: 40 composition: PVC
MANUFACTURER: ECT Manufacturing.
TYPE OF MATERIAL BETWEEN BOTTOM OF BORING AND SCREEN: Native Formations.
DESCRIPTION OF WELL CASING:
OUTSIDE DIAMETER: 178-in. NOMINAL INSIDE DIAMETER: 198-in.
SCHEDULE/THICKNESS: Sched. 44 COMPOSITION: PVC
MANUFACTURER: ECT Manufacturing
JOINT DESIGN AND COMPOSITION: Plush-threaded/slip-cop on bottom,
CENTRALIZERS DESIGN AND COMPOSITION: NIA-
DESCRIPTION OF PROTECTIVE CASING:
NOMINAL INSIDE DIAMETER: 5-in. COMPOSITION: 5+ce.
SPECIAL PROBLEMS ENCOUNTERED DURING WELL CONSTRUCTION AND THEIR RESOLUTION:
None,
Was all well screen and casing material used for construction free of foreign matter (e.g., adhesive tape, labels, soil,
61c.]? YES [X NO [ ]
Was all well screen and casing material used for construction free of unsecured couplings, ruptures, and other physical
breekage and/or defects? YES NO [ ]
Is deformation or bending of the installed well screen and casing minimized to the point of allowing the insertion and
retrieval of a 1.0-inch bailer throughout the entire length of the completed well? YES NO [ ]
QUANTITY OF APPROVED WATER USED FOR FILTER PACK ENPLACEMENT: None.
and the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of t
RECORDED BY (Signature & Date)  (Signature & Date)
D-173

PROJECT: Bulk Fuel Facility	MONITORING WELL DELIVERY ORDER NO: 006	66	
WELL NUMBER: FP-4Z	BEGIN: 11/12/06/c	END: 11/14/0%	
COORDINATES: N: E: DATUM/UNITS:		VATION: DATUM/U	NITS:
STEEL	PROTECTIVE CASING WITH COVER  TOP OF PVC FLUSH JO WATERTIGHT LOCKING		ELEV
	PROTECTIVE CASING DIA: (IN) 5-7n.  TYPE: Shad Flush-mod BOTTOM OF SURFACE CASING		
	RISER CASING DIA:HIN 15/8 7/1 TYPE: Sched. 40 PVC  TOP OF SEAL  ANNULAR SEAL	n. 0D	
	TYPE: Granular banta DSI Easy Seal TOP OF FILTER PACK		
	TYPE: W.G. #1 Filp		MANAGEMENT CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR
	SLOT SIZE; CONFIGURATION: HO	1 }	

### **ARCADIS**

#### Appendix F

Free Product Pumping Activities Previously Submitted (SAIC 2006)

**Table 4b. Free Product Removal Activities for Sumps** 

	ı		006 Measur	rements		1	1
D 4	<b>.</b>	Free	***	Б. 1	e,	6. 5. 1	G 11
Date	Position	Product	Water	Fuel	ft	cft Fuel	Gallons
8/2/06 8:00	1	19.5	10	9.5	0.79	2.49	18.58
	2	19	18	1	0.08	0.26	1.96
	3	27.5	26.5	1	0.08	0.26	1.96
	4	5.5	0	5.5	0.46	1.44	10.76
							33.25
8/2/06 11:30	1	13.5	6	7.5	0.63	1.96	14.67
	2	17.5	17.5	0	0.00	0.00	0.00
	3	26	26	0	0.00	0.00	0.00
	4	4.5	0	4.5	0.38	1.18	8.80
			v		0.00	1.10	23.47
	ı	ı	1	I			1
8/2/06 15:00	1	19	10	9	0.75	2.36	17.60
	2	18	18	0	0.00	0.00	0.00
	3	27	26.5	0.5	0.04	0.13	0.98
	4	5.5	0	5.5	0.46	1.44	10.76
							29.34
8/3/2006 8:00	1	20	10	10	0.83	2.62	19.56
0/3/2000 0:00	2	18.5	17.5	1	0.08	0.26	1.96
	3	27	26	1	0.08	0.26	1.96
	4	5.5	0	5.5	0.46	1.44	10.76
	7	3.3	U	3.3	0.40	1.77	34.22
			<u> </u>				34.22
8/3/2006 11:30	1	17	7	10	0.83	2.62	19.56
	2	17	17	0	0.00	0.00	0.00
	3	26	26	0	0.00	0.00	0.00
	4	4.5	0	4.5	0.38	1.18	8.80
							28.36
	T .	T	T		T		1
8/3/2006 15:00	1	18	9.5	8.5	0.71	2.23	16.62
	2	18	18	0	0.00	0.00	0.00
	3	26.5	26	0.5	0.04	0.13	0.98
	4	5	0	5	0.42	1.31	9.78
							27.38
8/4/2006 8:00	1	19.5	9.5	10	0.83	2.62	19.56
	2	18.5	17.5	1	0.08	0.26	1.96
	3	27	26	1	0.08	0.26	1.96
	4	5.5	0	5.5	0.46	1.44	10.76
	T	3.3	,	5.5	0.70	1,77	34.22
							J-1.22

**Table 4b. Free Product Removal Activities for Sumps (continued)** 

		August 20	006 Measur	ements			
		Free					
Date	Position	Product	Water	Fuel	ft	cft Fuel	Gallon
8/4/2006 11:30	1	14	7	7	0.58	1.83	13.69
	2	17.5	17.5	0	0.00	0.00	0.00
	3	25	25	0	0.00	0.00	0.00
	4	4.5	0	4.5	0.38	1.18	8.80
							22.49
8/4/2006 11:30	1	19	10	9	0.75	2.36	17.60
0/4/2000 11.50	2	18	17.5	0.5	0.04	0.13	0.98
	3	26	25.5	0.5	0.04	0.13	0.98
	4	5	0	5	0.42	1.31	9.78
	4	3	U	3	0.42	1.31	29.34
0/5/0006 0 00		20	1.0	10	0.02	2.62	10.54
8/7/2006 8:00	1	20	10	10	0.83	2.62	19.56
	2	16.5	16	0.5	0.04	0.13	0.98
	3	25.5	25	0.5	0.04	0.13	0.98
	4	6	0	6	0.50	1.57	11.73
							33.25
8/7/2006 11:30	1	20.5	10	10.5	0.88	2.75	20.53
	2	16.5	16	0.5	0.04	0.13	0.98
	3	25.5	25	0.5	0.04	0.13	0.98
	4	6	0	6	0.50	1.57	11.73
							34.22
8/7/2006 11:30	1	12.5	6	6.5	0.54	1.70	12.71
0,772000 11.50	2	16	15.5	0.5	0.04	0.13	0.98
	3	26	26	0.5	0.00	0.00	0.00
	4	4	0	4	0.33	1.05	7.82
	Т	т -	U	7	0.55	1.03	21.5
0/0/2007 0 00	1	20	10	10	0.02	2.62	10.54
8/8/2006 8:00	1	20	10	10	0.83	2.62	19.56
	2	17	16.5	0.5	0.04	0.13	0.98
	3	25	24.5	0.5	0.04	0.13	0.98
	4	5.5	0	5.5	0.46	1.44	10.76 <b>32.2</b> 7
			1		1		32.2
8/8/2006 11:30	1	20	9.5	10.5	0.88	2.75	20.53
	2	17	16.5	0.5	0.04	0.13	0.98
	3	25.5	25	0.5	0.04	0.13	0.98
	4	6	0	6	0.50	1.57	11.73
							34.22
8/8/2006 3:00	1	8	5	3	0.25	0.79	5.87
5. 5. 2000 5.00	2	15	15	0	0.00	0.00	0.00
	3	25	25	0	0.00	0.00	0.00
	4	3.5	0	3.5	0.29	0.92	6.84
		3.3	0	5.5	0.27	0.52	12.71

**Table 4b. Free Product Removal Activities for Sumps (continued)** 

		August 20	006 Measur	rements			
		Free					
Date	Position	Product	Water	Fuel	ft	cft Fuel	Gallons
8/9/2006 8:00	1	20.5	10.5	10	0.83	2.62	19.56
	2	17.5	17	0.5	0.04	0.13	0.98
	3	24	23.5	0.5	0.04	0.13	0.98
	4	5.5	0.5	5	0.42	1.31	9.78
							31.29
8/9/2006 11:30	1	20.5	10.5	10	0.83	2.62	19.56
0/9/2000 11:50	2	17.5	17	0.5	0.04	0.13	0.98
	3	24	23.5	0.5	0.04	0.13	0.98
	4	6	1	5	0.42	1.31	9.78
	7	0	1	3	0.42	1.31	31.29
			_		1		•
8/9/2006 3:00	1	10	9.5	0.5	0.04	0.13	0.98
	2	15	15	0	0.00	0.00	0.00
	3	22	22	0	0.00	0.00	0.00
	4	4	0	4	0.33	1.05	7.82
							8.80
8/10/2006 8:00	1	19	10	9	0.75	2.36	17.60
0,10,1000	2	17.5	17	0.5	0.04	0.13	0.98
	3	25	24.5	0.5	0.04	0.13	0.98
	4	6	1	5	0.42	1.31	9.78
	•	Ü	-	3	0.12	1.51	29.34
0/10/2006 11 20	1	10		1.0	0.02	2.62	10.56
8/10/2006 11:30	1	19	9	10	0.83	2.62	19.56
	2	17.5	17	0.5	0.04	0.13	0.98
	3	25	24.5	0.5	0.04	0.13	0.98
	4	6	1	5	0.42	1.31	9.78
							31.29
8/10/2006 3:00	1	9	4.5	4.5	0.38	1.18	8.80
	2	14.5	14.5	0	0.00	0.00	0.00
	3	23	23	0	0.00	0.00	0.00
	4	4	0	4	0.33	1.05	7.82
							16.62
8/11/2006 8:00	1	19	10	9	0.75	2.36	17.60
	2	17.5	17	0.5	0.04	0.13	0.98
	3	25	24.5	0.5	0.04	0.13	0.98
	4	6	1.5	4.5	0.38	1.18	8.80
	r	<u> </u>	1.5	1.5	0.50	1.10	28.36
0/11/2007 11 20	1	10		0.7	0.70	2.40	10.50
8/11/2006 11:30	1	19	9.5	9.5	0.79	2.49	18.58
	2	18	17.5	0.5	0.04	0.13	0.98
	3	26	25.5	0.5	0.04	0.13	0.98
	4	6	1.5	4.5	0.38	1.18	8.80

**Table 4b. Free Product Removal Activities for Sumps (continued)** 

	August 2006 Measurements						
		Free					
Date	Position	Product	Water	Fuel	ft	cft Fuel	Gallons
8/11/2006 3:00	1	11	5.5	5.5	0.46	1.44	10.76
	2	17	17	0	0.00	0.00	0.00
	3	25	25	0	0.00	0.00	0.00
	4	4	0	4	0.33	1.05	7.82
							18.58
8/14/2006 8:00	1	21.5	11.5	10	0.83	2.62	19.56
	2	17.5	17	0.5	0.04	0.13	0.98
	3	24.5	24	0.5	0.04	0.13	0.98
	4	6	1	5	0.42	1.31	9.78
							31.29
8/14/2006 11:30	1	17.5	9	8.5	0.71	2.23	16.62
	2	16.5	16.5	0	0.00	0.00	0.00
	3	23.5	23.5	0	0.00	0.00	0.00
	4	4.5	0	4.5	0.38	1.18	8.80
							25.42
8/14/2006 3:00	1	20.5	10.5	10	0.83	2.62	19.56
	2	17	16.5	0.5	0.04	0.13	0.98
	3	26	25.5	0.5	0.04	0.13	0.98
	4	5.5	0.5	5	0.42	1.31	9.78
							31.29
8/28/2006 3:00	1	21	11	10	0.83	2.62	19.56
	2	16	15.75	0.25	0.02	0.07	0.49
	3	23.5	23	0.5	0.04	0.13	0.98
	4	5.25	0.25	5	0.42	1.31	9.78
							30.80

### **ARCADIS**

#### Appendix G

Alternate Concentration Limit and Alternate Threshold Level Calculations (CAP Part B for Release #1)

#### 1.0 ALTERNATE CONCENTRATION LIMITS

Benzene and naphthalene were selected as contaminants of potential concern (COPCs) in groundwater for the site. The maximum benzene concentration in groundwater was 553 (µg/L) in December 1999 during the Corrective Action Plan (CAP)-Part A investigation. The maximum naphthalene concentration in groundwater was 528 (µg/L) in December 2000 during the CAP-Part B investigation. The modeling results estimated a dilution attenuation factor (DAF) of 8.9 for the lateral migration of benzene in groundwater from the area of the highest contamination (MW-22) to the closest potential receptor (storm drain) located 120 feet away from the center of the source area (Attachment A). The modeling results estimated a DAF of 126.3 for the lateral migration of naphthalene from the area of highest contamination (MW-22) to the storm drain (Attachment A).

Compound-specific regulatory levels or risk-based screening criteria were used in conjunction with the site-specific DAFs identified for the potential migration of contamination from the site to determine the alternate concentration limit (ACL) for each compound. The ACLs are presented in Table VI-A along with the maximum observed concentration for each constituent. The maximum detected concentrations for benzene and naphthalene do not exceed their respective ACLs.

Table VI-A. Alternate Concentration Limits for Contaminants in Groundwater

Regulatory Level			Calculated ACL	Maximum Observed Concentration (µg/L)		
Constituent	(μg/L)	$\mathbf{DAF}^{\prime\prime}$	(μg/L)	CAP-Part A	CAP-Part B	
Benzene	71.28	8.9	634.4 ^h	553	251	
Naphthalene	6.5"	126.3	820.9	101	558	

CAP - Corrective Action Plan.

DAF - Dilution attenuation factor.

"DAF = Maximum observed concentration + predicted concentration at the receptor.

=  $553 \div 62.1 \approx 8.9$  for benzene at the storm drain.

=  $558 \div 4.19 \approx 126.3$  for naphthalene at the storm drain.

Bold value exceeds the calculated ACL.

#### 2.0 ALTERNATE THRESHOLD LEVELS

Benzene, toluene, ethylbenzene, and xylenes (BTEX) were selected as COPCs for soil at the site. In addition, toluene was selected as a COPC for the sediment at the site. The closest receptor (storm drain) is located approximately 120 feet from the area of highest soil and groundwater contamination (SB/MW-22) in the vicinity of former aboveground storage tank (AST) 7003. Therefore, a DAF for lateral migration from the source to the nearest receptor was used in the ALT calculation. To be conservative, the benzene DAF of 8.9 was used in calculating the alternate threshold levels (ATLs) for each of the COPCs (Table VI-B). The maximum soil contamination levels at the site were detected in the soil sample collected above the water table [0.0 to 2.0 feet below ground surface (BGS), MW-22]; therefore, leaching to groundwater by percolating rainwater was used. The DAF for migration of leachate to the water table is calculated based on the SESOIL modeling results. SESOIL is used to simulate the vertical transport of contaminants from the source areas down through the vadose zone to the shallow

 $^{^{}b}$ ACL = Regulatory level × DAF.

In-stream Water Quality Standard.

[&]quot;Risk-based screening criteria.

groundwater (water table). (SESOIL is an acronym for Seasonal Soil compartment model and is a one-dimensional, vertical transport code for the unsaturated soil zone.)

The ATLs for soil are presented in Table VI-C along with the maximum observed concentrations. The maximum detected benzene concentration in the soil (1.130 mg/kg) at location SB-22/MW-22 was the only compound found to exceed its ATL.

The ATLs were calculated using the following equation:

$$ATL = K_{oc} * f_{cs} * C_{std} * DAF_{L} * DAF_{W},$$

where

K_{oc} = organic carbon partitioning coefficient [Georgia Underground Storage Tank

(GA UST) CAP-Part A Guidance, Appendix I, Table 1],

 $f_{cs}$  = fractional organic carbon content,  $C_{std}$  = applicable water quality standard,

 $DAF_W$  = dilution attenuation factor for the lateral migration of groundwater,

 $DAF_t$  = dilution attenuation factor for the vertical migration of leachate.

