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Groundwater Baseline Investigation at U.S. Navy's Eastern Maneuver Area

Former Atlantic Fleet Weapons Training Facility
Vieques Island, Puerto Rico

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Executive Summary

The U.S. Environmental Protection Agency (EPA) and the Department of the Navy (the Navy) entered into an Administrative Order on Consent (Consent Order) on January 10, 2000, to address potential environmental contamination at the former Atlantic Fleet Weapons Training Facility (AFWTF) on Vieques Island, Puerto Rico. As part of the Consent Order, the Navy was required to complete a groundwater baseline investigation along the western property boundary of the former Eastern Maneuver Area (EMA). This groundwater baseline investigation supplements the initial hydrogeologic investigation, completed in August 1999 (Baker, 1999). The scope of work for the investigation is presented in the *Final Work Plan for Groundwater Baseline Investigation* (CH2M HILL, 2001). This Groundwater Baseline Investigation Report presents the procedures and results of the field investigations to meet the objectives of the Consent Order, which comprise:

1) Investigate the groundwater quality along the western perimeter by analyzing groundwater data from four Resource Conservation and Recovery Act (RCRA) monitoring wells (RCRA-1, RCRA-2, RCRA-3, and RCRA-4).

2) Investigate the groundwater flow patterns along the western perimeter.

3) Determine whether activities at the former AFWTF have impacted the groundwater along the western perimeter.

Site Description

Vieques has a land area of approximately 33,000 acres, and is located on the Antillean Island Arc separating the Caribbean Sea from the Atlantic Ocean. The island is approximately 7 miles southeast of the eastern coast of the island of Puerto Rico. Vieques is approximately 21 miles long (east to west) and 4.5 miles wide (north to south). The EMA is the westernmost area in the AFTWF, which is located on the eastern one-third of the island, and encompasses 11,000 acres. As of May 1, 2003, the former AFWTF came under the jurisdiction of the DOI.

Summary of Previous Investigations

The 1999 hydrogeologic investigation was conducted for the Navy to assess the potential for ordnance-derived constituents to have migrated west from the former AFWTF onto non-military property. In addition, the EPA had requested that the Navy complete a “baseline” groundwater investigation along the western property boundary of the Navy facility. The groundwater baseline investigation was designed to establish baseline groundwater quality and regional groundwater flow patterns along the western perimeter of the former EMA.

The results of the 1999 hydrogeologic investigation are summarized in the report entitled *The Results of The Hydrogeologic Investigation Vieques Island, Puerto Rico* (Baker, 1999). The report was submitted to EPA in March 2000. The goals of the investigation were twofold:

1. Assess whether explosive-related compounds were present in groundwater at the property boundary
2. Establish the flow direction of groundwater at the EMA western property boundary and assess whether the potential existed for offsite migration of compounds potentially present in groundwater

To meet these goals, 11 groundwater monitoring wells were installed at the property line such that groundwater samples could be obtained for laboratory analysis. In addition, eight piezometers were installed at varying distances east of the property line; these were used to collect groundwater elevation measurements to assess groundwater flow direction. During the 1999 hydrogeologic investigation, the EPA requested that the Navy perform a separate groundwater baseline investigation. Therefore, 4 of the 11 monitoring wells (RCRA-1, RCRA-2, RCRA-3, RCRA-4) were designated to be included in the baseline investigation.

In addition to sampling the 11 wells (including the four RCRA wells) along the western property boundary for explosive-derived compounds, the Navy also sampled these wells for total and dissolved metals (also referred to as inorganics) to characterize the metal content of the groundwater along the western property boundary of the EMA. This sampling constituted the first event of the Groundwater Baseline Investigation. The second Groundwater Baseline Investigation sampling event was accomplished in February 2004 to complete the Appendix IX list of sampling parameters; this study included the collection and analysis of groundwater samples from the RCRA monitoring wells for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), herbicides, pesticides, polychlorinated biphenyls (PCBs), dioxins, and general chemistry parameters. These two sampling events together complete the Appendix IX sampling list, and together compose the Groundwater Baseline Investigation, as stated in the *Final Groundwater Baseline Investigation Work Plan* (CH2M HILL, 2001).

Assessment of Groundwater Flow Conditions

The groundwater flow evaluation determined that groundwater flow along the EMA western perimeter boundary is likely affected by a flow divide at the approximate north/south midpoint of the island, approximately at the location of well NW-3. Generally, groundwater north of well NW-3 flows north toward the Atlantic Ocean and groundwater south of NW-3 flows south toward the Caribbean Sea. As a result, groundwater within bedrock is not likely to flow from former Navy property to the west.

Analytical Data Summary

Table ES-1 summarizes the analytical data collected from the monitoring wells as part of the Baseline Groundwater Investigation. The groundwater baseline quality data collected along the western perimeter show that no explosives, SVOCs, herbicides, pesticides, PCBs, or dioxins were detected in any of the four RCRA monitoring wells sampled as part of this investigation. The metal barium was detected, but the levels detected are likely attributable to background conditions. The VOCs bromodichloromethane and chloroform were detected above the EPA Region IX Tap Water Preliminary Remediation Goal (PRG) in one well (RCRA-3). Both of these VOCs are common disinfection byproducts from municipal water

treatment with chlorine. There is no known former Navy water treatment facility in the area of RCRA-3. However, monitoring well RCRA-3 is located just southeast and downgradient of a residential area, whose water is supplied by the municipality.

Based on this information, the former Navy activities have not affected the groundwater quality at the western perimeter of the former EMA, nor do the data suggest bedrock groundwater is flowing from the EMA west off of the former AFWTF.

TABLE ES-1
Number of Groundwater Samples Collected During the 1999 and 2004 Sampling Events
Groundwater Baseline Investigation, Vieques, Puerto Rico

Site	Sampling Event	Sampled Media	Total Metals	Dissolved Metals	VOCs	SVOCs	Pesticides	Herbicides	PCB	Explosives	Perchlorate	Dioxins	Cyanide, Sulfide
RCRA 1	1999 Sampling Event	Groundwater	1	1						1	1		
	2004 Sampling Event	Groundwater			1	1	1	1	1			1	1
RCRA 2	1999 Sampling Event	Groundwater	1	1						1	1		
	2004 Sampling Event	Groundwater			1	1	1	1	1			1	1
RCRA 3	1999 Sampling Event	Groundwater	1	1						1	1		
	2004 Sampling Event	Groundwater			1	1	1	1	1			1	1
RCRA 4	1999 Sampling Event	Groundwater	1	1						1	1		
	2004 Sampling Event	Groundwater			1	1	1	1	1			1	1
NW 1	1999 Sampling Event	Groundwater	1	1						1	1		
	2004 Sampling Event	Groundwater	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
NW 3	1999 Sampling Event	Groundwater	1	1						1	1		
	2004 Sampling Event	Groundwater	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
NW 4	1999 Sampling Event	Groundwater	1	1						1	1		
	2004 Sampling Event	Groundwater	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
NW 5	1999 Sampling Event	Groundwater	1	1						1	1		
	2004 Sampling Event	Groundwater	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
NW 6	1999 Sampling Event	Groundwater	1	1						1	1		
	2004 Sampling Event	Groundwater	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
NW 7	1999 Sampling Event	Groundwater	1	1						1	1		
	2004 Sampling Event	Groundwater	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
NW 8	1999 Sampling Event	Groundwater	1	1						1	1		
	2004 Sampling Event	Groundwater	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Notes:
NS = not sampled

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List of Acronyms

AFWTF	Atlantic Fleet Weapons Training Facility
ASTM	American Society for Testing and Materials
bls	below land surface
CFR	Code of Federal Register
CLP	Contract Laboratory Program
COC	Chain-of-Custody
Consent Order	Administrative Order of Consent
COPC	Constituents of Potential Concern
DOI	Department of Interior
DQE	Data quality evaluation
DQO	Data quality objective
DV	Data validation
ECA	Eastern Conservation Area
EMA	Eastern Maneuver Area
EPA	U.S. Environmental Protection Agency
ERB	Equipment rinsate blank
ft	Feet
gpm	Gallons per minute
GPS	Global Positioning Satellite
LB	Laboratory blank
LCS	Laboratory confirmation sample
LCSD	Laboratory Control Sample Duplicate
LIA	Live Impact Area
MB	Method blank
MDL	Method detection limit
MS/MSD	Matrix Spike/matrix spike duplicate
msl	Mean sea level
NAD	North American Datum
NAPR	Naval Activity Puerto Rico
Navy	Department of the Navy
NSRR	Naval Station Roosevelt Roads
PARCCS	Precision, accuracy, representativeness, comparability, and completeness
PCB	Polychlorinated biphenyls
PREQB	Puerto Rico Environmental Quality Board
PRG	Preliminary Remediation Goal
PVC	Polyvinyl chloride
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Project Plan
RCRA	Resource Conservation and Recovery Act
RFI	RCRA Facility Investigation
RL	Reporting Limit
SIA	Surface Impact Area

SOP	Standard Operating Procedures
SOW	Scope of Work
SVOC	Semi-volatile organic compounds
TB	Trip blank
TM	Technical memorandum
TOC	Top of casing
USGS	U.S. Geological Survey
VNWR	Vieques National Wildlife Refuge
VOC	Volatile organic compounds
µg/L	Micrograms per Liter

SECTION 1

Introduction

The U.S. Environmental Protection Agency (EPA) and the Department of the Navy (the Navy) entered into an Administrative Order on Consent (Consent Order) on January 10, 2000, to address potential environmental contamination at the former Atlantic Fleet Weapons Training Facility (AFWTF) on Vieques Island, Puerto Rico. On April 30, 2003, the 14,573 acres of the former AFWTF were transferred to the Department of Interior (DOI) to be operated and managed as a National Wildlife Refuge in accordance with Public Law 107–107. The former AFWTF comprised three separate operational areas. From west to east, these areas comprised the Eastern Maneuver Area (EMA), the Surface Impact Area (SIA) and the Live Impact Area (LIA). As part of the Consent Order, the Navy was required to complete a groundwater baseline investigation along the western property boundary of the former EMA. This groundwater baseline investigation supplements the initial hydrogeologic investigation, completed in August 1999 (Baker, 1999). The scope of work for the investigation is presented in the *Final Work Plan for Groundwater Baseline Investigation* (CH2M HILL, 2001). This Groundwater Baseline Investigation Report presents the procedures and results of the field investigations to meet the objectives of the Consent Order, which comprise:

1) Investigate the groundwater quality along the western perimeter by analyzing groundwater data from four Resource Conservation and Recovery Act (RCRA) monitoring wells (RCRA-1, RCRA-2, RCRA-3, and RCRA-4).

2) Investigate the groundwater flow patterns along the western perimeter.

3) Determine whether activities at the former AFWTF have impacted the groundwater along the western perimeter.

The Consent Order stated that if the Navy wished to submit documentation of work previously implemented for usage in satisfying part or all of the requirements of the Order, such documentation had to be submitted to EPA for its review and approval within 60 days of the effective date of the Order (January, 2000). To fulfill this requirement, the Hydrogeologic Investigation (Baker, 1999) was submitted to the EPA in March 2000. Hence, a significant portion of the data presented in this Groundwater Baseline Investigation Report was collected during the 1999 Hydrogeologic Investigation (Baker, 1999).

1.1 Site Description

Vieques has a land area of approximately 33,000 acres, and is located on the Antillean Island Arc separating the Caribbean Sea from the Atlantic Ocean. The island is approximately 7 miles southeast of the eastern coast of the island of Puerto Rico (Figure 1-1). Vieques is approximately 21 miles long (east to west) and 4.5 miles wide (north to south).

The former AFTWF is located on the eastern one-third of the island. For the purposes of the EPA Consent Order and this investigation, the former AFWTF comprises: the Surface

Impact Area (SIA), Live Impact Area (LIA), the Eastern Conservation Area (ECA) (which together encompass an area of 3,600 acres), and the EMA, which encompasses 11,000 acres. The former AFWTF was under the command of the former U.S. Naval Station Roosevelt Roads (NSRR), now referred to as Naval Activity Puerto Rico (NAPR). As of May 1, 2003, the former AFWTF came under the jurisdiction of the DOI. Figure 1-2 shows the location of the EMA, SIA, LIA and ECA.

1.2 Summary of Previous Investigations

Prior to May 1, 2003, the former AFWTF had been in continuous use since World War II, when the Navy acquired title to the land. The 1999 hydrogeologic investigation was conducted for the Navy to assess the potential for ordnance-derived constituents to have migrated from the former AFWTF to the western two-thirds of Vieques. In addition, the EPA had requested that the Navy complete a "baseline" groundwater investigation along the western property boundary of the Navy facility. The groundwater baseline investigation was designed to establish baseline groundwater quality and regional groundwater flow patterns along the western perimeter of the former EMA.

The results of the 1999 hydrogeologic investigation are summarized in the report entitled *The Results of The Hydrogeologic Investigation Vieques Island, Puerto Rico* (Baker, 1999). The report was submitted to EPA in March 2000. The goals of the investigation were twofold:

1. Assess whether explosive-related compounds were present in groundwater at the property boundary
2. Establish the flow direction of groundwater at the EMA western property boundary and assess whether the potential existed for offsite migration of compounds potentially present in groundwater

To meet these goals, 11 groundwater monitoring wells were installed at the property line such that groundwater samples could be obtained for laboratory analysis. In addition, eight piezometers were installed at varying distances east of the property line; these were used to collect groundwater elevation measurements to assess groundwater flow direction. Figure 1-3 presents the locations of the monitoring wells and piezometers. During the 1999 hydrogeologic investigation, the EPA requested that the Navy perform a separate groundwater baseline investigation. Therefore, four monitoring wells (RCRA-1, RCRA-2, RCRA-3, RCRA-4) were designated to be included in the baseline investigation. Appendix A presents soil boring logs for the four RCRA monitoring wells. Appendix B presents well completion diagrams of the four RCRA monitoring wells.

In addition to sampling the 11 wells (including the four RCRA wells) along the western property boundary for explosive-derived compounds, the Navy also sampled these wells for metals to characterize the metal content of the groundwater along the western property boundary of the EMA.

Data collection from the 1999 investigation included the sampling and analysis of groundwater from the RCRA monitoring wells for dissolved metals, total metals, and explosives. This sampling constituted the first event of the Groundwater Baseline Investigation. The second Groundwater Baseline Investigation sampling event was

accomplished in February 2004 to complete the Appendix IX list of sampling parameters; this study included the collection and analysis of groundwater samples from the RCRA monitoring wells for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), herbicides, pesticides, polychlorinated biphenyls (PCBs), dioxins, and general chemistry parameters. These two sampling events together complete the Appendix IX sampling list, and together compose the Groundwater Baseline Investigation, as stated in the *Final Groundwater Baseline Investigation Work Plan* (CH2M HILL, 2001).

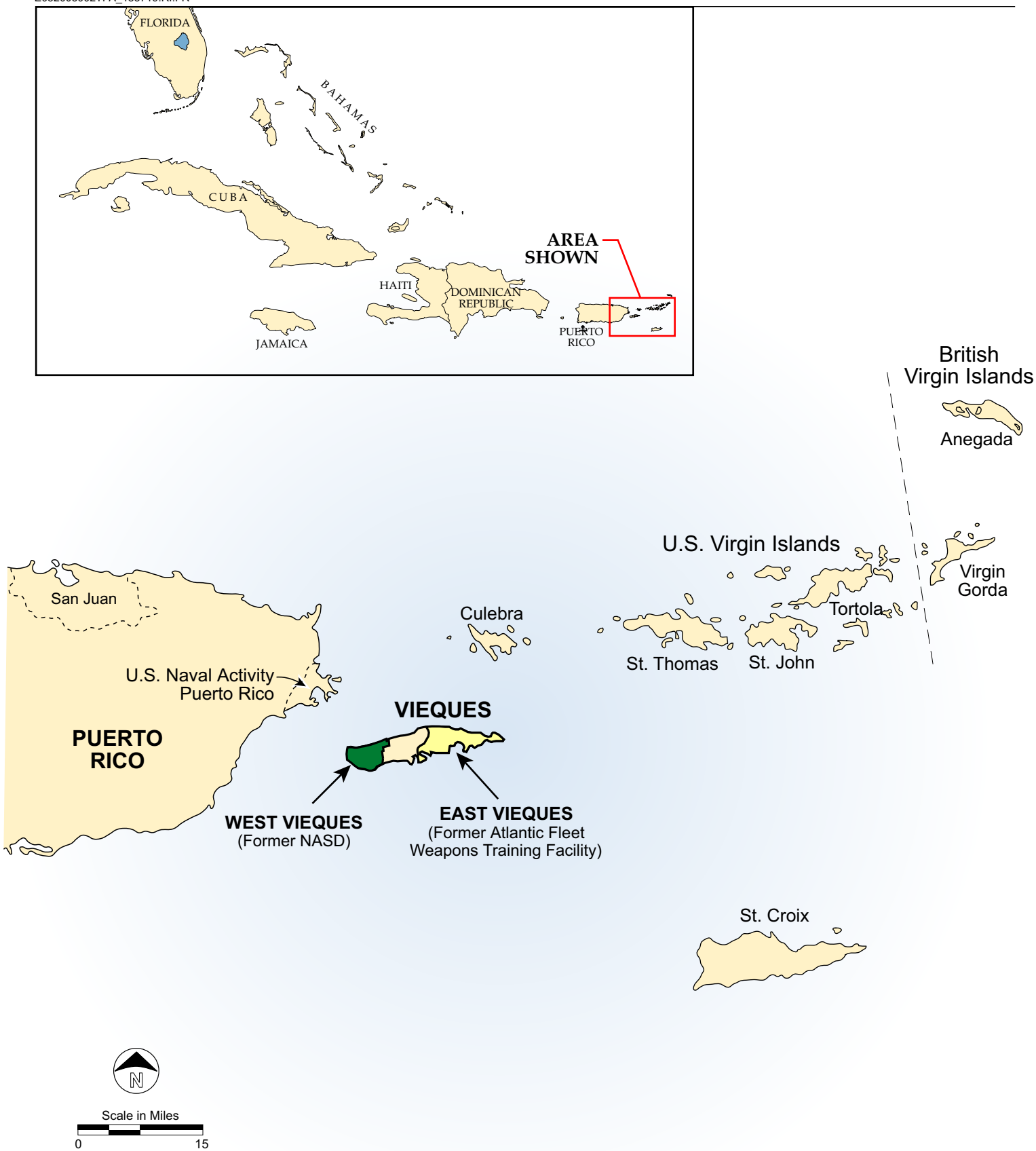

Figure 1-1
Regional Location Map
Former Atlantic Fleet Weapons Training Facility, Vieques, Puerto Rico

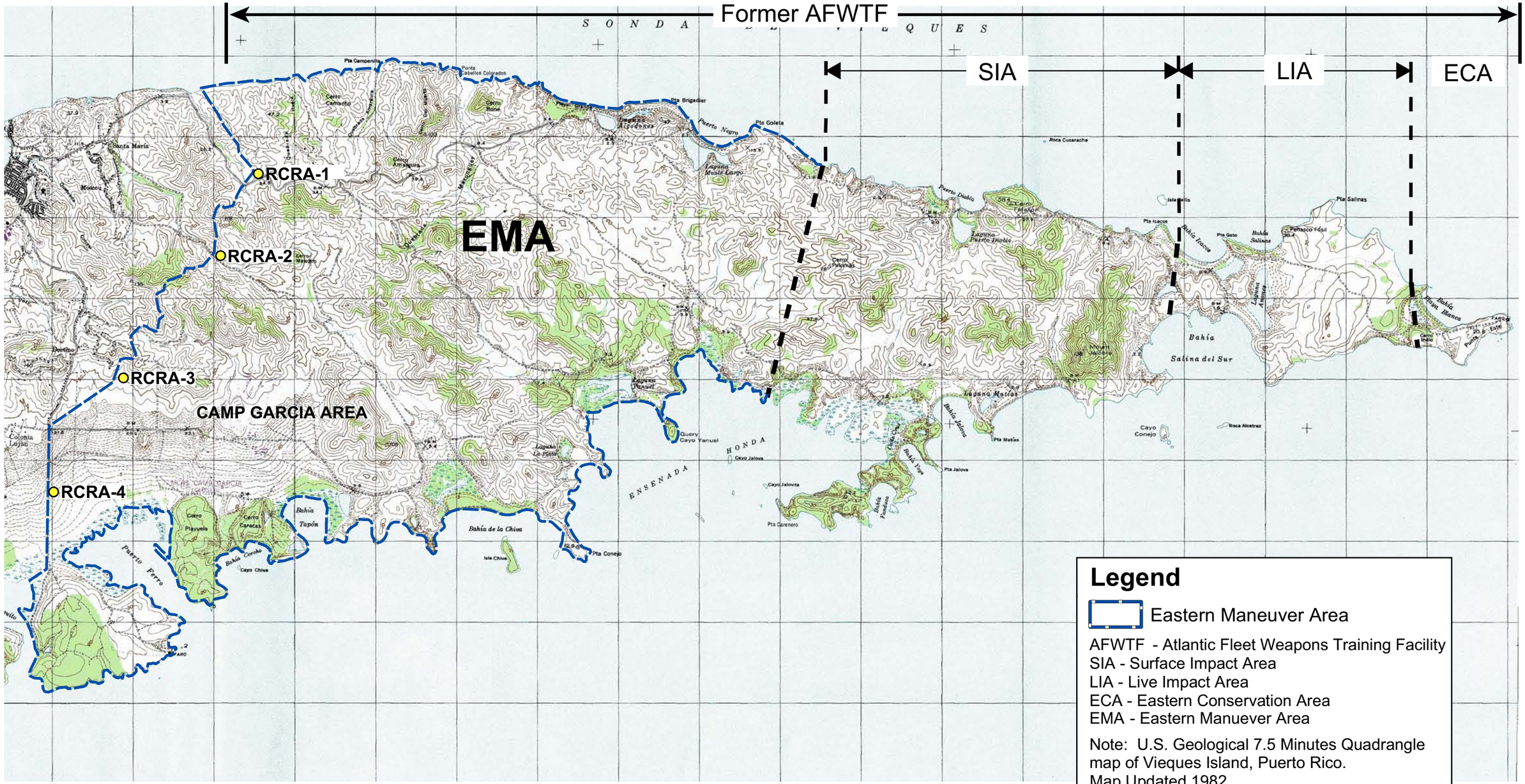

Figure 1-2
Former AFWTF Site Location Map
Former Atlantic Fleet Weapons Training Facility, Vieques, Puerto Rico

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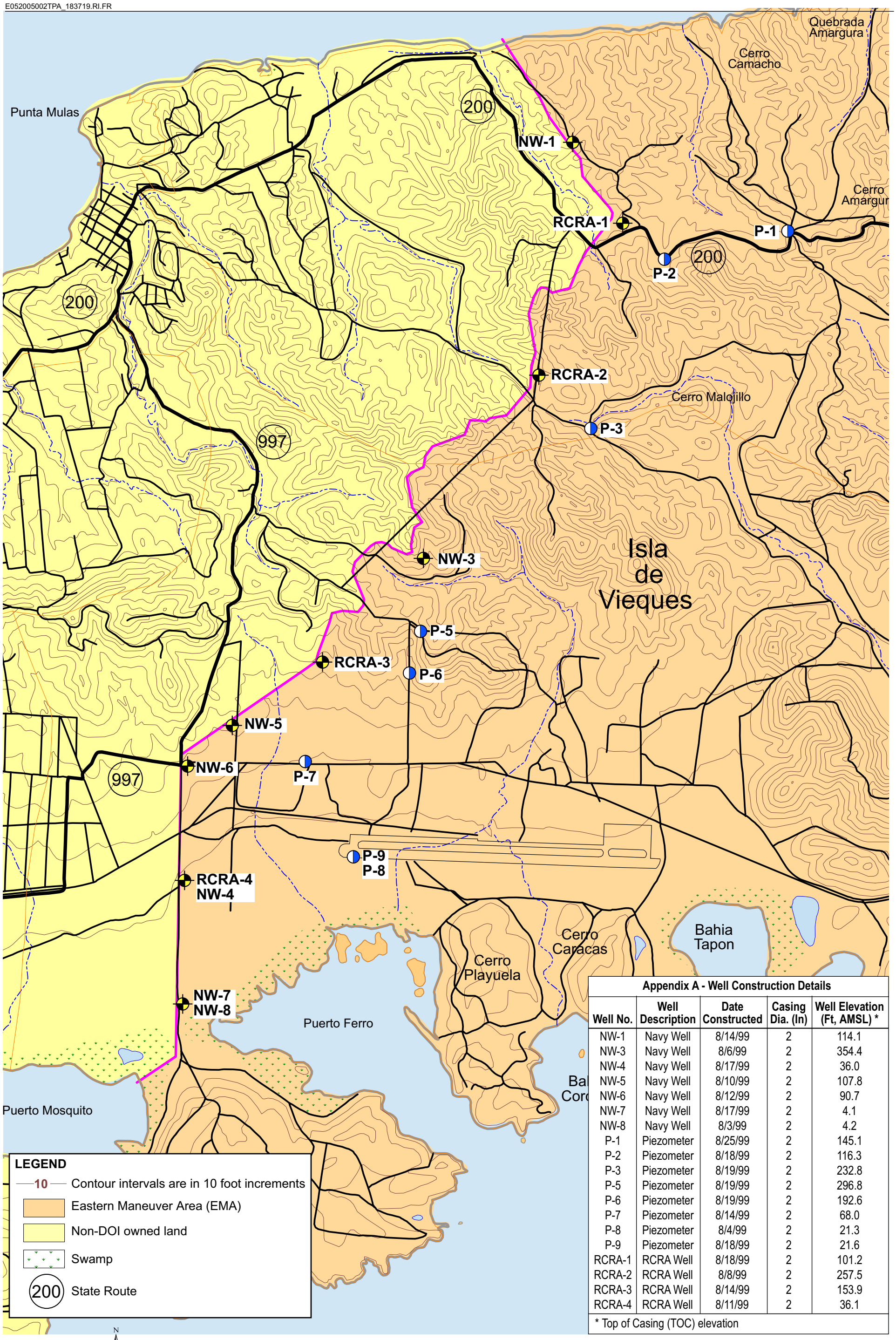

Appendix A - Well Construction Details

Well No.	Well Description	Date Constructed	Casing Dia. (In)	Well Elevation (Ft, AMSL) *
NW-1	Navy Well	8/14/99	2	114.1
NW-3	Navy Well	8/6/99	2	354.4
NW-4	Navy Well	8/17/99	2	36.0
NW-5	Navy Well	8/10/99	2	107.8
NW-6	Navy Well	8/12/99	2	90.7
NW-7	Navy Well	8/17/99	2	4.1
NW-8	Navy Well	8/3/99	2	4.2
P-1	Piezometer	8/25/99	2	145.1
P-2	Piezometer	8/18/99	2	116.3
P-3	Piezometer	8/19/99	2	232.8
P-5	Piezometer	8/19/99	2	296.8
P-6	Piezometer	8/19/99	2	192.6
P-7	Piezometer	8/14/99	2	68.0
P-8	Piezometer	8/4/99	2	21.3
P-9	Piezometer	8/18/99	2	21.6
RCRA-1	RCRA Well	8/18/99	2	101.2
RCRA-2	RCRA Well	8/8/99	2	257.5
RCRA-3	RCRA Well	8/14/99	2	153.9
RCRA-4	RCRA Well	8/11/99	2	36.1

* Top of Casing (TOC) elevation

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Figure 1-3
Monitoring Well and Piezometer Locations
Former AFWTF, Puerto Rico

SECTION 2

Field Investigation Activities

The results for the hydrogeologic investigation performed in August 1999 were presented in a report entitled *Results of the Hydrogeologic Investigation, Vieques Island, Puerto Rico* (Baker, 1999). The field investigation included: soil sampling and analyses, groundwater monitoring well installation at 11 locations, groundwater sampling and analyses, piezometer installation, groundwater elevation monitoring, and surveying. Groundwater samples were collected at monitoring wells RCRA-1, RCRA-2, RCRA-3, RCRA-4, NW-1, NW-3, NW-4, NW-5, NW-6, NW-7, and NW-8 and analyzed for total metals (antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, mercury, nickel, selenium, silver, thallium, tin, vanadium, and zinc), dissolved metals, and explosive-related constituents. These activities are referred to as the "first round" of sampling.

The second round of groundwater sampling of monitoring wells RCRA-1, RCRA-2, RCRA-3, and RCRA-4 was conducted by CH2M HILL in 2004. The samples were analyzed for the remaining RCRA Appendix IX constituents, which comprised VOCs, SVOCs, pesticides, herbicides, PCBs, dioxins, and general chemistry parameters to assess whether site-related constituents were present in the groundwater and potentially migrating offsite. The second round of groundwater sampling took place during the Phase I RFI field investigation, and the four RCRA monitoring wells were sampled on February 2 and February 3, 2004.

Data generated from the investigation were expected to meet the quality levels established in regulatory standards and guidelines. To achieve this goal, the data were collected in general accordance with the standard operating procedures presented in the *Master Work Plan for the Atlantic Fleet Weapons Training Facility, Vieques, Puerto Rico* (CH2M HILL, June 2003) and the *Final Work Plan for Groundwater Baseline Investigation at U.S. Navy's Eastern Maneuver Area Vieques Island, Puerto Rico* (CH2M HILL, September 6, 2001). These two documents were approved by EPA and PREQB. In addition, the groundwater sampling protocol used the following guidance:

- Region 2 Standard Operating Procedure (SOP), *Groundwater Sampling Procedure Low Stress Purging and Sampling* (EPA, final report, March 16, 1998) (included in Appendix C)
- *Handbook Ground Water, Volume I: Ground Water and Contamination* (EPA, September 1990)
- *Handbook Ground Water, Volume II: Methodology* (EPA, July 1991)
- *RCRA Ground-Water Monitoring: Draft Technical Guidance* (EPA, 1992)

2.1 Sample Locations

Eleven groundwater monitoring wells and eight piezometers were installed at varying distances east of the property line to establish the groundwater flow direction at the former

EMA western property boundary. Groundwater elevation measurements were collected to assess the groundwater flow direction. Figure 1-3 shows the location of all western perimeter monitoring wells and piezometers. Table 2-1 presents a summary of well construction details.

The first round of groundwater sample collection from RCRA-1, RCRA-2, RCRA-3, RCRA-4, NW-1, NW-3, NW-4, NW-5, NW-6, NW-7, and NW-8, took place on August 18, 19, and 20, 1999, during the hydrogeologic investigation (Baker, 1999). Samples were analyzed for total metals, dissolved metals, and explosives.

The second round of groundwater sample collection from RCRA-1, RCRA-2, RCRA-3, and RCRA-4 took place on February 2 and 3, 2004. Samples were analyzed for RCRA Appendix IX constituents (except for the previously sampled metals and explosives).

2.2 Sampling Methods

2.2.1 Groundwater Elevation Measurements

Two sets of groundwater elevation measurements were obtained from the monitoring wells and piezometers on August 25, and 26, 1999. Table 2-2A summarizes these measurements (Baker, 1999). Groundwater elevation measurements were also collected in 2004 from monitoring wells RCRA-1, 2, 3, and 4, as shown in Table 2-2B.

2.2.2 Surveying

The monitoring well and piezometer locations were surveyed in the field using Global Positioning System (GPS) techniques. The survey established the latitude and longitude coordinates for each of the locations. In addition, the elevation, in feet (ft) above mean sea level (msl), was established to the nearest 0.01 ft. The locations of the soil samples were established using traditional surveying techniques. These locations were tied into the control points set for the GPS survey. Table 2-3 provides the survey data (Baker, 1999).

2.2.3 Monitoring Well Purging and Sampling

2.2.3.1 1999 Hydrogeologic Investigation Sampling

During the first round of groundwater sampling of the four RCRA monitoring wells and the eight NW wells, the wells were purged and sampled using low-flow sampling techniques with a submersible pump. Prior to sampling, at least three well volumes of water were purged from each well. The wells were pumped at a rate of approximately 0.25 to 0.5 gallons per minute (gpm). Water quality data (comprising temperature, conductivity, salinity, pH, dissolved oxygen, and turbidity) were monitored during purging. Each well was sampled after the parameters stabilized (less than 10 percent fluctuation) (Baker, 1999).

After purging, the wells were sampled from the submersible pump. New, dedicated Tygon® tubing was used for each well. The pump and cables were decontaminated between wells by washing with potable water and Alconox® and rinsing with potable water. Potable water was pumped through the submersible pump during rinsing.

2.2.3.2 2004 Groundwater Baseline Investigation Sampling

The second round of groundwater sampling involved sampling of the four RCRA monitoring wells. Groundwater samples collected from these wells were analyzed for all constituents included in Appendix IX of Title 40, Code of Federal Regulations, Part 264 (40 CFR 264), excluding metals and explosives for which previous samples were analyzed.

Prior to the second round of groundwater sampling, depth to groundwater was measured using an electronic water level probe. The water level was measured to the nearest 0.01 ft from the top of the polyvinyl chloride (PVC) well casing.

The four RCRA monitoring wells were purged and sampled either with a stainless steel Grundfos® submersible pump, or a plastic Whale pump, depending on the water volume and recharge rate of the well.

Prior to sampling, at least three well volumes of water were purged from each well. The wells were pumped at a rate of approximately 0.20 to 0.26 gallons per minute. In-situ measurements collected during well purging comprised temperature, conductivity, redox potential, dissolved oxygen, pH, turbidity, and depth to water. Groundwater was sampled after the parameters had stabilized (less than 10 percent fluctuation) using one of the pumps described previously. New separate Teflon® tubing was used for each well. The pump and cables were decontaminated between wells by washing with Alconox® and potable water, rinsing with potable water, rinsing with isopropyl alcohol, then rinsing with distilled water. Potable water and distilled water were pumped through the submersible pump during rinsing. Appendix D includes monitoring well groundwater sampling data sheets for the second round of groundwater sampling.

As presented in *Appendix D, Groundwater Sampling Data Sheets for RCRA-1, 2, 3, and* 4, only one well has purging drawdown greater than 0.3 ft. The well purging information is provided below:

RCRA-1 static water level at 47.48 ft bls, purging water level was 47.50 ft bls (drawdown= 0.02 ft);

RCRA-2 static water level at 36.40 ft bls, no drawdown;

RCRA-3 static water level at 56.95 ft bls, purging water level was 57.22 ft bls (drawdown= 0.27 ft);

RCRA-4 static water level at 38.62 ft bls, purging water level was 41.00 ft bls (drawdown= 2.38 ft).

RCRA-4 was purged and sampled at a higher flow rate than specified in the low flow sampling procedures. The groundwater sample data are valid based on the consistency of the temporal field parameters collected during purging: pH within 0.04, conductivity within 0.002%, and DO within 0.07%. In addition, more than three casing volumes were purged from the well, and turbidity was comparable to the turbidity measurements of the other three wells, which were all low. Therefore, the groundwater sample collected from well RCRA-4 is representative of ambient formation groundwater conditions.

A flow rate higher than prescribed by the low-flow sampling protocol was used during the purging and sampling of the four RCRA wells because the type of valve used on the effluent

end of the TFE tubing did not permit flow rate adjustment below about 0.2 gpm. Three of the four wells had a sufficient specific capacity to accommodate the higher flow rate without drawdown, but the specific capacity in monitoring well RCRA-4 was lower than the other three wells, which resulted in an increased drawdown. However, as noted above, the groundwater sample collected from RCRA-4 is considered representative of ambient formation conditions.

Groundwater samples were collected from the discharge hose of the purge pump into properly-labeled, laboratory-prepared sampling containers filled and/or preserved as appropriate; cooled to approximately 4°C; and shipped to the analytical laboratory using appropriate chain-of-custody (COC) documentation procedures.

Split samples were collected by PREQB and EPA during the groundwater baseline sampling event. RCRA-1 samples were split with PREQB and RCRA-2, 3, and 4 samples were split with EPA. Currently, the Navy does not have information concerning the results of the split samples collected. If all split sample data collected by Tech Law-designated laboratories (Pace Analytical and GPL), and the EPA DESA laboratory, and all data validation information is sent to the Navy for review, these data can be evaluated for QA/QC procedures used.

2.3 Data Validation

This task involved sample management and data validation. The analytical data generated during the first and second rounds of RCRA well sampling were validated by an independent data validation subcontractor according to EPA's *National Functional Guidelines for Organic Data Review* (EPA, 1999).

Analytical results from the 2004 sampling event, as well as the existing Appendix IX metal results, were validated by a subcontractor approved by the Navy. Data validators used EPA Region 2 guidance.

The hardcopy data packages were reviewed by the subcontractor chemists using the process outlined in EPA's *Functional Guidelines for Evaluating Data* (EPA, 2002, and 1999). Areas of review included (when applicable to the method) holding time compliance, calibration verification, blank results, matrix spike precision and accuracy, method accuracy as demonstrated by laboratory control samples (LCSs), field duplicate results, surrogate recoveries, internal standard performance, and interference checks. A data review worksheet was completed for each of these data packages and any non-conformance was documented. This data review and validation process is independent of the laboratory's checks and focuses on the usability of the data to support the project data interpretation and decision-making processes.

Analytical data may be appended with a qualifying flag, which consists of a single or double-letter abbreviation that is a data descriptor. The following flags were in the evaluation:

U - Undetected. Analyte was analyzed for but not detected above the method detection limit (MDL).

UJ - Detection limit estimated. Analyte was analyzed for and qualified as not detected.

J - Estimated. The analyte was present, but the reported value may not be accurate or precise.

R - Rejected. The data are unusable. (NOTE: Analyte/compound may or may not be present.)

Numerical sample results that are greater than the MDL but less than the laboratory reporting limit (RL) are qualified with a "J" for estimated, as required by EPA's *Functional Guidelines* (EPA, 2002, and 1999).

2.4 Data Quality Evaluation

The data quality evaluation (DQE) is the quantitative and qualitative evaluation of overall trends in the project-specific database. The objective of the DQE process is to understand the effects of the overall analytical process on data usability to support project-specific data quality objectives (DQOs). The DQE includes an analysis of the effect of the specific sample matrix on the overall analytical process. Appendix E includes all DQE results.

The DQE deliverable is a DQE technical memorandum (TM) that can be used by the project team to understand project-specific data usability. Topics addressed in the DQE TM include the following:

- *Potential blank contamination*—the effect on the usability of data for compounds detected in both the field or laboratory blank samples and the corresponding field samples
- *Laboratory performance*—evaluation of the recovery for blank spike samples such as the LCS, calibration criteria, etc.
- *Potential matrix interferences*—evaluation of the accuracy and precision for surrogates, spiked field samples, and duplicate field sample results
- *Assessment of PARCCs*—comparison of data validation (DV) findings with precision, accuracy, representativeness, comparability, and completeness (PARCCS)

This task also includes the evaluation of validated laboratory data and field-generated data. The data evaluation includes incorporation of historical data from the previous investigations, tabulation of the data, and generation of figures and/or tables associated with data (e.g., sampling location maps).

All analytical requirements and laboratory deliverables necessary for evaluation of the validity of data gathered are provided as part of the validation package submitted with the draft and final reports. These requirements include a comparison of the analytical data to

DQOs, the implementation of EPA Region 2 data validation SOPs, and a review of the raw analytical data.

2.4.1 Sample Analysis

All analyses of groundwater were conducted at a contracted laboratory that fulfilled the requirements of the Navy's Quality Assurance/Quality Control (QA/QC) Program Manual and EPA's SW 846. The laboratory followed the scope of work prepared by the project team. A signed certificate of analysis was provided with each laboratory data package, along with a certificate of compliance certifying that all work was performed in accordance with the EPA SOW. All analyses were performed following the highest level of EPA guidance. Analyses included the ratio of field QC samples recommended by EPA guidance for the DQOs.

2.4.2 Field QC Procedures

QC duplicate samples and blanks were used to provide a measure of the internal consistency of the samples and to provide an estimate of the components of variance and the bias in the analytical process. The Quality Assurance Project Plan (QAPP) provides details with regard to the number and frequency of field QC samples collected during the investigation.

2.4.3 Blanks

Blanks provide a measure of cross-contamination sources, decontamination efficiency, and other potential errors that can be introduced from sources other than the sample. American Society for Testing and Materials (ASTM) Type II water was used for blanks. Four types of blanks were generated during sampling activities: trip blanks, field blanks, equipment rinsate blanks, and temperature blanks.

One trip blank was included in each cooler used for the daily shipment of VOC samples. If more than one cooler was sent on a given day, all of the VOC samples were placed in one cooler, if possible, to minimize the number of trip blanks needed. The trip blanks were prepared before each sampling event, shipped or transported to the field with the sampling bottles, and returned unopened for analysis. Trip blanks indicate if there is contamination during shipment to the field, from storage in the field, or from shipment from the field to the analytical laboratory.

One field blank was collected per sampling event. Field blanks are used to determine the chemical quality of water used for such procedures as decontamination and blank collection.

One equipment blank per sample medium was obtained for each day of sampling. Equipment blanks provide an indication of the efficiency of decontamination procedures.

EPA has recently requested that a temperature blank be included in each cooler containing samples for analyses so that the laboratory can record the temperature without disturbing the samples. The temperature blank was labeled, but was not given a sample number nor was it listed as a sample on the COC form.

2.4.4 Duplicates

Field duplicate samples were collected at a frequency of one field duplicate per 10 field samples per matrix. The locations from which the duplicates were taken were selected randomly. Each duplicate sample was split evenly into two sample containers and submitted for analysis as two independent samples.

2.4.5 Matrix Spike/Matrix Spike Duplicate (MS/MSD)

Matrix spike/matrix spike duplicate (MS/MSD) samples were collected at a frequency of one MS/MSD for every 20 field samples collected. Analytical results for these samples indicate the impact of the matrix (water, soil, sediment) on extracting the analyte for analysis. MS/MSD samples give an indication of the laboratory's analytical accuracy and precision within the sample matrix. Data validators used these results to evaluate the accuracy and precision of the analytical data.

2.4.6 Conclusions of the Data Quality Evaluation

Conclusions of the data quality evaluation process are:

- The laboratory analyzed the samples according to the EPA methods stated in the work plan as demonstrated by the deliverable summaries and analytical run sequences.
- Field duplicate results indicate good field sampling precision and homogeneity of the sample matrix.
- Sample results for target organic compounds above the MDL but less than the RL should be considered as uncertain but indicative of the presence of that compound at an estimated concentration.
- Spike and surrogate recoveries indicate that the specific sample matrix did not significantly interfere with the analytical process or the final numerical result.
- The LSC/LSCD accuracy and precision results with the noted exceptions indicate that the analytical methods were in control within the laboratory.
- Concentrations of bis (2-Ethylhexyl) phthalate found in an equipment rinsate blank should be considered as laboratory and/or field contamination instead of from environmental activities.

All project objectives or PARCCs were met, and the data can be used in the project decision-making process as qualified by the data quality evaluation process.

TABLE 2-1
Summary Of Well Construction Details
Groundwater Baseline Investigation, Vieques Island, Puerto Rico

Well Number	Date Installed	Top of Casing Elevation (ft above MSL)	Boring Depth (ft bls)	Well Depth (ft bls)	PVC Riser (ft bls)	Screen Interval Depth (ft bls)	Depth to Bentonite (ft bls)	Depth to Sandpack (ft bls)
NW-1	8/14/99	114.096	135	134	124	124 - 134	107.0	109.2
NW-3	8/6/99	354.382	197	197	187	187 - 197	177.0	182.0
NW-4	8/17/99	35.99	80	80	70	70 - 80	55.0	57.0
NW-5	8/10/99	107.808	118	118	108	108 - 118	103.6	106.0
NW-6	8/12/99	90.726	144	144	124	124 - 144	105.2	111.2
NW-7	8/17/99	4.103	81	81	71	71 - 81	60.0	64.0
NW-8	8/3/99	4.154	27	15	5	5 - 15	2.0	4.0
P-1	8/25/99	145.084	186	186	176	176 - 186	66.0	78.7
P-2	8/18/99	116.255	105	102	92	92 - 102	50.0	84.0
P-3	8/19/99	232.791	165	165	155	155 - 165	62.0	66.0
P-5	8/19/99	296.819	144	144	134	134 - 144	54.0	60.0
P-6	8/19/99	192.575	180.5	180.5	170.5	170.5 – 180.5	115.0	120.0
P-7	8/14/99	68.029	94	94	84	84 - 94	77.0	79.0
P-8	8/4/99	21.335	32	32	12	12 - 32	6.0	8.0
P-9	8/18/99	21.618	86	86	70	70 - 80	63.0	55.0
RCRA-1	8/18/99	101.241	65	64	54	54 - 64	46.0	49.5
RCRA-2	8/8/99	257.46	64	64	54	54 - 64	44.5	49.5
RCRA-3	8/14/99	153.937	69	69	59	59 - 69	48.0	53.8
RCRA-4	8/11/99	36.141	49.5	49.5	39.5	39.5 - 49.5	30.0	37.0

Notes:
ft = feet
bls = below land surface
MSL = mean sea level

TABLE 2-2A
1999 Groundwater Elevation Measurements
Groundwater Baseline Investigation, Vieques Island, Puerto Rico

Point ID	DTW 8/25	DTW 8/26	GW ELEV 8/25	GW ELEV 8/26	TOC Elevation (ft)
NW-1	101.210	101.190	12.886	12.906	114.096
NW-3	118.470	118.210	235.912	236.172	354.382
NW-4	37.280	37.220	-1.290	-1.230	35.990
NW-5	36.030	35.970	71.778	71.838	107.808
NW-6	52.700	52.560	38.026	38.166	90.726
NW-7	5.380	5.470	-1.277	-1.367	4.103
NW-8	4.930	5.030	-0.776	-0.876	4.154
P-1	132.000	131.130	13.084	13.954	145.084
P-2	61.870	61.890	54.385	54.365	116.255
P-3	82.390	82.020	150.401	150.771	232.791
P-5	80.150	79.910	216.669	216.909	296.819
P-6	102.910	93.030	89.665	99.545	192.575
P-7	53.110	52.980	14.919	15.049	68.029
P-8	24.870	24.810	-3.535	-3.475	21.335
P-9	24.790	24.760	-3.172	-3.142	21.618
RCRA-1	49.260	49.260	51.981	51.981	101.241
RCRA-2	40.030	40.030	217.439	217.439	257.469
RCRA-3	55.410	55.420	98.527	98.517	153.937
RCRA-4	37.270	37.200	-1.129	-1.059	36.141

Source: Baker, 1999
Notes:
ft = feet GW = Groundwater
DTW = Depth to water TOC = Top of Casing

TABLE 2-2B
2004 Groundwater Elevation Measurements
Groundwater Baseline Investigation, Vieques Island, Puerto Rico

Point ID	DTW 2/2004	GW ELEV 2/2004	TOC Elevation (ft)
RCRA-1	47.480	53.761	101.241
RCRA-2	39.540	217.929	257.469
RCRA-3	56.950	96.987	153.937
RCRA-4	38.620	-2.479	36.141

Notes:
ft = feet GW = Groundwater
DTW = Depth to water TOC = Top of Casing

TABLE 2-3
Well Survey Data
Groundwater Baseline Investigation, Vieques Island, Puerto Rico

Point ID	Latitude (NAD 83)	Longitude (NAD 83)	Northing (NAD 27 ft)	Easting (NAD 27 ft)	Elevation (ft)
NW-1	18° 09' 14.41641" N	65° 25' 00.38766" W	118136.057	852761.949	114.096
NW-3	18° 07' 54.85133" N	65° 25' 30.15492" W	110094.787	849935.643	354.382
NW-4	18° 06' 54.24112" N	65° 26' 15.45805" W	103957.401	845599.755	35.990
NW-5	18° 07' 22.44578" N	65° 26' 07.22030" W	106806.612	846378.807	107.808
NW-6	18° 07' 14.63050" N	65° 26' 15.54214" W	106013.953	845580.479	90.726
NW-7	18° 06' 29.85009" N	65° 26' 15.56954" W	101497.118	845602.359	4.103
NW-8	18° 06' 29.89526" N	65° 26' 15.64556" W	101501.635	845595.002	4.154
P-1	18° 08' 58.23604" N	65° 24' 17.83689" W	116526.879	856874.215	145.084
P-2	18° 08' 52.39909" N	65° 24' 41.73599" W	115925.246	854572.873	116.255
P-3	18° 08' 19.27054" N	65° 24' 56.24981" W	112575.918	853191.817	232.791
P-5	18° 07' 39.65922" N	65° 25' 28.64940" W	108563.218	850089.265	296.819
P-6	18° 07' 32.73216" N	65° 25' 32.03029" W	107862.720	849767.040	192.575
P-7	18° 07' 15.39599" N	65° 25' 52.74394" W	106103.142	847778.879	68.029
P-8	18° 06' 57.61779" N	65° 25' 43.06912" W	104315.033	848721.810	21.335
P-9	18° 06' 57.72842" N	65° 25' 43.08706" W	104326.182	848720.019	21.618
RCRA-1	18° 08' 59.75460" N	65° 24' 51.07721" W	116662.157	853667.958	101.241
RCRA-2	18° 08' 24.27608" N	65° 25' 08.22378" W	113074.409	852034.287	257.469
RCRA-3	18° 07' 34.53996" N	65° 25' 49.49817" W	108035.829	848081.364	153.937
RCRA-4	18° 06' 54.32223" N	65° 26' 15.46458" W	103965.579	845599.081	36.141

Source: Baker, 1999

Notes:
ft = feet
NAD = North American Datum

TABLE 2-4
Summary of Final Field Parameter Measurements Taken Prior to Groundwater Sample Collection – February 3-4, 2004
RCRA Perimeter Wells, East Vieques, Puerto Rico

Well ID	Purged Vol. (gallons)	pH	Conductivity (µmhos/cm)	Temperature (ºC)	DO (mg/L)	ORP (mV)	Turbidity (NTU)
RCRA-1	10.8	6.77	2,142	29.33	1.98	142	0.27
RCRA-2	13.0	6.83	1,760	28.30	0.59	155	0.41
RCRA-3	9.1	6.50	1,334	30.17	1.02	134	3.09
RCRA-4	7.0	7.07	1,641	29.40	1.50	159	1.33

SECTION 3

Summary of Investigation Results

3.1 Site Geology

The unconsolidated unit included in the investigation consisted of a layer of unconsolidated gravel, sand, silt and clay. The gravel, sand, silt, and clay occur in various relative percentages with the unconsolidated layer throughout the study area. The unconsolidated layer varies in thickness from approximately 5 to 50 ft and overlies a massive granite/granodiorite formation. Figure 3-1 presents the locations of cross sections A-A' and B-B' (Figures 3-2 and 3-3). The cross sections illustrate the occurrence and distribution of the local geology. As shown in the cross sections, the thickness of the unconsolidated layer decreases northward from well NW-7, located along the Caribbean shoreline, to well NW-3, located at the highest elevation within the study area. Likewise, the thickness of the unconsolidated layer increases again northward from NW-3 toward RCRA-1, located near the Atlantic Ocean shoreline (Baker, 1999).

3.2 Assessment of Groundwater Flow Conditions

To establish a flow direction of groundwater at the western property boundary of the former EMA and assess whether the potential existed for offsite migration of site-related compounds, 11 monitoring wells and eight piezometers were installed at varying distances east of the property line. Groundwater elevations were measured to assess groundwater flow direction. Figure 1-3 shows the locations of the monitoring wells and piezometers.

Piezometers P-8 and P-9 were installed into the alluvial unconsolidated deposits to assess groundwater flow in the uppermost groundwater zone and the Esperanza Aquifer, respectively. The remaining six piezometers were installed to assess groundwater flow within the bedrock.

The monitoring wells and piezometers were both installed using the same equipment and methodologies (e.g., both 2-inch-diameter PVC). Appendix A contains lithologic logs for the monitoring well and piezometer borings. Six of the logs (RCRA-2, NW-1, NW-6, P-1, P-6, and P-7) were not completed by the field staff (Baker Environmental, ERTEC Drilling, and CH2M HILL) during the drilling event and are listed as "Insufficient Data Set" in Appendix A. Field notes are included in Appendix A for three of these borings (i.e., NW-1, P-6, and P-7). However no drilling field notes are available for the RCRA-2, NW-6, and P-1 borings. Borings for RCRA-4, NW-8, P-8, and P-9 were drilled using the hollow stem auger drilling method only. Borings for RCRA-1, NW-3, NW-4, P-2, and P-3 were drilled with the air rotary drilling method only. Borings for RCRA-3, NW-5, NW-6, and P-5 were drilled using both hollow stem augers and air rotary drilling methods. Borings for RCRA-2, NW-1, NW-6, P-1, P-6, and P-7 did not have enough data available to determine what drilling method was used."

The top of the screened interval of the monitoring wells and piezometers were installed above the first encountered groundwater that was detected during drilling. Although this depth was determined during drilling, it was not documented on all the boring logs.

Monitoring well and piezometer construction details are summarized in Table 2-1. Well completion diagrams are provided in Appendix B.

Two sets of groundwater elevation measurements were obtained from the monitoring wells and piezometers on August 25 and 26, 1999. Table 2-2A summarizes these measurements. Groundwater elevation contours and flow direction for the bedrock water-bearing zone are illustrated in Figure 3-4. The depth to groundwater within the bedrock ranged from approximately 36 ft below land surface (bls) at NW-5 to 131 ft bls at P-1. The bedrock potentiometric surface was located at an elevation significantly higher than the elevations where groundwater was originally encountered during drilling of the bedrock wells and piezometers. Groundwater occurrence within the bedrock formation was associated with secondary porosity features (i.e., fractures and joints). These data indicate the fractures and joints within the bedrock store the groundwater and that the recharge areas for the fractures and joints are at higher elevations than the portions intersected by the wells and piezometers. This also indicates that the primary porosity of the bedrock formation is low enough to limit groundwater occurrence and movement to secondary porosity features (i.e., fractures and joints).

The groundwater elevation data for the bedrock indicates that a groundwater flow divide exists within the bedrock at the approximate north/south midpoint of the island, approximately at the location of well NW-3 (see Figure 3-4). Generally, groundwater north of well NW-3 flows north toward the Atlantic Ocean and groundwater south of NW-3 flows south toward the Caribbean Sea. No data were collected for the bedrock aquifer during a U.S. Geological Survey (USGS) study of this area (Torres-Gonzalez, 1989). The alluvial aquifer groundwater elevation data collected during the 1999 hydrogeologic investigation indicate that groundwater flow was to the east in the area of the study wells (NW-8, RCRA-4 and P-8). These results differed slightly from the results of Torres-Gonzalez (1989), which indicated a southeast groundwater flow direction for the unconsolidated aquifer. The difference may be attributable to the limited area included in this investigation, the limited number of water level measurements recorded, and the limited time span over which the water level measurements were recorded for this investigation. These data are shown in Appendix F (Baker, 1999). Groundwater elevation measurements were collected during the 2004 sampling event at monitoring wells RCRA-1, 2, 3, and 4 in accordance with the *Final Work Plan for Groundwater Baseline Investigation at U.S. Navy's Eastern Maneuver Area, Vieques Island, Puerto Rico* (CH2M HILL, 2001). The groundwater elevation data for these wells is presented in Table 2-2B. Because the 1999 groundwater elevation data facilitates a more comprehensive assessment of groundwater flow, the 1999 data were used in this assessment, rather than the data from the four wells measured in 2004.

3.3 Analytical Data Summary

EPA Region IX Tap Water Preliminary Remediation Goal (PRG) concentrations for protection of residential land use (PRG-R) were used to screen groundwater results, to evaluate whether any potential unacceptable threats to human health existed, and to

determine whether further investigations were warranted. Table 3-1 presents detected concentrations of parent (normal) samples and the duplicate sample from the RCRA wells for both the 1999 and 2004 analytical data that were above the PRG screening criteria. Data quality validation results for these data are contained in Appendix E. The complete set of analytical data for the RCRA wells is included in Appendix G. Appendix H includes analytical results for monitoring wells NW-1, and NW-3 through NW-8, which were sampled in 1999.

No explosives, SVOCs, herbicides, pesticides, PCBs, or dioxins were detected in any of the four RCRA monitoring well samples collected as part of this investigation. Two VOCs (bromodichlorome and chloroform) were detected in one RCRA monitoring well (RCRA 3) above the PRG; barium was also detected in RCRA 3 above the PRG.

No explosives were detected in monitoring wells NW-1, NW-3 through NW-8 during the 1999 sampling event. Monitoring well NW-8 had five exceedances of PRGs for total metals in groundwater, comprising arsenic, barium, cadmium, copper, and vanadium. Monitoring well NW-7 had one exceedance of the PRG for barium. Barium also exceeded the PRG in NW-7 for the dissolved metals sample. Zinc exceeded the PRG value at NW-8 for the dissolved metals sample.

3.3.1 Comparison to Human Health Risk Assessment Screening Levels

3.3.1.1 Metals

The only metal detected above screening levels in the four RCRA monitoring wells was barium. One detection of barium (330 µg/L) in a filtered sample and one detection of barium (320 µg/L in an unfiltered sample (both at RCRA-3) were detected above the PRG-R of 255 µg/L. Barium has been previously detected above screening levels in the background groundwater in western Vieques. Therefore, the barium exceedances are likely attributable to background conditions. Site-specific background groundwater data may be collected during future investigations of various SWMUs/AOCs. Comparison of these background data with the baseline groundwater data may help verify this conclusion.

3.3.1.2 VOCs

The VOCs bromodichloromethane and chloroform were detected above the PRG-R in RCRA-3.

- One detection of bromodichloromethane (0.52 µg/L) at RCRA-3 was above the PRG-R of 0.181 µg/L.
- One detection of chloroform at (4.7 µg/L) at RCRA-3 was above the PRG-R of 0.617 µg/L.

Both of these VOCs are common disinfection byproducts from municipal water treatment with chlorine. It is noted that RCRA-3 is within several hundred feet downgradient of residences whose water supply is from the municipality.

TABLE 3-1
Groundwater Analytical Data Detection Summary

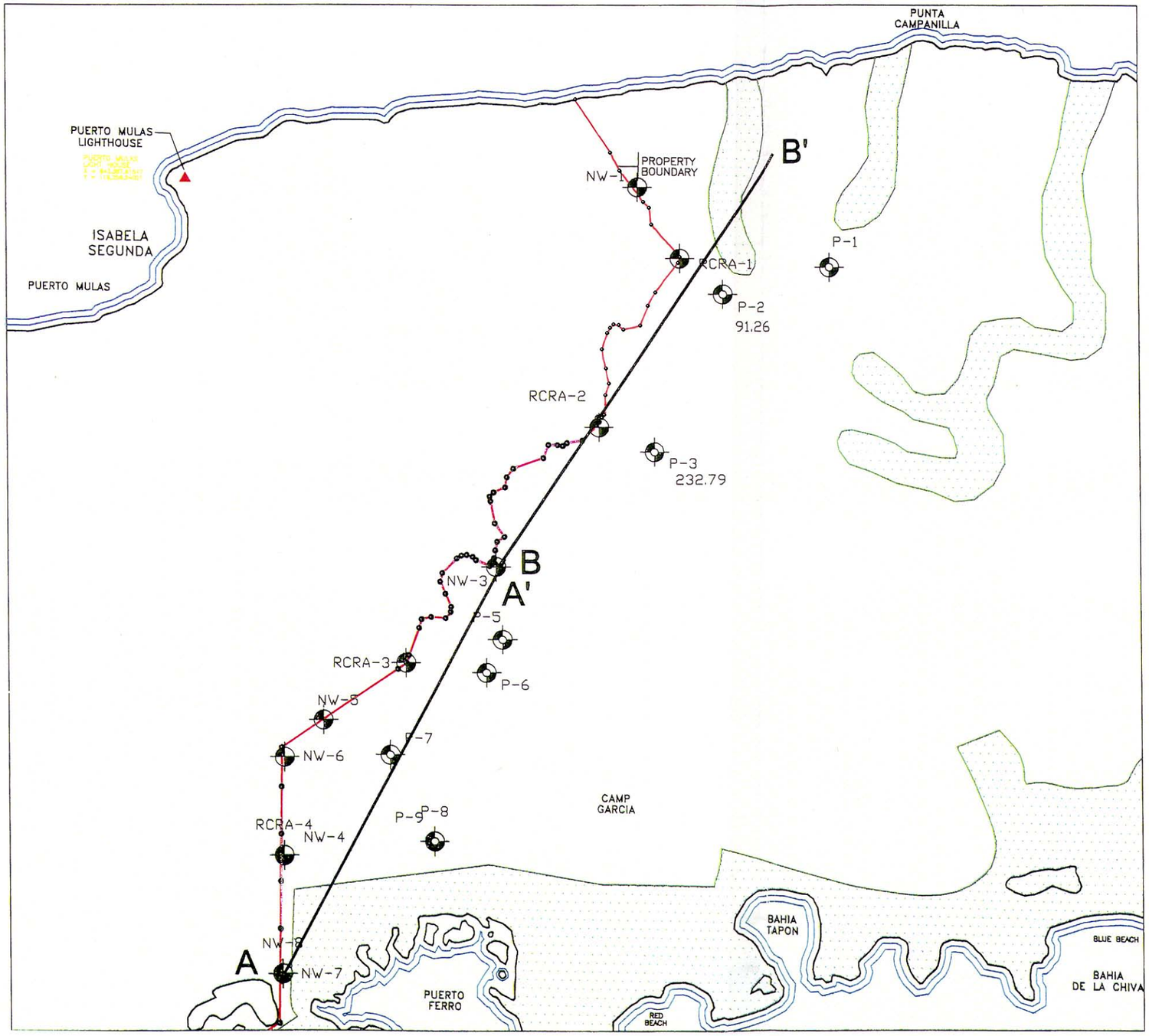
			StationID	RCRA-1		RCRA-2		RCRA-3		RCRA-4	
			SampleID	RCRA-1-GW		RCRA-2-GW		RCRA-3-GW		RCRA-4-GW	
			Depth								
			DateCollected	08/18/1999		08/18/1999		08/18/1999		08/19/1999	
			SampleType	N		N		N		N	
Parameter	**Year Sampled**	**Units**	**PRG**								
Dissolved Metals											
Barium, dissolved	1999	µg/L	255	18	=	32	=	330	=	150	=
Vanadium, dissolved	1999	µg/L	25.5			12	=				
Zinc, dissolved	1999	µg/L	1090	35	=	27	=			37	=
Total Metals											
Barium	1999	µg/L	255	18	=	33	=	320	=	140	=
Vanadium	1999	µg/L	25.5	ND		12	=	ND		ND	
Zinc	1999	µg/L	1090	31	=	26	=			78	=
Volatiles											
Bromodichloromethane	2004	µg/L	0.181	ND		ND		0.52	J	ND	
Chloroform	2004	µg/L	0.617	ND		ND		4.7	=	ND	
Chemistry											
Sulfide	2004	µg/L	10.9	ND		1920	J	1520	J	1920	J

Data Flags:
U = Undetected; analyte was analyzed but not detected above the MDL.
UJ = Detection limit was estimated; analyte was analyzed and qualified as undetected.
J = Estimated value; compounds detected at concentrations between the reporting limit and the method detection limit.
B = Analyte was detected in the associated method blank.
R = Data was unusable.
= - Detected value as shown.
ND = Not detected.
N = Normal sample (others include MS = matrix spike, DP = duplicate, ect.)
Exceeds the PRG

Screening Criteria
PRG - EPA Region 9 Preliminary Remediation Goals (2002) - Tap water.

3.3.1.3 Other Analytes

Four detections of sulfide (1,920 µg/L, 1,520 µg/L, 1,520 µg/L, and 1,920 µg/L in RCRA-2, RCRA-2Dup, RCRA-3, and RCRA-4, respectively) were above the PRG-R of 10.9 µg/L. One detection of cyanide was detected in RCRA-2Dup at a concentration of 6.59 µg/L, with a PRG value of 0.62 µg/L. However, cyanide was not detected in the normal RCRA-2 sample.



