N40003.AR.000989
PUERTO RICO NA
5090.3a

133236.PM.PO/D1/01

Final

Additonal Data Collection Investigation Report

Tow Way Fuel Farm

Naval Station Roosevelt Roads
RCRA/HSWA Permit No. PR2170027203
Ceiba, Puerto Rico

Prepared For

Department of the Navy
Atlantic Division
Naval Facilities Engineering Command

Norfolk, Virginia

Contract No. N62470-95-D-6007
CTO-0034

April 22, 2003

Prepared by

CH2M HILL
Federal Group, Ltd.

Baker
Environmental, Inc.

CDM
Federal Programs Corp.

FINAL

ADDITIONAL DATA COLLECTION INVESTIGATION REPORT TOW WAY FUEL FARM

NAVAL STATION ROOSEVELT ROADS
RCRA/HSWA PERMIT NO. PR2170027203
CEIBA, PUERTO RICO

CONTRACT TASK ORDER 0034

APRIL 22, 2003

Prepared for:

DEPARTMENT OF THE NAVY
ATLANTIC DIVISION
NAVAL FACILITIES
ENGINEERING COMMAND
Norfolk, Virginia

Under the:

LANTDIV CLEAN Program
Contract N62470-95-D-6007

Prepared by:

CH2M Hill
Herndon, Virginia

BAKER ENVIRONMENTAL, INC.
Coraopolis, Pennsylvania

TABLE OF CONTENTS

Page

LIST OF ACRONYMS AND ABBREVIATIONS vi

1.0 INTRODUCTION 1-1
1.1 CMS Facility History 1-1
1.2 Objectives 1-1
1.3 Report Organization 1-2

2.0 PHYSICAL CHARACTERISITICS OF STUDY AREA 2-1
2.1 Climatology 2-1
2.2 Topography 2-1
2.3 Geology 2-2
2.3.1 Soils 2-2
2.3.2 Regional Geology 2-3
2.3.3 SWMU 7/8 Site Geology 2-3
2.4 Hydrology and Hydrogeology 2-4
2.4.1 Regional Hydrology 2-4
2.4.2 SWMU 7/8 Hydrogeology 2-5

3.0 FIELD INVESTIGATION 3-1
3.1 Sampling Activities at SWMU 7/8 3-1
3.2 Soil Sampling Procedures 3-1
3.2.1 Surface Soil Sampling Procedures 3-1
3.2.2 Subsurface Soil Sampling Procedures 3-2
3.2.3 Drilling Procedures 3-2
3.3 Groundwater Investigation Procedures 3-2
3.3.1 Monitor Well Installation Procedures 3-2
3.3.2 Well Development Procedures 3-3
3.3.3 Groundwater Sampling Procedures 3-4
3.3.4 Slug Test Procedures 3-4
3.4 Surface Water and Sediment Sampling Procedures 3-4
3.4.1 Base Background Surface Water Sampling Procedures 3-5
3.4.2 SWMU 7/8 Surface Water Sampling Procedures 3-5
3.4.3 Base Background Sediment Sampling Procedures 3-5
3.4.4 SWMU 7/8 Sediment Sampling Procedures 3-5
3.5 Free Product Sampling Procedures 3-6
3.6 IDW Sampling Procedures 3-6
3.6.1 Aqueous Sampling 3-6
3.6.2 Non-Aqueous Sampling 3-6
3.7 Quality Assurance/Quality Control Procedures 3-7
3.8 Decontamination Procedures 3-7

TABLE OF CONTENTS
(Continued)

4.0 ANALYTICAL RESULTS 4-1
4.1 Soils Investigation 4-1
4.1.1 Surface Soil Analytical Results 4-1
4.1.2 Subsurface Soil Analytical Results 4-2
4.2 Groundwater Investigation 4-2
4.2.1 VOC and SVOC Results 4-2
4.2.2 Metals Results 4-3
4.2.3 Natural Attenuation Parameter Results 4-3
4.3 Surface Water and Sediment Investigation 4-6
4.3.1 Base Background Surface Water Analytical Results 4-6
4.3.2 SWMU 7/8 Surface Water Analytical Results 4-7
4.3.3 Base Background Sediment Analytical Results 4-7
4.3.4 SWMU 7/8 Sediment Analytical Results 4-8
4.4 Free Product Level and Analytical Results 4-9
4.5 Investigation Derived Waste 4-9
4.5.1 Aqueous Sampling Results 4-9
4.5.2 Non-Aqueous Sampling Results 4-10
4.6 Quality Assurance/Quality Control Results 4-10
4.6.1 Equipment Rinsate Samples 4-10
4.6.2 Field Blank Samples 4-10
4.6.3 Trip Blank Samples 4-11
4.7 Data Validation 4-11

5.0 CONCLUSIONS 5-1

6.0 REFERENCES 6-1

TABLES

2-1 Summary of Groundwater Elevations and Product Thickness Measurements
2-2 Summary of Slug Test Results

3-1 Summary of Sampling and Analytical Program
3-2 Laboratory Analytical Methods
3-3 Summary of Soil Boring and Well Construction Details
3-4 Summary of Well Development Information
3-5 Summary of Groundwater Field Parameters
3-6 Groundwater Laboratory Analytical Methods
3-7 Summary of Sampling and Analytical Program – Base Background
3-8 Summary of Base Background Surface Water Field Parameters
3-9 Summary of Surface Water Field Parameters
3-10 Free Product and Laboratory Analytical Methods
3-11 Summary of Sampling and Analytical Program – Investigative Derived Waste
3-12 Summary of Sampling and Analytical Program – Quality Assurance/Quality Control

4-1 Summary of Organic Detections in Surface Soil
4-2 Summary of Inorganic Detections in Surface Soil

DRAFT FINAL

ADDITIONAL DATA COLLECTION INVESTIGATION REPORT TOW WAY FUEL FARM

NAVAL STATION ROOSEVELT ROADS
RCRA/HSWA PERMIT NO. PR2170027203
CEIBA, PUERTO RICO

CONTRACT TASK ORDER 0034

JANUARY 3, 2003

Prepared for:

DEPARTMENT OF THE NAVY
ATLANTIC DIVISION
NAVAL FACILITIES
ENGINEERING COMMAND
Norfolk, Virginia

Under the:

LANTDIV CLEAN Program
Contract N62470-95-D-6007

Prepared by:

CH2M Hill
Herndon, Virginia

BAKER ENVIRONMENTAL, INC.
Coraopolis, Pennsylvania

TABLE OF CONTENTS
(Continued)

4-3 Summary of Organic Detections in Subsurface Soil
4-4 Summary of Organic Detections in Groundwater
4-5 Summary of (Total) Inorganic Detections in Groundwater
4-6 Summary of (Dissolved) Inorganic Detections in Groundwater
4-7 Summary of Organic Detections in Base Background Surface Water
4-8 Summary of (Total) Inorganic Detections in Base Background Surface Water
4-9 Summary of (Dissolved) Inorganic Detections in Base Background Surface Water
4-10 Summary of Organic Detections in Surface Water
4-11 Summary of (Total) Inorganic Detections in Surface Soil
4-12 Summary of (Dissolved) Inorganic Detections in Surface Water
4-13 Summary of Organic Detections in Base Background Sediment
4-14 Summary of Inorganic Detections in Base Background Sediment
4-15 Summary of Organic Detections in Sediment
4-16 Summary of Inorganic Detections in Sediment
4-17 Summary of Detections in Free Product Samples
4-18 Summary or Organic Detections in Investigative Derived Waste
4-19 Summary of Inorganic Detections in Investigative Derived Waste
4-20 Summary of Organic Detections in Equipment Rinsate Samples
4-21 Summary of (Total) Inorganic Detections in Equipment Rinsate Samples
4-22 Summary of Organic Detections in Field Blank Samples
4-23 Summary of (Total) Inorganic Detections in Field Blank Samples
4-24 Summary of Organic Detections in Base Background Trip Blank Sample
4-25 Summary of Organic Detections in Trip Blank Samples

FIGURES

1-1 Zone Location Map

2-1 Corrected Groundwater Surface Contour Map (February 28, 2002)

3-1 Surface and Subsurface Soil Sampling Locations
3-2 Groundwater Sampling Locations
3-3 Slug Test Monitor Well Locations
3-4 Base Background Open Water Marine Environment Sampling Locations
3-5 Surface Water and Sediment Sampling Locations

4-1 Benzene in Groundwater – Tow Way Fuel Farm
4-2 TCE in Groundwater – Tow Way Fuel Farm
4-3 Fluorene in Groundwater – Tow Way Fuel Farm
4-4 Naphthalene in Groundwater – Tow Way Fuel Farm
4-5 2-Methylnaphthalene in Groundwater – Tow Way Fuel Farm
4-6 Free Product Thickness and Extent Map (February 28, 2002)

LIST OF APPENDICES

A Wellhead Test Data (Slug Tests)
B Chain-of-Custody Records
C Test Boring and Well Construction Records
D Field Notes from Additional Data Collection Investigation
E Analytical Laboratory Results
F IDW Disposal Invoice
G QA/QC Laboratory Results
H Data Validation Report Narratives

LIST OF ACRONYMS AND ABBREVIATIONS

ASTM	American Society of Testing Materials
Baker	Baker Environmental, Inc.
BETX	Benzene, Toluene, Ethylbenzene, and Xylene
bgs	below ground surface
C	Celsius
$CACO_3$	Calcium Carbonate
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
cis 1,2-DCE	1,2-Dichloroethene
CLP	Contract Laboratory Procedures
CMS	Corrective Measures Study
CMSI	Corrective Measures Study Investigation
CO_2	Carbon Dioxide
CTO	Contract Task Order
CVOC	Chlorinated Volatile Organic Compound
D	duplicate
DCA	Dichloroethane
DFM	Diesel Fuel Marine
DO	Dissolved Oxygen
DoN	Department of the Navy
DOT	Department of Transportation
DRMO	Defense Reutilization Marketing Office
ER	Equipment Rinsate
F	Fahrenheit
feet/foot	feet per foot
FB	Field Blank
ft/bgs	feet below ground surface
ft/day	feet per day
g/ml	grams per milliliter
HSWA	Hazardous and Solid Waste Amendments
ID	inside diameter
IDW	Investigation Derived Waste
IR	Installation Restoration
LANTDIV	Atlantic Division, Naval Facilities Engineering Command
LNAPL	Light Non-Aqueous Phase Liquid
µg/kg	micrograms per kilogram
mgd	million gallons per day
mg/kg	milligrams per kilogram
mg/L	milligrams per liter

LIST OF ACRONYMS AND ABBREVIATIONS
(Continued)

MNA	Monitored Natural Attenuation
mV	millivolts
nM	nanoMolar
NRC	National Research Council
NSRR	Naval Station Roosevelt Roads
OD	outside diameter
OSWER	Office of Solid Waste and Emergency Response
PAH	Polynuclear Aromatic Hydrocarbons
PCBs	Polychlorinated Biphenyls
PCE	Tetrachloroethene
PID	Photoionization Detector
PSH	Phase Separated Hydrocarbons
PVC	polyvinyl chloride
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
redox	oxidation-reduction potential
RFI	RCRA Facility Investigation
SAB	Scientific Advisory Board
SOPs	Standard Operating Procedures
SOW	Statement of Work
SU	Standard Unit
SVOC	Semivolatile Organic Compound
SWMU	Solid Waste Management Unit
TB	Trip Blank
TCA	Trichloroethane
TCE	Trichloroethene
TCLP	Toxicity Characteristic Leachate Procedure
TEA	Terminal Electron Acceptor
TOC	Total Organic Carbon
TWFF	Tow Way Fuel Farm
USEPA	United States Environmental Protection Agency
USGS	United States Geological Society
UST	Underground Storage Tank
VC	Vinyl Chloride
VOC	Volatile Organic Compound

1.0 INTRODUCTION

This document presents results from the Additional Data Collection Investigation performed in the first quarter 2002, for Solid Waste Management Unit (SWMU) 7/8, Naval Station Roosevelt Roads (NSRR), Ceiba, Puerto Rico. This report is prepared under the Corrective Action provisions of the NSRR's Resource Conservation and Recovery Act (RCRA) Permit No. PR2170027203. This report has been prepared by Baker Environmental, Inc. (Baker) under contract to the Atlantic Division, Naval Facilities Engineering Command (LANTDIV) Contract Number N62470-95-D-6007, Contract Task Order (CTO) 034.

On October 20, 1994 the United States Environmental Protection Agency (USEPA) Region II issued a Final RCRA Part B Permit [RCRA/ Hazardous and Solid Waste Amendments (HSWA) Permit No. PR2170027203)] to NSRR. This permit contains requirements for the Corrective Measures Study (CMS) activities conducted at NSRR. Prior to 1993, environmental activities at NSRR, exclusive of underground storage tanks (USTs), were conducted in compliance with Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) regulations under the Department of the Navy's (DoN's) Installation Restoration (IR) Program. The RCRA Part B Permit, issued for the Defense Reutilization and Marketing Office (DRMO) at NSRR, included provisions for corrective action under the HSWA provisions of RCRA.

1.1 CMS Facility History

The Tow Way Fuel Farm (TWFF) has been the subject of numerous investigations, even before the implementation of RCRA corrective action requirements. A full RCRA Facility Investigation (RFI) (Baker 1997) was performed at the site with a subsequent report submitted to and approved by the EPA. Additional investigations since the RFI include the Additional Well Installation (Baker 1998), Corrective Measures Study Investigations (CMSI) (Baker 1999), Hydraulic Characteristics Evaluation (McLaren Hart, 1999), TCE Investigation Report (Baker 2000), and Pier 1 Report of Findings authored by McLaren-Hart (McLaren-Hart 2000). As a result of these investigations and in support of ongoing efforts on the CMS, additional data requirements were identified. On December 19, 2000, a meeting to present a conceptual approach on gathering the necessary data to support the CMS was held at EPA Region II New York office. In addition, on May 23, 2001 discussions continued on data collections to include data for the groundwater model being developed. It was agreed by all that a work plan to address the data needs would be developed. The Final Work Plan for Additional Data Collection was submitted to the EPA on September 27, 2001 and EPA approved on January 3, 2002. The additional data collection fieldwork was performed from January 6, 2002 to March 12, 2002.

1.2 Objectives

The TWFF was originally divided into five zones in the Final Additional Data Collection Work Plan (Baker, 2001) to facilitate understanding of the additional work to be performed. Upon completion of the Additional Data Collection Investigation, a sixth zone was added to the TWFF as presented on Figure 1-1. Each zone represents a portion of the TWFF that has been impacted by past operations. The first three zones (Zones 1, 2, and 6) are associated with the presence of phase separated hydrocarbons (PSH) on the water table. Zone 4 is associated with the dissolved trichloroethene (TCE) plume associated with monitor well 7MW07, while Zone 5 contains a dissolved benzene plume underlying Zones 1 & 2 in association with PSH.

The objective of this investigation was to:

- Determine the extent of contamination from the PSH release around Pier 1 (Proposed Zone 3).
- Establish down-gradient compliance well for the dissolved TCE in and around 7MW07 (Zone 4).
- Establish a compliance well down-gradient of monitor well 7MW08 which now contains PSH.
- Establish replacement wells in areas where existing monitor wells contain well screens, which remain below the apparent groundwater interface the majority of time.
- Determine the extent of PSH contamination within the TWFF (Zones 1, 2, and 3), utilizing the replacement wells.
- Verify the presence of hydrocarbons in the unsaturated zone and on the groundwater table down-gradient of active Tanks 82 and 83, utilizing the replacement wells.
- Determine hydrogeologic boundaries to the north and west of the TWFF.
- Fingerprint the light non-aqueous phase liquid (LNAPL) in the three zones where PSH was expected (Zones 1, 2, and 3 if available).
- Collect and analyze groundwater associated with dissolved phase constituents (Zones 4 and 5).
- Collect and analyze groundwater down-gradient from UGW02 that recently had measurable PSH in the monitor well.
- Characterize groundwater quality in monitor wells south of Forrestal Drive.
- Characterize surface water quality within the Ensenada Honda down-gradient from the TWFF.
- Characterize surface soil quality at the TWFF.
- Determine the extent of polynuclear aromatic hydrocarbons (PAH) in the soil and groundwater in the upper TWFF.
- Characterize sediment quality within the Ensenada Honda down-gradient from the TWFF.
- Gather aquifer information for the development of a groundwater model.

The objective of this report is to present the data collected during the investigation.

1.3 Report Organization

Section 1.0 of this document includes the introduction, CMS Facility History, and the objectives of this report. Section 2.0 provides a description of the field investigation conducted from January 2002 to March 2002. Section 3.0 provides a description of the physical characteristics of the TWFF, including climatology, topography, geology, and hydrology. Section 4.0 also discusses the sampling procedures for all media including environmental samples, free product samples, Investigation Derived Waste (IDW) samples, and quality assurance/quality control (QA/QC) samples, as well as decontamination procedures. Section 4.0 discusses the analytical results for all samples collected including the media listed above. Section 5.0 provides references used in this report.

2.0 PHYSICAL CHARACTERISTICS OF STUDY AREA

The physical setting of NSRR was documented in the 1984 IAS (NEESA Document 13-051). This information is summarized below.

2.1 Climatology

The climate of the Roosevelt Roads area is characterized as warm and humid, with frequent showers occurring throughout the year. A major factor affecting the weather is the pattern of trade winds associated with the Bermuda High, the center of which is in the vicinity of 30^0 North, 30^0 West. The prevailing wind direction reflects the easterly trade winds. The area receives a surface flow varying between the northeast to the southeast about 75 percent of the year, and as much as 95 percent of the time in July when the easterly winds are strongest. The differential heating of the land and sea during the day tends to give a more northerly component to the flow on the northern side of the island and a more southerly component on the southern side. During the night, a land breeze causes a prevailing southeasterly flow in the north and a prevailing northeasterly flow over the southern coast. The mean annual wind velocity is 5.5 knots, with a minimum in November and a maximum in August. Gales associated with westward moving disturbances in the trade winds or hurricanes passing either north or south of the area have the highest probability of occurrence from June through October.

Uniform temperatures prevail, with small diurnal ranges as a result of insular exposure and the relatively small land areas. The warmest months are August and September, while the coolest are January and February. Mean annual maximum temperatures range from 82.0^0 Fahrenheit (F) in January to 88.2^0 F in August. The mean annual minimum temperatures vary from 64.0^0 F in January to 73.2^0 F in June. The highest maximum temperature recorded was 95^0 F, while the lowest minimum was 59^0 F. Rain usually occurs at least nine days in every month, with an average of 60 inches per year although a dry winter season occurs from December through April. About 22 thunderstorm-days occur per year, with maximum frequencies of three days per month from May through October.

In late summer, the mean sky cover begins a steady decrease from a monthly maximum average of 6.5-tenths coverage in September to a minimum monthly average of 4.4-tenths coverage in February. From March through August, the monthly average clouds over increases steadily from 4.5- to 6.0-tenths coverage during the period. Over the open sea, a maximum of clouds (usually broken stratocumulus) occurs during early morning, with the skies clearing or becoming scattered with cumulus by afternoon. Completely clear or overcast skies are rare during daylight hours, while clear skies frequently occur at night.

The hurricane season is from mid-June through mid-September; maximum winds exceed 95 knots during severe hurricanes. An average of two tropical storms per year occur in the study area, one of which usually reaches hurricane intensity.

2.2 Topography

The regional area of Roosevelt Roads consists of an interrupted, narrow coastal plain with small valleys extending from the Sierra de Luquillo range, which has been severely eroded by streams into valleys several hundreds of feet deep. Slopes of up to 60^0 are common.

In the immediate area of the station, elevations range from sea level to approximately 295 feet. Immediately to the north of the NSRR boundary, the hills rise abruptly to heights of 800 to 1,050 feet above sea level, with the tallest peak located within two kilometers of the station boundary. There is a series of three hilly areas on the station, two of which separate the southern airfield area from the Port/Industrial, Housing and Personnel Support areas. The third set of hills is in the Bundy area. These

ridgelines not only separate sections of the station, but also dictate the degree of allowable development. The ridgeline south of the airfield provides an excellent barrier which effectively decreases the aircraft-generated noise which reaches the Unaccompanied Enlisted Personnel Housing areas to an acceptable level. Relief is low along the shoreline. Lagoons and mangrove swamps are common.

2.3 Geology

The following subsections present a description of the general geology at NSRR and site-specific geologic information obtained at the TWFF.

2.3.1 Soils

The soil associations found at NSRR are predominantly of two types typical of humid areas, namely the Swamps-Marshes Association and the Mabi-Rio-Arriba-Cayagua Association, as well as the Descalabrado-Guayama Association, which is typical of dry areas. In addition, isolated areas of the Caguabo-Mucara-Naranjito Association, the Coloso-Toa-Bajura Association, and the Jacana-Amelia-Fraternidad Association are found at NSRR.

The Swamps-Marshes and Mabi-Rio-Arriba-Cayagua associations cover over one half of NSRR's surface area and are equally distributed. The remaining area is covered primarily by the Descalabrado-Guayama and Caguabo-Mucara-Naranjito associations.

The Swamps-Marshes Association consists of deep, very poorly drained soils. This association is found in level or nearly level areas that are slightly above sea level but are wet, and when the tide is high, are covered or affected by saltwater or brackish water. The soils are sandy or clayey, and contain organic materials from decaying mangrove trees. They are underlain by coral, shells and marl at varying depths. The high concentration of salt inhibits the growth of all vegetation except mangrove trees, and in small scattered patches, other salt-tolerant plants.

The Mabi-Rio-Arriba-Cayagua Association consists generally of deep, somewhat poorly drained and moderately well-drained, nearly level to moderately steep soils found on foot and side slopes, terraces and alluvial fans. Soils of this association at NSRR are basically clayey.

The Descalabrado-Guayama Association generally consists of shallow, well-drained, strongly sloping to very steep soils on volcanic uplands. Soils of this association are found primarily in the hilly areas located directly inland and adjacent to the soils of the Swamps-Marshes Association.

The Caguabo-Mucara-Naranjito Association consists generally of shallow and moderately deep, well-drained, sloping to very steep soils on volcanic uplands. This association consists of soils which formed in residual material that weathered from volcanic rocks. This association is represented at the station by soils of the Sabana series, which are found on the side slopes and the hilly terrain west of Langley Drive in the Fort Bundy area. These soils are suited for pasture and woodland. Steep slopes, susceptibility to erosion and depth to bedrock are the main limitations for farming, and for recreation and urban areas.

The Coloso-Toa-Bajura Association consists of deep, moderately well drained to poorly drained, nearly level soils found on floodplains. This soil association extends along the western boundary of NSRR and around the airfield. The soils of this association formed in fine-textured and moderately fine-textured sediment of mixed origin on floodplains. The Coloso soils are deep and somewhat poorly drained; the Toa soils are deep and moderately well drained; and the Bajura soils and Maunabo soils are deep and poorly drained. The Reilly soils, also part of this association, are shallow sand and gravel and are excessively drained; they lie adjacent to streams. The minor soils are Talante, Vivi, Fortuna, Vega Alta

and Vega Baja. The Talante, Vivi, Fortuna and Vega Baja soils are found on floodplains, while the Vega Alta soils occupy slightly higher positions on terraces.

The Jacana-Amelia-Fraternidad Association consists generally of moderately deep and deep, well-drained and moderately well-drained, nearly level to strongly sloping soils on terraces, alluvial fans and foot slopes. This association is represented at NSRR by soils of the Jacana series, which consist of moderately deep, well-drained soils found on the foot slopes and low rolling hills along Langley Drive and just east of the airfield. These soils formed in fine-textured sediment and residuum derived from basic volcanic rocks.

2.3.2 Regional Geology

The underlying geology of NSRR area is predominantly volcanic (composed of lava and tuff), as well as sedimentary (rocks derived from discontinuous beds of limestone). These rocks all range in age from early Cretaceous to middle Eocene. The volcanic rocks and interbedded limestones have been complexly faulted, folded, metamorphosed and variously intruded by dioritic rocks. This complex geological structuring occurred sometime after the deposition of the limestone during the middle Tertiary, when Puerto Rico was separated from the other major Antillean Islands by block faulting, and was arched, uplifted and tilted to the northeast. Culebra, Vieques, and the Virgin Islands are part of the Puerto Rican block; they are separated from the main island simply because of the drowning that resulted from the tilting.

In addition to the predominant volcanic and sedimentary rock, the northwestern and western sectors of the base are underlain by unconsolidated alluvial and older deposits from the Quaternary period.

The primary geologic formations on and near NSRR are various beach deposits, alluvium, quartz diorite and granodiorite, quartz keratophyre, the Daguao Formation, and the Figuera Lava. NSRR is traversed by the Peña Pobre fault zone.

2.3.3 SWMU 7/8 Site Geology

The underlying geology of the area at NSRR is predominantly volcanic as well as sedimentary. The volcanic rocks and interbedded limestone have been complexly faulted, folded, metamorphosed and variously intruded by dioritic rocks. The primary geologic formations on and near NSRR are various beach deposits, alluvium, quartz diorite and granodiorite, aquartz keratophyre, the Daguao Formation, and the Figuera Lava.

The geology in the area of TWFF can be divided into four general units:

1. Surficial fill material
2. Residual soil/saprolite
3. Bedrock (weathered and unweathered)
4. Marine sediments

The surficial fill material is present mainly in the lower portions of TWFF, near Ensenada Honda. Fill material is also present in the tank farm area from extensive cutting and filling of the hillside to accommodate the fuel tanks and roadways. The fill is generally composed of fine to medium grained sand with varying amounts of silt and clay. The fill material near the piers and bulkheads tends to contain a significant amount of rocks and boulders. The fill material is generally encountered at the ground surface to depths below the ground surface ranging from 2 feet to over 25 feet. The source of the fill material has not been definitively determined but it is most likely either natural soil excavated during tank construction or dredge material from Ensenada Honda.

An often relatively thick layer of residual soil is present mainly on the hillside of TWFF, was formed in place by the in-situ decomposition of bedrock. Where the soil retains remnants of its original structure, it is known as saprolite. This residual soil was encountered at all of the soil borings and monitoring wells advanced at the site. This zone is comprised of clayey silt and silty clay, with fine to course and rock fragments. The percentage of rock fragments steadily increases with depth until the zone grades to weathered rock fragments with occasional clay seams and eventually to competent bedrock. The thickness of this unit is variable and in places is in excess of 40 feet.

The third zone identified consists of slightly weathered to unweathered bedrock. The bedrock is described as a gabbro, very broken to broken, massively bedded, hard to very hard and highly fractured due to tectonic deformation and subsequent weathering. Bedrock typically occurs beneath the residual soil, fill, or marine sediments. Occasionally, it is present near the ground surface (e.g., in the vicinity of well 7MW08).

A fourth zone, consisting of unconsolidated material, was identified during the Corrective Measures Study Investigation (Baker, 1999) near the Ensenada Honda. This material consists of naturally occurring marine sediments, primarily silt with lesser amounts of sand and clay with coral and shell fragments.

2.4 Hydrology and Hydrogeology

The following sections present a description of the hydrologic conditions that exist at NSRR. Both regional conditions and site specific conditions at TWFF are discussed.

2.4.1 Regional Hydrology

The surface waters that flow across the northeastern plain of Puerto Rico, where the Station is located, originate on the eastern slopes of the Sierra de Luquillo mountains. Surface runoff is channeled into various rivers and streams which eventually flow into the Caribbean Sea. The Daguao River and Quebrada Seca Stream (a tributary to Rio Daguao) collect surface waters from the hills immediately north of the station and, in periods of heavy rain, on-station flooding occurs. The Daguao-Quebrada Seca watershed comprises an area of approximately 7.6 square miles (4,900 acres), and the river falls some 700 feet from its source to sea level. Increased development in the Town of Ceiba, especially in areas adjacent to the station's northern boundary, has significantly increased the surface runoff reaching the station, causing ponding and erosion in the Boxer Drive area. Boxer Drive, for a major portion of its length, is subject to surface water flooding, as are Hangar 200 and AIMD Hangar 379 and adjacent apron areas. This condition has been alleviated by the construction of the new highway (Route 3) immediately outside the fence and the realignment of Boxer Drive both with attendant stormwater management features.

In the low-lying shore areas, seawater flooding results from storms, wind and abnormally high tides. The tidal ranges in the Roosevelt Roads area are rather small, with a maximum spring range of less than three feet. The tides are semidiurnal and have a usual range of about one foot in the main harbor of the station.

Little information exists concerning the geohydrology of NSRR. The only known potential sources of groundwater lie in lenticular beds of clay, sand and gravel, and rock fragments which occur at a depth of less than 30 meters. No wells have been developed on-base from these layers. Some wells had been developed up-gradient of the station in Ceiba, some three kilometers from base headquarters, but were abandoned due to high levels of salinity.

The quality of surface waters is variable, reflecting the drainage area through which the water flows. Generally, surface waters have high turbidities and bio-organics (naturally occurring organics, such as decay products of vegetable and animal matter) due to the periodic heavy rains which can easily erode soils from steep slopes, exposed areas and disturbed stream beds.
Water from alluvial aquifers along the coast of the station is of a calcium bicarbonate type, and has high concentrations of iron and manganese. The source of these minerals is unknown, but they may be derived from buried swamp or lagoon deposits.

A seawater-freshwater interface is present in the aquifers throughout the coastal areas of Puerto Rico, usually within a short distance inland of the coastline.

The NSRR potable water treatment plant receives its raw water from the Rio Blanco through a 27 inch reinforced concrete pipe that replaced the old, open channel. The intake is located at the foot of the El Yunque rain forest. This buried raw water line traverses a distance of 14 miles from the intake to the station boundary. A raw water reservoir is located at the water treatment plant and has a 45-million gallon capacity. Additionally, there are two fire protection storage reservoirs with a total capacity of 520,000 gallons.

The base has been served for over 30 years by the present treatment facility. The plant (Building 88) has a capacity of 4.0 million gallons per day (mgd). Water flows by gravity into a 45 million gallon raw water storage basin from which the plant draws its supply at a rate of 1.3 mgd on average. Treatment consists of pre-chlorination, coagulation sedimentation, filtration and post-chlorination.

The single potable water supply system provides water to all industrial operations at the facility. The water supply is low in hardness, and, therefore, is an excellent source for industrial uses, particularly in boiler operation and maintenance.

Three hundred acres are used for pasture near Gate 1, and are irrigated as needed. Extensive sprinkling of lawns and green areas is evident throughout the base.

2.4.2 SWMU 7/8 Hydrogeology

There is not a well-defined contact between the residual soil and bedrock described in Section 2.3.3; rather, there is a gradational change of decreased weathering and fracturing with increasing depth. There is no distinct physical or hydraulic boundary between the residual soil and the bedrock. They are therefore considered as one hydrogeologic unit. Slug test data support this conclusion (discussed later in this section).

The pattern of groundwater flow from February 28, 2002 in the residual soil/bedrock hydrogeologic unit is shown in Figure 2-1. It shows a flow pattern consistent with historical patterns (refer to RCRA Quarterly Monitoring Reports). In areas with measurable mobile PSH, a correction was made for the water table depression caused by the PSH. The following relationship, based on Archimedes' Principle, provides a correction factor that allows the water table elevation to be adjusted for the effect of floating PSH.

$$\mathbf{CDTW = MDTW - (r_{PSH}/r_{w})(PT)}$$

Where:

CDTW = corrected depth to water [L]
MDTW = measured depth to water [L]
ρ_{PSH} = density of the PSH [M/L^3]

ρ_w = density of the water, generally 1.0 [M/L^3]
PT = measured PSH thickness [L]

Table 2-1 presents a summary of corrected groundwater elevations and product thickness measurements collected on February 28, 2002. In general, the direction of groundwater flow in the upper TWFF area is toward the northwest and north. A groundwater flow divide is apparent with the addition of wells UGW31, UGW32, and UGW34. Groundwater in the northern portion of the site flows to the north, toward the northern mangrove swamps. A groundwater high is apparent in the vicinity of monitor wells 7MW02A, UGW23, and UGW2. The direction of flow in the lower TWFF area is toward Ensenada Honda. Groundwater mounding is also evident in the vicinity of wells UGW9 and MW4, indicative of groundwater recharge areas.

Hydraulic gradients vary spatially across the TWFF. The hydraulic gradient in the lower portion of TWFF is generally higher than the gradient in the upper portion of the TWFF. In February 28, 2002, the hydraulic gradient in the upper portion was approximately 0.0002 feet per foot (feet/foot) (in the vicinity of UGW34) and approximately 0.02 feet/foot (in the vicinity of UGW11).

A tidal study was conducted during the RFI (Baker, 1997) to determine the effects of the tide on the groundwater flow patterns at TWFF. Fluctuations between high and low readings in the wells in the study were generally less than 0.1 feet, indicating that tidal changes do not significantly affect the flow of groundwater at TWFF.

Several slug tests and two pumping tests have been performed on wells at TWFF. The slug test results are summarized on Table 2-2 (the pumping test results are in Baker's 1997 RFI Report for SWMU 7/8). Hydraulic conductivity estimates from slug test range from 0.02 feet per day (feet/day) to 12.34 feet/day. In general, there appears to be little difference between the hydraulic conductivity estimates from well in fill, marine sediments, residual soil and bedrock. The ranges are similar (two to three orders of magnitude). The averages in each group also are similar (approximately 1.9 feet/day to 3.5 feet/day).

In should be noted that a hydraulic conductivity estimate in well UGW11 from a test conducted in February 2002 appears to be anomalous (138.53 ft/day). That estimate is several orders-of-magnitude higher than the other values. A slug test was also performed at this well in 1992, which provided an estimated hydraulic conductivity of 1.6 feet/day. That appears to be more consistent with estimates from other wells and has been included in the data set. The wellhead test data collected during the Additional Data Collection Field Investigation are provided in Appendix A.

3.0 FIELD INVESTIGATION

The following sections present a description of the environmental field investigation activities conducted at TWFF. All investigations performed and the methodologies used were in accordance with the approved Final Work Plan for Additional Data Collection, as well as the approved RFI Work Plans (Baker, 2001a and 1995).

3.1 Sampling Activities at SWMU 7/8

The additional data collection activities at the TWFF consisted of collecting:

- Surface soil samples at eight soil boring locations and during monitor well installation at four newly installed monitor wells.
- Subsurface soil samples at eight soil boring locations and during monitor well installation at four newly installed monitor wells.
- Groundwater samples from 25 existing monitor wells, as well as 11 monitor wells newly installed during this investigation.
- 9 Surface water and 13 sediment samples from specific identified locations south of the TWFF.
- 9 Background surface water and sediment samples

Environmental sampling locations, as well as slug test locations utilized during this most recent investigation at the TWFF are presented on Figures 3-1 through Figure 3-5 and described in the following subsections. A description of the procedures utilized for collecting the above mentioned samples are also included in the following subsections.

Tables 3-1 presents a listing of all the samples collected at the TWFF during this investigation, along with their respective analyses. Table 3-2 presents a listing of all method numbers used for the analyses listed in Table 3-1.

3.2 Soil Sampling Procedures

The following subsections present a description of the surface and subsurface soil sampling procedures utilized during this field investigation at the TWFF.

3.2.1 Surface Soil Sampling Procedure

The surface soil samples at the TWFF were acquired following the appropriate Baker Standard Operating Procedures (SOPs) mentioned in the EPA approved 1995 RFI Work (Baker, 1995). Surface soil samples were collected using a decontaminated stainless steel spoon. Prior to sample collection, vegetation (grass and roots) was removed from the location. Samples were obtained to a depth of one foot below ground surface (bgs) as required by EPA Region II guidelines. Surface soil samples collected for Volatile Organic Compounds (VOCs) analysis were placed directly into the laboratory prepared container without homogenizing to prevent volatilization. Surface soil samples collected for other analyses were placed on to a disposable tin pan and homogenized prior to placement into their respective containers beginning with Semivolatile Organic Compounds (SVOCs) and ending with the inorganic analyses. Samples were kept in coolers on ice and listed on a chain-of-

custody record until delivered to the laboratory. Chain-of-custody forms for environmental media samples are provided in Appendix B. Table 3-1 presents a listing of all surface soil samples collected as well as their corresponding analyses. Figure 3-1 presents the surface soil locations.

3.2.2 Subsurface Soil Sampling Procedures

Subsurface soil samples were collected during this investigation from soil boreholes and permanent monitor well boreholes. Samples from the soil boreholes and monitor well boreholes were collected using two-inch outside diameter (OD) split-spoons in accordance with the American Society of Testing Materials (ASTM) D-1586 Methods. After the split-spoons were removed from the borehole, they were opened and immediately screened using a photoionization detector (PID). Each soil sample was then placed into new sealable plastic bags which were pre-labeled, and placed in a cooler with ice until completion of the boring. The samples selected for analysis were based on the criteria contained within the approved work plans. Since no VOC analysis was conducted according to Table 3-1, all samples were homogenized on disposable tin pans and placed into SVOC containers. Samples were kept in coolers on ice and listed on a chain-of-custody record (see Appendix B) until delivered to the laboratory. Subsurface soil sampling locations are presented on Figure 3-1.

3.2.3 Drilling Procedures

Drilling operations were performed using either a Mobile B-61 truck mounted drill rig, or a tripod mounted drill rig system. The soil borings were advanced using either a 4-1/4 inch inside diameter (ID) hollow-stem augers for the two-inch monitor wells, or 6-1/4 inch inside diameter hollow-stem augers for the four-inch wells. At the locations where the tripod drilling system was utilized, soil borings were advanced using a 140 pound hammer connected to a rod with a stainless steel split-spoon. Soil samples collected using both methods, were collected continuously (at 2-foot intervals) using 2-inch OD split-spoons. Subsurface soil samples were collected from the ground surface to refusal or the water table, which ever came first. Once the water table was encountered, samples were collected at intervals selected by the Baker Field Geologist based on the criteria contained within the approved work plan. Borehole information pertaining to soil classification, environmental sampling depths, and depth to groundwater measurements were recorded on Soil Boring and Well Construction Records (refer to Appendix C). Boring logs will be used in conjunction with boring logs from other TWFF field investigations, as a tool if future work is to be conducted at this SWMU. The drilling and soil sampling activities were performed in Level D personal protective equipment. Decontamination fluids, as well as soil cuttings generated during the investigation were containerized by Baker field personnel, and were disposed of offsite as discussed in Section 4.5.

3.3 Groundwater Investigation Procedures

The following subsections present a description of the groundwater sampling procedures utilized during this field investigation at the TWFF.

3.3.1 Monitor Well Installation Procedures

Fourteen monitor wells were originally scheduled to be installed at the TWFF during this investigation, as mentioned in the additional data collection work plan (Baker, 2001a). However, only eleven of the proposed fourteen monitor wells were actually installed. Three existing monitor wells were utilized after information became available of their proximity to the proposed wells to be installed. EPA Region II was contacted during the field investigation concerning this modification. It was decided that the integrity of the wells needed to be assessed including a review of the boring logs to make a determination of their usability. After checking the integrity of these three existing monitor

wells through redevelopment and review of the boring logs, it was decided to use these for this investigation. The new monitor wells installed were numbered sequentially starting with 7MW10 and ending with 7MW20. The new monitor wells act as either compliance or replacement wells in the TWFF area.

All monitor wells were advanced using a mobile B-61 drilling rig capable of augering and down hole air hammering or equivalent. Monitor well 7MW17 was installed with a mobile B-90 rig utilizing an Odex casing advancement system. This procedure was different from the procedure used for the rest of the monitor wells. The Odex system was utilized at this location because of continuous collapsing of the borehole walls during the air hammering of the monitor well. The Odex system allows the drilling crew to advance a continuous casing along with the hammer to the desired depth. This process prevents borehole collapse. All completed wells were 4 inches in diameter except 7MW10 and 7MW19, which were 2 inches. The 4-inch diameter wells were drilled using 6 ¼-inch augers. The 2-inch diameter wells were drilled using 4 ¼-inch augers. Each monitor well was split-spoon sampled continuously at 2-foot intervals unless otherwise noted. A boring log was maintained indicating, among other things, lithology, PSH, and water occurrence. Soil borings were logged to verify stratigraphy as presented in Appendix C.

All the wells with the exception of 7MW16, 7MW17, 7MW18, and 7MW19, were screened across the water table with 10 feet of 0.010-slot schedule 40 PVC screen. The monitor wells mentioned above were screened across the water table with 15 feet (7MW16) and 20 feet (7MW17 through 7MW19), respectively of 0.010-slot schedule 40 PVC screen. All screens were set so that the seasonal high for groundwater is approximately 2 feet below the top of screen. The screen was also set so that the bottom of the screen did not fall outside the seasonal low for groundwater. Additional screen was added to meet these requirements at monitor wells 7MW17 through 7MW19. These screen lengths were more than specified in the work plan. However, approval from the project manager was obtained prior to completing the well. Table 3-3 presents a summary of the soil boring and well construction details for the new locations sampled during this investigation.

All wells used 20/40 sand filter pack to approximately 2 feet above the top of screen, followed by an approximate 2-foot bentonite seal. The remaining annulus was grouted to the surface and finished with either a flush mount cover (round 6-inch bolt down well vault) at monitor wells 7MW10 through 7MW14, or a steel protective casing stick up with a 2-foot by 2-foot cement pad at monitor wells 7MW15 through 7MW20.

All drill cuttings were containerized and labeled in Department of Transportation (DOT) approved 55-gallon drums for analysis and disposal at a later date.

3.3.2 Well Development Procedures

Each monitor well installed during this investigation was developed using dedicated tubing with a foot valve that continuously pumped the groundwater from the well either manually, or by using a waterra pump. All monitor wells were purged until they either went dry, cleared up substantially through visual interpretation, or there was no change in the visual interpretation of the turbidity. All development water was containerized in labeled, DOT approved 55-gallon drums for disposal at a later date. The monitor wells were allowed sufficient time to recover prior to sampling. A table containing well development information is presented in Table 3-4.

3.3.3 Groundwater Sampling Procedures

Groundwater samples from this investigation were collected from the 11 newly installed monitor wells and 25 existing monitor wells. Prior to sampling, the wells were gauged with an oil/water interface probe to measure PSH. Even if PSH was encountered above 0.01 feet, the sample was still collected and analyzed. Groundwater samples, including samples collected beneath detected PSH layers, were done so by utilizing the methods described in the EPA approved additional data collection work plan (Baker, 2001a).

Groundwater samples were packed in ice, maintained with the proper chain-of-custody record and shipped next day air to the "fixed base" laboratory. Because of previously encountered delays associated with sample shipments from Puerto Rico to the United States, additional insurance to cover re-sampling costs was claimed on the bill of laden. As required in the work plan for this investigation (Baker, 2001a), at least one member of the field team remained on the island until verification by the laboratory of receipt of all shipments. Chain-of-custody records for environmental media samples are provided as Appendix B.

VOCs, SVOCs, and inorganic constituents were analyzed in the laboratory using the methods identified in Table 3-2. The dissolved inorganic samples were filtered in the field using 0.45 micron in-line field filters. The groundwater locations sampled during this investigation are presented on Figure 3-2.

The groundwater samples collected during this investigation were analyzed in the field as well as at the mainland laboratory for a limited number of monitored natural attenuation (MNA) parameters. This analysis was performed to gather additional information to help support natural attenuation as a potential remedial alternative, should it be considered solely or in conjunction with another technology at the TWFF. Field analysis consisted of the collection of temperature, pH, specific conductivity, dissolved oxygen (DO), oxidation-reduction potential, turbidity, ferrous iron, and alkalinity as presented in Table 3-5. With the exception of ferrous iron, alkalinity, and DO, the other field parameters were collected with instruments that were calibrated in the field each day prior to sampling. The field measurements mentioned above, along with certain natural attenuation analyses (nitrate, sulfate, methane, ethene, ethane, and groundwater density) were analyzed utilizing the methods identified in Table 3-6.

3.3.4 Slug Test Procedures

A total of sixteen slug tests were performed in selected areas of the TWFF as presented on Figure 3-3. The slug tests were performed using a 1 ½-inch, polyvinyl chloride (PVC) slug for a 2-inch well and a 3 ½-inch, PVC slug for the 4-inch well. A Hermit data logger with one Teflon® coated transducer was used to record the groundwater recovery in each slug tested well. The slug test (permeability) results are presented in Appendix A.

3.4 <u>Surface Water and Sediment Sampling Procedures</u>

The following subsections present a description of the surface water and sediment sampling procedures utilized during the field investigation at the TWFF. Although not presented in the Final Work Plan for Additional Data Collection for the TWFF, base background surface water and sediment sample were also collected during the above-mentioned investigation. The collection of the base background surface water and sediment samples was implemented utilizing the EPA approved Draft Screening-Level Ecological Risk Assessment Problem Formulation (Step 1) and Exposure Estimate for SWMUs 1 and 2 (Baker, 2001b).

3.4.1 Base Background Surface Water Sampling Procedures

A total of nine base background surface water samples were collected during this investigation as presented in Table 3-7 and on Figure 3-4. Each base background surface water sample was collected utilizing the methods and procedures listed in the EPA approved Draft Screening-Level Ecological Risk Assessment as mentioned above.

Each base background surface water sample was analyzed for Appendix IX VOCs, SVOCs, low level PAHs, pesticides/polychlorinated biphenyls (PCBs), chlorinated herbicides, dioxins/furans, and the Appendix IX total and dissolved metals list along with cyanide, as presented in Table 3-7. Each sample was also field analyzed for pH, salinity, DO, and temperature, and these results are presented in Table 3-8.

Samples were packed in ice, maintained with the proper chain-of-custody record, and shipped next day air to the "fixed base" laboratory. Chain-of-custody records for environmental media are provided as Appendix B.

3.4.2 SWMU 7/8 Surface Water Sampling Procedures

A total of nine surface water samples were collected during this investigation as presented in Table 3-1 and on Figure 3-5. Due to the location of 7SW5, a boat was used to collect surface water sample at this location. Each surface water sample was collected utilizing the methods and procedures listed in the EPA approved additional data collection work plan for this site (Baker, 2001a).

Each surface water sample was analyzed for VOCs, SVOCs, low level PAHs, and the Appendix IX total and dissolved metals list as presented in Table 3-1. Each sample was also field analyzed for pH, salinity, DO, and temperature. The field results are presented in Table 3-9.

Samples were packed in ice, maintained with the proper chain-of-custody record (see Appendix B), and shipped next day air to the "fixed base" laboratory.

3.4.3 Base Background Sediment Sampling Procedures

A total of nine base background sediment samples were collected during this investigation as presented in Table 3-7 and on Figure 3-4. Each base background sediment sample was collected utilizing the methods and procedures listed in the EPA approved Draft Screening-Level Ecological Risk Assessment Problem Formulation (Step 1) and Exposure Estimate for SWMUs 1 and 2 (Baker, 2001b).

Each base background sediment sample was analyzed for Appendix IX VOCs, SVOCs, low level PAHs, pesticides/PCBs, chlorinated herbicides, dioxins/furans, total organic carbon (TOC), and the Appendix IX total metals including cyanide as presented in Table 3-7.

Samples were packed in ice, maintained with the proper chain-of-custody record (see Appendix B), and shipped next day air to the "fixed base" laboratory.

3.4.4 SWMU 7/8 Sediment Sampling Procedures

A total of 13 sediment samples were collected during this investigation as presented in Table 3-1 and on Figure 3-5. Due to the location of sediment samples 7SD7, 7SD8, 7SD13, and 7SD14, a boat was used to collect sediment samples at these locations. Each sediment sample was collected utilizing the

methods and procedures listed in the EPA approved additional data collection work plan (Baker, 2001a).

Each sediment sample was analyzed for Appendix IX VOCs, SVOCs, low level PAHs, TOC, and the Appendix IX total metals list as presented in Table 3-1.

Samples were packed in ice, maintained with the proper chain-of-custody record, and shipped next day air to the "fixed base" laboratory. Chain-of-custody records for these and all environmental media are provided as Appendix B.

3.5 Free Product Sampling Procedures

A total of two PSH samples were collected from the TWFF area during this past investigation. One sample was collected from Zone 1, while one sample was collected from Zone 2. A PSH sample was not collected in Zone 3 due to the lack of PSH within the wells of Zone 3. The PSH sample collected from Zone 1 consisted of measurable amounts of free product from monitor well UGW25. The PSH sample collected from Zone 2 consisted of measurable amounts of free product from monitor well UGW13.

The two PSH samples collected were analyzed for Brookville Kinematic Viscosity and product density as presented in Table 3-10. These two samples were also fingerprinted against standards of JP-5 and Diesel Fuel Marine (DFM) which were collected during this investigation.

Samples were packed in a cooler, maintained with the proper chain-of-custody record, and shipped next day to the "fixed base" laboratory.

3.6 IDW Sampling Procedures

The following subsections present a description of the IDW sampling procedures utilized during the field investigation at the TWFF.

3.6.1 Aqueous Sampling

One sample was collected from the aqueous IDW that was generated during this investigation. The aqueous IDW generated at this site included purged groundwater from the sampling and developing of wells, chemicals used in the decontamination of drilling equipment, as well as water from the decontamination of the drilling equipment. This sample was collected by placing a disposable Teflon bailer in each of the aqueous DOT approved 55-gallon drums, and compositing the sample into a clean filled jug. The contents were then transferred into the appropriate laboratory containers. This IDW sample was analyzed for lead, benzene, and RCRA metals as presented in Table 3-11.

Samples were packed in ice, and maintained with the proper chain-of-custody record (see Appendix B) until shipment by next day air to the "fixed base" laboratory.

3.6.2 Non-Aqueous Sampling

One composite sample was collected from the soil cuttings generated during this investigation and containerized in DOT approved 55-gallon drums. The IDW sample was analyzed for Toxicity Characteristics Leachate Procedure (TCLP) Benzene, TCLP Lead, and TCLP RCRA Metals as presented in Table 3-11. The laboratory prepared container for the TCLP Benzene was filled first with soil cuttings from a well with suspected contaminated soil cuttings. The remaining composited soil

was homogenized in the clean stainless steel mixing bowl and then placed into laboratory prepared containers for TCLP Lead and TCLP Metals.

Samples were packed in ice, and maintained with the proper chain-of-custody record until shipment the next day air to the "fixed base" laboratory.

3.7 Quality Assurance/Quality Control Procedures

Extensive field quality assurance/quality control (QA/QC) samples were collected during this investigation. These samples were obtained to: (1) ensure that decontamination procedures were properly implemented (i.e., equipment rinsate blanks); (2) evaluate field methodology (i.e., duplicate samples); (3) establish field background conditions (i.e., field blanks); and, (4) evaluate whether cross-contamination occurred during sampling and/or shipping (i.e., trip blanks).

Several types of field QA/QC samples were collected and analyzed including duplicate samples, equipment rinsate samples, field blanks, and trip blanks. These QA/QC samples are defined below:

- Duplicate Sample (D): Two samples collected simultaneously into separate containers from the same source under identical conditions. One duplicate sample was collected for every 10 (10 percent) environmental samples collected for each media type.

- Equipment Rinsate Sample (ER): Sample obtained by running laboratory supplied deionized water over/through sample collection equipment after it was decontaminated. These samples were used to determine if decontamination procedures were adequate.

- Field Blank (FB): Sample obtained from each water source utilized during the field program. The water sources used during the field program included: laboratory supplied deionized water utilized to collect rinsate blanks; store bought distilled water utilized for decontamination; and potable water utilized for decontamination.

- Trip Blank (TB): Trip blanks were prepared at the laboratory and shipped with the sample containers. The trip blanks were packaged for shipment with the other VOC samples and sent for analysis. At no time after their preparation were the trip blank sample containers opened before they reached the laboratory. At least one trip blank per shipping cooler was sent to the laboratory for VOC analysis.

One trip blank sample was sent to the mainland laboratory in conjunction with the base background surface water and sediment samples collected. A total of four equipment rinsate samples, and three field blank samples were sent to the mainland laboratory as presented in Table 3-12. A total of 18 trip blank samples were sent to the mainland laboratory for analysis of Appendix IX VOCs.

3.8 Decontamination Procedures

Decontamination procedures performed in the field were conducted in accordance with EPA Region II guidelines. For routine sample collection equipment (split-spoons, stainless steel spoons, and soil spatulas), the following steps were implemented:

- Clean with potable water and low-phosphate detergent
- Tap water rinse
- 10 percent nitric acid solution rinse
- Tap water rinse

- Methanol followed by a hexane or an acetone rinse
- Air dry
- Analyte-free deionized water rinse
- Wrap in aluminum foil, shiny side out, for storage or transport

This decontamination procedure followed the SOPs outlined in the EPA approved RCRA Facility Investigation Work Plans (Baker, 1995).

Disposable tubing was employed for the collection of groundwater samples during this investigation. A new riser and well screen was used during the installation of each new monitor well. The drill rig was decontaminated in accordance with the EPA approved RFI Work Plans (Baker, 1995) between each well.

Appendix D presents the field notes for each member of the Baker field crew that worked at the TWFF during the Additional Data Collection Investigation.

4.0 ANALYTICAL RESULTS

This section presents an overview of chemical analytical results obtained from samples taken during the additional data collection field investigation, as well as the base background surface water and sediment investigation. The TWFF data was obtained through sample collection and analysis of the surface and subsurface soil, groundwater, surface water, and sediment samples. The analytical results for environmental and QA/QC samples also are included in this section. Appendix E contains the complete set of analytical results obtained from this investigation, including soil, sediment, surface water, and groundwater.

The data reported for the TWFF, as well as for the base background sediment and surface water data was not screened against any criteria in this report. However, this data (with the exception of base background sediment) was screened against criteria in either the ecological risk assessment (Section 3.0), the human health risk assessment (Section 4.0), or both in the Draft Final CMS Task I Report for the TWFF (Baker, 2002).

4.1 Soils Investigation

A total of twelve surface soil and twelve subsurface soil samples along with three duplicate samples were collected during the Additional Data Collection Investigation. The results for both surface and subsurface soil will be discussed in the sections that follow.

4.1.1 Surface Soil Analytical Results

Twelve surface soil samples and one duplicate sample were collected during this investigation. A total of seven volatiles: styrene, toluene, xylene, 1,1,1-Trichloroethane, methylene chloride, 2-butanone, and trichloroethene were detected in the 12 surface soil samples as shown in Table 4-1. As presented under the location of maximum detection column, a majority of the maximum detections in surface soil were reported in sample 7SB30-00. This sample was located in the northern TWFF area along Palau Street as presented in Figure 3-1. The risks associated with the listed detections were covered in Sections 3.0 (Ecological Risk Assessment) and Section 4.0 (Establishment of Corrective Action Objectives) of the Draft Final CMS Task I Report (Baker, 2002).

A total of eight semivolatiles: bis(2-ethylhexyl)phthalate, benzo(g,h,i)perylene, benzo(b)fluoranthene, fluoranthene, chrysene, benzo(a)anthracene, di-n-butylphthalate, and phenanthrene were detected in the surface soil as shown in Table 4-1. The majority of the semivolatile detections in surface soil were reported in sample 7SB29-00. This sample was also located in the northern TWFF area along Palau Street as presented on Figure 3-1. The risks associated with the listed detections are covered in Sections 3.0 (Ecological Risk Assessment) and Section 4.0 (Establishment of Corrective Action Objectives) of the above mentioned report.

Along with the semivolatile analysis, 7MW16-00 was also analyzed for low level PAHs. A total of ten PAHs were detected in 7MW16-00, with concentrations as follows: pyrene [4.3J micrograms per kilogram (µg/kg)], benzo(g,h,i)perylene (3.2J µg/kg), indeno(1,2,3-cd)pyrene (2.2J µg/kg), benzo(b)fluoranthene (2.5J µg/kg), fluoranthene (6.2J µg/kg), benzo(k)fluoranthene (3.6J µg/kg), chrysene (3.3J µg/kg), benzo(a)pyrene (2.7J µg/kg), benzo(a)anthracene (3.2J µg/kg), and phenanthrene (3.4J µg/kg).

A total of fifteen different metals were detected in the surface soil samples as shown in Table 4-2, including lead, mercury, nickel, thallium, antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, vanadium, zinc, and selenium. There did not seem to be a trend in the metals analysis of

surface soil in the location of maximum detection column. However, the risks associated with these constituents were presented in Sections 3.0 and Section 4.0 of the above-mentioned report.

4.1.2 Subsurface Soil Analytical Results

Twelve subsurface soil samples and two duplicate samples were collected during this investigation. A total of seven SVOCs: bis(2-ethylhexyl)phthalate, pyrene, 7,12-dimethyl benz(a)anthracene, p-dimethylaminoazobenzene, 2,6-dinitrotoluene, phenanthrene, and 5-nitro-o-toluidine were detected in the subsurface soil as shown in Table 4-3. There did not seem to be a trend in the SVOC analysis of subsurface soil in the location of maximum detection column. The risks associated with the listed detections are covered in Section 4.0 (Establishment of Corrective Action Objectives) of the Draft Final CMS Task I Report (Baker, 2002).

Along with the SVOC analysis, all 14 subsurface soil samples were analyzed for low level PAHs. A total of 14 low level PAHs were detected in the subsurface soil as shown in Table 4-3. Seven of the 14 listed low level PAH constituents were detected in soil boring 7MW19, located at the top of the hill north of the back gate entrance to the TWFF. The risks associated with the listed detections are covered in Section 4.0 (Establishment of Corrective Action Objectives) of the above mentioned report.

4.2 Groundwater

A total of 36 groundwater samples along with four duplicate samples were collected during the Additional Data Collection Investigation. The groundwater results will be discussed in the sections that follow.

4.2.1 VOC and SVOC Results

A total of 21 VOCs were detected in the groundwater samples that were collected during the Additional Data Collection Investigation as shown in Table 4-4. Of the 21 VOC constituents detected, only two of those VOCs (benzene and trichloroethene) were detected in four or more of the monitor wells sampled. Figures 4-1 and 4-2 are isopleth maps showing graphically the levels of detections within each monitor well of benzene and trichloroethene, respectively. As presented on Figure 4-1, the highest detections of benzene appear to be centrally located in the area of monitor wells 470MW1 and 470MW3. As presented on Figure 4-2, the highest detections of TCE are in the area of 7MW07. The risks associated with the listed detections are covered in Sections 3.0 (Ecological Risk Assessment) and Section 4.0 (Establishment of Corrective Action Objectives) of the above mentioned report.

There were 21 SVOCs detected in the groundwater samples as shown in Table 4-4. Of the 21 SVOC constituents detected, only three of those SVOCs (fluorene, naphthalene, and 2-methylnaphthalene) were detected in four or more of the monitor wells sampled. Figures 4-3 through Figure 4-5 are isopleth maps showing graphically the levels of detections within each monitor well of fluorene, naphthalene, and 2-methylnaphthalene, respectively. As presented on Figure 4-3, the highest detections of fluorene appear to be in three distinct areas. One area appears to be centrally located around monitor well 470MW1, while the second area appears to be centrally located at the intersection of Palua Street and Forrestal Drive. The third area is located around monitor well UGW10. As presented on Figure 4-4, the highest detections of naphthalene appear to be in two distinct areas, one of which centrally located around monitor wells 470MW1 and 470MW3, while the second area is located around monitor well 7MW08. Figure 4-5 presents the highest detections of 2-methylnaphthalene in three distinct areas. The first area encompasses much of the lower TWFF area north of Forrestal Drive, while the second area is centrally located around monitor well 7MW12. The third area containing high detections of 2-methylnaphthalene is centrally located around monitor well 7MW08. The risks associated with the listed detections are covered in Sections 3.0 and Section 4.0 of the Draft Final CMS Task I Report (Baker, 2002).

The groundwater density was measured in seven of the 36 groundwater samples collected including 7MW06, 7MW16, 7MW17, 7MW19, 7MW20, UGW11, and UGW31, with a results of 1,000 micrograms per liter (µg/l) for each of these samples. This analysis was run for these particular samples to confirm the groundwater density value used in correcting the groundwater elevations where PSH is encountered.

4.2.2 Metals Results

The 36 monitor wells sampled during the Additional Data Collection Investigation were also analyzed for Appendix IX total metals. As presented in Table 4-5, a total of 17 total inorganics were detected in the groundwater samples collected during this investigation. Also shown on this table are columns representing the number of positive detections, the range of the positive detections, and the location of the maximum detections for each constituent. The risks associated with the listed detections are covered in Sections 3.0 (Ecological Risk Assessment) and Section 4.0 (Establishment of Corrective Action Objectives) of the Draft Final CMS Task I Report (Baker, 2002).

The 36 monitor wells sampled during the Additional Data Collection Investigation were also analyzed for Appendix IX dissolved metals. As presented in Table 4-6, a total of 15 dissolved inorganics were detected in the groundwater samples collected during this investigation. Also shown on this table are columns representing the number of positive detections, the range of the positive detections, and the location of the maximum detections for each constituent. The risks associated with the listed detections are covered in Sections 3.0 (Ecological Risk Assessment) and Section 4.0 (Establishment of Corrective Action Objectives) of the above mentioned report.

4.2.3 Natural Attenuation Parameter Results

Each of the 36 groundwater samples were analyzed for a limited number of monitoring natural attenuation parameters including nitrate, nitrite, sulfate, methane, and TOC.

Background

Biodegradation of petroleum hydrocarbons is well documented and considered ubiquitous in nature. The driving force for the biodegradation of petroleum hydrocarbons is the energy releasing (thermodynamically favorable) transfer of electrons from an electron donor (petroleum hydrocarbon) to an electron acceptor. Although aerobic microbial degradation of petroleum hydrocarbons has been recognized and understood for an extended period, the significance of anaerobic degradation of these compounds was not fully appreciated until recently. It is now apparent that anaerobic biodegradation is the most significant process working to remove petroleum hydrocarbons from groundwater systems that do not involve some type of active aerobic remediation process, such as air sparging. Anaerobic conditions are generally defined as dissolved oxygen concentrations of 0.5 milligrams per liter (mg/L) or less, and hydrogen concentrations of 0.1 nanoMolar (nM) or more. Although nutrients such as nitrogen and phosphorous are essential for biodegradation, nutrient limiting conditions in natural systems are essentially undocumented.

Chlorinated volatile organic compounds (CVOCs) are considered separately in the MNA scenario. The degradation of CVOCs is typically termed "reductive dechlorination" because the CVOC has its chloride ions sequentially replaced with hydrogen ions through a mechanism termed "halorespiration," forming daughter products. For the case of chlorinated ethenes, tetrachloroethene (a.k.a. PCE) sequentially reduces to TCE, then predominantly cis 1,2-dichloroethene (cis 1,2 DCE), vinyl chloride (VC), and finally ethene and ethane. During each of these reactions, a chloride ion on the compound is replaced by a hydrogen ion. All of these reactions are biological. In the case of the chlorinated ethanes,

trichloroethane (TCA) can be biologically reduced to dichloroethane (DCA), or it can be abiotically reduced to 1,1-dichloroethene or acetate. These and other mechanisms are described in several documents, including Weidemeier, et al., 1999.

EPA's Office of Solid Waste and Emergency Response (OSWER) Directive 9200.4-17 (1999) identifies three lines of evidence that can be used to evaluate natural attenuation. These lines of evidence are:

1) Historical groundwater and/or soil chemistry data that demonstrate a clear and meaningful trend of decreasing contaminant mass and/or concentration over time at appropriate monitoring or sampling points.

2) Hydrogeologic and geochemical data that can be used to demonstrate indirectly the types of MNA processes active at the site, and the rate at which such processes will reduce contaminant concentrations to required levels.

3) Data from field or microcosm studies (conducted with actual contaminated site media) which directly demonstrate the occurrence of a particular NA process at the site and its ability to degrade the contaminants of concern.

Line-of-evidence number one can be depicted through the use of historical contaminant concentration trend lines at wells that have historical chemical results associated with them. In general, this line of evidence can only be considered if aquifer conditions have been and remain undisturbed. This line of evidence may not be valid if aquifer conditions are changed due to the installation of a pump and treatment facility. Because of the limited number of sampling rounds at TWFF, no historical trends will be evaluation for natural attenuation purposes.

In the case of line-of-evidence number two, MNA by biodegradation can be demonstrated primarily by analytical data showing that geochemical conditions are suitable for biodegradation and that active biodegradation has occurred, as indicated by the consumption of terminal electron acceptors (TEA) and/or the production of metabolic by-products. Specifically, the following trends are strong indicators of biological activity: 1) depletion of electron acceptors such as dissolved oxygen, nitrate, and sulfate; and 2) increasing metabolic by-product concentrations such as ferrous iron, methane, and alkalinity. All these indicators are evaluated using the “footprint” concept, comparing concentrations within the plume to those outside the plume.

Data from field or microcosm studies (as described in line-of-evidence number three) are difficult to obtain because of the complexity of recreating site conditions in the laboratory. Because of this limitation, line-of-evidence number three is beyond the scope of this report and investigation. This report will focus on the second line of evidence in a limited manner.

It should be noted that this natural attenuation evaluation is very limited in nature. Natural attenuation at the TWFF has been identified as a potential remedial alternative and subsequent MNA specific sampling has been performed to provide data in support of this alternative, should it be considered solely or in conjunction with another technology. Discussion of the results of the MNA specific sampling is provided in this section.

Terminal Electron Acceptor and Geochemical Indicators

The geochemical parameters that were measured at the site include dissolved oxygen, nitrate, ferrous iron, sulfate, methane, and alkalinity. All data discussed in this section is found in Tables 3-5 and 4-4.

The average DO value for all 36 groundwater samples taken was 1.0 mg/L. The range across the site was 0.2 - 4.0 mg/L. In general, dissolved oxygen values were reduced to 0.5 mg/L or lower in areas

currently or formerly impacted by contamination (7MW06, UGW06, UGW26, 470MW03, UGW23, 7MW09, 7MW03, and 7MW16). Background DO levels were around 2.0 mg/L. Although specific background monitor wells were not defined for this investigation, UGW31, UGW32, and UGW34 were used as background "indicator" wells for use in comparing the geochemical parameters within the impacted areas to those outside the impacted areas.

The range of nitrate concentrations at TWFF is 0.013J – 5.9 mg/L. The average value, including non-detections was 0.698 mg/L. This relationship suggests that anaerobic biodegradation is occurring at the site through the microbially mediated process of denitrification. Higher nitrate concentrations were observed in background wells on the upper TWFF.

The TEA next in line for microbes to use are ferric iron oxyhydroxide or crystalline iron oxides. Ferrous iron is a by-product of this reaction. Therefore, ferrous iron values should increase where microbes are actively degrading petroleum hydrocarbons. The average ferrous iron concentration across the site was 0.43 mg/L. The range of concentrations was 0.0 – 1.96 mg/L. These are not high ferrous iron concentrations. Seven wells had ferrous iron over 1.0 mg/L, implying that biological activity is occurring. These wells are GW04, 470MW01, 470MW03, 7MW11, 7MW13, 7MW14, and 7MW19. With the exception of 7MW19, these wells are in areas currently or formerly impacted by petroleum hydrocarbons. The higher level found at 7MW19 is most likely due to instrumentation interference from the high turbidity that was found at that well.

The sulfate concentrations ranged from 28 – 1,300 mg/L. The average concentration was 308 mg/L, including non-detections. These are high sulfate concentrations, but an area of reduced concentrations is seen in the lower part of the site, near the pier. Since sulfate is a TEA, a footprint of reduced values indicates that biological activity is occurring or has occurred.

Methane is produced by methanogens that use the acetate formed by fermenting hydrocarbons in an anaerobic environment. Since the TEA's are depleted, an anaerobic environment exists to ferment the hydrocarbons. Methane levels were not high at this site. The range was 0.01 – 5.0 mg/L. Higher methane levels are seen in UGW10, 470MW01, 470MW03, 7MW10, 7MW11, 7MW12, 7MW13, 7MW14, 7MW15, and 7MW16. In general, these are mostly the same locations where other indications of reduced TEAs are found. Methane is the final product of biological activity in a petroleum impacted subsurface. Its presence indicates that near anaerobic or anaerobic conditions exist in the aquifer, and that degradation of hydrocarbons has occurred.

Total alkalinity concentrations at the site ranged from 120 to 1146 mg/L as calcium carbonate ($CaCO_3$). Increased alkalinity at a site would be expected from increased carbon dioxide (CO_2) concentrations due to microbial reactions. The higher alkalinity values are seen at the 470 wells.

The oxidation-reduction potential (redox) at the TWFF ranged from –330 millivolts (mV) to 220 mV. The lower or negative regions indicate reduced conditions where microbial action has depleted the aquifer of electron acceptors. In general, the lower redox regions correspond to the regions where DO, nitrate, ferrous iron, sulfate and methane indicators point to reduced conditions.

The pH and temperature also were monitored regularly during the sampling program. The average pH at the site was 7.0 standard unit (SU). This range of pH is within the optimal range (6.0 to 8.0 S.U.) for petroleum-degrading microbes (Wiedermeier et al., 1999). The range of pH observed at the site varied from 5.46 (final reading for well 7MW15, Table 3-5) to 10.11 (7MW10). In general the pH was most varied at new well locations. This may be due to a lack of stabilization of the aquifer matrix with the newly constructed well at that location. (The analytical results would be unaffected.) The average temperature values ranged from 27.6 – 31.3°C. The natural attenuation process is enhanced at higher temperatures [greater than 20°celsius (C)].

Reductive Dechlorination Indicators

The previously mentioned geochemical indicators are useful for determining if aquifer conditions have been impacted by microbial action on petroleum hydrocarbons. They are also used to evaluate if aquifer conditions are conducive to reductive dechlorination of TCE. A few other indicators are specific to a chlorinated ethene plume. Total organic carbon (TOC), ethene, and ethane were measured in the area of the TCE plume at the site.

TOC in the groundwater was measured in a few locations around the TCE plume. It ranged from 0.58J – 3.5 mg/L. These are not high concentrations. In general, TOC concentrations need to be greater than 20 mg/L in order to support reductive dechlorination.

The daughter products of TCE dechlorination are primarily cis 1,2 DCE (although sometimes trans 1,2-DCE or 1,1-DCE is seen), vinyl chloride, and ethene or ethane. Cis 1,2-DCE was not measured because it is not on the Appendix IX list of volatile organic compounds. No detections of trans 1,2-DCE or vinyl chloride were found. 1,1-dichloroethene was detected below the detection limit at UGW16. The dissolved gases of ethene and ethane were also measured in the TCE area, but were not detected.

4.3 Surface Water and Sediment Investigation

A total of nine surface water and 13 sediment samples along with three duplicate samples were collected during the Additional Data Collection Investigation. Also collected during this investigation were nine base background surface water and sediment samples along with two duplicate samples. The site specific and base background surface water and sediment sample results will be discussed in the sections that follow.

4.3.1 Base Background Surface Water Analytical Results

Nine base background surface water samples and one duplicate sample were collected during this investigation as presented on Figure 3-4. There were no positive detections of VOC in any of the samples collected. Fluorene was the only SVOC detected in any of the samples collected, with a concentration of 0.46J µg/L in sample BGOWSWO6 as presented in Table 4-7. The base background surface water data is used in Section 3.0 of the Ecological Risk Assessment (Step 3a) portion of the Draft Final CMS Task I Report. This data is used in the risk assessment to determine if risks detected in the TWFF surface water can be attributed to base background conditions.

A total of eight different total metals were detected in the surface soil samples as shown in Table 4-8, including lead, tin, arsenic, barium, cadmium, copper, vanadium, and selenium. There did not seem to be a trend in the metals analysis of surface soil in the location of maximum detection column.

A total of six different dissolved metals were detected in the base background surface water samples as shown in Table 4-9. The dissolved metals detected in the samples included arsenic, barium, cadmium, copper, vanadium, and zinc. A majority of the detections were found in either sample BGOWSW01 or BGOWSW02 located in the eastern portion of the surface water sampling area as presented on Figure 3-4.

4.3.2 SWMU 7/8 Surface Water Analytical Results

Nine surface water samples and one duplicate sample were collected at the TWFF during the Additional Data Collection Investigation as presented on Figure 3-5. Carbon disulfide was the only VOC detected in

any of the surface water samples collected, with concentrations ranging from 2.9J µg/L (7SW6) to 3.3J µg/L (7SW2). Bis(2-ethylhexyl)phthalate was the only SVOC detected in any of the samples collected with a concentration of 12 µg/L in sample 7SW3 as presented in Table 4-10.
Along with the semivolatile analysis, each sample was also analyzed for low level PAHs. A total of six PAHs were detected including anthracene, pyrene, fluoranthene, acenaphthene, phenanthrene, and naphthalene as presented in Table 4-10. A majority of the PAHs detected were found in samples 7SW4 and 7SW4D. The risks associated with the listed detections are covered in Section 3.0 (Ecological Risk Assessment) of the Draft Final CMS Task I Report (Baker, 2002).

A total of 11 different total metals were detected in the surface water samples collected at the TWFF as shown in Table 4-11, including lead, mercury, tin, antimony, arsenic, barium, cadmium, copper, vanadium, zinc, and selenium. There did not seem to be a trend in the total metals analysis of surface water in the location of maximum detection column. However, the risks associated with these constituents were presented in Section 3.0 (Ecological Risk Assessment) of the above mentioned report.

A total of ten different dissolved metals were detected in the surface water collected at the TWFF samples as shown in Table 4-12. The dissolved metals detected in the samples included lead, thallium, tin, antimony, arsenic, barium, cadmium, copper, vanadium, and zinc. Five of the ten detections listed on Table 4-13 were found in either sample 7SW4 or 7SW4D, located north of the Fueling Pier along the Ensenada Honda coastline as shown on Figure 3-5. The risks associated with these constituents were presented in Section 3.0 (Ecological Risk Assessment) of the above mentioned report.

4.3.3 Base Background Sediment Analytical Results

Nine base background sediment samples and one duplicate sample were collected during this investigation as presented on Figure 3-4. There were no positive detections of VOCs in any of the samples collected. There were no semivolatile constituents detected in any of the samples collected as presented in Table 4-13. Only one pesticide/PCB (4,4'-DDD) was detected in any of the samples collected during this investigation, with a concentration of 1.3J µg/kg in sample BGOWSD06. The base background sediment data is not used in Section 3.0 of the Ecological Risk Assessment (Step 3a) portion of the Draft Final Task I Report. This data is not used because it was collected from a littoral zone, while many of the TWFF sediment samples were collected from deep water habitat adjacent to dock/piers and sea walls. The other reason this data is not used in the ecological risk assessment is that this data was collected from an area that is remote from industrial areas. This contrasts with the location of the TWFF sediment samples collected from the Ensenada Honda. Sediment quality at these locations can be influenced by activities unrelated to the TWFF (naval shipping activities, marine cargo handling, ship repair, and material storage) and storm sewer discharges from drainage areas that do not include the TWFF.

Along with the semivolatile analysis, each sample was also analyzed for low level PAHs. A total of seven PAHs were detected including pyrene, benzo(g,h,i)perylene, indeno(1,2,3-cd)pyrene, benzo(b)fluoranthene, fluoranthene, benzo(a)pyrene, and naphthalene as presented in Table 4-13. Also shown on this table are columns representing the number of positive detections, the range of the positive detections, and the location of the maximum detections for each constituent. A majority of the PAHs detected were found in samples BGOWSD03 and BGOWSD08.

All ten base background sediment samples including the duplicate sample were also analyzed for chlorinated herbicides, dioxins/furans, and TOC. 2,4-D was the only chlorinated herbicide detected in any of the samples collected, with a range of 9NJ µg/kg (BGOWSD03D) to 18J µg/kg (BGOWSD04) as presented in Table 4-13. There were no detections of dioxins/furans in any of the base background sediment samples collected. TOC was detected in eight of the ten samples collected, with a range of 1,800 mg/kg (BGOWSD02) to 3,800 mg/kg (BGOWSD01).

A total of eleven different total metals were detected in the base background sediment samples as shown in Table 4-14. The detected constituents include lead, mercury, nickel, thallium, arsenic, barium, chromium, cobalt, copper, vanadium, and zinc. There does not seem to be a trend in the metals analysis of sediment in the location of maximum detection column.

4.3.4 SWMU 7/8 Sediment Analytical Results

A total of 13 sediment samples and two duplicate samples were collected at the TWFF during the Additional Data Collection Investigation as presented on Figure 3-5. Seven VOCs were detected as presented in Table 4-15, including styrene, toluene, xylene, acetone, methylene chloride, carbon disulfide, and 2-butanone. There does not seem to be a trend in the VOC analysis of sediment in the location of maximum detection column. The risks associated with the listed detections are covered in Section 3.0 (Ecological Risk Assessment) of the Draft Final CMS Task I Report (Baker, 2002).

There were a total of 13 SVOCs constituents detected in the sediment samples collected at the TWFF as presented in Table 4-15. A majority of the SVOC detections were found in sample 7SD12 located along the bulkhead in the Ensenada Honda between Pier 2 and the Berthing Pier. The risks associated with the listed detections are covered in Section 3.0 (Ecological Risk Assessment) as mentioned above.

Along with the semivolatile analysis, each sample was also analyzed for low level PAHs. A total of 16 low level PAHs were detected as presented in Table 4-15. A majority of the low level PAH detections were found in sample 7SD12 located along the bulkhead in the Ensenada Honda between Pier 2 and the Berthing Pier. The risks associated with the listed detections are covered in Section 3.0 (Ecological Risk Assessment) as mentioned above.

All 15 sediment samples including the duplicate sample were also analyzed for TOC, with ranges from 2,000 mg/kg in sample 7SD4, to 18,000 mg/kg in samples 7SD7 and 7SD11.

A total of 16 different total metals were detected in the sediment samples collected at the TWFF as shown in Table 4-16. Eight of the 16 detections were located in sample 7SD3, located along the coastline in the northwest portion of the Ensenada Honda as presented on Figure 3-5. The risks associated with the listed detections are covered in Section 3.0 (Ecological Risk Assessment) as mentioned above.

4.4 Free Product Level and Analytical Results

During this investigation, a complete round of water levels and free product levels were collected. Of the 84 monitor wells that were measured for free product on February 2, 2002, only eight of the monitor wells contained measureable amounts of free product. These monitor wells included UGW12, UGW19, UGW21, PW2, GW02, 470MW1, 7MW08, and 7MW15. However, the free product levels referred to in the above-mentioned text, was not presented on Figure 4-6. The rationale for this is that the monitor wells at the TWFF were purged on January 31, 2002 by the base's subcontractor under the JA Jones contract. Therefore, the measurements that Baker collected on February 2, 2002 would not accurately depict PSH extent at the TWFF. The free product levels presented on Figure 4-6 are from the base subcontractor's February 28, 2002 round of water levels as well as free product levels. These values would depict realistic levels of PSH at the TWFF.

As presented in the Final Work Plan for Additional Data Collection Tow Way Fuel Farm (Baker, 2001), the TWFF was originally broken up into five zones of contamination. Four of the five zones were designated due to levels of PSH within the monitor wells, while the fifth zone was based on the level of dissolved TCE within monitor well 7MW07. As presented in the above mentioned work plan, Zone 3 was established based on of information from the McLaren-Hart Pier 1 Report of Findings (McLaren-

Hart, 2000). Because their boring logs indicated that groundwater had risen and consistently stayed above the top of screen in UGW09, the monitor well was replaced to confirm the presence or absence of PSH in this area. Two more monitor wells were installed to further identify the southern and western edges of the suspected plume. As presented on Table 2-1 and Figure 4-6, there were no monitor wells during this investigation in the Zone 3 area which contained measurable amounts of PSH. Monitoring will continue in this area.

As mentioned in the additional data collection work plan (Baker, 2001), a representative sample of PSH was to be collected from Zones 1, 2, and 3. However, during this field investigation only Zones 1 and 2 contained measurable amounts of PSH. Therefore, two samples (PSH01 and PSH02) were collected from Zones 1 (UGW13) and 2 (UGW25), respectively, and analyzed for product density, Brookville Kinematic Viscosity, and fingerprint. As presented in Table 4-18, the groundwater density was the same for both samples [0.82 grams per milliliter (g/ml)]. The fingerprint analysis revealed positive detections of JP-5 only within both PSH samples collected at 1,100,000 mg/kg. The viscosity for the two PSH samples collected were both found to be 3.5 centipoise.

4.5 Investigation Derived Waste

A total of two IDW samples were collected at the end of the Additional Data Collection Field Investigation from the aqueous and non-aqueous waste generated during this investigation. The sections that follow will discuss the results of the IDW samples. The IDW generated during this investigation was removed from the TWFF on March 28, 2002, as well as on April 2, 2002 as presented on the disposal invoices in Appendix F. A total of 24 drums were removed once the analytical data was certified by a Puerto Rican chemist and forwarded to BFI Waste Systems located in Ponce, Puerto Rico.

4.5.1 Aqueous Sampling Results

One aqueous IDW sample was collected at the TWFF during the Additional Data Collection Investigation as presented in Table 4-18. Benzene was positively detected in IDW-01 at a concentration of 5 µg/L.

A total of eight different RCRA metals were detected in sample IDW-01 collected at the TWFF as shown in Table 4-19, including lead, mercury, silver, arsenic, barium, cadmium, chromium, and selenium. The concentrations ranged from 0.005 mg/L in lead and cadmium, to 0.22 mg/L in barium. A complete set of the TWFF IDW analytical data is presented in Appendix G.

4.5.2 Non-Aqueous Sampling Results

One non-aqueous IDW sample was collected at the TWFF during the Additional Data Collection Investigation as presented in Table 4-18. TCLP benzene was positively detected in IDW-02 at a concentration of 20 µg/L.