Table VI-B. Values Used in ATL Calculation

Constituent	K _{oc} (mL/g)	f _{cs}	C _{std} (mg/L) ¹	$\mathbf{DAF_{I}}$	$\mathbf{DAF}_{\mathrm{W}}$	Calculated ATL (mg/kg)
Benzene	81	0.0036	0.005	29.8	8.9	0.3867
Toluene	133	0.0036	1	25.5	8.9	12.210
Ethylbenzene	176	0.0036	0.7	15.7	8.9	61.85
Xylenes	639	0.0036	10	3.2	8.9	74.6

¹U.S. Environmental Protection Agency Safe Drinking Water Act (SDWA) maximum contaminant level.

Table VI-C. Alternate Threshold Levels for Contaminated Soil/Sediment

	Regulatory Level	Calculated ATL	Maximum Concentration	
Constituent	(mg/kg) ^a	(mg/kg)	CAP-Part A	CAP-Part B
Benzene	0.005	0.3867	1.130	0.0763
Toluene	0.400	12.210	0.404 (Soil)	0.0388 (Soil)
			2.810 (Sediment)	ND (Sediment)
Ethylbenzene	0.370	61.85	13.6	4.5
Xylenes	20.0	74.6	74.6	17.0

[&]quot;Georgia Underground Storage Tank Soil Threshold Levels (i.e., Table A, Column 1).

ATL - Alternate threshold level.

DAF - Dilution attenuation factor.

CAP - Corrective Action Plan.

ND - Not detected.

Bold value exceeds the calculated ATL.

### **ARCADIS**

#### Appendix H

Summary of Fate and Transport Model (CAP Part B for Release #1)

Table A-1. CAP-Part A Natural Attenuation Modeling Results (Benzene Concentration vs. Distance) for the Former UST 117 Site

Distance to Receptor (ft)	Distance to Receptor (m)	Predicted Maximum Benzene Concentration in Groundwater (µg/L)
0.0	0.0	553
32.8	10.0	435
39.4	12.0	365
49.2	15.0	273
59.1	18.0	209
65.6	20.0	178
78.7	24.0	130
98.4	30.0	90.8
120.1	36.6	62.1
131.2	40.0	51.8
164.0	50.0	31.4
196.9	60.0	20
229.7	70.0	13.1
262.5	80.0	8.74
295.3	90.0	5.95
341.2	104.0	3.6
393.7	120.0	2
492.1	150.0	0.8
656.2	200.0	0.2

Table A-2. CAP-Part B Natural Attenuation Modeling Results (Naphthalene Concentration vs. Distance) for the Former UST 117 Site

Distance to Receptor (ft)	Distance to Receptor (m)	Predicted Maximum Naphthalene Concentration in Groundwater (µg/L)
0.0	0.0	529
6.6	2.0	536
9.8	3.0	533
13.1	4.0	526
16.4	5.0	512
23.0	7.0	458
29.5	9.0	366
32.8	10.0	312
39.4	12.0	214
49.2	15.0	120
59.1	18.0	71
65.6	20.0	51
78.7	24.0	25.3
98.4	30.0	10.9
120.1	36.6	4.19
196.9	60.0	0.174
341.2	104.0	6.70 E-04
393.7	120.0	0
492.1	150.0	0
656.2	200.0	0

Table A-3. CAP-Part B Natural Attenuation Modeling Results (Benzene Concentration vs. Time) for the Former UST 117 Site

Time	Predicted Maximum Benzene Concentration in Groundwater (µg/L)			
(year)	MW-22	MW-32		
0.0 (12/00)	174.0	109.0		
0.5 (06/01)	114.0	89.1		
1.0 (12/01)	75.9	84.3		
1.5 (06/02)	51.6	74.2		
2.0 (12/02)	31.6	62.3		

Note: Time 0.0 is equal to December 2000, which was the last groundwater sampling event conducted at the site. Monitoring wells MW-22 and MW-32 will be sampled semiannually for 1 year as part of the monitoring only program to validate the fate and transport modeling results. As predicted by the model, benzene concentrations in both wells should be below the In-stream Water Quality Standard (IWQS) of 71.28  $\mu$ g/L by the end of year 2 (i.e., December 2002).

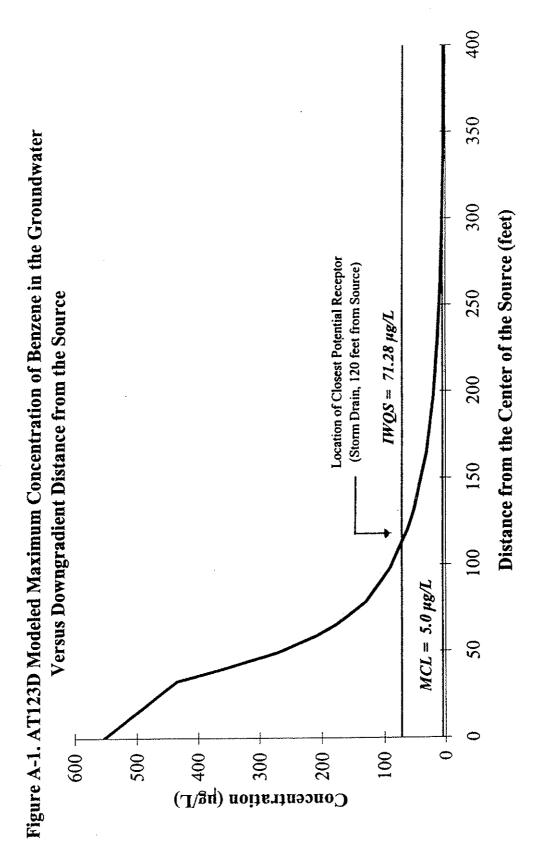


Figure A-1. AT123D Modeled Maximum Concentration of Benzene in the Groundwater Versus Downgradient Distance from the Source

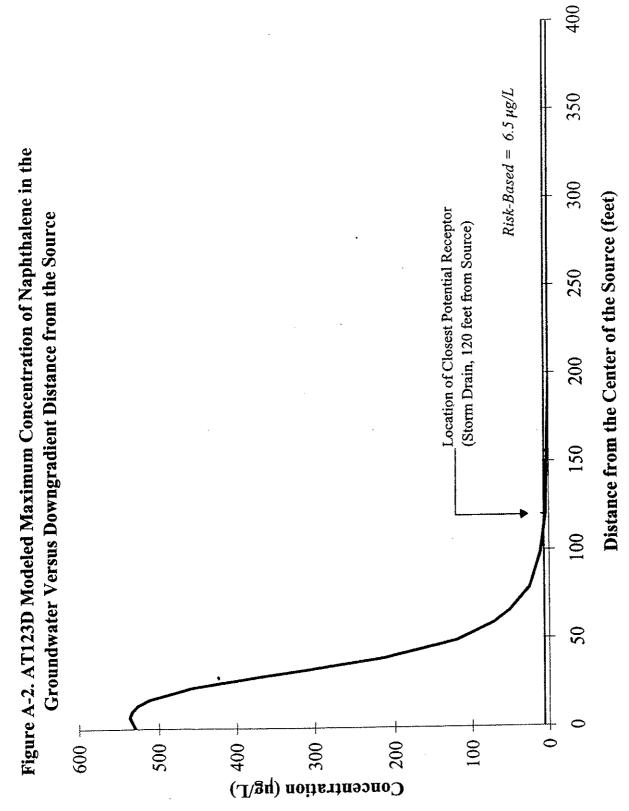
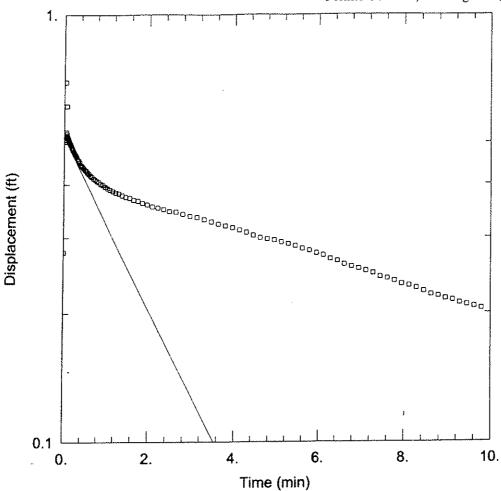


Figure A-2. AT123D Modeled Maximum Concentration of Naphthalene in the Groundwater Versus Downgradient Distance from the Source



### WELL TEST ANALYSIS

Data Set: C:\WINDOWS\DESKTOP\BF-MW-E4.AQT

Date: 01/22/01 Time: 10:09:30

### PROJECT INFORMATION

Company: SAIC

Client: USACE-Savannah

Test Location: Hunter Army Airfield

Test Date: 12-04-00

### AQUIFER DATA

Saturated Thickness: 10.72 ft Anisotropy Ratio (Kz/Kr): 1.

### **WELL DATA**

Initial Displacement: 0.278 ft

Casing Radius: 0.008 ft

Screen Length: 10.72 ft

Water Column Height: 10.72 ft

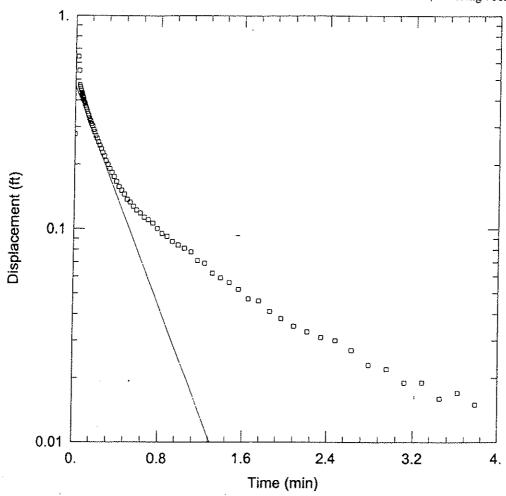
Wellbore Radius: 0.33 ft

Gravel Pack Porosity: 0.3

### SOLUTION

Aquifer Model: Unconfined K = 0.001994 ft/min Solution Method: Bouwer-Rice y0 = 0.5165 ft

Figure A-3. Slug Test Analysis for MW-E4 at the Former UST 117, Building 7002 Site



### **WELL TEST ANALYSIS**

Data Set: C:\WINDOWS\DESKTOP\BF-MW-E5.AQT

Date: 01/22/01 Time: 10:10:44

### PROJECT INFORMATION

Company: SAIC

Client: USACE-Savannah

Test Location: Hunter Army Airfield

Test Date: 12-04-00

### AQUIFER DATA

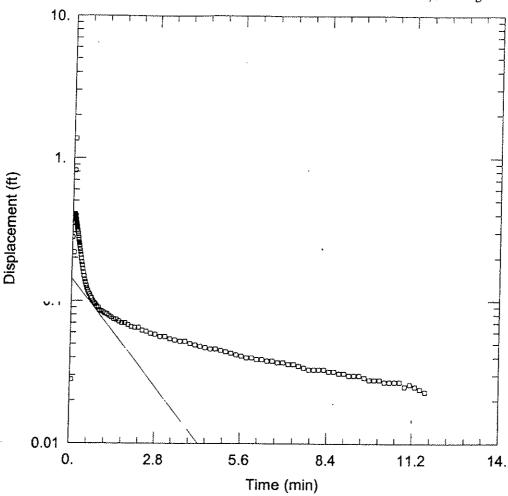
Saturated Thickness: 10.7 ft Anisotropy Ratio (Kz/Kr): 1.

### **WELL DATA**

Initial Displacement: 0.278 ft
Casing Radius: 0.008 ft
Screen Length: 10. ft
Water Column Height: 10.7 ft
Wellbore Radius: 0.33 ft
Gravel Pack Porosity: 0.3

### SOLUTION

Aquifer Model: Unconfined K = 0.01269 ft/min Solution Method: Bouwer-Rice y0 = 0.4673 ft





Data Set: C:\WINDOWS\DESKTOP\BF-MW-E6,AQT

Date: 01/22/01 Time: 10:10:07

### PROJECT INFORMATION

Company: SAIC

Client: USACE-Savannah

Test Location: Hunter Army Airfield

Test Date: 12-04-00

### **AQUIFER DATA**

Saturated Thickness: 9.76 ft Anisotropy Ratio (Kz/Kr): 1.

### **WELL DATA**

Initial Displacement: 0.278 ft Casing Radius: 0.008 ft Screen Length: 10. ft Water Column Height: 9.76 ft Wellbore Radius: 0.33 ft Gravel Pack Porosity: 0.3

### SOLUTION

Aquifer Model: Unconfined K = 0.002624 ft/min Solution Method: Bouwer-Rice y0 = 0.1433 ft

Figure A-5. Slug Test Analysis for MW-E6 at the Former UST 117, Building 7002 Site

### TABLE A-4. AT123D FATE AND TRANSPORT MODEL INPUT AND OUTPUT VALUES FOR BENZENE AT THE FORMER UST 117, BUILDING 7002 SITE

NO. OF POINTS IN X-DIRECTION	14 2 1 400 13 241 12 1 0 1
AQUIFER DEPTH, = 0.0 FOR INFINITE DEEP (METERS) AQUIFER WIDTH, = 0.0 FOR INFINITE WIDE (METERS) BEGIN POINT OF X-SOURCE LOCATION (METERS) END POINT OF X-SOURCE LOCATION (METERS) BEGIN POINT OF Y-SOURCE LOCATION (METERS) END POINT OF Y-SOURCE LOCATION (METERS) BEGIN POINT OF Z-SOURCE LOCATION (METERS) END POINT OF Z-SOURCE LOCATION (METERS)	0.0000E+00 -0.9100E+01 0.9100E+01 -0.6100E+01 0.6100E+01 0.0000E+00
POROSITY  HYDRAULIC CONDUCTIVITY (METER/HOUR)  HYDRAULIC GRADIENT  LONGITUDINAL DISPERSIVITY (METER)  LATERAL DISPERSIVITY (METER)  VERTICAL DISPERSIVITY (METER)  DISTRIBUTION COEFFICIENT, KD (M**3/KG)  HEAT EXCHANGE COEFFICIENT (KCAL/HR-M**2-DEGREE C)	0.1800E+00 0.9000E-01 0.3500E-02 0.1000E+02 0.3000E+01 0.7900E-04 0.0000E+00
MOLECULAR DIFFUSION MULTIPLY BY POROSITY (M**2/HR) DECAY CONSTANT (PER HOUR) BULK DENSITY OF THE SOIL (KG/M**3) ACCURACY TOLERANCE FOR REACHING STEADY STATE DENSITY OF WATER (KG/M**3) TIME INTERVAL SIZE FOR THE DESIRED SOLUTION (HR) DISCHARGE TIME (HR) WASTE RELEASE RATE (KCAL/HR), (KG/HR), OR (CI/HR)	0.4000E-04 0.1320E+04 0.1000E-02 0.1000E+04 0.7300E+03 0.8760E+06
RETARDATION FACTOR	0.1108E-02 0.1109E-01

0.000E+00 0.000E+00

0.451E-04 0.518E-06

0.758E-02 0.567E-04

0.133E-03

0.225E-01

0.

104.

60.

