N96095.AR.000456
NWIRP CALVERTON NY
5090.3a

Phase 2 Remedial Investigation
Site 6A - Fuel Calibration Area
Site 10B - Engine Test House
Southern Area

Naval Weapons
Industrial Reserve Plant
Calverton, New York

Northern Division
Naval Facilities Engineering Command
Contract Number N62472-90-D-1298
Contract Task Order 0223

July 2001

TETRA TECH NUS, INC.

040108/P

PHASE 2 REMEDIAL INVESTIGATION
SITE 6A - FUEL CALIBRATION AREA
SITE 10B - ENGINE TEST HOUSE
SOUTHERN AREA

NAVAL WEAPONS INDUSTRIAL RESERVE PLANT
CALVERTON, NEW YORK

COMPREHENSIVE LONG-TERM
ENVIRONMENTAL ACTION NAVY (CLEAN) CONTRACT

Submitted to:
Engineering Field Activity Northeast
Environmental Branch Code 18
Naval Facilities Engineering Command
10 Industrial Highway, Mail Stop #82
Lester, Pennsylvania 19113-2090

Submitted by:
Tetra Tech NUS, Inc.
600 Clark Avenue, Suite 3
King of Prussia, Pennsylvania 19406-1433

CONTRACT NUMBER N62472-90-D-1298
CONTRACT TASK ORDERS 0270

JULY 2001

PREPARED UNDER THE SUPERVISION OF:

DAVID D. BRAYACK
PROJECT MANAGER
TETRA TECH NUS, INC.
PITTSBURGH, PENNSYLVANIA

APPROVED FOR SUBMISSION BY:

JOHN J. TREPANOWSKI
PROGRAM MANAGER
TETRA TECH NUS, INC.
KING OF PRUSSIA, PENNSYLVANIA

TABLE OF CONTENTS

SECTION		PAGE NO.
ACRONYMS AND ABBREVIATIONS		**v**
EXECUTIVE SUMMARY		**ES-1**
1.0	**INTRODUCTION**	**1-1**
1.1	PURPOSE	1-1
1.2	FACILITY LOCATION	1-2
1.3	FACILITY HISTORY	1-3
1.4	SURFACE WATER HYDROLOGY	1-4
1.5	HYDROGEOLOGY	1-4
1.6	GENERAL ECOLOGICAL SETTING OF NWIRP CALVERTON	1-5
1.7	PREVIOUS INVESTIGATIONS	1-6
1.8	SUMMARY OF FIELD ACTIVITIES	1-6
1.9	DATA EVALUATION	1-7
1.9.1	Phase 2 Groundwater Screening Data 1997	1-7
1.9.2	Supplemental Investigation Groundwater Screening Data 2000	1-7
1.9.3	MNA Supplemental Investigation Groundwater Data 2000	1-7
1.9.4	Summary	1-8
2.0	**SITE BACKGROUND**	**2-1**
2.1	SITE HISTORY AND PHYSICAL SETTING	2-1
2.2	ECOLOGICAL SETTING	2-3
2.2.1	Vegetation	2-3
2.2.2	Wildlife	2-4
2.2.3	Wetlands	2-4
2.2.4	Aquatic Biota	2-4
2.2.5	Special Status Species	2-4
2.3	GEOLOGY	2-4
2.4	HYDROGEOLOGY	2-6
2.4.1	Groundwater Occurrence	2-6
2.4.2	Groundwater Flow Directions	2-6
2.4.3	Hydraulic Characteristics	2-7
2.4.4	Groundwater Supply	2-8
2.5	PREVIOUS INVESTIGATIONS	2-8
2.5.1	Background Investigations	2-8
2.5.2	Initial Assessment Study (IAS)	2-9
2.5.3	Site Investigation (SI)	2-9
2.5.4	RCRA Facility Assessment (RFA)	2-9
2.5.5	Phase 1 RCRA Field Investigation (RFI)	2-10
2.6	SITE CHRONOLOGY	2-15
2.7	DATA GAPS	2-17
3.0	**PHASE 2 AND SUPPLEMENTAL GROUNDWATER INVESTIGATIONS**	**3-1**
3.1	FIELD ACTIVITIES	3-1
3.1.1	Phase 2 Remedial Investigation	3-1
3.1.2	Supplemental Groundwater Investigation	3-3
3.2	ANALYTICAL RESULTS	3-6
3.2.1	Site 6A - Fuel Calibration Area	3-6
3.2.2	Engine Test House	3-10
3.2.3	Southern Area	3-12

TABLE OF CONTENTS (CONT.)

SECTION **PAGE NO.**

3.3 SUMMARY OF GROUNDWATER CONTAMINATION 3-12
3.4 MONITORED NATURAL ATTENUATION (MNA) 3-14

4.0 ECOLOGICAL RISK EVALUATION 4-1

5.0 CONCLUSIONS 5-1

REFERENCES R-1

APPENCIES

A ANALYTICAL LABORATORY DATA SHEETS
A.1 Phase 2 Groundwater Investigation
A.2 Supplemental Groundwater Investigation
A.3 Monitored Natural Attenuation Groundwater Investigation

B SAMPLE LOG SHEETS
B.1 Phase 2 Groundwater Investigation
B.2 Supplemental Groundwater Investigation
B.3 Monitored Natural Attenuation Groundwater Investigation

C CHAIN OF CUSTODY FORMS

D BORING LOG SHEETS
D.1 Phase 2 Groundwater Investigation
D.2 Supplemental Groundwater Investigation

E MONITORING WELL CONSTRUCTION SHEETS

F GAMMA RAY LOG SHEETS

G BIOSCREEN MODELING

TABLES

NUMBER		PAGE NO.
3-1	Positive Detections (µg/L) - Site 6A - Fuel Calibration Area	3-19
3-2	Positive Detections (µg/L) - Site 10B - Engine Test House	3-25
3-3	Positive Detections (µg/L) - Southern Area	3-31
3-4	Positive Detections (µg/L) - Fuel Calibration Area	3-37
3-5	Positive Detections (µg/L) - Southern Area	3-38
3-6	Monitored Natural Attenuation Groundwater Analytical Results	3-40

FIGURES

NUMBER		PAGE NO.
1-1	General Location Map	1-9
1-2	Site Location Map	1-11
1-3	Surface Water Hydrology	1-13
2-1	Study Area	2-19
2-2	Generalized Cross Section Plan	2-21
2-3	Generalized Cross Section A-A'	2-23
2-4	Groundwater Flow Pattern	2-25
2-5	Vertical Flow Net	2-27
3-1	Sample Points	3-43
3-2	Sample Points	3-45
3-3	Permanent Monitoring Well Locations	3-47
3-4	Temporary Well and Piezometer Sample Results	3-49
3-5	Generalized Cross Section Plan	3-51
3-6	Generalized Cross Section	3-53
3-7	1,1,1-TCA Exceeding 5 UG/L	3-55
3-8	1,1,1-TCA Exceeding 5 UG/L	3-57
3-9	1,1-DCA Exceeding 5 UG/L	3-59
3-10	1,1-DCA Exceeding 5 UG/L	3-61
3-11	1,1-DCE Exceeding 5 UG/L	3-63
3-12	1,1-DCE Exceeding 5 UG/L	3-65
3-13	Permanent Monitoring Well Locations	3-67

ACRONYMS AND ABBREVIATIONS

AL	action level
ARAR	applicable or relevant and appropriate requirements
AWQC	ambient water quality criteria
AWQS	ambient water quality standard
BDAT	best-demonstrated available technology
bgs	below ground surface
BTAG	Biological Technical Assistance Group
CAA	Clean Air Act
CAMU	corrective action management unit
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CLEAN	Comprehensive Long-Term Environmental Action Navy
CLP	Contract Laboratory Program
CMS	Corrective Measures Study
COC	chain-of-custody
COPC	chemical of potential concern
CRDL	Contract Required Detection Limit
CRQL	contract required quantification limit
CSF	Cancer Slope Factor
CTO	Contract Task Order
CWA	Clean Water Act
cy	cubic yards
dL	deciliter
DO	dissolved oxygen
DOE	U.S. Department of Energy
DOH	Department of Health
DOT	Department of Transportation
ECL	Environmental Conservation Law
EE/CA	Engineering Evaluation/Cost Analysis
EPA	U.S. Environmental Protection Agency
ERA	ecological risk assessment
FFS	Focused Feasibility Study
FS	Feasibility Study
FWS	U.S. Fish and Wildlife Service
GC	gas chromatography
GOCO	government-owned-contractor-operated

HASP	health and safety plan
HDPE	high-density polyethylene
HI	hazard index
HNUS	Halliburton NUS Corporation
HQ	hazard quotient
hr	hour
IAS	Initial Assessment Study
ICR	incremental cancer risk
IDL	instrument detection limit
IEUBK	Integrated Exposure Uptake Biokinetic
IR	Installation Restoration
IRIS	Integrated Risk Information System
kg	kilogram
L	liter
lb	pound
LCV	least chronic value
LDR	land disposal restriction
LOAEL	lowest-observed-adverse effect level
MCL	Maximum Contaminant Level
MCLG	Maximum Contaminant Level Goal
MDL	method detection limit
MF	modifying factor
mg	milligram
msl	mean sea level
NAAQS	National Ambient Air Quality Standards
NAVFAC	Naval Facilities Engineering Command
NEPA	National Environmental Policy Act
NESHAPs	National Emissions Standards for Hazardous Air Pollutants
NOAEL	no-observed-adverse effect level
NPDES	National Pollutant Discharge Elimination System
NSPS	New Source Performance Standards
NTU	nephelometric turbidity unit
NWIRP	Naval Weapons Industrial Reserve Plant
NYSDEC	New York State Department of Environmental Conservation
O&M	operation and maintenance
OSHA	Occupational Safety and Health Administration
OSWER	Office of Solid Waste and Emergency Response

PA	Preliminary Assessment
PAH	polynuclear aromatic hydrocarbon
PCB	polychlorinated biphenyl
POC	principal organic contaminant
POL	petroleum, oils, and lubricants
POTW	publicly owned treatment works
ppb	part per billion
PPE	personal protective equipment
PRG	Preliminary Remediation Goal
PVC	polyvinyl chloride
QA	Quality Assurance
QC	Quality Control
RAO	remedial action objective
RCRA	Resource Conservation and Recovery Act
RFA	RCRA Facility Assessment
RfD	Reference Dose
RFI	RCRA Facility Investigation
RI	Remedial Investigation
ROD	Record of Decision
RPD	relative percent difference
SDWA	Safe Drinking Water Act
SI	Site Investigation
SOP	Standard Operating Procedure
SPDES	State Pollutant Discharge Elimination System
SSL	soil screening level
STARS	Spill Technology and Remediation Series
SVOC	semivolatile organic compound
SWMU	Solid Waste Management Unit
TAGM	Technical and Administrative Guidance Memorandum
TAL	Target Analyte List
TBC	to be considered
TCL	Target Compound List
TCLP	Toxicity Characteristic Leaching Procedure
TDS	total dissolved solids
TIC	tentatively identified compound
TOGS	Technical and Operation Guidance Series
TRC	Technical Review Committee

TSD	treatment, storage, and disposal
TtNUS	Tetra Tech NUS, Inc.
TU	temporary unit
UF	uncertainty factor
UOC	unspecified organic contaminant
USDOI	U.S. Department of the Interior
VOC	volatile organic compound
µg	microgram

EXECUTIVE SUMMARY

The Northern Division of the Naval Facilities Engineering Command (NAVFAC) has issued Contract Task Order (CTO) 0270 to Tetra Tech NUS, Inc. (TtNUS) under the Comprehensive Long-Term Environmental Action Navy (CLEAN) Contract N62472-90-D-1298 to perform a Phase 2 Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) at the Naval Weapons Industrial Reserve Plant (NWIRP), located in Calverton, New York. This report summarizes the results of investigation at Sites 6A – Fuel Calibration Area, groundwater at 10B – Engine Test House, and the Southern Area. Based on test results presented in this and previous reports, the nature and extent of contamination at this site have been adequately characterized. Therefore, the remediation process can proceed to the FS step. Additional data collection would be conducted during the Feasibility Study and Remedial Action stages, as required. The area is listed as Classification 2 in the NYSDEC Registry of Inactive Waste Disposal Sites.

SITE DESCRIPTION

The fuel calibration and related facilities were used in the testing of aircraft fuel and engine systems. Aircraft fuel delivery systems were pressurized with fuel in the calibration area to test for leaks. The testing may have resulted in frequent, small fuel spills to the area's pavement.

The Fuel Calibration Area consists of a new and old fuel calibration pad. The old fuel calibration pad was located in what is now an open grass-covered field. The new fuel calibration pad is located to the north and east of the old fuel calibration pad on a concrete apron. The concrete apron between the two fuel calibration pads was also used for the same activity. A shed, piping, and fuel filtering devices were located in the area in the 1980s. The equipment has since been removed.

An open field, approximately 10 acres in area, is located immediately south of the old and new calibration pads. The old fuel calibration pad was located at the northwest corner of the field, in an area now partially covered by a wastewater treatment facility. No physical evidence exists of the former calibration area. An area east of the wastewater treatment plant and south of the fuel pad is the former site of a septic leach field.

The Fuel Calibration Area is sloped very gently to the south and east. Drainage swales are located parallel to the southern and eastern edges of the pad. The two swales meet east of the south corner of the pad, and enter a southward trending buried culvert. The culvert outfalls to another drainage ditch approximately 625 feet south of the pad. This ditch continues to a shallow pond located approximately 1,500 feet south-southeast of the pad. Aircraft hangers and painting shops are located east of the pad. Several small

drainage collection ponds are located to the north, east, and south of the Fuel Calibration Area, all within 1,500 feet.

Three ancillary structures to the Fuel Calibration Area are located to the southeast. These include the covered engine runup area, the hush house, and the Engine Test House (Site 10B). The engine runup area was used to test jet engines and fuel systems for leaks while operating the engines at elevated speeds. An excavated area several acres in size is located east of the engine runup area blast fence; its use is unknown. The hush house is a specially constructed building that allows aircraft engines to be operated at high speeds while containing the associated noise. The Engine Test House was outfitted to operate jet engines before installation in aircraft.

The primary environmental concern at the Fuel Calibration Area was the spillage of aircraft fuels. According to the IAS (Navy, 1986), as many as 230 gallons of fuel are recorded to have been spilled in these areas. The majority of the spillage is expected to be concentrated in the areas surrounding the main fuel calibration pad.

The Engine Test House (Site 10B) is located several thousand feet to the south of the Fuel Calibration Area. The area consists of a building, surrounding pad, sparse woods, and open grassy areas. A drainage swale and culvert from the Fuel Calibration Area runs adjacent to and hydraulically upgradient of the Engine Test House. From the late 1980's to the early 1990's, groundwater from the Fuel Calibration Area was discharged into this drainage swale and culvert. As a result, the presence of chlorinated VOC contaminated groundwater at the Engine Test House is likely to be attributable to the Fuel Calibration Area.

This area was initially evaluated as part of the 1995 RFA cesspool/leachfield investigation (HNUS, 1995c). Subsequent testing during the RFA Addendum found that the cesspool at this site was not a source of environmental contamination. However, during this testing, fuel-type contamination (benzene, toluene, ethylbenzene, and xylene [BTEX]) was found in the area of an underground storage tank (UST) removed in the mid-1990s. Based on an interview with Northrop Grumman, approximately 80 cubic yards of fuel contaminated soils were excavated during the UST removal. The purpose of the Phase 2 RI is to determine the extent of remaining free product and fuel-type VOC contaminated groundwater.

The Southern Area is located to the southeast of the Engine Test House and extends off site to the southeast. The area was investigated because a Suffolk County monitoring well demonstrated the presence of chlorinated VOCs in groundwater downgradient of the facility. There are no known or suspected contaminant sources within this area. However, this area is hydraulically downgradient of the

Engine Test House (Site 10B), the Fuel Calibration Area (Site 6A), and the general industrial complex at the facility. Groundwater flow through this area is to the southeast, with the Peconic River or Flander's Bay being potential discharge points.

The area is mostly wooded, and includes two shallow ponds near the northern edge. The ponds receive runoff through a drainage swale and culvert from the Fuel Calibration Area. From the late 1980's to the early 1990's, groundwater from the Fuel Calibration Area was discharged into this drainage swale and culvert and into the western pond. As a result, the presence of chlorinated VOC contaminated groundwater at the Southern Area may be attributable to the Fuel Calibration Area.

PREVIOUS INVESTIGATIONS

In 1986, an Initial Assessment Study was conducted that identified Site 6A as an site with potential environmental contamination. In 1991/1992, a Site Investigation confirmed the presence of VOC and fuel contaminated groundwater. In 1994/1995, an RCRA Facility Investigation was conducted to delineate the nature and extent of groundwater contamination. The results are summarized as follows.

Groundwater testing found VOCs including 1,1,1-trichloroethane (15,000 µg/L), 1,1-dichloroethane (5,800 µg/L), chloroethane (430 µg/L), toluene (330 µg/L), and xylenes (780 µg/L) at concentrations above Federal maximum contaminant levels (MCLs) and/or NYSDEC groundwater and drinking water quality standards. The NYSDEC standard for most VOCs in groundwater is 5 µg/L. Semivolatile Organic Compounds (SVOCs) including 1,2-dichlorobenzene (9 µg/L), 2-methylnaphthalene (74 µg/L), 4-methylphenol (84 µg/L), and naphthalene (120 µg/L) were also found at levels exceeding Federal MCLs and/or NYSDEC groundwater quality standards. Lead was not found at a level exceeding Federal or state standards. Floating free product has been identified at the site. The location of the free product corresponds to the location of the most contaminated groundwater. Free product recovery was an ongoing Northrop Grumman operation until 1997.

SITE RISKS

The human health risk assessment was conducted for current worker and the hypothetical future resident in the 1995 RFI Report. The total cancer risk estimate developed for a maintenance worker assuming exposure to contaminants in the soil at Site 6A was 7.9×10^{-7}. This cancer risk estimate is below the 10^{-4} to 10^{-6} target risk range often used by the EPA in determining the need for action at CERCLA/RCRA sites or in the formulation of standards and criteria (e.g., the Federal Safe Drinking Water Act standards). The hazard index (an indicator of the potential for adverse noncarcinogenic health effects) calculated for the maintenance worker was 1.6×10^{-5}. Adverse noncarcinogenic health effects are not anticipated when the hazard index is below unity.

The risk assessment conducted assuming a future residential land use scenario considered representative concentrations in soils and groundwater. The total cancer risk estimate for the receptor (an adult) was 2.5×10^{-3}. This value exceeds the EPA target risk range of 10^{-4} to 10^{-6}. However, the cancer risk estimate developed for contaminants in soils (8.1×10^{-6}) is lower than that calculated for chemicals in groundwater (2.5×10^{-3}) and is within the EPA target risk range. Only the risk estimate calculated for benzo(a)pyrene in soil individually exceeds 1×10^{-6}. The hazard indices developed for adult and child receptors assuming a future residential land use scenario were 8.9 and 23.6, respectively. These results indicate that there is a potential for adverse noncarcinogenic health effects under the conditions specified in the exposure assessment. However, the majority of the risk is attributable to hypothetical residential exposure to chemicals detected in groundwater. Hazard indices developed for contaminants in soils do not exceed unity, an indication that adverse noncarcinogenic health effects are not anticipated for soil exposure pathways evaluated in the baseline risk assessment.

PHASE 2 RI

The Phase 2 Remedial Investigation was conducted in 1997 and consisted of the following activities.

- Installation and sampling of 42 temporary monitoring wells, 13 at the Fuel Calibration Area (FC-TW-01A to -13A), 16 at the Engine Test House (ET-TW01A to -16A), and 13 in the Southern Area (SA-TW-101 to -113). The temporary monitoring wells were sampled at multiple depths up to 135 feet below ground surface (bgs).

- Installation and sampling of two shallow permanent monitoring wells (FC-MW-07S and FC-MW-08S).

SUPPLEMENTAL RI

A Supplemental Groundwater Investigation was conducted between June 2000 and October 2000 throughout the study area to further delineate the extent of the groundwater plume. This investigation focused on off site groundwater contamination (Southern Area) and deep groundwater contamination at the old fuel calibration area. Sample locations are presented in Figures 3-1, 3-2, and 3-3. Activities conducted during this investigation include the following.

- Sampling of two existing permanent monitoring wells at the old fuel calibration pad to determine the current concentration of VOCs (FC-MW-02S and -03S).

- Installation and sampling of eight temporary monitoring wells, including: three wells at the old fuel calibration pad to a depth of 200 feet below ground surface (FC-TW-04A, FC-TW-09A, and

FC-TW-20A); two wells between the Site 10B - Engine Test House and Site 6A - Fuel Calibration Area to a depth of 100 feet below ground surface (FC-TW-21A and ET-TW-06A); and three wells south of the facility to a depth of 100 feet below ground surface (SA-TW-111, -112, and -113). In addition, after the finding of deep contamination at SA-TW-113 (100 feet below ground surface), a temporary monitoring well was installed at the location of PZ-102 and extended to a depth of 140 feet bgs.

- Installation and sampling of 12 temporary piezometers near the Peconic River (SA-PZ-101SID,-102S,I,D,-103S,I,D, and -104S,ID). The piezometers were used for groundwater sampling and to measure horizontal and vertical groundwater flow gradients. These piezometers were installed in four clusters at three depths per cluster.

- Collection and testing of two surface water samples from the Peconic River near SA-PZ-102 and SA-PZ-104.

- Sampling of three permanent monitoring wells (FC-MW-01S, -MW-02S, and -MW-03S) and two piezometers (SA-PZ101-I-47 and SA-PZ104-S-10.5) for monitored natural attenuation parameters.

CONCLUSIONS

The following conclusions were developed based upon the results of the Phase 1 and Phase 2 RIs for the Study Area:

- Although the deep groundwater contamination delineation is not complete, the extent of groundwater contamination at the Study Area is now adequately defined.

- Enough data now exists between both phases of the RFI/RI to proceed to a FS to evaluate remedial options that will address groundwater contamination. Chlorinated VOCs in the groundwater are the primary site concern.

1.0 INTRODUCTION

1.1 PURPOSE

The Northern Division of the Naval Facilities Engineering Command (NAVFAC) has issued Contract Task Order (CTO) 0270 to Tetra Tech NUS, Inc. (TtNUS) under the Comprehensive Long-Term Environmental Action Navy (CLEAN) Contract N62472-90-D-1298 to perform a Phase 2 Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) at the Naval Weapons Industrial Reserve Plant (NWIRP), located in Calverton, New York.

This work is part of the Navy's Installation Restoration (IR) Program, which is designed to identify contamination of Navy and Marine Corps lands/facilities resulting from past operations and to institute corrective measures, as needed. There are typically four distinct stages. Stage 1 is the Preliminary Assessment (PA), which was formerly known as the Initial Assessment Study (IAS). Stage 2 is a RCRA Facility Assessment -Sampling Visit (RFA), which is also referred to as a Site Investigation (SI), which augments the information collected in the Preliminary Assessment. Stage 3 is the RCRA Facility Investigation/Corrective Measures Study (RFI/CMS) (also referred to as a Remedial Investigation/Feasibility Study [RI/FS]), which characterizes the contamination at a facility and develops options for remediation of the site. Stage 4 is the Corrective Action, which results in the control or cleanup of contamination at sites. This report has been prepared under Stage 3 and serves as a supplemental report to the RFI report and Addendum for NWIRP Calverton, New York, (Halliburton NUS [HNUS], 1995a; HNUS, 1995b).

This report specifically addresses Sites 6A – Fuel Calibration Area, groundwater at 10B – Engine Test House, and the Southern Area, collectively referred to as the Study Area in this report. Based on test results presented in this and previous reports (See Section 1.7), the nature and extent of contamination at this site have been adequately characterized. Therefore, the remediation process can proceed to the FS step. Additional data collection would be conducted during the Feasiblity Study and Remedial Action stages, as required.

This Phase 2 RI, which is analogous to a Phase 2 RFI, was conducted in accordance with the requirements of the New York State Department of Environmental Conservation (NYSDEC) Division of Solid & Hazardous Materials Part 373 Permit that was issued to the Navy on April 18, 2000 under their implementing regulations (6 NYCRR Part 621). This permit supercedes and replaces the original Part 373 Permit to Operate a Hazardous Waste Storage Facility that was issued to then Grumman Aerospace Corporation on March 25, 1992. The new permit, issued only to the Department of Navy, deals exclusively with those Solid Waste Management Units (SWMUs) that remain on the former NWIRP

Calverton property and any Corrective Actions that may be required in order to adequately address each IR site. Although the Part 373 Permit is the enforceable document governing the Navy's remedial actions, the NYSDEC State Superfund group, located out of the Albany office, retains primary responsibility for regulatory oversight of the Navy's actions. As such, the Navy has agreed to a request made by the NYSDEC State Superfund group to utilize terminology associated with the NYSDEC State Superfund program which is closely related to the Federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) program. The CERCLA terminology that is to be used parallels the RCRA terminology, and the implementation phases of each have been determined to meet the substantive requirements of both programs and will also satisfy the Corrective Action requirements set forth in Module III of the Part 373 Permit.

The area is listed as Classification 2 in the NYSDEC Registry of Inactive Waste Disposal Sites.

1.2 FACILITY LOCATION

The site involved in this study is located within the confines of NWIRP Calverton, Suffolk County, New York, (see Figure 1-1 and Figure 1-2). NWIRP Calverton is located on Long Island approximately 70 miles east of New York City. The facility is located within the municipality of Riverhead.

Prior to 1996, NWIRP Calverton was a government-owned contractor-operated (GOCO) facility which was operated by the Northrop Grumman Corporation. The facility had an overall area of approximately 6,000 acres, of which 3,000 acres lie entirely within a fenced-in boundary. The majority of the industrial activity was confined to the south central portion of this fenced-in area.

Currently, NWIRP Calverton consists of four separate parcels of land totaling approximately 358 acres. Eight Navy IR sites are included within these parcels as follows. The location of the parcels and sites are presented in Figure 1-2.

<u>Parcel A (32 acres)</u>

Site 2 - Fire Training Area

<u>Parcel B1 (40 acres)</u>

Site 6A - Fuel Calibration Area

Site 10B - Engine Test House

<u>Parcel B2 (131 acres)</u>

Southern Area

Parcel C (10 acres)

Site 7 - Fuel Depot

Site 10A - Jet Fuel Systems Laboratory

Parcel D (145 acres)

Site 1- Northeast Pond Disposal Area

Site 9 - ECM Area

1.3 FACILITY HISTORY

NWIRP Calverton has been owned by the U.S. Department of the Navy (Navy) since the early 1950's, at which time the land was purchased from a number of private owners. The facility was expanded in 1958 through additional purchases of privately-owned land. Northrop Grumman Corporation (previously Grumman Corporation) leased the land and was the sole operator of the facility from its construction until February 1996. In 1996, the land was returned to the Navy.

In September 1998, the majority of the land within the developed section of the facility was transferred to the Town of Riverhead for redevelopment. Because of the need for additional environmental investigation and the potential need for remediation, the Navy retained four parcels of land within the developed section. The four parcels and associated Navy IR Sites are presented on Figure 1-2.

Approximately 3000 acres of undeveloped land outside of the fenced area was transferred to the Veterans Administration and the New York State Department of Environmental Conservation (NYSDEC) in 1999.

NWIRP Calverton was constructed in the early 1950's for use in the development, assembly, testing, refitting, and retrofitting of Naval combat aircraft. The facility supported aircraft design and production at the Northrop Grumman's Bethpage facility, which is located in Nassau County, New York.

The majority of industrial activity at the facility was confined to the developed area in the center and south center of the facility, between the two runways. Industrial activities at the facility were related to the manufacturing and assembly of aircraft and aircraft components. Operations which resulted in hazardous waste generation included but were not limited to metal finishing processes, such as metal cleaning and electroplating, other maintenance operations, temporary storage of hazardous waste, fueling operations, and various training operations. The painting of aircraft and components resulted in additional waste generation.

1.4 SURFACE WATER HYDROLOGY

The majority of the NWIRP Calverton is located within the Peconic River drainage basin. The eastward-flowing Peconic River is located approximately 1,300 feet south of the facility at its closest point. The Peconic River discharges to Peconic Bay located 8.5 stream miles from the facility.

Surface water hydrology is illustrated on Figure 1-3. Major surface water features near the facility include McKay Lake and Northeast Pond (see Figure 1-2). McKay Lake is a man-made groundwater recharge basin located north of River Road, midway along the southern site border. Northeast Pond is located at the northeast corner of the facility. Several small drainage basins exist near the Fuel Calibration Area (Runway Ponds). All of these surface water features are land locked, with the exception of McKay Lake, which has an intermittent discharge to Swan Pond, located 1,500 feet to the south of NWIRP Calverton. Overhead flow from the drainage basins to the Peconic River may also occur periodically.

A number of small wetlands exist on the Calverton facility. The U.S. Department of the Interior (USDOI), Fish and Wildlife Department classifies the western half of the 2-acre Northeast Pond as palustrine, forested/scrub/shrub/emergent wetland. The drainage basins are classified as palustrine, scrub/shrub/emergent wetland (USDOI, 1980).

1.5 HYDROGEOLOGY

The unconsolidated sediments that underlie NWIRP Calverton are generally coarse-grained with high porosities and permeabilities. These factors create aquifers with high yields and transmissivities.

The Upper Glacial Formation, the Magothy Formation, and the Lloyd Sand are the major regional aquifers. The Upper Glacial and Magothy aquifers are of principle importance in Suffolk County because of their proximity to the ground surface. The Raritan Clay of the Raritan Formation has a very low permeability and acts as a regional confining layer that is believed to minimize the local risk of contamination to the underlying Lloyd Sand aquifer (McClymonds and Frank, 1972). The Lloyd Sand has not been extensively developed due to its depth and the abundant water available in the overlying aquifers.

The Upper Glacial aquifer is widely used as a source of groundwater in Suffolk County. The water table beneath the NWIRP Calverton lies within this aquifer. Porosities in excess of 30 percent have been calculated for the Upper Glacial aquifer in adjoining Nassau County. Hydraulic conductivity is estimated at 270 feet per day (ft/day).

The Magothy aquifer is also widely used as a source of groundwater in Suffolk County. The most productive units are coarser sand and gravel. The permeability of the Magothy is high and hydraulic conductivity has been calculated in excess of 70 ft/day.

The Upper Glacial and Magothy aquifers are believed to be hydraulically interconnected and to function as a single unconfined aquifer. Logs from on-site monitoring wells, previous hydrogeologic investigations, and geologic mapping indicate that although clay lenses that may create locally confining and/or perched conditions are present in both aquifers, these lenses are not widespread and do not function as regional aquitards (McClymonds and Frank, 1972; Fetter, 1976).

NWIRP Calverton straddles a regional groundwater divide, with groundwater beneath the northern half of the facility flowing to the northeast, with the Long Island Sound as the probable discharge point for groundwater in the shallow aquifer zones. Groundwater beneath the southern half of the facility flows to the southeast and the Peconic River basin is the likely discharge point. Groundwater on the divide, the location of which can fluctuate, flows to the east. Groundwater potentiometric contours are shown on Figure 1-3.

1.6 GENERAL ECOLOGICAL SETTING OF NWIRP CALVERTON

NWIRP Calverton is located in the Long Island Pine Barrens, an area characterized by forests dominated by pitch pine (*Pinus rigida*) and oaks (*Quercus* sp.) growing on course-textured upland soils. Rainfall leaches rapidly through the soils recharging a vast underlying aquifer but creating a dry environment at the surface which predisposes the vegetation to frequent periodic wildfires. Where the frequent fire cycle is intact, the forest is typically dominated by pitch pine with a dense understory of scrub oak (*Quercus ilicifolia*), a shrub oak that rarely grows taller than 20 feet. Pitch pine is thick barked and thus generally resistant to brief fires, and both pitch pine and scrub oak regenerate rapidly following heavier fires (Myers and Gaffney, 1990; Navy, 1986).

Dominance by taller oaks; especially scarlet oak (*Quercus coccinea*), white oak (*Quercus alba*), and black oak (*Quercus velutina*); increases where the fire cycle has been suppressed by human activity. A successional sequence progressing from a pitch pine-shrub oak forest, to a pitch pine-oak forest (taller oaks), and then to an oak-pitch pine forest (taller oaks) is recognized when fire is excluded (Myers and Gaffney, 1990). Fire has generally been excluded from inside the NWIRP Calverton fence since its establishment in 1952, and most mature forest within the fence cover falls into the pitch pine-oak or oak-pitch pine classifications. Especially in the northern part of the fenced area, where soils are less coarse, much forest cover is dominated by oaks, and pitch pine is only a minor associate.

Also typical of the Long Island Pine Barrens are coastal plain ponds, isolated shallow ponds with fluctuating levels of acidic, tea-colored water. These ponds are typically fringed by emergent wetland communities dominated by various rushes, sedges, and forbs and known to support a variety of rare, threatened, and endangered species (Myers and Gaffney, 1990; Conrad, 1996). The fenced part of NWIRP Calverton contains several coastal plain ponds, including Northeast Pond, Shannon's Pond immediately south of Northeast Pond, North Pond, and three narrow ponds on the edge of the developed area termed the Runway Ponds. Most of these ponds, especially Northeast Pond and the Runway Ponds, have been hydrologically altered by human activity. Also, one man-made lake (McKay Lake) is present in the south central portion of the facility.

1.7 PREVIOUS INVESTIGATIONS

Previous investigations at the site consisted of the following:

- IAS (Navy, 1986)
- SI (HNUS, 1992a)
- Hazard Ranking System Preliminary Scoring and Site Inspection Report Form (HNUS, 1992b)
- RFI (HNUS 1995a)
- RFI Addendum (HNUS 1995b)

This report has been prepared as an addendum to the NWIRP Calverton RFI reports issued in 1995, (HNUS, 1995a; HNUS, 1995b). The RFI reports concluded that additional testing was necessary to confirm nature and extent of contamination at several sites, including Sites 6A, 10B, and the Southern Area.

The Phase 2 RI testing program was presented in the Phase 2 RCRA Facility Investigation Field Sampling Plan (CFB, 1997) and incorporates comments from the NYSDEC, New York State Department of Health (DOH), The Nature Conservancy, Suffolk County Department of Health Services, and the EPA.

1.8 SUMMARY OF FIELD ACTIVITIES

Field activities conducted during the Phase 2 RI are summarized as follows. A detailed description of field activities is presented in Section 3.0 of this report.

- Permanent monitoring well installation and sampling
- Temporary monitoring well installation, with groundwater sampling and volatile organic compounds (VOCs) analysis.
- Piezometer installation, with groundwater sampling and VOC analysis.

1.9 DATA EVALUATION

This section discusses the evaluation of trip blank contamination for the Phase 2 groundwater screening data, the Supplemental Investigation groundwater screening data and the Monitored Natural Attenuation (MNA) Supplemental Investigation groundwater data. Analytical results, analytical methods, and data qualifiers (where applicable) are presented in Appendix A.

1.9.1 Phase 2 Groundwater Screening Data 1997

The Phase 2 RI groundwater samples were analyzed by Volumetric Techniques, Ltd. for limited volatile organic compound (VOC) analysis by EPA analytical methods 601/602 with a 48-hour turnaround time. These data were evaluated for the impact of trip blank contamination. Samples collected from sites 6A, 10B, and the Southern Area during the Phase 2 Investigation were considered in this evaluation. The following volatile organic compounds were detected in trip blanks at the concentrations indicated below:

COC#	Compound	Detected Concentrations (µg/L)	Action Level (µg/L)	Samples Affected
13	1,1-Dichloroethane	0.74	3.7	None
18	Benzene Toluene	0.54 1.42	2.7 14.2	None

Despite the presence of 1,1-dichloroethane, benzene and toluene in the trip blanks, these compounds were not detected in the associated field samples. Consequently, the presence of these compounds in field samples is not likely attributable to blank contamination.

1.9.2 Supplemental Investigation Groundwater Screening Data 2000

The Supplemental Investigation groundwater samples were analyzed by Ecotest Laboratories, Inc. for limited VOCs by EPA analytical methods 601/602, with a 48-hour turnaround time. Screening samples collected from sites 6A, 10B, and the Southern Area during the Supplemental Investigation were considered in this evaluation. The Ecotest data were also evaluated for the impact of trip blank contamination. However, no compounds were detected in the associated trip blanks. Therefore, field samples were determined not to be impacted by trip blank contamination.

1.9.3 MNA Supplemental Investigation Groundwater Data 2000

The MNA investigation groundwater samples were analyzed by Severn Trent Laboratories for Target Compound List (TCL) VOCs using U.S. EPA Contract Laboratory Program (CLP) OLM04.2 analytical

methodology with a 48-hour turnaround time. A standard turnaround time was prescribed for the following analytical fractions of the MNA data: Diesel Range Organic compounds (DRO), Gasoline Range Organic compounds (GRO), dissolved carbon dioxide, dissolved methane, dissolved ethane, dissolved ethene, biochemical oxygen demand (BOD), chemical oxygen demand (COD), total organic carbon (TOC), dissolved iron, dissolved manganese, chloride, nitrate, nitrite, orthophosphate, sulfate and sulfide.

A more detailed data evaluation was conducted of the Monitored Natural Attenuation (MNA) data generated by Severn Trent Laboratories. More extensive field QA/QC samples and more extensive laboratory QA/QC procedures were employed in the collection and analysis of these samples. Samples collected at sites 6A and Southern Area during the MNA investigation were considered in this evaluation. Laboratory and field QC blanks were evaluated to aid in the elimination of false positive results identified as laboratory or field artifacts. Methylene chloride was detected in a trip blank at the concentration indicated below:

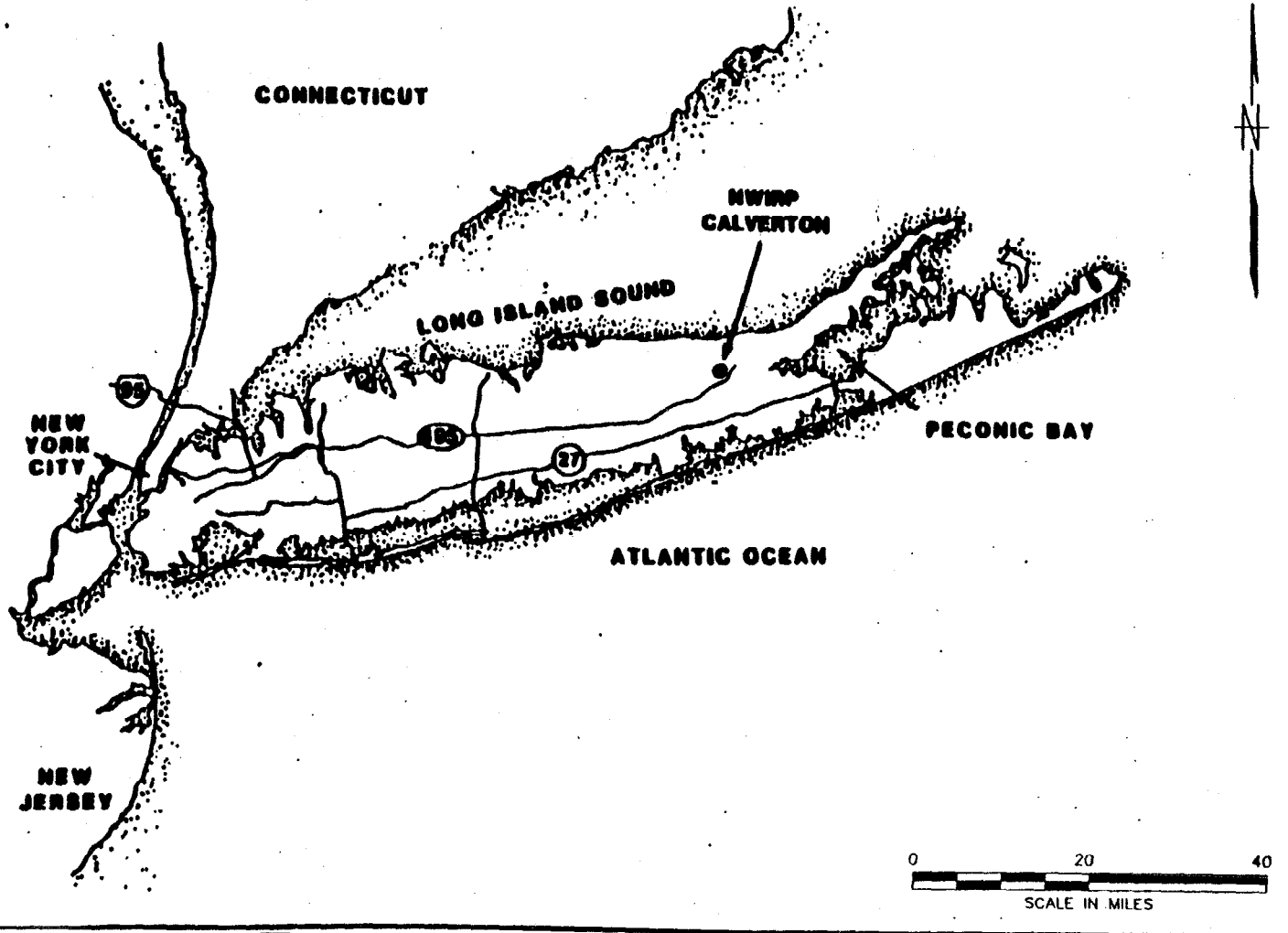
Collection Date	Compound	Detected Concentrations (µg/L)	Action Level (µg/L)	Samples Affected
08/02/00	Methylene Chloride	5.2	26.5	SA-PZ-101-I-47-00 SA-PZ-104-S-10.5-00

Despite the presence of methylene chloride in the above trip blank, this compound was not detected in the associated field samples. Consequently, the presence of methylene chloride in field samples is not attributable to laboratory or trip blank contamination.

1.9.4 Summary

On a facility-wide basis, 1,1-dichloroethane, benzene, toluene, and methylene chloride were detected in several trip blanks. However, the aforementioned compounds were not detected in the associated field samples.

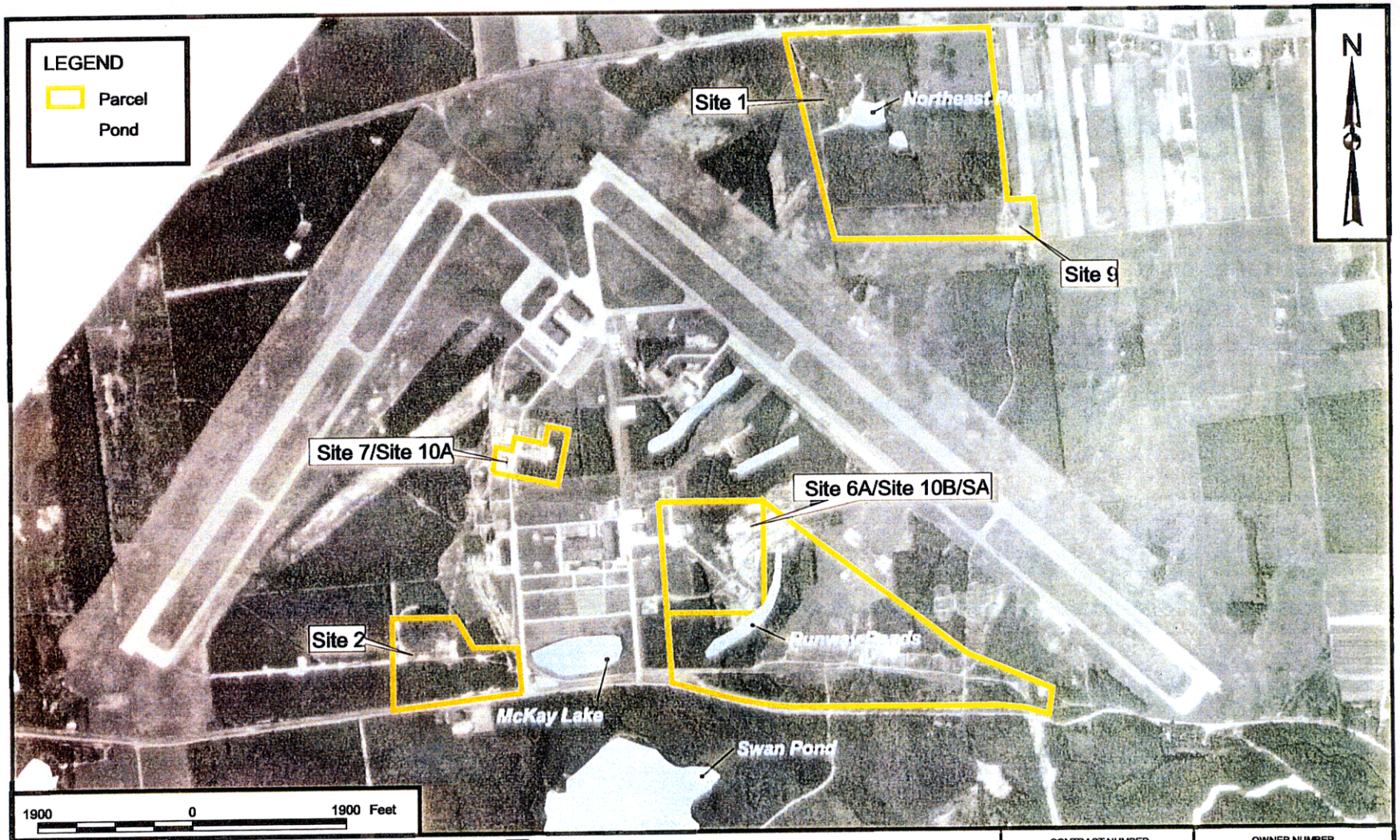
ACAD: 7398Q001.dwg 04/19/01 MF



DRAWN BY HJP DATE 3/28/01	Tetra Tech NUS, Inc.	CONTRACT NO. 5653	OWNER NO. 0221
CHECKED BY DATE	GENERAL LOCATION MAP REMEDIAL INVESTIGATION NWIRP, CALVERTON, NEW YORK	APPROVED BY	DATE
COST/SCHED-AREA		APPROVED BY	DATE
SCALE AS NOTED		DRAWING NO. FIGURE 1-1	REV. 0

FORM CADD NO. TtNUS_AH.DWG - REV 0 - 1/22/98

This page intentionally left blank.



DRAWN BY J. LAMEY — DATE 4/24/01	Tetra Tech NUS, Inc.	CONTRACT NUMBER 7398	OWNER NUMBER 0270
CHECKED BY — DATE —	SITE LOCATION MAP SITES 6A AND 10B, AND SOUTHERN AREA PHASE 2 REMEDIAL INVESTIGATION NWIRP CALVERTON, NEW YORK	APPROVED BY — DATE —	
COST/SCHEDULE-AREA		APPROVED BY — DATE —	
SCALE AS NOTED		DRAWING NO. FIGURE 1-2	REV 0

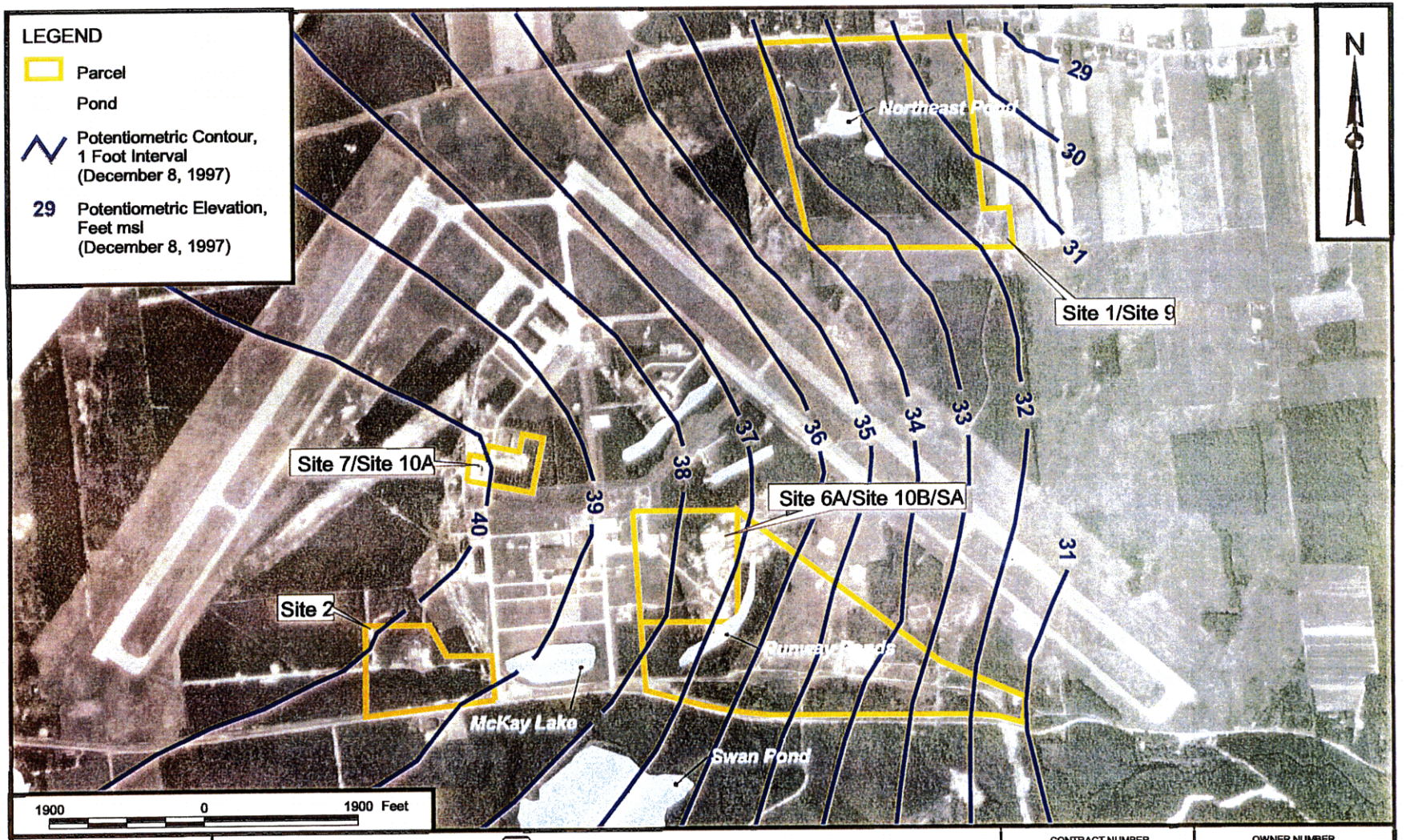
P:\GIS\NWIRP_CALVERTON\PH2_REMEDIAL_INVESTIGATION.APR SITE LOCATION MAP 4/24/01 JAL

040108/P

1-11

CTO 0270

00600 E B1 Y



DRAWN BY J. LAMEY — DATE 4/24/01	Tetra Tech NUS, Inc.	CONTRACT NUMBER 7398	OWNER NUMBER 0270
CHECKED BY — DATE —	SURFACE WATER HYDROLOGY AND GROUNDWATER CONTOUR MAP SITES 6A AND 10B, AND SOUTHERN AREA PHASE 2 REMEDIAL INVESTIGATION NWIRP CALVERTON, NEW YORK	APPROVED BY — DATE —	
COST/SCHEDULE-AREA		APPROVED BY — DATE —	
SCALE AS NOTED		DRAWING NO. FIGURE 1-3	REV 0

P:\GIS\NWIRP_CALVERTON\PH2_REMEDIAL_INVESTIGATION.APR SUFACE WATER HYDROLOGY 4/24/01 JAL

2.0 SITE BACKGROUND

2.1 SITE HISTORY AND PHYSICAL SETTING

The Study Area, consisting of Site 6A - Fuel Calibration Area, groundwater at Site 10B – Engine Test House, and the Southern Area, is located in the south central portion of NWIRP Calverton, as shown on Figure 2-1.

The fuel calibration and related facilities were used in the testing of aircraft fuel and engine systems. Aircraft fuel delivery systems were pressurized with fuel in the calibration area to test for leaks. The testing may have resulted in frequent, small fuel spills to the area's pavement (Navy, 1986).

The Fuel Calibration Area consists of a new and old fuel calibration pad. The old fuel calibration pad was located in what is now an open grass-covered field. The new fuel calibration pad is located to the north and east of the old fuel calibration pad on a concrete apron. The concrete apron between the two fuel calibration pads was also used for the same activity. A shed, piping, and fuel filtering devices were located in the area in the 1980s [U.S. Geological Survey (USGS), 1967; Navy, 1986]. The equipment has since been removed.

An open field, approximately 10 acres in area, is located immediately south of the old and new calibration pads. The old fuel calibration pad was located at the northwest corner of the field, in an area now partially covered by a wastewater treatment facility. No physical evidence exists of the former calibration area. An area east of the wastewater treatment plant and south of the fuel pad is the former site of a septic leach field [U.S. Geological Survey (USGS), 1967; Navy, 1986].

The Fuel Calibration Area is sloped very gently to the south and east. Drainage swales are located parallel to the southern and eastern edges of the pad. The two swales meet east of the south corner of the pad, and enter a southward trending buried culvert. The culvert outfalls to another drainage ditch approximately 625 feet south of the pad. This ditch continues to a shallow pond located approximately 1,500 feet south-southeast of the pad (USGS, 1967).

Aircraft hangers and painting shops are located east of the pad. Several small drainage collection ponds are located to the north, east, and south of the Fuel Calibration Area, all within 1,500 feet (USGS, 1967; Navy, 1986).

Three ancillary structures to the Fuel Calibration Area are located to the southeast. These include the covered engine runup area, the hush house, and the Engine Test House (Site 10B). The engine runup

area was used to test jet engines and fuel systems for leaks while operating the engines at elevated speeds. An excavated area several acres in size is located east of the engine runup area blast fence; its use is unknown. The hush house is a specially constructed building that allows aircraft engines to be operated at high speeds while containing the associated noise. The Engine Test House was outfitted to operate jet engines before installation in aircraft.

The primary environmental concern at the Fuel Calibration Area was the spillage of aircraft fuels. According to the IAS (Navy, 1986), as many as 230 gallons of fuel are recorded to have been spilled in these areas. The majority of the spillage is expected to be concentrated in the areas surrounding the main fuel calibration pad.

The grass field located immediately east of the Fuel Calibration Area is the former location of a septic system leach field. The system was active before the construction of the facility's sanitary sewage treatment plant in 1970. The leach field is believed to have received primarily sanitary wastes; however, it is not known whether industrial process wastes entered the leach field (Navy, 1986). Testing conducted in this area found no evidence of significant environmental contamination (HNUS, 1995c).

Eighteen monitoring wells were placed south and southeast of the fuel calibration pad by Marine Pollution Control (MPC) between March 1984 and November 1987. A groundwater recovery unit including a pumping well, an oil recovery well, and an oil/water separator tank was installed in 1987. The tank is connected to a pipe that follows the drainage ditch paralleling the southern edge of the calibration pad. The ditch enters a buried culvert southeast of the pad and eventually discharges to a small pond 1,500 feet south of the calibration pad. The recovery system pipe ends in the underground culvert. Red iron staining was observed during the site investigation in the ditch adjacent to the oil/water tank separation outfall and at the end of the culvert. The staining in the ditch near the oil/water separator reportedly resulted from a break in the piping early in 1990 (USGS, 1967; Navy, 1986). This system was shut down in 1993. Free product recovery from individual wells is a continuing action. As of December 1993, approximately 1,200 gallons of petroleum product have been removed from this site.

The Engine Test House (Site 10B) is located several thousand feet to the south of the Fuel Calibration Area. The area consists of a building, surrounding pad, sparse woods, and open grassy areas. The Fuel Calibration Area (Site 6A) has a free product layer and fuel-type and chlorinated VOC contaminated groundwater. A drainage swale and culvert from the Fuel Calibration Area runs adjacent to and hydraulically upgradient of the Engine Test House. From the late 1980's to the early 1990's, groundwater from the Fuel Calibration Area was discharged into this drainage swale and culvert. As a result, the presence of chlorinated VOC contaminated groundwater at the Engine Test House is likely to be attributable to the Fuel Calibration Area.

This area was initially evaluated as part of the 1995 RFA cesspool/leachfield investigation (HNUS, 1995c). Subsequent testing during the RFA Addendum (CF Braun, 1997b) found that the cesspool at this site was not a source of environmental contamination. However, during this testing, fuel-type contamination (benzene, toluene, ethylbenzene, and xylene [BTEX]) was found in the area of an underground storage tank (UST) removed in the mid-1990s. Based on an interview with Northrop Grumman, approximately 80 cubic yards of fuel contaminated soils were excavated during the UST removal. The purpose of the Phase 2 RI is to determine the extent of remaining free product and fuel-type VOC contaminated groundwater.

The Southern Area is located to the southeast of the Engine Test House and extends off site to the southeast. The area was investigated because a Suffolk County monitoring well demonstrated the presence of chlorinated VOCs in groundwater downgradient of the facility. There are no known or suspected contaminant sources within this area. However, this area is hydraulically downgradient of the Engine Test House (Site 10B), the Fuel Calibration Area (Site 6A), and the general industrial complex at the facility. Groundwater flow through this area is to the southeast, with the Peconic River or Flander's Bay being potential discharge points.

The area is mostly wooded, and includes two shallow ponds near the northern edge. The ponds receive runoff through a drainage swale and culvert from the Fuel Calibration Area. From the late 1980's to the early 1990's, groundwater from the Fuel Calibration Area was discharged into this drainage swale and culvert and into the western pond. As a result, the presence of chlorinated VOC contaminated groundwater at the Southern Area may be attributable to the Fuel Calibration Area.

2.2 ECOLOGICAL SETTING

2.2.1 Vegetation

The area surrounding the Study Area supports a grassy turf dominated by upland grasses such as fescues (*Festuca* sp.), panic grass (*Panicum lanuginosum*), and broomsedge (*Andropogon virginicus*), and weedy forbs such as yellow sweet clover (*Melilotus officinalis*), pigweed (*Amaranthus retroflexus*), raspberry (*Rubus* sp.), and plantain (*Plantago lanceolata*). This area was frequently mowed until 1996 while NWIRP Calverton was in active operation, but the grass has been allowed to grow to seed since then. The weedy forbs are typical of lawns and likely were present even when the area was frequently mowed. But their coverage has likely been expanding since 1996.

A narrow strip of oak-pine forest is located southeast of the Study Area. This forest is typical of course-textured upland soils. It is dominated by oaks (primarily scarlet oak, *Quercus coccinea*, and white oak,

Quercus alba) and pitch pine (*Pinus rigida*), with a dense shrubby understory of early low blueberry (*Vaccineum vacillans*). Another strip of forest is located northeast of the Study Area. This forest is dominated by scarlet and white oak saplings, pitch pine saplings, and saplings of successional hardwoods such as black cherry (*Prunus serotina*) and sassafras (*Sassafras albidum*). It appears to be a successional predecessor of the oak-pine forest typical of the Long Island Pine Barrens that has established on cultivated land abandoned after Federal acquisition.

2.2.2 Wildlife

When NWIRP Calverton was in active operation, the broad grassy lawns in this area were of little or no value to most wildlife. Now that the lawns have been allowed go to seed and become mixed with old field forbs such as raspberries, they provide quality habitat for species favoring early old fields such as eastern meadowlark (*Sturnella magna*), upland sandpiper (*Bartramia longicauda*), grasshopper sparrow (*Ammodramus savannarum*), and vesper sparrow (*Pooecetes gramineus*). The forest edges to the east likely provide suitable habitat for species such as whitetail deer (*Odocoileus virginianus*), northern bobwhite (*Colinus virginanus*), eastern kingbird (*Tyrannus tyrannus*), indigo bunting (*Passerina cyanea*), and song sparrow (*Melospiza melodia*) (Kricher, 1988).

2.2.3 Wetlands

There are no areas on or adjoining the Study Area that meet the technical criteria for delineation as wetlands [US Corps of Engineers (USCOE), 1987]. The only natural vegetation on the site comprises ruderal upland grasses and weedy forbs, and the only natural vegetation adjoining the site is a forest of scarlet oak and pitch pine, both typical of uplands.

2.2.4 Aquatic Biota

There are no aquatic habitats, and hence no aquatic biota, on or close to the Study Area.

2.2.5 Special Status Species

Records maintained by the NY State Department of Environmental Conservation (NYSDEC) Natural Heritage Program do not include any documented sightings of special status species at coordinates on or near the Study Area (Conrad, 1996).

2.3 GEOLOGY

The geology at NWIRP Calverton consists of a mixture of sandy and clayey deposits. Cross Section A-A' (Figures 2-2 and 2-3) shows the cross section local map and generalized geology across the Study Area,

drawn using data from boring logs and geophysical logs. The upper 120 to 130 feet of subsurface materials consists primarily of fine to medium sand, with thin to thick clayey layers also encountered within the predominantly sandy deposits. Minor amounts of fill, consisting primarily of a mixture of sand, silt, and clay, are also found at shallow depths (0-6 ft) in some areas. In the area of the Peconic River, two shallow zones of finer grained materials (mixtures of sand, silt, and clay) were encountered within the sandy deposits within 50 feet of ground surface. A silty clay layer approximately 30 feet in thickness was encountered at a depth of approximately 60 to 90 feet [0 to –30 ft means sea level (msl)] in the borings drilled within the western and central portions of the Study Area. In the southeastern portion of the Study Area, this clay unit appears to pinch out and was not encountered in the borings drilled near the Peconic River. Another thin clay lens was encountered at an elevation of approximately –40 ft msl within the sandy deposits in the Fuel Calibration Area and Engine Test House (Figure 2-3). Based on published geologic information for the Long Island area, these shallow geologic units are all likely to be Upper Pleistocene glacial deposits, including glacial outwash (coarser grained units) and glaciolacustrine deposits (silty clays).