LEGEND

RCRA-1 MONITORING WELL

P-1 PIEZOMETER

SHORELINE

A —— A' HYDROGEOLOGIC CROSS-SECTION

AFWTF PROPERTY LINE

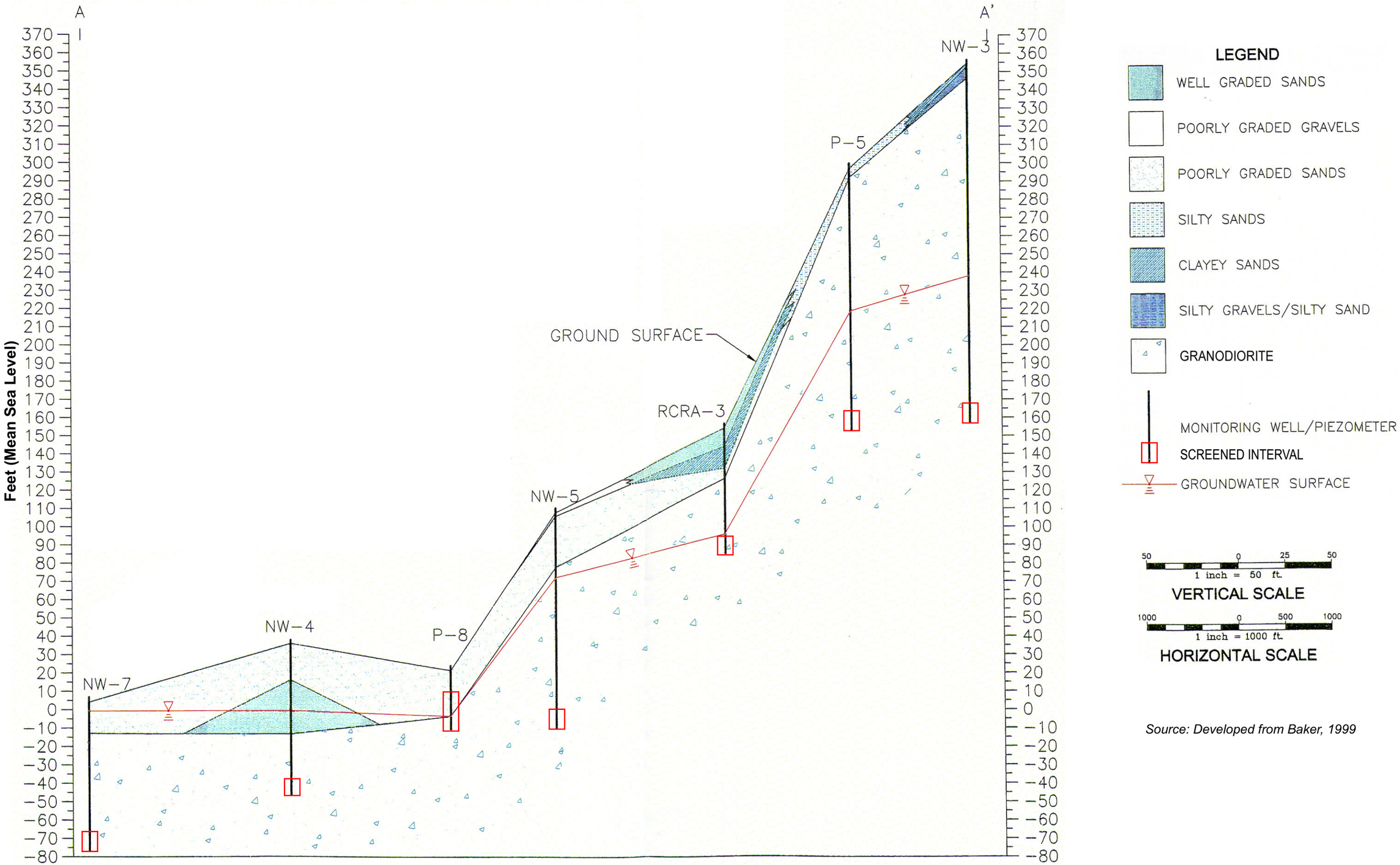
2400 0 1200 2400

1 inch = 2400 ft.

N W E S

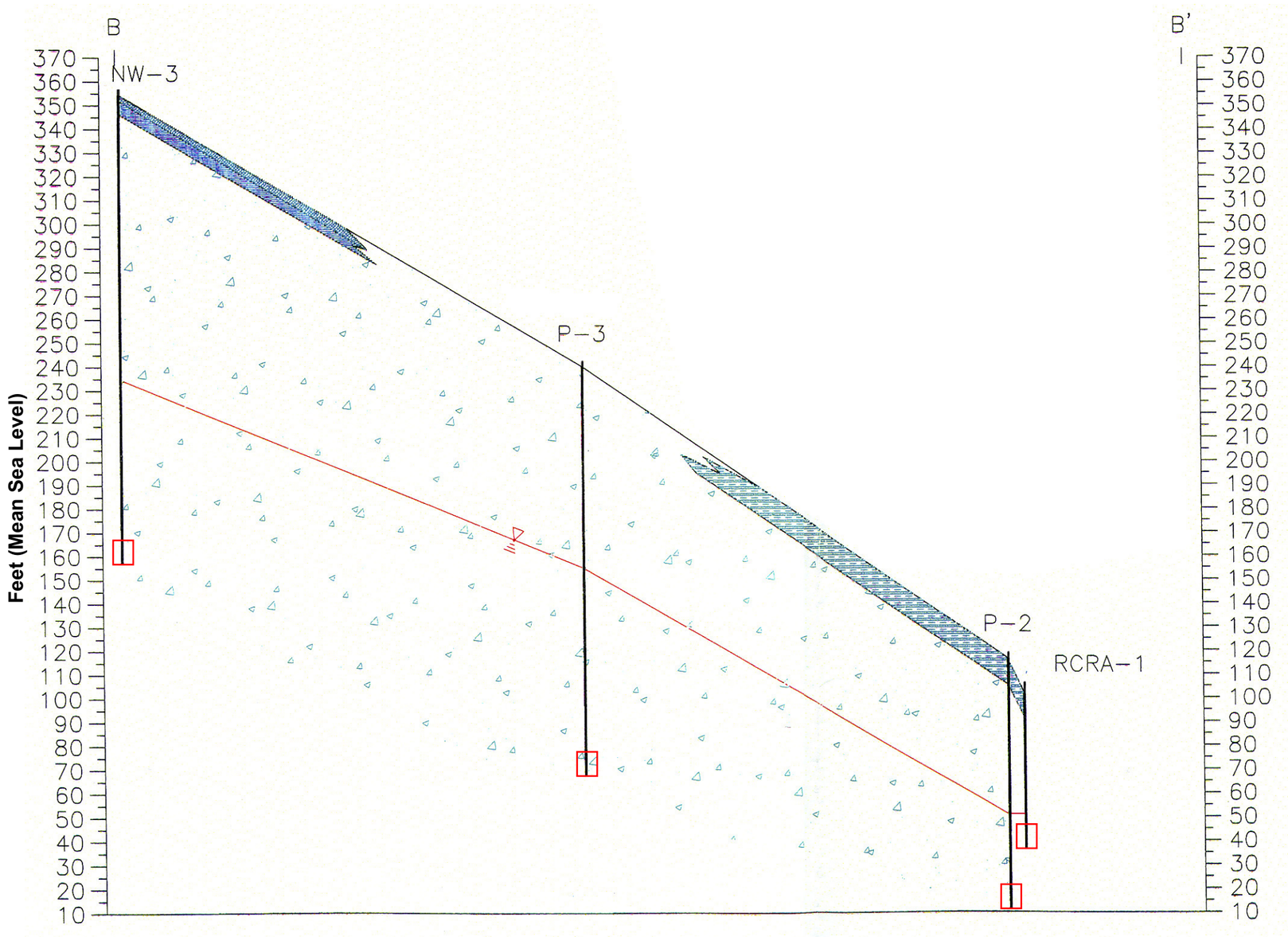
Source: Developed from Baker, 1999

FIGURE 3-1
Hydrogeologic Cross-Section Location Map
Former Atlantic Fleet Weapons Training Facility, Vieques, Puerto Rico



Source: Developed from Baker, 1999

Figure 3-2
Hydrogeologic Cross-Section A-A'
Former Atlantic Fleet Weapons Training Facility, Vieques, Puerto Rico



LEGEND

SANDY CLAY/SILTY CLAY

CLAYEY SANDS

SILTY GRAVELS/SILTY SAND

GRANODIORITE

MONITORING WELL/PIEZOMETER

SCREENED INTERVAL

GROUNDWATER SURFACE

50 0 25 50

1 inch = 50 ft.

VERTICAL SCALE

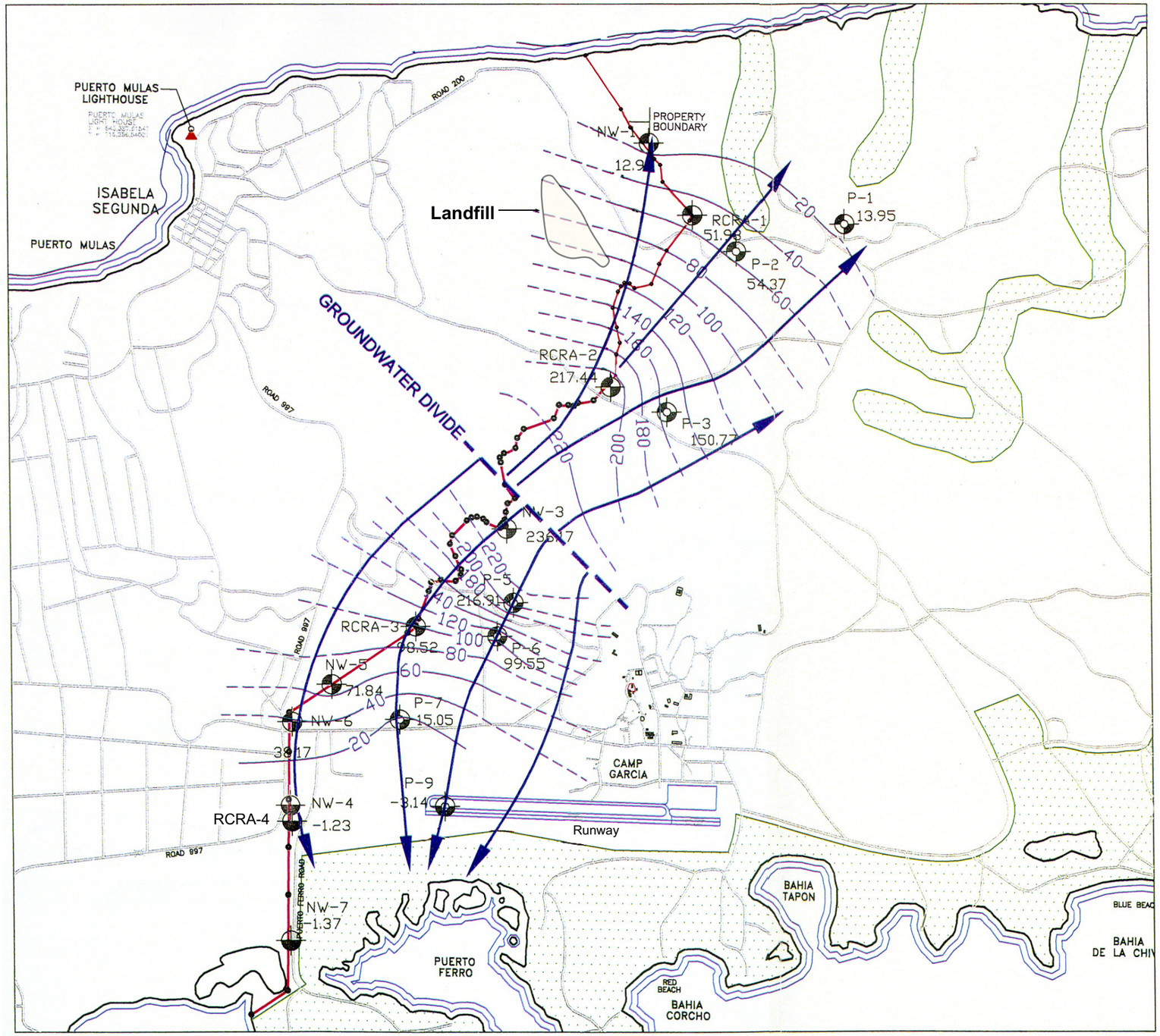
1000 0 500 1000

1 inch = 1000 ft.

HORIZONTAL SCALE

Source: Developed from Baker, 1999

Figure 3-3
Hydrogeologic Cross-Section B-B'
Former Atlantic Fleet Weapons Training Facility, Vieques, Puerto Rico



Groundwater Elevation Measurements

Point ID	GW Elevation Measured 8/26
NW-1	12.906
NW-3	236.172
NW-4	-1.230
NW-5	71.838
NW-6	38.166
NW-7	-1.367
NW-8	-0.876
P-1	13.954
P-2	54.365
P-3	150.771
P-5	216.909
P-6	99.545
P-7	15.049
P-8	-3.475
P-9	-3.142
RCRA-1	51.981
RCRA-2	217.439
RCRA-3	98.517
RCRA-4	-1.059

Source: Baker, 1999

Note:
GW = Groundwater

LEGEND

- AFWTF PROPERTY LINE
- 20 — INFERRED GROUNDWATER ELEVATION CONTOURS
- 40 — INTERPRETED GROUNDWATER ELEVATION CONTOURS
- INTERPRETED GROUNDWATER FLOW DIRECTION
- NW-1 12.91 — MONITORING WELL WITH POSTED GROUNDWATER ELEVATION (MSL)
- P-1 13.95 — PIEZOMETER WITH POSTED GROUNDWATER ELEVATION (MSL)
- CONSERVATION ZONES

0 8,000 16,000
Feet

N W E S

Source: Baker Environmental

Figure 3-4
Groundwater Contour Map
Former AFWTF, Puerto Rico

SECTION 4

Summary and Conclusions

A Groundwater Baseline Investigation was completed at the former EMA in Vieques to establish groundwater baseline quality and to delineate groundwater flow patterns along the western perimeter to determine whether activities at the former AFWTF have impacted the groundwater along the western perimeter of the EMA.

Groundwater flow along the EMA western perimeter boundary is affected by a flow divide at the approximate north/south midpoint of the island, approximately at the location of well NW-3. Generally, groundwater north of well NW-3 flows north toward the Atlantic Ocean and groundwater south of NW-3 flows south toward the Caribbean Sea. As a result, groundwater within bedrock is not likely to flow from former Navy property to the west.

The groundwater baseline quality data collected along the western perimeter show that no explosives, SVOCs, herbicides, pesticides, PCBs, or dioxins were detected in any of the four RCRA monitoring wells sampled as part of this investigation. The metal barium was detected above the PRG-R criterion in RCRA-3. However, the levels detected are likely attributable to background conditions. The VOCs bromodichloromethane and chloroform were detected above the PRG-R in RCRA-3. Both of these VOCs are common disinfection byproducts from municipal water treatment with chlorine. There is no former Navy water treatment activity in the area of RCRA-3. However, monitoring well RCRA-3 is located just southeast and downgradient of a residential area, whose water is supplied by the municipality.

In summary, groundwater north of well NW-3 flows north toward the Atlantic Ocean and groundwater south of NW-3 flows south toward the Caribbean Sea. Therefore, groundwater within bedrock is not likely to flow from the former Navy property to the west. Constituents detected above risk-based screening levels are likely attributable to either background conditions (i.e., barium) or offsite (i.e., non-Navy) sources (i.e., bromodichloromethane and chloroform). Site-specific background groundwater data may be collected during future investigations of various SWMUs/AOCs. Comparison of these background data with the baseline groundwater data may help verify this conclusion.

Based on this information, the former Navy activities appear to have had no impact on groundwater quality at the western perimeter of the former EMA.

SECTION 5

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APPENDIX A

Soil Boring Logs

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Vieques Phase I, Vieques Island, Puerto Rico
CTO NO.: 138 BORING NO.: RCRA-1
COORDINATES: EAST: NORTH:
ELEVATION: SURFACE: TOP OF PVC CASING:

Rig: CME-55								
	Split Spoon	**Casing**	**Augers**	**Core Barrel**	**Date**	**Progress (Ft.)**	**Weather**	**Depth to Water (Ft.)**
Size (ID)	1 5/8		4 1/4		#######	65.0'bgs		--
Length	2		5					
Type			STD					
Hammer Wt.			130					
Fall			30					

Remarks:

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston
N = No Sample

WELL INFORMATION

Type	Diam.	Top Depth (Ft.)	Bottom Depth (Ft.)
Sch 40 PVC screen			
Sch 40 PVC riser			

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
1								
2								
3								
4	R-N					Moderately weathered, 5/6 10yr yellowish brown, granodiorite look alike material, matrix olive-green (olivine material) oxide material on faces of fragments		
5								
6								
7								
8								
9								
10								

DRILLING CO.: SoilTech BAKER REP.: Joe Morales
DRILLER: Osvaldo BORING NO.: RCRA-1 SHEET 1 OF 4

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Vieques Phase I, Vieques Island, Puerto Rico

CTO NO.: 138 BORING NO.: RCRA-1

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	BG/PS = Background/Point Source

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
11								
12								
13								
14								
15	R-N					Same as above		
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26	R-N					Same as above		
27								
28								
29							cement/	
30							grout to surface	

DRILLING CO.: SoilTech BAKER REP.: Joe Morales

DRILLER: Osvaldo BORING NO.: RCRA-1 SHEET 2 OF 4

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Vieques Phase I, Vieques Island, Puerto Rico

CTO NO.: 138 BORING NO.: RCRA-1

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	BG/PS = Background/Point Source

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
31	R-N					Same as above		
32								
33								
34								
35								
36								
37								
38								
39								
40								
41	R-N					Same as above		
42								
43								
44								
45							cement/ grout to surface	
46								
47							Bentonite	
48								
49								
50							gravel to bottom	

DRILLING CO.: SoilTech BAKER REP.: Joe Morales

DRILLER: Osvaldo BORING NO.: RCRA-1 SHEET 3 OF 4

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Vieques Phase I, Vieques Island, Puerto Rico

CTO NO.: 138 BORING NO.: RCRA-1

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	BG/PS = Background/Point Source

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
51								
52						Same as above except more fines in the cuttings, yellowish brown in color, 5/4 10yr		
53								
54								
55								
56	R-N						top of screen	
57								
58								
59								
60								
61						Same as above without the fines		
62								
63	R-N							
64								
65							bottom of screen	
66								
67								
68								
69								
70								

DRILLING CO.: SoilTech BAKER REP.: Joe Morales

DRILLER: Javier BORING NO.: RCRA-1 SHEET 4 OF 4

INSUFFICIENT DATA SET FOR RCRA-2

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Vieques Phase I, Vieques Island, Puerto Rico
CTO NO.: 138 BORING NO.: RCRA-3
COORDINATES: EAST: NORTH:
ELEVATION: SURFACE: TOP OF PVC CASING: 153.937

Rig: CME-55	Split Spoon	Casing	Augers	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	1 5/8		4 1/4		#######	69.0'bgs.		--
Length	2		5					
Type			STD					
Hammer Wt.			130					
Fall			30					

Remarks:

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston
N = No Sample

WELL INFORMATION

Type	Diam.	Top Depth (Ft.)	Bottom Depth (Ft.)
Sch 40 PVC screen			
Sch 40 PVC riser			

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
1 2 3 4 5	A-N					Brown-Red Sandy cuttings, dry		
6 7	S-1	1.5/2.0 75%	10 9 9 9			Brown-Red Sand with dense upper interval, loose lower interval, sedimentary throughout dry, no odor		
8 9 10	A-N							
	S-2		9			Match to Sheet 2		

DRILLING CO.: SoilTech BAKER REP.: Matt Maloney
DRILLER: Osvaldo BORING NO.: RCRA-3 SHEET 1 OF 4

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Vieques Phase I, Vieques Island, Puerto Rico

CTO NO.: 138 BORING NO.: RCRA-3

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	BG/PS = Background/Point Source

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
11	S-2	1.5/2.0 75%	8 7 5			Some clay with sand (light grey) dense thoughout entire interval 11-12' Reddish sand, very small gravel, dry, no odor		
12								
13	A-N							
14								
15								
16	S-3	1.6/2.1 80%	6 5 8 12			dense red-brown Sand, some white sand dispersed throughout sample, dry, no odor		
17								
18	A-N							
19								
20								
21	S-4	1.5/2.0 75%	9 9 12 11			dense red-brown sand, some clay, dry / some moisture within clay lense @ 21', no odor		
22								
23	A-N							
24						drilling harder @ 24'		
25								
26	S-5	1.3/2.0 65%	20 24 50/5"			grey-brown Sand @ 25-26'bgs dense throughout sample, greyish Sand with small gravel, some iron staining, dry, no odor		
27								
						Rig bouncing (boulder?)		
28						refusal @ 27.5'bgs		
29								
30						Match to Sheet 3		

DRILLING CO.: SoilTech BAKER REP.: Matt Maloney

DRILLER: Osvaldo BORING NO.: RCRA-3 SHEET 2 OF 4

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Vieques Phase I, Vieques Island, Puerto Rico

CTO NO.: 138 BORING NO.: RCRA-3

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	BG/PS = Background/Point Source

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
31						Continued from Sheet 2	cement/ grout	
32								
33	R-N							
34								
35						medium to coarse cuttings, **Granodiorite** composition, quartz and feldspar		
36								
37								
38								
39								
40								
41								
42								
43								
44						**Same as above**, except with pyrite, more whites, less fines		
45								
46								
47								
48								
49							bentonite	
50						darker because of oxide material more brown in rock frags		

DRILLING CO.: SoilTech BAKER REP.: Matt Maloney

DRILLER: Osvaldo BORING NO.: RCRA-3 SHEET 3 OF 4

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Vieques Phase I, Vieques Island, Puerto Rico

CTO NO.: 138 BORING NO.: RCRA-3

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	BG/PS = Background/Point Source

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
51						Continued from Sheet 2		
52								
53								
54								
55	R-N						gravel to bottom	
56								
57								
58								
59								
60						SAME AS ABOVE	top of screen	
61								
62								
63								
64	R-N							
65								
66								
67								
68								
69								
70						boring terminated @ 69'bgs		

DRILLING CO.: SoilTech BAKER REP.: Matt Maloney

DRILLER: Osvaldo BORING NO.: RCRA-3 SHEET 4 OF 4

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Vieques Phase I, Vieques Island, Puerto Rico
CTO NO.: 138 BORING NO.: RCRA-4
COORDINATES: EAST: NORTH:
ELEVATION: SURFACE: TOP OF PVC CASING:

Rig: CME-55	Split Spoon	Casing	Augers	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	1 5/8		4 1/4		#######	35.5'bgs		--
Length	2		5					
Type			STD					
Hammer Wt.			130					
Fall			30					

Remarks:

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston
N = No Sample

WELL INFORMATION

Type	Diam.	Top Depth (Ft.)	Bottom Depth (Ft.)
Sch 40 PVC screen			
Sch 40 PVC riser			

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
1	A-N					yellowish brown dry sand, fine o medium		.
2								
3								
4								
5								
6	S-1	2.0/2.0 100%	10 10 15 18			Clayey Sand, yellowish 4/6 5yr, organic material on top		
7								
8	A-N					Same as above		
9								
10								
	S-2		11					

DRILLING CO.: SoilTech BAKER REP.: Joe Etheridge
DRILLER: Osvaldo BORING NO.: RCRA-4 SHEET 1 OF 3

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Vieques Phase I, Vieques Island, Puerto Rico

CTO NO.: 138 BORING NO.: RCRA-4

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	BG/PS = Background/Point Source

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
11	S-2	1.8/2.0 90%	19 18 32			oxide nodules, fine to medium sand ina clayey matrix,brownish-yellow, 10yr5/6		
12								
13	A-N					dull yellowish brown, dry Clayey sand		
14								
15								
16	S-3	100%	14 16 17 17			oxide nodules, fine to medium sand ina clayey matrix,brownish-yellow, 10yr5/6		
17								
18	A-N					dry, brown, Clayey Sand, 10yr 4/3		
19								
20								
21	S-4	100%	21 23 31 30			oxide nodules, fractures, fine to medium sand, clayey , clay matrix, reddish yellow 7.5 yr 6/6		
22								
23	A-N					dry Clayey Sand		
24								
25								
26	S-5	100%	16 19 19 19			same as above bottom 4"; greenish gray, fine Clayey Sand, 7/5 Gy		
27								
28	A-N					7/2 10yr, light grey cuttings		
29							cement/ grout to surface	
30								
	S-6		33			loose, fractured, clayey		

DRILLING CO.: SoilTech BAKER REP.: Joe Etheridge

DRILLER: Osvaldo BORING NO.: RCRA-4 SHEET 2 OF 3

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Vieques Phase I, Vieques Island, Puerto Rico

CTO NO.: 138 BORING NO.: RCRA-4

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	BG/PS = Background/Point Source

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
31	S-6	75%	33 50/5"			sand, white, no dark minerals	bentonite	
32						(granodiorite look alike) weathered, decomposed black minerals and some quartz from 31.5' to 35'		
33	A-N							
34								
35								
36	S-7	50%	7/8 50/2			decomposed rock, Silty Sand, some silty clay, same as 30-32' moist; light greenish grey silty fine sand, some black material		
37								
38	A-N					pale yellow cuttings, fine silt, like powder	gravel to bottom	
39								
40							top of screen	
41	S-8	30%	50/3			Silty Sand, wet at bottom 2" fragments of decomposed rock like granodiorite, some clay in the matrix, fine to medium sand		
42								
43	A-N					some wet cuttings		
44								
45								
46	S-9	25%	50/5			wet, clayey sand, same as above but wet		
47								
48	A-N							
49							bottom of screen	
50								
						boring terminated @ 50.0'bgs		

DRILLING CO.: SoilTech BAKER REP.: Joe Etheridge

DRILLER: Osvaldo BORING NO.: RCRA-4 SHEET 3 OF 3

INSUFFICIENT DATA SET FOR NW-1

ERTEC
ENTAL RESOURCE TECHNOLOGIES

PROJECT: Cerro Gorda JOB NO:
LOCATION: Vieques
CLIENT: CH2M-HILL
CHECKED BY: Jael Morales DATE: 08/19/99
PAGE: 1 OF 1

NW-1

depth Description

50' - moderately weathered and fines of Rock fragments, dark bluish gray matrix.

60' - Do, more fines in the cuttings yellowish brown, olive green material

70' - same material without weathering.

80' - Do

90' - Do, not weathered, some bluish gray matrix some yellowish brown fragments

100' - Do

[illegible]' - Do

[illegible]' - Do, same material, Bluish gray fine grain matrix.

The cuttings where too small to identify clearly the type of rock

P.O. Box 195336, San Juan, P.R. 00919-5336 • Tel (787) 792-8902 • Fax (787) 783-5555

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Vieques Phase I, Vieques Island, Puerto Rico

CTO NO.: 138 BORING NO.: NW-3

COORDINATES: EAST: NORTH:

ELEVATION: SURFACE: 354.382 TOP OF PVC CASING: 354.382

Rig: Reich 600; see remarks

	Split Spoon	Casing	Augers	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)		6"			08/06/1999	180'	partly cloudy,humid,	NA
Length		20'			08/07/1999	197'	high of 90	190-197'
Type		PVC			08/08/1999	NA		115'
Hammer Wt.								
Fall								

Remarks: Used Reich 600, air rotary/ hammer rig (water well rig), logged hole from cuttings

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston
N = No Sample

WELL INFORMATION

Type	Diam.	Top Depth (Ft.)	Bottom Depth (Ft.)
Sch 40 PVC screen(0.01 slot)	2"	187'bgs.	197'bgs.
Sch 40 PVC riser	2"	3'abs.	187'bgs.

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
1 2	R-N					Sandy Loam 0-2', little clay		
3 4 5 6 7 8	R-N					Rock fragments of basalt 2-8'		
9 10	R-N					**Bedrock**; granitic(granodiorite) grey	cement/ grout to surface	
						Match to Sheet 2		

DRILLING CO.: SoilTech BAKER REP.: Matt Maloney

DRILLER: Javier BORING NO.: NW-3 SHEET 1 OF 11

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Vieques Phase I, Vieques Island, Puerto Rico

CTO NO.: 138 BORING NO.: NW-3

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	BG/PS = Background/Point Source

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
11						switched to air hammer @10'		
12								
13								
14								
15								
16								
17								
18								
19								
20	R-N					**Granitic rock** @ 20',grey blew hole, dry		
21								
22								
23								
24								
25								
26								
27								
28								
29						**Granitic rock** light brown in color@30'	cement/ grout to surface	
30	R-N							

DRILLING CO.: SoilTech BAKER REP.: Matt Maloney

DRILLER: Javier BORING NO.: NW-3 SHEET 2 OF 11

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Vieques Phase I, Vieques Island, Puerto Rico

CTO NO.: 138 BORING NO.: NW-3

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	BG/PS = Background/Point Source

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
31								
32								
33								
34								
35								
36								
37								
38								
39								
40	R-N					**Granitic rock** blew hole, no water		
41								
42								
43								
44								
45								
46								
47								
48						**Granitic rock**, grey to blue-grey color of fines, yellow-green		
49						mineral in rock frags(olivene? basaltic?)	cement/ grout to surface	
50	R-N							

DRILLING CO.: SoilTech BAKER REP.: Matt Maloney

DRILLER: Javier BORING NO.: NW-3 SHEET 3 OF 11

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Vieques Phase I, Vieques Island, Puerto Rico

CTO NO.: 138 BORING NO.: NW-3

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	BG/PS = Background/Point Source

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
51								
52								
53								
54								
55								
56								
57								
58						Blue-grey **granitic rock** sample consists of mostly sand with trace rock frags(hammer crushing granite into sand and other fines)		
59								
60		R-N						
61								
62								
63								
64								
65								
66								
67								
68								
69						**Granitic rock**, same as above	cement/ grout to surface	
70		R-N						

DRILLING CO.: SoilTech BAKER REP.: Matt Maloney

DRILLER: Javier BORING NO.: NW-3 SHEET 4 OF 11

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Vieques Phase I, Vieques Island, Puerto Rico

CTO NO.: 138 BORING NO.: NW-3

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	BG/PS = Background/Point Source

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
71								
72								
73								
74								
75								
76								
77								
78								
79						**Granitic rock**, same as above yellow-green mineral present		
80		R-N				blew hole, no water		
81								
82								
83								
84								
85								
86								
87								
88								
89						**Granitic rock**, same as above	cement/ grout	
90		R-N					to surface	

DRILLING CO.: SoilTech BAKER REP.: Matt Maloney

DRILLER: Javier BORING NO.: NW-3 SHEET 5 OF 11

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Vieques Phase I, Vieques Island, Puerto Rico

CTO NO.: 138 BORING NO.: NW-3

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	BG/PS = Background/Point Source

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
91								
92								
93								
94								
95								
96								
97								
98								
99						**Granitic rock**, same as above finer grained cuttings indicating harder rock		
100		R-N				blew hole, no water		
101								
102								
103								
104								
105								
106								
107								
108								
109						**Granitic rock**, same as above coarser grained cuttings with yellow-green mineral present	cement/ grout to surface	
110		R-N						

DRILLING CO.: SoilTech BAKER REP.: Matt Maloney

DRILLER: Javier BORING NO.: NW-3 SHEET 6 OF 11

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Vieques Phase I, Vieques Island, Puerto Rico

CTO NO.: 138 BORING NO.: NW-3

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	BG/PS = Background/Point Source

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
111								
112								
113								
114								
115								
116								
117								
118								
119						**Granitic rock**, same as above		
						finer grained cuttings, harder rock		
120		R-N				blew hole, no water		
121								
122								
123								
124								
125								
126								
127								
						Granitic rock, with less yellow-		
128						green mineral present,		
						even finer cuttings		
129						blew hole, unsure of the presence		cement/
						of water, drill water?		grout
130		R-N						to
								surface

DRILLING CO.: SoilTech BAKER REP.: Matt Maloney

DRILLER: Javier BORING NO.: NW-3 SHEET 7 OF11

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Vieques Phase I, Vieques Island, Puerto Rico

CTO NO.: 138 BORING NO.: NW-3

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	BG/PS = Background/Point Source

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
131								
132								
133								
134								
135								
136								
137								
138						**Same as above**; drilled to 140' without circulating water , cuttings all dry; no indication of water		
139								
140		R-N						
141								
142								
143								
144								
145								
146								
147								
148						**Granitic** material with yellow-green mineral throughout medium to coarse sand sized cuttings		
149						blew hole,no water	cement/ grout to surface	
150		R-N						

DRILLING CO.: SoilTech BAKER REP.: Matt Maloney

DRILLER: Javier BORING NO.: NW-3 SHEET 8 OF 11

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Vieques Phase I, Vieques Island, Puerto Rico

CTO NO.: 138 BORING NO.: NW-3

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	BG/PS = Background/Point Source

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
151								
152								
153								
154								
155								
156								
157								
158								
159						**Same as above**; blew hole, no water		
160		R-N						
161								
162								
163								
164								
165								
166								
167						**Same as above;** except fine to medium grained sand sized cuttings finer than 150' to 160' blew hole, no water		
168								
169							cement/ grout to surface	
170		R-N						

DRILLING CO.: SoilTech BAKER REP.: Matt Maloney

DRILLER: Javier BORING NO.: NW-3 SHEET 9 OF 11

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Vieques Phase I, Vieques Island, Puerto Rico

CTO NO.: 138 BORING NO.: NW-3

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	BG/PS = Background/Point Source

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
171								
172								
173								
174								
175							cement/ grout to surface	
176								
177								
178							Bentonite Pellets	
179						**Same as above;** decided to let hole sit, see if water accumulates		
180	R-N					End of day 8/6/99		
181						Start 8/7/99 blew hole @ 180', no water		
182								
183							Sand #1	
184								
185								
186						at 190'; encountered cuttings with iron staining and large size,		
187						indicated disolution along or		
188						groundwater flow along a fracture, water increases,	PVC screen .01 slot	
189						blew hole twice and got water cleaned hole and removed rods Water level @ 190' exactly		
190	R-N							

DRILLING CO.: SoilTech BAKER REP.: Matt Maloney

DRILLER: Javier BORING NO.: NW-3 SHEET 10 OF 11

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Vieques Phase I, Vieques Island, Puerto Rico

CTO NO.: 138 BORING NO.: NW-3

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	BG/PS = Background/Point Source

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
191								
192							PVC screen .01 slot	
193						Encountered a more productive fracture/ making water; water return rate indicated about 5-10 gal/min (Javier G.) blew hole to clean out cuttings, water level rising continuously, let well sit overnite water level @ 115' bgs. @0730 on 8/8/99		
194								
195								
196								
197		R-N						
198						boring terminated @ 197' bgs.		
199								
200								
201								
202								
203								
204								
205								
206								
207								
208								
209								
210								

DRILLING CO.: SoilTech BAKER REP.: Matt Maloney

DRILLER: Javier BORING NO.: NW-3 SHEET 11 OF 11

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Vieques Phase I, Vieques Island, Puerto Rico

CTO NO.: 138 BORING NO.: N W-4

COORDINATES: EAST: NORTH:

ELEVATION: SURFACE: TOP OF PVC CASING:

Rig: Mobile B-56								
	Split Spoon	**Casing**	**Augers**	**Core Barrel**	**Date**	**Progress (Ft.)**	**Weather**	**Depth to Water (Ft.)**
Size (ID)	1 5/8		4 1/4		########	80'bgs		--
Length	2		5					
Type			STD					
Hammer Wt.			130					
Fall			30					

Remarks: Air rotary drilling started at 27'bgs and logged using cuttings

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston
N = No Sample

WELL INFORMATION

Type	Diam.	Top Depth (Ft.)	Bottom Depth (Ft.)
Sch 40 PVC screen (.01slot)	2"	70'bgs	80'bgs
Sch 40 PVC riser	2"	3'ags	70'bgs

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
1								
2								
3							cement/ grout	.
4								
5	R-N					fine to medium Sand, Silty-clay, occasional gravel, yellowish-brown		
6								
7								
8								
9								
10								

DRILLING CO.: SoilTech BAKER REP.: Joel Morales

DRILLER: Osvaldo BORING NO.: NW-4 SHEET 1 OF 5

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Vieques Phase I, Vieques Island, Puerto Rico

CTO NO.: 138 BORING NO.: NW-4

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	BG/PS = Background/Point Source

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
11	R-N					fine Sand, yellowish-brown matrix, 5/1 10yr, quartz, some mafic minerals(very fine)	cement/ grout to surface	
12								
13								
14								
15								
16								
17								
18								
19	R-N					Same as above		
20								
21								
22								
23								
24								
25	R-N					olive matrix, coarse sand, quartz, some mafics apparently from Granodiorite		
26								
27								
28								
29								
30								

DRILLING CO.: SoilTech BAKER REP.: Joel Morales

DRILLER: Osvaldo BORING NO.: NW-4 SHEET 2 OF 5

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Vieques Phase I, Vieques Island, Puerto Rico

CTO NO.: 138 BORING NO.: NW-4

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	BG/PS = Background/Point Source

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
31							cement/ grout to surface	
32								
33	R-N							
34								
35								
36								
37								
38								
39								
40								
41								
42								
43								
44						**Same as above**		
45								
46								
47								
48								
49								
50								

DRILLING CO.: SoilTech BAKER REP.: Joel Morales

DRILLER: Osvaldo BORING NO.: NW-4 SHEET 3 OF 5

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Vieques Phase I, Vieques Island, Puerto Rico

CTO NO.: 138 BORING NO.: NW-4

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	BG/PS = Background/Point Source

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
51								
52						Same as above with some green material	cement/ grout to surface	
53								
54								
55								
56	R-N						bentonite	
57								
58							gravel to bottom	
59								
60								
61								
62								
63								
64								
65	R-N					Same as above		
66								
67								
68								
69								
70							top of screen	

DRILLING CO.: SoilTech BAKER REP.: Joel Morales

DRILLER: Osvaldo BORING NO.: NW-4 SHEET 4 OF 5

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Vieques Phase I, Vieques Island, Puerto Rico

CTO NO.: 138 BORING NO.: NW-4

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	BG/PS = Background/Point Source

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
71								
72						dark greenish grey matrix, same minerals as above, granodiorite		
73								
74								
75								
76	R-N							
77								
78								
79								
80						Granodiorite		
81						boring terminated @ 80'bgs		
82								
83								
84								
85								
86								
87								
88								
89								
90								

DRILLING CO.: SoilTech BAKER REP.: Joel Morales

DRILLER: Osvaldo BORING NO.: NW-4 SHEET 5 OF 5

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Vieques Phase I, Vieques Island, Puerto Rico

CTO NO.: 138 BORING NO.: NW-5

COORDINATES: EAST: NORTH:

ELEVATION: SURFACE: TOP OF PVC CASING:

Rig: Reich 600; see remarks								
	Split Spoon	**Casing**	**Augers**	**Core Barrel**	**Date**	**Progress (Ft.)**	**Weather**	**Depth to Water (Ft.)**
Size (ID)		6"			#######	118.2' bgs.	Partly cloudy, hot,humid	112.6' bgs.
Length		20'					PM Sunny,hot, humid	
Type		PVC					90	
Hammer Wt.								
Fall								

Remarks: Used Reich 600, air rotary/ hammer rig (water well rig), logged hole from cuttings

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston
N = No Sample

WELL INFORMATION

Type	Diam.	Top Depth (Ft.)	Bottom Depth (Ft.)
Sch 40 PVC screen(0.01 slot)	2"	108.2'bgs.	118.2'bgs.
Sch 40 PVC riser	2"	3'abs.	108.2'bgs.

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
1	A-N					slow drilling thru coarse gravel		
2								
3								
4								
5								
6	S-1	0.8/2.0 40%	11 25 50/3			some white sand, loose coarse brown-red sand small gravel with minerals dry, no odor		
7								
8	A-N					easier drilling		
9							cement/ grout to surface	
10								

DRILLING CO.: SoilTech BAKER REP.: Matt Maloney

DRILLER: Javier BORING NO.: NW-5 SHEET 1 OF 7

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Vieques Phase I, Vieques Island, Puerto Rico

CTO NO.: 138 BORING NO.: NW-5

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	BG/PS = Background/Point Source

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
11	S-N	0%	50/0			no recovery		
12								
13	A-N					dry cuttings, easy drilling		
14								
15								
16	S-2	5%	50/2			loose brown-red sand with some white sand, very small gravel, dry, no odor		
17								
18	A-N					Dry, sandy, easy drilling		
19								
20								
21	S-3	5%	50/2			brown sand,pebbles,dry, no odor Refusal @ 21.5'bgs.		
22	R-N					boulder?, unable to advance		
23						drilled thru rock 23-24'		
24								
25								
26	R-N					alternating hard and soft rock layers from 23-30'		
27								
28								
29						Bedrock @ 30'	cement/ grout to surface	
30								
						Match to Sheet 3		

DRILLING CO.: SoilTech BAKER REP.: Matt Maloney

DRILLER: Javier BORING NO.: NW-5 SHEET 2 OF 7

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Vieques Phase I, Vieques Island, Puerto Rico

CTO NO.: 138 BORING NO.: NW-5

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	BG/PS = Background/Point Source

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
31								
32	R-N					Quartzos granite; very hard/ competent bedrock		
33						fine to medium grained sand sized cuttings		
34								
35								
36								
37								
38						Same as above; except larger grained cuttings;		
39						coarse to medium sand sized cuttings		
40	R-N							
41								
42								
43								
44								
45								
46								
47								
48						Limited (6"long) fracture evident by iron staining		
49						dry, no water	cement/ grout	
50	R-N						to surface	

DRILLING CO.: SoilTech BAKER REP.: Matt Maloney

DRILLER: Javier BORING NO.: NW-5 SHEET 3 OF 7

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Vieques Phase I, Vieques Island, Puerto Rico

CTO NO.: 138 BORING NO.: NW-5

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	BG/PS = Background/Point Source

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
51								
52								
53								
54								
55								
56								
57								
58								
59						Softer material, greener color: olivene,softer		
60	R-N					larger, med. Grained sand sized cuttings		
61								
62								
63								
64								
65								
66								
67								
68								
69							cement/ grout	
70	R-N						to surface	

DRILLING CO.: SoilTech BAKER REP.: Matt Maloney

DRILLER: Javier BORING NO.: NW-5 SHEET 4 OF 7

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Vieques Phase I, Vieques Island, Puerto Rico

CTO NO.: 138 BORING NO.: NW-5

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	BG/PS = Background/Point Source

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
71								
72								
73								
74								
75								
76								
77								
78								
79						Harder material, grey color: black and white minerals ??? and quartz		
80	R-N							
81								
82	R-N					Intersected fracture @ 82'; minor water production		
83								
84								
85								
86								
87								
88								
89							cement/ grout	
90	R-N						to surface	

DRILLING CO.: SoilTech BAKER REP.: Matt Maloney

DRILLER: Javier BORING NO.: NW-5 SHEET 5 OF 7

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Vieques Phase I, Vieques Island, Puerto Rico

CTO NO.: 138 BORING NO.: NW-5

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	BG/PS = Background/Point Source

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
91						Continued from Sheet 5		
92								
93								
94								
95								
96						Drilling deeper does not increase water production from fracture @ 82', very limited in extent and only storing percolating water, drys up when blowing hole		
97								
98								
99								
100		R-N				**Same as above**		
101								
102							cement/ grout to surface	
103								
104							Bentonite pellets	
105								
106								
107							Sand #1 to bottom of hole	
108								
109							top of screen	
110		R-N						

DRILLING CO.: SoilTech BAKER REP.: Matt Maloney

DRILLER: Javier BORING NO.: NW-5 SHEET 6 OF 7

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Vieques Phase I, Vieques Island, Puerto Rico

CTO NO.: 138 BORING NO.: NW-5

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	BG/PS = Background/Point Source

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
111						Continued from Sheet 6		
112						Intersected large fracture @ 111' more olivene, softer rock		
113								
114								
115								
116						water productivity @ fracture approx. 2' of water	PVC	
117						water production maintained after blowing hole twice	screen .01 slot	
118								
119						boring terminated @118.2'bgs		
120								
121								
122								
123								
124								
125								
126								
127								
128								
129								
130								

DRILLING CO.: SoilTech BAKER REP.: Matt Maloney

DRILLER: Javier BORING NO.: NW-5 SHEET 7 OF7

INSUFFICIENT DATA SET FOR NW-6

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Vieques Phase I, Vieques Island, Puerto Rico
CTO NO.: 138 BORING NO.: N W-7
COORDINATES: EAST: NORTH:
ELEVATION: SURFACE: TOP OF PVC CASING:

Rig: Mobile B-56								
	Split Spoon	**Casing**	**Augers**	**Core Barrel**	**Date**	**Progress (Ft.)**	**Weather**	**Depth to Water (Ft.)**
Size (ID)	1 5/8		4 1/4		#######	69.0'bgs		--
Length	2		5					
Type			STD					
Hammer Wt.			130					
Fall			30					

Remarks: Air rotary drilling started at 27'bgs and logged using cuttings

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston
N = No Sample

WELL INFORMATION

Type	Diam.	Top Depth (Ft.)	Bottom Depth (Ft.)
Sch 40 PVC screen (.01slot)	2"	71'bgs	81'bgs
Sch 40 PVC riser	2"	3'ags	71'bgs

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
1 2 3 4 5	A-N					Dry, brown, coarse to fine **SAND**, and gravel	cement/ grout	.
6 7	S-1	0.5/2.0 25%	6 6 6 8			coarse to fine **SAND** and fine gravel (pebbles), some granitic some sedimentary		
8 9 10	A-N					Dry, coarse to fine **SAND**		
	S-2		12			Match to Sheet 2		

DRILLING CO.: SoilTech BAKER REP.: Matt Maloney
DRILLER: Osvaldo BORING NO.: NW-7 SHEET 1 OF 5

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Vieques Phase I, Vieques Island, Puerto Rico

CTO NO.: 138 BORING NO.: NW-7

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	BG/PS = Background/Point Source

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
11	S-2	.33/2.0 17%	12 13 13			Dry, dense **SAND**, no odor	cement/ grout to surface	
12								
13	A-N					Same		
14								
15								
16	S-3	0.12/2.0 6%	50/2"			Moist, **SAND**, no odor poor recovery due to obstruction at 16-ft.		
17								
18	A-N					SAND and fine gravel (granitic) auger cuttings, weathered **Bedrock**		
19								
20								
21	S-4	0%	100/0"			No recovery due to **bedrock** obstruction at 21.25 - ft		
22	S-5	0%	100/0"			No recovery		
23								
24	A-N					Auger cuttings medium to fine gravel of granitic origin - **Bedrock**		
25								
26	S-6	0.12/2.0 6%	50/2"			Dry, fine gravel of granitic origin no odor		
27								
28	R-N					1" inch of advancement after 30 min. of hollow stem augering		
29						will continue borehole advancement with air rotory rig		
30						Match to Sheet 3		

DRILLING CO.: SoilTech BAKER REP.: Matt Maloney

DRILLER: Osvaldo BORING NO.: NW-7 SHEET 2 OF 5

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Vieques Phase I, Vieques Island, Puerto Rico

CTO NO.: 138 BORING NO.: NW-7

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	BG/PS = Background/Point Source

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
31						Continued from Sheet 2	cement/ grout to surface	
32								
33	R-N							
34						light yellowish-brown matrix, coarse sand, some dark rock fragments		
35								
36								
37								
38								
39								
40								
41								
42								
43								
44						**Same as above**		
45								
46								
47								
48								
49								
50								

DRILLING CO.: SoilTech BAKER REP.: Matt Maloney

DRILLER: Osvaldo BORING NO.: NW-7 SHEET 3 OF 5

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Vieques Phase I, Vieques Island, Puerto Rico

CTO NO.: 138 BORING NO.: NW-7

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	BG/PS = Background/Point Source

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
51								
52							cement/ grout to surface	
53								
54								
55								
56	R-N					Same as above		
57								
58								
59								
60								
61							bentonite	
62								
63								
64								
65	R-N						gravel to bottom	
66								
67								
68								
69								
70								

DRILLING CO.: SoilTech BAKER REP.: Matt Maloney

DRILLER: Osvaldo BORING NO.: NW-7 SHEET 4 OF 5

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Vieques Phase I, Vieques Island, Puerto Rico

CTO NO.: 138 BORING NO.: NW-7

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	BG/PS = Background/Point Source

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
71								
72						coarse sand, light yellowish-brown	top of screen	
73								
74								
75								
76	R-N							
77								
78								
79								
80						Granodiorite?		
81								
82						boring terminated @ 81'bgs		
83								
84								
85								
86								
87								
88								
89								
90								

DRILLING CO.: SoilTech BAKER REP.: Matt Maloney

DRILLER: Osvaldo BORING NO.: NW-7 SHEET 5 OF 5

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Vieques Phase I, Vieques Island, Puerto Rico
CTO NO.: 138 BORING NO.: N W-8
COORDINATES: EAST: NORTH:
ELEVATION: SURFACE: TOP OF PVC CASING: 4.154

Rig: Mobile B-56								
	Split Spoon	**Casing**	**Augers**	**Core Barrel**	**Date**	**Progress (Ft.)**	**Weather**	**Depth to Water (Ft.)**
Size (ID)	1 5/8		4 1/4		#######	27	sunny, humid, 90	--
Length	2		5					
Type			STD					
Hammer Wt.			130					
Fall			30					

Remarks:

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston
N = No Sample

WELL INFORMATION

Type	Diam.	Top Depth (Ft.)	Bottom Depth (Ft.)
Sch 40 PVC screen(.01slot)	2"	5'bgs.	15'bgs.
Sch 40 PVC riser	2"	3'abs.	5'bgs.

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
1	A-N					sandy **LOAM**	cement/ grout	
2								
3							bentonite	
4								
5							sand to bottom	
6	S-1	1.83/2.0 92%	3 5 8 10			Moist, taupe, medium dense, **SAND**, some clay no odor	top of screen	
7								
8	A-N					**SAND**		
9								
10								
	S-2		3			Match to Sheet 2		

DRILLING CO.: SoilTech BAKER REP.: Matt Maloney
DRILLER: Osvaldo BORING NO.: NW-8 SHEET 1 OF 2

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Vieques Phase I, Vieques Island, Puerto Rico

CTO NO.: 138 BORING NO.: NW-8

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

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
11 12	S-2	1.5/2.0 75%	8 9 11			Wet, medium dense **SAND,** and gravel; water @ 7.7-ft		
13 14 15	A-N					**SAND** and gravel		
16 17	S-3	1.5/2.0 75%	10 5 6 10			Wet, medium dense **SAND,** little clay	bottom of screen at 15'	
18 19 20 21 22 23 24 25	A-N					Wet, **SAND** and clay		
26 27	S-4	1.8/2.0 90%	50/2"			Wet, **SAND** and gravel		
28 29 30						boring terminated @ 27-ft. Bgs		

DRILLING CO.: SoilTech BAKER REP.: Matt Maloney

DRILLER: Osvaldo BORING NO.: NW-8 SHEET 2 OF 2

INSUFFICIENT DATA SET FOR P-1

Baker
Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Vieques Phase I, Vieques Island, Puerto Rico
CTO NO.: 138 BORING NO.: P-2
COORDINATES: EAST: NORTH:
ELEVATION: SURFACE: TOP OF PVC CASING:

Rig: B-90	Split Spoon	Casing	Augers	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)					8/19/99		sunny, humid, 90	--
Length								
Type								
Hammer Wt.								
Fall								

Remarks: The piezometer was advanced with an air rotary drill rig. The lithology was descriped from the drill cuttings.

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston
N = No Sample

WELL INFORMATION

Type	Diam.	Top Depth (Ft.)	Bottom Depth (Ft.)
Sch 40 PVC screen			
Sch 40 PVC riser			

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
1								
2								
3	R-N					Brown silty CLAY, some fine to sand, organics		
4						CL		
5							2-inch diameter sch. 40 PVC riser	
6								
7							cement grout	
8	R-N					Brown silty CLAY, some fine to sand		
9						CL		
10								

DRILLING CO.: ERTEC BAKER REP.: Joel Morales
DRILLER: BORING NO.: P-2 SHEET 1 OF 6

Baker
Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Vieques Phase I, Vieques Island, Puerto Rico
CTO NO.: 138 BORING NO.: P-2

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

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
11								
12								
13	R-N					GRANITE GR		
14							2-inch diameter sch. 40 PVC riser	
15								
16								
17	R-N					GRANITE GR	cement grout	
18								
19								
20								
21								
22	R-N					GRANITE GR		
23								
24								
25								
26								
27	R-N					DIORITE, with high percentage of mafic minerals DR		
28								
29								
30								
						Match to Sheet 3		

DRILLING CO.: ERTEC BAKER REP.: Joel Morales
DRILLER: BORING NO.: P-2 SHEET 2 OF 6

Baker
Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Vieques Phase I, Vieques Island, Puerto Rico
CTO NO.:
BORING NO.: P-2

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

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
31								
32	R-N					DIORITE, with high percentage of mafic minerals **DR**		
33							2-inch diameter sch. 40 PVC riser	
34								
35								
36								
37	R-N					DIORITE, with high percentage of mafic minerals **DR**		
38								
39								
40							cement grout	
41								
42								
43								
44								
45	R-N					DIORITE, with high percentage of mafic minerals **DR**		
46								
47								
48								
49								
50								

DRILLING CO.: ERTEC
DRILLER:
BAKER REP.: Joel Morales
BORING NO.: P-2
SHEET 3 OF 6

Baker
Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Vieques Phase I, Vieques Island, Puerto Rico
CTO NO.:
BORING NO.: P-2

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

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
51								
52								
53								
54								
55	R-N					Yellow brown, slightly weathered GRANODIORITE, with mica, and olivine		
56								
57								
58							2-inch diameter sch. 40 PVC riser	
59								
60							cement grout	
61								
62	R-N							
63								
64								
65								
66								
67								
68	R-N					DIORITE, with high percentage of mafic minerals		
69						DR		
70								

DRILLING CO.: ERTEC
DRILLER:
BAKER REP.: Joel Morales
BORING NO.: P-2
SHEET 4 OF 6

Baker
Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Vieques Phase I, Vieques Island, Puerto Rico
CTO NO.: 138 BORING NO.: P-2

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

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
71								
72								
73								
74								
75							2-inch diameter sch. 40 PVC riser	
76								
77								
78	R-N					DIORITE, with high percentage of mafic minerals		
79						DR	cement grout	
80							top of bentonite	
81							seal	
82								
83								
84							top of # 1 qtz sand	
85								
86								
87								
88								
89	R_N					DIORITE, with high percentage of mafic minerals		
90						DR		

DRILLING CO.: ERTEC
DRILLER:

BAKER REP.: Joel Morales
BORING NO.: P-2

Baker
Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Vieques Phase I, Vieques Island, Puerto Rico
CTO NO.: _____ BORING NO.: P-2

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

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
91	R-N					DIORITE, with high percentage of mafic minerals, some pyrite DR		
92								
93								
94							top of screen	
95							10 slot sch. 40 PVC screen - 2-inch dia.	
96								
97								
98								
99								
100	R-N					DIORITE, with high percentage of mafic minerals DR		
101								
102								
103								
104								
105								
106						boring terminated @ 105-ft bgs		
107								
108								
109								
110								

DRILLING CO.: ERTEC BAKER REP.: Joel Morales
DRILLER: BORING NO.: P-2 SHEET 6 OF 6

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Vieques Phase I, Vieques Island, Puerto Rico

CTO NO.: 138 BORING NO.: P-3

COORDINATES: EAST: NORTH:

ELEVATION: SURFACE: TOP OF PVC CASING:

Rig: B-90	Split Spoon	Casing	Augers	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)					8/19/99		sunny, humid, 90	--
Length								
Type								
Hammer Wt.								
Fall								

Remarks: The piezometer was advanced with an air rotary drill rig. The lithology was descriped from the drill cuttings.

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston
N = No Sample

WELL INFORMATION

Type	Diam.	Top Depth (Ft.)	Bottom Depth (Ft.)
Sch 40 PVC screen			
Sch 40 PVC riser			

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
1								
2								
3	R-N					DIORITE, little quartz, olivine **DR**		
4							2-inch diameter sch. 40 PVC riser	
5								
6								
7							cement grout	
8	R-N					DIORITE, little quartz, olivine **DR**		
9								
10								

DRILLING CO.: ERTEC BAKER REP.: Joel Morales

DRILLER: BORING NO.: P-3 SHEET 1 OF 9

Baker
Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Vieques Phase I, Vieques Island, Puerto Rico
CTO NO.: 138 BORING NO.: P-3

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

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
11								
12								
13	R-N					DIORITE, little quartz, olivine **DR**	2-sc 2-inch diameter sch. 40 PVC riser	
14								
15								
16							cement grout	
17	R-N					DIORITE, little quartz, olivine **DR**		
18								
19								
20								
21								
22	R-N					DIORITE, little quartz, olivine **DR**		
23								
24								
25								
26								
27	R-N					DIORITE, little quartz, olivine **DR**		
28								
29								
30								
						Match to Sheet 3		

DRILLING CO.: ERTEC BAKER REP.: Joel Morales
DRILLER: BORING NO.: P-3 SHEET 2 OF 9

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Vieques Phase I, Vieques Island, Puerto Rico

CTO NO.:

BORING NO.: P-3

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

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
31								
32								
33							2-inch diameter sch. 40 PVC riser	
34								
35	R-N					DIORITE, little quartz, olivine **DR**		
36								
37								
38								
39								
40							cement grout	
41								
42								
43								
44								
45	R-N					DIORITE, little quartz, olivine **DR**		
46								
47								
48								
49								
50								

DRILLING CO.: ERTEC

DRILLER:

BAKER REP.: Joel Morales

BORING NO.: P-3

Baker
Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Vieques Phase I, Vieques Island, Puerto Rico
CTO NO.: BORING NO.: P-3

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

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
51								
52								
53								
54								
55	R-N					DIORITE, little quartz, olivine **DR**		
56								
57								
58							2-inch diameter sch. 40 PVC riser	
59								
60							cement grout	
61								
62								
63								
64								
65	R-N					DIORITE, little quartz, olivine **DR**		
66								
67								
68								
69								
70								

DRILLING CO.: ERTEC BAKER REP.: Joel Morales
DRILLER: BORING NO.: P-3 SHEET 4 OF 9

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Vieques Phase I, Vieques Island, Puerto Rico

CTO NO.: 138 BORING NO.: P-3

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

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
71								
72								
73								
74							2-inch diameter sch. 40 PVC riser	
75	R-N					DIORITE, little quartz, olivine **DR**		
76								
77								
78							cement grout	
79								
80							top of bentonite seal	
81								
82								
83								
84							top of # 1 qtz sand	
85	R-N					DIORITE, little quartz, olivine **DR**		
86								
87								
88								
89	R_N							
90								

DRILLING CO.: ERTEC BAKER REP.: Joel Morales

DRILLER: BORING NO.: P-3

Baker
Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Vieques Phase I, Vieques Island, Puerto Rico
CTO NO.: BORING NO.: P-3

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	BG/PS = Background/Point Source

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
91								
92								
93								
							top of screen	
94								
95							10 slot sch. 40 PVC	
	R-N					DIORITE, little quartz, olivine	screen - 2-inch dia.	
96						**DR**		
97								
98								
99								
100								
101								
102								
103								
104								
105	R-N					DIORITE, little quartz, olivine		
						DR		
106								
107								
108								
109								
110								

DRILLING CO.: ERTEC BAKER REP.: Joel Morales
DRILLER: BORING NO.: P-3 SHEET 6 OF 9

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Vieques Phase I, Vieques Island, Puerto Rico
CTO NO.:
BORING NO.: P-3

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

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
111								
112								
113								
114								
115	R-N					DIORITE, little quartz, olivine **DR**		
116								
117								
118								
119								
120								
121								
122								
123								
124								
125	R-N					DIORITE, little quartz, olivine **DR**		
126								
127								
128								
129								
130								

DRILLING CO.: ERTEC
DRILLER:

BAKER REP.: Joel Morales
BORING NO.: P-3

Baker
Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Vieques Phase I, Vieques Island, Puerto Rico
CTO NO.: 138 BORING NO.: P-3

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

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
131								
132								
133								
134								
135	R-N					DIORITE, little quartz, olivine **DR**		
136								
137								
138								
139								
140								
141								
142								
143								
144								
145	R-N					DIORITE, little quartz, olivine **DR**		
146								
147								
148								
149								
150								

DRILLING CO.: ERTEC BAKER REP.: Joel Morales
DRILLER: BORING NO.: P-3 SHEET 8 OF 9

Baker
Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Vieques Phase I, Vieques Island, Puerto Rico
CTO NO.: 138 BORING NO.: P-3

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

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
151								
152								
153								
154								
155	R-N					DIORITE, little quartz, olivine **DR**		
156								
157								
158								
159								
160								
						boring terminated @ 160-ft bgs		
161								
162								
163								
164								
165								
166								
167								
168								
169								
170								

DRILLING CO.: ERTEC BAKER REP.: Joel Morales
DRILLER: BORING NO.: P-3 SHEET 9 OF 9

Baker
Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Vieques Phase I, Vieques Island, Puerto Rico
CTO NO.: 138 BORING NO.: P-5
COORDINATES: EAST: NORTH:
ELEVATION: SURFACE: TOP OF PVC CASING:

Rig: B-90	Split Spoon	Casing	Augers	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)					8/19/99		sunny, humid, 90	--
Length								
Type								
Hammer Wt.								
Fall								

Remarks: The piezometer was advanced with an air rotary drill rig. The lithology was descriped from the drill cuttings.