30

0.234E-03 0.516E-01 0.000E+00 0.000E+00 24 24. 0.326E-03 0.000E+00 0.000E+00 0.947E-01 20. 20. 0.124E+00 0.000E+00 0.000E+00 0.367E-03 18. 18. 0.188E+00 0.422E-03 0.000E+00 0.000E+00 15. 15. 0.462E-03 0.282E+00 0.000E+00 0.000E+00 12. 22. 0.7900E-01 * DISSOLVED CHEMICAL CONC.) 0.7900E-01 * DISSOLVED CHEMICAL CONC.) 0.354E+00 0.479E-03 DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.8760E+04 HRS 0.000E+00 0.000E+00 10. 10. × × × 0.0000E+00 HRS CONTINUE CONTINUE 0.477E-03 0.489E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 104. η. . 'n DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.000E+00 0.000E+00 0.494E+00 0.415E-03 0.000E+00 0.000E+00 0 ٥. 60. 00.0 00.0 (ADSORBED CHEMICAL CONC. = (ADSORBED CHEMICAL CONC. 0.149E-04 0.296E-02 0.000E+00 0.000E+00 0.000E+00 0.000E+00 37. -28 -28. N 0.000E+00 0.000E+00 0.159E-02 0.902E-05 0.000E+00 0.000E+00 30. -31. -31 0 0 -24. 0 -24. >× ×

0.1752E+05 HRS DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT

	5. 4.	0.977E-01 0.262E-02					24.	0.116E+00 0.551E-02		
	20.	0.147E+00 0.297E-02					20.	0.166E+00 0.581E-02		
	18.	0.179E+00 0.308E-02					18.	0.197E+00 0.588E-02		
	15.	0.245E+00 0.319E-02					15.	0.262E+00 0.586E-02		
ONC.)	12.	0.339E+00			CONC.)		12.	0.355E+00 0.572E-02		
AT 0.1/52E+05 HRS DISSOLVED CHEMICAL CONC.)	X H	0.410E+00 0.316E-02 NUE	∢		AT 0.2628E+05 HRS DISSOLVED CHEMICAL C	×	10.	42 55	×	
IN PPM AT 0.1752E+05 HRS OE-01 * DISSOLVED CHEMICAL	īų	0.540E+00 0. 0.289E-02 0. CONTINUE	104.	0.948E-06 0.881E-07	<b>≋</b> ∗		ι <b>,</b>	0.553E+00 0. 0.492E-02 0. CONTINUE	104.	0.485E-04
	00.00	0.537E+00 0.241E-02	. 09	0.216E-02 0.154E-03	0	00.0	. 0	0.548E+00 0,406E-02	. 09	0.719E-02
)	2 = 0	0.608E-02	37.	0.310E-01 0.141E-02	DISTRIBUTION OF DISSOLVED CHEMICALS (ADSORBED CHEMICAL CONC. = 0.790	0 = 2	-28.	0.738E-02 0.379E-03	37.	0.467E-01
(ADSORBED CHEMICAL CONC.	-31.	0.376E-02 0.125E-03	30.	0.582E-01 0.207E-02	STRIBUTION OF (ADSORBED CHE		-31.	0.476E-02 0.280E-03	30.	0.761E-01
(£)	×	0.	×	0.	SIQ		≯	0 .	Þ	

DI	DISTRIBUTION OF DISSOLVED CHEMICALS	PISSOLVED (	CHEMICALS IN	IN PPM AT 0.35	0.3504E+05 HRS					
	(ADSORBED CHEMICAL CONC.	EMICAL CONC.	31	11 * DISSOLVE	0.7900E-01 * DISSOLVED CHEMICAL CONC.)	ONC.)				
		n 2	0.00							
					×					
×	-31.	-28.	.0	ທ	10.	12.	15.	18.	20.	4.
	0.519E-02	0.792E-02	0.552E+00	0.558E+00	0.431E+00	0.361E+00	0.269E+00	0.2045+00	0.173E+00	0.124E+00
- 24 .	0.390E-03	0.518E-03	0.500E-02	0.609E-02 0. CONTINUE	0.696E-02 INUE	0.722E-02	0.749E-02	0.763E-02	0.764E-02	0.746E-02
					×					
× .	30.	37.	. 09	104.						
	0.840E-01	0.546E-01	0.120E-01	0.306E-03						
-24.	0.690E-02	0.593E-02	0.225E-02	0.792E-04						
Ü.	DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT	F DISSOLVED	CHEMICALS IN	PPM AT 0.4	0.4380E+05 HRS					
	(ADSORBED CHEMICAL CONC.	EMICAL CONC.	* TO-MORE-OT *		DISSOLVED CHEMICAL CONC.)	CONC.				
		11 2	00.00							
>-	-31,	-28.		ທ	10.	12.	15.	18.	20.	24.
0	0.538E-02	0.815E-02	0.553E+00	0.560E+00	0.433E+00	0.363E+00	0.271E+00	0.207E+00	0.176E+00	0.127E+00
-24.	0.455E-03	0.597E-03	0.548E-02	0.669E-02 0.	0.769E-02	0.801E-02	0.836E-02	0.858E-02	0.865E-02	0.858E+02
					×					
≯	30.	37.	. 09	104.						
0.	0.876E-01	0.585E-01	0.153E-01	0.825E-03						
-24.		0.725E-02	0.341E-02	0.263E-03						

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.5256E+05 HRS (ADSORBED CHEMICAL CONC.)

		24.	0.129E+00 0.918E-02					24.	0.129E+00 0.950E-02		
		20.	0.177E+00 0.918E-02					20.	0.178E+00 (0.945E-02 (		
		18.	0.208E+00 0.908E-02					18.	0.209E+00 0.934E-02		
		15.	0.272E+00 0.882E-02					15.	0.273E+00 0.905E-02		
ONC.)		12.	0.364E+00 0.841E-02			CONC.)		12.	0.364E+00 0.862E-02		
* DISSOLVED CHEMICAL CONC.)		, X 10.	0.434E+00 0.807E-02 NUE	×	·	AT 0.6132E+05 HRS DISSOLVED CHEMICAL C	·	х 10.	0.434E+00 0.826E-02 NUE	×	
		ν,	0.560E+00 0. 0.700E-02 0. CONTINUE	104.	0.147E-02 0.535E-03			ů.	0.561E+00 0. 0.715E-02 0. CONTINUE	104.	0.208E-02 0.828E-03
= 0.7900E-01	00.00	0.	0.554E+00 0.572E-02	. 09	0.174E-01 0.426E-02		00.00	. 0	0.554E+00 0.584E-02	. 09	0.185E-01 0.482E-02
MICAL CONC.	0 = 2	. 28.	0.825E-02 0.640E-03	37.	0.603E-01 0.803E-02	DISSOLVED C	5 F Z	-28,	0.830E-02 0.663E-03	37.	0.612E-01 0.846E-02
(ADSORBED CHEMICAL CONC.		-31,	0.546E-02 0.491E-03	30.	0.893E-01 0.882E-02	DISTRIBUTION OF DISSOLVED CHEMICALS (ADSORBED CHEMICAL CONC. = 0.790		-31,	0.550E-02 0.510E-03	30.	0.900E-01 0.919E-02
<u> </u>		×	-24.	×	0.	ors)		×	.24.	≯	0.

DI	STRIBUTION OF DISSOLVED (ADSORBED CHEMICAL CONC.	F DISSOLVED FMICAL CONC.	DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM (ADSORBED CHEMICAL CONC. = 0.7900E-01 *		AT 0.7008E+05 HRS DISSOLVED CHEMICAL CONC.)	CONC.)				
		#1	00.00		:					
×	.31.	-28.	. 0	Ŗ,	X 10.	12.	15.	18.	20.	24.
0 .	0.552E-02 0.520E-03	0.832E-02 0.675E-03	0.554E+00	0.561E+00 0. 0.723E-02 0. CONTINUE	44 80	0.365E+00 0.872E-02	0.273E+00 0.917E-02	0.209E+00 0.947E-02	0.178E+00 0.960E-02	0.130E+00 0.966E-02
Ħ	30.	37.	. 09	104.	×					
0.	0.904E-01	0.617E-01 0.869E-02	0.192E-01 0.516E-02	0.258E-02 0.109E-02						
Ια	STRIBUTION OF DISSOLVED (ADSORBED CHEMICAL CONC.	F DISSOLVED	CHEM	U.	0.7884E+05 HRS	( DNOD				
			ı							
		= 7	00.00		>					
≯	-31.	-28.	.0	Ŋ	10.	12.	5	18,	20.	24.
. 0 .	0.553E-02	0.833E-02	0.554E+00	0.561E+00	0.435E+00	0.365E+00	0.273E+00	0.209E+00	0.1788+00	0.130E+00
, !			1	CONTINUE	INUE	1000	1000	300 : : : : : : : : : : : : : : : : : :	NO. 1000.	20 - 20 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0
⋈	30.	37.	09	104.	×					
0 .	0.906E-01 0.950E-02	0.619E-01 0.882E-02	0.195E-01 0.537E-02	0.294E-02 0.129E-02						

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.8760E+05 HRS (ADSORBED CHEMICAL CONC. * 0.7900E-01 * DISSOLVED CHEMICAL CONC.)

	24.	0.130E+00 0.980E-02					24.	0.130E+00 0.982E-02		
	20.	0.178E+00 0. 0.971E-02 0.					20.	0.178E+00 0.0.973E-02 0.		
	18.	0.209E+00 0.958E-02					18.	0.209E+00 0.960E-02		
	15.	0.273E+00 0.926E-02					15.	0.273E+00 0.928E-02		
	12.	0.365E+00 0.881E-02			donc.)		12.	0.365E+00 0.882E-02		
	x 10.	0.435E+00 0.843E-02 NNUE	;		ICALS IN PPM AT 0.9636E+05 HRS 0.7900E-01 * DISSOLVED CHEMICAL CONC.)	×	10.	0.435E+00 0.845E-02 INUE	4	
		0.561E+00 0. 0.729E-02 0. CONTINUE	104.	0.319E-02 0.144E-02	PPM AT 0.90		'n,	0.561E+00 0. 0.730E-02 0. CONTINUE	104.	0.335E-02 0.155E-02
0.00	.0	0.554E+00	.09	0.197E-01 0.549E-02	THEMICALS IN = 0.7900E-(	00.00	.0	0.554E+00	. 09	0.199E-01 0.555E-02
Z = 0	-28.	0.834E-02 0.685E-03	37.	0.620E-01 0.889E-02	DISSOLVED (	= 2	-28.	0.834E-02 0.686E-03	37.	0.621E-01 0.893E-02
	-31.	0.554E-02 0.528E-03	30.	0.907E-01 0.955E-02	DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT (ADSORBED CHEMICAL CONC. = 0.7900E-01 * DIS		33	0.554E-02 0.530E-03	30.	0.907E-01 0.958E-02
	×	. 24.	₩	0.	SIQ )		¥	0.	≯	. 24

DI	DISTRIBUTION OF DISSOLVED CHEMICALS (ADSORBED CHEMICAL CONC. = 0.790)	F DISSOLVED EMICAL CONC.	CHEMICALS IN = 0.7900E-0	ICALS IN PPM AT 0.1051E+06 HRS 0.7900E-01 * DISSOLVED CHEMICAL CONC.)	0.1051E+06 HRS OLVED CHEMICAL O	CONC.)				
		ii Z	00.00							
≯	-31.	-28.	.0	Ň	10.	12.	15.	18.	20.	24.
.24.	0.554E-02 0.530E-03	0.834E-02 0.687E-03	0.554E+00 0.596E-02	0.561E+00 0. 0.730E-02 0. CONTINUE	0.435E+00 0.845E-02 NUE	0.365E+00 0.883E-02	0.273E+00 0.929E-02	0.209E+00	0.178E+00 0.974E-02	0.130E+00 0.984E-02
⊱	30.	37.	.09	104.	×					
0.	0.908E-01 0.960E-02	0.621E-01 0.894E-02	0.199E-01 0.559E-02	0.345E-02 0.161E-02						
Ħα	DISTRIBUTION OF DISSOLVED CHEMICALS (ADSORBED CHEMICAL CONC. * 0.790	F DISSOLVED		IN PPM AT 0.113 E-01 * DISSOLVE	AT 0.1139E+06 HRS DISSOLVED CHEMICAL (	CONC.)				
		H 23	00.00							
₩	-31.	-28.	.0	Ň,	10.	12.	S.	18.	20.	24.
0.	0.554E-02 0.531E-03	0.834E-02 0.688E-03	0.554E+00 0.596E-02	0.561E+00 0.731E-02	0.435E+00 0.846E-02	0.365E+00 0.883E-02	0.273E+00 0.929E-02	0.209E+00 0.961E-02	0.178E+00 0.975E-02	0.130E+00 0.984E-02
;	;			CONTINUE	INUE · X					
፟	30.	37.	. 09	104.						
0 42	0.908E-01 0.961E-02	0.621E-01 0.896E-02	0,199E-01 0,561E-02	0.352E-02 0.166E-02						

0.1226E+06 HRS DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT

	24.	0.130E+00 0.985E-02					24.	0.130E+00 0.985E-02		
	20.	0.178E+00 0.975E-02					20.	0.178E+00 0.975E-02		
	18.	0.209E+00 0.961E-02					æ	0.209E+00 0.962E-02		
		0.273E+00 0.929E-02					15.	0.273E+00 0.929E~02		
ONC.)	12.	0.365E+00 0.884E-02			CONC.)		12.	0.365E+00 0.884E-02		
ZeE+U6 HRS D CHEMICAL C	X 10.	44 3 4.3	<		AT 0.1314E+06 HRS DISSOLVED CHEMICAL C	;	х 10.	43 84	×	
CREMICALS IN FFM AT 0.1226E+06 HRS = 0.7900E-01 * DISSOLVED CHEMICAL CONC.)	ν,	0.561E+00 0. 0.731E-02 0. CONTINUE	104.	0.356E-02 0.168E-02	IN PPM AT 0.13 E-01 * DISSOLVE		თ	0.561E+00 0.0.731E-02 0.	104.	0.358E-02 0.170E-02
= 0.7900E-0	0.00	0.554E+00 0.597E-02	.09	0.200E-01 0.563E-02	_	00.0	. 0	0.554E+00 0.597E-02	.09	0.200E-01 0.563E-02
MICAL CONC.	Z = 0 28.	0.834E-02 0.688E-03	37.	0.621E-01 0.896E-02	U		- 28.	0.834E-02 0.688E-03	37.	0.621E-01 0.896E-02
(ADSORBED CHEMICAL CONC.	. 31.	0.554E-02	30.	0.908E-01 0.961E-02	STRIBUTION OF DISSOLVED (ADSORBED CHEMICAL CONC.		-31.	0.531E-03	30.	0.908E-01 0.961E-02
)   	X	. 24.	≯	0.	DIS.		¥	0.	×	0.

Id	DISTRIBUTION OF DISSOLVED CHEMICALS (ADSORBED CHEMICAL CONC. = 0.790	MICAL CONC.	CHEMICALS IN = 0.7900E-0	ICALS IN PPM AT 0.1402E+06 HRS 0.7900E-01 * DISSOLVED CHEMICAL CONC.)	0.1402E+06 HRS OLVED CHEMICAL C	CONC.)				
		" 2	0.00							
*	-31.	- 28	. 0	ů,	7 10.	12.	15.	18.	20.	24.
. 24.	0.554E-02 0.531E-03	0.834E-02 0.688E-03	0.554E+00 0.597E-02	0.561E+00 0. 0.731E-02 0. CONTINUE	443 48	0.365E+00 0.884E-02	0.273E+00 0.930E-02	0.209E+00 0.962E-02	0.178E+00 0.975E-02	0.130E+00 0.985E-02
¥	30.	37.	. 09	104.	×					
.24.	0.908E-01 0.961E-02	0.621E-01 0.897E-02	0.200E-01 0.564E-02	0.359E-02 0.171E-02						
DI	DISTRIBUTION OF DISSOLVED CHEMICALS (ADSORBED CHEMICAL CONC. = 0.7900	F DISSOLVED EMICAL CONC.		≅ *	AT 0.1489E+06 HRS DISSOLVED CHEMICAL CONC.)	CONC.)				
		: 2	00.00		:					
≯	-31.	-28.	· O	Ŋ	х 10.	12.	15.	18.	20.	24.
. 24.	0.554E-02 0.531E-03	0.834E-02 0.688E-03	0.554E+00 0.597E-02	0.561E+00 0. 0.731E-02 0. CONTINUE	0.435E+00 0.846E-02 INUE	0.365E+00	0.273E+00 0.930E-02	0.209E+00 0.962E-02	0.178E+00 0.975E-02	0.130E+00 0.985E-02
<b>&gt;</b>	30.	37.	. 09	104.	×					
0.	0.908E-01 0.962E-02	0.621E-01 0.897E-02	0.200E-01 0.564E-02	0.360E-02 0.172E-02						

0.130E+00 0.985E-02

0.178E+00 0.975E-02

24.

20.