A total of eight different RCRA TCLP metals were detected in sample IDW-02 collected at the TWFF as shown in Table 4-19, including lead, mercury, silver, arsenic, barium, cadmium, chromium, and selenium. The concentrations ranged from 0.02 mg/L in mercury, to 2 mg/L in barium.

4.6 Quality Assurance/Quality Control Sample Results

The QA/QC sampling efforts consisted of the collection of equipment rinsate samples, field blanks, and trip blanks. The results from the analysis of these samples are discussed in the following subsections.

4.6.1 Equipment Rinsate Samples

Four equipment rinsate samples (7ER01, 7ER02, 7ER04, and 7ER07) were collected during the Additional Data Collection Investigation as presented in Table 4-20. Sample 7ER01 was collected from a stainless steel spoon, while 7ER02 was collected from a split-spoon sampler. Sample 7ER04 was collected from a petite ponar dredge, while 7ER07 was collected from low flow tubing used with a peristaltic pump.

Benzene was the only organic compound detected in any of the samples collected. Sample 7ER01 contained the only positive detection of benzene, with a concentration of 0.28J µg/L as presented in Table 4-20.

A total of three different total metals (lead, nickel, and zinc) were detected in the equipment rinsate samples collected at the TWFF as shown in Table 4-21. A complete set of QA/QC analytical data is presented in Appendix G.

4.6.2 Field Blank Samples

Three field blank samples (2000FB01 through 2000FB03) were collected during the Additional Data Collection Investigation at the TWFF. The water analyzed included lab-grade deionized water (2000FB01), store bought deionized water (2000FB02) and NSRR water supply (2000FB03). The NSRR water supply was taken from a spigot at the TWFF Pump House. Table 4-22 presents a summary of all detected organics in the field blank samples. Two VOCs (toluene and acetone) were detected in field blank sample 200FB02, with concentrations ranging from 1.2J µg/L for toluene, to 10J µg/L for acetone. Three SVOCs (2,4,6-trichlorophenol, naphthalene, and 2-methylnaphthalene) were detected in 2000FB03, with concentrations ranging from 0.38J µg/L in 2-methlnaphthalene, to 120J µg/L in 2,4,6-trichlorophenol.

A total of two metals (barium and copper) were detected in field blank samples as indicated in Table 4-23. The concentrations ranged from 0.0052J mg/L (2000FB03) for barium, to 0.0014J mg/L (2000FB02) for copper.

4.6.3 Trip Blank Samples

One trip blank sample was used during the collection of the base background surface water and sediment samples. There were no detections of VOCs as presented in Table 4-24. A total of 18 trip blanks were analyzed for VOCs as part of the Additional Data Collection Field Investigation at the TWFF. Eight VOCs (styrene, proprionitrile, acrylonitrile, toluene, acetone, benzene, trichloroethene, 1,2,3-trichloropropane) were detected in the trip blanks collected as presented in Table 4-25.

4.7 Data Validation

A detailed and independent data validation was performed by Heartland Environmental Services, Inc. to verify the qualitative and quantitative reliability of the data presented and adherence to stated analytical protocols. This review included a detailed review and interpretation of all the data generated by the laboratory for data quality Level D deliverables. The primary tools that were utilized by the experienced data validation personnel included analytical method operating procedures, Statement of Work (SOW) for contract laboratory procedures (CLP) guidance documents, EPA Region II guidelines for data validation, established criteria, and professional judgement.

The data validation reports stated that the overall laboratory performance was acceptable according to usability. The overall quality of the data package is acceptable. The reported results are accepted as reported by the laboratory with the noted qualifications. Data validation reports were prepared by the data validator, which provided the back-up information accompanying the qualifying statements, presented in the QA/QC review. Copies of the narratives from the data validation reports associated with this investigation are provided as Appendix H.

5.0 CONCLUSIONS

This section discusses the objectives of this investigation as described in Section 1.2 and whether or not these objectives were met.

Objective:

- Determine the extent of contamination from the PSH release around Pier 1 (Proposed Zone 3).

Conclusion:

Four monitor wells were installed in the Zone 3 area near Pier 1 and monitored for the presence of PSH. No PSH was detected in the monitoring wells installed in Zone 3. The PSH previously identified in earlier investigations is contained near Pier 1.

Objective:

- Establish down-gradient compliance well for the dissolved TCE in and around 7MW07 (Zone 4).

Conclusion:

Down-gradient compliance monitor well 7MW10 was successfully installed down gradient of monitor well 7MW07. No TCE was detected from monitor well 7MW10.

Objective:

- Establish a compliance well down-gradient of monitor well 7MW08 which now contains PSH.

Conclusion:

Down-gradient compliance monitor well 7MW20 was successfully installed down gradient of monitor well 7MW08 to assist in determining the extent of PSH to the east of the TWFF. No PSH was detected from monitor well 7MW20.

Objective:

- Establish replacement wells in areas where existing monitor wells contain well screens, which remain below the apparent groundwater interface the majority of time.

Conclusion:

Monitor wells 7MW15 (replacement for GW03) and 7MW16 (replacement for UGW14) were successfully installed with the screens being within the groundwater interface range.

Objective:

- Determine the extent of PSH contamination within the TWFF (Zones 1, 2, and 3), utilizing the replacement wells.

Conclusions:

The extent of PSH contamination within the TWFF (Zones 1, 2, and 3) was successfully determined with the installation of the replacement monitor wells. Figure 4-6 provides the PSH thickness and extent at the TWFF.

- Verify the presence of hydrocarbons in the unsaturated zone and on the groundwater table down-gradient of active Tanks 82 and 83, utilizing the replacement wells.

Conclusion:

Monitor wells 7MW17 and 7MW18 were successfully installed to verify the presence of hydrocarbons in the unsaturated zone and on the groundwater table down gradient of Tanks 82 and 83. No evidence of hydrocarbons was present during the installation of the two monitor wells. PSH was not detected during the free-product level measurements from either of the two wells. The results of this investigation do not indicate that hydrocarbons are present in the unsaturated zone or on the groundwater table from the locations of the two new wells.

Objective:

- Determine hydrogeologic boundaries to the north and west of the TWFF.

Conclusion:

Hydrogeologic boundaries were successfully determined through the installation of monitor wells 7MW17, 7MW18, and 7MW19 and utilizing existing monitor wells UGW31, UGW32, and UGW34. All of these wells were gauged with the other wells at the TWFF. Figure 2-1 provides the corrected groundwater surface contour map of the TWFF from this investigation. The addition of the additional wells has provided additional points to gain a better understanding of groundwater flow in the upper TWFF area.

Objective:

- Fingerprint the light non-aqueous phase liquid (LNAPL) in the three zones where PSH was expected (Zones 1, 2, and 3 if available).

Conclusion:

PSH was only present in Zones 1 and 2. Samples were collected from these two zones and were fingerprinted. The results of the fingerprinting identified the PSH as JP-5 fuel.

Objective:

- Collect and analyze groundwater associated with dissolved phase constituents (Zones 4 and 5).

Conclusion:

Groundwater samples were obtained from the monitor wells within Zones 4 and 5 as well as throughout the entire TWFF to evaluate dissolved phase constituents. Figures 4-1, 4-3, 4-4, and 4-5 provide isopleths maps of dissolved constituents (benzene, fluorine, napthalene, and 2-methylnaphthalene) in groundwater at Zone 5. Figure 4-2 provides the isopleths of TCE in groundwater at Zone 4.

Objective:

- Collect and analyze groundwater down-gradient from UGW02 that recently had measurable PSH in the monitor well.

Conclusion:

Groundwater was obtained from monitor wells 7MW03, 7MW17, and 7MW09. No detections of fuel related compounds were detected nor was any PSH detected from theses wells There is no indication that any of the down gradient wells have been impacted from recent identification of PSH in UGW02..

Objective:

- Characterize groundwater quality in monitor wells south of Forrestal Drive.

Conclusion:

All of the monitor wells south of Forestall Drive were sampled to determine groundwater quality. The TCE plume continued to be present in Zone 4 (see Figure 4-2). Fluorene was detected in two isolated wells (GW04 and UGW10) south of Forrestal Drive as presented on Figure 4-3. Meth6ylene and 2-methylnapthalene was detected in monitor well 7MW08 as shown on Figures 4-4 and 4-5, respectively. The detection of PSH is still limited to those wells north of Forrestal Drive.

Objective:

- Characterize surface water quality within the Ensenada Honda down-gradient from the TWFF.

Conclusion:

Surface water samples were collected from nine different locations within Ensenada Honda. Carbon disulfide was the only VOC detected while bis(2-ethylhexyl)phthalate was the only SVOC detected. Six different PAHs were detected with the majority of them from one sample location 7SW4.

Objective:

- Characterize surface soil quality at the TWFF.

Conclusion:

A total of 12 additional surface soil samples were collected from across the TWFF and analyzed for VOCs, SVOCs and metals. There were only a few locations were the majority of the positive detections of VOCs and SVOCs were detected. These locations were 7SB29-00 and 7SB30-00.

Objective:

- Determine the extent of polynuclear aromatic hydrocarbons (PAH) in the soil and groundwater in the upper TWFF.

Conclusion:

The extent of PAH contamination was determined for the soils in the upper TWFF through of a total of 24 soil samples. Minor detections of low level PAHs were detected in the subsurface soil samples ranging from 2J µg/kg to 25 µg/kg. The majority of these detections were from one sample 7MW19-03. Minor detections of PAHs were detected in the surface soil samples ranging from 2.2 µg/kg to 52J µg/kg. The majority of the PAHs found in the surface soils were isolated to two samples (7SB29-00 and 7MW16-00. The extent of PAHs in the groundwater at the upper TWFF was conducted through the collection of groundwater from 16 monitor wells. Flourene and 2-methylnaphthalene were detected in a few of the monitor wells in the lower portions of the upper TWFF as presented on Figures 4-3 and 4-5, respectively.

Objective:

- Characterize sediment quality within the Ensenada Honda down-gradient from the TWFF.

Conclusion:

The sediment at the TWFF was characterized through the collection of thirteen sediment samples. Section 3.0 of the TWFF Task I CMS discusses the sediment quality.

Objective:

- Gather aquifer information for the development of a groundwater model.

Conclusion:

All of the information outlined in the Work plan was gathered during this investigation. A successful groundwater model was developed for the TWFF and is provided as Appendix G of the TWFF Task I CMS Report.

6.0 REFERENCES

Baker Environmental, Inc. (Baker), 1995. Final RCRA Facility Investigation, Naval Station Roosevelt Roads, Puerto Rico. September 14, 1995. Coraopolis, Pennsylvania.

Baker, 1997. Revised Draft RCRA Facility Investigation Report for Operable Unit 2 (SWMU 7/8), Naval Station Roosevelt Roads, Ceiba, Puerto Rico. June 16, 1997. Coraopolis, Pennsylvania.

Baker, 1998. Additional Well Installation Tow Way Fuel Farm Interim Corrective Measure, Naval Station Roosevelt Roads, Ceiba, Puerto Rico. March 6, 1998. Coraopolis, Pennsylvania.

Baker, 1999. Final Corrective Measures Study Investigations Tow Way Fuel Farm, Naval Station Roosevelt Roads, Ceiba, Puerto Rico. April 21, 1999. Coraopolis, Pennsylvania.

Baker, 2000. Final TCE Investigation Report for SWMU 7/8 – Tow Way Fuel Farm, Naval Station Roosevelt Roads, Ceiba, Puerto Rico. February 15, 2000. Coraopolis, Pennsylvania.

Baker, 2001a. Final Work Plan for Additional Data Collection, Tow Way Fuel Farm, Naval Station Roosevelt Roads, Ceiba, Puerto Rico. September 27, 2001. Coraopolis, Pennsylvania.

Baker, 2001b. Draft Screening-Level Ecological Risk Assessment Problem Formulation (Step 1) and Exposure Estimate SWMUs 1 and 2. August 10, 2001. Coraopolis, Pennsylvania.

Baker, 2002. Draft Final CMS Task I Report, Tow Way Fuel Farm, Naval Station Roosevelt Roads, Ceiba, Puerto Rico. July 9, 2002. Coraopolis, Pennsylvania.

Evans, P.J., 2001, "A Bioavailable Ferric Iron Assay and Relevance to Reductive Dechlorination," *6th International In Situ and On-Site Bioremediation Symposium*, Leeson, A., et al., editors. Battelle Press.

McLaren-Hart, 1999. Hydraulic Characteristics Evaluation, Free Product Recovery System, Tow Way Fuel Facility, Naval Station Roosevelt Roads, Ceiba, Puerto Rico. August 31, 1999.

McLaren-Hart, 2000. Report of Findings Quantification of Product Release Pier 1 – Tow Way Fuel Farm Facility, Naval Station Roosevelt Roads, Ceiba, Puerto Rico. March 16, 2000.

National Research Council, 2000. *Natural Attenuation for Groundwater Remediation*. National Academy Press, Washington, DC.

USEPA, 2001. "*Monitored Natural Attenuation: USEPA Research Program - An EPA Science Advisory Board Review*." EPA-SAB-EEC-01-004, May 2001.

USGS, 1997. Natural Attenuation of Chlorinated Volatile Organic Compounds in a Freshwater Tidal Wetland, Aberdeen Proving Ground, Maryland. Water-Resources Investigations Report 97-4171.

Weidemeier, T., Rifai, H.S., Newell, C.J., and Wilson, J.T., *Natural Attenuation of Fuels and Chlorinated Solvents in the Subsurface*, John Wiley & Sons, Inc., 1999.

TABLES

TABLE 2-1

SUMMARY OF GROUNDWATER ELEVATIONS AND PRODUCT THICKNESS MEASUREMENTS
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

		February 28, 2002				
Monitor Well	Elevation (ft. msl)	Depth to Product (ft. from top of PVC)	Depth to Water (ft. from top of PVC)	Product Thickness (ft.)	Corrected Depth to Water (ft. from top of PVC)	Equivalent Freshwater Elevation (ft.)
UGW01	116.57	16.80	16.80	0	16.80	99.77
UGW02	162.11	55.96	56.22	0.26	56.01	106.10
UGW03	125.21	20.30	20.30	0	20.30	104.91
UGW04	120.66	15.60	15.60	0	15.60	105.06
UGW05	116.55	11.80	11.80	0	11.80	104.75
UGW06	111.50	9.18	9.18	0	9.18	102.32
UGW07	110.04	6.70	6.70	0	6.70	103.34
UGW08	110.24	6.84	6.84	0	6.84	103.40
UGW09	109.45	3.64	3.64	0	3.64	105.81
UGW10	110.73	9.73	9.73	0	9.73	101.00
UGW11	109.64	8.87	8.87	0	8.87	100.77
UGW12	114.22	11.34	11.34	0	11.34	102.88
UGW13	113.58	11.42	11.55	0.13	11.44	102.14
UGW14	119.59	14.71	14.71	0	14.71	104.88
UGW15	112.52	11.38	11.38	0	11.38	101.14
UGW16	113.83	10.95	10.95	0	10.95	102.88
UGW17	112.62	10.38	10.58	0.2	10.42	102.20
UGW18	114.55	10.05	10.05	0	10.05	104.50
UGW19	112.47	10.70	10.70	0	10.70	101.77
UGW20R	109.15	8.29	8.29	0	8.29	100.86
UGW21	113.41	11.88	11.88	0	11.88	101.53
UGW22	110.30	15.65	15.65	0	15.65	94.65
UGW23	169.38	63.05	63.05	0	63.05	106.33
UGW24	179.00	74.46	74.46	0	74.46	104.54
UGW25	154.17	49.10	50.80	1.7	49.41	104.76
UGW26	110.79	6.72	6.72	0	6.72	104.07
AW01	122.35	17.68	17.68	0	17.68	104.67
AW02	121.50	16.33	17.50	1.17	16.54	104.96
PW01	115.38	8.87	8.87	0	8.87	106.51
PW02	115.69	10.58	10.95	0.37	10.65	105.04
PW03	117.33	10.95	10.95	0	10.95	106.38
PW05	117.42	10.8	10.88	0.08	10.81	106.61
PW06	117.69	8.6	8.6	0	8.60	109.09
MW01	115.94	9.92	9.99	0.07	9.93	106.01
MW02	115.56	10.32	10.32	0	10.32	105.24
MW03	117.22	6.40	6.40	0	6.40	110.82
MW04	116.56	7.43	7.43	0	7.43	109.13
MTMW1	123.25	18.03	21.25	3.22	18.61	104.64
MTMW2	122.53	16.30	22.90	6.6	17.49	105.04
MTMW3	122.28	17.52	18.30	0.78	17.66	104.62
MTMW4	122.09	15.84	22.52	6.68	17.04	105.05
RW1	120.55	15.30	15.62	0.32	15.36	105.19
RW2	118.01	10.80	10.80	0	10.80	107.21
RW4	111.09	6.38	6.38	0	6.38	104.71
RW5	110.35	7.97	8.35	0.38	8.04	102.31

TABLE 2-1

SUMMARY OF GROUNDWATER ELEVATIONS AND PRODUCT THICKNESS MEASUREMENTS
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

		February 28, 2002				
Monitor Well	Elevation (ft. msl)	Depth to Product (ft. from top of PVC)	Depth to Water (ft. from top of PVC)	Product Thickness (ft.)	Corrected Depth to Water (ft. from top of PVC)	Equivalent Freshwater Elevation (ft.)
RW6	109.82	7.76	7.76	0	7.76	102.06
RW7	108.59	6.82	6.82	0	6.82	101.77
RW8	109.89	8.32	8.32	0	8.32	101.57
GW02	113.94	10.17	10.17	0	10.17	103.77
GW03	113.40	9.67	9.67	0	9.67	103.73
GW04	113.06	8.19	8.19	0	8.19	104.87
GW06	110.95	8.59	8.59	0	8.59	102.36
470MW01	133.14	27.72	27.72	0	27.72	105.42
470MW03	123.15	19.57	19.57	0	19.57	103.58
7MW01A	128.41	24.83	24.83	0	24.83	103.58
7MW02A	148.50	42.28	42.28	0	42.28	106.22
7MW03	179.31	72.79	72.79	0	72.79	106.52
7MW04	182.56	78.08	78.08	0	78.08	104.48
7MW05	114.13	11.93	11.93	0	11.93	102.20
7MW06	108.25	7.60	7.60	0	7.60	100.65
7MW07	115.35	13.65	13.65	0	13.65	101.70
7MW08	111.33	10.05	10.65	0.6	10.16	101.17
7MW09	161.34	55.38	55.38	0	55.38	105.96
UGW27	129.36	25.97	25.97	0	25.97	103.39
UGW28	127.01	23.84	23.84	0	23.84	103.17
UGW31	144.97	41.55	41.55	0	41.55	103.42
UGW32	188.57	82.62	82.62	0	82.62	105.95
UGW33	214.48	110.00	110.00	0	110.00	104.48
UGW34	191.28	86.87	86.87	0	86.87	104.41
7MW10	106.74	6.01	6.01	0	6.01	100.73
7MW11	109.02	6.59	6.59	0	6.59	102.43
7MW12	107.95	7.62	7.62	0	7.62	100.33
7MW13	108.39	6.49	6.49	0	6.49	101.90
7MW14	106.59	5.44	5.44	0	5.44	101.15
7MW15	114.17	8.43	8.58	0.15	8.46	105.71
7MW16	120.57	7.65	7.65	0	7.65	112.92
7MW17	147.64	43.13	43.13	0	43.13	104.51
7MW18	175.31	70.72	70.72	0	70.72	104.59
7MW19	216.82	112.44	112.44	0	112.44	104.38
7MW20	113.25	11.60	11.60	0	11.60	101.65
Trench Vault	109.82	5.92	5.92	0	5.92	103.90

Notes:

ft. - feet.
ft msl - feet mean sea level + 100 ft.
PVC - Polyvinyl Chloride Riser.

TABLE 2-2

SUMMARY OF SLUG TEST RESULTS
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Location	Date	Rising Head Test (feet/day)	Falling Head Test (feet/day)	Comment
Unconsolidated Marine Sediments				
7MW10	Jan-02	4.77	--	Corrective Measures Study
UGW6	Feb-92	0.4	--	UST Investigation
UGW7	Feb-92	0.07	--	UST Investigation
UGW10	Feb-92	2.36	--	UST Investigation
UGW11	Feb-92	1.61	--	UST Investigation
		4.77		Maximum
		0.07		Minimum
		1.84		Average
Unconsolidated Fill Material				
7MW11	Jan-02	0.79	--	Corrective Measures Study
7MW12	Feb-02	2.26	--	Corrective Measures Study
7MW13	Jan-02	2.61	--	Corrective Measures Study
7MW14	Jan-02	0.26	--	Corrective Measures Study
UGW7	Aug-96	1.96	--	RCRA Facilities Investigation
UGW16	Aug-96	10.31	--	RCRA Facilities Investigation
		10.31	--	Maximum
		0.26	--	Minimum
		3.03	--	Average
Residual Soil and Saprolite				
7MW05	Jan-02	2.37	--	Corrective Measures Study
7MW15	Jan-02	0.19	--	Corrective Measures Study
GW03	Aug-96	7.6	2.52	RCRA Facilities Investigation
7MW02A	May-98	11.98	--	Corrective Measures Study Investigations
UGW2	Feb-92	0.02	--	UST Investigation
UGW3	Feb-92	0.7	--	UST Investigation
UGW8	Feb-92	0.2	--	UST Investigation
UGW9	Feb-92	0.09	--	UST Investigation
UGW17	Feb-92	1.25	--	UST Investigation
UGW18	Feb-92	0.46	--	UST Investigation
UGW5	Nov-94	0.02	--	Site Characterization
7MW20	Jan-02	0.65	--	Corrective Measures Study
7MW16	Feb-02	4.38	--	Corrective Measures Study
		11.98	--	Maximum
		0.02	--	Minimum
		2.30	--	Average

TABLE 2-2

SUMMARY OF SLUG TEST RESULTS
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Location	Date	Rising Head Test (feet/day)	Falling Head Test (feet/day)	Comment
Weathered and Unweathered Bedrock				
7MW08	Jan-02	6.18	--	Corrective Measures Study
7MW17	Mar-02	0.35	--	Corrective Measures Study
7MW18	Feb-02	0.41	--	Corrective Measures Study
7MW19	Jan-02	0.46	--	Corrective Measures Study
7MW01A	May-98	9.89	--	Corrective Measures Study Investigations
7MW03	May-98	5.3	0.73	Corrective Measures Study Investigations
7MW04	May-98	2.6	2.6	Corrective Measures Study Investigations
UGW24	May-98	0.67	--	Avg of 2 tests, CMSI
UGW34	Jan-02	0.58	--	Corrective Measures Study
UGW32	Jan-02	0.74	--	Corrective Measures Study
UGW31	Jan-02	2.72	--	Corrective Measures Study
UGW20	Aug-96	12.34	--	Avg of 2 tests, RFI
	Maximum	12.34	--	Maximum
	Minimum	0.35	--	Minimum
	Average	3.52	--	Average

TABLE 3-1

SUMMARY OF SAMPLING AND ANALYTICAL PROGRAM
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Sample Media	Sample ID	Sample Depth (ft bgs)	Sample Date	Organics			Laboratory			Metals		Misc. Parameter	TCE Parameters		Comments
				Appendix IX Volatiles (8260)	Appendix IX Semivolatiles (8270)	(Low Level PAH) - (8270)	Nitrate(353.2)	Nitrate/Sulfate (300.3)(375.4)	Methane (SW3810)	Appendix IX Total Metals (6010)	Appendix IX Dissolved Metals (Field Filtered/6010)	Groundwater Density	Ethene & Ethane (SW3810)	TOC (9060)	
Groundwater	7MW03	NA	01/25/02	X	X		X	X	X	X	X				
	7MW05	NA	01/09/02	X	X		X	X	X	X	X				
	7MW06	NA	01/09/02	X	X		X	X	X	X	X	X			
	7MW07	NA	01/13/02	X	X		X	X	X	X	X		X	X	
	7MW07D	NA	01/13/02	X	X		X	X	X	X	X		X	X	Duplicate
	7MW07MS	NA	01/13/02	X	X		X	X	X	X	X		X		Matrix Spike
	7MW07MSD	NA	01/13/02	X	X		X	X	X	X	X		X		Matrix Spike Duplicate
	7MW08	NA	01/13/02	X	X		X	X	X	X	X		X	X	
	7MW09	NA	01/25/02	X	X		X	X	X	X	X				
	7MW10	NA	01/26/02	X	X		X	X	X	X	X		X	X	
	7MW11	NA	01/27/02	X	X		X	X	X	X	X				
	7MW12	NA	02/01/02	X	X		X	X	X	X	X				
	7MW13	NA	01/27/02	X	X		X	X	X	X	X				
	7MW14	NA	01/29/02	X	X		X	X	X	X	X				
	7MW15	NA	01/29/02	X	X		X	X	X	X	X				
	7MW16	NA	02/01/02	X	X		X	X	X	X	X	X			
	7MW17	NA	03/01/02	X	X		X	X	X	X	X	X			
	7MW18	NA	01/31/02	X	X		X	X	X	X	X				
	7MW18D	NA	01/31/02	X	X		X	X	X	X	X				Duplicate
	7MW19	NA	01/31/02	X	X		X	X	X	X	X	X			
	7MW20	NA	01/28/02	X	X		X	X	X	X	X	X	X	X	
	UGW06	NA	01/10/02	X	X		X	X		X	X				
	UGW06D	NA	01/10/02	X	X		X	X		X	X				
	UGW07	NA	01/10/02	X	X		X	X		X	X				
	UGW08	NA	01/11/02	X	X		X	X	X	X	X				
	UGW08D	NA	01/11/02	X	X		X	X	X	X	X				Duplicate
	UGW08MS	NA	01/11/02	X	X		X	X	X	X	X				Matrix Spike
	UGW08MSD	NA	01/11/02	X	X		X	X	X	X	X				Matrix Spike Duplicate

TABLE 3-1

SUMMARY OF SAMPLING AND ANALYTICAL PROGRAM
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Sample Media	Sample ID	Sample Depth (ft bgs)	Sample Date	Organics			Laboratory			Metals		Misc. Parameter	TCE Parameters		Comments
				Appendix IX Volatiles (8260)	Appendix IX Semivolatiles (8270)	(Low Level PAH) - (8270)	Nitrate(353.2)	Nitrate/Sulfate (300.3)(375.4)	Methane (SW3810)	Appendix IX Total Metals (6010)	Appendix IX Dissolved Metals (Field Filtered/6010)	Groundwater Density	Ethene & Ethane (SW3810)	TOC (9060)	
Groundwater (Cont.)	UGW09	NA	01/12/02	X	X		X	X	X	X	X				
	UGW10	NA	01/12/02	X	X		X	X	X	X	X				
	UGW11	NA	01/12/02	X	X		X	X	X	X	X	X			
	UGW15	NA	01/09/02	X	X		X	X	X	X	X				
	UGW16	NA	01/12/02	X	X		X	X	X	X	X		X	X	
	UGW18	NA	01/12/02	X	X		X	X	X	X	X				
	UGW20R	NA	01/11/02	X	X		X	X	X	X	X				
	UGW23	NA	01/25/02	X	X		X	X	X	X	X				
	UGW26	NA	01/11/02	X	X		X	X	X	X	X				
	UGW31	NA	01/16/02	X	X		X	X	X	X	X	X			
	UGW32	NA	01/16/02	X	X		X	X	X	X	X				
	UGW34	NA	01/16/02	X	X		X	X	X	X	X				
	GW04	NA	01/10/02	X	X		X	X		X	X				
	GW06	NA	01/11/02	X	X		X	X	X	X	X				
	470MW01	NA	01/15/02	X	X		X	X	X	X	X				
	470MW03	NA	01/15/02	X	X		X	X	X	X	X				
Surface Water	7SW1	(1)	01/15/02	X	X	X				X	X				
	7SW2	(1)	01/15/02	X	X	X				X	X				
	7SW3	(1)	01/15/02	X	X	X				X	X				
	7SW4	(1)	01/15/02	X	X	X				X	X				
	7SW4D	(1)	01/15/02	X	X	X				X	X				Duplicate
	7SW4MS	(1)	01/15/02	X	X	X				X	X				Matrix Spike
	7SW4MSD	(1)	01/15/02	X	X	X				X	X				Matrix Spike Duplicate
	7SW5	(1)	01/16/02	X	X	X				X	X				
	7SW6	9.5(2)	01/17/02	X	X	X				X	X				
	7SW7	8.0(2)	01/16/02	X	X	X				X	X				
	7SW8	11.5(2)	01/16/02	X	X	X				X	X				
	7SW9	16.0(2)	01/16/02	X	X	X				X	X				

TABLE 3-1

SUMMARY OF SAMPLING AND ANALYTICAL PROGRAM
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Sample Media	Sample ID	Sample Depth (ft bgs)	Sample Date	Organics			Laboratory			Metals		Misc. Parameter	TCE Parameters		Comments
				Appendix IX Volatiles (8260)	Appendix IX Semivolatiles (8270)	(Low Level PAH) - (8270)	Nitrate(353.2)	Nitrate/Sulfate (300.3)(375.4)	Methane (SW3810)	Appendix IX Total Metals (6010)	Appendix IX Dissolved Metals (Field Filtered/6010)	Groundwater Density	Ethene & Ethane (SW3810)	TOC (9060)	
Surface Soil	7MW16-00	0.0-1.0	01/16/02	X	X	X				X					
	7MW17-00	0.0-1.0	01/16/02	X	X					X					
	7MW17-00D	0.0-1.0	01/16/02	X	X					X					Duplicate
	7MW17-00MS	0.0-1.0	01/16/02	X	X					X					Matrix Spike
	7MW17-00MSD	0.0-1.0	01/16/02	X	X					X					Matrix Spike Duplicate
	7MW18-00	0.0-1.0	01/29/02	X	X					X					
	7MW19-00	0.0-1.0	01/30/02	X	X					X					
	7SB23-00	0.0-1.0	01/23/02	X	X					X					
	7SB24-00	0.0-1.0	01/23/02	X	X					X					
	7SB25-00	0.0-1.0	01/24/02	X	X					X					
	7SB26-00	0.0-1.0	01/24/02	X	X					X					
	7SB27-00	0.0-1.0	01/12/02	X	X					X					
	7SB28-00	0.0-1.0	01/23/02	X	X					X					
	7SB29-00	0.0-1.0	01/12/02	X	X					X					
	7SB30-00	0.0-1.0	01/12/02	X	X					X					
Subsurface Soil	7MW16-06	6.0-7.0	01/16/02		X	X									
	7MW17-03	3.0-7.0	01/23/02			X									
	7MW17-03D	3.0-7.0	01/23/02			X									
	7MW17-03MS/MSD	3.0-7.0	01/23/02			X									
	7MW18-03	3.0-3.6	01/29/02		X	X									
	7MW19-03	3.0-4.6	01/30/02		X	X									
	7SB23-07	6.0-7.0	01/22/02			X									
	7SB24-07	7.0-11.0	01/23/02		X	X									
	7SB24-07D	7.0-11.0	01/23/02		X	X									
	7SB25-04	4.0-5.2	01/29/02		X	X									
	7SB26-07	8.0-9.0	01/24/02		X	X									

TABLE 3-1

SUMMARY OF SAMPLING AND ANALYTICAL PROGRAM
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Sample Media	Sample ID	Sample Depth (ft bgs)	Sample Date	Organics			Laboratory			Metals		Misc. Parameter	TCE Parameters		Comments
				Appendix IX Volatiles (8260)	Appendix IX Semivolatiles (8270)	(Low Level PAH) - (8270)	Nitrate(353.2)	Nitrate/Sulfate (300.3)(375.4)	Methane (SW3810)	Appendix IX Total Metals (6010)	Appendix IX Dissolved Metals (Field Filtered/6010)	Groundwater Density	Ethene & Ethane (SW3810)	TOC (9060)	
Subsurface Soil (Cont.)	7SB27-11	11.0-12.4	01/12/02		X	X									
	7SB28-03	3.0-7.0	01/22/02			X									
	7SB29-10	10.0-10.75	01/12/02		X	X									
	7SB30-08	8.0-8.9	01/12/02		X	X									
Sediment	7SD1	0.0-0.5	01/15/02	X	X	X				X				X	
	7SD2	0.0-0.5	01/15/02	X	X	X				X				X	
	7SD3	0.0-0.5	01/15/02	X	X	X				X				X	
	7SD4	0.0-0.5	01/15/02	X	X	X				X				X	
	7SD4D	0.0-0.5	01/15/02	X	X	X				X				X	Duplicate
	7SD5	0.0-0.5	01/15/02	X	X	X				X				X	
	7SD6	0.0-0.5	01/15/02	X	X	X				X				X	
	7SD7	0.0-0.3	01/16/02	X	X	X				X				X	
	7SD8	0.0-0.3	01/16/02	X	X	X				X				X	
	7SD9	0.0-0.3	01/16/02	X	X	X				X				X	
	7SD11	0.0-0.3	01/15/02	X	X	X				X				X	
	7SD11D	0.0-0.3	01/15/02	X	X	X				X				X	
	7SD11MS/MSD	0.0-0.3	01/15/02	X	X	X				X				X	
	7SD12	0.0-0.3	01/15/02	X	X	X				X				X	
	7SD13	0.0-0.3	01/16/02	X	X	X				X				X	
	7SD14	0.0-0.3	01/16/02	X	X	X				X				X	

Notes:
ft bgs - feet below ground surface.
(1) - Sample collected one foot up from sea floor.
(2) - Depth shown is from below water surface.

TABLE 3-2

LABORATORY ANALYTICAL METHODS
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Volatiles	Quantitation Limits*		Method Number
	Water (mg/L)	Low Soil (mg/kg)	
Acetone	50	50	8260
Acetonitrile	200	200	8260
Acrolein	100	100	8260
Acrylonitrile	100	100	8260
Benzene	5.0	5.0	8260
Bromodichloromethane	5.0	5.0	8260
Bromoform	5.0	5.0	8260
Bromomethane	10	10	8260
Carbon Disulfide	5.0	5.0	8260
Carbon Tetrachloride	5.0	5.0	8260
Chlorobenzene	5.0	5.0	8260
Chloroethane	10	10	8260
Chloroform	5.0	5.0	8260
Chloromethane	10	10	8260
Chloroprene	5.0	3.0	8260
3-Chloro-1-propene	5.0	5.0	8260
1,2-Dibromo-3-chloropropane	5.0	10	8260
Dibromochloromethane	5.0	5.0	8260
1,2-Dibromoethane	5.0	5.0	8260
Dibromomethane	5.0	5.0	8260
trans-1,4-Dichloro-2-butene	10	10	8260
Dichlorodifluoromethane	10	5.0	8260
Dibromomethane	5.0	5.0	8260
1,1-Dichloroethane	5.0	5.0	8260
1,2-Dichloroethane	5.0	5.0	8260
trans-1,2-dichloroethene	5.0	5.0	8260
1,1-Dichloroethene	5.0	5.0	8260
Methylene Chloride	5.0	5.0	8260
1,2-Dichloropropane	5.0	5.0	8260
cis-1,3-Dichloropropene	5.0	5.0	8260
trans-1,3-Dichloropropene	5.0	5.0	8260
Ethyl benzene	5.0	5.0	8260
Ethyl methacrylate	5.0	5.0	8260
2-Hexanone	25	25	8260
Iodomethane	5.0	5.0	8260
Isobutanol	200	200	8260
Methacrylonitrile	100	100	8260
2-Butanone	25	25	8260
Methyl methacrylate	5.0	5.0	8260
4-Methyl-2-pentanone	25	25	8260

TABLE 3-2

LABORATORY ANALYTICAL METHODS
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Volatiles (Cont.)	Quantitation Limits*		Method Number
	Water (mg/L)	Low Soil (mg/kg)	
Pentachloroethane	25	25	8260
Propionitrile	100	100	8260
Stryene	5.0	5.0	8260
1,1,1,2-Tetrachloroethane	5.0	5.0	8260
1,1,2,2-Tetrachloroethane	5.0	5.0	8260
Tetrachloroethene	5.0	5.0	8260
Toluene	5.0	5.0	8260
1,1,1-Trichloroethane	5.0	5.0	8260
1,1,2-Trichloroethane	5.0	5.0	8260
Trichloroethene	5.0	5.0	8260
Trichlorofluoromethane	5.0	5.0	8260
1,2,3-Trichloropropane	5.0	5.0	8260
Vinyl Acetate	10	10	8260
Vinyl Chloride	10	10	8260
Xylene	10	10	8260

TABLE 3-2

LABORATORY ANALYTICAL METHODS
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Semivolatiles	Quantitation Limits*		Method Number
	Water (mg/L)	Low Soil (mg/kg)	
Acenaphthene	10	330	8270
Acenaphthylene	10	330	8270
Acetophenone	10	330	8270
2-Acetylaminofluorene	10	330	8270
4-Aminobiphenyl	20	330	8270
Aniline	20	330	8270
Anthracene	10	330	8270
Aramite	10	330	8270
Benzo(a)anthracene	10	330	8270
Benzo(b)fluoranthene	10	330	8270
Benzo(k)fluoranthene	10	330	8270
Benzo(g,h,i)perylene	10	330	8270
Benzo(a)pyrene	10	330	8270
Benzyl alcohol	10	330	8270
Bis(2-chloroethoxyl)methane	10	330	8270
Bis(2-chloroethyl)ether	10	330	8270
Bis(2-ethylhexyl)phthalate	10	330	8270
4-Bromophenyl phenyl ether	10	330	8270
Butylbenzylphthalate	10	330	8270
4-Chloroaniline	20	660	8270
4-Chloro-3-methylphenol	10	330	8270
2-Chloronaphthalene	10	330	8270
2-Chlorophenol	10	330	8270
4-Chlorophenyl phenyl ether	10	330	8270
Chrysene	10	330	8270
3&4 Methylphenol	10	330	8270
2-Methylphenol	10	330	8270
Diallate	10	330	8270
Dibenzofuran	10	330	8270
Di-n-butyl phthalate	10	330	8270
Dibenzo(a,h)anthracene	10	330	8270
o-Dichlorobenzene	10	330	8270
m-Dichlorobenzene	10	330	8270
p-Dichlorobenzene	10	330	8270
3,3'-Dichlorobenzidine	20	660	8270
2,4-Dichlorophenol	10	330	8270
2,6-Dichlorophenol	10	330	8270
Diethylphthalate	10	330	8270
p-(Dimethylamino)azobenzene	10	330	8270
7,12-Dimethyl benz(a)anthracene	10	330	8270

TABLE 3-2

LABORATORY ANALYTICAL METHODS
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Semivolatiles (Cont.)	Quantitation Limits*		Method Number
	Water (mg/L)	Low Soil (mg/kg)	
3,3-Dimethyl benzidine	20	1,700	8270
2,4-Dimethylphenol	10	330	8270
alpha, alpha-Dimethylphenethylamine	2,000	67,000	8270
Dimethyl phthalate	10	330	8270
m-Dinitrobenzene	10	330	8270
4,6-Dinitro-2-methylphenol	50	1,700	8270
2,4-Dinitrophenol	50	1,700	8270
2,4-Dinitrotoluene	10	330	8270
2,6-Dinitrotoluene	10	330	8270
Di-n-octylphthalate	10	330	8270
1,4-Dioxane	10	330	8270
Dinoseb	10	330	8270
Ethylmethanesulfonate	10	330	8270
Fluoranthene	10	330	8270
Fluorene	10	330	8270
Hexachlorobenzene	10	330	8270
Hexachlorobutadiene	10	330	8270
Hexachlorocyclopentadiene	10	330	8270
Hexachloroethane	10	330	8270
Hexachlorophene	5,000	170,000	8270
Hexachloropropene	10	330	8270
Indeno(1,2,3-cd)pyrene	10	330	8270
Isophorone	10	330	8270
Isosafrole	10	330	8270
Methapyrilene	2,000	67,000	8270
3-Methylcholanthrene	10	330	8270
Methyl methanesulfonate	10	330	8270
2-Methylnaphthalene	10	330	8270
Naphthalene	10	330	8270
1,4-Naphthoquinone	10	330	8270
1-Naphthylamine	10	330	8270
2-Naphthylamine	10	330	8270
2-Nitroaniline	50	1,700	8270
3-Nitroaniline	50	1,700	8270
4-Nitroaniline	50	1,700	8270
Nitrobenzene	10	330	8270
2-Nitrophenol	10	330	8270
4-Nitrophenol	50	1,700	8270
4-Nitroquinoline-1-oxide	20	3,300	8270
n-Nitrosodi-n-butylamine	10	330	8270

TABLE 3-2

LABORATORY ANALYTICAL METHODS
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Semivolatiles (Cont.)	Quantitation Limits*		Method Number
	Water (mg/L)	Low Soil (mg/kg)	
n-Nitrosodiethylamine	10	330	8270
n-Nitrosodimethylamine	10	330	8270
n-Nitrosodiphenylamine	NA	330	8270
n-Nitrosodi-n-propylamine	10	330	8270
n-Nitrosomethylethylamine	10	330	8270
n-Nitrosomorpholine	10	330	8270
n-Nitrosopiperidine	10	330	8270
n-Nitrosopyrrolidine	10	330	8270
5-Nitro-o-toluidine	10	330	8270
bis-(2-chloroisopropyl)ether	10	330	8270
Pentachlorobenzene	10	330	8270
Pentachloronitrobenzene	10	330	8270
Pentachlorophenol	50	1,700	8270
Phenacetin	10	330	8270
Phenanthrene	10	330	8270
Phenol	10	330	8270
1,4-Phenylenediamine	2,000	1,700	8270
2-Picolin	10	330	8270
Pronamide	10	330	8270
Pyrene	10	330	8270
Pyridine	50	330	8270
Safrole	10	330	8270
1,2,4,5-Tetrachlorobenzene	10	330	8270
2,3,4,6-Tetrachlorophenol	10	330	8270
o-Toluidine	10	330	8270
1,2,4-Trichlorobenzene	10	330	8270
2,4,5-Trichlorophenol	10	330	8270
2,4,6-Trichlorophenol	10	330	8270
1,3,5-Trinitrobenzene	10	330	8270
Miscellaneous Parameters			
TOC	1,000	1,000	9060

Notes:

* Quantitation limits listed for soil/sediment are based on wet weight. The quantitation limits calculated by the laboratory for soil/sediment, calculated on dry weight basis, will be higher.
NA - Not Available.

TABLE 3-2

LABORATORY ANALYTICAL METHODS
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Inorganics	Quantitation Limits*		Method Number	Method Description
	Water (mg/L)	Low Soil (mg/kg)		
Antimony	20	2.0	6010	Inductively Coupled Plasma
Arsenic	10	1.0	6010	Inductively Coupled Plasma
Barium	10	1.0	6010	Inductively Coupled Plasma
Beryllium	4.0	0.4	6010	Inductively Coupled Plasma
Cadmium	5.0	0.5	6010	Inductively Coupled Plasma
Chromium	10	1.0	6010	Inductively Coupled Plasma
Cobalt	10	1.0	6010	Inductively Coupled Plasma
Copper	20	2.0	6010	Inductively Coupled Plasma
Lead	5.0	0.5	6010	Inductively Coupled Plasma
Mercury	0.2	0.02	7470/7471	Cold Vapor AA
Nickel	40	4.0	6010	Inductively Coupled Plasma
Selenium	10	1.0	6010	Inductively Coupled Plasma
Silver	10	1.0	6010	Inductively Coupled Plasma
Thallium	10	1.0	6010	Inductively Coupled Plasma
Tin	10	5.0	6010	Inductively Coupled Plasma
Vanadium	10	1.0	6010	Inductively Coupled Plasma
Cyanide	0.010	1.0	9012	Colorimetric
Sulfide	1.0	25	9030	Titrimetric, Iodine
Zinc	20	2.0	6010	Inductively Coupled Plasma

Note:

* Quantitation limits listed for soil/sediment are based on wet weight. The quantitation limits calculated by the laboratory for soil/sediment, calculated on dry weight basis, will be higher.

TABLE 3-3

SUMMARY OF SOIL BORING AND WELL CONSTRUCTION DETAILS
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Location Type	Monitor Well No./ Soil Boring No.	Date Installed	Top of PVC Casing Elevation (ft msl)	Ground Surface Elevation (feet above msl)	Boring Depth (ft bgs)	Depth to Bedrock (ft bgs)	Well Depth (ft bgs)	Screen Interval Depth (ft bgs)	Sand Pack Interval (ft bgs)	Bentonite Interval (ft bgs)	Stick-Up (ft bgs)
Monitor Well	7MW10	1/17/02	106.74	106.93	14.0	NA	12.0	2.0-12.0	1.0-12.0	0.0-1.0	-0.19
	7MW11	1/15/02	109.02	109.23	13.0	NA	12.0	2.0-12.0	1.0-12.0	0.0-1.0	-0.21
	7MW12	1/31/02	107.95	108.14	20.0	NA	10.5	2.0-10.5	1.0-10.5	0.0-1.0	-0.19
	7MW13	1/16/02	108.39	108.60	14.0	NA	12.0	2.0-12.0	1.0-14.0	0.0-1.0	-0.21
	7MW14	1/14/02	106.59	106.61	15.0	NA	12.0	2.0-12.0	1.0-15.0	0.0-1.0	-0.02
	7MW15	1/15/02	114.17	111.50	14.0	NA	12.2	2.2-12.2	1.0-12.2	0.0-1.0	2.67
	7MW16	1/30/02	120.57	118.19	20.0	16.0	17.3	2.3-17.3	1.0-17.3	0.0-1.0	2.38
	7MW17	2/28/02	147.64	144.60	46.0	8.4	46.0	26.0-46.0	10.0-46.0	8.0-10.0	3.04
	7MW18	1/29/02	175.31	173.07	87.0	7.5	77.5	57.5-77.5	47.0-77.5	44.0-47.0	2.24
	7MW19	1/24/02	216.82	214.33	121.4	3.0	117.8	97.8-117.8	90.0-117.8	88.0-90.0	2.49
	7MW20	1/11/02	113.30	110.88	16.5	5.0	15.0	5.0-15.0	3.0-16.5	1.0-3.0	2.42
	UGW31	6/9/94	144.97	142.66	55.0	12.0	46.5	36.0-46.0	33.0-50.0	32.0-33.0	2.31
	UGW32	6/22/94	188.57	185.74	100.0	30.0	89.5	74.0-89.0	72.0-100.0	70.0-72.0	2.83
	UGW34	6/27/94	191.28	188.61	124.0	2.0	115.5	100.0-115.0	96.0-124.0	94.0-96.0	2.67
Soil Boring	7MW18A	1/28/02	NA	172.35	3.5	3.5	NA	NA	NA	NA	NA
	7MW19A	1/20/02	NA	213.99	4.5	4.5	NA	NA	NA	NA	NA
	7SB23	1/23/02	NA	153.04	8.1	8.1	NA	NA	NA	NA	NA
	7SB24	1/23/02	NA	120.50	11.0	11.0	NA	NA	NA	NA	NA
	7SB25	1/24/02	NA	124.96	5.2	5.2	NA	NA	NA	NA	NA
	7SB26	1/24/02	NA	120.75	13.0	13.0	NA	NA	NA	NA	NA
	7SB27	1/12/02	NA	181.77	12.4	12.4	NA	NA	NA	NA	NA
	7SB28	1/22/02	NA	174.20	12.5	12.5	NA	NA	NA	NA	NA
	7SB29	1/12/02	NA	189.31	10.8	10.8	NA	NA	NA	NA	NA
	7SB30	1/12/02	NA	184.75	8.9	8.9	NA	NA	NA	NA	NA

Notes:

ft - feet.
bgs - below ground surface.
msl - mean sea level + 100 ft.
NA - Not Applicable/Not Available.

TABLE 3-4

SUMMARY OF WELL DEVELOPMENT INFORMATION
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Well ID	Time Start	Time Finish	Initial Water Level (ft. from top of PVC)	Total Depth (ft from top of PVC)	Well Diameter (inches)	Calculated Well Volume (gallons)	Development Method	Comments
7MW10	1018	1035	6.12	12.1	2	0.99	Hand pump with foot valve	Approximately 17 gallons were purged out of monitor well. Purged water was very turbid and did not clear up.
7MW11	1516	1550	6.54	11.9	4	3.50	Hand pump with foot valve	Approximately 12 gallons were purged out of monitor well. After the12 gallons were purged, pumping method could no longer purge out anymore water (SWL = 11.42').
7MW12	1006	1045	9.40	11.20	4	1.18	Peristaltic Pump (Full Power)	Approximately 10 gallons were purged out of monitor well. Purged water was initially turbid then cleared up rather quickly.
7MW13	1640	1720	6.65	11.7	4	3.32	Hand pump with foot valve	Approximately 20 gallons were purged out of monitor well (SWL = 7.79'). Purged water was very turbid and did not clear up. Slight petroleum odor with visible sheen on purge water.
7MW14	0833	0846	4.75	11.59	4	4.50	Hand pump with foot valve	Approximately 6 gallons were purged out of monitor well. After the 6 gallons were purged, pumping method could no longer purge out anymore water (SWL = 11.60). Purged water was very turbid and did not clear up.
7MW15	1000	1012	8.74	14.92	4	4.10	Hand pump with foot valve	Approximately 7 gallons were purged out of monitor well. After the 7 gallons were purged, pumping method could no longer purge out anymore water (SWL = 14.32', PSH = 14.27'). Purged water was initially clear then became slightly more turbid.
7MW16	1622	1713	10.01	19.70	4	6.36	(2) Peristaltic Pumps (Full Power)[(1)]	Approximately 17 gallons were purged out of monitor well. Purged water was initially turbid then cleared up rather quickly.
7MW17	NA	NA	43.13	49.84	4	4.41	Downhole Pump	A total of approximately 21 gallons were purged out of monitor well during three segments of development. Monitor well went dry all three times. Purged water was initially very turbid then cleared up.

TABLE 3-4

SUMMARY OF WELL DEVELOPMENT INFORMATION
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Well ID	Time Start	Time Finish	Initial Water Level (ft. from top of PVC)	Total Depth (ft from top of PVC)	Well Diameter (inches)	Calculated Well Volume (gallons)	Development Method	Comments
7MW18	1704 / 1750	1705 / 1753	71.27	80.80	4	6.30	Downhole Pump	A total of approximately 17 gallons were purged out of monitor well during two segments of development. Monitor well went dry both times. Purged water was very turbid and did not clear up.
7MW19	1154	1220	112.50	123.30	2	1.80	Disposable Teflon Bailer	Approximately 7 gallons were purged out of monitor well. Purged water was initially turbid, then became more clear.
7MW20	1418	1428	11.90	20.3	4	5.52	Hand pump with foot valve	Approximately 5 gallons were purged out of monitor well. After the 5 gallons were purged, pumping method could no longer purge out anymore water (SWL = 17.19'). Purged water was very turbid and did not clear up.

Note:

ft - feet.
PVC - Polyvinyl Chloride Riser.
NA - Not Available.
(1) - Second peristaltic pump was added at 1651.

TABLE 3-5

SUMMARY OF GROUNDWATER FIELD PARAMETERS
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Well No.	Time Interval	Static Water Level (ft from top of PVC)	Temperature (^{O}C)	pH (S.U.)	Specific Conductance (umhos/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (N.T.U.)	Ferrous Iron (mg/L)	Alkalinity (mg/L)
7MW05	0823	11.43								
1/9/02	0826	11.61								
	0830	11.54	29.4	7.20	2,616		117.8	60.8		
	0834	11.54	29.7	7.26	2,635		105.3	2.0		
	0838	11.53	29.7	7.21	2,889		103.0	1.3		
	0840	11.53	29.7	7.22	3,008		103.2	1.0		
	0844	11.53	29.6	7.18	3,026	0.6	101.1	0.6	0.00	601
UGW15	1002	10.98	31.1	6.81	14,800		-236.1	0.4		
1/9/02	1027	10.98	31.2	6.81	13,300		-303.7	0.6		
	1033	10.97	31.2	6.82	15,710		-305.3	0.2		
	1038	10.99	31.3	6.82	19,450		-307.0	0.2		
	1045	10.98	31.3	6.80	20,450		-316.2	0.1		
	1050	10.98	31.1	6.83	20,360	0.7	-311.8	0.2	0.09	989
7MW06	1208	7.27	29.4	6.40	44,010		-15.1	0.1		
1/9/02	1214	7.21	29.4	6.43	43,890		-18.0	1.5		
	1218	7.26	29.6	6.45	43,490		-52.0	0.8		
	1225	7.27	29.4	6.45	40,400		-107.9	1.5		
	1231	7.27	29.6	6.49	40,730		-135.0	1.7		
	1236	7.27	29.6	6.49	39,700		-159.6	0.9		
	1241	7.27	29.4	6.49	37,370		-200.5	0.6		
	1249	7.27	29.7	6.49	33,650		-223.4	0.0		
	1254	7.27	29.6	6.50	33,020	0.2	-231.8	0.8	0.05	674
UGW07	0815	8.06	27.7	6.94	3,593		-44.8	3.5		
1/10/02	0822	7.94	27.9	6.98	3,415		-77.2	2.9		
	0828	8.03	27.9	7.04	3,289		-83.7	3.7		
	0835	8.16	27.8	7.03	3,441		-98.1	1.7		
	0842	8.27	27.9	7.00	3,550		-114.3	1.2		
	0847	8.30	28.1	7.06	3,745	0.6	-122.6	1.1	0.90	722
GW04	1039	9.89	31.2	7.20	1,101		-143.2	8.9		
1/10/02	1044	10.68	30.7	7.16	1,045		-129.5	8.9		
	1049	11.35	31.0	7.12	1,037	1.0	-131.2	8.0	1.05	451
UGW06	1245	9.15	30.2	6.65	12,690		-327.8	0.9		
1/10/02	1252	9.18	29.9	6.60	29,800		-326.4	0.4		
	1257	9.20	29.9	6.64	29,100	0.4	-330.7	0.4	0.06	918
UGW08	0822	6.83	27.9	6.58	1,640		29.1	2.4		
1/11/02	0827	6.89	28.7	6.62	1,595		28.3	2.4		
	0832	6.92	28.4	6.66	1,590	0.8	22.9	2.2	0.12	680
UGW26	1050	6.78	30.6	6.57	5,370		86.1	0.0		
1/11/02	1055	6.72	30.3	6.62	5,450		66.1	0.1		
	1102	6.72	30.8	6.82	5,370		75.4	0.1		
	1108	6.73	31.0	6.80	5,450	0.4	77.0	0.1	0.02	639
GW06	1259	9.31	30.1	6.48	13,310		109.0	0.6		
1/11/02	1304	9.43	30.1	6.55	13,420		91.7	0.5		
	1309	9.52	30.0	6.59	13,430	1.0	82.3	0.2	0.03	488
UGW20R	Well went dry after purging on 1/10/02. Well went dry again during sampling on 1/11/02. Finished sampling 1/12/02.									
1/12/02	0803	8.08	30.4	6.32	11,240	1.0	15.2	15.1	0.80	571
UGW09	0835	3.76	29.2	7.15	419		70.9	3.6		
1/12/02	0840	3.77	29.5	7.32	400		86.4	2.9		
	0845	3.82	29.7	7.39	399	0.6	94.9	2.9	0.01	120
UGW10	0945	9.42	30.3	6.63	1,621		-104.0	8.3		
1/12/02	0950	9.44	30.5	6.65	1.607		-115.3	5.4		
	0955	9.44	30.3	6.65	1,602		-113.2	2.9		
	1000	9.44	30.4	6.74	1,592	0.6	-107.9	2.7	0.43	732

TABLE 3-5

SUMMARY OF GROUNDWATER FIELD PARAMETERS
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Well No.	Time Interval	Static Water Level (ft from top of PVC)	Temperature (^{O}C)	pH (S.U.)	Specific Conductance (umhos/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (N.T.U.)	Ferrous Iron (mg/L)	Alkalinity (mg/L)
UGW11	1055	8.78	30.2	7.04	14,870		-290.3	17.7		
1/12/02	1100	8.78	30.1	7.09	7,070		-252.3	2.9		
	1105	8.78	29.8	7.05	5,740		-209.2	1.4		
	1110	8.78	29.7	7.06	5,380		-192.1	1.3		
	1115	8.78	30.1	7.09	5,080	0.6	-191.9	1.1	0.03	413
UGW18	1417	10.21	30.8	6.91	2,499		27.4	1.3		
1/12/02	1422	10.15	30.3	6.97	2,473		37.5	1.6		
	1427	10.16	30.6	7.00	2,500	0.8	42.5	0.9	0.01	158
UGW16	1528	11.35	30.5	6.60	3,722		89.3	3.5		
1/12/02	1533	11.10	30.5	6.62	3,997		76.9	1.3		
	1538	11.59	30.5	6.79	3,297		76.3	1.8		
	1543	11.53	30.5	6.79	3,589		82.9	0.6		
	1548	11.50	30.6	6.82	3,628	1.0	80.0	0.8	0.00	262
7MW08	0835	9.75	29.5	6.42	8.13		-19.6	3.2		
1/13/02	0840	9.75	29.6	6.51	8.13		-19.6	2.1		
	0845	9.75	29.6	6.55	8.21	1.0	-22.8	0.3	0.51	449
7MW07	0959	13.54	29.6	7.33	1,264		73.7	3.4		
1/13/02	1004	13.57	29.8	7.36	1,232		78.7	4.0		
	1009	13.58	29.9	7.40	1,235		70.5	4.8		
	1014	13.59	29.8	7.44	1,218	2.0	79.7	5.1	0.01	438
470MW03	0805	19.20	28.7	6.49	6.04		-135.8	2.4		
1/15/02	0810	19.32	29.0	6.51	6.18		-110.8	1.9		
	0815	19.52	29.3	6.51	6.27	0.4	-106.9	1.7	1.73	687
470MW01	0944	(1)	29.4	6.67	3,113		-102.1	6.2		
1/15/02	0949	(1)	29.2	6.69	2,936		-96.9	5.4		
	0954	(1)	29.3	6.77	2,842		-101.0	5.1		
	0957	(1)	29.4	6.74	2,741		-101.5	5.9		
	1001	(1)	29.2	6.74	2,686	1.0	-102.4	5.5	1.96	1,146
UGW34	0845	(1)	28.3	6.81	6,120		84.7	5.2		
1/16/02	0850	(1)	29.3	6.84	6,380		87.7	3.1		
	0855	(1)	29.3	6.94	6,260		90.9	1.8		
	0857	(1)	29.4	6.94	6,360	3.0	88.2	1.7	0.01	710
UGW31	1017	(1)	27.8	6.67	10,140		101.7	155.0		
1/16/02	1020	(1)	28.0	6.66	10,240		103.5	47.3		
	1023	(1)	28.0	6.66	10,450		109.1	23.7		
	1026	(1)	28.2	6.64	10,500		114.3	12.9		
	1029	(1)	28.3	6.62	10,550		110.3	8.6		
	1032	(1)	28.3	6.64	10,670		109.1	6.7		
	1035	(1)	28.1	6.65	10,630	2.0	110.5	5.2	0.03	582
UGW32	1230	(1)	28.6	6.68	7,610		110.9	102.4		
1/16/02	1235	(1)	28.6	6.68	7,370		114.9	(2)		
	1239	(1)	28.8	6.60	6,170		123.3	177.0		
	1243	(1)	28.8	6.63	7,490		108.8	54.3		
	1247	(1)	28.8	6.64	7,590		106.0	22.1		
	1252	(1)	28.7	6.63	7,570		118.0	12.3		
	1257	(1)	28.7	6.64	7,610	1.0	119.7	8.3	0.04	659

TABLE 3-5

SUMMARY OF GROUNDWATER FIELD PARAMETERS
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Well No.	Time Interval	Static Water Level (ft from top of PVC)	Temperature (^{O}C)	pH (S.U.)	Specific Conductance (umhos/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (N.T.U.)	Ferrous Iron (mg/L)	Alkalinity (mg/L)
UGW23	0816	(1)	28.0	7.26	1,059		123.4	4.35		
1/24/02	0821	(1)	28.3	7.22	1,097		115.5	9.91		
	0826	(1)	28.6	7.33	1,128		108.4	11.2		
	0831	(1)	30.2	7.27	1,227		77.9	20.5		
	0836	(1)	30.2	7.36	1,253		90.5	13.8		
	0841	(1)	30.3	7.39	1,258	0.4	88.9	15.2	0.01	717
7MW09	1358	55.80	28.7	6.48	3,379		-65.5	13.2		
1/24/02	1403	56.30	29.2	6.51	3,456		-88.9	13.7		
	1408	57.20	29.5	6.47	3,573		-82.7	15.6		
	1412	57.60	29.6	6.53	3,618	0.4	-76.9	17.5	0.26	970
7MW03	0856	92.10	27.7	7.71	12,910		12.8	20.3		
1/25/02	0901	99.90	29.7	7.74	12,880		-120.7	9.6		
	0906	102.70	29.6	7.92	13,210		-131.6	4.7		
	0911	105.00	30.7	8.05	13,350		-126.6	5.6		
	0916	106.20	31.3	8.10	13,420		-115.8	9.5		
	0921	110.90	30.6	7.97	13,590	0.4	-94.4	14.7	0.07	344
7MW20	1014	12.90	28.7	9.12	1,621		126.2	112.0		
1/26/02	1019	13.25	28.8	8.88	1,705		150.5	49.6		
	1024	13.58	28.9	8.91	1,718		164.5	35.1		
	1029	13.84	28.7	9.04	1,762		193.7	28.6		
	1034	13.98	28.7	9.10	1,792		206.5	21.3		
	1039	14.11	28.8	9.07	1,804	1.0	219.9	23.2	0.06	532
7MW10	1310	6.18	29.1	10.29	11,600		-282.5	492.0		
1/26/02	1315	6.18	29.1	10.16	6,960		-263.7	305.0		
	1320	6.18	29.2	10.09	6,040		-268.6	131.0		
	1325	6.18	29.2	10.07	5,980		-281.8	48.3		
	1330	6.18	28.8	10.04	5,930		-285.9	16.9		
	1335	6.19	28.8	10.16	5.91		-279.5	12.4		
	1340	6.19	28.7	10.11	5,860		-291.8	8.2		
	1345	6.20	28.8	10.22	5,890		-279.9	7.1		
	1350	6.20	28.8	10.06	5,830		-285.8	4.1		
	1355	6.20	28.5	10.22	5,900		-271.9	3.0		
	1400	6.20	28.7	10.12	5,860		-285.0	2.2		
	1405	6.20	29.0	10.11	5,900	0.6	-288.8	2.2	0.09	487
7MW11	0755	6.92	29.2	8.24	941		-77.1	52.0		
1/27/02	0800	7.05	29.9	8.42	923		-82.1	36.4		
	0805	7.14	29.8	8.54	905		-83.0	29.5		
	0810	7.22	29.9	8.55	904	0.6	-81.3	27.5	1.29	507
7MW13	0933	6.89	29.3	6.02	1,002		-51.4	89.6		
1/27/02	0938	6.94	29.1	6.11	1,002		-56.0	32.9		
	0943	6.96	29.5	6.02	1,000		-59.3	21.5		
	0948	6.97	29.4	6.08	1,003	1.0	-62.7	19.5	1.18	639
7MW14	0920	5.95	27.8	5.99	10,660		-141.2	205.0		
1/29/02	0926	6.08	27.7	5.74	16,160		-132.5	137.0		
	0932	6.33	27.9	5.68	19,180		-131.5	91.3		
	0938	6.58	27.8	5.63	19,270		-124.9	109.6		
	0943	6.85	27.6	5.68	19,140	1.0	-121.9	106.4	1.42	889

TABLE 3-5

SUMMARY OF GROUNDWATER FIELD PARAMETERS
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Well No.	Time Interval	Static Water Level (ft from top of PVC)	Temperature (^{O}C)	pH (S.U.)	Specific Conductance (umhos/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Turbidity (N.T.U.)	Ferrous Iron (mg/L)	Alkalinity (mg/L)
7MW15	1132	8.79	28.5	5.45	3,744		-118.9	5.7		
1/29/02	1137	9.05	28.6	5.36	3,715		-115.2	4.5		
	1142	9.31	28.6	5.32	3,653		-111.9	4.0		
	1147	9.61	28.5	5.31	3,543		-112.0	4.3		
	1152	9.87	28.6	5.37	2,943		-102.0	3.1		
	1157	10.11	28.5	5.36	2,502		-88.9	3.4		
	1203	10.31	28.7	5.36	2,435		-88.3	3.8		
	1208	10.50	28.1	5.46	2,407	1.0	-91.9	3.9	0.71	895
7MW19	0905	NA	29.0	6.22	14,020		82.4	(2)		
1/30/02	0910	NA	29.9	6.18	14,500		80.6	(2)		
	0915	NA	29.9	6.08	14,680	0.9	84.1	(2)	1.75	538
7MW18	0809	75.52	28.6	9.05	4,070		52.5	438.0		
1/31/02	0814	76.55	29.9	9.41	4,113		30.0	(2)		
	0819	(3)	29.8	9.64	4,366	4.0	41.2	(2)	0.10	614
7MW12	0826	7.80	28.7	9.46	3,620		-123.4	44.9		
2/1/02	0831	7.80	28.9	9.16	3,603		-115.2	38.5		
	0836	7.80	28.9	9.05	3,685		-110.2	27.7		
	0841	7.80	28.6	9.02	3,739		-108.3	18.4		
	0846	7.80	28.8	9.04	3,755		-110.2	14.3		
	0851	7.79	28.5	9.02	3,776		-106.9	10.9		
	0856	7.79	29.0	9.03	3,789		-105.9	8.9		
	0901	7.77	29.1	9.06	3,848		-104.5	6.9		
	0906	7.76	28.9	9.12	3,914		-107.9	5.0		
	0911	7.76	29.2	9.10	3,873	0.6	-112.8	4.6	0.16	702
7MW16	1121	7.96	28.3	6.67	1,403		-35.7	31.5		
2/1/02	1126	7.96	28.1	6.63	1,397		-33.8	40.4		
	1131	7.97	28.3	6.60	1,401		-31.6	45.9		
	1136	7.97	28.3	6.55	1,403	0.5	-29.1	47.8	0.59	652
7MW17	1050	40.94	28.4	6.54	9,680		115.6	37.1		
3/1/02	1100	41.21	29.3	6.45	10,560		109.1	46.1		
	1105	42.34	29.9	6.53	10,610		98.9	20.9		
	1110	41.45	30.2	6.54	10,600		94.3	13.4		
	1115	41.56	30.1	6.57	10,590	3.0	95.1	12.9	0.02	760

Notes:

ft - feet.
PVC - Polyvinyl chloride riser.
^{o}C - Degrees Celsius.
S.U. - Standard Unit.
umhos/cm - micro ohms per centimeter.
mg/L - milligrams per liter.
mV - millivolts.
N.T.U. - Nephlometric Turbidity Units.
NA - Not Available.

(1) - The static water level was not taken during the purging process because of lack of room inside the PVC riser.
(2) - Turbidity was over-range.
(3) - Monitor well went dry after the second set of field parameters were taken.

TABLE 3-6

GROUNDWATER LABORATORY ANALYTICAL METHODS
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Monitored Natural Attenuation Parameters	**Quantitation Limits**	**Method Number**
	Water (mg/L)	
Dissolved Oxygen (DO)	50	Chemets (Field)
Nitrate	50	353.2
Ferrous Iron (Fe+2)	100	Hach Method 8146 (field)
Sulfate	5.0	375.4
Methane	0.19	SW 3810
Alkalinity	1000	Hach Alkalinity Test Kit (field)
Oxidation-Reduction Potential	0.1mV	Redox Meter (Field)
pH	unitless	Conductivity Meter (Field)
Temperature	degrees C	Conductivity Meter (Field)
Ethene[(1)]	0.19	SW 3810
Ethane[(1)]	0.19	SW 3810
Miscellaneous Parameters		
Groundwater Density	unitless	2520C

Notes:

[(1)] - Zone 4 - TCE Plume.
ppt - parts per thousand.
C - Celsius.

TABLE 3-7

SUMMARY OF SAMPLING AND ANALYTICAL PROGRAM - BASE BACKROUND
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Sample Media	Sample ID	Sample Date	Fixed Base Laboratory										Comments
			RCRA Appendix IX Parameters									Total Organic Carbon - (9060)	
			VOCs - (8260)	SVOCs - (8270)	Low level PAHs	Pest (8081)/PCBs - (8082)	Chlorinated Herbicides - (8151)	Metals (total) - (6010/7000)	Metals (diss) - (6010/7000)	Cyanides - (9012)	Dioxins & Furans - (8280)		
Background Sediment	BGOWSD01	01/17/02	X	X	X	X	X	X		X	X	X	
	BGOWSD02	01/17/02	X	X	X	X	X	X		X	X	X	
	BGOWSD03	01/17/02	X	X	X	X	X	X		X	X	X	
	BGOWSD03D	01/17/02	X	X	X	X	X	X		X	X	X	Duplicate
	BGOWSD03MS/MSD	01/17/02	X	X	X	X	X	X		X	X	X	Matrix Spike/Matrix Spike Dup.
	BGOWSD04	01/17/02	X	X	X	X	X	X		X	X	X	
	BGOWSD05	01/17/02	X	X	X	X	X	X		X	X	X	
	BGOWSD06	01/17/02	X	X	X	X	X	X		X	X	X	
	BGOWSD07	01/17/02	X	X	X	X	X	X			X	X	
	BGOWSD08	01/17/02	X	X	X	X	X	X			X	X	
	BGOWSD09	01/17/02	X	X	X	X	X	X			X	X	
Background Surface Water	BGOWSW01	01/17/02	X	X	X	X	X	X	X	X	X		
	BGOWSW02	01/17/02	X	X	X	X	X	X	X	X	X		
	BGOWSW03	01/17/02	X	X	X	X	X	X	X	X	X		
	BGOWSW03D	01/17/02	X	X	X	X	X	X	X	X	X		Duplicate
	BGOWSW03MS	01/17/02	X	X	X	X	X	X	X		X		Matrix Spike
	BGOWSW03MSD	01/17/02	X	X	X	X	X	X	X		X		Matrix Spike Duplicate
	BGOWSW04	01/17/02	X	X	X	X	X	X	X	X	X		
	BGOWSW05	01/17/02	X	X	X	X	X	X	X	X	X		
	BGOWSW06	01/17/02	X	X	X	X	X	X	X	X	X		
	BGOWSW07	01/17/02	X	X	X	X	X	X	X	X	X		
	BGOWSW08	01/17/02	X	X	X	X	X	X	X	X	X		
	BGOWSW09	01/17/02	X	X	X	X	X	X	X	X	X		

TABLE 3-8

SUMMARY OF BASE BACKGROUND SURFACE WATER FIELD PARAMETERS
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Surface Water Location	Dissolved Oxygen (D.O.) (mg/L)	Temperature from D.O. Meter (^{O}C)	Salinity (ppt)	Temperature from Salinity Meter (^{O}C)	pH (S.U.)
BG0WSW1	5.33	26.7	34.7	26.7	7.96
BG0WSW2	8.80	26.7	34.4	26.7	8.01
BG0WSW3	7.90	26.8	34.4	26.8	7.96
BG0WSW4	8.53	26.6	34.3	26.7	8.00
BG0WSW5	7.94	26.8	34.3	26.7	7.97
BG0WSW6	9.35	26.7	34.5	26.7	8.04
BG0WSW7	8.98	26.7	34.3	26.7	8.07
BG0WSW8	8.45	26.7	34.3	26.7	8.04
BG0WSW9	7.84	26.8	34.3	26.8	7.97

Notes:

mg/L - milligrams per liter.
^{o} C - Degrees Celsius.
ppt - Parts per trillion.
S.U. - Standard Unit.

TABLE 3-9

SUMMARY OF SURFACE WATER FIELD PARAMETERS
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Surface Water Location	Dissolved Oxygen (D.O.) (mg/L)	Temperature from D.O. Meter (^{O}C)	Salinity (ppt)	Temperature from Salinity Meter (^{O}C)	pH (S.U.)
7SW1	NA	NA	18.7	NA	8.14
7SW2	NA	NA	26.0	NA	8.08
7SW3	NA	NA	23.0	NA	8.13
7SW4	NA	NA	32.6	NA	6.70
7SW5	7.4	27.1	33.7	27.3	7.95
7SW6	6.9	26.2	33.7	26.3	7.88
7SW7	7.6	26.8	33.5	26.8	7.97
7SW8	7.2	26.9	34.1	26.9	7.91
7SW9	8.2	26.8	35.2	26.8	7.98

Notes:

mg/L - milligrams per liter.
^{o} C - Degrees Celsius.
ppt - Parts per trillion.
S.U. - Standard Unit.
NA - Not Available.

TABLE 3-10

FREE PRODUCT LABORATORY ANALYTICAL METHODS
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Free Product	Quantitation Limits Water (mg/L)	Method Number
Fingerprint	50	8021
Brookville Kinematic Viscosity	Centipoise	ASTM-2983
Product Density	unitless	2710F

TABLE 3-11

SUMMARY OF SAMPLING AND ANALYTICAL PROGRAM
INVESTIGATIVE DERIVED WASTE
TWFF - ADDITIONAL COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

IDW	Date	RCRA Metals	Lead	Benzene	TCLP RCRA Metals	TCLP Lead	TCLP Benzene	Comments
IDW-01	02/03/02	X	X	X				Aqueous IDW
IDW-02	02/03/02				X	X	X	Non-Aqueous IDW

TABLE 3-12

SUMMARY OF SAMPLING AND ANALYTICAL PROGRAM
QA/QC SAMPLES
TWFF - ADDITIONAL COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Location	Equipment Rinsates	Sample Date	Analysis Requested Aqueous Samples					Comments
			Appendix IX VOCs	Appendix IX SVOCs	low level PAH	Appendix IX Metals	TOC	
SWMU 7	**Equipment Rinsates**							
	7ER01	01/16/02	X	X		X		Stainless Steel Spoon
	7ER02	01/16/02		X				Split Spoon
	7ER04	01/15/02	X	X	X	X	X	Petite Ponar Dredge
	7ER07	01/09/02	X	X		X		Low Flow Tubing
	Trip Blanks							
	7TB01	01/09/02	X					Trip Blank
	7TB02	01/10/02	X					Trip Blank
	7TB03	01/11/02	X					Trip Blank
	7TB04	01/14/02	X					Trip Blank
	7TB05	01/15/02	X					Trip Blank
	7TB06	01/16/02	X					Trip Blank
	7TB07	01/16/02	X					Trip Blank
	7TB08	01/16/02	X					Trip Blank
	7TB09	01/17/02	X					Trip Blank
	7TB10	01/17/02	X					Trip Blank
	7TB11	01/22/02	X					Trip Blank
	7TB12	01/25/02	X					Trip Blank
	7TB13	01/28/02	X					Trip Blank
	7TB14	01/29/02	X					Trip Blank
	7TB15	01/30/02	X					Trip Blank
	7TB16	01/31/02	X					Trip Blank
	7TB17	02/01/02	X					Trip Blank
	7TB99	03/01/02	X					
	Field Blanks							
	2000FB01	01/14/02	X	X		X		Lab Grade DI Water
	2000FB02	01/15/02	X	X		X		Store DI Water
	2000FB03	01/15/02	X	X		X		NSRR Potable Water
Base Background	**Trip Blank**							
	BGOWTB01	01/17/02	X					

TABLE 4-1

SUMMARY OF ORGANIC DETECTIONS IN SURFACE SOIL
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Site ID	7MW16	7MW17	7MW17	7MW18	7MW19	7SB23	7SB24	7SB25
Sample ID	7MW16-00	7MW17-00	7MW17-00D	7MW18-00	7MW19-00	7SB23-00	7SB24-00	7SB25-00
Sample Date	01/15/02	01/16/02	01/16/02	01/29/02	01/30/02	01/23/02	01/23/02	01/24/02
Depth (ft bgs)	0.0 - 1.0	0.0 - 1.0	0.0 - 1.0	0.0 - 1.0	0.0 - 1.0	0.0 - 1.0	0.0 - 1.0	0.0 - 1.0
Volatiles (ug/kg)								
Styrene	6.4 U	7.1 U	6.3 U	5.8 U	5.5 U	5.9 U	5.4 U	7.6 U
Toluene	6.4 U	7.1 U	6.3 U	14 U	42	5.9 U	56	7.6 U
Xylene	6.4 U	7.1 U	6.3 U	12 U	4.6 J	12 U	5.4 J	15 U
1,1,1-Trichloroethane	6.4 U	7.1 U	6.3 U	5.8 U	5.5 U	5.9 U	3.2 J	7.6 U
Methylene chloride	6.4 U	7.1 U	6.3 U	5.8 U	5.5 U	5.9 U	5.4 U	7.6 U
2-Butanone	32 U	36 U	32 U	29 U	28 U	30 U	27 U	38 U
Trichloroethene	6.4 U	7.1 U	6.3 U	5.8 U	4.3 J	5.9 U	5.4 U	7.6 U
Semivolatiles (ug/kg)								
Bis(2-ethylhexyl)phthalate	410 U	68 J	64 J	190 J	400 U	790	100 J	68 J
Benzo(g,h,i)perylene	410 U	470 U	430 U	370 U	400 U	380 U	46 J	38 J
Benzo(b)fluoranthene	410 U	470 U	430 U	370 U	400 U	380 U	350 U	460 U
Fluoranthene	410 U	470 U	430 U	370 U	400 U	380 U	350 U	460 U
Chrysene	410 U	470 U	430 U	370 U	400 U	380 U	350 U	460 U
Benzo(a)anthracene	410 U	470 U	430 U	370 U	400 U	380 U	350 U	460 U
Di-n-butylphthalate	410 U	470 U	65 J	370 U	400 U	380 U	350 U	460 U
Phenanthrene	410 U	470 U	430 U	370 U	400 U	380 U	350 U	460 U

TABLE 4-1

SUMMARY OF ORGANIC DETECTIONS IN SURFACE SOIL
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Site ID	7MW16	7MW17	7MW17	7MW18	7MW19	7SB23	7SB24	7SB25
Sample ID	7MW16-00	7MW17-00	7MW17-00D	7MW18-00	7MW19-00	7SB23-00	7SB24-00	7SB25-00
Sample Date	01/15/02	01/16/02	01/16/02	01/29/02	01/30/02	01/23/02	01/23/02	01/24/02
Depth (ft bgs)	0.0 - 1.0	0.0 - 1.0	0.0 - 1.0	0.0 - 1.0	0.0 - 1.0	0.0 - 1.0	0.0 - 1.0	0.0 - 1.0
Low Level PAHs (ug/kg)								
Pyrene	4.3 J	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	3.2 J	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	2.2 J	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	2.5 J	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	6.2 J	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	3.6 J	NA	NA	NA	NA	NA	NA	NA
Chrysene	3.3 J	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	2.7 J	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	3.2 J	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	3.4 J	NA	NA	NA	NA	NA	NA	NA

Notes:
ft bgs - feet below ground surface.
ug/kg - micrograms per kilogram.
J - Estimated value.
U - Not Detected.
R - Result is requested and unusable.
NA - Not Analyzed.

TABLE 4-1

SUMMARY OF ORGANIC DETECTIONS IN SURFACE SOIL
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Site ID	7SB26	7SB27	7SB28	7SB29	7SB30			
Sample ID	7SB26-00	7SB27-00	7SB28-00	7SB29-00	7SB30-00	Number	Range	Location
Sample Date	01/24/02	01/12/02	01/22/02	01/12/02	01/12/02	of Positive	of Positive	of Maximum
Depth (ft bgs)	0.0 - 1.0	0.0 - 1.0	0.0 - 1.0	0.0 - 1.0	0.0 - 1.0	Detections	Detections	Detection
Volatiles (ug/kg)								
Styrene	6.4 U	5.3 U	6.3 U	5.7 U	4.5 J	1/13	4.5J	7SB30-00
Toluene	32 U	14	6.3 U	12	57	4/13	14 - 57	7SB30-00
Xylene	13 U	5.3 U	12 U	5.7 U	3.9 J	3/13	3.9J - 5.4J	7SB24-00
1,1,1-Trichloroethane	6.4 U	5.3 U	6.3 U	5.7 U	5.4 U	1/13	3.2J	7SB24-00
Methylene chloride	6.4 U	2.2 J	6.3 U	5.7 U	6.7	2/13	2.2J - 6.7	7SB30-00
2-Butanone	32 U	5.4 J	31 U	28 U	5.9 J	2/13	5.4J - 5.9J	7SB30-00
Trichloroethene	6.4 U	5.3 U	6.3 U	5.7 U	10	2/13	4.3J - 10	7SB30-00
Semivolatiles (ug/kg)								
Bis(2-ethylhexyl)phthalate	140 J	360 U	70 J	380 U	380 U	8/13	64J - 790	7SB23-00
Benzo(g,h,i)perylene	400 U	360 U	420 U	380 U	380 U	2/13	38J - 46J	7SB24-00
Benzo(b)fluoranthene	400 U	360 U	420 U	35 J	380 U	1/13	35J	7SB29-00
Fluoranthene	400 U	360 U	420 U	52 J	380 U	1/13	52J	7SB29-00
Chrysene	400 U	360 U	420 U	33 J	380 U	1/13	33J	7SB29-00
Benzo(a)anthracene	400 U	360 U	420 U	29 J	380 U	1/13	29J	7SB29-00
Di-n-butylphthalate	400 U	360 U	420 U	380 U	380 U	1/13	65J	7SB29-00
Phenanthrene	400 U	25 J	420 U	25 J	380 U	2/13	25J	7SB27-00, 7SB29-00

TABLE 4-1

SUMMARY OF ORGANIC DETECTIONS IN SURFACE SOIL
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Site ID	7SB26	7SB27	7SB28	7SB29	7SB30			
Sample ID	7SB26-00	7SB27-00	7SB28-00	7SB29-00	7SB30-00	Number	Range	Location
Sample Date	01/24/02	01/12/02	01/22/02	01/12/02	01/12/02	of Positive	of Positive	of Maximum
Depth (ft bgs)	0.0 - 1.0	0.0 - 1.0	0.0 - 1.0	0.0 - 1.0	0.0 - 1.0	Detections	Detections	Detection
Low Level PAHs (ug/kg)								
Pyrene	NA	NA	NA	NA	NA	1/13	4.3J	7MW16-00
Benzo(g,h,i)perylene	NA	NA	NA	NA	NA	1/13	3.2J	7MW16-00
Indeno(1,2,3-cd)pyrene	NA	NA	NA	NA	NA	1/13	2.2J	7MW16-00
Benzo(b)fluoranthene	NA	NA	NA	NA	NA	1/13	2.5J	7MW16-00
Fluoranthene	NA	NA	NA	NA	NA	1/13	6.2J	7MW16-00
Benzo(k)fluoranthene	NA	NA	NA	NA	NA	1/13	3.6J	7MW16-00
Chrysene	NA	NA	NA	NA	NA	1/13	3.3J	7MW16-00
Benzo(a)pyrene	NA	NA	NA	NA	NA	1/13	2.7J	7MW16-00
Benzo(a)anthracene	NA	NA	NA	NA	NA	1/13	3.2J	7MW16-00
Phenanthrene	NA	NA	NA	NA	NA	1/13	3.4J	7MW16-00

Notes:
ft bgs - feet below ground surface.
ug/kg - micrograms per kilogram.
J - Estimated value.
U - Not Detected.
R - Result is requested and unusab
NA - Not Analyzed.