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston
N = No Sample

WELL INFORMATION

Type	Diam.	Top Depth (Ft.)	Bottom Depth (Ft.)
Sch 40 PVC screen			
Sch 40 PVC riser			

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
1								
2								
3	R-N					Yellow brown, coarse to fine SAND, some silt and clay **SM**		
4								
5								
6								
7						Yellow brown, adequetly weathered GRANODIORITE, with mica **GD**		
8	A-N							
9								
10								

DRILLING CO.: ERTEC BAKER REP.: Joel Morales
DRILLER: BORING NO.: P-5 SHEET 1 OF 8

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Vieques Phase I, Vieques Island, Puerto Rico

CTO NO.: 138 BORING NO.: P-5

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

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
11								
12								
13	R-N					Yellow brown, adequetly weathered GRANODIORITE, with mica **GD**		
14								
15								
16								
17								
18								
19								
20	R-N					Yellow brown, slightly weathered GRANODIORITE, with mica **GD**		
21								
22								
23								
24								
25								
26								
27	R-N					Yellow brown, slightly weathered GRANODIORITE, with mica		
28								
29								
30								

DRILLING CO.: ERTEC BAKER REP.: Joel Morales

DRILLER: BORING NO.: P-5 SHEET 2 OF 8

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Vieques Phase I, Vieques Island, Puerto Rico

CTO NO.:

BORING NO.:

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

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
31								
32								
33								
34								
35	R-N					Yellow brown, slightly weathered GRANODIORITE, with mica, and olivine		
36								
37								
38								
39								
40								
41								
42	R-N					Yellow brown, slightly weathered GRANODIORITE, with mica, and olivine		
43								
44								
45								
46								
47	R-N					Yellow brown, slightly weathered GRANODIORITE, with mica, and olivine		
48								
49								
50								

DRILLING CO.: ERTEC

DRILLER:

BAKER REP.: Joel Morales

BORING NO.: P-5

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Vieques Phase I, Vieques Island, Puerto Rico

CTO NO.:

BORING NO.: P-5

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

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
51								
52								
53								
54								
55	R-N					Yellow brown, slightly weathered GRANODIORITE, with mica, and olivine		
56								
57								
58								
59								
60								
61								
62								
63								
64								
65	R-N					Yellow brown, slightly weathered GRANODIORITE, with mica, and olivine		
66								
67								
68								
69								
70								

DRILLING CO.: ERTEC

DRILLER:

BAKER REP.: Joel Morales

BORING NO.: P-5

Baker
Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Vieques Phase I, Vieques Island, Puerto Rico
CTO NO.: _____ BORING NO.: P-5

SAMPLE TYPE	DEFINITIONS
S = Split Spoon A = Auger T = Shelby Tube W = Wash R = Air Rotary C = Core D = Denison P = Piston N = No Sample	SPT = Standard Penetration Test (ASTM D1586) PID = Photo Ionization Detector Measurement MSL = Mean Sea Level BG/PS = Background/Point Source

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
71								
72								
73								
74								
75	R-N					Yellow brown, slightly weathered GRANODIORITE, with mica, and olivine		
76								
77								
78								
79								
80								
81								
82								
83								
84								
85	R-N					Yellow brown, slightly weathered GRANITE/ GRANODIORITE, with mica, and olivine		
86								
87								
88								
89								
90								

DRILLING CO.: ERTEC BAKER REP.: Joel Morales
DRILLER: _____ BORING NO.: P-5 SHEET 5 OF 8

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Vieques Phase I, Vieques Island, Puerto Rico

CTO NO.: _____ BORING NO.: _____

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

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
91						Continued from Sheet 2		
92								
93								
94								
95	R-N					Yellow brown, slightly weathered GRANITE/ GRANODIORITE, with mica, and olivine		
96								
97								
98								
99								
100								
101								
102								
103								
104								
105	R-N					Yellow brown, slightly weathered GRANITE/ GRANODIORITE, with mica, and olivine		
106								
107								
108								
109								
110								

DRILLING CO.: ERTEC BAKER REP.: Joel Morales

DRILLER: _____ BORING NO.: P-5 SHEET 6 OF 8

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Vieques Phase I, Vieques Island, Puerto Rico

CTO NO.:

BORING NO.: P-5

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

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
111								
112								
113	R-N					Yellow brown, slightly weathered GRANITE/ GRANODIORITE, with mica, and olivine		
114								
115								
116								
117								
118	R-N					Yellow brown, slightly weathered GRANITE/ GRANODIORITE, with mica, and olivine		
119								
120								
121								
122								
123								
124								
125	R-N					Yellow brown, slightly weathered GRANITE/ GRANODIORITE, with mica, and olivine		
126								
127								
128								
129								
130								

DRILLING CO.: ERTEC

DRILLER:

BAKER REP.: Joel Morales

BORING NO.: P-5

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Vieques Phase I, Vieques Island, Puerto Rico

CTO NO.: 138 BORING NO.: P-5

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

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
131								
132								
133								
134								
135	R-N					Yellow brown, slightly weathered GRANITE/ GRANODIORITE, with mica, and olivine		
136								
137								
138								
139								
140								
141						Boring terminated @ 140-ft bgs		
142								
143								
144								
145								
146								
147								
148								
149								
150								

DRILLING CO.: ERTEC BAKER REP.: Joel Morales

DRILLER: BORING NO.: P-5 SHEET 8 OF 8

INSUFFICIENT DATA SET FOR P-6

ERTEC
...NTAL RESOURCE TECHNOLOGIES

PROJECT: Camp Garcia JOB NO:
LOCATION: Vieques
CLIENT: CH2MHILL
CHECKED BY: Joel Morales DATE: 08/19/99
PAGE: 1 OF 1

P-6

60' - Granodiorite look alike Basalt fragment, Quartz, hornblend, [redacted]. some mica, The cutting look a bluish gray color

70' - Do,

The Driller only take this two samples, he said that the material was almost the same since the begining. No mayor changes in the hardness of the material, he did not feel it in the machine.
hardness

INSUFFICIENT DATA SET FOR P-7

ERTEC
NMENTAL RESOURCE TECHNOLOGIES

PROJECT: Camp Garcia JOB NO:
LOCATION: Vieques
CLIENT: CH2M-Hill
CHECKED BY: Joel Morales DATE: 08/14/99
PAGE: 1 OF 1

P-7 8-14-99

depth	Description
58'	groundwater material, cutting as 5/1 2.5Y gray color. same ~~[illegible]~~ or similar (driller version)
68'	Do, but with more olive or green material
80'	Do

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Vieques Phase I, Vieques Island, Puerto Rico
CTO NO.: 138 BORING NO.: P-8
COORDINATES: EAST: NORTH:
ELEVATION: SURFACE: TOP OF PVC CASING:

Rig: Mobile B-56	Split Spoon	Casing	Augers	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	1 5/8		4 1/4		8/4/99	32	sunny, breezy, 90	--
Length	2		5					
Type			STD					
Hammer Wt.			130					
Fall			30					

Remarks:

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston
N = No Sample

WELL INFORMATION

Type	Diam.	Top Depth (Ft.)	Bottom Depth (Ft.)
Sch 40 PVC screen	2	10	30
Sch 40 PVC riser	2	-2.5	10

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
1 2 3 4 5	A-N					Gravel - numerous obstructions near the surface		
6 7	S-1	2.0/2.0 100%	5 5 6 9			Brown to redbrown, dry to moist stiff, sandy **CLAY**, some roots no odor		
8 9 10	A-N					**SAND**		
	S-2		10			Match to Sheet 2		

DRILLING CO.: SoilTech BAKER REP.: Matt Maloney
DRILLER: Osvaldo BORING NO.: P-8 SHEET 1 OF 3

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Vieques Phase I, Vieques Island, Puerto Rico

CTO NO.: 138 BORING NO.: P-8

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

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
11	S-2	2.0/2.0 100%	14 32 38			Brown, moist, very stiff, sandy **CLAY**		
12						Dry, very dense **SAND** and and gravel, iron staining		
13	A-N							
14								
15								
16	S-3	2.0/2.0 100%	13 15 15 18			Dry, medium dense **SAND** and gravel		
17						Brown, hard, sandy clay		
18	A-N							
19								
20								
21	S-4	2.0/2.0 100%	8 10 10 12			Moist, reddish brown clayey **SAND** at 21 to 21.5 ft solution fracture w/iron staining and black gravel		
22								
23	A-N							
24								
25								
26	S-5	1.5/2.0 75%	10 13 14 14			Wet, **SAND** and gravel to 25.75' Moist. clayey sand and gravel to 27-ft		
27								
28	A-N							
29								
30								
	S-6		9			Match to Sheet 3		

DRILLING CO.: SoilTech BAKER REP.: Matt Maloney

DRILLER: Osvaldo BORING NO.: P-8 SHEET 2 OF 3

Baker
Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT:
CTO NO.: 138
BORING NO.: P-8

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

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
31	S-6	2.0/2.0 100%	11 17 20			Red brown, wet, clayey SAND		
32						boring terminated @ 32-ft. bgs		
33								
34								
35								
36								
37								
38								
39								
40								
41								
42								
43								
44								
45								
46								
47								
48								
49								
50								

DRILLING CO.: SoilTech
DRILLER: Osvaldo
BAKER REP.: Matt Maloney
BORING NO.: P-8

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Vieques Phase I, Vieques Island, Puerto Rico

CTO NO.: 138 BORING NO.: P 9

COORDINATES: EAST: NORTH:

ELEVATION: SURFACE: TOP OF PVC CASING:

Rig: CME 45 & 55	Split Spoon	Casing	Augers	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	1 5/8		4 1/4		8/5/99	25	sunny, brief showers,	--
Length	2		5				90	
Type			STD					
Hammer Wt.			130					
Fall			30					

Remarks:

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston
N = No Sample

WELL INFORMATION

Type	Diam.	Top Depth (Ft.)	Bottom Depth (Ft.)
Sch 40 PVC screen			
Sch 40 PVC riser			

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
1 2 3 4 5	A-N					sandy **LOAM**, auger cuttings		
6 7	S-1	0.5/2.0 25%	3 4 5 9			**Clayey Sand**		
8 9 10	A-N					No sample		

Match to Sheet 2

DRILLING CO.: SoilTech BAKER REP.: Matt Maloney

DRILLER: Osvaldo BORING NO.: P-9 SHEET 1 OF 2

Baker
Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Vieques Phase I, Vieques Island, Puerto Rico
CTO NO.: 138 BORING NO.: P-9

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

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) BG/PS	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
11, 12, 13, 14, 15	A-N							
16, 17	S-2	1.5/2.0 75%	7 16 23 22			**Sand & Gravel**, brown to yellow, dry, dense, no odor		
18, 19, 20	A-N							
21, 22	S-3	1.7/2.0 85%	7 7 7 7			**Sand & gravel**, dry, dense:20-21.5', 21.5-22', clear brown sand; wet		
23, 24, 25	A-N							
26, 27, 28, 29, 30						boring terminated @ 25-ft. bgs		

DRILLING CO.: SoilTech
DRILLER: Osvaldo
BAKER REP.: Matt Maloney
BORING NO.: P-9

APPENDIX B

Well Construction Diagrams

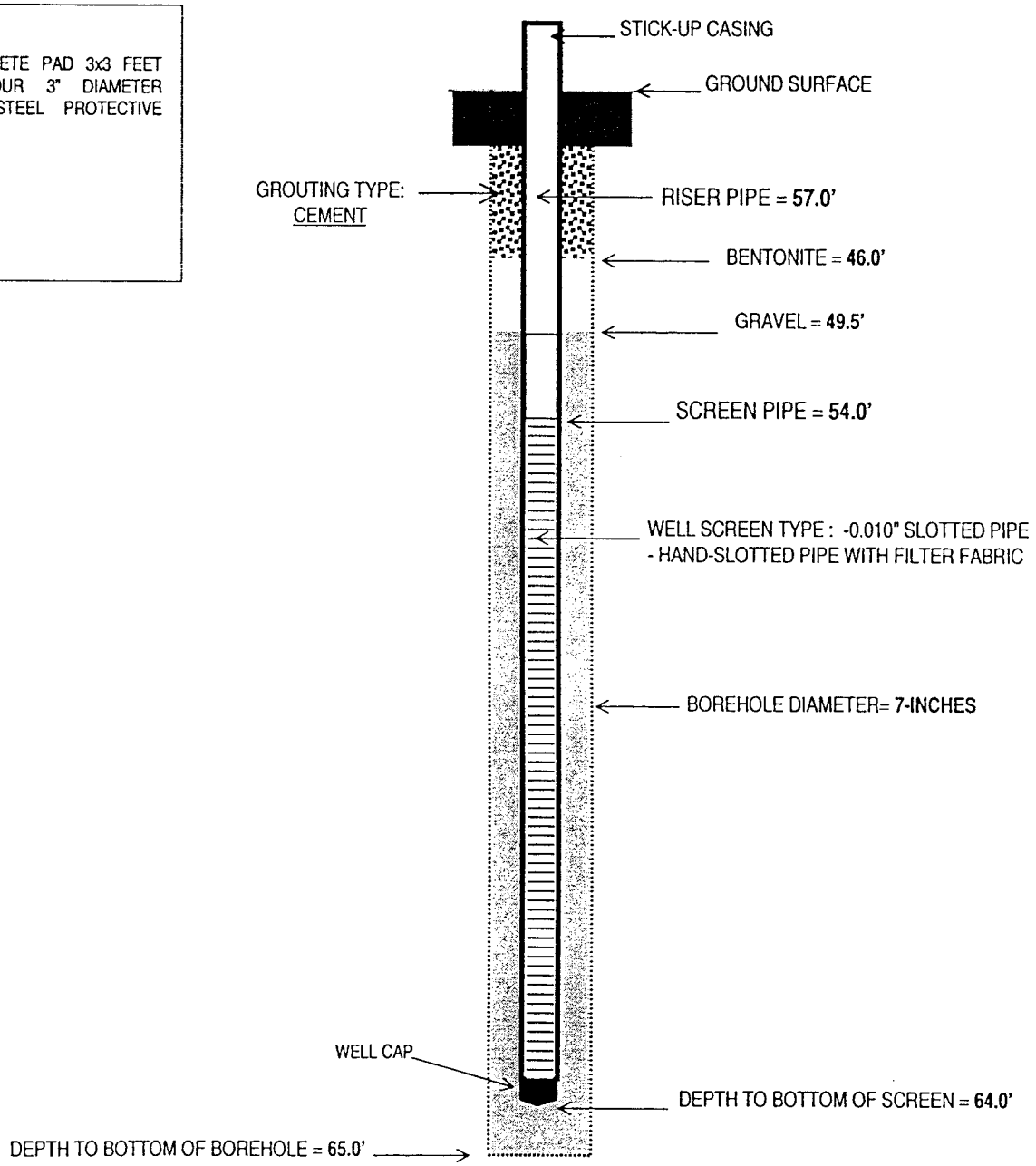
ERTEC

WELL CONSTRUCTION DETAIL

PROJECT NAME:	CAMP GARCIA	**WELL ID:**	**RCRA-1**
LOCATION	VIEQUES, PUERTO RICO	**BEGIN DATE:**	08/18/99
CLIENT:	CH2M-HILL	**FINISH DATE:**	08/18/99
JOB NO.:	E-990716	**WELL PURPOSE:**	MONITORING WELL
FIELD PERSON:	JOEL MORALES	**DRILLER:**	PERFORACIONES E.CAMPOS
MANHOLE TYPE:	__ FLUSH GROUND	**MEASURE BASE AT:**	_X_ GROUND LEVEL
	_X_ ABOVE GROUND		____ MEAN SEA LEVEL
UNIT:	_X_ FEET __ METER	**WELL DIAMETER:**	2 INCHES

NOTES:

- CONCRETE PAD 3x3 FEET AND FOUR 3" DIAMETER BLANK STEEL PROTECTIVE PIPE.



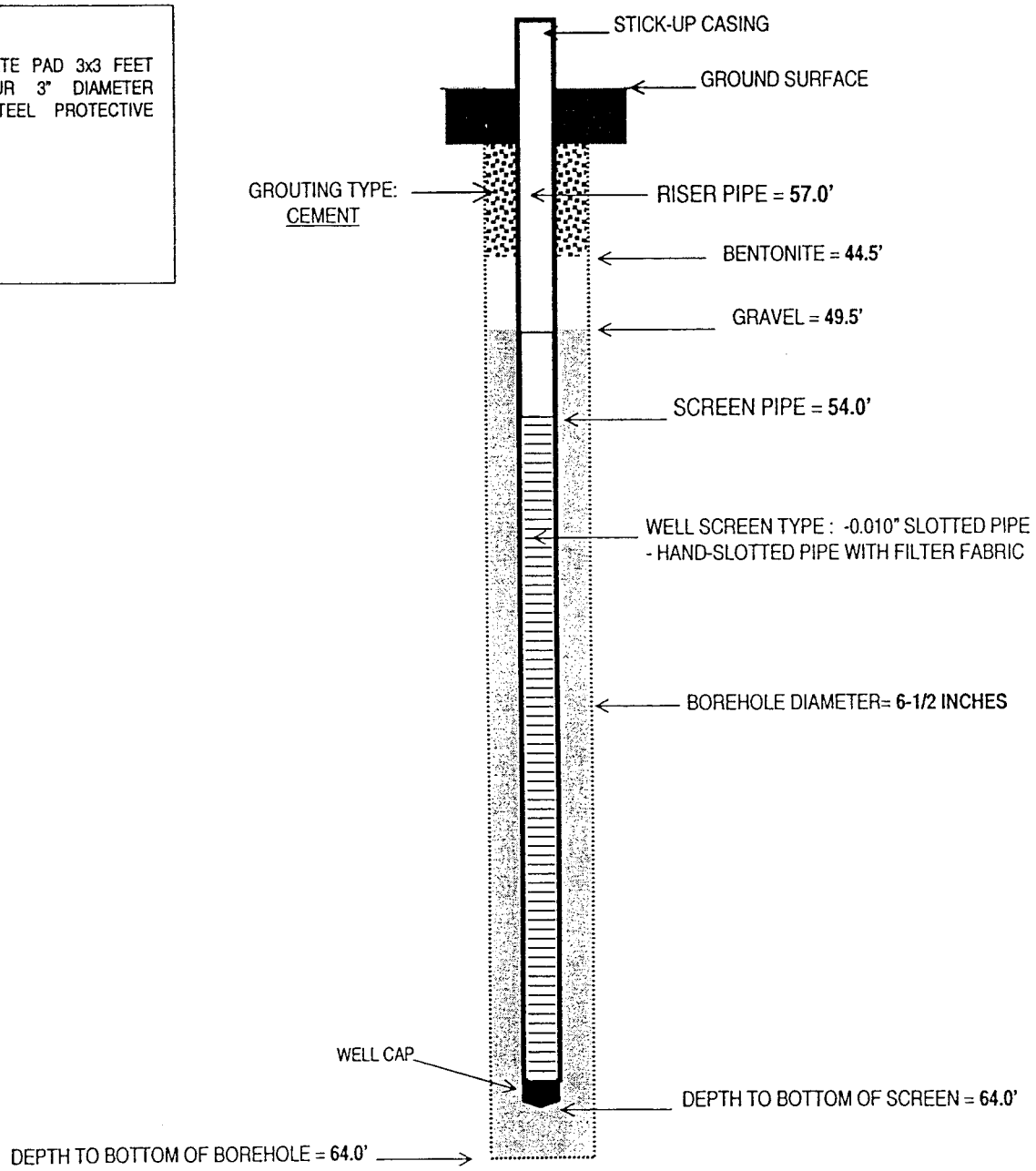
ERTEC

WELL CONSTRUCTION DETAIL

PROJECT NAME:	CAMP GARCIA	**WELL ID:**	**RCRA-2**
LOCATION	VIEQUES, PUERTO RICO	**BEGIN DATE:**	08/08/99
CLIENT:	CH2M-HILL	**FINISH DATE:**	08/08/99
JOB NO.:	E-990716	**WELL PURPOSE:**	MONITORING WELL
FIELD PERSON:	MATT	**DRILLER:**	PERFORACIONES E.CAMPOS
MANHOLE TYPE:	__ FLUSH GROUND	**MEASURE BASE AT:**	X GROUND LEVEL
	X ABOVE GROUND		____ MEAN SEA LEVEL
UNIT:	X FEET __ METER	**WELL DIAMETER:**	2 INCHES

NOTES:

- CONCRETE PAD 3x3 FEET AND FOUR 3" DIAMETER BLANK STEEL PROTECTIVE PIPE.



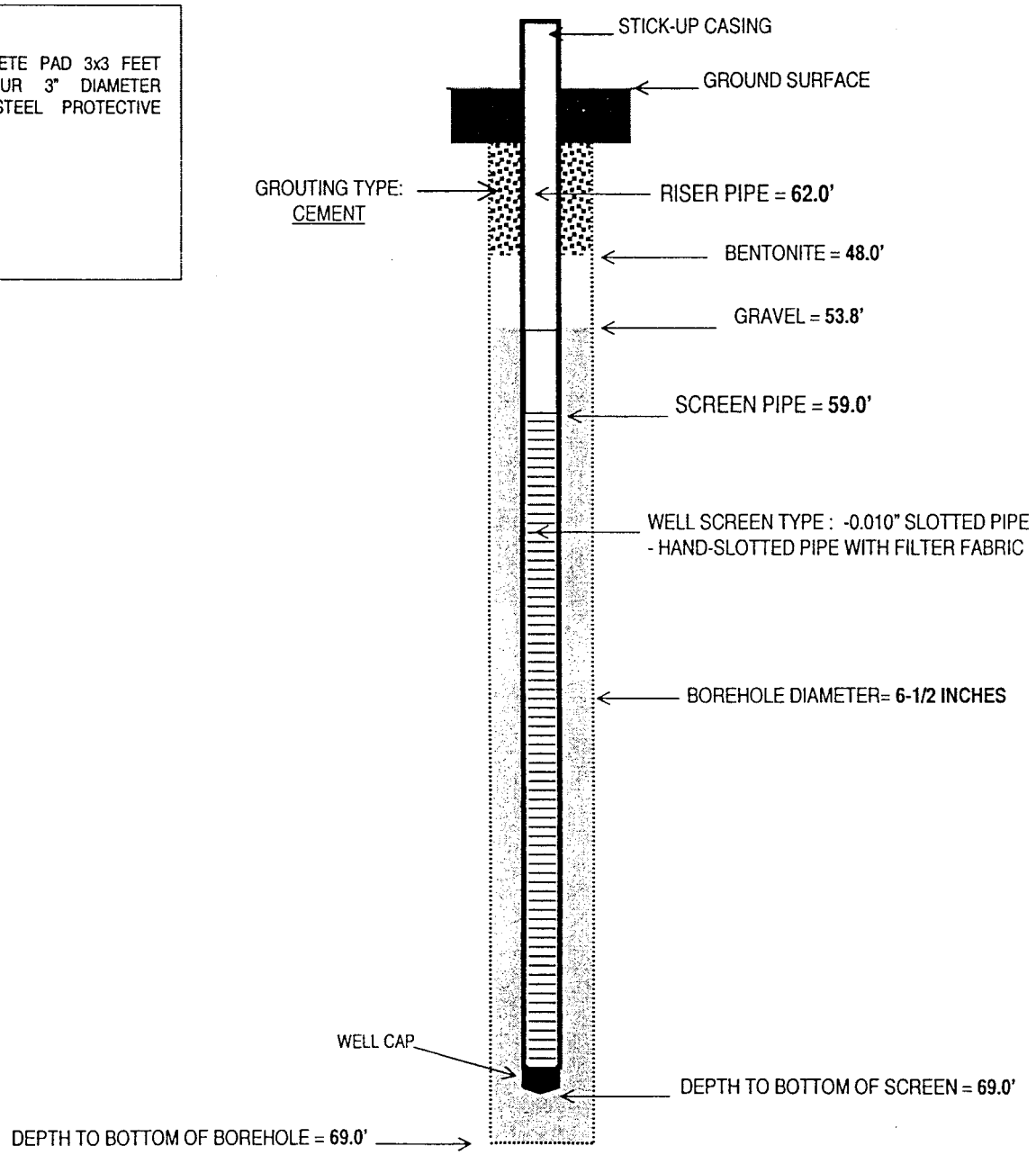
ERTEC

WELL CONSTRUCTION DETAIL

PROJECT NAME:	CAMP GARCIA	**WELL ID:**	**RCRA-3**
LOCATION	VIEQUES, PUERTO RICO	**BEGIN DATE:**	08/14/99
CLIENT:	CH2M-HILL	**FINISH DATE:**	08/14/99
JOB NO.:	E-990716	**WELL PURPOSE:**	MONITORING WELL
FIELD PERSON:	JOEL MORALES	**DRILLER:**	PERFORACIONES E.CAMPOS
MANHOLE TYPE:	__ FLUSH GROUND	**MEASURE BASE AT:**	_X_ GROUND LEVEL
	_X_ ABOVE GROUND		____ MEAN SEA LEVEL
UNIT:	_X_ FEET __ METER	**WELL DIAMETER:**	2 INCHES

NOTES:

- CONCRETE PAD 3x3 FEET AND FOUR 3" DIAMETER BLANK STEEL PROTECTIVE PIPE.



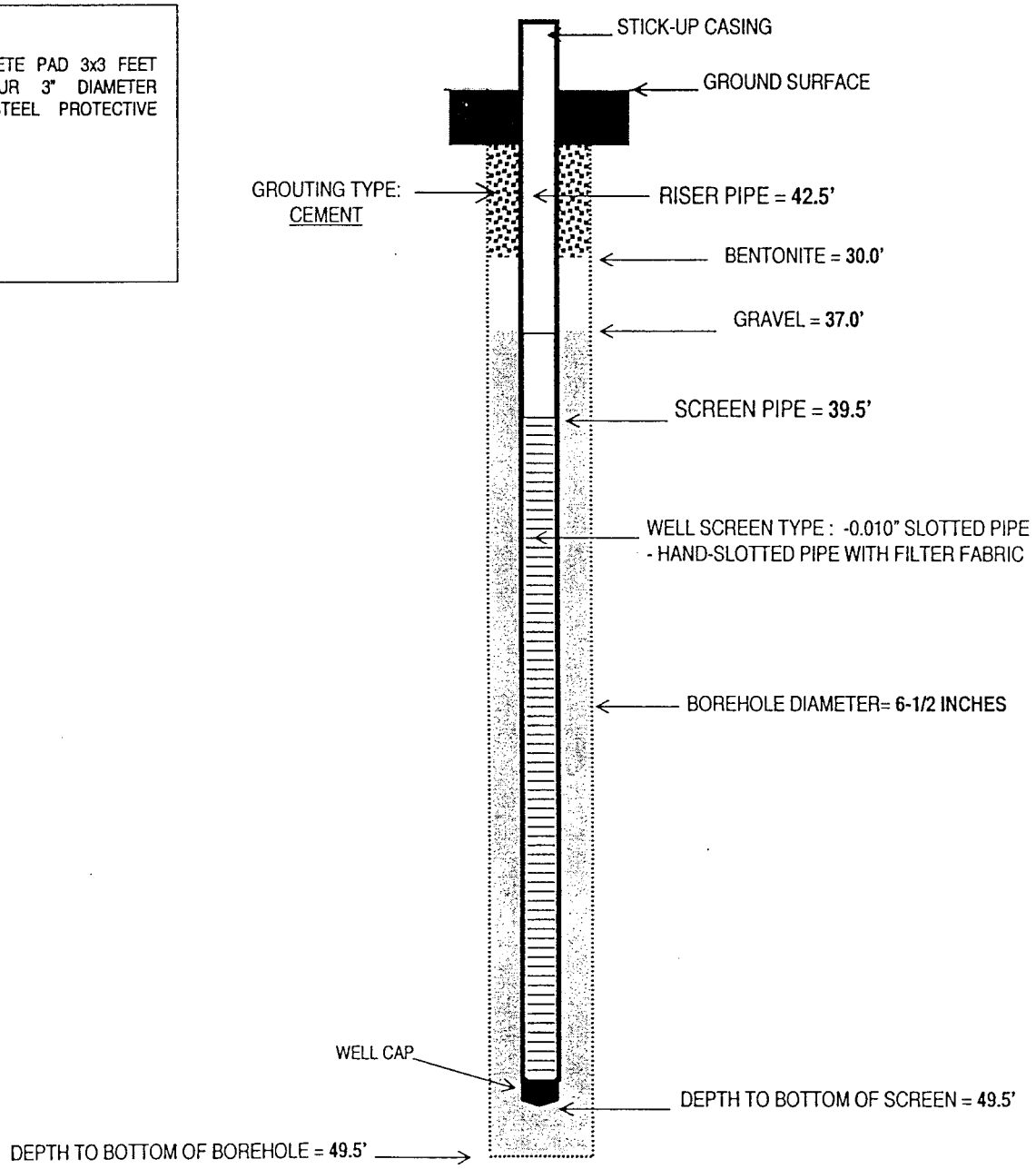
ERTEC

WELL CONSTRUCTION DETAIL

PROJECT NAME:	CAMP GARCIA	**WELL ID:**	**RCRA-4**
LOCATION	VIEQUES, PUERTO RICO	**BEGIN DATE:**	08/11/99
CLIENT:	CH2M-HILL	**FINISH DATE:**	08/11/99
JOB NO.:	E-990716	**WELL PURPOSE:**	MONITORING WELL
FIELD PERSON:	JOEL MORALES	**DRILLER:**	SOILTECH DRILLING
MANHOLE TYPE:	__ FLUSH GROUND	**MEASURE BASE AT:**	X GROUND LEVEL
	X ABOVE GROUND		____ MEAN SEA LEVEL
UNIT:	X FEET __ METER	**WELL DIAMETER:**	2 INCHES

NOTES:

- CONCRETE PAD 3x3 FEET AND FOUR 3" DIAMETER BLANK STEEL PROTECTIVE PIPE.



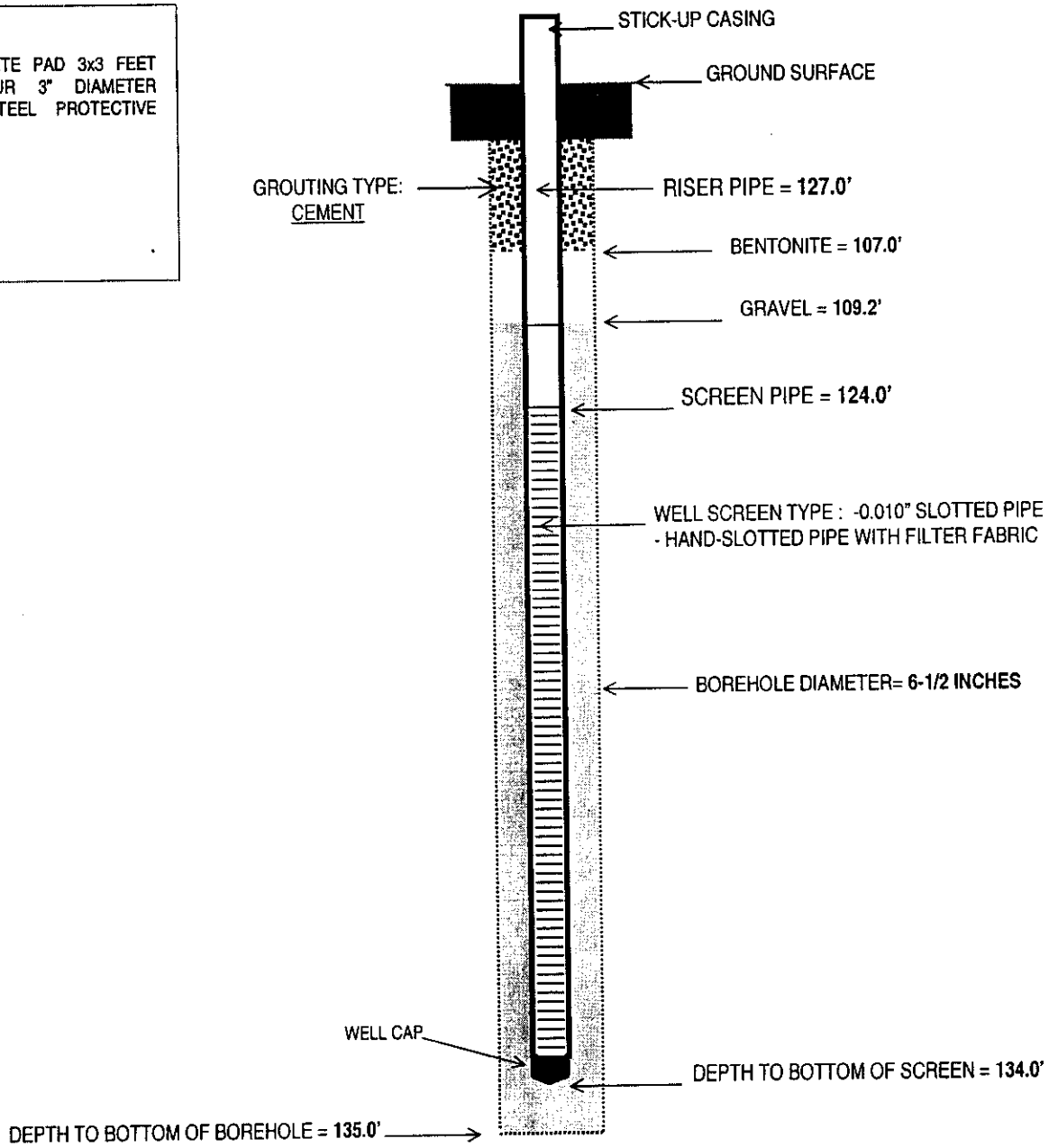
ERTEC

WELL CONSTRUCTION DETAIL

PROJECT NAME:	CAMP GARCIA	WELL ID:	NW-1
LOCATION	VIEQUES, PUERTO RICO	BEGIN DATE:	08/13/99
CLIENT:	CH2M-HILL	FINISH DATE:	08/14/99
JOB NO.:	E-990716	WELL PURPOSE:	MONITORING WELL
FIELD PERSON:	JOEL MORALES	DRILLER:	AQUA SYSTEM
MANHOLE TYPE:	__ FLUSH GROUND	MEASURE BASE AT:	_X_ GROUND LEVEL
	_X_ ABOVE GROUND		____ MEAN SEA LEVEL
UNIT:	_X_ FEET __ METER	WELL DIAMETER:	2 INCHES

NOTES:

- CONCRETE PAD 3x3 FEET AND FOUR 3" DIAMETER BLANK STEEL PROTECTIVE PIPE.



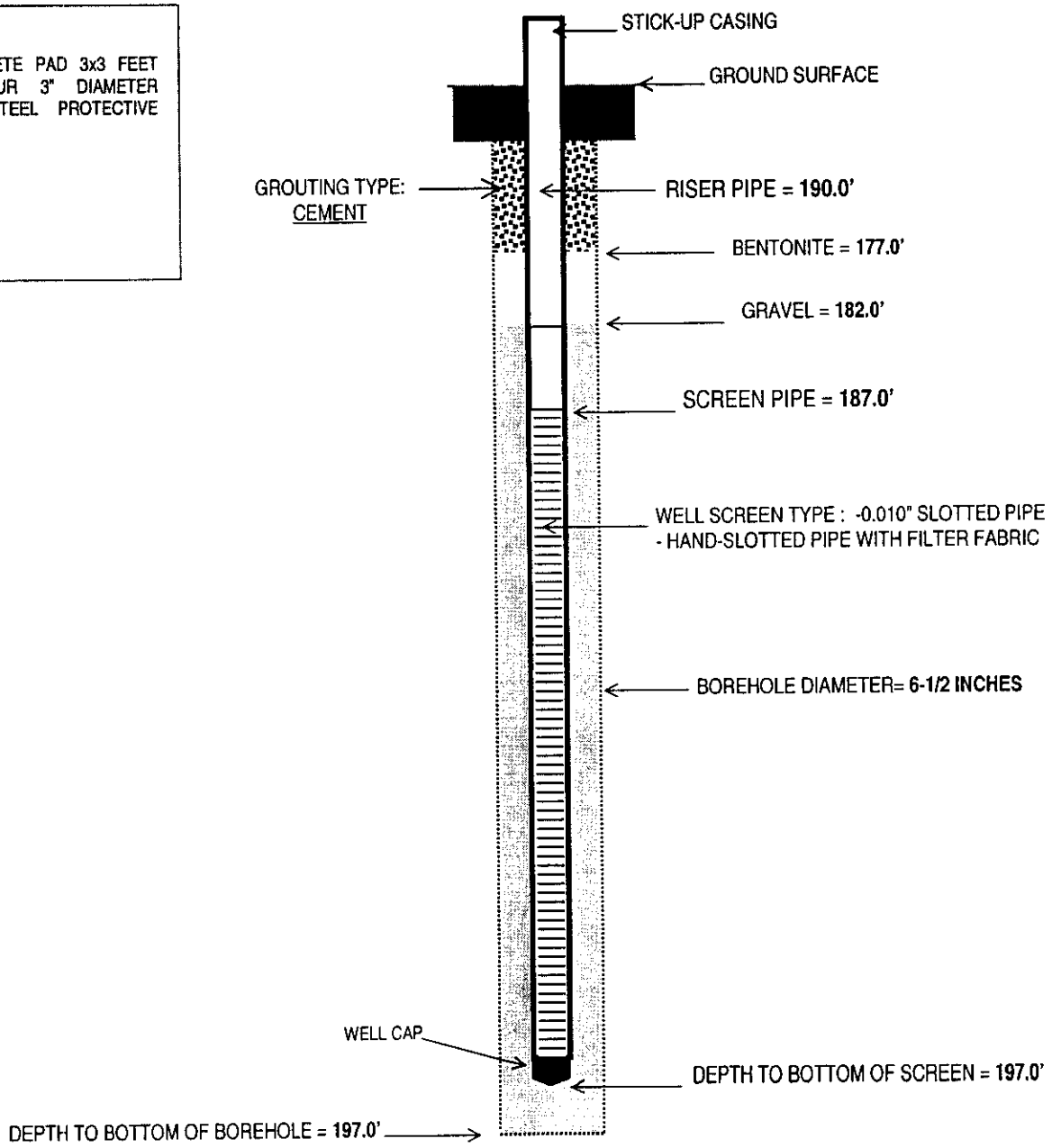
ERTEC

WELL CONSTRUCTION DETAIL

PROJECT NAME:	CAMP GARCIA	**WELL ID:**	NW-3
LOCATION	VIEQUES, PUERTO RICO	**BEGIN DATE:**	08/06/99
CLIENT:	CH2M-HILL	**FINISH DATE:**	08/06/99
JOB NO.:	E-990716	**WELL PURPOSE:**	MONITORING WELL
FIELD PERSON:	JOEL MORALES	**DRILLER:**	PERFORACIONES E.CAMPOS
MANHOLE TYPE:	__ FLUSH GROUND	**MEASURE BASE AT:**	_X_ GROUND LEVEL
	_X_ ABOVE GROUND		____ MEAN SEA LEVEL
UNIT:	_X_ FEET __ METER	**WELL DIAMETER:**	2 INCHES

NOTES:

- CONCRETE PAD 3x3 FEET AND FOUR 3" DIAMETER BLANK STEEL PROTECTIVE PIPE.



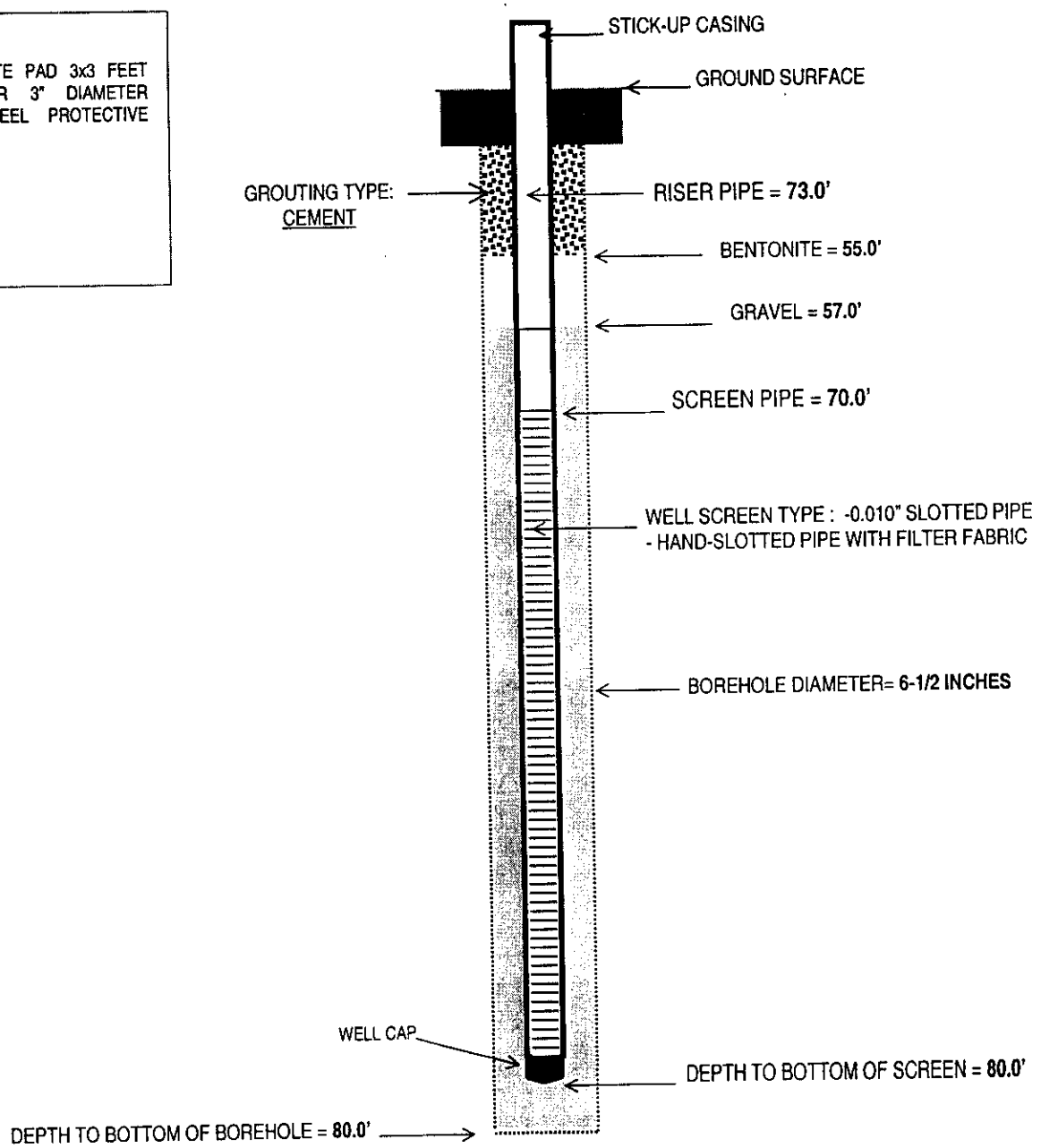
ERTEC

WELL CONSTRUCTION DETAIL

PROJECT NAME:	CAMP GARCIA	**WELL ID:**	NW-4
LOCATION	VIEQUES, PUERTO RICO	**BEGIN DATE:**	08/16/99
CLIENT:	CH2M-HILL	**FINISH DATE:**	08/17/99
JOB NO.:	E-990716	**WELL PURPOSE:**	MONITORING WELL
FIELD PERSON:	JOEL MORALES	**DRILLER:**	AQUA SYSTEM
MANHOLE TYPE:	__ FLUSH GROUND	**MEASURE BASE AT:**	_X_ GROUND LEVEL
	_X_ ABOVE GROUND		____ MEAN SEA LEVEL
UNIT:	_X_ FEET __ METER	**WELL DIAMETER:**	2 INCHES

NOTES:

- CONCRETE PAD 3x3 FEET AND FOUR 3" DIAMETER BLANK STEEL PROTECTIVE PIPE.



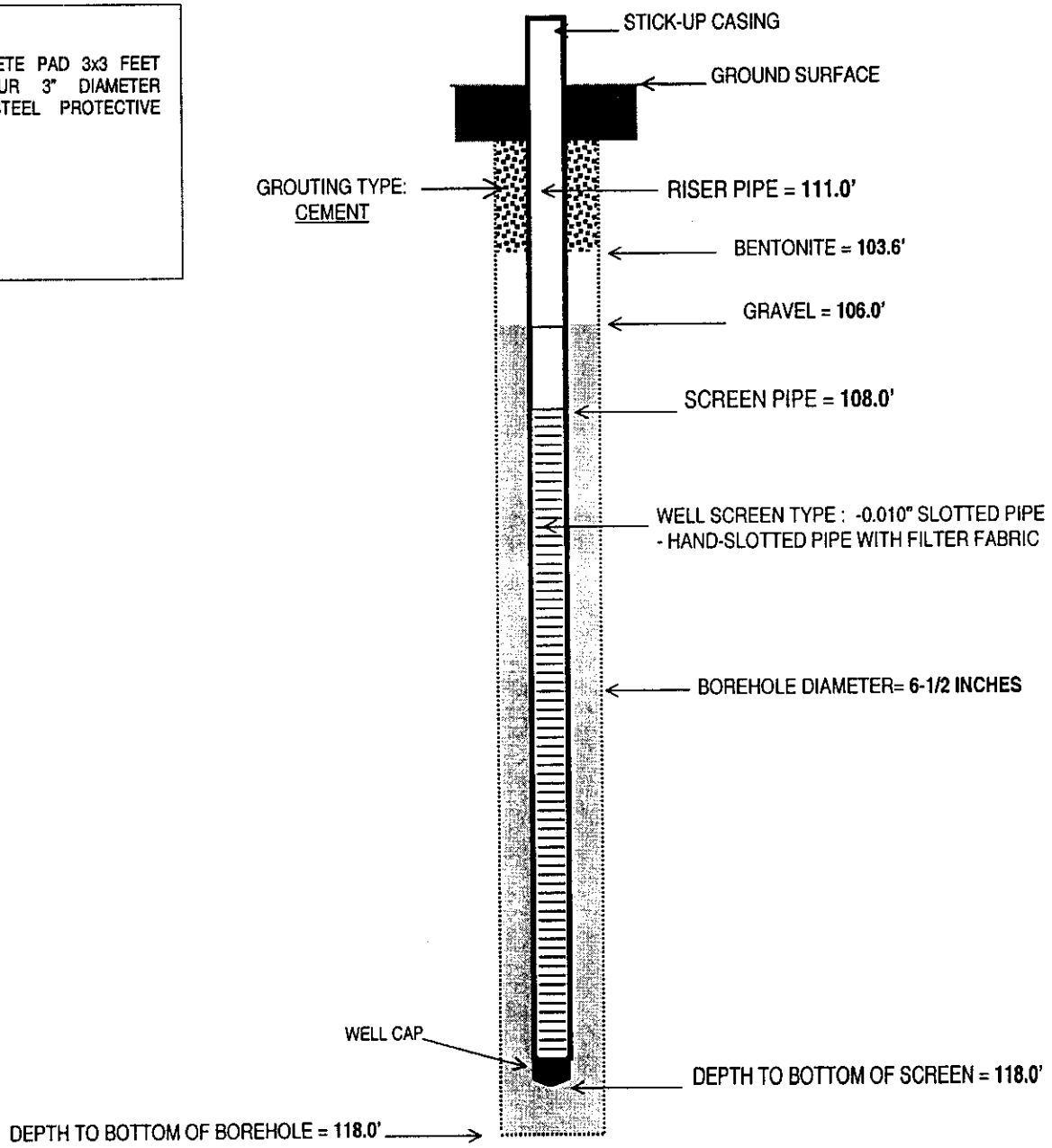
ERTEC

WELL CONSTRUCTION DETAIL

PROJECT NAME:	CAMP GARCIA	**WELL ID:**	**NW-5**
LOCATION	VIEQUES, PUERTO RICO	**BEGIN DATE:**	08/10/99
CLIENT:	CH2M-HILL	**FINISH DATE:**	08/10/99
JOB NO.:	E-990716	**WELL PURPOSE:**	MONITORING WELL
FIELD PERSON:	JOEL MORALES	**DRILLER:**	PERFORACIONES E.CAMPOS
MANHOLE TYPE:	__ FLUSH GROUND	**MEASURE BASE AT:**	_X_ GROUND LEVEL
	_X_ ABOVE GROUND		____ MEAN SEA LEVEL
UNIT:	_X_ FEET __ METER	**WELL DIAMETER:**	2 INCHES

NOTES:

- CONCRETE PAD 3x3 FEET AND FOUR 3" DIAMETER BLANK STEEL PROTECTIVE PIPE.



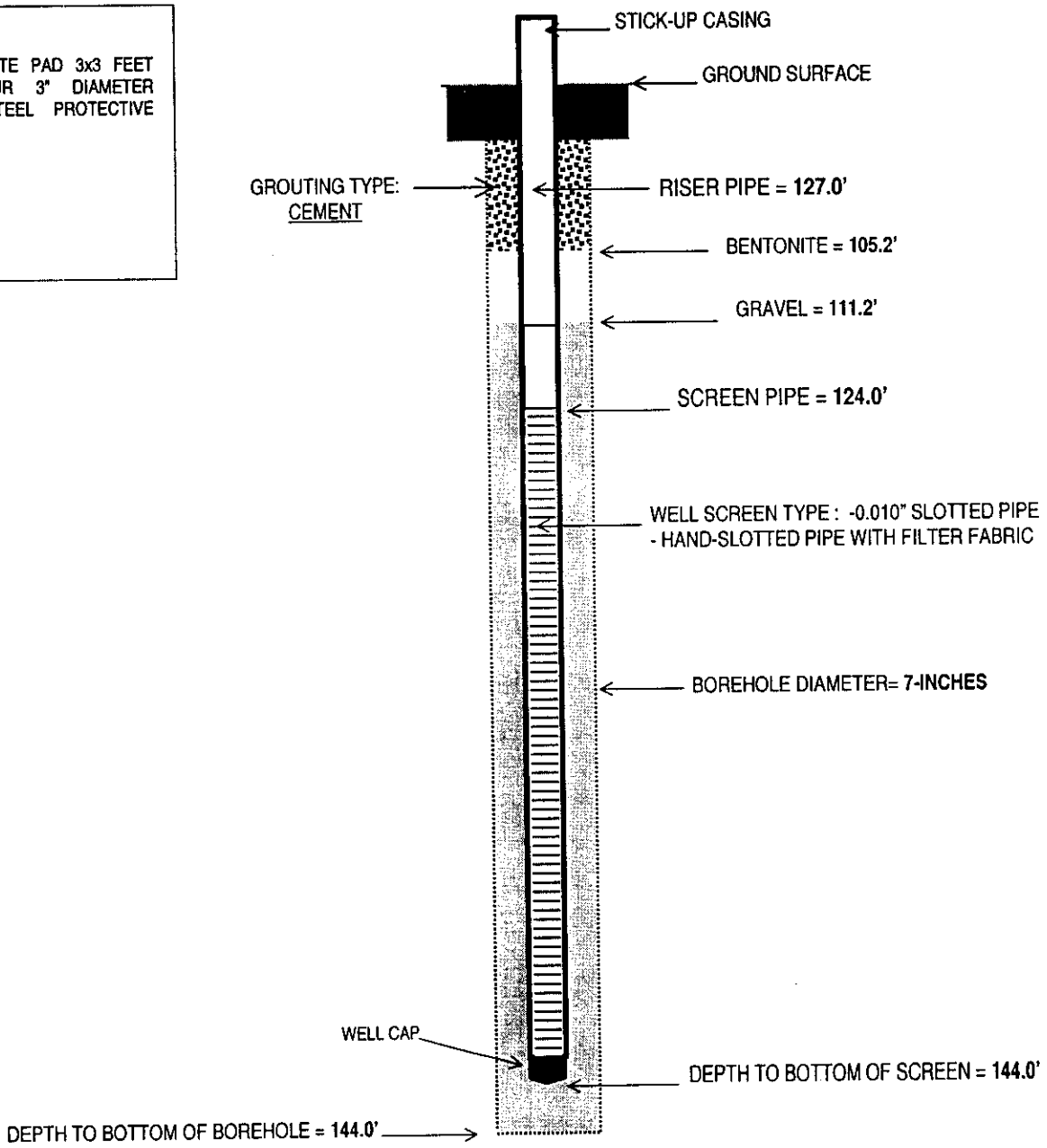
ERTEC

WELL CONSTRUCTION DETAIL

PROJECT NAME:	CAMP GARCIA	**WELL ID:**	NW-6
LOCATION	VIEQUES, PUERTO RICO	**BEGIN DATE:**	08/11/99
CLIENT:	CH2M-HILL	**FINISH DATE:**	08/12/99
JOB NO.:	E-990716	**WELL PURPOSE:**	MONITORING WELL
FIELD PERSON:	JOEL MORALES	**DRILLER:**	PERFORACIONES E.CAMPOS
MANHOLE TYPE:	__ FLUSH GROUND	**MEASURE BASE AT:**	_X_ GROUND LEVEL
	_X_ ABOVE GROUND		____ MEAN SEA LEVEL
UNIT:	_X_ FEET __ METER	**WELL DIAMETER:**	2 INCHES

NOTES:

- CONCRETE PAD 3x3 FEET AND FOUR 3" DIAMETER BLANK STEEL PROTECTIVE PIPE.



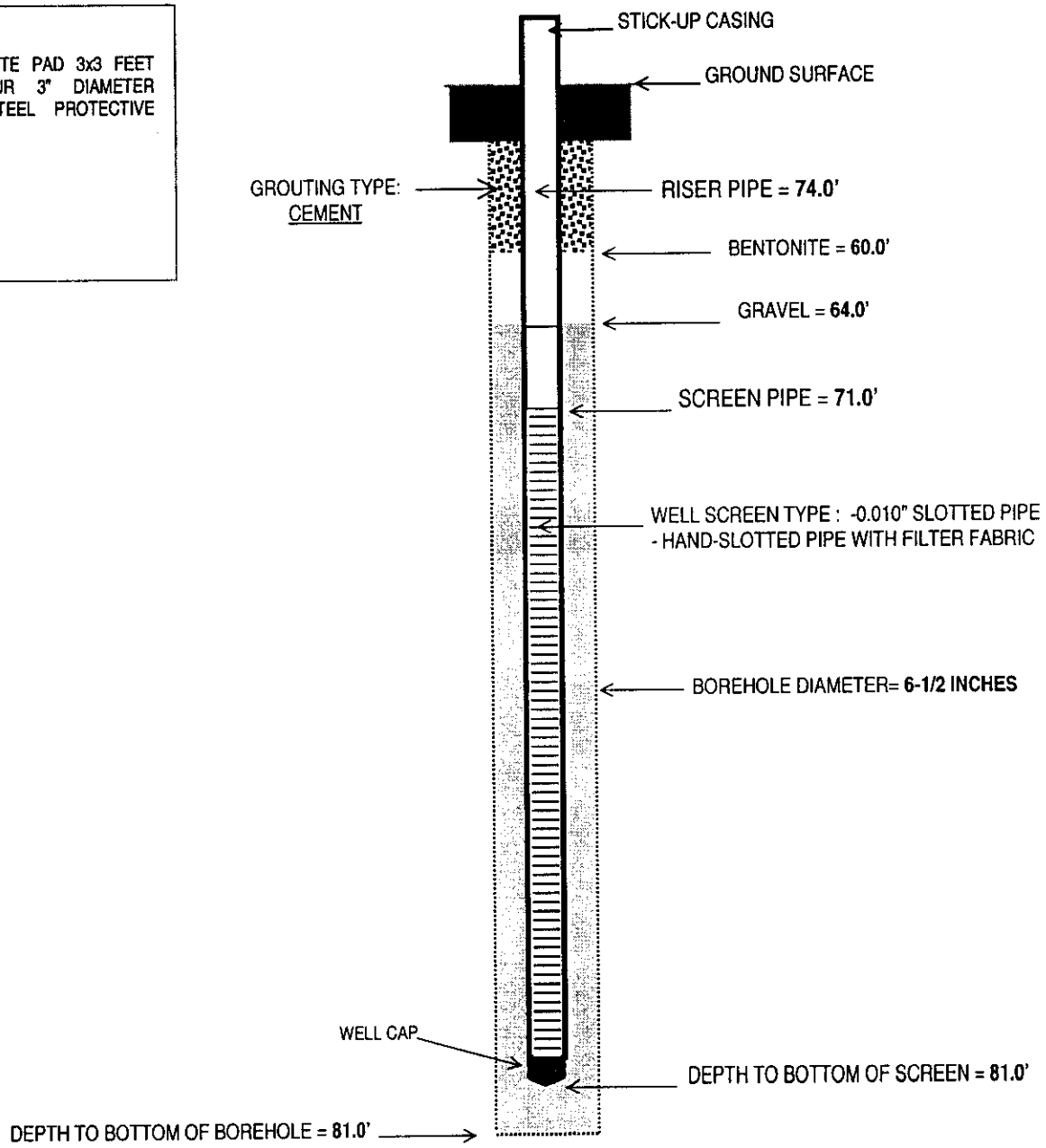
ERTEC

WELL CONSTRUCTION DETAIL

PROJECT NAME:	CAMP GARCIA	**WELL ID:**	NW-7
LOCATION	VIEQUES, PUERTO RICO	**BEGIN DATE:**	08/16/99
CLIENT:	CH2M-HILL	**FINISH DATE:**	08/17/99
JOB NO.:	E-990716	**WELL PURPOSE:**	MONITORING WELL
FIELD PERSON:	JOEL MORALES	**DRILLER:**	AQUA SYSTEM
MANHOLE TYPE:	__ FLUSH GROUND	**MEASURE BASE AT:**	_X_ GROUND LEVEL
	_X_ ABOVE GROUND		____ MEAN SEA LEVEL
UNIT:	_X_ FEET __ METER	**WELL DIAMETER:**	2 INCHES

NOTES:

- CONCRETE PAD 3x3 FEET AND FOUR 3" DIAMETER BLANK STEEL PROTECTIVE PIPE.



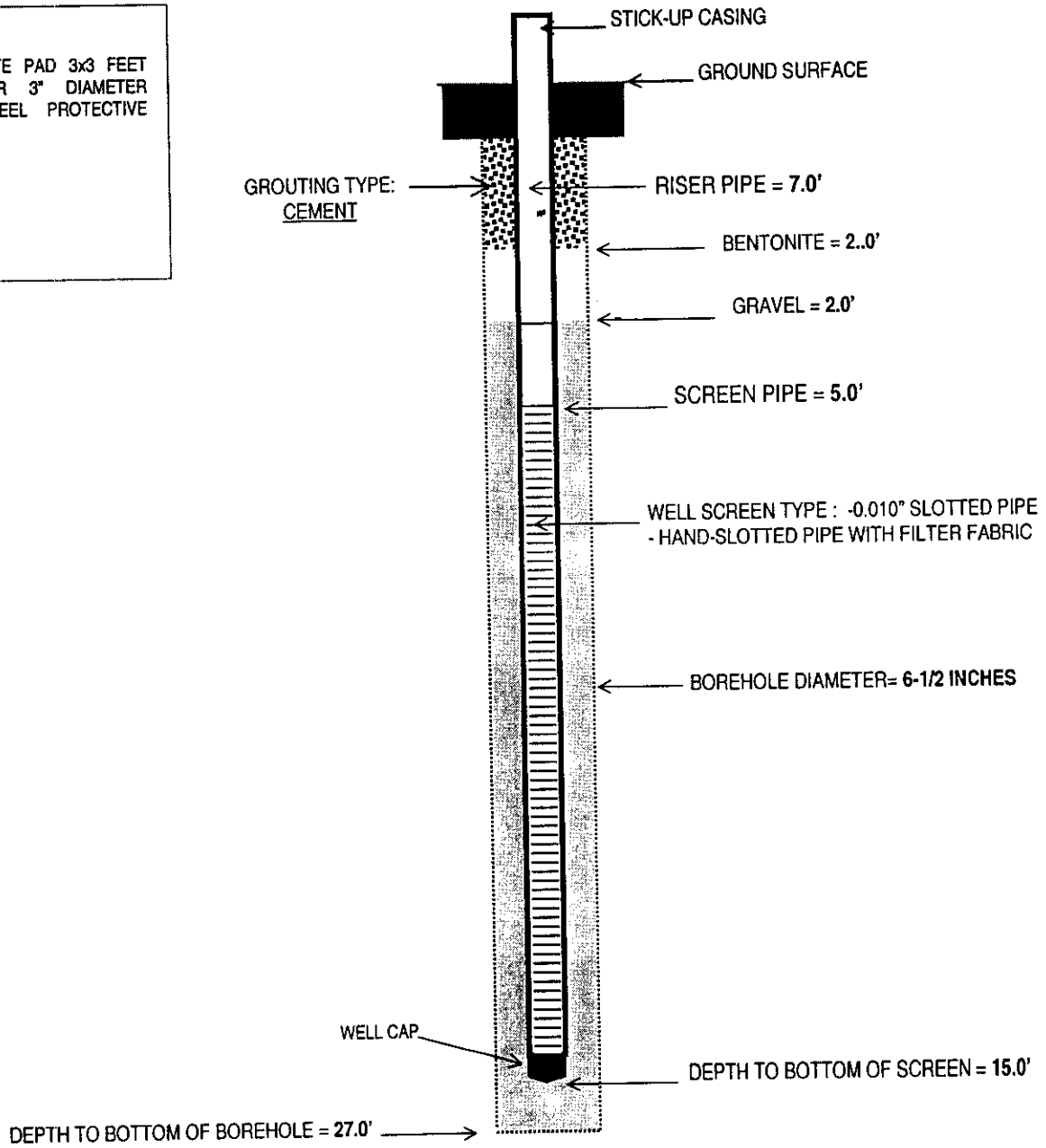
ERTEC

WELL CONSTRUCTION DETAIL

PROJECT NAME:	CAMP GARCIA	**WELL ID:**	NW-8
LOCATION	VIEQUES, PUERTO RICO	**BEGIN DATE:**	08/03/99
CLIENT:	CH2M-HILL	**FINISH DATE:**	08/03/99
JOB NO.:	E-990716	**WELL PURPOSE:**	MONITORING WELL
FIELD PERSON:	MATT	**DRILLER:**	SOIL TECH DRILLING
MANHOLE TYPE:	__ FLUSH GROUND	**MEASURE BASE AT:**	_X_ GROUND LEVEL
	_X_ ABOVE GROUND		____ MEAN SEA LEVEL
UNIT:	_X_ FEET __ METER	**WELL DIAMETER:**	2 INCHES

NOTES:

- CONCRETE PAD 3x3 FEET AND FOUR 3" DIAMETER BLANK STEEL PROTECTIVE PIPE.



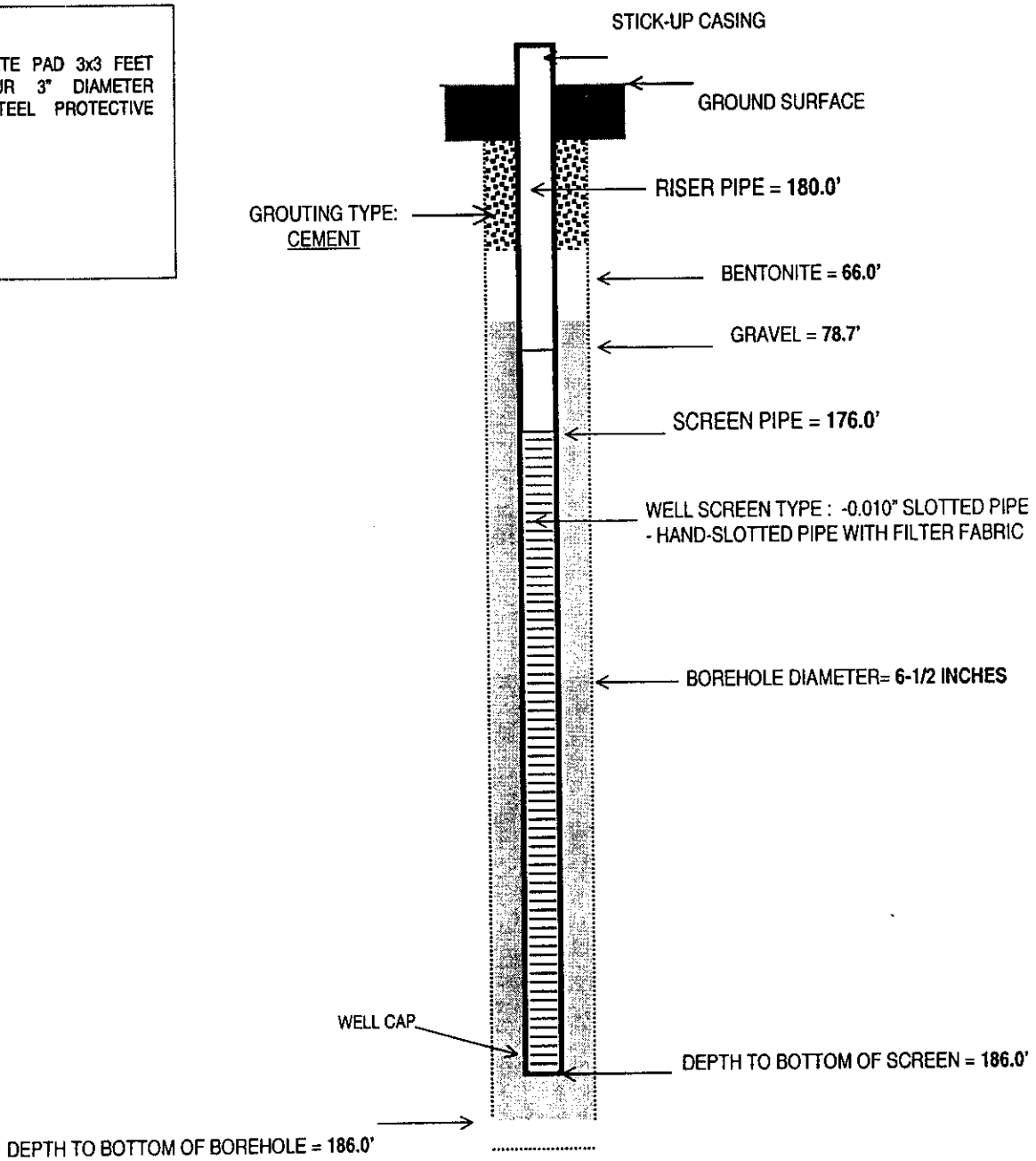
ERTEC

WELL CONSTRUCTION DETAIL

PROJECT NAME:	CAMP GARCIA	**WELL ID:**	**P-1**
LOCATION	VIEQUES, PUERTO RICO	**BEGIN DATE:**	08/25/99
CLIENT:	CH2M-HILL	**FINISH DATE:**	08/25/99
JOB NO.:	E-990716	**WELL PURPOSE:**	MONITORING WELL
FIELD PERSON:	JOEL MORALES	**DRILLER:**	PERFORACIONES E.CAMPOS
MANHOLE TYPE:	__ FLUSH GROUND	**MEASURE BASE AT:**	_X_ GROUND LEVEL
	_X_ ABOVE GROUND		____ MEAN SEA LEVEL
UNIT:	_X_ FEET __ METER	**WELL DIAMETER:**	2 INCHES

NOTES:

- CONCRETE PAD 3x3 FEET AND FOUR 3" DIAMETER BLANK STEEL PROTECTIVE PIPE.



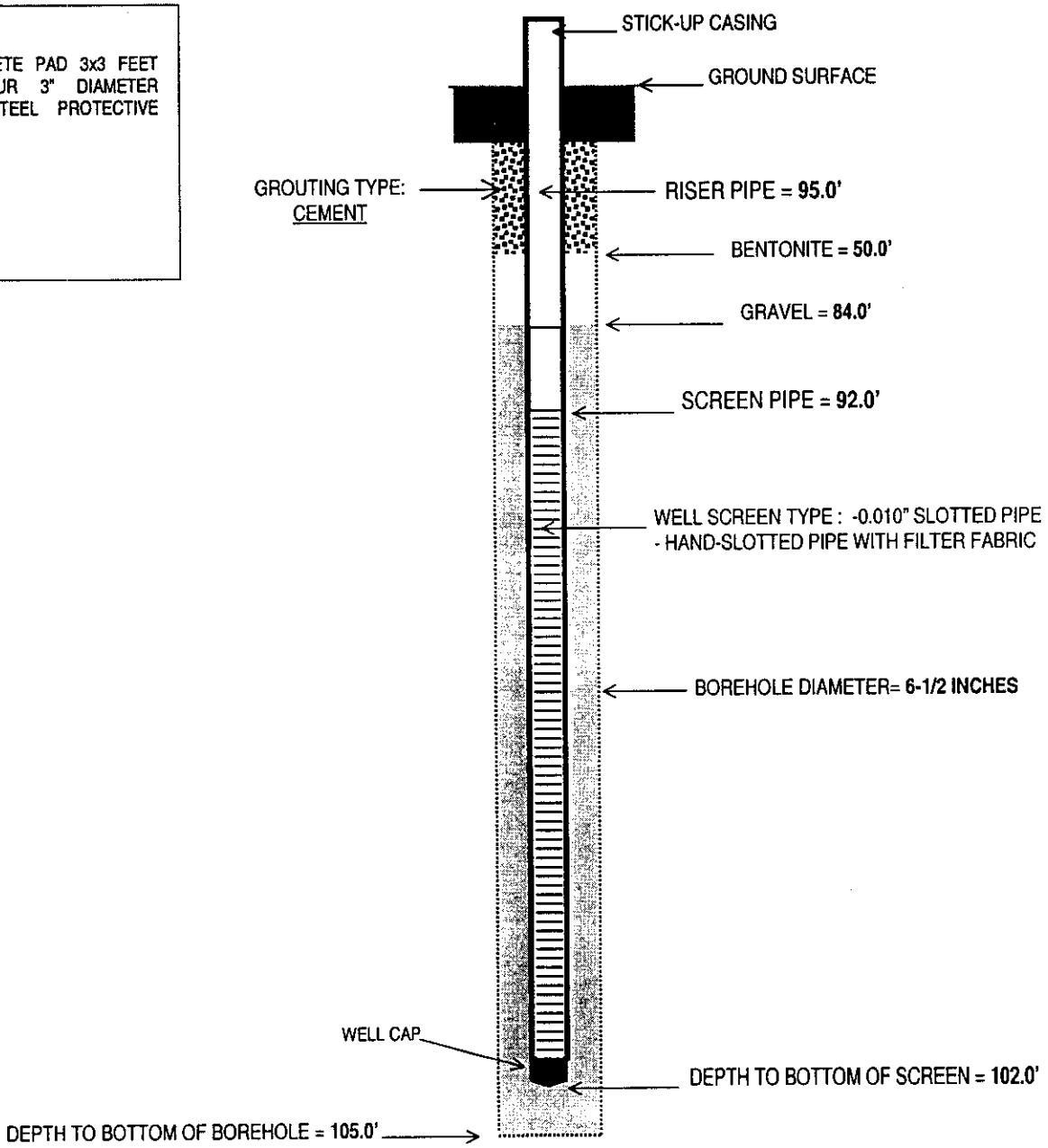
ERTEC

WELL CONSTRUCTION DETAIL

PROJECT NAME:	CAMP GARCIA	**WELL ID:**	P-2
LOCATION	VIEQUES, PUERTO RICO	**BEGIN DATE:**	08/18/99
CLIENT:	CH2M-HILL	**FINISH DATE:**	08/18/99
JOB NO.:	E-990716	**WELL PURPOSE:**	MONITORING WELL
FIELD PERSON:	JOEL MORALES	**DRILLER:**	AQUA SYSTEM
MANHOLE TYPE:	__ FLUSH GROUND	**MEASURE BASE AT:**	_X_ GROUND LEVEL
	_X_ ABOVE GROUND		____ MEAN SEA LEVEL
UNIT:	_X_ FEET ___ METER	**WELL DIAMETER:**	2 INCHES

NOTES:

- CONCRETE PAD 3x3 FEET AND FOUR 3" DIAMETER BLANK STEEL PROTECTIVE PIPE.