(ADSORBED CHEMICAL CONC. = 0.7900E-01 * DISSOLVED CHEMICAL CONC.) DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.1577E+06 HRS

	20. 24.	0.178E+00 0.130E+00 0.975E-02 0.985E-02			
	18.	0.209E+00 0.17E 0.962E-02 0.97E			
	15.	0.273E+00 0.20 0.930E-02 0.96			
	12.	0.365E+00 0.884E-02			
	X 10.	0.561E+00 0.435E+00 0.731E-02 0.846E-02 CONTINUE	<b>×</b> .		664E+06 HRS
		0.561E+00 0.0 0.731E-02 0.0	104.	0.360E-02 0.172E-02	IN PPM AT 0.1664E+06 HRS
00.00	, O	0.554E+00	.09	0.200E-01 0.564E-02	
17 II	- 28.	0.834E-02 0.688E-03	37.	0.621E-01 0.897E-02	DISTRIBUTION OF DISSOLVED CHEMICALS
	-31.	0. 0.554E-02 -24. 0.531E-03	30.	0.908E-01 0.962E-02	STRIBUTION O
	X	0.	>1	. 0 - 24 .	)IG

(ADSORBED CHEMICAL CONC. = 0.7900E-01 * DISSOLVED CHEMICAL CONC.)

00.0

11 Ŋ

18.	0.209E+00	0.962E-02			
15.		0.930E-02			
12.	0.365E+00	0.884E-02			!
10.	0.435E+00	0.731E-02 0.846E-02	×		
S	0.561E+00	0.731E-02 0.8		104.	0.361E-02 0.172E-02
.0	0.554E+00	0.597E-02		. 09	0.200E-01 0.564E-02
- 28.	0.834E-02	0.688E-03		37.	0.621E-01 0.897E-02
-31.	0.554E-02	0.531E-03		30.	0.908E-01 0.962E-02
≯	0.	-24.		≯	. 0 24 .

STEADY STATE SOLUTION HAS BEEN OBTAINED BEFORE FINAL SIMULATING TIME

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.1752E+06 HRS (ADSORBED CHEMICAL CONC. = 0.7900E-01 * DISSOLVED CHEMICAL CONC.)

	18. 20. 24.	0.209E+00 0.178E+00 0.130E+00 0.962E-02 0.975E-02 0.985E-02			
	15.	0.365E+00 0.273E+00 0.2 0.884E-02 0.930E-02 0.9			,
	12.	0.365E+00 0.884E-02			
	X 10.	0.561E+00 0.435E+00 0.731E-02 0.846E-02	NUE	×	
	Ņ.		CONTINUE	104.	0.361E-02
0.00	·	0.554E+00 0.597E-02		. 09	0.200E-01
2 = 2	-28.	0.834E-02 0.688E-03		37.	0.621E-01
	175200.	0.554E-02 0.531E-03	•	30.	0.908E-01
	⋈	0.		⋈	. 0

### TABLE A-5. AT123D FATE AND TRANSPORT MODEL INPUT AND OUTPUT VALUES FOR NAPHTHALENE AT THE FORMER UST 117, BUILDING 7002 SITE

NO. OF POINTS IN X-DIRECTION
AQUIFER DEPTH, = 0.0 FOR INFINITE DEEP (METERS) 0.1524E+02 AQUIFER WIDTH, = 0.0 FOR INFINITE WIDE (METERS) 0.0000E+00 BEGIN POINT OF X-SOURCE LOCATION (METERS)0.9100E+01 END POINT OF X-SOURCE LOCATION (METERS) 0.9100E+01 BEGIN POINT OF Y-SOURCE LOCATION (METERS)0.6100E+01 END POINT OF Y-SOURCE LOCATION (METERS) 0.6100E+01 BEGIN POINT OF Z-SOURCE LOCATION (METERS) 0.0000E+00 END POINT OF Z-SOURCE LOCATION (METERS) 0.0000E+00
POROSITY
MOLECULAR DIFFUSION MULTIPLY BY POROSITY (M**2/HR) 0.2700E-05 DECAY CONSTANT (PER HOUR)
RETARDATION FACTOR

# (ADSORBED CHEMICAL CONC. = 0.1190E+01 * DISSOLVED CHEMICAL CONC.) DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.0000E+00 HRS

~

0.00

0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+0 0.000E+00 0.000E+00  $0.0000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.0000E+00 \quad 0.0000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0$ 0.000E+00 ≻ o ≺

### CONTINUE

04 90

0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 7 ° ° 5.

# (ADSORBED CHEMICAL CONC. = 0.1190E+01 * DISSOLVED CHEMICAL CONC.) DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.8760E+04 HRS

0.00 = 2

0.660E-02 0.215E-06 0.257E-03 0.480E+00 0.458E+00 0.261E+00 0.166E+00 0.784E-01 0.372E-01 0.223E-01 0.504E-06 0.102E-05 0.690E-06 8 0.158E-05 0.137E-05 12. 0. 0.102E-07 0.183E-05 0.192E-05 -28. 0.891E-04 0.410E-08 -3 0.

### CONTINUE

60

0.119E-09 0.000E+00 0.172E-13 0.629E-08 0.102E-03 0.114E-02 0.528E-07

0.000E+00

# (ADSORBED CHEMICAL CONC. = 0.1190E+01 * DISSOLVED CHEMICAL CONC.) DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.1752E+05 HRS

0.00

0.183E-01 0.252E-04 0.422E-01 0.391E-04 0. 0.443E-03 0.935E-03 0.520E+00 0.502E+00 0.302E+00 0.203E+00 0.110E+00 0.616E-01 -24. 0.859E-06 0.154E-05 0.631E-04 0.710E-04 0.681E-04 0.640E-04 0.558E-04 0.459E-04 ∞. -31.

### CONTINUE

69

0.122E-04 0.407E-05 0.110E-07 0.000E+00 0.602E-02 0.146E-02 0.225E-05 0.000E+00

# (ADSORBED CHEMICAL CONC. = 0.1190E+01 * DISSOLVED CHEMICAL CONC.) DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.2628E+05 HRS

0.00

0.231E-01 0.101E-03 0.485E-01 0.136E-03 0. 5. 10. 12. 15. 18. 0.527E+00 0.510E+00 0.310E+00 0.212E+00 0.117E+00 0.685E-01 0.171E-03 0.151E-03 0.191E-03 0.186E-03 0.653E-05 0.163E-03 0.188E-03 0.125E-02 -28 0.643E-03 0.408E-05 <u>ښ</u> ≻ 0. <del>2</del>,

CONTINUE

60.

0.295E-02 0.280E-04 0.662E-11 0.618E-04 0.292E-04 0.540E-06 0.206E-12 0.908E-02 > 0 5

(ADSORBED CHEMICAL CONC. = 0.1190E+01 * DISSOLVED CHEMICAL CONC.) DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.3504E+05 HRS

0.00 = 2

12. 15. 18. 20. 24. 0.213E+00 0.119E+00 0.703E-01 0.503E-01 0.247E-01 0.234E-03 0.216E-03 0.172E-03 0.113E-04 0.226E-03 0.264E-03 0.275E-03 0.271E-03 0.257E-03 0. 5. 10. 0.528E+00 0.511E+00 0.312E+00 0.136E-02 0.716E-03 0.739E-05 <u>.,</u> .24.

CONTINUE

8

0.103E-01 0.371E-02 0.782E-04 0.327E-08 0.187E-09 0.300E-05 0.646E-04 0.116E-03

≻ °. 4.

(ADSORBED CHEMICAL CONC. = 0.1190E+01 * DISSOLVED CHEMICAL CONC.) DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.4380E+05 HRS

0.00

0.740E-03 0.139E-02 0.528E+00 0.512E+00 0.312E+00 0.214E+00 0.120E+00 0.708E-01 0.508E-01 0.251E-01 0.940E-05 0.140E-04 0.255E-03 0.299E-03 0.315E-03 0.312E-03 0.299E-03 0.277E-03 0.258E-03 0.212E-03 <u>%</u> -28 > 0. ½.

CONTINUE

0.123E-03 0.327E-07 104 9 0.107E-01 0.402E-02

0.907E-04 0.691E-05 0.296E-08 0.151E-03 > 0. ₹

A-24

# (ADSORBED CHEMICAL CONC. = 0.1190E+01 * DISSOLVED CHEMICAL CONC.) DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.5256E+05 HRS

0.00

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20. 24. 0.509E-01 0.253E-01 0.230E-03 0.277E-03 0.710E-01 0.295E-03 0.120E+00 0.329E-03 0.317E-03 -28. 0. 5. 10. 12. 0.140E-02 0.529E+00 0.512E+00 0.312E+00 0.214E+00 0.153E-04 0.266E-03 0.313E-03 0.331E-03 0.104E-04 0.747E-03

### CONTINUE

90

0.150E-03 0.120E-06 0.105E-03 0.105E-04 0.148E-07 0.108E-01 0.413E-02 0.168E-03

# (ADSORBED CHEMICAL CONC. = 0.1190E+01 * DISSOLVED CHEMICAL CONC.) DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.6132E+05 HRS

0.00

24. 0.253E-01 0.237E-03 0.302E-03 0.284E-03 0.510E-01 0.710E-01 ∞. 15. 0.120E+00 0.323E-03 -31. -28. 0, 5. 10. 12. 0.749E-03 0.140E-02 0.529E+00 0.512E+00 0.312E+00 0.214E+00 0.335E-03 0.107E-04 0.158E-04 0.270E-03 0.318E-03 0.337E-03 0 0.7

### CONTINUE

60.

0.164E-03 0.257E-06 0.390E-07 0.128E-04 0.111E-03 0.417E-02 0.109E-01 0.175E-03

# (ADSORBED CHEMICAL CONC. = 0.1190E+01 * DISSOLVED CHEMICAL CONC.) DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.7008E+05 HRS

0.00

0.305E-03 0.286E-03 0.240E-03 0.253E-01 0.750E-03 0.140E-02 0.529E+00 0.512E+00 0.312E+00 0.214E+00 0.120E+00 0.710E-01 0.510E-01 0.109E-04 0.160E-04 0.271E-03 0.319E-03 0.339E-03 0.337E-03 0.326E-03 0.305E-03 0.286E-03 18. 0.74

### CONTINUE

0.109E-01 0.418E-02 0.170E-03 0.399E-06 9 0.178E-03

> 0. ₹

0.114E-03 0.141E-04 0.700E-07

# (ADSORBED CHEMICAL CONC. = 0.1190E+01 * DISSOLVED CHEMICAL CONC.) DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.7884E+05 HRS

0.00

18. 20. 24. 0.710E-01 0.510E-01 0.253E-01 0.287E-03 0.241E-03 0.305E-03 0.120E+00 0.326E-03 0.214E+00 0.320E-03 0.339E-03 0.338E-03 0.529E+00 0.512E+00 0.312E+00 0.272E-03 0.161E-04 0.140E-02 -28. 0.110E-04 0.750E-03 <u>ښ</u> > 0.2

CONTINUE

60.

0.179E-03 0.115E-03 0.147E-04 0.990E-07 0.512E-06 0.172E-03 0.419E-02 0.109E-01 > °. 42,

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.8760E+05 HRS

(ADSORBED CHEMICAL CONC. = 0.1190E+01 * DISSOLVED CHEMICAL CONC.)

0.00

0. 5. 10. 12. 15. 18. 20. 24. 0.529E+00 0.512E+00 0.312E+00 0.214E+00 0.120E+00 0.710E-01 0.510E-01 0.253E-01 0.327E-03 0.306E-03 0.288E-03 0.241E-03 0.338E-03 0.320E-03 0.340E-03 0.110E-04 0.161E-04 0.272E-03 0.140E-02 0.750E-03 > 0 <del>2</del>

CONTINUE

0.586E-06 0.173E-03 90 0.419E-02 0.109E-01 30.

0.116E-03 0.150E-04 0.121E-06 0.179E-03 > 0 ₹

# (ADSORBED CHEMICAL CONC. = 0.1190E+01.* DISSOLVED CHEMICAL CONC.) DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.9636E+05 HRS

0.00 = 2

0.253E-01 0.510E-01 0.288E-03 12. 15. 18. 0.214E+00 0.120E+00 0.710E-01 0.306E-03 0.327E-03 0.140E-02 0.529E+00 0.512E+00 0.312E+00 0.214E+00 0.161E-04 0.272E-03 0.320E-03 0.340E-03 0.338E-03 10. Ċ -28. 0.110E-04 0.750E-03 <del>ب</del> 7 ° 0. -24.

CONTINUE

0.174E-03 0.629E-06 60. 0.419E-02 0.109E-01 > 0 ₹

0.135E-06 0.151E-04 0.116E-03 0.179E-03

# (ADSORBED CHEMICAL CONC. = 0.1190E+01 * DISSOLVED CHEMICAL CONC.) DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.1051E+06 HRS

0.00

-28. 0. 5. 10. 12. 15. 18. 20. 24. 0.140E-02 0.529E+00 0.512E+00 0.312E+00 0.214E+00 0.120E+00 0.710E-01 0.510E-01 0.253E-01 0.241E-03 0.288E-03 0.306E-03 0.338E-03 0.327E-03 0.161E-04 0.272E-03 0.320E-03 0.340E-03 0.110E-04 0.750E-03 ≻ o. ½

### CONTINUE

60.

0.174E-03 0.651E-06 0.116E-03 0.152E-04 0.143E-06 0.419E-02 0.109E-01 0.179E-03 ≻ °. 5.

# (ADSORBED CHEMICAL CONC. = 0.1190E+01 * DISSOLVED CHEMICAL CONC.) DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.1139E+06 HRS

0.00

0.241E-03 0.253E-01 0.510E-01 0.288E-03 18. 0.710E-01 0.306E-03 0.120E+00 0.327E-03 5 -28. 0. 5. 10. 12. 0.140E-02 0.529E+00 0.512E+00 0.214E+00 0.338E-03 0.161E-04 0.272E-03 0.320E-03 0.340E-03 0.750E-03 0.110E-04 -3 [. ≻ 0. 5. .24.

### CONTINUE

8

0.174E-03 0.662E-06 0.147E-06 0.152E-04 0.419E-02 0.116E-03 30. 0.109E-01 0.179E-03

> 0.4

# (ADSORBED CHEMICAL CONC. = 0.1190E+01 * DISSOLVED CHEMICAL CONC.) DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.1226E+06 HRS

0.00

-31. -28. 0 5. 10. 12. 15. 18. 20. 24. 0.750E-03 0.140E-04 0.512E+00 0.512E+00 0.214E+00 0.120E+00 0.710E-04 0.510E-04 0.272E-03 0.320E-03 0.340E-03 0.330E-03 0.330E-03 0.330E-03 0.320E-03 0.320E-03 0.241E-03 > 0.42 2.0 ≺

### CONTINUE

0.109E-01 0.419E-02 0.174E-03 0.667E-06 104 69 > 0.4

0.149E-06 0.116E-03 0.152E-04 0.179E-03

# (ADSORBED CHEMICAL CONC. = 0.1190E+01 * DISSOLVED CHEMICAL CONC.) DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.1314E+06 HRS

0.00= Z

0.510E-01 0.253E-01 0.288E-03 12. 15. 18. 0.214E+00 0.120E+00 0.710E-01 0.306E-03 0.327E-03 0.338E-03 0.529E+00 0.512E+00 0.312E+00 0.340E-03 0.320E-03 0.161E-04 0.272E-03 0.140E-02 -28. 0.110E-04 0.750E-03 4 > 0 ₹

0.241E-03

### CONTINUE

Y 30. 37. 60. 104. 0. 0.109E-01 0.419E-02 0.174E-03 0.669E-06 -24. 0.179E-03 0.116E-03 0.152E-04 0.150E-06

# (ADSORBED CHEMICAL CONC. = 0.1190E+01 * DISSOLVED CHEMICAL CONC.) DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.1402E+06 HRS

0.00 = 2

0.253E-01 0.241E-03 0.510E-01 0.288E-03 -28. 0. 5. 10. 12. 15. 18. 0.140E-02 0.529E+00 0.512E+00 0.312E+00 0.214E+00 0.120E+00 0.710E-01 0.161E-04 0.272E-03 0.320E-03 0.340E-03 0.338E-03 0.327E-03 0.306E-03 0.110E-04 0.750E-03 .3 > 0 2

### CONTINUE

0.174E-03 0.670E-06 60. 0.109E-01 0.419E-02

0.152E-04 0.151E-06 0.116E-03 0.179E-03 > 0. ₹

# (ADSORBED CHEMICAL CONC. = 0.1190E+01 * DISSOLVED CHEMICAL CONC.) DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.1489E+06 HRS

0.00

0.241E-03 0.253E-01 0.288E-03 0.510E-01 0.306E-03 0.710E-01 ∞ 0.120E+00 0.327E-03 0.140E-02 0.529E+00 0.512E+00 0.312E+00 0.214E+00 0.338E-03 0.320E-03 0.340E-03 0.161E-04 0.272E-03 -28. 0.750E-03 0.110E-04 <u>...</u> ≻ 0. -24.