TABLE 4-2

SUMMARY OF INORGANIC DETECTIONS IN SURFACE SOIL
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Site ID	7MW16	7MW17	7MW17	7MW18	7MW19	7SB23	7SB24	7SB25
Sample ID	7MW16-00	7MW17-00	7MW17-00D	7MW18-00	7MW19-00	7SB23-00	7SB24-00	7SB25-00
Sample Date	01/15/02	01/16/02	01/16/02	01/29/02	01/30/02	01/23/02	01/23/02	01/24/02
Depth (ft bgs)	0.0 - 1.0	0.0 - 1.0	0.0 - 1.0	0.0 - 1.0	0.0 - 1.0	0.0 - 1.0	0.0 - 1.0	0.0 - 1.0
Inorganics - Total (mg/kg)								
Lead	7.9 J	9.6	8.6	3	4.4	14	1.9	6.4
Mercury	0.012 J	0.029	0.028	0.005 J	0.0037 J	0.0096 J	0.0083 J	0.0085 J
Nickel	10	20	14	9.5	5.3	16	15	17
Thallium	1.1 U	1 J	0.86 J	1 J	1.7 J	0.79 J	2.3 J	1.2 J
Antimony	0.93 J	0.66 J	0.67 J	2 U	2.2 U	1.3 J	1.9 U	2.6 U
Arsenic	1.9 J	1.4	1.3	1.2	0.85 J	2.8	0.97 U	1.5
Barium	66	130	130	78	190	50	47	96
Beryllium	0.19 J	0.34 J	0.33 J	0.23 J	0.18 J	0.32 J	0.12 J	0.34 J
Cadmium	0.41 J	0.42 J	0.34 J	0.4 J	0.55 U	0.77	0.14 J	0.21 J
Chromium	20 J	36	28	9.8	11	32	19	65
Cobalt	17	37	32	17	17	27	18	27
Copper	81 J	120 J	84 J	110	42	110	110	100
Vanadium	97	220 J	170 J	110	77	140	110	220
Zinc	60	95	290	83 J	56 J	78 J	54 J	48 J
Selenium	1.1 U	1.3 U	1.2 U	1 U	1.1 U	1.1 U	0.97 U	0.86 J

Notes:
ft bgs - feet below ground surface.
mg/kg - milligrams per kilogram.
J - Estimated value.
U - Not Detected.

TABLE 4-2

SUMMARY OF INORGANIC DETECTIONS IN SURFACE SOIL
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Site ID	7SB26	7SB27	7SB28	7SB29	7SB30			
Sample ID	7SB26-00	7SB27-00	7SB28-00	7SB29-00	7SB30-00	Number	Range	Location
Sample Date	01/24/02	01/12/02	01/22/02	01/12/02	01/12/02	of Positive	of Positive	of Maximum
Depth (ft bgs)	0.0 - 1.0	0.0 - 1.0	0.0 - 1.0	0.0 - 1.0	0.0 - 1.0	Detections	Detections	Detection
Inorganics - Total (mg/kg)								
Lead	9.5	7.9	4.9	11	6.7	13/13	1.9 - 14	7SB23-00
Mercury	0.02 J	0.019	0.011 J	0.018 J	0.016 J	13/13	0.0037J - 0.029	7MW17-00
Nickel	12	19	17	14	15	13/13	5.3 - 20	7MW17-00
Thallium	1 J	2.1 J	1.5 J	2.5 J	2.5 J	12/13	0.79J - 2.5J	7SB29-00, 7SB30-00
Antimony	2.4 U	2 U	0.93 J	0.59 J	0.64 J	7/13	0.59J - 1.3J	7SB23-00
Arsenic	3.2	2.2 J	1.9	1.7 J	1.8 J	12/13	0.85J - 3.2	7SB26-00
Barium	110	31	120	58	27	13/13	27 - 190	7MW19-00
Beryllium	0.23 J	0.6	0.36 J	0.41 J	0.45	13/13	0.12J - 0.6	7SB27-00
Cadmium	0.53 J	0.8	0.36 J	0.78	0.74	12/13	0.14J - 0.8	7SB27-00
Chromium	18	23	31	21	20	13/13	9.8 - 65	7SB25-00
Cobalt	20	22	38	23	18	13/13	17 - 38	7SB28-00
Copper	110	54	110	77	46	13/13	42 - 120J	7MW17-00
Vanadium	110	120	170	130	120	13/13	77 - 220	7SB25-00
Zinc	74 J	85	96 J	74	73	13/13	48J - 290	7MW17-00D
Selenium	1.2 U	0.58 J	1.3 U	0.97 J	0.59 J	4/13	0.58J - 0.97J	7SB29-00

Notes:
ft bgs - feet below ground surface
mg/kg - milligrams per kilogram
J - Estimated value.
U - Not Detected.

TABLE 4-3

SUMMARY OF ORGANIC DETECTIONS IN SUBSURFACE SOIL
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Site ID	7MW16	7MW17	7MW17	7MW18	7MW19	7SB23	7SB24	7SB24
Sample ID	7MW16-06	7MW17-03	7MW17-03D	7MW18-03	7MW19-03	7SB23-07	7SB24-07	7SB24-07D
Sample Date	01/15/02	01/22/02	01/22/02	01/29/02	01/30/02	01/23/02	01/23/02	01/23/02
Depth (ft bgs)	6.0 - 7.0	3.0 - 7.0	3.0 - 7.0	3.0 - 3.6	3.0 - 4.6	6.0 - 7.0	7.0 - 11.0	7.0 - 11.0
Semivolatiles (ug/kg)								
Bis(2-ethylhexyl)phthalate	380 U	NA	NA	160 J	280 J	NA	140 J	91 J
Pyrene	120 J	NA	NA	380 U	420 U	NA	410 U	420 U
7,12-Dimethyl benz(a)anthracene	380 U	NA	NA	0.38 U	420 U	NA	410 U	420 U
p-Dimethylaminoazobenzene	380 U	NA	NA	380 U	420 U	NA	410 U	420 U
2,6-Dinitrotoluene	380 U	NA	NA	380 U	420 U	NA	410 UJ	690 J
Phenanthrene	380 U	NA	NA	38 J	420 U	NA	410 U	420 U
5-Nitro-o-toluidine	380 U	NA	NA	380 U	420 U	NA	410 U	420 U
Low Level PAHs (ug/kg)								
Anthracene	380 U	7.3 U	7.6 U	7.7 U	8.5 U	8.7 U	8.4 UJ	8.6 UJ
Pyrene	380 U	7.3 U	2.2 J	7.7 U	3.9 J	8.7 U	8.4 UJ	8.6 UJ
Benzo(g,h,i)perylene	380 U	7.3 U	7.6 U	7.7 U	8.5 U	8.7 U	8.4 UJ	8.6 UJ
Indeno(1,2,3-cd)pyrene	380 U	7.3 U	7.6 U	7.7 U	2.1 J	8.7 U	8.4 UJ	8.6 UJ
Benzo(b)fluoranthene	380 U	7.3 U	7.6 U	7.7 U	8.5 U	3.6 J	8.4 UJ	8.6 UJ
Fluoranthene	380 U	7.3 U	7.6 U	7.7 U	4.4 J	8.7 U	8.4 UJ	8.6 UJ
Benzo(k)fluoranthene	380 U	7.3 U	7.6 U	2 J	7.8 J	8.7 U	8.4 UJ	8.6 UJ
Chrysene	380 U	7.3 U	7.6 U	7.7 U	4.2 J	8.7 U	8.4 UJ	8.6 UJ
Benzo(a)pyrene	380 U	7.3 U	7.6 U	7.7 U	3.8 J	8.7 U	8.4 UJ	8.6 UJ
Benzo(a)anthracene	380 U	7.3 U	7.6 U	7.7 U	2.1 J	8.7 U	8.4 UJ	8.6 UJ
Phenanthrene	380 U	7.3 U	7.6 U	25	2.1 J	8.7 U	8.4 UJ	8.6 UJ
Fluorene	380 U	7.3 U	7.6 U	7.7 U	8.5 U	8.7 U	8.4 UJ	8.6 UJ
1-Methylnaphthalene	380 U	7.3 U	7.6 U	6.1 J	8.5 U	8.7 U	8.4 UJ	8.6 UJ
2-Methylnaphthalene	380 U	7.3 U	7.6 U	6 J	8.5 U	8.7 U	8.4 UJ	8.6 UJ

Notes:

ug/kg - micrograms per kilogram.
ft/bgs - feet below ground surface.
J - Estimated value.
U - Not Detected.
UJ - Report quantitation limit is qualified as estimated.
NA - Not Analyzed.

TABLE 4-3

SUMMARY OF ORGANIC DETECTIONS IN SUBSURFACE SOIL
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Site ID	7SB25	7SB26	7SB27	7SB28	7SB29	7SB30			
Sample ID	7SB25-04	7SB26-07	7SB27-11	7SB28-03	7SB29-10	7SB30-08	Number	Range	Location
Sample Date	01/29/02	01/24/02	01/12/02	01/22/02	01/12/02	01/12/02	of Positive	of Positive	of Maximum
Depth (ft bgs)	4.0 - 5.2	8.0 - 9.0	11.0 - 12.4	3.0 - 7.0	10.0 - 10.75	8.0 - 8.9	Detections	Detections	Detection
Semivolatiles (ug/kg)									
Bis(2-ethylhexyl)phthalate	52 J	460 U	380 U	NA	380 U	380 U	5/10	52J - 280J	7MW19-03
Pyrene	370 U	460 U	380 U	NA	380 U	380 U	1/10	120J	7MW16-06
7,12-Dimethyl benz(a)anthracene	370 U	140 J	380 U	NA	380 U	380 U	1/10	140J	7SB26-07
p-Dimethylaminoazobenzene	370 U	61 J	380 U	NA	380 U	380 U	1/10	61J	7SB26-07
2,6-Dinitrotoluene	370 U	460 U	380 U	NA	380 U	380 U	1/10	690J	7SB24-07D
Phenanthrene	370 U	460 U	380 U	NA	380 U	380 U	1/10	38J	7MW18-03
5-Nitro-o-toluidine	370 U	31 J	380 U	NA	380 U	380 U	1/10	31J	7SB26-07
Low Level PAHs (ug/kg)									
Anthracene	7.4 U	9.3 UJ	7.8 U	6.8 J	7.8 U	7.6 U	1/14	6.8J	7SB28-03
Pyrene	7.4 U	9.3 UJ	7.8 U	8.7 U	7.8 U	7.6 U	2/14	2.2J - 3.9J	7MW19-03
Benzo(g,h,i)perylene	7.4 U	6.4 J	7.8 U	8.7 U	7.8 U	7.6 U	1/14	6.4J	7SB26-07
Indeno(1,2,3-cd)pyrene	7.4 U	9.3 UJ	7.8 U	8.7 U	7.8 U	7.6 U	1/14	2.1J	7MW19-03
Benzo(b)fluoranthene	7.4 U	9.3 UJ	7.8 U	8.7 U	7.8 U	7.6 U	1/14	3.6J	7SB23-07
Fluoranthene	7.4 U	9.3 UJ	7.8 U	8.7 U	7.8 U	7.6 U	1/14	4.4J	7MW19-03
Benzo(k)fluoranthene	7.4 U	9.3 UJ	7.8 U	8.7 U	7.8 U	7.6 U	2/14	2J - 7.8J	7MW19-03
Chrysene	7.4 U	9.3 UJ	7.8 U	8.7 U	7.8 U	7.6 U	1/14	4.2J	7MW19-03
Benzo(a)pyrene	7.4 U	9.3 UJ	7.8 U	8.7 U	7.8 U	7.6 U	1/14	3.8J	7MW19-03
Benzo(a)anthracene	7.4 U	9.3 UJ	7.8 U	8.7 U	7.8 U	7.6 U	1/14	2.1J	7MW19-03
Phenanthrene	7.4 U	9.3 UJ	7.8 U	8.7 U	7.8 U	7.6 U	2/14	2.1J - 25	7MW18-03
Fluorene	7.4 U	9.3 UJ	7.8 U	2.9 J	7.8 U	7.6 U	1/14	2.9J	7SB28-03
1-Methylnaphthalene	7.4 U	9.3 UJ	7.8 U	3.9 J	7.8 U	7.6 U	2/14	3.9J - 6.1J	7MW18-03
2-Methylnaphthalene	7.4 U	9.3 UJ	7.8 U	6 J	7.8 U	7.6 U	2/14	6J	'MW18-03,7SB28-03

Notes:

ug/kg - micrograms per kilogram
ft/bgs - feet below ground surface
J - Estimated value.
U - Not Detected.
UJ - Report quantitation limit is qualified as estimated.
NA - Not Analyzed.

TABLE 4-4

SUMMARY OF ORGANIC DETECTIONS IN GROUNDWATER
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Sample ID	470MW01	470MW03	7MW03	7MW05	7MW06	7MW07	7MW07D	7MW08
Site ID	470MW01	470MW03	7MW03	7MW05	7MW06	7MW07	7MW07	7MW08
Sample Date	01/15/02	01/15/02	01/25/02	01/09/02	01/09/02	01/13/02	01/13/02	01/13/02
Volatiles (ug/L)								
Ethylbenzene	580	1,400	5 U	5 U	5 U	1,000 U	1,000 U	5 U
Acrolein	2,000 R	10,000 R	100 R	100 R	100 R	20,000 R	20,000 R	100 J
Propionitrile	720 J	10,000 U	100 U	100 UJ	100 UJ	20,000 U	20,000 U	100 U
Acrylonitrile	400 J	10,000 U	100 U	100 U	100 U	20,000 UJ	20,000 UJ	100 U
Toluene	3,900 D	500 U	5 U	5 U	5 U	1,000 U	170 J	5 U
Xylene	6,300	6,100	10 U	10 U	10 U	2,000 U	2,000 U	10 U
Carbon tetrachloride	100 U	500 U	5 U	5 U	5 U	1,000 U	1,000 U	5 U
Acetone	1,000 U	5,000 U	50 U	50 UJ	50 UJ	10,000 U	10,000 U	50 U
Chloroform	100 U	500 U	5 U	5 U	5 U	1,000 U	1,000 U	5 U
Benzene	19,000 D	11,000	5 U	5 U	5 U	1,000 U	1,000 U	0.54 J
Acetonitrile	1,700 J	20,000 U	200 UJ	200 UJ	200 U	40,000 UJ	40,000 UJ	200 U
Methylene chloride	100 U	500 U	5 U	5 U	5 U	95 J	1,000 U	5 U
Bromodichloromethane	100 U	500 U	5 U	5 U	5 U	1,000 U	1,000 U	5 U
1,1-Dichloroethene	100 U	500 U	5 U	5 U	5 U	1,000 U	1,000 U	5 U
Trichlorofluoromethane	100 U	500 U	5 U	5 U	5 U	1,000 U	1,000 U	5 U
Pentachloroethane	500 U	2,500 U	25 R	25 R	25 R	5,000 UJ	5,000 UJ	25 J
Isobutanol	2,500 J	20,000 R	200 R	200 R	200 R	40,000 U	40,000 U	200 R
2-Butanone	810 J	2,500 U	25 U	25 UJ	25 UJ	5,000 U	5,000 U	25 U
Trichloroethene	100 U	500 U	5 U	5 U	5 U	28,000 J	23,000 J	0.47 J
Methyl methacrylate	100 U	500 U	5 U	5 U	5 U	1,000 U	1,000 U	5 U
1,2-Dibromo-3-chloropropane	100 U	500 U	5 U	5 U	5 U	1,000 UJ	1,000 UJ	5 J
Semivolatiles (ug/L)								
Benzyl alcohol	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	26	36	10 U	10 U	10 U	10 U	10 U	10 U
Phenol	72	18	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-ethylhexyl)phthalate	10 U	0.84 J	1.20 J	10 U	0.88 J	10 U	10 U	10 U
1,4-Dioxane	10 U	10 U	10 U	10 UJ	10 UJ	10 U	10 U	10 U
Dimethylphthalate	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U

TABLE 4-4

SUMMARY OF ORGANIC DETECTIONS IN GROUNDWATER
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Sample ID	470MW01	470MW03	7MW03	7MW05	7MW06	7MW07	7MW07D	7MW08
Site ID	470MW01	470MW03	7MW03	7MW05	7MW06	7MW07	7MW07	7MW08
Sample Date	01/15/02	01/15/02	01/25/02	01/09/02	01/09/02	01/13/02	01/13/02	01/13/02
3&4-Methylphenol	73	14	10 U	10 U	10 U	10 U	10 U	10 U
Dibenzofuran	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Semivolatiles (Cont.)(ug/L)								
Indeno(1,2,3-cd)pyrene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthylene	10 U	1.2 J	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Diethylphthalate	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Di-n-butylphthalate	10 U	10 U	0.92 J	10 U	10 U	10 U	10 U	10 U
Phenanthrene	1 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Fluorene	2 J	0.84 J	10 U	10 U	10 U	10 U	10 U	10 U
Naphthalene	250 DJ	160	10 U	10 U	10 U	10 U	10 U	17
2-Methylnaphthalene	46	33	10 U	10 U	10 U	10 U	10 U	15
2-Methylphenol	13	5.1 J	10 U	10 U	10 U	10 U	10 U	10 U
Acetophenone	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Misc. Parameter (ug/L)								
Density	NA	NA	NA	NA	1,000	NA	NA	NA
Monitoring Natural Attenuation (ug/I								
Nitrate (as N)	50 U	50 U	50 U	670	50	50 U	50 U	50 U
Nitrite	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Sulfate as SO4	5,000 U	5,000 U	320,000	120,000	1,300,000	57,000	56,000	250,000
Methane	2,300	2,400	18	10 U	51	10 U	10 U	56
TCE Parameters (mg/L)								
Total organic carbon	NA	NA	NA	NA	NA	1.7	1.7	2.0

TABLE 4-4

SUMMARY OF ORGANIC DETECTIONS IN GROUNDWATER
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Sample ID	470MW01	470MW03	7MW03	7MW05	7MW06	7MW07	7MW07D	7MW08
Site ID	470MW01	470MW03	7MW03	7MW05	7MW06	7MW07	7MW07	7MW08
Sample Date	01/15/02	01/15/02	01/25/02	01/09/02	01/09/02	01/13/02	01/13/02	01/13/02

Notes:

ug/L - micrograms per liter.
J - Estimated value.
U - Not Detected.
R - Result is rejected and unusable.
D - Result value based on dilution analysis.
UJ - Report quantitation limit is qualified as estimated.
DJ - Estimated value based on dilution analysis.
B - Analyte found in associated method blank.
NA - Not Analyzed.
mg/L - milligrams per liter.

TABLE 4-4

SUMMARY OF ORGANIC DETECTIONS IN GROUNDWATER
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Sample ID	7MW09	7MW10	7MW11	7MW12	7MW13	7MW14	7MW15	7MW16
Site ID	7MW09	7MW10	7MW11	7MW12	7MW13	7MW14	7MW15	7MW16
Sample Date	01/24/02	01/26/02	01/27/02	02/01/02	01/27/02	01/29/02	01/29/02	02/01/02
Volatiles (ug/L)								
Ethylbenzene	5 U	5 U	5 U	5 U	5 U	5 U	5 U	34
Acrolein	100 R	100 R	100 R	100 R	100 R	100 R	100 R	100 R
Propionitrile	100 U	100 U	100 U	100 U	100 U	12 J	100 U	100 U
Acrylonitrile	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U
Toluene	5 U	5 U	5 U	5 U	5 U	5 U	5 U	2 J
Xylene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	41
Carbon tetrachloride	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	50 U	50 U	50 U	50 R	50 U	50 U	50 U	16 J
Chloroform	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Benzene	5 U	5 U	5 U	5 U	5 U	5 U	5 U	2 J
Acetonitrile	200 UJ	200 UJ	200 UJ	200 U	200 UJ	200 UJ	200 UJ	200 U
Methylene chloride	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Bromodichloromethane	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethene	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Trichlorofluoromethane	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Pentachloroethane	25 R	25 R	25 R	25 R	25 R	25 R	25 R	25 R
Isobutanol	200 R	200 R	200 R	200 R	270 J	200 R	33 J	200 R
2-Butanone	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Trichloroethene	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Methyl methacrylate	5 U	5 U	5 U	5 U	5 U	5 U	4 J	5 U
1,2-Dibromo-3-chloropropane	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Semivolatiles (ug/L)								
Benzyl alcohol	10 U	10 U	10 U	10 UJ	10 R	10 U	10 U	10 U
2,4-Dimethylphenol	10 U	10 U	10 U	10 UJ	10 R	10 U	10 U	10 U
Phenol	10 U	10 U	10 U	10 UJ	10 R	10 U	10 U	10 U
Bis(2-ethylhexyl)phthalate	8 J	1.1 J	2.1 J	1 J	1.9 J	1.1 J	3 J	10 U
1,4-Dioxane	10 U	10 U	10 U	10 UJ	10 U	10 U	10 U	10 U
Dimethylphthalate	10 U	0.5 J	10 U	10 UJ	10 U	2 J	10 U	10 U

TABLE 4-4

SUMMARY OF ORGANIC DETECTIONS IN GROUNDWATER
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Sample ID	7MW09	7MW10	7MW11	7MW12	7MW13	7MW14	7MW15	7MW16
Site ID	7MW09	7MW10	7MW11	7MW12	7MW13	7MW14	7MW15	7MW16
Sample Date	01/24/02	01/26/02	01/27/02	02/01/02	01/27/02	01/29/02	01/29/02	02/01/02
3&4-Methylphenol	10 U	10 U	10 U	10 U	10 R	10 U	7 J	10 U
Dibenzofuran	10 U	10 U	10 U	0.54 J	10 U	10 U	0.74 J	1.2 J
Benzo(g,h,i)perylene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Semivolatiles (Cont.)(ug/L)								
Indeno(1,2,3-cd)pyrene	10 U	10 U	10 U	0.58 J	10 U	10 U	10 U	10 U
Fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U	0.39 J	10 U
Acenaphthylene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthene	10 U	10 U	10 U	10 U	10 U	10 U	0.6 J	0.82 J
Diethylphthalate	10 U	10 U	10 U	10 U	0.66 J	10 U	10 U	10 U
Di-n-butylphthalate	0.88 J	1.2 J	1.6 J	0.28 J	1.3 J	1.1 J	0.87 J	10 U
Phenanthrene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Fluorene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	0.7 J
Naphthalene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	40
2-Methylnaphthalene	10 U	10 U	10 U	6.2 J	10 U	10 U	10 U	55
2-Methylphenol	10 U	10 U	10 U	10 U	10 R	10 U	10 U	10 U
Acetophenone	10 U	10 U	10 U	4.8 J	10 U	10 U	10 U	4 J
Misc. Parameter (ug/L)								
Density	NA	NA	NA	NA	NA	NA	NA	1,000
Monitoring Natural Attenuation (ug/L								
Nitrate (as N)	50 U	140	50 U	50 U	50 U	50 U	50 U	50 U
Nitrite	50 U	5 B	50 U	50 U	50 U	50 U	50 U	4 B
Sulfate as SO4	280,000	230,000	5,000 U	84,000	5,000 U	210,000	5,000 U	48,000
Methane	28	850	3,600	3,100	2,800	1,200	4,300	590
TCE Parameters (mg/L)								
Total organic carbon	NA	3.5	NA	NA	NA	NA	NA	NA

TABLE 4-4

SUMMARY OF ORGANIC DETECTIONS IN GROUNDWATER
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Sample ID	7MW09	7MW10	7MW11	7MW12	7MW13	7MW14	7MW15	7MW16
Site ID	7MW09	7MW10	7MW11	7MW12	7MW13	7MW14	7MW15	7MW16
Sample Date	01/24/02	01/26/02	01/27/02	02/01/02	01/27/02	01/29/02	01/29/02	02/01/02

Notes:

ug/L - micrograms per liter.
J - Estimated value.
U - Not Detected.
R - Result is rejected and unusable.
D - Result value based on dilution analy

UJ - Report quantitation limit is qualified as estimated.
DJ - Estimated value based on dilution analysis.
B - Analyte found in associated method blank.
NA - Not Analyzed.
mg/L - milligrams per liter.

TABLE 4-4

SUMMARY OF ORGANIC DETECTIONS IN GROUNDWATER
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Sample ID	7MW17	7MW18	7MW18D	7MW19	7MW20	GW04	GW06	UGW06
Site ID	7MW17	7MW18	7MW18	7MW19	7MW20	GW04	GW06	UGW06
Sample Date	03/01/02	01/31/02	01/31/02	01/30/02	01/26/02	01/10/02	01/11/02	01/10/02
Volatiles (ug/L)								
Ethylbenzene	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Acrolein	100 R	100 R	100 R	100 R	100 R	100 R	100 R	100 R
Propionitrile	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U
Acrylonitrile	100 U	100 U	100 U	100 U	100 U	100 UJ	100 UJ	100 UJ
Toluene	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Xylene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbon tetrachloride	5 U	1 J	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	50 UJ	50 R	50 R	50 R	50 U	50 U	50 U	50 U
Chloroform	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Benzene	5 U	1 J	5 U	5 U	5 U	5 U	5 U	5 U
Acetonitrile	200 UJ	200 U	200 U	200 U	200 UJ	200 UJ	200 UJ	200 UJ
Methylene chloride	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Bromodichloromethane	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethene	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Trichlorofluoromethane	5 U	5 U	5 U	11	5 U	5 U	5 U	5 U
Pentachloroethane	25 UJ	25 R	25 R	25 R	25 R	25 UJ	25 UJ	25 UJ
Isobutanol	200 R	200 R	200 R	200 R	200 R	200 U	200 U	200 U
2-Butanone	25 UJ	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Trichloroethene	5 U	0.48 J	5 U	5 U	0.59 J	5 U	5 U	5 U
Methyl methacrylate	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dibromo-3-chloropropane	5 UJ	5 U	5 U	5 U	5 U	5 UJ	5 UJ	5 UJ
Semivolatiles (ug/L)								
Benzyl alcohol	4 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Phenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-ethylhexyl)phthalate	0.89 J	0.72 J	10 U	10 U	3 J	15	10 U	10 U
1,4-Dioxane	10 U	10 U	40	10 U	10 U	10 U	10 U	10 U
Dimethylphthalate	10 U	10 U	10 U	0.88 J	10 U	10 U	10 U	10 U

TABLE 4-4

SUMMARY OF ORGANIC DETECTIONS IN GROUNDWATER
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Sample ID	7MW17	7MW18	7MW18D	7MW19	7MW20	GW04	GW06	UGW06
Site ID	7MW17	7MW18	7MW18	7MW19	7MW20	GW04	GW06	UGW06
Sample Date	03/01/02	01/31/02	01/31/02	01/30/02	01/26/02	01/10/02	01/11/02	01/10/02
3&4-Methylphenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibenzofuran	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Semivolatiles (Cont.)(ug/L)								
Indeno(1,2,3-cd)pyrene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthylene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Diethylphthalate	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Di-n-butylphthalate	10 U	10 U	10 U	10 U	2 J	0.5 J	10 U	10 U
Phenanthrene	10 U	10 U	10 U	10 U	10 U	0.5 J	10 U	10 U
Fluorene	10 U	10 U	10 U	10 U	10 U	1.3 J	10 U	10 U
Naphthalene	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylnaphthalene	1 J	10 U	10 U	10 U	10 U	96	10 U	10 U
2-Methylphenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acetophenone	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Misc. Parameter (ug/L)								
Density	1,000	NA	NA	1,000	1,000	NA	NA	NA
Monitoring Natural Attenuation (ug/I								
Nitrate (as N)	590	3,100	2,800	4,000	3,000	50 U	870 J	50 U
Nitrite	50 U	47 B	57	33 B	100	50 U	45 B	16 B
Sulfate as SO4	780,000	190,000	170,000	860,000	99,000	5,000 U	1,200,000	1,100,000
Methane	10 U	10 U	10 U	10 U	10 U	NA	10 U	NA
TCE Parameters (mg/L)								
Total organic carbon	NA	NA	NA	NA	3.2	NA	NA	NA

TABLE 4-4

SUMMARY OF ORGANIC DETECTIONS IN GROUNDWATER
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Sample ID	7MW17	7MW18	7MW18D	7MW19	7MW20	GW04	GW06	UGW06
Site ID	7MW17	7MW18	7MW18	7MW19	7MW20	GW04	GW06	UGW06
Sample Date	03/01/02	01/31/02	01/31/02	01/30/02	01/26/02	01/10/02	01/11/02	01/10/02

Notes:

ug/L - micrograms per liter.
J - Estimated value.
U - Not Detected.
R - Result is rejected and unusable.
D - Result value based on dilution analy

UJ - Report quantitation limit is qualified as estimated.
DJ - Estimated value based on dilution analysis.
B - Analyte found in associated method blank.
NA - Not Analyzed.
mg/L - milligrams per liter.

TABLE 4-4

SUMMARY OF ORGANIC DETECTIONS IN GROUNDWATER
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Sample ID	UGW06D	UGW07	UGW08	UGW08D	UGW09	UGW10	UGW11
Site ID	UGW06	UGW07	UGW08	UGW08	UGW09	UGW10	UGW11
Sample Date	01/10/02	01/10/02	01/11/02	01/11/02	01/12/02	01/12/02	01/12/02
Volatiles (ug/L)							
Ethylbenzene	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Acrolein	100 R	100 R	100 R	100 R	100 R	100 R	100 R
Propionitrile	100 U	100 U	100 U	100 U	100 U	100 U	100 U
Acrylonitrile	100 UJ	100 UJ	100 UJ	100 UJ	100 UJ	100 UJ	100 UJ
Toluene	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Xylene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbon tetrachloride	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Chloroform	5 U	5 U	5 U	5 U	75	5 U	5 U
Benzene	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Acetonitrile	200 UJ	200 UJ	200 UJ	200 UJ	200 UJ	200 UJ	200 UJ
Methylene chloride	5 U	5 U	5 U	5 U	2 J	5 U	5 U
Bromodichloromethane	5 U	5 U	5 U	5 U	3 J	5 U	5 U
1,1-Dichloroethene	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Trichlorofluoromethane	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Pentachloroethane	25 UJ	25 UJ	25 UJ	25 UJ	25 UJ	25 UJ	25 UJ
Isobutanol	200 U	200 U	200 U	200 U	200 U	200 U	200 U
2-Butanone	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Trichloroethene	5 U	5 U	5 U	5 U	5 U	5 U	0.35 J
Methyl methacrylate	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dibromo-3-chloropropane	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ
Semivolatiles (ug/L)							
Benzyl alcohol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Phenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-ethylhexyl)phthalate	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,4-Dioxane	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dimethylphthalate	10 U	10 U	10 U	10 U	10 U	10 U	10 U

TABLE 4-4

SUMMARY OF ORGANIC DETECTIONS IN GROUNDWATER
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Sample ID	UGW06D	UGW07	UGW08	UGW08D	UGW09	UGW10	UGW11
Site ID	UGW06	UGW07	UGW08	UGW08	UGW09	UGW10	UGW11
Sample Date	01/10/02	01/10/02	01/11/02	01/11/02	01/12/02	01/12/02	01/12/02
3&4-Methylphenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibenzofuran	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	10 U	10 UJ	1.4 J	0.9 J	10 U	10 U	10 U
Semivolatiles (Cont.)(ug/L)							
Indeno(1,2,3-cd)pyrene	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U
Fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthylene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthene	10 U	10 U	10 U	10 U	10 U	0.95 J	10 U
Diethylphthalate	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Di-n-butylphthalate	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Phenanthrene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Fluorene	10 U	10 U	10 U	10 U	10 U	2.7 J	10 U
Naphthalene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylnaphthalene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylphenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acetophenone	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Misc. Parameter (ug/L)							
Density	NA	NA	NA	NA	NA	NA	1,000
Monitoring Natural Attenuation (ug/L							
Nitrate (as N)	13 J	50	50 U	50 U	50 U	50 U	43 J
Nitrite	17 B	50 U	50 U	50 U	50 U	50 U	50 U
Sulfate as SO4	1,100,000	540,000	72,000	71,000	28,000	5,000 U	410,000
Methane	NA	NA	56	44	10 U	5,000	98
TCE Parameters (mg/L)							
Total organic carbon	NA	NA	NA	NA	NA	NA	NA

TABLE 4-4

SUMMARY OF ORGANIC DETECTIONS IN GROUNDWATER
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Sample ID	UGW06D	UGW07	UGW08	UGW08D	UGW09	UGW10	UGW11
Site ID	UGW06	UGW07	UGW08	UGW08	UGW09	UGW10	UGW11
Sample Date	01/10/02	01/10/02	01/11/02	01/11/02	01/12/02	01/12/02	01/12/02

Notes:

ug/L - micrograms per liter.
J - Estimated value.
U - Not Detected.
R - Result is rejected and unusable.
D - Result value based on dilution analy:
UJ - Report quantitation limit is qualified as estimated.
DJ - Estimated value based on dilution analysis.
B - Analyte found in associated method blank.
NA - Not Analyzed.
mg/L - milligrams per liter.

TABLE 4-4

SUMMARY OF ORGANIC DETECTIONS IN GROUNDWATER
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Sample ID	UGW15	UGW16	UGW18	UGW20R	UGW23	UGW26	UGW31
Site ID	UGW15	UGW16	UGW18	UGW20R	UGW23	UGW26	UGW31
Sample Date	01/09/02	01/12/02	01/12/02	01/11/02	01/24/02	01/11/02	01/16/02
Volatiles (ug/L)							
Ethylbenzene	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Acrolein	100 R	100 R	100 R	100 R	100 R	100 R	100 R
Propionitrile	100 UJ	100 U	100 U	100 U	100 U	100 U	100 U
Acrylonitrile	100 U	100 UJ	100 UJ	100 U	100 U	100 UJ	100 U
Toluene	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Xylene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbon tetrachloride	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	50 UJ	50 U	50 U	50 U	50 U	50 U	50 U
Chloroform	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Benzene	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Acetonitrile	200 UJ	200 UJ	200 UJ	200 U	200 UJ	200 UJ	200 U
Methylene chloride	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Bromodichloromethane	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethene	5 U	2 J	5 U	5 U	5 U	5 U	5 U
Trichlorofluoromethane	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Pentachloroethane	25 R	25 UJ	25 UJ	25 UJ	25 R	25 UJ	25 U
Isobutanol	200 R	200 U	200 U	200 R	200 R	200 U	200 R
2-Butanone	25 UJ	25 U	25 U	25 U	25 U	25 U	25 U
Trichloroethene	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Methyl methacrylate	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dibromo-3-chloropropane	5 U	5 UJ	5 UJ	5 UJ	5 U	5 UJ	5 U
Semivolatiles (ug/L)							
Benzyl alcohol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Phenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-ethylhexyl)phthalate	10 U	10 U	10 U	10 U	1 J	10 U	10 U
1,4-Dioxane	10 UJ	10 U	10 U	10 U	10 U	10 U	10 U
Dimethylphthalate	10 U	10 U	10 U	10 U	10 U	10 U	10 U

TABLE 4-4

SUMMARY OF ORGANIC DETECTIONS IN GROUNDWATER
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Sample ID	UGW15	UGW16	UGW18	UGW20R	UGW23	UGW26	UGW31
Site ID	UGW15	UGW16	UGW18	UGW20R	UGW23	UGW26	UGW31
Sample Date	01/09/02	01/12/02	01/12/02	01/11/02	01/24/02	01/11/02	01/16/02
3&4-Methylphenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibenzofuran	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene	10 U	10 U	10 U	10 U	10 U	1.4 J	10 U
Semivolatiles (Cont.)(ug/L)							
Indeno(1,2,3-cd)pyrene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Fluoranthene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthylene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Diethylphthalate	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Di-n-butylphthalate	10 U	10 U	10 U	10 U	0.7 J	10 U	10 U
Phenanthrene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Fluorene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Naphthalene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylnaphthalene	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylphenol	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acetophenone	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Misc. Parameter (ug/L)							
Density	NA	NA	NA	NA	NA	NA	1,000
Monitoring Natural Attenuation (ug/I							
Nitrate (as N)	50 U	50 U	33 J	21 J	50 U	830 J	5,900
Nitrite	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Sulfate as SO4	620,000	110,000	160,000	51,000	69,000	460,000	500,000
Methane	260	10 U	10 U	14	10 U	38	10 U
TCE Parameters (mg/L)							
Total organic carbon	NA	0.58 J	NA	NA	NA	NA	NA

TABLE 4-4

SUMMARY OF ORGANIC DETECTIONS IN GROUNDWATER
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Sample ID	UGW15	UGW16	UGW18	UGW20R	UGW23	UGW26	UGW31
Site ID	UGW15	UGW16	UGW18	UGW20R	UGW23	UGW26	UGW31
Sample Date	01/09/02	01/12/02	01/12/02	01/11/02	01/24/02	01/11/02	01/16/02

Notes:

ug/L - micrograms per liter.
J - Estimated value.
U - Not Detected.
R - Result is rejected and unusable.
D - Result value based on dilution analy

UJ - Report quantitation limit is qualified as estimated.
DJ - Estimated value based on dilution analysis.
B - Analyte found in associated method blank.
NA - Not Analyzed.
mg/L - milligrams per liter.

TABLE 4-4

SUMMARY OF ORGANIC DETECTIONS IN GROUNDWATER
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Sample ID Site ID Sample Date	UGW32 UGW32 01/16/02	UGW34 UGW34 01/16/02	Number of Positive Detections	Range of Positive Detections	Location of Maximum Detection
Volatiles (ug/L)					
Ethylbenzene	5 U	5 U	3/41	34 - 1,400	470MW03
Acrolein	100 R	100 R	1/1	100J	7MW08
Propionitrile	100 U	100 U	2/41	12J - 720J	470MW03
Acrylonitrile	100 U	100 U	1/41	400J	470MW01
Toluene	5 U	5 U	3/41	2J - 3,900D	470MW01
Xylene	10 U	10 U	3/41	41 - 6,300	470MW01
Carbon tetrachloride	5 U	5 U	1/41	1J	7MW18
Acetone	50 U	50 U	1/36	16J	7MW16
Chloroform	5 U	5 U	1/41	75	UGW09
Benzene	5 U	5 U	5/41	0.54J - 19,000D	470MW01
Acetonitrile	200 U	200 UJ	1/41	1,700J	470MW01
Methylene chloride	5 U	5 U	2/41	2J - 95J	7MW07
Bromodichloromethane	5 U	5 U	1/41	3J	UGW09
1,1-Dichloroethene	5 U	5 U	1/41	2J	UGW16
Trichlorofluoromethane	5 U	5 U	1/41	11	7MW19
Pentachloroethane	25 U	25 U	1/23	25J	7MW08
Isobutanol	200 R	200 R	3/18	33J - 2,500J	470MW01
2-Butanone	25 U	25 U	1/41	810J	470MW01
Trichloroethene	5 U	5 U	6/41	0.35J - 28,000J	7MW07
Methyl methacrylate	5 U	5 U	1/41	4J	7MW15
1,2-Dibromo-3-chloropropane	5 U	5 U	1/41	5J	7MW08
Semivolatiles (ug/L)					
Benzyl alcohol	10 U	10 U	1/39	4J	7MW17
2,4-Dimethylphenol	10 U	10 U	2/39	26 - 36	470MW03
Phenol	10 U	10 U	2/39	18 - 72	470MW01
Bis(2-ethylhexyl)phthalate	10 U	10 U	15/41	0.72J - 15	GW04
1,4-Dioxane	10 U	10 U	1/41	40	7MW18D
Dimethylphthalate	10 U	10 U	3/41	0.5J - 2J	7MW14

TABLE 4-4

SUMMARY OF ORGANIC DETECTIONS IN GROUNDWATER
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Sample ID Site ID Sample Date	UGW32 UGW32 01/16/02	UGW34 UGW34 01/16/02	Number of Positive Detections	Range of Positive Detections	Location of Maximum Detection
3&4-Methylphenol	10 U	10 U	3/39	7J - 73	470MW01
Dibenzofuran	10 U	10 U	3/41	0.54J - 1.2J	7MW16
Benzo(g,h,i)perylene	10 U	10 U	3/41	0.9J - 1.4J	UGW08,UGW26
Semivolatiles (Cont.)(ug/L)					
Indeno(1,2,3-cd)pyrene	10 U	10 U	1/40	0.58J	7MW12
Fluoranthene	10 U	10 U	1/40	0.39J	7MW15
Acenaphthylene	10 U	10 U	1/40	1.2J	470MW03
Acenaphthene	10 U	10 U	3/40	0.6J - 0.95J	UGW10
Diethylphthalate	10 U	10 U	1/40	0.66J	7MW13
Di-n-butylphthalate	10 U	10 U	11/40	0.28J - 2J	7MW20
Phenanthrene	10 U	10 U	2/40	0.5J - 1J	470MW01
Fluorene	10 U	10 U	5/40	0.7J - 2.7J	UGW10
Naphthalene	10 U	10 U	4/40	40 - 250DJ	470MW01
2-Methylnaphthalene	10 U	10 U	7/40	1J - 96	GW04
2-Methylphenol	10 U	10 U	2/39	5.1J - 13	470MW01
Acetophenone	10 U	10 U	2/40	4J - 4.8J	7MW12
Misc. Parameter (ug/L)					
Density	NA	NA	7/7	1,000	7MW16, 7MW17, 7MW19, 7MW20,
Monitoring Natural Attenuation (ug/L					
Nitrate (as N)	3,600	1,100	19/40	13J - 5,900	UGW31
Nitrite	50 U	50 U	2/40	57 - 100	7MW20
Sulfate as SO4	390,000	350,000	33/40	28,000 - 1,300,000	7MW06
Methane	10 U	10 U	20/36	14 - 5,000	UGW10
TCE Parameters (mg/L)					
Total organic carbon	NA	NA	6/6	0.58 - 3.5	7MW10

TABLE 4-4

SUMMARY OF ORGANIC DETECTIONS IN GROUNDWATER
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Sample ID	UGW32	UGW34	Number	Range	Location
Site ID	UGW32	UGW34	of Positive	of Positive	of Maximum
Sample Date	01/16/02	01/16/02	Detections	Detections	Detection

Notes:

ug/L - micrograms per liter.
J - Estimated value.
U - Not Detected.
R - Result is rejected and unusable.
D - Result value based on dilution analy

UJ - Report quantitation limit is qualified as estimated.
DJ - Estimated value based on dilution analysis.
B - Analyte found in associated method blank.
NA - Not Analyzed.
mg/L - milligrams per liter.

TABLE 4-5

SUMMARY OF (TOTAL) INORGANIC DETECTIONS IN GROUNDWATER
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Site ID	470MW01	470MW03	7MW03	7MW05	7MW06	7MW07	7MW07	7MW08	7MW09	7MW10	7MW11
Sample ID	470MW01	470MW03	7MW03	7MW05	7MW06	7MW07	7MW07D	7MW08	7MW09	7MW10	7MW11
Sample Date	01/15/02	01/15/02	01/25/02	01/09/02	01/09/02	01/13/02	01/13/02	01/13/02	01/24/02	01/26/02	01/27/02
Inorganics - Total (mg/L)											
Lead	0.052	0.005 UJ	0.005 U	0.005 U	0.005 U	0.005 UJ	0.005 UJ	0.005 UJ	0.005 U	0.005 U	0.005 U
Mercury	0.0002 U	0.0002 U	0.00011 J	0.0002 U	0.0002 U	0.0002 UJ	0.0002 UJ	0.0002 UJ	0.0002 UJ	0.0002 UJ	0.0002 UJ
Nickel	0.04 U	0.04 U	0.034 J	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.0073 J	0.04 U	0.0057 J
Silver	0.01 U	0.01 U	0.01 U	0.01 U	0.002 J	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Thallium	0.0055 J	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0072 J	0.01 U	0.01 U	0.01 U	0.01 U
Tin	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Antimony	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Arsenic	0.0088 J	0.0095 J	0.0032 J	0.0075 J	0.013	0.01 UJ	0.01 UJ	0.01 UJ	0.01 U	0.0086 J	0.01 U
Barium	0.092	0.26	0.48	0.0068 J	0.028	0.008 J	0.0088 J	0.017	0.075	0.062	0.13
Beryllium	0.0007 J	0.00062 J	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U
Cadmium	0.005 U	0.005 U	0.0051	0.005 U	0.0029 J	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Chromium	0.01 U	0.01 U	0.027	0.01 U	0.01 U	0.0019 J	0.01 U	0.01 U	0.0017 J	0.01 U	0.0025 J
Cobalt	0.0037 J	0.01 U	0.03	0.01 U	0.01 U	0.01 U	0.01 U	0.0048 J	0.01	0.01 U	0.0032 J
Copper	0.0032 J	0.0018 J	0.045	0.0042 J	0.0073 J	0.0018 J	0.0017 J	0.0009 J	0.0056 J	0.02 U	0.0081 J
Vanadium	0.01 U	0.01 U	0.032	0.58	0.014	0.019	0.02	0.0032 J	0.021	0.01 U	0.012
Zinc	0.025	0.02 U	0.022	0.013 J	0.02 U	0.0067 J	0.02 U	0.02 U	0.02 U	0.02 U	0.0074 J
Selenium	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 UJ	0.01 UJ	0.01 UJ	0.01 U	0.01 U	0.01 U

Notes:
mg/L - milligrams per liter.
J - Estimated value.
U - Not Detected.
UJ - Report quantitation limit is qualified as estimated.

TABLE 4-5

SUMMARY OF (TOTAL) INORGANIC DETECTIONS IN GROUNDWATER
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Site ID	7MW12	7MW13	7MW14	7MW15	7MW16	7MW17	7MW18	7MW18	7MW19	7MW20	GW04
Sample ID	7MW12	7MW13	7MW14	7MW15	7MW16	7MW17	7MW18	7MW18D	7MW19	7MW20	GW04
Sample Date	02/01/02	01/27/02	01/29/02	01/29/02	02/01/02	03/01/02	01/31/02	01/31/02	01/30/02	01/26/02	01/10/02
Inorganics - Total (mg/L)											
Lead	0.005 U	0.0017 J	0.005 U	0.0016 J	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 UJ
Mercury	0.0002 UJ	0.0002 UJ	0.0004 UJ	0.0004 UJ	0.0002 UJ	0.004 U	0.0002 UJ	0.0002 UJ	0.00008 J	0.0002 UJ	0.0002 UJ
Nickel	0.04 U	0.04 U	0.0073 J	0.01 J	0.04 U	0.014 J	0.015 J	0.028 J	0.035 J	0.04 U	0.04 U
Silver	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0056 J	0.01 U	0.01 U
Thallium	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Tin	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.0067 J	0.05 U	0.05 U	0.05 U
Antimony	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.0075 J	0.02 U	0.02 U
Arsenic	0.0039 J	0.01 U	0.0039 J	0.0097 J	0.01 U	0.01 U	0.01 U	0.0041 J	0.01 U	0.01 U	0.01 UJ
Barium	0.14	0.15	0.8	0.36	0.54	0.16	0.059	0.11	0.11	0.025	0.054
Beryllium	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U
Cadmium	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.0011 J	0.0014 J	0.005 U	0.005 U
Chromium	0.01 U	0.01 U	0.004 J	0.01 U	0.0029 J	0.0048 J	0.0078 J	0.023	0.049	0.01 U	0.01 U
Cobalt	0.0038 J	0.002 J	0.018	0.012	0.0051 J	0.0049 J	0.0077 J	0.015	0.014	0.01 U	0.01 U
Copper	0.0025 J	0.0019 J	0.02	0.0035 J	0.0075 J	0.0022 J	0.017 J	0.064	0.083	0.012 J	0.00095 J
Vanadium	0.0071 J	0.0067 J	0.019	0.0043 J	0.013	0.026	0.029	0.061	0.1	0.068	0.0034 J
Zinc	0.02 U	0.02 U	0.023	0.02 U	0.0068 J	0.024	0.009 J	0.04	0.034	0.041	0.0081 J
Selenium	0.01 U	0.01 U	0.006 J	0.01 U	0.01 U	0.0056 J	0.0043 J	0.01 U	0.01 U	0.01 U	0.01 UJ

Notes:
mg/L - milligrams per liter.
J - Estimated value.
U - Not Detected.
UJ - Report quantitation limit qualified as estimated.

TABLE 4-5

SUMMARY OF (TOTAL) INORGANIC DETECTIONS IN GROUNDWATER
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Site ID	GW06	UGW06	UGW06	UGW07	UGW08	UGW08	UGW09	UGW10	UGW11	UGW15	UGW16
Sample ID	GW06	UGW06	UGW06D	UGW07	UGW08	UGW08D	UGW09	UGW10	UGW11	UGW15	UGW16
Sample Date	01/11/02	01/10/02	01/10/02	01/10/02	01/11/02	01/11/02	01/12/02	01/12/02	01/12/02	01/09/02	01/12/02
Inorganics - Total (mg/L)											
Lead	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ	0.005 U	0.005 UJ
Mercury	0.0002 UJ	0.0002 UJ	0.0002 UJ	0.0002 UJ	0.0002 UJ	0.0002 UJ	0.0002 UJ	0.0002 UJ	0.0002 UJ	0.0002 U	0.0024 J
Nickel	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U
Silver	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Thallium	0.0056 J	0.01 U	0.01 U	0.01 U	0.01 U	0.0096 J	0.01 U	0.01 U	0.01 U	0.013	0.01 U
Tin	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Antimony	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Arsenic	0.01 UJ	0.0034 J	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.018	0.01 UJ
Barium	0.063	0.053	0.056	0.046	0.32	0.31	0.0024 J	0.028	0.0065 J	0.16	0.01 U
Beryllium	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U
Cadmium	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Chromium	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Cobalt	0.016	0.01 U	0.01 U	0.01 U	0.002 J	0.0019 J	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Copper	0.0019 J	0.0029 J	0.0022 J	0.0097 J	0.02 U	0.02 U	0.0054 J	0.02 U	0.02 U	0.0035 J	0.02 U
Vanadium	0.043	0.01 U	0.01 U	0.01 U	0.0026 J	0.01 U	0.14	0.0034 J	0.01 U	0.0035 J	0.018
Zinc	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.0077 J	0.02 U	0.02 U	0.02 U	0.02 U
Selenium	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.0083 J	0.01 UJ

Notes:
mg/L - milligrams per liter.
J - Estimated value.
U - Not Detected.
UJ - Report quantitation limit
qualified as estimated.

TABLE 4-5

SUMMARY OF (TOTAL) INORGANIC DETECTIONS IN GROUNDWATER
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Site ID	UGW18	UGW20R	UGW23	UGW26	UGW31	UGW32	UGW34	Number	Range	Location
Sample ID	UGW18	UGW20R	UGW23	UGW26	UGW31	UGW32	UGW34	of Positive	of Positive	of Maximum
Sample Date	01/12/02	01/12/02	01/24/02	01/11/02	01/16/02	01/16/02	01/16/02	Detections	Detections	Detection
Inorganics - Total (mg/L)										
Lead	0.005 UJ	0.0067 J	0.005 U	0.005 UJ	0.005 U	0.005 U	0.005 U	4/40	0.0016J - 0.052	470MW01
Mercury	0.00022 J	0.0002 UJ	0.0002 UJ	0.0002 UJ	0.0002 U	0.001	0.0002 U	5/40	0.00008J - 0.0024J	UGW16
Nickel	0.04 U	0.0077 J	0.005 J	0.04 U	0.04 U	0.04 U	0.04 U	11/40	0.0057J - 0.035J	7MW19
Silver	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	2/40	0.002J - 0.0056J	7MW19
Thallium	0.01 U	0.01 U	0.01 U	0.01 U	0.01 UJ	0.01 UJ	0.01 UJ	5/40	0.0055J - 0.013	UGW15
Tin	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	1/40	0.0067J	7MW18D
Antimony	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	1/40	0.0075J	7MW19
Arsenic	0.01 UJ	0.01 UJ	0.01 U	0.01 UJ	0.01 U	0.01 U	0.0037 J	12/40	0.0032J - 0.018	UGW15
Barium	0.0015 J	0.9	0.037	0.014	0.067	0.061	0.11	39/40	0.0015J - 0.9	UGW20R
Beryllium	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	2/40	0.00062J - 0.0007J	470MW01
Cadmium	0.005 U	0.00097 J	0.005 U	0.005 U	0.0016 J	0.005 U	0.005 U	6/40	0.00097J - 0.0051	7MW03
Chromium	0.01 U	0.0082 J	0.0075 J	0.01 U	0.01 U	0.01 U	0.01 U	12/40	0.0025J - 0.049	7MW19
Cobalt	0.01 U	0.014	0.0018 J	0.01 U	0.01 U	0.01 U	0.01 U	19/40	0.0018J - 0.03	7MW03
Copper	0.02 U	0.053	0.0049 J	0.02 U	0.0054 J	0.0033 J	0.0027 J	32/40	0.0009J - 0.083	7MW19
Vanadium	0.065	0.03	0.067	0.092	0.047	0.021	0.052	32/40	0.0026J - 0.58	7MW05
Zinc	0.02 U	0.11	0.02 U	0.02 U	0.023	0.01 J	0.013 J	18/40	0.0067J - 0.11	UGW20R
Selenium	0.01 UJ	0.01 UJ	0.01 U	0.0051 J	0.0066 J	0.01 U	0.01 U	6/40	0.0043J - 0.0083J	UGW15

Notes:
mg/L - milligrams per liter.
J - Estimated value.
U - Not Detected.
UJ - Report quantitation limit
qualified as estimated.

TABLE 4-6

SUMMARY OF (DISSOLVED) INORGANIC DETECTIONS IN GROUNDWATER
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Site ID	470MW01	470MW03	7MW03	7MW05	7MW06	7MW07	7MW07	7MW08	7MW09	7MW10	7MW11
Sample ID	470MW01	470MW03	7MW03	7MW05	7MW06	7MW07	7MW07D	7MW08	7MW09	7MW10	7MW11
Sample Date	01/15/02	01/15/02	01/25/02	01/09/02	01/09/02	01/13/02	01/13/02	01/13/02	01/24/02	01/26/02	01/27/02
Inorganics - Dissolved (mg/l											
Lead	0.022	0.005 U	0.005 U	0.005 U	0.005 U	0.005 UJ	0.005 UJ	0.005 UJ	0.005 U	0.005 U	0.005 U
Mercury	0.0002 U	0.0002 U	0.0002 UJ	0.0002 U	0.0002 U	0.0002 UJ	0.0002 UJ	0.0002 UJ	0.0002 UJ	0.0002 UJ	0.0002 UJ
Nickel	0.04 U	0.04 U	0.013 J	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.008 J	0.04 U	0.04 U
Silver	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Thallium	0.011 J	0.005 J	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Arsenic	0.011 J	0.0083 J	0.01 U	0.01 U	0.01 U	0.01 UJ	0.01 UJ	0.01 UJ	0.01 U	0.0049 J	0.0082 J
Barium	0.087	0.25	0.41	0.0067 J	0.027	0.0067 J	0.0072 J	0.016	0.074	0.06	0.13
Beryllium	0.00057 J	0.00062 J	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U
Cadmium	0.005 U	0.005 U	0.0025 J	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Chromium	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0037 J	0.01 U	0.0045 J	0.01 U	0.01 U
Cobalt	0.0036 J	0.01 U	0.017	0.01 U	0.002 J	0.01 U	0.01 U	0.0043 J	0.011	0.01 U	0.0021 J
Copper	0.0011 J	0.02 U	0.011 J	0.0028 J	0.0039 J	0.02 U	0.02 U	0.02 U	0.0086 J	0.02 U	0.02 U
Vanadium	0.01 U	0.01 U	0.0081 J	0.62	0.02	0.018	0.016	0.0022 UJ	0.025	0.01 U	0.0032 J
Zinc	0.013 J	0.02 U	0.02 U	0.02 U	0.02 U	0.0064 J	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Selenium	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 UJ	0.01 UJ	0.01 UJ	0.01 U	0.01 U	0.01 U

Notes:
mg/L - milligrams per liter.
J - Estimated value.
U - Not Detected.
UJ - Report quantitation limit is qualified as estimated.

TABLE 4-6

SUMMARY OF (DISSOLVED) INORGANIC DETECTIONS IN GROUNDWATER
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Site ID	7MW12	7MW13	7MW14	7MW15	7MW16	7MW17	7MW18	7MW18	7MW19	7MW20	GW04
Sample ID	7MW12	7MW13	7MW14	7MW15	7MW16	7MW17	7MW18	7MW18D	7MW19	7MW20	GW04
Sample Date	02/01/02	01/27/02	01/29/02	01/29/02	02/01/02	03/01/02	01/31/02	01/31/02	01/30/02	01/26/02	01/10/02
Inorganics - Dissolved (mg/l											
Lead	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.0017 J	0.005 U	0.005 U	0.005 U	0.005 UJ
Mercury	0.0002 UJ	0.0002 UJ	0.0002 UJ	0.0002 UJ	0.0002 UJ	0.004 U	0.0002 UJ	0.0002 UJ	0.0002 UJ	0.0002 UJ	0.0002 UJ
Nickel	0.04 U	0.04 U	0.0067 J	0.0095 J	0.04 U	0.013 J	0.012 J	0.014 J	0.0091 J	0.04 U	0.04 U
Silver	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0029 J	0.01 U	0.01 U
Thallium	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Arsenic	0.0038 J	0.01 U	0.0053 J	0.01	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Barium	0.14	0.14	0.79	0.37	0.53	0.16	0.065	0.068	0.065	0.019	0.042
Beryllium	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U
Cadmium	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Chromium	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Cobalt	0.0033 J	0.01 U	0.02	0.012	0.0037 J	0.0041 J	0.0074 J	0.007 J	0.0034 J	0.01 U	0.01 U
Copper	0.0033 J	0.02 U	0.0016 J	0.0018 J	0.0021 J	0.02 U	0.0029 J	0.003 J	0.0058 J	0.0031 J	0.02 U
Vanadium	0.0076 J	0.01 U	0.0087 J	0.0032 J	0.0022 J	0.024	0.018	0.015	0.036	0.061	0.01 U
Zinc	0.02 U	0.02 U	0.016 J	0.0082 J	0.015 J	0.022	0.02 U	0.02 U	0.02 U	0.0083 J	0.02 U
Selenium	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 UJ	0.0047 J	0.01 U	0.01 U	0.01 U	0.01 U

Notes:
mg/L - milligrams per liter.
J - Estimated value.
U - Not Detected.
UJ - Report quantitation limit
qualified as estimated.

TABLE 4-6

SUMMARY OF (DISSOLVED) INORGANIC DETECTIONS IN GROUNDWATER
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Site ID	GW06	UGW06	UGW06	UGW07	UGW08	UGW08	UGW09	UGW10	UGW11	UGW15	UGW16
Sample ID	GW06	UGW06	UGW06D	UGW07	UGW08	UGW08D	UGW09	UGW10	UGW11	UGW15	UGW16
Sample Date	01/11/02	01/10/02	01/10/02	01/10/02	01/11/02	01/11/02	01/12/02	01/12/02	01/12/02	01/09/02	01/12/02
Inorganics - Dissolved (mg/l											
Lead	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ	0.005 UJ	0.005 U	0.005 UJ
Mercury	0.0002 UJ	0.0002 UJ	0.0002 UJ	0.0002 UJ	0.0002 UJ	0.0002 UJ	0.0002 UJ	0.0002 UJ	0.0002 UJ	0.0002 U	0.0022 J
Nickel	0.0053 J	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U
Silver	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Thallium	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Arsenic	0.01 U	0.0042 J	0.0039 J	0.007 J	0.01 U	0.01 U	0.01 UJ	0.01 UJ	0.01 UJ	0.01 U	0.01 UJ
Barium	0.063	0.06	0.054	0.044	0.29	0.3	0.0018 J	0.026	0.0062 J	0.15	0.01 U
Beryllium	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U
Cadmium	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Chromium	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Cobalt	0.016	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Copper	0.0015 J	0.0054 J	0.0029 J	0.0013 J	0.02 U	0.02 U	0.0036 J	0.02 U	0.02 U	0.002 J	0.02 U
Vanadium	0.044	0.011 J	0.01 U	0.0024 J	0.01 U	0.01 U	0.14	0.0025 J	0.01 U	0.0056 J	0.017
Zinc	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Selenium	0.01 U	0.01 U	0.0051 J	0.01 U	0.01 U	0.01 U	0.01 UJ	0.01 UJ	0.0049 J	0.01 U	0.01 UJ

Notes:
mg/L - milligrams per liter.
J - Estimated value.
U - Not Detected.
UJ - Report quantitation limit
qualified as estimated.

TABLE 4-6

SUMMARY OF (DISSOLVED) INORGANIC DETECTIONS IN GROUNDWATER
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Site ID	UGW18	UGW20R	UGW23	UGW26	UGW31	UGW32	UGW34	Number	Range	Location
Sample ID	UGW18	UGW20R	UGW23	UGW26	UGW31	UGW32	UGW34	of Positive	of Positive	of Maximum
Sample Date	01/12/02	01/12/02	01/24/02	01/11/02	01/16/02	01/16/02	01/16/02	Detections	Detections	Detection
Inorganics - Dissolved (mg/l										
Lead	0.005 UJ	0.005 UJ	0.005 U	0.005 UJ	0.005 U	0.005 U	0.005 U	2/40	0.0017J - 0.022	470MW01
Mercury	0.00026 J	0.0002 UJ	0.0002 UJ	0.0002 UJ	0.0002 U	0.0011	0.0002 U	3/40	0.00026J - 0.0022J	UGW16
Nickel	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	9/40	0.0053J - 0.014J	7MW18D
Silver	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	1/40	0.0029J	7MW19
Thallium	0.01 U	0.01 U	0.01 U	0.01 U	0.01 UJ	0.01 UJ	0.01 UJ	2/40	0.005J - 0.011J	470MW01
Arsenic	0.01 UJ	0.01 UJ	0.01 U	0.01 U	0.01 U	0.0052 J	0.01 U	11/40	0.0038J - 0.01	7MW15
Barium	0.0014 J	0.93	0.036	0.014	0.067	0.059	0.1	39/40	0.0014J - 0.93	UGW20R
Beryllium	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	2/40	0.00057J - 0.00062J	470MW03
Cadmium	0.005 U	0.005 U	0.005 U	0.005 U	0.0013 J	0.00077 J	0.005 U	3/40	0.00077J - 0.0025J	7MW03
Chromium	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	2/40	0.0037J - 0.0045J	7MW09
Cobalt	0.01 U	0.0091 J	0.01 U	0.01 U	0.01 U	0.0015 J	0.01 U	17/40	0.0015J - 0.02	7MW14
Copper	0.02 U	0.0015 J	0.0025 J	0.02 U	0.0018 J	0.0034 J	0.0022 J	24/40	0.0011J - 0.011J	7MW03
Vanadium	0.068	0.01 U	0.063	0.095	0.048	0.021	0.054	28/40	0.0022J - 0.62	7MW05
Zinc	0.02 U	0.0077 J	0.02 U	0.02 U	0.02 J	0.013 J	0.011 J	11/40	0.0064J - 0.022	7MW17
Selenium	0.0053 J	0.01 UJ	0.0045 J	0.01 U	0.01 U	0.0044 J	0.01 U	6/40	0.0044J - 0.0053J	UGW18

Notes:
mg/L - milligrams per liter.
J - Estimated value.
U - Not Detected.
UJ - Report quantitation limit
qualified as estimated.

TABLE 4-7

SUMMARY OF ORGANIC DETECTIONS IN BASE BACKGROUND SURFACE WATER
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Site ID	BGOWSW01	BGOWSW02	BGOWSW03	BGOWSW03	BGOWSW04
Sample ID	BGOWSW01	BGOWSW02	BGOWSW03	BGOWSW03D	BGOWSW04
Sample Date	01/17/02	01/17/02	01/17/02	01/17/02	01/17/02
Volatiles (ug/L)					
Not Detected					
Semivolatiles (ug/L)					
Fluorene	10 U	10 U	10 U	10 U	10 U
Low Level PAHs (ug/L)					
Not Detected					
Pesticides/PCBs (ug/L)					
Not Detected					
Chlorinated Herbicides (ug/L)					
Not Detected					
Dioxins/Furans (ug/L)					
Not Detected					

Notes:
ug/L - micrograms per liter.
J - Estimated value.
U - Not Detected.

TABLE 4-7

SUMMARY OF ORGANIC DETECTIONS IN BASE BACKGROUND SURFACE WATER
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Site ID Sample ID Sample Date	BGOWSW05 BGOWSW05 01/17/02	BGOWSW06 BGOWSW06 01/17/02	BGOWSW07 BGOWSW07 01/17/02	BGOWSW08 BGOWSW08 01/17/02	BGOWSW09 BGOWSW09 01/17/02	Number of Positive Detections	Range of Positive Detections	Location of Maximum Detection
Volatiles (ug/L)								
Not Detected								
Semivolatiles (ug/L)								
Fluorene	10 U	0.46 J	10 U	10 U	10 U	1/10	0.46J	BGOWSW06
Low Level PAHs (ug/L)								
Not Detected								
Pesticides/PCBs (ug/L)								
Not Detected								
Chlorinated Herbicides (ug								
Not Detected								
Dioxins/Furans (ug/L)								
Not Detected								

Notes:
ug/L - micrograms per liter.
J - Estimated value.
U - Not Detected.

TABLE 4-8

SUMMARY OF (TOTAL) INORGANIC DETECTIONS IN BASE BACKGROUND SURFACE WATER
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Site ID	BGOWSW01	BGOWSW02	BGOWSW03	BGOWSW03	BGOWSW04
Sample ID	BGOWSW01	BGOWSW02	BGOWSW03	BGOWSW03D	BGOWSW04
Sample Date	01/17/02	01/17/02	01/17/02	01/17/02	01/17/02
Inorganics - Total (mg/					
Lead	0.005 U	0.005 U	0.005 U	0.005 U	0.0033 J
Tin	0.05 U	0.0065 J	0.05 U	0.05 U	0.05 U
Arsenic	0.01 U	0.0069 J	0.01 U	0.0094 J	0.0045 J
Barium	0.0087 J	0.0082 J	0.0086 J	0.0095 J	0.0094 J
Cadmium	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Copper	0.0025 J	0.0022 J	0.0017 J	0.002 J	0.0019 J
Vanadium	0.02 U	0.02 U	0.02 U	0.0047 J	0.0046 J
Selenium	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U

Notes:
mg/L - milligrams per liter.
J - Estimated value.
U - Not Detected.

TABLE 4-8

SUMMARY OF (TOTAL) INORGANIC DETECTIONS IN BASE BACKGROUND SURFACE WATER
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Site ID	BGOWSW05	BGOWSW06	BGOWSW07	BGOWSW08	BGOWSW09	Number	Range	Location
Sample ID	BGOWSW05	BGOWSW06	BGOWSW07	BGOWSW08	BGOWSW09	of Positive	of Positive	of Maximum
Sample Date	01/17/02	01/17/02	01/17/02	01/17/02	01/17/02	Detections	Detections	Detection
Inorganics - Total (mg/								
Lead	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	1/10	0.0033J	BGOWSW04
Tin	0.05 U	0.0073 J	0.05 U	0.05 U	0.05 U	2/10	0.0065J - 0.0073J	BGOWSW06
Arsenic	0.0074 J	0.01 U	0.01 U	0.0042 J	0.01 U	5/10	0.0042J - 0.0094J	BGOWSW03D
Barium	0.0098 J	0.0087 J	0.0085 J	0.009 J	0.0087 J	10/10	0.0082J - 0.0098J	BGOWSW05
Cadmium	0.005 U	0.005 U	0.005 U	0.00094 J	0.005 U	1/10	0.00094J	BGOWSW08
Copper	0.002 J	0.0024 J	0.0018 J	0.0019 J	0.0018 J	10/10	0.0017J - 0.0025J	BGOWSW01
Vanadium	0.0082 J	0.0068 J	0.02 U	0.02 U	0.012 J	5/10	0.0046J - 0.012J	BGOWSW09
Selenium	0.01 U	0.006 J	0.01 U	0.01 U	0.01 U	1/10	0.006J	BGOWSW06

Notes:
mg/L - milligrams per li
J - Estimated value.
U - Not Detected.

TABLE 4-9

SUMMARY OF (DISSOLVED) INORGANIC DETECTIONS IN BASE BACKGROUND SURFACE WATER
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Site ID	BGOWSW01	BGOWSW02	BGOWSW03	BGOWSW03	BGOWSW04
Sample ID	BGOWSW01	BGOWSW02	BGOWSW03	BGOWSW03D	BGOWSW04
Sample Date	01/17/02	01/17/02	01/17/02	01/17/02	01/17/02
Inorganics - Dissolved (mg/I					
Arsenic	0.01 U	0.0067 J	0.0044 J	0.0036 J	0.01 U
Barium	0.0086 J	0.0085 J	0.0086 J	0.0079 J	0.0086 J
Cadmium	0.005 U	0.00089 J	0.00083 J	0.005 U	0.005 U
Copper	0.0099 J	0.0032 J	0.0029 J	0.0029 J	0.0029 J
Vanadium	0.02 U	0.0089 J	0.0065 J	0.02 U	0.007 J
Zinc	0.0077 J	0.02 U	0.02 U	0.02 U	0.02 U

Notes:
mg/L - milligrams per liter.
J - Estimated value.
U - Not Detected.

TABLE 4-9

SUMMARY OF (DISSOLVED) INORGANIC DETECTIONS IN BASE BACKGROUND SURFACE WATER
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Site ID Sample ID Sample Date	BGOWSW05 BGOWSW05 01/17/02	BGOWSW06 BGOWSW06 01/17/02	BGOWSW07 BGOWSW07 01/17/02	BGOWSW08 BGOWSW08 01/17/02	BGOWSW09 BGOWSW09 01/17/02	Number of Positive Detections	Range of Positive Detections	Location of Maximum Detection
Inorganics - Dissolved (mg/I								
Arsenic	0.0055 J	0.01 U	0.0033 J	0.0071 J	0.0041 J	7/10	0.0033J - 0.0071J	BGOWSW08
Barium	0.0089 J	0.008 J	0.008 J	0.0082 J	0.0078 J	10/10	0.0078J - 0.0089J	BGOWSW05
Cadmium	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	2/10	0.00083J - 0.00089J	BGOWSW02
Copper	0.0033 J	0.0029 J	0.0034 J	0.003 J	0.0027 J	10/10	0.0027J - 0.0099J	BGOWSW01
Vanadium	0.006 J	0.005 J	0.007 J	0.0053 J	0.02 U	7/10	0.005J - 0.0089J	BGOWSW02
Zinc	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	1/10	0.0077J	BGOWSW01

Notes:
mg/L - milligrams per liter.
J - Estimated value.
U - Not Detected.

TABLE 4-10

SUMMARY OF ORGANIC DETECTIONS IN SURFACE WATER
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Site ID	7SW1	7SW2	7SW3	7SW4	7SW4	7SW5	7SW6
Sample ID	7SW1	7SW2	7SW3	7SW4	7SW4D	7SW5	7SW6
Sample Date	01/15/02	01/15/02	01/15/02	01/15/02	01/15/02	01/16/02	01/17/02
Volatiles (ug/L)							
Carbon disulfide	5 U	3.3 J	5 U	5 U	5 U	5 U	2.9 J
Semivolatiles (ug/L)							
Bis(2-ethylhexyl)phthala	10 U	10 U	12	10 U	10 U	10 U	10 U
Low level PAHs (ug/L)							
Anthracene	0.08 J	0.2 U	0.08 J	0.2 U	0.2 U	0.2 U	0.2 U
Pyrene	0.2 U	0.2 U	0.2 U	0.09 J	0.09 J	0.2 U	0.2 U
Fluoranthene	0.05 J	0.2 U	0.05 J	0.16 J	0.17 J	0.2 U	0.2 U
Acenaphthene	0.2 U	0.2 U	0.2 U	0.12 J	0.11 J	0.2 U	0.2 U
Phenanthrene	0.2 U	0.2 U	0.2 U	0.17 J	0.17 J	0.2 U	0.2 U
Naphthalene	0.2 U	0.2 U	0.2 U	0.11 J	0.09 J	0.2 U	0.2 U

Notes:
ug/L - micrograms per liter.
J - Estimated value.
U - Not Detected.

TABLE 4-10

SUMMARY OF ORGANIC DETECTIONS IN SURFACE WATER
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Site ID Sample ID Sample Date	7SW7 7SW7 01/16/02	7SW8 7SW8 01/16/02	7SW9 7SW9 01/16/02	Number of Positive Detections	Range of Positive Detections	Location of Maximum Detection
Volatiles (ug/L)						
Carbon disulfide	5 U	5 U	5 U	2/10	2.9J - 3.3J	7SW2
Semivolatiles (ug/L)						
Bis(2-ethylhexyl)phthala	10 U	10 U	10 U	1/10	12	7SW3
Low level PAHs (ug/L)						
Anthracene	0.2 U	0.2 U	0.2 U	2/10	0.08J	7SW1,7SW3
Pyrene	0.2 U	0.2 U	0.2 U	2/10	0.09J	7SW4,7SW4D
Fluoranthene	0.2 U	0.2 U	0.2 U	4/10	0.05J - 0.17J	7SW4D
Acenaphthene	0.2 U	0.2 U	0.2 U	2/10	0.11J - 0.12J	7SW4
Phenanthrene	0.2 U	0.2 U	0.2 U	2/10	0.17J	7SW4,7SW4D
Naphthalene	0.2 U	0.2 U	0.2 U	2/10	0.09J - 0.11J	7SW4

Notes:
ug/L - micrograms per lit
J - Estimated value.
U - Not Detected.

TABLE 4-11

SUMMARY OF (TOTAL) INORGANIC DETECTIONS IN SURFACE WATER
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Site ID	7SW1	7SW2	7SW3	7SW4	7SW4	7SW5	7SW6
Sample ID	7SW1	7SW2	7SW3	7SW4	7SW4D	7SW5	7SW6
Sample Date	01/15/02	01/15/02	01/15/02	01/15/02	01/15/02	01/16/02	01/17/02
Inorganics - Total (mg/L)							
Lead	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.0017 J	0.005 U
Mercury	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Tin	0.05 U	0.05 U	0.05 U	0.05 U	0.011 J	0.0068 J	0.05 U
Antimony	0.02 U	0.02 U	0.02 U	0.0057 J	0.02 U	0.02 U	0.0054 J
Arsenic	0.01 U	0.004 J	0.0061 J	0.01 U	0.0039 J	0.007 J	0.01 U
Barium	0.0086 J	0.009 J	0.021	0.012	0.012	0.0093 J	0.0088 J
Cadmium	0.005 U	0.005 U	0.00072 J	0.005 U	0.005 U	0.005 U	0.005 U
Copper	0.0032 J	0.0038 J	0.0052 J	0.0084 J	0.014 J	0.0022 J	0.0029 J
Vanadium	0.0061 J	0.01 J	0.01 J	0.0088 J	0.012 J	0.0092 J	0.0064 J
Zinc	0.02 U	0.02 U	0.02 U	0.0065 J	0.006 J	0.02 U	0.02 U
Selenium	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U

Notes:
mg/L - milligrams per liter.
J - Estimated value.
U - Not Detected.

TABLE 4-11

SUMMARY OF (TOTAL) INORGANIC DETECTIONS IN SURFACE WATER
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Site ID	7SW7	7SW8	7SW9	Number	Range	Location
Sample ID	7SW7	7SW8	7SW9	of Positive	of Positive	of Maximum
Sample Date	01/16/02	01/16/02	01/16/02	Detections	Detections	Detection
Inorganics - Total (mg/L)						
Lead	0.005 U	0.005 U	0.005 U	1/10	0.0017J	7SW5
Mercury	0.0002 U	0.00008 J	0.0002 U	1/10	0.00008J	7SW8
Tin	0.05 U	0.05 U	0.05 U	2/10	0.0068J - 0.011J	7SW4D
Antimony	0.02 U	0.02 U	0.02 U	2/10	0.0054J - 0.0057J	7SW4
Arsenic	0.0042 J	0.0046 J	0.01 U	6/10	0.0039J - 0.007J	7SW5
Barium	0.0084 J	0.0086 J	0.0086 J	10/10	0.0084J - 0.021	7SW3
Cadmium	0.005 U	0.005 U	0.005 U	1/10	0.00072J	7SW3
Copper	0.0022 J	0.0026 J	0.0021 J	10/10	0.0021J - 0.0084J	7SW4
Vanadium	0.0046 J	0.0077 J	0.0061 J	10/10	0.0046J - 0.012J	7SW4D
Zinc	0.02 U	0.02 U	0.02 U	2/10	0.006J - 0.0065J	7SW4
Selenium	0.01 U	0.0063 J	0.01 U	1/10	0.0063J	7SW8

Notes:
mg/L - milligrams per liter.
J - Estimated value.
U - Not Detected.

TABLE 4-12

SUMMARY OF (DISSOLVED) INORGANIC DETECTIONS IN SURFACE WATER
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Site ID	7SW1	7SW2	7SW3	7SW4	7SW4	7SW5	7SW6
Sample ID	7SW1	7SW2	7SW3	7SW4	7SW4D	7SW5	7SW6
Sample Date	01/15/02	01/15/02	01/15/02	01/15/02	01/15/02	01/16/02	01/17/02
Inorganics - Dissolved (mg/L)							
Lead	0.005 U	0.005 U	0.005 U	0.005 U	0.0026 J	0.005 U	0.005 U
Thallium	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 U	0.0049 J
Tin	0.0076 J	0.05 U	0.05 U	0.05 U	0.05 U	0.0091 J	0.0066 J
Antimony	0.02 U	0.02 U	0.02 U	0.02 U	0.0053 J	0.02 U	0.02 U
Arsenic	0.004 J	0.0071 J	0.0036 J	0.01 U	0.01 U	0.01 U	0.0032 J
Barium	0.0082 J	0.0089 J	0.021	0.011	0.01	0.0094 J	0.0075 J
Cadmium	0.005 U	0.00095 J	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Copper	0.0037 J	0.0038 J	0.0047 J	0.0084 J	0.0046 J	0.0023 J	0.0021 J
Vanadium	0.0068 J	0.02 U	0.01 J	0.0092 J	0.012 J	0.02 U	0.0062 J
Zinc	0.0059 J	0.02 U	0.02 U	0.0082 J	0.0073 J	0.02 U	0.02 U

Notes:
mg/L - milligrams per liter.
J - Estimated value.
U - Not Detected.
UJ - Report quantitation limit is qualified as estimated.

TABLE 4-12

SUMMARY OF (DISSOLVED) INORGANIC DETECTIONS IN SURFACE WATER
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Site ID	7SW7	7SW8	7SW9	Number	Range	Location
Sample ID	7SW7	7SW8	7SW9	of Positive	of Positive	of Maximum
Sample Date	01/16/02	01/16/02	01/16/02	Detections	Detections	Detection
Inorganics - Dissolved (mg/L)						
Lead	0.005 U	0.005 U	0.005 U	1/10	0.0026J	7SW4D
Thallium	0.01 U	0.01 U	0.01 U	1/10	0.0049J	7SW6
Tin	0.0086 J	0.0073 J	0.05 U	5/10	0.0066J - 0.0091J	7SW5
Antimony	0.02 U	0.02 U	0.02 U	1/10	0.0053J	7SW4D
Arsenic	0.01 U	0.01 U	0.0077 J	5/10	0.0032J - 0.0077J	7SW9
Barium	0.0089 J	0.0086 J	0.0082 J	10/10	0.0075J - 0.021	7SW3
Cadmium	0.005 U	0.005 U	0.005 U	1/10	0.00095J	7SW2
Copper	0.0034 J	0.0023 J	0.0027 J	10/10	0.0021J - 0.0084J	7SW4
Vanadium	0.0052 J	0.02 U	0.0045 J	7/10	0.0045J - 0.012J	7SW4D
Zinc	0.02 U	0.02 U	0.02 U	3/10	0.0059J - 0.0082J	7SW4

Notes:
mg/L - milligrams per liter.
J - Estimated value.
U - Not Detected.
UJ - Report quantitation limit i
qualified as estimated.