Underlying these Upper Pleistocene deposits is a silty clay unit that is approximately 60 feet thick and appears to underlie the entire Study Area (Figure 2-3), based on limited boring log information. Only a few borings penetrated to the depth of this unit (approximately 80 feet below mean sea level), however all of the borings that reached the depth horizon for this unit encountered the clay. Below this clay unit, a fine to medium sand with gravel was encountered. The deepest borings drilled within the Study Area (in the Fuel Calibration Area) terminated within this unit, so the thickness and the lateral continuity of the deposit are unknown. This deep sand and gravel unit is likely a part of the Magothy Formation, based on stratigraphic projections for the top of the Magothy Formation of -100 to -150 ft msl, made using regional geologic information (Buxton, et.al., 1989). It is unclear as to whether the silty clay unit that directly overlies the sand and gravel unit is part of the Magothy Formation, the Upper Pleistocene deposits, or possibly a remnant of the Gardiners Clay (which has occasionally been found directly overlying the Magothy Formation in southern areas of Suffolk County but not as far north as NWIRP Calverton).

Regional descriptions of the Magothy Formation describe it as clayey to silty, fine to medium sand, with lenses of coarser sand and clay (Franke and McClymonds, 1972; Prince and Schneider, 1989). The Magothy Formation is expected to be several hundred feet thick in the Study Area.

The geologic units encountered within the Study Area appear to be generally flat-lying, consistent with what would be expected for the glacial deposits on Long Island. The upper contact of the Magothy Formation, being an erosional surface, is expected to be flat-lying to undulating, reflecting the former topography, even though the formation itself is known to dip to the south.

2.4 HYDROGEOLOGY

2.4.1 Groundwater Occurrence

Groundwater is encountered under unconfined conditions at shallow depths beneath the NWIRP, within the glacial deposits that form the uppermost hydrogeologic unit in the area. This shallow aquifer, commonly referred to as the upper glacial aquifer, extends to depths of over 100 feet beneath NWIRP and is the aquifer of most concern in regards to groundwater quality issues related to the NWIRP. The upper glacial aquifer is comprised primarily of highly permeable glacial outwash deposits, with till (unsorted mixtures of sand, silt, clay, and gravel) and glaciolacustirne clayey deposits also present.

Directly underlying the upper glacial aquifer is the Magothy aquifer. This aquifer, comprised primarily of clayey fine to medium sand, is projected to be about 650 feet thick in north central Suffolk County (including the NWIRP area), and regionally is used as a major source for water supply.

Groundwater movement within the upper glacial and Magothy aquifers is primarily through the coarser grained sediments towards local (i.e., wells, small streams) or regional (i.e., rivers) groundwater discharge points. Local silt/clay lenses or more areally extensive silt/clay layers are expected to serve as barriers to vertical groundwater migration, due to the expected low hydraulic conductivity of these fine-grained deposits in comparison to the coarser sand/gravel deposits.

Across the study area to the Peconic River, the water table was generally encountered within about 10 feet of ground surface. Southeast of the Peconic River, the depth to groundwater increases due to the much higher ground surface elevations in this area.

2.4.2 Groundwater Flow Directions

A local groundwater divide is believed to be present at the NWIRP. Based on previously published information and on RFI data interpretations (HNUS, 1995a), the general direction of groundwater flow across the southern and eastern portions of NWIRP Calverton, including the Study Area, is east-southeast, towards the Peconic River, while groundwater in the northern portion of the facility flows northward towards Long Island Sound.

During this Phase 2 RI, a focused groundwater investigation was performed in the Southern Area to determine whether the Peconic River was the discharge point for all groundwater migrating in this direction from the base, or conversely whether some groundwater bypassed the river and migrated to areas further south. The study involved the installation of several well clusters on both sides of the river and in the immediate vicinity of the river, the installation of two staff gauges in the river, and the collection

of four rounds of water level data from the wells and staff gauges. Potentiometric surface interpretations based on water level data from the well clusters indicates that the river is the ultimate groundwater discharge point in this area, as the water levels along the river were lower than water levels for both shallow and deep wells in well clusters located several hundred feet from the river to both sides. Groundwater in the Study Area was found to be migrating east-southeast towards the river, while on the opposite side of the river the groundwater flow direction is generally northward towards the river, as shown on Figure 2-4. A vertical flow net was constructed using data from selected well clusters and the staff gauges, illustrating the flow to the river from both sides (Figure 2-5). Based on the interpretation of the data collected, any groundwater contamination that may reach the river is expected to discharge to the river and not migrate beyond it to the south.

In 1997, the Nature Conservancy – Long Island Chapter prepared several water table contour maps for the general Calverton area. These maps indicate that the groundwater flow direction within the Southern Area is generally to the east-southeast, towards the Peconic River. An overall groundwater flow gradient across the study area of approximately .0012 was calculated based on the water table contour maps. This overall flow gradient was in good agreement with site-specific groundwater flow gradients observed during the RFI investigation.

2.4.3 Hydraulic Characteristics

The hydraulic characteristics of the upper glacial aquifer at the NWIRP were evaluated during the RFI through slug tests performed at several sites and the performance of a pumping test at the Fire Training Area. Based on the slug testing, the shallow portion of the upper glacial aquifer at NWIRP has an average hydraulic conductivity of about 111 ft/day, while the average hydraulic conductivity of the deeper sediments is approximately 36 ft/day. Pumping test results indicate an average horizontal hydraulic conductivity of 91 ft/day, vertical hydraulic conductivity of 8.5 ft/day, and specific yield of .07 for the upper glacial aquifer. These tests were all performed in and are representative of the uppermost portion of the upper glacial aquifer, above the clay layer found at a depth of approximately 60 feet.

McClymonds and Franke (1972) reported an average hydraulic conductivity of 200 ft/day for the upper glacial aquifer in northern Suffolk County (including the study area), and an average hydraulic conductivity of 53.5 ft/day for the Magothy aquifer in the same area. Buxton and Modica (1992) derived hydraulic conductivity values for the upper glacial and Magothy aquifers of 230 and 50 ft/day, respectively, during a modeling study of Long Island in general. Based on a comparison between the site testing results and general estimates for the area, the aquifer materials at NWIRP are similar to but slightly less permeable than the aquifer materials typically found across Long Island.

2.4.4 Groundwater Supply

The nearest drinking water well is located at a sportsman club near Connecticut Avenue and River Road. Another private well is located approximately one mile to the east in Calverton. The nearest pubic water supply well is located approximately 4 miles east-northeast of the NWIRP.

2.5 PREVIOUS INVESTIGATIONS

2.5.1 Background Investigations

The Suffolk County Department of Health Services (SCDHS) installed a monitoring well in the Southern Area in 1974 (D-51591). The screened interval of the well is 11 to 21 feet below the water table. Available chlorinated VOC test results from this well are summarized below. The results indicate that chlorinated VOCs have been periodically detected in this well.

Date	Concentration (µg/L)			
	1,1,1- TCA	1,1-DCE	1,1-DCA	Chloroethane
January 1993	13	2	Possible	4
April 1990				
August 1989				
July 1987	2		8	
April 1986	80			
July 1984				
January 1984				
September 1982				
July 1982				
May 1982				
November 1981	13			
June 1981	27			
January 1981	100			
October 1980	120			
August 1980				
February 1980				
July 1977				

In 1992, just prior to shutting down the groundwater extraction system at the Fuel Calibration Area, samples from the system discharge were collected. The results of the testing are summarized as follows. This water was discharged to a drainage swale located near the Fuel Calibration Area. Water in the drainage swale flowed south, through a culvert to a pond located near the northwest corner of the Southern Area.

Chemical	Range of Positive Detections (µg/L)
1,1,1-Trichloroethane	210 to 220
1,1-Dichloroethane	220 to 250
1,1-Dichloroethene	7 to 9
Benzene	2
Chloroethane	68 to 77
Ethylbenzene	12 to 16
Toluene	5 to 7
Xylene	89 to 100

In 1995, seven shallow temporary monitoring wells and one permanent monitoring well were installed in the Southern Area to determine if a potential VOC source was present. The investigation concluded that there was no remaining significant source of VOCs within the Southern Area.

2.5.2 Initial Assessment Study (IAS)

An IAS was performed at NWIRP Calverton in 1986 (Navy, 1986). This study identified seven potential areas of concern.

2.5.3 Site Investigation (SI)

As a follow-up to the IAS, as well as to additional findings since that time, seven sites were investigated at NWIRP Calverton, under an SI (HNUS, 1992a). The sites investigated can be classified as either landfill-type sites or sites resulting from documented or suspected historic spills or leaks of fuels, oils, and/or solvents. Spills have been documented at this site. In addition, floating free product has been identified in monitoring wells.

2.5.4 RCRA Facility Assessment (RFA)

A leach field near the Engine Test House was initially investigated in the 1995 RFA (HNUS, 1995c). During the 1995 investigation, five soil gas points were installed around the cesspool and one soil sample was collected at the groundwater interface. The soil gas sample analysis detected 1,1,1-trichloroethane (1,1,1-TCA) at a maximum concentration of 2.6 micrograms per liter (µg/L), as well as similar concentrations of toluene and xylene. Freon at 0.023 milligrams per kilogram (mg/kg) was the only VOC detected in the soil sample. The inorganic results for the soil sample were consistent with background concentrations. However, based on visual and field instrument analysis conducted during the sampling, there was evidence the fuel contamination may be present in soils.

As a follow up to the initial investigation, an RFA Addendum for this area was prepared (CF Braun, 1997). During the investigation, seven soil and seven groundwater samples were collected from and around the cesspools and the former underground storage tank area. This testing found no detectable concentrations of VOCs in the groundwater around the cesspools, confirming that the cesspools were not a source of environmental contamination. However, groundwater samples collected near the former underground storage tank found fuel-type VOCs (ethylbenzene and xylene) at a total concentration of 1,100 µg/L. In addition, the soil testing in this area detected total petroleum hydrocarbons (TPH) at the groundwater interface with a maximum concentration of 11,300 mg/kg. TPH at this concentration in soils is indicates the presence of a free product layer.

2.5.5 Phase 1 RCRA Field Investigation (RFI)

An RFI was conducted in 1994/1995 (HNUS 1995a and HNUS 1995b) only at Site 6A – Fuel Calibration Area. The conclusions from this investigation are summarized as follows:

- VOCs were detected at relatively low to moderate concentrations in the Fuel Calibration Area soils. The only VOCs detected in site soils were 2-butanone (0.003 mg/kg), 1,1,1-TCA (0.002 mg/kg), ethylbenzene (1.8 mg/kg), xylenes (17 mg/kg), and freon 113 (0.004 mg/kg). The fuel contaminated area appears to be localized to an area immediately south of the concrete pad. A RCRA hazardous waste characteristic evaluation (40 CFR 261) of site soils did not find that the soils would be classifiable as a characteristic hazardous waste.

- Polynuclear aromatic hydrocarbons (PAHs) and phthalates were detected at several locations throughout the site. However, only one PAH (benzo(a)pyrene at 0.11 mg/kg) at one location exceeded NYSDEC soil action levels.

- Lead was detected at most soil locations throughout the site, however not at concentrations that would be considered greater than background.

- Groundwater testing found VOCs including 1,1,1-trichloroethane (15,000 µg/L), 1,1-dichloroethane (5,800 µg/L), chloroethane (430 µg/L), toluene (330 µg/L), and xylenes (780 µg/L) at concentrations above Federal maximum contaminant levels (MCLs) and/or NYSDEC groundwater and drinking water quality standards. The NYSDEC standard for most VOCs in groundwater is 5 µg/L. Semivolatile Organic Compounds (SVOCs) including 1,2-dichlorobenzene (9 µg/L), 2-methylnaphthalene (74 µg/L), 4-methylphenol (84 µg/L), and naphthalene (120 µg/L) were also found at levels exceeding Federal MCLs and/or NYSDEC groundwater quality standards. Lead was not found at a level exceeding Federal or state standards.

- Based primarily on temporary monitoring well testing, two potential source areas of this contamination were, or are, present at the site and include the paint shop area to the northwest and/or the current Fuel Calibration Area to the northeast.

- Floating free product has been identified at the site. The location of the free product corresponds to the location of the most contaminated groundwater. Free product recovery was an ongoing Northrop Grumman operation until 1997.

- The extent of soil contamination is adequately defined and relatively minor.

- The extent of groundwater contamination associated with the old fuel calibration pad is characterized in both the horizontal and vertical directions. Groundwater locations requiring additional definition of extent are below the screened interval at monitoring well MW-02-I and the new fuel calibration pad.

- The baseline risk assessment found no adverse risks to current workers would be expected. Under a hypothetical future residential land use scenario, adverse risks to human health would be expected from both direct contact with the soils and ingestion of groundwater. The hazard index (HI) exceeds 1.0 only for domestic use of groundwater. Calculated incremental cancer risks (ICRs) are approximately 8.1×10^{-6} and 2.5×10^{-3} for the soil and groundwater media, respectively. The primary contaminants of concern for future residents include solvents, PAHs, substituted benzene compounds, and naphthalene compounds.

Details of the risk assessment performed during the RFI are as follows.

- Risk Characterization Approach: The results of the risk assessment developed during the 1995 RFI (HNUS 1995a) are summarized below. Additional detail is provided in Table 6-15 and Appendix L of the 1995 RFI. The potential receptor evaluated for the current land use scenario is a maintenance worker performing work tasks in the vicinity of Site 6A. Surface water bodies do not exist within and do not adjoin Site 6A. Therefore, the baseline risk assessment for Site 6A does not include an evaluation of an adolescent receptor potentially exposed to surface waters and sediments. Risks to hypothetical receptors assuming a future residential land use scenario were evaluated.

- Current Maintenance Worker Exposure: The total cancer risk estimate developed for a maintenance worker assuming exposure to contaminants in the soil at Site 6A was 7.9×10^{-7}. This cancer risk estimate is below the 10^{-4} to 10^{-6} target risk range often used by the EPA in determining the need for action at CERCLA/RCRA sites or in the formulation of standards and criteria (e.g., the Federal Safe Drinking Water Act standards).

- The hazard index (an indicator of the potential for adverse noncarcinogenic health effects) calculated for the maintenance worker was 1.6×10^{-5}. Adverse noncarcinogenic health effects are not anticipated when the hazard index is below unity.

- Future Residential Exposure: The risk assessment conducted assuming a future residential land use scenario considered representative concentrations in soils and groundwater. The total cancer risk estimate for the receptor (an adult) was 2.5×10^{-3}. This value exceeds the EPA target risk range of 10^{-4} to 10^{-6}. However, as summarized in Table 6-15 of the 1995 RFI, the cancer risk estimate developed for contaminants in soils (8.1×10^{-6}) is lower than that calculated for chemicals in groundwater (2.5×10^{-3}) and is within the EPA target risk range. Only the risk estimate calculated for benzo(a)pyrene in soil individually exceeds 1×10^{-6}. In contrast, cancer risk estimates developed for the following contaminants in groundwater exceed 1×10^{-5}:

  Chloroethane (risk estimate [RE] = 1.18×10^{-5})
  1,1-Dichloroethene (RE = 2.4×10^{-5})

- The hazard indices developed for adult and child receptors assuming a future residential land use scenario were 8.9 and 23.6, respectively. These results indicate that there is a potential for adverse noncarcinogenic health effects under the conditions specified in the exposure assessment. However, the majority of the risk is attributable to hypothetical residential exposure to chemicals detected in groundwater. Hazard indices developed for contaminants in soils do not exceed unity, an indication that adverse noncarcinogenic health effects are not anticipated for soil exposure pathways evaluated in the baseline risk assessment. In contrast, hazard quotients developed for the following chemicals in groundwater do exceed a value of one individually when adult and/or child receptors are evaluated:

1,1,1-Trichloroethane	4-Methylphenol
1,1-Dichloroethane	1,1-Dichloroethene

- Integrated Exposure Uptake Biokinetic (IEUBK) Lead Modeling Results: The IEUBK Lead Model was used to characterize potential effects associated with exposure to media containing lead. The model considers exposures to lead in air, food, soil/dust, and drinking water and estimates blood lead levels in receptors aged 0-6 years. The results are summarized in a probability histograph, with the population experiencing blood lead levels greater than 10 microgram per deciliter µg/dL identified as a percentage.

- The IUBK Model results for Site 6A indicate that 2.39 percent of exposed children will experience blood lead concentrations greater than 10 µg/dL. Under default and background conditions, only 0.03 percent of the exposed receptors will exceed this benchmark blood lead level. The groundwater at the site is solely responsible for the increase, as all other input parameters are either background or default values.

- The manner in which the IUBK results are presented prevents a definitive discussion of the potential impact of lead exposure. Toxicological effects associated with child lead exposure include neurological dysfunction and other developmental problems.

- Qualitative Risk Assessment: The focus of the qualitative risk assessment is to identify regulations [Applicable or Relevant and Appropriate Requirements (ARARs)] and other standards [To Be Considered (TBCs)] which are exceeded by measured site contaminant levels. The standards which are presented are those which have been developed for the protection of human health. Other criteria, developed for the protection of the environment and ecological receptors, are not considered. Discussion of the qualitative risk assessment is presented on a medium-specific basis.

- Soil: Although no Federal standards are generally available for evaluating soils in a qualitative manner, the State of New York has adopted soil criteria which are designed to be protective of the environment (i.e., groundwater). The criteria are identified in Technical and Administrative Guidance Memorandum (TAGM) Number 4046, Determination of Soil Cleanup Objectives and Cleanup Levels, as revised January 26, 1994 (TAGM). TAGM standards for organic compounds are developed to ensure attainment of groundwater standards under an equilibrium partitioning scenario. The numerical soil standard is based on compound-specific organic carbon partitioning coefficients (K_{OC}s), a default dilution attenuation factor (100 to 1), and a soil organic carbon content (1%); or risk-based concentrations (for soil ingestion). Recommended cleanup objectives are identified on the basis of background (regional or site-specific) and health based criteria.

- As identified in the 1995 RFI, as least one reported result for xylenes, phenol, nitrobenzene, isophorone, 2-nitrophenol, naphthalene, 2-methylnaphthalene, and benzo(a)pyrene exceeds the TAGM standard. The TAGM cleanup goal exceedences are noted to be primarily associated with sampling location SS04/SB04 although additional exceedences are noted for SB05 (2- to 4-foot depth).

- Groundwater: Analytical results for groundwater are compared to Federal and state MCLs and state groundwater quality standards to evaluate if standards are exceeded. Federal or state MCLs and/or state groundwater quality standards are exceeded in at least one sample for all detected volatile

organic groundwater chemicals (chlorinated aliphatics and monocyclic aromatics). Additionally, 1,2-dichlorobenzene, 4-methylphenol, naphthalene, and 2-methylnaphthalene exceed respective standards in one sample. With the exception of ethylbenzene and 2,4-dimethylphenol, the sample from monitoring well MWO2S is noted to have the highest reported concentration of contaminants and the highest number of chemicals which exceed the standards. All other organic chemicals detected in groundwater are reported at concentrations less than respective standards.

- Risk Assessment Conclusions: The risk assessment conclusions are based on the results of both quantitative and qualitative risk assessment methodologies and identify possible risks associated with human exposure to the soil and groundwater at Site 6A. The conservative nature of the risk assessment approach is intended to herald possible risks, but the assessments do not provide expressly accurate or definitive information regarding the occurrence of adverse health effects in humans exposed to site media. Several factors which are not apparent in the conclusions necessitate careful interpretation of the results and the risk management which will follow as future activities are planned. Cancer Slope Factors are the upper 95 percent confidence limit of a dose-response curve generally derived from animal studies. Actual human risk, while not identifiable, is not expected to exceed the upper limit based on the CSFs, and, in fact, may be lower.

- Based on the quantitative risk assessment, the current conditions at Site 6A do not pose cancer risks at levels which exceed benchmarks commonly used by the EPA for risk management (i.e., cancer risk in excess of 10^{-6}). The calculated hazard index, which measures the likelihood of occurrence of adverse systemic health effects, is less than one which indicates none are expected. Under the evaluated scenario, occupational receptors exposed during routine activity do not experience risk levels greater than the EPA benchmark risk level.

- Under a hypothetical future residential land use scenario, the calculated risks are above both the cancer and noncancer risk benchmarks. Exposure scenarios including soil contact and domestic use of groundwater were evaluated. The majority of the risks are provided by the groundwater exposure route, although notable risks are also presented by soil exposure routes. Cancer risks for adult residents (2.5×10^{-3}) are primarily attributable to chlorinated solvents (chloroethane and 1,1-dichloroethene) in groundwater, with additional contribution from benzo(a)pyrene in soil. The cumulative hazard index, an indicator of the potential for adverse systemic health effects, for the child residential receptor is 23.6. The primary contributions to this hazard index are 1,1,1-trichloroethane, 1,1-dichloroethane, 1,1-dichloroethene, and 4-methylphenol in groundwater. Soil exposures did not result in a hazard index greater than one for this receptor. The child resident is the most sensitive receptor for systemic effects due to the high contact rate relative to the overall body weight of the

receptor. The effects of these chemicals are likely to manifest themselves in the form of liver and kidney damage.

- The qualitative risk assessment indicates that available analytical results for several parameters exceed regulatory and other standards. The soils are noted to be contaminated with amounts of chlorinated and nonchlorinated solvents, PAHs, nitroaromatics, and phthalate esters. Of these detected chemicals, xylenes, phenol, nitrobenzene, isophorone, 2-nitrophenol, naphthalene isomers, and benzo(a)pyrene are noted to have exceeded respective New York State TAGM 4046 Recommended Cleanup Goals. Groundwater chemical concentrations also eclipse both state and Federal drinking water standards and state water quality standards. Exceedences are noted for chlorinated and methyl-substituted benzene solvents, 1,2-dichlorobenzene, 4-methylphenol, and naphthalene isomers. The conclusions of the qualitative risk assessment generally mirror those for the quantitative assessment.

- In conclusion, the risk assessment indicates that the soils and groundwater at the Fuel Calibration Area site pose unacceptable human health risks only for hypothetical future land users at the site. Chemicals of concern include chlorinated and nonchlorinated solvents, substituted benzenes, phenolics, and PAHs, in both the soil and the groundwater. Current risk levels do not exceed respective EPA risk range goals or benchmarks, indicating that no adverse effects are anticipated for current maintenance receptors.

2.6 SITE CHRONOLOGY

1952/55 to 1982+/-: Jet engines were tested at the old fuel calibration pad. Fuel spills and leaks were common. Minor maintenance was conducted in this area. Testing activities were moved to the new fuel calibration pad in the early 1980s.

1984 to 1987: 18 groundwater monitoring wells were installed to track the extent of the floating free product layer.

1985 to 1986: The Navy conducted an Initial Assessment Study for Calverton and identified the Site 6A - Fuel Calibration Area as a potential area of concern.

1987: A groundwater and free product extraction (floating petroleum) system was installed to collect floating free product on the water table.

1988 to 1993: Groundwater and free product extraction continued until 1993. Passive free product recovery continued until 1996 and was then restarted in 2000.

1991 to 1992: The Navy conducted a Site Investigation at Calverton and confirmed the presence of contamination and recommended that a Remedial Investigation be conducted to delineate the nature and extent of contamination.

1993 to 1994: The Navy prepared a work plan to conduct a remedial investigation at several sites at Calverton, including Site 6A - Fuel Calibration Area.

1994 to 1995: The Navy conducted a Remedial Investigation at Site 6A.

1996 to 1997: The Navy prepared a work plan to conduct a Phase 2 remedial investigation at several sites including Site 2.

1997: The Navy establishes the Restoration Advisory Board for NWIRP Calverton.

1997 to 1998: The Navy conducted a Phase 2 Remedial Investigation at Site 6A. Specific areas addressed include deep groundwater onsite, groundwater at the Engine Test House Area, groundwater near the southern fence and off site groundwater near the near the Peconic River. Analytical results were submitted to the regulators.

1998: The Navy conducted an Engineering Evaluation/Cost Analysis (EE/CA) for several sites including Site 6A. The analysis recommended that free product recovery be restarted at Site 6A.

1999: The Navy conducts groundwater extraction tests in anticipation of a new free product recovery system [vapor-assisted oil skimming (VAOS)]. However, based on subsequent field testing, several interferences were noted that impact the ability to successfully extract and treat the groundwater. An alternate recommendation was made to recover product using passive techniques (i.e. absorbent pillows).

2000: The Navy proceeds with passive free product recovery. As of December 2000, only minor levels of residual free product are noted.

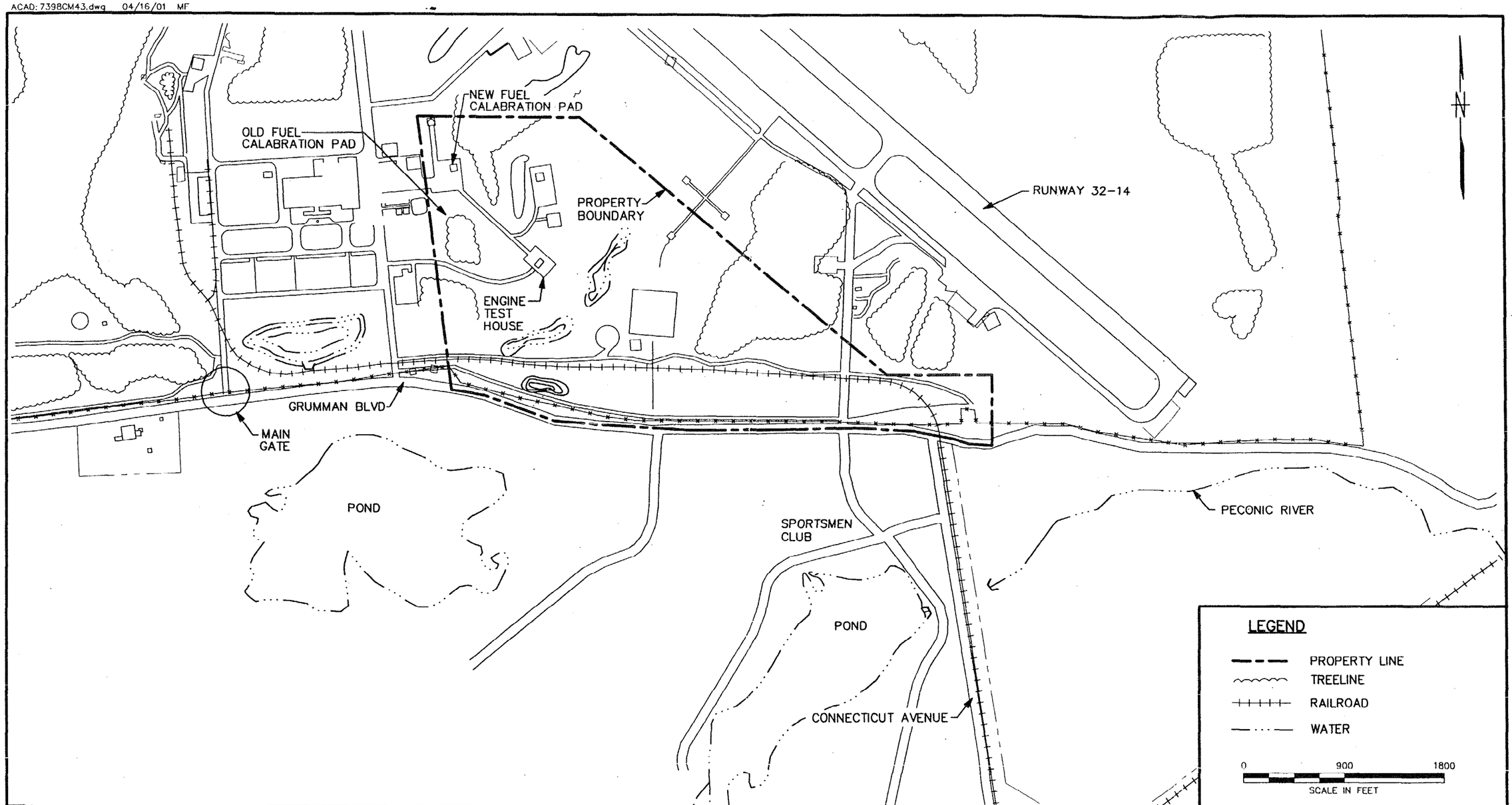
2.7 DATA GAPS

Site 6A, 10B, and the Southern Area were investigated to more fully delineate the nature and extent of contamination in soil and groundwater. Data gaps from the previous RFI are as follows:

- Determination of the southern extent of groundwater contamination, particularly in offsite areas.
- The vertical extent of groundwater in the source area, as well as (old fuel calibration pad), the horizontal extent of the deep contamination in this area.

This page intentionally left blank.

ACAD: 7398CM43.dwg 04/16/01 MF



NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

DRAWN BY HJP	DATE 1/3/01
CHECKED BY	DATE
COST/SCHED-AREA	
SCALE AS NOTED	

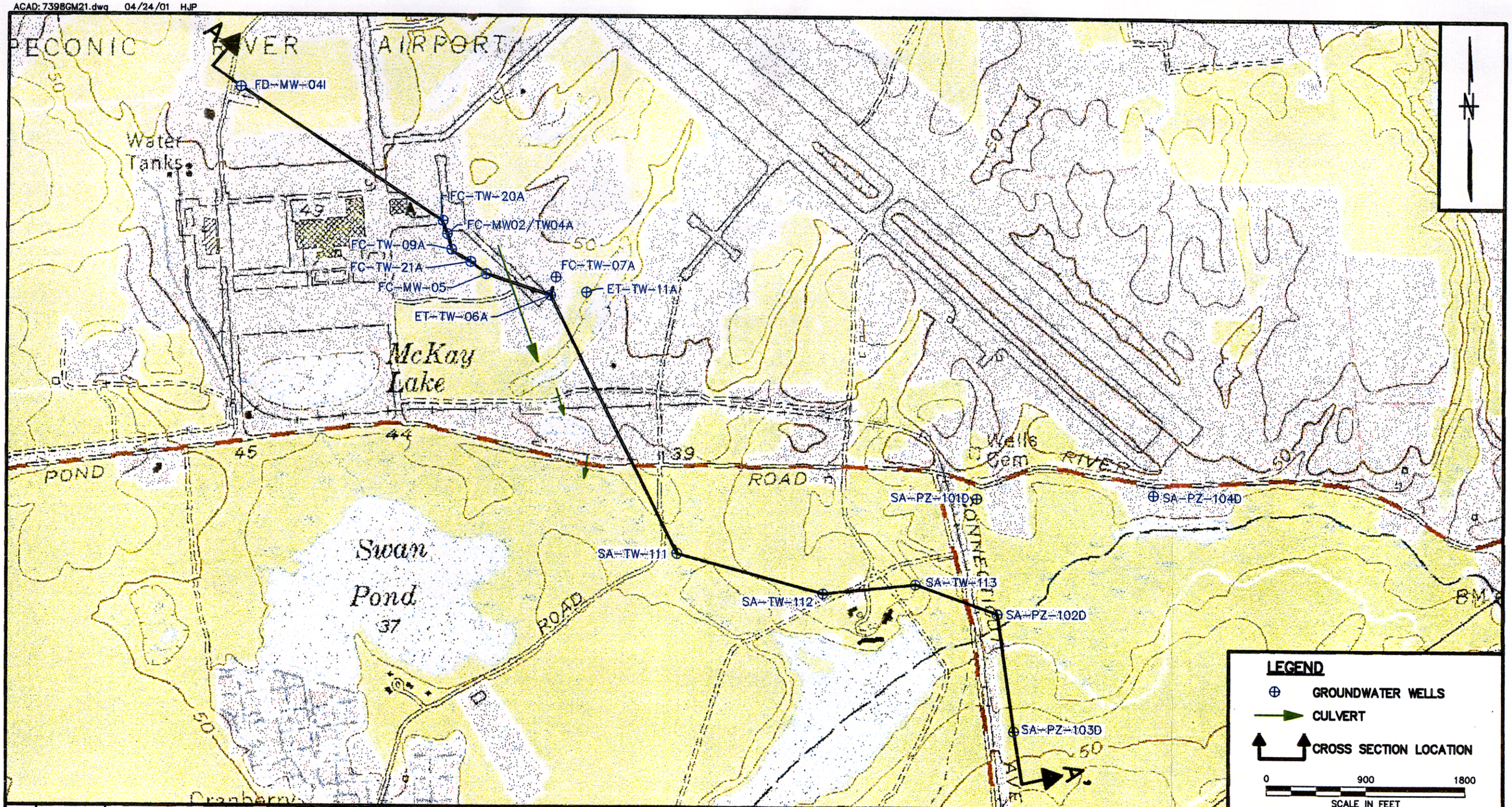
Tetra Tech NUS, Inc.

STUDY AREA
SITES 6A AND10B, AND SOUTHERN AREA
PHASE 2 – REMEDIAL INVESTIGATION
NWIRP, CALVERTON, NY

CONTRACT NO. 7398	OWNER NO. 0270
APPROVED BY	DATE
APPROVED BY	DATE
DRAWING NO. FIGURE 2-1	REV. 0

FORM CADD NO. TtNUS_BH.DGN - REV 0 - 1/20/98

ACAD: 7398GM21.dwg 04/24/01 HJP



NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

DRAWN BY HJP DATE 3/30/01
CHECKED BY DATE
COST/SCHED-AREA
SCALE AS NOTED

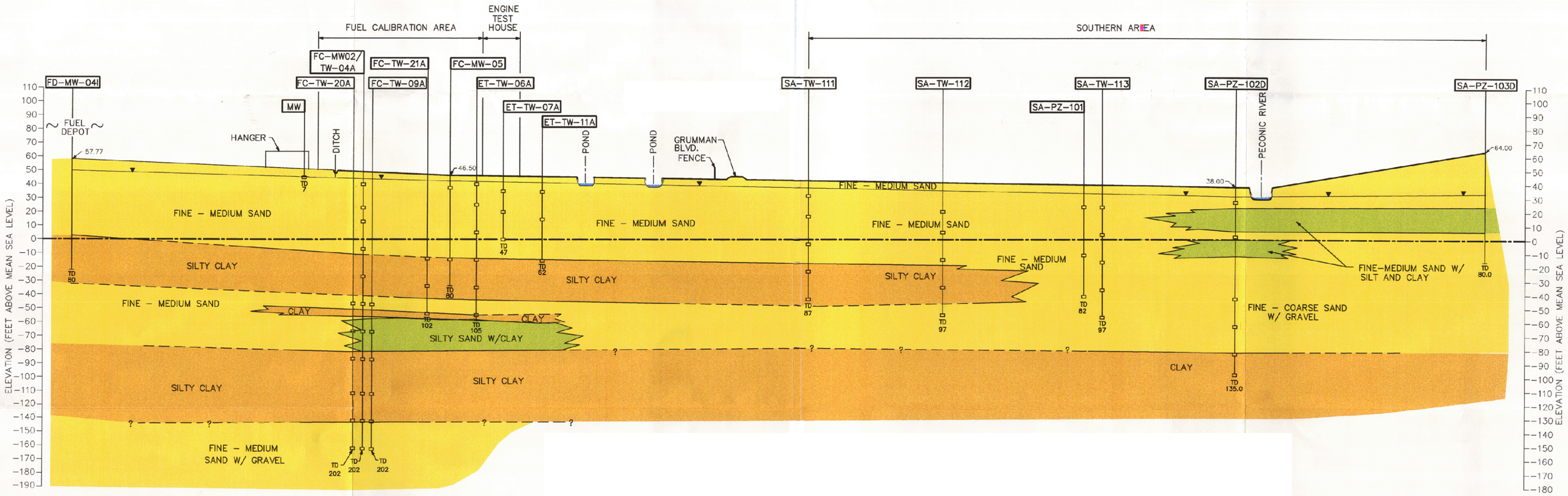
Tetra Tech NUS, inc.

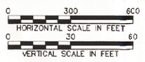
GENERALIZED CROSS SECTION PLAN
SITES 6A AND 10B, AND SOUTHERN AREA
PHASE 2 REMEDIAL INVESTIGATION
NWIRP CALVERTON
CARVERTON, NEW YORK

CONTRACT NO. 7398
OWNER NO. 0270
APPROVED BY DATE
APPROVED BY DATE
DRAWING NO. FIGURE 2-2
REV. 0

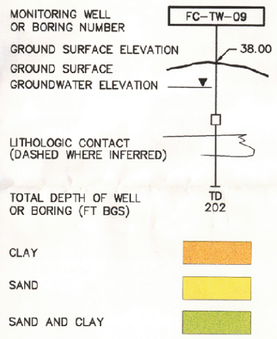
FORM CADD NO. TtNUS_BH.DGN - REV 0 - 1/20/98

00600EB3Y





LEGEND:



NO.	DATE	REVISIONS	BY	CHKD	APPD

NO.	RELEASED FOR	BY	DATE

REFERENCES

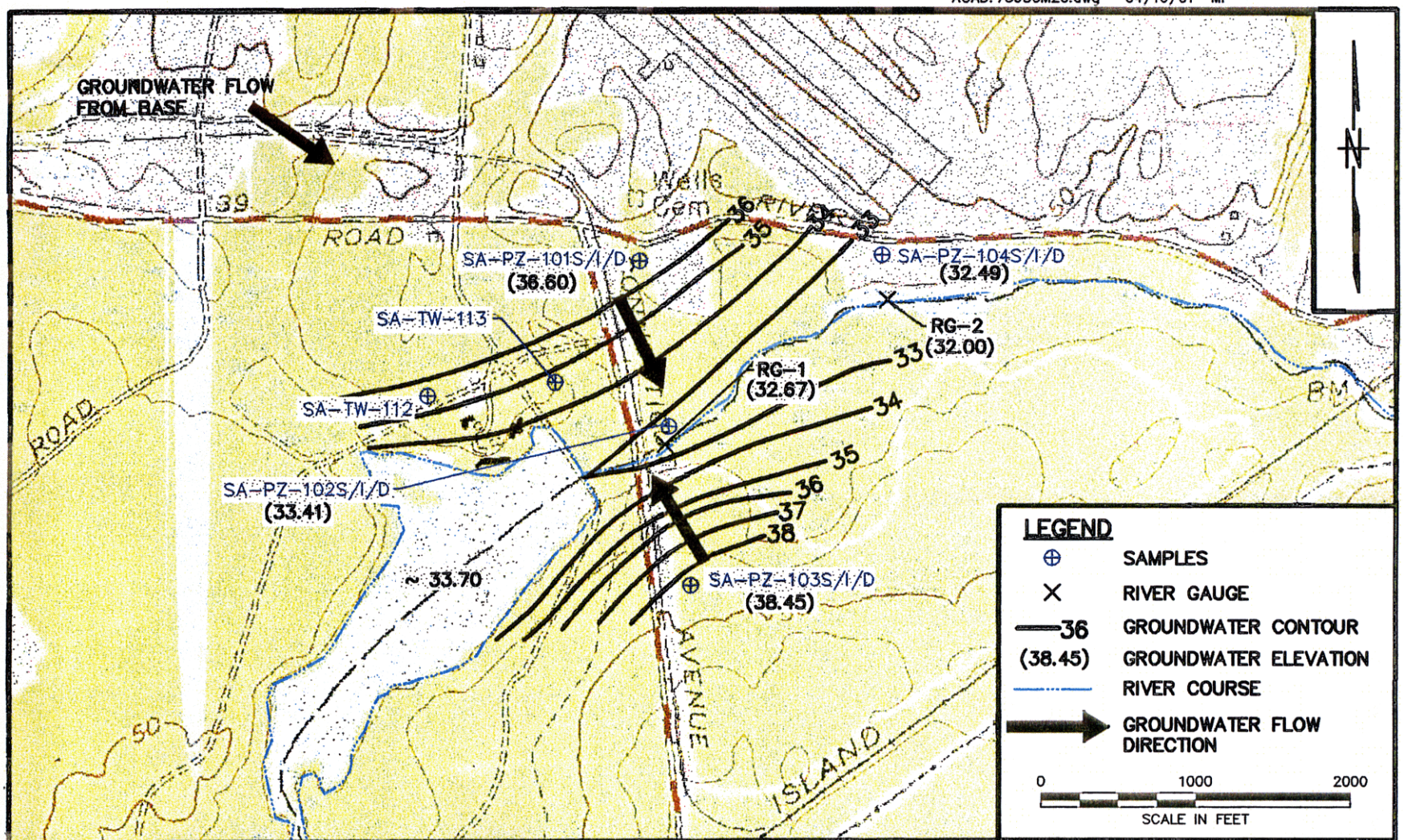
DRAWN BY HJP DATE 3/30/01
CHECKED BY DATE
COST/SCHED–AREA
SCALE AS NOTED

Tetra Tech NUS, Inc.

GENERALIZED CROSS SECTION A – A'
SITES 6A AND 10B, AND SOUTHERN AREA
PHASE 2 REMEDIAL INVESTIGATION
NWIRP CALVERTON
CALVERTON, NEW YORK

CONTRACT NO. 7398
OWNER NO. 0270
APPROVED BY DATE
APPROVED BY DATE
DRAWING NO. FIGURE 2–3
REV. 0

ACAD: 7398GM20.dwg 04/16/01 MF



DRAWN BY HJP DATE 3/30/01	Tetra Tech NUS, Inc.	CONTRACT NO. 7398	OWNER NO. 0270
CHECKED BY DATE	GROUNDWATER FLOW PATTERN SITES 6 AND 10B, AND SOUTHERN AREA PHASE 2 REMEDIAL INVESTIGATION NWIRP CALVERTON CALVERTON, NEW YORK	APPROVED BY DATE	
COST/SCHED-AREA		APPROVED BY DATE	
SCALE AS NOTED		DRAWING NO. FIGURE 2-4	REV. 0

FORM CADD NO. T+NUS_AH.DWG - REV 0 - 1/22/98

3.0 PHASE 2 AND SUPPLEMENTAL GROUNDWATER INVESTIGATIONS

A Phase 2 Remedial Investigation was conducted in 1997 and a supplemental groundwater investigation was conducted in 2000. The field activities associated with these investigations are discussed in Section 3.1. Analytical results are discussed in detail in Section 3.2 and are summarized in Section 3.3. The Monitored Natural Attenuation Evaluation is presented in Section 3.4.

3.1 FIELD ACTIVITIES

3.1.1 Phase 2 Remedial Investigation

The Phase 2 Remedial Investigation was conducted in 1997 and consisted of the following activities. Well locations are illustrated on Figures 3-1, 3-2, and 3-3.

- Installation and sampling of 42 temporary monitoring wells (13 at the Fuel Calibration Area (FC-TW-01A to -13A), 16 at the Engine Test House (ET-TW01A to -16A), and 13 in the Southern Area (SA-TW-101 to -113). The temporary monitoring wells were sampled at multiple depths up to 135 feet below ground surface (bgs). Between the 1994 and 1997 field events, a duplicate numbering system inadvertently occurred at several sites including the Fuel Calibration Area and the Engine Test House. To eliminate the duplicate numbering system, an "A" designation was added to the wells installed in 1997 and 2000. The newer wells are at different locations than wells of the same number without the "A" designation.

- Installation and sampling of two shallow permanent monitoring wells (FC-MW-07S and FC-MW-08S).

Thirteen temporary monitoring wells were installed at Site 6A - Fuel Calibration Area (FC-TW-01A to FC-TW-13A) between March 1997 and June 1997. Four of the temporary monitoring wells were installed to investigate the depth of contamination near the old fuel calibration pad and extended to depths of 140 feet below ground surface (bgs) or 135 feet below the water table (bwt), (FC-TW-04, FC-TW-08A, -09A, and 10A). The balance of the temporary monitoring wells were installed near the new fuel calibration pad to define the extent of fuel-type VOC contaminated groundwater.

Eight temporary monitoring wells were installed around the Engine Test House and used to define a relatively small area of fuel-related groundwater contamination (ET-TW-01A to -08A). However, during this delineation, chlorinated solvents were detected in several of the groundwater samples. Eight additional temporary monitoring wells were then installed further down gradient (southeast) of the Engine Test House (ET-TW-09A to -016A) to better define the magnitude and extent of the solvent contamination. Based on

the finding of chlorinated solvents in several of these wells, the Navy planned on extending investigation even further down gradient to the south and east. At the same time, Suffolk County was installing temporary monitoring wells south of the NWIRP Calverton along River Road and reported detecting chlorinated solvents in several of these wells. As a result of these combined findings, the Navy continued with the Suffolk County groundwater investigation along the southern fence line.

Seven temporary monitoring wells were then installed along River Road from approximately McKay Lake to Connecticut Avenue (SA-TW-101 to SA-TW-107). Three additional temporary monitoring wells were installed on Navy property along Connecticut Avenue (SA-TW108 to SA-TW-110).

During installation of the wells, a discrete number was assigned to each location. The groundwater samples were assigned the same location number. For example, groundwater sample FC-GW-0109 was collected from temporary monitoring well location FC-TW-01. The last two to three digits of a sample code refer to the depth below ground surface at which the sample was collected. For FC-GW-0109, the ground water sample was collected at a depth of 9 feet bgs. Temporary monitoring well locations are presented on Figures 3-1 and 3-2.

Two methods of sampling were used for the installation of temporary monitoring wells during the Phase 2 Investigation. The majority of temporary monitoring wells were installed using the Geoprobe™ direct push method. The Geoprobe™ consists of a truck-mounted, sampling device, which uses hydraulic pressure to push sampling rods into the ground. The first rod consists of an 18 inch long screen with a steel well point tip. Once at depth, 1/4-inch diameter polyethylene tubing was lowered to the screened interval. A peristaltic pump was used to purge the casing of three volumes. The water sample was then collected by pinching the end of the sample tube, bringing the tube to the surface, and transferring the water into the sample bottle.

Several of the deep temporary monitoring wells (80 feet bgs and deeper) were installed using a hollow stem auger (HSA) containing a slotted screen (0.010") on the bottom flight. The screened auger was drilled to depth. A submersible pump was lowered into the well to the screen depth. Three well casing volumes were purged from the well. The pump flow rate was reduced and the groundwater sample was collected. In addition, for the deepest well installed at the old fuel calibration pad (FC-TW-04A), the temporary monitoring well was installed through a steel casing. The casing was installed to below the water table to isolate the sample equipment from free product and relatively high VOC concentrations found in the shallow groundwater at this location.

Details of the samples were recorded on sample log sheets that are included in Appendix B. Chain of Custody forms are provided in Appendix C.

The samples were submitted to Volumetric for quick-turnaround (48 hours) gas chromatography (GC) VOC analysis (EPA Method 601/602). The test results are detailed in Appendix A and discussed in Section 3.2. These results were compared to NYSDEC drinking water protection standards.

The two new permanent monitoring wells were installed at the Fuel Calibration Area in November 1997. One well, FC-MW-07-S, was installed near the downgradient edge of the source area at the old fuel calibration pad. This well was installed because groundwater flow in the area may be more to the east southeast than previously anticipated.

The other well, FC-MW-08-S, was installed down gradient of the VOC-contaminated groundwater at the new fuel calibration pad. Analytical results from the temporary monitoring well program previously identified a relatively small area of fuel impacted groundwater at the new fuel calibration pad. This well can be used for long term monitoring. Figure 3-3 illustrates the location of the two new permanent monitoring wells installed in 1997 plus the permanent monitoring wells installed in 1994. Not shown in the figure are a series of shallow monitoring wells that were installed by Northrop Grumman in the 1980s to identify the extent of the a floating free product layer at the site. These other wells are illustrated in the EECA for Site 6A (TtNUS, 1998).

The two new permanent monitoring wells were sampled and analyzed for VOCs. Analytical results, sample log sheets and chain of custody forms are presented in Appendices B, C, and D, respectively. The groundwater samples were collected via a disposable hand bailer. During all well purging and sample collection, pH, specific conductivity, temperature, turbidity, dissolved oxygen, and total dissolved solids (TDS) were measured. Groundwater samples were sent to Quanterra for TCL VOC analysis.

3.1.2 Supplemental Groundwater Investigation

A Supplemental Groundwater Investigation was conducted between June 2000 and October 2000 throughout the study area to further delineate the extent of the groundwater plume. This investigation focused on off site groundwater contamination (Southern Area) and deep groundwater contamination at the old fuel calibration area. Sample locations are presented in Figures 3-1, 3-2, and 3-3. Activities conducted during this investigation include the following.

- Sampling of two existing permanent monitoring wells at the old fuel calibration pad to determine the current concentration of VOCs (FC-MW-02S and -03S).

- Installation and sampling of eight temporary monitoring wells, including: three wells at the old fuel calibration pad to a depth of 200 feet below ground surface (FC-TW-04A, FC-TW-09A, and

FC-TW-20A); two wells between the Site 10B - Engine Test House and Site 6A - Fuel Calibration Area to a depth of 100 feet below ground surface (FC-TW-21A and ET-TW-06A); and three wells south of the facility to a depth of 100 feet below ground surface (SA-TW-111, -112, and -113). In addition, after the finding of deep contamination at SA-TW-113 (100 feet below ground surface), a temporary monitoring well was installed at the location of PZ-102 and extended to a depth of 140 feet bgs.

- Installation and sampling of 12 temporary piezometers near the Peconic River (SA-PZ-101S,I,D-102S,I,D-103S,I,D and -104S,I,D). The piezometers were used for groundwater sampling and to measure horizontal and vertical groundwater flow gradients. These piezometers were installed in four clusters at three depths per cluster.

- Collection and testing of two surface water samples from the Peconic River near SA-PZ-102 and SA-PZ-104.

- Sampling of three permanent monitoring wells (FC-MW-01S, -MW-02S, and -MW-03S) and two piezometers (SA-PZ101-I-47 and SA-PZ104-S-10.5) for monitored natural attenuation parameters.

The temporary monitoring wells were installed and tested using a hollow stem auger and a hydropunch sampling technique. The hollow stem augers were used to advance a boring to near the sample depth. The hydropunch sampler was then driven through the auger into the aquifer below the boring. The deep borings (deeper than 100 ft bgs) were logged with a Gamma Ray Probe to identify clay layers. Split spoon sample were also collected to confirm lithology.

The piezometer borings were advanced using standard HSA drilling techniques. Each piezometer was installed using 1-inch interval diameter (I.D.), Schedule 40 polyvinyl chloride (PVC), flush joint, threaded riser pipes and factory slotted well screens. Piezometer screens were 5 feet in length with a slot size of 0.02 inches. Split spoon sampling was conducted on the intermediate boring at each cluster in order to document the subsurface lithology. In addition, each of the deep piezometer borings was logged with a Gamma Ray Probe to identify any clay layers below the depth of the intermediate piezometers. Boring log sheets were completed for each piezometer installed and can be found in Appendix D. Monitoring well construction sheets are in Appendix E, while gamma ray logs are located in Appendix F.

Each piezometer was purged prior to sampling with a peristaltic pump. The small diameter of the piezometer prevented testing using a submersible pump like for the permanent monitoring wells. High-density polyethylene (HDPE) tubing was utilized and the tubing intake was placed at the approximate middle of the well screen for purging. A minimum of three well casing volumes was removed from each

piezometer prior to sampling. The water level, pump flow rate, and field parameter readings were monitored at 5 minute intervals during purging. Field parameter readings consisted of pH, specific conductivity, temperature, dissolved oxygen, turbidity, salinity, and Eh/oxidation/reduction potential (ORP).

Following purging, groundwater samples were collected from each of the piezometers. Sample containers for VOCs were filled using the "soda-straw" method: the peristaltic pump was shut off, the tubing discharge line was crimped, the tubing was withdrawn from the well, and the sample containers were filled from the intake end of the tubing while the opposite end is uncrimped. All purge and sample information was recorded on purge data sheets and groundwater sample log sheets. These log sheets are located in Appendix B.

Following completion of all piezometer related activities, each piezometer was abandoned as per the Site Work Plan. The shallow and intermediate piezometers were abandoned by first filling each of the well casings and screens with a thin cement/grout slurry and then pulling the well casings and screens from the boring. The remaining annulas spaces was then filled with cement/bentonite grout. Each of the deep piezometers was grouted in place without removing the casing or screen. However, the well casing was cut at approximately 2 feet below grade and the ground surface was restored to surrounding conditions.

For the permanent monitoring wells, an adjustable rate, submersible Redi-flow pump and Teflon lined HDPE tubing was utilized for purging and sampling of most of the monitoring wells. Select, near surface wells were also sampled using a perisaltic pump and a disposable polyethylene tube into the well to compare results from previous sample procedures with current sample procedures.

The field parameters measured during this sampling included pH, specific conductivity, temperature, turbidity, dissolved oxygen, and Eh/ORP. Ecotest Laboratories was used as a quick turnaround laboratory for VOC analysis in the supplemental investigation. Severn Trent Laboratories performed the balance of the analysis.

All groundwater samples were analyzed for Target Compound List (TCL) volatile organic compounds (VOCs). Results were compared to the New York State Department of Environmental Conservation (NYSDEC) drinking water protection standards. The samples for monitored natural attenuation parameters were also analyzed for biochemical oxygen demand, chemical oxygen demand, chloride, nitrate, nitrite, orthophosphate, sulfate, sulfide, total organic carbon, methane, ethane, and ethene.

3.2 ANALYTICAL RESULTS

VOC analytical results are discussed in this section. Additional evaluation of the data relative to the MNA testing is presented in Section 3.3. Analytical results can be found in Appendix A. Figure 3-4 presents a tag map of the 1997 and 2000 area wide groundwater data. The results are discussed below. Positive detections are presented in Tables 3-1, 3-2, and 3-3 for Fuel Calibration Area, Engine Test House, and Southern Area temporary monitoring wells, respectively. Positive detections for permanent monitoring wells and piezometers are presented in Tables 3-4 and 3-5, respectively.

Forty-four temporary monitoring wells were sampled in the Study Area between March 1997 and October 2000. These wells were sampled at multiple deeps ranging from near the ground surface to 200 feet below the ground surface. Groundwater depths range from approximately 3 to 15 feet below the ground surface in the study area.

3.2.1 Site 6A - Fuel Calibration Area

The discussion of the Fuel Calibration Area is divided into the new fuel calibration pad and the old fuel calibration pad. The new fuel calibration pad is located approximately 200 feet north of the old fuel calibration pad. Temporary monitoring well data for the Fuel Calibration Area is presented in Table 3-1.

New Fuel Calibration Pad

Groundwater at the new fuel calibration pad was investigated because fuel-type VOCs (BTEX) were found in the groundwater in this area during the 1994/1995 investigation of the leachfields and cesspools (HNUS, 1995C). The location of the detected groundwater contamination was also near the water discharge point for a fuel/water separator. Prior to the 1997 study, the horizontal and vertical extent of this contamination was unknown.

To investigate this area, eight temporary monitoring wells were installed. Three temporary monitoring wells (FC-TW-01A, FC-TW-02A, and FC-TW-03A) were installed 100 feet to the east and south (hydraulic downgradient). One well was installed at the suspected source to confirm the previous findings (FC-TW-05A). Four wells were installed to the north to confirm the northern extent of contamination (FC-TW-06A, -11A, -12A, and -13A).

Fuel-type VOCs were detected in FC-TW-05A at depths of 5 and 20 feet bgs, but not at a depth of 40 feet bgs. The maximum detected concentrations were benzene at 44 µg/L, ethylbenzene at 20 µg/L, toluene at 34 µg/L, and xylene at 133 µg/L. NYSDEC drinking water standards for these chemicals are 0.7, 5, 5, and 5 µg/L respectively. This testing confirmed the presence of fuel-type VOCs at the new fuel calibration

pad. However, fuel-type VOCs were not detected in the other seven wells. This finding indicates that a relatively small area (approximately 60 feet by 80 feet) of fuel-type VOC contaminated groundwater is present. In addition, to date this contamination has not impacted other nearby areas (100 feet away). Migration of low-concentration fuels in groundwater, like at this site, much beyond the source area is not common because of biodegradation and other natural attenuation factors. A permanent monitoring well was installed downgradient of this area (FC-MW-08-S) to serve as a point for long term monitoring in this area. Fuel type VOCs were not detected in FC-MW-08-S.

Chlorinated VOCs were detected in monitoring wells FC-TW-03A, FC-TW-05A, and FC-TW-06A. Maximum detected concentrations include 1,1,1-trichloroethane at 14 µg/L (20 ft depth of FC-TW-03A), 1,1-dichloroethane at 1.4 µg/L (40 ft depth of FC-TW-06A), and 1,2-DCE at 3.4 µg/L (20 ft depth of FC-TW-06). Only the 14 µg/L detection of 1,1,1-trichloroethane exceeds NYSDEC drinking water standards (5 µg/L). Similar levels of chlorinated VOCs were detected in FC-MW-08-S, (1,1-dichloroethene at 21 µg/L, See Table 3-4). Low level detections of chlorinated solvents are common throughout much of this area.

Freon 113 (trichlorotrifluoroethane) was also detected in FC-TW-05A and FC-TW-06A, with a maximum concentration of 1.6 µg/L, which is below the NYSDEC drinking water standard of 5 µg/L.

Old Fuel Calibration Pad

Floating free product and VOC contaminated groundwater have been identified at the old fuel calibration pad, with the overall extent mostly defined. However, during the 1995 RFI (HNUS, 1995b), an intermediate depth monitoring well (FC-MW-02I) was installed to 80 feet bgs (75 feet bwt). During the first round of testing, 1,1,1-trichloroethane at 210 µg/L and 1,1-dichloroethene at 95 µg/L were detected in this well. During the second round of testing 7 months later, VOCs were not detected at concentrations greater than NYSDEC drinking water standards (5 µg/L for each chemical). Therefore, to define the vertical extent of contamination, deeper temporary monitoring wells were installed during the Phase 2 RI.

The investigation of the deep contamination was originally conducted at FC-TW-04A, with groundwater samples collected at 80 and 100 feet bgs. The VOCs and their maximum detected concentrations in this well are as follows: 1,1,1-trichloroethane (481 µg/L), 1,1-dichloroethane (1,057 µg/L), 1,1-dichloroethene (496 µg/L), ethylbenzene (7.2 µg/L), freon 11 (trichlorofluoromethane) (122 µg/L), methylene chloride (34 µg/L), toluene (33 µg/L), and xylene (48 µg/L). All concentrations exceed NYSDEC drinking water standards. Next, samples were collected at 120 and 140 feet bgs. VOCs were not detected at 120 feet bgs. The following VOCs exceeding standards were detected at 140 ft bgs: 1,1,1-trichloroethane (678 µg/L), 1,1-dichloroethane (523 µg/L), and xylene (29 µg/L). The finding of VOCs in the deepest

sample collected indicates that VOC contamination may extend beyond 140 feet bgs. Because of equipment limitations, groundwater samples could not be collected below 140 feet bgs and the deep groundwater investigation was continued during the supplemental investigation in this area.

Also, to ensure that cross-contamination from the overlying groundwater and free product layer did not affect the groundwater results, a steel well casing was installed to a depth of 20 feet below the water table. Groundwater samples were then collected at depths of 30, 40, 60 and 80 feet bgs (FC-TW-04A samples). The results of this testing found that VOCs were not detected in the samples collected at depths of 30, 40, and 60 feet bgs. However, 1,1,1-trichloroethane, 1,1-dichloroethane, chloroform, and freon were found in the sample collected at 80 feet bgs, all at concentrations exceeding NYSDEC drinking water standards. This finding indicates that the VOCs are present at depth and do not result from vertical cross contamination.

Because of the finding of deep VOC contamination, three additional deep temporary monitoring wells were installed around FC-TW-04A to determine the horizontal extent of the deep VOC contamination. FC-TW-08A was installed approximately 180 feet to the north-northwest, FC-TW-09A was installed approximately 200 feet to the southeast, and FC-TW-10A was installed approximately 200 feet to the west-southwest. Samples were collected at 100, 120, and 140 feet bgs for each of these wells. VOCs were not found at concentrations exceeding NYSDEC drinking water standards in these three wells. Therefore, even though the contamination in this area is found at depth, the horizontal extent is not widespread.

To further investigate the vertical extent of VOC contamination in the area, four temporary monitoring wells (FC-TW-04A, FC-TW-09A, FC-TW-20A, and FC-TW-21A) were re-sampled within the Fuel Calibration Area between July 20 and August 7, 2000. FC-TW-04A is the location of the deep contamination previously identified. FC-TW-09A is approximately 200 feet to the southeast of FC-TW-04A. FC-TW-20A is located approximately 100 feet to the northwest of FC-TW-04A.

For location FC-TW-04A, the VOCs were found at concentrations that exceeded NYSDEC drinking water standards at depths of 165, 180, and 200 ft bgs. 1,1,1-trichloroethane was detected at 220 µg/L at depth of 165 feet bgs, again confirming the relatively deep component of groundwater contamination in this area. However, the maximum concentrations of chlorinated VOCs at depths of 180 and 200 feet bgs were only 19 µg/L and 13 µg/L, respectively. These detections only slightly exceed the NYSDEC drinking water standard of 5 µg/L.

Except for temporary monitoring well FC-TW-09A, at a depth of 160 feet bgs, VOCs were not detected at significant concentrations at depth at other nearby locations (i.e. exceeding drinking water standards).

For FC-TW-09A at 160 feet bgs, exceedances were noted for chloroethene (9 µg/L), ethylbenzene (16 µg/L), and xylene (130 µg/L). This finding indicates that some deep migration of VOCs is likely occurring, however, the migration is not as significant as that in the more shallow groundwater.

Temporary well FC-TW-21A is located approximately 500 feet to the southeast and was sampled at depth of 60, 80, and 100 feet bgs. This well was sampled in combination with ET-TW-06A and was tested to evaluate VOC contaminated groundwater previously found in the area at depths of 40 to 60 feet bgs. 1,1-Dichloroethane and 1,1-dichloroethene were found to exceed NYSDEC drinking water standards in temporary monitoring well FC-TW09A at depths of 60 and 80 feet bgs. These VOCs were also detected in the groundwater sample at 100 feet bgs, but the concentrations were less than the drinking water standards. Note that VOCs were not detected at depths of 60 and 80 feet bgs at ET-TW-06A, and that even though VOCs were detected at 100 feet bgs at this location, the detection were less than drinking water standards.

FC-MW-07-S was installed in 1997 between two downgradient monitoring wells for the site (FC-MW-03-S and FC-MW-05-S) The well was installed to address a concern that groundwater contamination from the Fuel Calibration Area was potentially flowing between these two wells. VOCs were not detected in FC-MW-07-S.

Chlorinated VOCs were detected in FC-MW-08-S and include 1,1-dichloroethene (21 µg/L) and chloroethane (19 µg/L). Both detections exceed NYSDEC drinking water protection standards of 5 µg/L and indicate that at least some chlorinated solvents entered the groundwater in this area. The absence of fuel related VOCs in this area indicates that the petroleum contaminated groundwater in the area of the new fuel calibration pad is not migrating quickly.