### CONTINUE

Y 30. 37. 60. 104. 0. 0.109E-01 0.419E-02 0.174E-03 0.670E-06 -24. 0.179E-03 0.116E-03 0.152E-04 0.151E-06

STEADY STATE SOLUTION HAS BEEN OBTAINED BEFORE FINAL SIMULATING TIME.

### A-28

# DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.1577E+06 HRS (ADSORBED CHEMICAL CONC. = 0.1190E+01 * DISSOLVED CHEMICAL CONC.)

-31. -28. 0. 5. 10. 12. 15. 18. 20. 24. 0.750E-03 0.140E-02 0.529E+00 0.512E+00 0.214E+00 0.120E+00 0.710E-01 0.510E-01 0.253E-01 0.253E-03 0.320E-03 0.320E-03 0.338E-03 0.327E-03 0.320E-03 0.241E-03 Y 30. 37. 60. 104. 0. 0.109E-01 0.419E-02 0.174E-03 0.670E-06 -24. 0.179E-03 0.116E-03 0.152E-04 0.151E-06 CONTINUE × 8 ≻ 0. -24.

A-29

0.00

Table A-6. AT123D Fate and Transport Model Input and Output Values for Benzene (Concentration vs. Time) at the Former UST 117, Building 7002 Site

NO. OF POINTS IN X-DIRECTION
AQUIFER DEPTH, = 0.0 FOR INFINITE DEEP (METERS) 0.1524E+02 AQUIFER WIDTH, = 0.0 FOR INFINITE WIDE (METERS) 0.0000E+00 BEGIN POINT OF X-SOURCE LOCATION (METERS)0.9100E+01 END POINT OF X-SOURCE LOCATION (METERS) 0.9100E+01 BEGIN POINT OF Y-SOURCE LOCATION (METERS)0.6100E+01 END POINT OF Y-SOURCE LOCATION (METERS) 0.6100E+01 BEGIN POINT OF Z-SOURCE LOCATION (METERS) 0.0000E+00 END POINT OF Z-SOURCE LOCATION (METERS) 0.0000E+00
POROSITY
MOLECULAR DIFFUSION MULTIPLY BY POROSITY (M**2/HR) 0.3530E-05 DECAY CONSTANT (PER HOUR)
RETARDATION FACTOR

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.0000E+00 HRS (ADSORBED CHEMICAL CONC. = 0.7900E-01 * DISSOLVED CHEMICAL CONC.)

(ADSORBED CHEMICAL CONC. = 
$$0.7$$
)
$$Z = 0.00$$

$$X$$

$$Y \qquad 0. \qquad 46.$$

0.000E+00

0.000E+00

Ö

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.4380E+05 HRS (ADSORBED CHEMICAL CONC. = 0.7900E-01 * DISSOLVED CHEMICAL CONC.)

$$Z = 0.00$$
 X Y  $0.46.$  0.653E+00 0.345E-01

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.4818E+05 HRS (ADSORBED CHEMICAL CONC. = 0.7900E-01 * DISSOLVED CHEMICAL CONC.)

$$Z = 0.00$$
 X Y 0. 46.

0.468E-01

0.289E+00

Ö

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.5256E+05 HRS (ADSORBED CHEMICAL CONC. = 0.7900E-01 * DISSOLVED CHEMICAL CONC.)

$$Z = 0.00$$
  
Y 0 46.

0.672E-01

0.176E+00

Ö

×

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.5694E+05 HRS (ADSORBED CHEMICAL CONC. = 0.7900E-01 * DISSOLVED CHEMICAL CONC.)

$$Z = 0.00$$
 X  $Y = 0.0114E+00 0.840E-01$ 

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.6132E+05 HRS (ADSORBED CHEMICAL CONC. = 0.7900E-01 * DISSOLVED CHEMICAL CONC.)

SORBED CHEMICAL CONC. = (Z = 0.00)

0.891E-01

0.759E-01

Ö.

46.

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.6570E+05 HRS (ADSORBED CHEMICAL CONC. = 0.7900E-01 * DISSOLVED CHEMICAL CONC.)

Z = 0.00

Υ 0. 46.

0.843E-01

0.516E-03

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.7008E+05 HRS (ADSORBED CHEMICAL CONC. = 0.7900E-01 * DISSOLVED CHEMICAL CONC.)

Z = 0.00 X X Y 0. 46.

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.7446E+05 HRS (ADSORBED CHEMICAL CONC. = 0.7900E-01 * DISSOLVED CHEMICAL CONC.)

0.742E-01

0.356E-01

Z = 0.00 Y = 0.00

0.623E-01

×

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.7884E+05 HRS (ADSORBED CHEMICAL CONC. = 0.7900E-01 * DISSOLVED CHEMICAL CONC.)

Z = 0.00Y 0. 46.

×

0.174E-01 0.506E-01

Ö

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DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.8322E+05 HRS (ADSORBED CHEMICAL CONC. = 0.7900E-01 * DISSOLVED CHEMICAL CONC.)

$$Z = 0.00$$
 X  $Y = 0.00$  46.

0.402E-01

0.123E-01

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.8760E+05 HRS (ADSORBED CHEMICAL CONC. = 0.7900E-01 * DISSOLVED CHEMICAL CONC.)

$$Z = 0.00$$
 X Y 0. 46.

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.9198E+05 HRS (ADSORBED CHEMICAL CONC. = 0.7900E-01 * DISSOLVED CHEMICAL CONC.)

$$Z = 0.00$$
  
Y 0. 46.

×

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.9636E+05 HRS (ADSORBED CHEMICAL CONC. = 0.7900E-01 * DISSOLVED CHEMICAL CONC.)

$$Z = 0.00$$
 X Y 0. 46.

0.187E-01

0.446E-02

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.1007E+06 HRS (ADSORBED CHEMICAL CONC. = 0.7900E-01 * DISSOLVED CHEMICAL CONC.)

$$Z = 0.00$$
  
 $Y = 0.00$ 

×

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.1051E+06 HRS (ADSORBED CHEMICAL CONC. = 0.7900E-01 * DISSOLVED CHEMICAL CONC.)

$$Z = 0.00 = Z$$

0. 46.

0.108E-01

0.230E-02

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.1095E+06 HRS (ADSORBED CHEMICAL CONC. = 0.7900E-01 * DISSOLVED CHEMICAL CONC.)

$$Z = 0.00 = Z$$

0.811E-02

0.166E-02

0

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.1139E+06 HRS (ADSORBED CHEMICAL CONC. = 0.7900E-01 * DISSOLVED CHEMICAL CONC.)

$$Z = 0.00$$

×

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.1183E+06 HRS (ADSORBED CHEMICAL CONC. = 0.7900E-01 * DISSOLVED CHEMICAL CONC.)

$$Z = 0.00$$

 $\times$ 

Ö

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.1226E+06 HRS (ADSORBED CHEMICAL CONC. = 0.7900E-01 * DISSOLVED CHEMICAL CONC.)

$$Z = 0.00$$

0,

0. 0.626E-03 0.341E-02 STEADY STATE SOLUTION HAS NOT BEEN REACHED BEFORE FINAL SIMULATING TIME.

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A-34 (Revised 11-05-01)



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Former UST 117, Building 7002 Hunter Army Airfield

TABLE A-7. GEOTECHNICAL PARAMETERS FOR THE FORMER UST 117, BUILDING 7002 SITE

				₩,	~
	Per-	meability	(cm/s)	(5,117)	1 47F-08
		Porosity.	`	**	070
		Specific	Gravity		265
Total	Organic	Carbon	(%)		0
	Moisture	Content	(%)		28.9
		Sample   Classifi-	cation		ij
		Sample	Depth		12.0 to 4.0
			Sample ID		BFGT11
			Tank ID   Facility ID   Sample ID   I	1	9-025113*1
			Tank ID	-	117
	;	Building	Ą	0000	7007

NOTE: CH = Sandy, fat clay.

UST = Underground storage tank.

### **ARCADIS**

### Appendix I

Site Ranking Form

Table A-1. CAP-Part A Natural Attenuation Modeling Results (Benzene Concentration vs. Distance) for the Former UST 117 Site

Distance to Receptor (ft)	Distance to Receptor (m)	Predicted Maximum Benzene Concentration in Groundwater (µg/L)
0.0	0.0	553
32.8	10.0	435
39.4	12.0	365
49.2	15.0	273
59.1	18.0	209
65.6	20.0	178
78.7	24.0	130
98.4	30.0	90.8
120.1	36.6	62.1
131.2	40.0	51.8
164.0	50.0	31.4
196.9	60.0	20
229.7	70.0	13.1
262.5	80.0	8.74
295.3	90.0	5.95
341.2	104.0	3.6
393.7	120.0	2
492.1	150.0	0.8
656.2	200.0	0.2

Table A-2. CAP-Part B Natural Attenuation Modeling Results (Naphthalene Concentration vs. Distance) for the Former UST 117 Site

Distance to Receptor (ft)	Distance to Receptor (m)	Predicted Maximum Naphthalene Concentration in Groundwater (µg/L)
0.0	0.0	529
6.6	2.0	536
9.8	3.0	533
13.1	4.0	526
16.4	5.0	512
23.0	7.0	458
29.5	9.0	366
32.8	10.0	312
39.4	12.0	214
49.2	15.0	120
59.1	18.0	71
65.6	20.0	51
78.7	24.0	25.3
98.4	30.0	10.9
120.1	36.6	4.19
196.9	60.0	0.174
341.2	104.0	6.70 E-04
393.7	120.0	0
492.1	150.0	0
656.2	200.0	0

Table A-3. CAP-Part B Natural Attenuation Modeling Results (Benzene Concentration vs. Time) for the Former UST 117 Site

Time	Predicted Maximum Benzene Concentration in Groundwater (µg/L)		
(year)	MW-22	MW-32	
0.0 (12/00)	174.0	109.0	
0.5 (06/01)	114.0	89.1	
1.0 (12/01)	75.9	84.3	
1.5 (06/02)	51.6	74.2	
2.0 (12/02)	31.6	62.3	

Note: Time 0.0 is equal to December 2000, which was the last groundwater sampling event conducted at the site. Monitoring wells MW-22 and MW-32 will be sampled semiannually for 1 year as part of the monitoring only program to validate the fate and transport modeling results. As predicted by the model, benzene concentrations in both wells should be below the In-stream Water Quality Standard (IWQS) of 71.28  $\mu$ g/L by the end of year 2 (i.e., December 2002).

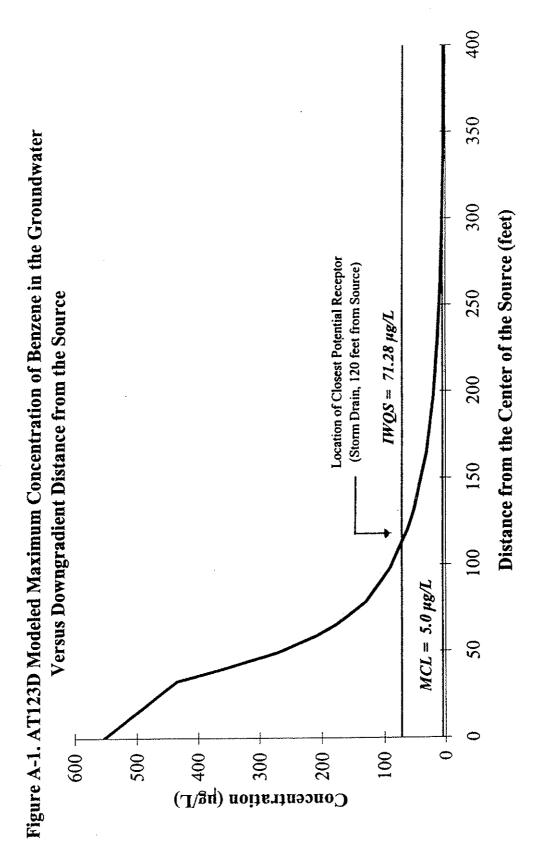


Figure A-1. AT123D Modeled Maximum Concentration of Benzene in the Groundwater Versus Downgradient Distance from the Source

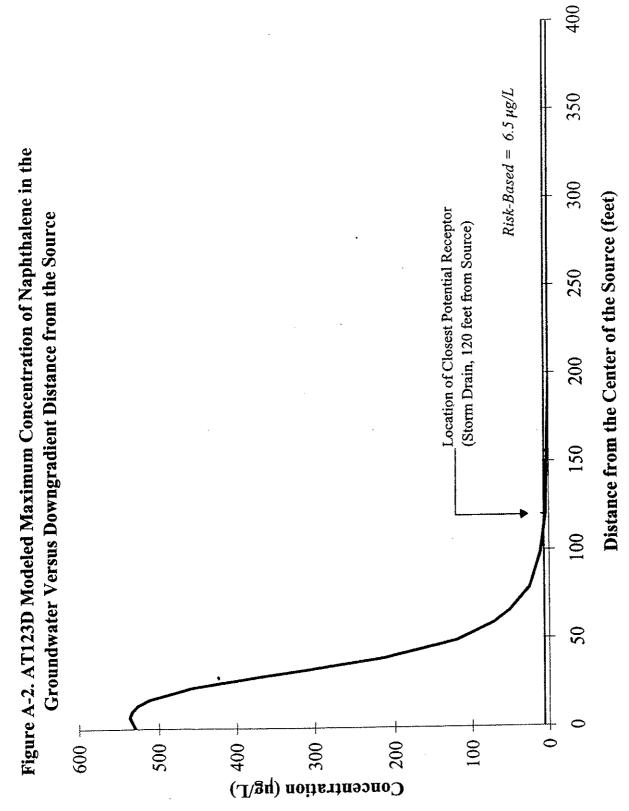
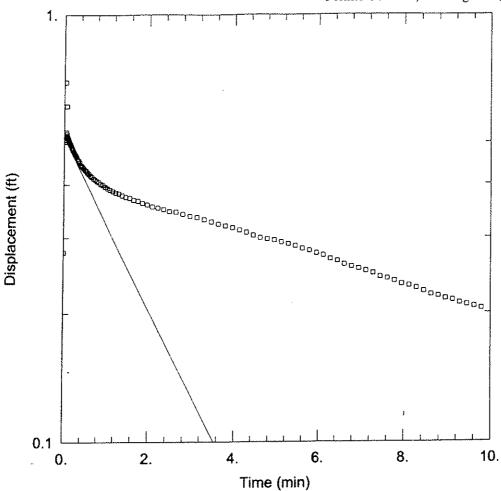


Figure A-2. AT123D Modeled Maximum Concentration of Naphthalene in the Groundwater Versus Downgradient Distance from the Source



### WELL TEST ANALYSIS

Data Set: C:\WINDOWS\DESKTOP\BF-MW-E4.AQT

Date: 01/22/01 Time: 10:09:30

### PROJECT INFORMATION

Company: SAIC

Client: USACE-Savannah

Test Location: Hunter Army Airfield

Test Date: 12-04-00

### AQUIFER DATA

Saturated Thickness: 10.72 ft Anisotropy Ratio (Kz/Kr): 1.