TABLE 4-13

SUMMARY OF ORGANIC DETECTIONS IN BASE BACKGROUND SEDIMENT
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Site ID	BGOWSD01	BGOWSD02	BGOWSD03	BGOWSD03	BGOWSD04
Sample ID	BGOWSD01	BGOWSD02	BGOWSD03	BGOWSD03D	BGOWSD04
Sample Date	01/17/02	01/17/02	01/17/02	01/17/02	01/17/02
Depth (ft bss)	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5
Volatiles (ug/kg)					
Not Detetced					
Semivolatiles (ug/kg)					
Not Detected					
Pesticides/PCBs (ug/kg)					
4,4'-DDD	5.1 U	4.8 U	5.1 U	4.6 U	5 U
Low Level PAHs (ug/kg)					
Pyrene	10 U	9.7 U	3.6 J	9.4 U	10 U
Benzo(g,h,i)perylene	10 U	9.7 U	2.4 J	9.4 U	2.8 J
Indeno(1,2,3-cd)pyrene	10 U	9.7 U	10 U	9.4 U	10 U
Benzo(b)fluoranthene	10 U	9.7 U	3.4 J	9.4 U	10 U
Fluoranthene	10 U	9.7 U	3.7 J	9.4 U	10 U
Benzo(a)pyrene	10 U	9.7 U	10 U	9.4 U	10 U
Naphthalene	10 U	9.7 U	2.6 J	2 J	10 U
Chlorinated Herbicides (ug/kg)					
2,4-D	13 U	1.2 U	13 U	9 NJ	18 J
Dioxins/Furans (ug/kg)					
Not Detected					
Misc. Parameter (mg/kg)					
Total organic carbon	3,800	1,800	2,600	3,100	3,500

Notes:

ug/kg - micrograms per kilogram.
ft bss - feet below sediment surface.
J - Estimated value.
mg/kg - milligrams per kilogram.

U - Not Detected.
UJ - Report quantitation limit is qualified as estimated.
NJ - Result is considered presumptively present at an estimated concentration.

TABLE 4-13

SUMMARY OF ORGANIC DETECTIONS IN BASE BACKGROUND SEDIMENT
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Site ID	BGOWSD05	BGOWSD06	BGOWSD07	BGOWSD08	BGOWSD09			
Sample ID	BGOWSD05	BGOWSD06	BGOWSD07	BGOWSD08	BGOWSD09	Number	Range	Location
Sample Date	01/17/02	01/17/02	01/17/02	01/17/02	01/17/02	of Positive	of Positive	of Maximum
Depth (ft bss)	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	Detections	Detections	Detection
Volatiles (ug/kg)								
Not Detetced								
Semivolatiles (ug/kg)								
Not Detected								
Pesticides/PCBs (ug/kg)								
4,4'-DDD	4.8 U	1.3 J	4.7 U	5.3 U	4.7 U	1/10	1.3J	BGOWSD06
Low Level PAHs (ug/kg)								
Pyrene	9.7 U	10 U	9.6 U	11 U	9.6 U	1/10	3.6J	BGOWSD03
Benzo(g,h,i)perylene	2.3 J	10 U	9.6 U	16	9.6 U	4/10	2.3J - 16	BGOWSD08
Indeno(1,2,3-cd)pyrene	9.7 U	10 U	9.6 U	1.9 J	9.6 U	1/10	1.9J	BGOWSD08
Benzo(b)fluoranthene	9.7 U	10 U	9.6 U	11 U	9.6 U	1/10	3.4J	BGOWSD03
Fluoranthene	9.7 U	10 U	9.6 U	11 U	9.6 U	1/10	3.7J	BGOWSD03
Benzo(a)pyrene	9.7 U	10 U	9.6 U	2.5 J	9.6 U	1/10	2.5J	BGOWSD08
Naphthalene	9.7 U	2.4 J	2.6 J	11 U	9.6 U	4/10	2J - 2.6J	BGOWSD03, BGOWSD07
Chlorinated Herbicides (ug/kg)								
2,4-D	12 U	13 U	12 UJ	13 UJ	12 UJ	2/10	9NJ - 18J	BGOWSD04
Dioxins/Furans (ug/kg)								
Not Detected								
Misc. Parameter (mg/kg)								
Total organic carbon	3,600	3,600	3,400	500 U	500 U	8/10	1,800 - 3,800	BGOWSD01

Notes:

ug/kg - micrograms per kilogram
ft bss - feet below sediment surfac
J - Estimated value.
mg/kg - milligrams per kilogram.

U - Not Detected.
UJ - Report quantitation limit is qualified as estimated.
NJ - Result is considered presumptively present at an estimated concentration.

TABLE 4-14

SUMMARY OF INORGANIC DETECTIONS IN BASE BACKGROUND SEDIMENT
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Site ID	BGOWSD01	BGOWSD02	BGOWSD03	BGOWSD03	BGOWSD04
Sample ID	BGOWSD01	BGOWSD02	BGOWSD03	BGOWSD03D	BGOWSD04
Sample Date	01/17/02	01/17/02	01/17/02	01/17/02	01/17/02
Depth (ft bss)	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5
Inorganics - Total (mg/kg)					
Lead	0.63 J	0.66 UJ	0.74 J	0.56 J	0.69 UJ
Mercury	0.031 U	0.0062 J	0.026 U	0.026 U	0.0043 J
Nickel	5.1 U	5.3 U	6.2 U	5.1 U	5.5 U
Thallium	1.3 U	1.3 U	0.91 J	1.3 U	1.4 U
Arsenic	1.8	1.9	1.4 J	1.8	2.7
Barium	7.2	7.6	8.1	7	7.9
Chromium	2.6	3.3	3.1	3.1	3.1
Cobalt	0.35 J	0.93 J	0.56 J	0.77 J	0.66 J
Copper	2.2 J	3	2.6 J	2.7	2.7 J
Vanadium	3.6	8.3	6	7.2	5.7
Zinc	2.6	4.3	3.4	3.8	3.5

Notes:
mg/kg - milligrams per kilogram.
ft bss - feet below sediment surface.
J - Estimated value.
U - Not Detected.
UJ - Report quantitation limit is qualified as estimated.

TABLE 4-14

SUMMARY OF INORGANIC DETECTIONS IN BASE BACKGROUND SEDIMENT
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Site ID	BGOWSD05	BGOWSD06	BGOWSD07	BGOWSD08	BGOWSD09			
Sample ID	BGOWSD05	BGOWSD06	BGOWSD07	BGOWSD08	BGOWSD09	Number	Range	Location
Sample Date	01/17/02	01/17/02	01/17/02	01/17/02	01/17/02	of Positive	of Positive	of Maximum
Depth (ft bss)	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	0.0 - 0.5	Detections	Detections	Detection
Inorganics - Total (mg/kg)								
Lead	0.72 UJ	0.65 UJ	0.57 J	0.66 J	0.57 J	6/10	0.56J - 0.74J	BGOWSD03
Mercury	0.029 U	0.028 U	0.0052 J	0.0042 J	0.0056 J	5/10	0.0042J - 0.0062J	BGOWSD02
Nickel	5.8 U	5.2 U	0.58 J	5.4 U	5.2 U	1/10	0.58J	BGOWSD07
Thallium	1.4 U	1.3 U	1.2 U	1.3 U	1.3 U	1/10	0.91J	BGOWSD03
Arsenic	3	1.9	2.3	3	2.7	10/10	1.4J - 3	BGOWSD05, BGOWSD08
Barium	7.6	7.6	6.8	7.5	7.3	10/10	6.8 - 8.1	BGOWSD03
Chromium	3.5	2.5	3.5	3.5	3.1	10/10	2.5 - 3.5	BGOWSD05,BGOWSD07 , BGOWSD08
Cobalt	0.8 J	0.54 J	0.93 J	0.7 J	0.91 J	10/10	0.35J - 0.93J	BGOWSD02, BGOWSD07
Copper	3.1	2.4 J	3	3.2	3.1	10/10	2.2J - 3.2	BGOWSD08
Vanadium	9.1	4.1	9.6	8.1	9.1	10/10	3.6 - 9.1	BGOWSD05, BGOWSD09
Zinc	4.3	2.8	4.4	4.2	4.5	10/10	2.6 - 4.5	BGOWSD09

Notes:

mg/kg - milligrams per kilogram.
ft bss - feet below sediment surfac
J - Estimated value.
U - Not Detected.
UJ - Report quantitation limit is qualified as estimated.

TABLE 4-15

SUMMARY OF ORGANIC DETECTIONS IN SEDIMENT
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Site ID	7SD1	7SD2	7SD3	7SD4	7SD4	7SD5	7SD6
Sample ID	7SD1	7SD2	7SD3	7SD4	7SD4D	7SD5	7SD6
Sample Date	01/15/02	01/15/02	01/15/02	01/15/02	01/15/02	01/15/02	01/15/02
Depth (ft bss)	0.0-0.2	0.0-0.2	0.0-0.2	0.0-0.2	0.0-0.2	0.0-0.2	0.0-0.2
Volatiles (ug/kg)							
Styrene	4.2 J	7.9 U	6.6 U	3.1 J	6.2 U	8.4 U	3.8 J
Toluene	5.8 J	6.7 J	6 J	15	12	8.4 U	9.6 U
Xylene	8.2 U	7.9 U	6.6 U	6.2 J	6.2 U	8.4 U	9.6 U
Acetone	62 J	36 J	41 J	85 J	120 J	84 U	96 U
Methylene chloride	8.2 U	7.9 U	6.6 U	2.7 J	2.2 J	8.4 U	9.6 U
Carbon disulfide	8.2 U	4.9 J	6.6 U	7.4 U	6.2 U	8.4 U	9.6 U
2-Butanone	41 U	5.8 J	8.9 J	24 J	28 J	25 J	13 J
Semivolatiles (ug/kg)							
Bis(2-ethylhexyl)phthalate	550 U	530 U	510 U	480 U	440 U	590 U	630 U
Anthracene	550 U	530 U	510 U	480 U	440 U	590 U	630 U
1,4-Dioxane	550 U	530 U	510 U	480 U	440 U	590 U	630 U
Pyrene	550 U	530 U	510 U	480 U	440 U	460 J	200 J
Benzo(g,h,i)perylene	550 U	530 U	510 U	480 U	440 U	160 J	100 J
Indeno(1,2,3-cd)pyrene	550 U	530 U	510 U	480 U	440 U	590 U	630 U
Benzo(b)fluoranthene	550 U	49 J	510 U	480 U	440 U	350 J	220 J
Fluoranthene	550 U	530 U	510 U	480 U	440 U	600	220 J
Benzo(k)fluoranthene	550 U	530 U	510 U	480 U	440 U	310 J	180 J
Chrysene	550 U	64 J	510 U	480 U	440 U	340 J	200 J
Benzo(a)pyrene	550 U	530 U	510 U	480 U	440 U	240 J	130 J
Benzo(a)anthracene	550 U	530 U	510 U	480 U	440 U	250 J	110 J
Phenanthrene	550 U	530 U	510 U	480 U	440 U	160 J	67 J

TABLE 4-15

SUMMARY OF ORGANIC DETECTIONS IN SEDIMENT
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Sample ID	7SD1	7SD2	7SD3	7SD4	7SD4D	7SD5	7SD6
Sample Date	01/15/02	01/15/02	01/15/02	01/15/02	01/15/02	01/15/02	01/15/02
Depth (ft bss)	0.0-0.2	0.0-0.2	0.0-0.2	0.0-0.2	0.0-0.2	0.0-0.2	0.0-0.2
Low Level PAHs (ug/kg)							
Anthracene	11 U	2.8 J	10 U	9.7 U	9 U	6.5 J	250
Pyrene	11 U	16	11	9.7 U	3.8 J	25	210
Benzo(g,h,i)perylene	11 U	14	6.6 J	2.4 J	3.8 J	18	69
Indeno(1,2,3-cd)pyrene	11 U	12	6.3 J	1.8 J	3.3 J	14	54
Benzo(b)fluoranthene	11 U	30	24	5.3 J	14 J	32	280
Fluoranthene	11 U	14	8.5 J	9.7 U	9 U	36	240
Benzo(k)fluoranthene	11 U	46	23	7.4 J	13 J	32	230
Acenaphthylene	11 U	3 J	10 U	9.7 U	9 U	3 J	15
Chrysene	11 U	52	38	8.1 J	10	26	250
Benzo(a)pyrene	11 U	17	9.5 J	3.3 J	6.2 J	17	110
Dibenzo(a,h)anthracene	11 U	2.7 J	10 U	9.7 U	9 U	5.6 J	26
Benzo(a)anthracene	11 U	9.5 J	6.6 J	9.7 U	7.8 J	13	130
Acenaphthene	11 U	11 U	10 U	9.7 U	9 U	6.7 U	13 U
Phenanthrene	11 U	11 U	10 U	9.7 U	9 U	20	40
Fluorene	11 U	11 U	10 U	9.7 U	9 U	3 J	5 J
2-Methylnaphthalene	11 U	11 U	10 U	9.7 U	9 U	6.7 U	1.6 J
Misc. Parameter (mg/kg)							
Total organic carbon	2,200	3,800	3,000	2,000	2,100	7,300	6,600

Notes:
ft bss - feet below sediment surface.
ug/kg - micrograms per kilogram.
mg/kg - milligrams per kilogram.
J - Estimated value.
U - Not Detected.
UJ - Report quantitation limit is qualified as estimated.

TABLE 4-15

SUMMARY OF ORGANIC DETECTIONS IN SEDIMENT
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Site ID	7SD7	7SD8	7SD9	7SD11	7SD11
Sample ID	7SD7	7SD8	7SD9	7SD11	7SD11D
Sample Date	01/16/02	01/16/02	01/16/02	01/16/02	01/16/02
Depth (ft bss)	0.0-0.2	0.0-0.2	0.0-0.2	0.0-0.2	0.0-0.2
Volatiles (ug/kg)					
Styrene	7.4 U	8.5 U	9.8	12 U	11 U
Toluene	7.4 U	8.5 U	11 U	31 J	11 UJ
Xylene	7.4 U	8.5 U	9.2 U	12 U	11 U
Acetone	110 UJ	100 UJ	92 U	130 J	110 U
Methylene chloride	7.4 U	8.5 U	9.2 U	12 U	11 U
Carbon disulfide	7.4 U	8.5 U	9.2 U	12 U	11 U
2-Butanone	13 J	14 J	10 J	24 J	18 J
Semivolatiles (ug/kg)					
Bis(2-ethylhexyl)phthalate	570 U	660 U	250 J	180 J	780 U
Anthracene	570 U	660 U	570 U	770 U	200 J
1,4-Dioxane	40	660 U	570 U	770 U	780 U
Pyrene	570 U	660 U	260 J	550 J	460 J
Benzo(g,h,i)perylene	51 J	66 J	100 J	360 J	300 J
Indeno(1,2,3-cd)pyrene	570 U	660 U	570 U	320 J	270 J
Benzo(b)fluoranthene	83 J	100 J	210 J	480 J	410 J
Fluoranthene	570 U	660 U	270 J	710 J	590 J
Benzo(k)fluoranthene	76 J	95 J	180 J	410 J	290 J
Chrysene	65 J	69 J	180 J	380 J	350 J
Benzo(a)pyrene	53 J	66 J	120 J	370 J	310 J
Benzo(a)anthracene	42 J	49 J	110 J	240 J	210 J
Phenanthrene	570 U	660 U	49 J	230 J	210 J

TABLE 4-15

SUMMARY OF ORGANIC DETECTIONS IN SEDIMENT
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Sample ID	7SD7	7SD8	7SD9	7SD11	7SD11D
Sample Date	01/16/02	01/16/02	01/16/02	01/16/02	01/16/02
Depth (ft bss)	0.0-0.2	0.0-0.2	0.0-0.2	0.0-0.2	0.0-0.2
Low Level PAHs (ug/kg)					
Anthracene	15 J	6.9 J	13 J	32	31
Pyrene	110	45	160	610 J	570 J
Benzo(g,h,i)perylene	48	28	60	240 J	240 J
Indeno(1,2,3-cd)pyrene	48	26	48 J	190 J	190 J
Benzo(b)fluoranthene	140	77	190	470 J	590 J
Fluoranthene	140	56	180	900 J	870 J
Benzo(k)fluoranthene	110	70	150	580 J	440 J
Acenaphthylene	5.5 J	4.1 J	12 J	11 J	14 J
Chrysene	110	55	110	480 J	450 J
Benzo(a)pyrene	88	48	110	400 J	410 J
Dibenzo(a,h)anthracene	25	12 J	21 J	86	96
Benzo(a)anthracene	75	35	73	360 J	360 J
Acenaphthene	3.8 J	13 U	58 U	9 J	6.4 J
Phenanthrene	33	13	63	310 J	270 J
Fluorene	16 U	13 U	58 U	10 J	9.1 J
2-Methylnaphthalene	16 U	13 U	58 U	16 U	16 U
Misc. Parameter (mg/kg)					
Total organic carbon	18,000	16,000	9,900	18,000	16,000

Notes:
ft bss - feet below sediment surfac
ug/kg - micrograms per kilogram
mg/kg - milligrams per kilogram
J - Estimated value.
U - Not Detected.
UJ - Report quantitation limit is
qualified as estimated.

TABLE 4-15

SUMMARY OF ORGANIC DETECTIONS IN SEDIMENT
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Site ID	7SD12	7SD13	7SD14			
Sample ID	7SD12	7SD13	7SD14	Number	Range	Location
Sample Date	01/16/02	01/16/02	01/16/02	of Positive	of Positive	of Maximum
Depth (ft bss)	0.0-0.2	0.0-0.2	0.0-0.2	Detections	Detections	Detection
Volatiles (ug/kg)						
Styrene	13 U	7 U	11 U	4/15	3.1J - 9.8	7SD9
Toluene	13 U	7 U	11 U	2/15	15 - 31J	7SD11
Xylene	13 U	7 U	11 U	1/15	6.2J	7SD4
Acetone	190 U	70 UJ	110 UJ	1/15	120J	7SD4D
Methylene chloride	13 U	7 U	11 U	2/15	2.2J - 2.7J	7SD4
Carbon disulfide	13 U	7 U	11 U	1/15	4.9J	7SD2
2-Butanone	40 J	10 J	12 J	14/15	5.8J - 40J	7SD12
Semivolatiles (ug/kg)						
Bis(2-ethylhexyl)phthalate	250 J	580 U	690 U	3/15	180J - 250J	7SD9, 7SD12
Anthracene	86 J	50 J	690 U	3/15	50J - 200J	7SD11D
1,4-Dioxane	820 U	580 U	690 U	1/15	40	7SD7
Pyrene	2,100	130 J	690 U	7/15	130J - 2,100	7SD12
Benzo(g,h,i)perylene	820 U	77 J	120 J	9/15	51J - 360J	7SD11
Indeno(1,2,3-cd)pyrene	900	580 U	690 U	3/15	270J - 900	7SD12
Benzo(b)fluoranthene	1,700	140 J	220 J	11/15	49J - 1,700	7SD12
Fluoranthene	3,600	130 J	81 J	8/15	81J - 3,600	7SD12
Benzo(k)fluoranthene	1,300	120 J	210 J	10/15	76J - 1,300	7SD12
Chrysene	1,500	120 J	150 J	11/15	64J - 1,500	7SD12
Benzo(a)pyrene	1,300	100 J	170 J	10/15	53J - 1,300	7SD12
Benzo(a)anthracene	940	76 J	83 J	10/15	42J - 940	7SD12
Phenanthrene	1,300	50 J	690 U	7/15	49J - 1,300	7SD12

TABLE 4-15

SUMMARY OF ORGANIC DETECTIONS IN SEDIMENT
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Sample ID Sample Date Depth (ft bss)	7SD12 01/16/02 0.0-0.2	7SD13 01/16/02 0.0-0.2	7SD14 01/16/02 0.0-0.2	Number of Positive Detections	Range of Positive Detections	Location of Maximum Detection
Low Level PAHs (ug/kg)						
Anthracene	210 J	41	13 J	11/15	2.8J - 250	7SD6
Pyrene	4,700	330 J	70	13/15	3.8J - 4,700	7SD12
Benzo(g,h,i)perylene	1,400	190 J	40	14/15	2.4J - 1,400	7SD12
Indeno(1,2,3-cd)pyrene	1,300	200 J	36	14/15	1.8J - 1,300	7SD12
Benzo(b)fluoranthene	2,400	870 J	130	14/15	5.3J - 2,400	7SD12
Fluoranthene	5,800	260 J	82	12/15	8.5J - 5,800	7SD12
Benzo(k)fluoranthene	2,500	1,000 J	120	14/15	7.4J - 2,500	7SD12
Acenaphthylene	340 U	32	8.7 J	10/15	3J - 32	7SD13
Chrysene	2,600	340 J	96	14/15	8.1J - 2,600	7SD12
Benzo(a)pyrene	2,200	730 J	92	14/15	3.3J - 2,200	7SD12
Dibenzo(a,h)anthracene	530	140 J	22	11/15	2.7J - 530	7SD12
Benzo(a)anthracene	1,700	200 J	62	13/15	7.8J - 1,700	7SD12
Acenaphthene	140 J	12 J	15 U	5/15	3.8J - 140J	7SD12
Phenanthrene	2,800	74	20	10/15	13 - 2,800	7SD12
Fluorene	140 J	7.5 J	15 U	6/15	3J - 140J	7SD12
2-Methylnaphthalene	340 U	14 U	15 U	1/15	1.6J	7SD6
Misc. Parameter (mg/kg)						
Total organic carbon	17,000	11,000	16,000	15/15	2,000 - 18,000	7SD7,7SD11

Notes:
ft bss - feet below sediment surfa
ug/kg - micrograms per kilogram
mg/kg - milligrams per kilogram
J - Estimated value.
U - Not Detected.
UJ - Report quantitation limit is
qualified as estimated.

TABLE 4-16

SUMMARY OF INORGANIC DETECTIONS IN SEDIMENT
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Site ID	7SD1	7SD2	7SD3	7SD4	7SD4	7SD5	7SD6	7SD7
Sample ID	7SD1	7SD2	7SD3	7SD4	7SD4D	7SD5	7SD6	7SD7
Sample Date	01/15/02	01/15/02	01/15/02	01/15/02	01/15/02	01/15/02	01/15/02	01/16/02
Depth (ft bss)	0.0 - 0.2	0.0 - 0.2	0.0 - 0.2	0.0 - 0.2	0.0 - 0.2	0.0 - 0.2	0.0 - 0.2	0.0 - 0.2
Inorganics - Total (mg/kg)								
Lead	1.3 J	3.8	3	2.6	6.6	11 J	17 J	16
Mercury	0.028 U	0.0092 J	0.022 J	0.0088 J	0.01 J	0.013 J	0.036	0.052
Nickel	3.1 J	4.2 J	21	3.9 J	6.9	10	10	7.5
Thallium	1.5 U	1.6 U	1.4 U	1.2 U	0.96 J	1.6 J	1.7 U	1.4 U
Tin	7.6 U	8.1 U	7 U	6 U	5.6 U	8.1 U	8.7 U	7.2 U
Antimony	3 U	3.2 U	2.8 U	2.4 U	2.3 U	3.2 UJ	3.5 UJ	0.89 J
Arsenic	2.9 J	6.2	46	3.9 J	6.4	4.9 J	4.9 J	6.4
Barium	18	29	100	16	49	20	48	16
Beryllium	0.17 J	0.19 J	0.39 J	0.16 J	0.28 J	0.19 J	0.16 J	0.13 J
Cadmium	0.27 J	0.38 J	1.3	0.53 J	1	0.4 J	0.17 J	0.21 J
Chromium	11	17	39	15	27	24 J	22 J	26
Cobalt	3.6	4.8	31	6.2	12	15	15	10
Copper	10	13	31	15	18	76 J	130 J	57 J
Vanadium	56	84	200	100	190	130	97	86 J
Zinc	11	19	28	12	17	77	71	73
Selenium	1.5 U	1.6 U	1.3 J	0.8 J	0.8 J	1.6 U	1.7 U	1.4 U

Notes:
ft bss - feet below sediment surface.
mg/kg - milligrams per kilogram.
J - Estimated value.
U - Not Detected.
UJ - Report quantitation limit is qualified as estimated.

TABLE 4-16

SUMMARY OF INORGANIC DETECTIONS IN SEDIMENT
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Site ID	7SD8	7SD9	7SD11	7SD11	7SD12	7SD13	7SD14			
Sample ID	7SD8	7SD9	7SD11	7SD11D	7SD12	7SD13	7SD14	Number	Range	Location
Sample Date	01/16/02	01/16/02	01/16/02	01/16/02	01/16/02	01/16/02	01/16/02	of Positive	of Positive	of Maximum
Depth (ft bss)	0.0 - 0.2	0.0 - 0.2	0.0 - 0.2	0.0 - 0.2	0.0 - 0.2	0.0 - 0.2	0.0 - 0.2	Detections	Detections	Detection
Inorganics - Total (mg/kg)										
Lead	20	290 J	1300 J	1200 J	300 J	55	26	15/15	2.6 - 1,300	7SD11
Mercury	0.02 J	0.048	0.062 J	0.053 J	0.068 J	0.036	0.075	14/15	0.0088J -0.075	7SD14
Nickel	5.6 J	7.8	20 J	7.5 J	13 J	8.4	9.6	15/15	3.1J - 21	7SD3
Thallium	1.8 U	1.6 U	1.9 UJ	2 UJ	2.3 UJ	1.8 U	1.9 U	2/15	0.96J - 1.6J	7SD5
Tin	9.1 U	7.8 U	9.3 J	9.9 UJ	11 UJ	8.8 U	9.5 U	1/15	9.3J	7SD11
Antimony	3.6 UJ	2.5 J	15 J	1 J	1.5 J	3.5 UJ	3.8 UJ	5/15	0.89J - 15J	7SD11
Arsenic	4.6	8 J	11 J	7.9 J	11 J	6.3	7.8	15/15	2.9J - 46	7SD3
Barium	15	20	21 J	17 J	19 J	25	26	15/15	15 - 100	7SD3
Beryllium	0.11 J	0.13 J	0.15 J	0.15 J	0.16 J	0.16 J	0.18 J	15/15	0.11J - 0.39J	7SD3
Cadmium	0.91 U	0.55 J	0.35 J	0.99 UJ	0.59 J	0.16 J	0.95 U	12/15	0.16J - 1.3	7SD3
Chromium	14	24 J	47 J	22 J	28 J	18	26	15/15	11 - 47J	7SD11
Cobalt	6	4.4	7.1 J	4.4 J	6.2 J	9.6	9.6	15/15	3.6 - 31	7SD3
Copper	46 J	58 J	140 J	99 J	210 J	60 J	77 J	15/15	10 - 210J	7SD12
Vanadium	42 J	33	44 J	40 J	47 J	69 J	64 J	15/15	33 - 200	7SD3
Zinc	52	600	410 J	140 J	280 J	68	82	15/15	11 - 600	7SD9
Selenium	1.8 U	1.6 U	1.9 UJ	2 UJ	2.3 UJ	1.8 U	1.9 U	3/15	0.8J - 1.3J	7SD3

Notes:
ft bss - feet below sediment surfac
mg/kg - milligrams per kilogram.
J - Estimated value.
U - Not Detected.
UJ - Report quantitation limit is qualified as estimated.

TABLE 4-17

SUMMARY OF DETECTIONS IN FREE PRODUCT SAMPLES
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Site ID	PSH01	PSH02
Sample ID	PSH01	PSH02
Date	02/18/02	02/18/02
Product Density (g/ml)		
Density	0.82	0.82
Fingerprint (mg/kg)		
JP-5	1,100,000	1,100,000
Brookville Kinematic Viscosity (Centipoise)		
Viscosity	3.5	3.5

Notes:
g/ml - grams per milliliter.
mg/kg - milligrams per kilogram.

TABLE 4-18

SUMMARY OF ORGANIC DETECTIONS IN INVESTIGATIVE DERIVED WASTE
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Sample ID	IDW-01[1]	IDW-02[2]
Sample Date	02/03/02	02/03/02
Volatiles (ug/L)		
Benzene	5	NA
TCLP Volatiles (ug/L)		
Benzene	NA	20

Notes:
ug/L - micrograms per liter.
NA - Not Applicable.
[1] - Aqueous Sample.
[2] - Non-Aqueous Sample.

TABLE 4-19

SUMMARY OF INORGANIC DETECTIONS IN INVESTIGATIVE DERIVED WASTE
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Sample ID	IDW-01[1]	IDW-02[2]
Sample Date	02/03/02	02/03/02
RCRA Metals (mg/L)		
Lead	0.005	NA
Mercury	0.0002	NA
Silver	0.01	NA
Arsenic	0.01	NA
Barium	0.22	NA
Cadmium	0.005	NA
Chromium	0.01	NA
Selenium	0.01	NA
RCRA Metals - TCLP (mg/L)		
Lead	NA	0.2
Mercury	NA	0.02
Silver	NA	0.1
Arsenic	NA	0.2
Barium	NA	2
Cadmium	NA	0.1
Chromium	NA	0.2
Selenium	NA	0.5

Notes:
mg/L - milligrams per liter.
NA - Not Applicable.
[1] - Aqueous Sample.
[2] - Non-Aqueous Sample.

TABLE 4-20

SUMMARY OF ORGANIC DETECTIONS IN EQUIPMENT RINSATE SAMPLES
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Sample ID Sample Date	7ER01 01/16/02	7ER02 01/16/02	7ER04 01/15/02	7ER07 01/09/02	Number of Positive Detections	Range of Positive Detections	Location of Maximum Detection
Volatiles (ug/L)							
Benzene	0.28 J	NA	5 U	5 U	1/3	0.28J	7ER01
Semivolatiles (ug/L)							
Not Detected							
Low Level PAHs (ug/L)							
Not Detected							
Misc. Parameters (mg/L)							
Not Detected							

Notes:
ug/L - micrograms per liter.
mg/L - milligrams per liter.
J - Estimated value.
U - Not Detected.
NA - Not Analyzed.

TABLE 4-21

SUMMARY OF (TOTAL) INORGANIC DETECTIONS IN EQUIPMENT RINSATE SAMPLES
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Sample ID Sample Date	7ER01 01/16/02	7ER04 01/15/02	7ER07 01/09/02	Number of Positive Detections	Range of Positive Detections	Location of Maximum Detection
Inorganics - Total (mg/L						
Lead	0.005 U	0.0032 J	0.005 U	1/3	0.0032J	7ER04
Nickel	0.04 U	0.0081 J	0.0055 J	2/3	0.0055J - 0.0081J	7ER04
Zinc	0.02 U	0.02 U	0.0065 J	1/3	0.0065J	7ER07

Notes:
mg/L - milligrams per liter.
J - Estimated value.
U - Not Detected.

TABLE 4-22

SUMMARY OF ORGANIC DETECTIONS IN FIELD BLANK SAMPLES
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Sample ID Sample Date	2000FB01 01/14/02	2000FB02 01/15/02	2000FB03 01/14/02	Number of Positive Detections	Range of Positive Detections	Location of Maximum Detection
Volatiles (ug/L)						
Toluene	5 U	1.2 J	5 U	1/3	1.2J	2000FB02
Acetone	50 U	10 J	50 U	1/3	10J	2000FB02
Semivolatiles (ug/L)						
2,4,6-Trichlorophenol	10 U	10 U	120 J	1/3	120J	2000FB03
Naphthalene	10 U	10 U	0.49 J	1/3	0.49J	2000FB03
2-Methylnaphthalene	10 U	10 U	0.38 J	1/3	0.38J	2000FB03

Notes:
ug/L - micrograms per liter.
J - Estimated value.
U - Not Detected.

TABLE 4-23

SUMMARY OF (TOTAL) INORGANIC DETECTIONS IN FIELD BLANK SAMPLES
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Sample ID	2000FB01	2000FB02	2000FB03	Number	Range	Location
Sample Date	01/14/02	01/15/02	01/14/02	of Positive Detections	of Positive Detections	of Maximum Detection
Inorganics - Total (mg/I						
Barium	0.01 U	0.01 U	0.0052 J	1/3	0.0052J	2000FB03
Copper	0.02 U	0.0014 J	0.02 U	1/3	0.0014J	2000FB02

Notes:
mg/L - milligrams per liter.
J - Estimated value.
U - Not Detected.

TABLE 4-24

SUMMARY OF ORGANIC DETECTIONS IN BASE BACKGROUND TRIP BLANK SAMPLE
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Sample ID	BGOWTB01
Date	01/17/02

Volatiles (ug/L)
Not Detected

Note:
ug/L - micrograms per liter.

TABLE 4-25

SUMMARY OF ORGANIC DETECTIONS IN TRIP BLANK SAMPLES
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Sample ID	7TB01	7TB02	7TB03	7TB04	7TB05	7TB06
Sample Date	01/09/02	01/10/02	01/11/02	01/14/02	01/15/02	01/16/02
Volatiles (ug/L)						
Styrene	5 U	5 U	5 U	5 U	5 U	5 U
Propionitrile	100 UJ	100 U	100 U	100 U	100 U	100 U
Acrylonitrile	100 U	100 UJ	100 UJ	100 UJ	100 U	100 U
Toluene	5 U	1.7 J	5 U	5 U	1.4 J	5 U
Acetone	50 UJ	50 U	11 J	50 U	11 J	50 U
Benzene	5 U	5 U	5 U	5 U	0.55 J	5 U
Trichloroethene	5 U	0.56 J	5 U	5 U	5 U	5 U
1,2,3-Trichloropropane	5 U	5 U	5 U	5 U	5 U	5 U

Notes:
ug/L - micrograms per liter.
J - Estimated value.
U - Not Detected.
UJ - Report quantitation limit is
qualified as estimated.
R - Result is rejected and unusable.

TABLE 4-25

SUMMARY OF ORGANIC DETECTIONS IN TRIP BLANK SAMPLES
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Sample ID	7TB07	7TB08	7TB09	7TB10	7TB11	7TB12
Sample Date	01/16/02	01/16/02	01/17/02	01/17/02	01/23/02	01/25/02
Volatiles (ug/L)						
Styrene	5 U	5 U	5 U	5 U	5 U	5 U
Propionitrile	100 U	100 U	100 U	12 J	100 U	100 U
Acrylonitrile	100 U	100 U	100 U	12 J	100 U	100 U
Toluene	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	50 U	50 U	50 U	50 U	50 U	10 J
Benzene	5 U	5 U	5 U	5 U	5 U	5 U
Trichloroethene	5 U	5 U	5 U	5 U	5 U	5 U
1,2,3-Trichloropropane	5 U	5 U	5 U	5 U	5 U	8.6

Notes:
ug/L - micrograms per liter.
J - Estimated value.
U - Not Detected.
UJ - Report quantitation limi
qualified as estimated.
R - Result is rejected and un

TABLE 4-25

SUMMARY OF ORGANIC DETECTIONS IN TRIP BLANK SAMPLES
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Sample ID Sample Date	7TB13 01/28/02	7TB14 01/29/02	7TB15 01/30/02	7TB16 01/31/02	7TB17 02/01/02	7TB99 03/01/02	Number of Positive Detections	Range of Positive Detections	Location of Maximum Detection
Volatiles (ug/L)									
Styrene	5 U	1.4 J	5 U	5 U	5 U	5 U	1/18	1.4J	7TB14
Propionitrile	100 U	100 U	100 U	100 U	100 U	100 U	1/18	12J	7TB10
Acrylonitrile	100 U	100 U	100 U	100 U	100 U	100 U	1/18	12J	7TB10
Toluene	5 U	5 U	5 U	0.61 J	5 U	5 U	3/18	0.61J - 1.7J	7TB02
Acetone	50 U	50 U	50 R	50 R	50 R	11 J	4/18	10J - 11J	7TB03, 7TB05, 7TB99
Benzene	5 U	5 U	5 U	5 U	5 U	5 U	1/18	0.55J	7TB05
Trichloroethene	5 U	5 U	5 U	5 U	5 U	5 U	1/18	0.56J	7TB02
1,2,3-Trichloropropane	5 U	5 U	5 U	5 U	5 U	5 UJ	1/18	8.6	7TB12

Notes:
ug/L - micrograms per liter.
J - Estimated value.
U - Not Detected.
UJ - Report quantitation limi
qualified as estimated.
R - Result is rejected and un

FIGURES

250 0 125 250
1 inch = 250 ft.

k\26007\033Phase\Cad\RROADS\ Rr2033008

NOTE:
DATUM PLAN USED IS MEAN LOW WATER = 100.00 FT. AS ESTABLISHED BY U.S. NAVY SURVEY SECTION AS OF NOVEMBER 1941.

Baker

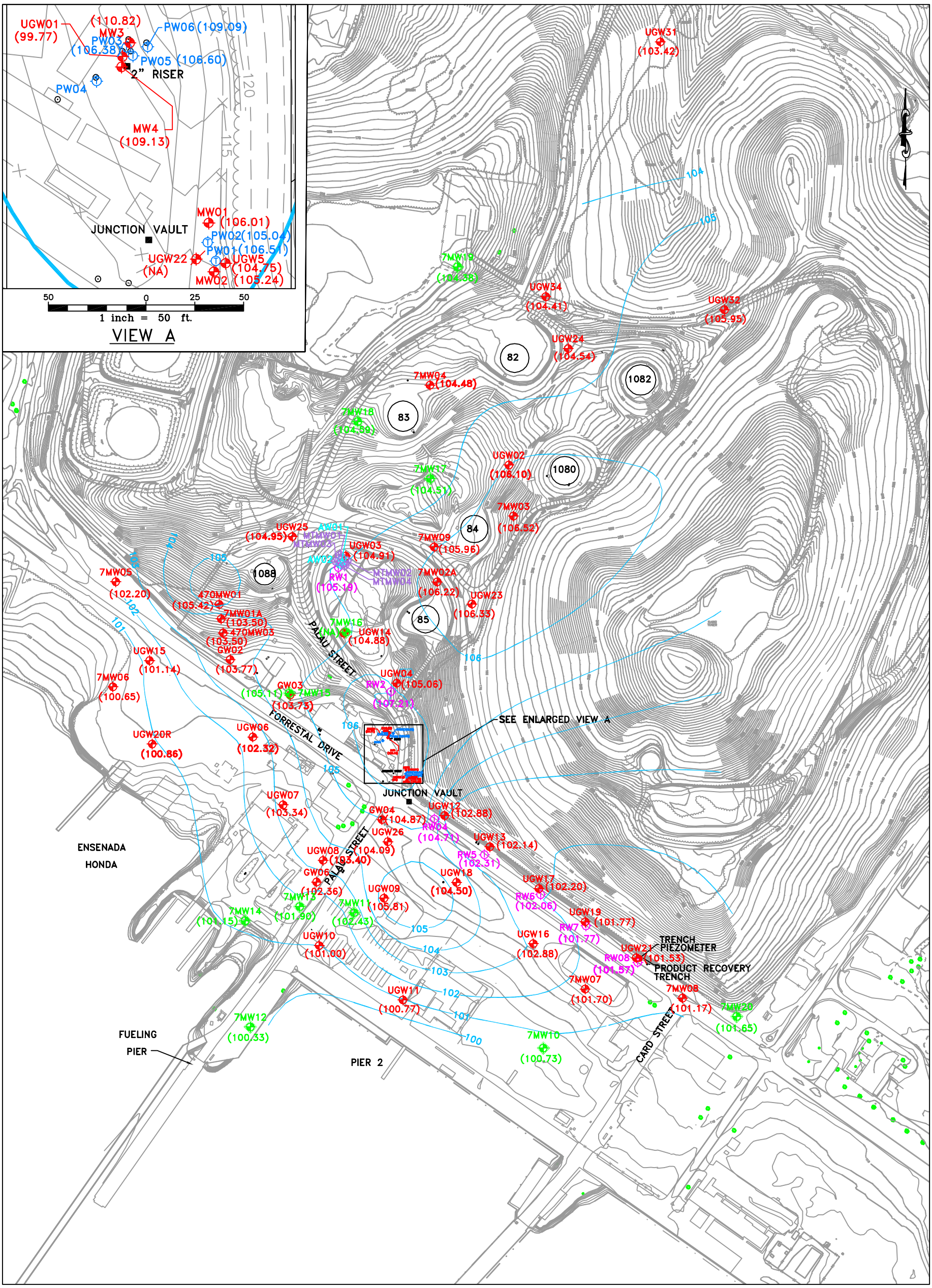
LEGEND

- MONITOR WELL LOCATION
- TERRAVAC PRODUCT RECOVERY WELL LOCATION
- ICHOR PRODUCT RECOVERY WELL LOCATION
- NEW MONITOR WELL LOCATION
- FREE PRODUCT PLUME
- DISSOLVED TCE PLUME
- UNSUPPORTED FREE PRODUCT PLUME
- MANTECH MONITOR WELL
- MANTECH CLEANOx APPLICATION WELL

SOURCE: LANTDIV, FEB. 1992/1997

FIGURE 1–1
ZONE LOCATION MAP
ADDITIONAL DATA COLLECTION INVESTIGATION
TOW WAY FUEL FARM

NAVAL STATION ROOSEVELT ROADS
PUERTO RICO



250 0 125 250
1 inch = 250 ft.

Rr2033009.DWG

NOTE:
DATUM PLAN USED IS MEAN LOW WATER = 100.00 FT. AS ESTABLISHED BY U.S. NAVY SURVEY SECTION AS OF NOVEMBER 1941.

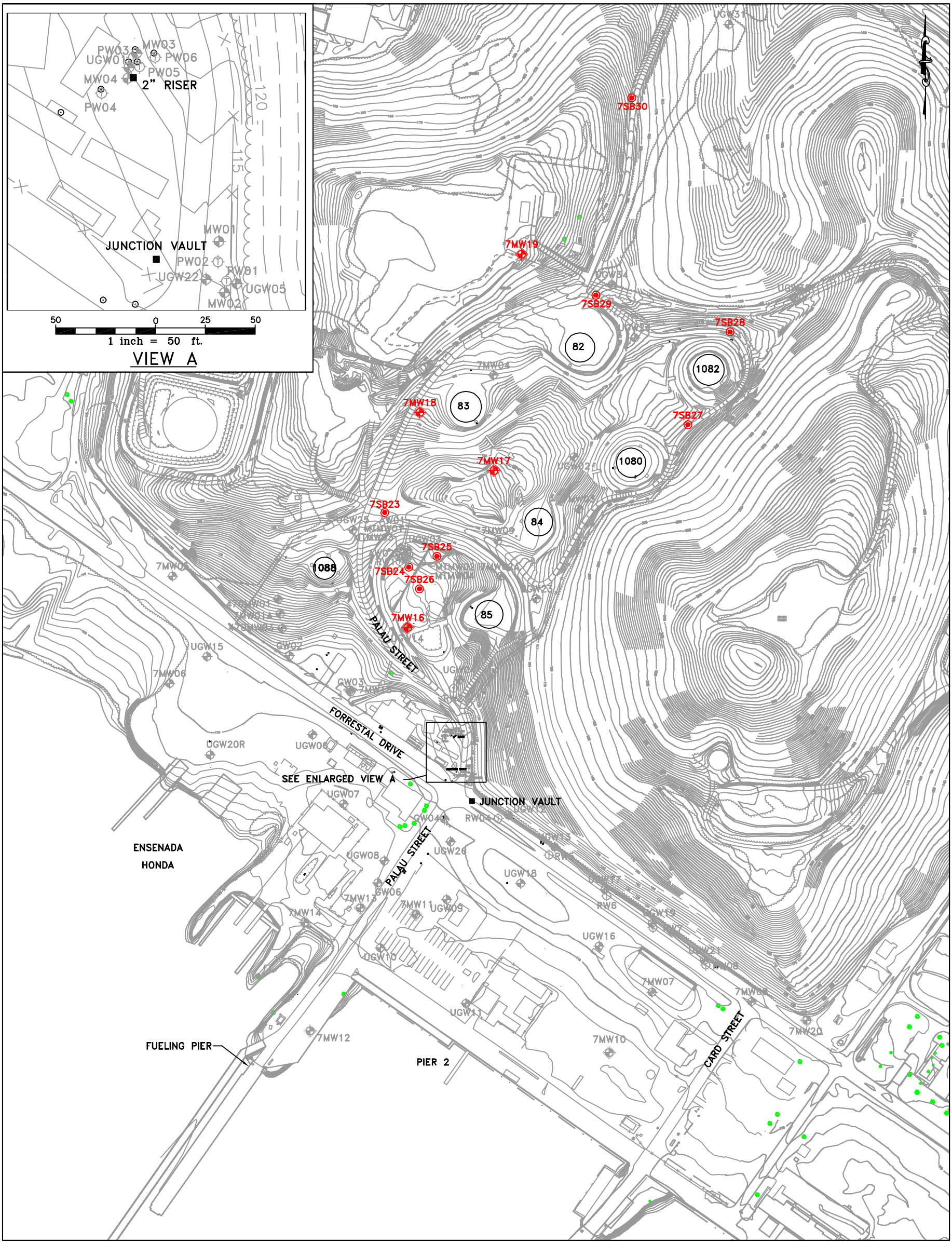
Baker

LEGEND

- MONITOR WELL LOCATION
- NEW MONITOR WELL LOCATION
- TERRAVAC PRODUCT RECOVERY WELL LOCATION
- ICHOR PRODUCT RECOVERY WELL LOCATION
- (101.29) CORRECTED GROUNDWATER ELEVATION (FT.)
- (NA) DATA NOT ANALYZED
- 101 ELEVATION (FT.)
- MANTECH MONITOR WELL
- MANTECH CLEANOx APPLICATION WELL

SOURCE: LANTDIV, FEB. 1992/1997

FIGURE 2-1
CORRECTED GROUNDWATER SURFACE CONTOUR MAP (FEBRUARY 28, 2002)
ADDITIONAL DATA COLLECTION INVESTIGATION
TOW WAY FUEL FARM
NAVAL STATION ROOSEVELT ROADS
PUERTO RICO



k\26007\034Phase\cad\Rr2034002

NOTE:
–DATUM PLAN USED IS MEAN LOW WATER = 100.00 FT. AS ESTABLISHED BY U.S. NAVY SURVEY SECTION AS OF NOVEMBER 1941.

SOURCE: LANTDIV, FEB. 1992/1997

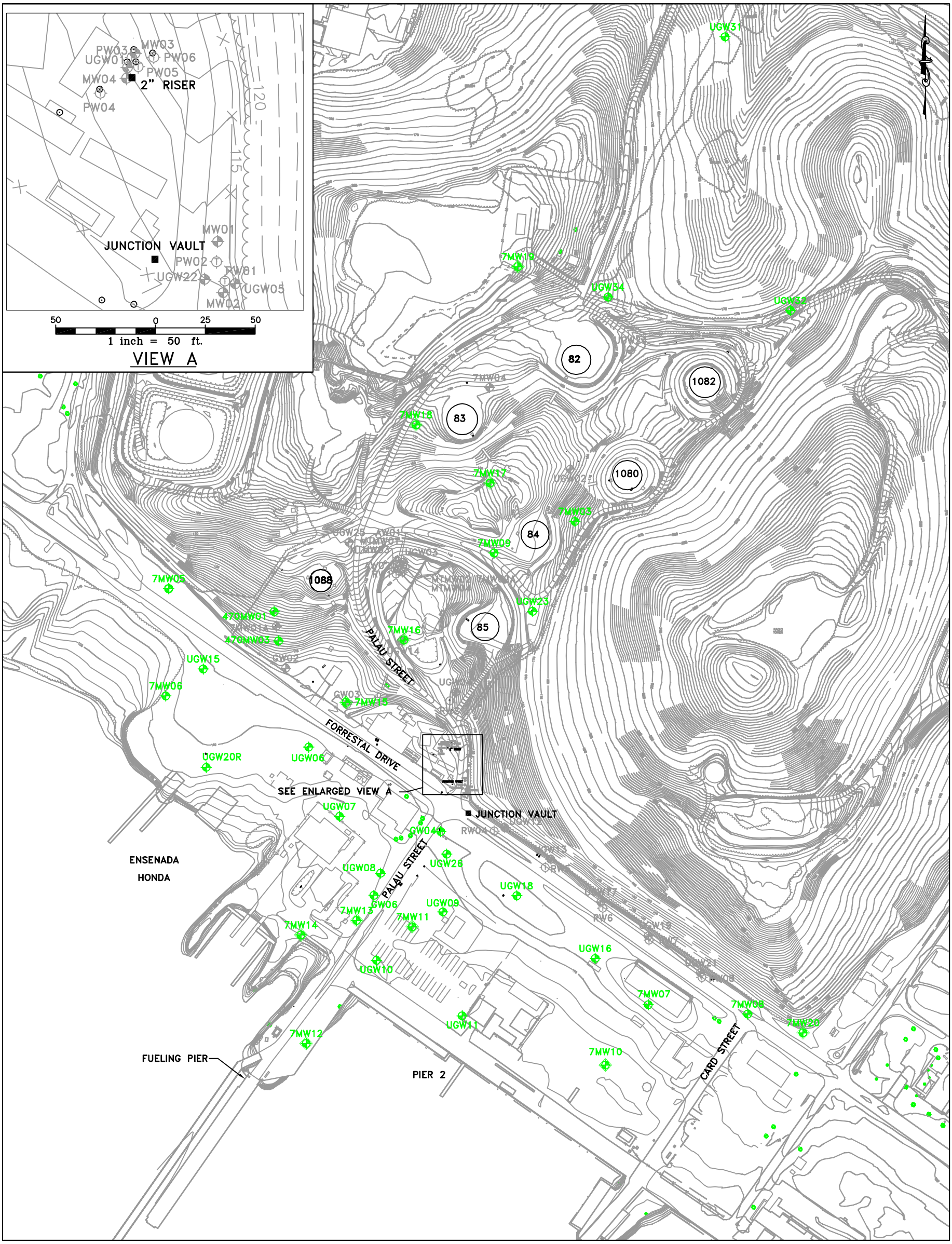
Baker

LEGEND

- NEW MONITOR WELL LOCATION
- MONITOR WELL LOCATION
- SOIL BORING LOCATION
- TERRAVAC PRODUCT RECOVERY WELL LOCATION
- ICHOR PRODUCT RECOVERY WELL LOCATION
- MANTECH MONITOR WELL
- MANTECH CLEANOx APPLICATION WELL

FIGURE 3–1
SURFACE AND SUBSURFACE SOIL SAMPLING LOCATIONS
ADDITIONAL DATA COLLECTION INVESTIGATION
TOW WAY FUEL FARM

NAVAL STATION ROOSEVELT ROADS
PUERTO RICO



NOTE:
–DATUM PLAN USED IS MEAN LOW WATER = 100.00 FT. AS ESTABLISHED BY U.S. NAVY SURVEY SECTION AS OF NOVEMBER 1941.

Baker

k\26007\034Phase\cad\Rr2034003

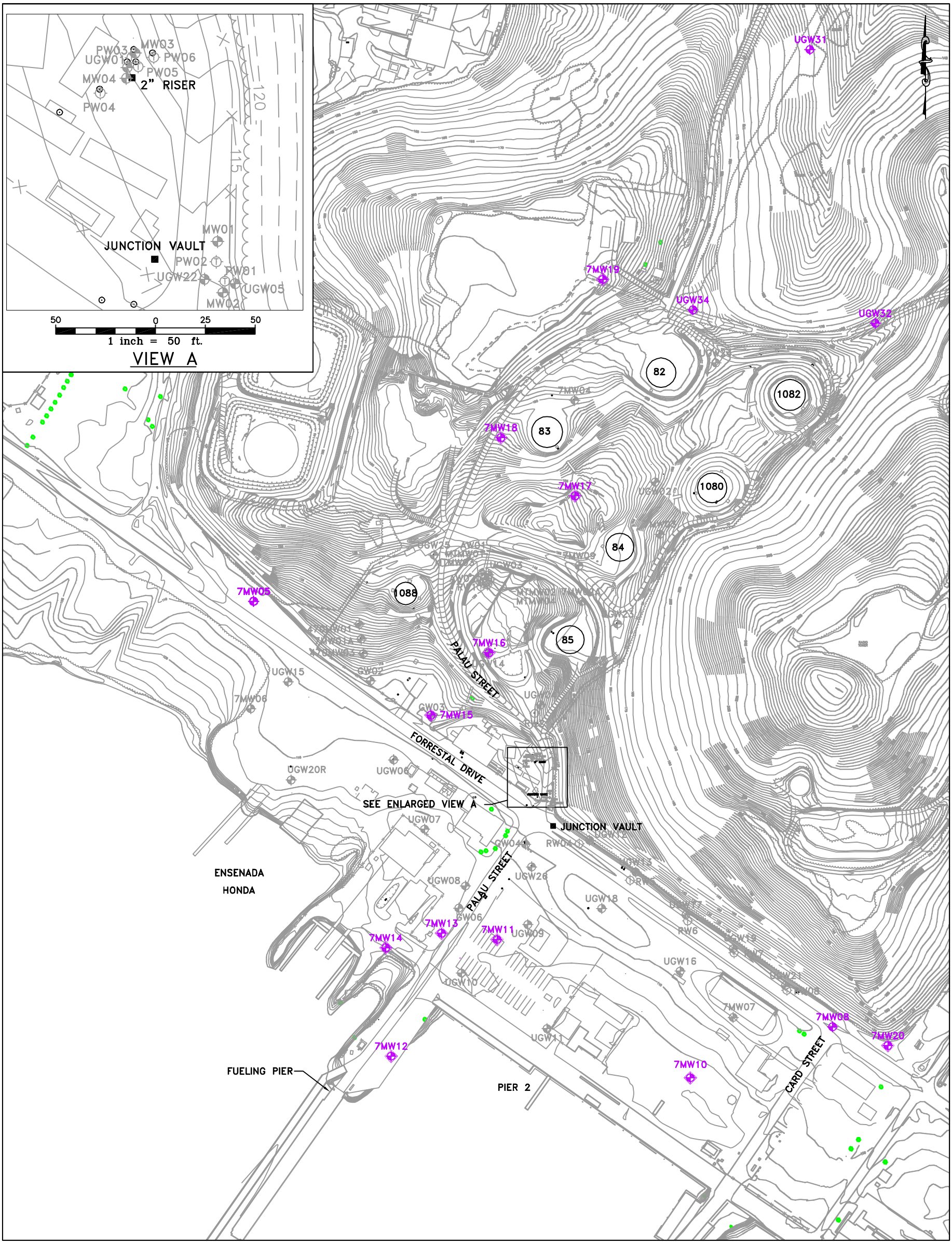
SOURCE: LANTDIV, FEB. 1992/1997

LEGEND

- NEW MONITOR WELL LOCATION
- MONITOR WELL LOCATION
- TERRAVAC PRODUCT RECOVERY WELL LOCATION
- ICHOR PRODUCT RECOVERY WELL LOCATION
- MANTECH MONITOR WELL
- MANTECH CLEANOx APPLICATION WELL

FIGURE 3–2
GROUNDWATER SAMPLING LOCATIONS
ADDITIONAL DATA COLLECTION INVESTIGATION
TOW WAY FUEL FARM

NAVAL STATION ROOSEVELT ROADS
PUERTO RICO



250 0 125 250
1 inch = 250 ft.

NOTE:
–DATUM PLAN USED IS MEAN LOW WATER = 100.00 FT. AS ESTABLISHED BY U.S. NAVY SURVEY SECTION AS OF NOVEMBER 1941.

k\26007\034Phase\cad\Rr2034004

SOURCE: LANTDIV, FEB. 1992/1997

Baker

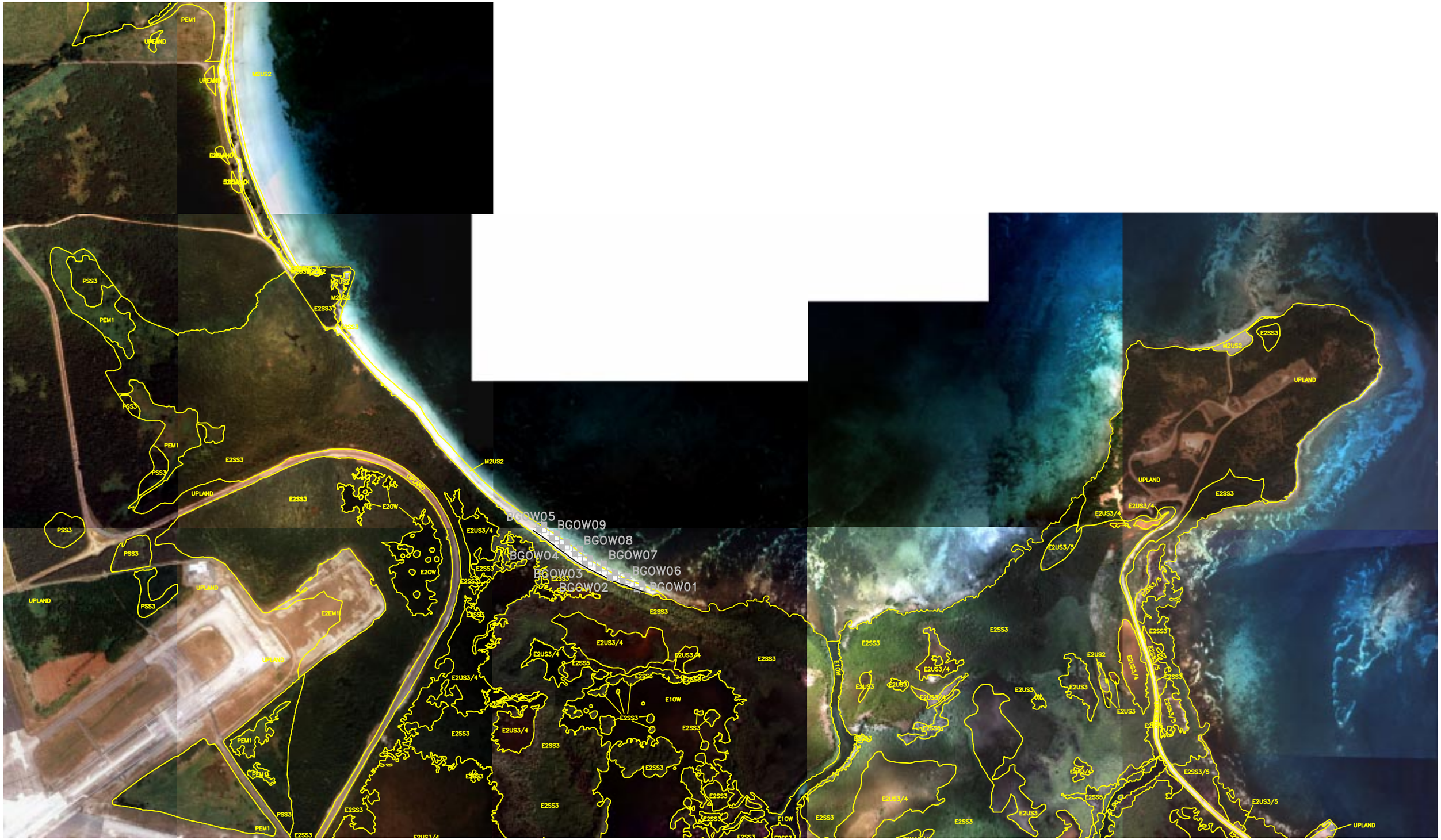
LEGEND

- NEW MONITOR WELL LOCATION
- MONITOR WELL LOCATION
- TERRAVAC PRODUCT RECOVERY WELL LOCATION
- ICHOR PRODUCT RECOVERY WELL LOCATION
- MANTECH MONITOR WELL
- MANTECH CLEANOx APPLICATION WELL

FIGURE 3–3
SLUG TEST MONITOR WELL LOCATIONS
ADDITIONAL DATA COLLECTION INVESTIGATION
TOW WAY FUEL FARM

NAVAL STATION ROOSEVELT ROADS
PUERTO RICO

K\26007\034Phase\cad\Rr2034001



LEGEND

OPEN WATER MARINE
– SURFACE WATER/ SEDIMENT SAMPLE LOCATION

E2SS3 – E2SS3 WETLANDS BOUNDARIES (SEE FIGURE 2–3 FOR CLASSIFICATIONS)

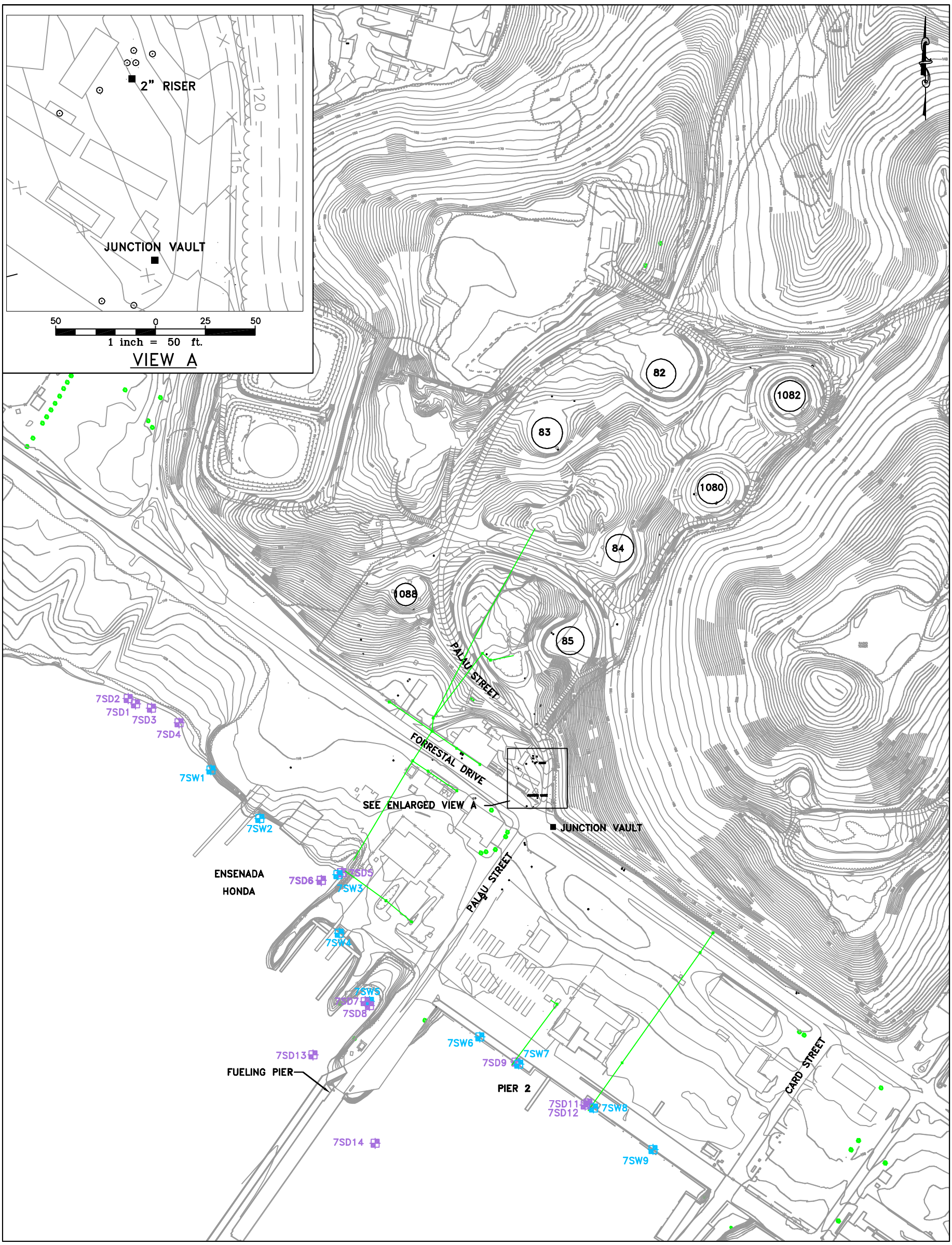
800 0 400 800
1 inch = 800 ft.

Baker

FIGURE 3–4
BASE BACKGROUND OPEN WATER MARINE ENVIRONMENT SAMPLING LOCATIONS

NAVAL STATION ROOSEVELT ROADS
PUERTO RICO

SOURCE: GEO-MARINE, INC., SEPTEMBER 6, 2000.



250 0 125 250
1 inch = 250 ft.

NOTE:
–DATUM PLAN USED IS MEAN LOW WATER = 100.00 FT. AS ESTABLISHED BY U.S. NAVY SURVEY SECTION AS OF NOVEMBER 1941.

K\26007\034Phase\cad\Rr2034005

SOURCE: LANTDIV, FEB. 1992/1997

Baker

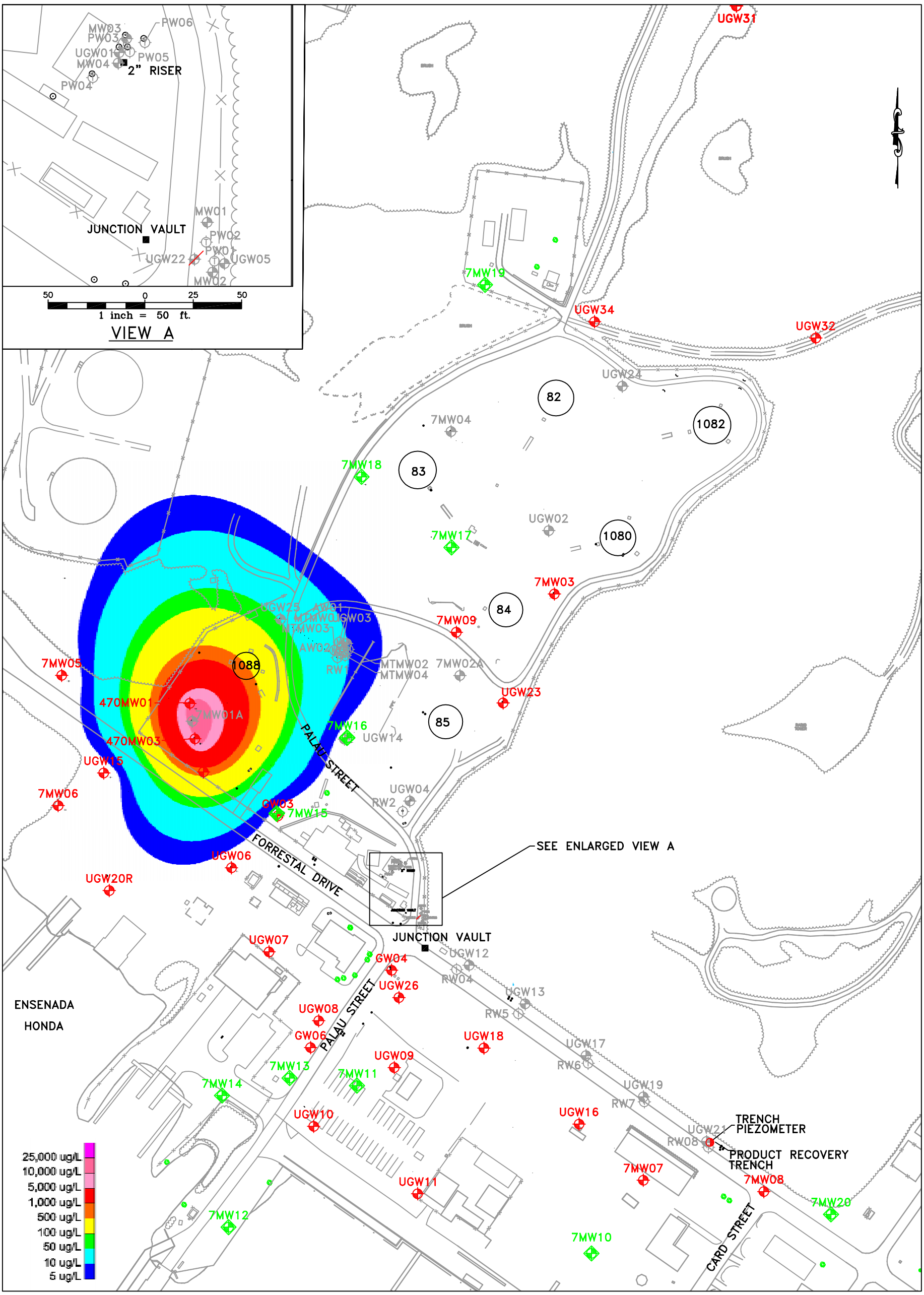
LEGEND

- SEDIMENT SAMPLING LOCATION
- SURFACE WATER SAMPLING LOCATION
- STORM SEWER

SOURCE: LANTDIV, FEB. 1992/1997

FIGURE 3–5
SURFACE WATER AND SEDIMENT SAMPLING LOCATIONS
ADDITIONAL DATA COLLECTION REPORT
TOW WAY FUEL FARM

NAVAL STATION ROOSEVELT ROADS
PUERTO RICO



K:\26007\034PHASE\0000SUB\GRAPHICS\CAD\TWFF\2034805T

NOTE:
DATUM PLAN USED IS MEAN LOW WATER = 100.00 FT. AS ESTABLISHED BY U.S. NAVY SURVEY SECTION AS OF NOVEMBER 1941.

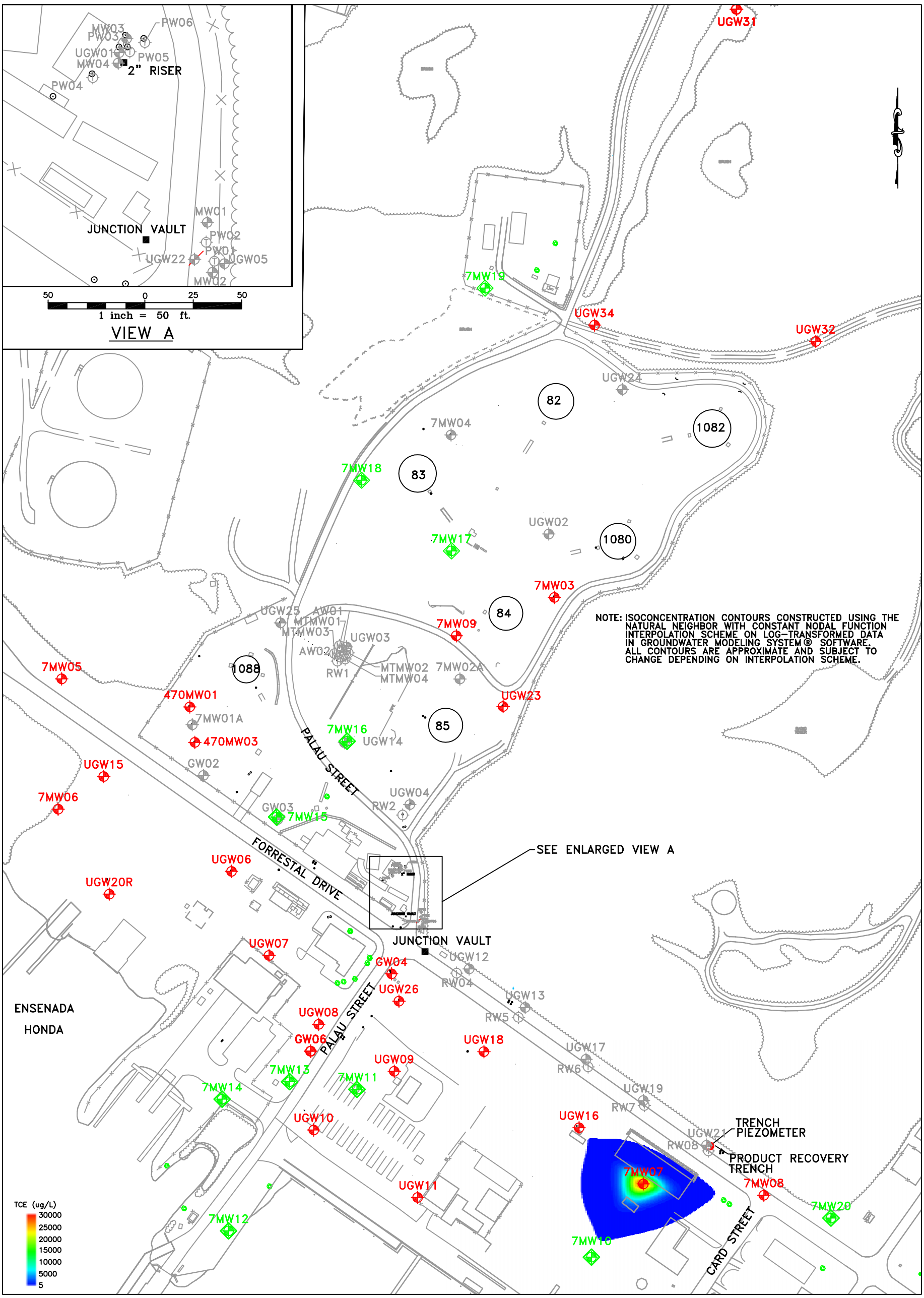
Baker

LEGEND

- MONITOR WELL LOCATION
- NEW MONITOR WELL LOCATION
- TERRAVAC PRODUCT RECOVERY WELL LOCATION
- ICHOR PRODUCT RECOVERY WELL LOCATION
- MANTECH MONITOR WELL
- MANTECH CLEANOx APPLICATION WELL

SOURCE: LANTDIV, FEB. 1992/1997

FIGURE 4-1
BENZENE IN GROUNDWATER
ISOPLETH MAP
ADDITIONAL DATA COLLECTION INVESTIGATION
TOW WAY FUEL FARM
NAVAL STATION ROOSEVELT ROADS
PUERTO RICO



NOTE: ISOCONCENTRATION CONTOURS CONSTRUCTED USING THE NATURAL NEIGHBOR WITH CONSTANT NODAL FUNCTION INTERPOLATION SCHEME ON LOG-TRANSFORMED DATA IN GROUNDWATER MODELING SYSTEM® SOFTWARE. ALL CONTOURS ARE APPROXIMATE AND SUBJECT TO CHANGE DEPENDING ON INTERPOLATION SCHEME.

NOTE:
DATUM PLAN USED IS MEAN LOW WATER = 100.00 FT. AS ESTABLISHED BY U.S. NAVY SURVEY SECTION AS OF NOVEMBER 1941.

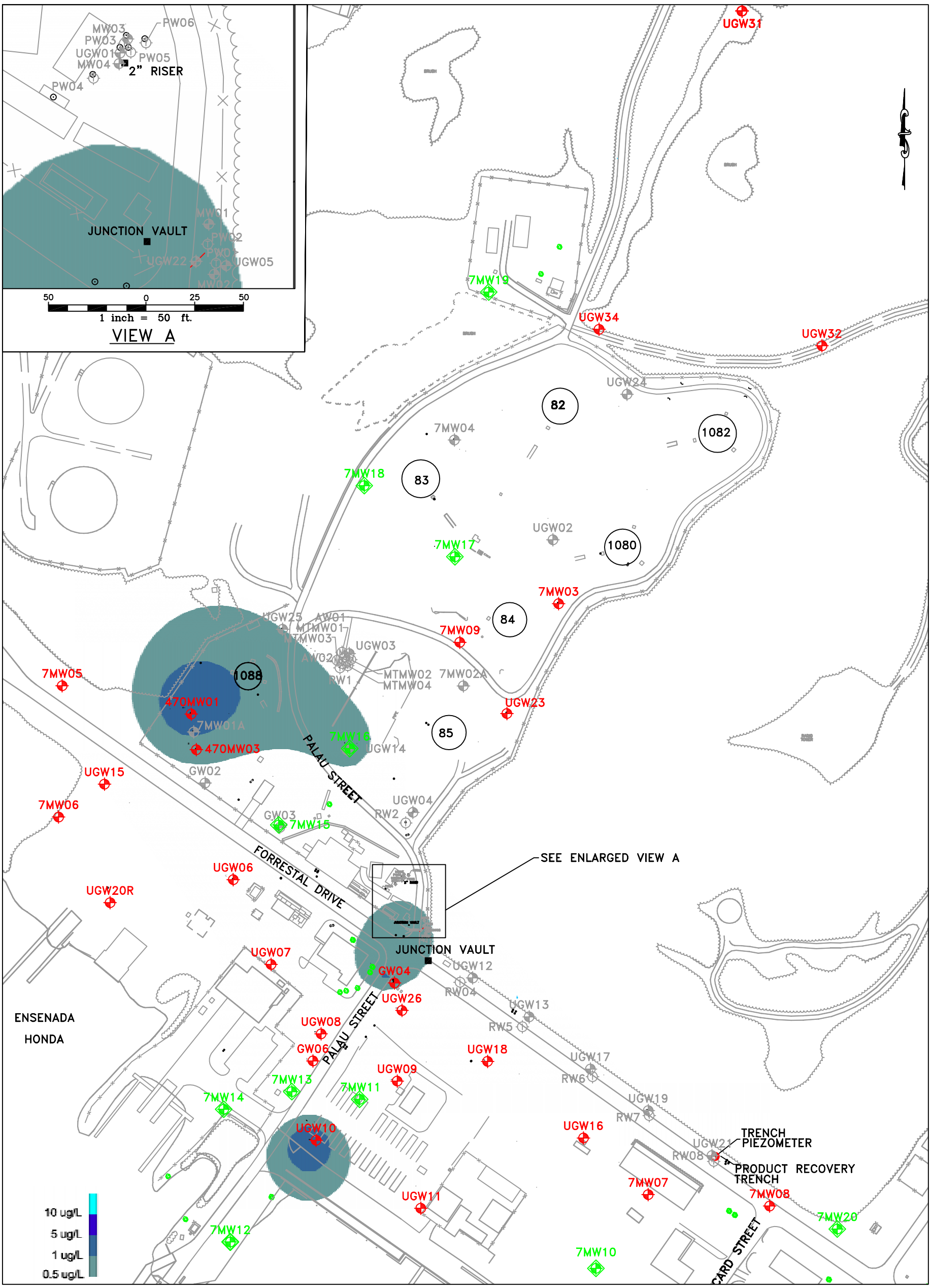
Baker

LEGEND

- MONITOR WELL LOCATION
- NEW MONITOR WELL LOCATION
- TERRAVAC PRODUCT RECOVERY WELL LOCATION
- ICHOR PRODUCT RECOVERY WELL LOCATION
- MANTECH MONITOR WELL
- MANTECH CLEANOx APPLICATION WELL

SOURCE: LANTDIV, FEB. 1992/1997

FIGURE 4-2
TCE IN GROUNDWATER
ISOPLETH MAP
ADDITIONAL DATA COLLECTION INVESTIGATION
TOW WAY FUEL FARM
NAVAL STATION ROOSEVELT ROADS
PUERTO RICO



NOTE:
DATUM PLAN USED IS MEAN LOW WATER = 100.00 FT. AS ESTABLISHED BY U.S. NAVY SURVEY SECTION AS OF NOVEMBER 1941.