As part of the Supplemental Groundwater Investigation in 2000, two permanent monitoring wells (FC-MW-02-S and FC-MW-03-S) located in the Fuel Calibration Area were sampled. The purpose of this sampling was to further characterize the extent of VOC contamination near the source in the old Fuel Calibration Pad, and in anticipation of groundwater testing for monitored natural attenuation testing.

Chlorinated VOCs were detected in FC-MW-02-S. Maximum detected concentrations include 1,1,1-trichloroethane at 2,200 µg/L, 1,1-dichloroethane at 3,600 µg/L, 1,1-DCE at 37 µg/L, chloroethane at 720 µg/L, and trichloroethene (TCE) at 6 µg/L. NYSDEC drinking water standards for all of these chlorinated VOCs are 5 µg/L. Based on the initial characterization of the area in 1994, using both soil gas and temporary monitoring wells, FC-MW-02-S represents the most contaminated groundwater at the Site.

Fuel-type VOCs, which consist of BTEX, were also detected in FC-MW-02-S and FC-MW-03-S. The maximum detected concentrations were benzene at 1 µg/L (FC-MW-02-S), ethylbenzene at 81 µg/L (FC-MW-03-S), toluene at 180 µg/L (FC-MW-02-S), and xylenes at 570 µg/L (FC-MW-02-S). NYSDEC drinking water standards for these chemicals are 0.7, 5, 5, and 5 µg/L respectively. Both FC-MW-02-S and FC-MW-03-S represent areas where fuel type floating product has been identified recently (2000).

Site 6A - Downgradient Areas

During the 1995 RFI investigation, the horizontal extent of groundwater contamination was reasonably well defined in the area of the old fuel calibration pad. However, during the groundwater investigation of the new fuel calibration pad and the Engine Test House, chlorinated VOCs were detected in several wells 500 to 1,000 feet sidegradient or downgradient from the old fuel calibration pad, with the contamination not directly attributable to any known source.

Based on the location and type of contamination, the chlorinated VOCs in the groundwater were most likely associated with operations at the old fuel calibration pad. However, there were several monitoring wells located between the old fuel calibration pad and the Engine Test House, which did not have detectable concentrations of VOCs. This zone of clean groundwater indicates that VOCs from the old fuel calibration pad did not flow directly or continuously into the Engine Test House.

Based on the site topography and the absence of other potential sources, it is suspected that VOC contamination from the Fuel Calibration Area may have migrated to these downgradient areas via overland transport through the swale and culvert system in the area. In addition, from the late 1980s to the early 1990's contaminated groundwater from the Fuel Calibration Area was discharged into this swale. Note that the same swale and culvert also connect to a pond that is upgradient of the Southern Area.

3.2.2 Engine Test House

Sixteen temporary monitoring wells were installed at the Engine Test House (ET-TW-01A to ET-TW-16A) from April 1997 to July 1997. In addition, in July 2000, one temporary monitoring well (ET-TW-06A) was drilled deeper.

Ten temporary monitoring wells were installed to investigate the extent of fuel contaminated groundwater near the Engine Test House. Six temporary monitoring wells were then installed to the south and east of the Engine Test House to support the Fuel Calibration Area or Southern Area investigation.

The test results are summarized in Table 3-2 and Figure 3-4, and are detailed in Appendix A. These results were compared to NYSDEC drinking water protection standards.

Fuel-type VOCs were found in samples from the three temporary monitoring wells located just downgradient of the former UST (ET-TW-01A, ET-TW-02A, and ET-TW-03A). These fuel-type chemicals included ethylbenzene (maximum detection of 1,084 µg/L), toluene (maximum concentration of 337 µg/L), and xylene (maximum concentration of 196 µg/L).

Also detected in some of the samples were chlorinated VOCs such as bromomethane (at 353 µg/L), chlorobenzene (at 381 µg/L), and chloroform (at 16 µg/L). These three VOCs were not generally detected elsewhere at the site or the rest of the facility. This finding likely results from a minor release of these chemicals at this site.

Other temporary monitoring wells at the Engine Test House did not exhibit evidence of significant fuel-type VOC contamination. Therefore the extent of fuel-type VOC contamination consists of an area of approximately 4,800 square feet. Also, this contamination is not migrating quickly, with downgradient wells located approximately 140 feet from the former UST not being impacted. Migration of low-concentration fuels in groundwater, like at this site, much beyond the source area is not common because of biodegradation and other natural attenuation factors.

Several chlorinated VOCs were also detected in several wells at the Engine Test House. The well with the highest concentration of chlorinated VOCs is ET-TW-05A, which contained 1,1,1-trichloroethane (at 166 µg/L), 1,1-dichloroethene (at 188 µg/L), and chloroethane (at 138 µg/L). These chemicals and concentrations are consistent with the VOCs measured in the Fuel Calibration Area groundwater extraction system discharge in 1992.

Freon 113 (1,1,2-trichlorotrifluorethane) was detected in two temporary monitoring wells east of the Engine Test House (ET-TW-07A and ET-TW-08A) at a maximum concentration of 152 µg/L. Other temporary monitoring wells at the Engine Test House did not contain freon 113 at concentrations greater than groundwater criteria, indicating that the freon contamination is limited to the area of these two wells. Freon 113 has been detected sporadically throughout the facility. However, freon was not on the analyte list for the Fuel Calibration Area during the initial RFI and the testing of the Fuel Calibration Area groundwater discharge in 1992. As a result, it is uncertain as to whether the Fuel Calibration Area could have been an initial source of this freon 113. However, 1,1,1-trichleroethane (27 µg/L), 1,1-DCA (53 µg/L), 1,1-dichleroethene (2.3 µg/L), 1,2-dichleroethene (3.6 µg/L), and vinyl chloride (27 µg/L) were also detected in these wells. Alternatively, there may have been a minor release of freon 113 in the open field around these wells.

As part of the Supplemental Investigation, temporary monitoring well ET-TW-06A was sampled on July 19, 2000 to support the downgradient investigation area overlapped by the Fuel Calibration Area. Groundwater samples were collected from 60, 80, and 100 feet bgs. A local laboratory analyzed all groundwater samples for VOCs with quick-turnaround times. 1,1,1-trichleroethane and 1,1-dichleroethane were both detected at the 100 ft depth of ET-TW-06A, but at concentrations below the NYSDEC drinking water protection standards. These results show that VOC contamination at the Engine Test House is to the east and north of ET-TW-06A.

3.2.3 Southern Area

In 1997, ten temporary monitoring wells were installed at the Southern Area. In 2000, three additional temporary monitoring wells and 12 piezometers were installed. Seven temporary monitoring wells (SA-TW-101 through SA-TW-107) were within the fenced in portion of the facility to define the width of the plume and general flow direction. These seven wells were installed to complement two wells installed by SCDHS (SACAL3 and SACAL4). Six other temporary monitoring wells (SA-TW-108 to SA-TW-113) were installed to the southeast to determine the maximum down gradient extent of groundwater contamination. Three of these wells were installed on NWIRP Calverton runway buffer zones, two wells were installed on the Peconic River Sportsman Club, and one wells was installed on the town right-of-way. The twelve piezometers (SA-PZ-101S, I, D, -102S, I, D, -103S, I, D, and -104S, I, D) were installed primarily for groundwater elevation measurements, but groundwater samples were also collected from these wells.

The maximum chemicals detected in southern area monitoring wells and piezometers that exceed NYSDEC drinking water standards include 1,1,1-trichloroethane (94 µg/L), 1,1-dichlorothane (220 µg/L), 1,1-dichloroethene (21 µg/L), 1,2-dichloroethene (13 µg/L), vinyl chloride (2 µg/L), and xylene (18 µg/L). Note that these chemicals and concentrations are consistent with those observed in the Fuel Calibration Area groundwater extraction system discharge operated from the late 1980s to 1992. The primary discharge point for the extraction system would be approximately 600 feet hydraulically upgradient from the most contaminated Southern Area wells.

3.3 SUMMARY OF GROUNDWATER CONTAMINATION

This section presents an overview of the groundwater contamination associated with Site 6A - Fuel Calibration Area, Site 10B - Engine Test House, and the Southern Area. Figures 3-5 and 3-6 present an overview of locations where VOC contaminated groundwater has been confirmed, as well as provides estimates at to where the VOC contaminated groundwater is likely to be currently, or in the near future. Note that within this overall area of confirmed and potential groundwater contamination, there are groundwater monitoring wells and sample depths that exhibit either a low level of contamination (less

than drinking water standards) or no detectable level of contamination. A non-continuous plume, is believed to have resulted from discrete release times over a 40 year period, storm events creating contaminant overland surges, and contaminant adsorption/desorption properties

The estimates presented in Figure 3-5 and 3-6 were developed using both groundwater analytical data and measured groundwater flow patterns. Groundwater contamination has been confirmed at Site 6A, an area southeast of the Engine Test House, near the southern property fence, and offsite near Connecticut Avenue. Contamination from the Fuel Calibration Area is believe to have been accelerated to the south and east via overland transport through a series of drainage ditches, culverts, and ponds located south of the Engine Test House. The chemicals found in the Engine Test House area and Southern Area are similar to those found at the Fuel Calibration Area.

Based on the testing program, two distinct areas of groundwater contamination are present at the Fuel Calibration Area. The first area is associated with the old fuel calibration pad, but also includes the new fuel calibration pad. This contamination extends from the old pad near monitoring well FC-MW-02-S to the east and south. The types of contaminants in the groundwater are 1,1,1-TCA and breakdown products such as 1,1-DCA. Floating free product and fuels, such as benzene, toluene, ethylbenzene, and xylene are also identified with this area.

The second area of groundwater contamination is near the Engine Test House. The type of contaminants present in this area are 1,1,1-trichloroethane and related breakdown products, resulting from unreported solvent activities at the Engine Test House, or more likely from historic releases to the hydraulically upgradient drainage swales and culvert from the Fuel Calibration Area. In 1992, the discharge from the groundwater extraction system at the Fuel Calibration Area was measured to contain 1,1,1-trichloroethane (210 to 220 µg/L), 1,1-dichloroethane (220 to 250 µg/L), and chloroethane (68 to 77 µg/L). Freon was not on the list of analyzed parameters. Based on site hydrogeology, groundwater from this area will flow into the Southern Area.

Data from the Phase 2 RFI and Supplemental Investigation were combined with the data from previous investigations to delineate the extent of groundwater contamination through the use of Environmental Visualization System (EVS). Data from Site 6A - Fuel Calibration Area, Site 10B – Engine Test House, and the Southern Area was used for this evaluation. The EVS evaluation focused on 1,1,1-trichloroethane, 1,1-dichloroethane, and chloroethane. These three chemicals were found most frequently and at the highest concentrations throughout this study area. Under normal degradation, 1,1,1-trichloroethane will degrade biologically to 1,1-dichloroethane and chemically to 1,1-dichoroethene. These chemicals will further degrade to chloroethane and chloroethene. Ultimately, these chemicals will

degrade to carbon dioxide and water, although long periods of time may be required to achieve this unless certain conditions are present.

EVS Figures 3-7 and 3-8 show respectively a plan and two side views of the contaminant plume for 1,1,1-trichloroethane. Figures 3-9 and 3-10 depict plan and side views for 1,1-dichloroethane. Finally, Figures 3-11 and 3-12 illustrate 1,1-dichleroethene contamination throughout the area. Based on the modeling results, the primary source of contamination is attributed to the old fuel calibration pads. Migration of the contaminant plume to the Engine Test House and Southern Area has occurred over time. The horizontal extent of groundwater contamination extends from the outside the western half of the Fuel Calibration Area to the eastern side of the Southern Area. One continuous contamination plume does not exist in the area. The maximum vertical extent of groundwater contamination is near the northern half of the Fuel Calibration Area and is approximately 160 ft below ground surface.

As shown on the above-mentioned figures, the extent of the groundwater contamination is adequately defined to proceed from the study phase to the alternative analysis phase.

3.4 MONITORED NATURAL ATTENUATION (MNA)

Between July 31 and August 2, 2000, MNA field investigation activities were conducted at the Study Area. The purpose of these activities was to evaluate the potential for attenuation of contaminants as they migrate through the Sites. The MNA evaluation considers the analytical data at the site for degradation parameters, computer modeling of contaminant fate and transport, and most importantly contaminant concentrations over time. In support of the MNA evaluation, the following field activities were conducted.

- Groundwater sampler were collected from three existing monitoring wells (FC-MW-01-S, FC-MW-02-S, and FC-MW-03-S) at Site 6A. Samples were analyzed for VOCs, TPH, and natural attenuation parameters. FC-MW-01-S represents an upgradient monitoring well for Site 6A. FC-MW-02-S and FC-MW-03-S represent higher groundwater concentrations in plume near the source area.

- Groundwater samples were collected from two piezometers (SA-PZ-101-I and SA-PZ-104-S) in the Southern Area. Samples were analyzed for VOCs and natural attenuation parameters. Because of the absence of ideal locations near the site and because contamination was identified in downgradient areas, these wells were selected for downgradient monitoring locations. One well contained moderate levels of VOCs and the other well contained no detected VOCs, but based on location and groundwater flow is likely to be downgradient of SA-PZ-101-I.

An adjustable rate, Redi-flow pump and Teflon lined HDPE tubing was utilized for purging and sampling of the three permanent monitoring wells. The pump was placed at approximately the center of the saturated well screen prior to beginning purge activities. Because of the small diameter of the piezometers, a submersible pump could not be used at the two piezometers. Therefore, a perisaltic pump and tubing were used to collect these samples. All wells were purged a minimum of three well volumes and until monitored water quality parameters of three consecutive purge-water reading fell within 10 percent of one another. Water quality field measurements were collected every 5 minutes and included pH, specific conductivity, temperature, dissolved oxygen, turbidity, and Eh/ORP. All water quality parameters were measured with a device utilizing a flow-through cell. These wells were also monitored for the natural attenuation parameters of carbon dioxide, dissolved oxygen, ferrous iron and hydrogen sulfide using field test kits. The water level in each well and the flow rate of the pump were also monitored to assure that the wells were not purged at a higher rate than the natural yield of the formation.

Sample results are presented in Table 3-6. Chlorinated VOCs were detected in four of the five sample locations. Maximum detected concentrations include 1,1,1-TCA at 2,000 µg/L (11.6 ft depth of FC-MW-02-S), 1,1-DCA at 3,400 µg/L (11.6 ft depth of FC-MW-02-S), 1,1-DCE at 30 µg/L (11.6 ft depth of FC-MW-02-S), and chloroethane at 9.1 µg/L (47 ft depth of SA-PZ-101-I). NYSDEC drinking water standards for all of these chlorinated VOCs are 5 µg/L.

Fuel-type VOCs were detected in one of the wells samples (FC-MW-02-S). The maximum detected concentrations were ethylbenzene at 46 µg/L (11.6 ft depth), toluene at 140 µg/L (11.6 ft depth), and xylenes at 510 µg/L (11.6 ft depth). The NYSDEC drinking water standards for these fuel-type VOCs are 5 µg/L.

The evaluation of monitored natural attenuation data is based on a weight of evidence approach for: documentation that contaminant degradation is occurring; modeling efforts to estimate the rate of degradation relative to migration, and monitoring to confirm the assumptions used in the modeling and to identify the potential need to take further action. To document that degradation is occurring, a field evaluation is conducted to monitor breakdown products such as chloroethane, ethane, ethene, methane, and carbon dioxide. Other parameters such as the absence of dissolved oxygen and the presence of dissolved iron, manganese, and sulfide are indicators that biodegradation may be occurring at the site. Modeling efforts are detailed in Appendix G and are summarized below. The monitoring component of the evaluation is the most important aspect of the evaluation, and ideally contaminant concentrations should decrease over time and not migrate significantly. Each of elements is discussed below.

Parameters measured as part of the monitoring natural attenuation evaluation are presented in Table 3-6. For chlorinated solvents (like those found at Site 6A), anaerobic biodegradation processes (in the

absence of dissolved oxygen - less than 1 mg/L) are faster than aerobic biodegradation processes (in the presence of dissolved oxygen - greater than 1 mg/L). The primary anaerobic degradation pathway for 1,1,1-trichloroethane is as follows: 1,1-dichloroethane, chloroethane, ethane, and methane/carbon dioxide/water/chloride. Chloroethane, methane, and ethane are also readily biologically degraded under aerobic conditions to form carbon dioxide and water. The absence of oxygen (0.39 mg/L) and the presence of 1,1-dichloroethane and chloroethane are primary indicators that anaerobic biodegradation is occurring at Site 6A (FC-MW-02-S). The presence of oxygen (2.34 to 3.51 mg/L) in the downgradient monitoring wells is an indication that anaerobic conditions are limited to the site.

For fuel-type chemicals such as ethylbenzene, toluene, and xylene, aerobic biodegradation processes are faster than anaerobic biodegradation processes. Under aerobic conditions, carbon dioxide and water are formed. Under anaerobic conditions, methane, carbon dioxide, and water are formed.

Because of potential interactions between chemicals and the surrounding media, the other natural attenuation parameters listed in Table 3-6 provide only indirect evidence of degradation. Methane, ethane, and ethene are gases that are very volatile and can readily migrate to or from a source area. Also, they are relatively biodegradable. Biochemical oxygen demand and chemical oxygen demand results are dependent on both soluble organics and some metals (e.g. iron). Hydrogen sulfide, sulfate, and carbon dioxide results are effected by pH and the presence of metals (e.g. iron) and calcium. Chloride is formed from the degradation of chlorinated solvents. However, chloride is naturally found at relatively high concentrations in most ground waters, which masks potential increases in concentration from degradation. Nitrate, nitrite, and orthophosphate are macronutrients that microorganisms require for growth. Iron and manganese become soluble under low pHs or anaerobic conditions. However, these conditions also occur naturally, in particular around peat that have been observed at NWIRP Calverton.

Details on the modeling efforts are presented in Appendix G. Based on the results of the modeling, the groundwater contaminants found in the Southern Area are not likely to be attributable to groundwater flow directly from Site 6A (because of distance and groundwater velocity). Also, based on the modeling the plume at Site 6A should remain relatively stable and is not expected to migrate more than approximately 1500 feet. However, contaminants are expected to remain at the site for approximately 130 years (xylene).

Historical groundwater monitoring data for the site also provides evidence that natural attenuation is occurring, see Figure 3-13. 1,1,1-trichloroethane was measured at a concentration of 14,000 µg/L for well FC-MW-02-S in August 1994. In August 2000, the concentration had decreased to 1900 µg/L. Toluene was similarly noted to decrease from approximately 320 µg/L to 140 µg/L over this same time period. As suggested by the computer modeling results, xylene is not degrading very quickly at the site.

Xylene was measured to be 405 µg/L in August 1994 and 510 µg/L in August 2000. The concentration of chemicals such as 1,1-dichloroethane and chloroethane vary over time, because the measured concentration is based on the relative rate of being simultaneously formed and degraded.

Based on groundwater and contaminant velocity estimates, the contamination found in the Southern Area is likely attributable to overland transport of contaminated groundwater. Based on the lack of a defined source, computer modeling was not conducted for the Southern Area groundwater. Rather, a regional flow balance model was established to address the potential impact of groundwater contamination in the area of SA-PZ-101 and SA-TW-111 on the Peconic River. This evaluation does not consider attenuation of contaminants prior to discharge into the river, and therefore is biased high. The hydraulic portion of the model is based on a ratio on the river recharge from the Southern Area relative to drainage area of the Peconic River upstream of the Southern Area. This ratio is estimated to be 1 part (Southern Area) to 25 parts (for the upstream), indicating that contaminants from the Southern Area flowing to the River from the Southern Area would be reduced in concentration by a factor of 25. Also, since the contaminants of concern are volatile, once mixed in the stream, they would dissipate quickly. The Southern Area groundwater would likely enter the river near the bottom and since parts of the stream are periodically stagnant at higher concentrations may sometimes occur in localized areas.

Based on analytical results obtained from SA-PZ-101 and SA-TW-113, the model has calculated that the maximum concentration of contaminants expected to enter the Peconic River would be approximately 65 µg/L for 1,1-dichloroethane. This estimate was based on the average concentration of 1,1-dichloroethane at these two locations. By applying the 25 to 1 attenuation factor for the stream, as described above, the maximum solvent concentration for the Peconic River would be expected to be approximately 2.6 µg/L, which is less than drinking water and surface water quality standards. Based on the analytical data, other VOCs are present but at lower concentrations.

This page intentionally left blank.

TABLE 3-1

POSITIVE DETECTIONS IN GROUNDWATER (ug/L)
SITE 6A - FUEL CALIBRATION AREA
PHASE 2 REMEDIAL INVESTIGATION
NWIRP CALVERTON, NEW YORK
PAGE 1 OF 6

Well ID	FC-TW-01A			FC-TW-02A			FC-TW-03A		
Sample Date	APR '97	APR '97	APR '97	MAR '97	MAR '97	MAR '97	MAR '97	APR '97	APR '97
Depth (ft bgs)	5	20	40	5	20	40	5	20	40
1,1,1-Trichloroethane								14	
1,1-Dichloroethane									
1,1-Dichloroethene									
1,2-Dichloroethene									
Acetone									
Benzene									
Carbon Disulfide									
Chloroethane									
Chloro form									
Ethyl benzene									
Trichlorofluoromethane									
1,1,2-Trichlorotrifluoroethane									
Trichlorofluoroethane									
Methylene Chloride									
Toluene									
Xylene									

TABLE 3-1

POSITIVE DETECTIONS IN GROUNDWATER (ug/L)
SITE 6A - FUEL CALIBRATION AREA
PHASE 2 REMEDIAL INVESTIGATION
NWIRP CALVERTON, NEW YORK
PAGE 2 OF 6

Well ID	FC-TW-04A										
Sample Date	JUN '97	JUN '97	JUN '97	JUN '97	APR '97	APR '97	MAY '97	MAY '97	AUG '00	AUG '00	AUG '00
Depth (ft bgs)	30	40	60	80	80	100	120	140	165	180	200
1,1,1-Trichloroethane				599	481	416		678	220	19	13
1,1-Dichloroethane					1057	826		523	72	7	3
1,1-Dichloroethene				570	496	186					
1,2-Dichloroethene											
Acetone									12		
Benzene											
Carbon Disulfide										110	
Chloroethane									16	2	
Chloro form				68							
Ethyl benzene						7.2			3		
Trichlorofluoromethane					122						
1,1,2-Trichlorotrifluoroethane											
Trichlorofluoroethane				95							
Methylene Chloride						34					
Toluene					33	16			4		
Xylene					48	18		29	36	5	

TABLE 3-1

POSITIVE DETECTIONS IN GROUNDWATER (ug/L)
SITE 6A - FUEL CALIBRATION AREA
PHASE 2 REMEDIAL INVESTIGATION
NWIRP CALVERTON, NEW YORK
PAGE 3 OF 6

Well ID	FC-TW-05A				FC-TW-06A			FC-TW-07A		
Sample Date	APR '97	APR '97	APR '97	APR '97	APR '97	APR '97	APR '97	APR '97	APR '97	APR '97
Depth (ft bgs)	5	20	20*	40	5	20	40	5	20	40
1,1,1-Trichloroethane			1.8						20	0.6
1,1-Dichloroethane										
1,1-Dichloroethene					1.2		1.4		1.1	1.0
1,2-Dichloroethene			3.0		3.1	3.4				
Acetone										
Benzene	37	44								
Carbon Disulfide										
Chloroethane										
Chloro form										
Ethyl benzene	20	8.0								
Trichlorofluoromethane										
1,1,2-Trichlorotrifluoroethane			1.6			0.8			0.7	
Trichlorofluoroethane										
Methylene Chloride										
Toluene	11	34								
Xylene	133	94								

TABLE 3-1

POSITIVE DETECTIONS IN GROUNDWATER (ug/L)
SITE 6A - FUEL CALIBRATION AREA
PHASE 2 REMEDIAL INVESTIGATION
NWIRP CALVERTON, NEW YORK
PAGE 4 OF 6

Well ID	FC-TW-08A			FC-TW-09A					
Sample Date	MAY '97	MAY '97	MAY '97	MAY '97	MAY '97	MAY '97	JUL '00	JUL '00	JUL '00
Depth (ft bgs)	100	120	140	100	120	140	160	180	200
1,1,1-Trichloroethane							1		
1,1-Dichloroethane							3		
1,1-Dichloroethene									
1,2-Dichloroethene									
Acetone							24	13	
Benzene									
Carbon Disulfide									
Chloroethane							9	2	1
Chloro form									
Ethyl benzene							16	2	
Trichlorofluoromethane									
1,1,2-Trichlorotrifluoroethane									
Trichlorofluoroethane									
Methylene Chloride									
Toluene			2.3				7		
Xylene							130	10	10

TABLE 3-1

POSITIVE DETECTIONS IN GROUNDWATER (ug/L)
SITE 6A - FUEL CALIBRATION AREA
PHASE 2 REMEDIAL INVESTIGATION
NWIRP CALVERTON, NEW YORK
PAGE 5 OF 6

Well ID	FC-TW-10A			FC-TW-11A			FC-TW-12A			FC-TW-13A		
Sample Date	MAY '97	MAY '97	MAY '97	MAY '97	MAY '97	MAY '97	JUN '97	JUN '97	JUN '97	JUN '97	JUN '97	JUN '97
Depth (ft bgs)	100	120	140	5	20	40	5	20	40	5	20	40
1,1,1-Trichloroethane											1.9	1.9
1,1-Dichloroethane												
1,1-Dichloroethene												
1,2-Dichloroethene												
Acetone												
Benzene												
Carbon Disulfide												
Chloroethane												
Chloro form												
Ethyl benzene												
Trichlorofluoromethane												
1,1,2-Trichlorotrifluoroethane												
Trichlorofluoroethane												
Methylene Chloride												
Toluene												
Xylene												

TABLE 3-1

POSITIVE DETECTIONS IN GROUNDWATER (ug/L)
SITE 6A - FUEL CALIBRATION AREA
PHASE 2 REMEDIAL INVESTIGATION
NWIRP CALVERTON, NEW YORK
PAGE 6 OF 6

Well ID	FC-TW-20A							FC-TW-21A		
Sample Date	AUG '00	AUG '00	AUG '00	AUG '00	AUG '00	AUG '00	AUG '00	JUL '00	JUL '00	JUL '00
Depth (ft bgs)	105	120	140	160	180	200	210	60	80	100
1,1,1-Trichloroethane				1				14	6	1.5
1,1-Dichloroethane				2				39	12	3.3
1,1-Dichloroethene										
1,2-Dichloroethene										
Acetone										
Benzene										
Carbon Disulfide										
Chloroethane								4.5	2	
Chloro form										
Ethyl benzene										
Trichlorofluoromethane										
1,1,2-Trichlorotrifluoroethane										
Trichlorofluoroethane										
Methylene Chloride										
Toluene										
Xylene										

Notes:
* = Duplicate Sample
bgs = below ground surface
Blank = Not detected at the analytical method detection limit
Shaded = Detection exceeds NYSDEC Drinking Water Protection Standards
Concentrations in µg/L
Other VOCs not detected

TABLE 3-2

POSITIVE DETECTIONS IN GROUNDWATER (ug/L)
SITE 10B - ENGINE TEST HOUSE
PHASE 2 REMEDIAL INVESTIGATION
NWIRP CALVERTON, NEW YORK
PAGE 1 OF 6

Well ID	ET-TW-01A		ET-TW-02A		ET-TW-03A		ET-TW-04A	
Sample Date	APR '97	APR '97	APR '97	APR '97	APR '97	APR '97	APR '97	APR '97
Depth (ft bgs)	5	20	5	20	5	20	5	20
1,1,1-Trichloroethane								
1,1-Dichloroethane								
1,1-Dichloroethene								
1,2-Dichloroethene								
Benzene								
Bromodichloromethane								
Bromomethane					353			
Carbon Disulfide								
Chlorobenzene	381							
Chloroethane								
Chloro form				15				
Ethyl benzene		143		55	1084	23		
1,1,2-Trichlorotrifluoroethane								
Trichlorofluoroethane								
Methylene Chloride								
Toluene	156	337	31		277	37		
Vinyl Chloride								
Xylene	39	53			127	196		

TABLE 3-2

POSITIVE DETECTIONS IN GROUNDWATER (ug/L)
SITE 10B - ENGINE TEST HOUSE
PHASE 2 REMEDIAL INVESTIGATION
NWIRP CALVERTON, NEW YORK
PAGE 2 OF 6

Well ID	ET-TW-05A			ET-TW-06A					
Sample Date	APR '97	APR '97	APR '97	APR '97	APR '97	APR '97	JUL '00	JUL '00	JUL '00
Depth (ft bgs)	5	20	40	5	20	40	60	80	100
1,1,1-Trichloroethane		166	3.7						1.5
1,1-Dichloroethane					7.7				3.6
1,1-Dichloroethene		188	30		2.6				
1,2-Dichloroethene									
Benzene									
Bromodichloromethane	4.1								
Bromomethane									
Carbon Disulfide									
Chlorobenzene									
Chloroethane	138	45							
Chloro form									
Ethyl benzene		8.7							
1,1,2-Trichlorotrifluoroethane									
Trichlorofluoroethane									
Methylene Chloride	7.0								
Toluene		8.6							
Vinyl Chloride									
Xylene									

TABLE 3-2

POSITIVE DETECTIONS IN GROUNDWATER (ug/L)
SITE 10B - ENGINE TEST HOUSE
PHASE 2 REMEDIAL INVESTIGATION
NWIRP CALVERTON, NEW YORK
PAGE 3 OF 6

Well ID	ET-TW-07A					ET-TW-08A					
Sample Date	APR '97	APR '97	APR '97	JUL '97	JUL '97	APR '97	APR '97	APR '97	JUL '97	JUL '97	JUL '97
Depth (ft bgs)	5	20	40	60	80	5	20	40	60	60*	80
1,1,1-Trichloroethane			8.3				26	25		27	
1,1-Dichloroethane										53	
1,1-Dichloroethene	1.2	2.3					1.1				
1,2-Dichloroethene									3.5		3.6
Benzene		2.0									
Bromodichloromethane											
Bromomethane											
Carbon Disulfide											
Chlorobenzene											
Chloroethane											
Chloro form											
Ethyl benzene				2.2							
1,1,2-Trichlorotrifluoroethane		152	33	2.7	0.6		107	72	1.1	3.6	1.5
Trichlorofluoroethane											
Methylene Chloride											
Toluene										0.9	
Vinyl Chloride		60		11						27	
Xylene				3.0							

TABLE 3-2

POSITIVE DETECTIONS IN GROUNDWATER (ug/L)
SITE 10B - ENGINE TEST HOUSE
PHASE 2 REMEDIAL INVESTIGATION
NWIRP CALVERTON, NEW YORK
PAGE 4 OF 6

Well ID	ET-TW-09A			ET-TW-10A				ET-TW-11A		
Sample Date	MAY '97	MAY '97	MAY '97	MAY '97	MAY '97	MAY '97	MAY '97	MAY '97	MAY '97	MAY '97
Depth (ft bgs)	5	30	60	5	30	30*	60	5	30	60
1,1,1-Trichloroethane					0.6	6.6			5.7	0.5
1,1-Dichloroethane										2.4
1,1-Dichloroethene										
1,2-Dichloroethene										
Benzene										
Bromodichloromethane										
Bromomethane										
Carbon Disulfide										
Chlorobenzene										
Chloroethane										
Chloro form										
Ethyl benzene										
1,1,2-Trichlorotrifluoroethane										
Trichlorofluoroethane										
Methylene Chloride										
Toluene									0.5	0.7
Vinyl Chloride										
Xylene										

TABLE 3-2

POSITIVE DETECTIONS IN GROUNDWATER (ug/L)
SITE 10B - ENGINE TEST HOUSE
PHASE 2 REMEDIAL INVESTIGATION
NWIRP CALVERTON, NEW YORK
PAGE 5 OF 6

Well ID	ET-TW-12A			ET-TW-13A		ET-TW-14A	
Sample Date	MAY '97	MAY '97	MAY '97	MAY '97	MAY '97	MAY '97	MAY '97
Depth (ft bgs)	5	20	20*	5	20	5	20
1,1,1-Trichloroethane							
1,1-Dichloroethane							
1,1-Dichloroethene							
1,2-Dichloroethene							
Benzene							
Bromodichloromethane							
Bromomethane							
Carbon Disulfide							
Chlorobenzene							
Chloroethane							
Chloro form							
Ethyl benzene							
1,1,2-Trichlorotrifluoroethane							
Trichlorofluoroethane							
Methylene Chloride							
Toluene							
Vinyl Chloride							
Xylene							

TABLE 3-2

POSITIVE DETECTIONS IN GROUNDWATER (ug/L)
SITE 10B - ENGINE TEST HOUSE
PHASE 2 REMEDIAL INVESTIGATION
NWIRP CALVERTON, NEW YORK
PAGE 6 OF 6

Well ID	ET-TW-15A						ET-TW-16A			
Sample Date	JUN '97	JUN '97	JUN '97	JUN '97	JUL '97	JUL '97	JUN '97	JUN '97	JUN '97	JUN '97
Depth (ft bgs)	5	20	20*	40	60	80	5	30	30*	60
1,1,1-Trichloroethane				22	24	12			0.9	
1,1-Dichloroethane			4.7	49	43			5.4	6.4	13
1,1-Dichloroethene					4.6	4.6				
1,2-Dichloroethene						20				
Benzene					1.4					
Bromodichloromethane										
Bromomethane										
Carbon Disulfide										
Chlorobenzene										
Chloroethane										
Chloro form										
Ethyl benzene					1.7					
1,1,2-Trichlorotrifluoroethane					4.0	2.1				
Trichlorofluoroethane				0.8						
Methylene Chloride										
Toluene										
Vinyl Chloride										
Xylene					1.2					

Notes:
Blank = Not detected at the analytical method detection limit
* = Duplicate Sample
Shaded = Detection exceeds NYSDEC Drinking Water Protection Standards
bgs = below ground surface
Concentrations in µg/L
Other VOCs not detected

TABLE 3-3

POSITIVE DETECTIONS IN GROUNDWATER (ug/L)
SOUTHERN AREA
PHASE 2 REMEDIAL INVESTIGATION
NWIRP CALVERTON, NEW YORK
PAGE 1 OF 6

Well ID	SA-TW-101			SA-TW-102			SA-TW-103				
Sample Date	JUN '97	JUN '97	JUN '97	JUN '97	JUN '97	JUN '97	JUN '97	JUN '97	JUN '97	JUN '97	JUN '97
Depth (ft bgs)	5	20	60	5	20	40	5	20	20*	40	60
1,1,1-Trichloroethane	11	15	1.1					2.2	0.7	2.1	0.7
1,1,2-Trichloroethane	0.6	1.2	1.9								
1,1-Dichloroethane	4.2	31	4.3								
1,1-Dichloroethene											
1,2-Dichloroethane											
1,2-Dichloroethene											
Acetone											
Carbon Disulfide											
Chloroethane											
Chloro form	1.0	4.7									
Ethyl benzene				2.9							
Trichlorofluoromethane		2.6									
Toluene				1.0							
Vinyl Chloride											
Xylene				18							

TABLE 3-3

POSITIVE DETECTIONS IN GROUNDWATER (ug/L)
SOUTHERN AREA
PHASE 2 REMEDIAL INVESTIGATION
NWIRP CALVERTON, NEW YORK
PAGE 2 OF 6

Well ID	SA-TW-104				SA-TW-105			
Sample Date	JUL '97	JUL '97	JUL '97	JUL '97	JUL '97	JUL '97	JUL '97	JUL '97
Depth (ft bgs)	5	20	40	60	5	20	40	60
1,1,1-Trichloroethane								
1,1,2-Trichloroethane								
1,1-Dichloroethane		2.1	2.9	1.4		3.9		
1,1-Dichloroethene								
1,2-Dichloroethane								
1,2-Dichloroethene		2.5	0.9	0.9	0.6		0.6	1.0
Acetone								
Carbon Disulfide								
Chloroethane								
Chloro form								
Ethyl benzene								
Trichlorofluoromethane								
Toluene								
Vinyl Chloride				0.4	1.7			
Xylene								

TABLE 3-3

POSITIVE DETECTIONS IN GROUNDWATER (ug/L)
SOUTHERN AREA
PHASE 2 REMEDIAL INVESTIGATION
NWIRP CALVERTON, NEW YORK
PAGE 3 OF 6

Well ID	SA-TW-106					SA-TW-107			
Sample Date	AUG '97	AUG '97	AUG '97	AUG '97	AUG '97	JUL '97	JUL '97	JUL '97	JUL '97
Depth (ft bgs)	5	20	20*	40	60	5	20	40	60
1,1,1-Trichloroethane				12					
1,1,2-Trichloroethane									
1,1-Dichloroethane				3.1	7.3				
1,1-Dichloroethene					1.2				
1,2-Dichloroethane									
1,2-Dichloroethene									
Acetone									
Carbon Disulfide									
Chloroethane									
Chloro form									
Ethyl benzene									
Trichlorofluoromethane									
Toluene									
Vinyl Chloride									
Xylene									

TABLE 3-3

POSITIVE DETECTIONS IN GROUNDWATER (ug/L)
SOUTHERN AREA
PHASE 2 REMEDIAL INVESTIGATION
NWIRP CALVERTON, NEW YORK
PAGE 4 OF 6

Well ID	SA-TW-108					SA-TW-109				
Sample Date	NOV 97'	NOV 97'	NOV 97'	NOV 97'	NOV 97'	NOV 97'	NOV 97'	NOV 97'	NOV 97'	NOV 97'
Depth (ft bgs)	5	20	40	60	80	5	20	40	60	80
1,1,1-Trichloroethane										
1,1,2-Trichloroethane										
1,1-Dichloroethane										
1,1-Dichloroethene										
1,2-Dichloroethane			1.3	1.6						
1,2-Dichloroethene										
Acetone										
Carbon Disulfide										
Chloroethane										
Chloro form										
Ethyl benzene										
Trichlorofluoromethane										
Toluene										
Vinyl Chloride										
Xylene										

TABLE 3-3

POSITIVE DETECTIONS IN GROUNDWATER (ug/L)
SOUTHERN AREA
PHASE 2 REMEDIAL INVESTIGATION
NWIRP CALVERTON, NEW YORK
PAGE 5 OF 6

Well ID	SA-TW-110					SA-TW-111					
Sample Date	NOV 97'	NOV 97'	NOV 97'	NOV 97'	NOV 97'	JUL '00	JUL '00	JUL '00	JUL '00	JUL '00	JUL '00
Depth (ft bgs)	5	20	40	60	80	10	25	45	50	65	85
1,1,1-Trichloroethane											
1,1,2-Trichloroethane											
1,1-Dichloroethane						33	5	2	3		
1,1-Dichloroethene						8					
1,2-Dichloroethane											
1,2-Dichloroethene											
Acetone							12				
Carbon Disulfide						4					
Chloroethane											
Chloro form											
Ethyl benzene											
Trichlorofluoromethane											
Toluene											
Vinyl Chloride											
Xylene											

TABLE 3-3

POSITIVE DETECTIONS IN GROUNDWATER (ug/L)
SOUTHERN AREA
PHASE 2 REMEDIAL INVESTIGATION
NWIRP CALVERTON, NEW YORK
PAGE 6 OF 6

Well ID	SA-TW-112					SA-TW-113				
Sample Date	JUL '00	JUL '00	JUL '00	JUL '00	JUL '00	JUL '00	JUL '00	JUL '00	JUL '00	JUL '00
Depth (ft bgs)	22	35	55	75	95	20	35	60	75	95
1,1,1-Trichloroethane								24	6	18
1,1,2-Trichloroethane										
1,1-Dichloroethane			5					120	43	130
1,1-Dichloroethene			1					12	3	9
1,2-Dichloroethane										
1,2-Dichloroethene										
Acetone										
Carbon Disulfide										
Chloroethane								5	1	5
Chloro form	3	2	2							
Ethyl benzene										
Trichlorofluoromethane										
Toluene										
Vinyl Chloride			2							
Xylene										

Notes:
Blank = Not detected at the analytical method detection limit
* = Duplicate Sample
Shaded = Detection exceeds NYSDEC Drinking Water Protection Standards
bgs = below ground surface
Concentrations in µg/L
Other VOCs not detected

TABLE 3-4

POSITIVE DETECTIONS IN PERMANENT MONITORING WELLS (ug/L)
SITE 6A - FUEL CALIBRATION AREA
PHASE 2 REMEDIAL INVESTIGATON
NWIRP CALVERTON, NEW YORK

Location	FC-MW-02-S	FC-MW-03-S	FC-MW-07-S	FC-MW-08-S
	Source	Near Downgradient	Downgradient	Downgradient
Date	JUL '00	JUL '00	NOV '97	NOV '97
Depth (ft bgs)	12	12	15	15
1,1,1-Trichloroethane	2200			
1,1-Dichloroethane	3600			
1,1-Dichloroethene	37			21
Acetone	110			
Benzene	1			
Chloroethane	720			19
Ethylbenzene	27	81		
Toluene	180	1		
TCE	6			
Xylene	570	430		
Trichloroethene				

Notes:
Blank = Not detected at the analytical method detection limit
Shaded = Detection exceeds NYS Drinking Water Protection Standards
bgs = below ground surface
Concentrations in mg/L
Location column is the direction of the well in reference to the source area plume
Other VOCs not detected

TABLE 3-5

POSITIVE DETECTIONS (ug/L)
SOUTHERN AREA
NWIRP CALVERTON, NEW YORK
PAGE 1 OF 2

Well ID	SA-PZ-101-S,I,D				SA-PZ-102-S,I,D			SA-PZ-102		
Date	JUL '00	JUL '00	JUL '00	JUL '00	JUL '00	JUL '00	JUL '00	AUG '00	AUG '00	AUG '00
Depth (ft bgs)	S-18	I-47	D-80	D-80 (DUP)	S-10	I-37	D-80	100	125	140
1,1,1-Trichloroethane		19								
1,1-Dichloroethane		220								
1,1-Dichloroethene		21								
Chloroethane		7								

TABLE 3-5

POSITIVE DETECTIONS (ug/L)
SOUTHERN AREA
NWIRP CALVERTON, NEW YORK
PAGE 2 OF 2

Well ID	SA-PZ-103-S,I,D			SA-PZ-104-S,I,D		
Date	JUL '00	JUL '00	JUL '00	JUL '00	JUL '00	JUL '00
Depth (ft bgs)	S-29	I-40	D-80	S-9	I-35	D-80
1,1,1-Trichloroethane						
1,1-Dichloroethane						
1,1-Dichloroethene						
Chloroethane						

Notes:
Blank = Not detected at the analytical method detection limit
Shaded = Detection exceeds NYS Drinking Water Protection Standards
bgs = below ground surface
Concentrations in µg/L
Other VOCs not detected

TABLE 3-6

MONITORED NATURAL ATTENUATION GROUNDWATER ANALYTICAL RESULTS
SITES 6A AND 10B, AND SOUTHERN AREA
NAVAL WEAPONS INDUSTRIAL RESERVE PLANT
CALVERTON, NEW YORK
PAGE 1 OF 2

Volatile Organic Compounds (VOCs)

Well ID	FC-MW-01-S	FC-MW-02-S		FC-MW-03-S		SA-PZ-101-I	SA-PZ-104-S
Location	Upgradient	Source		Near Downgradient		Downgradient	Downgradient
Date	JUL '00	AUG '00	AUG '00 D	AUG '00	AUG '00 D	AUG '00	AUG '00
Depth	13	11.6	11.6	11.6	11.6	47	10.5
1,1,1-Trichloroethane		1900	2000		1.7	8.1	
1,1-Dichloroethane		3300	3400		2.6	170	
1,1-Dichloroethene		25	30			18	
Chloroethane						9.1	
Ethylbenzene		46	29				
Toluene		140	110				
Xylene		510	330				

TABLE 3-6

MONITORED NATURAL ATTENUATION GROUNDWATER ANALYTICAL RESULTS
SITES 6A AND 10B, AND SOUTHERN AREA
NAVAL WEAPONS INDUSTRIAL RESERVE PLANT
CALVERTON, NEW YORK
PAGE 2 OF 2

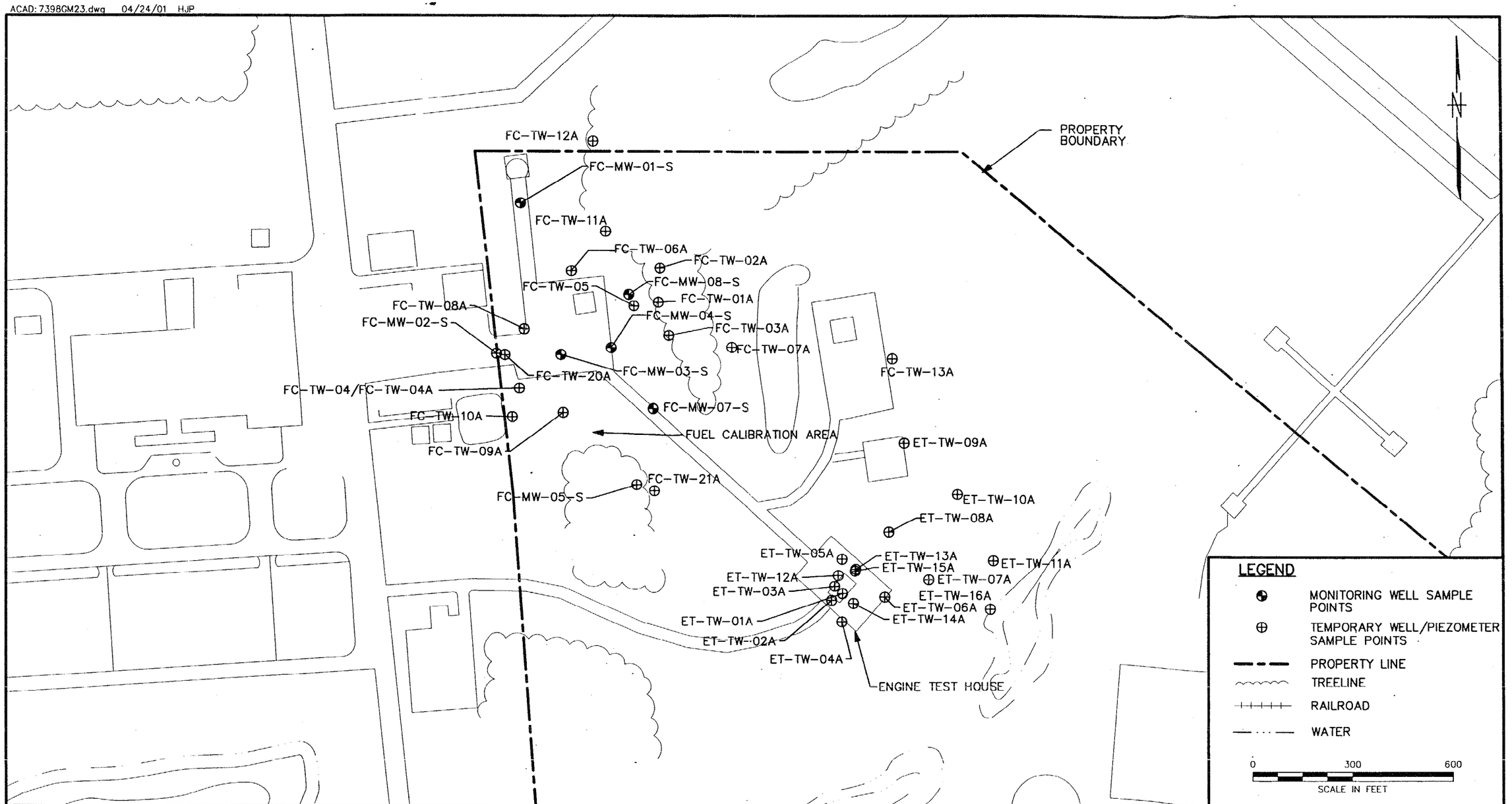
Natural Attenuation Parameters

Well ID	FC-MW-01-S	FC-MW-02-S	FC-MW-03-S	SA-PZ-101-I	SA-PZ-104-S
Location	Upgradient	Source	Near Downgradient	Downgradient	Downgradient
Date	JUL '00	AUG '00	AUG '00	AUG '00	AUG '00
Depth	13	11.6	11.6	47	10.5
Biochemical oxygen demand (5 day)	3.6	23		3.5	7.8
Chemical oxygen demand	15.2	84.1			28.3
Dissolved oxygen	0.94	0.39	3.51	2.34	4.37
Hydrogen Sulfide	0.1	0.5	0	0	0
Carbon dioxide	4.3			0.63	9.1
Methane	2.6	0.8	0.062	0.85	3.8
Ethane					
Ethene					
Chloride	2.2	2.3		6.3	6.8
Nitrate	0.14				
Nitrite					
Ortho phosphate					
Sulfate	4		2	14.2	3.2
Sulfide		3		1	2.2
Total organic carbon	7.8		1.3	1.3	11.3
Iron	7740	12100		753	19100
Manganese	202	50		814	622

Notes:
Blank = Not Detected
Shaded = Detection exceeds NYS Drinking Water Standards
VOC and Inorganic concentrations in µg/L, Natural Attenuation Parameter concentrations in mg/L
Location column is the direction of the monitoring well in reference to the source area plume
Other VOCs and Inorganics Not Detected

This page intentionally left blank.

ACAD: 7398GM23.dwg 04/24/01 HJP



NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

DRAWN BY HJP DATE 1/3/01
CHECKED BY DATE
COST/SCHED-AREA
SCALE AS NOTED

Tetra Tech NUS, Inc.

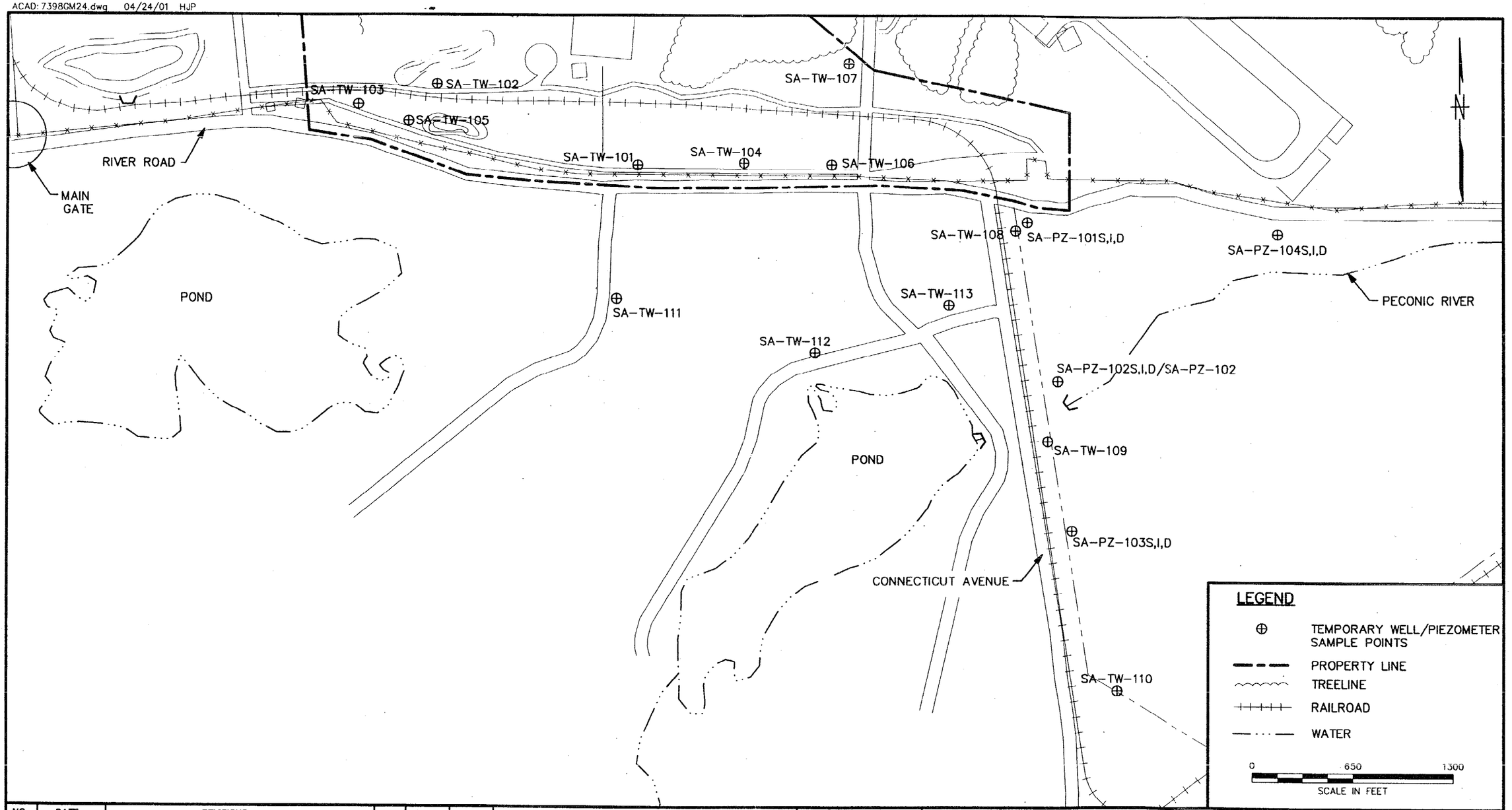
SAMPLE POINTS
SITES 6A, 10B AND SOUTHERN AREA
PHASE 2 REMEDIAL INVESTIGATION
NWIRP CALVERTON
CALVERTON, NEW YORK

CONTRACT NO. 7398
OWNER NO. 0270
APPROVED BY DATE
APPROVED BY DATE
DRAWING NO. FIGURE 3-1
REV. 0

FORM CADD NO. TtNUS_BH.DGN - REV 0 - 1/20/98

00600E842

ACAD: 7398GM24.dwg 04/24/01 HJP



NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

DRAWN BY HJP DATE 1/3/01
CHECKED BY DATE
COST/SCHED-AREA
SCALE AS NOTED

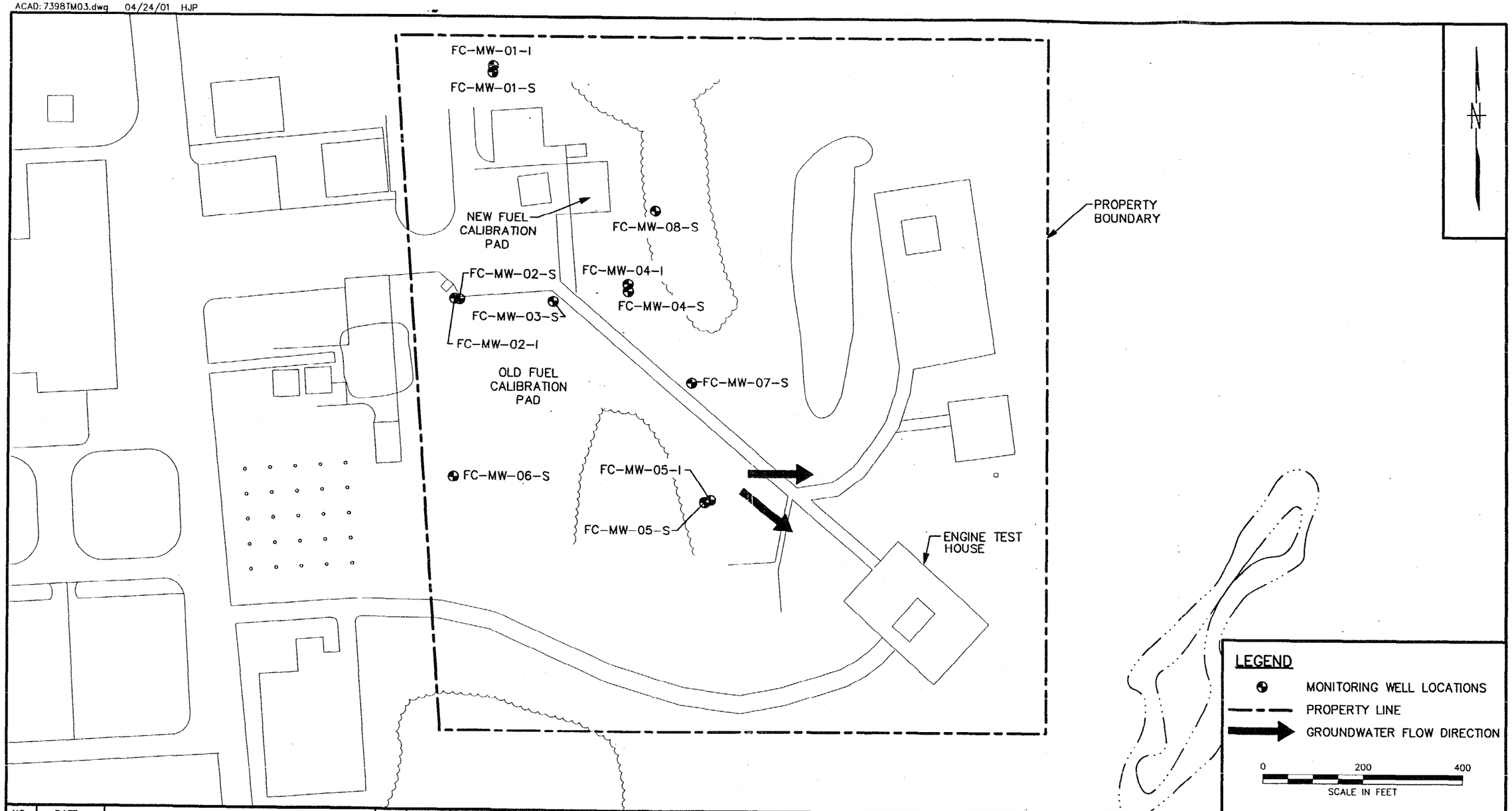
Tetra Tech NUS, Inc.

SAMPLE POINTS
SITES 6A, 10B AND SOUTHERN AREA
PHASE 2 REMEDIAL INVESTIGATION
NWIRP CALVERTON
CALVERTON, NEW YORK

CONTRACT NO. 7398
OWNER NO. 0270
APPROVED BY DATE
APPROVED BY DATE
DRAWING NO. FIGURE 3-2
REV. 0

FORM CADD NO. TtNUS_BH.DGN - REV 0 - 1/20/98

ACAD: 7398TM03.dwg 04/24/01 HJP



NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

DRAWN BY HJP DATE 3/30/01
CHECKED BY DATE
COST/SCHED-AREA
SCALE AS NOTED

Tetra Tech NUS, Inc.