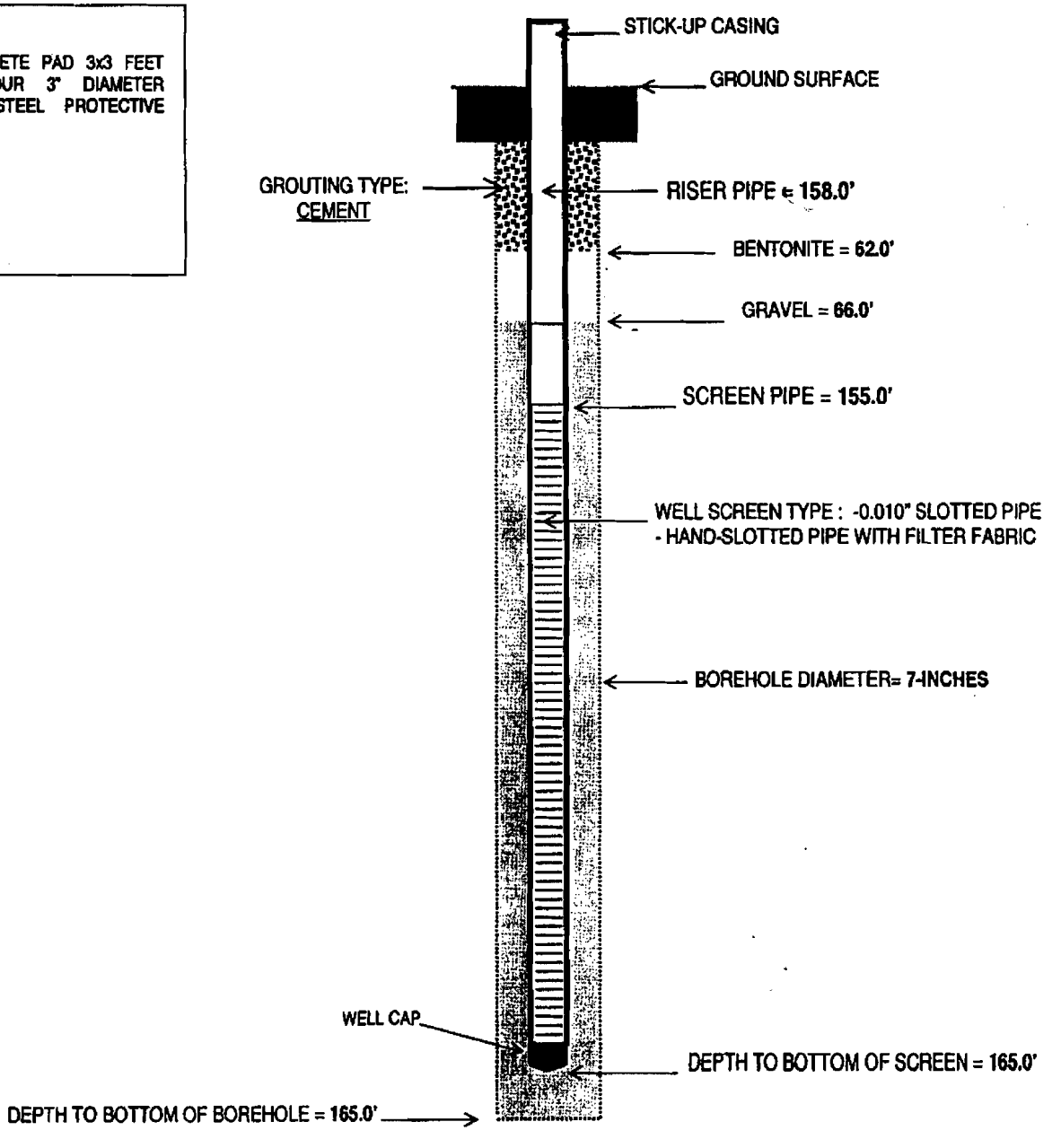
ERTEC

WELL CONSTRUCTION DETAIL

PROJECT NAME:	CAMP GARCIA	**WELL ID:**	P-3
LOCATION	VIEQUES, PUERTO RICO	**BEGIN DATE:**	08/17/99
CLIENT:	CH2M-HILL	**FINISH DATE:**	08/19/99
JOB NO.:	E-990716	**WELL PURPOSE:**	MONITORING WELL
FIELD PERSON:	JOEL MORALES	**DRILLER:**	PERFORCIONES E.CAMPOS
MANHOLE TYPE:	__ FLUSH GROUND	**MEASURE BASE AT:**	_X_ GROUND LEVEL
	_X_ ABOVE GROUND		____ MEAN SEA LEVEL
UNIT:	_X_ FEET ___ METER	**WELL DIAMETER:**	2 INCHES

NOTES:

- CONCRETE PAD 3x3 FEET AND FOUR 3" DIAMETER BLANK STEEL PROTECTIVE PIPE.



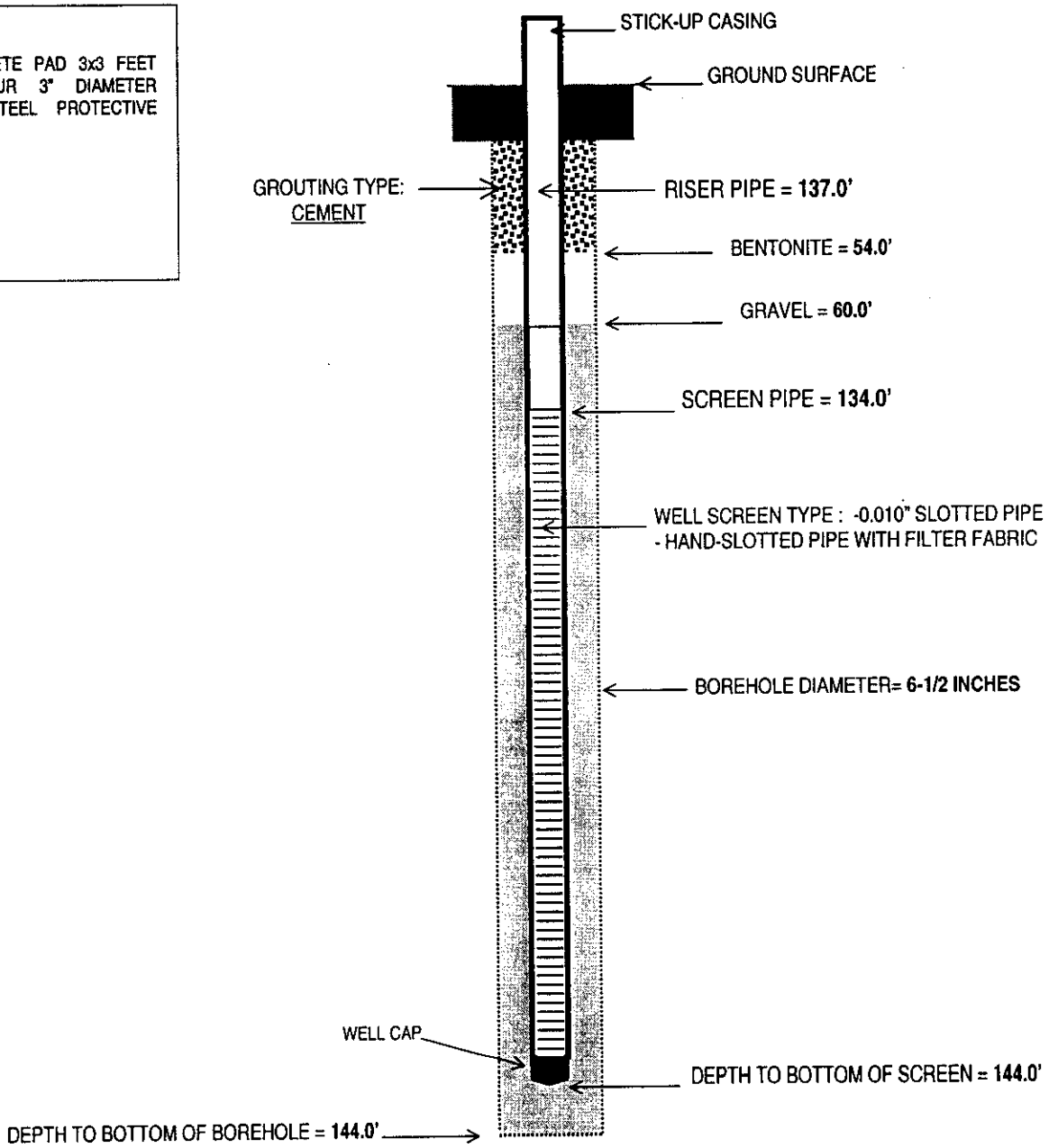
ERTEC

WELL CONSTRUCTION DETAIL

PROJECT NAME:	CAMP GARCIA	**WELL ID:**	P-5
LOCATION	VIEQUES, PUERTO RICO	**BEGIN DATE:**	08/18/99
CLIENT:	CH2M-HILL	**FINISH DATE:**	08/19/99
JOB NO.:	E-990716	**WELL PURPOSE:**	MONITORING WELL
FIELD PERSON:	JOEL MORALES	**DRILLER:**	PERFORACIONES E.CAMPOS
MANHOLE TYPE:	__ FLUSH GROUND	**MEASURE BASE AT:**	_X_ GROUND LEVEL
	_X_ ABOVE GROUND		____ MEAN SEA LEVEL
UNIT:	_X_ FEET __ METER	**WELL DIAMETER:**	2 INCHES

NOTES:

- CONCRETE PAD 3x3 FEET AND FOUR 3" DIAMETER BLANK STEEL PROTECTIVE PIPE.



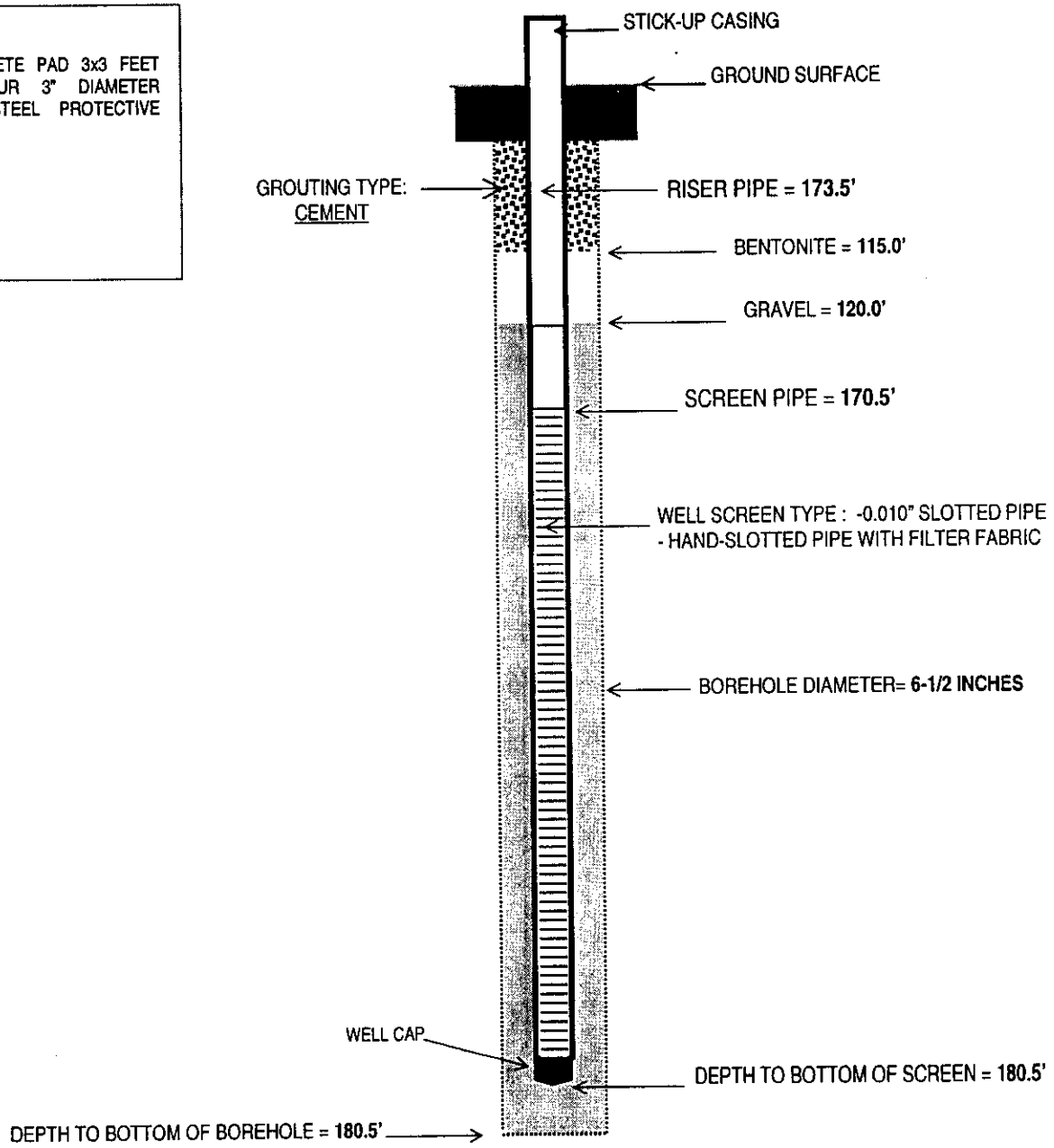
ERTEC

WELL CONSTRUCTION DETAIL

PROJECT NAME:	CAMP GARCIA	WELL ID:	P-6
LOCATION	VIEQUES, PUERTO RICO	BEGIN DATE:	08/18/99
CLIENT:	CH2M-HILL	FINISH DATE:	08/19/99
JOB NO.:	E-990716	WELL PURPOSE:	MONITORING WELL
FIELD PERSON:	JOEL MORALES	DRILLER:	SOIL TECH DRILLING
MANHOLE TYPE:	__ FLUSH GROUND	MEASURE BASE AT:	_X_ GROUND LEVEL
	_X_ ABOVE GROUND		____ MEAN SEA LEVEL
UNIT:	_X_ FEET __METER	WELL DIAMETER:	2 INCHES

NOTES:

- CONCRETE PAD 3x3 FEET AND FOUR 3" DIAMETER BLANK STEEL PROTECTIVE PIPE.



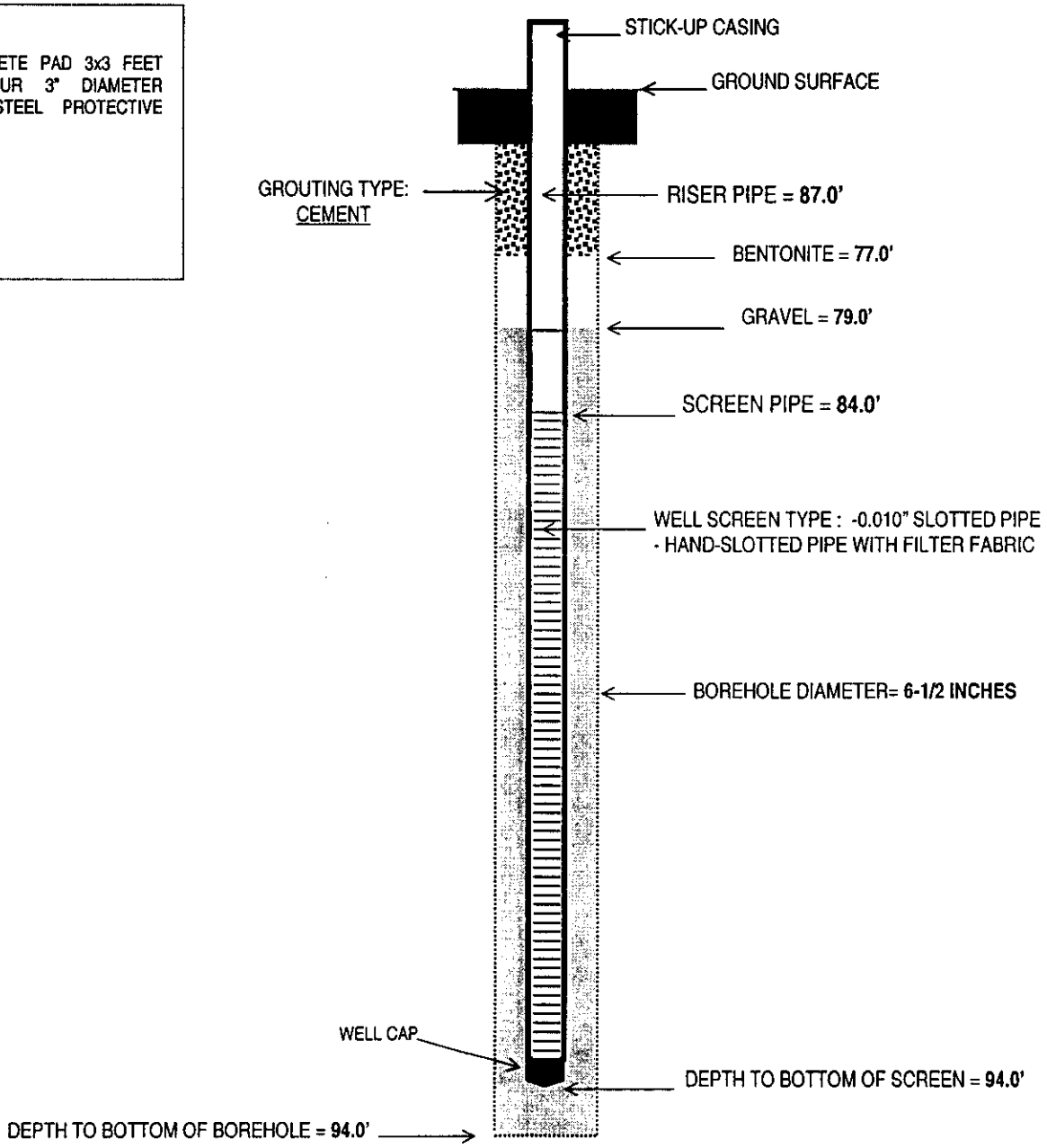
ERTEC

WELL CONSTRUCTION DETAIL

PROJECT NAME:	CAMP GARCIA	**WELL ID:**	P-7
LOCATION	VIEQUES, PUERTO RICO	**BEGIN DATE:**	08/14/99
CLIENT:	CH2M-HILL	**FINISH DATE:**	08/14/99
JOB NO.:	E-990716	**WELL PURPOSE:**	MONITORING WELL
FIELD PERSON:	JOEL MORALES	**DRILLER:**	SOIL TECH DRILLING
MANHOLE TYPE:	__ FLUSH GROUND	**MEASURE BASE AT:**	_X_ GROUND LEVEL
	_X_ ABOVE GROUND		____ MEAN SEA LEVEL
UNIT:	_X_ FEET __ METER	**WELL DIAMETER:**	2 INCHES

NOTES:

- CONCRETE PAD 3x3 FEET AND FOUR 3" DIAMETER BLANK STEEL PROTECTIVE PIPE.



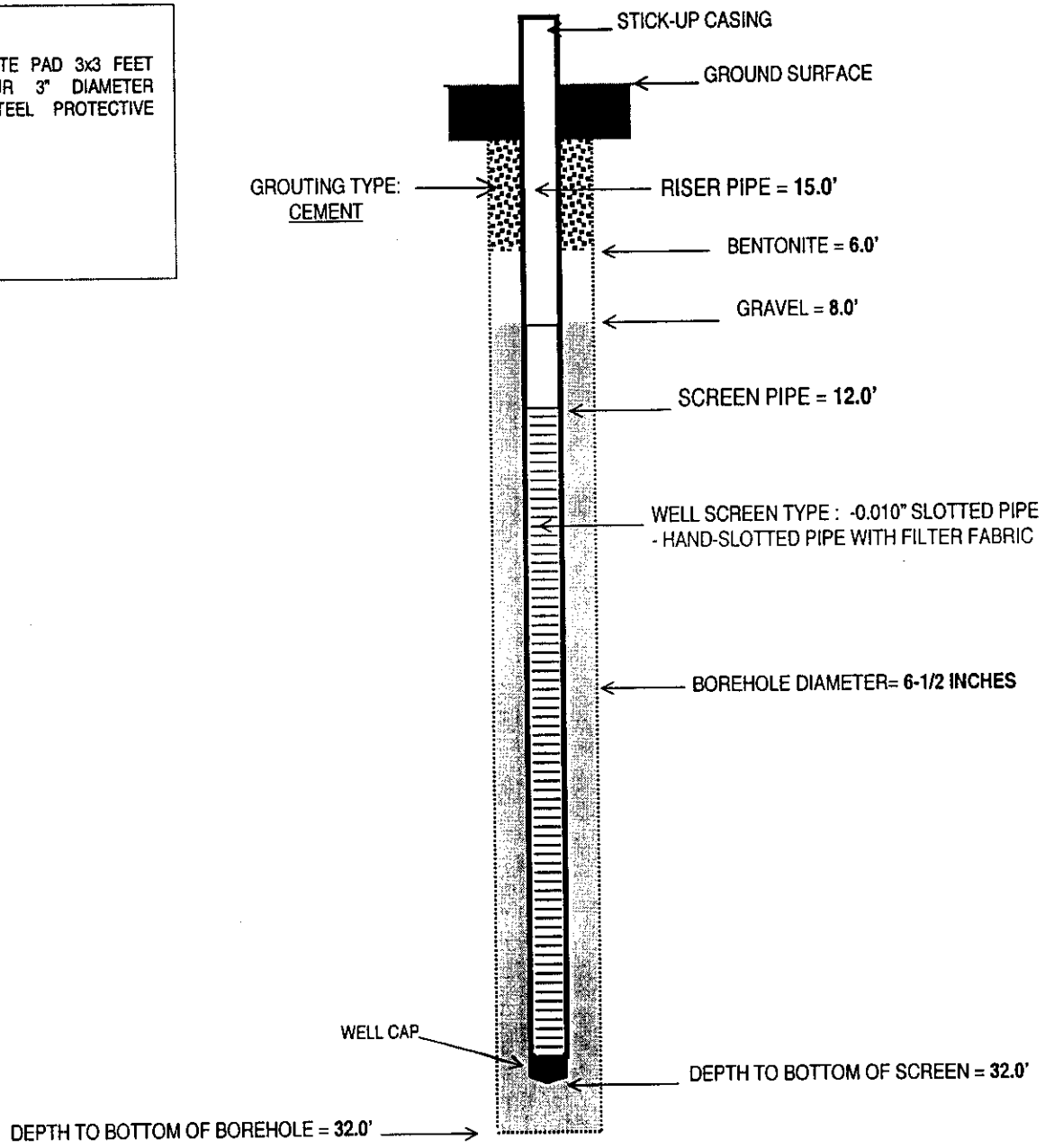
ERTEC

WELL CONSTRUCTION DETAIL

PROJECT NAME:	CAMP GARCIA	WELL ID:	P-8
LOCATION	VIEQUES, PUERTO RICO	BEGIN DATE:	08/04/99
CLIENT:	CH2M-HILL	FINISH DATE:	08/04/99
JOB NO.:	E-990716	WELL PURPOSE:	MONITORING WELL
FIELD PERSON:	MATT	DRILLER:	SOIL TECH DRILLING
MANHOLE TYPE:	__ FLUSH GROUND	MEASURE BASE AT:	_X_ GROUND LEVEL
	_X_ ABOVE GROUND		____ MEAN SEA LEVEL
UNIT:	_X_ FEET __ METER	WELL DIAMETER:	2 INCHES

NOTES:

- CONCRETE PAD 3x3 FEET AND FOUR 3" DIAMETER BLANK STEEL PROTECTIVE PIPE.



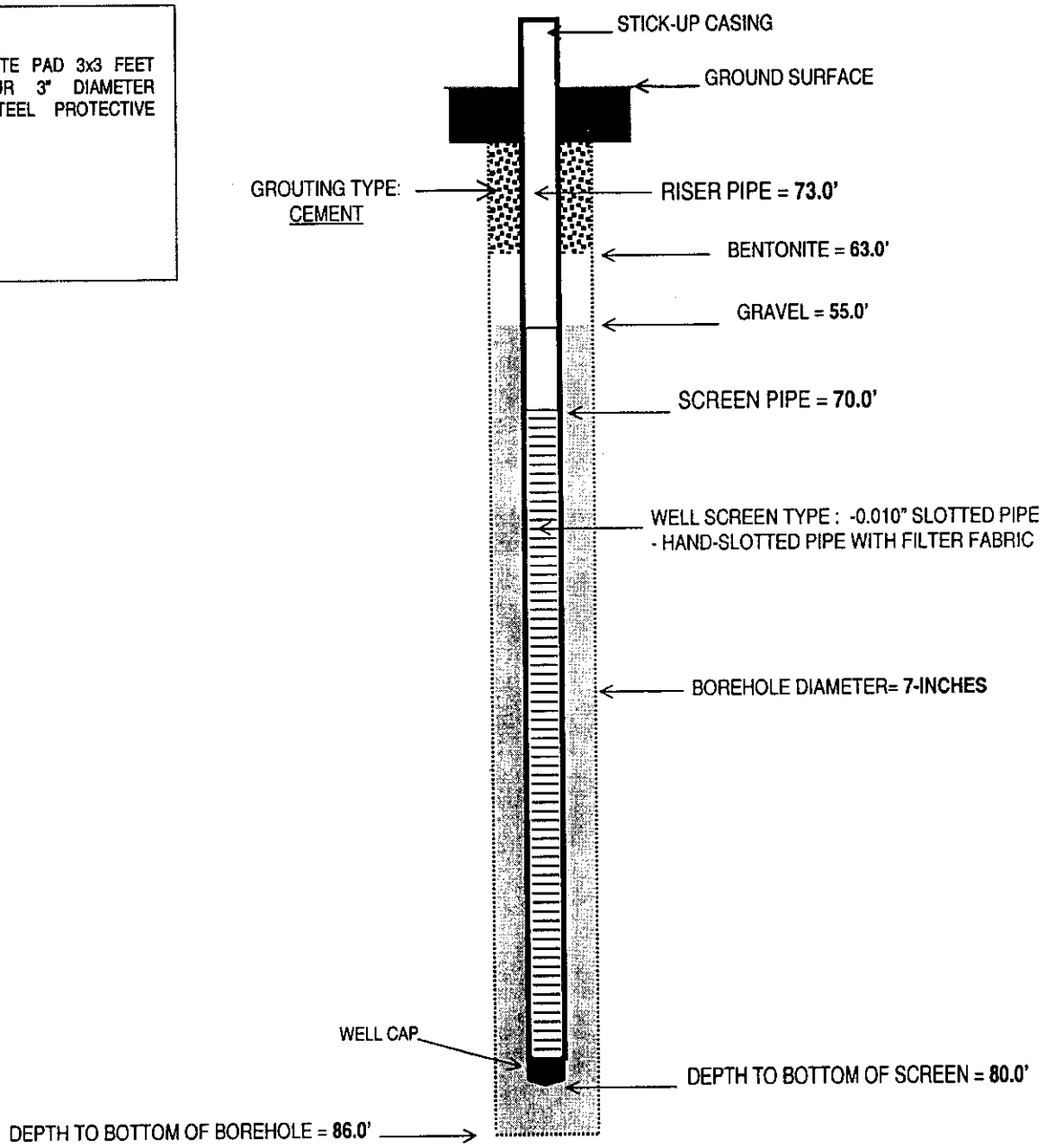
ERTEC

WELL CONSTRUCTION DETAIL

PROJECT NAME:	CAMP GARCIA	**WELL ID:**	P-9
LOCATION	VIEQUES, PUERTO RICO	**BEGIN DATE:**	08/18/99
CLIENT:	CH2M-HILL	**FINISH DATE:**	08/18/99
JOB NO.:	E-990716	**WELL PURPOSE:**	MONITORING WELL
FIELD PERSON:	JOEL MORALES	**DRILLER:**	SOIL TECH DRILLING
MANHOLE TYPE:	__ FLUSH GROUND	**MEASURE BASE AT:**	_X_ GROUND LEVEL
	_X_ ABOVE GROUND		____ MEAN SEA LEVEL
UNIT:	_X_ FEET __ METER	**WELL DIAMETER:**	2 INCHES

NOTES:

- CONCRETE PAD 3x3 FEET AND FOUR 3" DIAMETER BLANK STEEL PROTECTIVE PIPE.



APPENDIX C

Groundwater Sampling Procedure Low Stress Purging and Sampling

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION II

GROUND WATER SAMPLING PROCEDURE
LOW STRESS (Low Flow) PURGING AND SAMPLING

I. SCOPE & APPLICATION

This Low Stress (or Low-Flow) Purging and Sampling Procedure is the EPA Region II standard method for collecting low stress (low flow) ground water samples from monitoring wells. Low stress Purging and Sampling results in collection of ground water samples from monitoring wells that are representative of ground water conditions in the geological formation. This is accomplished by minimizing stress on the geological formation and minimizing disturbance of sediment that has collected in the well. The procedure applies to monitoring wells that have an inner casing with a diameter of 2.0 inches or greater, and maximum screened intervals of ten feet unless multiple intervals are sampled. The procedure is appropriate for collection of groundwater samples that will be analyzed for volatile and semi-volatile organic compounds (VOCs and SVOCs), pesticides, polychlorinated biphenyls (PCBs), metals, and microbiological and other contaminants in association with all EPA programs.

This procedure does not address the collection of light or dense non-aqueous phase liquids (LNAPL or DNAPL) samples, and should be used for aqueous samples only. For sampling NAPLs, the reader is referred to the following EPA publications: DNAPL Site Evaluation (Cohen & Mercer, 1993) and the RCRA Ground-Water Monitoring: Draft Technical Guidance (EPA/530-R-93-001), and references therein.

II. METHOD SUMMARY

The purpose of the low stress purging and sampling procedure is to collect ground water samples from monitoring wells that are representative of ground water conditions in the geological formation. This is accomplished by setting the intake velocity of the sampling pump to a flow rate that limits drawdown inside the well casing.

Sampling at the prescribed (low) flow rate has three primary benefits. First, it minimizes disturbance of sediment in the bottom of the well, thereby producing a sample with low turbidity (i.e., low concentration of suspended particles). Typically, this saves time and analytical costs by eliminating the need for collecting and analyzing an additional filtered sample from the same well. Second, this procedure minimizes aeration of the ground water during sample collection, which improves the sample quality for VOC analysis. Third, in most cases the procedure significantly reduces the volume of ground water purged from a well and the costs associated with its proper treatment and disposal.

III. ADDRESSING POTENTIAL PROBLEMS

Problems that may be encountered using this technique include a) difficulty in sampling wells with insufficient yield; b) failure of one or more key indicator parameters to stabilize; c) cascading of water and/or formation of air bubbles in the tubing; and d) cross-contamination between wells.

Insufficient Yield Wells with insufficient yield (i.e., low recharge rate of the well) may dewater during purging. Care should be taken to avoid loss of pressure in the tubing line due to dewatering of the well below the level of the pump's intake. Purging should be interrupted before the water level in the well drops below the top of the pump, as this may induce cascading of the sand pack. Pumping the well dry should therefore be avoided to the extent possible in all cases. Sampling should commence as soon as the volume in the well has recovered sufficiently to allow collection of samples. Alternatively, ground water samples may be obtained with techniques designed for the unsaturated zone, such as lysimeters.

Failure to Stabilize Key Indicator Parameters

If one or more key indicator parameters fails to stabilize after 4 hours, one of four options should be considered: a) continue purging in an attempt to achieve stabilization; b) discontinue purging, do not collect samples, and document attempts to reach stabilization in the log book; c) discontinue purging, collect samples, and document attempts to reach stabilization in the log book; or d) Secure the well, purge and collect samples the next day (preferred). The key indicator parameter for samples to be analyzed for VOCs is dissolved oxygen. The key indicator parameter or all other samples is turbidity.

Cascading

To prevent cascading and/or air bubble formation in the tubing, care should be taken to ensure that the flow rate is sufficient to maintain pump suction. Minimize the length and diameter of tubing (i.e., 1/4 or 3/8 inch ID) to ensure that the tubing remains filled with ground water during sampling.

Cross-Contamination

To prevent cross-contamination between wells, it is strongly recommended that dedicated, in-place pumps be used. As an alternative, the potential for cross-contamination can be reduced by performing the more thorough "daily" decontamination procedures between sampling of each well in addition to the start of each sampling day (see Section VII, below).

Equipment Failure

Adequate equipment should be on-hand so that equipment failures do not adversely impact sampling activities.

IV. PLANNING DOCUMENTATION AND EQUIPMENT

- Approved site-specific Field Sampling Plan/Quality Assurance Project Plan (QAPP). This plan must specify the type of pump and other equipment to be used. The QAPP must also specify the depth to which the pump intake should be lowered in each well. Generally, the target depth will correspond to the mid-point of the most permeable zone in the screened interval. Borehole geologic and geophysical logs can be used to help select the most permeable zone. However, in some cases, other criteria may be used to select the target depth for the pump intake. In all cases, the target depth must be approved by the EPA hydrogeologist or EPA project scientist.

- Well construction data, location map, field data from last sampling event.

- Polyethylene sheeting.

- Flame Ionization Detector (FID) and Photo Ionization Detector (PID).

- Adjustable rate, positive displacement ground water sampling pump (e.g., centrifugal or bladder pumps constructed of stainless steel or Teflon). A peristaltic pump may only be used for inorganic sample collection.

- Interface probe or equivalent device for determining the presence or absence of NAPL.

- Teflon or Teflon-lined polyethylene tubing to collect samples for organic analysis. Teflon or Teflon-lined polyethylene, PVC, Tygon or polyethylene tubing to collect samples for inorganic analysis. Sufficient tubing of the appropriate material must be available so that each well has dedicated tubing.

- Water level measuring device, minimum 0.01 foot accuracy, (electronic preferred for tracking water level drawdown during all pumping operations).

- Flow measurement supplies (e.g., graduated cylinder and stop watch or in-line flow meter).

- Power source (generator, nitrogen tank, etc.).

- Monitoring instruments for indicator parameters. Eh and dissolved oxygen must be monitored in-line using an instrument with a continuous readout display. Specific conductance, pH, and temperature may be monitored either in-line or using separate probes. A nephalometer is used to measure turbidity.

- Decontamination supplies (see Section VII, below).

- Logbook (see Section VIII, below).

- Sample bottles.

- Sample preservation supplies (as required by the analytical methods).

- Sample tags or labels, chain of custody.

V. SAMPLING PROCEDURES

<u>Pre-Sampling Activities</u>

1. Start at the well known or believed to have the least contaminated ground water and proceed systematically to the well with the most contaminated ground water. Check the well, the lock, and the locking cap for damage or evidence of tampering. Record observations.

2. Lay out sheet of polyethylene for placement of monitoring and sampling equipment.

3. Measure VOCs at the rim of the unopened well with a PID and FID instrument and record the reading in the field log book.

4. Remove well cap.

5. Measure VOCs at the rim of the opened well with a PID and an FID instrument and record the reading in the field log book.

6. If the well casing does not have a reference point (usually a V-cut or indelible mark in the well casing), make one. Note that the reference point should be surveyed for correction of ground water elevations to the mean geodesic datum (MSL).

7. Measure and record the depth to water (to 0.01 ft) in all wells to be sampled prior to purging. Care should be taken to minimize disturbance in the water column and dislodging of any particulate matter attached to the sides or settled at the bottom of the well.

8. If desired, measure and record the depth of any NAPLs using an interface probe. Care should be taken to minimize disturbance of any sediment that has accumulated at the bottom of the well. Record the observations in the log book. If LNAPLs and/or DNAPLs are detected, install the pump at this time, as described in step 9, below. Allow the well to sit for several days between the measurement or sampling of any DNAPLs and the low-stress purging and sampling of the ground water.

Sampling Procedures

9. Install Pump: Slowly lower the pump, safety cable, tubing and electrical lines into the well to the depth specified for that well in the EPA-approved QAPP or a depth otherwise approved by the EPA hydrogeologist or EPA project scientist. The pump intake must be kept at least two (2) feet above the bottom of the well to prevent disturbance and resuspension of any sediment or NAPL present in the bottom of the well. Record the depth to which the pump is lowered.

10. Measure Water Level: Before starting the pump, measure the water level again with the pump in the well. Leave the water level measuring device in the well.

11. Purge Well: Start pumping the well at 200 to 500 milliliters per minute (ml/min). The water level should be monitored approximately every five minutes. Ideally, a steady flow rate should be maintained that results in a stabilized water level (drawdown of 0.3 ft or less). Pumping rates should, if needed, be reduced to the minimum capabilities of the pump to ensure stabilization of the water level. As noted above, care should be taken to maintain pump suction and to avoid entrainment of air in the tubing. Record each adjustment made to the pumping rate and the water level measured immediately after each adjustment.

12. Monitor Indicator Parameters: During purging of the well, monitor and record the field indicator parameters (turbidity, temperature, specific conductance, pH, Eh, and DO) approximately every five minutes. The well is considered stabilized and ready for sample collection when the indicator parameters have stabilized for three consecutive readings as follows (Puls and Barcelona, 1996):

+0.1 for pH
+3% for specific conductance (conductivity)
+10 mv for redox potential
+10% for DO and turbidity

Dissolved oxygen and turbidity usually require the longest time to achieve stabilization. The pump must not be removed from the well between purging and sampling.

13. Collect Samples: Collect samples at a flow rate between 100 and 250 ml/min and such that drawdown of the water level within the well does not exceed the maximum allowable drawdown of 0.3 ft. VOC samples must be collected first and directly into sample containers. All sample containers should be filled with minimal turbulence by allowing the ground water to flow from the tubing gently down the inside of the container.

Ground water samples to be analyzed for volatile organic compounds (VOCs) require pH adjustment. The appropriate EPA Program Guidance should be consulted to determine whether pH adjustment is necessary. If pH adjustment is necessary for VOC sample preservation, the amount of acid to be added to each sample vial prior to sampling should be determined, drop by drop, on a separate and equal volume of water (e.g., 40 ml). Groundwater purged from the well prior to sampling can be used for this purpose.

14. Remove Pump and Tubing: After collection of the samples, the tubing, unless permanently installed, must be properly discarded or dedicated to the well for resampling by hanging the tubing inside the well.

15. Measure and record well depth.

16. Close and lock the well.

VI. FIELD QUALITY CONTROL SAMPLES

Quality control samples must be collected to determine if sample collection and handling procedures have adversely affected the quality of the ground water samples. The appropriate EPA Program Guidance should be consulted in preparing the field QC sample requirements of the site-specific QAPP.

All field quality control samples must be prepared exactly as regular investigation samples with regard to sample volume, containers, and preservation. The following quality control samples should be collected during the sampling event:

- Field duplicates
- Trip blanks for VOCs only
- Equipment blank (not necessary if equipment is dedicated to the well)

As noted above, ground water samples should be collected systematically from wells with the lowest level of contamination through to wells with highest level of contamination. The equipment blank should be collected after sampling from the most contaminated well.

VII. DECONTAMINATION

Non-disposable sampling equipment, including the pump and support cable and electrical wires which contact the sample, must be decontaminated thoroughly each day before use ("daily decon") and after each well is sampled ("between-well decon"). Dedicated, in-place pumps and tubing must be thoroughly decontaminated using "daily decon" procedures (see #17, below) prior to their initial use. For centrifugal pumps, it is strongly recommended that non-disposable sampling equipment, including the pump and support cable and electrical wires in contact with the sample, be decontaminated thoroughly each day before use ("daily decon").

EPA's field experience indicates that the life of centrifugal pumps may be extended by removing entrained grit. This also permits inspection and replacement of the cooling water in centrifugal pumps. All non-dedicated sampling equipment (pumps, tubing, etc.) must be decontaminated after each well is sampled ("between-well decon," see #18 on the following page).

17. Daily Decon

A) Pre-rinse: Operate pump in a deep basin containing 8 to 10 gallons of potable water for 5 minutes and flush other equipment with potable water for 5 minutes.

B) Wash: Operate pump in a deep basin containing 8 to 10 gallons of a non-phosphate detergent solution, such as Alconox, for 5 minutes and flush other equipment with fresh detergent solution for 5 minutes. Use the detergent sparingly.

C) Rinse: Operate pump in a deep basin of potable water for 5 minutes and flush other equipment with potable water for 5 minutes.

D) Disassemble pump.

E) Wash pump parts: Place the disassembled parts of the pump into a deep basin containing 8 to 10 gallons of non-phosphate detergent solution. Scrub all pump parts with a test tube brush.

F) Rinse pump parts with potable water.

G) Rinse the following pump parts with distilled/ deionized water: inlet screen, the shaft, the suction interconnector, the motor lead assembly, and the stator housing.

H) Place impeller assembly in a large glass beaker and rinse with 1% nitric acid (HNO_3).

I) Rinse impeller assembly with potable water.

J) Place impeller assembly in a large glass bleaker and rinse with isopropanol.

K) Rinse impeller assembly with distilled/deionized water.

18. Between-Well Decon

A) Pre-rinse: Operate pump in a deep basin containing 8 to 10 gallons of potable water for 5 minutes and flush other equipment with potable water for 5 minutes.

B) Wash: Operate pump in a deep basin containing 8 to 10 gallons of a non-phosphate detergent solution, such as Alconox, for 5 minutes and flush other equipment with fresh detergent solution for 5 minutes. Use the detergent sparingly.

C) Rinse: Operate pump in a deep basin of potable water for 5 minutes and flush other equipment with potable water for 5 minutes.

D) Final Rinse: Operate pump in a deep basin of distilled/deionized water to pump out 1 to 2 gallons of this final rinse water.

VIII. FIELD LOG BOOK

A field log book must be kept each time ground water monitoring activities are conducted in the field. The field log book should document the following:

- Well identification number and physical condition.
- Well depth, and measurement technique.
- Static water level depth, date, time, and measurement technique.
- Presence and thickness of immiscible liquid layers and detection method.
- Collection method for immiscible liquid layers.
- Pumping rate, drawdown, indicator parameters values, and clock time, at three to five minute intervals; calculate or measure total volume pumped.
- Well sampling sequence and time of sample collection.
- Types of sample bottles used and sample identification numbers.
- Preservatives used.
- Parameters requested for analysis.
- Field observations of sampling event.
- Name of sample collector(s).
- Weather conditions.
- QA/QC data for field instruments.

IX. REFERENCES

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Puls, R.W. and M.J. Barcelona, 1996, Low-Flow (Minimal Drawdown) Ground-water Sampling Procedures, EPA/540/S-95/504.

U.S. EPA, 1993, RCRA Ground-Water Monitoring: Draft Technical Guidance, EPA/530-R-93-001.

U.S. EPA Region II, 1989, CERCLA Quality Assurance Manual.

APPENDIX D

Groundwater Sampling Data Sheets for RCRA-1, 2, 3, and 4

GROUNDWATER SAMPLING DATA SHEET

CH2M HILL, INC.

Project Number: 183719.FI.ZZ

Client: US Navy
Location: Camp Garcia, RCRA 1
Event: AFWTF Phase I RFI
Date: 02/04/2004
Weather: Hot, sunny, light wind

Well ID: RCRA - 1
Sample ID: RCRA-1GW-R01
MS/MSD YES / **NO**
Sample Team: I. Lynch, Ben Brice, M. Stinnett

Total Depth: 65.50 FT.(BTOC) Measuring Device: Electronic WLI
Depth to water: (-) 47.48 FT.(BTOC) Date and Time: 02/04/2004 @ 1500
Water Column: 18.02 FT. WELL DIAMETER
(x) 0.163 GAL/FT. [(2" DIA.= .163 GAL/FT.) (4" DIA. = .653 GAL/FT.)]
Well Volume: 2.9 GAL. (1" DIA.= .041 GAL/FT.) (1 1/4 " DIA.= .064 GAL/FT.)
Minimum Purge Volume: 8.80 GAL. (x 3 well volumes)
Purge Device: Grundfos pump with TFE tubing. Average flow @ 0.24 gal/min
Sample Time 1545
Sample Appearance Clear, no odor

FIELD PARAMETERS

Time	Depth to Water, FT	Purged Vol. (gals)	pH	Cond. µmhos/cm	Temp., °C	DO	ORP	Turbidity	Color / Odor / Comments
1500	47.49								Turn pump on, rate @ 0.24 gal/min Clear, no odor
1515	47.50	3.6	6.74	2,133	29.37	2.49	133	0.50	Clear, no odor
1530	47.50	7.2	6.77	2,140	29.35	2.10	134	0.20	Clear, no odor
1535	47.50	8.4	6.76	2,141	29.30	2.01	140		Clear, no odor
1545	47.49	10.8	6.77	2,142	29.33	1.98	142	0.27	Began sampling, Clear, no odor
Note: Split sample with PREQB.									
Note: Pump set at 59 ft. btoc.									

Signed by: **I. Lynch** **02/04/2004**
Date and Time

GROUNDWATER SAMPLING DATA SHEET

CH2M HILL, INC.

Project Number: 183719.FI.ZZ

Client: US Navy
Location: Camp Garcia, RCRA 2
Event: AFWTF Phase I RFI
Date: 02/03/2004
Weather: Hot, sunny, windy

Well ID: RCRA - 2
Sample ID: RCRA-2GW-R01
MS/MSD YES / **NO**
Sample Team: I. Lynch
B. Brice

Total Depth: 65.60 FT.(BTOC) Measuring Device: Electronic WLI
Depth to water: (-) 39.54 FT.(BTOC) Date and Time: 02/03/2004 @ 1215
Water Column: 26.06 FT. WELL DIAMETER
(x) 0.163 GAL/FT. [(2" DIA.= .163 GAL/FT.) (4" DIA. = .653 GAL/FT.)]
Well Volume: 4.24 GAL. (1" DIA.= .041 GAL/FT.) (1 1/4 " DIA.= .064 GAL/FT.)
Minimum Purge Volume: 12.72 GAL. (x 3 well volumes)
Purge Device: Grundfos pump with TFE tubing. Average flow @ 0.24 gal/min
Sample Time 1320
Sample Appearance Clear, no odor

FIELD PARAMETERS

Time	Depth to Water, FT	Purged Vol. (gals)	pH	Cond. µmhos/cm	Temp., °C	DO	ORP	Turbidity	Color / Odor / Comments
1220									Turn pump on, rate @ 0.23 gal/min
1240	36.40	5.0	6.79	1,751	28.49	3.21	131	0.49	Clear, no odor
1300	36.40	8.0	6.81	1,755	28.30	0.52	166	0.44	Clear, no odor
1310	36.40	10.0	6.82	1,758	28.30	0.53	159	0.44	Clear, no odor
1320	36.40	13.0	6.83	1,760	28.30	0.59	155	0.41	Began sampling, Clear, no odor
		15.0 total gallons pumped.							
Note: Split sample with EPA.									

Signed by: **I. Lynch** **02/03/2004**
Date and Time

GROUNDWATER SAMPLING DATA SHEET

CH2M HILL, INC.

Project Number: 183719.FI.ZZ

Client: US Navy
Location: Camp Garcia, RCRA 3
Event: AFWTF Phase I RFI
Date: 02/03/2004
Weather: Hot, sunny, windy

Well ID: RCRA - 3
Sample ID: RCRA-3GW-R01
MS/MSD YES / **NO**
Sample Team: I. Lynch
B. Brice

Total Depth: 70.23 FT.(BTOC) Measuring Device: Electronic WLI
Depth to water: (-) 56.95 FT.(BTOC) Date and Time: 02/03/2004 @ 1440
Water Column: 13.26 FT. WELL DIAMETER
(x) 0.163 GAL/FT. [(2" DIA.= .163 GAL/FT.) (4" DIA. = .653 GAL/FT.)]
Well Volume: 2.16 GAL. (1" DIA.= .041 GAL/FT.) (1 1/4 " DIA.= .064 GAL/FT.)
Minimum Purge Volume: 6.48 GAL. (x 3 well volumes)
Purge Device: Grundfos pump with 5/16" TFE tubing. Average flow @ 0.26 gal/min
Sample Time 1520
Sample Appearance Clear, no odor

FIELD PARAMETERS

Time	Depth to Water, FT	Purged Vol. (gals)	pH	Cond. µmhos/cm	Temp., °C	DO	ORP	Turbidity	Color / Odor / Comments
1445	57.10								Turn pump on, rate @ 0.26 gal/min
1500	57.20	3.9	6.50	1,361	30.27	3.51	119	8.44	Clear, no odor
1510	57.22	6.5	6.51	1,338	30.10	1.09	129	3.38	Clear, no odor
1520	57.22	9.1	6.50	1,334	30.17	1.02	134	3.09	Began sampling, Clear, no odor
Note: Split sample with EPA.									
Note: Pump set at 69 ft btoc.									

Signed by: **I. Lynch** **02/03/2004**
Date and Time

GROUNDWATER SAMPLING DATA SHEET

CH2M HILL, INC.

Project Number: 183719.FI.ZZ

Client: US Navy
Location: Camp Garcia, RCRA 4
Event: AFWTF Phase I RFI
Date: 02/03/2004
Weather: Hot, sunny, windy

Well ID: RCRA - 4
Sample ID: RCRA-4GW-R01
MS/MSD YES / **NO**
Sample Team: J. Swenfurth
M. Stinnett

Total Depth: 52.59 FT.(BTOC)
Depth to water: (-) 38.62 FT.(BTOC)
Water Column: 13.97 FT.
(x) 0.163 GAL/FT.
Well Volume: 2.28 GAL.
Minimum Purge Volume: 6.84 GAL. (x 3 well volumes)

Measuring Device: Electronic WLI
Date and Time: 02/03/2004 @ 1515

WELL DIAMETER
[(2" DIA.= .163 GAL/FT.) (4" DIA. = .653 GAL/FT.)]
(1" DIA.= .041 GAL/FT.) (1 1/4 " DIA.= .064 GAL/FT.)

Purge Device: Whale pump with 5/16" TFE tubing and 12 volt DC battery. Average flow @ 0.20 gal/min
Sample Time 1630
Sample Appearance Clear, no odor

FIELD PARAMETERS

Time	Depth to Water, FT	Purged Vol. (gals)	pH	Cond. µmhos/cm	Temp., °C	DO	ORP	Turbidity	Color / Odor / Comments
1600									Turn pump on, rate @ 0.20 gal/min
1605	40.65		7.03	1,645	29.53	1.59	145		Clear, no odor
1610	40.80	1.0	7.04	1,644	29.35	1.62	152	3.79	Clear, no odor
1615	40.90	3.0	7.05	1,643	29.40	1.52	155	3.17	Clear, no odor
1620	40.95	5.0	7.07	1,642	29.42	1.52	157	1.32	Clear, no odor
1625	41.00	7.0	7.07	1,641	29.40	1.50	159.00	1.33	Clear, no odor
1630									Began sampling
Note: Split sample with EPA.									

Signed by: **M. Stinnett**

02/03/2004
Date and Time

APPENDIX E

Data Quality Evaluation TM for RCRA-1, 2, 3, and 4

Groundwater Baseline Investigation RCRA Wells 1, 2, 3, and 4, 2004 Data Quality Evaluation (DQE)

TO: Project File/TPA

COPIES: Project Files/GNV

FROM: Mark Stinnett/GNV and Kevin A. Sanders/GNV

DATE: June 7, 2004 and May 9, 2005

Introduction

The purpose of the technical memorandum (TM) is to present the findings of the data quality evaluation (DQE) performed on groundwater samples analyzed as part of the RCRA 2004 sampling of four wells (RCRA 1, RCRA 2, RCRA 3, and RCRA 4) at the former Atlantic Fleet Weapons Training Facility.

The purpose of the data quality evaluation process is to assess the effect of the overall analytical process on the usability of the data. The two major categories of data evaluation are laboratory performance and matrix interferences. Evaluation of laboratory performance is a check for compliance with the method requirements; either the laboratory did, or did not, analyze the samples within the limits of the analytical method. Evaluation of matrix interferences is more subtle and involves the analysis of several areas of results including surrogate spike recoveries, matrix spike recoveries, and duplicate sample results.

The four RCRA well samples were collected from February 3rd through February 4th, 2004. Field QC samples collected included a field duplicate, travel blank (analyzed for VOCs only), and an equipment rinsate blank. The number of each type of sample is listed by analytical method in **Exhibit 1**. The samples were analyzed for the following analytical fractions:

- Volatile organic compounds (VOCs) by SW-846 method 8260B
- Semivolatile organic compounds (SVOCs) by SW-846 method 8270C
- Organochlorine Pesticides and PCB's by SW846 method 8081A and 8082
- Chlorinated Herbicides by SW-846 method 8151
- Dioxins and Furans by SW-846 method 8290
- Total and Amenable Cyanide by SW-846 method 9012
- General chemistry parameters: Sulfide

Before the analytical results were released by the laboratory, both the sample and QC data were carefully reviewed to verify sample identity, instrument calibration, detection limits, dilution factors, numerical computations, accuracy of transcriptions, and chemical interpretations. Additionally, the QC data were reduced and the resulting data were reviewed to ascertain whether they were within the laboratory-defined limits for accuracy and precision. Any non-conforming data were discussed in the data package case narrative. **Exhibit 2** presents the frequency of detection of target analytes for field samples.

The hardcopy data packages were reviewed by the data validation subcontractor applying the review criteria detailed in the Environmental Protection Agency (EPA) guidance document *EPA Region II Checklist*. Areas of review included (when applicable to the method) holding time compliance, calibration verification, blank results, method accuracy as demonstrated by LCSs, field duplicate results, surrogate recoveries, internal standard performance, and interference checks. The EPA Region II data review worksheet was completed for each of these data packages and any non-conformances documented. This data review and validation process is independent of the laboratory's checks and focuses on the usability of the data to support the project data interpretation and decision-making processes.

Data that were not within the acceptance limits were appended with a qualifying flag, which consists of a single or double-letter abbreviation that indicates the nature of the identified non-conformance. Although the qualifying flags are appended to data records during the database query process, they are also included in the final data summary tables deliverable so that the data will not be used indiscriminately. These also include secondary, or the two-digit “sub-qualifier” flags, which are entered into the “DV Notes” field of the database. The secondary qualifiers provide the reasoning behind the assignment of a qualifier to the data. The sub-qualifiers are presented and defined in **Exhibit 3**. The following primary flags were used to qualify the data:

- **U -** Undetected. Analyte was analyzed for but not detected above the method detection limit.
- **UJ -** Detection limit estimated. Analyte was analyzed for, and qualified as not detected. The result is estimated.
- **J -** Estimated. The analyte was present, but the reported value may not be accurate or precise.
- **R -** Rejected. The data are unusable. (NOTE: Analyte/compound may or may not be present.)

Numerical sample results that are greater than the method detection limit (MDL) but less than the laboratory reporting limit (RL) are qualified with a “J” for estimated value.

The entire database was queried for frequency of detection in blanks and samples, detailed listing of blank detects, field duplicate precision, surrogate recoveries, preparation and analysis dates pertaining to holding times. The queries were then manipulated to calculate necessary statistics for evaluation of the data.

Once the data review and validation process was completed, the entire data set were reviewed for analyte frequencies of detection, dilution factors that might affect data usability, and patterns of target analyte distribution. The data set was also evaluated to identify potential data limitations, uncertainties, or both in the analytical results.

Holding Times

The holding times for each parameter were evaluated according to SW-846 requirements. No data were qualified as estimated or rejected due to holding time exceedances.

Calibration

The calibration criteria for the analytical methods used in this sampling event were evaluated for compliance requirements. This evaluation ensures that the laboratory is capable of producing acceptable qualitative and quantitative data for target compounds. Compounds that are flagged for initial or continuing calibration non-conformances are typically attributed to low relative response factors (RRFs) for GCMS methods or high percent differences (%D) or percent relative standard deviation (RSDs). Thirty-nine individual records did not meet the calibration criteria. A subgroup of

25 records were for initial calibration factors (leaving 14 records flagged as attributed to continuing calibration factors).

Exhibit 5 shows 14 continuing calibration records, 5 were flagged as rejected (R). These 5 records were for the compound 4-nitroquinoline-n-oxide, a noted poor performer by method 8270C. All other continuing calibration qualifications were as estimated results (J/UJ).

The 25 records flagged for initial calibration, 15 were flagged as rejected leaving 10 others qualified as an estimated values. These 15 records were comprised of three compounds, acetonitrile, isobutanol, and 1,4-Dioxane from method 8260. These compounds are also noted poor performers and were rejected due low RRF's. The remaining 10 records qualified as estimated (J/UJ) were for the compounds alpha-chlordane and methoxychlor analyzed under method 8081.

Potential Field Sampling and Laboratory Contamination

Four types of blank samples were used to monitor potential contamination introduced during field sampling, sample handling, shipping activities, as well as sample preparation and analysis in the laboratory. Types of blank samples included:

- **Trip Blank (TB)**: A sample of ASTM Type II water that is prepared in the laboratory prior to the sampling event. The water is stored in VOC sample containers and is not opened in the field, and travels back to the laboratory with the other samples for VOC analysis. This blank is used to monitor the potential for sample contamination during the sample container trip. One trip blank should be included in each sample cooler that contained samples for VOC analysis. One trip blank was submitted to the laboratory with these samples.

- **Equipment Rinsate Blank (ERB)**: A sample of the target-free water used for the final rinse during the equipment decontamination process. This blank sample is collected by rinsing the sampling equipment after decontamination and is analyzed for the same analytical parameters as the corresponding samples. This blank is used to monitor potential contamination caused by incomplete equipment decontamination. One equipment rinsate blank should be collected per day of sampling, per type of sampling equipment. One equipment rinsate blank was submitted to the laboratory for this field effort.

- **Laboratory Method Blank or Method Blank (LB or MB)**: A laboratory method blank is ASTM Type II water that is treated as a sample in that it undergoes the same analytical process as the corresponding field samples. Method blanks are used to monitor laboratory performance and contamination introduced during the analytical procedure. One method blank was prepared and analyzed for every twenty samples or per analytical batch, whichever was more frequent. Two laboratory method blanks were analyzed for this field effort

According to the EPA Region II Checklist, concentrations of common organic contaminants detected in samples at less than ten times the concentration of the associated blanks can be attributed to field sampling and laboratory contamination rather than environmental contamination from site activities. Common organic contaminants include acetone, methylene chloride, 2-butanone, and the phthalates. For other inorganic and organic contaminants, five times the concentration detected in the associated blanks (rather than ten times rule) is used to qualify results as potential field and/or laboratory contamination rather than environmental contamination. Detects in the samples at levels less than the action levels (5 or 10 times rule) would be qualified as not detected.

Analytical values reported at or near the method detection limit could be a Type I error associated with instrument noise and the lack of precision and accuracy at this level. Type I (or alpha error) occurs when the value reported is dismissed as a biased high, a false positive result.

A comprehensive list of all detects in each blank sample is provided in **Exhibit 4.** Additionally, **Exhibit 5** list all changes in qualifiers due to data validation and blank contamination.

One semivolatile compound, bis (2-Ethylhexyl) phthalate (BEHP) was detected in a single blank sample. Phthalates are used as plasticizers and the most common phthalate is bis (2-Ethylhexyl) phthalate (BEHP). Phthalates are often introduced into samples during handling. Gloves are often used when handling sampling equipment such as pumps, hoses, split spoons, dredges and bailers. Additionally, laboratory chemists use gloves when handling samples and extracts. Gloves are coated with plasticizers such as BEHP to facilitate release of the gloves from the skin. **Exhibit 4** indicated this phthalate was detected in 1 equipment rinsate blank. Two field sample results were qualified as non-detects for bis (2-Ethylhexyl) phthalate due to blank contamination.

As indicated in **Exhibit 4**, five compounds and/or analytes were detected in various analytical fractions but only two field samples were qualified for blank contamination as previously discussed. No data were rejected due to gross contamination.

Matrix Effects

Surrogate Spike Recovery

Surrogate spike compounds were added to every sample analyzed for the organic parameters including field and laboratory blanks as well as field environmental samples. Surrogate spikes consist of organic compounds which are similar to the method targets in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.

Surrogate spike recoveries were used to monitor both laboratory performance and matrix interferences. Surrogate spike recoveries from field and laboratory blanks were used to evaluate laboratory performance because the blanks should represent an "ideal" sample matrix. Surrogate spike recoveries for field samples were used to evaluate the potential for matrix interferences. Volatile data are qualified with respect to surrogate recoveries when one or more volatile surrogates are out of specifications. Semivolatiles are not qualified unless two or more surrogates, within the same fraction (base/neutral or acid fraction) are out of specification.

All reported surrogate spike recoveries for field and QC samples are presented by each analytical fraction in **Exhibit 6**. **Exhibit 5** indicated that one semi-volatile (method 8270) sample was qualified as “estimated” due to surrogate recoveries outside laboratory control limits. No samples were rejected due to low surrogate recoveries.

These statistics indicate that the specific sample matrix of this sampling event did not greatly influence the analytical process or the final numerical sample result.

Field Duplicate Sample Results

A duplicate field samples was collected and submitted to the laboratory for analysis. Both the native and duplicate samples was analyzed for the same parameters. Field duplicate analyses measure both field and laboratory precision and can also be affected by the homogeneity of the samples and can help indicate sample matrix heterogeneity. Therefore the results may have more variability than laboratory duplicates, which measure only laboratory performance. Duplicate samples are not spiked; therefore, evaluation of duplicate sample results are not qualified based on duplicate sample results; instead, the information is used to support the overall assessment of precision.

An aqueous control limit of ± 20% for the RPD was used for original and duplicate sample values greater than or equal to five times the RL. A control limit of ± the RL was used if either the sample for the duplicate value was less than five times the RL for a water matrix. In cases where only one

result is above the five times the RL level and the other is below, the ± RL criteria were applied. **Exhibit 7** includes a summary of the field duplicate measurements and their associated precision statistics.

One set of field duplicates per method were collected during this field effort. Overall, the data reflects that all of the precision data were within defined method control limits. This indicates that the sample matrix heterogeneity and sampling technique did not influence the final numerical results.

Laboratory Method Accuracy

Laboratory control samples (LCSs) or blank spikes (BSs) are quality control samples utilized to monitor laboratory method performance. These samples consist of deionized (DI) laboratory water spiked with the target compounds of interest. Exhibit 8 presents the LCS accuracy and LCSD precision statistics. Exhibit 5 indicates that a total of 16 records were qualified as rejected. A single organochlorine pesticide (toxaphene) result and 15 semi-volatile records were rejected. The semi-volatile data show that three analytes, isosafrole, alpha, alpha-Dimethylphenethylamine, and 1,4-Naphthoquinone, were qualified as rejected in 5 field samples. The rejected data attributed to blank spike recoveries outside criteria represent 1.5 % (16/1067) of the total sample measurements.

Sample Results for Measurements Near the Method Detection Limit (MDL)

The MDL is defined as the minimum concentration of an analyte that can be identified, measured, and reported with 99% confidence that the analyte concentration is greater than zero. Sample results at, or near the MDL are not accurate or precise. This situation is often caused by instrument noise or low-level background shifts rather than a true analyte signal. As concentrations approach a "quantitation limit", the confidence in the values increase.

PARCCs

Precision--is defined as the agreement between duplicate results, and was estimated by comparing duplicate matrix spike recoveries and field duplicate sample results.

Accuracy--is a measure of the agreement between an experimental determination and the true value of the parameter being measured. For the organic analyses, each of the samples was spiked with a surrogate compound; and for organic and inorganic analyses a LCS/LCSD were spiked with a known reference material before preparation. The LCS/LCSD results indicated the data precision and accuracy of the method. The LCS/LSCD data indicated the laboratory analytical method were within control during the analysis of the samples. The LCS/LCSD spike recoveries with the noted exceptions were within the method acceptance limits.

Representativeness--this criteria is a qualitative measure of the degree to which sample data accurately and precisely represent a characteristic environmental condition. Representativeness is a subjective parameter and is used to evaluate the efficacy of the sampling plan design. Representativeness was demonstrated by providing full descriptions in the project scoping documents of the sampling techniques and the rationale used for selecting sampling locations.

Completeness--is defined as the percentage of measurements that are judged to be valid compared to the total number of measurements made. The percent completeness for all analytical fractions was **97% (1031/1067)**. A goal of 90 percent usable data was established for the project.

Comparability--is another qualitative measure designed to express the confidence with which one data set may be compared to another. Factors that affect comparability are sample collection and handling techniques, sample matrix type, and analytical method. Comparability is defined by the other PARCC parameters because data sets can be compared with confidence when precision and

accuracy are known. Data from this investigation are comparable with other data collected at the site because only EPA methods were used to analyze the sample and EPA Level III QC data are available to support the quality of the data.