Baker

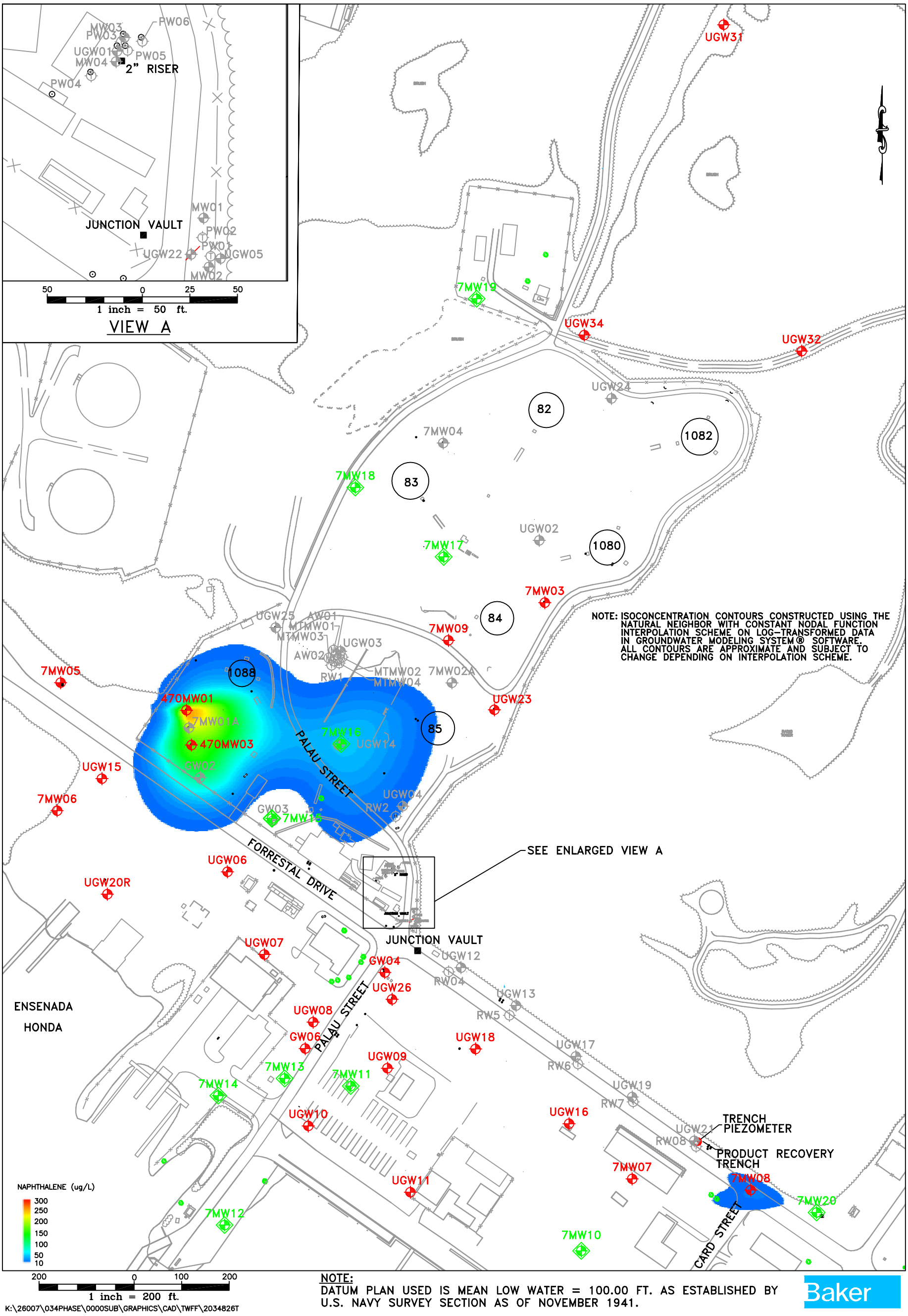
K:\26007\034PHASE\0000SUB\GRAPHICS\CAD\TWFF\2034808T

LEGEND

- MONITOR WELL LOCATION
- NEW MONITOR WELL LOCATION
- TERRAVAC PRODUCT RECOVERY WELL LOCATION
- ICHOR PRODUCT RECOVERY WELL LOCATION
- MANTECH MONITOR WELL
- MANTECH CLEANOx APPLICATION WELL

SOURCE: LANTDIV, FEB. 1992/1997

FIGURE 4-3
FLUORENE IN GROUNDWATER
ISOPLETH MAP
ADDITIONAL DATA COLLECTION INVESTIGATION
TOW WAY FUEL FARM
NAVAL STATION ROOSEVELT ROADS
PUERTO RICO



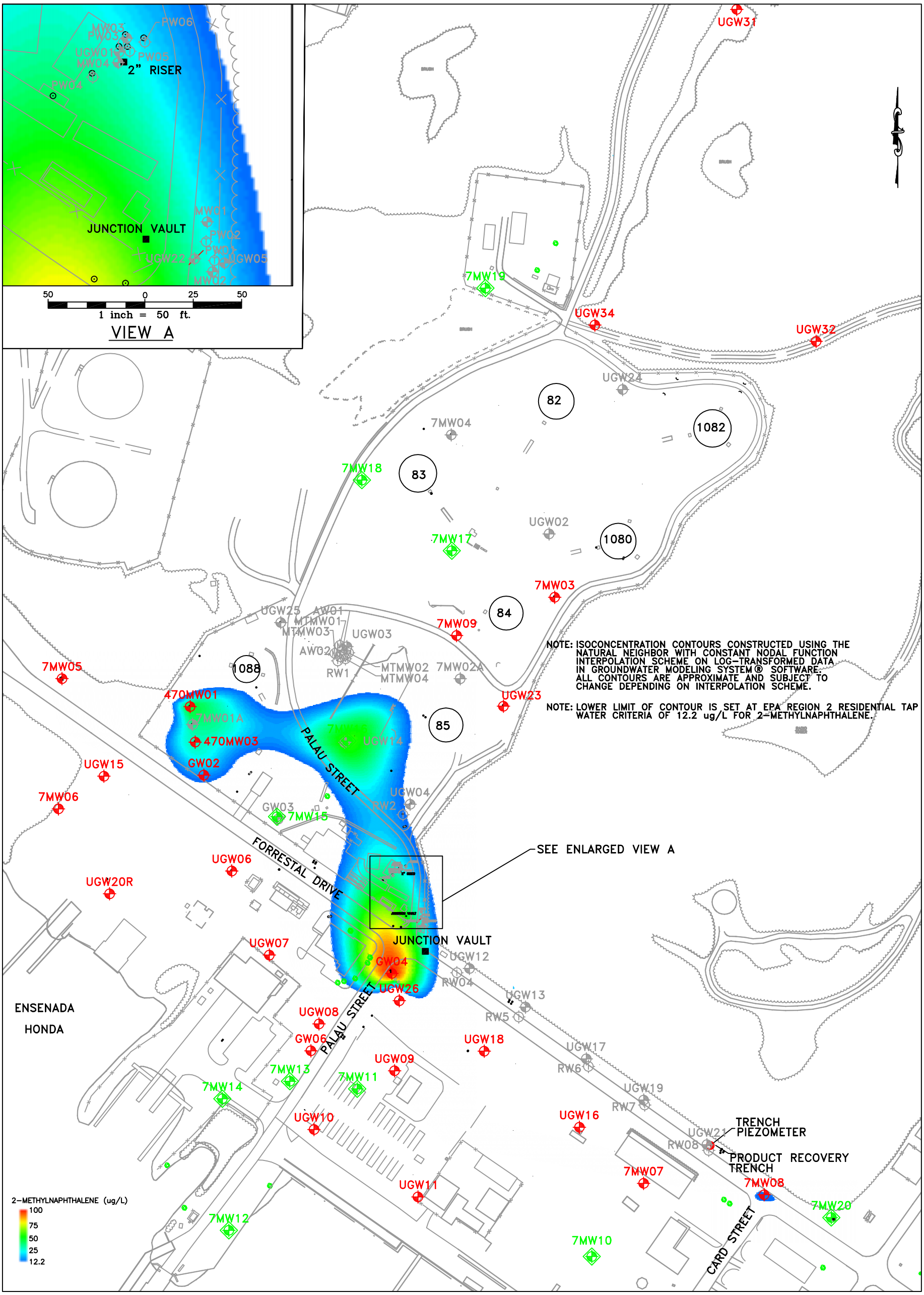
NOTE:
DATUM PLAN USED IS MEAN LOW WATER = 100.00 FT. AS ESTABLISHED BY U.S. NAVY SURVEY SECTION AS OF NOVEMBER 1941.

LEGEND

- MONITOR WELL LOCATION
- NEW MONITOR WELL LOCATION
- TERRAVAC PRODUCT RECOVERY WELL LOCATION
- ICHOR PRODUCT RECOVERY WELL LOCATION
- MANTECH MONITOR WELL
- MANTECH CLEANOx APPLICATION WELL

SOURCE: LANTDIV, FEB. 1992/1997

FIGURE 4-4
NAPHTHALENE IN GROUNDWATER
ISOPLETH MAP
ADDITIONAL DATA COLLECTION INVESTIGATION
TOW WAY FUEL FARM
NAVAL STATION ROOSEVELT ROADS
PUERTO RICO



K:\26007\034PHASE\0000SUB\GRAPHICS\CAD\TWFF\2034825T

NOTE:
DATUM PLAN USED IS MEAN LOW WATER = 100.00 FT. AS ESTABLISHED BY U.S. NAVY SURVEY SECTION AS OF NOVEMBER 1941.

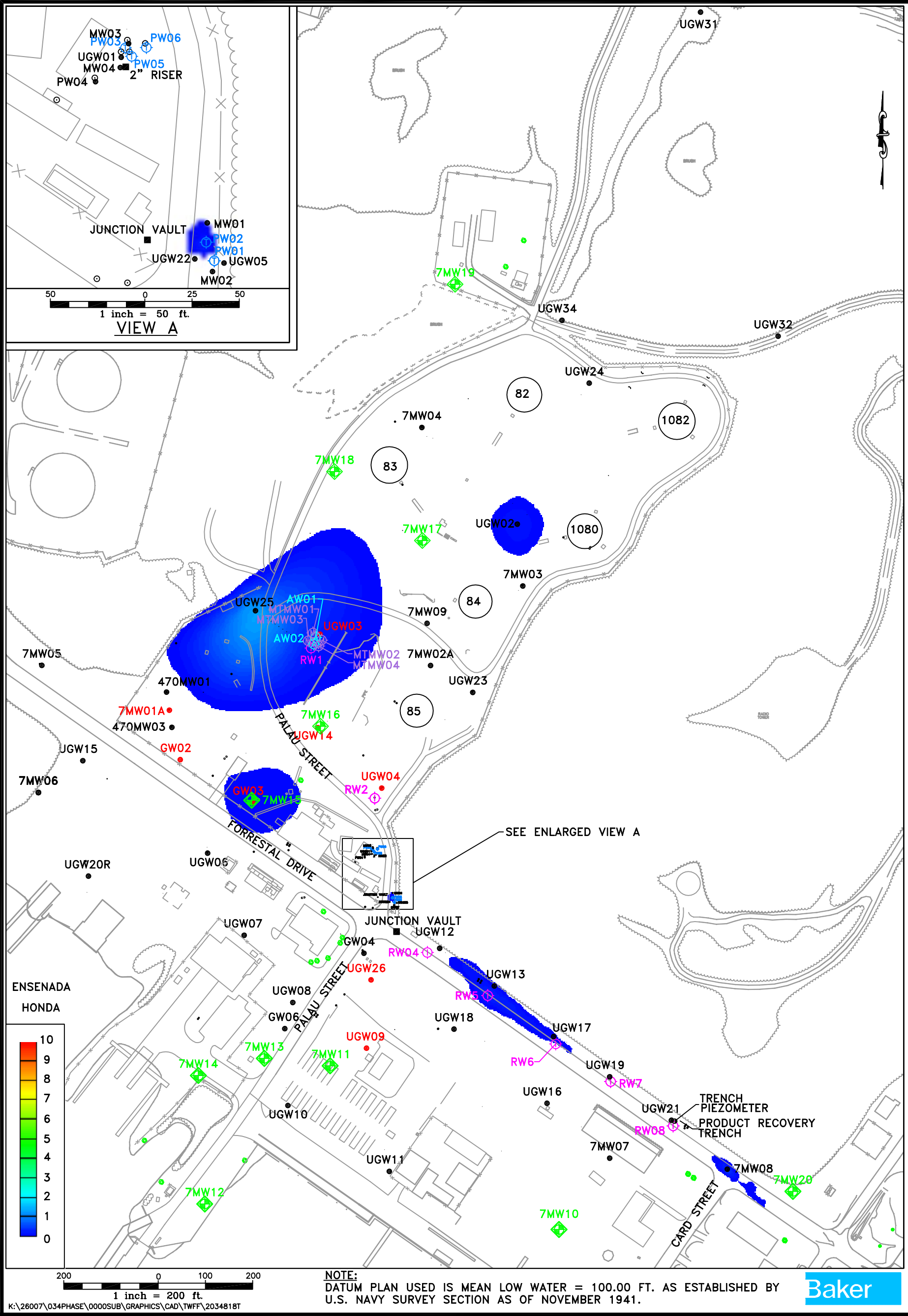
Baker

LEGEND

- MONITOR WELL LOCATION
- NEW MONITOR WELL LOCATION
- TERRAVAC PRODUCT RECOVERY WELL LOCATION
- ICHOR PRODUCT RECOVERY WELL LOCATION
- MANTECH MONITOR WELL
- MANTECH CLEANOx APPLICATION WELL

SOURCE: LANTDIV, FEB. 1992/1997

FIGURE 4-5
2-METHYLNAPHTHALENE IN GROUNDWATER
ISOPLETH MAP
ADDITIONAL DATA COLLECTION INVESTIGATION
TOW WAY FUEL FARM
NAVAL STATION ROOSEVELT ROADS
PUERTO RICO



NOTE:
DATUM PLAN USED IS MEAN LOW WATER = 100.00 FT. AS ESTABLISHED BY U.S. NAVY SURVEY SECTION AS OF NOVEMBER 1941.

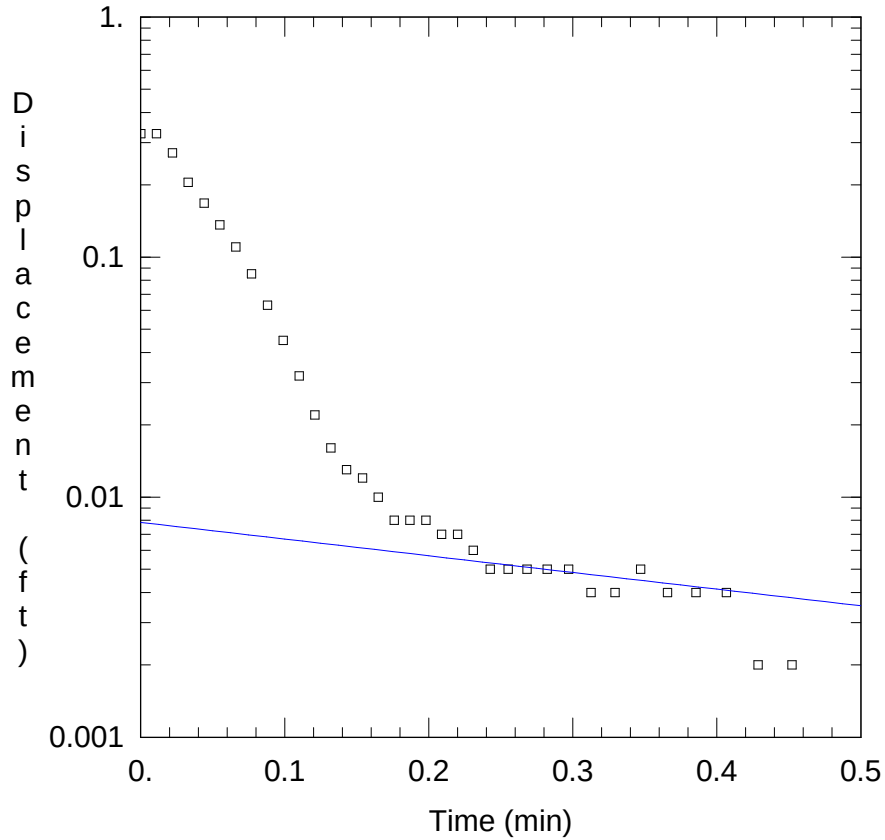
LEGEND

- NEW MONITOR WELL LOCATION
- MONITOR WELL LOCATION
- TERRAVAC PRODUCT RECOVERY WELL LOCATION
- ICHOR PRODUCT RECOVERY WELL LOCATION
- UGW09 – PRODUCT THICKNESS DATA NOT INCLUDED BECAUSE SCREEN IS CONSISTENTLY AND COMPLETELY BELOW THE WATER TABLE
- MANTECH MONITOR WELL
- MANTECH CLEANOx APPLICATION WELL

SOURCE: LANTDIV, FEB. 1992/1997

FIGURE 4-6
FREE PRODUCT THICKNESS AND EXTENT MAP (FEBRUARY 28, 2002)
ADDITIONAL DATA COLLECTION INVESTIGATION
TOW WAY FUEL FARM
NAVAL STATION ROOSEVELT ROADS
PUERTO RICO

APPENDIX A
WELLHEAD TEST DATA (SLUG TEST)
(Additional Data Collection Investigation Report)



WELL TEST ANALYSIS

Data Set: C:\MYFILES\7MW10R.AQT
Date: 07/01/02 Time: 13:16:45

PROJECT INFORMATION

Company: Baker Environmental, Inc.
Client: LANTDIV-Roosevelt Roads
Project: CTO-0034
Test Location: Tow Way Fuel Farm
Test Well: 7MW10 (Rising Head Test)
Test Date: 1/26/02

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 4.765 ft/day
y0 = 0.007838 ft

AQUIFER DATA

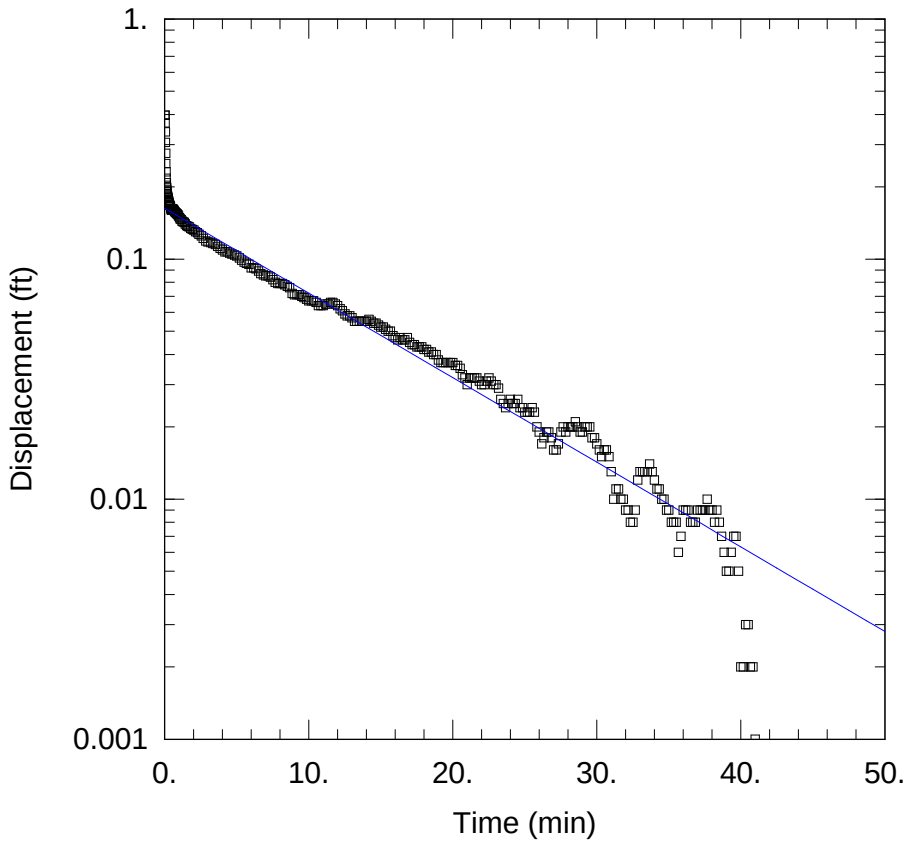
Saturated Thickness: 10. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Initial Displacement: 0.327 ft
Casing Radius: 0.083 ft
Screen Length: 10. ft

Water Column Height: 10. ft
Wellbore Radius: 0.167 ft
Gravel Pack Porosity: 0.3



WELL TEST ANALYSIS

Data Set: C:\MYDOCU~1\7MW11R.AQT
Date: 06/19/02 Time: 13:08:19

PROJECT INFORMATION

Company: Baker Environmental, Inc.
Client: LANTDIV-Roosevelt Roads
Project: CTO-0034
Test Location: Tow Way Fuel Farm
Test Well: 7MW11 (Rising Head Test)
Test Date: 1/26/02

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 0.7864 ft/day
y0 = 0.1625 ft

AQUIFER DATA

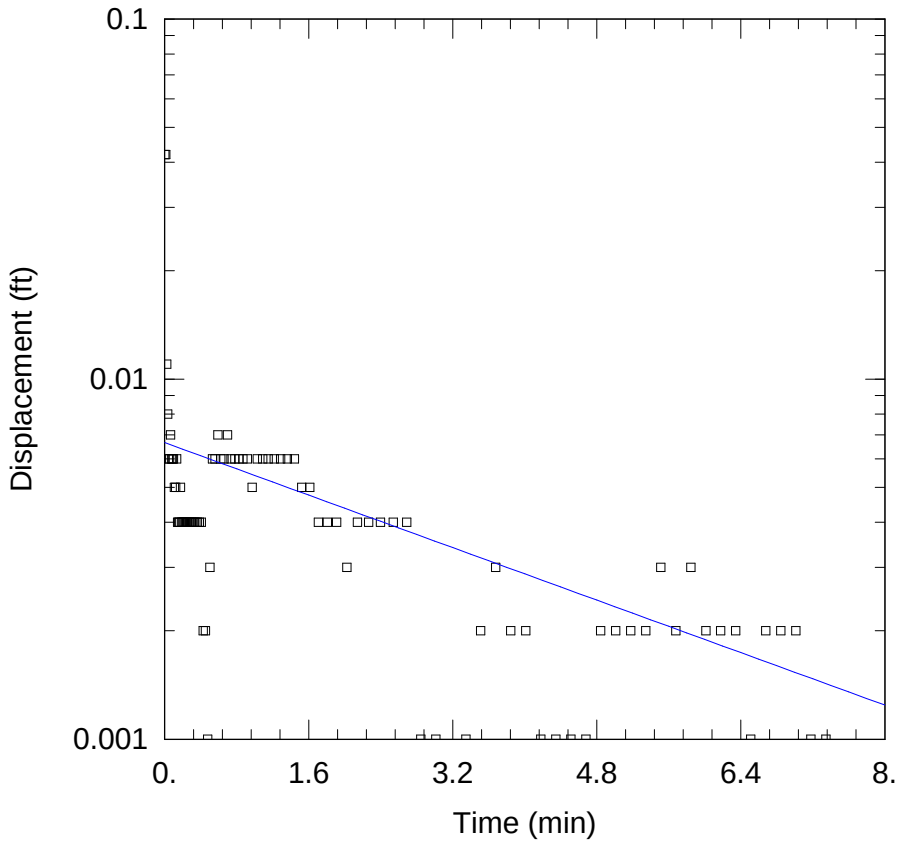
Saturated Thickness: 10. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Initial Displacement: 0.397 ft
Casing Radius: 0.167 ft
Screen Length: 10. ft

Water Column Height: 10. ft
Wellbore Radius: 0.33 ft
Gravel Pack Porosity: 0.3



WELL TEST ANALYSIS

Data Set: C:\MYDOCU~1\7MW12R.AQT
Date: 06/19/02 Time: 13:08:38

PROJECT INFORMATION

Company: Baker Environmental, Inc.
Client: LANTDIV-Roosevelt Roads
Project: CTO-0034
Test Location: Tow Way Fuel Farm
Test Well: 7MW12 (Rising Head Test)
Test Date: 2/1/02

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 2.262 ft/day
y0 = 0.006658 ft

AQUIFER DATA

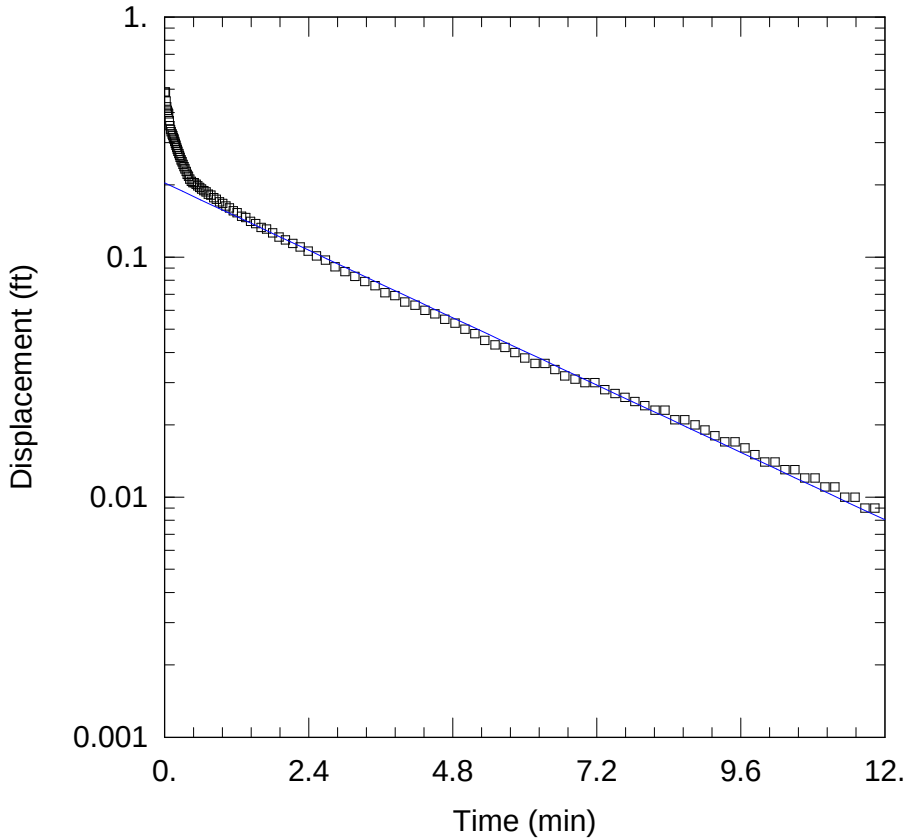
Saturated Thickness: 8.5 ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Initial Displacement: 0.042 ft
Casing Radius: 0.167 ft
Screen Length: 8.5 ft

Water Column Height: 8.5 ft
Wellbore Radius: 0.33 ft
Gravel Pack Porosity: 0.3



WELL TEST ANALYSIS

Data Set: C:\MYDOCU~1\7MW13R.AQT
Date: 06/19/02 Time: 13:08:47

PROJECT INFORMATION

Company: Baker Environmental, Inc.
Client: LANTDIV-Roosevelt Roads
Project: CTO-0034
Test Location: Tow Way Fuel Farm
Test Well: 7MW13 (Rising Head Test)
Test Date: 1/29/02

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 2.609 ft/day
y0 = 0.2036 ft

AQUIFER DATA

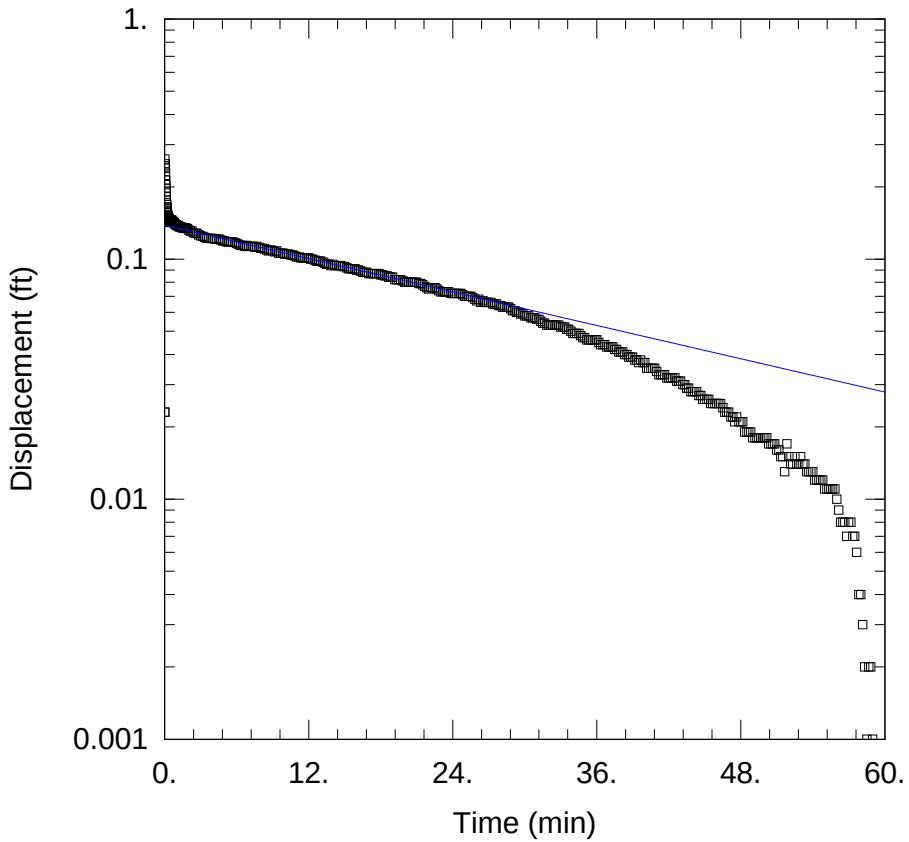
Saturated Thickness: 10. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Initial Displacement: 0.487 ft
Casing Radius: 0.167 ft
Screen Length: 10. ft

Water Column Height: 10. ft
Wellbore Radius: 0.33 ft
Gravel Pack Porosity: 0.3



WELL TEST ANALYSIS

Data Set: C:\MYDOCU~1\7MW14R.AQT
Date: 06/19/02 Time: 13:08:53

PROJECT INFORMATION

Company: Baker Environmental, Inc.
Client: LANTDIV-Roosevelt Roads
Project: CTO-0034
Test Location: Tow Way Fuel Farm
Test Well: 7MW14 (Rising Head Test)
Test Date: 1/27/02

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 0.2584 ft/day
y0 = 0.1382 ft

AQUIFER DATA

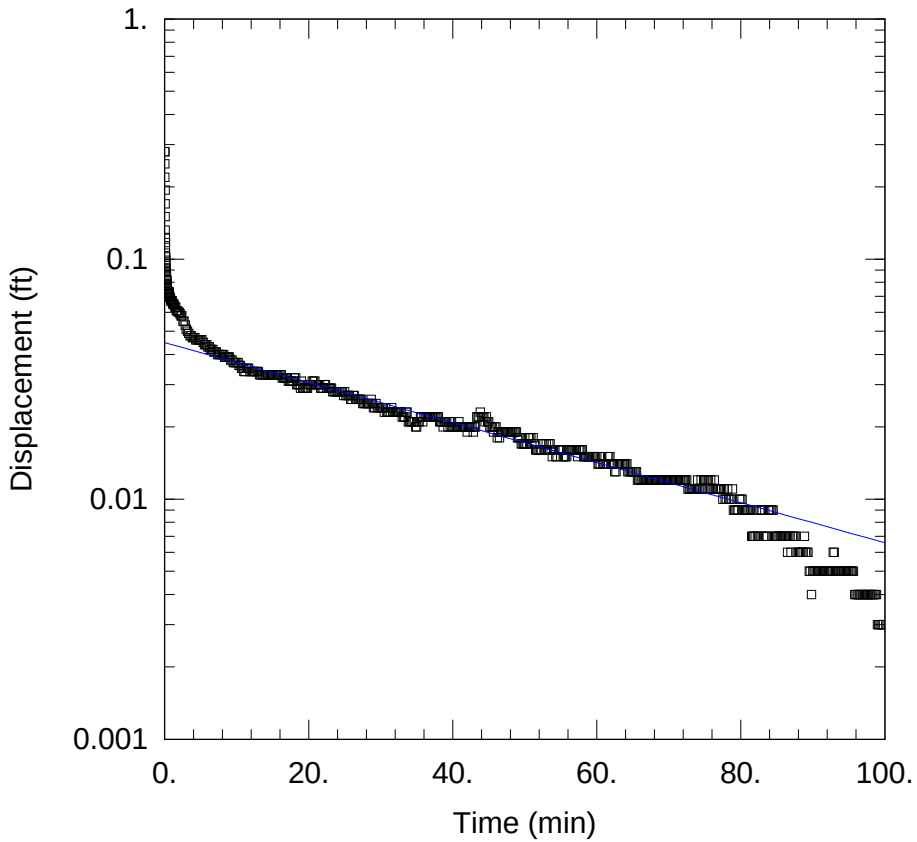
Saturated Thickness: 10. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Initial Displacement: 0.023 ft
Casing Radius: 0.167 ft
Screen Length: 10. ft

Water Column Height: 10. ft
Wellbore Radius: 0.33 ft
Gravel Pack Porosity: 0.3



WELL TEST ANALYSIS

Data Set: C:\MYDOCU~1\7MW15R.AQT
Date: 06/19/02 Time: 13:08:59

PROJECT INFORMATION

Company: Baker Environmental, Inc.
Client: LANTDIV-Roosevelt Roads
Project: CTO-0034
Test Location: Tow Way Fuel Farm
Test Well: 7MW15 (Rising Head Test)
Test Date: 1/30/02

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

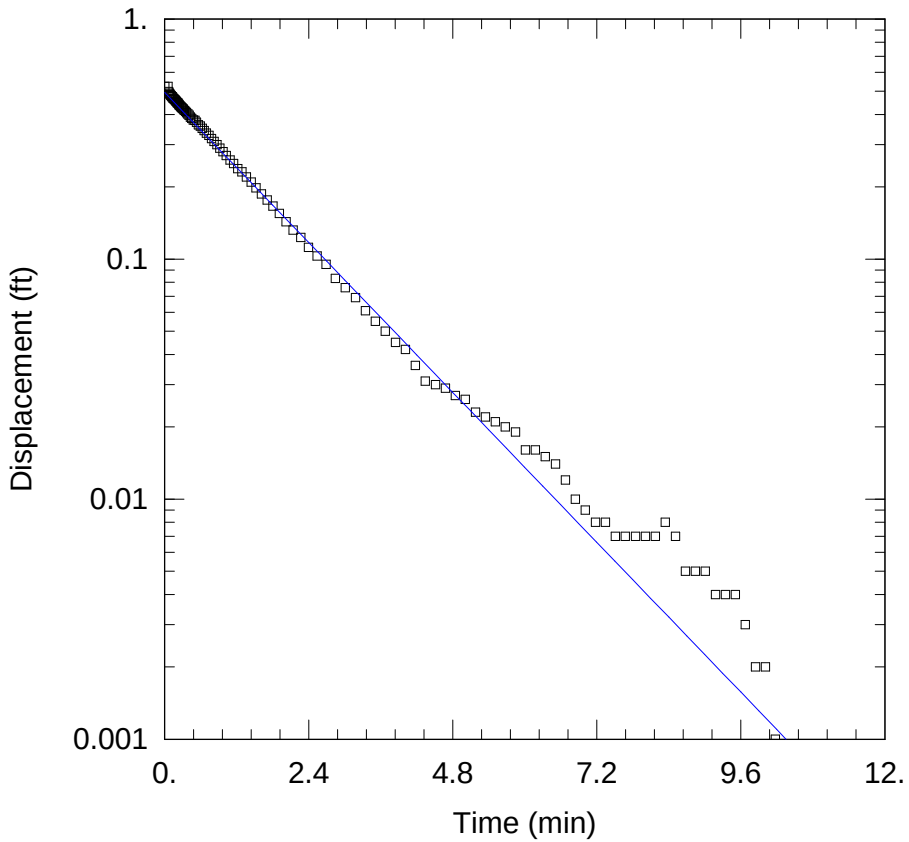
K = 0.186 ft/day
y0 = 0.04484 ft

AQUIFER DATA

Saturated Thickness: 10. ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Initial Displacement: 0.28 ft
Casing Radius: 0.167 ft
Screen Length: 10. ft
Water Column Height: 10. ft
Wellbore Radius: 0.33 ft
Gravel Pack Porosity: 0.3



WELL TEST ANALYSIS

Data Set: C:\MYDOCU~1\7MW16R.AQT
Date: 06/19/02 Time: 13:09:06

PROJECT INFORMATION

Company: Baker Environmental, Inc.
Client: LANTDIV-Roosevelt Roads
Project: CTO-0034
Test Location: Tow Way Fuel Farm
Test Well: 7MW16 (Rising Head Test)
Test Date: 2/1/02

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 4.377 ft/day
y0 = 0.4937 ft

AQUIFER DATA

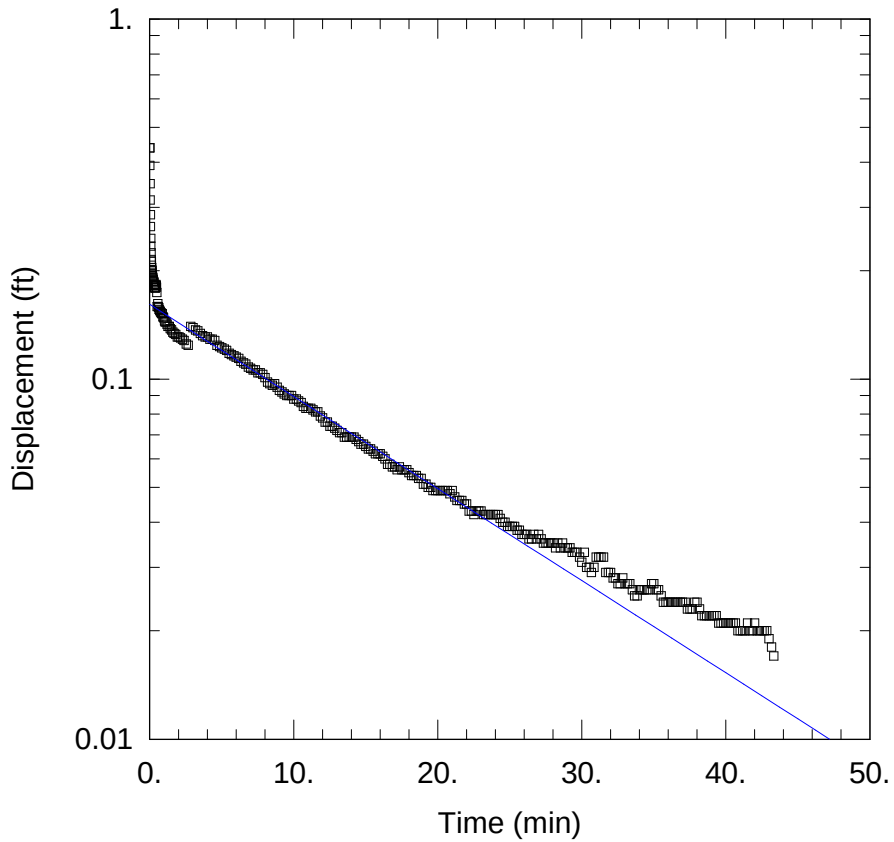
Saturated Thickness: 15. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Initial Displacement: 0.524 ft
Casing Radius: 0.167 ft
Screen Length: 15. ft

Water Column Height: 15. ft
Wellbore Radius: 0.33 ft
Gravel Pack Porosity: 0.3



WELL TEST ANALYSIS

Data Set: C:\MYDOCU~1\7MW17R.AQT
Date: 06/19/02 Time: 13:09:15

PROJECT INFORMATION

Company: Baker Environmental, Inc.
Client: LANTDIV-Roosevelt Roads
Project: CTO-0034
Test Location: Tow Way Fuel Farm
Test Well: 7MW17 (Rising Head Test)
Test Date: 3/14/02

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 0.3482 ft/day
y0 = 0.1611 ft

AQUIFER DATA

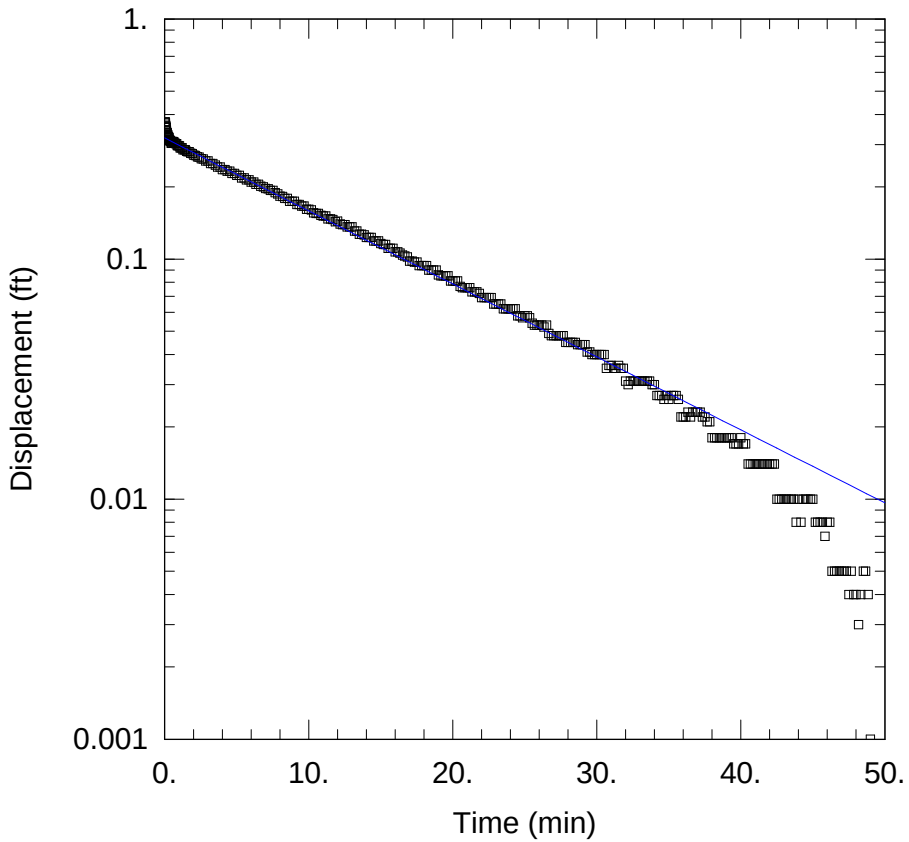
Saturated Thickness: 20. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Initial Displacement: 0.439 ft
Casing Radius: 0.167 ft
Screen Length: 20. ft

Water Column Height: 20. ft
Wellbore Radius: 0.33 ft
Gravel Pack Porosity: 0.3



WELL TEST ANALYSIS

Data Set: C:\MYDOCU~1\7MW18R.AQT
Date: 06/19/02 Time: 13:09:27

PROJECT INFORMATION

Company: Baker Environmental, Inc.
Client: LANTDIV-Roosevelt Roads
Project: CTO-0034
Test Location: Tow Way Fuel Farm
Test Well: 7MW18 (Rising Head Test)
Test Date: 2/1/02

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 0.414 ft/day
y0 = 0.3194 ft

AQUIFER DATA

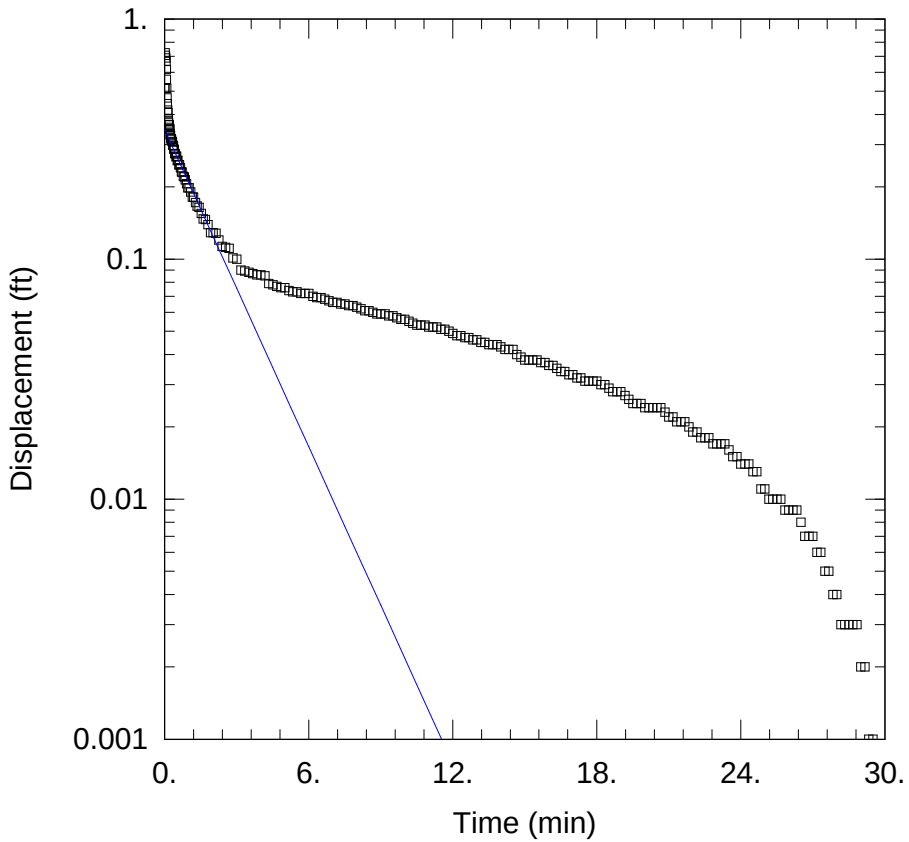
Saturated Thickness: 20. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Initial Displacement: 0.373 ft
Casing Radius: 0.167 ft
Screen Length: 20. ft

Water Column Height: 20. ft
Wellbore Radius: 0.33 ft
Gravel Pack Porosity: 0.3



WELL TEST ANALYSIS

Data Set: C:\MYDOCU~1\7MW19R.AQT
Date: 06/19/02 Time: 13:09:35

PROJECT INFORMATION

Company: Baker Environmental, Inc.
Client: LANTDIV-Roosevelt Roads
Project: CTO-0034
Test Location: Tow Way Fuel Farm
Test Well: 7MW19 (Rising Head Test)
Test Date: 1/28/02

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice

K = 0.4637 ft/day
y0 = 0.3454 ft

AQUIFER DATA

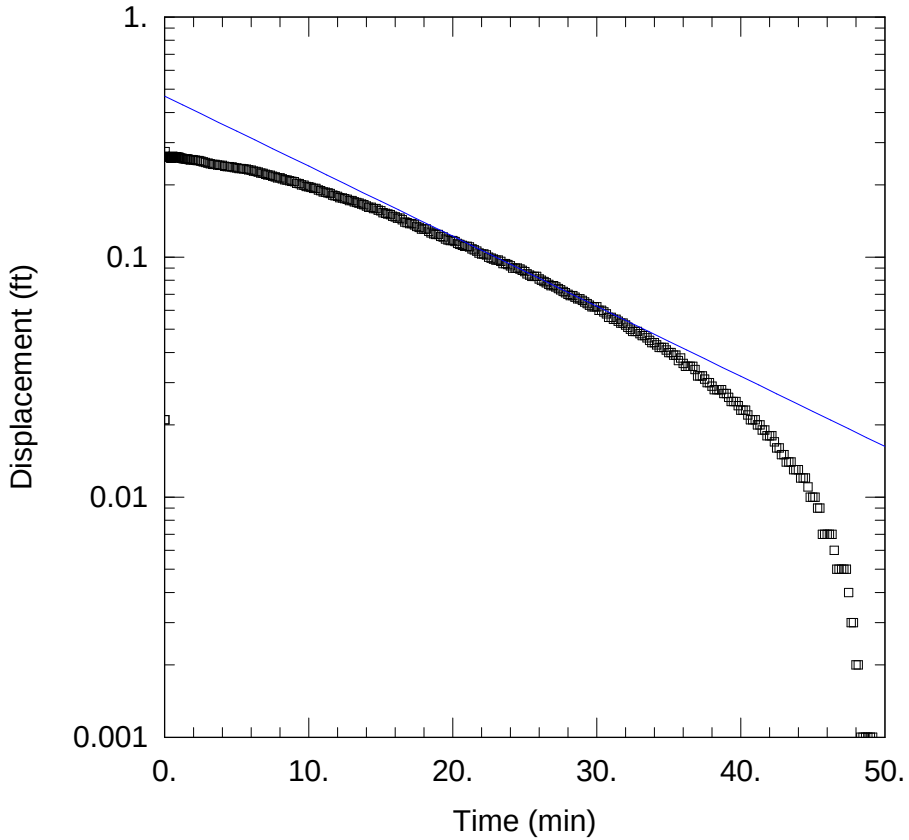
Saturated Thickness: 20. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Initial Displacement: 0.515 ft
Casing Radius: 0.083 ft
Screen Length: 20. ft

Water Column Height: 20. ft
Wellbore Radius: 0.167 ft



WELL TEST ANALYSIS

Data Set: C:\MYDOCU~1\7MW20R.AQT
Date: 06/19/02 Time: 13:09:44

PROJECT INFORMATION

Company: Baker Environmental, Inc.
Client: LANTDIV-Roosevelt Roads
Project: CTO-0034
Test Location: Tow Way Fuel Farm
Test Well: 7MW20 (Rising Head Test)
Test Date: 1/27/02

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 0.6513 ft/day
y0 = 0.4683 ft

AQUIFER DATA

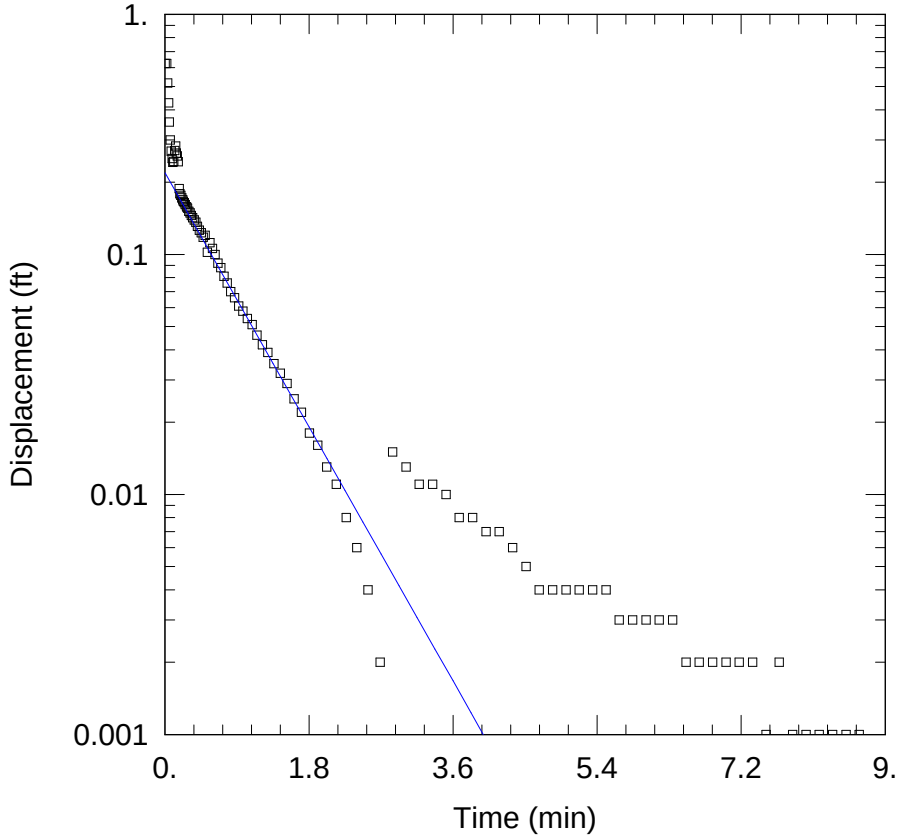
Saturated Thickness: 10. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Initial Displacement: 0.021 ft
Casing Radius: 0.167 ft
Screen Length: 10. ft

Water Column Height: 10. ft
Wellbore Radius: 0.33 ft
Gravel Pack Porosity: 0.3



WELL TEST ANALYSIS

Data Set: C:\MYDOCU~1\7MW05R.AQT
Date: 06/19/02 Time: 13:07:29

PROJECT INFORMATION

Company: Baker Environmental, Inc.
Client: LANTDIV-Roosevelt Roads
Project: CTO-0034
Test Location: Tow Way Fuel Farm
Test Well: 7MW05 (Rising Head Test)
Test Date: 1/13/02

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 2.372 ft/day
y0 = 0.2187 ft

AQUIFER DATA

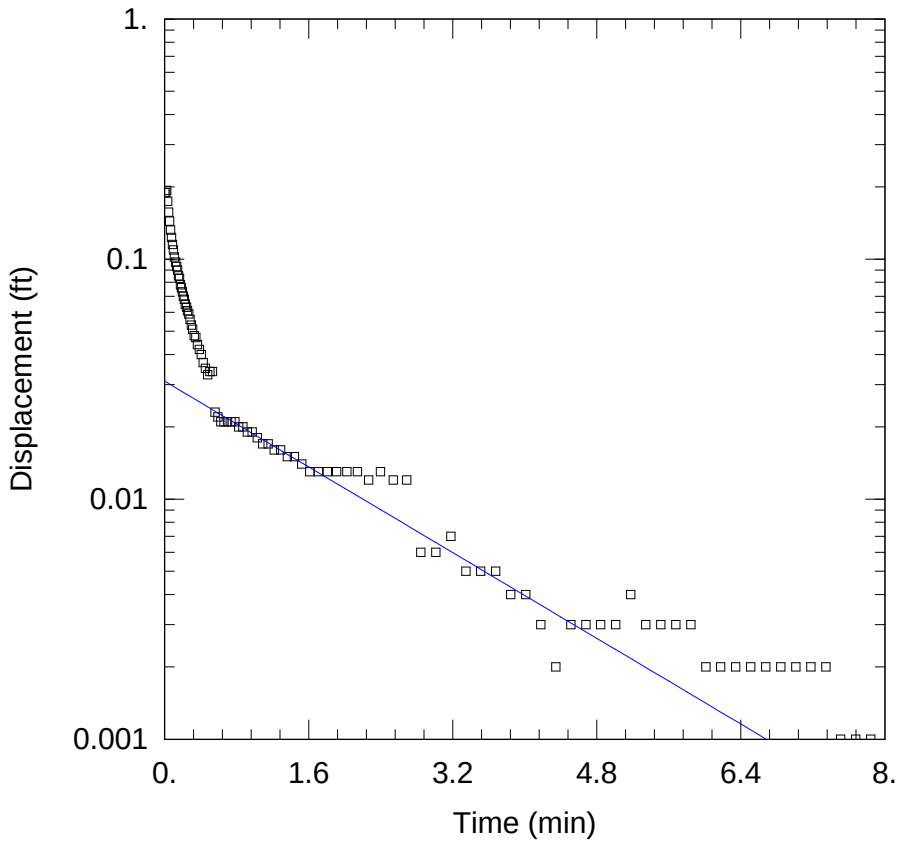
Saturated Thickness: 20. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Initial Displacement: 0.624 ft
Casing Radius: 0.083 ft
Screen Length: 20. ft

Water Column Height: 20. ft
Wellbore Radius: 0.167 ft
Gravel Pack Porosity: 0.3



WELL TEST ANALYSIS

Data Set: C:\MYDOCU~1\7MW08R.AQT
Date: 06/19/02 Time: 13:08:00

PROJECT INFORMATION

Company: Baker Environmental, Inc.
Client: LANTDIV-Roosevelt Roads
Project: CTO-0034
Test Location: Tow Way Fuel Farm
Test Well: 7MW08 (Rising Head Test)
Test Date: 1/13/02

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 6.176 ft/day
y0 = 0.03096 ft

AQUIFER DATA

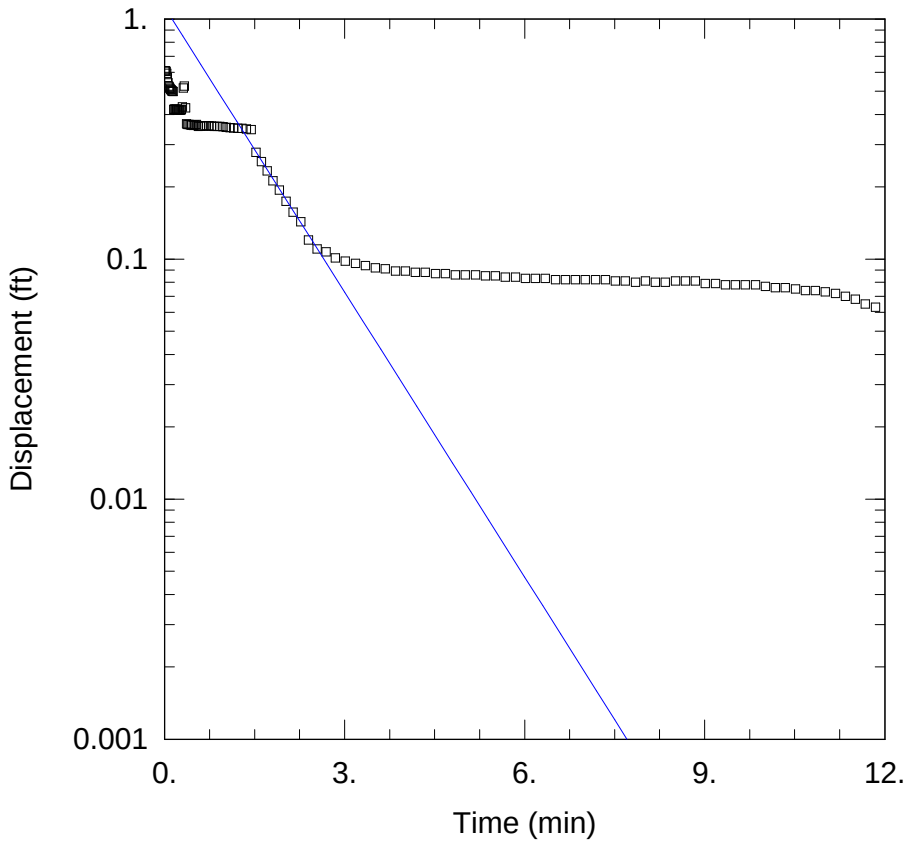
Saturated Thickness: 20. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Initial Displacement: 0.189 ft
Casing Radius: 0.25 ft
Screen Length: 20. ft

Water Column Height: 20. ft
Wellbore Radius: 0.5 ft
Gravel Pack Porosity: 0.3



WELL TEST ANALYSIS

Data Set: C:\MYDOCU~1\UGW31R.AQT
Date: 06/19/02 Time: 13:09:51

PROJECT INFORMATION

Company: Baker Environmental, Inc.
Client: LANTDIV-Roosevelt Roads
Project: CTO-0034
Test Location: Tow Way Fuel Farm
Test Well: UGW31 (Rising Head Test)
Test Date: 1/13/02

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 2.715 ft/day
y0 = 1.119 ft

AQUIFER DATA

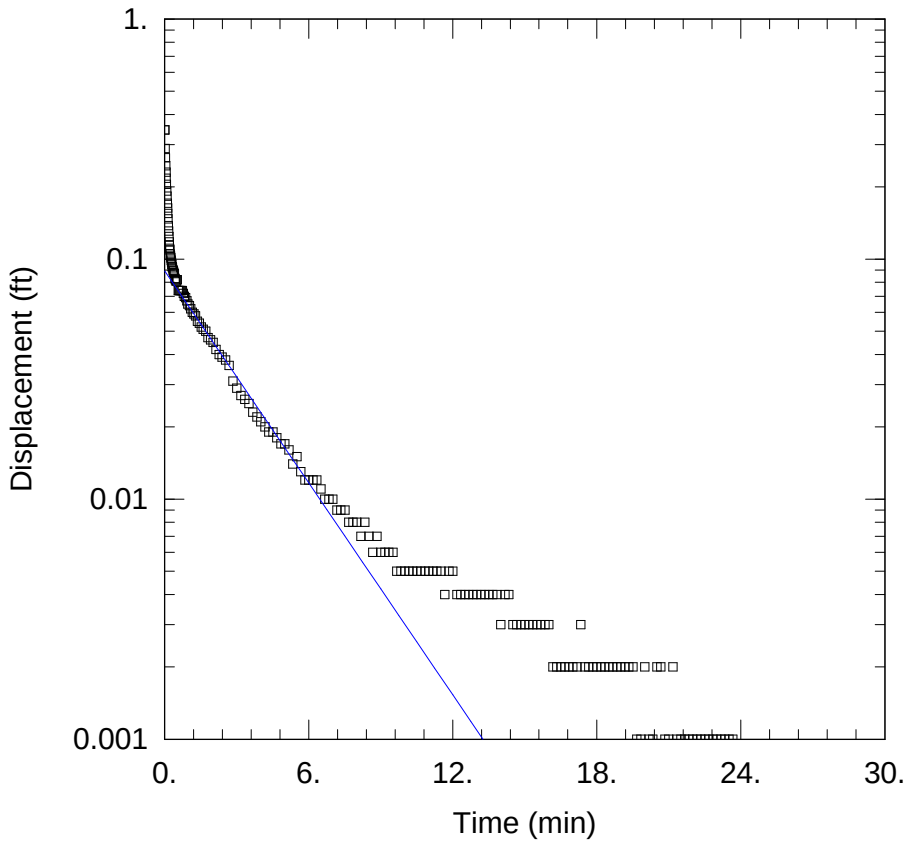
Saturated Thickness: 10. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Initial Displacement: 0.609 ft
Casing Radius: 0.083 ft
Screen Length: 10. ft

Water Column Height: 10. ft
Wellbore Radius: 0.167 ft
Gravel Pack Porosity: 0.3



WELL TEST ANALYSIS

Data Set: C:\MYDOCU~1\UGW32R.AQT
Date: 06/19/02 Time: 13:10:03

PROJECT INFORMATION

Company: Baker Environmental, Inc.
Client: LANTDIV-Roosevelt Roads
Project: CTO-0034
Test Location: Tow Way Fuel Farm
Test Well: UGW32 (Rising Head Test)
Test Date: 1/13/02

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

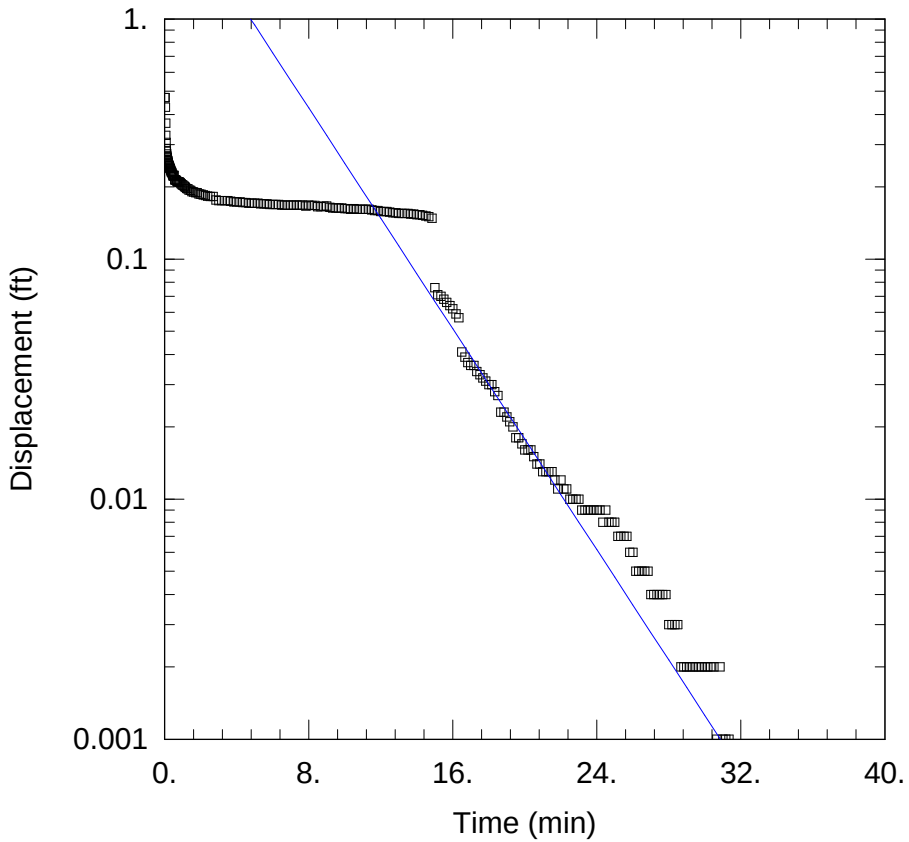
K = 0.7416 ft/day
y0 = 0.08913 ft

AQUIFER DATA

Saturated Thickness: 15. ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Initial Displacement: 0.345 ft
Casing Radius: 0.083 ft
Screen Length: 15. ft
Water Column Height: 15. ft
Wellbore Radius: 0.167 ft
Gravel Pack Porosity: 0.3



WELL TEST ANALYSIS

Data Set: C:\MYDOCU~1\UGW34R.AQT
Date: 06/19/02 Time: 13:10:09

PROJECT INFORMATION

Company: Baker Environmental, Inc.
Client: LANTDIV-Roosevelt Roads
Project: CTO-0034
Test Location: Tow Way Fuel Farm
Test Well: UGW34 (Rising Head Test
Test Date: 1/13/02

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 0.5798 ft/day
y0 = 3.547 ft

AQUIFER DATA

Saturated Thickness: 15. ft

Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Initial Displacement: 0.471 ft
Casing Radius: 0.083 ft
Screen Length: 15. ft

Water Column Height: 15. ft
Wellbore Radius: 0.167 ft
Gravel Pack Porosity: 0.3

APPENDIX B
CHAIN-OF-CUSTODY RECORDS
(Additional Data Collection Investigation Report)

FedEx Tracking # 8028 5325 5810 IMPS# 8232 2444 4125

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

STL Savannah

STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

Alternate Laboratory Name/Location

Phone:
Fax:

PROJECT REFERENCE: JWFF-NSRR	PROJECT NO.: 26007-034	PROJECT LOCATION (STATE): PR
STL (LAB) PROJECT MANAGER: Melanie Jakubsen	P.O. NUMBER:	CONTRACT NO.:
CLIENT (SITE) PM: Joe Etheridge	CLIENT PHONE: 787-485-1097	CLIENT FAX:
CLIENT NAME: Baker Environmental, Inc.	CLIENT E-MAIL:	
CLIENT ADDRESS: Airport Office Park Bldg. 3 420 Rouser Rd. Coraopolis, PA 15108		
COMPANY CONTRACTING THIS WORK (if applicable):		

PAGE 1 OF 1

STANDARD REPORT DELIVERY ( )
DATE DUE _____

EXPEDITED REPORT DELIVERY (SURCHARGE) ( )
DATE DUE _____

NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 3

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	App. IX SVOCs (8270)	App. IX Total Metals (6010)	REMARKS
								1	1	
								HNO_3	PRESERVATIVE	
								2	1	NUMBER OF CONTAINERS SUBMITTED
1/9/02	1105	UGW15						X		
1/9/02	1510	7ER07						X	X	

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS Jon C. Edel Jr.	1/9/02	1440						
RECEIVED BY: (SIGNATURE) EMPTY CONTAINERS	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
F Swafford	1/10/02	9:46	YES ✓ NO ( )		5240166	

ORIGINAL – RETURN TO LABORATORY WITH SAMPLE(S)

FedEx Tracking # 8078 5325 5810 IMPS# 8232 3444 4114 Serial Number 025100 (8)

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

STL Savannah

STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

Alternate Laboratory Name/Location
Phone:
Fax:

PROJECT REFERENCE: TWFF-NSRR	PROJ: 26007-034	PROJECT LOCATION (STATE): PR
STL (LAB) PROJECT MANAGER: Melanie Jakobsen	P.O. NUMBER	CONTRACT NO.
CLIENT (SITE) PM: Joe Etheridge	CLIENT PHONE: 787-485-1093	CLIENT FAX
CLIENT NAME: Baker Environmental, Inc.	CLIENT E-MAIL	
CLIENT ADDRESS: Airport Office Park Bldg. 3 420 Rouser Rd. Coraopolis PA 15108		
COMPANY CONTRACTING THIS WORK (if applicable)		

PAGE 1 OF 1

STANDARD REPORT DELIVERY ( )
DATE DUE _____
EXPEDITED REPORT DELIVERY (SURCHARGE) ( )
DATE DUE _____
NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 3

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICAT	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	APP. IX SVOCs (8270)	PRESERVATIVE	NUMBER OF CONTAINERS SUBMITTED	REMARKS
										2	
1/9/02	0855	7MW05		X				X			
1/9/02	1310	7MW06		X				X			
~~1/9/02~~	~~1105~~	~~[illegible]~~		~~X~~				~~X~~			
~~1/9/02~~	~~1420~~										
~~1/9/02~~											

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
Jon C. Edel Jr.	1/9/02	1440						
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

EMPTY CONTAINERS

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
J Swafford	1/10/02	9:46	YES (✓) NO ( )		5240166	

ORIGINAL – RETURN TO LABORATORY WITH SAMPLE(S)

Fedex Tracking # 8078 5375 5810

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

STL Savannah

STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

Alternate Laboratory Name/Location

Phone:
Fax:

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)
TWEF- NSER	26007-034	PR
STL (LAB) PROJECT MANAGER: Melanie Jakubsen	P.O. NUMBER	CONTRACT NO.
CLIENT (SITE) PM: Joe Etheridge	CLIENT PHONE: 787-485-1097	CLIENT FAX
CLIENT NAME: Baker Environmental, Inc.	CLIENT E-MAIL	
CLIENT ADDRESS: Airport Office Park Bldg. 3 420 Rouser Rd. Coraopolis, PA 15108		
COMPANY CONTRACTING THIS WORK (if applicable)		

PAGE 1 OF 1

STANDARD REPORT DELIVERY ○
DATE DUE _____

EXPEDITED REPORT DELIVERY (SURCHARGE) ○
DATE DUE _____

NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 3

PRESERVATIVE: HCl | ~~[illegible]~~ | H_2SO_4 | – | – | H_2SO_4 | H_2SO_4

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	App. 1x VOCs (8260)	~~[illegible]~~	Nitrate (353.2)	Nitrate/Sulfate 300.0/375.4	Methane (SW3810)	App. 1x Total Metals (6010)	App. 1x (Field Filtered) Dissolved Metals (6010)	Groundwater Density			REMARKS
								3		1	1	2	1	1				
1/9/02	0855	7MW05		X				X		X	X	X	X	X				
1/9/02	1310	7MW06		X				X		X	X	X	X	X	X			
1/9/02	1105	UGW15		X				X		X	X	X	X	X				
1/9/02	1430	7TB01		X				X										
1/9/02	1510	7ER07		X				X					X					

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS Jon C. Edell Jr.	1/9/02	1440						
RECEIVED BY: (SIGNATURE) EMPTY CONTAINERS	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
J Swafford	1/10/02	9:46	YES ✓ NO ○		524016	

ORIGINAL – RETURN TO LABORATORY WITH SAMPLE(S)

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

Master Waybill 8078 5375 6313

Severn Trent Laboratories, Inc.

- [x] 5102 LaRoche Avenue, Savannah, GA 31404 — Phone: (912) 354-7858 — Fax: (912) 352-0165
- [ ] 2846 Industrial Plaza Drive, Tallahassee, FL 32301 — Phone: (850) 878-3994 — Fax: (850) 878-9504
- [ ] 900 Lakeside Drive, Mobile, AL 36693 — Phone: (334) 666-6633 — Fax: (334) 666-6696
- [ ] 6712 Benjamin Road, Suite 100, Tampa, FL 33634 — Phone: (813) 885-7427 — Fax: (813) 885-7049

PROJECT REFERENCE: TWFF-NSCR
PROJECT NO.: 26007-034
PROJECT LOCATION (STATE): PR
STL (LAB) PROJECT MANAGER: Melanie Jakubsen
P.O. NUMBER:
CONTRACT NO.:
CLIENT (SITE): Joe Etheridge
CLIENT PHONE: 787-485-1097
CLIENT FAX:
CLIENT NAME: Baker Environmental
CLIENT E-MAIL:
CLIENT ADDRESS: Airport Office Park, BLDG 3. 420 Rouser Rd, Coraopolis, PA 15108
COMPANY CONTRACTING THIS WORK (if applicable):

PAGE 1 OF 1 (4)

STANDARD REPORT DELIVERY [ ]
DATE DUE
EXPEDITED REPORT DELIVERY (SURCHARGE) [ ]
DATE DUE
NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 3

MATRIX TYPE: Groundwater, Liquid-Aqueous

REQUIRED ANALYSIS / PRESERVATIVE / NUMBER CONTAINERS SUBMITTED

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	Groundwater	Liquid-Aqueous	App. IX VOCs (8260)	Nitrate (353.2)	Nitrate/Sulfate (300.0)/(375.4)	Methane (SW 3810)	App. IX Total Metals (6010)	App. IX Diss. Metals (Field Filtered) 6010				
PRESERVATIVE					HCl	H_2SO_4	—	—	HNO_3	HNO_3				
NUMBER CONTAINERS SUBMITTED					3	1	1	1	1	1				
1/10/02	1310	UGW06	X		X	X	X	X	X	X				
1/10/02	1310	UGW06D	X		X	X	X	X	X	X				
1/10/02	1108	GW04	X		X	X	X	X	X	X				
1/10/02	0900	UGW07	X		X	X	X	X	X	X				
1/10/02	1400	TB02		X	X									

REMARKS

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
Jon C. Edel Jr. EMPTY CONTAINERS	1/10/02	1430						
RECEIVED BY: (SIGNATURE) EMPTY CONTAINERS	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

LABORATORY USE ONLY

RECEIVED FOR LABORATORY USE BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SL LOG NO.	LABORATORY REMARKS
	1-11-02	9:40	YES / NO		S2-40202	

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

IMPS # 8232 7444 4169

Severn Trent Laboratories, Inc.

- [x] 5102 LaRoche Avenue, Savannah, GA 31404 — Phone: (912) 354-7858 — Fax: (912) 352-0165
- [ ] 2846 Industrial Plaza Drive, Tallahassee, FL 32301 — Phone: (850) 878-3994 — Fax: (850) 878-9504
- [ ] 900 Lakeside Drive, Mobile, AL 36693 — Phone: (334) 666-6633 — Fax: (334) 666-6696
- [ ] 6712 Benjamin Road, Suite 100, Tampa, FL 33634 — Phone: (813) 885-7427 — Fax: (813) 885-7049

5

PROJECT REFERENCE: TWFF-NSRR	PROJECT NO.: 26007-034	PROJECT LOCATION (STATE): PR	PAGE 1 OF 1
STL (LAB) PROJECT MANAGER: Melanie Jakubsen	P.O. NUMBER:	CONTRACT NO.:	STANDARD REPORT DELIVERY ☐ DATE DUE:
CLIENT (SITE): Joe Etheridge	CLIENT PHONE: 787-485-1097	CLIENT FAX:	EXPEDITED REPORT DELIVERY (SURCHARGE) ☐ DATE DUE:
CLIENT NAME: Baker Environmental	CLIENT E-MAIL:		NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 3
CLIENT ADDRESS: Airport Office Park, Bldg. 3 - 420 Rouser Rd., Coraopolis, PA 15108			
COMPANY CONTRACTING THIS WORK (if applicable):			

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	MATRIX TYPE: Groundwater	REQUIRED ANALYSIS: App. IX SVOCs (8270)	
				PRESERVATIVE: 1	
				NUMBER CONTAINERS SUBMITTED: 2	REMARKS
1/10/02	1310	UGW06	X	X	
1/10/02	1310	UGW06D	X	X	
~~[illegible]~~	~~[illegible]~~	~~[illegible]~~			
~~[illegible]~~	~~[illegible]~~	~~[illegible]~~			

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS Jon C. Edel Jr.	1/10/02	1930						
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY USE BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SL LOG NO.	LABORATORY REMARKS
[illegible]	1/11/02	9:40	YES NO		S2-40202	

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

IMPS # 8232 7444 4170

Severn Trent Laboratories, Inc.

- [x] 5102 LaRoche Avenue, Savannah, GA 31404 — Phone: (912) 354-7858 — Fax: (912) 352-0165
- [ ] 2846 Industrial Plaza Drive, Tallahassee, FL 32301 — Phone: (850) 878-3994 — Fax: (850) 878-9504
- [ ] 900 Lakeside Drive, Mobile, AL 36693 — Phone: (334) 666-6633 — Fax: (334) 666-6696
- [ ] 6712 Benjamin Road, Suite 100, Tampa, FL 33634 — Phone: (813) 885-7427 — Fax: (813) 885-7049

(6)

PROJECT REFERENCE: JWFF-NSRR	PROJECT NO.: 26007-034	PROJECT LOCATION (STATE): PR	PAGE 1 OF 1
STL (LAB) PROJECT MANAGER: Melanie Jakubsen	P.O. NUMBER	CONTRACT NO.	STANDARD REPORT DELIVERY [ ] DATE DUE
CLIENT (SITE): Joe Etheridge	CLIENT PHONE: 267-485-1097	CLIENT FAX	EXPEDITED REPORT DELIVERY (SURCHARGE) [ ] DATE DUE
CLIENT NAME: Baker Environmental	CLIENT E-MAIL		
CLIENT ADDRESS: Airport Office Park, BLDG. 3 - 420 Rouser Rd., Coraopolis PA 15108			NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 3
COMPANY CONTRACTING THIS WORK (if applicable)			

REQUIRED ANALYSIS: App. IX SVOCs (8270)

PRESERVATIVE: 1

NUMBER CONTAINERS SUBMITTED: 2

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	MATRIX TYPE: GROUNDWATER	App. IX SVOCs (8270)	REMARKS
1/10/02	0900	UGW03	X	X	
1/10/02	1108	GW04	X	X	

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
Jon C. Edel Jr. EMPTY CONTAINERS	1/10/02	1430						
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY USE BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL-SL LOG NO.	LABORATORY REMARKS
	1-11-02	9:40	YES NO		S2-4020	

Serial Number 002000

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

Master Waybill # 8078 5375 6324

Severn Trent Laboratories, Inc.

- ☑ 5102 LaRoche Avenue, Savannah, GA 31404 — Phone: (912) 354-7858 — Fax: (912) 352-0165
- ☐ 2846 Industrial Plaza Drive, Tallahassee, FL 32301 — Phone: (850) 878-3994 — Fax: (850) 878-9504
- ☐ 900 Lakeside Drive, Mobile, AL 36693 — Phone: (334) 666-6633 — Fax: (334) 666-6696
- ☐ 6712 Benjamin Road, Suite 100, Tampa, FL 33634 — Phone: (813) 885-7427 — Fax: (813) 885-7049

PROJECT REFERENCE: TWFF-NSRR	PROJECT NO.: 26007-034	PROJECT LOCATION (STATE): PR	PAGE 1 OF 1 (7)
STL (LAB) PROJECT MANAGER: Melanie Jakubsen	P.O. NUMBER	CONTRACT NO.	STANDARD REPORT DELIVERY ☐ DATE DUE
CLIENT (SITE): Joe Etheridge	CLIENT PHONE: 787-485-1097	CLIENT FAX	EXPEDITED REPORT DELIVERY (SURCHARGE) ☐ DATE DUE
CLIENT NAME: Baker Environmental, Inc.	CLIENT E-MAIL		
CLIENT ADDRESS: Airport Office Park, Bldg. 3, 420 Rouser Rd, Coraopolis, PA 15108			NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 5
COMPANY CONTRACTING THIS WORK (if applicable)			

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	Groundwater	Liquid-Aqueous				REQUIRED ANALYSIS: App. IX VOCs (8260)	Nitrate (353.2)	Nitrate/Sulfate (300.0)/(375.4)	Methane (SW8015D)	App. IX Total Metals	App. IX Dissolved Metals (Field Filtered)					REMARKS
		PRESERVATIVE						HCl	H_2SO_4	—	—	HNO_3	HNO_3					
		NUMBER CONTAINERS SUBMITTED						3	1	1	3	1	1					
1/11/02	0837	UGW08	X					X	X	X	X	X	X					
1/11/02	0837	UGW08D	X					X	X	X	X	X	X					
1/11/02	0837	UGW08MS	X					X	X	X	X	X	X					
1/11/02	0837	UGW08MSD	X					X			X							
1/11/02	0735	UGW20R	X					X		X								
1/11/02	1120	UGW26	X					X										
1/11/02	1320	GW06	X					X										
1/11/02	1400	TB03		X				X										

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
Jon C. Edel Jr. EMPTY CONTAINERS	1/11/02	1500						
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY USE BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT YES NO	CUSTODY SEAL NO.	STL SL LOG NO.	LABORATORY REMARKS
[signature]	1/12/02	1104			S24038	

Serial Number 002002

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

IMPS# 8232 7444 4217

Severn Trent Laboratories, Inc.

- ☑ 5102 LaRoche Avenue, Savannah, GA 31404 — Phone: (912) 354-7858 — Fax: (912) 352-0165
- ☐ 2846 Industrial Plaza Drive, Tallahassee, FL 32301 — Phone: (850) 878-3994 — Fax: (850) 878-9504
- ☐ 900 Lakeside Drive, Mobile, AL 36693 — Phone: (334) 666-6633 — Fax: (334) 666-6696
- ☐ 6712 Benjamin Road, Suite 100, Tampa, FL 33634 — Phone: (813) 885-7427 — Fax: (813) 885-7049

(8)

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)	PAGE	OF
TWFF-NSRR	26002-034	PR	1	1

STL (LAB) PROJECT MANAGER	P.O. NUMBER	CONTRACT NO.
Melanie Jakubsen		

CLIENT (SITE)	CLIENT PHONE	CLIENT FAX
Joe Etheridge	787-485-1097	

CLIENT NAME	CLIENT E-MAIL
Baker Environmental	

CLIENT ADDRESS: Airport Office Park, Bldg. 3, 420 Rouser Rd, Coraopolis, PA 15108

COMPANY CONTRACTING THIS WORK (if applicable):

STANDARD REPORT DELIVERY ☐ DATE DUE _____

EXPEDITED REPORT DELIVERY (SURCHARGE) ☐ DATE DUE _____

NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 5

MATRIX TYPE: Groundwater

REQUIRED ANALYSIS / PRESERVATIVE / NUMBER CONTAINERS SUBMITTED

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	App. IX SVOCs (8270)	Methane (SW3810)	App. IX Dissolved Metals (Field Filtered)	App. IX Total Metals	Nitrate/Surfate (300.0)	Nitrate (353.2)	REMARKS
		PRESERVATIVE	—	—	H_2NO_3	H_2NO_3	—	H_2SO_4	
		NUMBER CONTAINERS SUBMITTED	2	3	1	1	1	1	
1/11/02	1120	UGW26		X	X	X	X	X	
1/11/02	1320	GW06	X	X	X	X	X	X	
1/11/02	0837	UGW08MSD			X	X	X	X	

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
Jon C. Eell G. EMPTY CONTAINERS	1/11/02	1500						

RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY USE BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT YES NO	CUSTODY SEAL NO.	STL SL LOG NO.	LABORATORY REMARKS
K	1/12/02	1104			S240238	

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

IMPS # 8232 7444 4228

Severn Trent Laboratories, Inc.