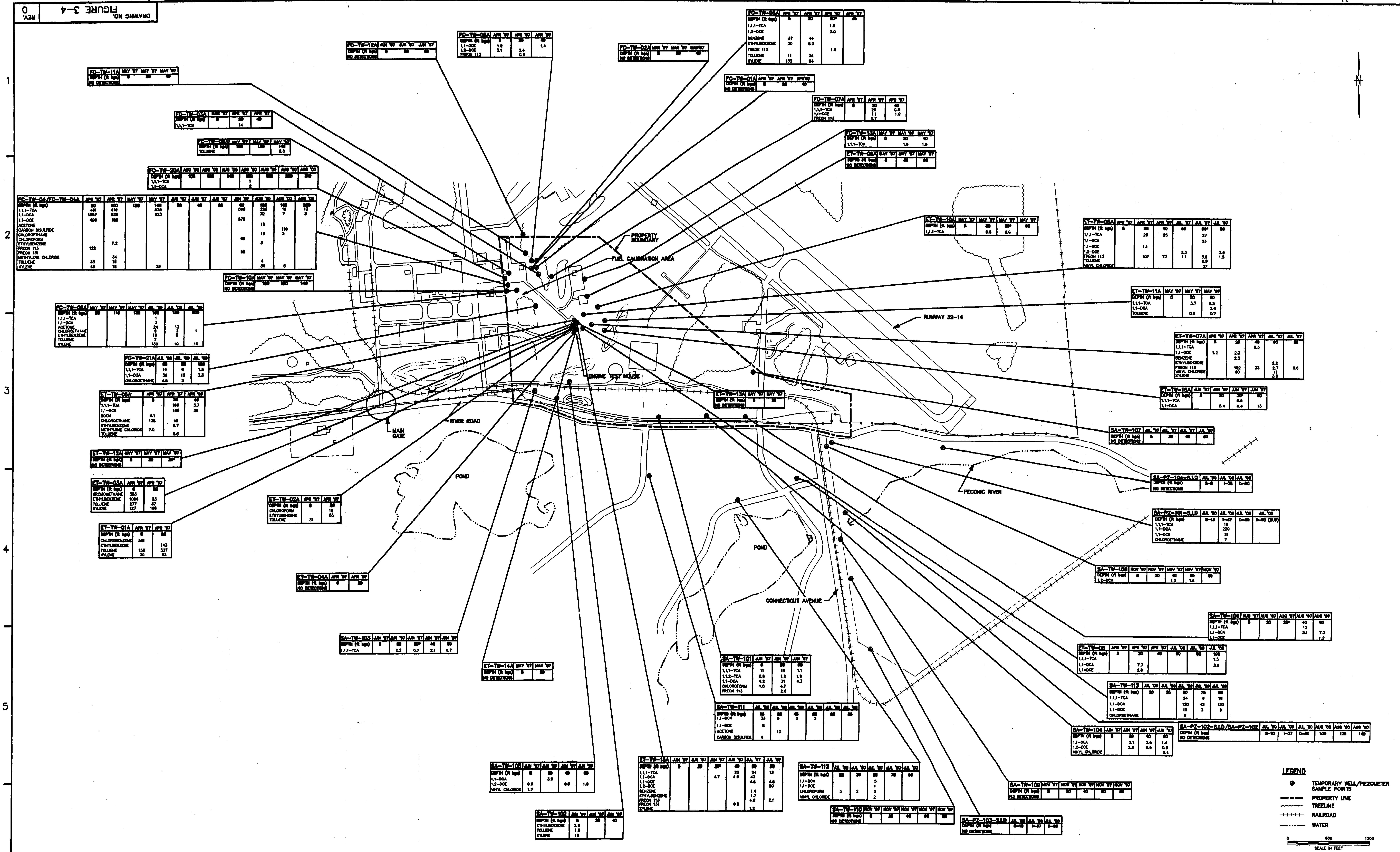
PERMANENT MONITORING WELL LOCATIONS
FUEL CALIBRATION AREA AND ENGINE TEST HOUSE
PHASE 2 REMEDIAL INVESTIGATION
NWIRP CALVERTON
CALVERTON, NEW YORK

CONTRACT NO. 7398
OWNER NO. 0270
APPROVED BY DATE
APPROVED BY DATE
DRAWING NO. FIGURE 3-3
REV. 0

FORM CADD NO. TtNUS_BH.DGN - REV 0 - 1/20/98

040108/P

CTO 0270



FC-TW-12A	JUN '97	JUN '97	JUN '97
DEPTH (ft bgs)	5	20	40
NO DETECTIONS			

FC-TW-09A	APR '97	APR '97	APR '97
DEPTH (ft bgs)	5	20	40
1,1-DCE	1.2		1.4
1,2-DCE	3.1	3.4	
FREON 113		0.8	

FC-TW-02A	MAR '97	MAR '97	MAR'97
DEPTH (ft bgs)	5	20	40
NO DETECTIONS			

FC-TW-05A	APR '97	APR '97	APR '97	APR '97
DEPTH (ft bgs)	5	20	20*	40
1,1,1-TCA			1.8	
1,2-DCE			3.0	
BENZENE	37	44		
ETHYLBENZENE	20	8.0		
FREON 113			1.6	
TOLUENE	11	34		
XYLENE	133	94		

FC-TW-11A	MAY '97	MAY '97	MAY '97
DEPTH (ft bgs)	5	20	40
NO DETECTIONS			

FC-TW-01A	APR '97	APR '97	APR'97
DEPTH (ft bgs)	5	20	40
NO DETECTIONS			

FC-TW-07A	APR '97	APR '97	APR '97
DEPTH (ft bgs)	5	20	40
1,1,1-TCA		20	0.6
1,1-DCE		1.1	1.0
FREON 113		0.7	

FC-TW-03A	MAR '97	APR '97	APR '97
DEPTH (ft bgs)	5	20	40
1,1,1-TCA		14	

FC-TW-13A	MAY '97	MAY '97	MAY '97
DEPTH (ft bgs)	5	20	40
1,1,1-TCA		1.9	1.9

ET-TW-09A	MAY '97	MAY '97	MAY '97
DEPTH (ft bgs)	5	30	60
NO DETECTIONS			

FC-TW-06A	MAY '97	MAY '97	MAY '97
DEPTH (ft bgs)	100	120	140
TOLUENE			2.3

FC-TW-20A	AUG '00	AUG '00	AUG '00	AUG '00	AUG '00	AUG '00	AUG '00
DEPTH (ft bgs)	105	120	140	160	180	200	210
1,1,1-TCA				1			
1,1-DCA				2			

FC-TW-04/FC-TW-04A	APR '97	APR '97	MAY '97	MAY '97	JUN '97	JUN '97	JUN '97	JUN '97	AUG '00	AUG '00	AUG '00
DEPTH (ft bgs)	80	100	120	140	20	40	60	80	165	180	200
1,1,1-TCA	461	416		679				590	220	19	13
1,1-DCA	1057	826		523					72	7	3
1,1-DCE	406	186						570			
ACETONE									12		
CARBON DISULFIDE										110	
CHLOROETHANE									16	2	
CHLOROFORM								68			
ETHYLBENZENE		7.2							3		
FREON 113	122										
FREON 131								86			
METHYLENE CHLORIDE		34									
TOLUENE	33	18							4		
XYLENE	48	18		29					36	5	

FC-TW-10A	MAY '97	MAY '97	MAY '97
DEPTH (ft bgs)	100	120	140
NO DETECTIONS			

FC-TW-08A	MAY '97	MAY '97	MAY '97	JUL '00	JUL '00	JUL '00
DEPTH (ft bgs)	85	110	120	160	180	200
1,1,1-TCA				1		
1,1-DCA				3		
ACETONE				24	13	
CHLOROETHANE				9	2	1
ETHYLBENZENE				18	2	
TOLUENE				7		
XYLENE				130	10	10

FC-TW-21A	JUL '00	JUL '00	JUL '00
DEPTH (ft bgs)	60	80	100
1,1,1-TCA	14	6	1.8
1,1-DCA	30	12	3.3
CHLOROETHANE	4.5	2	

ET-TW-06A	APR '97	APR '97	APR '97
DEPTH (ft bgs)	5	20	40
1,1,1-TCA		166	3.7
1,1-DCE		186	30
BDCM	4.1		
CHLOROETHANE	136	46	
ETHYLBENZENE		8.7	
METHYLENE CHLORIDE	7.0		
TOLUENE		8.6	

ET-TW-12A	MAY '97	MAY '97	MAY '97
DEPTH (ft bgs)	5	20	20*
NO DETECTIONS			

ET-TW-03A	APR '97	APR '97
DEPTH (ft bgs)	5	20
BROMOMETHANE	353	
ETHYLBENZENE	1084	23
TOLUENE	277	37
XYLENE	127	196

ET-TW-01A	APR '97	APR '97
DEPTH (ft bgs)	5	20
CHLOROBENZENE	381	
ETHYLBENZENE		143
TOLUENE	156	337
XYLENE	30	53

ET-TW-02A	APR '97	APR '97
DEPTH (ft bgs)	5	20
CHLOROFORM		15
ETHYLBENZENE		65
TOLUENE	31	

ET-TW-04A	APR '97	APR '97
DEPTH (ft bgs)	5	20
NO DETECTIONS		

SA-TW-103	JUN '97	JUN '97	JUN '97	JUN '97	JUN '97
DEPTH (ft bgs)	5	20	20*	40	60
1,1,1-TCA		2.2	0.7	2.1	0.7

ET-TW-14A	MAY '97	MAY '97
DEPTH (ft bgs)	5	20
NO DETECTIONS		

SA-TW-105	JUN '97	JUN '97	JUN '97	JUN '97
DEPTH (ft bgs)	5	20	40	60
1,1-DCA		3.9		
1,2-DCE	0.8		0.6	1.0
VINYL CHLORIDE	1.7			

SA-TW-102	JUN '97	JUN '97	JUN '97
DEPTH (ft bgs)	5	20	40
ETHYLBENZENE	2.9		
TOLUENE	1.0		
XYLENE	18		

ET-TW-15A	JUN '97	JUN '97	JUN '97	JUN '97	JUL '97	JUL '97
DEPTH (ft bgs)	5	20	20*	40	60	80
1,1,1-TCA				22	24	12
1,1-DCA			4.7	4.8	43	
1,1-DCE					4.8	4.8
1,2-DCE						30
BENZENE					1.4	
ETHYLBENZENE					1.7	
FREON 113					4.0	2.1
FREON 131				0.6		
XYLENE					1.2	

SA-TW-101	JUN '97	JUN '97	JUN '97
DEPTH (ft bgs)	5	20	60
1,1,1-TCA	11	15	1.1
1,1,2-TCA	0.8	1.2	1.9
1,1-DCA	4.2	31	4.3
CHLOROFORM	1.0	4.7	
FREON 113		2.6	

SA-TW-111	JUL '00	JUL '00	JUL '00	JUL '00	JUL '00	JUL '00
DEPTH (ft bgs)	10	20	40	60	80	85
1,1-DCA	33	5	2	3		
1,1-DCE	8					
ACETONE		12				
CARBON DISULFIDE	4					

SA-TW-112	JUL '00	JUL '00	JUL '00	JUL '00	JUL '00
DEPTH (ft bgs)	22	35	55	75	95
1,1-DCA			5		
1,1-DCE			1		
CHLOROFORM	3	2	2		
VINYL CHLORIDE			2		

SA-TW-110	NOV '97	NOV '97	NOV '97	NOV '97	NOV '97
DEPTH (ft bgs)	5	20	40	60	80
NO DETECTIONS					

SA-PZ-103-S,I,D	JUL '00	JUL '00	JUL '00
DEPTH (ft bgs)	S-10	I-37	D-80
NO DETECTIONS			

SA-TW-109	NOV '97	NOV '97	NOV '97	NOV '97	NOV '97
DEPTH (ft bgs)	5	20	40	60	80
NO DETECTIONS					

SA-TW-104	JUN '97	JUN '97	JUN '97	JUN '97
DEPTH (ft bgs)	5	20	40	60
1,1-DCA		2.1	2.9	1.4
1,2-DCE		2.5	0.9	0.9
VINYL CHLORIDE				0.4

SA-PZ-102-S,I,D/SA-PZ-102	JUL '00	JUL '00	JUL '00	AUG '00	AUG '00	AUG '00
DEPTH (ft bgs)	S-10	I-37	D-80	100	125	140
NO DETECTIONS						

SA-TW-113	JUL '00	JUL '00	JUL '00	JUL '00	JUL '00
DEPTH (ft bgs)	20	35	50	75	95
1,1,1-TCA			24	6	18
1,1-DCA			120	43	130
1,1-DCE			12	3	9
CHLOROETHANE			5		

ET-TW-08	APR '97	APR '97	APR '97	JUL '00	JUL '00	JUL '00
DEPTH (ft bgs)	5	20	40	60	80	100
1,1,1-TCA						1.5
1,1-DCA		7.7				3.6
1,1-DCE		2.6				

SA-TW-106	AUG '97	AUG '97	AUG '97	AUG '97	AUG '97
DEPTH (ft bgs)	5	20	20*	40	60
1,1,1-TCA				12	
1,1-DCA				3.1	7.3
1,1-DCE					1.2

SA-TW-108	NOV '97	NOV '97	NOV '97	NOV '97	NOV '97
DEPTH (ft bgs)	5	20	40	60	80
1,2-DCA			1.3	1.6	

SA-PZ-101-S,I,D	JUL '00	JUL '00	JUL '00	JUL '00
DEPTH (ft bgs)	S-18	I-47	D-80	D-80 (DUP)
1,1,1-TCA		19		
1,1-DCA		220		
1,1-DCE		21		
CHLOROETHANE		7		

SA-PZ-104-S,I,D	JUL '00	JUL '00	JUL '00
DEPTH (ft bgs)	S-8	I-35	D-80
NO DETECTIONS			

SA-TW-107	JUL '97	JUL '97	JUL '97	JUL '97
DEPTH (ft bgs)	5	20	40	60
NO DETECTIONS				

ET-TW-16A	JUN '97	JUN '97	JUN '97	JUN '97
DEPTH (ft bgs)	5	30	30*	60
1,1,1-TCA			0.9	
1,1-DCA		5.4	6.4	13

ET-TW-07A	APR '97	APR '97	APR '97	JUL '97	JUL '97
DEPTH (ft bgs)	5	20	40	60	80
1,1,1-TCA			8.3		
1,1-DCE	1.2	2.3			
BENZENE		2.0			
ETHYLBENZENE				2.2	
FREON 113		152	33	2.7	0.6
VINYL CHLORIDE		60		11	
XYLENE				3.0	

ET-TW-11A	MAY '97	MAY '97	MAY '97
DEPTH (ft bgs)	5	30	60
1,1,1-TCA		5.7	0.5
1,1-DCA			2.4
TOLUENE		0.6	0.7

ET-TW-08A	APR '97	APR '97	APR '97	JUL '97	JUL '97	JUL '97
DEPTH (ft bgs)	5	20	40	60	60*	80
1,1,1-TCA		26	25		27	
1,1-DCA					53	
1,1-DCE		1.1				
1,2-DCE				3.5		3.6
FREON 113		107	72	1.1	3.6	1.5
TOLUENE					0.9	
VINYL CHLORIDE					27	

ET-TW-10A	MAY '97	MAY '97	MAY '97	MAY '97
DEPTH (ft bgs)	5	30	30*	60
1,1,1-TCA		0.6	6.6	

ET-TW-13A	MAY '97	MAY '97
DEPTH (ft bgs)	5	20
NO DETECTIONS		

LEGEND
- ⊕ TEMPORARY WELL/PIEZOMETER SAMPLE POINTS
- PROPERTY LINE
- TREELINE
- RAILROAD
- WATER

0 600 1200 SCALE IN FEET

NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES	NO.	RELEASED FOR	BY	DATE

DRAWN BY HJP DATE 4/3/01
CHECKED BY DATE
COST/SCHED-AREA
SCALE AS NOTED

Tetra Tech NUS, Inc.

TEMPORARY WELL AND PIEZOMETER SAMPLE RESULTS
SITES 6A, 10B AND SOUTHERN AREA
PHASE 2 REMEDIAL INVESTIGATION
NWIRP CALVERTON
CALVERTON, NEW YORK

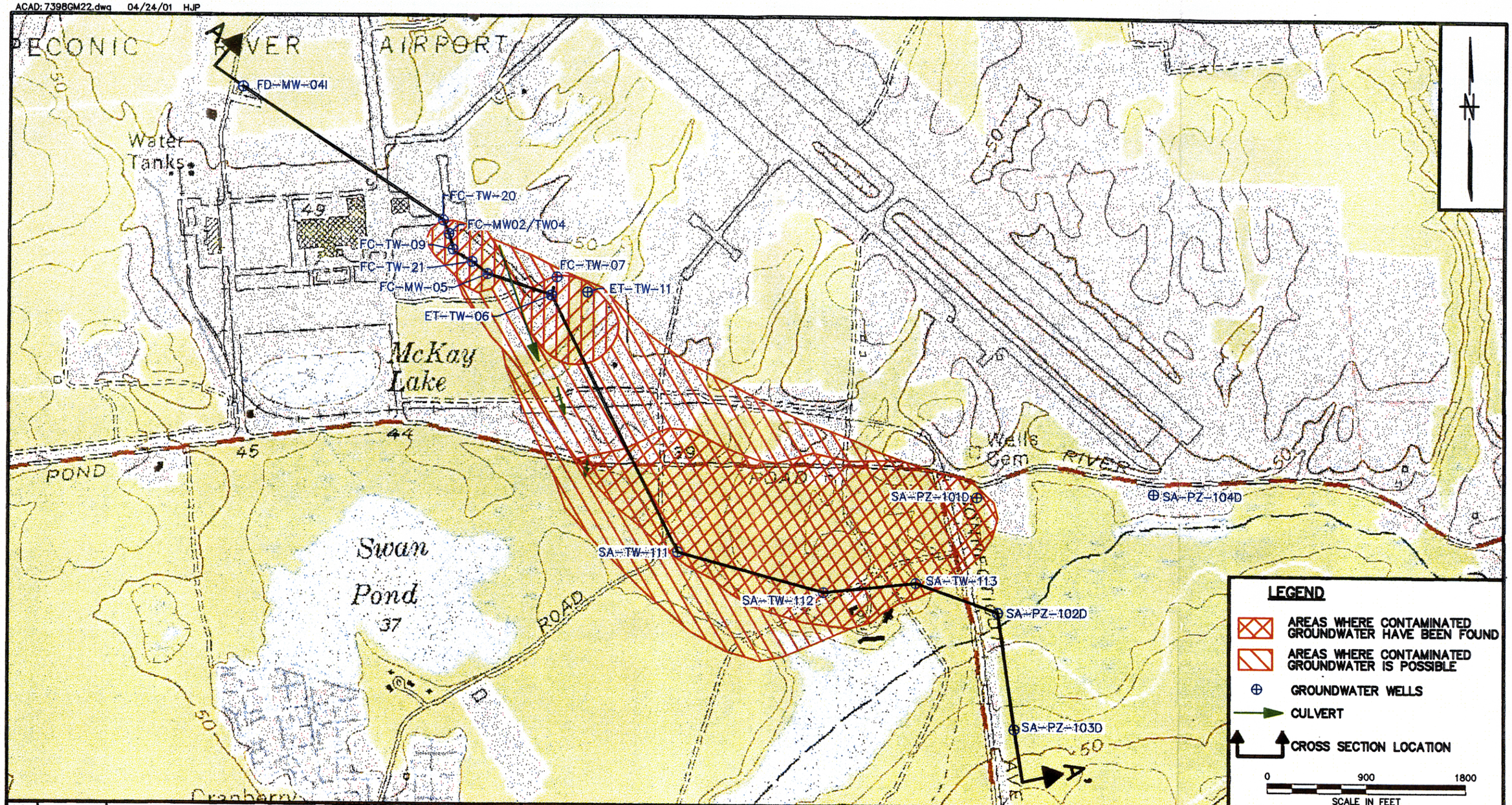
CONTRACT NO. 7398 | OWNER NO. 0270
APPROVED BY DATE
APPROVED BY DATE
DRAWING NO. FIGURE 3-4 | REV. 0

DRAWING NO. FIGURE 3-4 REV. 0

ACAD: 7398TM08.dwg 04/24/01 HJP

00600E05X

ACAD: 7398GM22.dwg 04/24/01 HJP



NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

DRAWN BY HJP DATE 3/30/01
CHECKED BY DATE
COST/SCHED-AREA
SCALE AS NOTED

Tetra Tech NUS, inc.

GENERALIZED CROSS SECTION PLAN
SITES 6A AND 10B, AND SOUTHERN AREA
PHASE 2 REMEDIAL INVESTIGATION
NWIRP CALVERTON
CARVERTON, NEW YORK

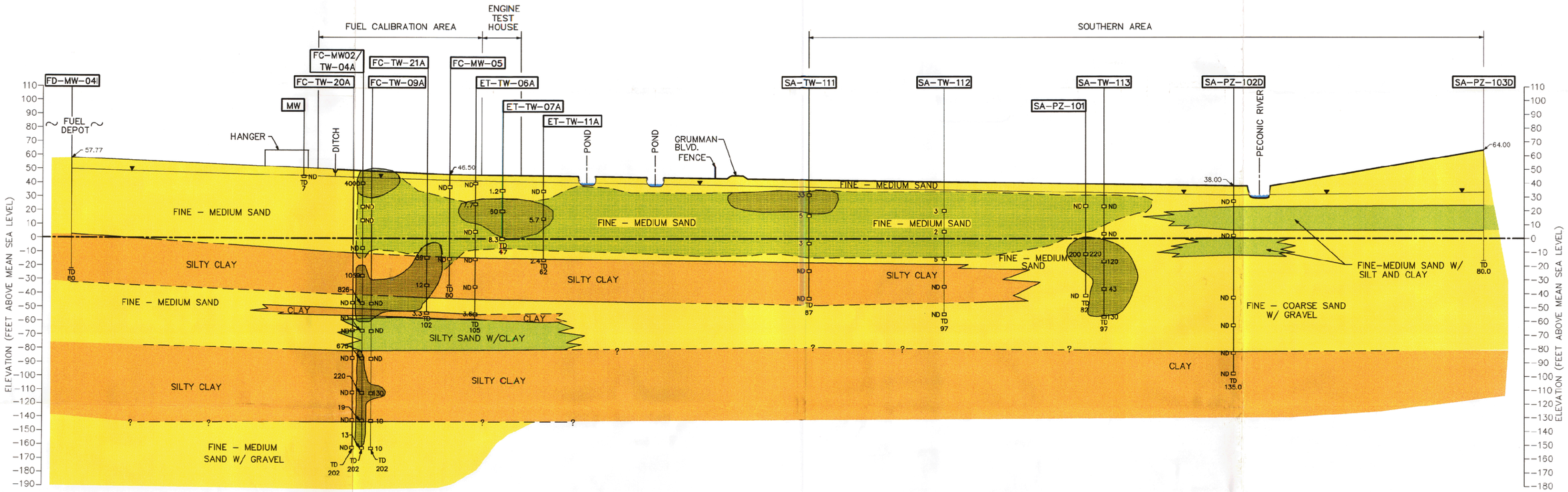
CONTRACT NO. 7398
OWNER NO. 0270
APPROVED BY DATE
APPROVED BY DATE
DRAWING NO. FIGURE 3-5
REV. 0

FORM CADD NO. TtNUS_BH.DGN - REV 0 - 1/20/98

040108/P

CTO 0270

00600EB6Y



LEGEND:

MONITORING WELL OR BORING NUMBER	FC-TW-09
GROUND SURFACE ELEVATION	38.00
GROUND SURFACE GROUNDWATER ELEVATION	
CONCENTRATION (ug/l)	3.3
LITHOLOGIC CONTACT (DASHED WHERE INFERRED)	
TOTAL DEPTH OF WELL OR BORING (FT BGS)	TD 202
NOT DETECTED	ND
CLAY	
SAND	
SAND AND CLAY	
VOC CONTAMINATED GROUNDWATER (> MCLs)	
AREA WHERE GROUNDWATER CONTAMINATION IS LIKELY	

NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES	NO.	RELEASED FOR	BY	DATE

DRAWN BY HJP DATE 12/01/00
CHECKED BY DATE
COST/SCHED-AREA
SCALE AS NOTED

Tetra Tech NUS, Inc.

GENERALIZED CROSS SECTION
SITES 6A AND 10B, AND SOUTHERN AREA
PHASE 2 REMEDIAL INVESTIGATION
NWIRP CALVERTON
CALVERTON, NEW YORK

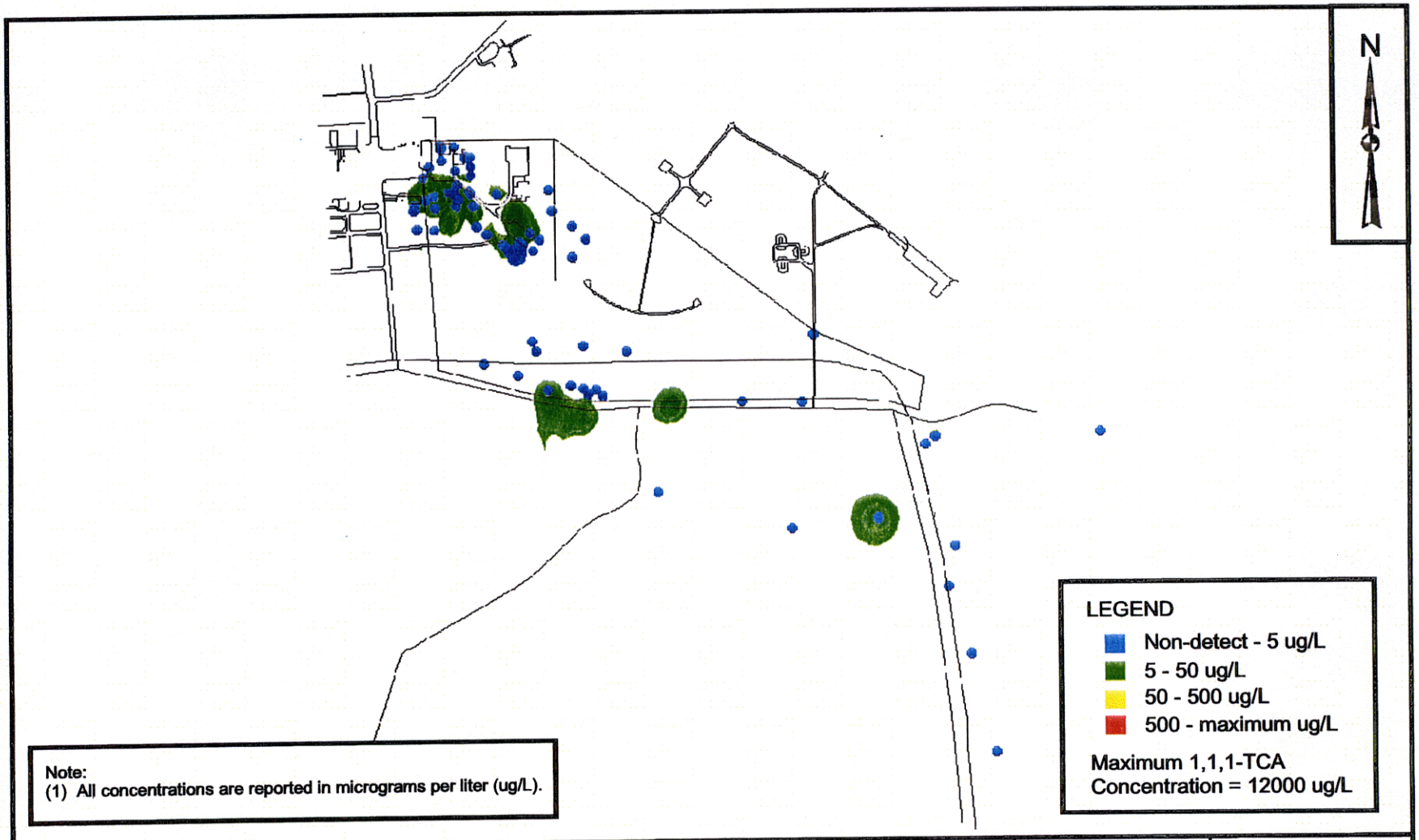
CONTRACT NO. 3853
OWNER NO. ----
APPROVED BY DATE
APPROVED BY DATE
DRAWING NO. FIGURE 3-6
REV. 0

DRAWING NO. FIGURE 3-6 REV. 0

FORM CADD NO. NEWBRC_E.DWG - REV 6 - 05/13/97

ACAD: 3853CX02.dwg 04/24/01 HJP

0060004004

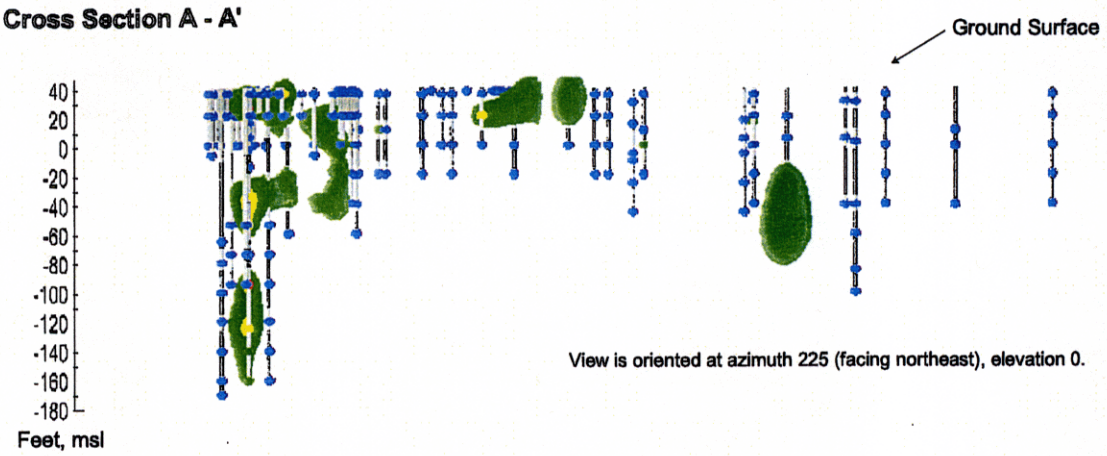


Note:
(1) All concentrations are reported in micrograms per liter (ug/L).

DRAWN BY J. LAMEY	DATE 4/24/01	Tetra Tech NUS, Inc.	CONTRACT NUMBER N7398 / OWNER NUMBER 0270
CHECKED BY	DATE	1,1,1-TCA EXCEEDING 5 UG/L SITES 6A AND 10B, AND SOUTHERN AREA PHASE 2 REMEDIAL INVESTIGATION NWIRP CALVERTON, NEW YORK	APPROVED BY / DATE
COST/SCHEDULE-AREA			APPROVED BY / DATE
SCALE AS NOTED			DRAWING NO. FIGURE 3-7 / REV 0

P:\GIS\NWIRP_CALVERTON\PH2_REMEDIAL_INVESTIGATION.APR SITES 6A & 10B-1,1,1-TCA PLUME PLAN 4/24/01 JAL

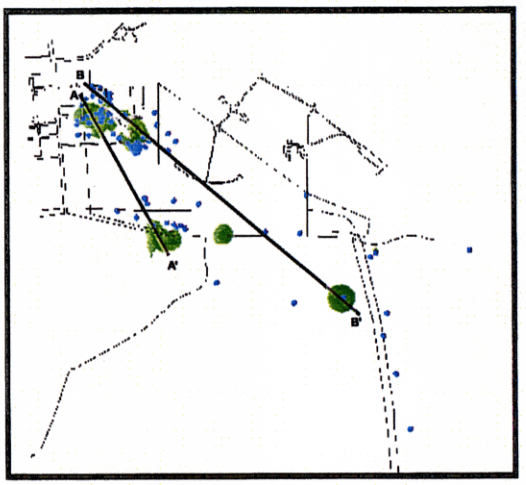
Cross Section A - A'



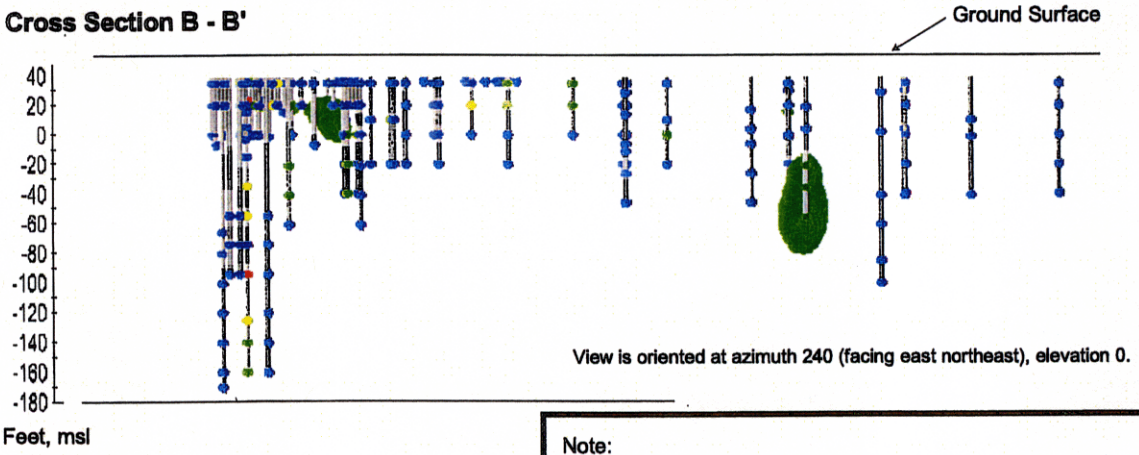
LEGEND

- Non-detect - 5 ug/L
- 5 - 50 ug/L
- 50 - 500 ug/L
- 500 - maximum ug/L

Maximum 1,1,1-TCA Concentration = 12000 ug/L



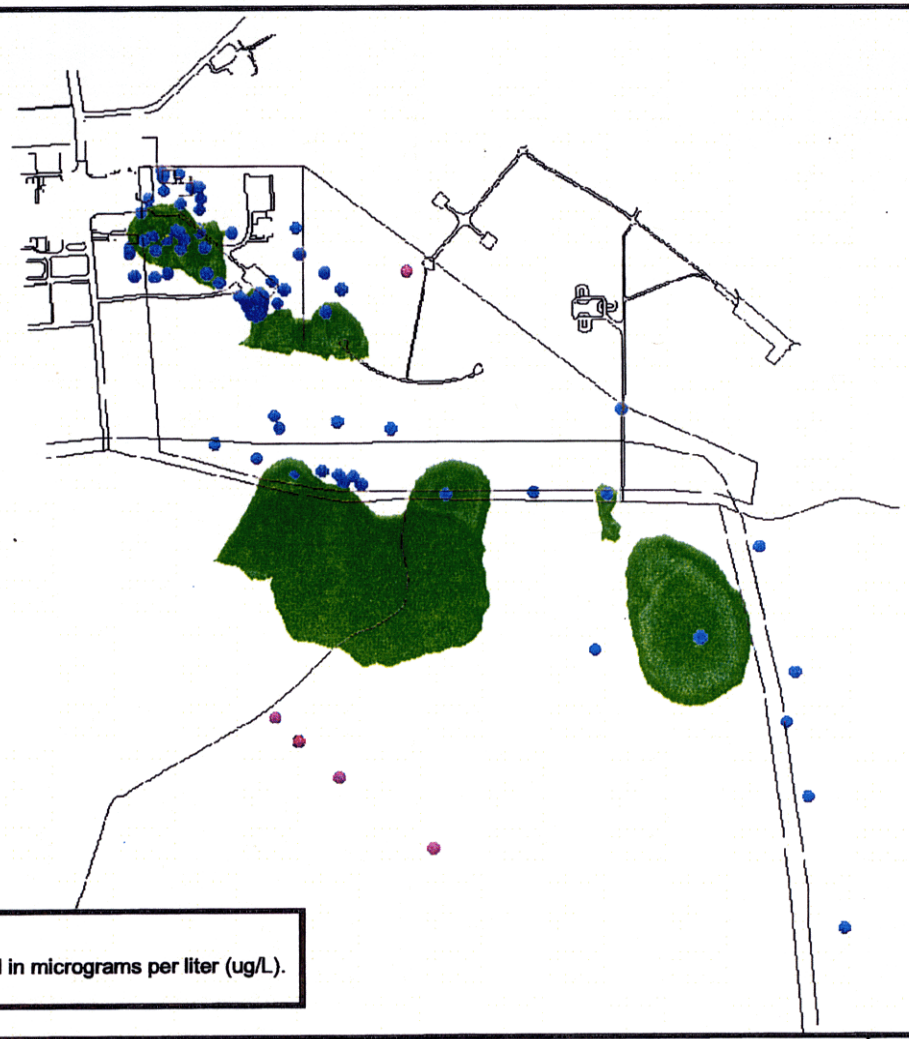
Cross Section B - B'



Note:
(1) All concentrations are reported in micrograms per liter (ug/L).

DRAWN BY J. LAMEY — DATE 4/24/01	Tetra Tech NUS, Inc.	CONTRACT NUMBER N7398	OWNER NO. 0270
CHECKED BY — DATE —	1,1,1-TCA EXCEEDING 5 UG/L SITES 6A AND 10B, AND SOUTHERN AREA PHASE 2 REMEDIAL INVESTIGATION NWIRP CALVERTON, NEW YORK	APPROVED BY — DATE —	
COST/SCHEDULE-AREA		APPROVED BY — DATE —	
SCALE AS NOTED		DRAWING NO. FIGURE 3-8	REV 0

P:\GIS\NWIRP_CALVERTON\PH2_REMEDIAL_INVESTIGATION.APR SITES 6A & 10B-1,1,1-TCA CROSS SECTIONS 4/24/01 JAL

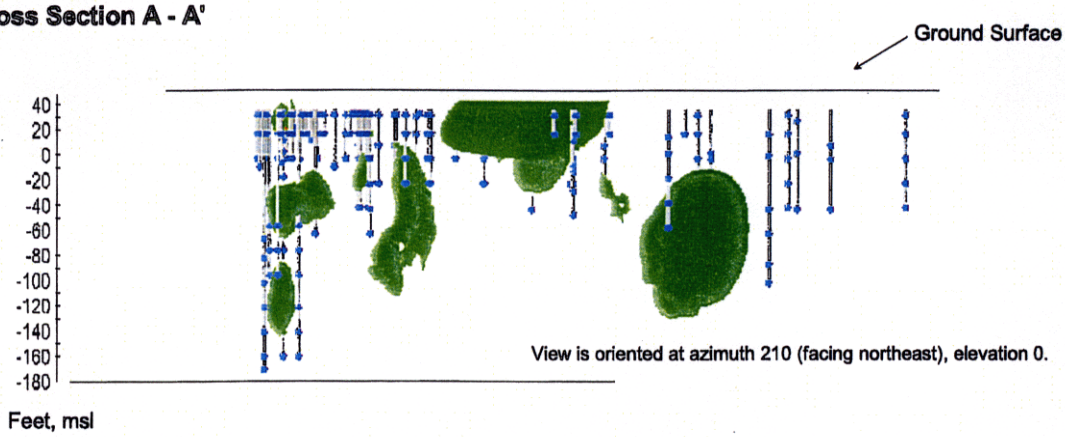


Note:
(1) All concentrations are reported in micrograms per liter (ug/L).

DRAWN BY J. LAMEY	DATE 4/24/01	Tetra Tech NUS, Inc.	CONTRACT NUMBER N7398 / OWNER NUMBER 0270
CHECKED BY	DATE	1,1-DCA EXCEEDING 5 UG/L SITES 6A AND 10B, AND SOUTHERN AREA PHASE 2 REMEDIAL INVESTIGATION NWIRP CALVERTON, NEW YORK	APPROVED BY / DATE
COST/SCHEDULE-AREA			APPROVED BY / DATE
SCALE AS NOTED			DRAWING NO. FIGURE 3-9 / REV 0

P:\GIS\NWIRP_CALVERTON\PH2_REMEDIAL_INVESTIGATION.APR SITES 6A & 10B-1,1-DCA PLUME PLAN 4/24/01 JAL

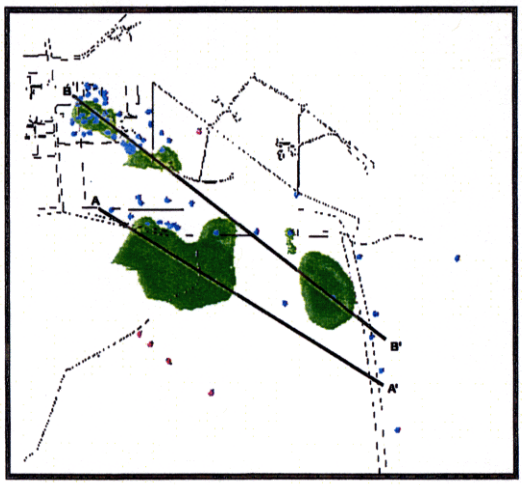
Cross Section A - A'



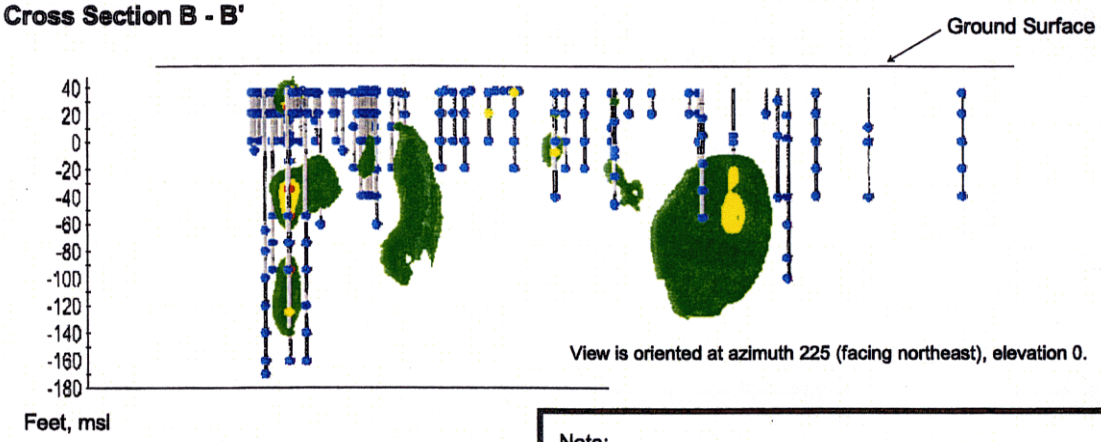
LEGEND

- Non-detect - 5 ug/L
- 5 - 50 ug/L
- 50 - 500 ug/L
- 500 - maximum ug/L
- Assumed Non-Detect Location

Maximum 1,1-DCA Concentration = 4800 ug/L



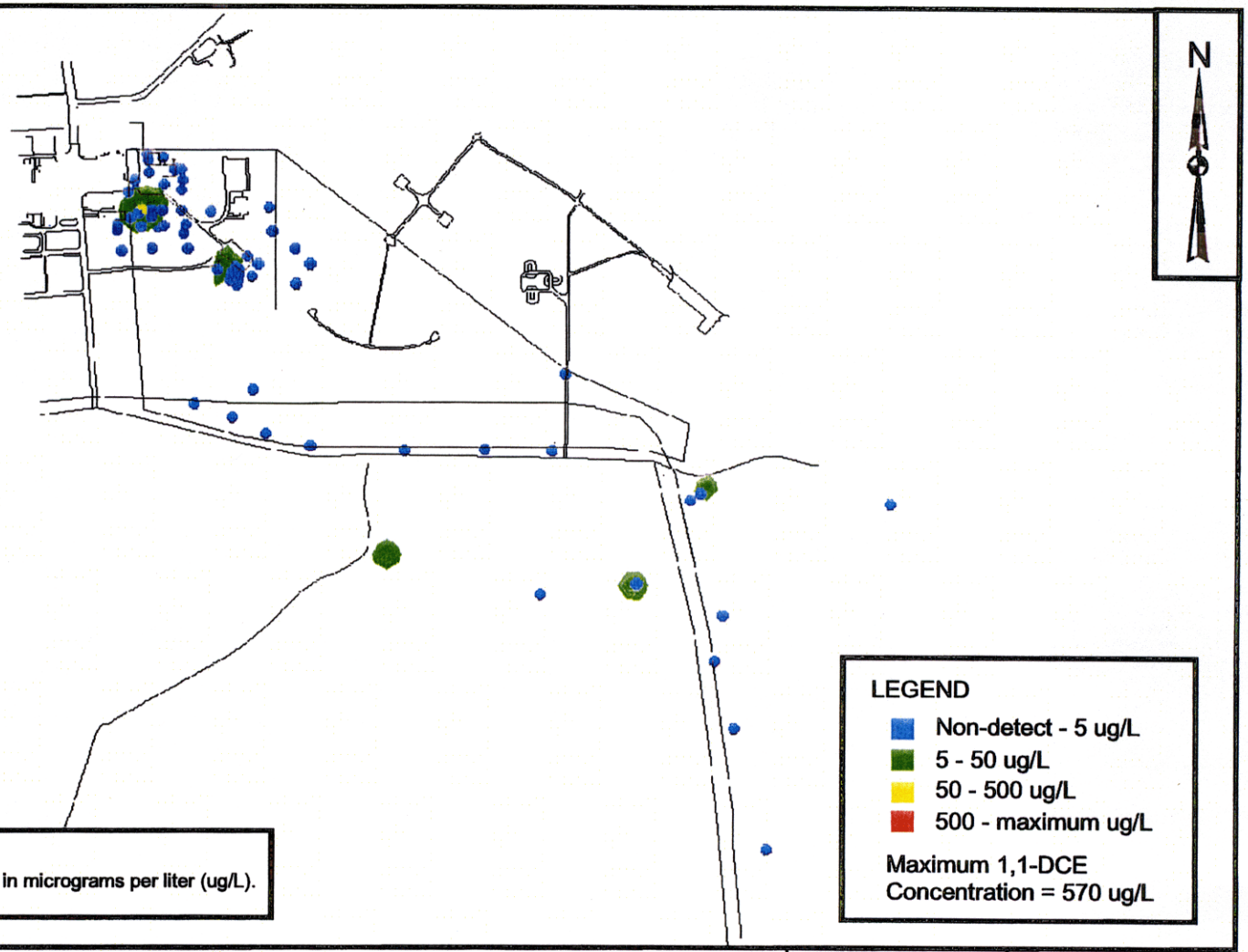
Cross Section B - B'



Note:
(1) All concentrations are reported in micrograms per liter (ug/L).

DRAWN BY J. LAMEY — DATE 1/4/01	Tetra Tech NUS, Inc.	CONTRACT NUMBER N7398	OWNER NO. 0270
CHECKED BY — DATE —	1,1-DCA EXCEEDING 5 UG/L SITES 6A AND 10B, AND SOUTHERN AREA PHASE 2 REMEDIAL INVESTIGATION NWIRP CALVERTON, NEW YORK	APPROVED BY — DATE —	
COST/SCHEDULE-AREA		APPROVED BY — DATE —	
SCALE AS NOTED		DRAWING NO. FIGURE 3-10	REV 0

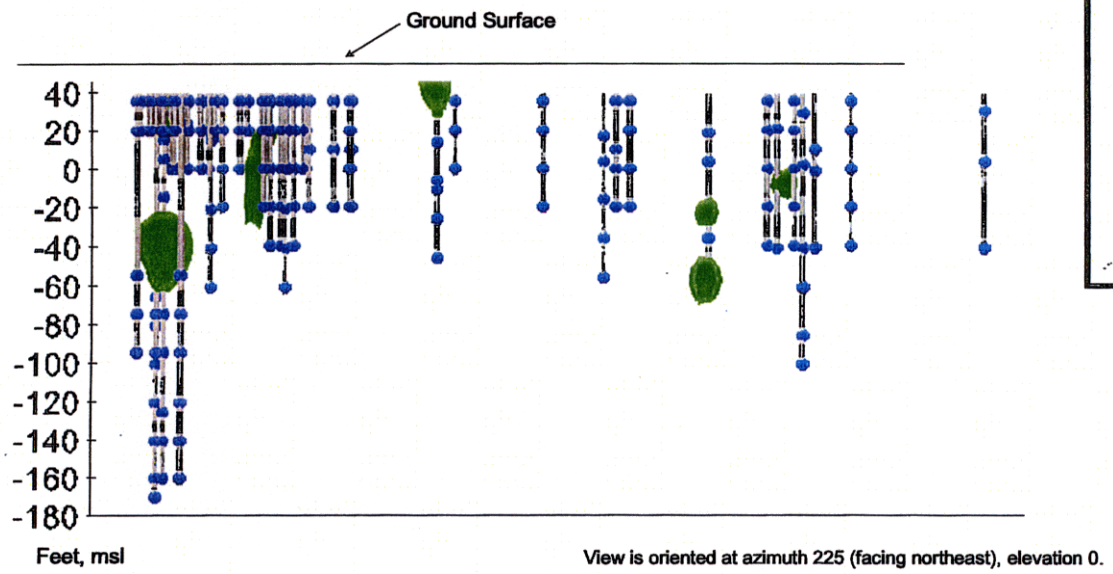
P:\GIS\NWIRP_CALVERTON\PH2_REMEDIAL_INVESTIGATION.APR SITES 6A & 10B-1,1-DCA CROSS SECTIONS 4/24/01 JAL



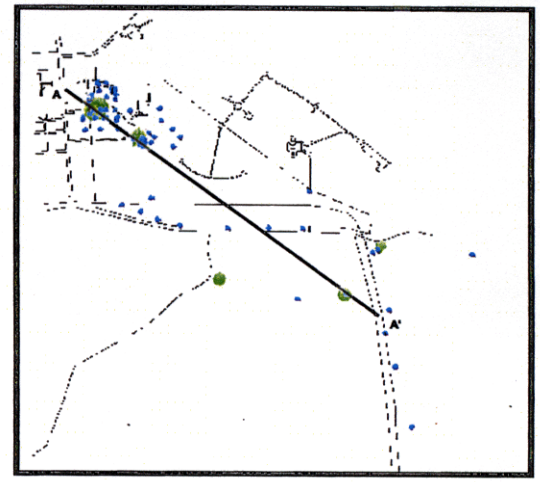
Note:
(1) All concentrations are reported in micrograms per liter (ug/L).

DRAWN BY J. LAMEY	DATE 4/24/01	Tetra Tech NUS, Inc.	CONTRACT NUMBER N7398 / OWNER NUMBER 0270
CHECKED BY ___	DATE ___	1,1-DCE EXCEEDING 5 UG/L SITES 6A AND 10B, AND SOUTHERN AREA PHASE 2 REMEDIAL INVESTIGATION NWIRP CALVERTON, NEW YORK	APPROVED BY ___ / DATE ___
COST/SCHEDULE-AREA			APPROVED BY ___ / DATE ___
SCALE AS NOTED			DRAWING NO. FIGURE 3-11 / REV 0

P:\GIS\NWIRP_CALVERTON\PH2_REMEDIAL_INVESTIGATION.APR SITES 6A & 10B-1,1-DCE PLUME PLAN 4/24/01 JAL



View is oriented at azimuth 225 (facing northeast), elevation 0.



LEGEND

- Non-detect - 5 ug/L
- 5 - 50 ug/L
- 50 - 500 ug/L
- 500 - maximum ug/L

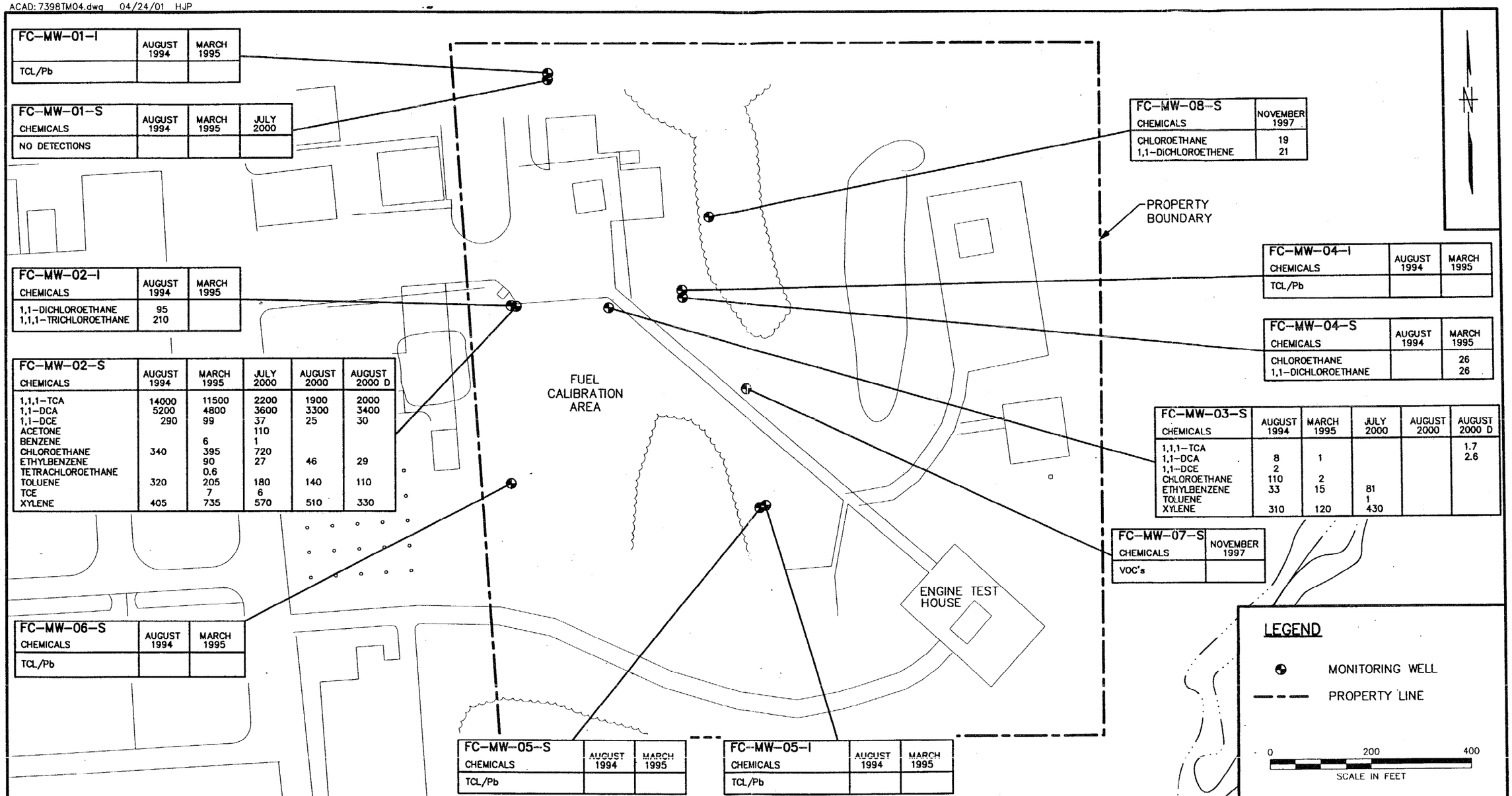
Maximum 1,1-DCE Concentration = 570 ug/L

Note:
(1) All concentrations are reported in micrograms per liter (ug/L).

DRAWN BY J. LAMEY	DATE 4/24/01	Tetra Tech NUS, Inc.	CONTRACT NUMBER N7398 / OWNER NUMBER 0270
CHECKED BY	DATE	1,1-DCE EXCEEDING 5 UG/L SITES 6A AND 10B, AND SOUTHERN AREA PHASE 2 REMEDIAL INVESTIGATION NWIRP CALVERTON, NEW YORK	APPROVED BY / DATE
COST/SCHEDULE-AREA			APPROVED BY / DATE
SCALE AS NOTED			DRAWING NO. FIGURE 3-12 / REV 0

P:\GIS\NWIRP_CALVERTON\PH2_REMEDIAL_INVESTIGATION.APR SITES 6A & 10B-1,1-DCE PLUME PLAN 4/24/01 JAL

ACAD: 7398TM04.dwg 04/24/01 HJP



FC-MW-01-I	AUGUST 1994	MARCH 1995
TCL/Pb		

FC-MW-01-S CHEMICALS	AUGUST 1994	MARCH 1995	JULY 2000
NO DETECTIONS			

FC-MW-02-I CHEMICALS	AUGUST 1994	MARCH 1995
1,1-DICHLOROETHANE	95	
1,1,1-TRICHLOROETHANE	210	

FC-MW-02-S CHEMICALS	AUGUST 1994	MARCH 1995	JULY 2000	AUGUST 2000	AUGUST 2000 D
1,1,1-TCA	14000	11500	2200	1900	2000
1,1-DCA	5200	4800	3600	3300	3400
1,1-DCE	290	99	37	25	30
ACETONE			110		
BENZENE		6	1		
CHLOROETHANE	340	395	720		
ETHYLBENZENE		90	27	46	29
TETRACHLOROETHANE		0.6			
TOLUENE	320	205	180	140	110
TCE		7	6		
XYLENE	405	735	570	510	330

FC-MW-06-S CHEMICALS	AUGUST 1994	MARCH 1995
TCL/Pb		

FC-MW-05-S CHEMICALS	AUGUST 1994	MARCH 1995
TCL/Pb		

FC-MW-05-I CHEMICALS	AUGUST 1994	MARCH 1995
TCL/Pb		

FC-MW-08-S CHEMICALS	NOVEMBER 1997
CHLOROETHANE	19
1,1-DICHLOROETHENE	21

FC-MW-04-I CHEMICALS	AUGUST 1994	MARCH 1995
TCL/Pb		

FC-MW-04-S CHEMICALS	AUGUST 1994	MARCH 1995
CHLOROETHANE		26
1,1-DICHLOROETHANE		26

FC-MW-03-S CHEMICALS	AUGUST 1994	MARCH 1995	JULY 2000	AUGUST 2000	AUGUST 2000 D
1,1,1-TCA					1.7
1,1-DCA	8	1			2.6
1,1-DCE	2				
CHLOROETHANE	110	2			
ETHYLBENZENE	33	15	81		
TOLUENE			1		
XYLENE	310	120	430		

FC-MW-07-S CHEMICALS	NOVEMBER 1997
VOC's	

NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

DRAWN BY HJP DATE 3/30/01
CHECKED BY DATE
COST/SCHED-AREA
SCALE AS NOTED

Tetra Tech NUS, Inc.

PERMANENT MONITORING WELL LOCATIONS
SITE A AND 10B
PHASE 2 REMEDIAL INVESTIGATION
NWIRP CALVERTON
CALVERTON, NEW YORK

CONTRACT NO. 7398
OWNER NO. 0270
APPROVED BY DATE
APPROVED BY DATE
DRAWING NO. FIGURE 3-13
REV. 0

FORM CADD NO. TtNUS_BH.DGN - REV 0 - 1/20/98

00600F072

4.0 ECOLOGICAL RISK EVALUATION

The Study Area (Sites 6A and 10B) lies in an area of disturbed soils and ruderal (weedy) terrestrial vegetation that lacks sensitive ecological receptors capable of being significantly affected in an adverse manner by environmental contamination. There are no wetlands, surface water, or aquatic communities, nor any special status species or unique terrestrial communities located on or adjacent to contaminated areas at this site. Because of the lack of sensitive receptors potentially exposed to contamination at this site, no formal ecological risk evaluation was performed for Sites 6A and 10B.

5.0 CONCLUSIONS

The following conclusions were developed based upon the results of the Phase 1 and Phase 2 RIs for the Study Area:

- Although the deep groundwater contamination delineation is not complete, the extent of groundwater contamination at the Study Area is now adequately defined.

- Enough data now exists between both phases of the RFI/RI to proceed to a FS to evaluate remedial options that will address groundwater contamination. Chlorinated VOCs in the groundwater are the primary site concern.

REFERENCES

Buxton, H.T., D.a. Smolensky, and P.K. Shernof, 1989. Hydrogeologic Correlations for Selected Wells on Long Island, New York. U.S. Geological Survey Water-Resources Investigations Report 86-4318.

Buxton, H.T> and E. Modica, 1992. Patterns and Rates of Ground-Water Flow on Long Island, New York. Ground Water, Vol. 30, No. 6.

C.F. Braun, 1997. Phase 2 RCRA Facility Investigation Field Sampling Plan for Naval Weapons Industrial Reserve Plant, Calverton, New York. King of Prussia, Pennsylvania.

CFB, 1997. Phase 2 RCRA Facility Investigation Field Sampling Plan for Naval Weapons Industrial Reserve Plant, Calverton, New York, Prepared by CF Braun, Contract Number N62472-90-1298, Contract Task Order 0270, March.

Conrad N. B., 1996. Letter dated March 15, 1996 from N. B. Conrad of the New York Department of Environmental Conservation, Natural Heritage Program, to J. P. Doub of the C. F. Braun Engineering Corp. concerning rare, threatened, and endangered species and habitats on NWIRP Calverton.

Conrad, N.B., 1996. Letter dated March 15, 1996 from N.B. Conrad of the New York State Department of Environmental Conservation, Natural Heritage Program to J.P. Doub of the C.F. Braun Engineering Corp. concerning rare, threatened, and endangered species and habitats on NWIRP Calverton.

Environmental Library, 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1. U.S. Army Corps of Engineers Waterways Experiment Station. Vicksburg, Mississippi.

Fetter, C.W., Jr., 1976. Hydrogeology of the South Fork of long Island, New York, Bulletin, Geological Society of America, Volume 87, pp. 401-406.

Halliburton NUS Corporation (HNUS), 1992a. Final Site Investigation NWIRP Calverton, New York, Comprehensive Long-Term Environmental Action Navy (CLEAN) Program, Prepared by Halliburton NUS, Contract Number N62472-90-1298, Contract Task Order 0002, April.

HNUS (Halliburton NUS Corporation), 1992a. Final Site Investigation, Naval Weapons Industrial Reserve Plant, Calverton, New York. King of Prussia, Pennsylvania.

HNUS (Halliburton NUS Corporation), 1992b. Hazard Ranking System Preliminary Scoring and Site Inspection Report Form, Naval Weapons Industrial Reserve Plant, Calverton, New York. King of Prussia, Pennsylvania.

HNUS, 1992b. Hazard Ranking System Preliminary Scoring and Site Inspection Report Form, NWIRP, Calverton, New York, CLEAN Program for U.S. Navy. Contract Number N62472-90-0, Contract Task Order 0002, April.

HNUS (Halliburton NUS Corporation), 1995a. Final RCRA Facility Investigation, Naval Weapons Industrial Reserve Plant, Calverton, New York. King of Prussia, Pennsylvania.

HNUS, 1995a. Final RCRA Facility Investigation, NWIRP, Calverton, New York, Comprehensive Long-Term Environmental Action Navy (CLEAN) Program, Prepared by Halliburton NUS, Contract Number N62472-90-0-1298, Contract Task Order 0138, August.

HNUS (Halliburton NUS Corporation), 1995b. RCRA Facility Investigation Addendum, Naval Weapons Industrial Reserve Plant, Calverton, New York. King of Prussia, Pennsylvania.

HNUS, 1995b. RCRA Facility Investigation Addendum, NWIRP, Calverton, New York, Comprehensive Long-Term Environmental Action Navy (CLEAN) Program, Prepared by Halliburton NUS, Contract Number N62472-90-0-1298, Contract Task Order 0138, September.

HNUS 1995c. RCRA Facility Assessment - Sampling Visit NWIRP, Calverton, New York, Comprehensive Long-Term Environmental Action Navy (CLEAN) Program, Prepared by Halliburton NUS, Contract Number N62472-90-0-1298, Contract Task Order 0138, March.

Kricher, J. C. 1988. A Field Guide to Eastern Forests. Peterson Field Guide Series.

Kricher, J.C., 1988. A Field Guide to Eastern Forests. Peterson Field Guide Series.

McClymonds, N. and O. Frank, 1972. Water Transmitting Properties of Aquifers of Long Island, New York, U.S. Geological Survey Professional Paper 627-E.

Myers, R. E. and F. B. Gaffney, 1990. Natural Resources Management Plan, Naval Weapons Industrial Reserve Plant Calverton, New York.

Navy, 1986. Initial Assessment Study of Naval Weapons Industrial Reserve Plant, Bethpage, New York and Naval Weapons Industrial Reserve Plant, Calverton, New York. Naval Energy and Environmental Activity, Philadelphia, Pennsylvania.

Navy, 1986. Initial Assessment Study of NWIRP Bethpage, NY and NWIRP Calverton, NY, prepared by Rogers, Golden & Halpein (RGH) for Naval Energy and Environmental Activity (NEESA) under Contract Number N62474-84-3386, Philadelphia, PA, December.

New York State Department of Environmental Conservation (NYSDEC), 1992. Spill Technology and Remediation Series (STARS) Memo No. 1, Petroleum Soil Guidance Policy, NYSDEC Division of Spills Management, August

NYSDEC (New York State Department of Environmental Conservation), 1994. Technical and Administrative Guidance Memorandum Number 4046, Determination of Soil Cleanup Objectives and Cleanup Levels. Albany, New York.

NYSDEC, 1994. Technical and Administrative Guidance Memorandum (TAGM) on Determination of Soil Cleanup Objectives and Cleanup Levels, Number 4046, Revision, January 24.

Prince, Keith R., and Brian J. Schneider, 1989. Estimation of Hydraulic Characteristics of the Upper Glacial and Magothy Aquifers at East Meadow, New York, by use of Aquifer Tests. U.S. Geological Survey Water-Resources Investigations Report. 87-4211.