Summary and Conclusions

Conclusions of the data quality evaluation process include:

- The laboratory analyzed the samples according to the EPA methods stated in the work plan as demonstrated by the deliverable summaries and analytical run sequences.
- Field duplicate results indicate good field sampling precision and homogeneity of the sample matrix.
- Sample results for target organic compounds above the MDL but less than the RL should be considered as uncertain but indicative of the presence of that compound at an estimated concentration.
- Spike and surrogate recoveries indicate that the specific sample matrix did not significantly interfere with the analytical process or the final numerical result.
- The LSC/LSCD accuracy and precision results with the noted exceptions indicate that the analytical methods were in control within the laboratory.
- Concentrations of bis (2-Ethylhexyl) phthalate found in an equipment rinsate blank should be considered as laboratory and/or field contamination instead due to environmental activities.

All project objectives or PARCCs were met, and the data can be used in the project decision-making process as qualified by the data quality evaluation process.

Exhibit 1- Number of Samples per Analytical Method

Matrix	Analytical Method	Analytical Method Description	Preparation Method	N	FD	EB	TB	LB	BS	BD	LR (RE)
WG	E376.1	Sulfide, Titrimetric, Iodine	NONE	3	1	1		2	1	1	
WG	SW8081A	Organochlorine Pesticides and PCBs as Aroclors by GC: Capillary Column Technique	SW3510	4	1	1		2	5	1	
WG	SW8082	Polychlorinated Biphenyls (PCBs)	SW3510	4	1	1		2	2	2	
WG	SW8151	Chlorinated Herbicides by GC Capillary Column Technique	SW3510	4	1	1		2	2	2	
WG	SW8260B	Volatile Organic Compounds by Gas Chromatgraph/Mass Spectrometry (GC/MS)	SW5030	4	1	1	1	2	2	2	
WG	SW8270C	GC/MS for Semivolatile Organics (Capillary Column Technique)	SW3510	4	1	1		3	3	3	1
WG	SW8290	Polychlorinated Dibenzodioxins (PCDDs) & Polychlorinated Furans	METHOD	3	1	1		1	1		
WG	SW9012A	Total and Amendable Cyanide (Colorimetric, Automated technique)	METHOD	3	1	1		1	1	1	

Exhibit 2 - Frequency of Detection in Field Samples

Matrix	Analytical Method	Preparation Method	Parameter	Number Analyzed	Number Detected	Minimum Detected	Maximum Detected	Minimum Reporting Limit	Maximum Reporting Limit	Minimum Detection Limit	Maximum Detection Limit	Units
WG	E376.1	NONE	Sulfide	4	4	1520	1920	2000	2000	80	80	µg/L
WG	SW9012	METHOD	cyanide	4	1	6.590000153	6.590000153	10	10	3.730000019	3.730000019	µg/L
WG	SW8260B	SW5030	Bromodichloromethane	5	1	0.519999981	0.519999981	1	1	0.189999998	0.189999998	µg/L
WG	SW8260B	SW5030	Chloroform	5	1	4.699999809	4.699999809	1	1	0.150000006	0.150000006	µg/L

Exhibit 3 - Secondary Data Validation Sub-Qualifiers and Their Definitions

Code	Definition
TN	Tune
BS	Blank Spike/LCS
IS	Internal Standard
MS	Matrix Spike and/or Matrix Spike Duplicate Recovery
MD	Matrix Spike/Matrix Spike Duplicate Precision
2S	Second Source
SD	Serial Dilution
SS	Spiked Surrogate
LR	Lab Re-extraction or Re-Analysis
IC	Initial Calibration
CC	Continuing Calibration Verification
PD	Pesticide Degradation
LD	Lab Duplicate
2C	Second Column (Confirmation)
HT	Holding Time
TD	Dissolved Concentration Greater Than the Total
PS	Post Spike
BL	Blank
RE	Re-extraction
DL	Dilution
IB	In Between MDL and RL
FD	Field Duplicate
OT	Other (Defined in DV Worksheet)
Order of Qualifiers is in Order of Importance, Impact on the Data	

Exhibit 4 - Target Compounds Found in Blank Samples

Matrix	Sample ID	Sample Type	Native Sample ID	Native Sample Type	Analytical Method	Preparation Method	Leach Method	Parameter	Lab Result	Lab Qual	Lab Conc Qual	Detection Limit	Reporting Limit	Units
WQ	RCRAGWTB01-04	TB	RCRAGWTB01-04	TB	SW8260B	SW5030	NONE	Toluene	0.2	J	J	0.19	10	µg/L
WQ	CGGWEB001-04	EB	CGGWEB001-04	EB	E376.1	NONE	NONE	Sulfide	1120	B	J	80	2000	µg/L
WQ	CGGWEB001-04	EB	CGGWEB001-04	EB	SW8260B	SW5030	NONE	Acetone	11.8	=	=	1.9	10	µg/L
WQ	CGGWEB001-04	EB	CGGWEB001-04	EB	SW8260B	SW5030	NONE	Methyl ethyl ketone	6.5	J	J	0.81	10	µg/L
WQ	CGGWEB001-04	EB	CGGWEB001-04	EB	SW8270C	SW3510	NONE	bis(2-Ethylhexyl) phthalate	4.7	J	J	4.4	10.1	µg/L

Matrix	Sample ID	Sample Type	LR Type	Analytical Method	Preparation Method	Parameter	Lab Result	Lab Qual	Lab Conc Qual	Final Result	Final Qual	Final Conc Qual	Detection Limit	Reporting Limit	Units	Validation Notes
WG	RCRA-2GW-R01	N		SW8081	SW3510	methoxychlor	0.51	U	U	0.51	UJ	U	0.0030	0.51	µg/L	IC
WG	RCRA-2GW-R01	N		SW8081	SW3510	alpha-chlordane	0.051	U	U	0.051	UJ	U	0.0022	0.051	µg/L	IC
WG	RCRA-3GW-R01	N		SW8081	SW3510	alpha-chlordane	0.051	U	U	0.051	UJ	U	0.0022	0.051	µg/L	IC
WG	RCRA-3GW-R01	N		SW8081	SW3510	methoxychlor	0.51	U	U	0.51	UJ	U	0.0031	0.51	µg/L	IC
WG	RCRA-4GW-R01	N		SW8081	SW3510	methoxychlor	0.51	U	U	0.51	UJ	U	0.0030	0.51	µg/L	IC
WG	RCRA-4GW-R01	N		SW8081	SW3510	alpha-chlordane	0.051	U	U	0.051	UJ	U	0.0022	0.051	µg/L	IC
WG	RCRAFD01P-R01	FD		SW8081	SW3510	alpha-chlordane	0.051	U	U	0.051	UJ	U	0.0022	0.051	µg/L	IC
WG	RCRAFD01P-R01	FD		SW8081	SW3510	methoxychlor	0.51	U	U	0.51	UJ	U	0.0030	0.51	µg/L	IC
WG	RCRA-1GW-R01	N		SW8081	SW3510	methoxychlor	0.54	U	U	0.54	UJ	U	0.0033	0.54	µg/L	IC
WG	RCRA-1GW-R01	N		SW8081	SW3510	alpha-chlordane	0.054	U	U	0.054	UJ	U	0.0024	0.054	µg/L	IC
WG	RCRA-1GW-R01	N		SW8081	SW3510	toxaphene	5.4	U	U	5.4	R	U	0.0340	5.4	µg/L	BS
WG	RCRA-2GW-R01	N		SW8270C	SW3510	1,3,5-trinitrobenzene	10.1	U	U	10.1	UJ	U	2.8000	10.1	µg/L	CC
WG	RCRA-2GW-R01	N		SW8270C	SW3510	1,4-naphthoquinone	10.1	U	U	10.1	R	U	3.1000	10.1	µg/L	BS
WG	RCRA-2GW-R01	N		SW8270C	SW3510	alpha, alpha-Dimethylphenethylamine	10.1	U	U	10.1	R	U	3.9000	10.1	µg/L	BS
WG	RCRA-2GW-R01	N		SW8270C	SW3510	isosafrole	10.1	U	U	10.1	R	U	2.6000	10.1	µg/L	BS
WG	RCRA-2GW-R01	N		SW8270C	SW3510	2,4-Dinitrophenol	50.5	U	U	50.5	UJ	U	5.6000	50.5	µg/L	CC
WG	RCRA-2GW-R01	N		SW8270C	SW3510	4-nitroquinoline-n-oxide	10.1	U	U	10.1	R	U	3.7000	10.1	µg/L	CC
WG	RCRA-3GW-R01	N		SW8270C	SW3510	2,4-Dinitrophenol	50.5	U	U	50.5	UJ	U	5.6000	50.5	µg/L	CC
WG	RCRA-3GW-R01	N		SW8270C	SW3510	isosafrole	10.1	U	U	10.1	R	U	2.6000	10.1	µg/L	BS
WG	RCRA-3GW-R01	N		SW8270C	SW3510	alpha, alpha-Dimethylphenethylamine	10.1	U	U	10.1	R	U	3.9000	10.1	µg/L	BS
WG	RCRA-3GW-R01	N		SW8270C	SW3510	1,4-naphthoquinone	10.1	U	U	10.1	R	U	3.1000	10.1	µg/L	BS
WG	RCRA-3GW-R01	N		SW8270C	SW3510	1,3,5-trinitrobenzene	10.1	U	U	10.1	UJ	U	2.8000	10.1	µg/L	CC
WG	RCRA-3GW-R01	N		SW8270C	SW3510	4-nitroquinoline-n-oxide	10.1	U	U	10.1	R	U	3.7000	10.1	µg/L	CC
WG	RCRA-4GW-R01	N		SW8270C	SW3510	alpha, alpha-Dimethylphenethylamine	10.1	U	U	10.1	R	U	3.9000	10.1	µg/L	BS
WG	RCRA-4GW-R01	N		SW8270C	SW3510	1,4-naphthoquinone	10.1	U	U	10.1	R	U	3.1000	10.1	µg/L	BS
WG	RCRA-4GW-R01	N		SW8270C	SW3510	4-nitroquinoline-n-oxide	10.1	U	U	10.1	R	U	3.7000	10.1	µg/L	CC
WG	RCRA-4GW-R01	N		SW8270C	SW3510	isosafrole	10.1	U	U	10.1	R	U	2.6000	10.1	µg/L	BS
WG	RCRA-4GW-R01	N		SW8270C	SW3510	2,4-Dinitrophenol	50.5	U	U	50.5	UJ	U	5.6000	50.5	µg/L	CC
WG	RCRA-4GW-R01	N		SW8270C	SW3510	bis(2-Ethylhexyl) phthalate	6.1	J	J	10.1	U	U	4.4000	10.1	µg/L	BL
WG	RCRA-4GW-R01	N		SW8270C	SW3510	1,3,5-trinitrobenzene	10.1	U	U	10.1	UJ	U	2.8000	10.1	µg/L	CC
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	Isophorone	10.1	U	U	10.1	UJ	U	3.8000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	isosafrole	10.1	U	U	10.1	R	U	2.6000	10.1	µg/L	BS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	kepone	10.1	U	U	10.1	UJ	U	3.1000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	3-methylcholanthrene	10.1	U	U	10.1	UJ	U	2.2000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	methyl methanesulfonate	10.1	U	U	10.1	UJ	U	1.9000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	2-Methylnaphthalene	10.1	U	U	10.1	UJ	U	2.8000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	Hexachloroethane	10.1	U	U	10.1	UJ	U	2.6000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	methapyrilene	10.1	U	U	10.1	UJ	U	3.7000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	Naphthalene	10.1	U	U	10.1	UJ	U	2.8000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	1,4-naphthoquinone	10.1	U	U	10.1	R	U	3.1000	10.1	µg/L	BS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	alpha, alpha-Dimethylphenethylamine	10.1	U	U	10.1	R	U	3.9000	10.1	µg/L	BS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	isodrin	5.2	U	U	5.2	UJ	U	2.6000	5.2	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	hexachloropropene	10.1	U	U	10.1	UJ	U	2.0000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	Phenanthrene	10.1	U	U	10.1	UJ	U	2.8000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	Hexachlorobenzene	10.1	U	U	10.1	UJ	U	2.6000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	Hexachlorocyclopentadiene	10.1	U	U	10.1	UJ	U	2.2000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	Hexachlorobutadiene	10.1	U	U	10.1	UJ	U	2.5000	10.1	µg/L	SS

Matrix	Sample ID	Sample Type	LR Type	Analytical Method	Preparation Method	Parameter	Lab Result	Lab Qual	Lab Conc Qual	Final Result	Final Qual	Final Conc Qual	Detection Limit	Reporting Limit	Units	Validation Notes
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	Fluoranthene	10.1	U	U	10.1	UJ	U	2.8000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	Fluorene	10.1	U	U	10.1	UJ	U	2.9000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	ethyl methanesulfonate	10.1	U	U	10.1	UJ	U	2.5000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	2,6-Dinitrotoluene	10.1	U	U	10.1	UJ	U	2.8000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	Indeno(1,2,3-c,d)pyrene	10.1	U	U	10.1	UJ	U	2.6000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	Nitrobenzene	10.1	U	U	10.1	UJ	U	2.8000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	o-toluidine	10.1	U	U	10.1	UJ	U	2.7000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	1,2,4-Trichlorobenzene	10.1	U	U	10.1	UJ	U	2.6000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	safrole	10.1	U	U	10.1	UJ	U	2.5000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	Pyrene	10.1	U	U	10.1	UJ	U	2.9000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	2-picoline (alpha-picoline)	10.1	U	U	10.1	UJ	U	1.5000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	phenacetin	10.1	U	U	10.1	UJ	U	2.7000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	Dibenz(a,h)anthracene	10.1	U	U	10.1	UJ	U	2.7000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	pentachloronitrobenzene	10.1	U	U	10.1	UJ	U	2.4000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	2,4-Dinitrotoluene	10.1	U	U	10.1	UJ	U	2.8000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	pentachlorobenzene	10.1	U	U	10.1	UJ	U	2.2000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	pentachloroethane	10.1	U	U	10.1	UJ	U	2.5000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	n-nitrosodiethylamine	10.1	U	U	10.1	UJ	U	3.1000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	4-Nitroaniline	50.5	U	U	50.5	UJ	U	2.8000	50.5	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	3-Nitroaniline	50.5	U	U	50.5	UJ	U	2.8000	50.5	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	2-Nitroaniline	50.5	U	U	50.5	UJ	U	3.0000	50.5	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	n-nitrosopyrrolidine	10.1	U	U	10.1	UJ	U	2.7000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	n-Nitrosodi-n-propylamine	10.1	U	U	10.1	UJ	U	3.0000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	n-nitrosopiperidine	10.1	U	U	10.1	UJ	U	2.8000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	n-Nitrosodiphenylamine	10.1	U	U	10.1	UJ	U	3.4000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	n-nitrosomorpholine	10.1	U	U	10.1	UJ	U	3.0000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	nitrosomethylethylamine	10.1	U	U	10.1	UJ	U	2.7000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	n-nitrosodimethylamine	10.1	U	U	10.1	UJ	U	2.2000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	p-dimethylaminoazobenzene	10.1	U	U	10.1	UJ	U	2.5000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	Anthracene	10.1	U	U	10.1	UJ	U	2.8000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	3,3'-Dichlorobenzidine	20.2	U	U	20.2	UJ	U	2.7000	20.2	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	Benzo(b)fluoranthene	10.1	U	U	10.1	UJ	U	2.6000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	Benzo(a)pyrene	10.1	U	U	10.1	UJ	U	2.8000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	Benzo(a)anthracene	10.1	U	U	10.1	UJ	U	2.6000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	4-Bromophenyl phenyl ether	10.1	U	U	10.1	UJ	U	2.3000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	bis(2-Ethylhexyl) phthalate	10.1	U	U	10.1	UJ	U	4.4000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	bis(2-Chloroisopropyl) ether	10.1	U	U	10.1	UJ	U	3.3000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	bis(2-Chloroethyl) ether	10.1	U	U	10.1	UJ	U	3.0000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	Bis(2-Chloroethoxy) methane	10.1	U	U	10.1	UJ	U	3.5000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	Benzo(k)fluoranthene	10.1	U	U	10.1	UJ	U	2.9000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	Aramite	10.1	U	U	10.1	UJ	U	2.5000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	Benzyl alcohol	10.1	U	U	10.1	UJ	U	3.1000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	p-phenylenediamine	10.1	U	U	10.1	UJ	U	2.7000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	Aniline (phenylamine, aminobenzene)	10.1	U	U	10.1	UJ	U	2.8000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	2-aminonaphthalene	10.1	U	U	10.1	UJ	U	2.5000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	1-naphthylamine	10.1	U	U	10.1	UJ	U	1.8000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	4-aminobiphenyl (4-biphenylamine)	10.1	U	U	10.1	UJ	U	2.2000	10.1	µg/L	SS

Matrix	Sample ID	Sample Type	LR Type	Analytical Method	Preparation Method	Parameter	Lab Result	Lab Qual	Lab Conc Qual	Final Result	Final Qual	Final Conc Qual	Detection Limit	Reporting Limit	Units	Validation Notes
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	Acetophenone	10.1	U	U	10.1	UJ	U	0.6700	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	Acenaphthylene	10.1	U	U	10.1	UJ	U	3.0000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	Acenaphthene	10.1	U	U	10.1	UJ	U	2.8000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	2-acetylaminofluorene	10.1	U	U	10.1	UJ	U	2.5000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	4-nitroquinoline-n-oxide	10.1	U	U	10.1	R	U	3.7000	10.1	µg/L	CC
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	Benzyl butyl phthalate	10.1	U	U	10.1	UJ	U	3.0000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	1,2-Dichlorobenzene	10.1	U	U	10.1	UJ	U	2.6000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	Di-n-octylphthalate	10.1	U	U	10.1	UJ	U	2.8000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	Di-n-butyl phthalate	10.1	U	U	10.1	UJ	U	2.9000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	1,3-dinitrobenzene	10.1	U	U	10.1	UJ	U	2.5000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	Dimethyl phthalate	10.1	U	U	10.1	UJ	U	3.0000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	3,3'-dimethylbenzidine	10.1	U	U	10.1	UJ	U	6.0000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	7,12-dimethylbenz(a)anthracene	10.1	U	U	10.1	UJ	U	2.5000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	diallate	10.1	U	U	10.1	UJ	U	2.6000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	Diethyl phthalate	10.1	U	U	10.1	UJ	U	2.8000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	Benzo(g,h,i)perylene	10.1	U	U	10.1	UJ	U	2.6000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	1,3-Dichlorobenzene	10.1	U	U	10.1	UJ	U	2.7000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	2,4-Dinitrophenol	50.5	U	U	50.5	UJ	U	5.6000	50.5	µg/L	CC
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	5-nitro-o-toluidine	10.1	U	U	10.1	UJ	U	2.6000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	Dibenzofuran	10.1	U	U	10.1	UJ	U	2.7000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	pyridine	10.1	U	U	10.1	UJ	U	2.1000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	4-Chlorophenyl phenyl ether	10.1	U	U	10.1	UJ	U	2.5000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	2-Chloronaphthalene	10.1	U	U	10.1	UJ	U	2.8000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	chlorobenzilate	10.1	U	U	10.1	UJ	U	2.5000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	4-Chloroaniline	10.1	U	U	10.1	UJ	U	3.0000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	Chrysene	10.1	U	U	10.1	UJ	U	2.9000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	Carbazole	10.1	U	U	10.1	UJ	U	3.1000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	1,2,4,5-tetrachlorobenzene	10.1	U	U	10.1	UJ	U	2.2000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	1,4-Dichlorobenzene	10.1	U	U	10.1	UJ	U	2.7000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	1,3,5-trinitrobenzene	10.1	U	U	10.1	UJ	U	2.8000	10.1	µg/L	SS
WG	RCRAFD01P-R01	FD		SW8270C	SW3510	pronamide	10.1	U	U	10.1	UJ	U	1.8000	10.1	µg/L	SS
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	2-Methylphenol (o-Cresol)	10.1	U	U	10.1	R	U	2.6000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	n-Nitrosodiphenylamine	10.1	U	U	10.1	R	U	3.4000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	n-nitrosomorpholine	10.1	U	U	10.1	R	U	3.0000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	nitrosomethylethylamine	10.1	U	U	10.1	R	U	2.7000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	n-nitrosodimethylamine	10.1	U	U	10.1	R	U	2.2000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	n-nitrosodiethylamine	10.1	U	U	10.1	R	U	3.1000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	n-nitroso-di-n-butylamine	10.1	U	U	10.1	R	U	2.7000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	1,4-naphthoquinone	10.1	U	U	10.1	R	U	3.1000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	Naphthalene	10.1	U	U	10.1	R	U	2.8000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	methapyrilene	10.1	U	U	10.1	R	U	3.7000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	2-Methylnaphthalene	10.1	U	U	10.1	R	U	2.8000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	alpha, alpha-Dimethylphenethylamine	10.1	U	U	10.1	R	U	3.9000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	Fluorene	10.1	U	U	10.1	R	U	2.9000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	4-Methylphenol (p-Cresol)	10.1	U	U	10.1	R	U	6.2000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	n-nitrosopyrrolidine	10.1	U	U	10.1	R	U	2.7000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	3-methylcholanthrene	10.1	U	U	10.1	R	U	2.2000	10.1	µg/L	DL

Matrix	Sample ID	Sample Type	LR Type	Analytical Method	Preparation Method	Parameter	Lab Result	Lab Qual	Lab Conc Qual	Final Result	Final Qual	Final Conc Qual	Detection Limit	Reporting Limit	Units	Validation Notes
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	isosafrole	10.1	U	U	10.1	R	U	2.6000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	isodrin	5.2	U	U	5.2	R	U	2.6000	5.2	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	Indeno(1,2,3-c,d)pyrene	10.1	U	U	10.1	R	U	2.6000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	hexachloropropene	10.1	U	U	10.1	R	U	2.0000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	Hexachloroethane	10.1	U	U	10.1	R	U	2.6000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	Hexachlorobenzene	10.1	U	U	10.1	R	U	2.6000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	Hexachlorocyclopentadiene	10.1	U	U	10.1	R	U	2.2000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	Hexachlorobutadiene	10.1	U	U	10.1	R	U	2.5000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	Fluoranthene	10.1	U	U	10.1	R	U	2.8000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	methyl methanesulfonate	10.1	U	U	10.1	R	U	1.9000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	Phenanthrene	10.1	U	U	10.1	R	U	2.8000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	1,3,5-trinitrobenzene	10.1	U	U	10.1	R	U	2.8000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	5-nitro-o-toluidine	10.1	U	U	10.1	R	U	2.6000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	o-toluidine	10.1	U	U	10.1	R	U	2.7000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	2,4,6-Trichlorophenol	10.1	U	U	10.1	R	U	3.6000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	2,4,5-Trichlorophenol	50.5	U	U	50.5	R	U	3.4000	50.5	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	2,3,4,6-tetrachlorophenol	10.1	U	U	10.1	R	U	3.0000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	1,2,4-Trichlorobenzene	10.1	U	U	10.1	R	U	2.6000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	safrole	10.1	U	U	10.1	R	U	2.5000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	pyridine	10.1	U	U	10.1	R	U	2.1000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	Pyrene	10.1	U	U	10.1	R	U	2.9000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	pronamide	10.1	U	U	10.1	R	U	1.8000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	2-picoline (alpha-picoline)	10.1	U	U	10.1	R	U	1.5000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	n-nitrosopiperidine	10.1	U	U	10.1	R	U	2.8000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	Phenol	10.1	U	U	10.1	R	U	1.7000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	n-Nitrosodi-n-propylamine	10.1	U	U	10.1	R	U	3.0000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	pentachloronitrobenzene	10.1	U	U	10.1	R	U	2.4000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	pentachlorobenzene	10.1	U	U	10.1	R	U	2.2000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	p-dimethylaminoazobenzene	10.1	U	U	10.1	R	U	2.5000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	Pentachlorophenol	50.5	U	U	50.5	R	U	2.6000	50.5	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	pentachloroethane	10.1	U	U	10.1	R	U	2.5000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	4-Nitrophenol	50.5	U	U	50.5	R	U	2.9000	50.5	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	2-Nitrophenol	10.1	U	U	10.1	R	U	3.4000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	Nitrobenzene	10.1	U	U	10.1	R	U	2.8000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	4-Nitroaniline	50.5	U	U	50.5	R	U	2.8000	50.5	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	3-Nitroaniline	50.5	U	U	50.5	R	U	2.8000	50.5	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	2-Nitroaniline	50.5	U	U	50.5	R	U	3.0000	50.5	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	Isophorone	10.1	U	U	10.1	R	U	3.8000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	phenacetin	10.1	U	U	10.1	R	U	2.7000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	Benzyl butyl phthalate	10.1	U	U	10.1	R	U	3.0000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	4-Chloro-3-methylphenol	10.1	U	U	10.1	R	U	2.7000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	1,2,4,5-tetrachlorobenzene	10.1	U	U	10.1	R	U	2.2000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	Benzyl alcohol	10.1	U	U	10.1	R	U	3.1000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	Benzo(k)fluoranthene	10.1	U	U	10.1	R	U	2.9000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	Benzo(g,h,i)perylene	10.1	U	U	10.1	R	U	2.6000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	Benzo(b)fluoranthene	10.1	U	U	10.1	R	U	2.6000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	bis(2-Ethylhexyl) phthalate	10.1	U	U	10.1	R	U	4.4000	10.1	µg/L	DL

Matrix	Sample ID	Sample Type	LR Type	Analytical Method	Preparation Method	Parameter	Lab Result	Lab Qual	Lab Conc Qual	Final Result	Final Qual	Final Conc Qual	Detection Limit	Reporting Limit	Units	Validation Notes
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	Benzo(a)anthracene	10.1	U	U	10.1	R	U	2.6000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	ethyl methanesulfonate	10.1	U	U	10.1	R	U	2.5000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	kepone	10.1	U	U	10.1	R	U	3.1000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	bis(2-Chloroisopropyl) ether	10.1	U	U	10.1	R	U	3.3000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	Carbazole	10.1	U	U	10.1	R	U	3.1000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	Bis(2-Chloroethoxy) methane	10.1	U	U	10.1	R	U	3.5000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	Benzo(a)pyrene	10.1	U	U	10.1	R	U	2.8000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	Aramite	10.1	U	U	10.1	R	U	2.5000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	Anthracene	10.1	U	U	10.1	R	U	2.8000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	p-phenylenediamine	10.1	U	U	10.1	R	U	2.7000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	Aniline (phenylamine, aminobenzene)	10.1	U	U	10.1	R	U	2.8000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	2-aminonaphthalene	10.1	U	U	10.1	R	U	2.5000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	1-naphthylamine	10.1	U	U	10.1	R	U	1.8000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	4-aminobiphenyl (4-biphenylamine)	10.1	U	U	10.1	R	U	2.2000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	Acetophenone	10.1	U	U	10.1	R	U	0.6700	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	Acenaphthylene	10.1	U	U	10.1	R	U	3.0000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	Acenaphthene	10.1	U	U	10.1	R	U	2.8000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	2-acetylaminofluorene	10.1	U	U	10.1	R	U	2.5000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	4-nitroquinoline-n-oxide	10.1	U	U	10.1	R	U	3.7000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	bis(2-Chloroethyl) ether	10.1	U	U	10.1	R	U	3.0000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	4,6-Dinitro-2-methylphenol	50.5	U	U	50.5	R	U	3.3000	50.5	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	Diethyl phthalate	10.1	U	U	10.1	R	U	2.8000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	diallate	10.1	U	U	10.1	R	U	2.6000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	7,12-dimethylbenz(a)anthracene	10.1	U	U	10.1	R	U	2.5000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	3,3'-dimethylbenzidine	10.1	U	U	10.1	R	U	6.0000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	Chrysene	10.1	U	U	10.1	R	U	2.9000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	2,6-dichlorophenol	10.1	U	U	10.1	R	U	3.5000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	4-Bromophenyl phenyl ether	10.1	U	U	10.1	R	U	2.3000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	2,4-Dimethylphenol	10.1	U	U	10.1	R	U	2.3000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	1,3-dinitrobenzene	10.1	U	U	10.1	R	U	2.5000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	Di-n-butyl phthalate	10.1	U	U	10.1	R	U	2.9000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	Di-n-octylphthalate	10.1	U	U	10.1	R	U	2.8000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	2,4-Dinitrophenol	50.5	U	U	50.5	R	U	5.6000	50.5	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	2,4-Dinitrotoluene	10.1	U	U	10.1	R	U	2.8000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	2,6-Dinitrotoluene	10.1	U	U	10.1	R	U	2.8000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	Dimethyl phthalate	10.1	U	U	10.1	R	U	3.0000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	2-Chloronaphthalene	10.1	U	U	10.1	R	U	2.8000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	4-Chloroaniline	10.1	U	U	10.1	R	U	3.0000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	chlorobenzilate	10.1	U	U	10.1	R	U	2.5000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	2-Chlorophenol	10.1	U	U	10.1	R	U	2.9000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	2,4-Dichlorophenol	10.1	U	U	10.1	R	U	3.1000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	4-Chlorophenyl phenyl ether	10.1	U	U	10.1	R	U	2.5000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	Dibenz(a,h)anthracene	10.1	U	U	10.1	R	U	2.7000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	Dibenzofuran	10.1	U	U	10.1	R	U	2.7000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	1,4-Dichlorobenzene	10.1	U	U	10.1	R	U	2.7000	10.1	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	3,3'-Dichlorobenzidine	20.2	U	U	20.2	R	U	2.7000	20.2	µg/L	DL
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	1,2-Dichlorobenzene	10.1	U	U	10.1	R	U	2.6000	10.1	µg/L	DL

Matrix	Sample ID	Sample Type	LR Type	Analytical Method	Preparation Method	Parameter	Lab Result	Lab Qual	Lab Conc Qual	Final Result	Final Qual	Final Conc Qual	Detection Limit	Reporting Limit	Units	Validation Notes
WG	RCRAFD01P-R01RE1	LR	RE	SW8270C	SW3510	1,3-Dichlorobenzene	10.1	U	U	10.1	R	U	2.7000	10.1	µg/L	DL
WG	RCRA-1GW-R01	N		SW8270C	SW3510	2,4-Dinitrophenol	50.5	U	U	50.5	UJ	U	5.6000	50.5	µg/L	CC
WG	RCRA-1GW-R01	N		SW8270C	SW3510	isosafrole	10.1	U	U	10.1	R	U	2.6000	10.1	µg/L	BS
WG	RCRA-1GW-R01	N		SW8270C	SW3510	1,4-naphthoquinone	10.1	U	U	10.1	R	U	3.1000	10.1	µg/L	BS
WG	RCRA-1GW-R01	N		SW8270C	SW3510	bis(2-Ethylhexyl) phthalate	5	J	J	10.1	U	U	4.4000	10.1	µg/L	BL
WG	RCRA-1GW-R01	N		SW8270C	SW3510	4-nitroquinoline-n-oxide	10.1	U	U	10.1	R	U	3.7000	10.1	µg/L	CC
WG	RCRA-1GW-R01	N		SW8270C	SW3510	alpha, alpha-Dimethylphenethylamine	10.1	U	U	10.1	R	U	3.9000	10.1	µg/L	BS
WG	RCRA-1GW-R01	N		SW8270C	SW3510	1,3,5-trinitrobenzene	10.1	U	U	10.1	UJ	U	2.8000	10.1	µg/L	CC
WG	RCRA-2GW-R01	N		SW8260B	SW5030	Acetonitrile	10	U	U	10	R	U	2.8000	10	µg/L	IC
WG	RCRA-2GW-R01	N		SW8260B	SW5030	isobutanol	20	U	U	20	R	U	11.0000	20	µg/L	IC
WG	RCRA-2GW-R01	N		SW8260B	SW5030	1,4-dioxane (p-dioxane)	40	U	U	40	R	U	18.0000	40	µg/L	IC
WG	RCRA-3GW-R01	N		SW8260B	SW5030	Acetonitrile	10	U	U	10	R	U	2.8000	10	µg/L	IC
WG	RCRA-3GW-R01	N		SW8260B	SW5030	isobutanol	20	U	U	20	R	U	11.0000	20	µg/L	IC
WG	RCRA-3GW-R01	N		SW8260B	SW5030	1,4-dioxane (p-dioxane)	40	U	U	40	R	U	18.0000	40	µg/L	IC
WG	RCRA-4GW-R01	N		SW8260B	SW5030	1,4-dioxane (p-dioxane)	40	U	U	40	R	U	18.0000	40	µg/L	IC
WG	RCRA-4GW-R01	N		SW8260B	SW5030	isobutanol	20	U	U	20	R	U	11.0000	20	µg/L	IC
WG	RCRA-4GW-R01	N		SW8260B	SW5030	Acetonitrile	10	U	U	10	R	U	2.8000	10	µg/L	IC
WG	RCRAFD01P-R01	FD		SW8260B	SW5030	Acetonitrile	10	U	U	10	R	U	2.8000	10	µg/L	IC
WG	RCRAFD01P-R01	FD		SW8260B	SW5030	isobutanol	20	U	U	20	R	U	11.0000	20	µg/L	IC
WG	RCRAFD01P-R01	FD		SW8260B	SW5030	1,4-dioxane (p-dioxane)	40	U	U	40	R	U	18.0000	40	µg/L	IC
WG	RCRA-1GW-R01	N		SW8260B	SW5030	isobutanol	20	U	U	20	R	U	11.0000	20	µg/L	IC
WG	RCRA-1GW-R01	N		SW8260B	SW5030	1,4-dioxane (p-dioxane)	40	U	U	40	R	U	18.0000	40	µg/L	IC
WG	RCRA-1GW-R01	N		SW8260B	SW5030	Acetonitrile	10	U	U	10	R	U	2.8000	10	µg/L	IC

Matrix	Sample ID	Sample Type	LR Type	(SW8081/SW3510/NONE) 2,4,5,6-Tetrachloro-meta-xylene	(SW8081/SW3510/NONE) 2,4,5,6-Tetrachloro-meta-xylene - Lower Limit	(SW8081/SW3510/NONE) 2,4,5,6-Tetrachloro-meta-xylene - Upper Limit	(SW8081/SW3510/NONE) 2,4,5,6-Tetrachloro-meta-xylene - Qual	(SW8081/SW3510/NONE) Decachlorobiphenyl	(SW8081/SW3510/NONE) Decachlorobiphenyl - Lower Limit	(SW8081/SW3510/NONE) Decachlorobiphenyl - Upper Limit	(SW8081/SW3510/NONE) Decachlorobiphenyl - Qual	(SW8082/SW3510/NONE) Decachlorobiphenyl	(SW8082/SW3510/NONE) Decachlorobiphenyl - Lower Limit	(SW8082/SW3510/NONE) Decachlorobiphenyl - Upper Limit	(SW8082/SW3510/NONE) Decachlorobiphenyl - Qual	(SW8151/SW3510/NONE) 2,4-dichlorophenylacetic acid	(SW8151/SW3510/NONE) 2,4-dichlorophenylacetic acid - Lower Limit	(SW8151/SW3510/NONE) 2,4-dichlorophenylacetic acid - Upper Limit	(SW8151/SW3510/NONE) 2,4-dichlorophenylacetic acid - Qual	(SW8260B/SW5030/NONE) 1,2-dichloroethane-d4	(SW8260B/SW5030/NONE) 1,2-dichloroethane-d4 - Lower Limit	(SW8260B/SW5030/NONE) 1,2-dichloroethane-d4 - Upper Limit	(SW8260B/SW5030/NONE) 1,2-dichloroethane-d4 - Qual	(SW8260B/SW5030/NONE) 1-Bromo-4-fluorobenzene (4-Bromofluorobenz	(SW8260B/SW5030/NONE) 1-Bromo-4-fluorobenzene (4-Bromofluorobenz - Lower Limit	(SW8260B/SW5030/NONE) 1-Bromo-4-fluorobenzene (4-Bromofluorobenz - Upper Limit	(SW8260B/SW5030/NONE) 1-Bromo-4-fluorobenzene (4-Bromofluorobenz - Qual	(SW8260B/SW5030/NONE) Dibromofluoromethane	(SW8260B/SW5030/NONE) Dibromofluoromethane - Lower Limit	(SW8260B/SW5030/NONE) Dibromofluoromethane - Upper Limit	(SW8260B/SW5030/NONE) Dibromofluoromethane - Qual	(SW8260B/SW5030/NONE) Toluene-d8	(SW8260B/SW5030/NONE) Toluene-d8 - Lower Limit	(SW8260B/SW5030/NONE) Toluene-d8 - Upper Limit	(SW8260B/SW5030/NONE) Toluene-d8 - Qual	(SW8270C/SW3510/NONE) 2,4,6-Tribromophenol	(SW8270C/SW3510/NONE) 2,4,6-Tribromophenol - Lower Limit	(SW8270C/SW3510/NONE) 2,4,6-Tribromophenol - Upper Limit	(SW8270C/SW3510/NONE) 2,4,6-Tribromophenol - Qual	(SW8270C/SW3510/NONE) 2-Fluorobiphenyl	(SW8270C/SW3510/NONE) 2-Fluorobiphenyl - Lower Limit	(SW8270C/SW3510/NONE) 2-Fluorobiphenyl - Upper Limit	(SW8270C/SW3510/NONE) 2-Fluorobiphenyl - Qual	(SW8270C/SW3510/NONE) 2-Fluorophenol
WG	RCRA-2GW-R01	N		100	45	125		87	34	133		94	16	116		76	60	130		105	80	120		104	86	115		102	86	118		100	88	110		69.3	10	122		62.6	43	116		50.5
WG	RCRA-3GW-R01	N		58	45	125		84	34	133		96	16	116		72	60	130		105	80	120		105	86	115		101	86	118		101	88	110		66.8	10	122		61.3	43	116		49
WG	RCRA-4GW-R01	N		100	45	125		85	34	133		99	16	116		72	60	130		106	80	120		105	86	115		105	86	118		105	88	110		66.3	10	122		59	43	116		51.5
WG	RCRAFD01P-R01	FD		120	45	125		84	34	133		97	16	116		60	60	130		106	80	120		110	86	115		106	86	118		104	88	110		15.6	10	122		14.3	43	116	*	38.3
WG	RCRAFD01P-R01RE1	LR	RE																																	76.2	10	122		69.6	43	116		51
WG	RCRA-1GW-R01	N		58.2	45	125		68	34	133		78	16	116		80	60	130		103	80	120		103	86	115		100	86	118		98	88	110		66.3	10	122		59.4	43	116		49.4
WG	RCRA-2GW-R01	N																																											
WG	RCRA-3GW-R01	N																																											
WG	RCRA-4GW-R01	N																																											
WG	RCRAFD01P-R01	FD																																											
WQ	021004BLKA22	LB																		107	80	120		108	86	115		98.8	86	118		104	88	110										
WQ	021004LCSA22	BS																		92.6	80	120		92.6	86	115		87.4	86	118		88.8	88	110										
WQ	021004LCSA22D	BD																		106	80	120		106	86	115		102	86	118		103	88	110										
WQ	6839BLK	LB		46	45	125		53	34	133																																			
WQ	6839LCS2	BD		65	45	125		84	34	133																																			
WQ	6839TLCB	LB										84	16	116																															
WQ	6840LCS2	BS										100	16	116																															
WQ	6840LCS3	BD										75	16	116																															
WQ	6850BLK	LB														80	60	130																											
WQ	6850LCS2	BS														76	60	130																											
WQ	6850LCS3	BD														72	60	130																											
WQ	021004BLKA01	LB																																		65.5	10	122		56.6	43	116		49.6
WQ	021004SLCS	BS																																		66	10	122		60	43	116		51.5
WQ	021004SLCSD	BD																																		68.5	10	122		61.9	43	116		52.5
WQ	0217BLK	LB																																		85.5	10	122		78.8	43	116		55.5
WQ	0217ALCS	BS																																		86	10	122		79.7	43	116		58.5
WQ	0217ALCSD	BD																																		90	10	122		84.7	43	116		65
WQ	RCRAGWTB01-04	TB																		105	80	120		109	86	115		102	86	118		102	88	110										
WQ	CGGWEB001-04	EB		66	45	125		40	34	133		49	16	116		76	60	130		104	80	120		110	86	115		105	86	118		104	88	110		65.8	10	122		59.6	43	116		48.9
WQ	021004BLKA22	LB																		107	80	120		108	86	115		98.8	86	118		104	88	110										
WQ	021004LCSA22	BS																		92.6	80	120		92.6	86	115		87.4	86	118		88.8	88	110										
WQ	021004LCSA22D	BD																		106	80	120		106	86	115		102	86	118		103	88	110										
WQ	6847BLK	LB		110	45	125		57	34	133		67	16	116																															
WQ	6847LCS	BS		65	45	125		62	34	133																																			
WQ	6847LCS2	BS		58	45	125		63	34	133																																			
WQ	6847tox	BS		59	45	125		70	34	133																																			
WQ	6848LCS	BS										68	16	116																															
WQ	6848LCS3	BD										63	16	116																															
WQ	6850BLK	LB														80	60	130																											
WQ	6850LCS2	BS														76	60	130																											
WQ	6850LCS3	BD														72	60	130																											
WQ	021004BLKA01	LB																																		65.5	10	122		56.6	43	116		49.6
WQ	021004SLCS	BS																																		66	10	122		60	43	116		51.5
WQ	021004SLCSD	BD																																		68.5	10	122		61.9	43	116		52.5
WQ	CGGWEB001-04	EB																																											
WQ	560984B	LB																																											
WQ	560984S	BS																																											

Matrix	Sample ID	Sample Type	LR Type	(SW8270C/SW3510/NONE) 2-Fluorophenol - Lower Limit	(SW8270C/SW3510/NONE) 2-Fluorophenol - Upper Limit	(SW8270C/SW3510/NONE) 2-Fluorophenol - Qual	(SW8270C/SW3510/NONE) Nitrobenzene-d5	(SW8270C/SW3510/NONE) Nitrobenzene-d5 - Lower Limit	(SW8270C/SW3510/NONE) Nitrobenzene-d5 - Upper Limit	(SW8270C/SW3510/NONE) Nitrobenzene-d5 - Qual	(SW8270C/SW3510/NONE) Phenol-d5	(SW8270C/SW3510/NONE) Phenol-d5 - Lower Limit	(SW8270C/SW3510/NONE) Phenol-d5 - Upper Limit	(SW8270C/SW3510/NONE) Phenol-d5 - Qual	(SW8270C/SW3510/NONE) Terphenyl-d14	(SW8270C/SW3510/NONE) Terphenyl-d14 - Lower Limit	(SW8270C/SW3510/NONE) Terphenyl-d14 - Upper Limit	(SW8270C/SW3510/NONE) Terphenyl-d14 - Qual	(SW8290/METHOD/NONE) 1,2,3,4,6,7,8-heptachlorodibenzo-p-dioxin-c	(SW8290/METHOD/NONE) 1,2,3,4,6,7,8-heptachlorodibenzo-p-dioxin-c - Lower Limit	(SW8290/METHOD/NONE) 1,2,3,4,6,7,8-heptachlorodibenzo-p-dioxin-c - Upper Limit	(SW8290/METHOD/NONE) 1,2,3,4,6,7,8-heptachlorodibenzo-p-dioxin-c - Qual	(SW8290/METHOD/NONE) 1,2,3,6,7,8-hexachlorodibenzo-p-dioxin-c13	(SW8290/METHOD/NONE) 1,2,3,6,7,8-hexachlorodibenzo-p-dioxin-c13 - Lower Limit	(SW8290/METHOD/NONE) 1,2,3,6,7,8-hexachlorodibenzo-p-dioxin-c13 - Upper Limit	(SW8290/METHOD/NONE) 1,2,3,6,7,8-hexachlorodibenzo-p-dioxin-c13 - Qual	(SW8290/METHOD/NONE) 1,2,3,7,8-pentachlorodibenzo-p-dioxin-c13	(SW8290/METHOD/NONE) 1,2,3,7,8-pentachlorodibenzo-p-dioxin-c13 - Lower Limit	(SW8290/METHOD/NONE) 1,2,3,7,8-pentachlorodibenzo-p-dioxin-c13 - Upper Limit	(SW8290/METHOD/NONE) 1,2,3,7,8-pentachlorodibenzo-p-dioxin-c13 - Qual	(SW8290/METHOD/NONE) 2,3,7,8-tetrachlorodibenzo-p-dioxin-c13	(SW8290/METHOD/NONE) 2,3,7,8-tetrachlorodibenzo-p-dioxin-c13 - Lower Limit	(SW8290/METHOD/NONE) 2,3,7,8-tetrachlorodibenzo-p-dioxin-c13 - Upper Limit	(SW8290/METHOD/NONE) 2,3,7,8-tetrachlorodibenzo-p-dioxin-c13 - Qual	(SW8290/METHOD/NONE) octachlorodibenzo-p-dioxin-c13	(SW8290/METHOD/NONE) octachlorodibenzo-p-dioxin-c13 - Lower Limit	(SW8290/METHOD/NONE) octachlorodibenzo-p-dioxin-c13 - Upper Limit	(SW8290/METHOD/NONE) octachlorodibenzo-p-dioxin-c13 - Qual
WG	RCRA-2GW-R01	N		21	120		69.8	35	114		37.5	10	94		65.2	33	141																						
WG	RCRA-3GW-R01	N		21	120		67	35	114		36.7	10	94		62.8	33	141																						
WG	RCRA-4GW-R01	N		21	120		67.4	35	114		39.3	10	94		63.1	33	141																						
WG	RCRAFD01P-R01	FD		21	120		14.9	35	114	*	30.7	10	94		19.4	33	141	*																					
WG	RCRAFD01P-R01RE1	LR	RE	21	120		68.4	35	114		37.8	10	94		72.6	33	141																						
WG	RCRA-1GW-R01	N		21	120		65.1	35	114		38.8	10	94		61.4	33	141																						
WG	RCRA-2GW-R01	N																	65	40	135		68	40	135		67	40	135		62	40	135		55	40	135	
WG	RCRA-3GW-R01	N																	56	40	135		64	40	135		71	40	135		64	40	135		53	40	135	
WG	RCRA-4GW-R01	N																	58	40	135		56	40	135		49	40	135		47	40	135		47	40	135	
WG	RCRAFD01P-R01	FD																	81	40	135		105	40	135		73	40	135		65	40	135		82	40	135	
WQ	021004BLKA22	LB																																					
WQ	021004LCSA22	BS																																					
WQ	021004LCSA22D	BD																																					
WQ	6839BLK	LB																																					
WQ	6839LCS2	BD																																					
WQ	6839TLCB	LB																																					
WQ	6840LCS2	BS																																					
WQ	6840LCS3	BD																																					
WQ	6850BLK	LB																																					
WQ	6850LCS2	BS																																					
WQ	6850LCS3	BD																																					
WQ	021004BLKA01	LB		21	120		64.1	35	114		37.8	10	94		61.7	33	141																						
WQ	021004SLCS	BS		21	120		65.9	35	114		34.4	10	94		61.6	33	141																						
WQ	021004SLCSD	BD		21	120		66.8	35	114		34.6	10	94		68.7	33	141																						
WQ	0217BLK	LB		21	120		80.6	35	114		39.6	10	94		81.1	33	141																						
WQ	0217ALCS	BS		21	120		83.9	35	114		39.4	10	94		81.1	33	141																						
WQ	0217ALCSD	BD		21	120		90.7	35	114		43.6	10	94		83.9	33	141																						
WQ	RCRAGWTB01-04	TB																																					
WQ	CGGWEB001-04	EB		21	120		64.7	35	114		37.1	10	94		63.9	33	141																						
WQ	021004BLKA22	LB																																					
WQ	021004LCSA22	BS																																					
WQ	021004LCSA22D	BD																																					
WQ	6847BLK	LB																																					
WQ	6847LCS	BS																																					
WQ	6847LCS2	BS																																					
WQ	6847tox	BS																																					
WQ	6848LCS	BS																																					
WQ	6848LCS3	BD																																					
WQ	6850BLK	LB																																					
WQ	6850LCS2	BS																																					
WQ	6850LCS3	BD																																					
WQ	021004BLKA01	LB		21	120		64.1	35	114		37.8	10	94		61.7	33	141																						
WQ	021004SLCS	BS		21	120		65.9	35	114		34.4	10	94		61.6	33	141																						
WQ	021004SLCSD	BD		21	120		66.8	35	114		34.6	10	94		68.7	33	141																						
WQ	CGGWEB001-04	EB																	69	40	135		70	40	135		51	40	135		43	40	135		54	40	135	
WQ	560984B	LB																	80	40	135		77	40	135		92	40	135		82	40	135		74	40	135	
WQ	560984S	BS																	62	40	135		75	40	135		68	40	135		71	40	135		62	40	135	

Matrix	Analytical Method	Preparation Method	Sample ID	Parameter	Lab Result	Final Result	Detection Limit	Reporting Limit	Field Dup Sample ID	Field Dup Lab Result	Field Dup Lab Qual	Field Dup Final Result	Field Dup Detection Limit	Field Dup Reporting Limit	RPD	Eval
WG	SW8290	METHOD	RCRA-2GW-R01	1,2,3,4,6,7,8-heptachlorodibenzo-p-dioxin	25	25	0.92	25	RCRAFD01P-R01	25	U	25	1.54	25	-100	IN
WG	SW8290	METHOD	RCRA-2GW-R01	1,2,3,4,7,8-hexachlorodibenzo-p-dioxin	25	25	1.13	25	RCRAFD01P-R01	25	U	25	0.34	25	-100	IN
WG	SW8290	METHOD	RCRA-2GW-R01	1,2,3,6,7,8-hexachlorodibenzo-p-dioxin	25	25	0.24	25	RCRAFD01P-R01	25	U	25	0.17	25	-100	IN
WG	SW8290	METHOD	RCRA-2GW-R01	1,2,3,7,8,9-hexachlorodibenzo-p-dioxin	25	25	0.18	25	RCRAFD01P-R01	25	U	25	0.53	25	-100	IN
WG	SW8290	METHOD	RCRA-2GW-R01	1,2,3,7,8-pentachlorodibenzo-p-dioxin	10	10	0.15	10	RCRAFD01P-R01	10	U	10	0.1	10	-100	IN
WG	SW8290	METHOD	RCRA-2GW-R01	2,3,7,8-tetrachlorodibenzo-p-dioxin	10	10	0.29	10	RCRAFD01P-R01	10	U	10	0.12	10	-100	IN
WG	SW8290	METHOD	RCRA-2GW-R01	heptachlorinated dibenzo-p-dioxins, (total)	25	25	0	25	RCRAFD01P-R01	25	U	25	0	25	-100	IN
WG	SW8290	METHOD	RCRA-2GW-R01	hexachlorinated dibenzo-p-dioxins, (total)	25	25	0	25	RCRAFD01P-R01	25	U	25	0	25	-100	IN
WG	SW8290	METHOD	RCRA-2GW-R01	octachlorodibenzo-p-dioxin	50	50	1.1	50	RCRAFD01P-R01	50	U	50	1.76	50	-100	IN
WG	SW8290	METHOD	RCRA-2GW-R01	pentachlorinated dibenzo-p-dioxins, (total)	10	10	0	10	RCRAFD01P-R01	10	U	10	0	10	-100	IN
WG	SW8290	METHOD	RCRA-2GW-R01	tetrachlorinated dibenzo-p-dioxins, (total)	10	10	0	10	RCRAFD01P-R01	10	U	10	0	10	-100	IN
WG	SW9012	METHOD	RCRA-2GW-R01	cyanide	3.73	3.73	3.73	10	RCRAFD01P-R01	6.59	B	6.59	3.73	10	200	IN
WG	E376.1	NONE	RCRA-2GW-R01	Sulfide	1920	1920	80	2000	RCRAFD01P-R01	1520	B	1520	80	2000	23.26	IN
WG	SW8151	SW3510	RCRA-2GW-R01	2,4,5-t (trichlorophenoxyacetic acid)	2	2	0.063	2	RCRAFD01P-R01	2	U	2	0.063	2	-100	IN
WG	SW8151	SW3510	RCRA-2GW-R01	2,4-d (dichlorophenoxyacetic acid)	10	10	0.09	10	RCRAFD01P-R01	10	U	10	0.09	10	-100	IN
WG	SW8151	SW3510	RCRA-2GW-R01	dinoseb	1	1	0.06	1	RCRAFD01P-R01	1	U	1	0.06	1	-100	IN
WG	SW8151	SW3510	RCRA-2GW-R01	silvex (2,4,5-tp)	2	2	0.038	2	RCRAFD01P-R01	2	U	2	0.038	2	-100	IN
WG	SW8082	SW3510	RCRA-2GW-R01	Aroclor-1016	1	1	0.036	1	RCRAFD01P-R01	1	U	1	0.036	1	-100	IN
WG	SW8082	SW3510	RCRA-2GW-R01	Aroclor-1221	2	2	0.044	2	RCRAFD01P-R01	2	U	2	0.044	2	-100	IN
WG	SW8082	SW3510	RCRA-2GW-R01	Aroclor-1232	1	1	0.02	1	RCRAFD01P-R01	1	U	1	0.02	1	-100	IN
WG	SW8082	SW3510	RCRA-2GW-R01	Aroclor-1242	1	1	0.031	1	RCRAFD01P-R01	1	U	1	0.031	1	-100	IN
WG	SW8082	SW3510	RCRA-2GW-R01	Aroclor-1248	1	1	0.013	1	RCRAFD01P-R01	1	U	1	0.013	1	-100	IN
WG	SW8082	SW3510	RCRA-2GW-R01	Aroclor-1254	1	1	0.012	1	RCRAFD01P-R01	1	U	1	0.012	1	-100	IN
WG	SW8082	SW3510	RCRA-2GW-R01	Aroclor-1260	1	1	0.025	1	RCRAFD01P-R01	1	U	1	0.025	1	-100	IN
WG	SW8081	SW3510	RCRA-2GW-R01	Aldrin	0.051	0.051	0.002	0.051	RCRAFD01P-R01	0.051	U	0.051	0.002	0.051	-100	IN
WG	SW8081	SW3510	RCRA-2GW-R01	alpha bhc (alpha hexachlorocyclohexane)	0.051	0.051	0.0012	0.051	RCRAFD01P-R01	0.051	U	0.051	0.0012	0.051	-100	IN
WG	SW8081	SW3510	RCRA-2GW-R01	alpha endosulfan	0.051	0.051	0.0044	0.051	RCRAFD01P-R01	0.051	U	0.051	0.0044	0.051	-100	IN
WG	SW8081	SW3510	RCRA-2GW-R01	alpha-chlordane	0.051	0.051	0.0022	0.051	RCRAFD01P-R01	0.051	U	0.051	0.0022	0.051	-100	IN
WG	SW8081	SW3510	RCRA-2GW-R01	beta bhc (beta hexachlorocyclohexane)	0.051	0.051	0.0018	0.051	RCRAFD01P-R01	0.051	U	0.051	0.0018	0.051	-100	IN
WG	SW8081	SW3510	RCRA-2GW-R01	beta endosulfan	0.1	0.1	0.0018	0.1	RCRAFD01P-R01	0.1	U	0.1	0.0018	0.1	-100	IN
WG	SW8081	SW3510	RCRA-2GW-R01	chlordane	0.051	0.051	0.01	0.051	RCRAFD01P-R01	0.051	U	0.051	0.01	0.051	-100	IN
WG	SW8081	SW3510	RCRA-2GW-R01	delta bhc (delta hexachlorocyclohexane)	0.051	0.051	0.0059	0.051	RCRAFD01P-R01	0.051	U	0.051	0.0059	0.051	-100	IN
WG	SW8081	SW3510	RCRA-2GW-R01	Dieldrin	0.1	0.1	0.0038	0.1	RCRAFD01P-R01	0.1	U	0.1	0.0038	0.1	-100	IN
WG	SW8081	SW3510	RCRA-2GW-R01	endosulfan sulfate	0.1	0.1	0.0022	0.1	RCRAFD01P-R01	0.1	U	0.1	0.0022	0.1	-100	IN
WG	SW8081	SW3510	RCRA-2GW-R01	endrin	0.1	0.1	0.0045	0.1	RCRAFD01P-R01	0.1	U	0.1	0.0045	0.1	-100	IN
WG	SW8081	SW3510	RCRA-2GW-R01	endrin aldehyde	0.1	0.1	0.0052	0.1	RCRAFD01P-R01	0.1	U	0.1	0.0052	0.1	-100	IN
WG	SW8081	SW3510	RCRA-2GW-R01	endrin ketone	0.1	0.1	0.0034	0.1	RCRAFD01P-R01	0.1	U	0.1	0.0034	0.1	-100	IN
WG	SW8081	SW3510	RCRA-2GW-R01	gamma bhc (lindane)	0.051	0.051	0.0019	0.051	RCRAFD01P-R01	0.051	U	0.051	0.0019	0.051	-100	IN
WG	SW8081	SW3510	RCRA-2GW-R01	gamma-chlordane	0.051	0.051	0.0025	0.051	RCRAFD01P-R01	0.051	U	0.051	0.0025	0.051	-100	IN
WG	SW8081	SW3510	RCRA-2GW-R01	heptachlor	0.051	0.051	0.0022	0.051	RCRAFD01P-R01	0.051	U	0.051	0.0022	0.051	-100	IN
WG	SW8081	SW3510	RCRA-2GW-R01	heptachlor epoxide	0.051	0.051	0.0025	0.051	RCRAFD01P-R01	0.051	U	0.051	0.0025	0.051	-100	IN
WG	SW8081	SW3510	RCRA-2GW-R01	methoxychlor	0.51	0.51	0.003	0.51	RCRAFD01P-R01	0.51	U	0.51	0.003	0.51	-100	IN
WG	SW8081	SW3510	RCRA-2GW-R01	p,p'-DDD	0.1	0.1	0.0041	0.1	RCRAFD01P-R01	0.1	U	0.1	0.0041	0.1	-100	IN
WG	SW8081	SW3510	RCRA-2GW-R01	p,p'-DDE	0.1	0.1	0.0057	0.1	RCRAFD01P-R01	0.1	U	0.1	0.0057	0.1	-100	IN
WG	SW8081	SW3510	RCRA-2GW-R01	p,p'-DDT	0.1	0.1	0.0045	0.1	RCRAFD01P-R01	0.1	U	0.1	0.0045	0.1	-100	IN
WG	SW8081	SW3510	RCRA-2GW-R01	toxaphene	5.1	5.1	0.031	5.1	RCRAFD01P-R01	5.1	U	5.1	0.031	5.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	1,2,4,5-tetrachlorobenzene	10.1	10.1	2.2	10.1	RCRAFD01P-R01	10.1	U	10.1	2.2	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	1,2,4-Trichlorobenzene	10.1	10.1	2.6	10.1	RCRAFD01P-R01	10.1	U	10.1	2.6	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	1,2-Dichlorobenzene	10.1	10.1	2.6	10.1	RCRAFD01P-R01	10.1	U	10.1	2.6	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	1,3,5-trinitrobenzene	10.1	10.1	2.8	10.1	RCRAFD01P-R01	10.1	U	10.1	2.8	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	1,3-Dichlorobenzene	10.1	10.1	2.7	10.1	RCRAFD01P-R01	10.1	U	10.1	2.7	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	1,3-dinitrobenzene	10.1	10.1	2.5	10.1	RCRAFD01P-R01	10.1	U	10.1	2.5	10.1	-100	IN

Matrix	Analytical Method	Preparation Method	Sample ID	Parameter	Lab Result	Final Result	Detection Limit	Reporting Limit	Field Dup Sample ID	Field Dup Lab Result	Field Dup Lab Qual	Field Dup Final Result	Field Dup Detection Limit	Field Dup Reporting Limit	RPD	Eval
WG	SW8290	METHOD	RCRA-2GW-R01	1,2,3,4,6,7,8-heptachlorodibenzo-p-dioxin	25	25	0.92	25	RCRAFD01P-R01	25	U	25	1.54	25	-100	IN
WG	SW8290	METHOD	RCRA-2GW-R01	1,2,3,4,7,8-hexachlorodibenzo-p-dioxin	25	25	1.13	25	RCRAFD01P-R01	25	U	25	0.34	25	-100	IN
WG	SW8290	METHOD	RCRA-2GW-R01	1,2,3,6,7,8-hexachlorodibenzo-p-dioxin	25	25	0.24	25	RCRAFD01P-R01	25	U	25	0.17	25	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	1,4-Dichlorobenzene	10.1	10.1	2.7	10.1	RCRAFD01P-R01	10.1	U	10.1	2.7	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	1,4-naphthoquinone	10.1	10.1	3.1	10.1	RCRAFD01P-R01	10.1	U	10.1	3.1	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	1-naphthylamine	10.1	10.1	1.8	10.1	RCRAFD01P-R01	10.1	U	10.1	1.8	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	2,3,4,6-tetrachlorophenol	10.1	10.1	3	10.1	RCRAFD01P-R01	10.1	U	10.1	3	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	2,4,5-Trichlorophenol	50.5	50.5	3.4	50.5	RCRAFD01P-R01	50.5	U	50.5	3.4	50.5	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	2,4,6-Trichlorophenol	10.1	10.1	3.6	10.1	RCRAFD01P-R01	10.1	U	10.1	3.6	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	2,4-Dichlorophenol	10.1	10.1	3.1	10.1	RCRAFD01P-R01	10.1	U	10.1	3.1	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	2,4-Dimethylphenol	10.1	10.1	2.3	10.1	RCRAFD01P-R01	10.1	U	10.1	2.3	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	2,4-Dinitrophenol	50.5	50.5	5.6	50.5	RCRAFD01P-R01	50.5	U	50.5	5.6	50.5	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	2,4-Dinitrotoluene	10.1	10.1	2.8	10.1	RCRAFD01P-R01	10.1	U	10.1	2.8	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	2,6-dichlorophenol	10.1	10.1	3.5	10.1	RCRAFD01P-R01	10.1	U	10.1	3.5	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	2,6-Dinitrotoluene	10.1	10.1	2.8	10.1	RCRAFD01P-R01	10.1	U	10.1	2.8	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	2-acetylaminofluorene	10.1	10.1	2.5	10.1	RCRAFD01P-R01	10.1	U	10.1	2.5	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	2-aminonaphthalene (beta naphthylamine)	10.1	10.1	2.5	10.1	RCRAFD01P-R01	10.1	U	10.1	2.5	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	2-Chloronaphthalene	10.1	10.1	2.8	10.1	RCRAFD01P-R01	10.1	U	10.1	2.8	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	2-Chlorophenol	10.1	10.1	2.9	10.1	RCRAFD01P-R01	10.1	U	10.1	2.9	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	2-Methylnaphthalene	10.1	10.1	2.8	10.1	RCRAFD01P-R01	10.1	U	10.1	2.8	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	2-Methylphenol (o-Cresol)	10.1	10.1	2.6	10.1	RCRAFD01P-R01	10.1	U	10.1	2.6	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	2-Nitroaniline	50.5	50.5	3	50.5	RCRAFD01P-R01	50.5	U	50.5	3	50.5	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	2-Nitrophenol	10.1	10.1	3.4	10.1	RCRAFD01P-R01	10.1	U	10.1	3.4	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	2-picoline (alpha-picoline)	10.1	10.1	1.5	10.1	RCRAFD01P-R01	10.1	U	10.1	1.5	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	3,3'-Dichlorobenzidine	20.2	20.2	2.7	20.2	RCRAFD01P-R01	20.2	U	20.2	2.7	20.2	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	3,3'-dimethylbenzidine	10.1	10.1	6	10.1	RCRAFD01P-R01	10.1	U	10.1	6	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	3-methylcholanthrene	10.1	10.1	2.2	10.1	RCRAFD01P-R01	10.1	U	10.1	2.2	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	3-Nitroaniline	50.5	50.5	2.8	50.5	RCRAFD01P-R01	50.5	U	50.5	2.8	50.5	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	4,6-Dinitro-2-methylphenol	50.5	50.5	3.3	50.5	RCRAFD01P-R01	50.5	U	50.5	3.3	50.5	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	4-aminobiphenyl (4-biphenylamine)	10.1	10.1	2.2	10.1	RCRAFD01P-R01	10.1	U	10.1	2.2	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	4-Bromophenyl phenyl ether	10.1	10.1	2.3	10.1	RCRAFD01P-R01	10.1	U	10.1	2.3	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	4-Chloro-3-methylphenol	10.1	10.1	2.7	10.1	RCRAFD01P-R01	10.1	U	10.1	2.7	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	4-Chloroaniline	10.1	10.1	3	10.1	RCRAFD01P-R01	10.1	U	10.1	3	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	4-Chlorophenyl phenyl ether	10.1	10.1	2.5	10.1	RCRAFD01P-R01	10.1	U	10.1	2.5	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	4-Methylphenol (p-Cresol)	10.1	10.1	6.2	10.1	RCRAFD01P-R01	10.1	U	10.1	6.2	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	4-Nitroaniline	50.5	50.5	2.8	50.5	RCRAFD01P-R01	50.5	U	50.5	2.8	50.5	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	4-Nitrophenol	50.5	50.5	2.9	50.5	RCRAFD01P-R01	50.5	U	50.5	2.9	50.5	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	5-nitro-o-toluidine	10.1	10.1	2.6	10.1	RCRAFD01P-R01	10.1	U	10.1	2.6	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	7,12-dimethylbenz(a)anthracene	10.1	10.1	2.5	10.1	RCRAFD01P-R01	10.1	U	10.1	2.5	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	Acenaphthene	10.1	10.1	2.8	10.1	RCRAFD01P-R01	10.1	U	10.1	2.8	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	Acenaphthylene	10.1	10.1	3	10.1	RCRAFD01P-R01	10.1	U	10.1	3	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	Acetophenone	10.1	10.1	0.67	10.1	RCRAFD01P-R01	10.1	U	10.1	0.67	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	Aniline (phenylamine, aminobenzene)	10.1	10.1	2.8	10.1	RCRAFD01P-R01	10.1	U	10.1	2.8	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	Anthracene	10.1	10.1	2.8	10.1	RCRAFD01P-R01	10.1	U	10.1	2.8	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	Aramite	10.1	10.1	2.5	10.1	RCRAFD01P-R01	10.1	U	10.1	2.5	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	Benzo(a)anthracene	10.1	10.1	2.6	10.1	RCRAFD01P-R01	10.1	U	10.1	2.6	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	Benzo(a)pyrene	10.1	10.1	2.8	10.1	RCRAFD01P-R01	10.1	U	10.1	2.8	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	Benzo(b)fluoranthene	10.1	10.1	2.6	10.1	RCRAFD01P-R01	10.1	U	10.1	2.6	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	Benzo(g,h,i)perylene	10.1	10.1	2.6	10.1	RCRAFD01P-R01	10.1	U	10.1	2.6	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	Benzo(k)fluoranthene	10.1	10.1	2.9	10.1	RCRAFD01P-R01	10.1	U	10.1	2.9	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	Benzyl alcohol	10.1	10.1	3.1	10.1	RCRAFD01P-R01	10.1	U	10.1	3.1	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	Benzyl butyl phthalate	10.1	10.1	3	10.1	RCRAFD01P-R01	10.1	U	10.1	3	10.1	-100	IN