- ☑ 5102 LaRoche Avenue, Savannah, GA 31404 — Phone: (912) 354-7858 — Fax: (912) 352-0165
- ☐ 2846 Industrial Plaza Drive, Tallahassee, FL 32301 — Phone: (850) 878-3994 — Fax: (850) 878-9504
- ☐ 900 Lakeside Drive, Mobile, AL 36693 — Phone: (334) 666-6633 — Fax: (334) 666-6696
- ☐ 6712 Benjamin Road, Suite 100, Tampa, FL 33634 — Phone: (813) 885-7427 — Fax: (813) 885-7049

(9)

PROJECT REFERENCE: TWFF-NSRR	PROJECT NO.: 26007-034	PROJECT LOCATION (STATE): PR	PAGE 1 OF 1
STL (LAB) PROJECT MANAGER: Melanie Jakubsen	P.O. NUMBER	CONTRACT NO.	STANDARD REPORT DELIVERY ☐ DATE DUE
CLIENT (SITE): Joe Etheridge	CLIENT PHONE: 787-485-1097	CLIENT FAX	EXPEDITED REPORT DELIVERY (SURCHARGE) ☐ DATE DUE
CLIENT NAME: Baker Environmental	CLIENT E-MAIL		
CLIENT ADDRESS: Airport Office Park, Bldg. 3, 420 Rouser Rd, Coraopolis, PA 15108			NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 5
COMPANY CONTRACTING THIS WORK (if applicable)			

MATRIX TYPE: Groundwater

REQUIRED ANALYSIS: APP. IX SVOCs (8270)

PRESERVATIVE: 1

NUMBER CONTAINERS SUBMITTED: 2

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	Groundwater	APP. IX SVOCs (8270)	REMARKS
1/11/02	1120	UGW26	X	X	
1/11/02	0837	UGW08MSD	X	X	

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS Jon C. Edel Jr.	1/11/02	1500						
RECEIVED BY: (SIGNATURE) EMPTY CONTAINERS	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

LABORATORY USE ONLY

RECEIVED FOR LABORATORY USE BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT YES NO	CUSTODY SEAL NO.	STL/SL LOG NO.	LABORATORY REMARKS
K	1/12/02	1104			S24023	

Serial Number

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

IMPS# 8232 7444 4239

Severn Trent Laboratories, Inc.

- ☑ 5102 LaRoche Avenue, Savannah, GA 31404 — Phone: (912) 354-7858 — Fax: (912) 352-0165
- ☐ 2846 Industrial Plaza Drive, Tallahassee, FL 32301 — Phone: (850) 878-3994 — Fax: (850) 878-9504
- ☐ 900 Lakeside Drive, Mobile, AL 36693 — Phone: (334) 666-6633 — Fax: (334) 666-6696
- ☐ 6712 Benjamin Road, Suite 100, Tampa, FL 33634 — Phone: (813) 885-7427 — Fax: (813) 885-7049

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)	PAGE	OF
TWFF- NSRR	26007-034	PR	1	1

STL (LAB) PROJECT MANAGER	P.O. NUMBER	CONTRACT NO.
Melanie Jakubsen		

CLIENT (SITE)	CLIENT PHONE	CLIENT FAX
Joe Etheridge	787-485-1097	

CLIENT NAME	CLIENT E-MAIL
Baker Environmental	

CLIENT ADDRESS: Airport Office Park, BLDG. 3, 420 Rouser Rd, Coraopolis, PA 15108

COMPANY CONTRACTING THIS WORK (if applicable):

STANDARD REPORT DELIVERY ☐ DATE DUE _____

EXPEDITED REPORT DELIVERY (SURCHARGE) ☐ DATE DUE _____

NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 5

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	MATRIX TYPE: Groundwater	REQUIRED ANALYSIS: AA: 1X SVOCs (8270)	REMARKS
1/11/02	0735	UGW20R	X	X	
1/11/02	0837	UGW108MS	X	X	

PRESERVATIVE: 1 — 2

NUMBER CONTAINERS SUBMITTED

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS Jon C. Edell Jr.	1/11/02	1500						

RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY USE BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT YES NO	CUSTODY SEAL NO.	STL SL LOG NO.	LABORATORY REMARKS
	1/12/02	1104			5240238	

Serial Number: 000020

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

IMPS # 8232 7444 4240

Severn Trent Laboratories, Inc.

- ☑ 5102 LaRoche Avenue, Savannah, GA 31404 — Phone: (912) 354-7858 — Fax: (912) 352-0165
- ☐ 2846 Industrial Plaza Drive, Tallahassee, FL 32301 — Phone: (850) 878-3994 — Fax: (850) 878-9504
- ☐ 900 Lakeside Drive, Mobile, AL 36693 — Phone: (334) 666-6633 — Fax: (334) 666-6696
- ☐ 6712 Benjamin Road, Suite 100, Tampa, FL 33634 — Phone: (813) 885-7427 — Fax: (813) 885-7049

PAGE 1 OF 1 (11)

PROJECT REFERENCE	TWFF-NSRR
PROJECT NO.	26002-034
PROJECT LOCATION (STATE)	PR
STL (LAB) PROJECT MANAGER	Melanie Jakubsen
P.O. NUMBER	
CONTRACT NO.	
CLIENT (SITE)	Joe Etheridge
CLIENT PHONE	787-485-1097
CLIENT FAX	
CLIENT NAME	Baker Environmental
CLIENT E-MAIL	
CLIENT ADDRESS	Airport Office Park, Bldg. 3, 420 Rouser Rd, Coraopolis, PA, 15108
COMPANY CONTRACTING THIS WORK (if applicable)	

STANDARD REPORT DELIVERY ☐
DATE DUE _____

EXPEDITED REPORT DELIVERY (SURCHARGE) ☐
DATE DUE _____

NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 5

REQUIRED ANALYSIS: AA 1X SVOCS (8270)

PRESERVATIVE: —

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	MATRIX TYPE: Groundwater	NUMBER CONTAINERS SUBMITTED	REMARKS
1/11/02	0837	UGW08	X	X	
1/11/02	0837	UGW08D	X	X	

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS Jon C. Edell Jr.	1/11/02	1500						
RECEIVED BY: (SIGNATURE) EMPTY CONTAINERS	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

LABORATORY USE ONLY

RECEIVED FOR LABORATORY USE BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT YES NO	CUSTODY SEAL NO.	STL SL LOG NO.	LABORATORY REMARKS
K	1/12/02	1104			S240238	

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

Master Air Waybill # 8078 5375 6276

Severn Trent Laboratories, Inc.

- [x] 5102 LaRoche Avenue, Savannah, GA 31404 — Phone: (912) 354-7858 — Fax: (912) 352-0165
- [ ] 2846 Industrial Plaza Drive, Tallahassee, FL 32301 — Phone: (850) 878-3994 — Fax: (850) 878-9504
- [ ] 900 Lakeside Drive, Mobile, AL 36693 — Phone: (334) 666-6633 — Fax: (334) 666-6696
- [ ] 6712 Benjamin Road, Suite 100, Tampa, FL 33634 — Phone: (813) 885-7427 — Fax: (813) 885-7049

PAGE 1 OF 1 (12)

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)
TWFF-NSRR	26007-034	PR
STL (LAB) PROJECT MANAGER: Melanie Jakubsen	P.O. NUMBER	CONTRACT NO.
CLIENT (SITE): Joe Etheridge	CLIENT PHONE: 787-485-1097	CLIENT FAX
CLIENT NAME: Baker Environmental	CLIENT E-MAIL	
CLIENT ADDRESS: Airport Office Park, Bldg. 3, 420 Rouser Rd. Coraopolis, PA 15108		
COMPANY CONTRACTING THIS WORK (if applicable)		

STANDARD REPORT DELIVERY [ ] DATE DUE ____

EXPEDITED REPORT DELIVERY (SURCHARGE) [ ] DATE DUE ____

NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 9

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	MATRIX: Groundwater	MATRIX: Liquid-Aqueous	App. IX VOCs (8260)	Nitrate (353.2)	Nitrate/Sulfate (300.0)/(375.4)	Methane (SW3810)	App. IX Total Metals	App. IX Dissolved Metals (Field Filtered)	Groundwater Density	Ethane/Ethane (SW3810)	TOC (9060)	REMARKS
PRESERVATIVE					HCl	H_2SO_4	—	—	HNO_3	HNO_3	—	—	HCl	
NUMBER CONTAINERS SUBMITTED					3	1	1	3	1	1	1		1	
1/12/02	1438	UGW18	X		X									Same bottles as methane
1/13/02	1030	7MW07MS	X		X								X	
1/13/02	1030	7MW07D	X		X								X	
1/13/02	1030	7MW07	X		X								X	
1/13/02	0855	7MW08	X		X								X	
1/12/02	1010	UGW10	X		X									
1/12/02	0855	UGW09	X		X									
1/12/02	1125	UGW11	X		X						X			
1/13/02	1030	7MW07MSD	X		X								X	
1/12/02	1600	UGW16	X		X	X	X	X	X	X		X	X	
1/14/02	1333	TB04		X	X									
1/12/02	0745	UGW20R	X			X		X	X	X				

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS Jon C. Fabel Jr.	1/14/02	1430						
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY USE BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SL LOG NO.	LABORATORY REMARKS
F Swafford	1/15/02	9:09	YES / NO		52 40262	

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

IMPS # 8232 7444 4261

Severn Trent Laboratories, Inc.

- ☑ 5102 LaRoche Avenue, Savannah, GA 31404 — Phone: (912) 354-7858 — Fax: (912) 352-0165
- ☐ 2846 Industrial Plaza Drive, Tallahassee, FL 32301 — Phone: (850) 878-3994 — Fax: (850) 878-9504
- ☐ 900 Lakeside Drive, Mobile, AL 36693 — Phone: (334) 666-6633 — Fax: (334) 666-6696
- ☐ 6712 Benjamin Road, Suite 100, Tampa, FL 33634 — Phone: (813) 885-7427 — Fax: (813) 885-7049

PAGE 1 OF 1 (13)

PROJECT REFERENCE: TWFF-NSRR
PROJECT NO.: 26007-034
PROJECT LOCATION (STATE): PR
STL (LAB) PROJECT MANAGER: Melanie Jakubsen
P.O. NUMBER:
CONTRACT NO.:
CLIENT (SITE): Joe Etheridge
CLIENT PHONE: 787-485-1097
CLIENT FAX:
CLIENT NAME: Baker Environmental
CLIENT E-MAIL:
CLIENT ADDRESS: Airport Office Park, Bldg. 3, 420 Rouser Rd., Coraopolis, PA 15108
COMPANY CONTRACTING THIS WORK (if applicable):

STANDARD REPORT DELIVERY ☑
DATE DUE:
EXPEDITED REPORT DELIVERY (SURCHARGE) ☐
DATE DUE:
NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 9

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	MATRIX TYPE: Groundwater	App. IX Total Metals	App. IX Dissolved Metals (Field Filtered)	Nitrate (353.2)	Nitrate/Nitrite (300.0)/(375.4)	Methane (SW3810)	Ethane/Ethene (SW3810)					REMARKS
		PRESERVATIVE		HNO3	HNO3	H2SO4	—	—						
		NUMBER CONTAINERS SUBMITTED		1	1	1	1	3						
1/12/02	1438	VGW18	X	X	X	X	X	X						Same bottles as methane
1/13/02	1030	7MW07	X	X	X	X	X	X	X					
1/13/02	1030	7MW07D	X	X	X	X	X	X	X					
1/13/02	1030	7MW07MS	X	X	X	X	X	X	X					
1/13/02	1030	7MW07MSD	X	X	X	X	X	X	X					

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS Jon E. Edel Jr.	1/14/02	1430						
RECEIVED BY: (SIGNATURE) EMPTY CONTAINERS	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

LABORATORY USE ONLY

RECEIVED FOR LABORATORY USE BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT (YES) NO	CUSTODY SEAL NO.	STL SL LOG NO.	LABORATORY REMARKS
J. Swafford	1/15/02	9:09			5240268	

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

IMPS # 8232 7444 4272

Severn Trent Laboratories, Inc.

- [x] 5102 LaRoche Avenue, Savannah, GA 31404 — Phone: (912) 354-7858 — Fax: (912) 352-0165
- [ ] 2846 Industrial Plaza Drive, Tallahassee, FL 32301 — Phone: (850) 878-3994 — Fax: (850) 878-9504
- [ ] 900 Lakeside Drive, Mobile, AL 36693 — Phone: (334) 666-6633 — Fax: (334) 666-6696
- [ ] 6712 Benjamin Road, Suite 100, Tampa, FL 33634 — Phone: (813) 885-7427 — Fax: (813) 885-7049

PAGE 1 OF 1 (14)

PROJECT REFERENCE	TWFF- NSRR
PROJECT NO.	26003-034
PROJECT LOCATION (STATE)	PR
STL (LAB) PROJECT MANAGER	Melanie Jakubsen
P.O. NUMBER	
CONTRACT NO.	
CLIENT (SITE)	Joe Etheridge
CLIENT PHONE	787-485-1097
CLIENT FAX	
CLIENT NAME	Baker Environmental
CLIENT E-MAIL	
CLIENT ADDRESS	Airport Office Park, Bldg. 3, 420 Rouser Rd, Coraopolis, PA 15108
COMPANY CONTRACTING THIS WORK (if applicable)	

STANDARD REPORT DELIVERY [ ]
DATE DUE _____

EXPEDITED REPORT DELIVERY (SURCHARGE) [ ]
DATE DUE _____

NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 9

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	MATRIX TYPE: Groundwater	REQUIRED ANALYSIS: App. IX SVOCs (8270)	REMARKS
				PRESERVATIVE: 1	
				NUMBER CONTAINERS SUBMITTED: 2	
1/13/02	1030	7MW03D	X	X	
1/13/02	1030	7MW07MS	X	X	

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS Jon C. Edell Jr.	1/14/02	1430						
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY USE BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL-SL LOG NO.	LABORATORY REMARKS
F. Swafford	1/15/02	909	YES / NO		5240262	

Serial Number 005017

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

IMPS # 8232 3444 4283

Severn Trent Laboratories, Inc.

- [x] 5102 LaRoche Avenue, Savannah, GA 31404 — Phone: (912) 354-7858 — Fax: (912) 352-0165
- [ ] 2846 Industrial Plaza Drive, Tallahassee, FL 32301 — Phone: (850) 878-3994 — Fax: (850) 878-9504
- [ ] 900 Lakeside Drive, Mobile, AL 36693 — Phone: (334) 666-6633 — Fax: (334) 666-6696
- [ ] 6712 Benjamin Road, Suite 100, Tampa, FL 33634 — Phone: (813) 885-7427 — Fax: (813) 885-7049

PAGE 1 OF 1 (15)

PROJECT REFERENCE	TWFF-NSER
PROJECT NO.	26002-034
PROJECT LOCATION (STATE)	
STL (LAB) PROJECT MANAGER	Melanie Jakubsen
P.O. NUMBER	
CONTRACT NO.	
CLIENT (SITE)	Joe Etheridge
CLIENT PHONE	
CLIENT FAX	
CLIENT NAME	Baker Environmental
CLIENT E-MAIL	
CLIENT ADDRESS	Airport Office Park, Bldg. 3, 420 Rouser Rd., Coraopolis, PA 15108
COMPANY CONTRACTING THIS WORK (if applicable)	

STANDARD REPORT DELIVERY [ ]
DATE DUE _____

EXPEDITED REPORT DELIVERY (SURCHARGE) [ ]
DATE DUE _____

NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 9

REQUIRED ANALYSIS

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	MATRIX TYPE: Groundwater	Agr. IX SVOCs (8270)										REMARKS
				1	PRESERVATIVE									
				2	NUMBER CONTAINERS SUBMITTED									
1/12/02	1438	UGW18	X	X										
1/12/02	1125	UGW11	X	X										

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS Jon C. Edel g.	1/14/02	1430						
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY USE BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL-SL LOG NO.	LABORATORY REMARKS
L. Swafford	1/15/02	9:09	YES / NO		5240262	

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

IMPS # 8232 7444 4294

Severn Trent Laboratories, Inc.

- ☑ 5102 LaRoche Avenue, Savannah, GA 31404 — Phone: (912) 354-7858 — Fax: (912) 352-0165
- ☐ 2846 Industrial Plaza Drive, Tallahassee, FL 32301 — Phone: (850) 878-3994 — Fax: (850) 878-9504
- ☐ 900 Lakeside Drive, Mobile, AL 36693 — Phone: (334) 666-6633 — Fax: (334) 666-6696
- ☐ 6712 Benjamin Road, Suite 100, Tampa, FL 33634 — Phone: (813) 885-7427 — Fax: (813) 885-7049

PROJECT REFERENCE: TWFF- NSRR	PROJECT NO.: 26007-034	PROJECT LOCATION (STATE): PR	PAGE 1 OF 1 (16)
STL (LAB) PROJECT MANAGER: Melanie Jakubsen	P.O. NUMBER:	CONTRACT NO.:	STANDARD REPORT DELIVERY ☐ DATE DUE:
CLIENT (SITE): Joe Etheridge	CLIENT PHONE: 787-485-1097	CLIENT FAX:	
CLIENT NAME: Baker Environmental	CLIENT E-MAIL:		EXPEDITED REPORT DELIVERY (SURCHARGE) ☐ DATE DUE:
CLIENT ADDRESS: Airport Office Park, Bldg. 3, 420 Rouser Rd. Coraopolis, PA 15108			
COMPANY CONTRACTING THIS WORK (if applicable):			NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 9

MATRIX TYPE: GROUNDWATER

REQUIRED ANALYSIS: APP. IX SVOCs (8270)

PRESERVATIVE

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	GROUNDWATER	APP. IX SVOCs (8270)	REMARKS
1/13/02	1030	7MW07	X	X	
1/13/02	0855	7MW08	X	X	

NUMBER CONTAINERS SUBMITTED

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS Jon C. Edel Jr.	1/14/02	1430						
RECEIVED BY: (SIGNATURE) EMPTY CONTAINERS	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

LABORATORY USE ONLY

RECEIVED FOR LABORATORY USE BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SL LOG NO.	LABORATORY REMARKS
F Bradford	1/15/02	9:00	YES / NO		S240262	

Serial Number: 000020

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

IMPS # 8232 7444 4309

Severn Trent Laboratories, Inc.

- [x] 5102 LaRoche Avenue, Savannah, GA 31404 — Phone: (912) 354-7858 — Fax: (912) 352-0165
- [ ] 2846 Industrial Plaza Drive, Tallahassee, FL 32301 — Phone: (850) 878-3994 — Fax: (850) 878-9504
- [ ] 900 Lakeside Drive, Mobile, AL 36693 — Phone: (334) 666-6633 — Fax: (334) 666-6696
- [ ] 6712 Benjamin Road, Suite 100, Tampa, FL 33634 — Phone: (813) 885-7427 — Fax: (813) 885-7049

PROJECT REFERENCE: JWFF- NSRR	PROJECT NO.: 26007-034	PROJECT LOCATION (STATE): PR	PAGE 1 OF 1 (17)
STL (LAB) PROJECT MANAGER: Melanie Jakubsen	P.O. NUMBER:	CONTRACT NO.:	STANDARD REPORT DELIVERY [ ] DATE DUE:
CLIENT (SITE): Joe Etheridge	CLIENT PHONE: 787-485-1097	CLIENT FAX:	EXPEDITED REPORT DELIVERY (SURCHARGE) [ ] DATE DUE:
CLIENT NAME: Baker Environmental	CLIENT E-MAIL:		
CLIENT ADDRESS: AOP 3, 420 Rouser Rd., Coraopolis, PA 15108			
COMPANY CONTRACTING THIS WORK (if applicable):			NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 9

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	MATRIX TYPE: Groundwater	App. IX SVOCs (8270)													REMARKS
				1	PRESERVATIVE												
				2	NUMBER CONTAINERS SUBMITTED												
1/12/02	1010	U6W10	X	X													
1/12/02	0855	U6W09	X	X													

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS Jon C. Edell Jr.	1/14/02	1430						
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY USE BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SL LOG NO.	LABORATORY REMARKS
J. Swafford	1/15/02	9:09	YES NO		5240262	

Serial Number: 000021

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

IMPS # 8232 7444 4310

Severn Trent Laboratories, Inc.

☑ 5102 LaRoche Avenue, Savannah, GA 31404 Phone: (912) 354-7858 Fax: (912) 352-0165
☐ 2846 Industrial Plaza Drive, Tallahassee, FL 32301 Phone: (850) 878-3994 Fax: (850) 878-9504
☐ 900 Lakeside Drive, Mobile, AL 36693 Phone: (334) 666-6633 Fax: (334) 666-6696
☐ 6712 Benjamin Road, Suite 100, Tampa, FL 33634 Phone: (813) 885-7427 Fax: (813) 885-7049

18

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)	PAGE	OF
TWFF - NSER	26007-034	PR	1	1

STL (LAB) PROJECT MANAGER	P.O. NUMBER	CONTRACT NO.
Melanie Jakubsen		

CLIENT (SITE)	CLIENT PHONE	CLIENT FAX
Joe Etheridge	787-485-1097	

CLIENT NAME	CLIENT E-MAIL
Baker Environmental	

CLIENT ADDRESS: AOP 3, 420 Rousse Rd., Coraopolis, PA 15108

COMPANY CONTRACTING THIS WORK (if applicable):

STANDARD REPORT DELIVERY ☐
DATE DUE _____

EXPEDITED REPORT DELIVERY (SURCHARGE) ☐
DATE DUE _____

NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 9

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	MATRIX TYPE: Groundwater	App. IX SVOCs (8270)											REMARKS
				1	PRESERVATIVE										
				2	NUMBER CONTAINERS SUBMITTED										
1/12/02	1600	UGW16	X	X											
1/13/02	1030	7MW07MSD	X	X											

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS Jon C. Earl Jr.	1/14/02	1430						
RECEIVED BY: (SIGNATURE) EMPTY CONTAINERS	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

LABORATORY USE ONLY

RECEIVED FOR LABORATORY USE BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL-SL LOG NO.	LABORATORY REMARKS
L Swafford	1/15/02	9:09	YES NO		524026	

Serial Number: 000022

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

IMPS # 8232 7444 4320

Severn Trent Laboratories, Inc.

☑ 5102 LaRoche Avenue, Savannah, GA 31404 Phone: (912) 354-7858 Fax: (912) 352-0165
☐ 2846 Industrial Plaza Drive, Tallahassee, FL 32301 Phone: (850) 878-3994 Fax: (850) 878-9504
☐ 900 Lakeside Drive, Mobile, AL 36693 Phone: (334) 666-6633 Fax: (334) 666-6696
☐ 6712 Benjamin Road, Suite 100, Tampa, FL 33634 Phone: (813) 885-7427 Fax: (813) 885-7049

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)	PAGE	OF
TWFF-NSER	26007-034	PR	1	1 (19)

STL (LAB) PROJECT MANAGER	P.O. NUMBER	CONTRACT NO.
Melanie Jakubsen		

CLIENT (SITE)	CLIENT PHONE	CLIENT FAX
Joe Etheridge	787-485-1093	

CLIENT NAME	CLIENT E-MAIL
Baker Environmental	

CLIENT ADDRESS: AOP 3, 420 Rovsek Rd., Coraopolis, PA 15108

COMPANY CONTRACTING THIS WORK (if applicable):

STANDARD REPORT DELIVERY ☐ DATE DUE _____

EXPEDITED REPORT DELIVERY (SURCHARGE) ☐ DATE DUE _____

NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 9

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	MATRIX TYPE: Liquid - Aqueous	App. IX SVOCs (8270)	App. IX Totals Metals	App. IX Dissolved Metals (Field Filtered)	REMARKS
				1	H_2NO_3	H_2NO_3	PRESERVATIVE
				2	1	1	NUMBER CONTAINERS SUBMITTED
1/14/02	1415	2000FB01	X	X	X	X	
1/14/02	1405	2000FB03	X	X	X	X	

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS Jon C. Ekel Jr.	1/14/02	1430						
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY USE BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL-SL LOG NO.	LABORATORY REMARKS
J. Swafford	1/16/02	9:09	YES / NO		SZ40262	

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

IMPS # 8232 7444 4331

Severn Trent Laboratories, Inc.

- ☑ 5102 LaRoche Avenue, Savannah, GA 31404 — Phone: (912) 354-7858 — Fax: (912) 352-0165
- ☐ 2846 Industrial Plaza Drive, Tallahassee, FL 32301 — Phone: (850) 878-3994 — Fax: (850) 878-9504
- ☐ 900 Lakeside Drive, Mobile, AL 36693 — Phone: (334) 666-6633 — Fax: (334) 666-6696
- ☐ 6712 Benjamin Road, Suite 100, Tampa, FL 33634 — Phone: (813) 885-7427 — Fax: (813) 885-7049

PROJECT REFERENCE: TWFF-NSRR	PROJECT NO.: 26007-034	PROJECT LOCATION (STATE): PR	PAGE 20 OF 20
STL (LAB) PROJECT MANAGER: Melanie Jakubsen	P.O. NUMBER:	CONTRACT NO.:	STANDARD REPORT DELIVERY ☐ DATE DUE:
CLIENT (SITE): Joe Etheridge	CLIENT PHONE: 787-485-1097	CLIENT FAX:	
CLIENT NAME: Baker Environmental	CLIENT E-MAIL:		EXPEDITED REPORT DELIVERY (SURCHARGE) ☐ DATE DUE:
CLIENT ADDRESS: AOP 3, 420 Roosevelt Rd. Coraopolis, PA 15108			
COMPANY CONTRACTING THIS WORK (if applicable):			NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

MATRIX TYPE: Groundwater

REQUIRED ANALYSIS: Methane (SW3810); App. IX Total Metals; App. IX Dissolved Metals (Field Filtered); Nitrate (353.2); Nitrate/Sulfate (300.0)/(325.4)

PRESERVATIVE: ~~HNO3~~; H_2NO_3; H_2NO_3; H_2SO_4

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	Groundwater	Methane (SW3810)	App. IX Total Metals	App. IX Dissolved Metals (Field Filtered)	Nitrate (353.2)	Nitrate/Sulfate (300.0)/(325.4)	REMARKS
		NUMBER CONTAINERS SUBMITTED		3	1	1	1	1	
1/12/02	0855	UGW09	X	X	X	X	X	X	
1/12/02	1010	UGW10	X	X	X	X	X	X	
1/12/02	1125	UGW11	X	X	X	X	X	X	
1/13/02	0853	7MW08	X	X	X	X	X	X	

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS Jon C. Edel	1/14/02	1430						
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY USE BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SL LOG NO.	LABORATORY REMARKS
J. Swafford	1/15/02	9:09	YES NO		5240262	

Serial Number 045112

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

Master Waybill # 8078 5375 6287

STL Savannah

STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

Alternate Laboratory Name/Location

Phone:
Fax:

(21)

PROJECT REFERENCE: TWFF- NSRR	PROJECT NO.: 26002-034	PROJECT LOCATION (STATE): PR
STL (LAB) PROJECT MANAGER: Melanie Jakubsen	P.O. NUMBER:	CONTRACT NO.:
CLIENT (SITE) PM: Joe Etheridge	CLIENT PHONE:	CLIENT FAX:
CLIENT NAME: Baker Environmental	CLIENT E-MAIL:	
CLIENT ADDRESS: AOP 3, [redacted] 420 Rouser Rd, Coraopolis, PA 15108		
COMPANY CONTRACTING THIS WORK (if applicable)		

PAGE 1 OF 1

STANDARD REPORT DELIVERY ( )

DATE DUE

EXPEDITED REPORT DELIVERY (SURCHARGE) ( )

DATE DUE

NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 2

PRESERVATIVE

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	App. IX VOCs (8260)	Nitrate (353.2)	Nitrate/Sulfate (300.0)/(375.4)	Methane (SW3810)	App. IX Total Metals	App. IX Dissolved Metals (Field Filtered)					REMARKS
								HCl	H_2SO_4	—	HNO_3	HNO_3						
								3	1	1	3	1	1					
1/15/02	1330	7TB05		X				X										
1/14/02	1415	2000FB01		X				X										
1/15/02	1210	2000FB02		X				X				X						
1/14/02	1405	2000FB03		X				X										
1/15/02	1010	470MW01		X				X	X	X	X	X	X					
1/15/02	0825	470MW03		X				X	X	X	X	X	X					

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS Jon C. Edell Jr.	1/15/02	1400						
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
F Swafford	1/16/02	9:06	YES ( ) NO ( )		S240288	

Serial Number 045113

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

IMPS # 8232 7444 4364

STL Savannah

STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

Alternate Laboratory Name/Location

Phone:
Fax:

(22)

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)
TWFF-NSBR	26007-034	PR

STL (LAB) PROJECT MANAGER	P.O. NUMBER	CONTRACT NO.
Melanie Jakubsen		

CLIENT (SITE) PM	CLIENT PHONE	CLIENT FAX
Joe Etheridge		

CLIENT NAME	CLIENT E-MAIL
Baker Environmental	

CLIENT ADDRESS: AOP 3, 420 Rouser Rd. Coraopolis, PA 15108

COMPANY CONTRACTING THIS WORK (if applicable):

PAGE 1 OF 1

STANDARD REPORT DELIVERY ( )

DATE DUE _____

EXPEDITED REPORT DELIVERY (SURCHARGE) ( )

DATE DUE _____

NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 2

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	App. IX SVOCs (8270)										REMARKS
								1	PRESERVATIVE									
								2	NUMBER OF CONTAINERS SUBMITTED									
1/15/02	1210	2000FB02		X				X										
1/15/02	1010	470MW01		X				X										
1/15/02	0825	470MW03		X				X										

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS Jim C. Edell Jr.	1/15/02	1400						
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
F Swafford	1/16/02	9:06	YES ✓ NO ( )		5240288	

ORIGINAL – RETURN TO LABORATORY WITH SAMPLE(S)

Serial Number 033130

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

~~IMPS~~ MASTER # 8078 5375 6254

STL Savannah

STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

Alternate Laboratory Name/Location

Phone:
Fax:

(23)

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)	PAGE	OF
TWFF-NSRR	26007-034	PR	1	1

STL (LAB) PROJECT MANAGER	P.O. NUMBER	CONTRACT NO.
MELANIE JAKUBSEN		

CLIENT (SITE) PM	CLIENT PHONE	CLIENT FAX
Joe Etheridge	787-485-1093	

CLIENT NAME	CLIENT E-MAIL
Baker Environmental	

CLIENT ADDRESS: ADP 3, 420 Rouser Road, Coraopolis, PA 15108

COMPANY CONTRACTING THIS WORK (if applicable)

STANDARD REPORT DELIVERY ( )
DATE DUE _____

EXPEDITED REPORT DELIVERY (SURCHARGE) ( )
DATE DUE _____

NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 1

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	MATRIX TYPE: COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	App. IX VOCs 8260	App IX SVOCs 8270	App IX METALS 6010	LOW LEVEL PAHs 8270	TOTAL ORGANIC CARBON 9060						REMARKS
								—	—	— PRESERVATIVE	—							
								1	1	1 NUMBER OF CONTAINERS SUBMITTED								
1/12/02	1015	7SB30-00	G					X	X	X								
	1002	7SB30-08									X							
	1050	7SB29-00						X	X	X								
	1413	7SB29-10									X							
	1430	7SB27-00						X	X	X								
	1548	7SB27-11						~~X~~ 6	~~X~~ 6		X							
1/15/02	1115	7SD1	G					~~X~~ 1	~~X~~ 1	X	X	X						
	1130	7SD2	G					X	~~X~~	X	X	X						
	1145	7SD3	G					X	~~X~~	X	X	X						
	1200	7SD4	G					X	~~X~~	X	X	X						
	1200	7SD4D	G					X	~~X~~	X	X	X						

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS Jon C. Ball Jr.	1/15/02	1430						
RECEIVED BY: (SIGNATURE) EMPTY CONTAINERS	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
J Swafford	1/16/02	9:06	YES (✓) NO ( )		5240288	

ORIGINAL – RETURN TO LABORATORY WITH SAMPLE(S)

Serial Number 044500

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

FedEx Airbill # 8078 5375 5821

STL Savannah

(X) STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

( ) Alternate Laboratory Name/Location

Phone:
Fax:

25

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)	PAGE 1 OF 1
NSRR - TWFF	CTO - 034	PR	
STL (LAB) PROJECT MANAGER: Melanie Jakubsen	P.O. NUMBER	CONTRACT NO.	
CLIENT (SITE) PM: Joe Etheridge	CLIENT PHONE	CLIENT FAX	
CLIENT NAME: Baker Env.	CLIENT E-MAIL		
CLIENT ADDRESS: 420 Rouser Rd. Coraopolis, PA 15108			
COMPANY CONTRACTING THIS WORK (if applicable)			

STANDARD REPORT DELIVERY (X)
DATE DUE 28 DAY TAT
EXPEDITED REPORT DELIVERY (SURCHARGE) ( )
DATE DUE _____

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	Low Level App IX SVOCs	Total App IX Metals	Diss App IX Metals								REMARKS
							PRESERVATIVE	—	HNO_3	HNO_3								
1/15/02	1645	7SW4		X				2	1	1								
1/15/02	1645	7SW4MS		X				2	1	1								
1/15/02	1645	7SW4MSD		X				2	1	1								

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS			[signature]	1/15/02	1500			
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
[signature]	1/17/02	1239	YES ( ) NO ( )		S240355	

ORIGINAL – RETURN TO LABORATORY WITH SAMPLE(S)

Serial Number 044303

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

MPS # 8232 7444 4412

STL Savannah

(X) STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

( ) Alternate Laboratory Name/Location

Phone:
Fax:

(26)

PROJECT REFERENCE: NSRR - TWFF	PROJECT NO.: CTO - 034	PROJECT LOCATION (STATE): PR
STL (LAB) PROJECT MANAGER: MELANIE JAKUBSEN	P.O. NUMBER:	CONTRACT NO.:
CLIENT (SITE) PM: JOE ETHERIDGE	CLIENT PHONE:	CLIENT FAX:
CLIENT NAME: BAKER ENV.	CLIENT E-MAIL:	
CLIENT ADDRESS: 420 ROUSER RD CORAOPOLIS, PA 15108		
COMPANY CONTRACTING THIS WORK (if applicable):		

PAGE 1 OF 1

STANDARD REPORT DELIVERY (X)

DATE DUE 28 DAY TAT

EXPEDITED REPORT DELIVERY (SURCHARGE) ( )

DATE DUE _____

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

REQUIRED ANALYSIS / MATRIX TYPE / NUMBER OF CONTAINERS SUBMITTED

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	LOW LEVEL APP IX SVOCs	TOTAL APP IX METALS	DISS. APP IX METALS								REMARKS
								—	HNO_3	HNO_3								
1/15/02	1600	FSW1		X				2	1	1								
1/15/02	1615	FSW2		X				2	1	1								
1/15/02	1630	FSW3		X				2	1	1								

PRESERVATIVE

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS			Mark E. Kim	1/15/02	1500			
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
[illegible]	1/17/02	1239	YES ( ) NO ( )		3240355	

ORIGINAL – RETURN TO LABORATORY WITH SAMPLE(S)

Serial Number 044000

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

MPS # 8232 7444 4423

STL Savannah

(X) STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

( ) Alternate Laboratory Name/Location
Phone:
Fax:

27

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)	PAGE	OF
NSRR-TWFF	CTO - 034	PR	1	1

STL (LAB) PROJECT MANAGER	P.O. NUMBER	CONTRACT NO.
MELANIE JAKUBSEN		

CLIENT (SITE) PM	CLIENT PHONE	CLIENT FAX
JOE ETHERIDGE		

CLIENT NAME	CLIENT E-MAIL
BAKER ENV.	

CLIENT ADDRESS: 420 ROUSER RD. CORAOPOLIS, PA 15108

COMPANY CONTRACTING THIS WORK (if applicable):

STANDARD REPORT DELIVERY (X)
DATE DUE 28 DAY TAT

EXPEDITED REPORT DELIVERY (SURCHARGE) ( )
DATE DUE _____

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	MATRIX TYPE: AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	LOW LEVEL APP IX SVOCs	TOTAL APP IX METALS	DISS APP IX METALS	APP IX VOCs	TOC						REMARKS
								—	HNO_3	HNO_3	HCl							
								NUMBER OF CONTAINERS SUBMITTED										
1/15/02	1645	7SW14D		X				2	1	1	3							
1/15/02	1625	7ER04		X				2	1		3	1						
1/15/02	1635	7SD5			X													
1/15/02	1640	7SD6			X													
1/15/02	1600	7SW1		X							3							
1/15/02	1615	7SW2		X							3							
1/15/02	1630	7SW3		X							3							
1/15/02	1645	7SW4		X							3							
1/15/02	1645	7SW4MS		X							3							
1/15/02	1645	7SW4MSD		X							3							
1/16/02	0930	7TB06		X							3							

PRESERVATIVE

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS			Mark E. [illegible]	1/15/02	1500			

RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
[illegible]	1/17/02	1239	YES ( ) NO ( )		5240358	

ORIGINAL – RETURN TO LABORATORY WITH SAMPLE(S)

Serial Number 044551

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

FED EX # 8078 5375 6265

STL Savannah

(X) **STL Savannah**
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

( ) Alternate Laboratory Name/Location

Phone:
Fax:

(28)

PROJECT REFERENCE: NSRR-TWFF	PROJECT NO.: CTO-034	PROJECT LOCATION (STATE): PR
STL (LAB) PROJECT MANAGER: MELANIE JAKUBSEN	P.O. NUMBER:	CONTRACT NO.:
CLIENT (SITE) PM: JOE ETHERIDGE	CLIENT PHONE:	CLIENT FAX:
CLIENT NAME: BAKER ENV.	CLIENT E-MAIL:	
CLIENT ADDRESS: 420 RAISER RD. CORAOPOLIS, PA 15108		
COMPANY CONTRACTING THIS WORK (if applicable)		

PAGE 1 OF 1

STANDARD REPORT DELIVERY (X)
DATE DUE 28 DAY TAT

EXPEDITED REPORT DELIVERY (SURCHARGE) ( )
DATE DUE _____

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

PRESERVATIVE

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	APP IX VOCs	LOW LEVEL APP IX SVOCs	APP IX METALS	TOC	Total Metal APP IX						REMARKS
1/16/02	1040	7SD9			X			1	1	1	1							
	1015	7SD11			X			1	1	1	1							
	1015	~~7SDD~~ check 7SD11D			X			1	1	1	1							
	1015	7SD11 MS/MSD			X			1	1	1	1							
	1030	7SD12			X			1	1	1	1							
1/16/02	1300	7TB07		X	~~X~~			3										
1/15/02	1525	7MW16-00			X			1	1			1						
1/15/02	1552	7MW16-06			X				1									

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS			[signature]	1500				
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
[signature]	1/17/02	1239	YES ( ) NO ( )		S240355	

ORIGINAL – RETURN TO LABORATORY WITH SAMPLE(S)

Serial Number 045114

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

Master Air Waybill # 8078 5375 6357

STL Savannah

STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

Alternate Laboratory Name/Location

Phone:
Fax:

(29)

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)
TWFF- NSRR	26007-034	PR

STL (LAB) PROJECT MANAGER	P.O. NUMBER	CONTRACT NO.
Melanie Jakubsen		

CLIENT (SITE) PM	CLIENT PHONE	CLIENT FAX
Joe Etheridge	787-485-1097	

CLIENT NAME	CLIENT E-MAIL
Baker Environmental	

CLIENT ADDRESS: AOP 3, 420 Rouser Road Coraopolis, PA 15108

COMPANY CONTRACTING THIS WORK (if applicable)

PAGE 1 OF 1

STANDARD REPORT DELIVERY ◯
DATE DUE _____

EXPEDITED REPORT DELIVERY (SURCHARGE) ◯
DATE DUE _____

NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 3

MATRIX TYPE — COMPOSITE (C) OR GRAB (G) INDICATE

REQUIRED ANALYSIS / PRESERVATIVE

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	APP. IX VOCs (8260)	Nitrate (353.2)	Nitrate/Sulfate (300.0)/(375.4)	Methane SW3810	APP. IX Total Metals	APP. IX Dissolved Metals (Field Filtered)	Groundwater Density				REMARKS
							HCl	H_2SO_4	—	—	HNO_3	HNO_3					
							3	1	1	3	1	1					
1/16/02	1040	UGW31	X				X	X	X	X	X	X	X				
1/16/02	1310	UGW32	X				X	X	X	X	X	X					
1/16/02	0905	UGW34	X				X	X	X	X	X	X					
1/16/02	1400	7TB08	X				X										
1/16/02	1020	7ER01	X				X				X						

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS			Jon C. Edel Jr.	1/16/02	1430			

RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
[signature]	1/17/02	1239	YES ◯ NO ◯		5240355	

ORIGINAL – RETURN TO LABORATORY WITH SAMPLE(S)

Serial Number: 340117

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

IMPS # 8232 7444 4467

STL Savannah

STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

Alternate Laboratory Name/Location

Phone:
Fax:

30

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)
JWFF- NSRR	26007-034	PR
STL (LAB) PROJECT MANAGER: Melanie Jakubsen	P.O. NUMBER	CONTRACT NO.
CLIENT (SITE) PM: Joe Etheridge	CLIENT PHONE	CLIENT FAX
CLIENT NAME: Baker Environmental	CLIENT E-MAIL	
CLIENT ADDRESS: AOP 3, 420 Rouser Road, Coraopolis, PA 15108		
COMPANY CONTRACTING THIS WORK (if applicable)		

PAGE 1 OF 1

STANDARD REPORT DELIVERY ◯
DATE DUE _____

EXPEDITED REPORT DELIVERY (SURCHARGE) ◯
DATE DUE _____

NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 3

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	REQUIRED ANALYSIS: APP. IX SVOCs (8270)									REMARKS
								PRESERVATIVE: 1									
								NUMBER OF CONTAINERS SUBMITTED: 2									
1/16/02	1040	UGW31		X				X									
1/16/02	1310	UGW32		X				X									
1/16/02	0905	UGW34		X				X									

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS			Jon C. Edell Jr.	1/16/02	1430			
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
	1/17/02	1255	YES ◯ NO ◯		5240355	

ORIGINAL – RETURN TO LABORATORY WITH SAMPLE(S)

Serial Number 340115

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

IMPS # 8232 7444 4478

STL Savannah

STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

Alternate Laboratory Name/Location: See Sample Matrix

Phone:
Fax:

31

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)
TWFF - NSRR	26007-034	PR

STL (LAB) PROJECT MANAGER	P.O. NUMBER	CONTRACT NO.
Melanie Jakubsen		

CLIENT (SITE) PM	CLIENT PHONE	CLIENT FAX
Joe Etheridge	787-485-1097	

CLIENT NAME	CLIENT E-MAIL
Baker Environmental	

CLIENT ADDRESS: AOP 3, 420 Reuser Rd, Coraopolis PA, 15108

COMPANY CONTRACTING THIS WORK (if applicable):

PAGE 1 OF 1

STANDARD REPORT DELIVERY ○

DATE DUE _____

EXPEDITED REPORT DELIVERY (SURCHARGE) ○

DATE DUE _____

NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 3

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	REQUIRED ANALYSIS: App. IX SVOCs (8270)	App. IX SVOCs (8270)								REMARKS
								PRESERVATIVE									
								1	1								
								NUMBER OF CONTAINERS SUBMITTED									
1/16/02	1020	7ER01		X				X									
1/16/02	1030	7ER02		X					X								

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS			Jon C. Edel Jr.	1/16/02	1430			

RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
[signature]	1/17/02	1239	YES ○ NO ○		S240355	

ORIGINAL – RETURN TO LABORATORY WITH SAMPLE(S)

Serial Number 040110

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

Master Air Waybill # 8078 5375 6335

STL Savannah

(X) STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

32

( ) Alternate Laboratory Name/Location

Phone:
Fax:

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)	PAGE
TWFF-NSRR	26007-034	PR	1 OF 1

STL (LAB) PROJECT MANAGER	P.O. NUMBER	CONTRACT NO.
Melanie Jakubsen		

CLIENT (SITE) PM	CLIENT PHONE	CLIENT FAX
Joe Etheridge	787-485-1097	

CLIENT NAME	CLIENT E-MAIL
Baker Environmental	

CLIENT ADDRESS: AOP 3, 420 Rouser Rd., Coraopolis, PA 15108

COMPANY CONTRACTING THIS WORK (if applicable):

STANDARD REPORT DELIVERY (X)
DATE DUE 28 DAY TAT

EXPEDITED REPORT DELIVERY (SURCHARGE) ( )
DATE DUE

NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 3

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	REQUIRED ANALYSIS: App. IX VOCs (8260)	App IX SVOCs (8270)	App IX Total Metals	TOC 9060							REMARKS
								PRESERVATIVE										
								NUMBER OF CONTAINERS SUBMITTED										
1/16/02	1725	7SW5		X				3		1								
1/17/02	0700	7SW6		X				3		1								
1/16/02	1700	7SW7		X				3		1								
1/16/02	1745	7SW8		X				3		1								
1/16/02	1600	7SW9		X				3		1								
1/17/02	1000	7TB09		X				3										
1/16/02	1735	7SD7			X			1	1	1	1							
1/16/02	1745	7SD8			X			1	1	1	1							
1/16/02	1800	7SD13			X			1	1									
1/16/02	1815	7SD14			X			1	1									

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS			[signature]	1/17/02	2000			

RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
[signature]	1/18/02	857	YES ( ) NO ( )		S240391	

ORIGINAL – RETURN TO LABORATORY WITH SAMPLE(S)

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

IMAS # 8232 7444 4515

STL Savannah

STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

33

Alternate Laboratory Name/Location

Phone:
Fax:

PROJECT REFERENCE: TWFF-NSRR	PROJECT NO.: 26007-034	PROJECT LOCATION (STATE): PR	PAGE 1 OF 1
STL (LAB) PROJECT MANAGER: Melanie Jakubsen	P.O. NUMBER	CONTRACT NO.	STANDARD REPORT DELIVERY ☒
CLIENT (SITE) PM: Joe Etheridge	CLIENT PHONE: 787-485-1097	CLIENT FAX	DATE DUE 28 DAY TAT
CLIENT NAME: Baker Environmental	CLIENT E-MAIL		EXPEDITED REPORT DELIVERY (SURCHARGE) ○
CLIENT ADDRESS: AOP3 420 Rouser Road, Coraopolis, PA 15108			DATE DUE
COMPANY CONTRACTING THIS WORK (if applicable)			NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 3

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	App IX SVOCs (8270)	App IX Total metals	TOC 9060	REMARKS
			MATRIX TYPE					REQUIRED ANALYSIS			
			PRESERVATIVE								
1/16/02	1725	75W5		X				2			
1/17/02	0700	75W6		X				2			
1/16/02	1700	75W7		X				2			
1/16/02	1800	75D13			X				1	1	

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS			Mark E. K.	1/17/02	2000			
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
[illegible]	1/18/02	854	YES ○ NO ○		5240391	

ORIGINAL – RETURN TO LABORATORY WITH SAMPLE(S)

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

IMPS # 6232 7444 4526

STL Savannah

STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

34

Alternate Laboratory Name/Location

Phone:
Fax:

PROJECT REFERENCE: TWFF-NSRR	PROJECT NO.: 26007-034	PROJECT LOCATION (STATE): PR
STL (LAB) PROJECT MANAGER: Melanie Jakubsen	P.O. NUMBER:	CONTRACT NO.:
CLIENT (SITE) PM: Joe Etheridge	CLIENT PHONE: 787-485-1097	CLIENT FAX:
CLIENT NAME: Baker Environmental	CLIENT E-MAIL:	
CLIENT ADDRESS: AOP3, 420 Rouser Rd, Coraopolis, PA 15108		
COMPANY CONTRACTING THIS WORK (if applicable):		

PAGE 1 OF 1

STANDARD REPORT DELIVERY ☒
DATE DUE 28 DAY TAT

EXPEDITED REPORT DELIVERY (SURCHARGE) ○
DATE DUE

NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 3

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	App IX SVOC's (8270)	App IX Dissolved Metals	App IX Total Metals	TOC 9060								REMARKS
									H_2NO_3	PRESERVATIVE									
								NUMBER OF CONTAINERS SUBMITTED											
1/16/02	1646	7SW8		X				2	1										
1/16/02	1600	7SW9		X				2	1										
1/16/02	1725	7SW5		X					1										
1/17/02	0700	7SW6		X					1										
1/16/02	1700	7SW7		X					1										
1/16/02	1815	7SW14			X					1	1								

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS			[signature]	1/17/02	2000			
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
[signature]	1/18/02	854	YES ○ NO ○		S24091	

ORIGINAL – RETURN T[illegible] ABORATORY WITH SAMPLE(S)

Serial Number: 040120

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

Master Airbill # 8078-5375-6368

STL Savannah

STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

35

Alternate Laboratory Name/Location

Phone:
Fax:

PROJECT REFERENCE: TWFF-NSRR	PROJECT NO.: 26007-034	PROJECT LOCATION (STATE): PR
STL (LAB) PROJECT MANAGER: Melanie Jakubsen	P.O. NUMBER:	CONTRACT NO.:
CLIENT (SITE) PM: Joe Etheridge	CLIENT PHONE: 787-485-1097	CLIENT FAX:
CLIENT NAME: Baker Environmental	CLIENT E-MAIL:	
CLIENT ADDRESS: AOP 3, 420 Rouser Rd., Coraopolis, PA 15108		
COMPANY CONTRACTING THIS WORK (if applicable):		

PAGE 1 OF 1

STANDARD REPORT DELIVERY ◯
DATE DUE _____

EXPEDITED REPORT DELIVERY (SURCHARGE) ◯
DATE DUE _____

NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 1

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	App IX VOC 8260	App IX VOC 8260	App IX SVOC 8270	App IX Total Metals							
PRESERVATIVE								HCL	none	none	none							
1/17/02	1130	7TB10		X				3										
1/16/02	1445	7MW17-00			X			~~3~~	1	1	1							
1/16/02	1445	7MW17-00 D			X				1	1	1							
1/16/02	1445	7MW17-00 MS			X				1	1	1							
1/16/02	1445	7MW17-00 MSD			X				1	1	1							

NUMBER OF CONTAINERS SUBMITTED

REMARKS

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS			[signature]	1/17/02	1800			
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
[signature]	1/18/02	854	YES ◯ NO ◯		S240391	

ORIGINAL – RETURN TO LABORATORY WITH SAMPLE(S)

Serial Number 040100

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

FED Ex: # 8078 5375 6380

STL Savannah

STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

36

Alternate Laboratory Name/Location

Phone:
Fax:

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)	PAGE	OF
TWFF-NSRR	26027-034	PR	1	1

STL (LAB) PROJECT MANAGER	P.O. NUMBER	CONTRACT NO.
Melanie Jakubsen		

CLIENT (SITE) PM	CLIENT PHONE	CLIENT FAX
Joe Etheridge	787-485-1097	

CLIENT NAME	CLIENT E-MAIL
Baker Environmental	

CLIENT ADDRESS: AOP 3, 420 Rouser Rd., Coraopolis, PA 15108

COMPANY CONTRACTING THIS WORK (if applicable):

STANDARD REPORT DELIVERY ⊗
DATE DUE 28 DAY TAT

EXPEDITED REPORT DELIVERY (SURCHARGE) ◯
DATE DUE _____

NUMBER OF COOLERS SUBMITTED PER SHIPMENT: ~~24~~ 25

PRESERVATIVE

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)		App IX VOCs Low Level	App IX SVOCs	App IX Pest/PCB	App IX Chlor. Herb.	App IX Tot. Metals	App IX Diss. Metals	Cyanide	Dioxins/Furans			REMARKS
1/17/02	1100	BGOWSW01		X					2	2	2	1	1	1	2				

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS			[signature]	1/17/02	2000			

RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
[signature]	1/18/02	854	YES ◯ NO ◯		S240391	

ORIGINAL – RETURN TO LABORATORY WITH SAMPLE(S)

Serial Number: 040111

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

MPS # 8232 7444 4560

STL Savannah

STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

37

Alternate Laboratory Name/Location

Phone:
Fax:

PROJECT REFERENCE: TWFF-NSRR	PROJECT NO.: 26007-034	PROJECT LOCATION (STATE): PR	PAGE 1 OF 1
STL (LAB) PROJECT MANAGER: Melanie Jakubser	P.O. NUMBER	CONTRACT NO.	STANDARD REPORT DELIVERY ⊗
CLIENT (SITE) PM: Joe Etheridge	CLIENT PHONE: 787-485-1097	CLIENT FAX	DATE DUE: 28 DAY TAT
CLIENT NAME: Baker Environmental	CLIENT E-MAIL		EXPEDITED REPORT DELIVERY (SURCHARGE) ○
CLIENT ADDRESS: AOP3, 420 Rouser Rd., Coraopolis, PA 15108			DATE DUE:
COMPANY CONTRACTING THIS WORK (if applicable)			NUMBER OF COOLERS SUBMITTED PER SHIPMENT: ~~24~~ 25

MATRIX TYPE: COMPOSITE (C) OR GRAB (G) INDICATE; AQUEOUS (WATER); SOLID OR SEMISOLID; AIR; NONAQUEOUS LIQUID (OIL, SOLVENT, ...)

REQUIRED ANALYSIS / PRESERVATIVE

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	App IX Low Level SVOCs	App IX Chlor. Herbs	App IX Pest/PCB	App IX Total Metals	Cyanide	Dioxins/Furans	TOC				REMARKS
1/17/02	1100	BGOWSD01			X			1	1	1	1	1	1	1				
1/17/02	1100	BGOWSW01		X				2										

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS			[signature]	1/17/02	2000			
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
[signature]	1/18/02	854	YES ○ NO ○		S240391	

ORIGINAL – RETURN TO LABORATORY WITH SAMPLE(S)

Serial Number 040110

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

MPS # 0232 7444 4570

STL Savannah

STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

38

Alternate Laboratory Name/Location

Phone:
Fax:

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)	PAGE	OF
TWFF-NBRR	26007-034	PR	1	1

STL (LAB) PROJECT MANAGER	P.O. NUMBER	CONTRACT NO.
Melanie Jakubsen		

CLIENT (SITE) PM	CLIENT PHONE	CLIENT FAX
Joe Etheridge	787-485-1097	

CLIENT NAME	CLIENT E-MAIL
Baker Environmental	

CLIENT ADDRESS: ADP 3, 420 Rouser Rd., Coraopolis, PA 15108

COMPANY CONTRACTING THIS WORK (if applicable)

STANDARD REPORT DELIVERY ⊗
DATE DUE 28 DAY TAT

EXPEDITED REPORT DELIVERY (SURCHARGE) ◯
DATE DUE

NUMBER OF COOLERS SUBMITTED PER SHIPMENT: ~~24~~ 25

PRESERVATIVE

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	LOW LEVEL APP IX SVOCs	APP IX PEST/PCB	APP IX CHLOR HERB	APP IX TOTAL METALS	APP IX DISS. METALS	CYANIDE	DIOXINS/FURANS				REMARKS
1/17/02	1155	BGOWSW02		X				2	2	2	1	1	1	2				

NUMBER OF CONTAINERS SUBMITTED

QACK

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS			[signature]	1/17/02	2000			

RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
[signature]	1/18/02	854	YES ◯ NO ◯		S240391	

ORIGINAL – RETURN TO LABORATORY WITH SAMPLE(S)

Serial Number 040401

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

MPS # 8232 7444 4581

STL Savannah

STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

39

Alternate Laboratory Name/Location

Phone:
Fax:

PROJECT REFERENCE: TWFF - NSRR	PROJECT NO.: 26007-034	PROJECT LOCATION (STATE): PR
STL (LAB) PROJECT MANAGER: Melanie Jakubsen	P.O. NUMBER:	CONTRACT NO.:
CLIENT (SITE) PM: Joe Etheridge	CLIENT PHONE: 787-485-1097	CLIENT FAX:
CLIENT NAME: Baker Environmental	CLIENT E-MAIL:	
CLIENT ADDRESS: ADP3, 420 Rouser Rd., Coraopolis, PA 15108		
COMPANY CONTRACTING THIS WORK (if applicable):		

PAGE 1 OF 1

STANDARD REPORT DELIVERY ☒
DATE DUE 28 DAY TAT

EXPEDITED REPORT DELIVERY (SURCHARGE) ○
DATE DUE _____

NUMBER OF COOLERS SUBMITTED PER SHIPMENT: ~~24~~ 25

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	APP IX LOW LEVEL SVOCS	APP IX PEST/PCB	APP IX CHLOR. HERB.	APP IX TOTAL METALS	CYANIDE	DIOXINS/FURAN	TOC				REMARKS
								PRESERVATIVE										
								NUMBER OF CONTAINERS SUBMITTED										
1/17/02	1155	BGOWSD02			X			1	1	1	1	1	1	1				
1/17/02	1155	BGOWSW02		X				2										

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS			[signature]	1/17/02	2000			
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
[signature]	1/18/02	854	YES ○ NO ○		S24039	

ORIGINAL – RETURN TO LABORATORY WITH SAMPLE(S)

Serial Number 045104

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

MPS # 8232 7444 4592

STL Savannah

⊗ STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

40

○ Alternate Laboratory Name/Location

Phone:
Fax:

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)	PAGE 1 OF 1
TWPFNSRR	26007-034	PR	
STL (LAB) PROJECT MANAGER: Melanie Jakubsen	P.O. NUMBER	CONTRACT NO.	
CLIENT (SITE) PM: Joe Etheridge	CLIENT PHONE: 787-485-1097	CLIENT FAX	
CLIENT NAME: Baker Environmental	CLIENT E-MAIL		
CLIENT ADDRESS: AOP3, 420 Rouser Rd, Coraopolis, PA 15108			
COMPANY CONTRACTING THIS WORK (if applicable)			

STANDARD REPORT DELIVERY ⊗
DATE DUE 28 DAY TAT

EXPEDITED REPORT DELIVERY (SURCHARGE) ○
DATE DUE

NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 25

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	LOW LEVEL APP IX SVOC	APP IX PEST/PCB	APP IX CHLOR. HERB	APP IX TOTAL METALS	CYANIDE	DIOXINS/FURANS		APP IX DISS. METALS	CYANIDE	DIOXINS/FURANS	REMARKS
								PRESERVATIVE										
1/17/02	1250	BGOWSW03		X				2	2	2	1	1	1	2	1	1	2	
		~~BGOWSW03D~~		X				2	2	2	1	1	1	2				
		~~BGOWSW03MS~~		X				2	2	2	1	1	1	2				
		~~BGOWSW03MSD~~		X				2	2	2	1	1	1	2				

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS			[signature]	1/17/02	2000			
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
[signature]	1/18/02	854	YES ○ NO ○		5240391	

ORIGINAL – RETURN TO LABORATORY WITH SAMPLE(S)

Serial Number: 040194

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

MPS # 8232 7444 4607

STL Savannah

(X) STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

41

( ) Alternate Laboratory Name/Location

Phone:
Fax:

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)	PAGE	OF
TWFF-NSRR	26007-034	PR	1	1

STL (LAB) PROJECT MANAGER	P.O. NUMBER	CONTRACT NO.
Melanie Jakubsen		

CLIENT (SITE) PM	CLIENT PHONE	CLIENT FAX
Joe Etheridge	787-485-1097	

CLIENT NAME	CLIENT E-MAIL
Baker Environmental	

CLIENT ADDRESS: AOP3, 420 Rouser Rd, Coraopolis, PA 15108

COMPANY CONTRACTING THIS WORK (if applicable):

STANDARD REPORT DELIVERY (X)
DATE DUE 28 DAY TAT

EXPEDITED REPORT DELIVERY (SURCHARGE) ( )
DATE DUE

NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 25

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	APP IX LOW LEVEL SVOC	APP IX PEST/PCB	APP IX CHLOR. HERB.	APP IX TOTAL METALS	CYANIDE	DIOXINS/FURANS	TOC				REMARKS
								PRESERVATIVE										
1/17/02	1250	BG OW SD Ø3			X			1	1	1	1	1	1	1				
1/17/02	1250	BG OW SW Ø3		X				2										

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS			[signature]	1/17/02	2000			

RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
[signature]	1/18/02	854	YES ( ) NO ( )		S240391	

ORIGINAL – RETURN TO LABORATORY WITH SAMPLE(S)

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

MPS # 8232 7444 4765

STL Savannah

(X) STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

42

( ) Alternate Laboratory Name/Location

Phone:
Fax:

PROJECT REFERENCE: TWFF-NSRR	PROJECT NO.: 26007-034	PROJECT LOCATION (STATE): PR	PAGE 1 OF 1
STL (LAB) PROJECT MANAGER: Melanie Jakubsen	P.O. NUMBER	CONTRACT NO.	STANDARD REPORT DELIVERY (X)
CLIENT (SITE) PM: Joe Etheridge	CLIENT PHONE: 787-485-1097	CLIENT FAX	DATE DUE: 28 DAY TAT
CLIENT NAME: Baker Environmental	CLIENT E-MAIL		EXPEDITED REPORT DELIVERY (SURCHARGE) ( )
CLIENT ADDRESS: AOP3, 420 Rouser Rd., Coraopolis, PA 15108			DATE DUE:
COMPANY CONTRACTING THIS WORK (if applicable)			NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 25

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	Low Level	App IX SVOCs	App IX Pest/PCB	App IX Chlor. Herb.	App IX Total Metals	App IX Diss. Metals	Cyanide	Dioxins/Furans				REMARKS
								PRESERVATIVE											
1/17/02	1250	BGOWSW03D		X				2	2	2	1	1	1	2					
								ONE											

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS			[signature]	1/17/02	2000			
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
[signature]	1/19/02	854	YES ( ) NO ( )		3240391	

ORIGINAL – RETURN TO LABORATORY WITH SAMPLE(S)

Serial Number 040102

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

MPS # 8232 7444 4776

STL Savannah

STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

43

Alternate Laboratory Name/Location

Phone:
Fax:

PROJECT REFERENCE: TWFF-NSRR	PROJECT NO.: 26007-034	PROJECT LOCATION (STATE): PR	PAGE 1 OF 1
STL (LAB) PROJECT MANAGER: Melanie Jakubsen	P.O. NUMBER	CONTRACT NO.	STANDARD REPORT DELIVERY ⊗
CLIENT (SITE) PM: Joe Etheridge	CLIENT PHONE: 787-785-1097	CLIENT FAX	DATE DUE 28 DAY TAT
CLIENT NAME: Baker Environmental	CLIENT E-MAIL		EXPEDITED REPORT DELIVERY (SURCHARGE) ○
CLIENT ADDRESS: 420 Rouser Rd., AOP 3, Coraopolis, PA 15108			DATE DUE 25
COMPANY CONTRACTING THIS WORK (if applicable)			NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	APP IX LOW LEVEL SVOCs	APP IX PEST/PCBs	APP IX CHLOR. HERB.	APP IX TOTAL METALS	CYANIDE	DIOXINS/FURANS	TOC				REMARKS
								PRESERVATIVE										
1/17/02	1250	BGOWSD03D			X			1	1	1	1	1	1	1				
1/17/02	1250	BGOWSW03D		X				2										

NUMBER OF CONTAINERS SUBMITTED

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS			Mark E. K	1/17/02	2000			
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
EC	1/18/02	854	YES ○ NO ○		S240391	

ORIGINAL – RETURN TO LABORATORY WITH SAMPLE(S)

Serial Number 045450

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

MPS # 8232 7444 4787

STL Savannah

(X) STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

(44)

( ) Alternate Laboratory Name/Location

Phone:
Fax:

PROJECT REFERENCE: TWFF-NSRR	PROJECT NO.: 26007-034	PROJECT LOCATION (STATE): PR	PAGE 1 OF 1
STL (LAB) PROJECT MANAGER: Melanie Jakubosen	P.O. NUMBER:	CONTRACT NO.:	STANDARD REPORT DELIVERY (X)
CLIENT (SITE) PM: Dr Etheridge	CLIENT PHONE: 787-485-1097	CLIENT FAX:	DATE DUE: 28 DAY TAT
CLIENT NAME: Baker Environmental	CLIENT E-MAIL:		EXPEDITED REPORT DELIVERY (SURCHARGE) ( )
CLIENT ADDRESS: 420 Rouser Rd., AOP3, Coraopolis, PA 15108			DATE DUE:
COMPANY CONTRACTING THIS WORK (if applicable):			NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 25

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	APP IX PEST/PCBs	APP IX CHLOR. HERB.	APP IX TOTAL METALS	APP IX DISS. METALS	CYANIDE	DIOXINS/FURANS					REMARKS
								PRESERVATIVE										
								HNO3				NaOH						
								NUMBER OF CONTAINERS SUBMITTED										
1/17/02	1250	BGOWSW03MS		X				2	2	1	1	1	2					

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS			Mark L. K	1/17/02	2000			
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
[illegible]	1/18/02	857	YES ( ) NO ( )		5240391	

ORIGINAL – RETURN TO LABORATORY WITH SAMPLE(S)

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

MPS # 8232 7444 4798

STL Savannah

STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

45

Alternate Laboratory Name/Location

Phone:
Fax:

PROJECT REFERENCE: FWFF-NSRR	PROJECT NO.: 26057-034	PROJECT LOCATION (STATE): PR	PAGE 1 OF 1
STL (LAB) PROJECT MANAGER: Melonie Jakubsen	P.O. NUMBER	CONTRACT NO.	STANDARD REPORT DELIVERY ☒
CLIENT (SITE) PM: Joe Etheridge	CLIENT PHONE: 787-485-1097	CLIENT FAX	DATE DUE: 28 CAL DAT
CLIENT NAME: Baker Environmental	CLIENT E-MAIL		EXPEDITED REPORT DELIVERY (SURCHARGE) ○
CLIENT ADDRESS: AOP3, 420 Rouser Rd, Coraopolis, PA 15108			DATE DUE:
COMPANY CONTRACTING THIS WORK (if applicable)			NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 25

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	APP IX LOW LEVEL SVOCs	APP IX PEST/PCBs	APP IX CHLOR. HERB.	APP IX TOTAL METALS	CYANIDE	DIOXINS/FURANS	TOC				REMARKS
							PRESERVATIVE											
1/17/02	1250	BGCWSD03 MS/MSD			X			1	1	1	1	1	1	1				
~~1/17/02~~	~~1250~~	~~BGCWSW03 MS~~		X				2		MEK								

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS			[signature]	1/17/02	2000			
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
[signature]	1/19/02	854	YES ○ NO ○		S2403 91	

ORIGINAL – RETURN TO LABORATORY WITH SAMPLE(S)

Serial number 040100

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

MPS # 8232 7444 4802

STL Savannah

☒ STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

46

○ Alternate Laboratory Name/Location

Phone:
Fax:

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)	PAGE	OF
TWFF - NSRR	26007-034	PR	1	1

STL (LAB) PROJECT MANAGER	P.O. NUMBER	CONTRACT NO.
Melanie Jakubsen		

CLIENT (SITE) PM	CLIENT PHONE	CLIENT FAX
Joe Etheridge	787-485-1097	

CLIENT NAME	CLIENT E-MAIL
Baker Environmental	

CLIENT ADDRESS: ADP3, 420 Rouser Rd., Coraopolis, PA 15108

COMPANY CONTRACTING THIS WORK (if applicable):

STANDARD REPORT DELIVERY ☒
DATE DUE 28 DAY TAT

EXPEDITED REPORT DELIVERY (SURCHARGE) ○
DATE DUE _____

NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 25

PRESERVATIVE

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	APP IX LOW LEVEL SVOCS	APP IX PEST/PCB	APP IX CHLOR HERB	APP IX TOTAL METALS	APP IX DISS. METALS	CYANIDE	DIOXINS/FURANS				REMARKS
		BG0WSW03MSD		X				2	2	1	1	1	1	2				

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS			Mark E. K	1/17/02	2000			

RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
KZ	1/18/02	354	YES ○ NO ○		S240391	

ORIGINAL – RETURN T ORATORY WITH SAMPLE(S)

Serial Number 040101

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

MPS # 8232 7444 4813

STL Savannah

STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

47

Alternate Laboratory Name/Location
Phone:
Fax:

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)	PAGE 1 OF 1
TWFF-NSRR	26007-034	PR	
STL (LAB) PROJECT MANAGER: Melanie Jakubsen	P.O. NUMBER	CONTRACT NO.	
CLIENT (SITE) PM: Joe Etheridge	CLIENT PHONE: 787-485-1097	CLIENT FAX	
CLIENT NAME: Baker Environmental	CLIENT E-MAIL		
CLIENT ADDRESS: AOP 3, 420 Rouser Rd, Coraopolis, PA 15108			
COMPANY CONTRACTING THIS WORK (if applicable)			

STANDARD REPORT DELIVERY ⊗
DATE DUE 28 DAY TAT
EXPEDITED REPORT DELIVERY (SURCHARGE) ○
DATE DUE _____
NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 25

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	APP IX PEST/PCB	APP IX CHLOR. HERB.	APP IX TOTAL METALS	APP IX DISS. METALS	CYANIDE	DIOXINS/FURANS					REMARKS
								PRESERVATIVE										
1/17/02	1355	BG0WSW04		X				2	2	1	1	1	2					

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS			[signature]	1/17/02	2000			
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
[signature]	1/18/02	857	YES ○ NO ○		S240391	

ORIGINAL – RETURN TO LABORATORY WITH SAMPLE(S)

Serial Number 040100

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

MPS # 8232 7444 4824

STL Savannah

STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

48

Alternate Laboratory Name/Location

Phone:
Fax:

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)
TWFF-NSRR	26007-034	PR
STL (LAB) PROJECT MANAGER: Melanie Jakubsen	P.O. NUMBER	CONTRACT NO.
CLIENT (SITE) PM: Joe Etheridge	CLIENT PHONE: 787-485-1097	CLIENT FAX
CLIENT NAME: Baker Environmental	CLIENT E-MAIL	
CLIENT ADDRESS: AOP3, 420 Rouser Rd., Coraopolis, PA 15108		
COMPANY CONTRACTING THIS WORK (if applicable)		

PAGE 1 OF 1

STANDARD REPORT DELIVERY (X)
DATE DUE 28 DAY TAT

EXPEDITED REPORT DELIVERY (SURCHARGE) ( )
DATE DUE _____

NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 25

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	APP IX LOW LEVEL SVOCS	APP IX PEST/PCB	APP IX CHLOR. HERB	APP IX TOTAL METALS	CYANIDE	DIOXINS/FURANS	TOC				REMARKS
								PRESERVATIVE										
1/17/02	1355	BG0WSD04			X			1	1	1	1	1	1	1				
1/17/02	1355	BG0WSW04		X				2										

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS			[signature]	1/17/02	2000			
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
[signature]	1/17/02	854	YES ( ) NO ( )		S24039 1	

ORIGINAL – RETURN TO LABORATORY WITH SAMPLE(S)

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

MPS # 8232 7444 4835

STL Savannah

STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

49

Alternate Laboratory Name/Location

Phone:
Fax:

PROJECT REFERENCE: TWFF-NSRR	PROJECT NO.: 26007-034	PROJECT LOCATION (STATE): PR	PAGE 1 OF 1
STL (LAB) PROJECT MANAGER: Melanie Jakubsen	P.O. NUMBER	CONTRACT NO.	STANDARD REPORT DELIVERY ⊗
CLIENT (SITE) PM: Joe Etheridge	CLIENT PHONE: 787-485-1097	CLIENT FAX	DATE DUE: 28 DAY TAT
CLIENT NAME: Baker Environmental	CLIENT E-MAIL		EXPEDITED REPORT DELIVERY (SURCHARGE) ○
CLIENT ADDRESS: AOP3, 420 Rouser Rd., Coraopolis, PA 15108			DATE DUE:
COMPANY CONTRACTING THIS WORK (if applicable)			NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 25

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	APP IX Pest/PCB	APP IX Chlor. HERB	APP IX Total Metals	APP IX Dissolved Metals	Cyanide	Dioxin/Furans					REMARKS
								PRESERVATIVE										
1/17/02	1440	BGOWSW05		X				2	2	1	1	1	2					

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS			[signature]	1/17/02	2000			
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
[signature]	1/18/02	857	YES ○ NO ○		S240391	

ORIGINAL – RETURN TO LABORATORY WITH SAMPLE(S)

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

MPS # 8232 7444 4846

STL Savannah

☒ STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

50

○ Alternate Laboratory Name/Location

Phone:
Fax:

PROJECT REFERENCE: TWPF - NSRR	PROJECT NO.: 26007-034	PROJECT LOCATION (STATE): PR
STL (LAB) PROJECT MANAGER: Melanie Jakubsen	P.O. NUMBER: [redacted]	CONTRACT NO.
CLIENT (SITE) PM: Joe Etheridge	CLIENT PHONE: 757-485-1097	CLIENT FAX
CLIENT NAME: Baker Environmental	CLIENT E-MAIL	
CLIENT ADDRESS: AOP3, 420 Rouser Rd., Coraopolis, PA 15108		
COMPANY CONTRACTING THIS WORK (if applicable)		

PAGE 1 OF 1

STANDARD REPORT DELIVERY ☒
DATE DUE 28 DAY TAT

EXPEDITED REPORT DELIVERY (SURCHARGE) ○
DATE DUE _____

NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 25

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	App IX Low Level SVOCs	App IX Pest/PCB	App IX Chlor. Herb.	App IX Total Metals	Cyanide	Dioxins/Furans	TOC				REMARKS
								PRESERVATIVE										
1/17/02	1440	BG OW SD 05			X			1	1	1	1	1	1	1				
1/17/02	1440	BG OW SW 05		X				2										

NUMBER OF CONTAINERS SUBMITTED

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS			Mark E. [illegible]	1/17/02	2000			
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
K	1/18/02	854	YES ○ NO ○		S240391	

ORIGINAL – RETURN T[illegible] LABORATORY WITH SAMPLE(S)

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

MPS # 8232 7444 4857

STL Savannah

⊗ STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

(51)

○ Alternate Laboratory Name/Location

Phone:
Fax:

PROJECT REFERENCE: TWFF- NSRR	PROJECT NO.: 26007-034	PROJECT LOCATION (STATE): PR	PAGE 1 OF 1
STL (LAB) PROJECT MANAGER: Melanie Jakubsen	P.O. NUMBER	CONTRACT NO.	STANDARD REPORT DELIVERY ⊗
CLIENT (SITE) PM: Joe Etheridge	CLIENT PHONE: 787-485-1097	CLIENT FAX	DATE DUE: 28 DAY TAT
CLIENT NAME: Baker Environmental	CLIENT E-MAIL		EXPEDITED REPORT DELIVERY (SURCHARGE) ○
CLIENT ADDRESS: AOP3, 420 Rouser Rd., Coraopolis, PA 15108			DATE DUE:
COMPANY CONTRACTING THIS WORK (if applicable)			NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 25

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	App IX Pest-/PCB	App IX Other Herb	App IX Total Metals	App IX Diss. Metals	Cyanide	Dioxins/Furans					REMARKS
								PRESERVATIVE										
								HNO3		HNO3	NaOH							
1/17/02	1130	BGOWSW06		X				2	2	1	1	1	2					

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS			[signature]	1/17/02	2000			
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
KG	1/18/02	854	YES ○ NO ○		S240391	

ORIGINAL – RETURN TO LABORATORY WITH SAMPLE(S)

Serial Number: 040101

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

MPS # 8232 7444 4868

STL Savannah

STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

52

Alternate Laboratory Name/Location

Phone:
Fax:

PROJECT REFERENCE: TWFF- NSRR	PROJECT NO.: 26007-034	PROJECT LOCATION (STATE): PR
STL (LAB) PROJECT MANAGER: Melanie Jakubsen	P.O. NUMBER:	CONTRACT NO.:
CLIENT (SITE) PM: Joe Etheridge	CLIENT PHONE: 787-485-1097	CLIENT FAX:
CLIENT NAME: Baker Environmental	CLIENT E-MAIL:	
CLIENT ADDRESS: APP 3, 420 Rouser Rd, Coraopolis, PA 15108		
COMPANY CONTRACTING THIS WORK (if applicable):		

PAGE 1 OF 1

STANDARD REPORT DELIVERY ⊗
DATE DUE: 28 DAY TAT

EXPEDITED REPORT DELIVERY (SURCHARGE) ◯
DATE DUE:

NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 25

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	MATRIX: COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	App IX Low Level SVOCs	App IX Pest/PCB's	App IX Chlor. Herb	App IX Total Metals	Cyanide	Dioxins/Furans	TOC				REMARKS
								PRESERVATIVE										
1/17/02	1130	BG OW SD 06			X			1	1	1	1	1	1	1				
1/17/02	1130	BG OW SW 06		X				2										

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS			[signature]	1/17/02	2000			
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
KC	1/18/02	857	YES ◯ NO ◯		S24039 1	

ORIGINAL – RETURN TO LABORATORY WITH SAMPLE(S)

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

MPS # 8232 7444 4879

STL Savannah

STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

53

Alternate Laboratory Name/Location
Phone:
Fax:

PROJECT REFERENCE: TWFF-NSRR	PROJECT NO.: 26007-034	PROJECT LOCATION (STATE): PR	PAGE 1 OF 1
STL (LAB) PROJECT MANAGER: Melanie Jakubsen	P.O. NUMBER:	CONTRACT NO.:	STANDARD REPORT DELIVERY ⊗
CLIENT (SITE) PM: Joe Etheridge	CLIENT PHONE: 787-485-1097	CLIENT FAX:	DATE DUE: 28 DAY TAT
CLIENT NAME: Baker Environmental	CLIENT E-MAIL:		EXPEDITED REPORT DELIVERY (SURCHARGE) ○
CLIENT ADDRESS: AOP3, 420 Rouser Rd., Coraopolis, PA 15108			DATE DUE:
COMPANY CONTRACTING THIS WORK (if applicable)			NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 25

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	App IX Pest/PCBs	App IX Chlor. Herb	App IX Total Metals	App IX Diss Metals	Cyanide	Dioxins/Furans					REMARKS
								PRESERVATIVE			HNO3	HNO3	NaOH					
1/17/02	1230	BGOWSW07		X				2	2	1	1	1	2					

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS			Michael E. K	1/17/02	2000			
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
FC	1/18/02	854	YES ○ NO ○		S240391	

ORIGINAL – RETURN T[illegible]BORATORY WITH SAMPLE(S)

Serial Number: 040100

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

MPS # 8232 7444 4880

STL Savannah

☒ STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

54

○ Alternate Laboratory Name/Location

Phone:
Fax:

PROJECT REFERENCE: TWFF-NSRR	PROJECT NO.: 26007-034	PROJECT LOCATION (STATE): PR	PAGE 1 OF 1
STL (LAB) PROJECT MANAGER: Melanie Jakubsen	P.O. NUMBER:	CONTRACT NO.:	STANDARD REPORT DELIVERY ☒
CLIENT (SITE) PM: Joe Etheridge	CLIENT PHONE: 787-485-1097	CLIENT FAX:	DATE DUE: 28 DAY TAT
CLIENT NAME: Baker Environmental	CLIENT E-MAIL:		EXPEDITED REPORT DELIVERY (SURCHARGE) ○
CLIENT ADDRESS: AOP3, 420 Rouser Rd., Coraopolis, PA 15108			DATE DUE:
COMPANY CONTRACTING THIS WORK (if applicable)			NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 25

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	App IX Low Level SVOCs	App IX Pest/PCBs	App IX Chlor Herb.	App IX Total Metals	Cyanide	Dioxins/Furans	TOC				REMARKS
								PRESERVATIVE										
								NUMBER OF CONTAINERS SUBMITTED										
1/17/02	1230	BGOWSD07			X			1	1	1	1	1	1	1				
1/17/02	1230	BGOWSW07		X				2										

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS			[signature]	1/17/02	2000			
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
[signature]	1/18/02	854	YES ○ NO ○		S240391	

ORIGINAL – RETURN TO LABORATORY WITH SAMPLE(S)

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

MPS # 8232 7444 4890

STL Savannah

(X) STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

55

( ) Alternate Laboratory Name/Location

Phone:
Fax:

PROJECT REFERENCE: TWFF- NSRR	PROJECT NO.: 26007-034	PROJECT LOCATION (STATE): PR	PAGE 1 OF 1
STL (LAB) PROJECT MANAGER: Melanie Dakubosen	P.O. NUMBER	CONTRACT NO.	STANDARD REPORT DELIVERY (X)
CLIENT (SITE) PM: Joe Etheridge	CLIENT PHONE: 787-485-1097	CLIENT FAX	DATE DUE: 28 DAY TAT
CLIENT NAME: Baker Environmental	CLIENT E-MAIL		EXPEDITED REPORT DELIVERY (SURCHARGE) ( )
CLIENT ADDRESS: ADP3, 420 Rauser Rd., Coraopolis, PA 15108			DATE DUE:
COMPANY CONTRACTING THIS WORK (if applicable)			NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 25

MATRIX TYPE (COMPOSITE (C) OR GRAB (G) INDICATE): AQUEOUS (WATER); SOLID OR SEMISOLID; AIR; NONAQUEOUS LIQUID (OIL, SOLVENT, ...)