Tetra Tech NUS, Inc. (TtNUS), 1998. Engineering Evaluation/Cost Analysis for Sites 2, 6A, 7 and 10B, Naval Weapons Industrial Reserve Plant. Calverton, New York. Comprehensive Long-Term Environmental Action Navy, Prepared by Tetra Tech NUS, Inc., Contract Number N62472-90-0-1298, Contract Task Order 0270, September.

U.S. Corps of Engineers (USCOE) Environmental Laboratory, 1987. Wetlands Delineation Manual. Technical Report Y-87-1. US Army Engineer Waterways Experiment Station, Vicksburg, MS.

U.S. Department of the Interior (USDOI), 1980. National Wetlands Inventory Maps for Wading River, Riverhead, and Mattituk, New York, Fish and Wildlife Service, April.

U.S. Geologic Survey (USGS), 1967. Wading River, New York quadrangle, 7.5 minute series. Topographic Map; combined with Riverhead, New York quadrangle, 7.5 minute series, Topographic Map, 1956 and Moriche, New York quadrangle, 7.5 minute series. Topographic Map, 1967 and Eastport, New

York, 7.5 minute series, Topographic Map, 1956 and Bellport, New York quadrangle, 7.5 minute series, Topographic Map, 1967 and Middle Island, New York, 7.5 minute series, Topographic Map, 1967.

USDOI (U.S. Department of the Interior), 1980. National Wetlands Inventory Maps for Wading River, Riverhead, and Mattituk, New York. Washington, DC.

APPENDIX A

ANALYTICAL LABORATORY DATA SHEETS

A.1 Phase 2 Groundwater Investigation

A.2 Supplemental Groundwater Investigation

A.3 Monitored Natural Attenuation Groundwater Investigation

A.1 PHASE 2 GROUNDWATER INVESTIGATION

Note: Groundwater samples collected from permanent monitoring well locations are identified as GW (for groundwater) in the following analytical laboratory data sheets. These sampling locations are identified as MW (for monitoring well) in the text and tables of this report.

BROWN & ROOT ENVIRONMENTAL

Lab Name:QUANTERRA

SDG Number: BR345

Matrix: (soil/water) WATER

Lab Sample ID:C7K150106 004

Method: OCLP OLM03.1
Volatile Organics, GC/MS (CLP -OLM03.1)

Sample WT/Vol: 5 / mL
Work Order: CE2MG101
Dilution factor: 1
Moisture %:NA

Date Received: 11/15/97
Date Extracted:11/18/97
Date Analyzed: 11/18/97

QC Batch: 7322109

Client Sample Id: FC-MW07-S

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
67-64-1	Acetone	10	U
71-43-2	Benzene	10	U
75-27-4	Bromodichloromethane	10	U
75-25-2	Bromoform	10	U
74-83-9	Bromomethane	10	U
78-93-3	2-Butanone	10	U
75-15-0	Carbon disulfide	10	U
56-23-5	Carbon tetrachloride	10	U
108-90-7	Chlorobenzene	10	U
124-48-1	Dibromochloromethane	10	U
75-00-3	Chloroethane	10	U
67-66-3	Chloroform	10	U
74-87-3	Chloromethane	10	U
75-34-3	1,1-Dichloroethane	10	U
107-06-2	1,2-Dichloroethane	10	U
75-35-4	1,1-Dichloroethene	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
100-41-4	Ethylbenzene	10	U
591-78-6	2-Hexanone	10	U
75-09-2	Methylene chloride	10	U
108-10-1	4-Methyl-2-pentanone	10	U
100-42-5	Styrene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
127-18-4	Tetrachloroethene	10	U
108-88-3	Toluene	10	U

FORM I

BROWN & ROOT ENVIRONMENTAL

Lab Name:QUANTERRA

SDG Number: BR345

Matrix: (soil/water) WATER

Lab Sample ID:C7K150106 004

Method: OCLP OLM03.1
Volatile Organics, GC/MS (CLP -OLM03.1)

Sample WT/Vol: 5 / mL
Work Order: CE2MG101
Dilution factor: 1
Moisture %:NA

Date Received: 11/15/97
Date Extracted:11/18/97
Date Analyzed: 11/18/97

QC Batch: 7322109

Client Sample Id: FC-MW07-S

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
71-55-6	1,1,1-Trichloroethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
79-01-6	Trichloroethene	10	U
75-01-4	Vinyl chloride	10	U
1330-20-7	Xylenes (total)	10	U

FORM I

BROWN & ROOT ENVIRONMENTAL
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name:QUANTERRA

SDG Number: BR345

Matrix: (soil/water) WATER

Lab Sample ID:C7K150106 004

Method: OCLP OLM03.1
Volatile Organics, GC/MS (CLP -OLM03.1)

Sample WT/Vol: 5 / mL
Work Order: CE2MG101
Dilution factor: 1
Moisture %:NA

Date Received: 11/15/97
Date Extracted:11/18/97
Date Analyzed: 11/18/97

QC Batch: 7322109

Client Sample Id: FC-MW07-S

(ug/L or ug/kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
	no tics detected			ND

0025

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 16:21:21
Date:
Collected:04/03/97
Received :04/03/97
Completed:04/08/97
Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root Environmental
F C G W 0 1 0 9
C O C #4
Liquid Sample/Sampled 10:17 A.M.
LIQUID

Sample Number 74929704

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<2.50	Ethylbenzene	<2.50
1,1-Dichloroethylene	<2.50	Toluene	<2.50
1,1-Dichloroethane	<2.50	Total Xylene	<2.50
Trans-1,2-Dichloroethylene	<2.50	Bromomethane	<2.50
Chloroform	<2.50	Chloromethane	<2.50
1,2-Dichloroethane	<2.50	Trichloro-Flouromethane	<2.50
1,1,1-Trichloroethane	<2.50	Trichlorotriflouroethane	<2.50
Carbon Tetrachloride	<2.50	Chloroethane	<2.50
Bromodichloromethane	<2.50		
1,2-Dichloropropane	<2.50		
Cis-Dichloropropylene	<2.50		
Trans-Dichloropropylene	<2.50		
Trichloroethylene	<2.50		
Vinyl Chloride	<2.50		
1,1,2-Trichloroethane	<2.50		
Dibromochloroethane	<2.50		
Bromoform	<2.50		
1,2-Dibromoethane	<2.50		
Tetrachloroethylene	<2.50		
Cis-1,2-Dichloroethylene	<2.50		
Benzene	<2.50		
Chlorobenzene	<2.50		
O-Dichlorobenzene (1,2)	<2.50		
M-Dichlorobenzene (1,3)	<2.50		
P-Dichlorobenzene (1,4)	<2.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 16:23:21
Date:
Collected:04/03/97
Received :04/03/97
Completed:04/08/97
Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root Environmental
F C G W 0 1 2 4
C O C #4
Liquid Sample/Sampled 10:34 A.M.
LIQUID

Sample Number 74939704

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<2.50	Ethylbenzene	<2.50
1,1-Dichloroethylene	<2.50	Toluene	<2.50
1,1-Dichloroethane	<2.50	Total Xylene	<2.50
Trans-1,2-Dichloroethylene	<2.50	Bromomethane	<2.50
Chloroform	<2.50	Chloromethane	<2.50
1,2-Dichloroethane	<2.50	Trichloro-Flouromethane	<2.50
1,1,1-Trichloroethane	<2.50	Trichlorotriflouroethane	<2.50
Carbon Tetrachloride	<2.50	Chloroethane	<2.50
Bromodichloromethane	<2.50		
1,2-Dichloropropane	<2.50		
Cis-Dichloropropylene	<2.50		
Trans-Dichloropropylene	<2.50		
Trichloroethylene	<2.50		
Vinyl Chloride	<2.50		
1,1,2-Trichloroethane	<2.50		
Dibromochloroethane	<2.50		
Bromoform	<2.50		
1,2-Dibromoethane	<2.50		
Tetrachloroethylene	<2.50		
Cis-1,2-Dichloroethylene	<2.50		
Benzene	<2.50		
Chlorobenzene	<2.50		
O-Dichlorobenzene (1,2)	<2.50		
M-Dichlorobenzene (1,3)	<2.50		
P-Dichlorobenzene (1,4)	<2.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 16:26:09
Date:
Collected:04/03/97
Received :04/03/97
Completed:04/08/97
Reported By:
N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root Environmental
F C G W O 1 4 4
C O C #4
Liquid Sample/Sampled 11:14 A.M.
LIQUID

Sample Number 74949704

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<2.50	Ethylbenzene	<2.50
1,1-Dichloroethylene	<2.50	Toluene	<2.50
1,1-Dichloroethane	<2.50	Total Xylene	<2.50
Trans-1,2-Dichloroethylene	<2.50	Bromomethane	<2.50
Chloroform	<2.50	Chloromethane	<2.50
1,2-Dichloroethane	<2.50	Trichloro-Flouromethane	<2.50
1,1,1-Trichloroethane	<2.50	Trichlorotriflouroethane	<2.50
Carbon Tetrachloride	<2.50	Chloroethane	<2.50
Bromodichloromethane	<2.50		
1,2-Dichloropropane	<2.50		
Cis-Dichloropropylene	<2.50		
Trans-Dichloropropylene	<2.50		
Trichloroethylene	<2.50		
Vinyl Chloride	<2.50		
1,1,2-Trichloroethane	<2.50		
Dibromochloroethane	<2.50		
Bromoform	<2.50		
1,2-Dibromoethane	<2.50		
Tetrachloroethylene	<2.50		
Cis-1,2-Dichloroethylene	<2.50		
Benzene	<2.50		
Chlorobenzene	<2.50		
O-Dichlorobenzene (1,2)	<2.50		
M-Dichlorobenzene (1,3)	<2.50		
P-Dichlorobenzene (1,4)	<2.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 15:10:23
Date:
Collected:03/04/97
Received :04/04/97
Completed:04/08/97
Reported By:

N.Y.S. Lab I.D. #10056

Sample Taken By
Client

Sample : Brown & Root Environmental
F C G W O 210
C O C #5
Liquid Sample/Sampled ~~1:00~~ 1:39 P.M.
LIQUID
DCR 7/9/97

Sample Number 75109704

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<2.50	Ethylbenzene	<2.50
1,1-Dichloroethylene	<2.50	Toluene	<2.50
1,1-Dichloroethane	<2.50	Total Xylene	<2.50
Trans-1,2-Dichloroethylene	<2.50	Bromomethane	<2.50
Chloroform	<2.50	Chloromethane	<2.50
1,2-Dichloroethane	<2.50	Trichloro-Flouromethane	<2.50
1,1,1-Trichloroethane	<2.50	Trichlorotriflouroethane	<2.50
Carbon Tetrachloride	<2.50	Chloroethane	<2.50
Bromodichloromethane	<2.50		
1,2-Dichloropropane	<2.50		
Cis-Dichloropropylene	<2.50		
Trans-Dichloropropylene	<2.50		
Trichloroethylene	<2.50		
Vinyl Chloride	<2.50		
1,1,2-Trichloroethane	<2.50		
Dibromochloroethane	<2.50		
Bromoform	<2.50		
1,2-Dibromoethane	<2.50		
Tetrachloroethylene	<2.50		
Cis-1,2-Dichloroethylene	<2.50		
Benzene	<2.50		
Chlorobenzene	<2.50		
O-Dichlorobenzene (1,2)	<2.50		
M-Dichlorobenzene (1,3)	<2.50		
P-Dichlorobenzene (1,4)	<2.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 15:13:47
Date:
Collected:03/04/97
Received :04/04/97
Completed:04/08/97
Reported By:

Sample Taken By
Client

N.Y.S. Lab I.D. #10058

Sample : Brown & Root Environmental
F C G W O 225
C O C #5
Liquid Sample/Sampled 1:54 P.M.
LIQUID

Sample Number 75119704

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<2.50	Ethylbenzene	<2.50
1,1-Dichloroethylene	<2.50	Toluene	<2.50
1,1-Dichloroethane	<2.50	Total Xylene	<2.50
Trans-1,2-Dichloroethylene	<2.50	Bromomethane	<2.50
Chloroform	<2.50	Chloromethane	<2.50
1,2-Dichloroethane	<2.50	Trichloro-Flouromethane	<2.50
1,1,1-Trichloroethane	<2.50	Trichlorotriflouroethane	<2.50
Carbon Tetrachloride	<2.50	Chloroethane	<2.50
Bromodichloromethane	<2.50		
1,2-Dichloropropane	<2.50		
Cis-Dichloropropylene	<2.50		
Trans-Dichloropropylene	<2.50		
Trichloroethylene	<2.50		
Vinyl Chloride	<2.50		
1,1,2-Trichloroethane	<2.50		
Dibromochloroethane	<2.50		
Bromoform	<2.50		
1,2-Dibromoethane	<2.50		
Tetrachloroethylene	<2.50		
Cis-1,2-Dichloroethylene	<2.50		
Benzene	<2.50		
Chlorobenzene	<2.50		
O-Dichlorobenzene (1,2)	<2.50		
M-Dichlorobenzene (1,3)	<2.50		
P-Dichlorobenzene (1,4)	<2.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 15:19:35
Date:
Collected:03/04/97
Received :04/04/97
Completed:04/08/97
Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root Environmental
F C G W O 245
C O C #5
Liquid Sample/Sampled 2:30 P.M.
LIQUID

Sample Number 75129704

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l)
Methylene Chloride	<2.50	Ethylbenzene	<2.50
1,1-Dichloroethylene	<2.50	Toluene	<2.50
1,1-Dichloroethane	<2.50	Total Xylene	<2.50
Trans-1,2-Dichloroethylene	<2.50	Bromomethane	<2.50
Chloroform	<2.50	Chloromethane	<2.50
1,2-Dichloroethane	<2.50	Trichloro-Flouromethane	<2.50
1,1,1-Trichloroethane	<2.50	Trichlorotriflouroethane	<2.50
Carbon Tetrachloride	<2.50	Chloroethane	<2.50
Bromodichloromethane	<2.50		
1,2-Dichloropropane	<2.50		
Cis-Dichloropropylene	<2.50		
Trans-Dichloropropylene	<2.50		
Trichloroethylene	<2.50		
Vinyl Chloride	<2.50		
1,1,2-Trichloroethane	<2.50		
Dibromochloroethane	<2.50		
Bromoform	<2.50		
1,2-Dibromoethane	<2.50		
Tetrachloroethylene	<2.50		
Cis-1,2-Dichloroethylene	<2.50		
Benzene	<2.50		
Chlorobenzene	<2.50		
O-Dichlorobenzene (1,2)	<2.50		
M-Dichlorobenzene (1,3)	<2.50		
P-Dichlorobenzene (1,4)	<2.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 15:24:56
Date:
Collected:03/04/97
Received :04/04/97
Completed:04/08/97
Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root Environmental
F C G W 0 310
C O C #5
Liquid Sample/Sampled 3:10 P.M.
LIQUID

Sample Number 75139704

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<2.50	Ethylbenzene	<2.50
1,1-Dichloroethylene	<2.50	Toluene	<2.50
1,1-Dichloroethane	<2.50	Total Xylene	<2.50
Trans-1,2-Dichloroethylene	<2.50	Bromomethane	<2.50
Chloroform	<2.50	Chloromethane	<2.50
1,2-Dichloroethane	<2.50	Trichloro-Flouromethane	<2.50
1,1,1-Trichloroethane	<2.50	Trichlorotriflouroethane	<2.50
Carbon Tetrachloride	<2.50	Chloroethane	<2.50
Bromodichloromethane	<2.50		
1,2-Dichloropropane	<2.50		
Cis-Dichloropropylene	<2.50		
Trans-Dichloropropylene	<2.50		
Trichloroethylene	<2.50		
Vinyl Chloride	<2.50		
1,1,2-Trichloroethane	<2.50		
Dibromochloroethane	<2.50		
Bromoform	<2.50		
1,2-Dibromoethane	<2.50		
Tetrachloroethylene	<2.50		
Cis-1,2-Dichloroethylene	<2.50		
Benzene	<2.50		
Chlorobenzene	<2.50		
O-Dichlorobenzene (1,2)	<2.50		
M-Dichlorobenzene (1,3)	<2.50		
P-Dichlorobenzene (1,4)	<2.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 15:26:42
Date:
Collected:04/04/97
Received :04/04/97
Completed:04/09/97

Sample Taken By
Client

Reported By:

N.Y.S. Lab I.D. #10058

Sample : Brown & Root Environmental
F C G W O 325
C O C #5
Liquid Sample/Sampled 3:19 P.M.
LIQUID

Sample Number 75149704

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l)
Methylene Chloride	<2.50	Ethylbenzene	<2.50
1,1-Dichloroethylene	<2.50	Toluene	<2.50
1,1-Dichloroethane	<2.50	Total Xylene	<2.50
Trans-1,2-Dichloroethylene	<2.50	Bromomethane	<2.50
Chloroform	<2.50	Chloromethane	<2.50
1,2-Dichloroethane	<2.50	Trichloro-Flouromethane	<2.50
1,1,1-Trichloroethane	13.90	Trichlorotriflouroethane	<2.50
Carbon Tetrachloride	<2.50	Chloroethane	<2.50
Bromodichloromethane	<2.50		
1,2-Dichloropropane	<2.50		
Cis-Dichloropropylene	<2.50		
Trans-Dichloropropylene	<2.50		
Trichloroethylene	<2.50		
Vinyl Chloride	<2.50		
1,1,2-Trichloroethane	<2.50		
Dibromochloroethane	<2.50		
Bromoform	<2.50		
1,2-Dibromoethane	<2.50		
Tetrachloroethylene	<2.50		
Cis-1,2-Dichloroethylene	<2.50		
Benzene	<2.50		
Chlorobenzene	<2.50		
O-Dichlorobenzene (1,2)	<2.50		
M-Dichlorobenzene (1,3)	<2.50		
P-Dichlorobenzene (1,4)	<2.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 15:28:58
Date:
Collected:04/04/97
Received :04/04/97
Completed:04/09/97
Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root Environmental
F C G W O 345
C O C #5
Liquid Sample/Sampled 3:46 P.M.
LIQUID

Sample Number 75159704

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<2.50	Ethylbenzene	<2.50
1,1-Dichloroethylene	<2.50	Toluene	<2.50
1,1-Dichloroethane	<2.50	Total Xylene	<2.50
Trans-1,2-Dichloroethylene	<2.50	Bromomethane	<2.50
Chloroform	<2.50	Chloromethane	<2.50
1,2-Dichloroethane	<2.50	Trichloro-Flouromethane	<2.50
1,1,1-Trichloroethane	<2.50	Trichlorotriflouroethane	<2.50
Carbon Tetrachloride	<2.50	Chloroethane	<2.50
Bromodichloromethane	<2.50		
1,2-Dichloropropane	<2.50		
Cis-Dichloropropylene	<2.50		
Trans-Dichloropropylene	<2.50		
Trichloroethylene	<2.50		
Vinyl Chloride	<2.50		
1,1,2-Trichloroethane	<2.50		
Dibromochloroethane	<2.50		
Bromoform	<2.50		
1,2-Dibromoethane	<2.50		
Tetrachloroethylene	<2.50		
Cis-1,2-Dichloroethylene	<2.50		
Benzene	<2.50		
Chlorobenzene	<2.50		
O-Dichlorobenzene (1,2)	<2.50		
M-Dichlorobenzene (1,3)	<2.50		
P-Dichlorobenzene (1,4)	<2.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 15:09:00
Date:
Collected:06/06/97
Received :06/06/97
Completed:06/10/97
Reported By:

Sample Taken By
Client

N.Y.S. Lab I.D. #10056

Sample : Brown & Root Environmental
F C G W 04a 30
C O C #24
Liquid Sample/Sampled 11:40 P.M.
LIQUID

Sample Number 85309706

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Fluoromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 15:11:22
Date:
Collected:06/06/97
Received :06/06/97
Completed:06/10/97
Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root Environmental
F C G W 04a 40
C O C #24
Liquid Sample/Sampled 12:00 P.M.
LIQUID

Sample Number 85319706

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l)
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Fluoromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Comments

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 15:13:40
Date:
Collected:06/06/97
Received :06/06/97
Completed:06/10/97

Sample Taken By
Client

Reported By:

N.Y.S. Lab I.D. #10058

Sample : Brown & Root Environmental
F C G W 04a 60
C O C #24
Liquid Sample/Sampled 12:45 P.M.
LIQUID

Sample Number 85329706

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Fluoromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 14:59:10
Date:
Collected:06/09/97
Received :06/09/97
Completed:06/17/97
Reported By:

Sample Taken By
Client

N.Y.S. Lab I.D. #10058

Sample : Brown & Root Environmental
F C G W 04a-80
C O C #25
Liquid Sample/Sampled 4:00 P.M.
LIQUID

Sample Number 85569706

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<5	Ethylbenzene	<5
1,1-Dichloroethylene	570	Toluene	<5
1,1-Dichloroethane	<5	Total Xylene	<5
Trans-1,2-Dichloroethylene	<5	Bromomethane	<5
Chloroform	68	Chloromethane	<5
1,2-Dichloroethane	<5	Trichloro-Flouromethane	<5
1,1,1-Trichloroethane	599.1	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<5	Chloroethane	<0.50
Bromodichloromethane	<5	Trichlorofluoroethane	94.9
1,2-Dichloropropane	<5		
\Is-Dichloropropylene	<5		
Trans-Dichloropropylene	<5		
Trichloroethylene	<5		
Vinyl Chloride	<5		
1,1,2-Trichloroethane	<5		
Dibromochloroethane	<5		
Bromoform	<5		
Tetrachloroethane	<5		
Tetrachloroethylene	<5		
Cis-1,2-Dichloroethylene	<5		
Benzene	<5		
Chlorobenzene	<5		
O-Dichlorobenzene	<5		
M-Dichlorobenzene	<5		
P-Dichlorobenzene	<5		

Comments
* Noticable Odor Present
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 15:03:42
Date:
Collected:04/05/97
Received :04/07/97
Completed:04/10/97
Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root Environmental
F C G W O 480
C O C #7
Liquid Sample/Sampled 1:47 P.M.
LIQUID

Sample Number 75459704

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l)
Methylene Chloride	<2.50	Ethylbenzene	<2.50
1,1-Dichloroethylene	496.45	Toluene	33.3
1,1-Dichloroethane	1056.8	Total Xylene	48.45
Trans-1,2-Dichloroethylene	<2.50	Bromomethane	<2.50
Chloroform	<2.50	Chloromethane	<2.50
1,2-Dichloroethane	<2.50	Trichloro-Flouromethane	122.2
1,1,1-Trichloroethane	480.5	Trichlorotriflouroethane	<2.50
Carbon Tetrachloride	<2.50	Chloroethane	<2.50
Bromodichloromethane	<2.50		
1,2-Dichloropropane	<2.50		
Cis-Dichloropropylene	<2.50		
Trans-Dichloropropylene	<2.50		
Trichloroethylene	<2.50		
Vinyl Chloride	<2.50		
1,1,2-Trichloroethane	<2.50		
Dibromochloroethane	<2.50		
Bromoform	<2.50		
1,2-Dibromoethane	<2.50		
Tetrachloroethylene	<2.50		
Cis-1,2-Dichloroethylene	<2.50		
Benzene	<2.50		
Chlorobenzene	<2.50		
O-Dichlorobenzene (1,2)	<2.50		
M-Dichlorobenzene (1,3)	<2.50		
P-Dichlorobenzene (1,4)	<2.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 15:08:02
Date:
Collected:04/05/97
Received :04/07/97
Completed:04/10/97
Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root Environmental
F C G W O 4100
C O C #7
Liquid Sample/Sampled 2:53 P.M.
LIQUID

Sample Number 75469704

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	33.75	Ethylbenzene	7.15
1,1-Dichloroethylene	185.6	Toluene	16.0
1,1-Dichloroethane	826.3	Total Xylene	17.5
Trans-1,2-Dichloroethylene	<2.50	Bromomethane	<2.50
Chloroform	<2.50	Chloromethane	<2.50
1,2-Dichloroethane	<2.50	Trichloro-Flouromethane	<2.50
1,1,1-Trichloroethane	415.8	Trichlorotriflouroethane	<2.50
Carbon Tetrachloride	<2.50	Chloroethane	<2.50
Bromodichloromethane	<2.50		
1,2-Dichloropropane	<2.50		
Cis-Dichloropropylene	<2.50		
Trans-Dichloropropylene	<2.50		
Trichloroethylene	<2.50		
Vinyl Chloride	<2.50		
1,1,2-Trichloroethane	<2.50		
Dibromochloroethane	<2.50		
Bromoform	<2.50		
1,2-Dibromoethane	<2.50		
Tetrachloroethylene	<2.50		
Cis-1,2-Dichloroethylene	<2.50		
Benzene	<2.50		
Chlorobenzene	<2.50		
O-Dichlorobenzene (1,2)	<2.50		
M-Dichlorobenzene (1,3)	<2.50		
P-Dichlorobenzene (1,4)	<2.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 14:38:40
Date:
Collected:05/06/97
Received :05/07/97
Completed:05/08/97

Sample Taken By
Client

Reported By:

N.Y.S. Lab I.D. #10058

Sample : Brown & Root Environmental
F C G W 04 120
C O C #15
Liquid Sample/Sampled 10:50 A.M.
LIQUID

Sample Number 80529705

Analysis : EPA Method 601/602/

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l)
Methylene Chloride	<2.50	Ethylbenzene	<2.50
1,1-Dichloroethylene	<2.50	Toluene	<2.50
1,1-Dichloroethane	<2.50	Total Xylene	<2.50
Trans-1,2-Dichloroethylene	<2.50	Bromomethane	<2.50
Chloroform	<2.50	Chloromethane	<2.50
1,2-Dichloroethane	<2.50	Trichloro-Flouromethane	<2.50
1,1,1-Trichloroethane	<2.50	Trichlorotriflouroethane	<2.50
Carbon Tetrachloride	<2.50	Chloroethane	<2.50
Bromodichloromethane	<2.50		
1,2-Dichloropropane	<2.50		
Cis-Dichloropropylene	<2.50		
Trans-Dichloropropylene	<2.50		
Trichloroethylene	<2.50		
Vinyl Chloride	<2.50		
1,1,2-Trichloroethane	<2.50		
Dibromochloroethane	<2.50		
Bromoform	<2.50		
1,2-Dibromoethane	<2.50		
Tetrachloroethylene	<2.50		
Cis-1,2-Dichloroethylene	<2.50		
Benzene	<2.50		
Chlorobenzene	<2.50		
O-Dichlorobenzene (1,2)	<2.50		
M-Dichlorobenzene (1,3)	<2.50		
P-Dichlorobenzene (1,4)	<2.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 14:40:47
Date:
Collected:05/06/97
Received :05/07/97
Completed:05/08/97
Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root Environmental
F C G W 04 140
C O C #15
Liquid Sample/Sampled ~~11:40~~ 11:45 A.M.
LIQUID
Bck 7/9/97

Sample Number 80539705

Analysis : EPA Method 601/602/

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<2.50	Ethylbenzene	<2.50
1,1-Dichloroethylene	<2.50	Toluene	<2.50
1,1-Dichloroethane	523	Total Xylene	28.5
Trans-1,2-Dichloroethylene	<2.50	Bromomethane	<2.50
Chloroform	<2.50	Chloromethane	<2.50
1,2-Dichloroethane	<2.50	Trichloro-Flouromethane	<2.50
1,1,1-Trichloroethane	677.5	Trichlorotriflouroethane	<2.50
Carbon Tetrachloride	<2.50	Chloroethane	<2.50
Bromodichloromethane	<2.50		
1,2-Dichloropropane	<2.50		
Cis-Dichloropropylene	<2.50		
Trans-Dichloropropylene	<2.50		
Trichloroethylene	<2.50		
Vinyl Chloride	<2.50		
1,1,2-Trichloroethane	<2.50		
Dibromochloroethane	<2.50		
Bromoform	<2.50		
1,2-Dibromoethane	<2.50		
Tetrachloroethylene	<2.50		
Cis-1,2-Dichloroethylene	<2.50		
Benzene	<2.50		
Chlorobenzene	<2.50		
O-Dichlorobenzene (1,2)	<2.50		
M-Dichlorobenzene (1,3)	<2.50		
P-Dichlorobenzene (1,4)	<2.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 10:14:23
Date:
Collected:04/19/97
Received :04/19/97
Completed:04/23/97
Reported By:

N.Y.S. Lab I.D. #10068

Sample Taken By
Client

Sample : Brown & Root Environmental
F C G W O 513
C O C #13
Liquid Sample/Sampled 9:23 A.M.
LIQUID

Sample Number 77849704

Analysis : EPA Method 601/602/

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l)
Methylene Chloride	<0.50	Ethylbenzene	20.30
1,1-Dichloroethylene	<0.50	Toluene	10.7
1,1-Dichloroethane	<0.50	Total Xylene	133.3
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Flouromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	37.40		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 10:16:17
Date:
Collected:04/19/97
Received :04/19/97
Completed:04/23/97
Reported By:

N.Y.S. Lab I.D. #10188

Sample Taken By
Client

Sample : Brown & Root Environmental
F C G W C 528
C O C #13
Liquid Sample/Sampled 9:44 A.M.
LIQUID

Sample Number 7859704

Analysis : EPA Method 601/602/

Parameters	Results ppb(mmg/l	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	8.0
1,1-Dichloroethylene	<0.50	Toluene	33.9
1,1-Dichloroethane	<0.50	Total Xylene	93.8
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Flouromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	43.9		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 10:11:35
Date:
Collected:04/19/97
Received :04/19/97
Completed:04/23/97

Sample Taken By
Client

Reported By:

N.Y.S. Lab I.D. #10058

Sample : Brown & Root Environmental
F C D U 04 Duplicate (Duplicate of FCGW0528)
C O C #13
Liquid Sample/Sampled 0:00
LIQUID

Sample Number 77839704

Analysis : EPA Method 601/602/

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l)
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	2.97	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Flouromethane	<0.50
1,1,1-Trichloroethane	1.82	Trichlorotrifluorethane	1.64
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 10:17:48
Date:
Collected:04/19/97
Received :04/19/97
Completed:04/23/97
Reported By:

N.Y.S. Lab I.D. #11058

Sample Taken By
Client

Sample : Brown & Root Environmental
F C C W O 548
C O C #13
Liquid Sample/Sampled 10:08 A.M.
LIQUID

Sample Number 77869704

Analysis : EPA Method 601/602/

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Flouromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 10:19:44
Date:
Collected:04/19/97
Received :04/19/97
Completed:04/23/97

Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root Environmental
F C G W C 615
C C C #13
Liquid Sample/Sampled 11:14 A.M.
LIQUID

Sample Number 77879704

Analysis : EPA Method 601/602/

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	1.20	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	3.10	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Flouromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 10:22:38
Date:
Collected:04/19/97
Received :04/19/97
Completed:04/23/97
Reported By:

Sample Taken By
Client

N.Y.S. Lab I.D. #10058

Sample : Brown & Root Environmental
F C G W O 630
C O C #13
Liquid Sample/Sampled 11:29 A.M.
LIQUID

Sample Number 77889704

Analysis : EPA Method 601/602/

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	3.37	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Flouromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotrifluorethane	0.8
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 10:24:13
Date:
Collected:04/19/97
Received :04/19/97
Completed:04/28/97
Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root Environmental
F C G W O 650
C O C #13
Liquid Sample/Sampled 11:59 A.M.
LIQUID

Sample Number 77899704

Analysis : EPA Method 601/602/

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l)
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	1.40	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Flouromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 10:39:30
Date:
Collected:04/20/97
Received :04/20/97
Completed:04/28/97
Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root Environmental
FC ~~N-P~~ G W O 715
Dcr 7/3/97
C O C #13
Liquid Sample/Sampled 2:03 P.M.
LIQUID

Sample Number 77959704

Analysis : EPA Method 601/602/

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l)
Methylene Chlor	<0.50	Ethylbenzene	<0.50
1,1-Dichloroeth[illegible]e	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Fluoromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
Tetrachloroethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene	<0.50		
M-Dichlorobenzene	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 10:48:30
Date:
Collected:04/20/97
Received :04/20/97
Completed:04/28/97
Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root Environmental
FC ~~N P~~ G W O 730
C O C #13
Dcr 7/8/97 Liquid Sample/Sampled 2:28 P.M.
LIQUID

Sample Number 77969704

Analysis : EPA Method 601/602/

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	1.13	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Fluoromethane	<0.50
1,1,1-Trichloroethane	19.79	Trichlorotrifluorethane	0.67
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
Tetrachloroethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene	<0.50		
M-Dichlorobenzene	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 10:50:04
Date:
Collected:04/20/97
Received :04/20/97
Completed:04/28/97
Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root Environmental
FC ~~N-P~~ G W O 750
Dcr C O C #13
7/8/97 Liquid Sample/Sampled 2:43 P.M.
LIQUID

Sample Number 77979704

Analysis : EPA Method 601/602/

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	0.95	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Fluoromethane	<0.50
1,1,1-Trichloroethane	0.62	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
Tetrachloroethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene	<0.50		
M-Dichlorobenzene	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 14:19:01
Date:
Collected:05/20/97
Received :05/20/97
Completed:05/22/97
Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Laboratory

Sample : Brown & Root Environmental
F C -G W 08-100
C O C #20
Liquid Sample/Sampled 9:50 A.M.
LIQUID

Sample Number 82099705

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Flouromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
Tetrachloroethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene	<0.50		
M-Dichlorobenzene	<0.50		
P-Dichlorobenzene	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 14:21:40
Date:
Collected:05/20/97
Received :05/20/97
Completed:05/22/97
Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Laboratory

Sample : Brown & Root Environmental
F C -G W 08-120
C O C #20
Liquid Sample/Sampled 10:30 A.M.
LIQUID

Sample Number 82109705

Analysis : EPA-Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l)
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Flouromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
Tetrachloroethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene	<0.50		
M-Dichlorobenzene	<0.50		
P-Dichlorobenzene	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 14:24:21
Date:
Collected:05/20/97
Received :05/20/97
Completed:05/22/97
Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Laboratory

Sample : Brown & Root Environmental
F C -G W 08-140
C O C #20
Liquid Sample/Sampled 11:15 A.M.
LIQUID

Sample Number 82119705

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	2.34
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Flouromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
Tetrachloroethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene	<0.50		
M-Dichlorobenzene	<0.50		
P-Dichlorobenzene	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 16:19:06
Date:
Collected:05/~~12~~13/97
Received :05/13/97
Completed:05/20/97
Reported By:
N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root Environmental
F C -G W 09-100
C O C #18
Liquid Sample/Sampled 10:30 A.M.
LIQUID

Sample Number 81449705

Analysis : EPA Method 601/602/Freon

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Flouromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 16:21:00
Date:
Collected:05/~~12~~13/97 Dcl 21
Received :05/13/97
Completed:05/20/97
Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root Environmental
F C -G W 09-120
C O C #18
Liquid Sample/Sampled 11:20 A.M.
LIQUID

Sample Number 81459705

Analysis : EPA Method 601/602/Freon

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l)
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Flouromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 16:22:34
Date:
Collected:05/~~12~~13/97
Received :05/13/97
Completed:05/20/97
Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root Environmental
F C -G W 09-140
C O C #18
Liquid Sample/Sampled 12:00 P.M.
LIQUID

Sample Number 81469705

Analysis : EPA Method 601/602/Freon

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l)
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Flouromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 10:16:08
Date:
Collected:05/14/97
Received :05/14/97
Completed:05/20/97

Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root Environmental
F C -G W 10-100
C O C #19
Liquid Sample/Sampled 12:00 P.M.
LIQUID

Sample Number 81609705

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Flouromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 10:17:46
Date:
Collected:05/14/97
Received :05/14/97
Completed:05/20/97
Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root Environmental
F C -G W 10-120
C O C #19
Liquid Sample/Sampled 1:30 P.M.
LIQUID

Sample Number 81619705

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Flouromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 10:19:24
Date:
Collected:05/14/97
Received :05/14/97
Completed:05/19/97

Sample Taken By
Client

Reported By:

N.Y.S. Lab I.D. #10058

Sample : Brown & Root Environmental
F C -G W 10-140
C O C #19
Liquid Sample/Sampled 2:15 P.M.
LIQUID

Sample Number 81629705

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Fluoromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 15:00:26
Date:
Collected:05/12/97
Received :05/21/97
Completed:05/19/97

Reported By:

N.Y.S. Lab I.D. #10088

Sample Taken By
Client

Sample : Brown & Root Environmental
F C-G W 11-11
C O C #17
Liquid Sample/Sampled 3:45 P.M.
LIQUID

Sample Number 80989705

Analysis : EPA Method 601/602/

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Fluoromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 15:03:33
Date:
Collected:05/~~12~~/97 11
Received :05/~~11~~/97 12
Completed:05/19/97
Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root Environmental
F C-G-W 11-26
C O C #17
Liquid Sample/Sampled 4:10 P.M.
LIQUID

Sample Number 80999705

Analysis : EPA Method 601/602/

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Fluoromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 15:06:10
Date:
Collected:05/12/97
Received :05/14/97
Completed:05/19/97
Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root Environmental
F C-G W 11-46
C O C #17
Liquid Sample/Sampled 4:50 P.M.
LIQUID

Sample Number 81009705

Analysis : EPA-Method 601/602/

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Fluoromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 15:01:21
Date:
Collected:06/05/97
Received :06/05/97
Completed:06/08/97
Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root Environmental
F C G W 12 11
C O C #23
Liquid Sample/Sampled 9:50 A.M.
LIQUID

Sample Number 84849706

Analysis : EPA Method 601/602/Freon

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Fluoromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 15:03:34
Date:
Collected:06/05/97
Received :06/05/97
Completed:06/08/97
Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root Environmental
F C G W 12-26
C O C #23
Liquid Sample/Sampled 11:15 A.M.
LIQUID

Sample Number 84859706

Analysis : EPA Method 601/602/Freon

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l)
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Fluoromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 15:05:02
Date:
Collected:06/05/97
Received :06/05/97
Completed:06/08/97
Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root Environmental
F C G W 12-46
C O C #23
Liquid Sample/Sampled 11:40 A.M.
LIQUID

Sample Number 84869706

Analysis : EPA Method 601/602/Freon

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l)
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Fluoromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 15:07:28
Date:
Collected:06/05/97
Received :06/05/97
Completed:06/08/97

Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root Environmental
F.C G W 13-14
C O C #23
Liquid Sample/Sampled 13:30 P.M.
LIQUID

Sample Number 84879706

Analysis : EPA Method 601/602/Freon

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Fluoromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 15:09:18
Date:
Collected:06/05/97
Received :06/05/97
Completed:06/08/97
Reported By:

N.Y.S. Lab I.D. #10068

Sample Taken By
Client

Sample : Brown & Root Environmental
F C C W 13-29
C C C #23
Liquid Sample/Sampled 13:50 P.M.
LIQUID

Sample Number 84889706

Analysis : EPA Method 601/602/Freon

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l)
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Fluoromethane	<0.50
1,1,1-Trichloroethane	1.86	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 15:11:05
Date:
Collected:06/05/97
Received :06/05/97
Completed:06/08/97

Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root Environmental
F C G W 13-49
C O C #23
Liquid Sample/Sampled 14:15 P.M.
LIQUID

Sample Number 84899706

Analysis : EPA Method 601/602/Freon

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Fluoromethane	<0.50
1,1,1-Trichloroethane	1.86	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	.50		
Trans-Dichloropropylene	.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 15:51:19
Date:
Collected:04/01/97
Received :04/01/97
Completed:04/04/97

Sample Taken By
Client

Reported By:

N.Y.S. Lab I.D. #10058

Sample : Brown & Root Environmental
E T G W 0 1 1 1
C O C #2
Liquid Sample/Sampled 09:56 A.M.
LIQUID

Sample Number 74299704

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	156
1,1-Dichloroethane	<0.50	Total Xylene	39
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Fluoromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	381		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 15:52:06
Date:
Collected:04/01/97
Received :04/01/97
Completed:04/03/97
Reported By:

N.Y.S. Lab I.D./#10058

Sample Taken By
Client

Sample : Brown & Root Environmental
E T G W 0 1 2 6
C O C #2
Liquid Sample/Sampled 10:17 A.M.
LIQUID

Sample Number 74309704

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<12.50	Ethylbenzene	142.7
1,1-Dichloroethylene	<12.50	Toluene	337
1,1-Dichloroethane	<12.50	Total Xylene	52 50
Trans-1,2-Dichloroethylene	<12.50	Bromomethane	<12.50
Chloroform	<12.50	Chloromethane	<12.50
1,2-Dichloroethane	<12.50	Trichloro-Fluoromethane	<12.50
1,1,1-Trichloroethane	<12.50	Trichlorotrifluorethane	<12.50
Carbon Tetrachloride	<12.50	Chloroethane	<12.50
Bromodichloromethane	<12.50		
1,2-Dichloropropane	<12.50		
Cis-Dichloropropylene	<12.50		
Trans-Dichloropropylene	<12.50		
Trichloroethylene	<12.50		
Vinyl Chloride	<12.50		
1,1,2-Trichloroethane	<12.50		
Dibromochloroethane	<12.50		
Bromoform	<12.50		
1,2-Dibromoethane	<12.50		
Tetrachloroethylene	<12.50		
Cis-1,2-Dichloroethylene	<12.50		
Benzene	<12.50		
Chlorobenzene	<12.50		
O-Dichlorobenzene (1,2)	<12.50		
M-Dichlorobenzene (1,3)	<12.50		
P-Dichlorobenzene (1,4)	<12.50		

Comments
Revised Data
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 15:52:47
Date:
Collected:04/01/97
Received :04/01/97
Completed:04/04/97

Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root Environmental
E T G W 0 2 1 1
C O C #2
Liquid Sample/Sampled 11:10 A.M.
LIQUID

Sample Number 74319704

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	31
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Fluoromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1.1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 15:53:25
Date:
Collected:04/01/97
Received :04/01/97
Completed:04/03/97
Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root Environmental
E T G W 0 2 2 6
C O C #2
Liquid Sample/Sampled 11:56 A.M.
LIQUID

Sample Number 74329704

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	55.25
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	15.25	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Fluoromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Comments
Revised Data
* Indicates less than 1 part per billion or below detection limit.

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 14:55:05
Date:
Collected:04/01/97
Received :04/02/97
Completed:04/04/97
Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root Environmental
E T G W 0 3 1 1
C C C #3
Liquid Sample/Sampled 01:46 P.M.
LIQUID

Sample Number 74629704

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<50	Ethylbenzene	1,084
1,1-Dichloroethylene	<50	Toluene	277
1,1-Dichloroethane	<50	Total Xylene	127
Trans-1,2-Dichloroethylene	<50	Bromomethane	353
Chloroform	<50	Chloromethane	<50
1,2-Dichloroethane	<50	Trichloro-Flouromethane	<50
1,1,1-Trichloroethane	<50	Trichlorotriflouroethane	<50
Carbon Tetrachloride	<50	Chloroethane	<50
Bromodichloromethane	<50		
1,2-Dichloropropane	<50		
Cis-Dichloropropylene	<50		
Trans-Dichloropropylene	<50		
Trichloroethylene	<50		
Vinyl Chloride	<50		
1,1,2-Trichloroethane	<50		
Dibromochloroethane	<50		
Bromoform	<50		
1,2-Dibromoethane	<50		
Tetrachloroethylene	<50		
Cis-1,2-Dichloroethylene	<50		
Benzene	<50		
Chlorobenzene	<50		
O-Dichlorobenzene (1,2)	<50		
M-Dichlorobenzene (1,3)	<50		
P-Dichlorobenzene	<50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 14:56:12
Date:
Collected:04/01/97
Received :04/02/97
Completed:
Reported By:

Sample Taken By
Client4/4/97

N.Y.S. Lab I.D. #10058

Sample : Brown & Root Environmental
E T G W 0 3 2 6
C O C #3
Liquid Sample/Sampled 01:58 P.M.
LIQUID

Sample Number 74639704

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<5	Ethylbenzene	23.2
1,1-Dichloroethylene	<5	Toluene	37.3
1,1-Dichloroethane	<5	Total Xylene	195.5
Trans-1,2-Dichloroethylene	<5	Bromomethane	<5
Chloroform	<5	Chloromethane	<5
1,2-Dichloroethane	<5	Trichloro-Flouromethane	<5
1,1,1-Trichloroethane	<5	Trichlorotriflouroethane	<5
Carbon Tetrachloride	<5	Chloroethane	<5
Bromodichloromethane	<5		
1,2-Dichloropropane	<5		
Cis-Dichloropropylene	<5		
Trans-Dichloropropylene	<5		
Trichloroethylene	<5		
Vinyl Chloride	<5		
1,1,2-Trichloroethane	<5		
Dibromochloroethane	<5		
Bromoform	<5		
1,2-Dibromoethane	<5		
Tetrachloroethylene	<5		
Cis-1,2-Dichloroethylene	<5		
Benzene	<5		
Chlorobenzene	<5		
O-Dichlorobenzene (1,2)	<5		
M-Dichlorobenzene (1,3)	<5		
P-Dichlorobenzene (1,4)	<5		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 15:21:23
Date:
Collected:04/06/97
Received :04/07/97
Completed:04/10/97

Sample Taken By
Client

Reported By:

N.Y.S. Lab I.D. #10058

Sample : Brown & Root Environmental
E T G W O 411
C O C #7
Liquid Sample/Sampled 2:09 P.M.
LIQUID

Sample Number 75519704

Analysis : EPA Method 601/602/

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<2.50	Ethylbenzene	<2.50
1,1-Dichloroethylene	<2.50	Toluene	<2.50
1,1-Dichloroethane	<2.50	Total Xylene	<2.50
Trans-1,2-Dichloroethylene	<2.50	Bromomethane	<2.50
Chloroform	<2.50	Chloromethane	<2.50
1,2-Dichloroethane	<2.50	Trichloro-Flouromethane	<2.50
1,1,1-Trichloroethane	<2.50	Trichlorotriflouroethane	<2.50
Carbon Tetrachloride	<2.50	Chloroethane	<2.50
Bromodichloromethane	<2.50		
1,2-Dichloropropane	<2.50		
Cis-Dichloropropylene	<2.50		
Trans-Dichloropropylene	<2.50		
Trichloroethylene	<2.50		
Vinyl Chloride	<2.50		
1,1,2-Trichloroethane	<2.50		
Dibromochloroethane	<2.50		
Bromoform	<2.50		
1,2-Dibromoethane	<2.50		
Tetrachloroethylene	<2.50		
Cis-1,2-Dichloroethylene	<2.50		
Benzene	<2.50		
Chlorobenzene	<2.50		
O-Dichlorobenzene (1,2)	<2.50		
M-Dichlorobenzene (1,3)	<2.50		
P-Dichlorobenzene (1,4)	<2.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 15:23:13
Date:
Collected:04/06/97
Received :04/07/97
Completed:04/10/97
Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root Environmental
E T G W O 426
C O C #7
Liquid Sample/Sampled 2:25 P.M.
LIQUID

Sample Number 75529704

Analysis : EPA Method 601/602/

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<2.50	Ethylbenzene	<2.50
1,1-Dichloroethylene	<2.50	Toluene	<2.50
1,1-Dichloroethane	<2.50	Total Xylene	<2.50
Trans-1,2-Dichloroethylene	<2.50	Bromomethane	<2.50
Chloroform	<2.50	Chloromethane	<2.50
1,2-Dichloroethane	<2.50	Trichloro-Flouromethane	<2.50
1,1,1-Trichloroethane	<2.50	Trichlorotriflouroethane	<2.50
Carbon Tetrachloride	<2.50	Chloroethane	<2.50
Bromodichloromethane	<2.50		
1,2-Dichloropropane	<2.50		
Cis-Dichloropropylene	<2.50		
Trans-Dichloropropylene	<2.50		
Trichloroethylene	<2.50		
Vinyl Chloride	<2.50		
1,1,2-Trichloroethane	<2.50		
Dibromochloroethane	<2.50		
Bromoform	<2.50		
1,2-Dibromoethane	<2.50		
Tetrachloroethylene	<2.50		
Cis-1,2-Dichloroethylene	<2.50		
Benzene	<2.50		
Chlorobenzene	<2.50		
O-Dichlorobenzene (1,2)	<2.50		
M-Dichlorobenzene (1,3)	<2.50		
P-Dichlorobenzene (1,4)	<2.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 13:09:44
Date:
Collected:04/08/97
Received :04/08/97
Completed:04/14/97

Sample Taken By
Client

Reported By:

N.Y.S. Lab I.D. #10058

Sample : Brown & Root Environmental
E T G W O 511
C O C #9
Liquid Sample/Sampled 10:38 A.M.
LIQUID

Sample Number 75899704

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	7.0	Ethylbenzene	<2.50
1,1-Dichloroethylene	<2.50	Toluene	<2.50
1,1-Dichloroethane	<2.50	Total Xylene	<2.50
Trans-1,2-Dichloroethylene	<2.50	Bromomethane	<2.50
Chloroform	<2.50	Chloromethane	<2.50
1,2-Dichloroethane	<2.50	Trichloro-Flouromethane	<2.50
1,1,1-Trichloroethane	<2.50	Trichlorotriflouroethane	<2.50
Carbon Tetrachloride	<2.50	Chloroethane	137.9
Bromodichloromethane	4.1		
1,2-Dichloropropane	<2.50		
Cis-Dichloropropylene	<2.50		
Trans-Dichloropropylene	<2.50		
Trichloroethylene	<2.50		
Vinyl Chloride	<2.50		
1,1,2-Trichloroethane	<2.50		
Dibromochloroethane	<2.50		
Bromoform	<2.50		
1,2-Dibromoethane	<2.50		
Tetrachloroethylene	<2.50		
Cis-1,2-Dichloroethylene	<2.50		
Benzene	<2.50		
Chlorobenzene	<2.50		
O-Dichlorobenzene (1,2)	<2.50		
M-Dichlorobenzene (1,3)	<2.50		
P-Dichlorobenzene (1,4)	<2.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 13:08:07
Date:
Collected:04/08/97
Received :04/08/97
Completed:04/14/97
Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root Environmental
E T G W O 526
C O C #9
Liquid Sample/Sampled 10:29 A.M.
LIQUID

Sample Number 75889704

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l)
Methylene Chloride	<2.50	Ethylbenzene	8.65
1,1-Dichloroethylene	187.7	Toluene	8.6
1,1-Dichloroethane	<2.50	Total Xylene	<2.50
Trans-1,2-Dichloroethylene	<2.50	Bromomethane	<2.50
Chloroform	<2.50	Chloromethane	<2.50
1,2-Dichloroethane	<2.50	Trichloro-Flouromethane	<2.50
1,1,1-Trichloroethane	165.5	Trichlorotriflouroethane	<2.50
Carbon Tetrachloride	<2.50	Chloroethane	45
Bromodichloromethane	<2.50		
1,2-Dichloropropane	<2.50		
Cis-Dichloropropylene	<2.50		
Trans-Dichloropropylene	<2.50		
Trichloroethylene	<2.50		
Vinyl Chloride	<2.50		
1,1,2-Trichloroethane	<2.50		
Dibromochloroethane	<2.50		
Bromoform	<2.50		
1,2-Dibromoethane	<2.50		
Tetrachloroethylene	<2.50		
Cis-1,2-Dichloroethylene	<2.50		
Benzene	<2.50		
Chlorobenzene	<2.50		
O-Dichlorobenzene (1,2)	<2.50		
M-Dichlorobenzene (1,3)	<2.50		
P-Dichlorobenzene (1,4)	<2.50		

Comments

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 13:06:20
Date:
Collected:04/08/97
Received :04/~~08~~/97 09
Completed:04/14/97

Sample Taken By
Client

Reported By:

N.Y.S. Lab I.D. #10058

Sample : Brown & Root Environmental
E T G W O 546
C O C #9
Liquid Sample/Sampled 10:08 A.M.
LIQUID

Sample Number 75879704

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<2.50	Ethylbenzene	<2.50
1,1-Dichloroethylene	29.65	Toluene	<2.50
1,1-Dichloroethane	<2.50	Total Xylene	<2.50
Trans-1,2-Dichloroethylene	<2.50	Bromomethane	<2.50
Chloroform	<2.50	Chloromethane	<2.50
1,2-Dichloroethane	<2.50	Trichloro-Flouromethane	<2.50
1,1,1-Trichloroethane	3.65	Trichlorotriflouroethane	<2.50
Carbon Tetrachloride	<2.50	Chloroethane	<2.50
Bromodichloromethane	<2.50		
1,2-Dichloropropane	<2.50		
Cis-Dichloropropylene	<2.50		
Trans-Dichloropropylene	<2.50		
Trichloroethylene	<2.50		
Vinyl Chloride	<2.50		
1,1,2-Trichloroethane	<2.50		
Dibromochloroethane	<2.50		
Bromoform	<2.50		
1,2-Dibromoethane	<2.50		
Tetrachloroethylene	<2.50		
Cis-1,2-Dichloroethylene	<2.50		
Benzene	<2.50		
Chlorobenzene	<2.50		
O-Dichlorobenzene (1,2)	<2.50		
M-Dichlorobenzene (1,3)	<2.50		
P-Dichlorobenzene (1,4)	<2.50		

Comments

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 13:14:01
Date:
Collected:04/08/97
Received :04/08/97
Completed:04/14/97
Reported By:

Sample Taken By
Client

N.Y.S. Lab I.D. #10088

Sample : Brown & Root Environmental
E T G W O 611
C O C #9
Liquid Sample/Sampled 12:11 ~~A.M.~~ P.M. 8ck 7/9/97
LIQUID

Sample Number 75929704

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<2.50	Ethylbenzene	<2.50
1,1-Dichloroethylene	<2.50	Toluene	<2.50
1,1-Dichloroethane	<2.50	Total Xylene	<2.50
Trans-1,2-Dichloroethylene	<2.50	Bromomethane	<2.50
Chloroform	<2.50	Chloromethane	<2.50
1,2-Dichloroethane	<2.50	Trichloro-Flouromethane	<2.50
1,1,1-Trichloroethane	<2.50	Trichlorotriflouroethane	<2.50
Carbon Tetrachloride	<2.50	Chloroethane	<2.50
Bromodichloromethane	<2.50		
1,2-Dichloropropane	<2.50		
Cis-Dichloropropylene	<2.50		
Trans-Dichloropropylene	<2.50		
Trichloroethylene	<2.50		
Vinyl Chloride	<2.50		
1,1,2-Trichloroethane	<2.50		
Dibromochloroethane	<2.50		
Bromoform	<2.50		
1,2-Dibromoethane	<2.50		
Tetrachloroethylene	<2.50		
Cis-1,2-Dichloroethylene	<2.50		
Benzene	<2.50		
Chlorobenzene	<2.50		
O-Dichlorobenzene (1,2)	<2.50		
M-Dichlorobenzene (1,3)	<2.50		
P-Dichlorobenzene (1,4)	<2.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 13:12:36
Date:
Collected:04/08/97
Received :04/08/97
Completed:04/14/97

Sample Taken By
Client

Reported By:

N.Y.S. Lab I.D. #10058

Sample : Brown & Root Environmental
E T G W O 626
C O C #9
Liquid Sample/Sampled 11:58 A.M.
LIQUID

Sample Number 75919704

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<2.50	Ethylbenzene	<2.50
1,1-Dichloroethylene	2.59	Toluene	<2.50
1,1-Dichloroethane	7.7	Total Xylene	<2.50
Trans-1,2-Dichloroethylene	<2.50	Bromomethane	<2.50
Chloroform	<2.50	Chloromethane	<2.50
1,2-Dichloroethane	<2.50	Trichloro-Flouromethane	<2.50
1,1,1-Trichloroethane	<2.50	Trichlorotriflouroethane	<2.50
Carbon Tetrachloride	<2.50	Chloroethane	<2.50
Bromodichloromethane	<2.50		
1,2-Dichloropropane	<2.50		
Cis-Dichloropropylene	<2.50		
Trans-Dichloropropylene	<2.50		
Trichloroethylene	<2.50		
Vinyl Chloride	<2.50		
1,1,2-Trichloroethane	<2.50		
Dibromochloroethane	<2.50		
Bromoform	<2.50		
1,2-Dibromoethane	<2.50		
Tetrachloroethylene	<2.50		
Cis-1,2-Dichloroethylene	<2.50		
Benzene	<2.50		
Chlorobenzene	<2.50		
O-Dichlorobenzene (1,2)	<2.50		
M-Dichlorobenzene (1,3)	<2.50		
P-Dichlorobenzene (1,4)	<2.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 13:11:11
Date:
Collected:04/08/97
Received :04/08/97
Completed:04/14/97
Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root Environmental
E T G W O 646
C O C #9
Liquid Sample/Sampled 11:42 A.M.
LIQUID

Sample Number 75909704

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<2.50	Ethylbenzene	<2.50
1,1-Dichloroethylene	<2.50	Toluene	<2.50
1,1-Dichloroethane	<2.50	Total Xylene	<2.50
Trans-1,2-Dichloroethylene	<2.50	Bromomethane	<2.50
Chloroform	<2.50	Chloromethane	<2.50
1,2-Dichloroethane	<2.50	Trichloro-Flouromethane	<2.50
1,1,1-Trichloroethane	<2.50	Trichlorotriflouroethane	<2.50
Carbon Tetrachloride	<2.50	Chloroethane	<2.50
Bromodichloromethane	<2.50		
1,2-Dichloropropane	<2.50		
Cis-Dichloropropylene	<2.50		
Trans-Dichloropropylene	<2.50		
Trichloroethylene	<2.50		
Vinyl Chloride	<2.50		
1,1,2-Trichloroethane	<2.50		
Dibromochloroethane	<2.50		
Bromoform	<2.50		
1,2-Dibromoethane	<2.50		
Tetrachloroethylene	<2.50		
Cis-1,2-Dichloroethylene	<2.50		
Benzene	<2.50		
Chlorobenzene	<2.50		
O-Dichlorobenzene (1,2)	<2.50		
M-Dichlorobenzene (1,3)	<2.50		
P-Dichlorobenzene (1,4)	<2.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 10:51:39
Date:
Collected: 04/20/97
Received : 04/20/97
Completed: 04/28/97

Sample Taken By
Client

Reported By:

N.Y.S. Lab I.D. #10058

Sample : Brown & Root Environmental
ET ~~A-F~~ G W O 715
C O C #13
Dce 7/8/97 Liquid Sample/Sampled 3:46 P.M.
LIQUID

Sample Number 77989704

Analysis : EPA Method 601/602/

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	1.22	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Fluoromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
Tetrachloroethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene	<0.50		
M-Dichlorobenzene	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 10:54:43
Date:
Collected:04/20/97
Received :04/20/97
Completed:04/28/97
Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root Environmental
ET G W C 730
Dec C O C #13
7/17/97 Liquid Sample/Sampled 4:04 P.M.
LIQUID

Sample Number 77999704

Analysis : EPA Method 601/602/

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l)
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	2.3	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Flouromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotrifluorethane	151.8
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	59.8		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	1.95		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 10:58:37
Date:
Collected:04/20/97
Received :04/20/97
Completed:04/25/97
Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root Environmental
ET — G W C 750
C C C #19
Liquid Sample/Sampled 4:24 P.M.
Liquid

DCK 7/8/97

Sample Number 78009704

Analysis : EPA Method 601/602/

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Flouromethane	<0.50
1,1,1-Trichloroethane	8.31	Trichlorotrifluorethane	22.91
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 15:53:50
Date:
Collected:07/10/97
Received :07/10/97
Completed:07/11/97
Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root Environmental
E T -Gw 7-70
C O C #29
Liquid Sample/Sampled 10:15 A.M.
LIQUID

Sample Number 89699707

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	[illegible].23
1,1-Dichloroethylene	<0.50	Toluene	<[illegible].50
1,1-Dichloroethane	<0.50	Total Xylene	3.01
Trans-1.2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Fluoromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotrifluorethane	2.74
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	10.79		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 15:56:04
Date:
Collected:07/10/97
Received :07/10/97
Completed:07/11/97
Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root Environmental
E T -GW 7-90
C O C #29
Liquid Sample/Sampled 11:30 A.M.
LIQUID

Sample Number 89709707

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Fluoromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotrifluorethane	0.56
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 10:26:14
Date:
Collected:04/19/97
Received :04/19/97
Completed:04/28/97

Sample Taken By
Client

Reported By:

N.Y.S. Lab I.D. #10058

Sample : Brown & Root Environmental
ET ~~F-C~~ G W O 815
C O C #13
Liquid Sample/Sampled 3:09 P.M.
LIQUID

Sample Number 77909704

Analysis : EPA Method 601/602/

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Fluoromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
Tetrachloroethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene	<0.50		
M-Dichlorobenzene	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F. Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 10:27:55
Date:
Collected:04/19/97
Received :04/19/97
Completed:04/28/97

Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root Environmental
ET [illegible] S W O 830
C O C #13
Dor 7/15/97 Field Sample/Sampled 3:23 P.M.
[illegible]

Sample Number 77919704

Analysis : EPA Method 601/602/

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l)
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	1.11	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Fluoromethane	<0.50
1,1,1-Trichloroethane	24.1	Trichlorotrifluoroethane	106.9
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
Tetrachloroethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene	<0.50		
M-Dichlorobenzene	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 10:30:15
Date:
Collected:04/19/97
Received :04/19/97
Completed:04/28/97
Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root Environmental
ET — G W O 850
Bck 7/18/97 C O C #13
Liquid Sample/Sampled 3:4[illegible] P.M.
LIQUID

Sample Number 77929704

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Fluoromethane	<0.50
1,1,1-Trichloroethane	24.59	Trichlorotrifluoroethane	72.30
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
Tetrachloroethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene	<0.50		
M-Dichlorobenzene	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 15:48:27
Date:
Collected:07/09/97
Received :07/09/97
Completed:07/11/97

Reported By:

N.Y.S. Lab I.D. #10068

Sample Taken By
Client

Sample : Brown & Root Environmental
E T -6w 8-70 ✔
C O C #29
Liquid Sample/Sampled 12:50 P.M.
LIQUID

Sample Number 89679707

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Iethylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	3.45	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Fluoromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotrifluorethane	1.13
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichlorometnane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 15:59:57
Date:
Collected:07/10/97
Received :07/10/97
Completed:07/11/97

Sample Taken By
Client

Reported By:

N.Y.S. Lab I.D. #10088

Sample : Brown & Root Environmental
E T -Dup 17 of ETEW08-70
C O C #29
Liquid Sample/Sampled 00:00
LIQUID