Matrix	Analytical Method	Preparation Method	Sample ID	Parameter	Lab Result	Final Result	Detection Limit	Reporting Limit	Field Dup Sample ID	Field Dup Lab Result	Field Dup Lab Qual	Field Dup Final Result	Field Dup Detection Limit	Field Dup Reporting Limit	RPD	Eval
WG	SW8290	METHOD	RCRA-2GW-R01	1,2,3,4,6,7,8-heptachlorodibenzo-p-dioxin	25	25	0.92	25	RCRAFD01P-R01	25	U	25	1.54	25	-100	IN
WG	SW8290	METHOD	RCRA-2GW-R01	1,2,3,4,7,8-hexachlorodibenzo-p-dioxin	25	25	1.13	25	RCRAFD01P-R01	25	U	25	0.34	25	-100	IN
WG	SW8290	METHOD	RCRA-2GW-R01	1,2,3,6,7,8-hexachlorodibenzo-p-dioxin	25	25	0.24	25	RCRAFD01P-R01	25	U	25	0.17	25	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	Bis(2-Chloroethoxy) methane	10.1	10.1	3.5	10.1	RCRAFD01P-R01	10.1	U	10.1	3.5	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	bis(2-Chloroethyl) ether (2-Chloroethyl ether)	10.1	10.1	3	10.1	RCRAFD01P-R01	10.1	U	10.1	3	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	bis(2-Chloroisopropyl) ether	10.1	10.1	3.3	10.1	RCRAFD01P-R01	10.1	U	10.1	3.3	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	bis(2-Ethylhexyl) phthalate	10.1	10.1	4.4	10.1	RCRAFD01P-R01	10.1	U	10.1	4.4	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	Carbazole	10.1	10.1	3.1	10.1	RCRAFD01P-R01	10.1	U	10.1	3.1	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	chlorobenzilate	10.1	10.1	2.5	10.1	RCRAFD01P-R01	10.1	U	10.1	2.5	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	Chrysene	10.1	10.1	2.9	10.1	RCRAFD01P-R01	10.1	U	10.1	2.9	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	Di-n-butyl phthalate	10.1	10.1	2.9	10.1	RCRAFD01P-R01	10.1	U	10.1	2.9	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	Di-n-octylphthalate	10.1	10.1	2.8	10.1	RCRAFD01P-R01	10.1	U	10.1	2.8	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	diallate	10.1	10.1	2.6	10.1	RCRAFD01P-R01	10.1	U	10.1	2.6	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	Dibenz(a,h)anthracene	10.1	10.1	2.7	10.1	RCRAFD01P-R01	10.1	U	10.1	2.7	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	Dibenzofuran	10.1	10.1	2.7	10.1	RCRAFD01P-R01	10.1	U	10.1	2.7	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	Diethyl phthalate	10.1	10.1	2.8	10.1	RCRAFD01P-R01	10.1	U	10.1	2.8	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	Dimethyl phthalate	10.1	10.1	3	10.1	RCRAFD01P-R01	10.1	U	10.1	3	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	ethyl methanesulfonate	10.1	10.1	2.5	10.1	RCRAFD01P-R01	10.1	U	10.1	2.5	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	Fluoranthene	10.1	10.1	2.8	10.1	RCRAFD01P-R01	10.1	U	10.1	2.8	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	Fluorene	10.1	10.1	2.9	10.1	RCRAFD01P-R01	10.1	U	10.1	2.9	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	Hexachlorobenzene	10.1	10.1	2.6	10.1	RCRAFD01P-R01	10.1	U	10.1	2.6	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	Hexachlorobutadiene	10.1	10.1	2.5	10.1	RCRAFD01P-R01	10.1	U	10.1	2.5	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	Hexachlorocyclopentadiene	10.1	10.1	2.2	10.1	RCRAFD01P-R01	10.1	U	10.1	2.2	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	Hexachloroethane	10.1	10.1	2.6	10.1	RCRAFD01P-R01	10.1	U	10.1	2.6	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	hexachloropropene	10.1	10.1	2	10.1	RCRAFD01P-R01	10.1	U	10.1	2	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	Indeno(1,2,3-c,d)pyrene	10.1	10.1	2.6	10.1	RCRAFD01P-R01	10.1	U	10.1	2.6	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	isodrin	5.2	5.2	2.6	5.2	RCRAFD01P-R01	5.2	U	5.2	2.6	5.2	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	Isophorone	10.1	10.1	3.8	10.1	RCRAFD01P-R01	10.1	U	10.1	3.8	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	isosafrole	10.1	10.1	2.6	10.1	RCRAFD01P-R01	10.1	U	10.1	2.6	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	kepone	10.1	10.1	3.1	10.1	RCRAFD01P-R01	10.1	U	10.1	3.1	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	methapyrilene	10.1	10.1	3.7	10.1	RCRAFD01P-R01	10.1	U	10.1	3.7	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	methyl methanesulfonate	10.1	10.1	1.9	10.1	RCRAFD01P-R01	10.1	U	10.1	1.9	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	n-nitroso-di-n-butylamine	10.1	10.1	2.7	10.1	RCRAFD01P-R01	10.1	U	10.1	2.7	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	n-Nitrosodi-n-propylamine	10.1	10.1	3	10.1	RCRAFD01P-R01	10.1	U	10.1	3	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	n-nitrosodiethylamine	10.1	10.1	3.1	10.1	RCRAFD01P-R01	10.1	U	10.1	3.1	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	n-nitrosodimethylamine	10.1	10.1	2.2	10.1	RCRAFD01P-R01	10.1	U	10.1	2.2	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	n-Nitrosodiphenylamine	10.1	10.1	3.4	10.1	RCRAFD01P-R01	10.1	U	10.1	3.4	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	n-nitrosomorpholine	10.1	10.1	3	10.1	RCRAFD01P-R01	10.1	U	10.1	3	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	n-nitrosopiperidine	10.1	10.1	2.8	10.1	RCRAFD01P-R01	10.1	U	10.1	2.8	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	n-nitrosopyrrolidine	10.1	10.1	2.7	10.1	RCRAFD01P-R01	10.1	U	10.1	2.7	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	Naphthalene	10.1	10.1	2.8	10.1	RCRAFD01P-R01	10.1	U	10.1	2.8	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	Nitrobenzene	10.1	10.1	2.8	10.1	RCRAFD01P-R01	10.1	U	10.1	2.8	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	nitrosomethylethylamine	10.1	10.1	2.7	10.1	RCRAFD01P-R01	10.1	U	10.1	2.7	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	o-toluidine	10.1	10.1	2.7	10.1	RCRAFD01P-R01	10.1	U	10.1	2.7	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	p-dimethylaminoazobenzene	10.1	10.1	2.5	10.1	RCRAFD01P-R01	10.1	U	10.1	2.5	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	p-phenylenediamine	10.1	10.1	2.7	10.1	RCRAFD01P-R01	10.1	U	10.1	2.7	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	pentachlorobenzene	10.1	10.1	2.2	10.1	RCRAFD01P-R01	10.1	U	10.1	2.2	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	pentachloroethane	10.1	10.1	2.5	10.1	RCRAFD01P-R01	10.1	U	10.1	2.5	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	pentachloronitrobenzene	10.1	10.1	2.4	10.1	RCRAFD01P-R01	10.1	U	10.1	2.4	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	Pentachlorophenol	50.5	50.5	2.6	50.5	RCRAFD01P-R01	50.5	U	50.5	2.6	50.5	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	phenacetin	10.1	10.1	2.7	10.1	RCRAFD01P-R01	10.1	U	10.1	2.7	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	Phenanthrene	10.1	10.1	2.8	10.1	RCRAFD01P-R01	10.1	U	10.1	2.8	10.1	-100	IN

Matrix	Analytical Method	Preparation Method	Sample ID	Parameter	Lab Result	Final Result	Detection Limit	Reporting Limit	Field Dup Sample ID	Field Dup Lab Result	Field Dup Lab Qual	Field Dup Final Result	Field Dup Detection Limit	Field Dup Reporting Limit	RPD	Eval
WG	SW8290	METHOD	RCRA-2GW-R01	1,2,3,4,6,7,8-heptachlorodibenzo-p-dioxin	25	25	0.92	25	RCRAFD01P-R01	25	U	25	1.54	25	-100	IN
WG	SW8290	METHOD	RCRA-2GW-R01	1,2,3,4,7,8-hexachlorodibenzo-p-dioxin	25	25	1.13	25	RCRAFD01P-R01	25	U	25	0.34	25	-100	IN
WG	SW8290	METHOD	RCRA-2GW-R01	1,2,3,6,7,8-hexachlorodibenzo-p-dioxin	25	25	0.24	25	RCRAFD01P-R01	25	U	25	0.17	25	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	Phenol	10.1	10.1	1.7	10.1	RCRAFD01P-R01	10.1	U	10.1	1.7	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	pronamide	10.1	10.1	1.8	10.1	RCRAFD01P-R01	10.1	U	10.1	1.8	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	Pyrene	10.1	10.1	2.9	10.1	RCRAFD01P-R01	10.1	U	10.1	2.9	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	pyridine	10.1	10.1	2.1	10.1	RCRAFD01P-R01	10.1	U	10.1	2.1	10.1	-100	IN
WG	SW8270C	SW3510	RCRA-2GW-R01	safrole	10.1	10.1	2.5	10.1	RCRAFD01P-R01	10.1	U	10.1	2.5	10.1	-100	IN
WG	SW8260B	SW5030	RCRA-2GW-R01	1,1,1,2-Tetrachloroethane	1	1	0.25	1	RCRAFD01P-R01	1	U	1	0.25	1	-100	IN
WG	SW8260B	SW5030	RCRA-2GW-R01	1,1,1-Trichloroethane	1	1	0.31	1	RCRAFD01P-R01	1	U	1	0.31	1	-100	IN
WG	SW8260B	SW5030	RCRA-2GW-R01	1,1,2,2-Tetrachloroethane	1	1	0.24	1	RCRAFD01P-R01	1	U	1	0.24	1	-100	IN
WG	SW8260B	SW5030	RCRA-2GW-R01	1,1,2-Trichloroethane	1	1	0.4	1	RCRAFD01P-R01	1	U	1	0.4	1	-100	IN
WG	SW8260B	SW5030	RCRA-2GW-R01	1,1-Dichloroethane	1	1	0.18	1	RCRAFD01P-R01	1	U	1	0.18	1	-100	IN
WG	SW8260B	SW5030	RCRA-2GW-R01	1,1-Dichloroethene	1	1	0.36	1	RCRAFD01P-R01	1	U	1	0.36	1	-100	IN
WG	SW8260B	SW5030	RCRA-2GW-R01	1,2,3-Trichloropropane	1	1	0.41	1	RCRAFD01P-R01	1	U	1	0.41	1	-100	IN
WG	SW8260B	SW5030	RCRA-2GW-R01	1,2-Dibromo-3-chloropropane	1	1	0.78	1	RCRAFD01P-R01	1	U	1	0.78	1	-100	IN
WG	SW8260B	SW5030	RCRA-2GW-R01	1,2-Dibromoethane (Ethylene dibromide)	1	1	0.25	1	RCRAFD01P-R01	1	U	1	0.25	1	-100	IN
WG	SW8260B	SW5030	RCRA-2GW-R01	1,2-Dichlorobenzene	1	1	0.18	1	RCRAFD01P-R01	1	U	1	0.18	1	-100	IN
WG	SW8260B	SW5030	RCRA-2GW-R01	1,2-Dichloroethane	1	1	0.25	1	RCRAFD01P-R01	1	U	1	0.25	1	-100	IN
WG	SW8260B	SW5030	RCRA-2GW-R01	1,2-Dichloropropane	1	1	0.24	1	RCRAFD01P-R01	1	U	1	0.24	1	-100	IN
WG	SW8260B	SW5030	RCRA-2GW-R01	1,3-Dichlorobenzene	1	1	0.22	1	RCRAFD01P-R01	1	U	1	0.22	1	-100	IN
WG	SW8260B	SW5030	RCRA-2GW-R01	1,4-Dichlorobenzene	1	1	0.1	1	RCRAFD01P-R01	1	U	1	0.1	1	-100	IN
WG	SW8260B	SW5030	RCRA-2GW-R01	2-chloro-1,3-butadiene	1	1	0.25	1	RCRAFD01P-R01	1	U	1	0.25	1	-100	IN
WG	SW8260B	SW5030	RCRA-2GW-R01	2-Hexanone	4	4	0.64	4	RCRAFD01P-R01	4	U	4	0.64	4	-100	IN
WG	SW8260B	SW5030	RCRA-2GW-R01	Acetone	4	4	1.9	4	RCRAFD01P-R01	4	U	4	1.9	4	-100	IN
WG	SW8260B	SW5030	RCRA-2GW-R01	Acrolein	4	4	1.8	4	RCRAFD01P-R01	4	U	4	1.8	4	-100	IN
WG	SW8260B	SW5030	RCRA-2GW-R01	Acrylonitrile	2	2	0.81	2	RCRAFD01P-R01	2	U	2	0.81	2	-100	IN
WG	SW8260B	SW5030	RCRA-2GW-R01	allyl chloride (3-chloropropene)	1	1	0.39	1	RCRAFD01P-R01	1	U	1	0.39	1	-100	IN
WG	SW8260B	SW5030	RCRA-2GW-R01	Benzene	1	1	0.18	1	RCRAFD01P-R01	1	U	1	0.18	1	-100	IN
WG	SW8260B	SW5030	RCRA-2GW-R01	benzyl chloride	1	1	0.15	1	RCRAFD01P-R01	1	U	1	0.15	1	-100	IN
WG	SW8260B	SW5030	RCRA-2GW-R01	Bromodichloromethane	1	1	0.19	1	RCRAFD01P-R01	1	U	1	0.19	1	-100	IN
WG	SW8260B	SW5030	RCRA-2GW-R01	Bromoform	1	1	0.42	1	RCRAFD01P-R01	1	U	1	0.42	1	-100	IN
WG	SW8260B	SW5030	RCRA-2GW-R01	Bromomethane	1	1	0.41	1	RCRAFD01P-R01	1	U	1	0.41	1	-100	IN
WG	SW8260B	SW5030	RCRA-2GW-R01	Carbon disulfide	1	1	0.3	1	RCRAFD01P-R01	1	U	1	0.3	1	-100	IN
WG	SW8260B	SW5030	RCRA-2GW-R01	Carbon tetrachloride	1	1	0.25	1	RCRAFD01P-R01	1	U	1	0.25	1	-100	IN
WG	SW8260B	SW5030	RCRA-2GW-R01	Chlorobenzene	1	1	0.19	1	RCRAFD01P-R01	1	U	1	0.19	1	-100	IN
WG	SW8260B	SW5030	RCRA-2GW-R01	Chloroethane	1	1	0.44	1	RCRAFD01P-R01	1	U	1	0.44	1	-100	IN
WG	SW8260B	SW5030	RCRA-2GW-R01	Chloroform	1	1	0.15	1	RCRAFD01P-R01	1	U	1	0.15	1	-100	IN
WG	SW8260B	SW5030	RCRA-2GW-R01	Chloromethane	1	1	0.49	1	RCRAFD01P-R01	1	U	1	0.49	1	-100	IN
WG	SW8260B	SW5030	RCRA-2GW-R01	cis-1,2-Dichloroethene	1	1	0.32	1	RCRAFD01P-R01	1	U	1	0.32	1	-100	IN
WG	SW8260B	SW5030	RCRA-2GW-R01	cis-1,3-Dichloropropene	1	1	0.2	1	RCRAFD01P-R01	1	U	1	0.2	1	-100	IN
WG	SW8260B	SW5030	RCRA-2GW-R01	Dibromochloromethane	1	1	0.16	1	RCRAFD01P-R01	1	U	1	0.16	1	-100	IN
WG	SW8260B	SW5030	RCRA-2GW-R01	Dibromomethane	1	1	0.24	1	RCRAFD01P-R01	1	U	1	0.24	1	-100	IN
WG	SW8260B	SW5030	RCRA-2GW-R01	Dichlorodifluoromethane	1	1	0.44	1	RCRAFD01P-R01	1	U	1	0.44	1	-100	IN
WG	SW8260B	SW5030	RCRA-2GW-R01	ethyl methacrylate	1	1	0.17	1	RCRAFD01P-R01	1	U	1	0.17	1	-100	IN
WG	SW8260B	SW5030	RCRA-2GW-R01	Ethylbenzene	1	1	0.21	1	RCRAFD01P-R01	1	U	1	0.21	1	-100	IN
WG	SW8260B	SW5030	RCRA-2GW-R01	iodomethane (methyl iodide)	1	1	0.25	1	RCRAFD01P-R01	1	U	1	0.25	1	-100	IN
WG	SW8260B	SW5030	RCRA-2GW-R01	Methyl ethyl ketone (2-butanone)	4	4	0.81	4	RCRAFD01P-R01	4	U	4	0.81	4	-100	IN
WG	SW8260B	SW5030	RCRA-2GW-R01	Methyl isobutyl ketone (4-methyl-2-pentanone	4	4	0.5	4	RCRAFD01P-R01	4	U	4	0.5	4	-100	IN
WG	SW8260B	SW5030	RCRA-2GW-R01	methyl methacrylate	1	1	0.33	1	RCRAFD01P-R01	1	U	1	0.33	1	-100	IN
WG	SW8260B	SW5030	RCRA-2GW-R01	methylacrylonitrile	10	10	2	10	RCRAFD01P-R01	10	U	10	2	10	-100	IN
WG	SW8260B	SW5030	RCRA-2GW-R01	Methylene chloride	1	1	0.22	1	RCRAFD01P-R01	1	U	1	0.22	1	-100	IN

Matrix	Analytical Method	Preparation Method	Sample ID	Parameter	Lab Result	Final Result	Detection Limit	Reporting Limit	Field Dup Sample ID	Field Dup Lab Result	Field Dup Lab Qual	Field Dup Final Result	Field Dup Detection Limit	Field Dup Reporting Limit	RPD	Eval
WG	SW8290	METHOD	RCRA-2GW-R01	1,2,3,4,6,7,8-heptachlorodibenzo-p-dioxin	25	25	0.92	25	RCRAFD01P-R01	25	U	25	1.54	25	-100	IN
WG	SW8290	METHOD	RCRA-2GW-R01	1,2,3,4,7,8-hexachlorodibenzo-p-dioxin	25	25	1.13	25	RCRAFD01P-R01	25	U	25	0.34	25	-100	IN
WG	SW8290	METHOD	RCRA-2GW-R01	1,2,3,6,7,8-hexachlorodibenzo-p-dioxin	25	25	0.24	25	RCRAFD01P-R01	25	U	25	0.17	25	-100	IN
WG	SW8260B	SW5030	RCRA-2GW-R01	propane nitrile (propionitrile)	10	10	2.9	10	RCRAFD01P-R01	10	U	10	2.9	10	-100	IN
WG	SW8260B	SW5030	RCRA-2GW-R01	Styrene	1	1	0.12	1	RCRAFD01P-R01	1	U	1	0.12	1	-100	IN
WG	SW8260B	SW5030	RCRA-2GW-R01	Tetrachloroethene (PCE)	1	1	0.38	1	RCRAFD01P-R01	1	U	1	0.38	1	-100	IN
WG	SW8260B	SW5030	RCRA-2GW-R01	Toluene	1	1	0.19	1	RCRAFD01P-R01	1	U	1	0.19	1	-100	IN
WG	SW8260B	SW5030	RCRA-2GW-R01	trans-1,2-Dichloroethene	1	1	0.21	1	RCRAFD01P-R01	1	U	1	0.21	1	-100	IN
WG	SW8260B	SW5030	RCRA-2GW-R01	trans-1,3-Dichloropropene	1	1	0.24	1	RCRAFD01P-R01	1	U	1	0.24	1	-100	IN
WG	SW8260B	SW5030	RCRA-2GW-R01	trans-1,4-dichloro-2-butene	2	2	1.8	2	RCRAFD01P-R01	2	U	2	1.8	2	-100	IN
WG	SW8260B	SW5030	RCRA-2GW-R01	Trichloroethene (TCE)	1	1	0.2	1	RCRAFD01P-R01	1	U	1	0.2	1	-100	IN
WG	SW8260B	SW5030	RCRA-2GW-R01	Trichlorofluoromethane	1	1	0.45	1	RCRAFD01P-R01	1	U	1	0.45	1	-100	IN
WG	SW8260B	SW5030	RCRA-2GW-R01	Vinyl acetate	1	1	0.36	1	RCRAFD01P-R01	1	U	1	0.36	1	-100	IN
WG	SW8260B	SW5030	RCRA-2GW-R01	Vinyl chloride	1	1	0.33	1	RCRAFD01P-R01	1	U	1	0.33	1	-100	IN
WG	SW8260B	SW5030	RCRA-2GW-R01	Xylenes, total	3	3	0.67	3	RCRAFD01P-R01	3	U	3	0.67	3	-100	IN

Matrix	BS Sample ID	BSD Sample ID	Analytical Method	Preparation Method	Parameter	BS Lab Result	BSD Lab Result	BS True Value	BS Recovery	BSD True Value	BSD Recovery	RPD	RPD	BS LCL	BS UCL	Accuracy Qual	RPD Limit	Precision Qual
WQ	128630LCS	128630LCSD	E376.1	NONE	Sulfide	4960.0	4800	5000	99.2	5000	96	3.28	3.28	80	120		20	
WQ	6839LCS	6839LCS2	SW8081	SW3510	Aldrin	0.007	0.0055	0.01	140	0.01	110	24.00	24.00	34	118	*	20	*
WQ	6839LCS	6839LCS2	SW8081	SW3510	alpha bhc	0.006	0.0052	0.01	118	0.01	104	12.61	12.61	23	136		20	
WQ	6839LCS	6839LCS2	SW8081	SW3510	beta bhc	0.008	0.0068	0.01	152	0.01	136	11.11	11.11	42	128	*	20	
WQ	6839LCS	6839LCS2	SW8081	SW3510	delta bhc	0.006	0.0056	0.01	110	0.01	112	1.80	1.80	25	130		20	
WQ	6839LCS	6839LCS2	SW8081	SW3510	gamma bhc (lindane)	0.005	0.0055	0.01	108	0.01	110	1.83	1.83	25	139		20	
WQ	6839LCS	6839LCS2	SW8081	SW3510	alpha-chlordane	0.007	0.0064	0.01	130	0.01	128	1.55	1.55	65	112	*	20	
WQ	6839LCS	6839LCS2	SW8081	SW3510	gamma-chlordane	0.012	0.011	0.01	240	0.01	220	8.70	8.70	72	117	*	20	
WQ	6839LCS	6839LCS2	SW8081	SW3510	p,p'-DDD	0.006	0.0067	0.01	118	0.01	134	12.70	12.70	44	120	*	20	
WQ	6839LCS	6839LCS2	SW8081	SW3510	p,p'-DDE	0.006	0.0056	0.01	112	0.01	112	0.00	0.00	43	115		20	
WQ	6839LCS	6839LCS2	SW8081	SW3510	p,p'-DDT	0.006	0.006	0.01	124	0.01	120	3.28	3.28	42	140		20	
WQ	6839LCS	6839LCS2	SW8081	SW3510	Dieldrin	0.006	0.0062	0.01	128	0.01	124	3.17	3.17	39	123	*	20	
WQ	6839LCS	6839LCS2	SW8081	SW3510	alpha endosulfan	0.006	0.0063	0.01	124	0.01	126	1.60	1.60	44	126		20	
WQ	6839LCS	6839LCS2	SW8081	SW3510	beta endosulfan	0.007	0.0069	0.01	138	0.01	138	0.00	0.00	46	129	*	20	
WQ	6839LCS	6839LCS2	SW8081	SW3510	endosulfan sulfate	0.008	0.0083	0.01	166	0.01	166	0.00	0.00	42	131	*	20	
WQ	6839LCS	6839LCS2	SW8081	SW3510	endrin	0.006	0.0058	0.01	120	0.01	116	3.39	3.39	43	128		20	
WQ	6839LCS	6839LCS2	SW8081	SW3510	endrin aldehyde	0.006	0.007	0.01	114	0.01	140	20.47	20.47	38	107	*	20	*
WQ	6839LCS	6839LCS2	SW8081	SW3510	endrin ketone	0.008	0.0073	0.01	154	0.01	146	5.33	5.33	57	149	*	20	
WQ	6839LCS	6839LCS2	SW8081	SW3510	heptachlor epoxide	0.007	0.0073	0.01	136	0.01	146	7.09	7.09	43	125	*	20	
WQ	6839LCS	6839LCS2	SW8081	SW3510	heptachlor	0.009	0.0086	0.01	186	0.01	172	7.82	7.82	36	121	*	20	
WQ	6839LCS	6839LCS2	SW8081	SW3510	methoxychlor	0.008	0.0075	0.01	164	0.01	150	8.92	8.92	48	131	*	20	
WQ	6847LCS		SW8081	SW3510	Aldrin	0.004		0.01	88					34	118			
WQ	6847LCS		SW8081	SW3510	alpha bhc	0.006		0.01	116					23	136			
WQ	6847LCS		SW8081	SW3510	beta bhc	0.007		0.01	130					42	128	*		
WQ	6847LCS		SW8081	SW3510	delta bhc	0.006		0.01	116					25	130			
WQ	6847LCS		SW8081	SW3510	gamma bhc (lindane)	0.006		0.01	112					25	139			
WQ	6847LCS		SW8081	SW3510	alpha-chlordane	0.007		0.01	130					65	112	*		
WQ	6847LCS		SW8081	SW3510	gamma-chlordane	0.012		0.01	240					72	117	*		
WQ	6847LCS		SW8081	SW3510	p,p'-DDD	0.006		0.01	124					44	120	*		
WQ	6847LCS		SW8081	SW3510	p,p'-DDE	0.005		0.01	100					43	115			
WQ	6847LCS		SW8081	SW3510	p,p'-DDT	0.009		0.01	188					42	140	*		
WQ	6847LCS		SW8081	SW3510	Dieldrin	0.006		0.01	124					39	123	*		
WQ	6847LCS		SW8081	SW3510	alpha endosulfan	0.006		0.01	122					44	126			
WQ	6847LCS		SW8081	SW3510	beta endosulfan	0.006		0.01	120					46	129			
WQ	6847LCS		SW8081	SW3510	endosulfan sulfate	0.008		0.01	156					42	131	*		
WQ	6847LCS		SW8081	SW3510	endrin	0.006		0.01	112					43	128			
WQ	6847LCS		SW8081	SW3510	endrin aldehyde	0.005		0.01	104					38	107			
WQ	6847LCS		SW8081	SW3510	endrin ketone	0.011		0.01	220					57	149	*		
WQ	6847LCS		SW8081	SW3510	heptachlor epoxide	0.006		0.01	126					43	125	*		
WQ	6847LCS		SW8081	SW3510	heptachlor	0.011		0.01	220					36	121	*		
WQ	6847LCS		SW8081	SW3510	methoxychlor	0.008		0.01	152					48	131	*		
WQ	6847LCS2		SW8081	SW3510	Aldrin	0.005		0.01	92					34	118			
WQ	6847LCS2		SW8081	SW3510	alpha bhc	0.005		0.01	92					23	136			
WQ	6847LCS2		SW8081	SW3510	beta bhc	0.006		0.01	116					42	128			
WQ	6847LCS2		SW8081	SW3510	delta bhc	0.007		0.01	142					25	130	*		
WQ	6847LCS2		SW8081	SW3510	gamma bhc (lindane)	0.005		0.01	100					25	139			
WQ	6847LCS2		SW8081	SW3510	alpha-chlordane	0.006		0.01	118					65	112	*		
WQ	6847LCS2		SW8081	SW3510	gamma-chlordane	0.013		0.01	260					72	117	*		
WQ	6847LCS2		SW8081	SW3510	p,p'-DDD	0.004		0.01	84					44	120			
WQ	6847LCS2		SW8081	SW3510	p,p'-DDE	0.005		0.01	94					43	115			
WQ	6847LCS2		SW8081	SW3510	p,p'-DDT	0.005		0.01	94					42	140			

Matrix	BS Sample ID	BSD Sample ID	Analytical Method	Preparation Method	Parameter	BS Lab Result	BSD Lab Result	BS True Value	BS Recovery	BSD True Value	BSD Recovery	RPD	RPD	BS LCL	BS UCL	Accuracy Qual	RPD Limit	Precision Qual
WQ	128630LCS	128630LCSD	E376.1	NONE	Sulfide	4960.0	4800	5000	99.2	5000	96	3.28	3.28	80	120		20	
WQ	6839LCS	6839LCS2	SW8081	SW3510	Aldrin	0.007	0.0055	0.01	140	0.01	110	24.00	24.00	34	118	*	20	*
WQ	6839LCS	6839LCS2	SW8081	SW3510	alpha bhc	0.006	0.0052	0.01	118	0.01	104	12.61	12.61	23	136		20	
WQ	6847LCS2		SW8081	SW3510	Dieldrin	0.006		0.01	120					39	123			
WQ	6847LCS2		SW8081	SW3510	alpha endosulfan	0.006		0.01	110					44	126			
WQ	6847LCS2		SW8081	SW3510	beta endosulfan	0.006		0.01	116					46	129			
WQ	6847LCS2		SW8081	SW3510	endosulfan sulfate	0.007		0.01	134					42	131	*		
WQ	6847LCS2		SW8081	SW3510	endrin	0.005		0.01	108					43	128			
WQ	6847LCS2		SW8081	SW3510	endrin aldehyde	0.005		0.01	98					38	107			
WQ	6847LCS2		SW8081	SW3510	endrin ketone	0.007		0.01	138					57	149			
WQ	6847LCS2		SW8081	SW3510	heptachlor epoxide	0.006		0.01	112					43	125			
WQ	6847LCS2		SW8081	SW3510	heptachlor	0.008		0.01	166					36	121	*		
WQ	6847LCS2		SW8081	SW3510	methoxychlor	0.007		0.01	144					48	131	*		
WQ	6847tox		SW8081	SW3510	toxaphene	0.093		1	9.3					70	130	*		
WQ	6840LCS2	6840LCS3	SW8082	SW3510	Aroclor-1016	0.860	0.81	1	86	1	81	5.99	5.99	37	100		20	
WQ	6840LCS2	6840LCS3	SW8082	SW3510	Aroclor-1260	0.980	0.86	1	98	1	86	13.04	13.04	47	96	*	20	
WQ	6848LCS	6848LCS3	SW8082	SW3510	Aroclor-1016	0.780	0.72	1	78	1	72	8.00	8.00	37	100		20	
WQ	6848LCS	6848LCS3	SW8082	SW3510	Aroclor-1260	0.800	0.73	1	80	1	73	9.15	9.15	47	96		20	
WQ	6850LCS2	6850LCS3	SW8151	SW3510	2,4,5-t (trichlorophenoxyacetic acid)	0.990	0.96	1	99	1	96	3.08	3.08	55	155		20	
WQ	6850LCS2	6850LCS3	SW8151	SW3510	2,4,5-t (trichlorophenoxyacetic acid)	0.990	0.96	1	99	1	96	3.08	3.08	55	155		20	
WQ	6850LCS2	6850LCS3	SW8151	SW3510	2,4,5-t (trichlorophenoxyacetic acid)	0.990	0.96	1	99	1	96	3.08	3.08	55	155		20	
WQ	6850LCS2	6850LCS3	SW8151	SW3510	2,4,5-t (trichlorophenoxyacetic acid)	0.990	0.96	1	99	1	96	3.08	3.08	55	155		20	
WQ	6850LCS2	6850LCS3	SW8151	SW3510	2,4-d (dichlorophenoxyacetic acid)	1.000	0.89	1	100	1	89	11.64	11.64	43	161		20	
WQ	6850LCS2	6850LCS3	SW8151	SW3510	2,4-d (dichlorophenoxyacetic acid)	1.000	0.89	1	100	1	89	11.64	11.64	43	161		20	
WQ	6850LCS2	6850LCS3	SW8151	SW3510	2,4-d (dichlorophenoxyacetic acid)	1.000	0.89	1	100	1	89	11.64	11.64	43	161		20	
WQ	6850LCS2	6850LCS3	SW8151	SW3510	2,4-d (dichlorophenoxyacetic acid)	1.000	0.89	1	100	1	89	11.64	11.64	43	161		20	
WQ	6850LCS2	6850LCS3	SW8151	SW3510	dinoseb	0.810	0.76	1	81	1	76	6.37	6.37	18	149		20	
WQ	6850LCS2	6850LCS3	SW8151	SW3510	dinoseb	0.810	0.76	1	81	1	76	6.37	6.37	18	149		20	
WQ	6850LCS2	6850LCS3	SW8151	SW3510	dinoseb	0.810	0.76	1	81	1	76	6.37	6.37	18	149		20	
WQ	6850LCS2	6850LCS3	SW8151	SW3510	dinoseb	0.810	0.76	1	81	1	76	6.37	6.37	18	149		20	
WQ	6850LCS2	6850LCS3	SW8151	SW3510	silvex (2,4,5-tp)	0.990	0.94	1	99	1	94	5.18	5.18	54	150		20	
WQ	6850LCS2	6850LCS3	SW8151	SW3510	silvex (2,4,5-tp)	0.990	0.94	1	99	1	94	5.18	5.18	54	150		20	
WQ	6850LCS2	6850LCS3	SW8151	SW3510	silvex (2,4,5-tp)	0.990	0.94	1	99	1	94	5.18	5.18	54	150		20	
WQ	6850LCS2	6850LCS3	SW8151	SW3510	silvex (2,4,5-tp)	0.990	0.94	1	99	1	94	5.18	5.18	54	150		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Acetonitrile	219.0	200	200	110	200	100	9.07	9.52	37	122		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Acetonitrile	219.0	200	200	110	200	100	9.07	9.52	37	122		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Acetonitrile	219.0	200	200	110	200	100	9.07	9.52	37	122		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Acetonitrile	219.0	200	200	110	200	100	9.07	9.52	37	122		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Acetone	60.800	55.9	60	101	60	93.2	8.40	8.03	70	135		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Acetone	60.800	55.9	60	101	60	93.2	8.40	8.03	70	135		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Acetone	60.800	55.9	60	101	60	93.2	8.40	8.03	70	135		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Acetone	60.800	55.9	60	101	60	93.2	8.40	8.03	70	135		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Acrolein	57.200	69.2	60	95.3	60	115	18.99	18.74	31	148		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Acrolein	57.200	69.2	60	95.3	60	115	18.99	18.74	31	148		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Acrolein	57.200	69.2	60	95.3	60	115	18.99	18.74	31	148		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Acrolein	57.200	69.2	60	95.3	60	115	18.99	18.74	31	148		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Acrylonitrile	59.000	61.1	60	98.3	60	102	3.50	3.69	55	126		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Acrylonitrile	59.000	61.1	60	98.3	60	102	3.50	3.69	55	126		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Acrylonitrile	59.000	61.1	60	98.3	60	102	3.50	3.69	55	126		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Acrylonitrile	59.000	61.1	60	98.3	60	102	3.50	3.69	55	126		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Bromodichloromethane	20.600	20.4	20	103	20	102	0.98	0.98	84	127		20	

Matrix	BS Sample ID	BSD Sample ID	Analytical Method	Preparation Method	Parameter	BS Lab Result	BSD Lab Result	BS True Value	BS Recovery	BSD True Value	BSD Recovery	RPD	RPD	BS LCL	BS UCL	Accuracy Qual	RPD Limit	Precision Qual
WQ	128630LCS	128630LCSD	E376.1	NONE	Sulfide	4960.0	4800	5000	99.2	5000	96	3.28	3.28	80	120		20	
WQ	6839LCS	6839LCS2	SW8081	SW3510	Aldrin	0.007	0.0055	0.01	140	0.01	110	24.00	24.00	34	118	*	20	*
WQ	6839LCS	6839LCS2	SW8081	SW3510	alpha bhc	0.006	0.0052	0.01	118	0.01	104	12.61	12.61	23	136		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Bromodichloromethane	20.600	20.4	20	103	20	102	0.98	0.98	84	127		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Bromodichloromethane	20.600	20.4	20	103	20	102	0.98	0.98	84	127		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Bromodichloromethane	20.600	20.4	20	103	20	102	0.98	0.98	84	127		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Bromomethane	18.800	19.5	20	94	20	97.5	3.66	3.66	55	159		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Bromomethane	18.800	19.5	20	94	20	97.5	3.66	3.66	55	159		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Bromomethane	18.800	19.5	20	94	20	97.5	3.66	3.66	55	159		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Bromomethane	18.800	19.5	20	94	20	97.5	3.66	3.66	55	159		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Benzene	20.000	19.9	20	100	20	99.5	0.50	0.50	82	129		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Benzene	20.000	19.9	20	100	20	99.5	0.50	0.50	82	129		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Benzene	20.000	19.9	20	100	20	99.5	0.50	0.50	82	129		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Benzene	20.000	19.9	20	100	20	99.5	0.50	0.50	82	129		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	benzyl chloride	20.100	20.6	20	100	20	103	2.46	2.96	88	116		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	benzyl chloride	20.100	20.6	20	100	20	103	2.46	2.96	88	116		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	benzyl chloride	20.100	20.6	20	100	20	103	2.46	2.96	88	116		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	benzyl chloride	20.100	20.6	20	100	20	103	2.46	2.96	88	116		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Toluene	20.000	19.9	20	100	20	99.5	0.50	0.50	82	128		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Toluene	20.000	19.9	20	100	20	99.5	0.50	0.50	82	128		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Toluene	20.000	19.9	20	100	20	99.5	0.50	0.50	82	128		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Toluene	20.000	19.9	20	100	20	99.5	0.50	0.50	82	128		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Carbon disulfide	20.700	20.7	20	104	20	104	0.00	0.00	72	142		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Carbon disulfide	20.700	20.7	20	104	20	104	0.00	0.00	72	142		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Carbon disulfide	20.700	20.7	20	104	20	104	0.00	0.00	72	142		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Carbon disulfide	20.700	20.7	20	104	20	104	0.00	0.00	72	142		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	2-chloro-1,3-butadiene	20.700	20.7	20	104	20	104	0.00	0.00	70	130		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	2-chloro-1,3-butadiene	20.700	20.7	20	104	20	104	0.00	0.00	70	130		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	2-chloro-1,3-butadiene	20.700	20.7	20	104	20	104	0.00	0.00	70	130		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	2-chloro-1,3-butadiene	20.700	20.7	20	104	20	104	0.00	0.00	70	130		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Chlorobenzene	19.600	19.9	20	98	20	99.5	1.52	1.52	87	117		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Chlorobenzene	19.600	19.9	20	98	20	99.5	1.52	1.52	87	117		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Chlorobenzene	19.600	19.9	20	98	20	99.5	1.52	1.52	87	117		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Chlorobenzene	19.600	19.9	20	98	20	99.5	1.52	1.52	87	117		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Chloroethane	19.400	19.2	20	97	20	96	1.04	1.04	77	144		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Chloroethane	19.400	19.2	20	97	20	96	1.04	1.04	77	144		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Chloroethane	19.400	19.2	20	97	20	96	1.04	1.04	77	144		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Chloroethane	19.400	19.2	20	97	20	96	1.04	1.04	77	144		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Chloromethane	19.000	18.6	20	95	20	93	2.13	2.13	48	149		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Chloromethane	19.000	18.6	20	95	20	93	2.13	2.13	48	149		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Chloromethane	19.000	18.6	20	95	20	93	2.13	2.13	48	149		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Chloromethane	19.000	18.6	20	95	20	93	2.13	2.13	48	149		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	allyl chloride (3-chloropropene)	23.000	22.7	20	115	20	114	1.31	0.87	70	130		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	allyl chloride (3-chloropropene)	23.000	22.7	20	115	20	114	1.31	0.87	70	130		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	allyl chloride (3-chloropropene)	23.000	22.7	20	115	20	114	1.31	0.87	70	130		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	allyl chloride (3-chloropropene)	23.000	22.7	20	115	20	114	1.31	0.87	70	130		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Carbon tetrachloride	20.600	21.2	20	103	20	106	2.87	2.87	74	140		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Carbon tetrachloride	20.600	21.2	20	103	20	106	2.87	2.87	74	140		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Carbon tetrachloride	20.600	21.2	20	103	20	106	2.87	2.87	74	140		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Carbon tetrachloride	20.600	21.2	20	103	20	106	2.87	2.87	74	140		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Dibromochloromethane	19.200	19.7	20	96	20	98.5	2.57	2.57	87	123		20	

Matrix	BS Sample ID	BSD Sample ID	Analytical Method	Preparation Method	Parameter	BS Lab Result	BSD Lab Result	BS True Value	BS Recovery	BSD True Value	BSD Recovery	RPD	RPD	BS LCL	BS UCL	Accuracy Qual	RPD Limit	Precision Qual
WQ	128630LCS	128630LCSD	E376.1	NONE	Sulfide	4960.0	4800	5000	99.2	5000	96	3.28	3.28	80	120		20	
WQ	6839LCS	6839LCS2	SW8081	SW3510	Aldrin	0.007	0.0055	0.01	140	0.01	110	24.00	24.00	34	118	*	20	*
WQ	6839LCS	6839LCS2	SW8081	SW3510	alpha bhc	0.006	0.0052	0.01	118	0.01	104	12.61	12.61	23	136		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Dibromochloromethane	19.200	19.7	20	96	20	98.5	2.57	2.57	87	123		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Dibromochloromethane	19.200	19.7	20	96	20	98.5	2.57	2.57	87	123		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Dibromochloromethane	19.200	19.7	20	96	20	98.5	2.57	2.57	87	123		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	1,2-Dibromo-3-chloropropane	19.000	20.5	20	95	20	102	7.59	7.11	82	127		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	1,2-Dibromo-3-chloropropane	19.000	20.5	20	95	20	102	7.59	7.11	82	127		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	1,2-Dibromo-3-chloropropane	19.000	20.5	20	95	20	102	7.59	7.11	82	127		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	1,2-Dibromo-3-chloropropane	19.000	20.5	20	95	20	102	7.59	7.11	82	127		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Dibromomethane	20.600	20.2	20	103	20	101	1.96	1.96	83	120		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Dibromomethane	20.600	20.2	20	103	20	101	1.96	1.96	83	120		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Dibromomethane	20.600	20.2	20	103	20	101	1.96	1.96	83	120		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Dibromomethane	20.600	20.2	20	103	20	101	1.96	1.96	83	120		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	1,1-Dichloroethane	20.000	20.4	20	100	20	102	1.98	1.98	88	127		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	1,1-Dichloroethane	20.000	20.4	20	100	20	102	1.98	1.98	88	127		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	1,1-Dichloroethane	20.000	20.4	20	100	20	102	1.98	1.98	88	127		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	1,1-Dichloroethane	20.000	20.4	20	100	20	102	1.98	1.98	88	127		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	1,2-Dichloroethane	20.300	20.8	20	102	20	104	2.43	1.94	86	120		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	1,2-Dichloroethane	20.300	20.8	20	102	20	104	2.43	1.94	86	120		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	1,2-Dichloroethane	20.300	20.8	20	102	20	104	2.43	1.94	86	120		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	1,2-Dichloroethane	20.300	20.8	20	102	20	104	2.43	1.94	86	120		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	trans-1,4-dichloro-2-butene	40.500	43.2	40	101	40	108	6.45	6.70	68	115		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	trans-1,4-dichloro-2-butene	40.500	43.2	40	101	40	108	6.45	6.70	68	115		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	trans-1,4-dichloro-2-butene	40.500	43.2	40	101	40	108	6.45	6.70	68	115		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	trans-1,4-dichloro-2-butene	40.500	43.2	40	101	40	108	6.45	6.70	68	115		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	1,2-Dichlorobenzene	20.000	20.2	20	100	20	101	1.00	1.00	91	116		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	1,2-Dichlorobenzene	20.000	20.2	20	100	20	101	1.00	1.00	91	116		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	1,2-Dichlorobenzene	20.000	20.2	20	100	20	101	1.00	1.00	91	116		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	1,2-Dichlorobenzene	20.000	20.2	20	100	20	101	1.00	1.00	91	116		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	1,3-Dichlorobenzene	19.900	20	20	99.5	20	100	0.50	0.50	88	121		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	1,3-Dichlorobenzene	19.900	20	20	99.5	20	100	0.50	0.50	88	121		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	1,3-Dichlorobenzene	19.900	20	20	99.5	20	100	0.50	0.50	88	121		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	1,3-Dichlorobenzene	19.900	20	20	99.5	20	100	0.50	0.50	88	121		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	1,4-Dichlorobenzene	20.500	20	20	102	20	100	2.47	1.98	88	118		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	1,4-Dichlorobenzene	20.500	20	20	102	20	100	2.47	1.98	88	118		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	1,4-Dichlorobenzene	20.500	20	20	102	20	100	2.47	1.98	88	118		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	1,4-Dichlorobenzene	20.500	20	20	102	20	100	2.47	1.98	88	118		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	1,1-Dichloroethene	21.100	20.9	20	106	20	104	0.95	1.90	75	150		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	1,1-Dichloroethene	21.100	20.9	20	106	20	104	0.95	1.90	75	150		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	1,1-Dichloroethene	21.100	20.9	20	106	20	104	0.95	1.90	75	150		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	1,1-Dichloroethene	21.100	20.9	20	106	20	104	0.95	1.90	75	150		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	cis-1,2-Dichloroethene	19.900	19.9	20	99.5	20	99.5	0.00	0.00	88	127		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	cis-1,2-Dichloroethene	19.900	19.9	20	99.5	20	99.5	0.00	0.00	88	127		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	cis-1,2-Dichloroethene	19.900	19.9	20	99.5	20	99.5	0.00	0.00	88	127		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	cis-1,2-Dichloroethene	19.900	19.9	20	99.5	20	99.5	0.00	0.00	88	127		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	trans-1,2-Dichloroethene	20.900	21.1	20	104	20	106	0.95	1.90	84	135		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	trans-1,2-Dichloroethene	20.900	21.1	20	104	20	106	0.95	1.90	84	135		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	trans-1,2-Dichloroethene	20.900	21.1	20	104	20	106	0.95	1.90	84	135		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	trans-1,2-Dichloroethene	20.900	21.1	20	104	20	106	0.95	1.90	84	135		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	cis-1,3-Dichloropropene	20.000	20.2	20	100	20	101	1.00	1.00	67	133		20	

Matrix	BS Sample ID	BSD Sample ID	Analytical Method	Preparation Method	Parameter	BS Lab Result	BSD Lab Result	BS True Value	BS Recovery	BSD True Value	BSD Recovery	RPD	RPD	BS LCL	BS UCL	Accuracy Qual	RPD Limit	Precision Qual
WQ	128630LCS	128630LCSD	E376.1	NONE	Sulfide	4960.0	4800	5000	99.2	5000	96	3.28	3.28	80	120		20	
WQ	6839LCS	6839LCS2	SW8081	SW3510	Aldrin	0.007	0.0055	0.01	140	0.01	110	24.00	24.00	34	118	*	20	*
WQ	6839LCS	6839LCS2	SW8081	SW3510	alpha bhc	0.006	0.0052	0.01	118	0.01	104	12.61	12.61	23	136		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	cis-1,3-Dichloropropene	20.000	20.2	20	100	20	101	1.00	1.00	67	133		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	cis-1,3-Dichloropropene	20.000	20.2	20	100	20	101	1.00	1.00	67	133		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	cis-1,3-Dichloropropene	20.000	20.2	20	100	20	101	1.00	1.00	67	133		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	trans-1,3-Dichloropropene	19.700	20.1	20	98.5	20	100	2.01	1.51	62	137		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	trans-1,3-Dichloropropene	19.700	20.1	20	98.5	20	100	2.01	1.51	62	137		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	trans-1,3-Dichloropropene	19.700	20.1	20	98.5	20	100	2.01	1.51	62	137		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	trans-1,3-Dichloropropene	19.700	20.1	20	98.5	20	100	2.01	1.51	62	137		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	1,2-Dichloropropane	20.000	20.4	20	100	20	102	1.98	1.98	83	126		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	1,2-Dichloropropane	20.000	20.4	20	100	20	102	1.98	1.98	83	126		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	1,2-Dichloropropane	20.000	20.4	20	100	20	102	1.98	1.98	83	126		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	1,2-Dichloropropane	20.000	20.4	20	100	20	102	1.98	1.98	83	126		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	1,4-dioxane (p-dioxane)	490.0	384	400	122	400	96	24.26	23.85	0	167		20	*
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	1,4-dioxane (p-dioxane)	490.0	384	400	122	400	96	24.26	23.85	0	167		20	*
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	1,4-dioxane (p-dioxane)	490.0	384	400	122	400	96	24.26	23.85	0	167		20	*
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	1,4-dioxane (p-dioxane)	490.0	384	400	122	400	96	24.26	23.85	0	167		20	*
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Ethylbenzene	20.200	20.2	20	101	20	101	0.00	0.00	89	121		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Ethylbenzene	20.200	20.2	20	101	20	101	0.00	0.00	89	121		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Ethylbenzene	20.200	20.2	20	101	20	101	0.00	0.00	89	121		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Ethylbenzene	20.200	20.2	20	101	20	101	0.00	0.00	89	121		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	1,2-Dibromoethane (Ethylene dibromide)	20.500	20.7	20	102	20	104	0.97	1.94	79	117		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	1,2-Dibromoethane (Ethylene dibromide)	20.500	20.7	20	102	20	104	0.97	1.94	79	117		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	1,2-Dibromoethane (Ethylene dibromide)	20.500	20.7	20	102	20	104	0.97	1.94	79	117		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	1,2-Dibromoethane (Ethylene dibromide)	20.500	20.7	20	102	20	104	0.97	1.94	79	117		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	ethyl methacrylate	19.500	20	20	97.5	20	100	2.53	2.53	73	121		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	ethyl methacrylate	19.500	20	20	97.5	20	100	2.53	2.53	73	121		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	ethyl methacrylate	19.500	20	20	97.5	20	100	2.53	2.53	73	121		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	ethyl methacrylate	19.500	20	20	97.5	20	100	2.53	2.53	73	121		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Trichlorofluoromethane	20.600	20.9	20	103	20	104	1.45	0.97	65	190		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Trichlorofluoromethane	20.600	20.9	20	103	20	104	1.45	0.97	65	190		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Trichlorofluoromethane	20.600	20.9	20	103	20	104	1.45	0.97	65	190		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Trichlorofluoromethane	20.600	20.9	20	103	20	104	1.45	0.97	65	190		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Dichlorodifluoromethane	19.800	19.9	20	99	20	99.5	0.50	0.50	56	144		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Dichlorodifluoromethane	19.800	19.9	20	99	20	99.5	0.50	0.50	56	144		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Dichlorodifluoromethane	19.800	19.9	20	99	20	99.5	0.50	0.50	56	144		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Dichlorodifluoromethane	19.800	19.9	20	99	20	99.5	0.50	0.50	56	144		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	2-Hexanone	55.500	58.1	60	92.5	60	96.8	4.58	4.54	58	136		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	2-Hexanone	55.500	58.1	60	92.5	60	96.8	4.58	4.54	58	136		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	2-Hexanone	55.500	58.1	60	92.5	60	96.8	4.58	4.54	58	136		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	2-Hexanone	55.500	58.1	60	92.5	60	96.8	4.58	4.54	58	136		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	iodomethane (methyl iodide)	18.900	19.4	20	94.5	20	97	2.61	2.61	75	152		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	iodomethane (methyl iodide)	18.900	19.4	20	94.5	20	97	2.61	2.61	75	152		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	iodomethane (methyl iodide)	18.900	19.4	20	94.5	20	97	2.61	2.61	75	152		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	iodomethane (methyl iodide)	18.900	19.4	20	94.5	20	97	2.61	2.61	75	152		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	isobutanol	412.0	410	400	103	400	102	0.49	0.98	70	130		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	isobutanol	412.0	410	400	103	400	102	0.49	0.98	70	130		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	isobutanol	412.0	410	400	103	400	102	0.49	0.98	70	130		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	isobutanol	412.0	410	400	103	400	102	0.49	0.98	70	130		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Methyl ethyl ketone (2-butanone)	59.0	61.7	60	98.3	60	103	4.47	4.67	83	127		20	

Matrix	BS Sample ID	BSD Sample ID	Analytical Method	Preparation Method	Parameter	BS Lab Result	BSD Lab Result	BS True Value	BS Recovery	BSD True Value	BSD Recovery	RPD	RPD	BS LCL	BS UCL	Accuracy Qual	RPD Limit	Precision Qual
WQ	128630LCS	128630LCSD	E376.1	NONE	Sulfide	4960.0	4800	5000	99.2	5000	96	3.28	3.28	80	120		20	
WQ	6839LCS	6839LCS2	SW8081	SW3510	Aldrin	0.007	0.0055	0.01	140	0.01	110	24.00	24.00	34	118	*	20	*
WQ	6839LCS	6839LCS2	SW8081	SW3510	alpha bhc	0.006	0.0052	0.01	118	0.01	104	12.61	12.61	23	136		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Methyl ethyl ketone (2-butanone)	59.0	61.7	60	98.3	60	103	4.47	4.67	83	127		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Methyl ethyl ketone (2-butanone)	59.0	61.7	60	98.3	60	103	4.47	4.67	83	127		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Methyl ethyl ketone (2-butanone)	59.0	61.7	60	98.3	60	103	4.47	4.67	83	127		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	methylacrylonitrile	197.0	205	200	98.5	200	102	3.98	3.49	70	130		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	methylacrylonitrile	197.0	205	200	98.5	200	102	3.98	3.49	70	130		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	methylacrylonitrile	197.0	205	200	98.5	200	102	3.98	3.49	70	130		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	methylacrylonitrile	197.0	205	200	98.5	200	102	3.98	3.49	70	130		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Methyl isobutyl ketone (4-methyl-2-pentanone)	56.9	59.4	60	94.8	60	99	4.30	4.33	64	140		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Methyl isobutyl ketone (4-methyl-2-pentanone)	56.9	59.4	60	94.8	60	99	4.30	4.33	64	140		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Methyl isobutyl ketone (4-methyl-2-pentanone)	56.9	59.4	60	94.8	60	99	4.30	4.33	64	140		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Methyl isobutyl ketone (4-methyl-2-pentanone)	56.9	59.4	60	94.8	60	99	4.30	4.33	64	140		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	methyl methacrylate	19.400	19.9	20	97	20	99.5	2.54	2.54	33	172		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	methyl methacrylate	19.400	19.9	20	97	20	99.5	2.54	2.54	33	172		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	methyl methacrylate	19.400	19.9	20	97	20	99.5	2.54	2.54	33	172		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	methyl methacrylate	19.400	19.9	20	97	20	99.5	2.54	2.54	33	172		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Methylene chloride	18.800	19	20	94	20	95	1.06	1.06	81	129		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Methylene chloride	18.800	19	20	94	20	95	1.06	1.06	81	129		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Methylene chloride	18.800	19	20	94	20	95	1.06	1.06	81	129		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Methylene chloride	18.800	19	20	94	20	95	1.06	1.06	81	129		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	propane nitrile (propionitrile)	200.0	201	200	100	200	100	0.50	0.00	70	130		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	propane nitrile (propionitrile)	200.0	201	200	100	200	100	0.50	0.00	70	130		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	propane nitrile (propionitrile)	200.0	201	200	100	200	100	0.50	0.00	70	130		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	propane nitrile (propionitrile)	200.0	201	200	100	200	100	0.50	0.00	70	130		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	1,1,2,2-Tetrachloroethane	20.400	21.2	20	102	20	106	3.85	3.85	87	116		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	1,1,2,2-Tetrachloroethane	20.400	21.2	20	102	20	106	3.85	3.85	87	116		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	1,1,2,2-Tetrachloroethane	20.400	21.2	20	102	20	106	3.85	3.85	87	116		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	1,1,2,2-Tetrachloroethane	20.400	21.2	20	102	20	106	3.85	3.85	87	116		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Tetrachloroethene (PCE)	19.200	19.1	20	96	20	95.5	0.52	0.52	87	124		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Tetrachloroethene (PCE)	19.200	19.1	20	96	20	95.5	0.52	0.52	87	124		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Tetrachloroethene (PCE)	19.200	19.1	20	96	20	95.5	0.52	0.52	87	124		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Tetrachloroethene (PCE)	19.200	19.1	20	96	20	95.5	0.52	0.52	87	124		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Styrene	20.400	20.7	20	102	20	104	1.46	1.94	80	127		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Styrene	20.400	20.7	20	102	20	104	1.46	1.94	80	127		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Styrene	20.400	20.7	20	102	20	104	1.46	1.94	80	127		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Styrene	20.400	20.7	20	102	20	104	1.46	1.94	80	127		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Bromoform	17.800	18.1	20	89	20	90.5	1.67	1.67	67	129		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Bromoform	17.800	18.1	20	89	20	90.5	1.67	1.67	67	129		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Bromoform	17.800	18.1	20	89	20	90.5	1.67	1.67	67	129		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Bromoform	17.800	18.1	20	89	20	90.5	1.67	1.67	67	129		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	1,1,1,2-Tetrachloroethane	19.600	20.1	20	98	20	100	2.52	2.02	81	124		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	1,1,1,2-Tetrachloroethane	19.600	20.1	20	98	20	100	2.52	2.02	81	124		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	1,1,1,2-Tetrachloroethane	19.600	20.1	20	98	20	100	2.52	2.02	81	124		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	1,1,1,2-Tetrachloroethane	19.600	20.1	20	98	20	100	2.52	2.02	81	124		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	1,1,1-Trichloroethane	19.800	20.9	20	99	20	104	5.41	4.93	83	132		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	1,1,1-Trichloroethane	19.800	20.9	20	99	20	104	5.41	4.93	83	132		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	1,1,1-Trichloroethane	19.800	20.9	20	99	20	104	5.41	4.93	83	132		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	1,1,1-Trichloroethane	19.800	20.9	20	99	20	104	5.41	4.93	83	132		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	1,1,2-Trichloroethane	19.200	19.6	20	96	20	98	2.06	2.06	86	117		20	

Matrix	BS Sample ID	BSD Sample ID	Analytical Method	Preparation Method	Parameter	BS Lab Result	BSD Lab Result	BS True Value	BS Recovery	BSD True Value	BSD Recovery	RPD	RPD	BS LCL	BS UCL	Accuracy Qual	RPD Limit	Precision Qual
WQ	128630LCS	128630LCSD	E376.1	NONE	Sulfide	4960.0	4800	5000	99.2	5000	96	3.28	3.28	80	120		20	
WQ	6839LCS	6839LCS2	SW8081	SW3510	Aldrin	0.007	0.0055	0.01	140	0.01	110	24.00	24.00	34	118	*	20	*
WQ	6839LCS	6839LCS2	SW8081	SW3510	alpha bhc	0.006	0.0052	0.01	118	0.01	104	12.61	12.61	23	136		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	1,1,2-Trichloroethane	19.200	19.6	20	96	20	98	2.06	2.06	86	117		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	1,1,2-Trichloroethane	19.200	19.6	20	96	20	98	2.06	2.06	86	117		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	1,1,2-Trichloroethane	19.200	19.6	20	96	20	98	2.06	2.06	86	117		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Trichloroethene (TCE)	19.300	19.5	20	96.5	20	97.5	1.03	1.03	82	127		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Trichloroethene (TCE)	19.300	19.5	20	96.5	20	97.5	1.03	1.03	82	127		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Trichloroethene (TCE)	19.300	19.5	20	96.5	20	97.5	1.03	1.03	82	127		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Trichloroethene (TCE)	19.300	19.5	20	96.5	20	97.5	1.03	1.03	82	127		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Chloroform	20.200	20.3	20	101	20	102	0.49	0.99	83	127		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Chloroform	20.200	20.3	20	101	20	102	0.49	0.99	83	127		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Chloroform	20.200	20.3	20	101	20	102	0.49	0.99	83	127		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Chloroform	20.200	20.3	20	101	20	102	0.49	0.99	83	127		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	1,2,3-Trichloropropane	20.700	21.3	20	104	20	106	2.86	1.90	84	118		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	1,2,3-Trichloropropane	20.700	21.3	20	104	20	106	2.86	1.90	84	118		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	1,2,3-Trichloropropane	20.700	21.3	20	104	20	106	2.86	1.90	84	118		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	1,2,3-Trichloropropane	20.700	21.3	20	104	20	106	2.86	1.90	84	118		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Vinyl acetate	19.400	19.9	20	97	20	99.5	2.54	2.54	77	150		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Vinyl acetate	19.400	19.9	20	97	20	99.5	2.54	2.54	77	150		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Vinyl acetate	19.400	19.9	20	97	20	99.5	2.54	2.54	77	150		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Vinyl acetate	19.400	19.9	20	97	20	99.5	2.54	2.54	77	150		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Vinyl chloride	19.900	19.5	20	99.5	20	97.5	2.03	2.03	66	128		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Vinyl chloride	19.900	19.5	20	99.5	20	97.5	2.03	2.03	66	128		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Vinyl chloride	19.900	19.5	20	99.5	20	97.5	2.03	2.03	66	128		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Vinyl chloride	19.900	19.5	20	99.5	20	97.5	2.03	2.03	66	128		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Xylenes, total	60.600	60.6	60	101	60	101	0.00	0.00	82	124		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Xylenes, total	60.600	60.6	60	101	60	101	0.00	0.00	82	124		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Xylenes, total	60.600	60.6	60	101	60	101	0.00	0.00	82	124		20	
WQ	021004LCSA	021004LCSA22	SW8260B	SW5030	Xylenes, total	60.600	60.6	60	101	60	101	0.00	0.00	82	124		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	4-nitroquinoline-n-oxide	22.500	22.3	40	56.2	40	55.8	0.89	0.71	33	121		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	4-nitroquinoline-n-oxide	22.500	22.3	40	56.2	40	55.8	0.89	0.71	33	121		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	4-nitroquinoline-n-oxide	22.500	22.3	40	56.2	40	55.8	0.89	0.71	33	121		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	4-nitroquinoline-n-oxide	22.500	22.3	40	56.2	40	55.8	0.89	0.71	33	121		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2-acetylaminofluorene	28.400	29.9	40	71	40	74.8	5.15	5.21	38	129		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2-acetylaminofluorene	28.400	29.9	40	71	40	74.8	5.15	5.21	38	129		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2-acetylaminofluorene	28.400	29.9	40	71	40	74.8	5.15	5.21	38	129		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2-acetylaminofluorene	28.400	29.9	40	71	40	74.8	5.15	5.21	38	129		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Acenaphthene	27.900	28.2	40	69.8	40	70.5	1.07	1.00	44	124		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Acenaphthene	27.900	28.2	40	69.8	40	70.5	1.07	1.00	44	124		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Acenaphthene	27.900	28.2	40	69.8	40	70.5	1.07	1.00	44	124		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Acenaphthene	27.900	28.2	40	69.8	40	70.5	1.07	1.00	44	124		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Acenaphthylene	29.100	29.1	40	72.8	40	72.8	0.00	0.00	45	125		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Acenaphthylene	29.100	29.1	40	72.8	40	72.8	0.00	0.00	45	125		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Acenaphthylene	29.100	29.1	40	72.8	40	72.8	0.00	0.00	45	125		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Acenaphthylene	29.100	29.1	40	72.8	40	72.8	0.00	0.00	45	125		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Acetophenone	43.100	44.1	80	53.9	80	55.1	2.29	2.20	23	119		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Acetophenone	43.100	44.1	80	53.9	80	55.1	2.29	2.20	23	119		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Acetophenone	43.100	44.1	80	53.9	80	55.1	2.29	2.20	23	119		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Acetophenone	43.100	44.1	80	53.9	80	55.1	2.29	2.20	23	119		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	4-aminobiphenyl (4-biphenylamine)	29.900	30.8	40	74.8	40	77	2.97	2.90	9	131		20	