REQUIRED ANALYSIS / NUMBER OF CONTAINERS SUBMITTED

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	AQUEOUS (WATER)	App IX Pest/PCB's	App IX CHLOR. HERB	App IX Total metals	App IX Diss. metals	Cyanide	Dioxin/ Furans	REMARKS
				HNO3	HNO3	HNO3	HNO3	NaOH		
1/17/02	1335	BG0W SW 08	X	2	2	1	1	1	2	

PRESERVATIVE

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS			[signature]	1/17/02	2000			
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
[signature]	1/18/02	854	YES ( ) NO ( )		S24039	

ORIGINAL – RETURN T[illegible] BORATORY WITH SAMPLE(S)

Serial Number 040124

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

MPS # 8232 7444 4905

STL Savannah

STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

56

Alternate Laboratory Name/Location

Phone:
Fax:

PROJECT REFERENCE: TWFF-NSRR	PROJECT NO.: 26007-034	PROJECT LOCATION (STATE): PR	PAGE 1 OF 1
STL (LAB) PROJECT MANAGER: Melanie Jakubsen	P.O. NUMBER	CONTRACT NO.	STANDARD REPORT DELIVERY ☒ DATE DUE 28 DAY TAT
CLIENT (SITE) PM: Joe Etheridge	CLIENT PHONE: 787-485-1097	CLIENT FAX	
CLIENT NAME: Baker Environmental	CLIENT E-MAIL		EXPEDITED REPORT DELIVERY (SURCHARGE) ○ DATE DUE
CLIENT ADDRESS: AOP3, 420 Rouser Rd., Coraopolis, PA 15108			
COMPANY CONTRACTING THIS WORK (if applicable)			NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 25

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	App IX Low Level SVOCs	App IX Pest/PCB	App IX Chlor Herb	App IX Total metals	Cyanide	Dioxins/Furans					REMARKS
								PRESERVATIVE										
1/17/02	1335	BG OWSD 08			X			1	1	1	1	1	1					
1/17/02	1335	BG OW SW 08		X				2										

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS			[signature]	1/17/02	2000			
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
FC -	1/18/02	854	YES ○ NO ○		S24039	

ORIGINAL – RETURN TO LABORATORY WITH SAMPLE(S)

Serial Number: 040120

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

MPS #

STL Savannah

STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

57

Alternate Laboratory Name/Location

Phone:
Fax:

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)	PAGE
TWFF-NSRR	26007-034	PR	1 OF 1

STL (LAB) PROJECT MANAGER	P.O. NUMBER	CONTRACT NO.
Melanie Jakubsen		

CLIENT (SITE) PM	CLIENT PHONE	CLIENT FAX
Joe Etheridge	787-485-1097	

CLIENT NAME	CLIENT E-MAIL
Baker Environmental	

CLIENT ADDRESS: AOP3, 420 Rouser Rd., Coraopolis, PA 15108

COMPANY CONTRACTING THIS WORK (if applicable):

STANDARD REPORT DELIVERY ☒
DATE DUE 28 DAY TAT

EXPEDITED REPORT DELIVERY (SURCHARGE) ○
DATE DUE _____

NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 25

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	App IX Pest/PCB	App IX Chlor. Herb	App IX Total Metals	App IX Diss. Metals	Cyanide	Dioxins/Furans					REMARKS
								PRESERVATIVE		HNO3	HNO3	NaOH						
								NUMBER OF CONTAINERS SUBMITTED										
4/17/02	1415	BG0WSW09		X				2	2	1	1	1	2					

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS			Mark E. K[illegible]	4/17/02	2000			

RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
KC	1/18/02	854	YES ○ NO ○		S240391	

ORIGINAL – RETURN T[illegible] [illegible]ORATORY WITH SAMPLE(S)

Serial Number 040120

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

MPS # 8232 7444 4927

STL Savannah

(X) STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

58

( ) Alternate Laboratory Name/Location

Phone:
Fax:

PROJECT REFERENCE: TWFF NSRR	PROJECT NO.: 26007-034	PROJECT LOCATION (STATE): PR
STL (LAB) PROJECT MANAGER: Melanie Jakubsen	P.O. NUMBER:	CONTRACT NO.:
CLIENT (SITE) PM: Joe Etheridge	CLIENT PHONE: 787-485-1097	CLIENT FAX:
CLIENT NAME: Baker Environmental	CLIENT E-MAIL:	
CLIENT ADDRESS: AOP3, 420 Rouser Rd, Coraopolis, PA 15108		
COMPANY CONTRACTING THIS WORK (if applicable):		

PAGE 1 OF 1

STANDARD REPORT DELIVERY (X)
DATE DUE 28 DAY TAT

EXPEDITED REPORT DELIVERY (SURCHARGE) ( )
DATE DUE _____

NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 25

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	App IX Low Level SVOC	App IX Pest/PCBs	App IX Chlor. Herb.	App IX Total Metals	Cyanide	Dioxin/Furan	TOC				REMARKS
								PRESERVATIVE										
1/17/02	1415	BGOWSD09			X			1	1	1	1	1	1	1				
1/17/02	1415	BGOWSW09		X				2										

NUMBER OF CONTAINERS SUBMITTED

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS			[signature]	1/17/02	2000			
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
KC	1/18/02	854	YES ( ) NO ( )		5240391	

ORIGINAL – RETURN TO LABORATORY WITH SAMPLE(S)

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

STL Savannah

(X) STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

61

( ) Alternate Laboratory Name/Location

Phone:
Fax:

25/25

PROJECT REFERENCE: TWFF-NSRR	PROJECT NO.: 26007-034	PROJECT LOCATION (STATE): PR	PAGE 1 OF 2
STL (LAB) PROJECT MANAGER: Melanie Jakubsen	P.O. NUMBER	CONTRACT NO.	STANDARD REPORT DELIVERY (X)
CLIENT (SITE) PM: Joe Etheridge	CLIENT PHONE: 787-485-1097	CLIENT FAX	DATE DUE: 28 DAY TAT
CLIENT NAME: Baker Environmental	CLIENT E-MAIL		EXPEDITED REPORT DELIVERY (SURCHARGE) ( )
CLIENT ADDRESS: AOP 3, 420 Rouser Rd., Coraopolis, PA 15108			DATE DUE:
COMPANY CONTRACTING THIS WORK (if applicable)			NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 25

REQUIRED ANALYSIS: App. IX VOC 8260

PRESERVATIVE: HCL

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	App. IX VOC 8260	REMARKS
1/17/02	1100	BGOWSW01		X				3	
1/17/02	1155	BGOWSW02		X				3	
1/17/02	1250	BGOWSW03		X				3	
1/17/02	1250	BGOWSW03D		X				3	
1/17/02	1250	BGOWSW03MS		X				3	
1/17/02	1250	BGOWSW03MSD		X				3	
1/17/02	1355	BGOWSW04		X				3	
1/17/02	1440	BGOWSW05		X				3	
1/17/02	1130	BGOWSW06		X				3	
1/17/02	1230	BGOWSW07		X				3	
1/17/02	1335	BGOWSW08		X				3	
1/17/02	1415	BGOWSW09		X				3	

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS			Christa Harwood					
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
[illegible]	1/18/02	854	YES ( ) NO ( )		S240391	

ORIGINAL – RETURN TO LABORATORY WITH SAMPLE(S)

Serial Number 040490

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

STL Savannah

STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

61

Alternate Laboratory Name/Location

Phone:
Fax:

PROJECT REFERENCE: TWFF-NSRR	PROJECT NO.: 26007-034	PROJECT LOCATION (STATE): PR	PAGE 2 OF 2
STL (LAB) PROJECT MANAGER: Melanie Jakubsen	P.O. NUMBER	CONTRACT NO.	STANDARD REPORT DELIVERY ☒ DATE DUE 28 DAY TAT
CLIENT (SITE) PM: Joe Etheridge	CLIENT PHONE: 767-485-1097	CLIENT FAX	
CLIENT NAME: Baker Environmental	CLIENT E-MAIL		EXPEDITED REPORT DELIVERY (SURCHARGE) ○ DATE DUE
CLIENT ADDRESS: AOP3, 420 Rouser Rd., Coraopolis, PA 15108			
COMPANY CONTRACTING THIS WORK (if applicable)			NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 25

REQUIRED ANALYSIS / PRESERVATIVE

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	App. IX VOC 8260 (Preservative: None)	App. IX VOC 8260 (Preservative: HCL)									REMARKS
1/17/02	1100	BG0WSD01			X			1										
1/17/02	1155	BG0WSD02			X			1										
1/17/02	1250	BG0WSD03			X			1										
1/17/02	1250	BG0WSD03 D			X			1										
1/17/02	1250	BG0WSD03 MS/MSD			X			1										
1/17/02	1355	BG0WSD04			X			1										
1/17/02	1440	BG0WSD05			X			1										
1/17/02	1130	BG0WSD06			X			1										
1/17/02	1230	BG0WSD07			X			1										
1/17/02	1335	BG0WSD08			X			1										
1/17/02	1415	BG0WSD09			X			1										
1/17/02	1600	~~[illegible]~~ BG0WTB01		X					3									

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS			Christi Hanwood					
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
KG	1/18/02	854	YES ○ NO ○		S240391	

ORIGINAL – RETURN TO LABORATORY WITH SAMPLE(S)

Serial Number 045491

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

Master Air Waybill # 8028 5325 5832

STL Savannah

STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

Alternate Laboratory Name/Location
Phone:
Fax:

(62) JCE

PROJECT REFERENCE: SWFF-NSER	PROJECT NO.: 26007-034	PROJECT LOCATION (STATE): PR	PAGE 1 OF 1
STL (LAB) PROJECT MANAGER: Melanie Jakubsen	P.O. NUMBER	CONTRACT NO.	STANDARD REPORT DELIVERY ○ DATE DUE
CLIENT (SITE) PM: Joe Etheridge	CLIENT PHONE: 787-485-1097	CLIENT FAX	EXPEDITED REPORT DELIVERY (SURCHARGE) ○ DATE DUE
CLIENT NAME: Baker Environmental	CLIENT E-MAIL		
CLIENT ADDRESS			
COMPANY CONTRACTING THIS WORK (if applicable)			NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 1

MATRIX TYPE — COMPOSITE (C) OR GRAB (G) INDICATE; AQUEOUS (WATER); SOLID OR SEMISOLID; AIR; NONAQUEOUS LIQUID (OIL, SOLVENT, ...)

REQUIRED ANALYSIS

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G)	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	Appendix IX VOCs (8260)	Appendix IX SVOCs (8270)	Appendix IX Total Metals (6010)	Low level PAH	APP. IX VOCs (8260)						REMARKS
		PRESERVATIVE						HCl	–									
		NUMBER OF CONTAINERS SUBMITTED						3	1	1	1	1						
1/22/02	1200	7SB28-00	G					JCE	1	1		1						
1/22/02	1210	7SB28-03	G					JCE			1							
1/22/02	1619	7MW17-03	G								1							
		7MW17-03D	G								1							
		7MW17-03MS	G								1							
		7MW17-03MSD	G								1							
1/23/02	1130	7SB23-00	G					JCE	1	1		1						
1/23/02	1317	7SB23-07	G								1							
1/23/02	1450	TB11		X				X										

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS			Jon C. Edel Jr.	1/23/02	1500			
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
	1-24-02	9:24	YES ✓ NO ○		52-40505	

ORIGINAL — RETURN TO LABORATORY WITH SAMPLE(S)

Serial Number 000121

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

Master Air Waybill # 8078 5375 5854

STL Savannah

STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

Alternate Laboratory Name/Location

Phone:
Fax:

(63)

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)	PAGE	OF
TWFF-NSRR	26003-034	PR	1	1

STL (LAB) PROJECT MANAGER	P.O. NUMBER	CONTRACT NO.
Melanie Jakubsen		

CLIENT (SITE) PM	CLIENT PHONE	CLIENT FAX
Joe Etheridge	787-485-1097	

CLIENT NAME	CLIENT E-MAIL
Baker Environmental	

CLIENT ADDRESS: NOP 3, 420 Rousseau Rd., Coraopolis, PA 15108

COMPANY CONTRACTING THIS WORK (if applicable):

STANDARD REPORT DELIVERY ( )
DATE DUE _____

EXPEDITED REPORT DELIVERY (SURCHARGE) ( )
DATE DUE _____

NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 1

MATRIX TYPE — COMPOSITE (C) OR GRAB (G) INDICATE; AQUEOUS (WATER); SOLID OR SEMISOLID; AIR; NONAQUEOUS LIQUID (OIL, SOLVENT, ...)

REQUIRED ANALYSIS — NUMBER OF CONTAINERS SUBMITTED

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G)	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	JCE	Appendix IX SVOCs (8270)	Low Level PAHs (8270)	Appendix IX Total Metals							REMARKS
									1	1	1							
									PRESERVATIVE									
1/23/02	1425	7SBZ4-00	G					JCE	1		1							
1/23/02	1526	7SBZ4-07	G							1								
1/23/02	1526	7SBZ4-07D	G							1								
1/24/02	0910	7SBZ5-00	G					JCE	1		1							
1/24/02	1340	7SBZ6-00	G					JCE	1		1							
1/24/02	1355	7SBZ6-07	G							1								

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS			Jon C. Edel J.	1/25/02	1400			
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
KG	1/26/02	1052	YES ( ) NO ( )		5240575	

ORIGINAL – RETURN TO LABORATORY WITH SAMPLE(S)

Serial Number 055112

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

Master Air Waybill # 8078 5375 5843

STL Savannah

STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

Alternate Laboratory Name/Location

Phone:
Fax:

(64)

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)	PAGE	OF
TWFF-NSRR	26007-034	PR	1	2

STL (LAB) PROJECT MANAGER	P.O. NUMBER	CONTRACT NO.
Melanie Jakubsen		

CLIENT (SITE) PM	CLIENT PHONE	CLIENT FAX
Joe Etheridge	787-485-1097	

CLIENT NAME	CLIENT E-MAIL
Baker Environmental	

CLIENT ADDRESS: AOP 3, 420 Rouser Rd., Coraopolis, PA 15108

COMPANY CONTRACTING THIS WORK (if applicable)

STANDARD REPORT DELIVERY ◯
DATE DUE _____
EXPEDITED REPORT DELIVERY (SURCHARGE) ◯
DATE DUE _____
NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 2

MATRIX TYPE — INDICATE

REQUIRED ANALYSIS — NUMBER OF CONTAINERS SUBMITTED

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G)	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	App. IX VOCs (8260)	Nitrate (353.2)	Nitrate/Sulfate (300.0)/(375.4)	Methane (SW 3810)	App. IX Total Metals	App. IX Diss. Metals (Field Filtered)	App. IX VOCs (8260)				REMARKS
								—	H_2SO_4	—	—	HNO_3	HNO_3	HCl				PRESERVATIVE
								1	1	1	3	1	1	3				NUMBER OF CONTAINERS SUBMITTED
1/23/02	1425	75B24-00	G					X										
1/24/02	0910	75B25-00	G					X										
1/24/02	1340	75B26-00	G					X										
1/25/02	1100	7MW03		X					X	X	X	X	X	X				
1/24/02	1230	UGW23		X					X		X	X	X	X				
1/24/02	1420	7MW09		X					X		X	X	X	X				
1/25/02	1330	7TB12		X										X				
1/25/02	1135	7MW09		X						X								
1/25/02	1130	UGW23		X						X								

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS			Jon C. Edel Jr.	1/25/02	1405			

RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
K	1/26/02	1052	YES ◯ NO ◯		S240575	

ORIGINAL – RETURN TO LABORATORY WITH SAMPLE(S)

Serial Number 000111

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

IMPS # 8232 7444 4960

STL Savannah

STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

Alternate Laboratory Name/Location
Phone:
Fax:

(65)

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)	PAGE	OF
TWFF- NSRR	26007-034	PR	2	2

STL (LAB) PROJECT MANAGER	P.O. NUMBER	CONTRACT NO.
Melanie Jakubsen		

CLIENT (SITE) PM	CLIENT PHONE	CLIENT FAX
Joe Etheridge	787-485-1097	

CLIENT NAME	CLIENT E-MAIL
Baker Environmental	

CLIENT ADDRESS: AOP 3, 420 Rouser Rd., Coraopolis, PA 15108

COMPANY CONTRACTING THIS WORK (if applicable):

STANDARD REPORT DELIVERY ( )
DATE DUE _____

EXPEDITED REPORT DELIVERY (SURCHARGE) ( )
DATE DUE _____

NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 2

MATRIX TYPE — COMPOSITE (C) OR GRAB (G) INDICATE

REQUIRED ANALYSIS: 4 IX SVOCS (8270)

PRESERVATIVE: 1

NUMBER OF CONTAINERS SUBMITTED: 2

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G)	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	4 IX SVOCS (8270)	REMARKS
1/25/02	1100	7MW03		X				X	
1/24/02	1420	7MW09		X				X	
1/24/02	1230	UGW23		X				X	

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS			Jon C. Edel Jr.	1/25/02	1405			

RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
[illegible]	1/26/02	1052	YES ( ) NO ( )		S240595	

ORIGINAL – RETURN TO LABORATORY WITH SAMPLE(S)

Serial Number 040400

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

Master Air Waybill # 8078 5375 6232

STL Savannah

STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

Alternate Laboratory Name/Location

Phone:
Fax:

66

PROJECT REFERENCE: TWFF- NSRR	PROJECT NO.: 26007-034	PROJECT LOCATION (STATE): PR	PAGE 1 OF 1
STL (LAB) PROJECT MANAGER: Melanie Jakubsen	P.O. NUMBER	CONTRACT NO.	STANDARD REPORT DELIVERY ○ DATE DUE ____
CLIENT (SITE) PM: Joe Etheridge	CLIENT PHONE: 787-485-1097	CLIENT FAX	EXPEDITED REPORT DELIVERY (SURCHARGE) ○ DATE DUE ____
CLIENT NAME: Bakee Environmental	CLIENT E-MAIL		
CLIENT ADDRESS: AOP 3, 420 Rousse Rd., Coraopolis, PA 15108			
COMPANY CONTRACTING THIS WORK (if applicable)			NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 3

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	REQUIRED ANALYSIS: AP. IX SVOCs (8270)									REMARKS
								PRESERVATIVE: 1									
								NUMBER OF CONTAINERS SUBMITTED: 2									
1/27/02	1000	7MW13		X				X									
1/27/02	0820	7MW11		X				X									

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS			Jon C. Edel Jr.	1/28/02	1500			
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
	1/29/02	903	YES ○ NO ○		S240604	

ORIGINAL – RETURN TO LABORATORY WITH SAMPLE(S)

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

IMBS # 8232 7444 5018

STL Savannah

STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

Alternate Laboratory Name/Location

Phone:
Fax:

67

PROJECT REFERENCE: TWFF- NSRR	PROJECT NO.: 26007-034	PROJECT LOCATION (STATE): PR	PAGE 1 OF 1
STL (LAB) PROJECT MANAGER: Melanie Jakubsen	P.O. NUMBER	CONTRACT NO.	STANDARD REPORT DELIVERY ○ DATE DUE
CLIENT (SITE) PM: Joe Etheridge	CLIENT PHONE: 787-485-1097	CLIENT FAX	EXPEDITED REPORT DELIVERY (SURCHARGE) ○ DATE DUE
CLIENT NAME: Baker Environmental	CLIENT E-MAIL		
CLIENT ADDRESS: AOP 3, 420 Rouser Rd., Coraopolis, PA 15108			NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 3
COMPANY CONTRACTING THIS WORK (if applicable)			

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	REQUIRED ANALYSIS: Agr. 1x Svocs (8270)									REMARKS
								PRESERVATIVE: 1									
								NUMBER OF CONTAINERS SUBMITTED: 2									
1/26/02	1040	7MW30		X				X									
1/26/02	1415	7MW10		X				X									

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS			Jon E. Edell Jr.	1/28/02	1500			
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
KC	1/29/02	903	YES ○ NO ○		S240604	

ORIGINAL – RETURN TO LABORATORY WITH SAMPLE(S)

Serial Number 045000

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

IMPS # 8232 7444 5029

STL Savannah

STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

Alternate Laboratory Name/Location

Phone:
Fax:

68

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)
TWEF- NSRR	26007-034	PR

STL (LAB) PROJECT MANAGER	P.O. NUMBER	CONTRACT NO.
Melanie Jakubsen		

CLIENT (SITE) PM	CLIENT PHONE	CLIENT FAX
Joe Etheridge	787-485-1097	

CLIENT NAME Baker Environmental [redacted] JLE

CLIENT E-MAIL

CLIENT ADDRESS
AOP 3, 420 Rouser Rd, Coraopolis, PA 15108

COMPANY CONTRACTING THIS WORK (if applicable)

PAGE 1 OF 1

STANDARD REPORT DELIVERY ◯
DATE DUE

EXPEDITED REPORT DELIVERY (SURCHARGE) ◯
DATE DUE

NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 3

MATRIX TYPE (COMPOSITE (C) OR GRAB (G) INDICATE): AQUEOUS (WATER); SOLID OR SEMISOLID; AIR; NONAQUEOUS LIQUID (OIL, SOLVENT, ...)

REQUIRED ANALYSIS / PRESERVATIVE

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	AQUEOUS (WATER)	App. IX Vols (8260)	Nitrate (353.2)	Nitrate/Sulfate 300.0/375.4	Methane (SW 3810)	App. IX Tot Metals	App. IX Diss. Metals (Field Filtered)	Methane, Ethane, Ethane (SW3810)	TOC (9060)	Groundwater Density	REMARKS
PRESERVATIVE				HCl	H_2SO_4			HNO3					
NUMBER OF CONTAINERS SUBMITTED				3	1		3	1	3		1		
1/27/02	1000	7MW13	X	X	X		X	X	X				
1/27/02	0820	7MW11	X	X	X		X	X	X				
1/26/02	1040	7MW20	X	X	X			X	X	X	X	X	
1/26/02	1415	7MW10	X	X	X			X	X	X	X		
1/28/02	1440	7TB13	X	X									
1/28/02	1020	7MW20	X			X							
1/28/02	1139	7MW10	X			X							
1/28/02	1230	7MW13	X			X							
1/28/02	1210	7MW11	X			X							

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS			Jon C. Edell Jr.	1/28/02	1500			
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
KC	1/29/02	903	YES ◯ NO ◯		5240604	

ORIGINAL – RETURN TO LABORATORY WITH SAMPLE(S)

Serial Number: 000120

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

Master Air Waybill # 8078 5375 6243

STL Savannah

STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

Alternate Laboratory Name/Location

Phone:
Fax:

(69)

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)
TWFF-NSRR	26022-034	PR

STL (LAB) PROJECT MANAGER	P.O. NUMBER	CONTRACT NO.
Melanie Jakubsen		

CLIENT (SITE) PM	CLIENT PHONE	CLIENT FAX
Joe Etheridge	787-485-1092	

CLIENT NAME	CLIENT E-MAIL
Baker Environmental	

CLIENT ADDRESS: AOP3, 420 Rouser Rd., Coraopolis, PA 15108

COMPANY CONTRACTING THIS WORK (if applicable):

PAGE 1 OF 1

STANDARD REPORT DELIVERY ( )

DATE DUE _____

EXPEDITED REPORT DELIVERY (SURCHARGE) ( )

DATE DUE _____

NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 2

MATRIX TYPE — COMPOSITE (C) OR GRAB (G) INDICATE

REQUIRED ANALYSIS — PRESERVATIVE

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	APP. IX VOCs (8260)	Nitrate (353.2)	Nitrate/Nitrite (300.0)/(375.4)	Methane (SW3810)	APP. IX Tot. Metals	APP. IX Diss. Metals (Field Filtered)	APP. IX VOCs (8260)	APP. IX Tot. Metals	APP. IX SVOC (8270)	Low Level PAHs (8270)	REMARKS
								HCl	H2SO4			HNO3	HNO3					
								3	1	1	3	1	1	1	1	1	1	
1/29/02	0955	7MW14		X				X	X	X	X	X	X					
1/29/02	1230	7MW15		X				X	X	X	X	X	X					
1/29/02	1440	7TB14		X				X										
1/29/02	1125	7MW18-00	G											X	X	X		
1/29/02	1145	[redacted] JOE 7SB25-04	G														X	

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS			Jon C. Eckel Jr.	1/29/02	1500			

RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
[signature]	1/30/02	120	YES ( ) NO ( )		SZ40654	

ORIGINAL – RETURN LABORATORY WITH SAMPLE(S)

Serial Number 000114

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

IMPS # 8232 7444 5062

STL Savannah

STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

Alternate Laboratory Name/Location

Phone:
Fax:

(20)

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)	MATRIX TYPE	REQUIRED ANALYSIS	PAGE	OF
TWFF-NSRR	26007-034	PR			1	1

STL (LAB) PROJECT MANAGER	P.O. NUMBER	CONTRACT NO.
Melanie Jakubsen		
CLIENT (SITE) PM	**CLIENT PHONE**	**CLIENT FAX**
Joe Etheridge	787-485-1097	
CLIENT NAME	**CLIENT E-MAIL**	
Baker Environmental		
CLIENT ADDRESS		
AOP 3, 420 Rouser Rd., Coraopolis, PA 15108		
COMPANY CONTRACTING THIS WORK (if applicable)		

STANDARD REPORT DELIVERY ( )
DATE DUE _____

EXPEDITED REPORT DELIVERY (SURCHARGE) ( )
DATE DUE _____

NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 2

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	DRI 1X SVOCs (8270)									REMARKS
								PRESERVATIVE									
								1									
								NUMBER OF CONTAINERS SUBMITTED									
								2									
1/29/02	0955	7MW14		X				X									
1/29/02	1230	7MW15		X				X									

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS			Jon C. Edel Jr.	1/29/02	1500			
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
KC	1/30/02	1210	YES ( ) NO ( )		S240654	

ORIGINAL – RETURN TO LABORATORY WITH SAMPLE(S)

Serial Number 055120

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

Master Air Waybill # 8078 5375 6416

STL Savannah

STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

Alternate Laboratory Name/Location

Phone:
Fax:

71

PROJECT REFERENCE: JWFF-NSRR	PROJECT NO.: 26002-034	PROJECT LOCATION (STATE): PR
STL (LAB) PROJECT MANAGER: Melanie Jakubsen	P.O. NUMBER:	CONTRACT NO.:
CLIENT (SITE) PM: Joe Etheridge	CLIENT PHONE: 787-485-1097	CLIENT FAX:
CLIENT NAME: Baker Environmental	CLIENT E-MAIL:	
CLIENT ADDRESS: AoP 3, 420 Rousee Rd., Coraopolis, PA 15108		
COMPANY CONTRACTING THIS WORK (if applicable):		

PAGE 1 OF 1

STANDARD REPORT DELIVERY ( )
DATE DUE _____
EXPEDITED REPORT DELIVERY (SURCHARGE) ( )
DATE DUE _____
NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 1

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	App. IX VOCs (8260)	App. IX SVOCs (8270)	App. IX Tot. Metals	Low Level PAHs (8270)	App. IX VOCs (8260)						REMARKS
								PRESERVATIVE				HCl						
								1	1	1	1	3						
1/29/02	1605	7MW18-03	G								X							
1/30/02	1018	7MW19-00	G					X	X	X								
1/30/02	1042	7MW19-03	G								X							
1/30/02	1340	~~7TB15~~		X								X						

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS			Jon C. Edel Jr.	1/30/02	1400			
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
[signature]	1/31/02	8:48	YES (✓) NO ( )		S2-40686	

ORIGINAL – RETURN TO LABORATORY WITH SAMPLE(S)

Serial Number 055115

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

Master Air Waybill #8078 5375 6379

STL Savannah

STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

Alternate Laboratory Name/Location
Phone:
Fax:

72

PROJECT REFERENCE: TWFF-NSRR	PROJECT NO.: 26007-034	PROJECT LOCATION (STATE): PR
STL (LAB) PROJECT MANAGER: Melanie Jakubsen	P.O. NUMBER:	CONTRACT NO.:
CLIENT (SITE) PM: Joe Etheridge	CLIENT PHONE: 787-485-1093	CLIENT FAX:
CLIENT NAME: Baker Environmental	CLIENT E-MAIL:	
CLIENT ADDRESS: AOP 3, 420 Rouser Rd., Coraopolis, PA 15108		
COMPANY CONTRACTING THIS WORK (if applicable)		

PAGE 1 OF 1

STANDARD REPORT DELIVERY ◯
DATE DUE _____
EXPEDITED REPORT DELIVERY (SURCHARGE) ◯
DATE DUE _____
NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 2

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	App. 1x VOCs (8260)	Nitrate (353.2)	Nitrate/Nitrite (300.0)/(375.4)	Methane (SW3810)	App. 1x Tot. Metals	App. 1x Diss. Metals (Field Filtered)	Groundwater Density				REMARKS
								HCl	H_2SO_4	—	—	HNO_3	HNO_3	—				PRESERVATIVE
								3	1	1	3	1	1	1				NUMBER OF CONTAINERS SUBMITTED
1/31/02	1130	7MW18		X				X	X	X	X	X	X					
1/31/02	1130	7MW18D		X				X	X	X	X	X	X					
1/30/02	1500	7MW19		X				X	X	X	X	X	X	X				
1/31/02	1330	7TB16		X				X										

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS			Jon C. Edel Jr.	1/31/02	1400			
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
KC	2/1/02	836	YES ◯ NO ◯		S2407013	

ORIGINAL – RETURN TO LABORATORY WITH SAMPLE(S)

Serial Number 055110

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

IMPS # 8232 7444 5110

STL Savannah

STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

Alternate Laboratory Name/Location

Phone:
Fax:

(73)

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)
TWFF- NSRR	26002-034	PR

STL (LAB) PROJECT MANAGER	P.O. NUMBER	CONTRACT NO.
Melanie Jakobsen		

CLIENT (SITE) PM	CLIENT PHONE	CLIENT FAX
Joe Etheridge	787-485-1097	

CLIENT NAME	CLIENT E-MAIL
Baker Environmental	

CLIENT ADDRESS: AOP 3, 420 Rouser Rd., Coraopolis, PA 15108

COMPANY CONTRACTING THIS WORK (if applicable):

PAGE 1 OF 1

STANDARD REPORT DELIVERY ( )
DATE DUE _____

EXPEDITED REPORT DELIVERY (SURCHARGE) ( )
DATE DUE _____

NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 2

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	REQUIRED ANALYSIS: App. IX SVOCs (8270)	PRESERVATIVE: 1	NUMBER OF CONTAINERS SUBMITTED: 2	REMARKS
1/31/02	1130	7MW18		X				X			
1/31/02	1130	7MW18D		X				X			
1/30/02	1500	7MW19		X				X			

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS			Jon C. Edel Jr.	1/31/02	1400			

RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
[signature]	2/1/02	836	YES ( ) NO ( )		S240713	

ORIGINAL – RETURN TO LABORATORY WITH SAMPLE(S)

Serial Number 000110

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

Master Air Waybill # 8078 5375 6427

STL Savannah

STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

Alternate Laboratory Name/Location

Phone:
Fax:

74

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)
TWFF-NSRR	26007-034	PR

STL (LAB) PROJECT MANAGER	P.O. NUMBER	CONTRACT NO.
Melanie Jakubsen		

CLIENT (SITE) PM	CLIENT PHONE	CLIENT FAX
Joe Etheridge	787-485-1093	

CLIENT NAME	CLIENT E-MAIL
Baker Environmental	

CLIENT ADDRESS: AOP 3, 420 Rouser Rd., Coraopolis, PA 15108

COMPANY CONTRACTING THIS WORK (if applicable):

PAGE 1 OF 1

STANDARD REPORT DELIVERY ◯

DATE DUE _____

EXPEDITED REPORT DELIVERY (SURCHARGE) ◯

DATE DUE _____

NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 1

PRESERVATIVE

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	App. IX VOCs (8260)	Nitrate (353.2)	Nitrate/Sulfate (300.0)/(375.4)	Methane (SW3810)	App. IX Tot Metals	App. IX Diss. Metals (Field Filtered)	Groundwater Density	App. IX SVOCs (8270)			REMARKS
								HCl	H2SO4	+	−	HNO3	HNO3	−				
								3	1	1	3	1	1	1	1			NUMBER OF CONTAINERS SUBMITTED
2/01/02	1240	7TB17		X				X										
2/01/02	0925	7MW12		X				X	X	X	X	X	X		X			
2/01/02	1150	7MW16		X				X	X	X	X	X	X	X	X			

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS			Jon C. Edel Jr.	2/1/02	1330			
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
[signature]	2-2-02	10:13	YES ✓ NO ◯		S2-46743	

ORIGINAL – RETURN TO LABORATORY WITH SAMPLE(S)

Serial Number 033117

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

Master Air Waybill # 8078 5375 6405

STL Savannah

STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

Alternate Laboratory Name/Location

Phone:
Fax:

75

PROJECT REFERENCE: TWFF-NSRR	PROJECT NO.: 26007-034	PROJECT LOCATION (STATE): PR
STL (LAB) PROJECT MANAGER: Melanie Jakubsen	P.O. NUMBER:	CONTRACT NO.:
CLIENT (SITE) PM: Joe Etheridge	CLIENT PHONE: 787-485-1093	CLIENT FAX:
CLIENT NAME: Baker Environmental	CLIENT E-MAIL:	
CLIENT ADDRESS: AOP3, 420 Rouser Rd, Coraopolis, PA 15108		
COMPANY CONTRACTING THIS WORK (if applicable):		

PAGE 1 OF 1

STANDARD REPORT DELIVERY ○

DATE DUE

EXPEDITED REPORT DELIVERY (SURCHARGE) ○

DATE DUE 1

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	RCRA Metals	Lead	Benzene	TCLP Benzene	TCLP Lead	TCLP 8 RCRA Metals				
REQUIRED ANALYSIS																	
PRESERVATIVE								H_2NO_3	H_2NO_3	HCl	—	—	—				
NUMBER OF CONTAINERS SUBMITTED								1	1	3	2	2	1				
2/3/02	1000	IDW-01		X				X	X	X							
2/3/02	1000	IDW-02	G								X	X	X				

REMARKS

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS			Jon C. Edel Jr.	2/4/02	1245			
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
[signature]	020502	0953	YES ✓ NO ○		5240780	

Serial Number 055125

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

IMPS # 8232 7444 5316

STL Savannah

STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

54-07

Alternate Laboratory Name/Location
Phone:
Fax:

PROJECT REFERENCE: SWMU 7/8 TWFF-NSER	PROJECT NO.: 26005-034	PROJECT LOCATION (STATE): PR
STL (LAB) PROJECT MANAGER: Melanie Jakobsen	P.O. NUMBER:	CONTRACT NO.:
CLIENT (SITE) PM: Jon EDEL	CLIENT PHONE: 787-485-1097	CLIENT FAX:
CLIENT NAME: Baker Environmental	CLIENT E-MAIL:	
CLIENT ADDRESS: AOP 3, 420 Rouser Rd., Coraopolis, PA 15108		
COMPANY CONTRACTING THIS WORK (if applicable):		

PAGE 1 OF 1

STANDARD REPORT DELIVERY ( )
DATE DUE _____
EXPEDITED REPORT DELIVERY (SURCHARGE) ( )
DATE DUE _____

NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 2

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	Fingerprint	Product Density	Viscosity	REMARKS
								—	—	PRESERVATIVE	
2/18/02	1300	PSH02					X	2 →			Field Temp. 31.9°C
2/18/02	1320	PSH01					X	2 →			Field Temp. 31.9°C

↳ Density should be measured at the field temperature and at STP.

~~RUSH!!~~

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS			Jon C. Edel Jr.	2/18/02	1600			
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**
EMPTY CONTAINERS								

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
J Swafford	2/19/02	9:34	YES ✓ NO ( )		S241136	

ORIGINAL – RETURN TO LABORATORY WITH SAMPLE(S)

Serial Number: 000101

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

Master Air Waybill # 8058 5375 5505

STL Savannah

STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

54-14

Alternate Laboratory Name/Location

Phone:
Fax:

PROJECT REFERENCE: TWFF-NSRR	PROJECT NO.: 26003-034	PROJECT LOCATION (STATE): PR
STL (LAB) PROJECT MANAGER: Melanie Jakubsen	P.O. NUMBER:	CONTRACT NO.:
CLIENT (SITE) PM: Jon EDEL	CLIENT PHONE: 787-485-1093	CLIENT FAX:
CLIENT NAME: Baker Environmental	CLIENT E-MAIL:	
CLIENT ADDRESS: AOP3, 420 Rouser Rd., Coraopolis, PA 15108		
COMPANY CONTRACTING THIS WORK (if applicable):		

PAGE 1 OF 1

STANDARD REPORT DELIVERY ◯

DATE DUE _____

EXPEDITED REPORT DELIVERY (SURCHARGE) ◯

DATE DUE _____

NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 1

PRESERVATIVE

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	NUMBER OF CONTAINERS SUBMITTED	REMARKS
2/21/02	1120	JP-5 Standard					X		
2/21/02	1120	DFM Standard					X		
		For use in the fingerprinting analysis.							

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS Dwayford	1/31/02		Jon C. Edel Jr.	2/21/02	1300			
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**
EMPTY CONTAINERS Jon C. Edel Jr.	1/31/02 JEE	1430						

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
KC	2/22/02	844	YES ◯ NO ◯		S241238	

ORIGINAL – RETURN TO LABORATORY WITH SAMPLE(S)

Serial Number 050100

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

Master Air Waybill # 8078 5375 5762

STL Savannah

STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

54-18

Alternate Laboratory Name/Location

Phone:
Fax:

PROJECT REFERENCE: TWFF-NSRR	PROJECT NO.: 26007-099	PROJECT LOCATION (STATE): PR
STL (LAB) PROJECT MANAGER: Melanie Jakubsen	P.O. NUMBER:	CONTRACT NO.:
CLIENT (SITE) PM: Jon EDEL	CLIENT PHONE: 787-485-1097	CLIENT FAX:
CLIENT NAME: Baker Environmental	CLIENT E-MAIL:	
CLIENT ADDRESS: AOP 3, 420 Rouser Rd., Coraopolis, PA 15108		
COMPANY CONTRACTING THIS WORK (if applicable):		

PAGE 1 OF 1

STANDARD REPORT DELIVERY (●)
DATE DUE 28 FAT

EXPEDITED REPORT DELIVERY (SURCHARGE) ( )
DATE DUE

NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 1

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	APP. 1X VOCs	APP. 1X SVOCs	APP. 1X Total Metals	APP. 1X Diss. Metals (Field Filtered)	Groundwater Dynamics	Nitrate (353.2)	Nitrate/Sulfate	Methane			REMARKS
								HCl	—	HNO_3	HNO_3	—	H_2SO_4	—	—			
3/1/02	1120	7MW13		X				3	2	1	1	1	1	1	3			
3/1/02	1350	7TB99		X				3										

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS			Jon C. Edel Jr.	3/1/02	1400			
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**
EMPTY CONTAINERS Jon C. Edel Jr.	1/2/02	1500						

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
F Swafford	3/4/02	10:38	YES ( ) NO ( )		5241444	

ORIGINAL – RETURN TO LABORATORY WITH SAMPLE(S)

Serial Number 025100

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

IMPS # 8232 7444 5761

STL Savannah

STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

54-20

Alternate Laboratory Name/Location

Phone:
Fax:

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)
TWFF-NSRR	26007-034	PR

STL (LAB) PROJECT MANAGER	P.O. NUMBER	CONTRACT NO.
Melanie Jakubsen		

CLIENT (SITE) PM	CLIENT PHONE	CLIENT FAX
Jon EDEL	787-485-1097	

CLIENT NAME	CLIENT E-MAIL
Baker Environmental	

CLIENT ADDRESS: AOP 3, 420 Rouser Rd., Coraopolis, PA 15108

COMPANY CONTRACTING THIS WORK (if applicable)

PAGE 1 OF 1

STANDARD REPORT DELIVERY ●

DATE DUE 2STAT

EXPEDITED REPORT DELIVERY (SURCHARGE) ○

DATE DUE

NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 3

REQUIRED ANALYSIS: Low Level PAHs

PRESERVATIVE: 1

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	NUMBER OF CONTAINERS SUBMITTED	REMARKS
3/12/02	1354	7SD7	G					1	
	1349	7SD8	G					1	
	1400	7SD13	G					1	
	1330	7SD14	G					1	
	1347	7SW5		X				2	
	1030	7SW8		X				2	

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS			Jon C. Edel Jr	3/13/02	1400			

RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS Jon C. Edel Jr.	1/7/02	1500						

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
[illegible]	3/14/02	0841	YES ○ NO ○		S241801	

ORIGINAL – RETURN TO LABORATORY WITH SAMPLE(S)

Serial Number 040071

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

IMPS# 8232 7444 5>>2

STL Savannah

STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

54-21

Alternate Laboratory Name/Location
Phone:
Fax:

PROJECT REFERENCE: TWFF-NSRR	PROJECT NO.: 26007-034	PROJECT LOCATION (STATE): PR
STL (LAB) PROJECT MANAGER: Melanie Jakubsen	P.O. NUMBER:	CONTRACT NO.:
CLIENT (SITE) PM: Jon EDEL	CLIENT PHONE: 782-485-1093	CLIENT FAX:
CLIENT NAME: Baker Environmental	CLIENT E-MAIL:	
CLIENT ADDRESS: AOP3, 420 Rouser Rd., Coraopolis, PA 15108		
COMPANY CONTRACTING THIS WORK (if applicable):		

PAGE 1 OF 1

STANDARD REPORT DELIVERY ●
DATE DUE 28 TAT

EXPEDITED REPORT DELIVERY (SURCHARGE) ○
DATE DUE

NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 3

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ...)	Low Level PAHs									REMARKS
								1	PRESERVATIVE								
3/12/02	1052	7SW6		X				2									
↓	1043	7SW7		X				2									
↓	1008	7SW9		X				2									

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS			Jon C. Edel Jr.	3/13/02	1400			
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**
EMPTY CONTAINERS Jon C. Edel Jr.	1/7/02	1500						

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	STL SAVANNAH LOG NO.	LABORATORY REMARKS
KC	3/14/02	0841	YES ○ NO ○		S241801	

ORIGINAL – RETURN TO LABORATORY WITH SAMPLE(S)

APPENDIX C
TEST BORING AND WELL CONSTRUCTION RECORDS
(Additional Data Collection Investigation Report)

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT:	Additional Data Collection - Tow Way Fuel Farm		
PROJ. NO.:	CTO-0034	BORING NO.:	7MW10
COORDINATES:	EAST: 782,494.02	NORTH:	145,351.32
ELEVATION:	COVER: 106.93	TOP OF PVC CASING:	106.74

Rig: CME 75 Truck Mount

	Split Spoon	Casing	Air Hammer	Augers	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	2"	--	--	4-1/4" I.D.	1/15/2002	0 to 14	Sunny, 80s	
Length	2'	--	--	5'	1/26/2002			6.18
Type	Std.	--	--	HS				
Hammer Wt.	140#	--	--	--				
Fall	30"	--	--	--				

Remarks: Hand dig with post-hole digger from 0 to 3' for utility clearance.

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Direct Push P = Piston
N = No Sample

WELL INFORMATION

Type	Diam.	Top Depth (Ft.)	Bottom Depth (Ft.)
Schedule 40 PVC Casing	2"	0.0	2.0
PVC Slotted 10 Slot Screen	2"	2.0	12.0

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT Blows per 0.5'	Lab ID	PID (ppm) ps/bg	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
1, 2, 3 (3.0)	Hand Dig 0 to 3'					3.0'	Bentonite; Top of Sand at 1'; Top of Screen at 2'	104.93 - 103.93
4, 5 (5.0)	S-1	1.5	10 12 12 8		0.0	MEDIUM TO COARSE SAND AND FINE GRAVEL, some shell fragments; tan; dry		
6, 7 (7.0)	S-2	1.2	9 8 7 5		0.0	Wet at 6.4'	2" PVC Screen	
8, 9, 10	A-N					Match to Sheet 2	Sand	

DRILLING CO.:	Geo Works, Inc.	BAKER REP.:	Dave Gaviglia
DRILLER:	William Rolon	BORING NO.:	7MW10 SHEET 1 OF 2

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Additional Data Collection - Tow Way Fuel Farm

CTO NO.: CTO-0034 BORING NO.: 7MW10

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS

SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
ps/bg = point source/background

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) ps/bg	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
11						Continued from Sheet 1	2" PVC Screen	
12		A-N				* Auger deeper due to potential of sand strata to collapse. Leave augers in hole for water to stabilize.	Bottom of Screen at 12'	94.93
13							Soil Cuttings	
14	14.0					14.0'	Sand	92.93
15						Bottom of Boring at 14.0'		
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30						Match to Sheet 3		

DRILLING CO.: Geo Works, Inc. BAKER REP.: Dave Gaviglia

DRILLER: William Rolon BORING NO.: 7MW10 SHEET 2 OF 2

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT:	Additional Data Collection - Tow Way Fuel Farm		
PROJ. NO.:	CTO-0034	BORING NO.:	7MW11
COORDINATES:	EAST: 782,009.24	NORTH:	145,697.99
ELEVATION:	COVER: 109.23	TOP OF PVC CASING:	109.02

Rig: CME 75 Truck Mount

	Split Spoon	Casing	Air Hammer	Augers	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	2"	--	--	6-1/4" I.D.	1/14/2002	0 to 13	Partly Cloudy, 80s	8.0
Length	2'	--	--	5'	1/15/2002			6.6
Type	Std.	--	--	HS				
Hammer Wt.	140#	--	--	--				
Fall	30"	--	--	--				

Remarks: Hand dig with post-hole digger from 0 to 3' for utility clearance.

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Direct Push P = Piston
N = No Sample

WELL INFORMATION

Type	Diam.	Top Depth (Ft.)	Bottom Depth (Ft.)
Schedule 40 PVC Casing	4"	0.0	2.0
PVC Slotted 10 Slot Screen	4"	2.0	12.0

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT Blows per 0.5'	Lab ID	PID (ppm) ps/bg	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
1, 2, 3 (3.0)	Hand Dig 0 to 3'						Bentonite; Top of Sand at 1'; Top of Screen at 2'	107.23
4, 5 (5.0)	S-1	0.0	6 6 5 6		--	No Recovery		
6, 7 (7.0)	S-2	0.0	3 2 3 2		--	No Recovery		
8, 9 (9.0)	S-3	0.4	3 2 1 3		2.0	CLAYEY SILT AND ROCK FRAGMENTS; brown, gray; damp to moist. Tip of Spoon wet at 9' with PSH staining. Water in borehole. Match to Sheet 2	7.0' 4" PVC Screen; Sand	102.23
10	A-N							

DRILLING CO.:	Geo Works, Inc.	BAKER REP.:	Dave Gaviglia
DRILLER:	William Rolon	BORING NO.:	7MW11 SHEET 1 OF 2

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Additional Data Collection - Tow Way Fuel Farm

CTO NO.: CTO-0034 BORING NO.: 7MW11

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS

SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
ps/bg = point source/background

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) ps/bg	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
11						Continued from Sheet 1	4" PVC Screen	
12							Bottom of Screen at 12'	97.23
13	13.0'					13.0'	Soil Cuttings	96.23
14						Bottom of Boring at 13.0'		
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30						Match to Sheet 3		

DRILLING CO.: Geo Works, Inc. BAKER REP.: Dave Gaviglia

DRILLER: William Rolon BORING NO.: 7MW11 SHEET 2 OF 2

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT:	Additional Data Collection - Tow Way Fuel Farm		
PROJ. NO.:	CTO-0034	BORING NO.:	7MW12
COORDINATES:	EAST: 781,743.82	NORTH:	145,405.49
ELEVATION:	COVER: 108.14	TOP OF PVC CASING:	107.95

Rig: CME 75/B-61 Truck Mount

	Split Spoon	Casing	Air Hammer	Augers	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	2"	--	6.5" O.D.	6-1/4" I.D.	1/17/2002	0 to 3.6	Partly Cloudy, 80s	
Length	2'	--	5'	5'	1/30/2002	3.6 to 20	Partly Cloudy, Rain, 80s	
Type	Std.	--	--	HS	2/1/2002			7.48
Hammer Wt.	140#	--	--	--				
Fall	30"	--	--	--				

Remarks: Hand dig with post-hole digger from 0 to 3' for utility clearance. Auger refusal at 3.6', finish borehole to 20' with air hammer rig.

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Direct Push P = Piston
N = No Sample

WELL INFORMATION

Type	Diam.	Top Depth (Ft.)	Bottom Depth (Ft.)
Schedule 40 PVC Casing	4"	0.0	2.0
PVC Slotted 10 Slot Screen	4"	2.0	10.5

Depth (Ft.)		Sample Type & No.	Sample Rec. (Ft.,%)	SPT Blows per 0.5'	Lab ID	PID (ppm) ps/bg	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
1		Hand Dig 0 to 3'					CLAYEY SILT, some fine gravel, little sand; brown; damp	Bentonite	
2								Top of Sand at 1'	
								Top of Screen at 2'	106.14
3	3.0								.
	3.6	S-1	0.5	6-50/0.1'		0.0	Auger refusal at 3.6' (rip-rap boulder)		104.54
4		R-N							
5								Sand	
6								4" PVC Screen	
7							Petroleum odor coming from soil cuttings 8 to 12'		
8							Water ~ 8'		
9							Product and water coming from blown cuttings		
10								Bottom of Screen at 10.5'	
							Match to Sheet 2		97.64

DRILLING CO.:	Geo Works, Inc.	BAKER REP.:	Dave Gaviglia/Joe Etheridge
DRILLER:	William Rolon/Omar Negrin	BORING NO.:	7MW12 SHEET 1 OF 2

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Additional Data Collection - Tow Way Fuel Farm

CTO NO.: CTO-0034 BORING NO.: 7MW12

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS

SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
ps/bg = point source/background

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) ps/bg	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
11						Continued from Sheet 1		
12								
13								
14								
15	R-N						Soil Cuttings	
16								
17						* Advance additional footage to account for potential collapse		
18								
19								
20 20.0'						20.0'	88.14	
21						Bottom of Boring at 20.0'		
22								
23								
24								
25								
26								
27								
28								
29								
30						Match to Sheet 3		

DRILLING CO.: Geo Works, Inc. BAKER REP.: Dave Gaviglia/Joe Etheridge

DRILLER: William Rolon/Omar Negrin BORING NO.: 7MW12 SHEET 2 OF 2

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT:	Additional Data Collection - Tow Way Fuel Farm		
PROJ. NO.:	CTO-0034	BORING NO.:	7MW13
COORDINATES:	EAST: 781,869.980	NORTH:	145,713.67
ELEVATION:	COVER: 108.6	TOP OF PVC CASING:	108.39

Rig: CME 75 Truck Mount

	Split Spoon	Casing	Air Hammer	Augers	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	2"	--	--	6-1/4" I.D.	1/14/2002	0 to 14	Partly Cloudy, 80s	6.85
Length	2'	--	--	5'				
Type	Std.	--	--	HS				
Hammer Wt.	140#	--	--	--				
Fall	30"	--	--	--				

Remarks: Hand dig with post-hole digger from 0 to 3' for utility clearance.

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Direct Push P = Piston
N = No Sample

WELL INFORMATION

Type	Diam.	Top Depth (Ft.)	Bottom Depth (Ft.)
Schedule 40 PVC Casing	4"	0.0	2.0
PVC Slotted 10 Slot Screen	4"	2.0	12.0

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT Blows per 0.5'	Lab ID	PID (ppm) ps/bg	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
1	Hand Dig 0 to 3'						Bentonite; Top of Sand at 1'	
2							Top of Screen at 2'	106.6
3 (3.0)						3.0'		105.6
4	S-1	0.5'	6 9 9 7		0.0	CLAYEY SILT, little sand; tan, brown; dry		
5 (5.0)								
6	S-2	1.0	5 4 3 3		0.0			
7 (7.0)							4" PVC Screen	
8	S-3	0.5	3 3 3 3		150.0	8.6'		100.0
9 (9.0)						CLAYEY SILT, trace sand; moist to wet; gray; slight fuel odor	Sand	
10	A-N					Wet at 9'		

Match to Sheet 2

DRILLING CO.:	Geo Works, Inc.	BAKER REP.:	Dave Gaviglia
DRILLER:	William Rolon	BORING NO.:	7MW13 SHEET 1 OF 2

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Additional Data Collection - Tow Way Fuel Farm

CTO NO.: CTO-0034 BORING NO.: 7MW13

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS

SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
ps/bg = point source/background

Depth (Ft.)		Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) ps/bg	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
11							Continued from Sheet 1	4" PVC	
							1030 - Water at 6.7' (PSH on	Screen	
12							Water)	Bottom of	96.6
		A-N					1040 - Water at 6.6'	Screen at 12'	
13									
								Sand	
14	14.0							14.0	94.6
							Bottom of Boring at14.0'		
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									
							Match to Sheet 3		

DRILLING CO.: Geo Works, Inc. BAKER REP.: Dave Gaviglia

DRILLER: William Rolon BORING NO.: 7MW13 SHEET 2 OF 2

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT:	Additional Data Collection - Tow Way Fuel Farm		
PROJ. NO.:	CTO-0034	BORING NO.:	7MW14
COORDINATES:	EAST: 781,730.390	NORTH:	145,677.55
ELEVATION:	COVER: 106.61	TOP OF PVC CASING:	106.59

Rig: CME 75/B-61 Truck Mount

	Split Spoon	Casing	Air Hammer	Augers	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	2"	--	6.5" O.D.	6-1/4" I.D.	1/14/2002	0 to 15	Partly Cloudy, 80s	3.6
Length	2'	--	5'	5'				
Type	Std.	--	--	HS				
Hammer Wt.	140#	--	--	--				
Fall	30"	--	--	--				

Remarks: Hand dig with post-hole digger from 0 to 3' for utility clearance. Auger Rig from 0 to 3.8', Air Hammer Rig from 3.8' to 15'

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Direct Push P = Piston
N = No Sample

WELL INFORMATION

Type	Diam.	Top Depth (Ft.)	Bottom Depth (Ft.)
Schedule 40 PVC Casing	4"	0.0	2.0
PVC Slotted 10 Slot Screen	4"	2.0	12.0

Depth (Ft.)		Sample Type & No.	Sample Rec. (Ft.,%)	SPT Blows per 0.5'	Lab ID	PID (ppm) ps/bg	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
1		Hand Dig 0 to 3'						Bentonite; Top of Sand at 1'	
2								Top of Screen at 2'	104.61
3	3.0						3.0'		103.61
4	3.8	S-1	0.9	41 50/0.3'		0.0	CLAYEY SILT AND ROCK FRAGMENTS; brown, light gray, gray; dry to damp (FILL)		
5							Auger Refusal at 4' * Need Air Hammer to advance through fill boulders		
6							6.0' Gabbro rip-rap boulder at 4'		100.61
7		R-N					Same as Above, with clay, silt and little fine sand; grayish-brown; moist	4" PVC Screen	99.11
8							damp to moist at 6' 7.5'		
9							Same as Above but orangish-brown, increase in clay	Sand	
10							Match to Sheet 2		

DRILLING CO.:	Geo Works, Inc.	BAKER REP.:	Dave Gaviglia/Robert Roselius
DRILLER:	William Rolon/Omar Negrin	BORING NO.:	7MW14 SHEET 1 OF 2

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Additional Data Collection - Tow Way Fuel Farm

CTO NO.: CTO-0034 BORING NO.: 7MW14

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS

SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
ps/bg = point source/background

Depth (Ft.)		Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) ps/bg	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
11							Continued from Sheet 1	4" PVC Screen	
12								Bottom of Screen at 12'	94.61
13		R-N					Push Hammer to 15', no cuttings, likely clay as above, blow hole, little water, slight odor	Sand	
14									
15	15.0						15.0'		91.61
							Bottom of Boring at 15.0'		
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
30							Match to Sheet 3		

DRILLING CO.: Geo Works, Inc. BAKER REP.: Dave Gaviglia/Robert Roselius

DRILLER: William Rolon/Omar Negrin BORING NO.: 7MW14 SHEET 2 OF 2

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT:	Additional Data Collection - Tow Way Fuel Farm		
PROJ. NO.:	CTO-0034	BORING NO.:	7MW15
COORDINATES:	EAST: 781,843.30	NORTH:	146,260.43
ELEVATION:	CONC. PAD: 111.5	TOP OF PVC CASING:	114.17

Rig: CME 75 Truck Mount

	Split Spoon	Casing	Air Hammer	Augers	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	2"	--	--	6-1/4" I.D.	1/15/2002	0 to 14	Sunny, 80s	
Length	2'	--	--	5'	1/16/2002			11.08
Type	Std.	--	--	HS	1/17/2002			9.6
Hammer Wt.	140#	--	--	--	1/17/2002			8.83
Fall	30"	--	--	--				

Remarks: Hand dig with post-hole digger from 0 to 3' for utility clearance.

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Direct Push P = Piston
N = No Sample

WELL INFORMATION

Type	Diam.	Top Depth (Ft.)	Bottom Depth (Ft.)
Schedule 40 PVC Casing	4"	0.0	2.2
PVC Slotted 10 Slot Screen	4"	2.2	12.2

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT Blows per 0.5'	Lab ID	PID (ppm) ps/bg	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
1, 2, 3 (3.0)	Hand Dig 0 to 3'					3.0'	Bentonite; Top of Sand at 1'; Top of Screen at 2.2'	109.3 - 108.5
4, 5 (5.0)	S-1	0.7	4 5 6 3		1.5	Hard material at 3.3' (nick in split-spoon tip) * Move hole 2' North (Hand dig 3' Clearance) hitting concrete		
6, 7 (7.0)	S-2	0.6	4 3 5 7		83.0	* Move hole 3' Southwest of original location CLAYEY SILT, some rock fragments; brown, gray; damp to moist; slight fuel odor at 5'	4" PVC Screen	
8, 9 (9.0)	S-3	0.4	1 5 3 3		97.0	Wet at 7' (fuel odor stronger)	Sand	
10	A-N					Match to Sheet 2		

DRILLING CO.:	Geo Works, Inc.	BAKER REP.:	Dave Gaviglia
DRILLER:	William Rolon	BORING NO.:	7MW15 SHEET 1 OF 2

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Additional Data Collection - Tow Way Fuel Farm

CTO NO.: CTO-0034 BORING NO.: 7MW15

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS

SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
ps/bg = point source/background

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) ps/bg	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
11						Continued from Sheet 1	4" PVC Screen	
12							Bottom of Screen at 12.2'	99.3
13							Sand	
14	14.0					14.0'	Soil Cuttings	97.5
						Bottom of Boring at 14.0'		
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30						Match to Sheet 3		

DRILLING CO.: Geo Works, Inc. BAKER REP.: Dave Gaviglia

DRILLER: William Rolon BORING NO.: 7MW15 SHEET 2 OF 2

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT:	Additional Data Collection - Tow Way Fuel Farm		
PROJ. NO.:	CTO-0034	BORING NO.:	7MW16
COORDINATES:	EAST: 781,988.91	NORTH:	146,416.99
ELEVATION:	CONC. PAD: 118.19	TOP OF PVC CASING:	120.57

Rig: CME 75/B-61 Truck Mount

	Split Spoon	Casing	Air Hammer	Augers	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	2"	--	6.5" O.D.	6-1/4" I.D.	1/15/2002	0 to 3	Sunny, 80s	
Length	2'	--	5'	5'	1/17/2002	3 to 16	Pt. Cloudy, 80s	
Type	Std.	--	--	HS	1/30/2002	16 to 20	Pt. Cloudy, Rain, 80s	
Hammer Wt.	140#	--	--	--	2/1/2002			7.75
Fall	30"	--	--	--				

Remarks: Hand dig with post-hole digger from 0 to 3' for utility clearance. Auger Rig to refusal at 16', Air hammer rig from 16 to 20'.

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Direct Push P = Piston
N = No Sample

WELL INFORMATION

Type	Diam.	Top Depth (Ft.)	Bottom Depth (Ft.)
Schedule 40 PVC Casing	4"	0.0	2.3
PVC Slotted 10 Slot Screen	4"	2.3	17.3

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT Blows per 0.5'	Lab ID	PID (ppm) ps/bg	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
1, 2, 3 (3.0)	Hand Dig 0 to 3'			(1) 7MW16-00 Sample from 0-1'		CLAYEY SILT, some sand and rock fragments (FILL) (1) Collect Surface Soil Sample with clean Stainless Steel Spoon 1525 - Sample 7MW16-00 for VOCs, SVOCs and Metals	Bentonite; Top of Sand at 1'; Top of Screen at 2.3'	115.89
4, 5 (5.0)	S-1	1.1	5, 9, 6, 8		0.1	less rock fragments at 4'		
6, 7 (7.0)	S-2	1.0	1, 4, 6, 10	7MW16-06 Sample from 6-7'	21.0	Petroleum odor, gray color from 6 to 7' 1552 - Sample 7MW16-06 for Low Level PAHs Wet at 7'	4" PVC Screen	
8, 9 (9.0)	S-3	0.8	8, 7, 8, 10		9.0		Sand	
10	A-N					Match to Sheet 2		

DRILLING CO.:	Geo Works, Inc.	BAKER REP.:	Dave Gaviglia
DRILLER:	William Rolon	BORING NO.:	7MW16 SHEET 1 OF 2

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Additional Data Collection - Tow Way Fuel Farm

CTO NO.: CTO-0034 BORING NO.: 7MW16

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS

SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
ps/bg = point source/background

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) ps/bg	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
11						Continued from Sheet 1	4" PVC Screen	
12								
13	A-N							
14							4" PVC Screen	
15								
16	16.0					Rock at 16' (Auger Refusal), switch to air hammer rig	Sand	102.19
17							Bottom of Screen at 17.3'	100.89
18	R-N							
19							Soil Cuttings	
20	20.0					20.0'		98.19
21						Bottom of Boring at 20.0'		
22								
23								
24								
25								
26								
27								
28								
29								
30						Match to Sheet 3		

DRILLING CO.: Geo Works, Inc. BAKER REP.: Dave Gaviglia

DRILLER: William Rolon BORING NO.: 7MW16 SHEET 2 OF 2

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT:	Additional Data Collection - Tow Way Fuel Farm		
PROJ. NO.:	CTO-0034	BORING NO.:	7MW17
COORDINATES:	EAST: 782,204.71	NORTH:	146,810.30
ELEVATION:	CONC. PAD: 144.6	TOP OF PVC CASING:	147.64

Rig: CME 75/B-61/B-90 (ODEX) Truck Mount

	Split Spoon	Temp. Casing	Air Hammer	Augers	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	2"	8"	6.5" O.D.	6-1/4" I.D.	1/22/2002	0 to 9	Cloudy, 80s	
Length	2'	5'	5'	5'	1/31/2002	9 to 30	Sunny, 80s	
Type	Std.	Steel	--	HS	2/27/2002	30 to 32	Mostly Sunny, 80s	
Hammer Wt.	140#	--	--	--	2/28/2002	32 to 46	Partly Cloudy, 80s	40.3
Fall	30"	--	--	--	3/1/2002			40.09

Remarks: Hand dig with post-hole digger from 0 to 3' for utility clearance. Auger Rig to refusal at 8', B-61 Air hammer rig from 8 to 30', B-90 (ODEX) Air hammer rig from 30 to 46'.

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Direct Push P = Piston
N = No Sample

WELL INFORMATION

Type	Diam.	Top Depth (Ft.)	Bottom Depth (Ft.)
Schedule 40 PVC Casing	4"	0.0	26.0
PVC Slotted 10 Slot Screen	4"	26.0	46.0

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT Blows per 0.5'	Lab ID	PID (ppm) ps/bg	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
1, 2, 3 (3.0)	Hand Dig 0 to 3'			(1) 7MW17-00 Duplicate and MS/MSD 0-1'		SILTY CLAY, some rock fragments; brown; damp (1) Collect Surface soil sample 1/16/02-1445 for VOCs, SVOCs and Metals — 3.0'	Concrete; Top of Cement/Bentonite Grout at 1'	141.6
4, 5 (5.0)	S-1	1.3	2, 2, 4, 6	(2) 7MW17-03 Sample from 3-7'	0.0	SILTY CLAY, little rock and fine gravel; brown; damp (2) Collect subsurface soil sample from 3 to 7' for sufficient sample for Low Level PAHs. Collect Sample, Duplicate and MS/MSD - 1/22/02-1619	Cement/Bentonite Grout	
6, 7 (7.0)	S-2	1.7	5, 10, 12, 14		*	more rock fragments after 5' (slight odor) * PID Malfunctioning	4" PVC Riser	
8, 9 (9.0)	S-3	1.0	12, 20, 33, 36		*	— 8.4' — WEATHERED SAPROLITE, clayey silt some rock frags.; gray, orangish-brown, tan mottling; damp Auger Refusal at 9'	Top of Bentonite at 8'	136.2
10	R-N					Match to Sheet 2	Top of Sand at 10'	134.6

DRILLING CO.:	Geo Works, Inc./ERTEC, Inc.	BAKER REP.:	Dave Gaviglia/Joe Etheridge
DRILLER:	Omar Negrin/Andy Cosme	BORING NO.:	7MW17 SHEET 1 OF 3

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Additional Data Collection - Tow Way Fuel Farm

CTO NO.: CTO-0034 BORING NO.: 7MW17

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS

SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
ps/bg = point source/background

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) ps/bg	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
11						Continued from Sheet 1		
						Move 7MW17 location 26' North of soil		
12						boring. Drill using air hammer (B-61).		
13						Weathered Saprolite	Sand	
14								
15								
16								
17								
18						Collapsing zone from 18 to 21'		
19								
						19.5'		125.1
20		R-N				Gabbro, fractured with soft zones; gray; dry	4" PVC Riser	
21								
22								
23							Sand	
24								
25						Collapsing zone from 25 to 29'		
26							Top of Screen at 26'	118.6
27								
28								
29						* Driller can't drill past 30' using B-61 rig due to collapsing. * No water	4" PVC Screen	
30	30.0'							
						Match to Sheet 3		

DRILLING CO.: Geo Works, Inc./ERTEC, Inc. BAKER REP.: Dave Gaviglia/Joe Etheridge

DRILLER: Omar Negrin/Andy Cosme BORING NO.: 7MW17 SHEET 2 OF 3

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Additional Data Collection - Tow Way Fuel Farm

CTO NO.: CTO-0034 BORING NO.: 7MW17

SAMPLE TYPE	DEFINITIONS
S = Split Spoon A = Auger	SPT = Standard Penetration Test (ASTM D1586)
T = Shelby Tube W = Wash	PID = Photo Ionization Detector Measurement
R = Air Rotary C = Core	MSL = Mean Sea Level
D = Denison P = Piston N = No Sample	ps/bg = point source/background

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) ps/bg	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
31						Continued from Sheet 2		
32						* Use B-90 (ODEX) rig to drill past 30'	Sand	
33								
34								
35								
36								
37								
38	R-N (ODEX)						4" PVC Screen	
39								
40								
41							Sand	
42								
43								
44								
45							Bottom of Screen at 46.0'	
46	46.0'							98.6
47						Bottom of Boring at 46.0'		
48								
49								
50						Match to Sheet 4		

DRILLING CO.: Geo Works, Inc./ERTEC, Inc. BAKER REP.: Dave Gaviglia/Joe Etheridge

DRILLER: Omar Negrin/Andy Cosme BORING NO.: 7MW17 SHEET 3 OF 3

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT:	Additional Data Collection - Tow Way Fuel Farm		
PROJ. NO.:	CTO-0034	BORING NO.:	7MW18
COORDINATES:	EAST: 782,018.76	NORTH:	146,956.25
ELEVATION:	CONC. PAD: 173.07	TOP OF PVC CASING:	175.31

Rig: B-61 Truck Mount

	Split Spoon	Casing	Air Hammer	Augers	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	---	8"	6"/4"	---	1/14/2002	0 to 7	Pt. Cloudy, 80s	
Length	---	4'	5'	---	1/15/2002	7 to 12	Sunny, 80s	
Type	---	PVC	--	---	1/16/2002	12 to 54	Pt. Cloudy, 80s	
Hammer Wt.	---	--	--	--	1/17/2002	54 to 72	Pt. Cloudy, 80s	
Fall	---	--	--	--	1/18/2002	72 to 82	Pt. Cloudy, 80s	

Remarks: Hand dig with post-hole digger from 0 to 3' for utility clearance.

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Direct Push P = Piston
N = No Sample

WELL INFORMATION

Type	Diam.	Top Depth (Ft.)	Bottom Depth (Ft.)
Schedule 40 PVC Casing	4"	0.0	57.5
PVC Slotted 10 Slot Screen	4"	57.5	77.5

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT Blows per 0.5'	Lab ID	PID (ppm) ps/bkg	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
1, 2, 3 (3.0)	Hand Dig 0 to 3'				bkg	SAND, SILT, CLAY, GRAVEL AND COBBLES (Gabbro)	Concrete; Top of Cement/ Bentonite Grout at 1'	
4, 5, 6, 7	R-N (6" hammer)				bkg	8" PVC Surface Casing to 4' (grouted); 7.5'	4" PVC Riser	165.57
8, 9, 10						GABBRO, hard with quartz veins; highly fractured; black, blue/gray		

Match to Sheet 2

DRILLING CO.:	Geo Works, Inc.	BAKER REP.:	Robert Roselius
DRILLER:	Omar Negrin	BORING NO.:	7MW18 SHEET 1 OF 5

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Additional Data Collection - Tow Way Fuel Farm

CTO NO.: CTO-0034 BORING NO.: 7MW18

SAMPLE TYPE	DEFINITIONS
S = Split Spoon A = Auger	SPT = Standard Penetration Test (ASTM D1586)
T = Shelby Tube W = Wash	PID = Photo Ionization Detector Measurement
R = Air Rotary C = Core	MSL = Mean Sea Level
D = Denison P = Piston N = No Sample	ps/bg = point source/background

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) ps/bg	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
11						Continued from Sheet 1		
12								
13								
14							Cement/ Bentonite Grout	
15								
16								
17								
18								
19								
20	R-N (6" hammer)				bkg	Highly fractured to 21'	4" PVC Riser	
21						Gabbro harder at 21', less to no fractures/quartz		
22								
23								
24								
25								
26								
27								
28								
29								
30						Match to Sheet 3		

DRILLING CO.: Geo Works, Inc. BAKER REP.: Robert Roselius

DRILLER: Omar Negrin BORING NO.: 7MW18 SHEET 2 OF 5

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Additional Data Collection - Tow Way Fuel Farm

CTO NO.: CTO-0034 BORING NO.: 7MW18

SAMPLE TYPE	DEFINITIONS
S = Split Spoon A = Auger	SPT = Standard Penetration Test (ASTM D1586)
T = Shelby Tube W = Wash	PID = Photo Ionization Detector Measurement
R = Air Rotary C = Core	MSL = Mean Sea Level
D = Denison P = Piston N = No Sample	ps/bg = point source/background

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) ps/bg	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
31						Continued from Sheet 2		
32						getting more dark blue (hard rock) with depth	Cement/ Bentonite Grout	
33								
34								
35								
36								
37								
38							4" PVC Riser	
39	R-N (6" hammer)				bkg			
40								
41								
42								
43								
44							Top of Bentonite ~ 44'	129.07
45								
46						Collapsing at 46'		
47							Top of Sand at 47'	126.07
48						Very hard at 48.5' bgs., quartz vein		
49								
50						Match to Sheet 4		

DRILLING CO.: Geo Works, Inc. BAKER REP.: Robert Roselius

DRILLER: Omar Negrin BORING NO.: 7MW18 SHEET 3 OF 5

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Additional Data Collection - Tow Way Fuel Farm

CTO NO.: CTO-0034 BORING NO.: 7MW18

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS

SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
ps/bg = point source/background

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) ps/bg	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
51						Continued from Sheet 3		
52							4" PVC Riser	
53						Trace to little green pieces (olivine?) at 53.5', may be less quartz but very hard		
54							Sand	
55								
56								
57							Top of Screen at 57.5'	115.57
58								
59								
60	R-N (6" hammer)				bkg			
61								
62								
63						may be water above 63.5', damp rock fragments and cool air return (potentiometric water surface may be around 58' bgs.)	4" PVC Screen	
64								
65								
66								
67								
68							Sand	
69								
70						Match to Sheet 5		

DRILLING CO.: Geo Works, Inc. BAKER REP.: Robert Roselius

DRILLER: Omar Negrin BORING NO.: 7MW18 SHEET 4 OF 5

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Additional Data Collection - Tow Way Fuel Farm

CTO NO.: CTO-0034 BORING NO.: 7MW18

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS

SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
ps/bg = point source/background

Depth (Ft.)		Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) ps/bg	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
71		R-N (6" hammer)					Continued from Sheet 4 Switch from 6" to 4" hammer at 72'		
72	72.0'						Drilling advancement increases at 72.0' (2.5'/5 minutes), also losing some air (fractures), maybe color change of gray to brownish of dust (pulverize)	Sand	
73									
74								4" PVC Screen	
75									
76		R-N (4" hammer/ 6" hammer)				bkg			
77							Highly fractured from 77 to 82', hammer stuck at 82'	Bottom of Screen at 77.5'	95.57
78									
79									
80									
81									
82	82.0							Collapse to 77.5'	
83									
84									
85		R-N (6" hammer)							
86									
87	87.0'							87.0'	86.07
88							Bottom of Boring at 87.0'		
89									
90							Match to Sheet 6		

DRILLING CO.: Geo Works, Inc. BAKER REP.: Robert Roselius

DRILLER: Omar Negrin BORING NO.: 7MW18 SHEET 5 OF 5

Baker

Baker Environmental

TEST BORING RECORD

PROJECT: Additional Data Collection - Tow Way Fuel Farm

CTO NO.: CTO-0034 BORING NO.: 7MW18A

COORDINATES: EAST: 782,018.60 NORTH: 146,949.39

ELEVATION: SURFACE: 172.35

Rig: Tripod Mount	Split Spoon	Casing	Augers	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	2"	---	---	---	1/28/2002	0 to 3.5	Pt. Cloudy, 80s	
Length	2'	---	---	---				
Type	Std.	---	---	---				
Hammer Wt.	140#	---	---	---				
Fall	30"	---	---	---				

Remarks: Hand dig with post-hole digger from 0 to 3' for utility clearance. Borehole 8' Southeast of 7MW18.

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston
N = No Sample

DEFINITIONS

SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
BG/PS = Background/Point Source
ppm = parts per million

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT Blows per 0.5'	Lab ID	PID (ppm) ps/bg	Visual Description	Elevation (Ft. MSL)
1	Hand Dig			(1) 7MW18-00 Sample from 0-1'		SANDY SILT AND ROCK FRAGMENTS, little clay brown; moist to wet 0.5	171.85
2						WEATHERED SAPROLITE; tan, white, reddish-brown; dry (1) Collect surface soil sample with clean stainless steel spoon. 1125 - Sample 7MW18-00 for VOCs, SVOCs and Metals. Sample 7MW18-03 for Low Level PAHs. * PID Malfunctioning	
3 3.0	S-1	0.3	50/0.5'	7MW18-03 Sample from 3-3.5'	*		
4	S-2	0.0	50/0.0'			Split-spoon refusal at 3.5' 3.5	168.85
5						Bottom of Boring at 3.5'	
6							
7							
8							
9							
10							

DRILLING CO.: Geo Works, Inc. BAKER REP.: Dave Gaviglia

DRILLER: William Rolon BORING NO.: 7MW18A SHEET 1 OF 1

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT:	Additional Data Collection - Tow Way Fuel Farm		
PROJ. NO.:	CTO-0034	BORING NO.:	7MW19
COORDINATES:	EAST: 782,274.09	NORTH:	147,353.02
ELEVATION:	CONC. PAD: 214.33	TOP OF PVC CASING:	216.82

Rig: B-61 Truck Mount

	Split Spoon	Casing	Air Hammer	Augers	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	---	8"	4"	---	1/22/2002	0 to 103	Cloudy, 80s	
Length	---	3'	5'	---	1/23/2002	103 to 115	Pt. Cloudy, 80s	111.29
Type	---	PVC	--	---	1/24/2002	115 to 121.4	Pt. Cloudy, Rain, 80s	111.18
Hammer Wt.	---	--	--	--				
Fall	---	--	--	--				

Remarks: Hand dig with post-hole digger from 0 to 3' for utility clearance.

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Direct Push P = Piston
N = No Sample

WELL INFORMATION

Type	Diam.	Top Depth (Ft.)	Bottom Depth (Ft.)
Schedule 40 PVC Casing	2"	0.0	97.8
PVC Slotted 10 Slot Screen	2"	97.8	117.8

Depth (Ft.)		Sample Type & No.	Sample Rec. (Ft.,%)	SPT Blows per 0.5'	Lab ID	PID (ppm) ps/bkg	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
1		Hand Dig 0 to 3'					HUMUS Material	Concrete	
2								Top of Cement/ Bentonite Grout at 1'	
3	3.0						3.0'		211.33
4							ANADIARITE, some gabro		
5									
6								2" PVC Riser	
7		R-N							
8									
9									
10							10.0'		204.33

Match to Sheet 2

DRILLING CO.:	Geo Works, Inc.	BAKER REP.:	Joe Etheridge
DRILLER:	Omar Negrin	BORING NO.:	7MW19 SHEET 1 OF 7

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Additional Data Collection - Tow Way Fuel Farm

CTO NO.: CTO-0034 BORING NO.: 7MW19

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS

SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
ps/bg = point source/background

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) ps/bg	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
11						GABRO, some anadiarite		
12								
13								
14							Cement/ Bentonite Grout	
15						15.0'		199.33
						GABRO		
16								
17								
18								
19								
20	R-N						2" PVC Riser	
21								
22								
23						Penetration rate from 23 to 27' (1"/minute)		
24								
25								
26								
27								
28								
29								
30						Match to Sheet 3		

DRILLING CO.: Geo Works, Inc. BAKER REP.: Joe Etheridge

DRILLER: Omar Negrin BORING NO.: 7MW19 SHEET 2 OF 7

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Additional Data Collection - Tow Way Fuel Farm

CTO NO.: CTO-0034 BORING NO.: 7MW19

SAMPLE TYPE	DEFINITIONS
S = Split Spoon A = Auger	SPT = Standard Penetration Test (ASTM D1586)
T = Shelby Tube W = Wash	PID = Photo Ionization Detector Measurement
R = Air Rotary C = Core	MSL = Mean Sea Level
D = Denison P = Piston N = No Sample	ps/bg = point source/background

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) ps/bg	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
31						Continued from Sheet 2		
32								
33							Cement/ Bentonite Grout	
34								
35								
36						progress quicker, which implies weathered after 35'		
37								
38		R-N					2" PVC Riser	
39								
40								
41								
42								
43								
44								
45								
46								
47							Cement/ Bentonite Grout	
48								
49								
50						Match to Sheet 4		

DRILLING CO.: Geo Works, Inc. BAKER REP.: Joe Etheridge

DRILLER: Omar Negrin BORING NO.: 7MW19 SHEET 3 OF 7

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Additional Data Collection - Tow Way Fuel Farm

CTO NO.: CTO-0034 BORING NO.: 7MW19

SAMPLE TYPE	DEFINITIONS
S = Split Spoon A = Auger	SPT = Standard Penetration Test (ASTM D1586)
T = Shelby Tube W = Wash	PID = Photo Ionization Detector Measurement
R = Air Rotary C = Core	MSL = Mean Sea Level
D = Denison P = Piston N = No Sample	ps/bg = point source/background

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) ps/bg	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
51						Continued from Sheet 3		
52								
53							Cement/ Bentonite Grout	
54								
55								
56								
57								
58								
59							2" PVC Riser	
60	R-N							
61								
62								
63								
64								
65								
66								
67								
68							Cement/ Bentonite Grout	
69								
70						Match to Sheet 5		

DRILLING CO.: Geo Works, Inc. BAKER REP.: Joe Etheridge

DRILLER: Omar Negrin BORING NO.: 7MW19 SHEET 4 OF 7

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Additional Data Collection - Tow Way Fuel Farm

CTO NO.: CTO-0034 BORING NO.: 7MW19

SAMPLE TYPE	DEFINITIONS
S = Split Spoon A = Auger	SPT = Standard Penetration Test (ASTM D1586)
T = Shelby Tube W = Wash	PID = Photo Ionization Detector Measurement
R = Air Rotary C = Core	MSL = Mean Sea Level
D = Denison P = Piston N = No Sample	ps/bg = point source/background

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) ps/bg	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
71						Continued from Sheet 4		
72								
73								
74							Cement/	
75							Bentonite	
76						some evidence of fractures, milky white quartzite after 75'	Grout	
77								
78								
79							2" PVC Riser	
80	R-N							
81								
82								
83								
84								
85								
86								
87								
88							Top of Bentonite at 88'	126.33
89								
90						Match to Sheet 6	Top of Sand at 90'	124.33

DRILLING CO.: Geo Works, Inc. BAKER REP.: Joe Etheridge

DRILLER: Omar Negrin BORING NO.: 7MW19 SHEET 5 OF 7

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Additional Data Collection - Tow Way Fuel Farm

CTO NO.: CTO-0034 BORING NO.: 7MW19

SAMPLE TYPE	DEFINITIONS
S = Split Spoon A = Auger	SPT = Standard Penetration Test (ASTM D1586)
T = Shelby Tube W = Wash	PID = Photo Ionization Detector Measurement
R = Air Rotary C = Core	MSL = Mean Sea Level
D = Denison P = Piston N = No Sample	ps/bg = point source/background

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) ps/bg	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
91						Continued from Sheet 5	Sand	
92								
93								
94							2" PVC Riser	
95								
96						very hard competent gabro		
97								
98						penetration rate from 98 to 103' (1"/minute)	Top of Screen at 97.8'	116.53
99								
100		R-N						
101								
102								
103								
104							2" PVC Screen	
105								
106								
107							Sand	
108								
109						gabro very hard at 110'		
110						Match to Sheet 7		

DRILLING CO.: Geo Works, Inc. BAKER REP.: Joe Etheridge

DRILLER: Omar Negrin BORING NO.: 7MW19 SHEET 6 OF 7

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Additional Data Collection - Tow Way Fuel Farm

CTO NO.: CTO-0034 BORING NO.: 7MW19

SAMPLE TYPE	DEFINITIONS
S = Split Spoon A = Auger	SPT = Standard Penetration Test (ASTM D1586)
T = Shelby Tube W = Wash	PID = Photo Ionization Detector Measurement
R = Air Rotary C = Core	MSL = Mean Sea Level
D = Denison P = Piston N = No Sample	ps/bg = point source/background

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) ps/bg	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
111						Continued from Sheet 6		
112								
113							Sand	
114								
115							2" PVC Screen	
116	R-N							
117								
118							Bottom of Screen at 117.8'	96.53
119								
120							Collapse to 117.8'	
121	121.4						121.4'	92.93
122						Bottom of Boring at 121.4'		
123								
124								
125								
126								
127								
128								
129								
130								

DRILLING CO.: Geo Works, Inc. BAKER REP.: Joe Etheridge

DRILLER: Omar Negrin BORING NO.: 7MW19 SHEET 7 OF 7

Baker

Baker Environmental

TEST BORING RECORD

PROJECT: Additional Data Collection - Tow Way Fuel Farm

CTO NO.: CTO-0034 BORING NO.: 7MW19A

COORDINATES: EAST: 782,275.87 NORTH: 147,358.93

ELEVATION: SURFACE: 213.99

Rig: Tripod Mount	Split Spoon	Casing	Augers	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	2"	---	---	---	1/30/2002	0 to 4.5	Pt. Cloudy, Rain, 80s	
Length	2'	---	---	---				
Type	Std.	---	---	---				
Hammer Wt.	140#	---	---	---				
Fall	30"	---	---	---				

Remarks: Hand dig with post-hole digger from 0 to 3' for utility clearance. Borehole 6' North of 7MW19.