### **WELL DATA**

Initial Displacement: 0.278 ft

Casing Radius: 0.008 ft

Screen Length: 10.72 ft

Water Column Height: 10.72 ft

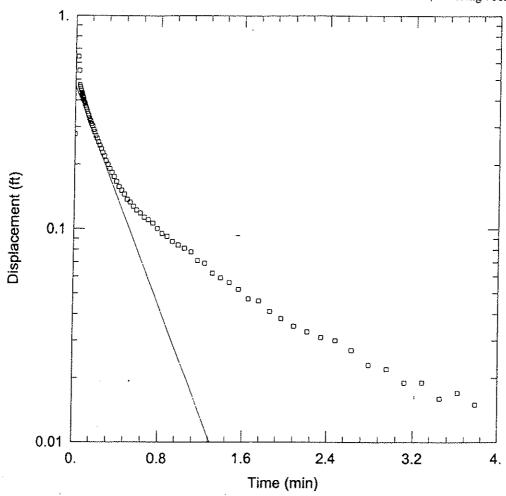
Wellbore Radius: 0.33 ft

Gravel Pack Porosity: 0.3

### SOLUTION

Aquifer Model: Unconfined K = 0.001994 ft/min Solution Method: Bouwer-Rice y0 = 0.5165 ft

Figure A-3. Slug Test Analysis for MW-E4 at the Former UST 117, Building 7002 Site



### **WELL TEST ANALYSIS**

Data Set: C:\WINDOWS\DESKTOP\BF-MW-E5.AQT

Date: 01/22/01 Time: 10:10:44

### PROJECT INFORMATION

Company: SAIC

Client: USACE-Savannah

Test Location: Hunter Army Airfield

Test Date: 12-04-00

### AQUIFER DATA

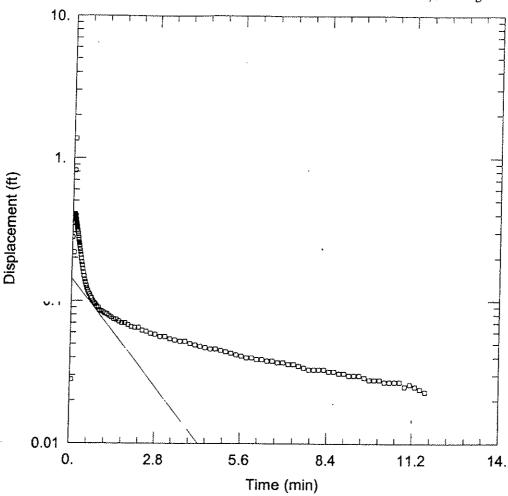
Saturated Thickness: 10.7 ft Anisotropy Ratio (Kz/Kr): 1.

### **WELL DATA**

Initial Displacement: 0.278 ft
Casing Radius: 0.008 ft
Screen Length: 10. ft
Water Column Height: 10.7 ft
Wellbore Radius: 0.33 ft
Gravel Pack Porosity: 0.3

### SOLUTION

Aquifer Model: Unconfined K = 0.01269 ft/min Solution Method: Bouwer-Rice y0 = 0.4673 ft





Data Set: C:\WINDOWS\DESKTOP\BF-MW-E6,AQT

Date: 01/22/01 Time: 10:10:07

### PROJECT INFORMATION

Company: SAIC

Client: USACE-Savannah

Test Location: Hunter Army Airfield

Test Date: 12-04-00

### **AQUIFER DATA**

Saturated Thickness: 9.76 ft Anisotropy Ratio (Kz/Kr): 1.

### **WELL DATA**

Initial Displacement: 0.278 ft Casing Radius: 0.008 ft Screen Length: 10. ft Water Column Height: 9.76 ft Wellbore Radius: 0.33 ft Gravel Pack Porosity: 0.3

### SOLUTION

Aquifer Model: Unconfined K = 0.002624 ft/min Solution Method: Bouwer-Rice y0 = 0.1433 ft

Figure A-5. Slug Test Analysis for MW-E6 at the Former UST 117, Building 7002 Site

### TABLE A-4. AT123D FATE AND TRANSPORT MODEL INPUT AND OUTPUT VALUES FOR BENZENE AT THE FORMER UST 117, BUILDING 7002 SITE

NO. OF POINTS IN X-DIRECTION	14 2 1 400 13 241 12 1 0 1
AQUIFER DEPTH, = 0.0 FOR INFINITE DEEP (METERS) AQUIFER WIDTH, = 0.0 FOR INFINITE WIDE (METERS) BEGIN POINT OF X-SOURCE LOCATION (METERS) END POINT OF X-SOURCE LOCATION (METERS) BEGIN POINT OF Y-SOURCE LOCATION (METERS) END POINT OF Y-SOURCE LOCATION (METERS) BEGIN POINT OF Z-SOURCE LOCATION (METERS) END POINT OF Z-SOURCE LOCATION (METERS)	0.0000E+00 -0.9100E+01 0.9100E+01 -0.6100E+01 0.6100E+01 0.0000E+00
POROSITY  HYDRAULIC CONDUCTIVITY (METER/HOUR)  HYDRAULIC GRADIENT  LONGITUDINAL DISPERSIVITY (METER)  LATERAL DISPERSIVITY (METER)  VERTICAL DISPERSIVITY (METER)  DISTRIBUTION COEFFICIENT, KD (M**3/KG)  HEAT EXCHANGE COEFFICIENT (KCAL/HR-M**2-DEGREE C)	0.1800E+00 0.9000E-01 0.3500E-02 0.1000E+02 0.3000E+01 0.7900E-04 0.0000E+00
MOLECULAR DIFFUSION MULTIPLY BY POROSITY (M**2/HR) DECAY CONSTANT (PER HOUR) BULK DENSITY OF THE SOIL (KG/M**3) ACCURACY TOLERANCE FOR REACHING STEADY STATE DENSITY OF WATER (KG/M**3) TIME INTERVAL SIZE FOR THE DESIRED SOLUTION (HR) DISCHARGE TIME (HR) WASTE RELEASE RATE (KCAL/HR), (KG/HR), OR (CI/HR)	0.4000E-04 0.1320E+04 0.1000E-02 0.1000E+04 0.7300E+03 0.8760E+06
RETARDATION FACTOR	0.1108E-02 0.1109E-01

0.000E+00 0.000E+00

0.451E-04 0.518E-06

0.758E-02 0.567E-04

0.133E-03

0.225E-01

0.

104.

60.

30

0.234E-03 0.516E-01 0.000E+00 0.000E+00 24 24. 0.326E-03 0.000E+00 0.000E+00 0.947E-01 20. 20. 0.124E+00 0.000E+00 0.000E+00 0.367E-03 18. 18. 0.188E+00 0.422E-03 0.000E+00 0.000E+00 15. 15. 0.462E-03 0.282E+00 0.000E+00 0.000E+00 12. 22. 0.7900E-01 * DISSOLVED CHEMICAL CONC.) 0.7900E-01 * DISSOLVED CHEMICAL CONC.) 0.354E+00 0.479E-03 DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.8760E+04 HRS 0.000E+00 0.000E+00 10. 10. × × × 0.0000E+00 HRS CONTINUE CONTINUE 0.477E-03 0.489E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 104. η. . 'n DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.000E+00 0.000E+00 0.494E+00 0.415E-03 0.000E+00 0.000E+00 0 ٥. 60. 00.0 00.0 (ADSORBED CHEMICAL CONC. = (ADSORBED CHEMICAL CONC. 0.149E-04 0.296E-02 0.000E+00 0.000E+00 0.000E+00 0.000E+00 37. -28 -28. N 0.000E+00 0.000E+00 0.159E-02 0.902E-05 0.000E+00 0.000E+00 30. -31. -31 0 0 -24. 0 -24. >× ×

0.1752E+05 HRS DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT

	5. 4.	0.977E-01 0.262E-02					24.	0.116E+00 0.551E-02		
	20.	0.147E+00 0.297E-02					20.	0.166E+00 0.581E-02		
	18.	0.179E+00 0.308E-02					18.	0.197E+00 0.588E-02		
	15.	0.245E+00 0.319E-02					15.	0.262E+00 0.586E-02		
ONC.)	12.	0.339E+00			CONC.)		12.	0.355E+00 0.572E-02		
AT 0.1/52E+05 HRS DISSOLVED CHEMICAL CONC.)	X H	0.410E+00 0.316E-02 NUE	∢		AT 0.2628E+05 HRS DISSOLVED CHEMICAL C	×	10.	42 55	×	
IN PPM AT 0.1752E+05 HRS OE-01 * DISSOLVED CHEMICAL	īų	0.540E+00 0. 0.289E-02 0. CONTINUE	104.	0.948E-06 0.881E-07	<b>≋</b> ∗		Υ	0.553E+00 0. 0.492E-02 0. CONTINUE	104.	0.485E-04
	00.00	0.537E+00 0.241E-02	. 09	0.216E-02 0.154E-03	0	00.0	. 0	0.548E+00 0,406E-02	. 09	0.719E-02
)	2 = 0	0.608E-02	37.	0.310E-01 0.141E-02	DISTRIBUTION OF DISSOLVED CHEMICALS (ADSORBED CHEMICAL CONC. = 0.790	0 = 2	-28.	0.738E-02 0.379E-03	37.	0.467E-01
(ADSORBED CHEMICAL CONC.	-31.	0.376E-02 0.125E-03	30.	0.582E-01 0.207E-02	STRIBUTION OF (ADSORBED CHE		-31.	0.476E-02 0.280E-03	30.	0.761E-01
(£)	×	0.	×	0.	SIQ		≯	0 .	Þ	

DI	DISTRIBUTION OF DISSOLVED CHEMICALS	F DISSOLVED	CHEMICALS IN	IN PPM AT 0.35	0.3504E+05 HRS	•				
	(ADSORBED CHEMICAL CONC.	EMICAL CONC.	31	11 * DISSOLVE	0.7900E-01 * DISSOLVED CHEMICAL CONC.)	ONC.)				
		n 2	0.00							
					×					
×	-31.	-28.	.0	ທ	10.	12.	15.	18.	20.	4.
	0.519E-02	0.792E-02	0.552E+00	0.558E+00	0.431E+00	0.361E+00	0.269E+00	0.2045+00	0.173E+00	0.124E+00
- 24 .	0.390E-03	0.518E-03	0.500E-02	0.609E-02 0. CONTINUE	0.696E-02 INUE	0.722E-02	0.749E-02	0.763E-02	0.764E-02	0.746E-02
					×					
× .	30.	37.	. 09	104.						
	0.840E-01	0.546E-01	0.120E-01	0.306E-03						
-24.	0.690E-02	0.593E-02	0.225E-02	0.792E-04						
Ü.	DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT	F DISSOLVED	CHEMICALS IN	PPM AT 0.4	0.4380E+05 HRS					
	(ADSORBED CHEMICAL CONC.	EMICAL CONC.	* TO-MORE-OT *		DISSOLVED CHEMICAL CONC.)	CONC.				
		11 2	00.00							
>-	-31,	-28.		ທ	10.	12.	15.	18.	20.	24.
0	0.538E-02	0.815E-02	0.553E+00	0.560E+00	0.433E+00	0.363E+00	0.271E+00	0.207E+00	0.176E+00	0.127E+00
-24.	0.455E-03	0.597E-03	0.548E-02	0.669E-02 0.	0.769E-02	0.801E-02	0.836E-02	0.858E-02	0.865E-02	0.858E+02
					×					
≯	30.	37.	. 09	104.						
0.	0.876E-01	0.585E-01	0.153E-01	0.825E-03						
-24.		0.725E-02	0.341E-02	0.263E-03						

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.5256E+05 HRS (ADSORBED CHEMICAL CONC.)

		24.	0.129E+00 0.918E-02					24.	0.129E+00 0.950E-02		
		20.	0.177E+00 0.918E-02					20.	0.178E+00 (0.945E-02 (		
		18.	0.208E+00 0.908E-02					18.	0.209E+00 0.934E-02		
		15.	0.272E+00 0.882E-02					15.	0.273E+00 0.905E-02		
ONC.)		12.	0.364E+00 0.841E-02			CONC.)		12.	0.364E+00 0.862E-02		
* DISSOLVED CHEMICAL CONC.)		, X 10.	0.434E+00 0.807E-02 NUE	×	·	AT 0.6132E+05 HRS DISSOLVED CHEMICAL C	·	х 10.	0.434E+00 0.826E-02 NUE	×	
		ν,	0.560E+00 0. 0.700E-02 0. CONTINUE	104.	0.147E-02 0.535E-03			ů.	0.561E+00 0. 0.715E-02 0. CONTINUE	104.	0.208E-02 0.828E-03
= 0.7900E-01	00.00	0.	0.554E+00 0.572E-02	. 09	0.174E-01 0.426E-02		00.00	. 0	0.554E+00 0.584E-02	. 09	0.185E-01 0.482E-02
MICAL CONC.	0 = 2	- 28.	0.825E-02 0.640E-03	37.	0.603E-01 0.803E-02	DISSOLVED C	5 F Z	-28,	0.830E-02 0.663E-03	37.	0.612E-01 0.846E-02
(ADSORBED CHEMICAL CONC.		-31,	0.546E-02 0.491E-03	30.	0.893E-01 0.882E-02	DISTRIBUTION OF DISSOLVED CHEMICALS (ADSORBED CHEMICAL CONC. = 0.790		-31,	0.550E-02 0.510E-03	30.	0.900E-01 0.919E-02
<u> </u>		×	-24.	×	0.	ors)		×	.24.	≯	0.

DI	STRIBUTION OF DISSOLVED (ADSORBED CHEMICAL CONC.	F DISSOLVED FMICAL CONC.	DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM (ADSORBED CHEMICAL CONC. = 0.7900E-01 *		AT 0.7008E+05 HRS DISSOLVED CHEMICAL CONC.)	CONC.)				
		#1	00.00		:					
×	.31.	-28.	. 0	ŗ,	X 10.	12.	15.	18.	20.	24.
0 .	0.552E-02 0.520E-03	0.832E-02 0.675E-03	0.554E+00	0.561E+00 0. 0.723E-02 0. CONTINUE	44 80 W W	0.365E+00 0.872E-02	0.273E+00 0.917E-02	0.209E+00 0.947E-02	0.178E+00 0.960E-02	0.130E+00 0.966E-02
Ħ	30.	37.	. 09	104.	×					
0.	0.904E-01	0.617E-01 0.869E-02	0.192E-01 0.516E-02	0.258E-02 0.109E-02						
Ια	STRIBUTION OF DISSOLVED (ADSORBED CHEMICAL CONC.	F DISSOLVED	CHEM	U.	0.7884E+05 HRS	( DNOD				
			ı							
		= 7	00.00		>					
≯	-31.	-28.	.0	Ŋ	10.	12.	5	18,	20.	24.
. 0 .	0.553E-02	0.833E-02	0.554E+00	0.561E+00	0.435E+00	0.365E+00	0.273E+00	0.209E+00	0.178E+00	0.130E+00
, !			1	CONTINUE	INUE	1000	1000	300 : : : : : : : : : : : : : : : : : :	NO. 1000.	20 - 20 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0
⋈	30.	37.	09	104.	×					
0 .	0.906E-01 0.950E-02	0.619E-01 0.882E-02	0.195E-01 0.537E-02	0.294E-02 0.129E-02						

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.8760E+05 HRS (ADSORBED CHEMICAL CONC. * 0.7900E-01 * DISSOLVED CHEMICAL CONC.)