Sample Number 89719707

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l)
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	0.87
1,1-Dichloroethane	53.04	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Fluoromethane	<0.50
1,1,1-Trichloroethane	27.42	Trichlorotrifluorethane	3.58
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	27.34		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene	<0.50		

Comments

* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 15:50:59
Date:
Collected:07/09/97
Received :07/09/97
Completed:07/11/97

Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root Environmental
E T -Gw 8-90
C O C #29
Liquid Sample/Sampled 1:30 P.M.
LIQUID

Sample Number 89689707

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Iethylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	3.55	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Fluoromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotrifluorethane	1.47
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 14:47:25
Date:
Collected:05/~~22~~/97 12
Received :05/~~21~~/97 12 21
Completed:05/19/97

Sample Taken By
Client

Reported By:

N.Y.S. Lab I.D. #10058

Sample : Brown & Root Environmental
E T-G W 09 -12
C O C #17
Liquid Sample/Sampled 1:30 P.M.
LIQUID

Sample Number 80949705

Analysis : EPA Method 601/602/

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l)
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Flouromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 14:49:32
Date:
Collected:05/~~22~~/97 11 8
Received :05/~~21~~/97 12 7
Completed:05/19/97
Reported By:

Sample Taken By
Client

N.Y.S. Lab I.D. #10058

Sample : Brown & Root Environmental
E T-G W 09 -37
C O C #17
Liquid Sample/Sampled 1:45 P.M.
LIQUID

Sample Number 80959705

Analysis : EPA Method 601/602/

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l)
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Fluoromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 14:51:13
Date:
Collected:05/~~12~~/97
Received :05/~~11~~/~~97~~ 12 97
Completed:05/~~19~~/97

Sample Taken By
Client

Reported By:

N.Y.S. Lab I.D. #10058

Sample : Brown & Root Environmental
E T-G W 09 -67
C O C #17
Liquid Sample/Sampled 2:40 P.M.
LIQUID

Sample Number 80969705

Analysis : EPA-Method 601/602/

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l)
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Fluoromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 14:38:40
Date:
Collected:05/~~12~~/97 11
Received :05/~~11~~/97 12
Completed:05/15/97
Reported By:

Sample Taken By
Client

N.Y.S. Lab I.D. #10058

Sample : Brown & Root Environmental
E T-G W 10 -17
C O C #17
Liquid Sample/Sampled 9:05 A.M.
LIQUID

Sample Number 80919705

Analysis : EPA-Method 601/602/

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Flouromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 14:41:26
Date:
Collected:05/12/97
Received :05/14/97
Completed:05/15/97
Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root Environmental
E T-G W 10 -42
C O C #17
Liquid Sample/Sampled 9:45 A.M.
LIQUID

Sample Number 80929705

Analysis : EPA Method 601/602/

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l)
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Flouromethane	<0.50
1,1,1-Trichloroethane	0.62	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 14:54:02
Date:
Collected:05/~~12~~/97 11
Received :05/~~14~~/97 12
Completed:05/~~19~~/97

Sample Taken By
Client

Reported By:

N.Y.S. Lab I.D. #10058

Sample : Brown & Root Environmental
E T-Dup 07 Duplicate (Duplicate of ET-GW10-42)
C O C #17
Liquid Sample/Sampled 000
LIQUID

Sample Number 80979705

Analysis : EPA Method 601/602/

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l)
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Fluoromethane	<0.50
1,1,1-Trichloroethane	6.64	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 14:44:29
Date:
Collected:05/~~12~~/97 11
Received :05/~~11~~/97 12
Completed:05/~~15~~/97
Reported By:

N.Y.S. Lab I.D. #10056

Sample Taken By
Client

Sample : Brown & Root Environmental
E T-G W 10 -72
C O C #17
Liquid Sample/Sampled 10:30 A.M.
LIQUID

Sample Number 80939705

Analysis : EPA-Method 601/602/

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l)
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Flouromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 14:30:00
Date:
Collected:05/12/97 10 Dc
Received :05/16/97 12 21
Completed:05/15/97
Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root Environmental
E T-G W 11 -15
C O C #17
Liquid Sample/Sampled 2:20 P.M.
LIQUID

Sample Number 80889705

Analysis : EPA Method 601/602/

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Flouromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 14:32:02
Date:
Collected:05/~~12~~/97 1
Received :05/~~13~~/97 12
Completed:05/15/97
Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root Environmental
E T-G W 11 -40
C O C #17
Liquid Sample/Sampled 2:45 P.M.
LIQUID

Sample Number 80899705

Analysis : EPA-Method 601/602/

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Flouromethane	<0.50
1,1,1-Trichloroethane	5.74	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 14:34:26
Date:
Collected:05/~~12~~/97 10 8
Received :05/~~13~~/97 12 7
Completed:05/15/97
Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root Environmental
E T-G W 11 -70
C O C #17
Liquid Sample/Sampled 3:30 P.M.
LIQUID

Sample Number 80909705

Analysis : EPA Method 601/602/

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	0.71
1,1-Dichloroethane	2.39	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Flouromethane	<0.50
1,1,1-Trichloroethane	0.53	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 15:17:51
Date:
Collected:05/09/97
Received :05/09/97
Completed:05/12/97

Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root Environmental
E T G W 12 11
C O C #16
Liquid Sample/Sampled 10:10 A.M.
LIQUID

Sample Number 80789705

Analysis : EPA Method 601/602/

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Flouromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 15:19:22
Date:
Collected:05/09/97
Received :05/09/97
Completed:05/12/97

Sample Taken By
Client

Reported By:

N.Y.S. Lab I.D. #10058

Sample : Brown & Root Environmental
E T G W 12-26
C O C #16
Liquid Sample/Sampled 10:30 A.M.
LIQUID

Sample Number 80799705

Analysis : EPA Method 601/602/

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Flouromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 15:32:39
Date:
Collected:05/09/97
Received :05/09/97
Completed:05/13/97
Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root Environmental
E T Dup 06 Duplicate (Duplicate of ET GW12-26)
C O C #16
Liquid Sample/Sampled 00:00
LIQUID

Sample Number 80849705

Analysis : EPA Method 601/602/

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Flouromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 15:22:03
Date:
Collected:05/09/97
Received :05/09/97
Completed:05/12/97

Sample Taken By
Client

Reported By:

N.Y.S. Lab I.D. #10088

Sample : Brown & Root Environmental
E T G W 13-11
C O C #16
Liquid Sample/Sampled 11:20 A.M.
LIQUID

Sample Number 80809705

Analysis : EPA Method 601/602/

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Flouromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 15:23:51
Date:
Collected:05/09/97
Received :05/09/97
Completed:05/13/97
Reported By:

Sample Taken By
Client

N.Y.S. Lab I.D. #10058

Sample : Brown & Root Environmental
E T G W 13-26
C O C #16
Liquid Sample/Sampled 11:40 A.M.
LIQUID

Sample Number 80819705

Analysis : EPA Method 601/602/

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l)
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Flouromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 15:26:48
Date:
Collected:05/09/97
Received :05/09/97
Completed:05/13/97
Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root Environmental
E T G W 14-11
C O C #16
Liquid Sample/Sampled 12:10 A.M.
LIQUID

Sample Number 80829705

Analysis : EPA Method 601/602/

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l)
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Flouromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 15:28:52
Date:
Collected:05/09/97
Received :05/09/97
Completed:05/13/97

Sample Taken By
Client

Reported By:

N.Y.S. Lab I.D. #10058

Sample : Brown & Root Environmental
E T G W 14-26
C O C #16
Liquid Sample/Sampled 12:30 P.M.
LIQUID

Sample Number 80839705

Analysis : EPA Method 601/602/

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l)
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Flouromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 14:53:24
Date:
Collected:06/05/97
Received :06/05/97
Completed:06/08/97
Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root Environmental
E-T-G W15-11
C O C #23
Liquid Sample/Sampled 9:10 A.M.
LIQUID

Sample Number 84809706

Analysis : EPA Method 601/602/Freon

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Fluoromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotrifluoroethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 14:55:11
Date:
Collected:06/05/97
Received :06/05/97
Completed:06/08/97

Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root Environmental
E T-C W15-26
C O C #23
Liquid Sample/Sampled 9:30 A.M.
LIQUID

Sample Number 84819706

Analysis : EPA Method 601/602/Freon

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Fluoromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 14:58:33
Date:
Collected:06/05/97
Received :06/05/97
Completed:06/08/97
Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root Environmental
E T-Dup 14 Duplicate of ET-GW15-26
C C C #13
Liquid Sample/Sampled 00:00
LIQUID

Sample Number 84839706

Analysis : EPA Method 601/602/Freon

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	4.69	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Fluoromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 14:56:32
Date:
Collected:06/05/97
Received :06/05/97
Completed:06/08/97
Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root Environmental
E T-E W15-46
C O C #23
Liquid Sample/Sampled 9:55 A.M.
LIQUID

Sample Number 84829706

Analysis : EPA Method 601/602/Freon

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l)
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	49.21	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Fluoromethane	<0.50
1,1,1-Trichloroethane	22.36	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50	Trchlorofluoroethane	0.82
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 14:45:13
Date:
Collected:07/11/97
Received :07/11/97
Completed:07/15/97
Reported By:

N.Y.S. Lab I.D. #10088

Sample Taken By
Client

Sample : Brown & Root Environmental
E T -G W-70
C O C #00
Liquid Sample/Sampled 9:00 A.M.
LIQUID

Sample Number 89789707

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l)
Methylene Chloride	<0.50	Ethylbenzene	1.72
1,1-Dichloroethylene	4.55	Toluene	*
1,1-Dichloroethane	42.73	Total Xylene	1.18
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Fluoromethane	<0.50
1,1,1-Trichloroethane	24.43	Trichlorotrifluorethane	3.97*
Carbon Tetrachloride	<0.50	Chloroetnane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	1.39		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 14:46:42
Date:
Collected:07/11/97
Received :07/11/97
Completed:07/15/97
Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root Environmental
E T -G W 90
C C C #30
Liquid Sample/Sampled 9:50 A.M.
LIQUID

Sample Number 89799707

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	4.55	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	20.49	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Flouromethane	<0.50
1,1,1-Trichloroethane	11.67	Trichlorotrifluorethane	2.13*
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 15:13:37
Date:
Collected:06/05/97
Received :06/05/97
Completed:06/08/97
Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root Environmental
[illegible] G W 1[illegible]-15
[illegible] #23
Liquid Sample/Sampled 8:50 A.M.
LIQUID

Sample Number 84909706

Analysis : EPA Method 601/602/Freon

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l)
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Fluoromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 15:15:13
Date:
Collected:06/05/97
Received :06/05/97
Completed:06/08/97
Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root Environmental
E T G W 16-40
C O C #23
Liquid Sample/Sampled 9:15 A.M.
LIQUID

Sample Number 84919706

Analysis : EPA Method 601/602/Freon

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	5.35	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Fluoromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 15:20:11
Date:
Collected:06/05/97
Received :06/05/97
Completed:06/10/97
Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root Environmental
E T Dup 15 Duplicate ET-GW16-40
C O C #23
Liquid Sample/Sampled 0000
LIQUID

Sample Number 84939706

Analysis : EPA Method 601/602/Freon

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l)
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	6.41	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Fluoromethane	<0.50
1,1,1-Trichloroethane	0.85	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 15:17:54
Date:
Collected:06/05/97
Received :06/05/97
Completed:06/10/97

Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root Environmental
E T G W 16-70
C O C #23
Liquid Sample/Sampled 10:15 A.M.
LIQUID

Sample Number 84929706

Analysis : EPA Method 601/602/Freon

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	12.91	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Fluoromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 15:02:19
Date:
Collected:06/09/97
Received :06/09/97
Completed:06/16/97
Reported By:

Sample Taken By
Client

N.Y.S. Lab I.D. #10058

Sample : Brown & Root Environmental
S A G W 101-17
C O C #25
Liquid Sample/Sampled 3:10 P.M.
LIQUID

Sample Number 85579706

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	4.23	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	1.01	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Fluoromethane	<0.50
1,1,1-Trichloroethane	11.44	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50	Dichlorodifluoromethane	<0.50
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	0.56		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
U-Dichlorobenzene (1,4)	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 15:08:02
Date:
Collected:06/09/97
Received :06/09/97
Completed:06/16/97
Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root Environmental
S A G W 101-32
C O C #25
Liquid Sample/Sampled 3:30 P.M.
LIQUID

Sample Number 85589706

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	31.27	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	4.72	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Fluoromethane	2.63
1,1,1-Trichloroethane	15.10	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50	Dichlorodifluoromethane	<0.50
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	1.20		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Comments

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 14:24:00
Date:
Collected:06/20/97
Received :06/20/97
Completed:06/25/97

Sample Taken By
Client

Reported By:

N.Y.S. Lab I.D. #10058

Sample : Brown & Root Environmental
S A -Gw 101- 72
C O C #27
Liquid Sample/Sampled 11:30 A.M.
LIQUID

Sample Number 87339706

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l)
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	4.34	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Fluoromethane	<0.50
1,1,1-Trichloroethane	1.08	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	1.88		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 14:18:11
Date:
Collected:06/19/97
Received :06/19/97
Completed:06/24/97

Sample Taken By
Client

Reported By:

N.Y.S. Lab I.D. #10058

Sample : Brown & Root Environmental
S A -G W 102-11
C O C #27
Liquid Sample/Sampled 2:40 P.M.
LIQUID

Sample Number 87309706

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l)
Methylene Chloride	<0.50	Ethylbenzene	2.93
1,1-Dichloroethylene	<0.50	Toluene	0.98
1,1-Dichloroethane	<0.50	Total Xylene	18.36
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Fluoromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 14:19:43
Date:
Collected:06/19/97
Received :06/19/97
Completed:06/24/97

Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root Environmental
S A -G W 102-26
C O C #27
Liquid Sample/Sampled 3:00 P.M.
LIQUID

Sample Number 87319706

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Fluoromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 14:22:00
Date:
Collected:06/19/97
Received :06/19/97
Completed:06/24/97
Reported By:

Sample Taken By
Client

N.Y.S. Lab I.D. #10058

Sample : Brown & Root Environmental
S A -G W 102-46
C O C #27
Liquid Sample/Sampled 3:30 P.M.
LIQUID

Sample Number 87329706

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb mmg/l
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Fluoromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 14:07:05
Date:
Collected:06/20/97
Received :06/20/97
Completed:06/24/97

Sample Taken By
Client

Reported By:

N.Y.S. Lab I.D. #10058

Sample : Brown & Root Environmental
S A -GW103-17
C O C #27
Liquid Sample/Sampled 10:15 A.M.
LIQUID

Sample Number 87259706

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Fluoromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 14:08:39
Date:
Collected:06/20/97
Received :06/20/97
Completed:06/24/97

Sample Taken By
Client

Reported By:

N.Y.S. Lab I.D. #10058

Sample : Brown & Root Environmental
S A -Gw103-32
C O C #27
Liquid Sample/Sampled 10:45 A.M.
LIQUID

Sample Number 87269706

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Fluoromethane	<0.50
1,1,1-Trichloroethane	2.17	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroetnane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 14:11:28
Date:
Collected:06/20/97
Received :06/20/97
Completed:06/24/97

Sample Taken By
Client

Reported By:

N.Y.S. Lab I.D. #10058

Sample : Brown & Root Environmental
S A -Dup 16 Duplicate SAEW103-32
C O C #27
Liquid Sample/Sampled 00:00
LIQUID

Sample Number 87279706

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l)
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Fluoromethane	<0.50
1,1,1-Trichloroethane	0.68	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Sample Tap: 4

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 14:14:23
Date:
Collected:06/19/97
Received :06/19/97
Completed:06/24/97

Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root Environmental
S A -G W 103-52
C O C #27
Liquid Sample/Sampled 11:15 A.M.
LIQUID

Sample Number 87289706

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Fluoromethane	<0.50
1,1,1-Trichloroethane	2.12	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 14:16:10
Date:
Collected:06/19/97
Received :06/19/97
Completed:06/24/97

Sample Taken By
Client

Reported By:

N.Y.S. Lab I.D. #10058

Sample : Brown & Root Environmental
S A -G W 103-72
C O C #27
Liquid Sample/Sampled 12:15 P.M.
LIQUID

Sample Number 87299706

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Fluoromethane	<0.50
1,1,1-Trichloroethane	0.71	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 14:05:07
Date:
Collected:07/14/97
Received :07/14/97
Completed:07/16/97
Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root Environmental
S A -Gw104-17
C O C #31
Liquid Sample/Sampled 9:40 A.M.
LIQUID

Sample Number 90149707

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l)
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Fluoromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 14:06:45
Date:
Collected:07/11/97
Received :07/11/97
Completed:07/16/97
Reported By:

Sample Taken By
Client

N.Y.S. Lab I.D. #10058

Sample : Brown & Root Environmental
S A -GW104-32
C O C #31
Liquid Sample/Sampled 9:50 A.M.
LIQUID

Sample Number 90159707

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	2.14	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	2.54	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Fluoromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 14:09:01
Date:
Collected:07/14/97
Received :07/14/97
Completed:07/16/97
Reported By:

Sample Taken By
Client

N.Y.S. Lab I.D. #10058

Sample : Brown & Root Environmental
S A -Gw104-52
C O C #31
Liquid Sample/Sampled 10:10 A.M.
LIQUID

Sample Number 90169707

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	2.91	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	0.94	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Fluoromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 14:11:31
Date:
Collected:07/14/97
Received :07/14/97
Completed:07/16/97

Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root Environmental
S A -Gw104-72
C O C #31
Liquid Sample/Sampled 11:00 A.M.
LIQUID

Sample Number 90179707

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l)
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	1.36	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	0.92	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Fluoromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	0.42		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 14:13:11
Date:
Collected:07/14/97
Received :07/14/97
Completed:07/16/97

Sample Taken By
Client

Reported By:

N.Y.S. Lab I.D. #10050

Sample : Brown & Root Environmental
S A -Gw105-17
C O C #31
Liquid Sample/Sampled 12:50 P.M.
LIQUID

Sample Number 90189707

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	0.57	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Fluoromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotrifluorethane	<0.[illegible]
Carbon Tetrachloride	<0.50	Chloroethane	<0.5[illegible]
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	1.70		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachl[illegible]oethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 14:15:33
Date:
Collected:07/14/97
Received :07/14/97
Completed:07/16/97

Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root Environmental
S A -GW105-32
C O C #31
Liquid Sample/Sampled 13:05 P.M.
LIQUID

Sample Number 90199707

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	3.86	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Fluoromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotrifluoroethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 14:21:08
Date:
Collected:07/14/97
Received :07/14/97
Completed:07/16/97
Reported By:

Sample Taken By
Client

N.Y.S. Lab I.D. #10068

Sample : Brown & Root Environmental
S A -GW105-52
C O C #31
Liquid Sample/Sampled 13:30 P.M.
LIQUID

Sample Number 90209707

Analysis : EPA-Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l)
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Di -loroethylene	0.59	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Fluoromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene.	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 14:23:09
Date:
Collected:07/14/97
Received :07/14/97
Completed:07/16/97

Sample Taken By
Client

Reported By:

N.Y.S. Lab I.D. #10058

Sample : Brown & Root Environmental
S A -GW105-72
C C C #01
Liquid Sample/Sampled 14:00 P.M.
LIQUID

Sample Number 90219707

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l)
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	1.03	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Fluoromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotrifluorethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 15:35:02
Date:
Collected:07/14/97
Received :07/14/97
Completed:08/18/97

Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root Environmental
S A -Tb-31 Trip Blank
C O C #32
Liquid Sample/Sampled 2:00 P.M.
LIQUID

Sample Number 12609708

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l)
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Flouromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotriflouroethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 10:02:07
Date:
Collected:08/14/97
Received :08/14/97
Completed:08/18/97

Sample Taken By
Client

Reported By:

N.Y.S. Lab I.D. #10058

Sample : Brown & Root Environmental
Sa-GW106-12
C O C #31
Liquid Sample/Sampled 9:40 A.M.
LIQUID

Sample Number 12489708

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l)
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Flouromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotriflouroethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 10:14:18
Date:
Collected:08/14/97
Received :08/14/97
Completed:08/18/97
Reported By:

N.Y.S. Lab I.D. 10058

Sample Taken By
Client

Sample : Brown & Root Environmental
Sa-Gw106-27
C O C #31
Liquid Sample/Sampled 10:45 A.M.
LIQUID

Sample Number 12499708

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l)
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Flouromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotriflouroethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 10:27:02
Date:
Collected:08/14/97
Received :08/14/97
Completed:08/18/97

Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root Environmental
Sa-Dup-19 field dup of SA-GW-106-27
C O C #31
Liquid Sample/Sampled 00:00
LIQUID

Sample Number 12529708

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Flouromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotriflouroethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 10:20:27
Date:
Collected:08/14/97
Received :08/14/97
Completed:08/18/97
Reported By:

Sample Taken By
Client

N.Y.S. Lab I.D. #10058

Sample : Brown & Root Environmental
Sa-Gw106-47
C O C #31
Liquid Sample/Sampled 12:00 P.M.
LIQUID

Sample Number 12509708

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	3.11	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Flouromethane	<0.50
1,1,1-Trichloroethane	11.89	Trichlorotriflouroethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 10:21:50
Date:
Collected:08/14/97
Received :08/14/97
Completed:08/18/97
Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root Environmental
Sa-Gw106-67
C O C #31
Liquid Sample/Sampled 1:00 P.M.
LIQUID

Sample Number 12519708

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l)
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	1.15	Toluene	<0.50
1,1-Dichloroethane	7.32	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Flouromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotriflouroethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 15:38:25
Date:
Collected:07/14/97
Received :07/14/97
Completed:08/18/97
Reported By:

N.Y.S. Lab I.D. #10088

Sample Taken By
Client

Sample : Brown & Root Environmental
S A -Gw107-25
C O C #32
Liquid Sample/Sampled 10:45 A.M.
LIQUID

Sample Number 12619708

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l)
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Flouromethane	<0.50
1,1-Trichloroethane	<0.50	Trichlorotriflouroethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 15:40:15
Date:
Collected:07/15/97
Received :07/15/97
Completed:08/18/97
Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root Environmental
S A -GW107-40
C O C #32
Liquid Sample/Sampled 8:35 A.M.
LIQUID

Sample Number 12629708

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l)
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Flouromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotriflouroethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport; New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 15:41:56
Date:
Collected:07/15/97
Received :07/15/97
Completed:08/18/97

Sample Taken By
Client

Reported By:_____

N.Y.S. Lab I.D. #10058

Sample : Brown & Root Environmental
S A -Gw107-60
C O C #32
Liquid Sample/Sampled 9:10 A.M.
LIQUID

Sample Number 12639708

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chlorometnane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Flouromethane	<0.50
1,1,1-Trichloroetnane	<0.50	Trichlorotriflouroethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichlorometnane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoetnane	<0.50		
Tetrachloroetnylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Comments

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 15:43:51
Date:
Collected:07/15/97
Received :07/15/97
Completed:08/18/97

Sample Taken By
Client

Reported By:

N.Y.S. Lab I.D. #10058

Sample : Brown & Root Environmental
S A -GW107-80
C O C #32
Liquid Sample/Sampled 9:50 A.M.
LIQUID

Sample Number 12649708

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l)
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Flouromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotriflouroethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 21:26:45
Date:
Collected:11/13/97
Received :11/13/97
Completed:11/17/97

Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root
Sa-108-23
Liquid Sample/Sampled 10:35 A.M.
LIQUID

Sample Number 23299711

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Flouromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotriflouroethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 21:28:26
Date:
Collected:11/13/97
Received :11/13/97
Completed:11/17/97

Sample Taken By
Client

Reported By:

N.Y.S. Lab I.D. #10058

Sample : Brown & Root
Sa-108-38
Liquid Sample/Sampled 11:15 A.M.
LIQUID

Sample Number 23309711

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Flouromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotriflouroethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 21:30:18
Date:
Collected:11/13/97
Received :11/13/97
Completed:11/17/97
Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root
Sa-108-58
Liquid Sample/Sampled 12:20 A.M.
LIQUID

Sample Number 23319711

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	1.28	Trichloro-Flouromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotriflouroethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 21:32:17
Date:
Collected:11/13/97
Received :11/13/97
Completed:11/17/97

Sample Taken By
Client

Reported By:

N.Y.S. Lab I.D. #10058

Sample : Brown & Root
Sa-108-78
Liquid Sample/Sampled 1:25 P.M.
LIQUID

Sample Number 23329711

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	1.57	Trichloro-Flouromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotriflouroethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 21:34:07
Date:
Collected:11/13/97
Received :11/13/97
Completed:11/17/97
Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root
Sa-108-98
Liquid Sample/Sampled 2:55 P.M.
LIQUID

Sample Number 23339711

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Flouromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotriflouroethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 02:50:09
Date:
Collected:11/14/97
Received :11/14/97
Completed:11/19/97
Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root
Sa-109-20
Liquid Sample/Sampled 8:15 A.M.
LIQUID

Sample Number 23459711

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Flouromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotriflouroethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 02:53:38
Date:
Collected:11/14/97
Received :11/14/97
Completed:11/19/97
Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root
Sa-109-35
Liquid Sample/Sampled 8:50 A.M.
LIQUID

Sample Number 23469711

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	C[illegible]romethane	<0.50
1,2-Dichloroethane	<0.50	T[illegible]chloro-Flouromethane	<0.50
1,1,[illegible]-Trichloroethane	<0.50	Trichlorotriflouroethane	<0.50
Carb[illegible]n Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 02:54:54
Date:
Collected:11/14/97
Received :11/14/97
Completed:11/19/97
Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root
Sa-109-55
Liquid Sample/Sampled 9:15 A.M.
LIQUID

Sample Number 23479711

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Flouromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotriflouroethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 02:56:58
Date:
Collected:11/14/97
Received :11/14/97
Completed:11/19/97
Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root
Sa-109-75
Liquid Sample/Sampled 9:45 A.M.
LIQUID

Sample Number 23489711

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Flouromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotriflouroethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 03:13:22
Date:
Collected:11/14/97
Received :11/14/97
Completed:11/19/97
Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Robt
Sa-109-95
Liquid Sample/Sampled 10:25 A.M.
LIQUID

Sample Number 23549711

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Flouromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotriflouroethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 03:01:02
Date:
Collected:11/14/97
Received :11/14/97
Completed:11/19/97
Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root
Sa-110-29
Liquid Sample/Sampled 12:53 A.M.
LIQUID

Sample Number 23499711

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Flouromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotriflouroethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 03:03:31
Date:
Collected:11/14/97
Received :11/14/97
Completed:11/19/97
Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root
Sa-110-44
Liquid Sample/Sampled 1:15 P.M.
LIQUID

Sample Number 23509711

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l)
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Flouromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotriflouroethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 03:05:48
Date:
Collected: 11/14/97
Received : 11/14/97
Completed: 11/19/97
Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root
Sa-110-64
Liquid Sample/Sampled 1:45 P.M.
LIQUID

Sample Number 23519711

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Flouromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotriflouroethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 03:07:39
Date:
Collected:11/14/97
Received :11/14/97
Completed:11/19/97
Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root
Sa-110-84
Liquid Sample/Sampled 2:20 P.M.
LIQUID

Sample Number 23529711

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l)
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Flouromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotriflouroethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

Volumetric Techniques, LTD.

317 Bernice Drive * Bayport, New York 11705 * (516) 472-4848

To: C F Braun, Kelly A. Johnson
661 Anderson Dr/Foster Plaza 7
Pittsburgh PA 15220
(412) 921-7273

Time Of Login : 03:11:22
Date:
Collected:11/14/97
Received :11/14/97
Completed:11/19/97
Reported By:

N.Y.S. Lab I.D. #10058

Sample Taken By
Client

Sample : Brown & Root
Sa-110-104
Liquid Sample/Sampled 2:50 P.M.
LIQUID

Sample Number 23539711

Analysis : EPA Method 601/602

Parameters	Results ppb(mmg/l)	Parameters	Results ppb(mmg/l)
Methylene Chloride	<0.50	Ethylbenzene	<0.50
1,1-Dichloroethylene	<0.50	Toluene	<0.50
1,1-Dichloroethane	<0.50	Total Xylene	<0.50
Trans-1,2-Dichloroethylene	<0.50	Bromomethane	<0.50
Chloroform	<0.50	Chloromethane	<0.50
1,2-Dichloroethane	<0.50	Trichloro-Flouromethane	<0.50
1,1,1-Trichloroethane	<0.50	Trichlorotriflouroethane	<0.50
Carbon Tetrachloride	<0.50	Chloroethane	<0.50
Bromodichloromethane	<0.50		
1,2-Dichloropropane	<0.50		
Cis-Dichloropropylene	<0.50		
Trans-Dichloropropylene	<0.50		
Trichloroethylene	<0.50		
Vinyl Chloride	<0.50		
1,1,2-Trichloroethane	<0.50		
Dibromochloroethane	<0.50		
Bromoform	<0.50		
1,2-Dibromoethane	<0.50		
Tetrachloroethylene	<0.50		
Cis-1,2-Dichloroethylene	<0.50		
Benzene	<0.50		
Chlorobenzene	<0.50		
O-Dichlorobenzene (1,2)	<0.50		
M-Dichlorobenzene (1,3)	<0.50		
P-Dichlorobenzene (1,4)	<0.50		

Comments
* Indicates less than 1 part per billion or below detection limit.

* CONSULTING CHEMISTS * COMPLETE LABORATORY TESTING *
* Sander R. Sternig * Director of Laboratories *

A.2

SUPPLEMENTAL GROUNDWATER INVESTIGATION

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

LAB NO:203119.13 07/20/00

Tetra Tech Nus, Inc.
Foster Plaza VII, 661 Anderson Dr.
Pittsburgh, PA 15220-2745
ATTN: David Brayack PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853-0300
COLLECTED BY: Client DATE COL'D:07/12/00 RECEIVED:07/14/00

SAMPLE: Water sample, FC-~~GW~~02S-15-00, 1347
MW

ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	720
Methylene Chloride	ug/L	<1
Acetone	ug/L	110
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	37
1,1 Dichloroethane	ug/L	3600
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	2200
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	180
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

ANALYTICAL PARAMETERS		
Ethyl Benzene	ug/L	27
Styrene	ug/L	<1
o Xylene	ug/L	220
m + p Xylene	ug/L	350
Xylene	ug/L	570
Bromomethane	ug/L	<1
ter.ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlordifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	6

cc:

REMARKS:

DIRECTOR

rn= 18209 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

LAB NO:203119.14 07/20/00

Tetra Tech Nus, Inc.
Foster Plaza VII, 661 Anderson Dr.
Pittsburgh, PA 15220-2745
ATTN: David Brayack PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853-0300
COLLECTED BY: Client DATE COL'D:07/12/00 RECEIVED:07/14/00

SAMPLE: Water sample, FC-~~C~~W03S-15-00, 1635
mw

ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	<1
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

ANALYTICAL PARAMETERS		
Ethyl Benzene	ug/L	81
Styrene	ug/L	<1
o Xylene	ug/L	49
m + p Xylene	ug/L	380
Xylene	ug/L	430
Bromomethane	ug/L	<1
ter.ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlordifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR

rn= 18210 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

LAB NO:203604.01 08/15/00

Tetra Tech Nus, Inc.
Foster Plaza VII. 661 Anderson Dr.
Pittsburgh, PA 15220-2745
ATTN: David Brayack PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853
COLLECTED BY: Client DATE COL'D:08/07/00 RECEIVED:08/09/00

SAMPLE: Water sample, FC-~~TW014~~ TW04-165-01, 1120

ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	16
Methylene Chloride	ug/L	<1
Acetone	ug/L	12
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	72
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	220
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	4
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

ANALYTICAL PARAMETERS		
Ethyl Benzene	ug/L	3
Styrene	ug/L	<1
o Xylene	ug/L	12
m + p Xylene	ug/L	24
Xylene	ug/L	36
Bromomethane	ug/L	<1
ter.ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlordifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR

rn= 21633 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

LAB NO:203604.02 08/15/00

Tetra Tech Nus, Inc.
Foster Plaza VII, 661 Anderson Dr.
Pittsburgh, PA 15220-2745
ATTN: David Brayack PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853
COLLECTED BY: Client DATE COL'D:08/07/00 RECEIVED:08/09/00

SAMPLE: Water sample, FC-~~TW014~~-180-01, 1246
TW04

ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	2
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	110
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	7
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	19
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

ANALYTICAL PARAMETERS		
Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	2
m + p Xylene	ug/L	3
Xylene	ug/L	5
Bromomethane	ug/L	<1
ter.ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlordifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR Thomas R. Gen

rn= 21634 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

LAB NO:203604.03 08/15/00

Tetra Tech Nus, Inc.
Foster Plaza VII, 661 Anderson Dr.
Pittsburgh, PA 15220-2745
ATTN: David Brayack P0#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853
COLLECTED BY: Client DATE COL'D:08/07/00 RECEIVED:08/09/00

SAMPLE: Water sample, FC-~~TW014~~-200-01, 1420
TW04

ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	3
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	13
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

ANALYTICAL PARAMETERS		
Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter.ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlordifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR Thomas R. Sen

rn= 21635 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

LAB NO:203458.01 08/17/00

Tetra Tech Nus, Inc.
Foster Plaza VII, 661 Anderson Dr.
Pittsburgh, PA 15220-2745
ATTN: David Brayack PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Bethpage Site, #N0565.0200
COLLECTED BY: Client DATE COL'D:07/31/00 RECEIVED:08/02/00

SAMPLE: Water sample, FC-TW09-160-01, 1140

ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	9
Methylene Chloride	ug/L	<1
Acetone	ug/L	24
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	3
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	7
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

ANALYTICAL PARAMETERS		
Ethyl Benzene	ug/L	16
Styrene	ug/L	<1
o Xylene	ug/L	42
m + p Xylene	ug/L	91
Xylene	ug/L	130
Bromomethane	ug/L	<1
ter.ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlordifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR

rn= 20272 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

LAB NO:203458.02 08/17/00

Tetra Tech Nus, Inc.
Foster Plaza VII, 661 Anderson Dr.
Pittsburgh, PA 15220-2745
ATTN: David Brayack PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Bethpage Site, #N0565.0200
COLLECTED BY: Client DATE COL'D:07/31/00 RECEIVED:08/02/00

SAMPLE: Water sample, FC-TW09-180-01, 1442

ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	2
Methylene Chloride	ug/L	<1
Acetone	ug/L	13
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	<1
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

ANALYTICAL PARAMETERS		
Ethyl Benzene	ug/L	2
Styrene	ug/L	<1
o Xylene	ug/L	3
m + p Xylene	ug/L	7
Xylene	ug/L	10
Bromomethane	ug/L	<1
ter.ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlordifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR

rn= 20273 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

LAB NO:203458.03 08/17/00

Tetra Tech Nus, Inc.
Foster Plaza VII, 661 Anderson Dr.
Pittsburgh, PA 15220-2745
ATTN: David Brayack PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Bethpage Site, #N0565.0200
COLLECTED BY: Client DATE COL'D:07/31/00 RECEIVED:08/02/00

SAMPLE: Water sample, FC-TW09-200-01, 1630

ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	<1
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

ANALYTICAL PARAMETERS		
Ethyl Benzene	ug/L	1
Styrene	ug/L	<1
o Xylene	ug/L	3
m + p Xylene	ug/L	7
Xylene	ug/L	10
Bromomethane	ug/L	<1
ter.ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlordifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR

rn= 20274 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

LAB NO:203484.01 08/09/00

Tetra Tech Nus, Inc.
Foster Plaza VII, 661 Anderson Dr.
Pittsburgh, PA 15220-2745
ATTN: David Brayack PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853
COLLECTED BY: Client DATE COL'D:08/02/00 RECEIVED:08/03/00

SAMPLE: Water sample, FC-TW20-105-01, 1325

ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	<1
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

ANALYTICAL PARAMETERS		
Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter.ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlordifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR

rn= 20649 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

LAB NO:203484.02 08/09/00

Tetra Tech Nus, Inc.
Foster Plaza VII, 661 Anderson Dr.
Pittsburgh, PA 15220-2745
ATTN: David Brayack PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853
COLLECTED BY: Client DATE COL'D:08/02/00 RECEIVED:08/03/00

SAMPLE: Water sample, FC-TW20-120-01, 1425

ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	<1
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

ANALYTICAL PARAMETERS		
Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter.ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlordifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR

rn= 20650 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

LAB NO:203484.03 08/09/00

Tetra Tech Nus, Inc.
Foster Plaza VII, 661 Anderson Dr.
Pittsburgh, PA 15220-2745
ATTN: David Brayack PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853
COLLECTED BY: Client DATE COL'D:08/02/00 RECEIVED:08/03/00

SAMPLE: Water sample, FC-TW20-140-01, 1540

ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	<1
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

ANALYTICAL PARAMETERS		
Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter.ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlordifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR

rn= 20651 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

LAB NO:203484.04 08/09/00

Tetra Tech Nus, Inc.
Foster Plaza VII, 661 Anderson Dr.
Pittsburgh, PA 15220-2745
ATTN: David Brayack PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853
COLLECTED BY: Client DATE COL'D:08/03/00 RECEIVED:08/03/00

SAMPLE: Water sample, FC-TW20-160-01, 0820

ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	2
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

ANALYTICAL PARAMETERS		
Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter.ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlordifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR

rn= 20652 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

LAB NO:203484.05 08/09/00

Tetra Tech Nus, Inc.
Foster Plaza VII, 661 Anderson Dr.
Pittsburgh, PA 15220-2745
ATTN: David Brayack P0#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853
COLLECTED BY: Client DATE COL'D:08/03/00 RECEIVED:08/03/00

SAMPLE: Water sample, FC-TW20-180-01, 0935

ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	<1
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

ANALYTICAL PARAMETERS		
Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter.ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlordifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR

rn= 20653 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

LAB NO:203484.06 08/09/00

Tetra Tech Nus, Inc.
Foster Plaza VII, 661 Anderson Dr.
Pittsburgh, PA 15220-2745
ATTN: David Brayack PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853
COLLECTED BY: Client DATE COL'D:08/03/00 RECEIVED:08/03/00

SAMPLE: Water sample, FC-TW20-200-01, 1055

ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	<1
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

ANALYTICAL PARAMETERS		
Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter.ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlordifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR

rn= 20654 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

LAB NO:203484.07 08/09/00

Tetra Tech Nus, Inc.
Foster Plaza VII, 661 Anderson Dr.
Pittsburgh, PA 15220-2745
ATTN: David Brayack PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853
COLLECTED BY: Client DATE COL'D:08/03/00 RECEIVED:08/03/00

SAMPLE: Water sample, FC-TW20-210-01, 1130

ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	<1
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

ANALYTICAL PARAMETERS		
Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter.ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlordifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR

rn= 20655 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777 • FAX (516) 422-5770

LAB NO:203238.06 07/27/00

Tetra Tech Nus, Inc.
Foster Plaza VII, 661 Anderson Dr.
Pittsburgh, PA 15220-2745
ATTN: David Brayack PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853
COLLECTED BY: Client DATE COL'D:07/20/00 RECEIVED:07/21/00

SAMPLE: Water sample, FC-TW21-60-01, 1110

ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	4.5
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	1
1,1 Dichloroethene	ug/L	1
1,1 Dichloroethane	ug/L	39
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	14
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

ANALYTICAL PARAMETERS		
Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter.ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlordifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR

rn= 18969 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777 • FAX (516) 422-5770

LAB NO:203238.07 07/27/00

Tetra Tech Nus, Inc.
Foster Plaza VII, 661 Anderson Dr.
Pittsburgh, PA 15220-2745
ATTN: David Brayack PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853
COLLECTED BY: Client DATE COL'D:07/20/00 RECEIVED:07/21/00

SAMPLE: Water sample, FC-TW21-80-01, 1245

ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	2
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	12
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	6
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

ANALYTICAL PARAMETERS		
Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter.ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlordifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR

rn= 18970 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777 • FAX (516) 422-5770

LAB NO:203238.08 07/27/00

Tetra Tech Nus, Inc.
Foster Plaza VII, 661 Anderson Dr.
Pittsburgh, PA 15220-2745
ATTN: David Brayack PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853
COLLECTED BY: Client DATE COL'D:07/20/00 RECEIVED:07/21/00

SAMPLE: Water sample, FC-TW21-100-01, 1410

ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	3.3
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	1.5
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

ANALYTICAL PARAMETERS		
Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter.ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlordifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR

rn= 18971 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777 • FAX (516) 422-5770

LAB NO:203238.01 07/27/00

Tetra Tech Nus, Inc.
Foster Plaza VII, 661 Anderson Dr.
Pittsburgh, PA 15220-2745
ATTN: David Brayack PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853
COLLECTED BY: Client DATE COL'D:07/19/00 RECEIVED:07/21/00

SAMPLE: Water sample, ET-TW06-60-01, 1050

ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	<1
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

ANALYTICAL PARAMETERS		
Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter.ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlordifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR

rn= 18964 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777 • FAX (516) 422-5770

LAB NO:203238.02 07/27/00

Tetra Tech Nus, Inc.
Foster Plaza VII, 661 Anderson Dr.
Pittsburgh, PA 15220-2745
ATTN: David Brayack PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853
COLLECTED BY: Client DATE COL'D:07/19/00 RECEIVED:07/21/00

SAMPLE: Water sample, ET-TW06-80-01, 1225

ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	<1
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

ANALYTICAL PARAMETERS		
Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter.ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlordifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR

rn= 18965 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777 • FAX (516) 422-5770

LAB NO:203238.03 07/27/00

Tetra Tech Nus, Inc.
Foster Plaza VII, 661 Anderson Dr.
Pittsburgh, PA 15220-2745
ATTN: David Brayack PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853
COLLECTED BY: Client DATE COL'D:07/19/00 RECEIVED:07/21/00

SAMPLE: Water sample, ET-TW06-100-01, 1345

ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	3.6
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	1.5
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

ANALYTICAL PARAMETERS		
Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter.ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlordifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR

rn= 18966 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

LAB NO.202981.01 07/13/00

Tetra Tech Nus, Inc.
Foster Plaza VII, 661 Anderson Dr.
Pittsburgh, PA 15220-2745
ATTN: David Brayack PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853
COLLECTED BY: Client DATE COL'D:07/05/00 RECEIVED:07/07/00

SAMPLE: Water sample, SA-PZ101S-18-01, 1035

ANALYTICAL PARAMETERS			ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1	Ethyl Benzene	ug/L	<1
Vinyl Chloride	ug/L	<1	Styrene	ug/L	<1
Chloroethane	ug/L	<1	o Xylene	ug/L	<1
Methylene Chloride	ug/L	<1	m + p Xylene	ug/L	<2
Acetone	ug/L	<10	Xylene	ug/L	<3
Carbon disulfide	ug/L	<1	Bromomethane	ug/L	<1
1,1 Dichloroethene	ug/L	<1	ter.ButylMethylEther	ug/L	<1
1,1 Dichloroethane	ug/L	<1	Freon 113	ug/L	<1
1,2 Dichloroethene	ug/L	<1	Trichlorofluomethane	ug/L	<1
Chloroform	ug/L	<1	Dichlordifluomethane	ug/L	<1
1,2 Dichloroethane	ug/L	<1	c-1,3Dichloropropene	ug/L	<1
2-Butanone	ug/L	<10	t-1,3Dichloropropene	ug/L	<[illegible]
111 Trichloroethane	ug/L	<1	Trichloroethene	ug/L	<[illegible]
Carbon Tetrachloride	ug/L	<1			
Bromodichloromethane	ug/L	<1			
1,2 Dichloropropane	ug/L	<1			
112 Trichloroethane	ug/L	<1			
Benzene	ug/L	<1			
Bromoform	ug/L	<1			
4-Methyl-2-Pentanone	ug/L	<10			
2-Hexanone	ug/L	<10			
Tetrachloroethene	ug/L	<1			
Toluene	ug/L	<1			
1122Tetrachloroethan	ug/L	<1			
Chlorobenzene	ug/L	<1			

cc:

REMARKS:

DIRECTOR

rn= 17397 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

LAB NO.202981.02 07/13/00

Tetra Tech Nus, Inc.
Foster Plaza VII, 661 Anderson Dr.
Pittsburgh, PA 15220-2745
ATTN: David Brayack PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853
COLLECTED BY: Client DATE COL'D:07/05/00 RECEIVED:07/07/00

SAMPLE: Water sample, SA-PZ101I-47-01, 1535

ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	7
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	21
1,1 Dichloroethane	ug/L	220
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	19
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

ANALYTICAL PARAMETERS		
Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter.ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlordifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR

rn= 17398 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

LAB NO.202981.03 07/13/00

Tetra Tech Nus, Inc.
Foster Plaza VII, 661 Anderson Dr.
Pittsburgh, PA 15220-2745
ATTN: David Brayack PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853
COLLECTED BY: Client DATE COL'D:07/05/00 RECEIVED:07/07/00

SAMPLE: Water sample, SA-PZ101D-80-01, 1440

ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	<1
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

ANALYTICAL PARAMETERS		
Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter.ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlordifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<
Trichloroethene	ug/L	<.

cc:

REMARKS:

DIRECTOR

rn= 17399 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

LAB NO.202981.04 07/13/00

Tetra Tech Nus, Inc.
Foster Plaza VII, 661 Anderson Dr.
Pittsburgh, PA 15220-2745
ATTN: David Brayack PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853
COLLECTED BY: Client DATE COL'D:07/05/00 RECEIVED:07/07/00

SAMPLE: Water sample, SA-PZ101D-80-01 MS, 1440

ANALYTICAL PARAMETERS		
Chloromethane	ug/L	18
Vinyl Chloride	ug/L	18
Chloroethane	ug/L	18
Methylene Chloride	ug/L	20
Acetone	ug/L	110
Carbon disulfide	ug/L	20
1,1 Dichloroethene	ug/L	20
1,1 Dichloroethane	ug/L	25
1,2 Dichloroethene	ug/L	21
Chloroform	ug/L	23
1,2 Dichloroethane	ug/L	23
2-Butanone	ug/L	110
111 Trichloroethane	ug/L	22
Carbon Tetrachloride	ug/L	18
Bromodichloromethane	ug/L	22
1,2 Dichloropropane	ug/L	23
112 Trichloroethane	ug/L	23
Benzene	ug/L	23
Bromoform	ug/L	24
4-Methyl-2-Pentanone	ug/L	120
2-Hexanone	ug/L	110
Tetrachloroethene	ug/L	21
Toluene	ug/L	22
1122Tetrachloroethan	ug/L	21
Chlorobenzene	ug/L	22

ANALYTICAL PARAMETERS		
Ethyl Benzene	ug/L	24
Styrene	ug/L	21
o Xylene	ug/L	22
m + p Xylene	ug/L	46
Xylene	ug/L	68
Bromomethane	ug/L	17
ter.ButylMethylEther	ug/L	24
Freon 113	ug/L	22
Trichlorofluomethane	ug/L	23
Dichlordifluomethane	ug/L	11
c-1,3Dichloropropene	ug/L	21
t-1,3Dichloropropene	ug/L	22
Trichloroethene	ug/L	23

cc:

REMARKS: MS = Matrix Spike.

DIRECTOR

rn= 17400 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

LAB NO.202981.05 07/13/00

Tetra Tech Nus, Inc.
Foster Plaza VII, 661 Anderson Dr.
Pittsburgh, PA 15220-2745
ATTN: David Brayack PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853
COLLECTED BY: Client DATE COL'D:07/05/00 RECEIVED:07/07/00

SAMPLE: Water sample, SA-PZ101D-80-01 MSD, 1440

ANALYTICAL PARAMETERS		
Chloromethane	ug/L	17
Vinyl Chloride	ug/L	17
Chloroethane	ug/L	20
Methylene Chloride	ug/L	20
Acetone	ug/L	81
Carbon disulfide	ug/L	21
1,1 Dichloroethene	ug/L	20
1,1 Dichloroethane	ug/L	22
1,2 Dichloroethene	ug/L	21
Chloroform	ug/L	21
1,2 Dichloroethane	ug/L	23
2-Butanone	ug/L	74
111 Trichloroethane	ug/L	21
Carbon Tetrachloride	ug/L	18
Bromodichloromethane	ug/L	21
1,2 Dichloropropane	ug/L	25
112 Trichloroethane	ug/L	20
Benzene	ug/L	21
Bromoform	ug/L	22
4-Methyl-2-Pentanone	ug/L	82
2-Hexanone	ug/L	78
Tetrachloroethene	ug/L	21
Toluene	ug/L	22
1122Tetrachloroethan	ug/L	21
Chlorobenzene	ug/L	22

ANALYTICAL PARAMETERS		
Ethyl Benzene	ug/L	21
Styrene	ug/L	20
o Xylene	ug/L	22
m + p Xylene	ug/L	43
Xylene	ug/L	65
Bromomethane	ug/L	18
ter.ButylMethylEther	ug/L	23
Freon 113	ug/L	21
Trichlorofluomethane	ug/L	22
Dichlordifluomethane	ug/L	10
c-1,3Dichloropropene	ug/L	22
t-1,3Dichloropropene	ug/L	1[illegible]
Trichloroethene	ug/L	2[illegible]

cc:

REMARKS: MSD = Matrix Spike Duplicate.

DIRECTOR

rn= 17401 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

LAB NO.202981.06 07/13/00

Tetra Tech Nus, Inc.
Foster Plaza VII, 661 Anderson Dr.
Pittsburgh, PA 15220-2745
ATTN: David Brayack PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853
COLLECTED BY: Client DATE COL'D:07/05/00 RECEIVED:07/07/00

SAMPLE: Water sample, SA-PZ101D-95-01, 1500

ANALYTICAL PARAMETERS			ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1	Ethyl Benzene	ug/L	<1
Vinyl Chloride	ug/L	<1	Styrene	ug/L	<1
Chloroethane	ug/L	<1	o Xylene	ug/L	<1
Methylene Chloride	ug/L	<1	m + p Xylene	ug/L	<2
Acetone	ug/L	<10	Xylene	ug/L	<3
Carbon disulfide	ug/L	<1	Bromomethane	ug/L	<1
1,1 Dichloroethene	ug/L	<1	ter.ButylMethylEther	ug/L	<1
1,1 Dichloroethane	ug/L	<1	Freon 113	ug/L	<1
1,2 Dichloroethene	ug/L	<1	Trichlorofluomethane	ug/L	<1
Chloroform	ug/L	<1	Dichlordifluomethane	ug/L	<1
1,2 Dichloroethane	ug/L	<1	c-1,3Dichloropropene	ug/L	<1
2-Butanone	ug/L	<10	t-1,3Dichloropropene	ug/L	<1
111 Trichloroethane	ug/L	<1	Trichloroethene	ug/L	<1
Carbon Tetrachloride	ug/L	<1			
Bromodichloromethane	ug/L	<1			
1,2 Dichloropropane	ug/L	<1			
112 Trichloroethane	ug/L	<1			
Benzene	ug/L	<1			
Bromoform	ug/L	<1			
4-Methyl-2-Pentanone	ug/L	<10			
2-Hexanone	ug/L	<10			
Tetrachloroethene	ug/L	<1			
Toluene	ug/L	<1			
1122Tetrachloroethan	ug/L	<1			
Chlorobenzene	ug/L	<1			

cc:

REMARKS:

DIRECTOR

rn= 17402 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

LAB NO.202981.07 07/13/00

Tetra Tech Nus, Inc.
Foster Plaza VII, 661 Anderson Dr.
Pittsburgh, PA 15220-2745
ATTN: David Brayack PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853
COLLECTED BY: Client DATE COL'D:07/05/00 RECEIVED:07/07/00

SAMPLE: Water sample, SA-PZ102S-10-01, 1805

ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	<1
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

ANALYTICAL PARAMETERS		
Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter.ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlordifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<
Trichloroethene	ug/L	<

cc:

REMARKS:

DIRECTOR

rn= 17403 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

LAB NO.202981.09 07/13/00

Tetra Tech Nus, Inc.
Foster Plaza VII, 661 Anderson Dr.
Pittsburgh, PA 15220-2745
ATTN: David Brayack PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853
COLLECTED BY: Client DATE COL'D:07/06/00 RECEIVED:07/07/00

SAMPLE: Water sample, SA-PZ102I-37-01, 1415

ANALYTICAL PARAMETERS			ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1	Ethyl Benzene	ug/L	<1
Vinyl Chloride	ug/L	<1	Styrene	ug/L	<1
Chloroethane	ug/L	<1	o Xylene	ug/L	<1
Methylene Chloride	ug/L	<1	m + p Xylene	ug/L	<2
Acetone	ug/L	<10	Xylene	ug/L	<3
Carbon disulfide	ug/L	<1	Bromomethane	ug/L	<1
1,1 Dichloroethene	ug/L	<1	ter.ButylMethylEther	ug/L	<1
1,1 Dichloroethane	ug/L	<1	Freon 113	ug/L	<1
1,2 Dichloroethene	ug/L	<1	Trichlorofluomethane	ug/L	<1
Chloroform	ug/L	<1	Dichlordifluomethane	ug/L	<1
1,2 Dichloroethane	ug/L	<1	c-1,3Dichloropropene	ug/L	<1
2-Butanone	ug/L	<10	t-1,3Dichloropropene	ug/L	<1
111 Trichloroethane	ug/L	<1	Trichloroethene	ug/L	<1
Carbon Tetrachloride	ug/L	<1			
Bromodichloromethane	ug/L	<1			
1,2 Dichloropropane	ug/L	<1			
112 Trichloroethane	ug/L	<1			
Benzene	ug/L	<1			
Bromoform	ug/L	<1			
4-Methyl-2-Pentanone	ug/L	<10			
2-Hexanone	ug/L	<10			
Tetrachloroethene	ug/L	<1			
Toluene	ug/L	<1			
1122Tetrachloroethan	ug/L	<1			
Chlorobenzene	ug/L	<1			

cc:

REMARKS:

DIRECTOR

rn= 17405 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

LAB NO.202981.08 07/13/00

Tetra Tech Nus, Inc.
Foster Plaza VII, 661 Anderson Dr.
Pittsburgh, PA 15220-2745
ATTN: David Brayack PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853
COLLECTED BY: Client DATE COL'D:07/05/00 RECEIVED:07/07/00

SAMPLE: Water sample, SA-PZ102D-80-01, 1805

ANALYTICAL PARAMETERS			ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1	Ethyl Benzene	ug/L	<1
Vinyl Chloride	ug/L	<1	Styrene	ug/L	<1
Chloroethane	ug/L	<1	o Xylene	ug/L	<1
Methylene Chloride	ug/L	<1	m + p Xylene	ug/L	<2
Acetone	ug/L	<10	Xylene	ug/L	<3
Carbon disulfide	ug/L	<1	Bromomethane	ug/L	<1
1,1 Dichloroethene	ug/L	<1	ter.ButylMethylEther	ug/L	<1
1,1 Dichloroethane	ug/L	<1	Freon 113	ug/L	<1
1,2 Dichloroethene	ug/L	<1	Trichlorofluomethane	ug/L	<1
Chloroform	ug/L	<1	Dichlordifluomethane	ug/L	<1
1,2 Dichloroethane	ug/L	<1	c-1,3Dichloropropene	ug/L	<1
2-Butanone	ug/L	<10	t-1,3Dichloropropene	ug/L	<
111 Trichloroethane	ug/L	<1	Trichloroethene	ug/L	<.
Carbon Tetrachloride	ug/L	<1			
Bromodichloromethane	ug/L	<1			
1,2 Dichloropropane	ug/L	<1			
112 Trichloroethane	ug/L	<1			
Benzene	ug/L	<1			
Bromoform	ug/L	<1			
4-Methyl-2-Pentanone	ug/L	<10			
2-Hexanone	ug/L	<10			
Tetrachloroethene	ug/L	<1			
Toluene	ug/L	<1			
1122Tetrachloroethan	ug/L	<1			
Chlorobenzene	ug/L	<1			

cc:

REMARKS:

DIRECTOR

rn= 17404 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

LAB NO.202981.10 07/13/00

Tetra Tech Nus, Inc.
Foster Plaza VII, 661 Anderson Dr.
Pittsburgh, PA 15220-2745
ATTN: David Brayack PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853
COLLECTED BY: Client DATE COL'D:07/06/00 RECEIVED:07/07/00

SAMPLE: Water sample, SA-PZ103S-29-01, 1105

ANALYTICAL PARAMETERS			ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1	Ethyl Benzene	ug/L	<1
Vinyl Chloride	ug/L	<1	Styrene	ug/L	<1
Chloroethane	ug/L	<1	o Xylene	ug/L	<1
Methylene Chloride	ug/L	<1	m + p Xylene	ug/L	<2
Acetone	ug/L	<10	Xylene	ug/L	<3
Carbon disulfide	ug/L	<1	Bromomethane	ug/L	<1
1,1 Dichloroethene	ug/L	<1	ter.ButylMethylEther	ug/L	<1
1,1 Dichloroethane	ug/L	<1	Freon 113	ug/L	<1
1,2 Dichloroethene	ug/L	<1	Trichlorofluomethane	ug/L	<1
Chloroform	ug/L	<1	Dichlordifluomethane	ug/L	<1
1,2 Dichloroethane	ug/L	<1	c-1,3Dichloropropene	ug/L	<1
2-Butanone	ug/L	<10	t-1,3Dichloropropene	ug/L	<1
111 Trichloroethane	ug/L	<1	Trichloroethene	ug/L	<1
Carbon Tetrachloride	ug/L	<1			
Bromodichloromethane	ug/L	<1			
1,2 Dichloropropane	ug/L	<1			
112 Trichloroethane	ug/L	<1			
Benzene	ug/L	<1			
Bromoform	ug/L	<1			
4-Methyl-2-Pentanone	ug/L	<10			
2-Hexanone	ug/L	<10			
Tetrachloroethene	ug/L	<1			
Toluene	ug/L	<1			
1122Tetrachloroethan	ug/L	<1			
Chlorobenzene	ug/L	<1			

cc:

REMARKS:

DIRECTOR

rn= 17406 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

LAB NO.202981.11 07/13/00

Tetra Tech Nus, Inc.
Foster Plaza VII, 661 Anderson Dr.
Pittsburgh, PA 15220-2745
ATTN: David Brayack PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853
COLLECTED BY: Client DATE COL'D:07/06/00 RECEIVED:07/07/00

SAMPLE: Water sample, SA-PZ103I-40-01, 1325

ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	<1
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

ANALYTICAL PARAMETERS		
Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter.ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlordifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<[illegible]
Trichloroethene	ug/L	<[illegible]

cc:

REMARKS:

DIRECTOR

rn= 17407 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

LAB NO.202981.12 07/13/00

Tetra Tech Nus, Inc.
Foster Plaza VII, 661 Anderson Dr.
Pittsburgh, PA 15220-2745
ATTN: David Brayack PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853
COLLECTED BY: Client DATE COL'D:07/06/00 RECEIVED:07/07/00

SAMPLE: Water sample, SA-PZ103D-80-01, 1130

ANALYTICAL PARAMETERS			ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1	Ethyl Benzene	ug/L	<1
Vinyl Chloride	ug/L	<1	Styrene	ug/L	<1
Chloroethane	ug/L	<1	o Xylene	ug/L	<1
Methylene Chloride	ug/L	<1	m + p Xylene	ug/L	<2
Acetone	ug/L	<10	Xylene	ug/L	<3
Carbon disulfide	ug/L	<1	Bromomethane	ug/L	<1
1,1 Dichloroethene	ug/L	<1	ter.ButylMethylEther	ug/L	<1
1,1 Dichloroethane	ug/L	<1	Freon 113	ug/L	<1
1,2 Dichloroethene	ug/L	<1	Trichlorofluomethane	ug/L	<1
Chloroform	ug/L	<1	Dichlordifluomethane	ug/L	<1
1,2 Dichloroethane	ug/L	<1	c-1,3Dichloropropene	ug/L	<1
2-Butanone	ug/L	<10	t-1,3Dichloropropene	ug/L	<1
111 Trichloroethane	ug/L	<1	Trichloroethene	ug/L	<1
Carbon Tetrachloride	ug/L	<1			
Bromodichloromethane	ug/L	<1			
1,2 Dichloropropane	ug/L	<1			
112 Trichloroethane	ug/L	<1			
Benzene	ug/L	<1			
Bromoform	ug/L	<1			
4-Methyl-2-Pentanone	ug/L	<10			
2-Hexanone	ug/L	<10			
Tetrachloroethene	ug/L	<1			
Toluene	ug/L	<1			
1122Tetrachloroethan	ug/L	<1			
Chlorobenzene	ug/L	<1			

cc:

REMARKS:

DIRECTOR

rn= 17408 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

LAB NO.202981.13 07/13/00

Tetra Tech Nus, Inc.
Foster Plaza VII, 661 Anderson Dr.
Pittsburgh, PA 15220-2745
ATTN: David Brayack PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853
COLLECTED BY: Client DATE COL'D:07/06/00 RECEIVED:07/07/00

SAMPLE: Water sample, SA-PZ104S-9-01, 1655

ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	<1
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

ANALYTICAL PARAMETERS		
Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter.ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlordifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<
Trichloroethene	ug/L	<.

cc:

REMARKS:

DIRECTOR

rn= 17409 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

LAB NO.202981.14 07/13/00

Tetra Tech Nus, Inc.
Foster Plaza VII, 661 Anderson Dr.
Pittsburgh, PA 15220-2745
ATTN: David Brayack PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853
COLLECTED BY: Client DATE COL'D:07/06/00 RECEIVED:07/07/00

SAMPLE: Water sample, SA-PZ104I-35-01, 1820

ANALYTICAL PARAMETERS			ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1	Ethyl Benzene	ug/L	<1
Vinyl Chloride	ug/L	<1	Styrene	ug/L	<1
Chloroethane	ug/L	<1	o Xylene	ug/L	<1
Methylene Chloride	ug/L	<1	m + p Xylene	ug/L	<2
Acetone	ug/L	<10	Xylene	ug/L	<3
Carbon disulfide	ug/L	<1	Bromomethane	ug/L	<1
1,1 Dichloroethene	ug/L	<1	ter.ButylMethylEther	ug/L	<1
1,1 Dichloroethane	ug/L	<1	Freon 113	ug/L	<1
1,2 Dichloroethene	ug/L	<1	Trichlorofluomethane	ug/L	<1
Chloroform	ug/L	<1	Dichlordifluomethane	ug/L	<1
1,2 Dichloroethane	ug/L	<1	c-1,3Dichloropropene	ug/L	<1
2-Butanone	ug/L	<10	t-1,3Dichloropropene	ug/L	<1
111 Trichloroethane	ug/L	<1	Trichloroethene	ug/L	<1
Carbon Tetrachloride	ug/L	<1			
Bromodichloromethane	ug/L	<1			
1,2 Dichloropropane	ug/L	<1			
112 Trichloroethane	ug/L	<1			
Benzene	ug/L	<1			
Bromoform	ug/L	<1			
4-Methyl-2-Pentanone	ug/L	<10			
2-Hexanone	ug/L	<10			
Tetrachloroethene	ug/L	<1			
Toluene	ug/L	<1			
1122Tetrachloroethan	ug/L	<1			
Chlorobenzene	ug/L	<1			

cc:

REMARKS:

DIRECTOR

rn= 17410 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

LAB NO.202981.15 07/13/00

Tetra Tech Nus, Inc.
Foster Plaza VII, 661 Anderson Dr.
Pittsburgh, PA 15220-2745
ATTN: David Brayack PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853
COLLECTED BY: Client DATE COL'D:07/06/00 RECEIVED:07/07/00

SAMPLE: Water sample, SA-PZ104D-80-01, 1713

ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	<1
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

ANALYTICAL PARAMETERS		
Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter.ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlordifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR

rn= 17411 NYSDOH ID#. 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

LAB NO:203659.02 08/18/00

Tetra Tech Nus, Inc.
Foster Plaza VII, 661 Anderson Dr.
Pittsburgh, PA 15220-2745
ATTN: David Brayack PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853
COLLECTED BY: Client DATE COL'D:08/09/00 RECEIVED:08/11/00

SAMPLE: Water sample, SA-~~PZ~~TW102-100-01, 1000

ANALYTICAL PARAMETERS			ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1	Ethyl Benzene	ug/L	<1
Vinyl Chloride	ug/L	<1	Styrene	ug/L	<1
Chloroethane	ug/L	<1	o Xylene	ug/L	<1
Methylene Chloride	ug/L	<1	m + p Xylene	ug/L	<2
Acetone	ug/L	<10	Xylene	ug/L	<3
Carbon disulfide	ug/L	<1	Bromomethane	ug/L	<1
1,1 Dichloroethene	ug/L	<1	ter.ButylMethylEther	ug/L	<1
1,1 Dichloroethane	ug/L	<1	Freon 113	ug/L	<1
1,2 Dichloroethene	ug/L	<1	Trichlorofluomethane	ug/L	<1
Chloroform	ug/L	<1	Dichlordifluomethane	ug/L	<1
1,2 Dichloroethane	ug/L	<1	c-1,3Dichloropropene	ug/L	<1
2-Butanone	ug/L	<10	t-1,3Dichloropropene	ug/L	<1
111 Trichloroethane	ug/L	<1	Trichloroethene	ug/L	<1
Carbon Tetrachloride	ug/L	<1			
Bromodichloromethane	ug/L	<1			
1,2 Dichloropropane	ug/L	<1			
112 Trichloroethane	ug/L	<1			
Benzene	ug/L	<1			
Bromoform	ug/L	<1			
4-Methyl-2-Pentanone	ug/L	<10			
2-Hexanone	ug/L	<10			
Tetrachloroethene	ug/L	<1			
Toluene	ug/L	<1			
1122Tetrachloroethan	ug/L	<1			
Chlorobenzene	ug/L	<1			

cc:

REMARKS:

DIRECTOR

rn= 22044 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

LAB NO:203659.03 08/18/00

Tetra Tech Nus, Inc.
Foster Plaza VII, 661 Anderson Dr.
Pittsburgh, PA 15220-2745
ATTN: David Brayack PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853
COLLECTED BY: Client DATE COL'D:08/09/00 RECEIVED:08/11/00

SAMPLE: Water sample, SA-~~PZ~~TW102-125-01, 1125

ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	<1
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

ANALYTICAL PARAMETERS		
Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter.ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlordifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR

rn= 22045 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

LAB NO:203659.04 08/18/00

Tetra Tech Nus, Inc.
Foster Plaza VII, 661 Anderson Dr.
Pittsburgh, PA 15220-2745
ATTN: David Brayack PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853
COLLECTED BY: Client DATE COL'D:08/09/00 RECEIVED:08/11/00
SAMPLE: Water sample, SA-~~P~~TZ102-140-01, 1235

ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	<1
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

ANALYTICAL PARAMETERS		
Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter.ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlordifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR

rn= 22046 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

LAB NO:203119.01 07/20/00

Tetra Tech Nus, Inc.
Foster Plaza VII, 661 Anderson Dr.
Pittsburgh, PA 15220-2745
ATTN: David Brayack PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853-0300
COLLECTED BY: Client DATE COL'D:07/12/00 RECEIVED:07/14/00

SAMPLE: Water sample, SA-TW-111-10-01, 0945

ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	4
1,1 Dichloroethene	ug/L	8
1,1 Dichloroethane	ug/L	33
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

ANALYTICAL PARAMETERS		
Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter.ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlordifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR

rn= 18197 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

LAB NO:203119.02 07/20/00

Tetra Tech Nus, Inc.
Foster Plaza VII, 661 Anderson Dr.
Pittsburgh, PA 15220-2745
ATTN: David Brayack PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853-0300
COLLECTED BY: Client DATE COL'D:07/12/00 RECEIVED:07/14/00

SAMPLE: Water sample, SA-TW-111-25-01, 1030

ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Acetone	ug/L	12
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	5
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

ANALYTICAL PARAMETERS		
Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter.ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlordifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR

rn= 18198 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

LAB NO:203119.03 07/20/00

Tetra Tech Nus, Inc.
Foster Plaza VII, 661 Anderson Dr.
Pittsburgh, PA 15220-2745
ATTN: David Brayack PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853-0300
COLLECTED BY: Client DATE COL'D:07/12/00 RECEIVED:07/14/00

SAMPLE: Water sample, SA-TW-111-45-01, 1115

ANALYTICAL PARAMETERS			ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1	Ethyl Benzene	ug/L	<1
Vinyl Chloride	ug/L	<1	Styrene	ug/L	<1
Chloroethane	ug/L	<1	o Xylene	ug/L	<1
Methylene Chloride	ug/L	<1	m + p Xylene	ug/L	<2
Acetone	ug/L	<10	Xylene	ug/L	<3
Carbon disulfide	ug/L	<1	Bromomethane	ug/L	<1
1,1 Dichloroethene	ug/L	<1	ter.ButylMethylEther	ug/L	<1
1,1 Dichloroethane	ug/L	2	Freon 113	ug/L	<1
1,2 Dichloroethene	ug/L	<1	Trichlorofluomethane	ug/L	<1
Chloroform	ug/L	<1	Dichlordifluomethane	ug/L	<1
1,2 Dichloroethane	ug/L	<1	c-1,3Dichloropropene	ug/L	<1
2-Butanone	ug/L	<10	t-1,3Dichloropropene	ug/L	<1
111 Trichloroethane	ug/L	<1	Trichloroethene	ug/L	<1
Carbon Tetrachloride	ug/L	<1			
Bromodichloromethane	ug/L	<1			
1,2 Dichloropropane	ug/L	<1			
112 Trichloroethane	ug/L	<1			
Benzene	ug/L	<1			
Bromoform	ug/L	<1			
4-Methyl-2-Pentanone	ug/L	<10			
2-Hexanone	ug/L	<10			
Tetrachloroethene	ug/L	<1			
Toluene	ug/L	<1			
1122Tetrachloroethan	ug/L	<1			
Chlorobenzene	ug/L	<1			

cc:

REMARKS:

DIRECTOR

rn= 18199 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

LAB NO:203119.04 07/20/00

Tetra Tech Nus, Inc.
Foster Plaza VII, 661 Anderson Dr.
Pittsburgh, PA 15220-2745
ATTN: David Brayack PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853-0300
COLLECTED BY: Client DATE COL'D:07/12/00 RECEIVED:07/14/00

SAMPLE: Water sample, SA-TW-111-50-01, 1125

ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	3
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

ANALYTICAL PARAMETERS		
Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter.ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlordifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR

rn= 18200 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

LAB NO:203119.05 07/20/00

Tetra Tech Nus, Inc.
Foster Plaza VII, 661 Anderson Dr.
Pittsburgh, PA 15220-2745
ATTN: David Brayack PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853-0300
COLLECTED BY: Client DATE COL'D:07/12/00 RECEIVED:07/14/00

SAMPLE: Water sample, SA-TW-111-65-01, 1230

ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	<1
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

ANALYTICAL PARAMETERS		
Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter.ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlordifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR

rn= 18201 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

LAB NO:203119.06 07/20/00

Tetra Tech Nus, Inc.
Foster Plaza VII, 661 Anderson Dr.
Pittsburgh, PA 15220-2745
ATTN: David Brayack PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853-0300
COLLECTED BY: Client DATE COL'D:07/12/00 RECEIVED:07/14/00

SAMPLE: Water sample, SA-TW-111-85-01, 1340

ANALYTICAL PARAMETERS			ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1	Ethyl Benzene	ug/L	<1
Vinyl Chloride	ug/L	<1	Styrene	ug/L	<1
Chloroethane	ug/L	<1	o Xylene	ug/L	<1
Methylene Chloride	ug/L	<1	m + p Xylene	ug/L	<2
Acetone	ug/L	<10	Xylene	ug/L	<3
Carbon disulfide	ug/L	<1	Bromomethane	ug/L	<1
1,1 Dichloroethene	ug/L	<1	ter.ButylMethylEther	ug/L	<1
1,1 Dichloroethane	ug/L	<1	Freon 113	ug/L	<1
1,2 Dichloroethene	ug/L	<1	Trichlorofluomethane	ug/L	<1
Chloroform	ug/L	<1	Dichlordifluomethane	ug/L	<1
1,2 Dichloroethane	ug/L	<1	c-1,3Dichloropropene	ug/L	<1
2-Butanone	ug/L	<10	t-1,3Dichloropropene	ug/L	<1
111 Trichloroethane	ug/L	<1	Trichloroethene	ug/L	<1
Carbon Tetrachloride	ug/L	<1			
Bromodichloromethane	ug/L	<1			
1,2 Dichloropropane	ug/L	<1			
112 Trichloroethane	ug/L	<1			
Benzene	ug/L	<1			
Bromoform	ug/L	<1			
4-Methyl-2-Pentanone	ug/L	<10			
2-Hexanone	ug/L	<10			
Tetrachloroethene	ug/L	<1			
Toluene	ug/L	<1			
1122Tetrachloroethan	ug/L	<1			
Chlorobenzene	ug/L	<1			

cc:

REMARKS:

DIRECTOR

rn= 18202 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

LAB NO:203037.01 08/18/00

Tetra Tech Nus, Inc.
Foster Plaza VII, 661 Anderson Dr.
Pittsburgh, PA 15220-2745
ATTN: David Brayack PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853
COLLECTED BY: Client DATE COL'D:07/10/00 RECEIVED:07/11/00

SAMPLE: Water sample, SA-TW-112-22-01, 1100

ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	<1
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	3
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

ANALYTICAL PARAMETERS		
Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter.ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlordifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR

rn= 17678 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

LAB NO:203037.02 08/18/00

Tetra Tech Nus, Inc.
Foster Plaza VII, 661 Anderson Dr.
Pittsburgh, PA 15220-2745
ATTN: David Brayack PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853
COLLECTED BY: Client DATE COL'D:07/10/00 RECEIVED:07/11/00

SAMPLE: Water sample, SA-TW-112-35-01, 1150

ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	<1
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	2
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

ANALYTICAL PARAMETERS		
Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter.ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlordifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR

rn= 17679 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

LAB NO:203037.03 08/18/00

Tetra Tech Nus, Inc.
Foster Plaza VII, 661 Anderson Dr.
Pittsburgh, PA 15220-2745
ATTN: David Brayack PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853
COLLECTED BY: Client DATE COL'D:07/10/00 RECEIVED:07/11/00

SAMPLE: Water sample, SA-TW-112-55-01, 1250

ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	1
1,1 Dichloroethane	ug/L	5
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	2
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

ANALYTICAL PARAMETERS		
Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter.ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlordifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	2

cc:

REMARKS:

DIRECTOR

rn= 17680 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

LAB NO:203037.04 08/18/00

Tetra Tech Nus, Inc.
Foster Plaza VII, 661 Anderson Dr.
Pittsburgh, PA 15220-2745
ATTN: David Brayack PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853
COLLECTED BY: Client DATE COL'D:07/10/00 RECEIVED:07/11/00

SAMPLE: Water sample, SA-TW-112-75-01, 1345

ANALYTICAL PARAMETERS			ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1	Ethyl Benzene	ug/L	<1
Vinyl Chloride	ug/L	<1	Styrene	ug/L	<1
Chloroethane	ug/L	<1	o Xylene	ug/L	<1
Methylene Chloride	ug/L	<1	m + p Xylene	ug/L	<2
Acetone	ug/L	<10	Xylene	ug/L	<3
Carbon disulfide	ug/L	<1	Bromomethane	ug/L	<1
1,1 Dichloroethene	ug/L	<1	ter.ButylMethylEther	ug/L	<1
1,1 Dichloroethane	ug/L	<1	Freon 113	ug/L	<1
1,2 Dichloroethene	ug/L	<1	Trichlorofluomethane	ug/L	<1
Chloroform	ug/L	<1	Dichlordifluomethane	ug/L	<1
1,2 Dichloroethane	ug/L	<1	c-1,3Dichloropropene	ug/L	<1
2-Butanone	ug/L	<10	t-1,3Dichloropropene	ug/L	<1
111 Trichloroethane	ug/L	<1	Trichloroethene	ug/L	<1
Carbon Tetrachloride	ug/L	<1			
Bromodichloromethane	ug/L	<1			
1,2 Dichloropropane	ug/L	<1			
112 Trichloroethane	ug/L	<1			
Benzene	ug/L	<1			
Bromoform	ug/L	<1			
4-Methyl-2-Pentanone	ug/L	<10			
2-Hexanone	ug/L	<10			
Tetrachloroethene	ug/L	<1			
Toluene	ug/L	<1			
1122Tetrachloroethan	ug/L	<1			
Chlorobenzene	ug/L	<1			

cc:

REMARKS:

DIRECTOR

rn= 17681 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

LAB NO:203037.05 08/18/00

Tetra Tech Nus, Inc.
Foster Plaza VII. 661 Anderson Dr.
Pittsburgh, PA 15220-2745
ATTN: David Brayack PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853
COLLECTED BY: Client DATE COL'D:07/10/00 RECEIVED:07/11/00

SAMPLE: Water sample, SA-TW-112-95-01, 1440

ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	<1
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

ANALYTICAL PARAMETERS		
Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter.ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlordifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR Thomas B

rn= 17682 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

LAB NO:203058.01 08/18/00

Tetra Tech Nus, Inc.
Foster Plaza VII, 661 Anderson Dr.
Pittsburgh, PA 15220-2745
ATTN: David Brayack PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853-0300
COLLECTED BY: Client DATE COL'D:07/11/00 RECEIVED:07/12/00

SAMPLE: Water sample, SA-TW-113-20-01, 1025

ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	<1
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

ANALYTICAL PARAMETERS		
Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter.ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlordifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR

rn= 17784 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

LAB NO:203058.02 08/18/00

Tetra Tech Nus, Inc.
Foster Plaza VII, 661 Anderson Dr.
Pittsburgh, PA 15220-2745
ATTN: David Brayack PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853-0300
COLLECTED BY: Client DATE COL'D:07/11/00 RECEIVED:07/12/00

SAMPLE: Water sample, SA-TW-113-35-01, 1115

ANALYTICAL PARAMETERS			ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1	Ethyl Benzene	ug/L	<1
Vinyl Chloride	ug/L	<1	Styrene	ug/L	<1
Chloroethane	ug/L	<1	o Xylene	ug/L	<1
Methylene Chloride	ug/L	<1	m + p Xylene	ug/L	<2
Acetone	ug/L	<10	Xylene	ug/L	<3
Carbon disulfide	ug/L	<1	Bromomethane	ug/L	<1
1,1 Dichloroethene	ug/L	<1	ter.ButylMethylEther	ug/L	<1
1,1 Dichloroethane	ug/L	<1	Freon 113	ug/L	<1
1,2 Dichloroethene	ug/L	<1	Trichlorofluomethane	ug/L	<1
Chloroform	ug/L	<1	Dichlordifluomethane	ug/L	<1
1,2 Dichloroethane	ug/L	<1	c-1,3Dichloropropene	ug/L	<1
2-Butanone	ug/L	<10	t-1,3Dichloropropene	ug/L	<1
111 Trichloroethane	ug/L	<1	Trichloroethene	ug/L	<1
Carbon Tetrachloride	ug/L	<1			
Bromodichloromethane	ug/L	<1			
1,2 Dichloropropane	ug/L	<1			
112 Trichloroethane	ug/L	<1			
Benzene	ug/L	<1			
Bromoform	ug/L	<1			
4-Methyl-2-Pentanone	ug/L	<10			
2-Hexanone	ug/L	<10			
Tetrachloroethene	ug/L	<1			
Toluene	ug/L	<1			
1122Tetrachloroethan	ug/L	<1			
Chlorobenzene	ug/L	<1			

cc:

REMARKS:

DIRECTOR

rn= 17785 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

LAB NO:203058.03 08/18/00

Tetra Tech Nus, Inc.
Foster Plaza VII, 661 Anderson Dr.
Pittsburgh, PA 15220-2745
ATTN: David Brayack PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853-0300
COLLECTED BY: Client DATE COL'D:07/11/00 RECEIVED:07/12/00

SAMPLE: Water sample, SA-TW-113-60-01, 1238

ANALYTICAL PARAMETERS			ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1	Ethyl Benzene	ug/L	<1
Vinyl Chloride	ug/L	<1	Styrene	ug/L	<1
Chloroethane	ug/L	5	o Xylene	ug/L	<1
Methylene Chloride	ug/L	<1	m + p Xylene	ug/L	<2
Acetone	ug/L	<10	Xylene	ug/L	<3
Carbon disulfide	ug/L	<1	Bromomethane	ug/L	<1
1,1 Dichloroethene	ug/L	12	ter.ButylMethylEther	ug/L	<1
1,1 Dichloroethane	ug/L	120	Freon 113	ug/L	<1
1,2 Dichloroethene	ug/L	<1	Trichlorofluomethane	ug/L	<1
Chloroform	ug/L	<1	Dichlordifluomethane	ug/L	<1
1,2 Dichloroethane	ug/L	<1	c-1,3Dichloropropene	ug/L	<1
2-Butanone	ug/L	<10	t-1,3Dichloropropene	ug/L	<1
111 Trichloroethane	ug/L	24	Trichloroethene	ug/L	<1
Carbon Tetrachloride	ug/L	<1			
Bromodichloromethane	ug/L	<1			
1,2 Dichloropropane	ug/L	<1			
112 Trichloroethane	ug/L	<1			
Benzene	ug/L	<1			
Bromoform	ug/L	<1			
4-Methyl-2-Pentanone	ug/L	<10			
2-Hexanone	ug/L	<10			
Tetrachloroethene	ug/L	<1			
Toluene	ug/L	<1			
1122Tetrachloroethan	ug/L	<1			
Chlorobenzene	ug/L	<1			

cc:

REMARKS:

DIRECTOR

rn= 17786 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

LAB NO:203058.04 08/18/00

Tetra Tech Nus, Inc.
Foster Plaza VII, 661 Anderson Dr.
Pittsburgh, PA 15220-2745
ATTN: David Brayack PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853-0300
COLLECTED BY: Client DATE COL'D:07/11/00 RECEIVED:07/12/00

SAMPLE: Water sample, SA-TW-113-75-01, 1345

ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	1
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	3
1,1 Dichloroethane	ug/L	43
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	6
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

ANALYTICAL PARAMETERS		
Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter.ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlordifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR

rn= 17787 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

LAB NO:203058.05 08/18/00

Tetra Tech Nus, Inc.
Foster Plaza VII, 661 Anderson Dr.
Pittsburgh, PA 15220-2745
ATTN: David Brayack PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853-0300
COLLECTED BY: Client DATE COL'D:07/11/00 RECEIVED:07/12/00

SAMPLE: Water sample, SA-TW-113-95-01, 1435

ANALYTICAL PARAMETERS			ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1	Ethyl Benzene	ug/L	<1
Vinyl Chloride	ug/L	<1	Styrene	ug/L	<1
Chloroethane	ug/L	5	o Xylene	ug/L	<1
Methylene Chloride	ug/L	<1	m + p Xylene	ug/L	<2
Acetone	ug/L	<10	Xylene	ug/L	<3
Carbon disulfide	ug/L	<1	Bromomethane	ug/L	<1
1,1 Dichloroethene	ug/L	9	ter.ButylMethylEther	ug/L	<1
1,1 Dichloroethane	ug/L	130	Freon 113	ug/L	<1
1,2 Dichloroethene	ug/L	<1	Trichlorofluomethane	ug/L	<1
Chloroform	ug/L	<1	Dichlordifluomethane	ug/L	<1
1,2 Dichloroethane	ug/L	<1	c-1,3Dichloropropene	ug/L	<1
2-Butanone	ug/L	<10	t-1,3Dichloropropene	ug/L	<1
111 Trichloroethane	ug/L	18	Trichloroethene	ug/L	<1
Carbon Tetrachloride	ug/L	<1			
Bromodichloromethane	ug/L	<1			
1,2 Dichloropropane	ug/L	<1			
112 Trichloroethane	ug/L	<1			
Benzene	ug/L	<1			
Bromoform	ug/L	<1			
4-Methyl-2-Pentanone	ug/L	<10			
2-Hexanone	ug/L	<10			
Tetrachloroethene	ug/L	<1			
Toluene	ug/L	<1			
1122Tetrachloroethan	ug/L	<1			
Chlorobenzene	ug/L	<1			

cc:

REMARKS:

DIRECTOR

rn= 17788 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

LAB NO.202981.16 07/13/00

Tetra Tech Nus, Inc.
Foster Plaza VII, 661 Anderson Dr.
Pittsburgh, PA 15220-2745
ATTN: David Brayack PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853
COLLECTED BY: Client DATE COL'D:07/05/00 RECEIVED:07/07/00

SAMPLE: Water sample, TB-070500, 1013

ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	<1
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

ANALYTICAL PARAMETERS		
Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter.ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlordifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<
Trichloroethene	ug/L	<

cc:

REMARKS:

DIRECTOR

rn= 17412 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

LAB NO:203037.06 08/18/00

Tetra Tech Nus, Inc.
Foster Plaza VII, 661 Anderson Dr.
Pittsburgh, PA 15220-2745
ATTN: David Brayack PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853
COLLECTED BY: Client DATE COL'D:06/21/00 RECEIVED:07/11/00

SAMPLE: Water sample, TB-071000, 1010

ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	<1
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

ANALYTICAL PARAMETERS		
Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter.ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlordifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR

rn= 17683 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

LAB NO:203058.06 08/18/00

Tetra Tech Nus, Inc.
Foster Plaza VII, 661 Anderson Dr.
Pittsburgh, PA 15220-2745
ATTN: David Brayack PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853-0300
COLLECTED BY: Client DATE COL'D:07/10/00 RECEIVED:07/12/00

SAMPLE: Water sample, TB071100, 0911

ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	<1
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

ANALYTICAL PARAMETERS		
Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter.ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlordifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR

rn= 17789 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

LAB NO:203119.11 07/20/00

Tetra Tech Nus, Inc.
Foster Plaza VII, 661 Anderson Dr.
Pittsburgh, PA 15220-2745
ATTN: David Brayack PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853-0300
COLLECTED BY: Client DATE COL'D:07/12/00 RECEIVED:07/14/00

SAMPLE: Water sample, TB071200, 1600

ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	<1
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

ANALYTICAL PARAMETERS		
Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter.ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlordifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR

rn= 18207 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (516) 422-5777 • FAX (516) 422-5770

LAB NO:203238.04 07/27/00

Tetra Tech Nus, Inc.
Foster Plaza VII, 661 Anderson Dr.
Pittsburgh, PA 15220-2745
ATTN: David Brayack PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853
COLLECTED BY: Client DATE COL'D:07/19/00 RECEIVED:07/21/00

SAMPLE: Water sample, TB-071900, 0906

ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	<1
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

ANALYTICAL PARAMETERS		
Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter.ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlordifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR

rn= 18967 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

LAB NO:203484.08 08/09/00

Tetra Tech Nus, Inc.
Foster Plaza VII, 661 Anderson Dr.
Pittsburgh, PA 15220-2745
ATTN: David Brayack PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853
COLLECTED BY: Client DATE COL'D:08/02/00 RECEIVED:08/03/00

SAMPLE: Water sample, TB-080200,

ANALYTICAL PARAMETERS			ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1	Ethyl Benzene	ug/L	<1
Vinyl Chloride	ug/L	<1	Styrene	ug/L	<1
Chloroethane	ug/L	<1	o Xylene	ug/L	<1
Methylene Chloride	ug/L	<1	m + p Xylene	ug/L	<2
Acetone	ug/L	<10	Xylene	ug/L	<3
Carbon disulfide	ug/L	<1	Bromomethane	ug/L	<1
1,1 Dichloroethene	ug/L	<1	ter.ButylMethylEther	ug/L	<1
1,1 Dichloroethane	ug/L	<1	Freon 113	ug/L	<1
1,2 Dichloroethene	ug/L	<1	Trichlorofluomethane	ug/L	<1
Chloroform	ug/L	<1	Dichlordifluomethane	ug/L	<1
1,2 Dichloroethane	ug/L	<1	c-1,3Dichloropropene	ug/L	<1
2-Butanone	ug/L	<10	t-1,3Dichloropropene	ug/L	<1
111 Trichloroethane	ug/L	<1	Trichloroethene	ug/L	<1
Carbon Tetrachloride	ug/L	<1			
Bromodichloromethane	ug/L	<1			
1,2 Dichloropropane	ug/L	<1			
112 Trichloroethane	ug/L	<1			
Benzene	ug/L	<1			
Bromoform	ug/L	<1			
4-Methyl-2-Pentanone	ug/L	<10			
2-Hexanone	ug/L	<10			
Tetrachloroethene	ug/L	<1			
Toluene	ug/L	<1			
1122Tetrachloroethan	ug/L	<1			
Chlorobenzene	ug/L	<1			

cc:

REMARKS:

DIRECTOR

rn= 20656 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

LAB NO:203604.04 08/15/00

Tetra Tech Nus, Inc.
Foster Plaza VII, 661 Anderson Dr.
Pittsburgh, PA 15220-2745
ATTN: David Brayack PO#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853
COLLECTED BY: Client DATE COL'D:08/01/00 RECEIVED:08/09/00

SAMPLE: Water sample, TB-080700, 1006

ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1
Vinyl Chloride	ug/L	<1
Chloroethane	ug/L	<1
Methylene Chloride	ug/L	<1
Acetone	ug/L	<10
Carbon disulfide	ug/L	<1
1,1 Dichloroethene	ug/L	<1
1,1 Dichloroethane	ug/L	<1
1,2 Dichloroethene	ug/L	<1
Chloroform	ug/L	<1
1,2 Dichloroethane	ug/L	<1
2-Butanone	ug/L	<10
111 Trichloroethane	ug/L	<1
Carbon Tetrachloride	ug/L	<1
Bromodichloromethane	ug/L	<1
1,2 Dichloropropane	ug/L	<1
112 Trichloroethane	ug/L	<1
Benzene	ug/L	<1
Bromoform	ug/L	<1
4-Methyl-2-Pentanone	ug/L	<10
2-Hexanone	ug/L	<10
Tetrachloroethene	ug/L	<1
Toluene	ug/L	<1
1122Tetrachloroethan	ug/L	<1
Chlorobenzene	ug/L	<1

ANALYTICAL PARAMETERS		
Ethyl Benzene	ug/L	<1
Styrene	ug/L	<1
o Xylene	ug/L	<1
m + p Xylene	ug/L	<2
Xylene	ug/L	<3
Bromomethane	ug/L	<1
ter.ButylMethylEther	ug/L	<1
Freon 113	ug/L	<1
Trichlorofluomethane	ug/L	<1
Dichlordifluomethane	ug/L	<1
c-1,3Dichloropropene	ug/L	<1
t-1,3Dichloropropene	ug/L	<1
Trichloroethene	ug/L	<1

cc:

REMARKS:

DIRECTOR Thomas B. [illegible]

rn= 21636 NYSDOH ID# 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

LAB NO.203659.01 08/22/00

Tetra Tech Nus, Inc.
Foster Plaza VII; 661 Anderson Dr.
Pittsburgh, PA 15220-2745
ATTN: David Brayack P0#00-0504-DB

SOURCE OF SAMPLE: NWIRP, Calverton Site, #3853
COLLECTED BY: Client DATE COL'D:08/07/00 RECEIVED:08/11/00

SAMPLE: Water sample, TB0~~9~~80900, 1006

ANALYTICAL PARAMETERS			ANALYTICAL PARAMETERS		
Chloromethane	ug/L	<1	Ethyl Benzene	ug/L	<1
Vinyl Chloride	ug/L	<1	Styrene	ug/L	<1
Chloroethane	ug/L	<1	o Xylene	ug/L	<1
Methylene Chloride	ug/L	<1	m + p Xylene	ug/L	<2
Acetone	ug/L	<10	Xylene	ug/L	<3
Carbon disulfide	ug/L	<1	Bromomethane	ug/L	<1
1,1 Dichloroethene	ug/L	<1	ter.ButylMethylEther	ug/L	<1
1,1 Dichloroethane	ug/L	<1	Freon 113	ug/L	<1
1,2 Dichloroethene	ug/L	<1	Trichlorofluomethane	ug/L	<1
Chloroform	ug/L	<1	Dichlordifluomethane	ug/L	<1
1,2 Dichloroethane	ug/L	<1	c-1,3Dichloropropene	ug/L	<1
2-Butanone	ug/L	<10	t-1,3Dichloropropene	ug/L	<1
111 Trichloroethane	ug/L	<1	Trichloroethene	ug/L	<1
Carbon Tetrachloride	ug/L	<1			
Bromodichloromethane	ug/L	<1			
1,2 Dichloropropane	ug/L	<1			
112 Trichloroethane	ug/L	<1			
Benzene	ug/L	<1			
Bromoform	ug/L	<1			
4-Methyl-2-Pentanone	ug/L	<10			
2-Hexanone	ug/L	<10			
Tetrachloroethene	ug/L	<1			
Toluene	ug/L	<1			
1122Tetrachloroethan	ug/L	<1			
Chlorobenzene	ug/L	<1			

cc:

REMARKS:

DIRECTOR

rn= 22043 NYSDOH ID# 10320

A.3

MONITORED NATURAL ATTENUATION GROUNDWATER INVESTIGATION

CTO1(WIRP CALVERTON
WATER DATA
QUANTERRA
SDG: CA007

SAMPLE NUMBER:	FC-GW01S-00			FC-GW02S-11-6-00-REP			FC-GW02S-11.6-00			FC-GW03S-11-6-00-REP		
SAMPLE DATE:	07/31/00			08/01/00			08/01/00			08/01/00		
LABORATORY ID:	C0H010196002			C0H020129008			C0H020129005			C0H020129009		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES												
1,1,1-TRICHLOROETHANE	10	U		2000			1900			1.7	J	P
1,1,2,2-TETRACHLOROETHANE	10	U		200	U		200	U		10	U	
1,1,2-TRICHLOROETHANE	10	U		200	U		200	U		10	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	10	UJ	C	200	UJ	C	200	UJ	C	10	U	
1,1-DICHLOROETHANE	10	U		3400			3300			2.6	J	P
1,1-DICHLOROETHENE	10	U		30	J	P	25	J	P	10	U	
1,2-DICHLOROETHANE	10	U		200	U		200	U		10	U	
1,2-DICHLOROETHENE (TOTAL)	10	U		200	U		200	U		10	U	
1,2-DICHLOROPROPANE	10	U		200	U		200	U		10	U	
2-BUTANONE	10	UJ	C	200	UJ	C	200	UJ	C	10	U	
2-HEXANONE	10	U		200	U		200	U		10	U	
4-METHYL-2-PENTANONE	10	U		200	U		200	U		10	U	
ACETONE	10	U		200	U		200	U		10	U	
BENZENE	10	U		200	U		200	U		10	U	
BROMODICHLOROMETHANE	10	U		200	U		200	U		10	U	
BROMOFORM	10	U		200	U		200	U		10	U	
BROMOMETHANE	10	UJ	C	200	UJ	C	200	UJ	C	10	UJ	C
CARBON DISULFIDE	10	U		200	U		200	U		10	U	
CARBON TETRACHLORIDE	10	U		200	U		200	U		10	U	
CHLOROBENZENE	10	U		200	U		200	U		10	U	
CHLOROETHANE	10	U		200	U		200	U		10	U	
CHLOROFORM	10	U		200	U		200	U		10	U	
CHLOROMETHANE	10	U		200	U		200	U		10	U	
CIS-1,3-DICHLOROPROPENE	10	U		200	U		200	U		10	U	
DIBROMOCHLOROMETHANE	10	U		200	U		200	U		10	U	
DICHLORODIFLUOROMETHANE	10	U		200	U		200	U		10	U	
ETHYLBENZENE	10	U		29	J	P	46	J	P	10	U	
METHYL TERT-BUTYL ETHER	10	UJ	C	200	UJ	C	200	UJ	C	10	U	
METHYLENE CHLORIDE	10	U		200	U		200	U		10	U	
STYRENE	10	U		200	U		200	U		10	U	
TETRACHLOROETHENE	10	U		200	U		200	U		10	U	
TOLUENE	10	U		110	J	P	140	J	P	10	U	

CTO189-NWIRP CALVERTON
WATER DATA
QUANTERRA
SDG: CA007

SAMPLE NUMBER:	FC-GW01S-00			FC-GW02S-11-6-00-REP			FC-GW02S-11.6-00			FC-GW03S-11-6-00-REP		
SAMPLE DATE:	07/31/00			08/01/00			08/01/00			08/01/00		
LABORATORY ID:	C0H010196002			C0H020129008			C0H020129005			C0H020129009		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES												
TRICHLOROETHENE	10	U		200	U		200	U		10	U	
TRICHLOROFLUOROMETHANE	10	U		200	U		200	U		10	U	
VINYL CHLORIDE	10	U		200	U		200	U		10	U	
XYLENES, TOTAL	10	U		330			510			10	U	

CTO NWIRP CALVERTON
WATER DATA
QUANTERRA
SDG: CA007

SAMPLE NUMBER:	FC-GW03S-11.6-00			GW-FB-080100-DI			GW-FB-080100-POT			GW-FD-080100		
SAMPLE DATE:	08/01/00			08/01/00			08/01/00			08/01/00		
LABORATORY ID:	C0H020129006			C0H020129003			C0H020129004			C0H020129007		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES												
1,1,1-TRICHLOROETHANE	10	U		10	U		10	U		10	U	
1,1,2,2-TETRACHLOROETHANE	10	U		10	U		10	U		10	U	
1,1,2-TRICHLOROETHANE	10	U		10	U		10	U		10	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	10	U		10	U		10	U		10	U	
1,1-DICHLOROETHANE	10	U		10	U		10	U		10	U	
1,1-DICHLOROETHENE	10	U		10	U		10	U		10	U	
1,2-DICHLOROETHANE	10	U		10	U		10	U		10	U	
1,2-DICHLOROETHENE (TOTAL)	10	U		10	U		10	U		10	U	
1,2-DICHLOROPROPANE	10	U		10	U		10	U		10	U	
2-BUTANONE	10	U		4.9	J	PC	10	U		10	U	
2-HEXANONE	10	U		10	U		10	U		10	U	
4-METHYL-2-PENTANONE	10	U		10	U		10	U		10	U	
ACETONE	10	U		11			10	U		10	U	
BENZENE	10	U		10	U		10	U		10	U	
BROMODICHLOROMETHANE	10	U		10	U		6.4	J	P	10	U	
BROMOFORM	10	U		10	U		1.5	J	P	10	U	
BROMOMETHANE	10	UJ	C	10	UJ	C	10	UJ	C	10	UJ	C
CARBON DISULFIDE	10	U		10	U		10	U		10	U	
CARBON TETRACHLORIDE	10	U		10	U		10	U		10	U	
CHLOROBENZENE	10	U		10	U		10	U		10	U	
CHLOROETHANE	10	U		10	U		10	U		10	U	
CHLOROFORM	10	U		10	U		6.6	J	P	10	U	
CHLOROMETHANE	10	U		10	U		10	U		10	U	
CIS-1,3-DICHLOROPROPENE	10	U		10	U		10	U		10	U	
DIBROMOCHLOROMETHANE	10	U		10	U		10	U		10	U	
DICHLORODIFLUOROMETHANE	10	U		10	U		10	U		10	U	
ETHYLBENZENE	10	U		10	U		10	U		10	U	
METHYL TERT-BUTYL ETHER	10	U		10	U		10	U		10	U	
METHYLENE CHLORIDE	10	U		2.8	J	P	10	U		10	U	
STYRENE	10	U		10	U		10	U		10	U	
TETRACHLOROETHENE	10	U		10	U		10	U		10	U	
TOLUENE	10	U		10	U		10	U		10	U	

CTO189-NWIRP CALVERTON
WATER DATA
QUANTERRA
SDG: CA007

SAMPLE NUMBER:	FC-GW03S-11.6-00	GW-FB-080100-DI	GW-FB-080100-POT	GW-FD-080100
SAMPLE DATE:	08/01/00	08/01/00	08/01/00	08/01/00
LABORATORY ID:	C0H020129006	C0H020129003	C0H020129004	C0H020129007
QC_TYPE:	NORMAL	NORMAL	NORMAL	NORMAL
% SOLIDS:	0.0 %	0.0 %	0.0 %	0.0 %
UNITS:	UG/L	UG/L	UG/L	UG/L
FIELD DUPLICATE OF:				

	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES												
TRICHLOROETHENE	10	U		10	U		10	U		10	U	
TRICHLOROFLUOROMETHANE	10	U		10	U		10	U		10	U	
VINYL CHLORIDE	10	U		10	U		10	U		10	U	
XYLENES, TOTAL	10	U		10	U		10	U		10	U	

SAMPLE NUMBER:	GW-RB-080100			GW-TB-080100			GW-TB-080200			SA-PZ101-I-47-00		
SAMPLE DATE:	08/01/00			08/01/00			08/02/00			08/02/00		
LABORATORY ID:	C0H020129002			C0H020129001			C0H030222001			C0H030222002		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES												
1,1,1-TRICHLOROETHANE	10	U		10	U		10	U		8.1	J	P
1,1,2,2-TETRACHLOROETHANE	10	U		10	U		10	U		10	U	
1,1,2-TRICHLOROETHANE	10	U		10	U		10	U		10	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	10	U		10	U		10	U		10	U	
1,1-DICHLOROETHANE	3.7	J	P	10	U		10	U		170		
1,1-DICHLOROETHENE	1.4	J	P	10	U		10	U		18		
1,2-DICHLOROETHANE	10	U		10	U		10	U		10	U	
1,2-DICHLOROETHENE (TOTAL)	10	U		10	U		10	U		10	U	
1,2-DICHLOROPROPANE	10	U		10	U		10	U		10	U	
2-BUTANONE	4.8	J	CP	10	U		10	U		10	U	
2-HEXANONE	10	U		10	U		10	U		10	U	
4-METHYL-2-PENTANONE	10	U		10	U		10	U		10	U	
ACETONE	10	U		10	U		10	U		10	U	
BENZENE	1.1	J	P	10	U		10	U		10	U	
BROMODICHLOROMETHANE	10	U		10	U		10	U		10	U	
BROMOFORM	10	U		10	U		10	U		10	U	
BROMOMETHANE	10	UJ	C	10	UJ	C	10	UJ	C	10	UJ	C
CARBON DISULFIDE	10	U		10	U		10	U		10	U	
CARBON TETRACHLORIDE	10	U		10	U		10	U		10	U	
CHLOROBENZENE	1.1	J	P	10	U		10	U		10	U	
CHLOROETHANE	10	U		10	U		10	U		9.1	J	P
CHLOROFORM	10	U		10	U		10	U		10	U	
CHLOROMETHANE	10	U		10	U		10	U		10	U	
CIS-1,3-DICHLOROPROPENE	10	U		10	U		10	U		10	U	
DIBROMOCHLOROMETHANE	10	U		10	U		10	U		10	U	
DICHLORODIFLUOROMETHANE	10	U		10	U		10	U		10	U	
ETHYLBENZENE	10	U		10	U		10	U		10	U	
METHYL TERT-BUTYL ETHER	10	U		10	U		10	U		10	U	
METHYLENE CHLORIDE	2.7	J	P	10	U		5.2	J	P	10	U	
STYRENE	10	U		10	U		10	U		10	U	
TETRACHLOROETHENE	10	U		10	U		10	U		10	U	
TOLUENE	1.2	J	P	10	U		10	U		10	U	

CTO189-NWIRP CALVERTON
WATER DATA
QUANTERRA
SDG: CA007

SAMPLE NUMBER:	GW-RB-080100			GW-TB-080100			GW-TB-080200			SA-PZ101-I-47-00		
SAMPLE DATE:	08/01/00			08/01/00			08/02/00			08/02/00		
LABORATORY ID:	C0H020129002			C0H020129001			C0H030222001			C0H030222002		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES												
TRICHLOROETHENE	1.1	J	P	10	U		10	U		10	U	
TRICHLOROFLUOROMETHANE	10	U		10	U		10	U		10	U	
VINYL CHLORIDE	10	U		10	U		10	U		10	U	
XYLENES, TOTAL	10	U		10	U		10	U		10	U	

CTO -NWIRP CALVERTON
WAT ATA
QUANTERRA
SDG: CA007

SAMPLE NUMBER:	SA-PZ104-S-10.5-00	TB-073100		
SAMPLE DATE:	08/02/00	07/31/00	/ /	/ /
LABORATORY ID:	C0H030222003	C0H010196001		
QC_TYPE:	NORMAL	NORMAL		
% SOLIDS:	0.0 %	0.0 %	100.0 %	100.0 %
UNITS:	UG/L	UG/L		
FIELD DUPLICATE OF:				

	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES												
1,1,1-TRICHLOROETHANE	10	U		10	U							
1,1,2,2-TETRACHLOROETHANE	10	U		10	U							
1,1,2-TRICHLOROETHANE	10	U		10	U							
1,1,2-TRICHLOROTRIFLUOROETHANE	10	U		10	U							
1,1-DICHLOROETHANE	10	U		10	U							
1,1-DICHLOROETHENE	10	U		10	U							
1,2-DICHLOROETHANE	10	U		10	U							
1,2-DICHLOROETHENE (TOTAL)	10	U		10	U							
1,2-DICHLOROPROPANE	10	U		10	U							
2-BUTANONE	10	U		10	U							
2-HEXANONE	10	U		10	U							
4-METHYL-2-PENTANONE	10	U		10	U							
ACETONE	10	U		10	U							
BENZENE	10	U		10	U							
BROMODICHLOROMETHANE	10	U		10	U							
BROMOFORM	10	U		10	U							
BROMOMETHANE	10	UJ	C	10	UJ	C						
CARBON DISULFIDE	10	U		10	U							
CARBON TETRACHLORIDE	10	U		10	U							
CHLOROBENZENE	10	U		10	U							
CHLOROETHANE	10	U		10	U							
CHLOROFORM	10	U		10	U							
CHLOROMETHANE	10	U		10	U							
CIS-1,3-DICHLOROPROPENE	10	U		10	U							
DIBROMOCHLOROMETHANE	10	U		10	U							
DICHLORODIFLUOROMETHANE	10	U		10	U							
ETHYLBENZENE	10	U		10	U							
METHYL TERT-BUTYL ETHER	10	U		10	U							
METHYLENE CHLORIDE	10	U		10	U							
STYRENE	10	U		10	U							
TETRACHLOROETHENE	10	U		10	U							
TOLUENE	10	U		10	U							
TRANS-1,3-DICHLOROPROPENE	10	U		10	U							

CTO189-NWIRP CALVERTON
WATER DATA
QUANTERRA
SDG: CA007

SAMPLE NUMBER:	SA-PZ104-S-10.5-00			TB-073100			/ /			/ /		
SAMPLE DATE:	08/02/00			07/31/00								
LABORATORY ID:	C0H030222003			C0H010196001								
QC_TYPE:	NORMAL			NORMAL								
% SOLIDS:	0.0 %			0.0 %			100.0 %			100.0 %		
UNITS:	UG/L			UG/L								
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES												
TRICHLOROETHENE	10	U		10	U							
TRICHLOROFLUOROMETHANE	10	U		10	U							
VINYL CHLORIDE	10	U		10	U							
XYLENES, TOTAL	10	U		10	U							

NWII CALVERTON
WATER DATA
QUANTERRA
SDG: CA007

SAMPLE NUMBER:	FC-GW01S-00			FC-GW02S-11.6-00			FC-GW03S-11.6-00			GW-FD-080100		
SAMPLE DATE:	07/31/00			08/01/00			08/01/00			08/01/00		
LABORATORY ID:	C0H010196002			C0H020129005			C0H020129006			C0H020129007		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
MISCELLANEOUS PARAMETERS												
BIOCHEMICAL OXYGEN DEMAND(MG/L)	3.6			23			2	U		2	U	
CHEMICAL OXYGEN DEMAND(MG/L)	15.2			84.1			10	U		10	U	
CHLORIDE(MG/L)	2.2			2.3			1.0	U		1.0	U	
NITRATE(MG/L)	0.14	J	H	0.1	U		0.1	U		0.1	U	
NITRITE(MG/L)	0.5	UJ	H	0.5	U		0.5	U		0.5	U	
ORTHOPHOSPHATE(MG/L)	0.2	UJ	H	0.5	U		0.5	U		0.5	U	
SULFATE(MG/L)	4			1.0	U		2			2		
SULFIDE(MG/L)	1	U		3			1	U		1	U	
TOTAL ORGANIC CARBON(MG/L)	7.8			1.0	U		1.3			1.1		

NWIRP CALVERTON
WATER DATA
QUANTERRA
SDG: CA007

SAMPLE NUMBER:	SA-PZ101-I-47-00	SA-PZ104-S-10.5-00	/ /	/ /
SAMPLE DATE:	08/02/00	08/02/00		
LABORATORY ID:	C0H030222002	C0H030222003		
QC_TYPE:	NORMAL	NORMAL		
% SOLIDS:	0.0 %	0.0 %	100.0 %	100.0 %
FIELD DUPLICATE OF:				

	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
MISCELLANEOUS PARAMETERS												
BIOCHEMICAL OXYGEN DEMAND(MG/L)	3.5			7.8								
CHEMICAL OXYGEN DEMAND(MG/L)	10	U		28.3								
CHLORIDE(MG/L)	6.3			6.8								
NITRATE(MG/L)	0.1	U		0.1	U							
NITRITE(MG/L)	0.5	U		0.50	U							
ORTHOPHOSPHATE(MG/L)	0.5	U		0.5	U							
SULFATE(MG/L)	14.2			3.2								
SULFIDE(MG/L)	1			2.2								
TOTAL ORGANIC CARBON(MG/L)	1.3			11.3								

NWII CALVERTON
WATE.. DATA
STL
SDG: CA007

SAMPLE NUMBER:	FC-GW01S-00			FC-GW02S-11.6-00			FC-GW03S-11.6-00			GW-FD-080100		
SAMPLE DATE:	07/31/00			08/01/00			08/01/00			08/01/00		
LABORATORY ID:	426361			426358			426359			426360		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
DISSOLVED METHANE												
CARBON DIOXIDE	4300			350	U		350	U		350	U	
ETHANE	4	U		4	U		4	U		4	U	
ETHENE	3	U		3	U		3	U		3	U	
METHANE	2600			890			62			6.7		

NWIRP CALVERTON
WATER DATA
STL
SDG: CA007

SAMPLE NUMBER:	SA-PZ101-I-47-00			SA-PZ104-S-10.5-00								
SAMPLE DATE:	08/02/00			08/02/00			/ /			/ /		
LABORATORY ID:	426490			426489								
QC_TYPE:	NORMAL			NORMAL								
% SOLIDS:	0.0 %			0.0 %			100.0 %			100.0 %		
UNITS:	UG/L			UG/L								
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
DISSOLVED METHANE												
CARBON DIOXIDE	630			9100								
ETHANE	4	U		4	U							
ETHENE	3	U		3	U							
METHANE	850			3800								

NWII CALVERTON
WATER DATA
QUANTERRA
SDG: CA007

SAMPLE NUMBER:	FC-GW01S-00			FC-GW02S-11.6-00			FC-GW03S-11.6-00			GW-FD-080100		
SAMPLE DATE:	07/31/00			08/01/00			08/01/00			08/01/00		
LABORATORY ID:	C0H010196002			C0H020129005			C0H020129006			C0H020129007		
QC_TYPE:	NORMAL			NORMAL			NORMAL			NORMAL		
% SOLIDS:	0.0 %			0.0 %			0.0 %			0.0 %		
UNITS:	UG/L			UG/L			UG/L			UG/L		
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS												
IRON	7740			12100			63.6	U	A	63.1	U	A
MANGANESE	202			50			1.2	U	A	1.7	U	A

NWIRP CALVERTON
WATER DATA
QUANTERRA
SDG: CA007

SAMPLE NUMBER:	SA-PZ101-I-47-00			SA-PZ104-S-10.5-00			/ /			/ /		
SAMPLE DATE:	08/02/00			08/02/00								
LABORATORY ID:	C0H030222002			C0H030222003								
QC_TYPE:	NORMAL			NORMAL								
% SOLIDS:	0.0 %			0.0 %			100.0 %			100.0 %		
UNITS:	UG/L			UG/L								
FIELD DUPLICATE OF:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS												
IRON	753			19100								
MANGANESE	814			622								

APPENDIX B
SAMPLE LOG SHEETS

B.1 Phase 2 Groundwater Investigation

B.2 Supplemental Groundwater Investigation

B.3 Monitored Natural Attenuation Groundwater Investigation

B.1

PHASE 2 GROUNDWATER INVESTIGATION

SAMPLE ID	INSTALLATION DATE	SAMPLE METHOD	COMMENTS
Fuel Calibration Area (FC)			
FCTW01	4/3/97	GEOPROBE	
FCTW02	4/3/97	GEOPROBE	
FCTW03	4/3/97	GEOPROBE	
FCTW04	4/5/97	HSA	80-100 fbs
FCTW05	4/19/97	GEOPROBE	
FCTW06	4/19/97	GEOPROBE	
FCTW07	4/20/97	GEOPROBE	
FCTW04	5/6/97	HSA	120-140 fbs
FCTW11	5/11/97	GEOPROBE	
FCTW09	5/13/97	HSA	
FCTW10	5/14/97	HSA	
FCTW08	5/20/97	HSA	
FCTW12	6/4/97	GEOPROBE	
FCTW13	6/4/97	GEOPROBE	
FCTW04A	6/6/97	GEOPROBE	30-80 fbs
FCMW07S	4/09/97	HSA	
FCMW08S	6/09/97	HSA	

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP Calverton
Project No.: 7398

[] Domestic Well Data
[X] Monitoring Well Data
[] Other Well Type:
[] QA Sample Type:

Sample ID No.: FC-MW07-S
Sample Location: Fuel Calibration
Sampled By: S. Patselas
C.O.C. No.: #5 of 5
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	Salinity %	Other NA
Date: 11/4/97								
Time: 1425								
Method: disposable bailer	clear	5.99	0.101	14.9	0	2.28	0.00	

PURGE DATA:

	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Date: 11/4/97								
Method: hand bail	Initial	5.75	0.075	15.3	1	3.80	0.00	
Monitor Reading (ppm): —	1	5.95	0.098	15.3	0	2.65	0.00	
Well Casing Diameter & Material	2	5.98	0.101	15.0	0	3.15	0.00	
Type: 4" PVC	3	5.98	0.100	15.0	0	2.42	0.00	
Total Well Depth (TD): 17.25								
Static Water Level (WL): 11.46								
One Casing Volume (gal/L): 3.79								
Start Purge (hrs): 1355								
End Purge (hrs): 1420								
Total Purge Time (min): 25								
Total Vol. Purged (gal/L): 12								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TCL VOC	HCl, 4°C	(2) 40ml vials	✓

OBSERVATIONS / NOTES:

Sample collected approximately 14 feet below TOC

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP Calverton
Project No.: 7398

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: FC-MW08-S
Sample Location: Fuel Calibration
Sampled By: S. Patelw
C.O.C. No.: #5 of 5
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA:

Date: 11/14/97	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Time: 1605	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	%	NA
Method: disposable bailer	gray	5.77	0.167	12.0	1	4.68	0.00	

PURGE DATA:

Date: 11/14/97	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method: hand bail	Initial	5.69	0.154	12.1	0	2.74	0.00	
Monitor Reading (ppm): —	1	5.73	0.163	12.1	9	2.77	0.00	
Well Casing Diameter & Material	2	5.75	0.166	12.1	9	2.98	0.00	
Type: 4" PVC	3	5.77	0.167	12.0	2	3.92	0.00	
Total Well Depth (TD): 14.86'	4	5.76	0.167	12.1	1	2.88	0.00	
Static Water Level (WL): 7.21'								
One Casing Volume (gal/L): 5.00								
Start Purge (hrs): 1510								
End Purge (hrs): 1600								
Total Purge Time (min): 50								
Total Vol. Purged (gal/L): 15								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TCL VOC	HCl, 4°C	(2) 40ml Vials	✓

OBSERVATIONS / NOTES:

Sample collected at approximately 10 feet below TOC.

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP- Calverton
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: TEMP WELL
[] QA Sample Type:

Sample ID No.: FC-GW04A-3
Sample Location: FUEL CAL AREA
Sampled By: TERESA SAWYER
C.O.C. No.: 24
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	Salinity %	Other NA
Date: 6/6/97								
Time: 1140								
Method: GRAB								

PURGE DATA:

Date: 6/6/97	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method: Peristaltic Pump	Initial							
Monitor Reading (ppm): –	1							
Well Casing Diameter & Material	2							
Type: GEOPROBE	3							
Total Well Depth (TD): 30'								
Static Water Level (WL): 5								
One Casing Volume(gal/L): .5								
Start Purge (hrs): 1130								
End Purge (hrs): 1140								
Total Purge Time (min): 10								
Total Vol. Purged (gal/L): 1.5								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC'S	ice to 4°C	2 40 mL VIALS	✓

OBSERVATIONS / NOTES:

Circle if Applicable:		Signature(s):
MS/MSD	Duplicate ID No.:	Teresa Sawyer

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP- Calverton
Project No.: 7398

[ ] Domestic Well Data
[ ] Monitoring Well Data
[X] Other Well Type: TEMP WELL
[ ] QA Sample Type:

Sample ID No.: FC-GW04A-4
Sample Location: FUEL CAL AREA
Sampled By: TERESA SAWYER
C.O.C. No.: 24
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA:

Date: 6/6/97	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Time: 1200	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	%	NA
Method: GRAB								

PURGE DATA:

Date: 6/6/97	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method: Peristaltic Pump	Initial							
Monitor Reading (ppm): —	1							
Well Casing Diameter & Material	2							
Type: GEOPROBE	3							
Total Well Depth (TD): 40'								
Static Water Level (WL): 5'								
One Casing Volume(gal/L): .66								
Start Purge (hrs): 1145								
End Purge (hrs): 1200								
Total Purge Time (min): 15								
Total Vol. Purged (gal/L): 2								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC's	ice to 4°C	2 40 mL VIALS	✓

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD | Duplicate ID No.:

Signature(s): Teresa Sawyer

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP- Calverton
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: TEMP WELL
[] QA Sample Type:

Sample ID No.: FC-GW04A-
Sample Location: FUEL CAL ALEF
Sampled By: TERESA SAWYER
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 6/6/97	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Time: 1245	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	%	NA
Method: GRAB								

PURGE DATA:

Date: 6/6/97	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method: Peristaltic Pump	Initial							
Monitor Reading (ppm): —	1							
Well Casing Diameter & Material	2							
Type: GEOPROBE	3							
Total Well Depth (TD): 60'								
Static Water Level (WL): 5'								
One Casing Volume(gal/L): 1 gal								
Start Purge (hrs): 1205								
End Purge (hrs): 1245								
Total Purge Time (min): 40								
Total Vol. Purged (gal/L): 1								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC's	ice to 4°C	2 40 ml VIALS	✓

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Teresa Sawyer

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP- Calverton
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: TEMP WELL
[] QA Sample Type:

Sample ID No.: EC GW04A-8D
Sample Location: FUEL CAL AREA
Sampled By: TERESA SAWYER
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Date: 6/6/97	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	%	NA
Time: 1600								
Method: GRAB								

PURGE DATA:

Date: 6/6/97	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method: Peristaltic pump	Initial							
Monitor Reading (ppm): —	1							
Well Casing Diameter & Material	2							
Type: GEOPROBE	3							
Total Well Depth (TD): 80'								
Static Water Level (WL): 5'								
One Casing Volume (gal/L): 1.1								
Start Purge (hrs): 1410								
End Purge (hrs): 1600								
Total Purge Time (min): 110								
Total Vol. Purged (gal/L): 1.5								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC's	ice to 4°C	2 40 mL VIALS	✓

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Teresa Sawyer

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP- Colverton
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: TEMPORARY
[] QA Sample Type:

Sample ID No.: FC-GW04-120
Sample Location: FUEL AREA
Sampled By: T.S.
C.O.C. No.: 12
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	Salinity %	Other NA
Date: 5/6/97								
Time: 10:50								
Method: GRAB								

PURGE DATA:

Date: 5/6/97	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method: sub pump	Initial							
Monitor Reading (ppm): 0	1							
Well Casing Diameter & Material	2							
Type: NA	3							
Total Well Depth (TD): 120								
Static Water Level (WL): NA								
One Casing Volume(gal/L): NA								
Start Purge (hrs): 1000								
End Purge (hrs): 1045								
Total Purge Time (min): 45								
Total Vol. Purged (gal/L): 250								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOCS	HCL to 4°C	2 40 ml vial	✓

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Teresa Sawyer

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP- Calverton
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Temp. well
[] QA Sample Type:

Sample ID No.: FC-GW04-140
Sample Location: FUEL CAL. AREA
Sampled By: T. Sawyer
C.O.C. No.: 15
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Date: 5/6/97	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	%	NA
Time: 1145								
Method: GRAB								

PURGE DATA:

Date: 5/6/97	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method: sub pump	Initial							
Monitor Reading (ppm): 0	1							
Well Casing Diameter & Material	2							
Type: NA	3							
Total Well Depth (TD): 140'								
Static Water Level (WL): NA								
One Casing Volume(gal/L): NA								
Start Purge (hrs): 1120								
End Purge (hrs): 1140								
Total Purge Time (min): 20								
Total Vol. Purged (gal/L): ≈ 100 ml								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOCs	ice to 4°C	2 40 ml vials	✓

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Teresa Sawyer

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP - Calverton
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Temp Well
[] QA Sample Type:

Sample ID No.: FC-GW08-100
Sample Location: FIRE CAL AREA
Sampled By: TERESA SAWYER
C.O.C. No.: 20
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	Salinity %	Other NA
Date: 5/20/97								
Time: 0950								
Method: GRAB								

PURGE DATA:

Date: 5/20/97	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method: Sub. Pump	Initial							
Monitor Reading (ppm): 0	1							
Well Casing Diameter & Material	2							
Type: HSA 4.25 ID	3							
Total Well Depth (TD): 100								
Static Water Level (WL): ~6'								
One Casing Volume(gal/L): 66								
Start Purge (hrs): 0920								
End Purge (hrs): 0950								
Total Purge Time (min): 30								
Total Vol. Purged (gal/L): 300								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC'S	ICE to 4°C	2 40 ml VIAL	✓

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Teresa Sawyer

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP- Calverton
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: TEMP WELL
[] QA Sample Type:

Sample ID No.: FC-GW08-120
Sample Location: FUEL CAL AREA
Sampled By: TERESA SAWYER
C.O.C. No.: 20
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 5/20/97	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Time: 1030	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	%	NA
Method: GRAB								

PURGE DATA:

Date: 5/20/97	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method: Sub Pump	Initial							
Monitor Reading (ppm): 0	1							
Well Casing Diameter & Material	2							
Type: HSA 4.25 ID	3							
Total Well Depth (TD): 120'								
Static Water Level (WL): 26'								
One Casing Volume (gal/L): 79								
Start Purge (hrs): 1005								
End Purge (hrs): 1035								
Total Purge Time (min): 30								
Total Vol. Purged (gal/L): 90								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOCs	ICE to 4°C	2 40 ml VIALS	✓

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Teresa Sawyer

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP- Calverton
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: TEMP WELL
[] QA Sample Type:

Sample ID No.: FC-GW08-140
Sample Location: FUEL CAL AREA
Sampled By: TERESA SAWYER
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Date: 5/20/97	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	%	NA
Time: 1115								
Method: GRAB								

PURGE DATA:

Date: 5/20/97	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method: Sub. Pump	Initial							
Monitor Reading (ppm): 0	1							
Well Casing Diameter & Material	2							
Type: HSA 4.25" ID	3							
Total Well Depth (TD): 140'								
Static Water Level (WL): ≈ 6'								
One Casing Volume (gal/L): 82								
Start Purge (hrs): 1045								
End Purge (hrs): 1055								
Total Purge Time (min): 10								
Total Vol. Purged (gal/L): 90								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC's	Ice to 4°C	2 40 mL VIALS	✓

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Teresa Sawyer

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP- Calverton
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Temp well
[] QA Sample Type:

Sample ID No.: FC-GW09-100
Sample Location: FUEL CAL AREA
Sampled By: T. Sawyer
C.O.C. No.: 18
Type of Sample:
[] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 5/13/97	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Time: 1030	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	%	NA
Method: GRAB								

PURGE DATA:

Date: 5/13/97	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method: Sub. Pump (GS)	Initial							
Monitor Reading (ppm): 150.0	1							
Well Casing Diameter & Material	2							
Type: HSA	3							
Total Well Depth (TD): 100'								
Static Water Level (WL): 60'								
One Casing Volume(gal/L): 6.0								
Start Purge (hrs): 0955								
End Purge (hrs): 1030								
Total Purge Time (min): 35								
Total Vol. Purged (gal/L): 30.0								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOCs	Ice to 4°C	2 40 ml VOALS	✓

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Teresa Dawyer

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: KWIRP-Colville
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Temp Well.
[] QA Sample Type:

Sample ID No.: FC-GW09-120
Sample Location: FUEL CAL AREA
Sampled By: T. Sawyer
C.O.C. No.: 18
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Date: 5/13/97	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	%	NA
Time: 1120								
Method: GOAB								

PURGE DATA.