Matrix	BS Sample ID	BSD Sample ID	Analytical Method	Preparation Method	Parameter	BS Lab Result	BSD Lab Result	BS True Value	BS Recovery	BSD True Value	BSD Recovery	RPD	RPD	BS LCL	BS UCL	Accuracy Qual	RPD Limit	Precision Qual
WQ	128630LCS	128630LCSD	E376.1	NONE	Sulfide	4960.0	4800	5000	99.2	5000	96	3.28	3.28	80	120		20	
WQ	6839LCS	6839LCS2	SW8081	SW3510	Aldrin	0.007	0.0055	0.01	140	0.01	110	24.00	24.00	34	118	*	20	*
WQ	6839LCS	6839LCS2	SW8081	SW3510	alpha bhc	0.006	0.0052	0.01	118	0.01	104	12.61	12.61	23	136		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	4-aminobiphenyl (4-biphenylamine)	29.900	30.8	40	74.8	40	77	2.97	2.90	9	131		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	4-aminobiphenyl (4-biphenylamine)	29.900	30.8	40	74.8	40	77	2.97	2.90	9	131		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	4-aminobiphenyl (4-biphenylamine)	29.900	30.8	40	74.8	40	77	2.97	2.90	9	131		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	1-naphthylamine	24.500	24.8	40	61.2	40	62	1.22	1.30	13	110		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	1-naphthylamine	24.500	24.8	40	61.2	40	62	1.22	1.30	13	110		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	1-naphthylamine	24.500	24.8	40	61.2	40	62	1.22	1.30	13	110		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	1-naphthylamine	24.500	24.8	40	61.2	40	62	1.22	1.30	13	110		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2-aminonaphthalene (beta naphthylamine)	27.100	27.6	40	67.8	40	69	1.83	1.75	9	109		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2-aminonaphthalene (beta naphthylamine)	27.100	27.6	40	67.8	40	69	1.83	1.75	9	109		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2-aminonaphthalene (beta naphthylamine)	27.100	27.6	40	67.8	40	69	1.83	1.75	9	109		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2-aminonaphthalene (beta naphthylamine)	27.100	27.6	40	67.8	40	69	1.83	1.75	9	109		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Aniline (phenylamine, aminobenzene)	25.500	25.4	40	63.8	40	63.5	0.39	0.47	14	99		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Aniline (phenylamine, aminobenzene)	25.500	25.4	40	63.8	40	63.5	0.39	0.47	14	99		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Aniline (phenylamine, aminobenzene)	25.500	25.4	40	63.8	40	63.5	0.39	0.47	14	99		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Aniline (phenylamine, aminobenzene)	25.500	25.4	40	63.8	40	63.5	0.39	0.47	14	99		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	p-phenylenediamine	26.100	27.5	40	65.2	40	68.8	5.22	5.37	39	121		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	p-phenylenediamine	26.100	27.5	40	65.2	40	68.8	5.22	5.37	39	121		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	p-phenylenediamine	26.100	27.5	40	65.2	40	68.8	5.22	5.37	39	121		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	p-phenylenediamine	26.100	27.5	40	65.2	40	68.8	5.22	5.37	39	121		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Anthracene	29.300	30.6	40	73.2	40	76.5	4.34	4.41	47	124		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Anthracene	29.300	30.6	40	73.2	40	76.5	4.34	4.41	47	124		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Anthracene	29.300	30.6	40	73.2	40	76.5	4.34	4.41	47	124		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Anthracene	29.300	30.6	40	73.2	40	76.5	4.34	4.41	47	124		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Aramite	26.400	27.1	40	66	40	67.8	2.62	2.69	40	128		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Aramite	26.400	27.1	40	66	40	67.8	2.62	2.69	40	128		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Aramite	26.400	27.1	40	66	40	67.8	2.62	2.69	40	128		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Aramite	26.400	27.1	40	66	40	67.8	2.62	2.69	40	128		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Benzyl butyl phthalate	31.300	31.8	40	78.2	40	79.5	1.58	1.65	42	150		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Benzyl butyl phthalate	31.300	31.8	40	78.2	40	79.5	1.58	1.65	42	150		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Benzyl butyl phthalate	31.300	31.8	40	78.2	40	79.5	1.58	1.65	42	150		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Benzyl butyl phthalate	31.300	31.8	40	78.2	40	79.5	1.58	1.65	42	150		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Bis(2-Chloroethoxy) methane	39.200	38.7	40	98	40	96.8	1.28	1.23	42	143		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Bis(2-Chloroethoxy) methane	39.200	38.7	40	98	40	96.8	1.28	1.23	42	143		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Bis(2-Chloroethoxy) methane	39.200	38.7	40	98	40	96.8	1.28	1.23	42	143		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Bis(2-Chloroethoxy) methane	39.200	38.7	40	98	40	96.8	1.28	1.23	42	143		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	bis(2-Chloroethyl) ether (2-Chloroethyl ether)	28.400	29.1	40	71	40	72.8	2.43	2.50	36	129		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	bis(2-Chloroethyl) ether (2-Chloroethyl ether)	28.400	29.1	40	71	40	72.8	2.43	2.50	36	129		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	bis(2-Chloroethyl) ether (2-Chloroethyl ether)	28.400	29.1	40	71	40	72.8	2.43	2.50	36	129		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	bis(2-Chloroethyl) ether (2-Chloroethyl ether)	28.400	29.1	40	71	40	72.8	2.43	2.50	36	129		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	bis(2-Chloroisopropyl) ether	28.500	29.2	40	71.2	40	73	2.43	2.50	41	133		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	bis(2-Chloroisopropyl) ether	28.500	29.2	40	71.2	40	73	2.43	2.50	41	133		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	bis(2-Chloroisopropyl) ether	28.500	29.2	40	71.2	40	73	2.43	2.50	41	133		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	bis(2-Chloroisopropyl) ether	28.500	29.2	40	71.2	40	73	2.43	2.50	41	133		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	bis(2-Ethylhexyl) phthalate	35.300	33.2	40	88.2	40	83	6.13	6.07	31	155		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	bis(2-Ethylhexyl) phthalate	35.300	33.2	40	88.2	40	83	6.13	6.07	31	155		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	bis(2-Ethylhexyl) phthalate	35.300	33.2	40	88.2	40	83	6.13	6.07	31	155		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	bis(2-Ethylhexyl) phthalate	35.300	33.2	40	88.2	40	83	6.13	6.07	31	155		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	4-Bromophenyl phenyl ether	25.800	26.4	40	64.5	40	66	2.30	2.30	41	114		20	

Matrix	BS Sample ID	BSD Sample ID	Analytical Method	Preparation Method	Parameter	BS Lab Result	BSD Lab Result	BS True Value	BS Recovery	BSD True Value	BSD Recovery	RPD	RPD	BS LCL	BS UCL	Accuracy Qual	RPD Limit	Precision Qual
WQ	128630LCS	128630LCSD	E376.1	NONE	Sulfide	4960.0	4800	5000	99.2	5000	96	3.28	3.28	80	120		20	
WQ	6839LCS	6839LCS2	SW8081	SW3510	Aldrin	0.007	0.0055	0.01	140	0.01	110	24.00	24.00	34	118	*	20	*
WQ	6839LCS	6839LCS2	SW8081	SW3510	alpha bhc	0.006	0.0052	0.01	118	0.01	104	12.61	12.61	23	136		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	4-Bromophenyl phenyl ether	25.800	26.4	40	64.5	40	66	2.30	2.30	41	114		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	4-Bromophenyl phenyl ether	25.800	26.4	40	64.5	40	66	2.30	2.30	41	114		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	4-Bromophenyl phenyl ether	25.800	26.4	40	64.5	40	66	2.30	2.30	41	114		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Benzo(a)anthracene	28.000	28.3	40	70	40	70.8	1.07	1.14	34	138		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Benzo(a)anthracene	28.000	28.3	40	70	40	70.8	1.07	1.14	34	138		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Benzo(a)anthracene	28.000	28.3	40	70	40	70.8	1.07	1.14	34	138		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Benzo(a)anthracene	28.000	28.3	40	70	40	70.8	1.07	1.14	34	138		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Benzo(a)pyrene	30.300	30.7	40	75.8	40	76.8	1.31	1.31	30	138		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Benzo(a)pyrene	30.300	30.7	40	75.8	40	76.8	1.31	1.31	30	138		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Benzo(a)pyrene	30.300	30.7	40	75.8	40	76.8	1.31	1.31	30	138		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Benzo(a)pyrene	30.300	30.7	40	75.8	40	76.8	1.31	1.31	30	138		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Benzo(b)fluoranthene	30.000	27.4	40	75	40	68.5	9.06	9.06	32	139		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Benzo(b)fluoranthene	30.000	27.4	40	75	40	68.5	9.06	9.06	32	139		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Benzo(b)fluoranthene	30.000	27.4	40	75	40	68.5	9.06	9.06	32	139		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Benzo(b)fluoranthene	30.000	27.4	40	75	40	68.5	9.06	9.06	32	139		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Benzo(g,h,i)perylene	29.900	30.3	40	74.8	40	75.8	1.33	1.33	32	138		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Benzo(g,h,i)perylene	29.900	30.3	40	74.8	40	75.8	1.33	1.33	32	138		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Benzo(g,h,i)perylene	29.900	30.3	40	74.8	40	75.8	1.33	1.33	32	138		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Benzo(g,h,i)perylene	29.900	30.3	40	74.8	40	75.8	1.33	1.33	32	138		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Benzo(k)fluoranthene	28.800	31.8	40	72	40	79.5	9.90	9.90	32	138		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Benzo(k)fluoranthene	28.800	31.8	40	72	40	79.5	9.90	9.90	32	138		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Benzo(k)fluoranthene	28.800	31.8	40	72	40	79.5	9.90	9.90	32	138		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Benzo(k)fluoranthene	28.800	31.8	40	72	40	79.5	9.90	9.90	32	138		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Benzyl alcohol	30.100	29.7	40	75.2	40	74.2	1.34	1.34	42	113		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Benzyl alcohol	30.100	29.7	40	75.2	40	74.2	1.34	1.34	42	113		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Benzyl alcohol	30.100	29.7	40	75.2	40	74.2	1.34	1.34	42	113		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Benzyl alcohol	30.100	29.7	40	75.2	40	74.2	1.34	1.34	42	113		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	1,2,4,5-tetrachlorobenzene	25.400	25.4	40	63.5	40	63.5	0.00	0.00	22	113		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	1,2,4,5-tetrachlorobenzene	25.400	25.4	40	63.5	40	63.5	0.00	0.00	22	113		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	1,2,4,5-tetrachlorobenzene	25.400	25.4	40	63.5	40	63.5	0.00	0.00	22	113		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	1,2,4,5-tetrachlorobenzene	25.400	25.4	40	63.5	40	63.5	0.00	0.00	22	113		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	4-Chloro-3-methylphenol	31.300	31.6	40	78.2	40	79	0.95	1.02	33	116		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	4-Chloro-3-methylphenol	31.300	31.6	40	78.2	40	79	0.95	1.02	33	116		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	4-Chloro-3-methylphenol	31.300	31.6	40	78.2	40	79	0.95	1.02	33	116		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	4-Chloro-3-methylphenol	31.300	31.6	40	78.2	40	79	0.95	1.02	33	116		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Carbazole	30.100	31	40	75.2	40	77.5	2.95	3.01	33	140		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Carbazole	30.100	31	40	75.2	40	77.5	2.95	3.01	33	140		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Carbazole	30.100	31	40	75.2	40	77.5	2.95	3.01	33	140		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Carbazole	30.100	31	40	75.2	40	77.5	2.95	3.01	33	140		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Chrysene	28.700	29	40	71.8	40	72.5	1.04	0.97	36	140		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Chrysene	28.700	29	40	71.8	40	72.5	1.04	0.97	36	140		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Chrysene	28.700	29	40	71.8	40	72.5	1.04	0.97	36	140		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Chrysene	28.700	29	40	71.8	40	72.5	1.04	0.97	36	140		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	4-Chloroaniline	33.000	32.3	40	82.5	40	80.8	2.14	2.08	41	102		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	4-Chloroaniline	33.000	32.3	40	82.5	40	80.8	2.14	2.08	41	102		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	4-Chloroaniline	33.000	32.3	40	82.5	40	80.8	2.14	2.08	41	102		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	4-Chloroaniline	33.000	32.3	40	82.5	40	80.8	2.14	2.08	41	102		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	chlorobenzilate	28.400	29.7	40	71	40	74.2	4.48	4.41	56	129		20	

Matrix	BS Sample ID	BSD Sample ID	Analytical Method	Preparation Method	Parameter	BS Lab Result	BSD Lab Result	BS True Value	BS Recovery	BSD True Value	BSD Recovery	RPD	RPD	BS LCL	BS UCL	Accuracy Qual	RPD Limit	Precision Qual
WQ	128630LCS	128630LCSD	E376.1	NONE	Sulfide	4960.0	4800	5000	99.2	5000	96	3.28	3.28	80	120		20	
WQ	6839LCS	6839LCS2	SW8081	SW3510	Aldrin	0.007	0.0055	0.01	140	0.01	110	24.00	24.00	34	118	*	20	*
WQ	6839LCS	6839LCS2	SW8081	SW3510	alpha bhc	0.006	0.0052	0.01	118	0.01	104	12.61	12.61	23	136		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	chlorobenzilate	28.400	29.7	40	71	40	74.2	4.48	4.41	56	129		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	chlorobenzilate	28.400	29.7	40	71	40	74.2	4.48	4.41	56	129		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	chlorobenzilate	28.400	29.7	40	71	40	74.2	4.48	4.41	56	129		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2-Chlorophenol	29.800	30.3	40	74.5	40	75.8	1.66	1.73	37	98		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2-Chlorophenol	29.800	30.3	40	74.5	40	75.8	1.66	1.73	37	98		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2-Chlorophenol	29.800	30.3	40	74.5	40	75.8	1.66	1.73	37	98		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2-Chlorophenol	29.800	30.3	40	74.5	40	75.8	1.66	1.73	37	98		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2-Chloronaphthalene	25.600	25.9	40	64	40	64.8	1.17	1.24	37	128		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2-Chloronaphthalene	25.600	25.9	40	64	40	64.8	1.17	1.24	37	128		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2-Chloronaphthalene	25.600	25.9	40	64	40	64.8	1.17	1.24	37	128		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2-Chloronaphthalene	25.600	25.9	40	64	40	64.8	1.17	1.24	37	128		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	4-Chlorophenyl phenyl ether	28.900	29.4	40	72.2	40	73.5	1.72	1.78	45	128		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	4-Chlorophenyl phenyl ether	28.900	29.4	40	72.2	40	73.5	1.72	1.78	45	128		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	4-Chlorophenyl phenyl ether	28.900	29.4	40	72.2	40	73.5	1.72	1.78	45	128		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	4-Chlorophenyl phenyl ether	28.900	29.4	40	72.2	40	73.5	1.72	1.78	45	128		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Dibenz(a,h)anthracene	27.300	27.9	40	68.2	40	69.8	2.17	2.32	41	106		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Dibenz(a,h)anthracene	27.300	27.9	40	68.2	40	69.8	2.17	2.32	41	106		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Dibenz(a,h)anthracene	27.300	27.9	40	68.2	40	69.8	2.17	2.32	41	106		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Dibenz(a,h)anthracene	27.300	27.9	40	68.2	40	69.8	2.17	2.32	41	106		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Dibenzofuran	28.900	29.2	40	72.2	40	73	1.03	1.10	42	137		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Dibenzofuran	28.900	29.2	40	72.2	40	73	1.03	1.10	42	137		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Dibenzofuran	28.900	29.2	40	72.2	40	73	1.03	1.10	42	137		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Dibenzofuran	28.900	29.2	40	72.2	40	73	1.03	1.10	42	137		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	3,3'-Dichlorobenzidine	31.400	31.6	40	78.5	40	79	0.63	0.63	32	108		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	3,3'-Dichlorobenzidine	31.400	31.6	40	78.5	40	79	0.63	0.63	32	108		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	3,3'-Dichlorobenzidine	31.400	31.6	40	78.5	40	79	0.63	0.63	32	108		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	3,3'-Dichlorobenzidine	31.400	31.6	40	78.5	40	79	0.63	0.63	32	108		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	1,2-Dichlorobenzene	21.200	21.7	40	53	40	54.2	2.33	2.24	27	106		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	1,2-Dichlorobenzene	21.200	21.7	40	53	40	54.2	2.33	2.24	27	106		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	1,2-Dichlorobenzene	21.200	21.7	40	53	40	54.2	2.33	2.24	27	106		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	1,2-Dichlorobenzene	21.200	21.7	40	53	40	54.2	2.33	2.24	27	106		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	1,3-Dichlorobenzene	19.500	20.1	40	48.8	40	50.2	3.03	2.83	29	101		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	1,3-Dichlorobenzene	19.500	20.1	40	48.8	40	50.2	3.03	2.83	29	101		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	1,3-Dichlorobenzene	19.500	20.1	40	48.8	40	50.2	3.03	2.83	29	101		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	1,3-Dichlorobenzene	19.500	20.1	40	48.8	40	50.2	3.03	2.83	29	101		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	1,4-Dichlorobenzene	19.700	20.4	40	49.2	40	51	3.49	3.59	26	101		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	1,4-Dichlorobenzene	19.700	20.4	40	49.2	40	51	3.49	3.59	26	101		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	1,4-Dichlorobenzene	19.700	20.4	40	49.2	40	51	3.49	3.59	26	101		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	1,4-Dichlorobenzene	19.700	20.4	40	49.2	40	51	3.49	3.59	26	101		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2,4-Dichlorophenol	30.400	30.6	40	76	40	76.5	0.66	0.66	7	128		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2,4-Dichlorophenol	30.400	30.6	40	76	40	76.5	0.66	0.66	7	128		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2,4-Dichlorophenol	30.400	30.6	40	76	40	76.5	0.66	0.66	7	128		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2,4-Dichlorophenol	30.400	30.6	40	76	40	76.5	0.66	0.66	7	128		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2,6-dichlorophenol	27.000	27.2	40	67.5	40	68	0.74	0.74	31	123		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2,6-dichlorophenol	27.000	27.2	40	67.5	40	68	0.74	0.74	31	123		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2,6-dichlorophenol	27.000	27.2	40	67.5	40	68	0.74	0.74	31	123		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2,6-dichlorophenol	27.000	27.2	40	67.5	40	68	0.74	0.74	31	123		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Diethyl phthalate	29.900	30.5	40	74.8	40	76.2	1.99	1.85	25	145		20	

Matrix	BS Sample ID	BSD Sample ID	Analytical Method	Preparation Method	Parameter	BS Lab Result	BSD Lab Result	BS True Value	BS Recovery	BSD True Value	BSD Recovery	RPD	RPD	BS LCL	BS UCL	Accuracy Qual	RPD Limit	Precision Qual
WQ	128630LCS	128630LCSD	E376.1	NONE	Sulfide	4960.0	4800	5000	99.2	5000	96	3.28	3.28	80	120		20	
WQ	6839LCS	6839LCS2	SW8081	SW3510	Aldrin	0.007	0.0055	0.01	140	0.01	110	24.00	24.00	34	118	*	20	*
WQ	6839LCS	6839LCS2	SW8081	SW3510	alpha bhc	0.006	0.0052	0.01	118	0.01	104	12.61	12.61	23	136		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Diethyl phthalate	29.900	30.5	40	74.8	40	76.2	1.99	1.85	25	145		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Diethyl phthalate	29.900	30.5	40	74.8	40	76.2	1.99	1.85	25	145		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Diethyl phthalate	29.900	30.5	40	74.8	40	76.2	1.99	1.85	25	145		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	diallate	26.300	26.8	40	65.8	40	67	1.88	1.81	37	115		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	diallate	26.300	26.8	40	65.8	40	67	1.88	1.81	37	115		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	diallate	26.300	26.8	40	65.8	40	67	1.88	1.81	37	115		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	diallate	26.300	26.8	40	65.8	40	67	1.88	1.81	37	115		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	7,12-dimethylbenz(a)anthracene	32.000	31.8	40	80	40	79.5	0.63	0.63	51	104		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	7,12-dimethylbenz(a)anthracene	32.000	31.8	40	80	40	79.5	0.63	0.63	51	104		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	7,12-dimethylbenz(a)anthracene	32.000	31.8	40	80	40	79.5	0.63	0.63	51	104		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	7,12-dimethylbenz(a)anthracene	32.000	31.8	40	80	40	79.5	0.63	0.63	51	104		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	3,3'-dimethylbenzidine	19.900	20.8	40	49.8	40	52	4.42	4.32	0	114		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	3,3'-dimethylbenzidine	19.900	20.8	40	49.8	40	52	4.42	4.32	0	114		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	3,3'-dimethylbenzidine	19.900	20.8	40	49.8	40	52	4.42	4.32	0	114		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	3,3'-dimethylbenzidine	19.900	20.8	40	49.8	40	52	4.42	4.32	0	114		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2,4-Dimethylphenol	33.600	33.4	40	84	40	83.5	0.60	0.60	4	116		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2,4-Dimethylphenol	33.600	33.4	40	84	40	83.5	0.60	0.60	4	116		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2,4-Dimethylphenol	33.600	33.4	40	84	40	83.5	0.60	0.60	4	116		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2,4-Dimethylphenol	33.600	33.4	40	84	40	83.5	0.60	0.60	4	116		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Dimethyl phthalate	28.800	29	40	72	40	72.5	0.69	0.69	16	139		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Dimethyl phthalate	28.800	29	40	72	40	72.5	0.69	0.69	16	139		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Dimethyl phthalate	28.800	29	40	72	40	72.5	0.69	0.69	16	139		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Dimethyl phthalate	28.800	29	40	72	40	72.5	0.69	0.69	16	139		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	4,6-Dinitro-2-methylphenol	31.400	32.5	40	78.5	40	81.2	3.44	3.38	7	129		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	4,6-Dinitro-2-methylphenol	31.400	32.5	40	78.5	40	81.2	3.44	3.38	7	129		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	4,6-Dinitro-2-methylphenol	31.400	32.5	40	78.5	40	81.2	3.44	3.38	7	129		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	4,6-Dinitro-2-methylphenol	31.400	32.5	40	78.5	40	81.2	3.44	3.38	7	129		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	1,3-dinitrobenzene	28.000	28.6	40	70	40	71.5	2.12	2.12	36	126		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	1,3-dinitrobenzene	28.000	28.6	40	70	40	71.5	2.12	2.12	36	126		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	1,3-dinitrobenzene	28.000	28.6	40	70	40	71.5	2.12	2.12	36	126		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	1,3-dinitrobenzene	28.000	28.6	40	70	40	71.5	2.12	2.12	36	126		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Di-n-butyl phthalate	30.900	31.7	40	77.2	40	79.2	2.56	2.56	48	137		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Di-n-butyl phthalate	30.900	31.7	40	77.2	40	79.2	2.56	2.56	48	137		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Di-n-butyl phthalate	30.900	31.7	40	77.2	40	79.2	2.56	2.56	48	137		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Di-n-butyl phthalate	30.900	31.7	40	77.2	40	79.2	2.56	2.56	48	137		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Di-n-octylphthalate	30.200	30.3	40	75.5	40	75.8	0.33	0.40	25	154		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Di-n-octylphthalate	30.200	30.3	40	75.5	40	75.8	0.33	0.40	25	154		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Di-n-octylphthalate	30.200	30.3	40	75.5	40	75.8	0.33	0.40	25	154		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Di-n-octylphthalate	30.200	30.3	40	75.5	40	75.8	0.33	0.40	25	154		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2,4-Dinitrophenol	37.000	38.6	40	92.5	40	96.5	4.23	4.23	2	125		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2,4-Dinitrophenol	37.000	38.6	40	92.5	40	96.5	4.23	4.23	2	125		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2,4-Dinitrophenol	37.000	38.6	40	92.5	40	96.5	4.23	4.23	2	125		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2,4-Dinitrophenol	37.000	38.6	40	92.5	40	96.5	4.23	4.23	2	125		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2,4-Dinitrotoluene	32.500	33.5	40	81.2	40	83.8	3.03	3.15	39	144		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2,4-Dinitrotoluene	32.500	33.5	40	81.2	40	83.8	3.03	3.15	39	144		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2,4-Dinitrotoluene	32.500	33.5	40	81.2	40	83.8	3.03	3.15	39	144		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2,4-Dinitrotoluene	32.500	33.5	40	81.2	40	83.8	3.03	3.15	39	144		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2,6-Dinitrotoluene	32.500	33.5	40	81.2	40	83.8	3.03	3.15	40	145		20	

Matrix	BS Sample ID	BSD Sample ID	Analytical Method	Preparation Method	Parameter	BS Lab Result	BSD Lab Result	BS True Value	BS Recovery	BSD True Value	BSD Recovery	RPD	RPD	BS LCL	BS UCL	Accuracy Qual	RPD Limit	Precision Qual
WQ	128630LCS	128630LCSD	E376.1	NONE	Sulfide	4960.0	4800	5000	99.2	5000	96	3.28	3.28	80	120		20	
WQ	6839LCS	6839LCS2	SW8081	SW3510	Aldrin	0.007	0.0055	0.01	140	0.01	110	24.00	24.00	34	118	*	20	*
WQ	6839LCS	6839LCS2	SW8081	SW3510	alpha bhc	0.006	0.0052	0.01	118	0.01	104	12.61	12.61	23	136		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2,6-Dinitrotoluene	32.500	33.5	40	81.2	40	83.8	3.03	3.15	40	145		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2,6-Dinitrotoluene	32.500	33.5	40	81.2	40	83.8	3.03	3.15	40	145		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2,6-Dinitrotoluene	32.500	33.5	40	81.2	40	83.8	3.03	3.15	40	145		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	ethyl methanesulfonate	28.900	29.3	40	72.2	40	73.2	1.37	1.38	38	114		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	ethyl methanesulfonate	28.900	29.3	40	72.2	40	73.2	1.37	1.38	38	114		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	ethyl methanesulfonate	28.900	29.3	40	72.2	40	73.2	1.37	1.38	38	114		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	ethyl methanesulfonate	28.900	29.3	40	72.2	40	73.2	1.37	1.38	38	114		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Fluorene	30.000	30.2	40	75	40	75.5	0.66	0.66	47	127		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Fluorene	30.000	30.2	40	75	40	75.5	0.66	0.66	47	127		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Fluorene	30.000	30.2	40	75	40	75.5	0.66	0.66	47	127		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Fluorene	30.000	30.2	40	75	40	75.5	0.66	0.66	47	127		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Fluoranthene	29.600	30.4	40	74	40	76	2.67	2.67	44	132		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Fluoranthene	29.600	30.4	40	74	40	76	2.67	2.67	44	132		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Fluoranthene	29.600	30.4	40	74	40	76	2.67	2.67	44	132		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Fluoranthene	29.600	30.4	40	74	40	76	2.67	2.67	44	132		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Hexachlorobutadiene	20.100	20.2	40	50.2	40	50.5	0.50	0.60	48	92		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Hexachlorobutadiene	20.100	20.2	40	50.2	40	50.5	0.50	0.60	48	92		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Hexachlorobutadiene	20.100	20.2	40	50.2	40	50.5	0.50	0.60	48	92		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Hexachlorobutadiene	20.100	20.2	40	50.2	40	50.5	0.50	0.60	48	92		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Hexachlorocyclopentadiene	19.700	19.7	40	49.2	40	49.2	0.00	0.00	13	80		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Hexachlorocyclopentadiene	19.700	19.7	40	49.2	40	49.2	0.00	0.00	13	80		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Hexachlorocyclopentadiene	19.700	19.7	40	49.2	40	49.2	0.00	0.00	13	80		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Hexachlorocyclopentadiene	19.700	19.7	40	49.2	40	49.2	0.00	0.00	13	80		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Hexachlorobenzene	29.900	30.4	40	74.8	40	76	1.66	1.59	35	135		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Hexachlorobenzene	29.900	30.4	40	74.8	40	76	1.66	1.59	35	135		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Hexachlorobenzene	29.900	30.4	40	74.8	40	76	1.66	1.59	35	135		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Hexachlorobenzene	29.900	30.4	40	74.8	40	76	1.66	1.59	35	135		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Hexachloroethane	17.300	17.6	40	43.2	40	44	1.72	1.83	22	96		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Hexachloroethane	17.300	17.6	40	43.2	40	44	1.72	1.83	22	96		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Hexachloroethane	17.300	17.6	40	43.2	40	44	1.72	1.83	22	96		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Hexachloroethane	17.300	17.6	40	43.2	40	44	1.72	1.83	22	96		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	hexachloropropene	17.600	17.3	40	44	40	43.2	1.72	1.83	12	114		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	hexachloropropene	17.600	17.3	40	44	40	43.2	1.72	1.83	12	114		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	hexachloropropene	17.600	17.3	40	44	40	43.2	1.72	1.83	12	114		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	hexachloropropene	17.600	17.3	40	44	40	43.2	1.72	1.83	12	114		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Indeno(1,2,3-c,d)pyrene	27.000	26.2	40	67.5	40	65.5	3.01	3.01	32	143		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Indeno(1,2,3-c,d)pyrene	27.000	26.2	40	67.5	40	65.5	3.01	3.01	32	143		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Indeno(1,2,3-c,d)pyrene	27.000	26.2	40	67.5	40	65.5	3.01	3.01	32	143		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Indeno(1,2,3-c,d)pyrene	27.000	26.2	40	67.5	40	65.5	3.01	3.01	32	143		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	isodrin	25.500	26	40	63.8	40	65	1.94	1.86	43	120		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	isodrin	25.500	26	40	63.8	40	65	1.94	1.86	43	120		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	isodrin	25.500	26	40	63.8	40	65	1.94	1.86	43	120		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	isodrin	25.500	26	40	63.8	40	65	1.94	1.86	43	120		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Isophorone	38.200	38.5	40	95.5	40	96.2	0.78	0.73	35	153		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Isophorone	38.200	38.5	40	95.5	40	96.2	0.78	0.73	35	153		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Isophorone	38.200	38.5	40	95.5	40	96.2	0.78	0.73	35	153		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Isophorone	38.200	38.5	40	95.5	40	96.2	0.78	0.73	35	153		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	isosafrole	27.000	26.9	40	67.5	40	67.2	0.37	0.45	70	130	*	20	

Matrix	BS Sample ID	BSD Sample ID	Analytical Method	Preparation Method	Parameter	BS Lab Result	BSD Lab Result	BS True Value	BS Recovery	BSD True Value	BSD Recovery	RPD	RPD	BS LCL	BS UCL	Accuracy Qual	RPD Limit	Precision Qual
WQ	128630LCS	128630LCSD	E376.1	NONE	Sulfide	4960.0	4800	5000	99.2	5000	96	3.28	3.28	80	120		20	
WQ	6839LCS	6839LCS2	SW8081	SW3510	Aldrin	0.007	0.0055	0.01	140	0.01	110	24.00	24.00	34	118	*	20	*
WQ	6839LCS	6839LCS2	SW8081	SW3510	alpha bhc	0.006	0.0052	0.01	118	0.01	104	12.61	12.61	23	136		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	isosafrole	27.000	26.9	40	67.5	40	67.2	0.37	0.45	70	130	*	20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	isosafrole	27.000	26.9	40	67.5	40	67.2	0.37	0.45	70	130	*	20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	isosafrole	27.000	26.9	40	67.5	40	67.2	0.37	0.45	70	130	*	20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	kepone	22.300	22.6	40	55.8	40	56.5	1.34	1.25	0	122		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	kepone	22.300	22.6	40	55.8	40	56.5	1.34	1.25	0	122		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	kepone	22.300	22.6	40	55.8	40	56.5	1.34	1.25	0	122		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	kepone	22.300	22.6	40	55.8	40	56.5	1.34	1.25	0	122		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	3-methylcholanthrene	28.100	30	40	70.2	40	75	6.54	6.61	54	105		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	3-methylcholanthrene	28.100	30	40	70.2	40	75	6.54	6.61	54	105		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	3-methylcholanthrene	28.100	30	40	70.2	40	75	6.54	6.61	54	105		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	3-methylcholanthrene	28.100	30	40	70.2	40	75	6.54	6.61	54	105		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2-Methylphenol (o-Cresol)	29.100	28.8	40	72.8	40	72	1.04	1.10	6	114		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2-Methylphenol (o-Cresol)	29.100	28.8	40	72.8	40	72	1.04	1.10	6	114		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2-Methylphenol (o-Cresol)	29.100	28.8	40	72.8	40	72	1.04	1.10	6	114		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2-Methylphenol (o-Cresol)	29.100	28.8	40	72.8	40	72	1.04	1.10	6	114		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	4-Methylphenol (p-Cresol)	22.100	22.5	40	55.2	40	56.2	1.79	1.80	6	104		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	4-Methylphenol (p-Cresol)	22.100	22.5	40	55.2	40	56.2	1.79	1.80	6	104		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	4-Methylphenol (p-Cresol)	22.100	22.5	40	55.2	40	56.2	1.79	1.80	6	104		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	4-Methylphenol (p-Cresol)	22.100	22.5	40	55.2	40	56.2	1.79	1.80	6	104		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	methyl methanesulfonate	22.600	22.4	40	56.5	40	56	0.89	0.89	12	97		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	methyl methanesulfonate	22.600	22.4	40	56.5	40	56	0.89	0.89	12	97		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	methyl methanesulfonate	22.600	22.4	40	56.5	40	56	0.89	0.89	12	97		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	methyl methanesulfonate	22.600	22.4	40	56.5	40	56	0.89	0.89	12	97		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	alpha, alpha-Dimethylphenethylamine	10.000	10	40	0	40	0			10	100	*	20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	alpha, alpha-Dimethylphenethylamine	10.000	10	40	0	40	0			10	100	*	20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	alpha, alpha-Dimethylphenethylamine	10.000	10	40	0	40	0			10	100	*	20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	alpha, alpha-Dimethylphenethylamine	10.000	10	40	0	40	0			10	100	*	20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2-Methylnaphthalene	26.800	26.9	40	67	40	67.2	0.37	0.30	33	127		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2-Methylnaphthalene	26.800	26.9	40	67	40	67.2	0.37	0.30	33	127		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2-Methylnaphthalene	26.800	26.9	40	67	40	67.2	0.37	0.30	33	127		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2-Methylnaphthalene	26.800	26.9	40	67	40	67.2	0.37	0.30	33	127		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	methapyrilene	13.300	13.4	40	33.2	40	33.5	0.75	0.90	0	48		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	methapyrilene	13.300	13.4	40	33.2	40	33.5	0.75	0.90	0	48		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	methapyrilene	13.300	13.4	40	33.2	40	33.5	0.75	0.90	0	48		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	methapyrilene	13.300	13.4	40	33.2	40	33.5	0.75	0.90	0	48		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Naphthalene	26.300	26.2	40	65.8	40	65.5	0.38	0.46	36	114		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Naphthalene	26.300	26.2	40	65.8	40	65.5	0.38	0.46	36	114		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Naphthalene	26.300	26.2	40	65.8	40	65.5	0.38	0.46	36	114		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Naphthalene	26.300	26.2	40	65.8	40	65.5	0.38	0.46	36	114		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	1,4-naphthoquinone	5.700	5.7	40	14.2	40	14.2	0.00	0.00	23	128	*	20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	1,4-naphthoquinone	5.700	5.7	40	14.2	40	14.2	0.00	0.00	23	128	*	20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	1,4-naphthoquinone	5.700	5.7	40	14.2	40	14.2	0.00	0.00	23	128	*	20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	1,4-naphthoquinone	5.700	5.7	40	14.2	40	14.2	0.00	0.00	23	128	*	20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	n-nitroso-di-n-butylamine	31.300	31.2	40	78.2	40	78	0.32	0.26	44	122		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	n-nitroso-di-n-butylamine	31.300	31.2	40	78.2	40	78	0.32	0.26	44	122		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	n-nitroso-di-n-butylamine	31.300	31.2	40	78.2	40	78	0.32	0.26	44	122		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	n-nitroso-di-n-butylamine	31.300	31.2	40	78.2	40	78	0.32	0.26	44	122		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	n-nitrosodiethylamine	25.900	27	40	64.8	40	67.5	4.16	4.08	43	112		20	

Matrix	BS Sample ID	BSD Sample ID	Analytical Method	Preparation Method	Parameter	BS Lab Result	BSD Lab Result	BS True Value	BS Recovery	BSD True Value	BSD Recovery	RPD	RPD	BS LCL	BS UCL	Accuracy Qual	RPD Limit	Precision Qual
WQ	128630LCS	128630LCSD	E376.1	NONE	Sulfide	4960.0	4800	5000	99.2	5000	96	3.28	3.28	80	120		20	
WQ	6839LCS	6839LCS2	SW8081	SW3510	Aldrin	0.007	0.0055	0.01	140	0.01	110	24.00	24.00	34	118	*	20	*
WQ	6839LCS	6839LCS2	SW8081	SW3510	alpha bhc	0.006	0.0052	0.01	118	0.01	104	12.61	12.61	23	136		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	n-nitrosodiethylamine	25.900	27	40	64.8	40	67.5	4.16	4.08	43	112		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	n-nitrosodiethylamine	25.900	27	40	64.8	40	67.5	4.16	4.08	43	112		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	n-nitrosodiethylamine	25.900	27	40	64.8	40	67.5	4.16	4.08	43	112		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	n-nitrosodimethylamine	23.900	22.6	40	59.8	40	56.5	5.59	5.67	0	108		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	n-nitrosodimethylamine	23.900	22.6	40	59.8	40	56.5	5.59	5.67	0	108		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	n-nitrosodimethylamine	23.900	22.6	40	59.8	40	56.5	5.59	5.67	0	108		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	n-nitrosodimethylamine	23.900	22.6	40	59.8	40	56.5	5.59	5.67	0	108		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	nitrosomethylethylamine	26.300	26.7	40	65.8	40	66.8	1.51	1.51	26	115		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	nitrosomethylethylamine	26.300	26.7	40	65.8	40	66.8	1.51	1.51	26	115		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	nitrosomethylethylamine	26.300	26.7	40	65.8	40	66.8	1.51	1.51	26	115		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	nitrosomethylethylamine	26.300	26.7	40	65.8	40	66.8	1.51	1.51	26	115		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	n-nitrosomorpholine	28.500	27.6	40	71.2	40	69	3.21	3.14	33	110		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	n-nitrosomorpholine	28.500	27.6	40	71.2	40	69	3.21	3.14	33	110		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	n-nitrosomorpholine	28.500	27.6	40	71.2	40	69	3.21	3.14	33	110		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	n-nitrosomorpholine	28.500	27.6	40	71.2	40	69	3.21	3.14	33	110		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	n-Nitrosodiphenylamine	32.600	33.7	40	81.5	40	84.2	3.32	3.26	66	145		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	n-Nitrosodiphenylamine	32.600	33.7	40	81.5	40	84.2	3.32	3.26	66	145		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	n-Nitrosodiphenylamine	32.600	33.7	40	81.5	40	84.2	3.32	3.26	66	145		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	n-Nitrosodiphenylamine	32.600	33.7	40	81.5	40	84.2	3.32	3.26	66	145		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	n-nitrosopiperidine	26.400	27.7	40	66	40	69.2	4.81	4.73	37	121		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	n-nitrosopiperidine	26.400	27.7	40	66	40	69.2	4.81	4.73	37	121		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	n-nitrosopiperidine	26.400	27.7	40	66	40	69.2	4.81	4.73	37	121		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	n-nitrosopiperidine	26.400	27.7	40	66	40	69.2	4.81	4.73	37	121		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	n-Nitrosodi-n-propylamine	25.200	25.6	40	63	40	64	1.57	1.57	36	112		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	n-Nitrosodi-n-propylamine	25.200	25.6	40	63	40	64	1.57	1.57	36	112		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	n-Nitrosodi-n-propylamine	25.200	25.6	40	63	40	64	1.57	1.57	36	112		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	n-Nitrosodi-n-propylamine	25.200	25.6	40	63	40	64	1.57	1.57	36	112		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	n-nitrosopyrrolidine	24.600	25.5	40	61.5	40	63.8	3.59	3.67	34	107		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	n-nitrosopyrrolidine	24.600	25.5	40	61.5	40	63.8	3.59	3.67	34	107		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	n-nitrosopyrrolidine	24.600	25.5	40	61.5	40	63.8	3.59	3.67	34	107		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	n-nitrosopyrrolidine	24.600	25.5	40	61.5	40	63.8	3.59	3.67	34	107		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2-Nitroaniline	30.200	31.1	40	75.5	40	77.8	2.94	3.00	53	114		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2-Nitroaniline	30.200	31.1	40	75.5	40	77.8	2.94	3.00	53	114		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2-Nitroaniline	30.200	31.1	40	75.5	40	77.8	2.94	3.00	53	114		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2-Nitroaniline	30.200	31.1	40	75.5	40	77.8	2.94	3.00	53	114		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	3-Nitroaniline	34.100	34.6	40	85.2	40	86.5	1.46	1.51	34	130		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	3-Nitroaniline	34.100	34.6	40	85.2	40	86.5	1.46	1.51	34	130		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	3-Nitroaniline	34.100	34.6	40	85.2	40	86.5	1.46	1.51	34	130		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	3-Nitroaniline	34.100	34.6	40	85.2	40	86.5	1.46	1.51	34	130		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	4-Nitroaniline	31.400	31.7	40	78.5	40	79.2	0.95	0.89	35	134		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	4-Nitroaniline	31.400	31.7	40	78.5	40	79.2	0.95	0.89	35	134		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	4-Nitroaniline	31.400	31.7	40	78.5	40	79.2	0.95	0.89	35	134		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	4-Nitroaniline	31.400	31.7	40	78.5	40	79.2	0.95	0.89	35	134		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Nitrobenzene	29.000	28.9	40	72.5	40	72.2	0.35	0.41	37	136		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Nitrobenzene	29.000	28.9	40	72.5	40	72.2	0.35	0.41	37	136		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Nitrobenzene	29.000	28.9	40	72.5	40	72.2	0.35	0.41	37	136		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Nitrobenzene	29.000	28.9	40	72.5	40	72.2	0.35	0.41	37	136		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2-Nitrophenol	30.600	30	40	76.5	40	75	1.98	1.98	11	129		20	

Matrix	BS Sample ID	BSD Sample ID	Analytical Method	Preparation Method	Parameter	BS Lab Result	BSD Lab Result	BS True Value	BS Recovery	BSD True Value	BSD Recovery	RPD	RPD	BS LCL	BS UCL	Accuracy Qual	RPD Limit	Precision Qual
WQ	128630LCS	128630LCSD	E376.1	NONE	Sulfide	4960.0	4800	5000	99.2	5000	96	3.28	3.28	80	120		20	
WQ	6839LCS	6839LCS2	SW8081	SW3510	Aldrin	0.007	0.0055	0.01	140	0.01	110	24.00	24.00	34	118	*	20	*
WQ	6839LCS	6839LCS2	SW8081	SW3510	alpha bhc	0.006	0.0052	0.01	118	0.01	104	12.61	12.61	23	136		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2-Nitrophenol	30.600	30	40	76.5	40	75	1.98	1.98	11	129		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2-Nitrophenol	30.600	30	40	76.5	40	75	1.98	1.98	11	129		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2-Nitrophenol	30.600	30	40	76.5	40	75	1.98	1.98	11	129		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	4-Nitrophenol	16.500	15.4	40	41.2	40	38.5	6.90	6.78	0	82		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	4-Nitrophenol	16.500	15.4	40	41.2	40	38.5	6.90	6.78	0	82		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	4-Nitrophenol	16.500	15.4	40	41.2	40	38.5	6.90	6.78	0	82		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	4-Nitrophenol	16.500	15.4	40	41.2	40	38.5	6.90	6.78	0	82		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	pentachloroethane	21.600	21.7	40	54	40	54.2	0.46	0.37	16	104		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	pentachloroethane	21.600	21.7	40	54	40	54.2	0.46	0.37	16	104		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	pentachloroethane	21.600	21.7	40	54	40	54.2	0.46	0.37	16	104		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	pentachloroethane	21.600	21.7	40	54	40	54.2	0.46	0.37	16	104		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Pentachlorophenol	30.400	31.4	40	76	40	78.5	3.24	3.24	17	131		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Pentachlorophenol	30.400	31.4	40	76	40	78.5	3.24	3.24	17	131		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Pentachlorophenol	30.400	31.4	40	76	40	78.5	3.24	3.24	17	131		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Pentachlorophenol	30.400	31.4	40	76	40	78.5	3.24	3.24	17	131		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	p-dimethylaminoazobenzene	26.600	27.3	40	66.5	40	68.2	2.60	2.52	57	111		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	p-dimethylaminoazobenzene	26.600	27.3	40	66.5	40	68.2	2.60	2.52	57	111		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	p-dimethylaminoazobenzene	26.600	27.3	40	66.5	40	68.2	2.60	2.52	57	111		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	p-dimethylaminoazobenzene	26.600	27.3	40	66.5	40	68.2	2.60	2.52	57	111		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	pentachlorobenzene	26.400	26.7	40	66	40	66.8	1.13	1.20	32	118		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	pentachlorobenzene	26.400	26.7	40	66	40	66.8	1.13	1.20	32	118		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	pentachlorobenzene	26.400	26.7	40	66	40	66.8	1.13	1.20	32	118		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	pentachlorobenzene	26.400	26.7	40	66	40	66.8	1.13	1.20	32	118		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	pentachloronitrobenzene	28.200	29.2	40	70.5	40	73	3.48	3.48	37	125		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	pentachloronitrobenzene	28.200	29.2	40	70.5	40	73	3.48	3.48	37	125		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	pentachloronitrobenzene	28.200	29.2	40	70.5	40	73	3.48	3.48	37	125		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	pentachloronitrobenzene	28.200	29.2	40	70.5	40	73	3.48	3.48	37	125		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Phenanthrene	29.800	30.4	40	74.5	40	76	1.99	1.99	49	125		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Phenanthrene	29.800	30.4	40	74.5	40	76	1.99	1.99	49	125		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Phenanthrene	29.800	30.4	40	74.5	40	76	1.99	1.99	49	125		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Phenanthrene	29.800	30.4	40	74.5	40	76	1.99	1.99	49	125		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Phenol	17.200	16.8	40	43	40	42	2.35	2.35	9	65		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Phenol	17.200	16.8	40	43	40	42	2.35	2.35	9	65		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Phenol	17.200	16.8	40	43	40	42	2.35	2.35	9	65		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Phenol	17.200	16.8	40	43	40	42	2.35	2.35	9	65		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	phenacetin	24.400	25.7	40	61	40	64.2	5.19	5.11	43	116		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	phenacetin	24.400	25.7	40	61	40	64.2	5.19	5.11	43	116		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	phenacetin	24.400	25.7	40	61	40	64.2	5.19	5.11	43	116		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	phenacetin	24.400	25.7	40	61	40	64.2	5.19	5.11	43	116		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2-picoline (alpha-picoline)	19.200	17.8	40	48	40	44.5	7.57	7.57	6	95		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2-picoline (alpha-picoline)	19.200	17.8	40	48	40	44.5	7.57	7.57	6	95		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2-picoline (alpha-picoline)	19.200	17.8	40	48	40	44.5	7.57	7.57	6	95		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2-picoline (alpha-picoline)	19.200	17.8	40	48	40	44.5	7.57	7.57	6	95		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	pronamide	27.700	28.8	40	69.2	40	72	3.89	3.97	35	123		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	pronamide	27.700	28.8	40	69.2	40	72	3.89	3.97	35	123		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	pronamide	27.700	28.8	40	69.2	40	72	3.89	3.97	35	123		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	pronamide	27.700	28.8	40	69.2	40	72	3.89	3.97	35	123		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Pyrene	28.400	28.8	40	71	40	72	1.40	1.40	45	129		20	

Matrix	BS Sample ID	BSD Sample ID	Analytical Method	Preparation Method	Parameter	BS Lab Result	BSD Lab Result	BS True Value	BS Recovery	BSD True Value	BSD Recovery	RPD	RPD	BS LCL	BS UCL	Accuracy Qual	RPD Limit	Precision Qual
WQ	128630LCS	128630LCSD	E376.1	NONE	Sulfide	4960.0	4800	5000	99.2	5000	96	3.28	3.28	80	120		20	
WQ	6839LCS	6839LCS2	SW8081	SW3510	Aldrin	0.007	0.0055	0.01	140	0.01	110	24.00	24.00	34	118	*	20	*
WQ	6839LCS	6839LCS2	SW8081	SW3510	alpha bhc	0.006	0.0052	0.01	118	0.01	104	12.61	12.61	23	136		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Pyrene	28.400	28.8	40	71	40	72	1.40	1.40	45	129		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Pyrene	28.400	28.8	40	71	40	72	1.40	1.40	45	129		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	Pyrene	28.400	28.8	40	71	40	72	1.40	1.40	45	129		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	pyridine	17.900	17.2	40	44.8	40	43	3.99	4.10	22	70		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	pyridine	17.900	17.2	40	44.8	40	43	3.99	4.10	22	70		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	pyridine	17.900	17.2	40	44.8	40	43	3.99	4.10	22	70		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	pyridine	17.900	17.2	40	44.8	40	43	3.99	4.10	22	70		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	safrole	28.000	28.5	40	70	40	71.2	1.77	1.70	31	116		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	safrole	28.000	28.5	40	70	40	71.2	1.77	1.70	31	116		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	safrole	28.000	28.5	40	70	40	71.2	1.77	1.70	31	116		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	safrole	28.000	28.5	40	70	40	71.2	1.77	1.70	31	116		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	1,2,4-Trichlorobenzene	21.900	22.3	40	54.8	40	55.8	1.81	1.81	28	108		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	1,2,4-Trichlorobenzene	21.900	22.3	40	54.8	40	55.8	1.81	1.81	28	108		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	1,2,4-Trichlorobenzene	21.900	22.3	40	54.8	40	55.8	1.81	1.81	28	108		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	1,2,4-Trichlorobenzene	21.900	22.3	40	54.8	40	55.8	1.81	1.81	28	108		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2,3,4,6-tetrachlorophenol	29.800	31.3	40	74.5	40	78.2	4.91	4.85	37	131		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2,3,4,6-tetrachlorophenol	29.800	31.3	40	74.5	40	78.2	4.91	4.85	37	131		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2,3,4,6-tetrachlorophenol	29.800	31.3	40	74.5	40	78.2	4.91	4.85	37	131		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2,3,4,6-tetrachlorophenol	29.800	31.3	40	74.5	40	78.2	4.91	4.85	37	131		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2,4,5-Trichlorophenol	29.900	30.6	40	74.8	40	76.5	2.31	2.25	9	131		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2,4,5-Trichlorophenol	29.900	30.6	40	74.8	40	76.5	2.31	2.25	9	131		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2,4,5-Trichlorophenol	29.900	30.6	40	74.8	40	76.5	2.31	2.25	9	131		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2,4,5-Trichlorophenol	29.900	30.6	40	74.8	40	76.5	2.31	2.25	9	131		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2,4,6-Trichlorophenol	29.200	29.2	40	73	40	73	0.00	0.00	8	130		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2,4,6-Trichlorophenol	29.200	29.2	40	73	40	73	0.00	0.00	8	130		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2,4,6-Trichlorophenol	29.200	29.2	40	73	40	73	0.00	0.00	8	130		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	2,4,6-Trichlorophenol	29.200	29.2	40	73	40	73	0.00	0.00	8	130		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	o-toluidine	28.700	28.8	40	71.8	40	72	0.35	0.28	29	104		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	o-toluidine	28.700	28.8	40	71.8	40	72	0.35	0.28	29	104		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	o-toluidine	28.700	28.8	40	71.8	40	72	0.35	0.28	29	104		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	o-toluidine	28.700	28.8	40	71.8	40	72	0.35	0.28	29	104		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	5-nitro-o-toluidine	28.800	29.6	40	72	40	74	2.74	2.74	39	116		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	5-nitro-o-toluidine	28.800	29.6	40	72	40	74	2.74	2.74	39	116		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	5-nitro-o-toluidine	28.800	29.6	40	72	40	74	2.74	2.74	39	116		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	5-nitro-o-toluidine	28.800	29.6	40	72	40	74	2.74	2.74	39	116		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	1,3,5-trinitrobenzene	33.900	36.2	40	84.8	40	90.5	6.56	6.50	32	150		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	1,3,5-trinitrobenzene	33.900	36.2	40	84.8	40	90.5	6.56	6.50	32	150		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	1,3,5-trinitrobenzene	33.900	36.2	40	84.8	40	90.5	6.56	6.50	32	150		20	
WQ	021004SLCS	021004SLCSD	SW8270C	SW3510	1,3,5-trinitrobenzene	33.900	36.2	40	84.8	40	90.5	6.56	6.50	32	150		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	4-nitroquinoline-n-oxide	27.500	27.3	40	68.8	40	68.2	0.73	0.88	33	121		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	2-acetylaminofluorene	41.000	43.5	40	102	40	109	5.92	6.64	38	129		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	Acenaphthene	35.800	38.7	40	89.5	40	96.8	7.79	7.84	44	124		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	Acenaphthylene	36.400	39.3	40	91	40	98.2	7.66	7.61	45	125		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	Acetophenone	60.000	66.7	80	75	80	83.4	10.58	10.61	23	119		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	4-aminobiphenyl (4-biphenylamine)	34.000	36.9	40	85	40	92.2	8.18	8.13	9	131		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	1-naphthylamine	26.500	28.8	40	66.2	40	72	8.32	8.39	13	110		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	2-aminonaphthalene (beta naphthylamine)	30.700	33.4	40	76.8	40	83.5	8.42	8.36	9	109		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	Aniline (phenylamine, aminobenzene)	17.700	29.9	40	44.2	40	74.8	51.26	51.43	14	99		20	*

Matrix	BS Sample ID	BSD Sample ID	Analytical Method	Preparation Method	Parameter	BS Lab Result	BSD Lab Result	BS True Value	BS Recovery	BSD True Value	BSD Recovery	RPD	RPD	BS LCL	BS UCL	Accuracy Qual	RPD Limit	Precision Qual
WQ	128630LCS	128630LCSD	E376.1	NONE	Sulfide	4960.0	4800	5000	99.2	5000	96	3.28	3.28	80	120		20	
WQ	6839LCS	6839LCS2	SW8081	SW3510	Aldrin	0.007	0.0055	0.01	140	0.01	110	24.00	24.00	34	118	*	20	*
WQ	6839LCS	6839LCS2	SW8081	SW3510	alpha bhc	0.006	0.0052	0.01	118	0.01	104	12.61	12.61	23	136		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	p-phenylenediamine	34.600	36.9	40	86.5	40	92.2	6.43	6.38	39	121		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	Anthracene	37.600	40.2	40	94	40	100	6.68	6.19	47	124		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	Aramite	37.500	41.1	40	93.8	40	103	9.16	9.35	40	128		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	Benzyl butyl phthalate	38.200	42.1	40	95.5	40	105	9.71	9.48	42	150		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	Bis(2-Chloroethoxy) methane	47.600	51.4	40	119	40	128	7.68	7.29	42	143		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	bis(2-Chloroethyl) ether (2-Chloroethyl ether)	33.900	38.5	40	84.8	40	96.2	12.71	12.60	36	129		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	bis(2-Chloroisopropyl) ether	34.400	38	40	86	40	95	9.94	9.94	41	133		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	bis(2-Ethylhexyl) phthalate	38.400	41.7	40	96	40	104	8.24	8.00	31	155		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	4-Bromophenyl phenyl ether	32.600	35.4	40	81.5	40	88.5	8.24	8.24	41	114		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	Benzo(a)anthracene	34.800	38.2	40	87	40	95.5	9.32	9.32	34	138		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	Benzo(a)pyrene	38.400	41.6	40	96	40	104	8.00	8.00	30	138		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	Benzo(b)fluoranthene	36.600	38.7	40	91.5	40	96.8	5.58	5.63	32	139		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	Benzo(g,h,i)perylene	38.400	41.8	40	96	40	104	8.48	8.00	32	138		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	Benzo(k)fluoranthene	35.400	39.3	40	88.5	40	98.2	10.44	10.39	32	138		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	Benzyl alcohol	29.400	33.9	40	73.5	40	84.8	14.22	14.28	42	113		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	1,2,4,5-tetrachlorobenzene	33.400	37.2	40	83.5	40	93	10.76	10.76	22	113		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	4-Chloro-3-methylphenol	37.600	41.2	40	94	40	103	9.14	9.14	33	116		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	Carbazole	37.300	39.7	40	93.2	40	99.2	6.23	6.24	33	140		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	Chrysene	35.800	39.4	40	89.5	40	98.5	9.57	9.57	36	140		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	4-Chloroaniline	33.300	36.3	40	83.2	40	90.8	8.62	8.74	41	102		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	chlorobenzilate	40.400	43.4	40	101	40	108	7.16	6.70	56	129		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	2-Chlorophenol	33.700	38.3	40	84.2	40	95.8	12.78	12.89	37	98		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	2-Chloronaphthalene	32.600	35.8	40	81.5	40	89.5	9.36	9.36	37	128		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	4-Chlorophenyl phenyl ether	36.400	39.5	40	91	40	98.8	8.17	8.22	45	128		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	Dibenz(a,h)anthracene	39.000	42.1	40	97.5	40	105	7.64	7.41	41	106		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	Dibenzofuran	36.200	39.1	40	90.5	40	97.8	7.70	7.75	42	137		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	3,3'-Dichlorobenzidine	36.700	42.5	40	91.8	40	106	14.65	14.36	32	108		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	1,2-Dichlorobenzene	31.300	35.7	40	78.2	40	89.2	13.13	13.14	27	106		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	1,3-Dichlorobenzene	30.100	34.4	40	75.2	40	86	13.33	13.40	29	101		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	1,4-Dichlorobenzene	30.900	34.6	40	77.2	40	86.5	11.30	11.36	26	101		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	2,4-Dichlorophenol	36.000	40	40	90	40	100	10.53	10.53	7	128		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	2,6-dichlorophenol	35.300	39	40	88.2	40	97.5	9.96	10.02	31	123		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	Diethyl phthalate	36.600	40.2	40	91.5	40	100	9.38	8.88	25	145		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	diallate	35.100	37.9	40	87.8	40	94.8	7.67	7.67	37	115		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	7,12-dimethylbenz(a)anthracene	45.800	48.9	40	114	40	122	6.55	6.78	51	104	*	20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	3,3'-dimethylbenzidine	10.000	9.3	40	0	40	23.2	200.00	200.00	0	114		20	*
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	2,4-Dimethylphenol	38.000	43.2	40	95	40	108	12.81	12.81	4	116		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	Dimethyl phthalate	34.900	37.1	40	87.2	40	92.8	6.11	6.22	16	139		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	4,6-Dinitro-2-methylphenol	39.600	44.3	40	99	40	111	11.20	11.43	7	129		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	1,3-dinitrobenzene	37.400	41.4	40	93.5	40	104	10.15	10.63	36	126		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	Di-n-butyl phthalate	38.300	40.8	40	95.8	40	102	6.32	6.27	48	137		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	Di-n-octylphthalate	37.400	41.2	40	93.5	40	103	9.67	9.67	25	154		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	2,4-Dinitrophenol	42.000	48.4	40	105	40	121	14.16	14.16	2	125		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	2,4-Dinitrotoluene	39.500	43.2	40	98.8	40	108	8.95	8.90	39	144		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	2,6-Dinitrotoluene	39.500	43.2	40	98.8	40	108	8.95	8.90	40	145		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	ethyl methanesulfonate	34.100	38.2	40	85.2	40	95.5	11.34	11.40	38	114		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	Fluorene	37.200	40.5	40	93	40	101	8.49	8.25	47	127		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	Fluoranthene	37.000	39.9	40	92.5	40	99.8	7.54	7.59	44	132		20	

Matrix	BS Sample ID	BSD Sample ID	Analytical Method	Preparation Method	Parameter	BS Lab Result	BSD Lab Result	BS True Value	BS Recovery	BSD True Value	BSD Recovery	RPD	RPD	BS LCL	BS UCL	Accuracy Qual	RPD Limit	Precision Qual
WQ	128630LCS	128630LCSD	E376.1	NONE	Sulfide	4960.0	4800	5000	99.2	5000	96	3.28	3.28	80	120		20	
WQ	6839LCS	6839LCS2	SW8081	SW3510	Aldrin	0.007	0.0055	0.01	140	0.01	110	24.00	24.00	34	118	*	20	*
WQ	6839LCS	6839LCS2	SW8081	SW3510	alpha bhc	0.006	0.0052	0.01	118	0.01	104	12.61	12.61	23	136		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	Hexachlorobutadiene	33.300	37.2	40	83.2	40	93	11.06	11.12	48	92	*	20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	Hexachlorocyclopentadiene	34.100	38.6	40	85.2	40	96.5	12.38	12.44	13	80	*	20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	Hexachlorobenzene	37.600	40.1	40	94	40	100	6.44	6.19	35	135		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	Hexachloroethane	29.500	32.5	40	73.8	40	81.2	9.68	9.55	22	96		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	hexachloropropene	27.600	31.2	40	69	40	78	12.24	12.24	12	114		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	Indeno(1,2,3-c,d)pyrene	37.200	40.1	40	93	40	100	7.50	7.25	32	143		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	isodrin	35.000	36.8	40	87.5	40	92	5.01	5.01	43	120		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	Isophorone	46.400	50.7	40	116	40	127	8.86	9.05	35	153		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	isosafrole	36.200	39.8	40	90.5	40	99.5	9.47	9.47	70	130		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	kepone	37.100	41.4	40	92.8	40	104	10.96	11.38	0	122		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	3-methylcholanthrene	39.300	42.5	40	98.2	40	106	7.82	7.64	54	105	*	20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	2-Methylphenol (o-Cresol)	31.300	34.7	40	78.2	40	86.8	10.30	10.42	6	114		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	4-Methylphenol (p-Cresol)	23.700	26.2	40	59.2	40	65.5	10.02	10.10	6	104		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	methyl methanesulfonate	23.200	26.6	40	58	40	66.5	13.65	13.65	12	97		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	alpha, alpha-Dimethylphenethylamine	10.000	10	40	0	40	0			10	100	*	20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	2-Methylnaphthalene	35.100	38.2	40	87.8	40	95.5	8.46	8.40	33	127		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	methapyrilene	6.300	4.1	40	15.8	40	10.2	42.31	43.08	0	48		20	*
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	Naphthalene	34.000	37.5	40	85	40	93.8	9.79	9.84	36	114		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	1,4-naphthoquinone	5.800	6.2	40	14.5	40	15.5	6.67	6.67	23	128	*	20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	n-nitroso-di-n-butylamine	39.200	42.3	40	98	40	106	7.61	7.84	44	122		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	n-nitrosodiethylamine	32.100	36.2	40	80.2	40	90.5	12.01	12.07	43	112		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	n-nitrosodimethylamine	22.100	25.3	40	55.2	40	63.2	13.50	13.51	0	108		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	nitrosomethylethylamine	29.800	33.8	40	74.5	40	84.5	12.58	12.58	26	115		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	n-nitrosomorpholine	32.400	35.3	40	81	40	88.2	8.57	8.51	33	110		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	n-Nitrosodiphenylamine	40.600	43.2	40	102	40	108	6.21	5.71	66	145		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	n-nitrosopiperidine	34.900	38.4	40	87.2	40	96	9.55	9.61	37	121		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	n-Nitrosodi-n-propylamine	30.400	33	40	76	40	82.5	8.20	8.20	36	112		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	n-nitrosopyrrolidine	29.000	31.5	40	72.5	40	78.8	8.26	8.33	34	107		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	2-Nitroaniline	36.100	39.4	40	90.2	40	98.5	8.74	8.80	53	114		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	3-Nitroaniline	36.400	39.6	40	91	40	99	8.42	8.42	34	130		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	4-Nitroaniline	35.900	38.7	40	89.8	40	96.8	7.51	7.50	35	134		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	Nitrobenzene	35.100	38.7	40	87.8	40	96.8	9.76	9.75	37	136		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	2-Nitrophenol	35.000	39.8	40	87.5	40	99.5	12.83	12.83	11	129		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	4-Nitrophenol	17.400	18.2	40	43.5	40	45.5	4.49	4.49	0	82		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	pentachloroethane	28.200	32.8	40	70.5	40	82	15.08	15.08	16	104		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	Pentachlorophenol	37.300	40.2	40	93.2	40	100	7.48	7.04	17	131		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	p-dimethylaminoazobenzene	37.200	39.7	40	93	40	99.2	6.50	6.45	57	111		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	pentachlorobenzene	35.500	38.6	40	88.8	40	96.5	8.37	8.31	32	118		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	pentachloronitrobenzene	39.000	42.4	40	97.5	40	106	8.35	8.35	37	125		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	Phenanthrene	37.200	39.9	40	93	40	99.8	7.00	7.05	49	125		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	Phenol	17.100	19.4	40	42.8	40	48.5	12.60	12.49	9	65		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	phenacetin	33.100	35.2	40	82.8	40	88	6.15	6.09	43	116		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	2-picoline (alpha-picoline)	5.100	9.2	40	12.8	40	23	57.34	56.98	6	95		20	*
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	pronamide	37.500	39.6	40	93.8	40	99	5.45	5.39	35	123		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	Pyrene	34.900	38.7	40	87.2	40	96.8	10.33	10.43	45	129		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	pyridine	3.100	5.8	40	7.8	40	14.5	60.67	60.09	22	70	*	20	*
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	safrole	37.600	40.9	40	94	40	102	8.41	8.16	31	116		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	1,2,4-Trichlorobenzene	31.200	35.8	40	78	40	89.5	13.73	13.73	28	108		20	

Matrix	BS Sample ID	BSD Sample ID	Analytical Method	Preparation Method	Parameter	BS Lab Result	BSD Lab Result	BS True Value	BS Recovery	BSD True Value	BSD Recovery	RPD	RPD	BS LCL	BS UCL	Accuracy Qual	RPD Limit	Precision Qual
WQ	128630LCS	128630LCSD	E376.1	NONE	Sulfide	4960.0	4800	5000	99.2	5000	96	3.28	3.28	80	120		20	
WQ	6839LCS	6839LCS2	SW8081	SW3510	Aldrin	0.007	0.0055	0.01	140	0.01	110	24.00	24.00	34	118	*	20	*
WQ	6839LCS	6839LCS2	SW8081	SW3510	alpha bhc	0.006	0.0052	0.01	118	0.01	104	12.61	12.61	23	136		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	2,3,4,6-tetrachlorophenol	40.500	43.9	40	101	40	110	8.06	8.53	37	131		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	2,4,5-Trichlorophenol	35.800	40.6	40	89.5	40	102	12.57	13.05	9	131		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	2,4,6-Trichlorophenol	37.000	39.5	40	92.5	40	98.8	6.54	6.59	8	130		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	o-toluidine	30.700	33.3	40	76.8	40	83.2	8.12	8.00	29	104		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	5-nitro-o-toluidine	36.400	39	40	91	40	97.5	6.90	6.90	39	116		20	
WQ	0217ALCS	0217ALCSD	SW8270C	SW3510	1,3,5-trinitrobenzene	46.700	51.6	40	117	40	129	9.97	9.76	32	150		20	
WQ	560984S		SW8290	METHOD	1,2,3,4,6,7,8-heptachlorodibenzo-p-dioxin	525.0		500	105					80	120			
WQ	560984S		SW8290	METHOD	1,2,3,4,7,8-hexachlorodibenzo-p-dioxin	590.0		500	118					80	120			
WQ	560984S		SW8290	METHOD	1,2,3,6,7,8-hexachlorodibenzo-p-dioxin	475.0		500	95					80	120			
WQ	560984S		SW8290	METHOD	1,2,3,7,8,9-hexachlorodibenzo-p-dioxin	550.0		500	110					80	120			
WQ	560984S		SW8290	METHOD	octachlorodibenzo-p-dioxin	1010.0		1000	101					80	120			
WQ	560984S		SW8290	METHOD	1,2,3,7,8-pentachlorodibenzo-p-dioxin	535.0		500	107					80	120			
WQ	560984S		SW8290	METHOD	2,3,7,8-tetrachlorodibenzo-p-dioxin	107.0		100	107					80	120			
WQ	128390LCS	128390LCSD	SW9012	METHOD	cyanide	219.0	228	250	87.6	250	91.2	4.03	4.03	74	108		20	

APPENDIX F

Three Point Groundwater Flow Direction Calculations

TABLE A-1 - Three Point (Triangulation) Calculations

Triangle ID	Figure No. Scale	Groundwater Elevations (feet MSL on 8/26/99) High	Mid	Low	Distance from High to Low* X	Proportional Distance Ratio [Q = (High - Low) / X]	Distance from High to Midpoint [(High - Mid) / Q]	Distance from Low to Midpoint [(Mid - Low) / Q]
1A	A-1 1 cm = 400 cm	NW-8 -0.88	RCRA-4 -1.06	P-8 -3.48	17.3	0.15	1.20	16.10
1B	A-4 1 cm = 800 cm	NW-4 -1.23	NW-7 -1.37	P-9 -3.14	5.8	0.33	0.43	5.37
2	A-2 1 cm = 800 cm	P-7 15.05	NW-4 -1.23	P-9 -3.14	3.7	4.92	3.31	0.39
3	A-3 1 cm = 800 cm	NW-6 38.17	P-7 15.05	NW-4 -1.23	3.8	10.37	2.23	1.57
4	A-4 1 cm = 800 cm	NW-5 71.84	NW-6 38.17	P-7 15.05	2.9	19.58	1.72	1.18
5	A-2 1 cm = 800 cm	RCRA-3 98.52	NW-5 71.84	P-7 15.05	3.7	22.56	1.18	2.52
6	A-3 1 cm = 800 cm	P-6 99.55	RCRA-3 98.52	P-7 15.05	4.9	17.24	0.06	4.84
7	A-4 1 cm = 800 cm	P-6 99.55	P-7 15.05	P-9 -3.14	6.8	15.10	5.60	1.20
8	A-4 1 cm = 800 cm	P-5 216.91	P-6 99.55	RCRA-3 98.52	3.9	30.36	3.87	0.03
9	A-4 1 cm = 800 cm	NW-3 236.17	P-5 216.91	RCRA-3 98.52	5.1	26.99	0.71	4.39
10	A-2 1 cm = 800 cm	NW-3 236.17	P-5 216.91	P-3 150.77	7.6	11.24	1.71	5.89
11	A-3 1 cm = 800 cm	NW-3 236.17	RCRA-2 217.44	P-3 150.77	7.6	11.24	1.67	5.93
12	A-2 1 cm = 800 cm	RCRA-2 217.44	P-3 150.77	P-2 54.37	7.1	22.97	2.90	4.20
13	A-4 1 cm = 800 cm	RCRA-2 217.44	P-2 54.37	RCRA-1 51.98	7.3	22.67	7.19	0.11
14	A-4 1 cm = 800 cm	P-3 150.77	P-2 54.37	P-1 13.95	11	12.44	7.75	3.25
15	A-3 1 cm = 800 cm	P-2 54.37	RCRA-1 51.98	P-1 13.95	4.4	9.19	0.26	4.14
16	A-2 1 cm = 800 cm	RCRA-1 51.98	P-1 13.95	NW-1 12.9	3.3	11.84	3.21	0.09
17	A-3 1 cm = 800 cm	RCRA-2 217.44	RCRA-1 51.98	NW-1 12.9	9.5	21.53	7.68	1.82

* - NOTE: calculated by Angie Pompa, checked by Daniel S. Fisher using a 1" = 40' measuring scale.