	24.	0.130E+00 0.980E-02					24.	0.130E+00 0.982E-02		
	20.	0.178E+00 0. 0.971E-02 0.					20.	0.178E+00 0.0.973E-02 0.		
	18.	0.209E+00 0.958E-02					18.	0.209E+00 0.960E-02		
	15.	0.273E+00 0.926E-02					15.	0.273E+00 0.928E-02		
	12.	0.365E+00 0.881E-02			donc.)		12.	0.365E+00 0.882E-02		
	x 10.	0.435E+00 0.843E-02 NNUE	;		ICALS IN PPM AT 0.9636E+05 HRS 0.7900E-01 * DISSOLVED CHEMICAL CONC.)	×	10.	0.435E+00 0.845E-02 INUE	4	
		0.561E+00 0. 0.729E-02 0. CONTINUE	104.	0.319E-02 0.144E-02	PPM AT 0.90		'n,	0.561E+00 0. 0.730E-02 0. CONTINUE	104.	0.335E-02 0.155E-02
0.00	.0	0.554E+00	.09	0.197E-01 0.549E-02	THEMICALS IN = 0.7900E-(	00.00	.0	0.554E+00	. 09	0.199E-01 0.555E-02
Z = 0	-28.	0.834E-02 0.685E-03	37.	0.620E-01 0.889E-02	DISSOLVED (	= 2	-28.	0.834E-02 0.686E-03	37.	0.621E-01 0.893E-02
	-31.	0.554E-02 0.528E-03	30.	0.907E-01 0.955E-02	DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT (ADSORBED CHEMICAL CONC. = 0.7900E-01 * DIS		33	0.554E-02 0.530E-03	30.	0.907E-01 0.958E-02
	×	. 24.	₩	0.	SIQ )		¥	0.	≯	. 24

DI	DISTRIBUTION OF DISSOLVED CHEMICALS (ADSORBED CHEMICAL CONC. = 0.790)	F DISSOLVED EMICAL CONC.	CHEMICALS IN = 0.7900E-0	ICALS IN PPM AT 0.1051E+06 HRS 0.7900E-01 * DISSOLVED CHEMICAL CONC.)	0.1051E+06 HRS OLVED CHEMICAL O	CONC.)				
		ii Z	00.00							
≯	-31.	-28.	.0	Ň	10.	12.	15.	18.	20.	24.
.24.	0.554E-02 0.530E-03	0.834E-02 0.687E-03	0.554E+00 0.596E-02	0.561E+00 0. 0.730E-02 0. CONTINUE	0.435E+00 0.845E-02 NUE	0.365E+00 0.883E-02	0.273E+00 0.929E-02	0.209E+00	0.178E+00 0.974E-02	0.130E+00 0.984E-02
⊱	30.	37.	.09	104.	×					
0.	0.908E-01 0.960E-02	0.621E-01 0.894E-02	0.199E-01 0.559E-02	0.345E-02 0.161E-02						
Ħα	DISTRIBUTION OF DISSOLVED CHEMICALS (ADSORBED CHEMICAL CONC. * 0.790	F DISSOLVED		IN PPM AT 0.113 E-01 * DISSOLVE	AT 0.1139E+06 HRS DISSOLVED CHEMICAL (	CONC.)				
		H 23	00.00							
₩	-31.	-28.	.0	Ň,	10.	12.	S.	18.	20.	24.
0.	0.554E-02 0.531E-03	0.834E-02 0.688E-03	0.554E+00 0.596E-02	0.561E+00 0.731E-02	0.435E+00 0.846E-02	0.365E+00 0.883E-02	0.273E+00 0.929E-02	0.209E+00 0.961E-02	0.178E+00 0.975E-02	0.130E+00 0.984E-02
;	;			CONTINUE	INUE · X					
∺	30.	37.	. 09	104.						
0 42	0.908E-01 0.961E-02	0.621E-01 0.896E-02	0,199E-01 0,561E-02	0.352E-02 0.166E-02						

0.1226E+06 HRS DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT

	24.	0.130E+00 0.985E-02					24.	0.130E+00 0.985E-02		
	20.	0.178E+00 0.975E-02					20.	0.178E+00 0.975E-02		
	18.	0.209E+00 0.961E-02					æ	0.209E+00 0.962E-02		
		0.273E+00 0.929E-02					15.	0.273E+00 0.929E~02		
ONC.)	12.	0.365E+00 0.884E-02			CONC.)		12.	0.365E+00 0.884E-02		
ZeE+U6 HRS D CHEMICAL C	X 10.	44 3 44 3	<		AT 0.1314E+06 HRS DISSOLVED CHEMICAL C	;	х 10.	43 84	×	
CREMICALS IN FFM AT 0.1226E+06 HRS = 0.7900E-01 * DISSOLVED CHEMICAL CONC.)	ν,	0.561E+00 0. 0.731E-02 0. CONTINUE	104.	0.356E-02 0.168E-02	IN PPM AT 0.13 E-01 * DISSOLVE		თ	0.561E+00 0.0.731E-02 0.	104.	0.358E-02 0.170E-02
nemicals in = 0.7900E-0	0.00	0.554E+00 0.597E-02	.09	0.200E-01 0.563E-02	_	00.0	. 0	0.554E+00 0.597E-02	.09	0.200E-01 0.563E-02
MICAL CONC.	Z = 0 28.	0.834E-02 0.688E-03	37.	0.621E-01 0.896E-02	U		- 28.	0.834E-02 0.688E-03	37.	0.621E-01 0.896E-02
(ADSORBED CHEMICAL CONC.	. 31.	0.554E-02	30.	0.908E-01 0.961E-02	STRIBUTION OF DISSOLVED (ADSORBED CHEMICAL CONC.		-31.	0.531E-03	30.	0.908E-01 0.961E-02
)   	X	. 24	≯	0.	DIS.		¥	0.	×	0.

Id	DISTRIBUTION OF DISSOLVED CHEMICALS (ADSORBED CHEMICAL CONC. = 0.790	MICAL CONC.	CHEMICALS IN = 0.7900E-0	ICALS IN PPM AT 0.1402E+06 HRS 0.7900E-01 * DISSOLVED CHEMICAL CONC.)	0.1402E+06 HRS OLVED CHEMICAL C	conc.)				
		" 2	0.00							
*	-31.	- 28	. 0	ů,	7 10.	12.	15.	18.	20.	24.
. 24.	0.554E-02 0.531E-03	0.834E-02 0.688E-03	0.554E+00 0.597E-02	0.561E+00 0. 0.731E-02 0. CONTINUE	443 48	0.365E+00 0.884E-02	0.273E+00 0.930E-02	0.209E+00 0.962E-02	0.178E+00 0.975E-02	0.130E+00 0.985E-02
¥	30.	37.	. 09	104.	×					
.24.	0.908E-01 0.961E-02	0.621E-01 0.897E-02	0.200E-01 0.564E-02	0.359E-02 0.171E-02						
DI	DISTRIBUTION OF DISSOLVED CHEMICALS (ADSORBED CHEMICAL CONC. = 0.7900	F DISSOLVED EMICAL CONC.		≅ *	AT 0.1489E+06 HRS DISSOLVED CHEMICAL CONC.)	CONC.)				
		: 2	00.00		:					
≯	-31.	-28.	· O	Ŋ	х 10.	12.	15.	18.	20.	24.
. 24.	0.554E-02 0.531E-03	0.834E-02 0.688E-03	0.554E+00 0.597E-02	0.561E+00 0. 0.731E-02 0. CONTINUE	0.435E+00 0.846E-02 INUE	0.365E+00	0.273E+00 0.930E-02	0.209E+00 0.962E-02	0.178E+00 0.975E-02	0.130E+00 0.985E-02
<b>&gt;</b>	30.	37.	. 09	104.	×					
0.	0.908E-01 0.962E-02	0.621E-01 0.897E-02	0.200E-01 0.564E-02	0.360E-02 0.172E-02						

0.130E+00 0.985E-02

0.178E+00 0.975E-02

24.

20.

(ADSORBED CHEMICAL CONC. = 0.7900E-01 * DISSOLVED CHEMICAL CONC.) DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.1577E+06 HRS

	20. 24.	0.178E+00 0.130E+00 0.975E-02 0.985E-02			
	18.	0.209E+00 0.178 0.962E-02 0.975			
	15.	0.273E+00 0.20 0.930E-02 0.96			
	12.	0.365E+00 0.884E-02			
	X 10.	0.561E+00 0.435E+00 0.731E-02 0.846E-02 CONTINUE	<b>×</b> .		664E+06 HRS
		0.561E+00 0.0 0.731E-02 0.0	104.	0.360E-02 0.172E-02	IN PPM AT 0.1664E+06 HRS
00.00	, O	0.554E+00	.09	0.200E-01 0.564E-02	
17 II	- 28.	0.834E-02 0.688E-03	37.	0.621E-01 0.897E-02	DISTRIBUTION OF DISSOLVED CHEMICALS
	-31.	0. 0.554E-02 -24. 0.531E-03	30.	0.908E-01 0.962E-02	STRIBUTION O
	X	0.	>1	.0	)IG

(ADSORBED CHEMICAL CONC. = 0.7900E-01 * DISSOLVED CHEMICAL CONC.)

00.0

11 Ŋ

18.	0.209E+00	0.962E-02			
15.		0.930E-02			
12.	0.365E+00	0.884E-02			!
10.	0.435E+00	0.731E-02 0.846E-02	×		
S	0.561E+00	0.731E-02 0.8		104.	0.361E-02 0.172E-02
.0	0.554E+00	0.597E-02		. 09	0.200E-01 0.564E-02
- 28.	0.834E-02	0.688E-03		37.	0.621E-01 0.897E-02
-31.	0.554E-02	0.531E-03		30.	0.908E-01 0.962E-02
≯	0.	-24.		≯	. 0 24 .

STEADY STATE SOLUTION HAS BEEN OBTAINED BEFORE FINAL SIMULATING TIME

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.1752E+06 HRS (ADSORBED CHEMICAL CONC. = 0.7900E-01 * DISSOLVED CHEMICAL CONC.)

	18. 20. 24.	0.209E+00 0.178E+00 0.130E+00 0.962E-02 0.975E-02 0.985E-02			
	15.	0.365E+00 0.273E+00 0.2 0.884E-02 0.930E-02 0.9			,
	12.	0.365E+00 0.884E-02			
	X 10.	0.561E+00 0.435E+00 0.731E-02 0.846E-02	NUE	×	
	Ņ.		CONTINUE	104.	0.361E-02
0.00	·	0.554E+00 0.597E-02		. 09	0.200E-01
2 = 2	-28.	0.834E-02 0.688E-03		37.	0.621E-01
	175200.	0.554E-02 0.531E-03	•	30.	0.908E-01
	⋈	0.		⋈	. 0

### TABLE A-5. AT123D FATE AND TRANSPORT MODEL INPUT AND OUTPUT VALUES FOR NAPHTHALENE AT THE FORMER UST 117, BUILDING 7002 SITE

NO. OF POINTS IN X-DIRECTION
AQUIFER DEPTH, = 0.0 FOR INFINITE DEEP (METERS) 0.1524E+02 AQUIFER WIDTH, = 0.0 FOR INFINITE WIDE (METERS) 0.0000E+00 BEGIN POINT OF X-SOURCE LOCATION (METERS)0.9100E+01 END POINT OF X-SOURCE LOCATION (METERS) 0.9100E+01 BEGIN POINT OF Y-SOURCE LOCATION (METERS)0.6100E+01 END POINT OF Y-SOURCE LOCATION (METERS) 0.6100E+01 BEGIN POINT OF Z-SOURCE LOCATION (METERS) 0.0000E+00 END POINT OF Z-SOURCE LOCATION (METERS) 0.0000E+00
POROSITY
MOLECULAR DIFFUSION MULTIPLY BY POROSITY (M**2/HR) 0.2700E-05 DECAY CONSTANT (PER HOUR)
RETARDATION FACTOR

# (ADSORBED CHEMICAL CONC. = 0.1190E+01 * DISSOLVED CHEMICAL CONC.) DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.0000E+00 HRS

~

0.00

0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+0 0.000E+00 0.000E+00  $0.0000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.0000E+00 \quad 0.0000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0.000E+00 \quad 0$ 0.000E+00 ≻ o ≺

### CONTINUE

04 90

0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 7 ° ° 5.

# (ADSORBED CHEMICAL CONC. = 0.1190E+01 * DISSOLVED CHEMICAL CONC.) DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.8760E+04 HRS

0.00 = 2

0.660E-02 0.215E-06 0.257E-03 0.480E+00 0.458E+00 0.261E+00 0.166E+00 0.784E-01 0.372E-01 0.223E-01 0.504E-06 0.102E-05 0.690E-06 8 0.158E-05 0.137E-05 12. 0. 0.102E-07 0.183E-05 0.192E-05 -28. 0.891E-04 0.410E-08 -3 0.

### CONTINUE

60

0.119E-09 0.000E+00 0.172E-13 0.629E-08 0.102E-03 0.114E-02 0.528E-07

0.000E+00

# (ADSORBED CHEMICAL CONC. = 0.1190E+01 * DISSOLVED CHEMICAL CONC.) DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.1752E+05 HRS

0.00

0.183E-01 0.252E-04 0.422E-01 0.391E-04 0. 0.443E-03 0.935E-03 0.520E+00 0.502E+00 0.302E+00 0.203E+00 0.110E+00 0.616E-01 -24. 0.859E-06 0.154E-05 0.631E-04 0.710E-04 0.681E-04 0.640E-04 0.558E-04 0.459E-04 ∞. -31.

### CONTINUE

69

0.122E-04 0.407E-05 0.110E-07 0.000E+00 0.602E-02 0.146E-02 0.225E-05 0.000E+00

# (ADSORBED CHEMICAL CONC. = 0.1190E+01 * DISSOLVED CHEMICAL CONC.) DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.2628E+05 HRS

0.00

0.231E-01 0.101E-03 0.485E-01 0.136E-03 0. 5. 10. 12. 15. 18. 0.527E+00 0.510E+00 0.310E+00 0.212E+00 0.117E+00 0.685E-01 0.171E-03 0.151E-03 0.191E-03 0.186E-03 0.653E-05 0.163E-03 0.188E-03 0.125E-02 -28 0.643E-03 0.408E-05 <u>ښ</u> ≻ 0. <del>2</del>

CONTINUE

60.

0.295E-02 0.280E-04 0.662E-11 0.618E-04 0.292E-04 0.540E-06 0.206E-12 0.908E-02 > 0 5

(ADSORBED CHEMICAL CONC. = 0.1190E+01 * DISSOLVED CHEMICAL CONC.) DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.3504E+05 HRS

0.00 = 2

12. 15. 18. 20. 24. 0.213E+00 0.119E+00 0.703E-01 0.503E-01 0.247E-01 0.234E-03 0.216E-03 0.172E-03 0.113E-04 0.226E-03 0.264E-03 0.275E-03 0.271E-03 0.257E-03 0. 5. 10. 0.528E+00 0.511E+00 0.312E+00 0.136E-02 0.716E-03 0.739E-05 <u>.,</u> .24.

CONTINUE

8

0.103E-01 0.371E-02 0.782E-04 0.327E-08 0.187E-09 0.300E-05 0.646E-04 0.116E-03

≻ °. 4.

(ADSORBED CHEMICAL CONC. = 0.1190E+01 * DISSOLVED CHEMICAL CONC.) DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.4380E+05 HRS

0.00

0.740E-03 0.139E-02 0.528E+00 0.512E+00 0.312E+00 0.214E+00 0.120E+00 0.708E-01 0.508E-01 0.251E-01 0.940E-05 0.140E-04 0.255E-03 0.299E-03 0.315E-03 0.312E-03 0.299E-03 0.277E-03 0.258E-03 0.212E-03 <u>%</u> -28 > 0. ½.