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston
N = No Sample

DEFINITIONS

SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
BG/PS = Background/Point Source
ppm = parts per million

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT Blows per 0.5'	Lab ID	PID (ppm) ps/bg	Visual Description	Elevation (Ft. MSL)
1	Hand Dig			(1) 7MW19-00 Sample from 0-1'		CLAYEY SILT AND ROCK FRAGMENTS (Gabbro) brown; damp to dry	
2						more rock after 2'	
2.5						(1) Collect surface soil sample with clean stainless steel spoon	
3	S-1	0.3	36 42 44 50/0.4'	7MW19-03 Sample from 3-4.5'	*	1125 - Sample 7MW19-00 for VOCs, SVOCs and Metals * PID Malfunctioning	
4							
4.5						1018 - Sample 7MW19-03 for Low Level PAHs	
5 4.5	S-2	0.0	50/0.1'		*	4.5	209.49
6						Bottom of Boring at 4.5'	
7							
8							
9							
10							

DRILLING CO.: Geo Works, Inc. BAKER REP.: Dave Gaviglia

DRILLER: Armando Fontanez BORING NO.: 7MW19A SHEET 1 OF 1

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT:	Additional Data Collection - Tow Way Fuel Farm		
PROJ. NO.:	CTO-0034	BORING NO.:	7MW20
COORDINATES:	EAST: 782,989.260	NORTH:	145,431.98
ELEVATION:	CONC. PAD: 110.88	TOP OF PVC CASING:	113.3

Rig: Mobile B-61 HDX Truck Mount

	Split Spoon	Casing	Air Hammer	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	--	--	6.5" O.D.	--	1/11/2002	0 to 16.5	Partly Cloudy, Rain, 80s	10.0
Length	--	--	5'	--	1/14/2002	---		11.82
Type	--	--	--	--				
Hammer Wt.	--	--	--	--				
Fall	--	--	--	--				

Remarks: Hand dig with post-hole digger from 0 to 3' for utility clearance.

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Direct Push P = Piston
N = No Sample

WELL INFORMATION

Type	Diam.	Top Depth (Ft.)	Bottom Depth (Ft.)
Schedule 40 PVC Casing	4"	0.0	5.0
PVC Slotted 10 Slot Screen	4"	5.0	15.0

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) ps/bg	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
1						SANDY SILT; tan; dry	Concrete	
2							Top of Bentonite at 1'	
3							Top of Sand at 3'	
4							PVC Riser	
5	R-N				0.0	5.0'	Top of Screen at 5'	105.88
6						SAPROLITE; gray, light green, light brown; dry		
7							4" PVC Screen	
8								
9							Sand	
10						Moist ~ 10'		

Match to Sheet 2

DRILLING CO.:	Geo Works, Inc.	BAKER REP.:	Dave Gaviglia
DRILLER:	Geraldo Rodriguez	BORING NO.:	7MW20

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Additional Data Collection - Tow Way Fuel Farm

CTO NO.: CTO-0034 BORING NO.: 7MW20

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS

SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
ps/bg = point source/background

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) ps/bg	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
11						Continued from Sheet 1		
12							4" PVC Screen	
13		R-N						
14								
15							Bottom of Screen at 15'	95.88
16							Sand	
	16.5					16.5'		94.38
17						Bottom of Boring at 16.5'		
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30						Match to Sheet 3		

DRILLING CO.: Geo Works, Inc. BAKER REP.: Dave Gaviglia

DRILLER: Geraldo Rodriguez BORING NO.: 7MW20 SHEET 2 OF 2

Baker

Baker Environmental

TEST BORING RECORD

PROJECT: Additional Data Collection - Tow Way Fuel Farm

CTO NO.: CTO-0034 BORING NO.: 7SB23

COORDINATES: EAST: 781,931.20 NORTH: 146,705.14

ELEVATION: SURFACE: 153.04

Rig: CME 75 Truck Mount	Split Spoon	Casing	Augers	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	2"	---	4-1/4" I.D.	---	1/23/2002	0 to 8.1	Pt. Cloudy, 80s	
Length	2'	---	5'	---				
Type	Std.	---	HS	---				
Hammer Wt.	140#	---	---	---				
Fall	30"	---	---	---				

Remarks: Hand dig with post-hole digger from 0 to 3' for utility clearance

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston
N = No Sample

DEFINITIONS

SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
BG/PS = Background/Point Source
ppm = parts per million

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT Blows per 0.5'	Lab ID	PID (ppm) ps/bg	Visual Description	Elevation (Ft. MSL)
1, 2, 3	Hand Dig			(1) 7SB23-00 Sample from 0-1'		SILT, little clay, some rock fragments; light brown; dry (FILL) (1) Collect surface soil sample with clean stainless steel spoon. 1130 - Sample 7SB23-00 for VOCs, SVOCs and Metals	
3.0							
4, 5	S-1	0.9	7 10 7 12				
5.0							
6	S-2	0.8	8 8 50/0.3'				
6.3							
7	A-N			7SB23-07 Sample from 5-6.3'		1317 - Sample 7SB23-07 above bedrock for Low Level PAHs	
7.0							
8	S-3	0.5	2,5 50/0.1'				
8.1							
9, 10							

5.5 — SANDY SILT, some rock and fine gravel frags., little shell fragments; tan; dry (Rock at 6.3') — 147.54

8.1 — Auger Refusal — 144.94

Bottom of Boring at 8.1'

Match to Sheet 2

DRILLING CO.: Geo Works, Inc. BAKER REP.: Dave Gaviglia

DRILLER: Armando Fontanez BORING NO.: 7SB23 SHEET 1 OF 1

Baker

Baker Environmental

TEST BORING RECORD

PROJECT: Additional Data Collection - Tow Way Fuel Farm

CTO NO.: CTO-0034 BORING NO.: 7SB24

COORDINATES: EAST: 781,991.23 NORTH: 146,568.36

ELEVATION: SURFACE: 120.5

Rig: CME 75 Truck Mount	Split Spoon	Casing	Augers	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	2"	---	4-1/4" I.D.	---	1/23/2002	0 to 11	Pt. Cloudy, 80s	
Length	2'	---	5'	---				
Type	Std.	---	HS	---				
Hammer Wt.	140#	---	---	---				
Fall	30"	---	---	---				

Remarks: Hand dig with post-hole digger from 0 to 3' for utility clearance

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston
N = No Sample

DEFINITIONS

SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
BG/PS = Background/Point Source
ppm = parts per million

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT Blows per 0.5'	Lab ID	PID (ppm) ps/bg	Visual Description	Elevation (Ft. MSL)
1 2 3 3.0	Hand Dig			(1) 7SB24-00 Sample from 0-1'		SANDY SILT AND ROCK FRAGMENTS; dark brown; dry (1) Collect surface soil sample with clean stainless steel spoon. 1425 - Sample 7SB24-00 for VOCs, SVOCs and Metals 3.0	117.50
4 5 5.0	S-1	1.3	3 5 5 8		0.0	SILTY CLAY, trace fine gravel; light brown; damp	
6 7 7.0	S-2	1.0	9 10 13 17		0.1	6.5	114.00
8 9 9.0	S-3	1.6	6 8 13 17	7-SB24-07 Sample from 7 - 11'	2.4	CLAYEY SILT, little rock fragments; gray, reddish-brown, tan; dry to damp little white/gray granular material from 8.6 to 9' (weathered saprolite), wet at 8' 1526 - Sample 7SB24-07 and Duplicate for Low Level PAHs	
10	S-4	0.8	6 13 36		0.0	Auger refusal at 10' Match to Sheet 2	

DRILLING CO.: Geo Works, Inc. BAKER REP.: Dave Gaviglia

DRILLER: Armando Fontanez BORING NO.: 7SB24 SHEET 1 OF 2

Baker

Baker Environmental

TEST BORING RECORD

PROJECT: Additional Data Collection - Tow Way Fuel Farm

CTO NO.: CTO-0034 BORING NO.: 7SB24

SAMPLE TYPE	DEFINITIONS
S = Split Spoon A = Auger	SPT = Standard Penetration Test (ASTM D1586)
T = Shelby Tube W = Wash	PID = Photo Ionization Detector Measurement
R = Air Rotary C = Core	MSL = Mean Sea Level
D = Denison P = Piston N = No Sample	ps/bg = point source/background

Depth (Ft.)		Sample Type & No.	Sample Rec. (Ft.,%)	SPT Blows per 0.5'	Lab ID	PID (ppm) ps/bg	Visual Description		Elevation (Ft. MSL)
11	11.0	S-4		34			Continued from Sheet 1	11.0	109.5
							Bottom of Boring at 11.0'		
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									

DRILLING CO.: Geo Works, Inc. BAKER REP.: Dave Gaviglia

DRILLER: Armando Fontanez BORING NO.: 7SB24 SHEET 2 OF 2

Baker

Baker Environmental

TEST BORING RECORD

PROJECT: Additional Data Collection - Tow Way Fuel Farm

CTO NO.: CTO-0034 BORING NO.: 7SB25

COORDINATES: EAST: 782,061.72 NORTH: 146,595.44

ELEVATION: SURFACE: 124.96

Rig: Tripod Mount	Split Spoon	Casing	Augers	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	2"	---	---	---	1/24/2002	0 to 5.2	Pt. Cloudy, Rain, 80s	
Length	2'	---	---	---				
Type	Std.	---	---	---				
Hammer Wt.	140#	---	---	---				
Fall	30"	---	---	---				

Remarks: Hand dig with post-hole digger from 0 to 3' for utility clearance. Refusal at 3.9' at original location, offset location 3' West.

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston
N = No Sample

DEFINITIONS

SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
BG/PS = Background/Point Source
ppm = parts per million

Depth (Ft.)		Sample Type & No.	Sample Rec. (Ft.,%)	SPT Blows per 0.5'	Lab ID	PID (ppm) ps/bg	Visual Description		Elevation (Ft. MSL)
1		S-1	0.3	5 5	(1) 7SB25-00	*	CLAYEY SILT, some rock fragments; dark brown; moist		
2	2.0			7 9	Sample from 0-1'		* PID Malfunctioning 0910 - Sample 7SB25-00 for VOCs, SVOCs and Metals		
3		S-2	0.8	8 8		*			-
4	4.0			10 10	7SB25-04		little fine gravel; gray, light gray, orangish-brown mottling starting at 4.0', grayer in color with slight odor		
5	5.2	S-3	0.8	8,7 50/0.2'	Sample 4 to 5.2'	*	1145 - Sample 7SB25-04 for Low Level PAHs	5.2	119.76
6							Bottom of Boring at 5.2'		
7									
8									
9									
10									

DRILLING CO.: Geo Works, Inc. BAKER REP.: Dave Gaviglia

DRILLER: Armando Fontanez BORING NO.: 7SB25 SHEET 1 OF 1

Baker

Baker Environmental

TEST BORING RECORD

PROJECT: Additional Data Collection - Tow Way Fuel Farm

CTO NO.: CTO-0034 BORING NO.: 7SB26

COORDINATES: EAST: 782,018.13 NORTH: 146,513.89

ELEVATION: SURFACE: 120.75

Rig: CME 75 Truck Mount	Split Spoon	Casing	Augers	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	2"	---	4-1/4" I.D.	---	1/24/2002	0 to 13	Pt. Cloudy, Rain, 80s	
Length	2'	---	5'	---				
Type	Std.	---	HS	---				
Hammer Wt.	140#	---	---	---				
Fall	30"	---	---	---				

Remarks: Hand dig with post-hole digger from 0 to 3' for utility clearance

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston
N = No Sample

DEFINITIONS

SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
BG/PS = Background/Point Source
ppm = parts per million

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT Blows per 0.5'	Lab ID	PID (ppm) ps/bg	Visual Description	Elevation (Ft. MSL)
1	Hand Dig			(1) 7SB26-00 Sample from 0-1'		SANDY SILT, little clay, some rock fragments; light brown; damp	
2						(1) Collect surface soil sample with clean stainless steel spoon.	
3 3.0						1340 - Sample 7SB26-00 for VOCs, SVOCs and Metals	
4	S-1	0.9	9 9 7 9		0.0		
4.5							116.25
5 5.0						SILTY CLAY, trace to little rock fragments; light brown to light gray; damp	
6	S-2	0.9	5 5 5 6		0.0		
7 7.0							
8	S-3	1.0	4 4 8 10	7-SB26-07 Sample from 8 - 9'	0.1	gray at 8.5', slight odor	
9 9.0						1355 - Sample 7SB26-07 for Low Level PAHs	
10	S-4	1.3	5 4 6		0.0	Subangular coarse gravel from 10.5 to 11.4'	
						Match to Sheet 2	

DRILLING CO.: Geo Works, Inc. BAKER REP.: Dave Gaviglia

DRILLER: Armando Fontanez BORING NO.: 7SB26 SHEET 1 OF 2

Baker

Baker Environmental

TEST BORING RECORD

PROJECT: Additional Data Collection - Tow Way Fuel Farm

CTO NO.: CTO-0034 BORING NO.: 7SB26

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS

SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
ps/bg = point source/background

Depth (Ft.)		Sample Type & No.	Sample Rec. (Ft.,%)	SPT Blows per 0.5'	Lab ID	PID (ppm) ps/bg	Visual Description	Elevation (Ft. MSL)
11	11.0	S-4		6			Continued from Sheet 1	
				4			light gray and reddish-brown mottling starting at 11.4'	
12		S-5	1.9	6		0.0	Auger refusal at 12.0'	
				9			Saprolite fragments at 12.5'	
13	13.0			32			13.0	107.75
							Bottom of Boring at 13.0'	
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								

DRILLING CO.: Geo Works, Inc. BAKER REP.: Dave Gaviglia

DRILLER: Armando Fontanez BORING NO.: 7SB26 SHEET 2 OF 2

Baker

Baker Environmental

TEST BORING RECORD

PROJECT: Additional Data Collection - Tow Way Fuel Farm

CTO NO.: CTO-0034 BORING NO.: 7SB27

COORDINATES: EAST: 782,691.25 NORTH: 146,925.58

ELEVATION: SURFACE: 181.77

Rig: CME 75 Truck Mount	Split Spoon	Casing	Augers	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	2"	---	4-1/4" I.D.	---	1/12/2002	0 to 12.4	Pt. Cloudy, 80s	
Length	2'	---	5'	---				
Type	Std.	---	HS	---				
Hammer Wt.	140#	---	---	---				
Fall	30"	---	---	---				

Remarks: Hand dig with post-hole digger from 0 to 3' for utility clearance

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston
N = No Sample

DEFINITIONS

SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
BG/PS = Background/Point Source
ppm = parts per million

Depth (Ft.)		Sample Type & No.	Sample Rec. (Ft.,%)	SPT Blows per 0.5'	Lab ID	PID (ppm) ps/bg	Visual Description	Elevation (Ft. MSL)
1 2 3	3.0	Hand Dig			(1) 7SB30-00 Sample from 0-1'		1430 - Sample 7SB27-00 for VOCs, SVOCs, and Metals (1) Collect surface soil sample with clean stainless steel spoon. 3.0	178.77
4 5	5.0	S-1	1.4	2 5 10 11		0.0	WEATHERED SAPROLITE, sandy silt and granular tan, gray, light brown, white mottling; dry	
6 7	7.0	S-2	1.5	7 13 18 21		0.0	Saprolite more competent at 6'	
8 9	9.0	S-3	1.9	11 18 28 34		0.0		
10		S-4	1.7	13 23 29		0.0	Match to Sheet 2	

DRILLING CO.: Geo Works, Inc. BAKER REP.: Dave Gaviglia

DRILLER: William Rolon BORING NO.: 7SB27 SHEET 1 OF 2

Baker

Baker Environmental

TEST BORING RECORD

PROJECT: Additional Data Collection - Tow Way Fuel Farm

CTO NO.: CTO-0034 BORING NO.: 7SB27

SAMPLE TYPE	DEFINITIONS
S = Split Spoon A = Auger	SPT = Standard Penetration Test (ASTM D1586)
T = Shelby Tube W = Wash	PID = Photo Ionization Detector Measurement
R = Air Rotary C = Core	MSL = Mean Sea Level
D = Denison P = Piston N = No Sample	ps/bg = point source/background

Depth (Ft.)		Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) ps/bg	Visual Description		Elevation (Ft. MSL)
11	11.0	S-4		26					
12		S-5	1.2	14 26	7SB27-11 Sample 11-12.4'	0.0	1548 - Sample 7SB27-11 for Low Level PAHs		
	12.4			50/0.4'			Refusal at 12.4'	12.4	169.37
13							Bottom of Boring at 12.4'		
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									

Match to Sheet 3

DRILLING CO.: Geo Works, Inc. BAKER REP.: Dave Gaviglia

DRILLER: William Rolon BORING NO.: 7SB27 SHEET 2 OF 2

Baker

Baker Environmental

TEST BORING RECORD

PROJECT: Additional Data Collection - Tow Way Fuel Farm

CTO NO.: CTO-0034 BORING NO.: 7SB28

COORDINATES: EAST: 782,796.67 NORTH: 147,158.29

ELEVATION: SURFACE: 174.2

Rig: CME 75 Truck Mount	Split Spoon	Casing	Augers	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	2"	---	4-1/4" I.D.	---	1/22/2002	0 to 12.5	Cloudy, 80s	
Length	2'	---	5'	---				
Type	Std.	---	HS	---				
Hammer Wt.	140#	---	---	---				
Fall	30"	---	---	---				

Remarks: Hand dig with post-hole digger from 0 to 3' for utility clearance

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston
N = No Sample

DEFINITIONS

SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
BG/PS = Background/Point Source
ppm = parts per million

Depth (Ft.)		Sample Type & No.	Sample Rec. (Ft.,%)	SPT Blows per 0.5'	Lab ID	PID (ppm) ps/bg	Visual Description		Elevation (Ft. MSL)
1 2 3	3.0	Hand Dig			(1) 7SB28-00 Sample from 0-1'		1200 - Sample 7SB28-00 for VOCs, SVOCs, and Metals (1) Collect surface soil sample with clean stainless steel spoon.	3.0	171.20
4 5	5.0	S-1	0.8	4 3 8 10	(2) 7SB28-03 Sample from 3 to 7'	0.0	CLAYEY SILT AND ROCK FRAGMENTS (FILL); brown, gray; dry to damp little to some fine sand at 5' (slight odor) (2) Collect subsurface soil sample from 3 to 7' for sufficient sample volume.		
6 7	7.0	S-2	0.6	5 5 5 4		*	1210 - Sample 7SB28-03 for Low Level PAHs * PID Malfunctioning	7.4	166.80
8 9	9.0	S-3	1.5	6 8 9 13		0.0	Weathered Saprolite, CLAYEY SILT; orange and brown staining (iron oxide), tan, light gray, green mottled; dry to damp		
10		S-4	1.0	6 7 26		0.0			

Match to Sheet 2

DRILLING CO.: Geo Works, Inc. BAKER REP.: Dave Gaviglia

DRILLER: Armando Fontanez BORING NO.: 7SB28 SHEET 1 OF 2

Baker

Baker Environmental

TEST BORING RECORD

PROJECT: Additional Data Collection - Tow Way Fuel Farm

CTO NO.: CTO-0034 BORING NO.: 7SB28

SAMPLE TYPE	DEFINITIONS
S = Split Spoon A = Auger	SPT = Standard Penetration Test (ASTM D1586)
T = Shelby Tube W = Wash	PID = Photo Ionization Detector Measurement
R = Air Rotary C = Core	MSL = Mean Sea Level
D = Denison P = Piston N = No Sample	ps/bg = point source/background

Depth (Ft.)		Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) ps/bg	Visual Description	Elevation (Ft. MSL)
11	11.0	S-4		33			Continued from Sheet 1	
				33				
12		S-5	1.0	48		0.0	more competent at 11.0'; dry	
	12.5			50/0.5'			12.5	161.7
13							Bottom of Boring at 12.5'	
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30							Match to Sheet 3	

DRILLING CO.: Geo Works, Inc. BAKER REP.: Dave Gaviglia

DRILLER: Armando Fontanez BORING NO.: 7SB28 SHEET 2 OF 2

Baker

Baker Environmental

TEST BORING RECORD

PROJECT: Additional Data Collection - Tow Way Fuel Farm

CTO NO.: CTO-0034 BORING NO.: 7SB29

COORDINATES: EAST: 782,460.45 NORTH: 147,250.13

ELEVATION: SURFACE: 189.31

Rig: CME 75 Truck Mount	Split Spoon	Casing	Augers	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	2"	---	4-1/4" I.D.	---	1/12/2002	0 to 10.75	Pt. Cloudy, 80s	
Length	2'	---	5'	---				
Type	Std.	---	HS	---				
Hammer Wt.	140#	---	---	---				
Fall	30"	---	---	---				

Remarks: Hand dig with post-hole digger from 0 to 3' for utility clearance

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston
N = No Sample

DEFINITIONS

SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
BG/PS = Background/Point Source
ppm = parts per million

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT Blows per 0.5'	Lab ID	PID (ppm) ps/bg	Visual Description	Elevation (Ft. MSL)
1	Hand Dig			(1) 7SB29-00 Sample from 0-1'		SILTY CLAY, some fine gravel and coarse sand; light brown; dry	
2						(1) Collect surface soil sample with clean stainless steel spoon.	
3 3.0						1050 - Sample 7SB29-00 for VOCs, SVOCs, and Metals	
4	S-1	1.3	4 4 10		0.0	4.3	185.01
5 5.0			21			WEATHERED SAPROLITE, sandy silt and granular; tan, gray, light brown mottling; dry	
6	S-2	1.4	8 15 22		0.0		
7 7.0			28				
8	S-3	1.4	3 14 14		0.0		
9 9.0			16				
10	S-4	1.3	15 14 43	7SB29-10 Sample 10-10.75'	0.0	1415 - Sample 7SB29-10 for Low Level PAHs	

Match to Sheet 2

DRILLING CO.: Geo Works, Inc. BAKER REP.: Dave Gaviglia

DRILLER: William Rolon BORING NO.: 7SB29 SHEET 1 OF 2

Baker

Baker Environmental

TEST BORING RECORD

PROJECT: Additional Data Collection - Tow Way Fuel Farm

CTO NO.: CTO-0034 BORING NO.: 7SB29

SAMPLE TYPE	DEFINITIONS
S = Split Spoon A = Auger	SPT = Standard Penetration Test (ASTM D1586)
T = Shelby Tube W = Wash	PID = Photo Ionization Detector Measurement
R = Air Rotary C = Core	MSL = Mean Sea Level
D = Denison P = Piston N = No Sample	ps/bg = point source/background

Depth (Ft.)		Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) ps/bg	Visual Description	Elevation (Ft. MSL)
11	10.75'	S-4		50/0.25'			Refusal at 10.75' 10.8	178.56
							Bottom of Boring at 10.75'	
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								
							Match to Sheet 3	

DRILLING CO.: Geo Works, Inc. BAKER REP.: Dave Gaviglia

DRILLER: William Rolon BORING NO.: 7SB29 SHEET 2 OF 2

Baker

Baker Environmental

TEST BORING RECORD

PROJECT: Additional Data Collection - Tow Way Fuel Farm

CTO NO.: CTO-0034 BORING NO.: 7SB30

COORDINATES: EAST: 782,550.66 NORTH: 147,744.99

ELEVATION: SURFACE: 184.75

Rig: CME 75 Truck Mount	Split Spoon	Casing	Augers	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	2"	---	4-1/4" I.D.	---	1/12/2002	0 to 8.9	Pt. Cloudy, 80s	
Length	2'	---	5'	---				
Type	Std.	---	HS	---				
Hammer Wt.	140#	---	---	---				
Fall	30"	---	---	---				

Remarks: Hand dig with post-hole digger from 0 to 3' for utility clearance

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston
N = No Sample

DEFINITIONS

SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
BG/PS = Background/Point Source
ppm = parts per million

Depth (Ft.)		Sample Type & No.	Sample Rec. (Ft.,%)	SPT Blows per 0.5'	Lab ID	PID (ppm) ps/bg	Visual Description		Elevation (Ft. MSL)
1		S-1	0.3	4 4 8 9	(1) 7SB30-00 Sample from 0-1'	*	WEATHERED SAPROLITE, sandy silt and granular; tan, gray, white; dry *Humidity affecting PID (1) Not enough recovery for sample in split-spoon, collect sample using clean post-hole digger.		
2	2.0								
3	3.0	Hand Dig					1015 - Sample 7SB30-00 for VOCs, SVOCs, and Metals		.
4		S-2	1.7	8 16 17 18		*			
5	5.0						Saprolite more competent at 5'		
6		S-3	1.5	24 22 28 40		*			
7	7.0								
8		S-4	2.0	12 24 37 53/0.4'	7SB30-08 Sample from 8-8.9'	0.0	1002 - Sample 7SB30-08 for Low Level PAHs Mineralized fracture at 8.5' Refusal at 8.9'	8.9	175.85
9	8.9								
10							Bottom of Boring at 8.9' Match to Sheet 2		

DRILLING CO.: Geo Works, Inc. BAKER REP.: Dave Gaviglia

DRILLER: William Rolon BORING NO.: 7SB30 SHEET 1 OF 1

APPENDIX F
IDW DISPOSAL INVOICE
(Additional Data Collection Investigation Report)

Note: 18 drums

BFI Waste Systems™

BROWNING-FERRIS INDUSTRIES

NR061-02

NON-HAZARDOUS WASTE MANIFEST	1. Generator's US EPA ID No.	Manifest Document No. 84764	2. Page 1 of	Pass Code:

GENERATOR

3. Generator's Name and Malling Address
NAVAL STATION ROOSEVELT ROAD
BOX 3021 ,CEIBA,P.R. 00771

4. Generator's Phone (787) 865-4152

Generating Location:
NAVAL STATION ROOSEVELT ROAD
PR ROUTE #3 BLDG 31
CEIBA, P.R. 00771

5. Transporter 1 Company Name	6. EQB Permit #	A. Transporter's Phone
NEGRON & NEGRON SERVICES, INC.		(787)260-3468
7. Transporter 2 Company Name	8. EQB Permit #	B. Transporter's Phone
9. Designated Facility Name and Site Address PONCE SANITARY LANDFILL PO BOX 7104 / RD 500 BARAMAYA FINAL AVENUE PONCE, PR 00731	10. EQB Permit # RSM-0058	C. Facility's Phone 787-841-7775

11. Waste Shipping Name and Description	Handling Code	12. Containers No	Type	13. Total Quantity	14. Unit Wt/Vol
a. GROUND WATER	020731-L29Y21931				
b. SOIL	020731 -L29Y21932				
c.					
d.				18 drums	

D. Additional Descriptions for Materials Listed Above

15. Special Handling Instructions and Additional Information

TRANSPORTER

16. GENERATOR'S CERTIFICATION: I certify the materials above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed / Typed Name	Signature	Month	Day	Year
Madeline Rivera Ruiz		03	28	02

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed / Typed Name	Signature	Month	Day	Year
J.RIVERA		03	28	02

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed / Typed Name	Signature	Month	Day	Year

FACILITY

19. Discrepancy Indication Space
Ground water- 5 drs- pH= 7.58 CRCR
Soil- 13 drs- pH= 9.48 CRCR

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in item 19.

Printed / Typed Name	Signature	Month	Day	Year
Carlos R. Colón		3	28	02

SALES DEPARTMENT

BFI OF PONCE, INC.
Industrial Waste Division
P. O. Box 7104
Ponce, PR 00732
Telephone: (787) 841-7775
Fax: (787) 259-2707

SERVICE TICKET #
061969
SERVICE DATE
03/28/02

SERVICE WORKSHEET

Customer: NAVAL STATION ROOSEVELT ROAD

Acct. No. | | | | | | | Loc. Code: | |

Service Location PR ROUTE # 3 BLDG 31
CEIBA, P.R. 00771

Transporter NEGRON & NEGRON SERVICES, INC.

Truck # 450 Plate # HP-4687

TIME					
Manifest # 84764	Customer Arrival	~~9:00~~ A.M. 8:00 P.M.	Landfill Arrival	A.M. P.M.
Service Time: 9:00 AM	Customer Leaving	12:00 A.M. P.M.	Landfill Leaving	A.M. P.M.

ROLL OFF BOXES

TRANS. CODE: 1
SYS CODE: 0100404
RTE. 404
HAULS: 01
CONT. SIZE: _____
VOL CODE: YD COMP: N
ON CALL: Y
HAUL CHRG: | | | | . |
DISP. CHRG: | | | | . |
OTHER CHRG: | | | | . |
DISP. VOL: _____
DISP. VOL CODE: | |
DISP. SITE: | |

VANS

_____ 27" van PU _____ Del _____ Rent _____ From: _____ To: _____
_____ 40" van
_____ 350 Truck
_____ Other

TANK TRUCK

_____ 8,000 gallons PU _____ Del _____ Rent _____ From: _____ To: _____

VACCUM TRUCK (3,000 gls) PU _____ Del _____ Rent _____ From: _____ To: _____

DUMP TRUCKS PU _____ Del _____ Rent _____

OTHER SERVICES:

_____ Pump
_____ Hoses
_____ Hydroblasting Machine
_____ Liner
_____ BFI Bag (1 yd)
_____ Labors
_____ Waste Approval
_____ Waste Approval Renewal
_____ Analiticals
✓ Waiting Time 1hr
_____ PPE Equipment
_____ Other _____

Contact Person: JOHN RAMSON / Madeline Rivera Svc Hour: _____ Purchase Order # _____

Comments: _____

Customer Signature _____ Driver Signature _____

BFI Waste Systems™

BROWNING-FERRIS INDUSTRIES

NR062 - 02

NON-HAZARDOUS WASTE MANIFEST	1. Generator's US EPA ID No.	Manifest Document No. 84767	2. Page 1 of	Pass Code:

3. Generator's Name and Mailing Address
NAVAL STATION ROOSEVELT ROAD
BOX 3021 CEIBA,P.R. 00771

4. Generator's Phone (787) 865-4152

Generating Location:
NAVAL STATION ROOSEVELT ROAD
P.R. ROUTE # 3 BLDG 31
CEIBA, P.R. 00771

5. Transporter 1 Company Name	6. EQB Permit #	A. Transporter's Phone
NEGRON & NEGRON SERVICES,INC.		(787)260-3468 HP-4657
7. Transporter 2 Company Name	8. EQB Permit #	B. Transporter's Phone
9. Designated Facility Name and Site Address	10. EQB Permit #	C. Facility's Phone
PONCE SANITARY LANDFILL PO BOX 7104 / RD 500 BARAMAYA FINAL AVENUE PONCE, PR 00731	RSM-0058	787-841-7775

11. Waste Shipping Name and Description	Handling Code	12. Containers No	Type	13. Total Quantity	14. Unit Wt/Vol
a. GROUND WATER	020731-L29Y21931	3			Dr.
b. SOIL	020731-L29Y21932	3			Dr.
c.					
d.					

D. Additional Descriptions for Materials Listed Above

15. Special Handling Instructions and Additional Information

GENERATOR

16. GENERATOR'S CERTIFICATION: I certify the materials above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed / Typed Name	Signature	Month	Day	Year
Madeline Rivera Ruiz		04	02	02

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials				
Printed / Typed Name	Signature	Month	Day	Year
J.RIVERA		04	02	02
18. Transporter 2 Acknowledgement of Receipt of Materials				
Printed / Typed Name	Signature	Month	Day	Year

FACILITY

19. Discrepancy Indication Space
11. a. pH=7.63
b. pH=9.51

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in item 19.

Printed / Typed Name	Signature	Month	Day	Year
Carlos R. Colón		4	02	02

SALES DEPARTMENT

BFI OF PONCE, INC.
Industrial Waste Division
P. O. Box 7104
Ponce, PR 00732
Telephone: (787) 841-7775
Fax: (787) 259-2707

SERVICE TICKET #
061971
SERVICE DATE
04/2/02

SERVICE WORKSHEET

Customer: NAVAL STATION ROOSEVELT ROAD

Acct. No. _____ Loc. Code: _____

Service Location P.R. ROUTE #3 BLDG 31

CEIBA,P.R. 00771

Transporter NEGRON & NWGRON SERVICES, INC.

Truck # 450 Plate # HP-4687

TIME					
Manifest # 84767	Customer Arrival	9:00 A.M. P.M.	Landfill Arrival	A.M. P.M.
Service Time: 9:00 AM	Customer Leaving	1000 A.M. P.M.	Landfill Leaving	A.M. P.M.

ROLL OFF BOXES

TRANS. CODE: 1 SYS CODE: 0100404 RTE. 404 # HAULS: 01

CONT. SIZE: _____ VOL CODE: YD COMP: N ON CALL: Y

HAUL CHRG: _____ DISP. CHRG: _____ OTHER CHRG: _____

DISP. VOL: _____ DISP. VOL CODE: _____ DISP. SITE: _____

VANS

_____ 27" van PU _____ Del _____ Rent _____ From: _____ To: _____
_____ 40" van
_____ 350 Truck
_____ Other

TANK TRUCK

_____ 8,000 gallons PU _____ Del _____ Rent _____ From: _____ To: _____

VACCUM TRUCK (3,000 gls) PU _____ Del _____ Rent _____ From: _____ To: _____

DUMP TRUCKS PU _____ Del _____ Rent _____

OTHER SERVICES:

_____ Pump
_____ Hoses
_____ Hydroblasting Machine
_____ Liner
_____ BFI Bag (1 yd)
_____ Labors

(✓) Waste Approval
(✓) Waste Approval Renewal
(✓) Analiticals
(✓) Waiting Time
_____ PPE Equipment
_____ Other _____

Contact Person: JOHN RAMSON / Madeline Rivera Five Hour: _____ Purchase Order # _____

Comments: _____

Customer Signature _____ Driver Signature _____

APPENDIX G
QA/QC LABORATORY RESULTS
(Additional Data Collection Investigation Report)

Data Qualifiers:

U – Not Detected.
J – Estimated value.
UJ – Report quantitation limit is qualified as estimated.
R – Result is rejected and unusable.
NA – Not Analyzed.

Notes:

µg/L – micrograms per liter.
mg/L – milligrams per liter.

APPENDIX G.1
TWFF, INVESTIGATION DERIVED WASTE – ORGANICS
(Additional Data Collection Investigation Report)

APPENDIX G.1

SUMMARY OF ANALYTCAL RESULTS, INVESTIGATION DERIVED WASTE - ORGANICS
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Sample ID	IDW-01	IDW-02
Sample Date	02/03/02	02/03/02
Volatiles (ug/L)		
Benzene	5	NA
TCLP Volatiles (ug/L)		
Benzene	NA	20

APPENDIX G.2
TWFF, INVESTIGATION DERIVED WASTE – INORGANICS
(Additional Data Collection Investigation Report)

APPENDIX G.2

SUMMARY OF ANALYTICAL RESULTS, INVESTIGATION DERIVED WASTE - INORGANICS
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Sample ID	IDW-01[(1)]	IDW-02[(2)]
Sample Date	02/03/02	02/03/02
RCRA Metals (mg/L)		
Lead	0.005	NA
Mercury	0.0002	NA
Silver	0.01	NA
Arsenic	0.01	NA
Barium	0.22	NA
Cadmium	0.005	NA
Chromium	0.01	NA
Selenium	0.01	NA
RCRA Metals - TCLP (mg/L)		
Lead	NA	0.2
Mercury	NA	0.02
Silver	NA	0.1
Arsenic	NA	0.2
Barium	NA	2
Cadmium	NA	0.1
Chromium	NA	0.2
Selenium	NA	0.5

APPENDIX G.3
TWFF, EQUIPMENT RINSATE SAMPLES – ORGANICS
(Additional Data Collection Investigation Report)

APPENDIX G.3

SUMMARY OF ANALYTICAL RESULTS, EQUIPMENT RINSATE SAMPLES - ORGANICS
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Sample ID	7ER01	7ER02	7ER04	7ER07
Sample Date	01/16/02	01/16/02	01/15/02	01/09/02
Volatiles (ug/L)				
Ethylbenzene	5 U	NA	5 U	5 U
Styrene	5 U	NA	5 U	5 U
cis-1,3-Dichloropropene	5 U	NA	5 U	5 U
trans-1,3-Dichloropropene	5 U	NA	5 U	5 U
1,2-Dibromoethane	5 U	NA	5 U	5 UJ
Acrolein	100 R	NA	100 R	100 R
3-Chloro-1-propene	5 U	NA	5 U	5 UJ
1,2-Dichloroethane	5 U	NA	5 U	5 U
Propionitrile	100 U	NA	100 U	100 UJ
Acrylonitrile	100 U	NA	100 U	100 U
Vinyl acetate	10 U	NA	10 U	10 U
4-Methyl-2-pentanone	25 U	NA	25 U	25 U
Toluene	5 U	NA	5 U	5 U
Chlorobenzene	5 U	NA	5 U	5 U
trans-1,4-Dichloro-2-butene	10 U	NA	10 U	10 U
Dibromochloromethane	5 U	NA	5 U	5 UJ
Methacrylonitrile	100 U	NA	100 U	100 U
Chloroprene	5 U	NA	5 U	5 UJ
Tetrachloroethene	5 U	NA	5 U	5 U
Xylene	10 U	NA	10 U	10 U
trans-1,2-Dichloroethene	5 U	NA	5 U	5 U
Carbon tetrachloride	5 U	NA	5 U	5 U
2-Hexanone	25 U	NA	25 U	25 UJ
1,1,1,2-Tetrachloroethane	5 U	NA	5 U	5 U
Acetone	50 U	NA	50 U	50 UJ
Chloroform	5 U	NA	5 U	5 U
Benzene	0.28 J	NA	5 U	5 U
1,1,1-Trichloroethane	5 U	NA	5 U	5 U
Bromomethane	10 U	NA	10 UJ	10 UJ
Chloromethane	10 U	NA	10 U	10 U
Iodomethane	5 U	NA	5 U	5 U
Dibromomethane	5 U	NA	5 U	5 U
Chloroethane	10 U	NA	10 U	10 U
Vinyl chloride	10 U	NA	10 U	10 U
Acetonitrile	200 UJ	NA	200 U	200 UJ
Methylene chloride	5 U	NA	5 U	5 U
Carbon disulfide	5 U	NA	5 U	5 U
Bromoform	5 U	NA	5 U	5 U
Bromodichloromethane	5 U	NA	5 U	5 U
1,1-Dichloroethane	5 U	NA	5 U	5 U
1,1-Dichloroethene	5 U	NA	5 U	5 U
Trichlorofluoromethane	5 U	NA	5 U	5 U
Dichlorodifluoromethane	10 U	NA	10 U	10 U
Pentachloroethane	25 U	NA	25 U	25 R
Isobutanol	200 R	NA	200 R	200 R
1,2-Dichloropropane	5 U	NA	5 U	5 U

APPENDIX G.3

SUMMARY OF ANALYTICAL RESULTS, EQUIPMENT RINSATE SAMPLES - ORGANICS
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Sample ID	7ER01	7ER02	7ER04	7ER07
Sample Date	01/16/02	01/16/02	01/15/02	01/09/02
Volatiles(Cont.) (ug/L)				
2-Butanone	25 U	NA	25 U	25 UJ
1,1,2-Trichloroethane	5 U	NA	5 U	5 U
Trichloroethene	5 U	NA	5 U	5 U
1,1,2,2-Tetrachloroethane	5 U	NA	5 U	5 U
Methyl methacrylate	5 U	NA	5 U	5 U
1,2-Dibromo-3-chloropropane	5 U	NA	5 U	5 U
1,2,3-Trichloropropane	5 U	NA	5 U	5 U
Ethyl methacrylate	5 U	NA	5 U	5 U
Semivolatiles (ug/L)				
4-Nitroaniline	50 U	50 U	50 U	50 U
4-Nitrophenol	50 U	50 U	50 U	50 U
Benzyl alcohol	10 U	10 U	10 U	10 U
n-Nitrosopiperidine	10 U	10 U	10 U	10 U
4-Bromophenyl phenyl ether	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	10 U	10 U	10 U	10 U
n-Nitrosomethylethylamine	10 U	10 U	10 U	10 U
1,4,-Dichlorobenzene	10 U	10 U	10 U	10 U
4-Chloroaniline	20 U	20 U	20 U	20 U
1,4-Phenylenediamine	2,000 U	2,000 U	2,000 U	2,000 U
Bis(2-chloroisopropyl)ether	10 U	10 U	10 U	10 U
Phenol	10 U	10 U	10 U	10 U
2-Picoline	10 U	10 U	10 U	10 U
Pryridine	50 U	50 U	50 U	50 U
Bis(2-chloroethyl)ether	10 U	10 U	10 U	10 U
Bis(2-chloroethoxy)methane	10 U	10 U	10 U	10 U
Bis(2-ethylhexyl)phthalate	10 U	10 U	10 U	10 U
Di-n-octylphthalate	10 U	10 U	10 U	10 U
Hexachlorobenzene	10 U	10 U	10 U	10 U
3,3'-Dimethylbenzidine	20 U	20 U	20 U	20 U
Anthracene	10 U	10 U	10 U	10 U
Isosafrole	10 U	10 U	10 U	10 U
1,2,4-Trichlorobenzene	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	10 U	10 U	10 U	10 U
2,4-Dinitrotoluene	10 U	10 U	10 U	10 U
A, A-Dimethylphenethylamine	2,000 U	2,000 U	2,000 U	2,000 U
1,4-Dioxane	10 U	10 U	10 U	10 U
o,o,o-Triethylphosphorothioate	10 U	10 U	10 U	10 UJ
Pyrene	10 U	10 U	10 U	10 U
1,4-Naphthoquinone	10 U	10 U	10 U	10 U
Dimethylphthalate	10 U	10 U	10 U	10 U
3&4-Methylphenol	10 U	10 U	10 U	10 U
Dibenzofuran	10 U	10 U	10 U	10 U
1-Naphthylamine	10 U	10 U	10 U	10 U
Aramite	10 U	10 U	10 U	10 U
Hexachloropropene	10 U	10 U	10 U	10 U

APPENDIX G.3

SUMMARY OF ANALYTICAL RESULTS, EQUIPMENT RINSATE SAMPLES - ORGANICS
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Sample ID	7ER01	7ER02	7ER04	7ER07
Sample Date	01/16/02	01/16/02	01/15/02	01/09/02
Semivolatiles(Cont.) (ug/L)				
Benzo(g,h,i)perylene	10 U	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene	10 U	10 U	10 U	10 U
Fluoranthene	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	10 U	10 U	10 U	10 U
Acenaphthylene	10 U	10 U	10 U	10 U
Chrysene	10 U	10 U	10 U	10 U
Diallate	10 U	10 U	10 U	10 U
Pronamide	10 U	10 U	10 U	10 U
Benzo(a)pyrene	10 U	10 U	10 U	10 U
2,4-Dinitrophenol	50 U	50 U	50 U	50 U
Dibenzo(a,h)anthracene	10 U	10 U	10 U	10 U
2-Acetylaminofluorene	10 U	10 U	10 U	10 U
4,6-Dinitro-2-methylphenol	50 U	50 U	50 U	50 U
1,3-Dichlorobenzene	10 U	10 U	10 U	10 U
n-Nitrosodiethylamine	10 U	10 U	10 U	10 U
3-Methylcholanthrene	10 U	10 U	10 U	10 U
Benzo(a)anthracene	10 U	10 U	10 U	10 U
4-Nitroquinoline-1-oxide	20 R	20 R	20 R	20 R
7,12-Dimethyl benz(a)anthracer	10 U	10 U	10 U	10 U
2,3,4,6-Tetrachlorophenol	10 U	10 U	10 U	10 U
4-Chloro-3-methylphenol	10 U	10 U	10 U	10 U
n-Nitrosomorpholine	10 U	10 U	10 U	10 U
p-Dimethylaminoazobenzene	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene	10 U	10 U	10 U	10 U
Pentachlorobenzene	10 U	10 U	10 U	10 U
Phenacetin	10 U	10 U	10 U	10 U
Ethyl methanesulfonate	10 U	10 U	10 U	10 U
Aniline	20 U	20 U	20 U	20 U
n-Nitrosodimethylamine	10 U	10 U	10 U	10 U
n-Nitroso-di-n-propylamine	10 U	10 U	10 U	10 U
Methyl methanesulfonate	10 U	10 U	10 U	10 U
Hexachloroethane	10 U	10 U	10 U	10 U
Hexachlorophene	5,000 U	5,000 U	5,000 U	5,000 U
4-Chlorophenyl-Phenylether	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	10 U	10 U	10 U	10 U
Isophorone	10 U	10 U	10 U	10 U
Pentachloronitrobenzene	10 U	10 U	10 U	10 U
Acenaphthene	10 U	10 U	10 U	10 U
Diethylphthalate	10 U	10 U	10 U	10 U
Di-n-butylphthalate	10 U	10 U	10 U	10 U
Phenanthrene	10 U	10 U	10 U	10 U
Butylbenzylphthalate	10 U	10 U	10 U	10 U
n-Nitrosodiphenylamine	10 U	10 U	10 U	10 U
Fluorene	10 U	10 U	10 U	10 U
2,6-Dichlorophenol	10 U	10 U	10 U	10 U

APPENDIX G.3

SUMMARY OF ANALYTICAL RESULTS, EQUIPMENT RINSATE SAMPLES - ORGANICS
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Sample ID	7ER01	7ER02	7ER04	7ER07
Sample Date	01/16/02	01/16/02	01/15/02	01/09/02
Semivolatiles(Cont.) (ug/L)				
Hexachlorobutadiene	10 U	10 U	10 U	10 U
Pentachlorophenol	50 U	50 U	50 U	50 U
2,4,6-Trichlorophenol	10 U	10 U	10 U	10 U
2-Nitroaniline	50 U	50 U	50 U	50 U
2-Nitrophenol	10 U	10 U	10 U	10 U
Dinoseb	10 UJ	10 UJ	10 UJ	10 UJ
Naphthalene	10 U	10 U	10 U	10 U
2-Methylnaphthalene	10 U	10 U	10 U	10 U
2-Chloronaphthalene	10 U	10 U	10 U	10 U
2-Naphthalamine	10 U	10 U	10 U	10 U
Methapyrilene	2,000 U	2,000 U	2,000 U	2,000 U
3,3'-Dichlorobenzidine	20 U	20 U	20 U	20 U
4-Aminobiphenyl	10 U	10 U	10 U	10 U
n-Nitroso-di-n-butylamine	10 U	10 U	10 U	10 U
n-Nitrosopyrrolidine	10 U	10 U	10 U	10 U
Safrole	10 U	10 U	10 U	10 U
2-Methylphenol	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	10 U	10 U	10 U	10 U
o-Toluidine	10 U	10 U	10 U	10 U
2-Chlorophenol	10 U	10 U	10 U	10 U
1,2,4,5-Tetrachlorobenzene	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	10 U	10 U	10 U	10 U
Acetophenone	10 U	10 U	10 U	10 U
Nitrobenzene	10 U	10 U	10 U	10 U
3-Nitroaniline	50 U	50 U	50 U	50 U
1,3,5-Trinitrobenzene	10 UJ	10 UJ	10 UJ	10 U
5-Nitro-o-toluidine	10 U	10 U	10 U	10 U
m-Dinitrobenzene	10 U	10 U	10 U	10 U

APPENDIX G.3

SUMMARY OF ANALYTICAL RESULTS, EQUIPMENT RINSATE SAMPLES - ORGANICS
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Sample ID	7ER01	7ER02	7ER04	7ER07
Sample Date	01/16/02	01/16/02	01/15/02	01/09/02
Low Level PAHs (ug/L)				
Anthracene	NA	NA	0.2 U	NA
Pyrene	NA	NA	0.2 U	NA
Benzo(g,h,i)perylene	NA	NA	0.2 U	NA
Indeno(1,2,3-cd)pyrene	NA	NA	0.2 U	NA
Benzo(b)fluoranthene	NA	NA	0.2 U	NA
Fluoranthene	NA	NA	0.2 U	NA
Benzo(k)fluoranthene	NA	NA	0.2 U	NA
Acenaphthylene	NA	NA	0.2 U	NA
Chrysene	NA	NA	0.2 U	NA
Benzo(a)pyrene	NA	NA	0.2 U	NA
Dibenzo(a,h)anthracene	NA	NA	0.2 U	NA
Benzo(a)anthracene	NA	NA	0.2 U	NA
Acenaphthene	NA	NA	0.2 U	NA
Phenanthrene	NA	NA	0.2 U	NA
Fluorene	NA	NA	0.2 U	NA
1-Methylnaphthalene	NA	NA	0.2 U	NA
Naphthalene	NA	NA	0.2 U	NA
2-Methylnaphthalene	NA	NA	0.2 U	NA
Misc. Parameters (mg/L)				
Total organic carbon	NA	NA	1 U	NA

APPENDIX G.4
TWFF, EQUIPMENT RINSATE SAMPLES – TOTAL INORGANICS
(Additional Data Collection Investigation Report)

APPENDIX G.4

SUMMARY OF ANALYTICAL RESULTS, EQUIPMENT RINSATE SAMPLES - TOTAL INORGANICS
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Sample ID	7ER01		7ER04		7ER07	
Sample Date	01/16/02		01/15/02		01/09/02	
Inorganics - Total (mg/L)						
Lead	0.005	U	0.0032	J	0.005	U
Mercury	0.0002	U	0.0002	U	0.0002	U
Nickel	0.04	U	0.0081	J	0.0055	J
Silver	0.01	U	0.01	U	0.01	U
Thallium	0.01	UJ	0.01	U	0.01	U
Tin	0.05	U	0.05	U	0.05	U
Antimony	0.02	U	0.02	U	0.02	U
Arsenic	0.01	U	0.01	U	0.01	U
Barium	0.01	U	0.01	U	0.01	U
Beryllium	0.004	U	0.004	U	0.004	U
Cadmium	0.005	U	0.005	U	0.005	U
Chromium	0.01	U	0.01	U	0.01	U
Cobalt	0.01	U	0.01	U	0.01	U
Copper	0.02	U	0.02	U	0.02	U
Vanadium	0.01	U	0.01	U	0.01	U
Zinc	0.02	U	0.02	U	0.0065	J
Selenium	0.01	U	0.01	U	0.01	U

APPENDIX G.5
TWFF, FIELD BLANK SAMPLES – ORGANICS
(Additional Data Collection Investigation Report)

APPENDIX G.5

SUMMARY OF ANALYTICAL RESULTS, FIELD BLANK SAMPLES - ORGANICS
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Sample ID	2000FB01	2000FB02	2000FB03
Sample Date	01/14/02	01/15/02	01/14/02
Volatiles (ug/L)			
Ethylbenzene	5 U	5 U	5 U
Styrene	5 U	5 U	5 U
cis-1,3-Dichloropropene	5 U	5 U	5 U
trans-1,3-Dichloropropene	5 U	5 U	5 U
1,2-Dibromoethane	5 U	5 U	5 U
Acrolein	100 R	100 R	100 R
3-Chloro-1-propene	5 U	5 U	5 U
1,2-Dichloroethane	5 U	5 U	5 U
Propionitrile	100 U	100 U	100 U
Acrylonitrile	100 U	100 U	100 U
Vinyl acetate	10 U	10 U	10 U
4-Methyl-2-pentanone	25 U	25 U	25 U
Toluene	5 U	1.2 J	5 U
Chlorobenzene	5 U	5 U	5 U
trans-1,4-Dichloro-2-butene	10 U	10 U	10 U
Dibromochloromethane	5 U	5 U	5 U
Methacrylonitrile	100 U	100 U	100 U
Chloroprene	5 U	5 U	5 U
Tetrachloroethene	5 U	5 U	5 U
Xylene	10 U	10 U	10 U
trans-1,2-Dichloroethene	5 U	5 U	5 U
Carbon tetrachloride	5 U	5 U	5 U
2-Hexanone	25 U	25 U	25 U
1,1,1,2-Tetrachloroethane	5 U	5 U	5 U
Acetone	50 U	10 J	50 U
Chloroform	5 U	5 U	5 U
Benzene	5 U	5 U	5 U
1,1,1-Trichloroethane	5 U	5 U	5 U
Bromomethane	10 UJ	10 UJ	10 U
Chloromethane	10 U	10 U	10 U
Iodomethane	5 U	5 U	5 U
Dibromomethane	5 U	5 U	5 U
Chloroethane	10 U	10 U	10 U
Vinyl chloride	10 U	10 U	10 U
Acetonitrile	200 U	200 U	200 U
Methylene chloride	5 U	5 U	5 U
Carbon disulfide	5 U	5 U	5 U
Bromoform	5 U	5 U	5 U
Bromodichloromethane	5 U	5 U	5 U
1,1-Dichloroethane	5 U	5 U	5 U
1,1-Dichloroethene	5 U	5 U	5 U
Trichlorofluoromethane	5 U	5 U	5 U
Dichlorodifluoromethane	10 U	10 U	10 U
Pentachloroethane	25 U	25 U	25 U
Isobutanol	200 R	200 R	200 R
1,2-Dichloropropane	5 U	5 U	5 U
Volatiles(Cont.) (ug/L)			

APPENDIX G.5

SUMMARY OF ANALYTICAL RESULTS, FIELD BLANK SAMPLES - ORGANICS
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Sample ID	2000FB01	2000FB02	2000FB03
Sample Date	01/14/02	01/15/02	01/14/02
2-Butanone	25 U	25 U	25 U
1,1,2-Trichloroethane	5 U	5 U	5 U
Trichloroethene	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane	5 U	5 U	5 U
Methyl methacrylate	5 U	5 U	5 U
1,2-Dibromo-3-chloropropar	5 U	5 U	5 U
1,2,3-Trichloropropane	5 U	5 U	5 U
Ethyl methacrylate	5 U	5 U	5 U
Semivolatiles (ug/L)			
4-Nitroaniline	50 U	50 U	50 UJ
4-Nitrophenol	50 U	50 U	50 UJ
Benzyl alcohol	10 U	10 U	10 UJ
n-Nitrosopiperidine	10 U	10 U	10 UJ
4-Bromophenyl phenyl ether	10 U	10 U	10 UJ
2,4-Dimethylphenol	10 U	10 U	10 UJ
n-Nitrosomethylethylamine	10 U	10 U	10 UJ
1,4,-Dichlorobenzene	10 U	10 U	10 UJ
4-Chloroaniline	20 U	20 U	20 UJ
1,4-Phenylenediamine	2,000 U	2,000 U	2,000 UJ
Bis(2-chloroisopropyl)ether	10 U	10 U	10 UJ
Phenol	10 U	10 U	10 UJ
2-Picoline	10 U	10 U	10 UJ
Pryridine	50 U	50 U	50 UJ
Bis(2-chloroethyl)ether	10 U	10 U	10 UJ
Bis(2-chloroethoxy)methane	10 U	10 U	10 UJ
Bis(2-ethylhexyl)phthalate	10 U	10 U	10 UJ
Di-n-octylphthalate	10 U	10 U	10 UJ
Hexachlorobenzene	10 U	10 U	10 UJ
3,3'-Dimethylbenzidine	20 U	20 U	20 UJ
Anthracene	10 U	10 U	10 UJ
Isosafrole	10 R	10 U	10 R
1,2,4-Trichlorobenzene	10 U	10 U	10 UJ
2,4-Dichlorophenol	10 U	10 U	10 UJ
2,4-Dinitrotoluene	10 U	10 U	10 UJ
A, A-Dimethylphenethylamin	2,000 UJ	2,000 U	2,000 UJ
1,4-Dioxane	10 U	10 U	10 UJ
o,o,o-Triethylphosphorothio	10 U	10 U	10 UJ
Pyrene	10 U	10 U	10 UJ
1,4-Naphthoquinone	10 U	10 U	10 UJ
Dimethylphthalate	10 U	10 U	10 UJ
3&4-Methylphenol	10 U	10 U	10 UJ
Dibenzofuran	10 U	10 U	10 UJ
1-Naphthylamine	10 U	10 U	10 UJ
Aramite	10 U	10 U	10 UJ
Hexachloropropene	10 U	10 U	10 UJ

APPENDIX G.5

SUMMARY OF ANALYTICAL RESULTS, FIELD BLANK SAMPLES - ORGANICS
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Sample ID	2000FB01	2000FB02	2000FB03
Sample Date	01/14/02	01/15/02	01/14/02
Semivolatiles(Cont.)(ug/L)			
Benzo(g,h,i)perylene	10 U	10 U	10 UJ
Indeno(1,2,3-cd)pyrene	10 U	10 U	10 UJ
Benzo(b)fluoranthene	10 U	10 U	10 UJ
Fluoranthene	10 U	10 U	10 UJ
Benzo(k)fluoranthene	10 U	10 U	10 UJ
Acenaphthylene	10 U	10 U	10 UJ
Chrysene	10 U	10 U	10 UJ
Diallate	10 U	10 U	10 UJ
Pronamide	10 U	10 U	10 UJ
Benzo(a)pyrene	10 U	10 U	10 UJ
2,4-Dinitrophenol	50 UJ	50 U	50 UJ
Dibenzo(a,h)anthracene	10 U	10 U	10 UJ
2-Acetylaminofluorene	10 U	10 U	10 UJ
4,6-Dinitro-2-methylphenol	50 UJ	50 U	50 UJ
1,3-Dichlorobenzene	10 U	10 U	10 UJ
n-Nitrosodiethylamine	10 U	10 U	10 UJ
3-Methylcholanthrene	10 U	10 U	10 UJ
Benzo(a)anthracene	10 U	10 U	10 UJ
4-Nitroquinoline-1-oxide	20 R	20 R	20 R
7,12-Dimethyl benz(a)anthra	10 U	10 U	10 UJ
2,3,4,6-Tetrachlorophenol	10 U	10 U	10 UJ
4-Chloro-3-methylphenol	10 U	10 U	10 UJ
n-Nitrosomorpholine	10 U	10 U	10 UJ
p-Dimethylaminoazobenzene	10 U	10 U	10 UJ
2,6-Dinitrotoluene	10 UJ	10 U	10 UJ
Pentachlorobenzene	10 U	10 U	10 UJ
Phenacetin	10 U	10 U	10 UJ
Ethyl methanesulfonate	10 U	10 U	10 UJ
Aniline	20 U	20 U	20 UJ
n-Nitrosodimethylamine	10 U	10 U	10 UJ
n-Nitroso-di-n-propylamine	10 U	10 U	10 UJ
Methyl methanesulfonate	10 U	10 U	10 UJ
Hexachloroethane	10 U	10 U	10 UJ
Hexachlorophene	5,000 U	5,000 UJ	5,000 UJ
4-Chlorophenyl-Phenylether	10 U	10 U	10 UJ
Hexachlorocyclopentadiene	10 U	10 U	10 UJ
Isophorone	10 U	10 U	10 UJ
Pentachloronitrobenzene	10 U	10 U	10 UJ
Acenaphthene	10 U	10 U	10 UJ
Diethylphthalate	10 U	10 U	10 UJ
Di-n-butylphthalate	10 U	10 U	10 UJ
Phenanthrene	10 U	10 U	10 UJ
Butylbenzylphthalate	10 U	10 U	10 UJ
n-Nitrosodiphenylamine	10 U	10 U	10 UJ
Fluorene	10 U	10 U	10 UJ
2,6-Dichlorophenol	10 U	10 U	10 UJ

APPENDIX G.5

SUMMARY OF ANALYTICAL RESULTS, FIELD BLANK SAMPLES - ORGANICS
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Sample ID	2000FB01	2000FB02	2000FB03
Sample Date	01/14/02	01/15/02	01/14/02
Semivolatiles(Cont.)(ug/L)			
Hexachlorobutadiene	10 U	10 U	10 UJ
Pentachlorophenol	50 U	50 U	50 UJ
2,4,6-Trichlorophenol	10 U	10 U	120 J
2-Nitroaniline	50 U	50 U	50 UJ
2-Nitrophenol	10 U	10 U	10 UJ
Dinoseb	10 U	10 UJ	10 UJ
Naphthalene	10 U	10 U	0.49 J
2-Methylnaphthalene	10 U	10 U	0.38 J
2-Chloronaphthalene	10 U	10 U	10 UJ
2-Naphthalamine	10 U	10 U	10 UJ
Methapyrilene	2,000 U	2,000 U	2,000 UJ
3,3'-Dichlorobenzidine	20 U	20 U	20 UJ
4-Aminobiphenyl	10 U	10 U	10 UJ
n-Nitroso-di-n-butylamine	10 U	10 U	10 UJ
n-Nitrosopyrrolidine	10 U	10 U	10 UJ
Safrole	10 U	10 U	10 UJ
2-Methylphenol	10 U	10 U	10 UJ
1,2-Dichlorobenzene	10 U	10 U	10 UJ
o-Toluidine	10 U	10 U	10 UJ
2-Chlorophenol	10 U	10 U	10 UJ
1,2,4,5-Tetrachlorobenzene	10 U	10 U	10 UJ
2,4,5-Trichlorophenol	10 U	10 U	10 UJ
Acetophenone	10 U	10 U	10 UJ
Nitrobenzene	10 U	10 U	10 UJ
3-Nitroaniline	50 U	50 U	50 UJ
1,3,5-Trinitrobenzene	10 U	10 UJ	10 UJ
5-Nitro-o-toluidine	10 U	10 U	10 UJ
m-Dinitrobenzene	10 U	10 U	10 UJ

APPENDIX G.6
TWFF, FIELD BLANK SAMPLES – TOTAL INORGANICS
(Additional Data Collection Investigation Report)

APPENDIX G.6

SUMMARY OF ANALYTICAL RESULTS, FIELD BLANK SAMPLES - TOTAL INORGANICS
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Sample ID	2000FB01	2000FB02	2000FB03
Sample Date	01/14/02	01/15/02	01/14/02
Inorganics - Total (mg/L)			
Lead	0.005 UJ	0.005 UJ	0.005 UJ
Mercury	0.0002 UJ	0.0002 U	0.0002 UJ
Nickel	0.04 U	0.04 U	0.04 U
Silver	0.01 U	0.01 U	0.01 U
Thallium	0.01 U	0.01 U	0.01 U
Tin	0.05 U	0.05 U	0.05 U
Antimony	0.02 U	0.02 U	0.02 U
Arsenic	0.01 UJ	0.01 UJ	0.01 UJ
Barium	0.01 U	0.01 U	0.0052 J
Beryllium	0.004 U	0.004 U	0.004 U
Cadmium	0.005 U	0.005 U	0.005 U
Chromium	0.01 U	0.01 U	0.01 U
Cobalt	0.01 U	0.01 U	0.01 U
Copper	0.02 U	0.0014 J	0.02 U
Vanadium	0.01 U	0.01 U	0.01 U
Zinc	0.02 U	0.02 U	0.02 U
Selenium	0.01 UJ	0.01 U	0.01 UJ

APPENDIX G.7
BASE BACKGROUND TRIP BLANK SAMPLES – ORGANICS
(Additional Data Collection Investigation Report)

APPENDIX G.7

SUMMARY OF ANALYTICAL RESULTS, BASE BACKGROUND TRIP BLANK SAMPLES - ORGANICS
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Sample ID	BGOWTB01	
Date	01/17/02	
Volatiles (ug/L)		
1,1,1,2-Tetrachloroethane	5	U
1,1,1-Trichloroethane	5	U
1,1,2,2-Tetrachloroethane	5	U
1,1,2-Trichloroethane	5	U
1,1-Dichloroethane	5	U
1,1-Dichloroethene	5	U
1,2,3-Trichloropropane	5	U
1,2-Dibromo-3-chloropropane	5	U
1,2-Dibromoethane	5	U
1,2-Dichloroethane	5	U
1,2-Dichloropropane	5	U
2-Chloro-1,3-butadiene	5	U
2-Hexanone	25	U
3-Chloropropene	5	U
Acetone	50	U
Acetonitrile	200	U
Acrolein	100	R
Acrylonitrile	100	U
Benzene	5	U
Bromodichloromethane	5	U
Bromoform	5	U
Bromomethane	10	U
Carbon disulfide	5	U
Carbon tetrachloride	5	U
Chlorobenzene	5	U
Chloroethane	10	U
Chloroform	5	U
Chloromethane	10	U
cis-1,3-Dichloropropene	5	U
Dibromochloromethane	5	U
Dichlorodifluoromethane	10	U
Ethyl methacrylate	5	U
Ethylbenzene	5	U
Iodomethane	5	U
Isobutanol	200	R
Methacrylonitrile	100	U
Methyl Ethyl Ketone	25	U
Methyl isobutyl ketone	25	U
Methyl methacrylate	5	U
Methylene bromide	5	U
Methylene chloride	5	U
Pentachloroethane	25	UJ
Propionitrile	100	U
Styrene	5	U
Tetrachloroethene	5	U
Toluene	5	U
trans-1,2-Dichloroethene	5	U

APPENDIX G.7

SUMMARY OF ANALYTICAL RESULTS, BASE BACKGROUND TRIP BLANK SAMPLES - ORGANICS
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Volatiles (Cont.)(ug/L)		
trans-1,3-Dichloropropene	5	U
trans-1,4-Dichloro-2-butene	10	U
Trichloroethene	5	U
Trichlorofluoromethane	5	U
Vinyl acetate	10	U
Vinyl chloride	10	U
Xylenes	10	U

APPENDIX G.8
TWFF, TRIP BLANK SAMPLES – ORGANICS
(Additional Data Collection Investigation Report)

APPENDIX G.8

SUMMARY OF ANALYTICAL RESULTS, TRIP BLANK SAMPLES - ORGANICS
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Sample ID	7TB01	7TB02	7TB03	7TB04	7TB05	7TB06
Sample Date	01/09/02	01/10/02	01/11/02	01/14/02	01/15/02	01/16/02
Volatiles (ug/L)						
Ethylbenzene	5 U	5 U	5 U	5 U	5 U	5 U
Styrene	5 U	5 U	5 U	5 U	5 U	5 U
cis-1,3-Dichloropropene	5 U	5 U	5 U	5 U	5 U	5 U
trans-1,3-Dichloropropene	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dibromoethane	5 UJ	5 U	5 U	5 U	5 U	5 U
Acrolein	100 R	100 R	100 R	100 R	100 R	100 R
3-Chloro-1-propene	5 UJ	5 U	5 U	5 U	5 U	5 U
1,2-Dichloroethane	5 U	5 U	5 U	5 U	5 U	5 U
Propionitrile	100 UJ	100 U	100 U	100 U	100 U	100 U
Acrylonitrile	100 U	100 UJ	100 UJ	100 UJ	100 U	100 U
Vinyl acetate	10 U	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-pentanone	25 U	25 U	25 U	25 U	25 U	25 U
Toluene	5 U	1.7 J	5 U	5 U	1.4 J	5 U
Chlorobenzene	5 U	5 U	5 U	5 U	5 U	5 U
trans-1,4-Dichloro-2-buten	10 U	10 U	10 U	10 U	10 U	10 U
Dibromochloromethane	5 UJ	5 U	5 U	5 U	5 U	5 U
Methacrylonitrile	100 U	100 UJ	100 UJ	100 UJ	100 U	100 U
Chloroprene	5 UJ	5 U	5 U	5 U	5 U	5 U
Tetrachloroethene	5 U	5 U	5 U	5 U	5 U	5 U
Xylene	10 U	10 U	10 U	10 U	10 U	10 U
trans-1,2-Dichloroethene	5 U	5 U	5 U	5 U	5 U	5 U
Carbon tetrachloride	5 U	5 U	5 U	5 U	5 U	5 U
2-Hexanone	25 UJ	25 U	25 U	25 U	25 U	25 U
1,1,1,2-Tetrachloroethane	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	50 UJ	50 U	11 J	50 U	11 J	50 U
Chloroform	5 U	5 U	5 U	5 U	5 U	5 U
Benzene	5 U	5 U	5 U	5 U	0.55 J	5 U
1,1,1-Trichloroethane	5 U	5 U	5 U	5 U	5 U	5 U
Bromomethane	10 UJ	10 UJ	10 UJ	10 UJ	10 U	10 UJ
Chloromethane	10 U	10 U	10 U	10 U	10 U	10 U
Iodomethane	5 U	5 U	5 U	5 U	5 U	5 U

APPENDIX G.8

SUMMARY OF ANALYTICAL RESULTS, TRIP BLANK SAMPLES - ORGANICS
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Sample ID	7TB01	7TB02	7TB03	7TB04	7TB05	7TB06
Sample Date	01/09/02	01/10/02	01/11/02	01/14/02	01/15/02	01/16/02
Volatiles(Cont.) (ug/L)						
Dibromomethane	5 U	5 U	5 U	5 U	5 U	5 U
Chloroethane	10 U	10 U	10 U	10 U	10 U	10 U
Vinyl chloride	10 U	10 U	10 U	10 U	10 U	10 U
Acetonitrile	200 UJ	200 UJ	200 UJ	200 UJ	200 U	200 U
Methylene chloride	5 U	5 U	5 U	5 U	5 U	5 U
Carbon disulfide	5 U	5 U	5 U	5 U	5 U	5 U
Bromoform	5 U	5 U	5 U	5 U	5 U	5 U
Bromodichloromethane	5 U	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethane	5 U	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethene	5 U	5 U	5 U	5 U	5 U	5 U
Trichlorofluoromethane	5 U	5 U	5 U	5 U	5 U	5 U
Dichlorodifluoromethane	10 U	10 U	10 U	10 U	10 U	10 U
Pentachloroethane	25 R	25 UJ	25 UJ	25 UJ	25 U	25 U
Isobutanol	200 R	200 U	200 U	200 U	200 R	200 R
1,2-Dichloropropane	5 U	5 U	5 U	5 U	5 U	5 U
2-Butanone	25 UJ	25 U	25 U	25 U	25 U	25 U
1,1,2-Trichloroethane	5 U	5 U	5 U	5 U	5 U	5 U
Trichloroethene	5 U	0.56 J	5 U	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane	5 U	5 U	5 U	5 U	5 U	5 U
Methyl methacrylate	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dibromo-3-chloropropa	5 U	5 UJ	5 UJ	5 UJ	5 U	5 U
1,2,3-Trichloropropane	5 U	5 U	5 U	5 U	5 U	5 U
Ethyl methacrylate	5 U	5 U	5 U	5 U	5 U	5 U

APPENDIX G.8

SUMMARY OF ANALYTICAL RESULTS, TRIP BLANK SAMPLES - ORGANICS
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Sample ID	7TB07	7TB08	7TB09	7TB10	7TB11	7TB12
Sample Date	01/16/02	01/16/02	01/17/02	01/17/02	01/23/02	01/25/02
Volatiles (ug/L)						
Ethylbenzene	5 U	5 U	5 U	5 U	5 U	5 U
Styrene	5 U	5 U	5 U	5 U	5 U	5 U
cis-1,3-Dichloropropene	5 U	5 U	5 U	5 U	5 U	5 U
trans-1,3-Dichloropropene	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dibromoethane	5 U	5 U	5 U	5 U	5 U	5 U
Acrolein	100 R	100 R	100 R	100 R	100 R	100 R
3-Chloro-1-propene	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dichloroethane	5 U	5 U	5 U	5 U	5 U	5 U
Propionitrile	100 U	100 U	100 U	12 J	100 U	100 U
Acrylonitrile	100 U	100 U	100 U	12 J	100 U	100 U
Vinyl acetate	10 U	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-pentanone	25 U	25 U	25 U	25 U	25 U	25 U
Toluene	5 U	5 U	5 U	5 U	5 U	5 U
Chlorobenzene	5 U	5 U	5 U	5 U	5 U	5 U
trans-1,4-Dichloro-2-buten	10 U	10 U	10 U	10 U	10 U	10 U
Dibromochloromethane	5 U	5 U	5 U	5 U	5 U	5 U
Methacrylonitrile	100 U	100 U	100 U	100 U	100 U	100 U
Chloroprene	5 U	5 U	5 U	5 U	5 U	5 U
Tetrachloroethene	5 U	5 U	5 U	5 U	5 U	5 U
Xylene	10 U	10 U	10 U	10 U	10 U	10 U
trans-1,2-Dichloroethene	5 U	5 U	5 U	5 U	5 U	5 U
Carbon tetrachloride	5 U	5 U	5 U	5 U	5 U	5 U
2-Hexanone	25 U	25 U	25 U	25 U	25 U	25 U
1,1,1,2-Tetrachloroethane	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	50 U	50 U	50 U	50 U	50 U	10 J
Chloroform	5 U	5 U	5 U	5 U	5 U	5 U
Benzene	5 U	5 U	5 U	5 U	5 U	5 U
1,1,1-Trichloroethane	5 U	5 U	5 U	5 U	5 U	5 U
Bromomethane	10 U	10 UJ	10 UJ	10 U	10 U	10 U
Chloromethane	10 U	10 U	10 U	10 U	10 U	10 U
Iodomethane	5 U	5 U	5 U	5 U	5 U	5 U

APPENDIX G.8

SUMMARY OF ANALYTICAL RESULTS, TRIP BLANK SAMPLES - ORGANICS
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Sample ID	7TB07	7TB08	7TB09	7TB10	7TB11	7TB12
Sample Date	01/16/02	01/16/02	01/17/02	01/17/02	01/23/02	01/25/02
Volatiles(Cont.) (ug/L)						
Dibromomethane	5 U	5 U	5 U	5 U	5 U	5 U
Chloroethane	10 U	10 U	10 U	10 U	10 U	10 U
Vinyl chloride	10 U	10 U	10 U	10 U	10 U	10 U
Acetonitrile	200 UJ	200 U	200 U	200 UJ	200 U	200 UJ
Methylene chloride	5 U	5 U	5 U	5 U	5 U	5 U
Carbon disulfide	5 U	5 U	5 U	5 U	5 U	5 U
Bromoform	5 U	5 U	5 U	5 U	5 U	5 U
Bromodichloromethane	5 U	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethane	5 U	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethene	5 U	5 U	5 U	5 U	5 U	5 U
Trichlorofluoromethane	5 U	5 U	5 U	5 U	5 U	5 U
Dichlorodifluoromethane	10 U	10 U	10 U	10 U	5 U	10 U
Pentachloroethane	25 U	25 U	25 U	25 U	25 U	25 R
Isobutanol	200 R	200 R	200 R	200 R	200 U	200 R
1,2-Dichloropropane	5 U	5 U	5 U	5 U	5 U	5 U
2-Butanone	25 U	25 U	25 U	25 U	25 U	25 U
1,1,2-Trichloroethane	5 U	5 U	5 U	5 U	5 U	5 U
Trichloroethene	5 U	5 U	5 U	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane	5 U	5 U	5 U	5 U	5 U	5 U
Methyl methacrylate	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dibromo-3-chloropropa	5 U	5 U	5 U	5 U	10 U	5 U
1,2,3-Trichloropropane	5 U	5 U	5 U	5 U	5 U	8.6
Ethyl methacrylate	5 U	5 U	5 U	5 U	5 U	5 U

APPENDIX G.8

SUMMARY OF ANALYTICAL RESULTS, TRIP BLANK SAMPLES - ORGANICS
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Sample ID	7TB13	7TB14	7TB15	7TB16	7TB17	7TB99
Sample Date	01/28/02	01/29/02	01/30/02	01/31/02	02/01/02	03/01/02
Volatiles (ug/L)						
Ethylbenzene	5 U	5 U	5 U	5 U	5 U	5 U
Styrene	5 U	1.4 J	5 U	5 U	5 U	5 U
cis-1,3-Dichloropropene	5 U	5 U	5 U	5 U	5 U	5 U
trans-1,3-Dichloropropene	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dibromoethane	5 U	5 U	5 U	5 U	5 U	5 UJ
Acrolein	100 R	100 R	100 R	100 R	100 R	100 R
3-Chloro-1-propene	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dichloroethane	5 U	5 U	5 U	5 U	5 U	5 U
Propionitrile	100 U	100 U	100 U	100 U	100 U	100 U
Acrylonitrile	100 U	100 U	100 U	100 U	100 U	100 U
Vinyl acetate	10 U	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-pentanone	25 U	25 U	25 U	25 U	25 U	25 UJ
Toluene	5 U	5 U	5 U	0.61 J	5 U	5 U
Chlorobenzene	5 U	5 U	5 U	5 U	5 U	5 U
trans-1,4-Dichloro-2-buten	10 U	10 U	10 U	10 U	10 U	10 U
Dibromochloromethane	5 U	5 U	5 U	5 U	5 U	5 U
Methacrylonitrile	100 U	100 U	100 U	100 U	100 U	100 U
Chloroprene	5 U	5 U	5 U	5 U	5 U	5 U
Tetrachloroethene	5 U	5 U	5 U	5 U	5 U	5 U
Xylene	10 U	10 U	10 U	10 U	10 U	10 U
trans-1,2-Dichloroethene	5 U	5 U	5 U	5 U	5 U	5 U
Carbon tetrachloride	5 U	5 U	5 U	5 U	5 U	5 U
2-Hexanone	25 U	25 U	25 U	25 U	25 U	25 UJ
1,1,1,2-Tetrachloroethane	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	50 U	50 U	50 R	50 R	50 R	11 J
Chloroform	5 U	5 U	5 U	5 U	5 U	5 U
Benzene	5 U	5 U	5 U	5 U	5 U	5 U
1,1,1-Trichloroethane	5 U	5 U	5 U	5 U	5 U	5 U
Bromomethane	10 U	10 U	10 U	10 U	10 U	10 U
Chloromethane	10 U	10 U	10 U	10 U	10 U	10 U
Iodomethane	5 U	5 U	5 U	5 U	5 U	5 U

APPENDIX G.8

SUMMARY OF ANALYTICAL RESULTS, TRIP BLANK SAMPLES - ORGANICS
TWFF - ADDITIONAL DATA COLLECTION INVESTIGATION
NAVAL STATION ROOSEVELT ROADS, CEIBA, PUERTO RICO

Sample ID	7TB13	7TB14	7TB15	7TB16	7TB17	7TB99
Sample Date	01/28/02	01/29/02	01/30/02	01/31/02	02/01/02	03/01/02
Volatiles(Cont.) (ug/L)						
Dibromomethane	5 U	5 U	5 U	5 U	5 U	5 U
Chloroethane	10 U	10 U	10 U	10 U	10 U	10 U
Vinyl chloride	10 U	10 U	10 U	10 U	10 U	10 U
Acetonitrile	200 UJ	200 UJ	200 U	200 U	200 U	200 UJ
Methylene chloride	5 U	5 U	5 U	5 U	5 U	5 U
Carbon disulfide	5 U	5 U	5 U	5 U	5 U	5 U
Bromoform	5 U	5 U	5 U	5 U	5 U	5 UJ
Bromodichloromethane	5 U	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethane	5 U	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethene	5 U	5 U	5 U	5 U	5 U	5 U
Trichlorofluoromethane	5 U	5 U	5 U	5 U	5 U	5 U
Dichlorodifluoromethane	10 U	10 U	10 U	10 U	10 U	10 U
Pentachloroethane	25 R	25 R	25 R	25 R	25 R	25 UJ
Isobutanol	200 R	200 R	200 R	200 R	200 R	200 R
1,2-Dichloropropane	5 U	5 U	5 U	5 U	5 U	5 U
2-Butanone	25 U	25 U	25 U	25 U	25 U	25 UJ
1,1,2-Trichloroethane	5 U	5 U	5 U	5 U	5 U	5 U
Trichloroethene	5 U	5 U	5 U	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane	5 U	5 U	5 U	5 U	5 U	5 UJ
Methyl methacrylate	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dibromo-3-chloropropa	5 U	5 U	5 U	5 U	5 U	5 UJ
1,2,3-Trichloropropane	5 U	5 U	5 U	5 U	5 U	5 UJ
Ethyl methacrylate	5 U	5 U	5 U	5 U	5 U	5 U