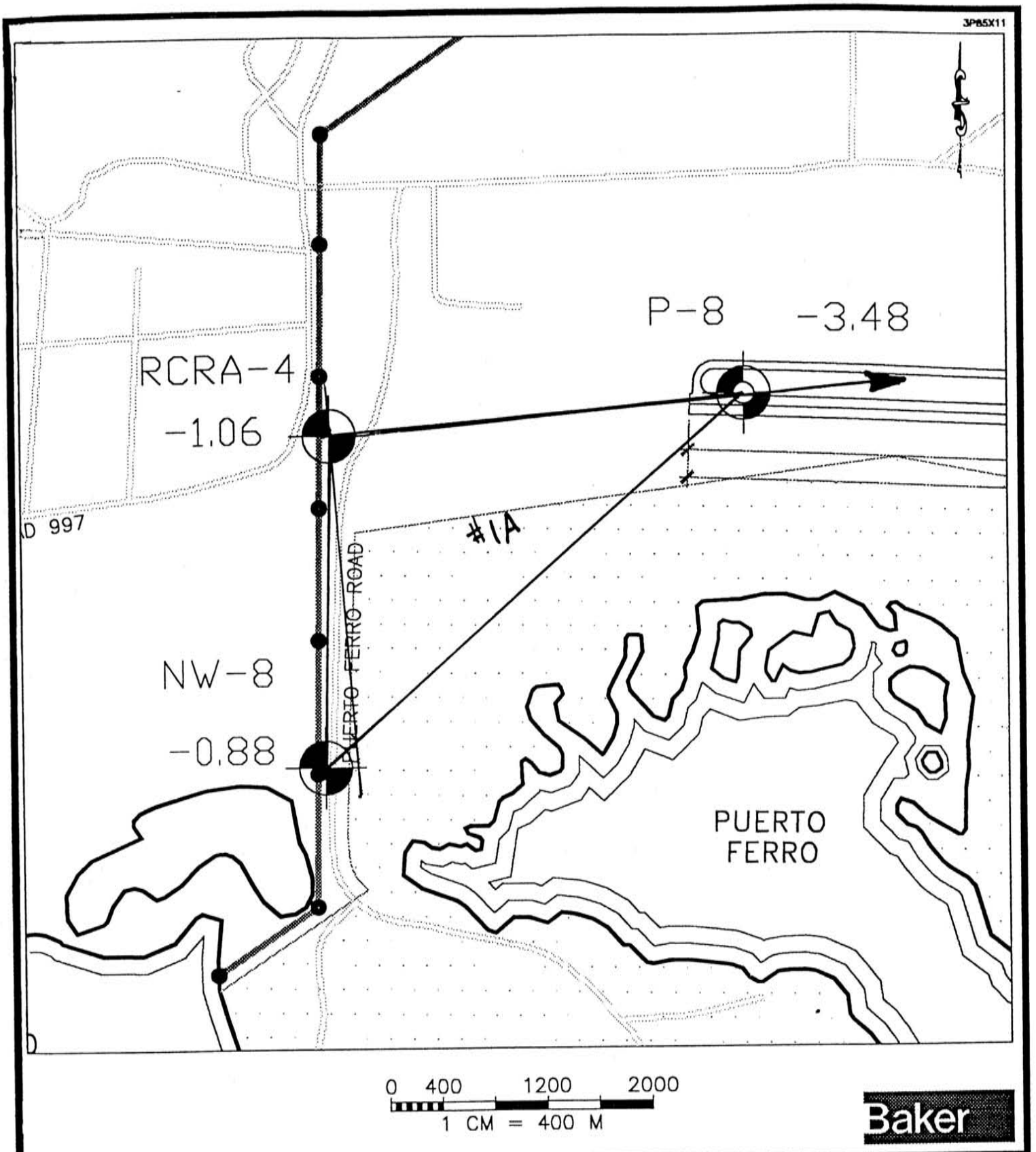
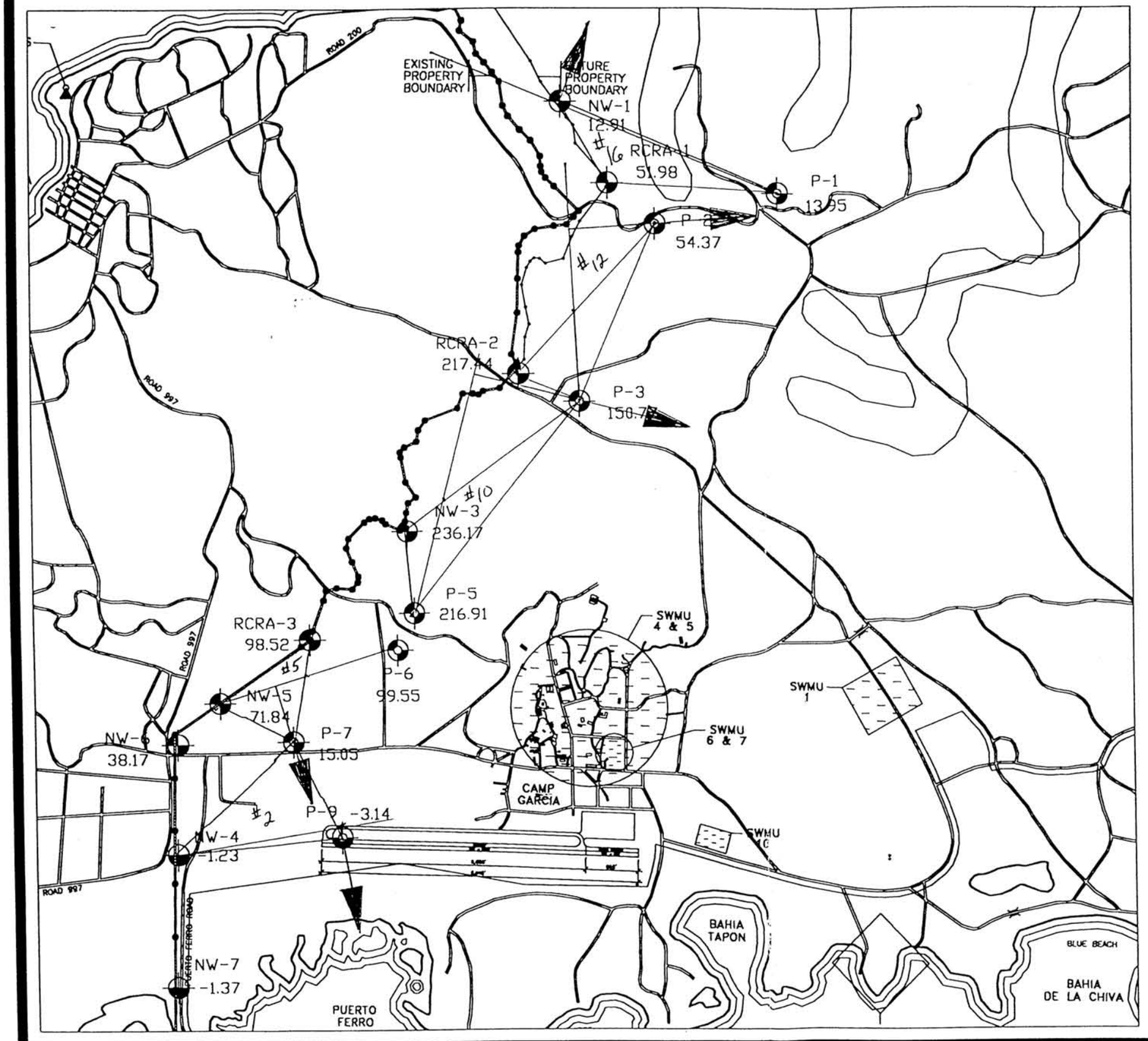


FIGURE A-1
3-POINT PROBLEMS

VIEQUES ISLAND
PUERTO RICO

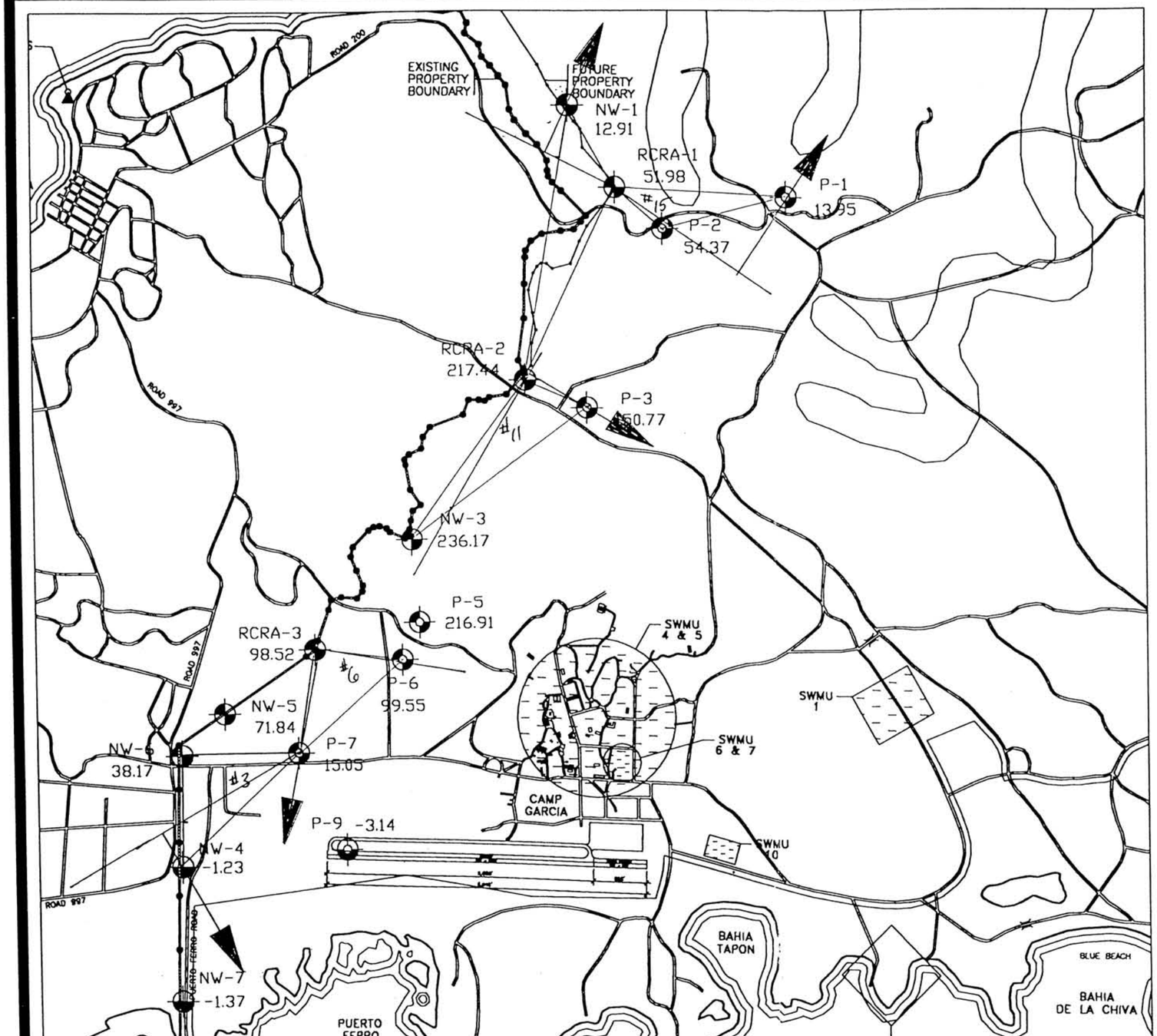


0 800 2400 4000
1 CM = 800 M

Baker

FIGURE A-2
3-POINT CALCULATIONS

VIEQUES ISLAND
PUERTO RICO



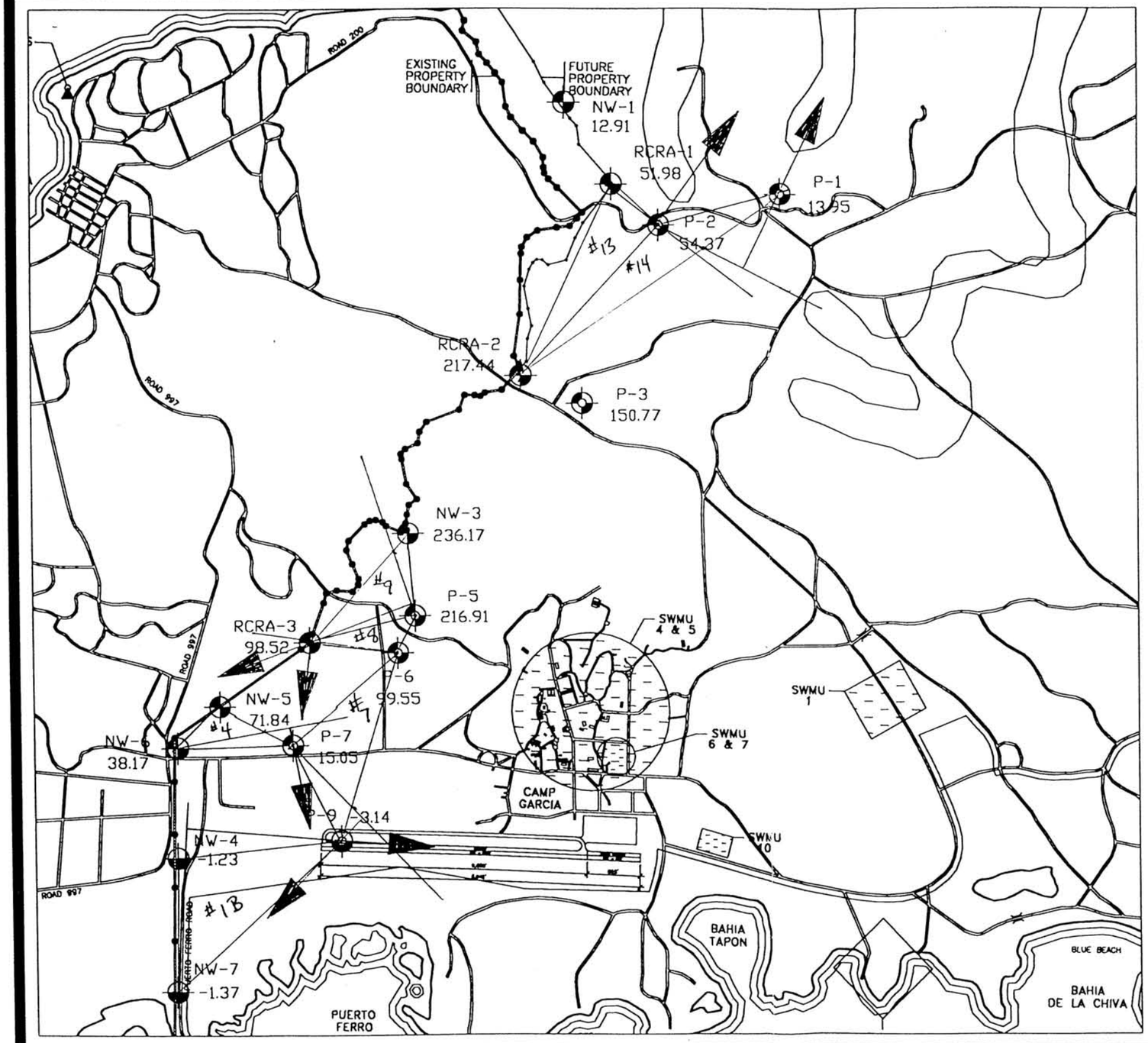
0 800 2400 4000

1 CM = 800 M

Baker

FIGURE A-3
3-POINT CALCULATIONS

VIEQUES ISLAND
PUERTO RICO



0 800 2400 4000

1 CM = 800 M

Baker

FIGURE A-4
3-POINT CALCULATIONS

VIEQUES ISLAND
PUERTO RICO

APPENDIX G

Appendix IX Analytical Data from RCRA 1, 2, 3, and 4

Analytical Data Summary

	StationID	RCRA-2		RCRA-2		RCRA-3		RCRA-4	
	SampleID	RCRA-2GW-R01		RCRAFD01P-R01		RCRA-3GW-R01		RCRA-4GW-R01	
	Date Collected	02/03/2004		02/03/2004		02/03/2004		02/03/2004	
	SampleType	N		FD		N		N	
Parameter	**Units**								
1,2,3,4,6,7,8-HEPTACHLORODIBENZO-p-DIOXIN	pg/L	25	U	25	U	25	U	25	U
1,2,3,4,7,8-HEXACHLORODIBENZO-p-DIOXIN	pg/L	25	U	25	U	25	U	25	U
1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN	pg/L	25	U	25	U	25	U	25	U
1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN	pg/L	25	U	25	U	25	U	25	U
1,2,3,7,8-PENTACHLORODIBENZO-p-DIOXIN	pg/L	10	U	10	U	10	U	10	U
2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN	pg/L	10	U	10	U	10	U	10	U
HEPTACHLORINATED DIBENZO-p-DIOXINS, (TOTAL)	pg/L	25	U	25	U	25	U	25	U
HEXACHLORINATED DIBENZO-p-DIOXINS, (TOTAL)	pg/L	25	U	25	U	25	U	25	U
OCTACHLORODIBENZO-p-DIOXIN	pg/L	50	U	50	U	50	U	50	U
PENTACHLORINATED DIBENZO-p-DIOXINS, (TOTAL)	pg/L	10	U	10	U	10	U	10	U
TETRACHLORINATED DIBENZO-p-DIOXINS, (TOTAL)	pg/L	10	U	10	U	10	U	10	U

NOTES:
U - Not detected.
J - Analyte present. Reported value may not be accurate or precise.

	StationID	RCRA-1	RCRA-2	RCRA-2	RCRA-2	RCRA-3	RCRA-4
	SampleID	RCRA-1-GW	RCRA-2-GW	RCRA-2-GWD	RCRA-2-GW**	RCRA-3-GW	RCRA-4-GW
	LogNumber	S915556B-6	S915556B-7	S915556B-8	S915556B-7	S915556B-9	S915608-8
	Date Collected	08/18/99	08/18/99	08/18/99	08/18/99	08/18/99	08/19/99
Parameter	**Units**						
Antimony	mg/L	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Arsenic	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Barium	mg/L	0.018	0.032	0.03	0.032	0.33	0.15
Beryllium	mg/L	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U
Cadmium	mg/L	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Chromium	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Cobalt	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Copper	mg/L	0.0024 B	0.0076 B	0.0028 B	0.0076 B	0.0022 B	0.0026 B
Lead	mg/L	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Mercury	mg/L	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Nickel	mg/L	0.0025 B	0.007 B	0.04 U	0.007 B	0.04 U	0.0018 B
Selenium	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Silver	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Thallium	mg/L	0.002 UW	0.002 UWM	0.002 UWM	0.002 UWM	0.002 U	0.002 U
Tin	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Vanadium	mg/L	0.0021 B	0.012	0.012	0.012	0.0034 B	0.0072 B
Zinc	mg/L	0.035	0.027	0.023	0.027	0.018 B	0.037

NOTES:
B = Reported value was obtained from a reading that was less than the CRDL but greater than or equal to the IDL.
U = Not detected.
W = Post digestion spike for furnance AA analysis is out of control limits (85-115%),
while sample absorbance is less than 50% of spike absorbance.
M = Duplicate injection precision not met.
** = Reported higher number of primary or duplicate sample.

mg/L = milligrams per liter.

	StationID	RCRA-1	RCRA-2	RCRA-2	RCRA-3	RCRA-4
	SampleID	RCRA-1-GW	RCRA-2-GW	RCRA-2-GWD	RCRA-3-GW	RCRA-4-GW
	LogNumber	S915608-3	S915608-4	S915608-5	S915608-6	S915608-8
	Date Collected	08/18/99	08/18/99	08/18/99	08/18/99	08/19/99
Parameter	**Units**					
1,3,5-Trinitrobenzene	µg/L	0.37 U	0.31 U	0.34 U	0.41 U	0.37 U
1,3-Dinitrobenzene	µg/L	0.37 U	0.31 U	0.34 U	0.41 U	0.37 U
2,4,6-Trinitrotoluene	µg/L	0.37 U	0.31 U	0.34 U	0.41 U	0.37 U
2,4-Dinitrotoluene	µg/L	0.37 U	0.31 U	0.34 U	0.41 U	0.37 U
2,6-Dinitrotoluene	µg/L	0.61 U	0.51 U	0.56 U	0.69 U	0.61 U
2-Amino-4,6-dinitrotoluene	µg/L	0.37 U	0.31 U	0.34 U	0.41 U	0.37 U
2-Nitrotoluene	µg/L	0.61 UJ	0.51 U	0.56 U	0.69 U	0.61 U
3-Nitrotoluene	µg/L	0.61 U	0.51 U	0.56 U	0.69 U	0.61 U
4-Amino-2,6-dinitrotoluene	µg/L	0.61 U	0.51 U	0.56 U	0.69 U	0.61 U
4-Nitrotoluene	µg/L	0.61 U	0.51 U	0.56 U	0.69 U	0.61 U
Hexahydro-1,3,5-trinitro-1,3,5-triazine	µg/L	1.2 U	1 U	1.1 U	1.4 U	1.2 U
Methyl-2,4,6-trinitrophenylnitramine	µg/L	0.61 UJ	0.51 UJ	0.56 UJ	0.69 UJ	0.61 UJ
Nitrobenzene	µg/L	0.37 U	0.31 U	0.34 U	0.41 U	0.37 U
Nitroglycerin	µg/L	30 U	30 U	30 U	30 U	30 U
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine	µg/L	1.2 U	1 U	1.1 U	1.4 U	1.2 U
Pentaerythritol tetranitrate	µg/L	20 U	20 U	20 U	20 U	20 U
Perchlorate	µg/L	5 U	5 U	5 U	5 U	5 U
Picric Acid	µg/L	2.9 U	2.6 U	4 U	2.7 U	3.1 U

NOTES:
U = Not detected. The associated number indicates approximate sample concentration necessary to be detected.
J = Analyte present. Reported value may not be accurate or precise.

µg/L = micrograms per liter.

Analytical Data Summary

	StationID	RCRA-2		RCRA-2		RCRA-3		RCRA-4	
	SampleID	RCRA-2GW-R01		RCRAFD01P-R01		RCRA-3GW-R01		RCRA-4GW-R01	
	Date Collected	02/03/04		02/03/04		02/03/04		02/03/04	
	SampleType	N		FD		N		N	
Parameter	**Units**								
Cyanide	µg/L	3.73	U	6.59	J	3.73	U	3.73	U
Sulfide	µg/L	1920	J	1520	J	1520	J	1920	J

NOTES:
U = Not detected.
J = Analyte present. Reported value may not be accurate or precise.

µg/L = micrograms per Liter.

Analytical Data Summary

	StationID	RCRA-1		RCRA-2		RCRA-2		RCRA-3		RCRA-4	
	SampleID	RCRA-1GW-R01		RCRA-2GW-R01		RCRAFD01P-R01		RCRA-3GW-R01		RCRA-4GW-R01	
	Date Collected	02/04/2004		02/03/2004		02/03/2004		02/03/2004		02/03/2004	
	SampleType	N		N		FD		N		N	
Parameter	**Units**										
2,4,5-T (TRICHLOROPHENOXYACETIC ACID)	µg/L	2	U	2	U	2	U	2	U	2	U
2,4-D (DICHLOROPHENOXYACETIC ACID)	µg/L	10	U	10	U	10	U	10	U	10	U
DINOSEB	µg/L	1	U	1	U	1	U	1	U	1	U
SILVEX (2,4,5-TP)	µg/L	2	U	2	U	2	U	2	U	2	U

NOTES:
U = Not detected.
J = Analyte present. Reported value may not be accurate or precise.

µg/L - micrograms per Liter.

Analytical Data Summary

	StationID	RCRA-1		RCRA-2		RCRA-2		RCRA-3		RCRA-4	
	SampleID	RCRA-1GW-R01		RCRA-2GW-R01		RCRAFD01P-R01		RCRA-3GW-R01		RCRA-4GW-R01	
	Date Collected	02/04/2004		02/03/2004		02/03/2004		02/03/2004		02/03/2004	
	SampleType	N		N		FD		N		N	
Parameter	**Units**										
PCB-1016 (AROCHLOR 1016)	µg/L	1.1	U	1	U	1	U	1	U	1	U
PCB-1221 (AROCHLOR 1221)	µg/L	2.2	U	2	U	2	U	2	U	2	U
PCB-1232 (AROCHLOR 1232)	µg/L	1.1	U	1	U	1	U	1	U	1	U
PCB-1242 (AROCHLOR 1242)	µg/L	1.1	U	1	U	1	U	1	U	1	U
PCB-1248 (AROCHLOR 1248)	µg/L	1.1	U	1	U	1	U	1	U	1	U
PCB-1254 (AROCHLOR 1254)	µg/L	1.1	U	1	U	1	U	1	U	1	U
PCB-1260 (AROCHLOR 1260)	µg/L	1.1	U	1	U	1	U	1	U	1	U

NOTES:
U = Not detected.
J = Analyte present. Reported value may not be accurate or precise.

µg/L - micrograms per Liter.

Analytical Data Summary

	StationID	RCRA-1		RCRA-2		RCRA-2		RCRA-3		RCRA-4	
	SampleID	RCRA-1GW-R01		RCRA-2GW-R01		RCRAFD01P-R01		RCRA-3GW-R01		RCRA-4GW-R01	
	Date Collected	02/04/2004		02/03/2004		02/03/2004		02/03/2004		02/03/2004	
	SampleType	N		N		FD		N		N	
Parameter	**Units**										
ALDRIN	µg/L	0.054	U	0.051	U	0.051	U	0.051	U	0.051	U
ALPHA BHC (ALPHA HEXACHLOROCYCLOHEXANE)	µg/L	0.054	U	0.051	U	0.051	U	0.051	U	0.051	U
ALPHA ENDOSULFAN	µg/L	0.054	U	0.051	U	0.051	U	0.051	U	0.051	U
ALPHA-CHLORDANE	µg/L	0.054	UJ	0.051	UJ	0.051	UJ	0.051	UJ	0.051	UJ
BETA BHC (BETA HEXACHLOROCYCLOHEXANE)	µg/L	0.054	U	0.051	U	0.051	U	0.051	U	0.051	U
BETA ENDOSULFAN	µg/L	0.11	U	0.1	U	0.1	U	0.1	U	0.1	U
CHLORDANE	µg/L	0.054	U	0.051	U	0.051	U	0.051	U	0.051	U
DELTA BHC (DELTA HEXACHLOROCYCLOHEXANE)	µg/L	0.054	U	0.051	U	0.051	U	0.051	U	0.051	U
DIELDRIN	µg/L	0.11	U	0.1	U	0.1	U	0.1	U	0.1	U
ENDOSULFAN SULFATE	µg/L	0.11	U	0.1	U	0.1	U	0.1	U	0.1	U
ENDRIN ALDEHYDE	µg/L	0.11	U	0.1	U	0.1	U	0.1	U	0.1	U
ENDRIN KETONE	µg/L	0.11	U	0.1	U	0.1	U	0.1	U	0.1	U
ENDRIN	µg/L	0.11	U	0.1	U	0.1	U	0.1	U	0.1	U
GAMMA BHC (LINDANE)	µg/L	0.054	U	0.051	U	0.051	U	0.051	U	0.051	U
GAMMA-CHLORDANE	µg/L	0.054	U	0.051	U	0.051	U	0.051	U	0.051	U
HEPTACHLOR EPOXIDE	µg/L	0.054	U	0.051	U	0.051	U	0.051	U	0.051	U
HEPTACHLOR	µg/L	0.054	U	0.051	U	0.051	U	0.051	U	0.051	U
METHOXYCHLOR	µg/L	0.54	UJ	0.51	UJ	0.51	UJ	0.51	UJ	0.51	UJ
p,p'-DDD	µg/L	0.11	U	0.1	U	0.1	U	0.1	U	0.1	U
p,p'-DDE	µg/L	0.11	U	0.1	U	0.1	U	0.1	U	0.1	U
p,p'-DDT	µg/L	0.11	U	0.1	U	0.1	U	0.1	U	0.1	U
TOXAPHENE	µg/L	5.4	R	5.1	U	5.1	U	5.1	U	5.1	U

NOTES:
U = Not detected.
J = Analyte present. Reported value may not be accurate or precise.

µg/L - micrograms per Liter.

	StationID	RCRA-1		RCRA-2		RCRA-2		RCRA-2		RCRA-3		RCRA-4	
	SampleID	RCRA-1GW-R01		RCRA-2GW-R01		RCRAFD01P-R01		RCRAFD01P-R01RE1		RCRA-3GW-R01		RCRA-4GW-R01	
	Date Collected	02/04/2004		02/03/2004		02/03/2004		02/03/2004		02/03/2004		02/03/2004	
	SampleType	N		N		FD		LR		N		N	
Parameter	**Units**												
1,2,4-Trichlorobenzene	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
1,2-Dichlorobenzene	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
1,3,5-Trinitrobenzene	µg/L	10.1	UJ	10.1	UJ	10.1	UJ	10.1	R	10.1	UJ	10.1	UJ
1,3-Dichlorobenzene	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
1,3-Dinitrobenzene	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
1,4-Dichlorobenzene	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
1,4-naphthoquinone	µg/L	10.1	R	10.1	R	10.1	R	10.1	R	10.1	R	10.1	R
1-Naphthylamine	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
2,3,4,6-Tetrachlorophenol	µg/L	10.1	U	10.1	U	10.1	U	10.1	R	10.1	U	10.1	U
2,6-Dichlorophenol	µg/L	10.1	U	10.1	U	10.1	U	10.1	R	10.1	U	10.1	U
2-Acetylaminofluorene	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
2-Aminonaphthalene (beta naphthylamine)	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
2-Picoline (alpha-picoline)	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
3,3'-Dimethylbenzidine	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
3-Methylcholanthrene	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
4-Aminobiphenyl (4-biphenylamine)	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
4-Nitroquinoline-n-oxide	µg/L	10.1	R	10.1	R	10.1	R	10.1	R	10.1	R	10.1	R
5-Nitro-o-toluidine	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
7,12-Dimethylbenz(a)anthracene	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
alpha, alpha-Dimethylphenethylamine	µg/L	10.1	R	10.1	R	10.1	R	10.1	R	10.1	R	10.1	R
Aniline (phenylamine, aminobenzene)	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
Aramite	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
Benzyl alcohol	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
Chlorobenzilate	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
Diallate	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
Ethyl methanesulfonate	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
Hexachloropropene	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
Isodrin	µg/L	5.2	U	5.2	U	5.2	UJ	5.2	R	5.2	U	5.2	U
Isosafrole	µg/L	10.1	R	10.1	R	10.1	R	10.1	R	10.1	R	10.1	R
Kepone	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
Methapyrilene	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
Methyl methanesulfonate	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
n-Nitroso-di-n-butylamine	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
n-Nitrosodiethylamine	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
n-Nitrosodimethylamine	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
n-Nitrosomorpholine	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
n-Nitrosopiperidine	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
n-Nitrosopyrrolidine	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
Naphthalene	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
Nitrosomethylethylamine	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
o-Toluidine	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
p-Dimethylaminoazobenzene	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
p-Phenylenediamine	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
Pentachlorobenzene	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
Pentachloroethane	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
Pentachloronitrobenzene	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
Phenacetin	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
Pronamide	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
Pyridine	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
Safrole	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
Acenaphthene	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U

	StationID	RCRA-1		RCRA-2		RCRA-2		RCRA-2		RCRA-3		RCRA-4	
	SampleID	RCRA-1GW-R01		RCRA-2GW-R01		RCRAFD01P-R01		RCRAFD01P-R01RE1		RCRA-3GW-R01		RCRA-4GW-R01	
	Date Collected	02/04/2004		02/03/2004		02/03/2004		02/03/2004		02/03/2004		02/03/2004	
	SampleType	N		N		FD		LR		N		N	
Parameter	**Units**												
Acenaphthylene	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
Acetophenone	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
Anthracene	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
Benzyl butyl phthalate	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
bis(2-Chloroethoxy) methane	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
bis(2-Chloroethyl) ether (2-Chloroethyl ether)	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
bis(2-Chloroisopropyl) ether	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
bis(2-Ethylhexyl) phthalate	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
4-Bromophenyl phenyl ether	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
Benzo(a)anthracene	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
Benzo(a)pyrene	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
Benzo(b)fluoranthene	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
Benzo(g,h,i)perylene	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
Benzo(k)fluoranthene	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
1,2,4,5-Tetrachlorobenzene	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
4-Chloro-3-methylphenol	µg/L	10.1	U	10.1	U	10.1	U	10.1	R	10.1	U	10.1	U
Carbazole	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
Chrysene	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
4-Chloroaniline	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
2-Chlorophenol	µg/L	10.1	U	10.1	U	10.1	U	10.1	R	10.1	U	10.1	U
2-Chloronaphthalene	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
4-Chlorophenyl phenyl ether	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
Dibenz(a,h)anthracene	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
Dibenzofuran	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
3,3'-Dichlorobenzidine	µg/L	20.2	U	20.2	U	20.2	UJ	20.2	R	20.2	U	20.2	U
2,4-Dichlorophenol	µg/L	10.1	U	10.1	U	10.1	U	10.1	R	10.1	U	10.1	U
Diethyl phthalate	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
2,4-Dimethylphenol	µg/L	10.1	U	10.1	U	10.1	U	10.1	R	10.1	U	10.1	U
Dimethyl phthalate	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
4,6-Dinitro-2-methylphenol	µg/L	50.5	U	50.5	U	50.5	U	50.5	R	50.5	U	50.5	U
Di-n-butyl phthalate	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
Di-n-octylphthalate	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
2,4-Dinitrophenol	µg/L	50.5	UJ	50.5	UJ	50.5	UJ	50.5	R	50.5	UJ	50.5	UJ
2,4-Dinitrotoluene	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
2,6-Dinitrotoluene	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
Fluorene	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
Fluoranthene	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
Hexachlorobutadiene	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
Hexachlorocyclopentadiene	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
Hexachlorobenzene	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
Hexachloroethane	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
Indeno(1,2,3-c,d)pyrene	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
Isophorone	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
2-Methylphenol (o-Cresol)	µg/L	10.1	U	10.1	U	10.1	U	10.1	R	10.1	U	10.1	U
4-Methylphenol (p-Cresol)	µg/L	10.1	U	10.1	U	10.1	U	10.1	R	10.1	U	10.1	U
2-Methylnaphthalene	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
n-Nitrosodiphenylamine	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
n-Nitrosodi-n-propylamine	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
2-Nitroaniline	µg/L	50.5	U	50.5	U	50.5	UJ	50.5	R	50.5	U	50.5	U
3-Nitroaniline	µg/L	50.5	U	50.5	U	50.5	UJ	50.5	R	50.5	U	50.5	U
4-Nitroaniline	µg/L	50.5	U	50.5	U	50.5	UJ	50.5	R	50.5	U	50.5	U

	StationID	RCRA-1		RCRA-2		RCRA-2		RCRA-2		RCRA-3		RCRA-4	
	SampleID	RCRA-1GW-R01		RCRA-2GW-R01		RCRAFD01P-R01		RCRAFD01P-R01RE1		RCRA-3GW-R01		RCRA-4GW-R01	
	Date Collected	02/04/2004		02/03/2004		02/03/2004		02/03/2004		02/03/2004		02/03/2004	
	SampleType	N		N		FD		LR		N		N	
Parameter	**Units**												
Nitrobenzene	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
2-Nitrophenol	µg/L	10.1	U	10.1	U	10.1	U	10.1	R	10.1	U	10.1	U
4-Nitrophenol	µg/L	50.5	U	50.5	U	50.5	U	50.5	R	50.5	U	50.5	U
Pentachlorophenol	µg/L	50.5	U	50.5	U	50.5	U	50.5	R	50.5	U	50.5	U
Phenanthrene	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
Phenol	µg/L	10.1	U	10.1	U	10.1	U	10.1	R	10.1	U	10.1	U
Pyrene	µg/L	10.1	U	10.1	U	10.1	UJ	10.1	R	10.1	U	10.1	U
2,4,5-Trichlorophenol	µg/L	50.5	U	50.5	U	50.5	U	50.5	R	50.5	U	50.5	U
2,4,6-Trichlorophenol	µg/L	10.1	U	10.1	U	10.1	U	10.1	R	10.1	U	10.1	U

NOTES:
U = Not detected.
J = Analyte present. Reported value may not be accurate or precise.

µg/L - micrograms per Liter.

	StationID	RCRA-1	RCRA-2	RCRA-2	RCRA-2	RCRA-3	RCRA-4
	SampleID	RCRA-1-GW	RCRA-2-GW	RCRA-2-GWD	RCRA-2-GW**	RCRA-3-GW	RCRA-4-GW
	LogNumber	S915556B-6	S915556B-7	S915556B-8	S915556B-7	S915556B-9	S915608-8
	Date Collected	08/18/99	08/18/99	08/18/99	08/18/99	08/18/99	08/19/99
Parameter	**Units**						
Antimony	mg/L	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Arsenic	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Barium	mg/L	0.018	0.033	0.03	0.033	0.32	0.14
Beryllium	mg/L	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U
Cadmium	mg/L	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Chromium	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0014 B
Cobalt	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Copper	mg/L	0.0013 B	0.0014 B	0.0011 B	0.0014 B	0.0011 B	0.0032 B
Lead	mg/L	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Mercury	mg/L	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 UJ
Nickel	mg/L	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.0019 B
Selenium	mg/L	0.01 U	0.01 U	0.0057 B	0.01 U	0.01 U	0.01 U
Silver	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Thallium	mg/L	0.002 UW	0.002 UW	0.002 UW	0.002 UW	0.002 U	0.002 U
Tin	mg/L	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Vanadium	mg/L	0.0022 B	0.012	0.012	0.012	0.0037 B	0.0075 B
Zinc	mg/L	0.031	0.026	0.022	0.031	0.16 B	0.078

NOTES:

B = Reported value was obtained from a reading that was less than the CRDL but greater than or equal to the IDL.

J = Analyte present. Reported value may not be accurate or precise.

U = Not detected.

W = Post digestion spike for furnance AA analysis is out of control limits (85-115%),
while sample absorbance is less than 50% of spike absorbance.

** = Reported higher number of primary or duplicate sample.

mg/L = milligrams per liter.

Analytical Data Summary

	StationID	RCRA-1		RCRA-2		RCRA-2		RCRA-3		RCRA-4	
	SampleID	RCRA-1GW-R01		RCRA-2GW-R01		RCRAFD01P-R01		RCRA-3GW-R01		RCRA-4GW-R01	
	Date Collected	02/04/2004		02/03/2004		02/03/2004		02/03/2004		02/03/2004	
	SampleType	N		N		FD		N		N	
Parameter	**Units**										
1,1,1,2-Tetrachloroethane	µg/L	1	U	1	U	1	U	1	U	1	U
1,1,1-Trichloroethane	µg/L	1	U	1	U	1	U	1	U	1	U
1,1,2,2-Tetrachloroethane	µg/L	1	U	1	U	1	U	1	U	1	U
1,1,2-Trichloroethane	µg/L	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethane	µg/L	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethene	µg/L	1	U	1	U	1	U	1	U	1	U
1,2,3-Trichloropropane	µg/L	1	U	1	U	1	U	1	U	1	U
1,2-Dibromo-3-chloropropane	µg/L	1	U	1	U	1	U	1	U	1	U
1,2-Dibromoethane (Ethylene dibromide)	µg/L	1	U	1	U	1	U	1	U	1	U
1,2-Dichlorobenzene	µg/L	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethane	µg/L	1	U	1	U	1	U	1	U	1	U
1,2-Dichloropropane	µg/L	1	U	1	U	1	U	1	U	1	U
1,3-Dichlorobenzene	µg/L	1	U	1	U	1	U	1	U	1	U
1,4-Dichlorobenzene	µg/L	1	U	1	U	1	U	1	U	1	U
1,4-Dioxane (p-dioxane)	µg/L	40	R	40	R	40	R	40	R	40	R
2-Chloro-1,3-butadiene	µg/L	1	U	1	U	1	U	1	U	1	U
2-Hexanone	µg/L	4	U	4	U	4	U	4	U	4	U
Acetone	µg/L	4	U	4	U	4	U	4	U	4	U
Acetonitrile	µg/L	10	R	10	R	10	R	10	R	10	R
Acrolein	µg/L	4	U	4	U	4	U	4	U	4	U
Acrylonitrile	µg/L	2	U	2	U	2	U	2	U	2	U
Allyl chloride (3-Chloropropene)	µg/L	1	U	1	U	1	U	1	U	1	U
Benzene	µg/L	1	U	1	U	1	U	1	U	1	U
Benzyl chloride	µg/L	1	U	1	U	1	U	1	U	1	U
Bromodichloromethane	µg/L	1	U	1	U	1	U	0.52	J	1	U
Bromoform	µg/L	1	U	1	U	1	U	1	U	1	U
Bromomethane	µg/L	1	U	1	U	1	U	1	U	1	U
Carbon disulfide	µg/L	1	U	1	U	1	U	1	U	1	U
Carbon tetrachloride	µg/L	1	U	1	U	1	U	1	U	1	U
Chlorobenzene	µg/L	1	U	1	U	1	U	1	U	1	U
Chloroethane	µg/L	1	U	1	U	1	U	1	U	1	U
Chloroform	µg/L	1	U	1	U	1	U	4.7	=	1	U
Chloromethane	µg/L	1	U	1	U	1	U	1	U	1	U
cis-1,2-Dichloroethene	µg/L	1	U	1	U	1	U	1	U	1	U
cis-1,3-Dichloropropene	µg/L	1	U	1	U	1	U	1	U	1	U
Dibromochloromethane	µg/L	1	U	1	U	1	U	1	U	1	U
Dibromomethane	µg/L	1	U	1	U	1	U	1	U	1	U
Dichlorodifluoromethane	µg/L	1	U	1	U	1	U	1	U	1	U
Ethyl methacrylate	µg/L	1	U	1	U	1	U	1	U	1	U
Ethylbenzene	µg/L	1	U	1	U	1	U	1	U	1	U
Iodomethane (methyl iodide)	µg/L	1	U	1	U	1	U	1	U	1	U
Isobutanol	µg/L	20	R	20	R	20	R	20	R	20	R
Methyl ethyl ketone (2-butanone)	µg/L	4	U	4	U	4	U	4	U	4	U
Methyl isobutyl ketone (4-methyl-2-pentanone)	µg/L	4	U	4	U	4	U	4	U	4	U
Methyl methacrylate	µg/L	1	U	1	U	1	U	1	U	1	U
Methylacrylonitrile	µg/L	10	U	10	U	10	U	10	U	10	U
Methylene chloride	µg/L	1	U	1	U	1	U	1	U	1	U
Propane nitrile (propionitrile)	µg/L	10	U	10	U	10	U	10	U	10	U

Analytical Data Summary

	StationID	RCRA-1		RCRA-2		RCRA-2		RCRA-3		RCRA-4	
	SampleID	RCRA-1GW-R01		RCRA-2GW-R01		RCRAFD01P-R01		RCRA-3GW-R01		RCRA-4GW-R01	
	Date Collected	02/04/2004		02/03/2004		02/03/2004		02/03/2004		02/03/2004	
	SampleType	N		N		FD		N		N	
Parameter	**Units**										
Styrene	µg/L	1	U	1	U	1	U	1	U	1	U
Tetrachloroethene (PCE)	µg/L	1	U	1	U	1	U	1	U	1	U
Toluene	µg/L	1	U	1	U	1	U	1	U	1	U
trans-1,2-Dichloroethene	µg/L	1	U	1	U	1	U	1	U	1	U
trans-1,3-Dichloropropene	µg/L	1	U	1	U	1	U	1	U	1	U
trans-1,4-Dichloro-2-butene	µg/L	2	U	2	U	2	U	2	U	2	U
Trichloroethene (TCE)	µg/L	1	U	1	U	1	U	1	U	1	U
Trichlorofluoromethane	µg/L	1	U	1	U	1	U	1	U	1	U
Vinyl acetate	µg/L	1	U	1	U	1	U	1	U	1	U
Vinyl chloride	µg/L	1	U	1	U	1	U	1	U	1	U
Xylenes, total	µg/L	3	U	3	U	3	U	3	U	3	U

NOTES:
U = Not detected.
J = Analyte present. Reported value may not be accurate or precise.

µg/L - micrograms per Liter.

APPENDIX H

1999 Metals and Explosive Analytical Data for Monitoring Wells NM-1, NW-3, NW-4, NW-5, NW-6, NW-7, and NW-8

ANALYTICAL SUMMARY OF EXPLOSIVE COMPOUNDS
GROUNDWATER
VIEQUES ISLAND

SAMPLE ID	NAVY-1-GW	NAVY-3-GW	NAVY-4-GW	NAVY-5-GW	NAVY-6-GW	NAVY-7-GW	NAVY-8-GW
LOG NUMBER	S915651-1	S915608-12	S915651-3	S915608-1	S915608-2	S915651-2	S915608-11
SAMPLE DATE	08/20/99	08/19/99	08/20/99	08/18/99	08/18/99	08/20/99	08/19/99
EXPLOSIVES (µg/l)							
1,3,5-Trinitrobenzene	0.35 U	0.36 U	0.42 U	0.36 U	0.38 U	0.67 U	0.36 U
1,3-Dinitrobenzene	0.35 U	0.36 U	0.42 U	0.36 U	0.38 U	0.67 U	0.36 U
2,4,6-Trinitrotoluene	0.35 U	0.36 U	0.42 U	0.36 U	0.38 U	0.67 U	0.36 U
2,4-Dinitrotoluene	0.35 U	0.36 U	0.42 U	0.36 U	0.38 U	0.67 U	0.36 U
2,6-Dinitrotoluene	0.59 U	0.6 U	0.7 U	0.6 U	0.63 U	1.1 U	0.6 U
2-Amino-4,6-dinitrotoluene	0.35 U	0.36 U	0.42 U	0.36 U	0.38 U	0.67 U	0.36 U
2-Nitrotoluene	0.59 UJ	0.6 UJ	0.7 UJ	0.6 UJ	0.63 UJ	1.1 UJ	0.6 UJ
3-Nitrotoluene	0.59 U	0.6 U	0.7 U	0.6 U	0.63 U	1.1 U	0.6 U
4-Amino-2,6-dinitrotoluene	0.59 U	0.6 U	0.7 U	0.6 U	0.63 U	1.1 U	0.6 U
4-Nitrotoluene	0.59 U	0.6 U	0.7 U	0.6 U	0.63 U	1.1 U	0.6 U
Hexahydro-1,3,5-trinitro-1,3,5-triazine	1.2 U	1.2 U	1.4 U	1.2 U	1.3 U	2.2 U	1.2 U
Methyl-2,4,6-trinitrophenylnitramine	0.59 UJ	0.6 UJ	0.7 UJ	0.6 UJ	0.63 UJ	1.1 UJ	0.6 UJ
Nitrobenzene	0.35 U	0.36 U	0.42 U	0.36 U	0.38 U	0.67 U	0.36 U
Nitroglycerin	30 U	30 U	30 U	30 U	30 U	30 U	30 U
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine	1.2 U	1.2 U	1.4 U	1.2 U	1.3 U	2.2 U	1.2 U
Pentaerythritol tetranitrate	20 U	20 U	20 U	20 U	20 U	20 U	20 U
Perchlorate	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Picric Acid	5.3 U	5.7 U	5.1 U	3.2 U	2.8 U	4 U	3.1 U

NOTES: U = Not detected. The associated number indicates approximate sample concentration necessary to be detected.
J = Analyte present. Reported value may not be accurate or precise.

µg/l = micrograms per liter.

SUMMARY OF EXPLOSIVE COMPOUNDS DETECTED
GROUNDWATER
VIEQUES ISLAND

SAMPLE ID	NAVY-1-GW	NAVY-3-GW	NAVY-4-GW	NAVY-5-GW	NAVY-6-GW	NAVY-7-GW	NAVY-8-GW
LOG NUMBER	S915651-1	S915608-12	S915651-3	S915608-1	S915608-2	S915651-2	S915608-11
SAMPLE DATE	08/20/99	08/19/99	08/20/99	08/18/99	08/18/99	08/20/99	08/19/99
EXPLOSIVES (µg/l)							
1,3,5-Trinitrobenzene	**NO DETECTS**						
1,3-Dinitrobenzene							
2,4,6-Trinitrotoluene							
2,4-Dinitrotoluene							
2,6-Dinitrotoluene							
2-Amino-4,6-dinitrotoluene							
2-Nitrotoluene							
3-Nitrotoluene							
4-Amino-2,6-dinitrotoluene							
4-Nitrotoluene							
Hexahydro-1,3,5-trinitro-1,3,5-triazine							
Methyl-2,4,6-trinitrophenylnitramine							
Nitrobenzene							
Nitroglycerin							
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine							
Pentaerythritol tetranitrate							
Perchlorate							
Picric Acid							

NOTES: µg/l = micrograms per liter.

SUMMARY OF INORGANIC CONSTITUENTS DETECTED
GROUNDWATER
VIEQUES ISLAND

SAMPLE ID		NAVY-1-GW	NAVY-3-GW	NAVY-4-GW	NAVY-5-GW	NAVY-6-GW	NAVY-7-GW	NAVY-8-GW
LOG NUMBER		S915651-1	S915608-12	S915651-3	S915556B-29	S915556B-30	S915651-2	S915608-11
SAMPLE DATE		08/20/99	08/19/99	08/20/99	08/18/99	08/18/99	08/20/99	08/19/99
	PRG (mg/l)							
TOTAL METALS (mg/l)								
Arsenic	0.0000448	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0043 B
Barium	0.255	0.054	0.02	0.058	0.1	0.039	0.5	0.36
Beryllium	0.0073	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.00011 B
Cadmium	0.00182	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.002 B
Chromium		0.0041 B	0.0047 B	0.012	0.0044 B	0.00089 B	0.0032 B	0.054
Cobalt	0.073	0.0057 B	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.024
Copper	0.146	0.024	0.014 B	0.0025 B	0.0062 B	0.0039 B	0.0039 B	0.2
Nickel	0.073	0.0073 B	0.0098 B	0.0011 B	0.015 B	0.0026 B	0.0013 B	0.033 B
Selenium	0.0182	0.0034 B	0.01 U	0.01 U	0.0063 B	0.01 U	0.01 U	0.0051 B
Tin		0.0019 B	0.01 U	0.01 U	0.0028 B	0.01 U	0.01 U	0.0075 B
Vanadium	0.0255	0.021	0.02	0.011	0.01 U	0.0075 B	0.0074 B	0.14
Zinc	1.09	0.027	0.015 B	0.021	0.013 B	0.018 B	0.028	0.46

NOTES:

B = Reported value was obtained from a reading that was less than the CRDL but greater than or equal to the ID

U = Not detected.

mg/l = milligrams per liter

ANALYTICAL SUMMARY OF DISSOLVED INORGANIC CONSTITUENTS
GROUNDWATER - DISSOLVED INORGANICS
VIEQUES ISLAND

SAMPLE ID	NAVY-1-GW	NAVY-3-GW	NAVY-4-GW	NAVY-5-GW	NAVY-6-GW	NAVY-7-GW	NAVY-8-GW
LOG NUMBER	S915651-1	S915608-12	S915651-3	S915556B-29	S915556B-30	S915651-2	S915608-11
SAMPLE DATE	08/20/99	08/19/99	08/20/99	08/18/99	08/18/99	08/20/99	08/19/99
DISSOLVED METALS (mg/l)							
Antimony	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Arsenic	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Barium	0.036	0.019	0.057	0.097	0.15	0.5	0.18
Beryllium	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
Chromium	0.01 U	0.0014 B	0.011	0.01 U	0.01 U	0.0026 B	0.0034 B
Cobalt	0.00079 B	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.026
Copper	0.0069 B	0.0049 B	0.0025 B	0.0032 B	0.0017 B	0.0056 B	0.029
Lead	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	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
Nickel	0.0025 B	0.04 U	0.0059 B	0.014 B	0.0014 B	0.0024 B	0.0086 B
Selenium	0.01 U	0.01 U	0.01 U	0.0059 B	0.01 U	0.0036 B	0.01 U
Silver	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Thallium	0.002 UWN	0.002 UW	0.002 U	0.002 UW	0.002 U	0.002 UWN	*0.01 U
Tin	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0018 B	0.0025 B
Vanadium	0.00065 B	0.022	0.01	0.01 U	0.0072 B	0.0077 B	0.013 B
Zinc	0.0094 B	0.011 B	0.022	0.008 B	0.035	0.05	2.6

NOTES: B = Reported value was obtained from a reading that was less than the CRDL but greater than or equal to the IDL.
U = Not detected.
N = Spiked sample recovery not within control limits.
W = Post digestion spike for furnance AA analysis is out of control limits (85-115%),
while sample absorbance is less than 50% of spike absorbance.
M = Duplicate injection precision not met.
* = ICP detection level
** = Reported higher number of primary or duplicate sample.

mg/l = milligrams per liter.

SUMMARY OF DISSOLVED INORGANIC CONSTITUENTS DETECTED
GROUNDWATER
VIEQUES ISLAND

SAMPLE ID		NAVY-1-GW	NAVY-3-GW	NAVY-4-GW	NAVY-5-GW	NAVY-6-GW	NAVY-7-GW	NAVY-8-GW
LOG NUMBER		S915651-1	S915608-12	S915651-3	S915556B-29	S915556B-30	S915651-2	S915608-11
SAMPLE DATE		08/20/99	08/19/99	08/20/99	08/18/99	08/18/99	08/20/99	08/19/99
	PRG (mg/L)							
DISSOLVED METALS (mg/l)								
Barium	0.255	0.036	0.019	0.057	0.097	0.15	0.5	0.18
Chromium		0.01 U	0.0014 B	0.011	0.01 U	0.01 U	0.0026 B	0.0034 B
Cobalt	0.073	0.00079 B	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.026
Copper	0.146	0.0069 B	0.0049 B	0.0025 B	0.0032 B	0.0017 B	0.0056 B	0.029
Nickel	0.073	0.0025 B	0.04 U	0.0059 B	0.014 B	0.0014 B	0.0024 B	0.0086 B
Selenium	0.0182	0.01 U	0.01 U	0.01 U	0.0059 B	0.01 U	0.0036 B	0.01 U
Tin		0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0018 B	0.0025 B
Vanadium	0.0255	0.00065 B	0.022	0.01	0.01 U	0.0072 B	0.0077 B	0.013 B
Zinc	1.09	0.0094 B	0.011 B	0.022	0.008 B	0.035	0.05	2.6

NOTES: B = Not detected substantially above the level reported in laboratory or field blanks.
U = Not detected. The associated number indicates approximate sample concentration necessary to be detected.

mg/l = milligrams per liter.

ANALYTICAL SUMMARY OF EXPLOSIVE COMPOUNDS
FIELD BLANKS/EQUIPMENT BLANKS
VIEQUES ISLAND

SAMPLE ID	AB-2	EQB-1	EQB-2	EQB-3	EQB-4	EQB-5	EQB-6
LOG NUMBER	S915608-9	S915556-29	S915556-30	S915556-31	S915608-7	S915608-10	S915651-4
SAMPLE DATE	08/19/99	08/18/99	08/18/99	08/18/99	08/18/99	08/19/99	08/20/99
EXPLOSIVES (µg/l)							
1,3,5-Trinitrobenzene	0.46 U	0.91 U	0.63 U	2.1 U	0.46 U	0.33 U	0.3 U
1,3-Dinitrobenzene	0.46 U	0.91 U	0.63 U	2.1 U	0.46 U	0.33 U	0.3 U
2,4,6-Trinitrotoluene	0.46 U	0.91 U	0.63 U	2.1 U	0.46 U	0.33 U	0.3 U
2,4-Dinitrotoluene	0.46 U	0.91 U	0.63 U	2.1 U	0.46 U	0.33 U	0.3 U
2,6-Dinitrotoluene	0.76 U	1.5 U	1.1 U	3.6 U	0.77 U	0.55 U	0.5 U
2-Amino-4,6-dinitrotoluene	0.46 U	0.91 U	0.63 U	2.1 U	0.46 U	0.33 U	0.3 U
2-Nitrotoluene	0.76 U	1.5 U	1.1 U	3.6 U	0.77 U	0.55 U	0.5 UJ
3-Nitrotoluene	0.76 U	1.5 U	1.1 U	3.6 U	0.77 U	0.55 U	0.5 U
4-Amino-2,6-dinitrotoluene	0.76 U	1.5 U	1.1 U	3.6 U	0.77 U	0.55 U	0.5 U
4-Nitrotoluene	0.76 U	1.5 U	1.1 U	3.6 U	0.77 U	0.55 U	0.5 U
Hexahydro-1,3,5-trinitro-1,3,5-triazine	1.5 U	3.0 U	2.1 U	7.1 U	1.5 U	1.1 U	1 U
Methyl-2,4,6-trinitrophenylnitramine	0.76 UJ	1.5 UJ	1 UJ	3.6 UJ	0.77 UJ	0.55 UJ	0.5 UJ
Nitrobenzene	0.46 U	0.91 U	0.63 U	2.1 U	0.46 U	0.33 U	0.3 U
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine	1.5 U	3.0 U	2.1 U	7.1 U	1.5 U	1.1 U	1 U
Nitroglycerin	30 U	**	**	**	30 U	30 U	30 U
Pentaerythritol tetranitrate	20 U	**	**	**	20 U	20 U	20 U
Perchlorate (ug/L)	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Picric Acid (ug/L)	3 U	2.6 U	16 U	2.6 U	2.8 U	3.2 U	4.6 U

NOTES: U = Not detected. The associated number indicates approximate sample concentration necessary to be detected.
J = Analyte present. Reported value may not be accurate or precise.
** = Insufficient sample volume to perform analysis.

µg/l = micrograms per liter.

SUMMARY OF EXPLOSIVE COMPOUNDS DETECTED
FIELD BLANKS/EQUIPMENT BLANKS
VIEQUES ISLAND

SAMPLE ID	AB-2	EQB-1	EQB-2	EQB-3	EQB-4	EQB-5	EQB-6
LOG NUMBER	S915608-9	S915556-29	S915556-30	S915556-31	S915608-7	S915608-10	S915651-4
SAMPLE DATE	08/19/99	08/18/99	08/18/99	08/18/99	08/18/99	08/19/99	08/20/99
EXPLOSIVES (µg/l)							
1,3,5-Trinitrobenzene	**NO DETECTS**						
1,3-Dinitrobenzene							
2,4,6-Trinitrotoluene							
2,4-Dinitrotoluene							
2,6-Dinitrotoluene							
2-Amino-4,6-dinitrotoluene							
2-Nitrotoluene							
3-Nitrotoluene							
4-Amino-2,6-dinitrotoluene							
4-Nitrotoluene							
Hexahydro-1,3,5-trinitro-1,3,5-triazine							
Methyl-2,4,6-trinitrophenylnitramine							
Nitrobenzene							
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine							
Nitroglycerin							
Pentaerythritol tetranitrate							
Perchlorate							
Picric Acid							

NOTES: µg/l = micrograms per liter.

SUMMARY OF INORGANIC CONSTITUENTS DETECTED
FIELD BLANKS/EQUIPMENT BLANKS
VIEQUES ISLAND

SAMPLE ID	AB-2	EQB-1	EQB-2	EQB-3	EQB-4	EQB-5	EQB-6
LOG NUMBER	S915608-9	S915556-29	S915556-30	S915556-31	S915556B-10	S915608-10	S915651-4
SAMPLE DATE	08/19/99	08/16/99	08/17/99	08/18/99	08/18/99	08/19/99	08/20/99
TOTAL METALS (mg/l)							
Barium	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.00044 B	0.01 U
Copper	0.02 U	0.02 U	0.02 U	0.02 U	0.001 B	0.02 U	0.02 U
Nickel	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.0032 B	0.04 U
Zinc	0.0012 B	0.015 B	0.017 B	0.003 B	0.009 B	0.009 B	0.02 U
DISSOLVED METALS (mg/l)							
Barium	0.01 U	NA	NA	NA	0.01 U	0.0008 B	0.01 U
Silver	0.01 U	NA	NA	NA	0.01 U	0.0027 B	0.01 U
Zinc	0.0053 B	NA	NA	NA	0.006 B	0.011 B	0.0024 B

NOTES: B = Not detected substantially above the level reported in laboratory or field blanks.
U = Not detected. The associated number indicates approximate sample concentration necessary to be detected.
NA = Not analyzed.

mg/l = milligrams per liter.