CONTINUE

0.123E-03 0.327E-07 104 9 0.107E-01 0.402E-02

0.907E-04 0.691E-05 0.296E-08 0.151E-03 > 0. ₹

A-24

# (ADSORBED CHEMICAL CONC. = 0.1190E+01 * DISSOLVED CHEMICAL CONC.) DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.5256E+05 HRS

0.00

Ö,

20. 24. 0.509E-01 0.253E-01 0.230E-03 0.277E-03 0.710E-01 0.295E-03 0.120E+00 0.329E-03 0.317E-03 -28. 0. 5. 10. 12. 0.140E-02 0.529E+00 0.512E+00 0.312E+00 0.214E+00 0.153E-04 0.266E-03 0.313E-03 0.331E-03 0.104E-04 0.747E-03

### CONTINUE

90

0.150E-03 0.120E-06 0.108E-01 0.413E-02

0.105E-03 0.105E-04 0.148E-07 0.168E-03

# (ADSORBED CHEMICAL CONC. = 0.1190E+01 * DISSOLVED CHEMICAL CONC.) DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.6132E+05 HRS

0.00

24. 0.253E-01 0.237E-03 0.302E-03 0.284E-03 0.510E-01 0.710E-01 ∞. 15. 0.120E+00 0.323E-03 -31. -28. 0, 5. 10. 12. 0.749E-03 0.140E-02 0.529E+00 0.512E+00 0.312E+00 0.214E+00 0.335E-03 0.107E-04 0.158E-04 0.270E-03 0.318E-03 0.337E-03 0 0.7

### CONTINUE

0.164E-03 0.257E-06 0.390E-07 0.128E-04 60. 0.111E-03 0.417E-02 0.109E-01 0.175E-03

# (ADSORBED CHEMICAL CONC. = 0.1190E+01 * DISSOLVED CHEMICAL CONC.) DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.7008E+05 HRS

0.00

0.253E-01 0.750E-03 0.140E-02 0.529E+00 0.512E+00 0.312E+00 0.214E+00 0.120E+00 0.710E-01 0.510E-01 0.109E-04 0.160E-04 0.271E-03 0.319E-03 0.339E-03 0.337E-03 0.326E-03 0.305E-03 0.286E-03 18. 0.74

0.305E-03 0.286E-03 0.240E-03

### CONTINUE

0.109E-01 0.418E-02 0.170E-03 0.399E-06 9

0.114E-03 0.141E-04 0.700E-07

0.178E-03

> 0. ¥

A-25

# (ADSORBED CHEMICAL CONC. = 0.1190E+01 * DISSOLVED CHEMICAL CONC.) DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.7884E+05 HRS

0.00

18. 20. 24. 0.710E-01 0.510E-01 0.253E-01 0.287E-03 0.241E-03 0.305E-03 0.120E+00 0.326E-03 0.214E+00 0.320E-03 0.339E-03 0.338E-03 0.529E+00 0.512E+00 0.312E+00 0.272E-03 0.161E-04 0.140E-02 -28. 0.110E-04 0.750E-03 <u>ښ</u> > 0.2

CONTINUE

60.

0.512E-06 0.172E-03 0.419E-02 0.109E-01 > °. 42,

0.179E-03 0.115E-03 0.147E-04 0.990E-07

# (ADSORBED CHEMICAL CONC. = 0.1190E+01 * DISSOLVED CHEMICAL CONC.) DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.8760E+05 HRS

0.00

0. 5. 10. 12. 15. 18. 20. 24. 0.529E+00 0.512E+00 0.312E+00 0.214E+00 0.120E+00 0.710E-01 0.510E-01 0.253E-01 0.327E-03 0.306E-03 0.288E-03 0.241E-03 0.338E-03 0.320E-03 0.340E-03 0.110E-04 0.161E-04 0.272E-03 0.140E-02 0.750E-03 > 0 <del>2</del>

CONTINUE

0.586E-06 0.173E-03 90 0.419E-02 0.109E-01 30.

≻ ° 5.

0.116E-03 0.150E-04 0.121E-06 0.179E-03

# (ADSORBED CHEMICAL CONC. = 0.1190E+01.* DISSOLVED CHEMICAL CONC.) DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.9636E+05 HRS

0.00 = 2

0.253E-01 0.510E-01 0.288E-03 12. 15. 18. 0.214E+00 0.120E+00 0.710E-01 0.306E-03 0.327E-03 0.140E-02 0.529E+00 0.512E+00 0.312E+00 0.214E+00 0.161E-04 0.272E-03 0.320E-03 0.340E-03 0.338E-03 10. Ċ -28. 0.110E-04 0.750E-03 <del>ب</del> 7 ° 0. -24.

CONTINUE

0.174E-03 0.629E-06 60. 0.419E-02 0.109E-01 > 0 ₹

0.135E-06 0.151E-04 0.116E-03 0.179E-03

# (ADSORBED CHEMICAL CONC. = 0.1190E+01 * DISSOLVED CHEMICAL CONC.) DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.1051E+06 HRS

0.00

-28. 0. 5. 10. 12. 15. 18. 20. 24. 0.140E-02 0.529E+00 0.512E+00 0.312E+00 0.214E+00 0.120E+00 0.710E-01 0.510E-01 0.253E-01 0.241E-03 0.288E-03 0.306E-03 0.338E-03 0.327E-03 0.161E-04 0.272E-03 0.320E-03 0.340E-03 0.110E-04 0.750E-03 ≻ o. ½

### CONTINUE

60.

0.174E-03 0.651E-06 0.116E-03 0.152E-04 0.143E-06 0.419E-02 0.109E-01 0.179E-03 ≻ °. 5.

# (ADSORBED CHEMICAL CONC. = 0.1190E+01 * DISSOLVED CHEMICAL CONC.) DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.1139E+06 HRS

0.00

0.241E-03 0.253E-01 0.510E-01 0.288E-03 18. 0.710E-01 0.306E-03 0.120E+00 0.327E-03 5 -28. 0. 5. 10. 12. 0.140E-02 0.529E+00 0.512E+00 0.214E+00 0.338E-03 0.161E-04 0.272E-03 0.320E-03 0.340E-03 0.750E-03 0.110E-04 -3 [. ≻ 0. 5. .24.

### CONTINUE

8

0.174E-03 0.662E-06 0.147E-06 0.152E-04 0.419E-02 0.116E-03 30. 0.109E-01 0.179E-03

> 0.4

# (ADSORBED CHEMICAL CONC. = 0.1190E+01 * DISSOLVED CHEMICAL CONC.) DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.1226E+06 HRS

0.00

-31. -28. 0 5. 10. 12. 15. 18. 20. 24. 0.750E-03 0.140E-04 0.512E+00 0.512E+00 0.214E+00 0.120E+00 0.710E-04 0.510E-04 0.272E-03 0.320E-03 0.340E-03 0.330E-03 0.330E-03 0.320E-03 0.320E-03 0.320E-03 0.320E-03 0.320E-03 0.320E-03 0.300E-04 0.161E-04 0.272E-03 0.320E-03 0.340E-03 0.320E-03 0.300E-03 0.241E-03 > 0.42 4.0 ×

### CONTINUE

0.109E-01 0.419E-02 0.174E-03 0.667E-06 104 8 > 0.4

0.149E-06 0.116E-03 0.152E-04 0.179E-03

# (ADSORBED CHEMICAL CONC. = 0.1190E+01 * DISSOLVED CHEMICAL CONC.) DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.1314E+06 HRS

0.00= Z

0.510E-01 0.253E-01 0.288E-03 12. 15. 18. 0.214E+00 0.120E+00 0.710E-01 0.306E-03 0.327E-03 0.338E-03 0.529E+00 0.512E+00 0.312E+00 0.340E-03 0.320E-03 0.161E-04 0.272E-03 0.140E-02 -28. 0.110E-04 0.750E-03 4 > 0 ₹

0.241E-03

### CONTINUE

Y 30. 37. 60. 104. 0. 0.109E-01 0.419E-02 0.174E-03 0.669E-06 -24. 0.179E-03 0.116E-03 0.152E-04 0.150E-06

# (ADSORBED CHEMICAL CONC. = 0.1190E+01 * DISSOLVED CHEMICAL CONC.) DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.1402E+06 HRS

0.00 = 2

0.253E-01 0.241E-03 0.510E-01 0.288E-03 -28. 0. 5. 10. 12. 15. 18. 0.140E-02 0.529E+00 0.512E+00 0.312E+00 0.214E+00 0.120E+00 0.710E-01 0.161E-04 0.272E-03 0.320E-03 0.340E-03 0.338E-03 0.327E-03 0.306E-03 0.110E-04 0.750E-03 .3 > 0 2

### CONTINUE

0.174E-03 0.670E-06 60. 0.109E-01 0.419E-02

0.152E-04 0.151E-06 0.116E-03 0.179E-03 > 0. ₹

# (ADSORBED CHEMICAL CONC. = 0.1190E+01 * DISSOLVED CHEMICAL CONC.) DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.1489E+06 HRS

0.00

0.241E-03 0.253E-01 0.288E-03 0.510E-01 0.306E-03 0.710E-01 ∞ 0.120E+00 0.327E-03 0.140E-02 0.529E+00 0.512E+00 0.312E+00 0.214E+00 0.338E-03 0.320E-03 0.340E-03 0.161E-04 0.272E-03 -28. 0.750E-03 0.110E-04 <u>...</u> ≻ 0. -24.

### CONTINUE

Y 30. 37. 60. 104. 0. 0.109E-01 0.419E-02 0.174E-03 0.670E-06 -24. 0.179E-03 0.116E-03 0.152E-04 0.151E-06

STEADY STATE SOLUTION HAS BEEN OBTAINED BEFORE FINAL SIMULATING TIME.

### A-28

# DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.1577E+06 HRS (ADSORBED CHEMICAL CONC. = 0.1190E+01 * DISSOLVED CHEMICAL CONC.)

-31. -28. 0. 5. 10. 12. 15. 18. 20. 24. 0.750E-03 0.140E-02 0.529E+00 0.512E+00 0.214E+00 0.120E+00 0.710E-01 0.510E-01 0.253E-01 0.253E-03 0.320E-03 0.320E-03 0.338E-03 0.327E-03 0.320E-03 0.241E-03 Y 30. 37. 60. 104. 0. 0.109E-01 0.419E-02 0.174E-03 0.670E-06 -24. 0.179E-03 0.116E-03 0.152E-04 0.151E-06 CONTINUE × 8 ≻ 0. -24.

A-29

0.00

Table A-6. AT123D Fate and Transport Model Input and Output Values for Benzene (Concentration vs. Time) at the Former UST 117, Building 7002 Site

NO. OF POINTS IN X-DIRECTION
AQUIFER DEPTH, = 0.0 FOR INFINITE DEEP (METERS) 0.1524E+02 AQUIFER WIDTH, = 0.0 FOR INFINITE WIDE (METERS) 0.0000E+00 BEGIN POINT OF X-SOURCE LOCATION (METERS)0.9100E+01 END POINT OF X-SOURCE LOCATION (METERS) 0.9100E+01 BEGIN POINT OF Y-SOURCE LOCATION (METERS)0.6100E+01 END POINT OF Y-SOURCE LOCATION (METERS) 0.6100E+01 BEGIN POINT OF Z-SOURCE LOCATION (METERS) 0.0000E+00 END POINT OF Z-SOURCE LOCATION (METERS) 0.0000E+00
POROSITY
MOLECULAR DIFFUSION MULTIPLY BY POROSITY (M**2/HR) 0.3530E-05 DECAY CONSTANT (PER HOUR)
RETARDATION FACTOR

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.0000E+00 HRS (ADSORBED CHEMICAL CONC. = 0.7900E-01 * DISSOLVED CHEMICAL CONC.)

(ADSORBED CHEMICAL CONC. = 
$$0.7$$
)
$$Z = 0.00$$

$$X$$

$$Y \qquad 0. \qquad 46.$$

0.000E+00

0.000E+00

Ö

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.4380E+05 HRS (ADSORBED CHEMICAL CONC. = 0.7900E-01 * DISSOLVED CHEMICAL CONC.)

$$Z = 0.00$$
 X Y  $0.46.$  0.653E+00 0.345E-01

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.4818E+05 HRS (ADSORBED CHEMICAL CONC. = 0.7900E-01 * DISSOLVED CHEMICAL CONC.)

$$Z = 0.00$$
 X Y 0. 46.

0.468E-01

0.289E+00

Ö

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.5256E+05 HRS (ADSORBED CHEMICAL CONC. = 0.7900E-01 * DISSOLVED CHEMICAL CONC.)

$$Z = 0.00$$
  
Y 0 46.

0.672E-01

0.176E+00

Ö

×

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.5694E+05 HRS (ADSORBED CHEMICAL CONC. = 0.7900E-01 * DISSOLVED CHEMICAL CONC.)

$$Z = 0.00$$
 X  $Y = 0.0114E+00 0.840E-01$ 

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.6132E+05 HRS (ADSORBED CHEMICAL CONC. = 0.7900E-01 * DISSOLVED CHEMICAL CONC.)

SORBED CHEMICAL CONC. = (Z = 0.00)

0.891E-01

0.759E-01

Ö.

46.

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.6570E+05 HRS (ADSORBED CHEMICAL CONC. = 0.7900E-01 * DISSOLVED CHEMICAL CONC.)

Z = 0.00

Υ 0. 46.

0.843E-01

0.516E-03

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.7008E+05 HRS (ADSORBED CHEMICAL CONC. = 0.7900E-01 * DISSOLVED CHEMICAL CONC.)

Z = 0.00 X X Y 0. 46.

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.7446E+05 HRS (ADSORBED CHEMICAL CONC. = 0.7900E-01 * DISSOLVED CHEMICAL CONC.)

0.742E-01

0.356E-01

Z = 0.00Y 0. 46.

0.623E-01

×

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.7884E+05 HRS (ADSORBED CHEMICAL CONC. = 0.7900E-01 * DISSOLVED CHEMICAL CONC.)

Z = 0.00Y 0. 46.

×

0.174E-01 0.506E-01

Ö

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A-32 (Revised 11-05-01)

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.8322E+05 HRS (ADSORBED CHEMICAL CONC. = 0.7900E-01 * DISSOLVED CHEMICAL CONC.)

$$Z = 0.00$$
 X  $Y = 0.00$  46.

0.402E-01

0.123E-01

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.8760E+05 HRS (ADSORBED CHEMICAL CONC. = 0.7900E-01 * DISSOLVED CHEMICAL CONC.)

$$Z = 0.00$$
 X Y 0. 46.

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.9198E+05 HRS (ADSORBED CHEMICAL CONC. = 0.7900E-01 * DISSOLVED CHEMICAL CONC.)

$$Z = 0.00$$
  
Y 0. 46.

×

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.9636E+05 HRS (ADSORBED CHEMICAL CONC. = 0.7900E-01 * DISSOLVED CHEMICAL CONC.)

$$Z = 0.00$$
 X Y 0. 46.

0.187E-01

0.446E-02

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.1007E+06 HRS (ADSORBED CHEMICAL CONC. = 0.7900E-01 * DISSOLVED CHEMICAL CONC.)

$$Z = 0.00$$
  
 $Y = 0.00$ 

×

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.1051E+06 HRS (ADSORBED CHEMICAL CONC. = 0.7900E-01 * DISSOLVED CHEMICAL CONC.)

$$Z = 0.00 = Z$$

0. 46.

0.108E-01

0.230E-02

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.1095E+06 HRS (ADSORBED CHEMICAL CONC. = 0.7900E-01 * DISSOLVED CHEMICAL CONC.)

$$Z = 0.00 = Z$$

0.811E-02

0.166E-02

0

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.1139E+06 HRS (ADSORBED CHEMICAL CONC. = 0.7900E-01 * DISSOLVED CHEMICAL CONC.)

$$Z = 0.00$$

×

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.1183E+06 HRS (ADSORBED CHEMICAL CONC. = 0.7900E-01 * DISSOLVED CHEMICAL CONC.)

$$Z = 0.00$$

 $\times$ 

Ö

DISTRIBUTION OF DISSOLVED CHEMICALS IN PPM AT 0.1226E+06 HRS (ADSORBED CHEMICAL CONC. = 0.7900E-01 * DISSOLVED CHEMICAL CONC.)

$$Z = 0.00$$

0,

0. 0.626E-03 0.341E-02 STEADY STATE SOLUTION HAS NOT BEEN REACHED BEFORE FINAL SIMULATING TIME.

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Former UST 117, Building 7002 Hunter Army Airfield

TABLE A-7. GEOTECHNICAL PARAMETERS FOR THE FORMER UST 117, BUILDING 7002 SITE

				7	~
	Per-	meability	(cm/c)	(5117.3)	1.47E-08
		Porosity.	`	***	070
		Specific	Gravity		265
Total	Organic	Carbon	(%)		0
	Moisture	Content	(%)		28.9
•		Sample   Classifi-	cation		ij
		Sample	Depth		12.0 to 4.0
			Sample ID		BFGT11
			Tank ID   Facility ID   Sample ID   I		9-025113*1
			Tank ID	-	117
	;	Building	Ą	6000	7007

NOTE: CH = Sandy, fat clay.

UST = Underground storage tank.