Date: 5/13/97	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method: Sub. Pump	Initial							
Monitor Reading (ppm): 0	1							
Well Casing Diameter & Material	2							
Type: HSA	3							
Total Well Depth (TD): 120'								
Static Water Level (WL): 6'								
One Casing Volume(gal/L): 80'								
Start Purge (hrs): 1055								
End Purge (hrs): 1120								
Total Purge Time (min): 25								
Total Vol. Purged (gal/L): 250								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOCS	ice to 4°C	2 40 ml VIAL	✓

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Teresa Dawson

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP-Calverton
Project No.: 73998

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Temp Well
[] QA Sample Type:

Sample ID No.: FC-GW09-140
Sample Location: FUEL CAL AREA
Sampled By: T. Sawyer
C.O.C. No.: 18
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 5/13/97	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Time: 1200	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	%	NA
Method: GRAB								

PURGE DATA:

Date: 5/13/97	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method: Sub. Pump	Initial							
Monitor Reading (ppm): 0	1							
Well Casing Diameter & Material	2							
Type: HSA	3							
Total Well Depth (TD): 140'								
Static Water Level (WL): 0'								
One Casing Volume(gal/L): 100								
Start Purge (hrs): 1130								
End Purge (hrs): 1200								
Total Purge Time (min): 30								
Total Vol. Purged (gal/L): 200								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOCS	ICE to 4°C	2 40 ml VIAL	✓

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Teresa Sawyer

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP- Calverton
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Temp Well
[] QA Sample Type:

Sample ID No.: FC-GW10-100
Sample Location: FUEL CAL AREA
Sampled By: T. Sawyer
C.O.C. No.: 19
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 5/14/97	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Time: 1200	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	%	NA
Method: GRAB								

PURGE DATA:

Date: 5/14/97	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method: Sub Pump	Initial							
Monitor Reading (ppm): 0	1							
Well Casing Diameter & Material	2							
Type: HSA	3							
Total Well Depth (TD): 160								
Static Water Level (WL): 6'								
One Casing Volume(gal/L): 60'								
Start Purge (hrs): 1130								
End Purge (hrs): 1200								
Total Purge Time (min): 30								
Total Vol. Purged (gal/L): 300								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC's	ice to 4°C	2 40 ml VIAL	✓

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Teresa Sawyer

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP - Colverton
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Temp Well
[] QA Sample Type:

Sample ID No.: FC-GW10-120
Sample Location: FUEL CAL AREA
Sampled By: T. Sawyer
C.O.C. No.: 19
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 5/14/97	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Time: 1330	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	%	NA
Method: GRAB								

PURGE DATA:

Date: 5/14/97	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method: Sub. Pump	Initial							
Monitor Reading (ppm): 0	1							
Well Casing Diameter & Material	2							
Type: HSA	3							
Total Well Depth (TD): 120								
Static Water Level (WL): 6'								
One Casing Volume(gal/L): 80								
Start Purge (hrs): 1300								
End Purge (hrs): 1330								
Total Purge Time (min): 30								
Total Vol. Purged (gal/L): 300								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC'S	ICE to 4°C	2 40 ml VIAL	✓

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Teresa Sawyer

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP-Calverton
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Temp Well
[] QA Sample Type:

Sample ID No.: EC-6 40
Sample Location: FWC2 AREA
Sampled By: T.S CR
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Date: 5/14/97	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	%	NA
Time: 1415								
Method: GRAB								

PURGE DATA:

	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Date: 5/14/97								
Method: Sub Pump	Initial							
Monitor Reading (ppm): C	1							
Well Casing Diameter & Material	2							
Type: HSA	3							
Total Well Depth (TD): 140'								
Static Water Level (WL): 60'								
One Casing Volume(gal/L): 180								
Start Purge (hrs): 1400								
End Purge (hrs): 1415								
Total Purge Time (min): 15								
Total Vol. Purged (gal/L): 150								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC'S	ice to 4°C	2 40 ml VIAL	✓

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Teresa Sawyer

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NAWRP-Galveston
Project No.: 7598

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Temp Well
[] QA Sample Type:

Sample ID No.: FC-GW11-11
Sample Location: Fuel Calibration Area
Sampled By: T. Sawyer
C.O.C. No.: 17
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	Salinity %	Other NA
Date: 5/11/97								
Time: 1545								
Method: GRAB								

PURGE DATA:

Date: 5/11/97	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method: Peristaltic Pump	Initial							
Monitor Reading (ppm): C	1							
Well Casing Diameter & Material	2							
Type: GEOPROBE	3							
Total Well Depth (TD): 11								
Static Water Level (WL): 6'								
One Casing Volume(gal/L):								
Start Purge (hrs): 1505								
End Purge (hrs): 1515								
Total Purge Time (min): 10								
Total Vol. Purged (gal/L): .33								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC'S	Ice to 4°C	2 40 ml VIAL	✓

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Teresa Sawyer

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWRP- Colverton
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Temp Well
[] QA Sample Type:

Sample ID No.: FC-GW11-26
Sample Location: Fuel Calibration Area
Sampled By: T. Sawyer
C.O.C. No.: 17
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	Salinity %	Other NA
Date: 5/11/97								
Time: 1610								
Method: GRAB								

PURGE DATA:

Date: 5/11/97	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method: Peristaltic Pump	Initial							
Monitor Reading (ppm): 0	1							
Well Casing Diameter & Material	2							
Type: GEOPROBE	3							
Total Well Depth (TD): 46								
Static Water Level (WL): 6'								
One Casing Volume(gal/L): —								
Start Purge (hrs): 1550								
End Purge (hrs): 1610								
Total Purge Time (min): 20								
Total Vol. Purged (gal/L): 1								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOCS	Ice to 4°C	2 40 ml vial	✓

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Teresa Sawyer

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NUSIPP-Colverton
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Temp Well
[] QA Sample Type:

Sample ID No.: FC-GW11-46
Sample Location: FUEL CALIBRATION AR
Sampled By: T. Swanger
C.O.C. No.: 17
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Date: 5/11/97	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	%	NA
Time: 1650								
Method: GRAB								

PURGE DATA:

Date: 5/11/97	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method: Peristaltic Pump	Initial							
Monitor Reading (ppm): 0	1							
Well Casing Diameter & Material	2							
Type: GEOPROBE	3							
Total Well Depth (TD): 46'								
Static Water Level (WL): 6'								
One Casing Volume(gal/L):								
Start Purge (hrs): 1620								
End Purge (hrs): 1650								
Total Purge Time (min): 30								
Total Vol. Purged (gal/L): 2								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC'S	ICE 4°C	2 40 ml VIAL	✓

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Teresa Swanger

SAMPLE ID	INSTALLATION DATE	SAMPLE METHOD	COMMENTS
Engine Test House (ET)			
ETTW01	4/1/97	GEOPROBE	
ETTW02	4/1/97	GEOPROBE	
ETTW03	4/1/97	GEOPROBE	
ETTW04	4/6/97	GEOPROBE	
ETTW05	4/8/97	GEOPROBE	
ETTW06	4/8/97	GEOPROBE	
ETTW08	4/19/97	GEOPROBE	
ETTW07	4/20/97	GEOPROBE	15-50 fbs
ETTW12	5/9/97	GEOPROBE	
ETTW13	5/9/97	GEOPROBE	
ETTW14	5/9/97	GEOPROBE	
ETTW11	5/10/97	GEOPROBE	
ETTW09	5/11/97	GEOPROBE	
ETTW10	5/11/97	GEOPROBE	
ETTW21	6/3/97	GEOPROBE	
ETTW15	6/4/97	GEOPROBE	11-46 fbs
ETTW16	6/5/97	GEOPROBE	
ETTW08	6/9/97	HSA	70-80 fbs
ETTW07	6/10/97	HSA	70-90 fbs
ETTW15	7/11/97	HSA	70-90 fbs

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP- Calverton
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Temp WELL
[] QA Sample Type:

Sample ID No.: ET-GW7-70
Sample Location: Engine Test H
Sampled By: TERESA SAWYE
C.O.C. No.: 59 SC
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 7/10/97	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Time: 815	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	%	NA
Method: GCAB								

PURGE DATA:

Date: 7/10/97	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method: Sub. Pump	Initial							
Monitor Reading (ppm):	1							
Well Casing Diameter & Material	2							
Type: HSA	3							
Total Well Depth (TD): 70								
Static Water Level (WL): 10'								
One Casing Volume(gal/L): —								
Start Purge (hrs): 910								
End Purge (hrs): 1000								
Total Purge Time (min): 50								
Total Vol. Purged (gal/L): 180								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC's	ice to 4°C	2 40 mL VIALS	✓

OBSERVATIONS / NOTES:

Circle if Applicable:
MS/MSD | Duplicate ID No.:

Signature(s): [illegible]

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP- Calverton
Project No.: 7398

[ ] Domestic Well Data
[ ] Monitoring Well Data
[X] Other Well Type: TEMP WELL
[ ] QA Sample Type:

Sample ID No.: ET-G07-
Sample Location: Engine Test Hou
Sampled By: TERESA SANUE
C.O.C. No.: ~~[illegible]~~
Type of Sample: 30
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	Salinity %	Other NA
Date: 7/10/97								
Time: 1130								
Method: GCAB								

PURGE DATA:

	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Date: 7/10/97								
Method: 2" pump	Initial							
Monitor Reading (ppm): –	1							
Well Casing Diameter & Material	2							
Type: HSA	3							
Total Well Depth (TD): 90'								
Static Water Level (WL): 20'								
One Casing Volume(gal/L): –								
Start Purge (hrs): ~~0945~~ 1130								
End Purge (hrs): 1230								
Total Purge Time (min): 60								
Total Vol. Purged (gal/L): 150								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC's	ice to 4°C	2 40 mL VIALS	✓

OBSERVATIONS / NOTES:

Circle if Applicable:
MS/MSD | Duplicate ID No.:

Signature(s): Teresa Sanuez

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP- Calverton
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: TEMP WELL
[] QA Sample Type:

Sample ID No.: ET-6[illegible]8-70
Sample Location: Engine Test Area
Sampled By: TERESA SAWYER
C.O.C. No.: #29
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	Salinity %	Other NA
Date: 9/9/97								
Time: 1250								
Method: sub. pump								

PURGE DATA:

	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Date: 9/9/97								
Method: sub. pump	Initial							
Monitor Reading (ppm): 0	1							
Well Casing Diameter & Material	2							
Type: 4" A PVC	3							
Total Well Depth (TD): 70'								
Static Water Level (WL): 10'								
One Casing Volume(gal/L): -								
Start Purge (hrs): 1234								
End Purge (hrs): 1250								
Total Purge Time (min): 16								
Total Vol. Purged (gal/L): 240								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC's	ice to 4°C	2 40 ml VIALS	✓

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.: Duplicate #17

Signature(s): Teresa Sawyer

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP- Calverton
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Temp well
[] QA Sample Type:

Sample ID No.: ET-GW8-9
Sample Location: Engine Test Area
Sampled By: Teresa Sawyer
C.O.C. No.: # 29
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 7/9/97	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Time: 1330	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	%	NA
Method: Sub. pump								

PURGE DATA:

Date: 7/7/97	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method: Sub pump	Initial							
Monitor Reading (ppm): 0	1							
Well Casing Diameter & Material	2							
Type: NA	3							
Total Well Depth (TD): 90								
Static Water Level (WL): 10								
One Casing Volume(gal/L): —								
Start Purge (hrs): 310								
End Purge (hrs): 1330								
Total Purge Time (min): 20								
Total Vol. Purged (gal/L): 250								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC's	ice to 4°C	2 40 mL VIALS	✓

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD | Duplicate ID No.:

Signature(s): Teresa Sawyer

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP-Calverton
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Temp Well
[] QA Sample Type:

Sample ID No.: ET-GW09-12
Sample Location: Engine Test Area
Sampled By: T. Sawyer
C.O.C. No.: 17
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	Salinity %	Other NA
Date: 5/1/97								
Time: 1330								
Method: GRAB								

PURGE DATA:

Date: 5/1/97	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method: Peristaltic Pump	Initial							
Monitor Reading (ppm): 0	1							
Well Casing Diameter & Material	2							
Type: GEOPROBE	3							
Total Well Depth (TD): 12'								
Static Water Level (WL): 7'								
One Casing Volume(gal/L):								
Start Purge (hrs): 1320								
End Purge (hrs): 1330								
Total Purge Time (min): 10								
Total Vol. Purged (gal/L):								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC'S	Ice to 4°C	2 40 ml vial	✓

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Teresa Sawyer

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP- Calverton
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Temp Well
[] QA Sample Type:

Sample ID No.: ET-GW09-37
Sample Location: Engine Test Area
Sampled By: T. Sawyer
C.O.C. No.: 17
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 5/11/97	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Time: 1345	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	%	NA
Method: GRAB								

PURGE DATA:

Date: 5/11/97	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method: Peristaltic Pump	Initial							
Monitor Reading (ppm): 0	1							
Well Casing Diameter & Material	2							
Type: GEOPROBE	3							
Total Well Depth (TD): 37'								
Static Water Level (WL): 7'								
One Casing Volume(gal/L):								
Start Purge (hrs): 1335								
End Purge (hrs): 1345								
Total Purge Time (min): 10								
Total Vol. Purged (gal/L): 2								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC'S	Ice to 4°C	2 40 ml VOC'S	✓

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Teresa Sawyer

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP - Colverton
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Temp well
[] QA Sample Type:

Sample ID No.: ET-GW09-07
Sample Location: Engine Test Area
Sampled By: T. Sawyer
C.O.C. No.: 17
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	Salinity %	Other NA
Date: 5/11/97								
Time: 1440								
Method: GRAB								

PURGE DATA:

Date: 5/11/97	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method: Peristaltic Pump	Initial							
Monitor Reading (ppm): 0	1							
Well Casing Diameter & Material	2							
Type: GEOPROBE	3							
Total Well Depth (TD): 47								
Static Water Level (WL): 7'								
One Casing Volume(gal/L):								
Start Purge (hrs): 1410								
End Purge (hrs): 1440								
Total Purge Time (min): 30								
Total Vol. Purged (gal/L): 1								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOCS	Ice to 4°C	2 40 ml VIAL	✓

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Teresa Sawyer

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP- Calverton
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Temp Well
[] QA Sample Type.

Sample ID No.: ET-GW10-17
Sample Location: Engine Test Area
Sampled By: T. Sawyer
C.O.C. No.: 17
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Date: 5/10/97	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	%	NA
Time: 0850 0905								
Method: GRAB								

PURGE DATA:

Date: 5/10/97	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method: Peristaltic Pump	Initial							
Monitor Reading (ppm): 0	1							
Well Casing Diameter & Material	2							
Type: GEOPROBE	3							
Total Well Depth (TD): 17'								
Static Water Level (WL): 9'								
One Casing Volume(gal/L): -								
Start Purge (hrs): 0840								
End Purge (hrs): 0850								
Total Purge Time (min): 10								
Total Vol. Purged (gal/L): -								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOCS	ice to 4°C	2 40 ml VIAL	✓

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Teresa Sawyer

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: Naval Galveston
Project No.: 73398

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Temp Well
[] QA Sample Type:

Sample ID No.: ET-GW10-42
Sample Location: Engine Test Area
Sampled By: T. Sawyer
C.O.C. No.: 17
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	Salinity %	Other NA
Date: 5/11/97								
Time: 0945								
Method: GRAB								

PURGE DATA:

Date: 5/11/97	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method: Peristaltic Pump	Initial							
Monitor Reading (ppm): 0	1							
Well Casing Diameter & Material	2							
Type: Geoprobe	3							
Total Well Depth (TD): 42'								
Static Water Level (WL): 12'								
One Casing Volume(gal/L):								
Start Purge (hrs): 0920								
End Purge (hrs): 0945								
Total Purge Time (min): 25								
Total Vol. Purged (gal/L): 2								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOCs	Ice to 4°C.	4 40 ml VIALS	✓

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
	✓ ET-DUP07

Signature(s): Teresa Sawyer

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP-Calverton
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Temp. Well
[] QA Sample Type:

Sample ID No.: ET-GW10-72
Sample Location: Engine Test Area
Sampled By: T. Sawyer
C.O.C. No.: 17
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 5/11/97	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Time: 1030	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	%	NA
Method: GRAB								

PURGE DATA:

Date: 5/11/97	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method: Peristaltic Pump	Initial							
Monitor Reading (ppm): 0	1							
Well Casing Diameter & Material	2							
Type: Geoprobe	3							
Total Well Depth (TD): 72'								
Static Water Level (WL): 12'								
One Casing Volume(gal/L):								
Start Purge (hrs): 1000								
End Purge (hrs): 1030								
Total Purge Time (min): 30								
Total Vol. Purged (gal/L): 2								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC'S	Ice to 4°C	2 40 ml VIAL	✓

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Teresa Sawyer

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP- Calverton
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Temp Well
[] QA Sample Type:

Sample ID No.: ET-GW11-15
Sample Location: Engine Test Area
Sampled By: T. Sawyer
C.O.C. No.: 17
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 5/10/97	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Time: 1420	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	%	NA
Method: GRAB								

PURGE DATA:

Date: 5/10/97	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method: Peristaltic Pump	Initial							
Monitor Reading (ppm): C	1							
Well Casing Diameter & Material	2							
Type: GEOPROBE	3							
Total Well Depth (TD): 15								
Static Water Level (WL): 10'								
One Casing Volume(gal/L): –								
Start Purge (hrs): 1410								
End Purge (hrs): 1420								
Total Purge Time (min): 10								
Total Vol. Purged (gal/L): –								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC'S	ICE to 4°C	2 40 mL VIALS	✓

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Teresa Sawyer

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP-Calverton
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Temp Well
[] QA Sample Type:

Sample ID No.: ET-GW11-40
Sample Location: Engine Test Area
Sampled By: T. Sawyer
C.O.C. No.: 17
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Date: 5/10/97	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	%	NA
Time: 1445								
Method: GRAB								

PURGE DATA:

Date: 5/10/97	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method: Peristaltic Pump	Initial							
Monitor Reading (ppm): 0	1							
Well Casing Diameter & Material	2							
Type: GEOPROBE	3							
Total Well Depth (TD): 40'								
Static Water Level (WL): 10'								
One Casing Volume(gal/L): -								
Start Purge (hrs): 1400								
End Purge (hrs): 1445								
Total Purge Time (min): 15								
Total Vol. Purged (gal/L): -								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC'S	Ice to 4°C	2 40 ml VOA VIAL	✓

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Teresa Sawyer

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP- Calverton
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Temp Well
[] QA Sample Type:

Sample ID No.: ET-GW11-70
Sample Location: Engine Test Area
Sampled By: T. Sawyer
C.O.C. No.: 17
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	Salinity %	Other NA
Date: 5/10/97								
Time: 1530								
Method: GRAB								

PURGE DATA:

Date: 5/10/97	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method: Peristaltic Pump	Initial							
Monitor Reading (ppm): 0	1							
Well Casing Diameter & Material	2							
Type: GEOPROBE	3							
Total Well Depth (TD): 70								
Static Water Level (WL): 10								
One Casing Volume(gal/L): -								
Start Purge (hrs): 1500								
End Purge (hrs): 1530								
Total Purge Time (min): 30								
Total Vol. Purged (gal/L):								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC'S	ice to 4°C	2 40 ml VIAL	✓

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Teresa Sawyer

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP-Crearton
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Temp Well
[] QA Sample Type:

Sample ID No.: ET-GW12-11
Sample Location: ENGINE TEST AREA
Sampled By: T. Sawyer
C.O.C. No.: 16
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Date: 5/9/97	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	%	NA
Time: 1010								
Method: GRAB								

PURGE DATA:

Date: 5/9/97	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method: Peristaltic Pump	Initial							
Monitor Reading (ppm): C	1							
Well Casing Diameter & Material	2							
Type: GEOPROBE	3							
Total Well Depth (TD): 11								
Static Water Level (WL): ~~[illegible]~~								
One Casing Volume(gal/L): —								
Start Purge (hrs): 0955								
End Purge (hrs): 1000								
Total Purge Time (min): 05								
Total Vol. Purged (gal/L):								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC'S	Ice to 4°C	2 40 ml VOA	✓

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Teresa [illegible]

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP- Colverton
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Temp Well
[] QA Sample Type:

Sample ID No.: ET-GW12-26
Sample Location: Engine Test Area
Sampled By: T. Sawyer
C.O.C. No.: 16
Type of Sample:
[] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Date: 5/9/97	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	%	NA
Time: 1030								
Method: GRAB								

PURGE DATA:

Date: 5/9/97	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method: Peristaltic Pump	Initial							
Monitor Reading (ppm): 0	1							
Well Casing Diameter & Material	2							
Type: GEOPROBE	3							
Total Well Depth (TD): 26								
Static Water Level (WL): 6'								
One Casing Volume(gal/L): -								
Start Purge (hrs): 1020								
End Purge (hrs): 1030								
Total Purge Time (min): 10								
Total Vol. Purged (gal/L): -								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC'S	ice to 4°C	4 40 ml vial	✓

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
	✓ ET Dup-06

Signature(s): Teresa Sawyer

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP - CALVERTON
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Temp well
[] QA Sample Type:

Sample ID No.: ET-GW13-11
Sample Location: ENGINE TEST AREA
Sampled By: T Sawyer
C.O.C. No.: 16
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Date: 5/9/97	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	%	NA
Time: 1110								
Method: GRAB								

PURGE DATA:

Date: 5/9/97	Volume	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Method: Peristaltic Pump	Initial							
Monitor Reading (ppm): 0	1							
Well Casing Diameter & Material	2							
Type: GEOPROBE	3							
Total Well Depth (TD): 11								
Static Water Level (WL): 6'								
One Casing Volume(gal/L): —								
Start Purge (hrs): 1100								
End Purge (hrs): 1110								
Total Purge Time (min): 10								
Total Vol. Purged (gal/L): —								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC's	ice to 4°C	2 40 ml VIAL	✓

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Teresa Sawyer

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: Nuil RP - Colverton
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Temp Well
[] QA Sample Type:

Sample ID No.: ET-GW013-26
Sample Location: Engine Test Area
Sampled By: T. Sawyer
C.O.C. No.: 16
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Date: 5/9/97	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	%	NA
Time: 1140								
Method: GRAB								

PURGE DATA:

Date: 5/9/97	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method: Peristaltic Pump	Initial							
Monitor Reading (ppm): 0	1							
Well Casing Diameter & Material	2							
Type: Geoprobe	3							
Total Well Depth (TD): 26								
Static Water Level (WL): 6								
One Casing Volume(gal/L): —								
Start Purge (hrs): 1130								
End Purge (hrs): 1140								
Total Purge Time (min): 10								
Total Vol. Purged (gal/L): —								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC'S	ICE to 4°C	2 40 ml VIAL	✓

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Teresa Sawyer

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP - Calverton
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Temp Well
[] QA Sample Type:

Sample ID No.: ET - GW14 - 11
Sample Location: Engine. test Area
Sampled By: T. Sawyer
C.O.C. No.: 116
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Date: 5/9/97	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	%	NA
Time: 1210								
Method: GRAB								

PURGE DATA:

	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Date: 5/9/97								
Method: Peristaltic Pump	Initial							
Monitor Reading (ppm): C	1							
Well Casing Diameter & Material	2							
Type: GEOPROBE	3							
Total Well Depth (TD): 11								
Static Water Level (WL): 6'								
One Casing Volume(gal/L): —								
Start Purge (hrs): 1200								
End Purge (hrs): 1210								
Total Purge Time (min): 10								
Total Vol. Purged (gal/L): —								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOCs	ICE to 4°C	2 40 ml VIAL	✓

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Teresa Sawyer

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP - Glenview
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Temp Well
[] QA Sample Type:

Sample ID No.: ET-GW14-26
Sample Location: Engine Test Area
Sampled By: T. Sawyer
C.O.C. No.: 16
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Date: 5/9/97	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	%	NA
Time: 1230								
Method: GRAB								

PURGE DATA:

Date: 5/9/97	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method: Peristaltic Pump	Initial							
Monitor Reading (ppm): 0	1							
Well Casing Diameter & Material	2							
Type: GEOPROBE	3							
Total Well Depth (TD): 26								
Static Water Level (WL): 6'								
One Casing Volume(gal/L): –								
Start Purge (hrs): 1220								
End Purge (hrs): 1230								
Total Purge Time (min): 10								
Total Vol. Purged (gal/L): –								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC'S	Ice to 4°C	2 40 ml VOA'S	✓

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Teresa Sawyer

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NUIRP- Calverton
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: TEMP WELL
[] QA Sample Type:

Sample ID No.: ET-GW15-11
Sample Location: Engine Test Area
Sampled By: TERESA SAWYER
C.O.C. No.: 23
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 6/4/97	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Time: ~~0855~~ 0910	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	%	NA
Method: GRAB								

PURGE DATA:

Date: 6/4/97	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method: Peristaltic Pump	Initial							
Monitor Reading (ppm): –	1							
Well Casing Diameter & Material	2							
Type: GEOPROBE	3							
Total Well Depth (TD): 11								
Static Water Level (WL): 6								
One Casing Volume(gal/L): .11								
Start Purge (hrs): 0905								
End Purge (hrs): 0910								
Total Purge Time (min): 5								
Total Vol. Purged (gal/L): .33								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC's	Ice to 4°C	2 40 mL VIALS	✓

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Teresa Sawyer

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP- Calverton
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: TEMP WELL
[] QA Sample Type:

Sample ID No.: ET-GW15-26
Sample Location: Engine Test Area
Sampled By: TERESA SAWYER
C.O.C. No.: 23
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 6/4/97	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Time: 0930	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	%	NA
Method: GRAB								

PURGE DATA:

Date: 6/4/97	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method: Peristaltic Pump	Initial							
Monitor Reading (ppm): -	1							
Well Casing Diameter & Material	2							
Type: GLOPPPBE	3							
Total Well Depth (TD): 26								
Static Water Level (WL): 6								
One Casing Volume(gal/L): 33								
Start Purge (hrs): 0915								
End Purge (hrs): 0925								
Total Purge Time (min): 10								
Total Vol. Purged (gal/L): 1								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC's	Ice to 4°C	2 40 mL VIALS	✓

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.:
	ET-DUP 14

Signature(s): Teresa Sawyer

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP- Calverton
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: TEMP WELL
[] QA Sample Type:

Sample ID No.: ET-GW15-46
Sample Location: Engine Test Area
Sampled By: TERESA SAWYER
C.O.C. No.: 23
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 6/4/97	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	Salinity %	Other NA
Time: 0955								
Method: GRAB								

PURGE DATA:

Date: 6/4/97	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method: Peristaltic Pump	Initial							
Monitor Reading (ppm): -	1							
Well Casing Diameter & Material	2							
Type: GEOPROBE	3							
Total Well Depth (TD): 4.6'								
Static Water Level (WL): .1								
One Casing Volume(gal/L): .66								
Start Purge (hrs): 0935								
End Purge (hrs): 0955								
Total Purge Time (min): 20								
Total Vol. Purged(gal/L): 2								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC's	Ice to 4°C	2 40 mL VIALS	✓

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Teresa Sawyer

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP- Calverton
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Temp WELL
[] QA Sample Type:

Sample ID No.: EJ-GW15-70
Sample Location: Engine Test Area
Sampled By: TERESA SAWYER
C.O.C. No.: 29 30
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 7/11/97	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	Salinity %	Other NA
Time: 0900								
Method: GRAB								

PURGE DATA:

Date: 7/11/97	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method: sub pump	Initial							
Monitor Reading (ppm): —	1							
Well Casing Diameter & Material	2							
Type: HSA	3							
Total Well Depth (TD): 70'								
Static Water Level (WL): 10'								
One Casing Volume(gal/L): —								
Start Purge (hrs): 0835								
End Purge (hrs): 0855								
Total Purge Time (min): 20								
Total Vol. Purged (gal/L): 200								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC's	ice to 4°C	2 40 mL VIALS	✓

OBSERVATIONS / NOTES:

Circle if Applicable:
MS/MSD | Duplicate ID No.:

Signature(s): Teresa Sawyer

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP- Calverton
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: TEMP WELL
[] QA Sample Type:

Sample ID No.: ET-GW5-
Sample Location: Engine Test Hex S
Sampled By: TERESA SAWYE
C.O.C. No.: 30
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	Salinity %	Other NA
Date: 7/11/97								
Time: 0950								
Method: Grab								

PURGE DATA:

	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Date: 7/11/97								
Method: Sub pump	Initial							
Monitor Reading (ppm):	1							
Well Casing Diameter & Material	2							
Type: HSA	3							
Total Well Depth (TD): 90								
Static Water Level (WL): 10								
One Casing Volume(gal/L): -								
Start Purge (hrs): 0920								
End Purge (hrs): 0950								
Total Purge Time (min): 30								
Total Vol. Purged (gal/L): 18								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC's	ice to 4°C	2 40 mL VIALS	✓

OBSERVATIONS / NOTES:

Circle if Applicable:
MS/MSD | Duplicate ID No.:

Signature(s): Teresa Sawyer

SAMPLE ID	INSTALLATION DATE	SAMPLE METHOD	COMMENTS
SOUTH AREA (SA)			
SATW102	6/19/97	GEOPROBE	
SATW103	6/19/97	GEOPROBE	
SATW101	6/20/97	GEOPROBE	
SATW104	7/14/97	GEOPROBE	
SATW105	7/14/97	GEOPROBE	
SATW106	8/14/97	HSA	
SATW107	8/15/97	HSA	
SATW108	11/13/97	HSA	
SATW109	11/14/97	HSA	
SATW110	11/14/97	HSA	

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP- Calverton
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: TEMP WELL
[] QA Sample Type:

Sample ID No.: JA-GW101 ~~PR-GW01-1~~
Sample Location: Penmaker Road
Sampled By: TERESA SAWYER
C.O.C. No.: 25
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 6/8/97	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Time: 1510	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	%	NA
Method: GRAB								

PURGE DATA:

Date: 6/8/97	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method: Peristaltic Pump	Initial							
Monitor Reading (ppm): —	1							
Well Casing Diameter & Material	2							
Type: GEOPROBE	3							
Total Well Depth (TD): 17'								
Static Water Level (WL): 12'								
One Casing Volume(gal/L): .16								
Start Purge (hrs): 1500								
End Purge (hrs): 1510								
Total Purge Time (min): 10								
Total Vol. Purged (gal/L): .5								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC's	ice to 4°C	2 40 mL VIALS	✓

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s): Teresa Sawyer

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP- Calverton
Project No.: 7398

[ ] Domestic Well Data
[ ] Monitoring Well Data
[X] Other Well Type: TEMP WELL
[ ] QA Sample Type:

Sample ID No.: SA-GW101 ~~PR-GW01~~-32 (T)
Sample Location: Perimeter Road
Sampled By: TERESA SAWYER
C.O.C. No.: 25
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	Salinity %	Other NA
Date: 6/8/97								
Time: 1530								
Method: GRAB								

PURGE DATA:

Date: 6/8/97	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method: Peristaltic Pump	Initial							
Monitor Reading (ppm): —	1							
Well Casing Diameter & Material	2							
Type: GEOPROBE	3							
Total Well Depth (TD): 32								
Static Water Level (WL): 12								
One Casing Volume(gal/L): .33								
Start Purge (hrs): 1515								
End Purge (hrs): 1530								
Total Purge Time (min): 15								
Total Vol. Purged (gal/L): 1								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC's	Ice to 4°C	2 40 mL VIALS	✓

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Teresa Sawyer

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP- Calverton
Project No.: 7398

[ ] Domestic Well Data
[ ] Monitoring Well Data
[X] Other Well Type: TEMP WELL
[ ] QA Sample Type:

Sample ID No.: SA-GW101-
Sample Location: South Perimeter
Sampled By: TERESA SAWYER
C.O.C. No.: 27
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	Salinity %	Other NA
Date: 6/20/97								
Time: 1130								
Method: GEMS								

PURGE DATA:

	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Date: 6/20/97								
Method: Peristaltic pump	Initial							
Monitor Reading (ppm): —	1							
Well Casing Diameter & Material	2							
Type: GEOPROBE	3							
Total Well Depth (TD): 12'								
Static Water Level (WL): 12								
One Casing Volume (gal/L): 1								
Start Purge (hrs): 1015								
End Purge (hrs): 1130								
Total Purge Time (min): 75								
Total Vol. Purged (gal/L): 3								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC's	Ice to 4°C	2 40 mL VIALS	✓

OBSERVATIONS / NOTES:

Circle if Applicable:
MS/MSD | Duplicate ID No.:

Signature(s): Teresa Sawyer

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP- Calverton
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: TEMP WELL
[] QA Sample Type:

Sample ID No.: SA-GW102-11
Sample Location: Soil Remediation
Sampled By: TERESA SAWYER
C.O.C. No.: 27
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 6/19/97	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Time: 1440	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	%	NA
Method: GRAB								

PURGE DATA:

Date: 6/19/97	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method: Peristaltic Pump	Initial							
Monitor Reading (ppm): —	1							
Well Casing Diameter & Material	2							
Type: GEOPROBE	3							
Total Well Depth (TD): 11'								
Static Water Level (WL): 6'								
One Casing Volume(gal/L): 14								
Start Purge (hrs): 1420								
End Purge (hrs): 1440								
Total Purge Time (min): 10								
Total Vol. Purged(gal/L): .5								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC's	ice to 4°C	2 40 mL VIALS	✓

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Teresa Sawyer

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP- Calverton
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Temp well
[] QA Sample Type:

Sample ID No.: SA-GW102-
Sample Location: Small Permeable
Sampled By: TERESA SAWYE
C.O.C. No.: 27
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 6/19/97	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Time: 1500	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	%	NA
Method: GEPP								

PURGE DATA:

Date: 6/19/97	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method: Peristaltic Pump	Initial							
Monitor Reading (ppm):	1							
Well Casing Diameter & Material	2							
Type: GEOPROBE	3							
Total Well Depth (TD): 26								
Static Water Level (WL): 5'								
One Casing Volume(gal/L): .33								
Start Purge (hrs): 1245								
End Purge (hrs): 1500								
Total Purge Time (min): 15								
Total Vol. Purged (gal/L):								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC's	Ice to 4°C	2 40 mL VIALS	✓

OBSERVATIONS / NOTES:

Circle if Applicable:
MS/MSD | Duplicate ID No.:

Signature(s): Teresa Sawyer

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP- Calverton
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: TEMP WELL
[] QA Sample Type:

Sample ID No.: SA-GW02-46
Sample Location: South Perimeter
Sampled By: TERESA SAWYE
C.O.C. No.: 27
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	Salinity %	Other NA
Date: 6/19/97								
Time: 1530								
Method: GRAB								

PURGE DATA:

Date: 6/19/97	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method: Peristaltic Pump	Initial							
Monitor Reading (ppm): —	1							
Well Casing Diameter & Material	2							
Type: GALVRCBE	3							
Total Well Depth (TD): 46								
Static Water Level (WL): 6'								
One Casing Volume(gal/L): 6.6								
Start Purge (hrs): 1510								
End Purge (hrs): 1530								
Total Purge Time (min): 20								
Total Vol. Purged (gal/L): 2								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC's	ice to 4°C	2 40 mL VIALS	✓

OBSERVATIONS / NOTES:

Circle if Applicable:
MS/MSD | Duplicate ID No.:

Signature(s): Teresa Sawyer

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP- Calverton
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Temp well
[] QA Sample Type:

Sample ID No.: SA-GW103-
Sample Location: Small Perimeter
Sampled By: TERESA SAWYER
C.O.C. No.: 27
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	Salinity %	Other NA
Date: 6/19/97								
Time: 1015								
Method: GRAB								

PURGE DATA:

	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Date: 6/19/97								
Method: Peristaltic Pump	Initial							
Monitor Reading (ppm): –	1							
Well Casing Diameter & Material	2							
Type: GEOPROBE	3							
Total Well Depth (TD): 17'								
Static Water Level (WL): 12'								
One Casing Volume(gal/L): .16								
Start Purge (hrs): 1005								
End Purge (hrs): 1015								
Total Purge Time (min): 10								
Total Vol. Purged (gal/L): .5								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC's	ice to 4°C	2 40 mL VIALS	✓

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD | Duplicate ID No.:

Signature(s): Teresa Sawyer

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP- Calverton
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: TEMP WELL
[] QA Sample Type:

Sample ID No.: SA-GW103-3
Sample Location: [illegible]
Sampled By: TERESA SAWY
C.O.C. No.: 27
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	Salinity %	Other NA
Date: 6/19/97								
Time: 1045								
Method: GRAB								

PURGE DATA:

	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Date: 6/19/97								
Method: Peristaltic Pump	Initial							
Monitor Reading (ppm): —	1							
Well Casing Diameter & Material	2							
Type: GEOPROBE	3							
Total Well Depth (TD): 32'								
Static Water Level (WL): 12'								
One Casing Volume(gal/L): .33								
Start Purge (hrs): 1025								
End Purge (hrs): 1040								
Total Purge Time (min): 15								
Total Vol. Purged (gal/L): 1								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC's	ice to 4°C	2 40 mL VIALS	✓

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD | Duplicate ID No.: SA-DUP-10

Signature(s): Teresa Sawyer

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP- Calverton
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: TEMP WELL
[] QA Sample Type:

Sample ID No.: SA-GW103-
Sample Location: SOUTH PERIMETER
Sampled By: TERESA SAWYER
C.O.C. No.: 27
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 6/19/97	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	Salinity %	Other NA
Time: 1115								
Method: GRAB								

PURGE DATA:

Date: 6/19/97	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method: Peristaltic Pump	Initial							
Monitor Reading (ppm): -	1							
Well Casing Diameter & Material	2							
Type: GEOPROBE	3							
Total Well Depth (TD): 32'								
Static Water Level (WL): 12'								
One Casing Volume (gal/L): .66								
Start Purge (hrs): 1050								
End Purge (hrs): 1115								
Total Purge Time (min): 25								
Total Vol. Purged (gal/L): 2								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC'S	ICE to 4°C	2 40 ml VIALS	✓

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD | Duplicate ID No.:

Signature(s): Teresa Sawyer

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP- Calverton
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Temp well
[] QA Sample Type:

Sample ID No.: SA-GW103-72
Sample Location: SOUTH PERIMETER
Sampled By: TERESA SANDERS
C.O.C. No.: 27
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	Salinity %	Other NA
Date: 6/19/97								
Time: 1215								
Method: GRAB								

PURGE DATA:

Date: 6/19/97	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method: Peristaltic Pump	Initial							
Monitor Reading (ppm): —	1							
Well Casing Diameter & Material	2							
Type: GEOPROBE	3							
Total Well Depth (TD): 72								
Static Water Level (WL): 12'								
One Casing Volume (gal/L): 1								
Start Purge (hrs): 1130								
End Purge (hrs): 1215								
Total Purge Time (min): 45								
Total Vol. Purged (gal/L): 3								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC's	ice to 4°C	2 40 mL VIALS	✓

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Teresa Sanders

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP- Calverton
Project No.: 7398

[ ] Domestic Well Data
[ ] Monitoring Well Data
[X] Other Well Type: TEMP WELL
[ ] QA Sample Type:

Sample ID No.: 3A G01C4
Sample Location: Riverside Road
Sampled By: TERESA SAWYE
C.O.C. No.: 31
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	Salinity %	Other NA
Date: 7/14/97								
Time: 0940								
Method: GRAB								

PURGE DATA:

	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Date: 7/14/97								
Method: Peristaltic Pump	Initial							
Monitor Reading (ppm): —	1							
Well Casing Diameter & Material	2							
Type: GEOTUBE	3							
Total Well Depth (TD): 17'								
Static Water Level (WL): 12'								
One Casing Volume(gal/L): .16								
Start Purge (hrs): 0920								
End Purge (hrs): 0940								
Total Purge Time (min): 20								
Total Vol. Purged (gal/L): .16								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC's	ice to 4°C	2 40 mL VIALS	✓

OBSERVATIONS / NOTES:

Circle if Applicable:
MS/MSD | Duplicate ID No.

Signature(s): [illegible]

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP- Calverton
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Temp well
[] QA Sample Type:

Sample ID No.: SA-GW04-3
Sample Location: Perimeter Rd
Sampled By: TERESA SAW
C.O.C. No.: 31
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	Salinity %	Othe NA
Date: 7/14/97								
Time: 0950								
Method: GRAB								

PURGE DATA:

	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Othe
Date: 7/14/97								
Method: Peristaltic Pump	Initial							
Monitor Reading (ppm): -	1							
Well Casing Diameter & Material	2							
Type: GEOPROBE	3							
Total Well Depth (TD): 32								
Static Water Level (W/L): 12'								
One Casing Volume(gal/L): .66								
Start Purge (hrs): 0940								
End Purge (hrs): 0950								
Total Purge Time (min): 10								
Total Vol. Purged (gal/L): 2								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collect
VOC's	Ice to 4°C	2 40 mL VIALS	✓

OBSERVATIONS / NOTES:

Circle if Applicable:
MS/MSD | Duplicate ID No.:

Signature(s): [illegible]

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP- Calverton
Project No.: 7398

[ ] Domestic Well Data
[ ] Monitoring Well Data
[X] Other Well Type: Temp WELL
[ ] QA Sample Type:

Sample ID No.: SA-GW104
Sample Location:
Sampled By: TERESA SAWYE
C.O.C. No.: 3A
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	Salinity %	Other NA
Date: 7/14/97								
Time: 1010								
Method: GRAB								

PURGE DATA:

	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Date: 7/14/97								
Method: Peristaltic Pump	Initial							
Monitor Reading (ppm): —	1							
Well Casing Diameter & Material	2							
Type: GRIDCBE	3							
Total Well Depth (TD): 52'								
Static Water Level (WL): 12'								
One Casing Volume(gal/L): .75								
Start Purge (hrs): 0955								
End Purge (hrs): 1000								
Total Purge Time (min): 15								
Total Vol. Purged (gal/L): 1								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collect
VOC's	Ice to 4°C	2 40 mL VIALS	✓

OBSERVATIONS / NOTES:

Circle if Applicable:
MS/MSD | Duplicate ID No.:

Signature(s):

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP- Calverton
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: TEMP WELL
[] QA Sample Type:

Sample ID No.: SA-GW10-4-7
Sample Location: Reynolds Road
Sampled By: TERESA SAUVE
C.O.C. No.: -31
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 7/14/97	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	Salinity %	Other NA
Time: 1100								
Method: Grab								

PURGE DATA:

Date: 7/14/97	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method: Peristaltic Pump	Initial							
Monitor Reading (ppm): —	1							
Well Casing Diameter & Material	2							
Type: GEOPROBE	3							
Total Well Depth (TD): 72'								
Static Water Level (WL): 17'								
One Casing Volume(gal/L): 1								
Start Purge (hrs): 1020								
End Purge (hrs): 1100								
Total Purge Time (min): 40								
Total Vol. Purged (gal/L): 1								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC's	ice to 4°C	2 40 mL VIALS	✓

OBSERVATIONS / NOTES:

Circle if Applicable:
MS/MSD | Duplicate ID No.:

Signature(s): Teresa Sauve

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP- Calverton
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Temp well
[] QA Sample Type:

Sample ID No.: SA-GW105-
Sample Location: Peconic River
Sampled By: TERESA SAWYER
C.O.C. No.: 31
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 7/14/97	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	Salinity %	Other NA
Time: 1250								
Method: GRAB								

PURGE DATA:

Date: 7/14/97	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method: Peristaltic Pump	Initial							
Monitor Reading (ppm): -	1							
Well Casing Diameter & Material	2							
Type: GEOPROBE	3							
Total Well Depth (TD): 17								
Static Water Level (WL): 12								
One Casing Volume(gal/L): .16								
Start Purge (hrs): 1240								
End Purge (hrs): 1250								
Total Purge Time (min): 10								
Total Vol. Purged (gal/L): .5								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC's	Ice to 4°C	2 40 mL VIALS	✓

OBSERVATIONS / NOTES:

Circle if Applicable:
MS/MSD | Duplicate ID No.:

Signature(s): Teresa Sawyer

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP- Calverton
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: TEMP WELL
[] QA Sample Type:

Sample ID No.: SA-GW105-3
Sample Location: Pumpkin Ro
Sampled By: TERESA SAWY
C.O.C. No.: 31
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Date: 7/14/97	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	%	NA
Time: 1505								
Method: GRAB								

PURGE DATA:

	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Date: 7/14/97								
Method: Peristaltic Pump	Initial							
Monitor Reading (ppm):	1							
Well Casing Diameter & Material	2							
Type: GEOPROBE	3							
Total Well Depth (TD): 32'								
Static Water Level (WL): 12'								
One Casing Volume(gal/L): .66								
Start Purge (hrs): 1255								
End Purge (hrs): 1305								
Total Purge Time (min): 10								
Total Vol. Purged (gal/L): 1								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC's	Ice to 4°C	2 40 mL VIALS	✓

OBSERVATIONS / NOTES:

Circle if Applicable:
MS/MSD | Duplicate ID No.:

Signature(s): Teresa Sawyer

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NIORP- Silverton
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: TEMP WELL
[] QA Sample Type:

Sample ID No.: SA GW10S
Sample Location: Riverside Road
Sampled By: TERESA SAWYER
C.O.C. No.: 31
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	Salinity %	Other NA
Date: 7/14/97								
Time: 1330								
Method: Grab								

PURGE DATA:

Date: 7/14/97	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method: Peristaltic Pump	Initial							
Monitor Reading (ppm): –	1							
Well Casing Diameter & Material	2							
Type: GEOPROBE	3							
Total Well Depth (TD): 32'								
Static Water Level (WL): 17'								
One Casing Volume(gal/L): .75								
Start Purge (hrs): 1310								
End Purge (hrs): 1330								
Total Purge Time (min): 20								
Total Vol. Purged (gal/L): 1								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC's	ice to 4°C	2 40 mL VIALS	✓

OBSERVATIONS / NOTES:

Circle if Applicable:
MS/MSD | Duplicate ID No.:

Signature(s): Teresa Sawyer

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP- Calverton
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: TEMP WELL
[] QA Sample Type:

Sample ID No.: JA-GW105-72
Sample Location: Peninsula Road
Sampled By: TERESA SAWYER
C.O.C. No.: 31
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	Salinity %	Other NA
Date: 7/14/97								
Time: 1400								
Method: GRAB								

PURGE DATA:

	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Date: 7/14/97								
Method: Peristaltic Pump	Initial							
Monitor Reading (ppm): —	1							
Well Casing Diameter & Material	2							
Type: GEOPROBE	3							
Total Well Depth (TD): 72'								
Static Water Level (WL): 12'								
One Casing Volume(gal/L): 1								
Start Purge (hrs): 1335								
End Purge (hrs): 1400								
Total Purge Time (min): 25								
Total Vol. Purged (gal/L): 1								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC's	ice to 4°C	2 40 mL VIALS	✓

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Teresa Sawyer

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP- Calverton
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: TEMP WELL
[] QA Sample Type:

Sample ID No.: SA-GW06-12
Sample Location: SOUTHERN AREA
Sampled By: TERESA SAWYER
C.O.C. No.: 31
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Date: 8/14/97	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	%	NA
Time: 1440								
Method: GRAB								

PURGE DATA:

Date: 8/14/97	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method: BAILER	Initial							
Monitor Reading (ppm): —	1							
Well Casing Diameter & Material	2							
Type: 4.25" ID HSA	3							
Total Well Depth (TD): 12'								
Static Water Level (WL): 7'								
One Casing Volume(gal/L): 3 3								
Start Purge (hrs): 0920								
End Purge (hrs): 0940								
Total Purge Time (min): 20								
Total Vol. Purged (gal/L): 18								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC'S	Ice to 4°C	2 40 ml VIALS	✓

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Teresa Sawyer

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP- Colverton
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: TEMP WELL
[] QA Sample Type:

Sample ID No.: SA-GW06-27
Sample Location: Southern area
Sampled By: TERESA SAWYER
C.O.C. No.: 31
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 8/14/97	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Time: 1045	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	%	NA
Method: GRAB								

PURGE DATA:

Date: 8/14/97	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method: sub pump	Initial							
Monitor Reading (ppm): -	1							
Well Casing Diameter & Material	2							
Type: 4.25 ID PVC	3							
Total Well Depth (TD): 97'								
Static Water Level (WL): 7'								
One Casing Volume(gal/L): 13.2								
Start Purge (hrs): 1030								
End Purge (hrs): 1045								
Total Purge Time (min): 15								
Total Vol. Purged (gal/L): 40								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC'S	ice to 4°C	2 40 ml VIALS	✓

OBSERVATIONS / NOTES:

20
.66
120
120
1.3.20

Circle if Applicable:

MS/MSD	Duplicate ID No.:
	SA ~~GW~~ C Dup 19

Signature(s): Teresa Sawyer

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP- Calverton
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: TEMP WELL
[] QA Sample Type:

Sample ID No.: QA-GW106-47
Sample Location: South Area
Sampled By: TERE SAWYER
C.O.C. No.: 1
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 8/14/97	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Time: 1200	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	%	NA
Method: GRAB								

PURGE DATA:

Date: 8/14/97	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method: sub pump	Initial							
Monitor Reading (ppm): -	1							
Well Casing Diameter & Material	2							
Type: 4.25" HSA	3							
Total Well Depth (TD): 47								
Static Water Level (WL): 7'								
One Casing Volume(gal/L): 20								
Start Purge (hrs): 1130								
End Purge (hrs): 1200								
Total Purge Time (min): 30								
Total Vol. Purged (gal/L): 150								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC'S	ICE to 4°C	2 40 ml VIALS	✓

OBSERVATIONS / NOTES:

~~60 × .66 = 40 → 3 × 40 = 120 → 59.4~~

40 × .66 = 240 → 240 → 2640

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Teresa Sawyer

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP- Calverton
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: TEMP WELL
[] QA Sample Type:

Sample ID No.: SA-GW106-67
Sample Location: Southern Area
Sampled By: TERESA SAWYER
C.O.C. No.: 30
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 8/14/97	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Time: 1300	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	%	NA
Method: GRAB								

PURGE DATA:

Date: 8/14/97	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method: Sub pump	Initial							
Monitor Reading (ppm): --	1							
Well Casing Diameter & Material	2							
Type: 4.25" HSA	3							
Total Well Depth (TD): 67'								
Static Water Level (WL): 7'								
One Casing Volume(gal/L): 40								
Start Purge (hrs): 1230								
End Purge (hrs): 1300								
Total Purge Time (min): 30								
Total Vol. Purged (gal/L): 140								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC's	Ice to 4°C	2 40 mL VIALS	✓

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Teresa Sawyer

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP- Calverton
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: TEMP WELL
[] QA Sample Type:

Sample ID No.: SA-GW107-25
Sample Location: Southern Area
Sampled By: TERESA SAWYER
C.O.C. No.: 32
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	Salinity %	Other NA
Date: 8/14/97								
Time: 1645								
Method: GCAB								

PURGE DATA:

Date: 8/14/97	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method: bailer	Initial							
Monitor Reading (ppm): –	1							
Well Casing Diameter & Material	2							
Type: 4.25" HSA	3							
Total Well Depth (TD): 25								
Static Water Level (WL): 20'								
One Casing Volume(gal/L): 5.5								
Start Purge (hrs): 1620								
End Purge (hrs): 1645								
Total Purge Time (min): 25								
Total Vol. Purged (gal/L): 10								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC's	ice to 4°C	2 40 mL VIALS	✓

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Teresa Sawyer

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP- Calverton
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: TEMP WELL
[] QA Sample Type:

Sample ID No.: SA-GW707-40
Sample Location: Southern Area
Sampled By: TERESA SAWYER
C.O.C. No.: 32
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 8/15/97	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Time: 0835	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	%	NA
Method: GRAB								

PURGE DATA:

Date: 8/15/97	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method: Sub pump	Initial							
Monitor Reading (ppm):	1							
Well Casing Diameter & Material	2							
Type: 4.25" HSA	3							
Total Well Depth (TD): 40'								
Static Water Level (WL): 20'								
One Casing Volume(gal/L): 13								
Start Purge (hrs): 0820								
End Purge (hrs): 0835								
Total Purge Time (min): 15								
Total Vol. Purged (gal/L): 40								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC'S	ICE to 4°C	2 40 ML VIALS	✓

OBSERVATIONS / NOTES:

20
.66
120
120
13.20

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP- Calverton
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: TEMP WELL
[] QA Sample Type:

Sample ID No.: SA-GW107-60
Sample Location: Southern Area
Sampled By: TERESA SAWYER
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 8/15/97	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Time:	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	%	NA
Method: grab								

PURGE DATA:

Date: 8/15/97	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method: sub pump	Initial							
Monitor Reading (ppm): –	1							
Well Casing Diameter & Material	2							
Type: 4.25" HSA	3							
Total Well Depth (TD): 60'								
Static Water Level (WL): 20'								
One Casing Volume(gal/L): 27								
Start Purge (hrs): 0850								
End Purge (hrs): 0910								
Total Purge Time (min): 20								
Total Vol. Purged (gal/L): 90								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC'S	ice to 4°C	2 40 ml VIALS	✓

OBSERVATIONS / NOTES:

40
66
240
240
2640

Circle if Applicable:

MS/MSD | Duplicate ID No.:

Signature(s): Teresa Sawyer

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP- Calverton
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: TEMP WELL
[] QA Sample Type:

Sample ID No.: SA-GW07-80
Sample Location: Southern Area
Sampled By: TERESA SAWYER
C.O.C. No.: 32
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Date: 8/15/97	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	%	NA
Time: 0940								
Method: grab								

PURGE DATA:

Date: 8/15/97	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method: sub pump	Initial							
Monitor Reading (ppm): –	1							
Well Casing Diameter & Material	2							
Type: 4.25 HSA	3							
Total Well Depth (TD): 80'								
Static Water Level (WL): 20'								
One Casing Volume(gal/L): 40								
Start Purge (hrs): 930								
End Purge (hrs): 950								
Total Purge Time (min): 20								
Total Vol. Purged (gal/L): 140								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC's	Ice to 4°C	2 40 mL VIALS	✓

OBSERVATIONS / NOTES:

60
66
360
3600
3960

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Teresa Sawyer

GROUNDWATER SAMPLE LOG SHEET

Page___ of ___

Project Site Name: NWIRP-CALVERTON
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[■] Other Well Type: Temporary well
[] QA Sample Type:

Sample ID No.: SA-108-23
Sample Location: Connect. Ave
Sampled By: Paul Davis
C.O.C. No.:
Type of Sample:
[■] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	Salinity %	Other NA
Date: 11-13-97								
Time: 1035								
Method: Disp. Bailer								

PURGE DATA:

	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Date: 11-13-97								
Method: Disp. Bailer	Initial							
Monitor Reading (ppm): —	1							
Well Casing Diameter & Material	2							
Type: Steel 4.25"	3							
Total Well Depth (TD): 23'				N.A.				
Static Water Level (WL): 18'								
One Casing Volume(gal/L): 3.7								
Start Purge (hrs): 1010								
End Purge (hrs): 1030								
Total Purge Time (min): 20								
Total Vol. Purged (gal/L): 10								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC'S	4°C	(2) 40 ml vials	✓

OBSERVATIONS / NOTES:

collected sample from 18' to 23' bgs 5' below GW level
slightly turbid - light tan water

volumetric lab.

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Paul M. Davis

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP-CALVERTON
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[■] Other Well Type: Temporary well
[] QA Sample Type:

Sample ID No.: SA-108-38
Sample Location: Connect. Ave
Sampled By: Paul Davis
C.O.C. No.:
Type of Sample:
[■] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Date: 11-13-97	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	%	NA
Time: 1115								
Method: Disp. Bailer								

PURGE DATA:

	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Date: 11-13-97								
Method: Disp. Bailer	Initial							
Monitor Reading (ppm): —	1							
Well Casing Diameter & Material	2							
Type: Steel 4.25"	3							
Total Well Depth (TD): 38'								
Static Water Level (WL): 28'								
One Casing Volume (gal/L): 7.4								
Start Purge (hrs): 1050								
End Purge (hrs): 1110								
Total Purge Time (min): 20								
Total Vol. Purged (gal/L): 20								

N.A.

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC'S	4°C	(2) 40 ml vials	✓

OBSERVATIONS / NOTES:

collected sample from a depth of 38' (20' below 20' below initial ground water level low level.)
Slightly turbid - light tan water.
~~Quantera~~ Volumetric lab

Circle if Applicable:		Signature(s):
MS/MSD	Duplicate ID No.:	Paul Davis

GROUNDWATER SAMPLE LOG SHEET

Page___ of ___

Project Site Name: NWIRP-CALVERTON
Project No.: 7398

[]. Domestic Well Data
[] Monitoring Well Data
[■] Other Well Type: Temporary Well
[] QA Sample Type:

Sample ID No.: SA-106-58
Sample Location: Center Ave
Sampled By: Paul Davis
C.O.C. No.:
Type of Sample:
[■] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Date: 11-13-97	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	%	NA
Time: 1220								
Method: Sub. Pump								

PURGE DATA:

	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Date: 11-13-97								
Method: Sub. Pump	Initial							
Monitor Reading (ppm): —	1							
Well Casing Diameter & Material	2							
Type: Steel 4.25"	3							
Total Well Depth (TD): 58'				N.A.				
Static Water Level (WL): 43'								
One Casing Volume (gal/L): 11								
Start Purge (hrs): 1150								
End Purge (hrs): 1210								
Total Purge Time (min): 20								
Total Vol. Purged (gal/L): 40								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC'S	4°C	(2) 40 ml vials	✓

OBSERVATIONS / NOTES:

collected sample from a depth of 58' bgs or 40' below initial groundwater.
Slightly turbid - light tan water
volumetric lab.

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Paul M. D[illegible]

GROUNDWATER SAMPLE LOG SHEET

Page___ of ___

Project Site Name: NWIRP-CALVERTON
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[■] Other Well Type: Temporary Well
[] QA Sample Type:

Sample ID No.: SA-108-78
Sample Location: Connect. Ave
Sampled By: Paul Davis
C.O.C. No.:
Type of Sample:
[■] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Date: 11-13-97	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	%	NA
Time: 1325								
Method: Sub. Pump								

PURGE DATA:

	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Date: 11-13-97								
Method: Sub. Pump	Initial							
Monitor Reading (ppm): —	1							
Well Casing Diameter & Material	2							
Type: steel 4.25"	3							
Total Well Depth (TD): 78'								
Static Water Level (WL): 67'								
One Casing Volume (gal/L): 8.1								
Start Purge (hrs): 1240								
End Purge (hrs): 1320								
Total Purge Time (min): 11								
Total Vol. Purged (gal/L): 30								

N.A.

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC'S	4°C	(2) 40 ml vials	✓

OBSERVATIONS / NOTES:

collected sample from a depth of 78' bgs and 60' below groundwater
slightly turbid - light tan
volumetric lab

purged well dry - allowed to recharge.

Circle if Applicable:

MS/MSD | Duplicate ID No.:

Signature(s): Paul D.

GROUNDWATER SAMPLE LOG SHEET

Page___ of ___

Project Site Name: NWIRP-CALVERTON
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[■] Other Well Type: Temporary Well
[] QA Sample Type:

Sample ID No.: SA-108-98
Sample Location: Conduit Ave
Sampled By: Paul Davis
C.O.C. No.:
Type of Sample:
[■] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	Salinity %	Other NA
Date: 11-13-97								
Time: 1455								
Method: Disp. Bailer								

PURGE DATA:

	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Date: 11-13-97								
Method: Disp. Bailer	Initial							
Monitor Reading (ppm): —	1							
Well Casing Diameter & Material	2							
Type: Steel 4.25"	3							
Total Well Depth (TD): 98'				N.A.				
Static Water Level (WL): 89'								
One Casing Volume (gal/L): 6.6								
Start Purge (hrs): 1415								
End Purge (hrs): 1445								
Total Purge Time (min): —								
Total Vol. Purged (gal/L): 5								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC'S	4°C	(2) 40 ml vials	✓

OBSERVATIONS / NOTES:

Collected sample from a depth of 90' bgs and 80' below initial groundwater. (Purged well dry)
Slightly turbid - light tan water
Volumetric lab

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Paul D —

GROUNDWATER SAMPLE LOG SHEET

Page___ of ___

Project Site Name: NWIRP-CALVERTON
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[■] Other Well Type: Temporary well
[] QA Sample Type:

Sample ID No.: SA-109-20
Sample Location: Connect. Ave
Sampled By: Paul Davis
C.O.C. No.:
Type of Sample:
[■] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Date: 11-14-97	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	%	NA
Time: 0815								
Method: Disp. Bailer								

PURGE DATA:

Date: 11-14-97	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method: Disp. Bailer	Initial							
Monitor Reading (ppm): –	1							
Well Casing Diameter & Material	2							
Type: Steel 4.25"	3							
Total Well Depth (TD): 20'								
Static Water Level (WL): 15'								
One Casing Volume (gal/L): 3.7								
Start Purge (hrs): 0800								
End Purge (hrs): 0815								
Total Purge Time (min): 15								
Total Vol. Purged (gal/L): 4								

N.A.

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC'S	4°C	(2) 40 ml Vials	✓

OBSERVATIONS / NOTES:

Collected sample 20' bgs or 5' below groundwater level

Slightly turbid - light tan

Volumetric Lab.

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Paul M. D[illegible]

GROUNDWATER SAMPLE LOG SHEET

Page___ of ___

Project Site Name: NWIRP-CALVERTON
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[■] Other Well Type: Temporary well
[] QA Sample Type:

Sample ID No.: SA-109-35
Sample Location: Convct. Ave
Sampled By: Paul Davis
C.O.C. No.:
Type of Sample:
[■] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	Salinity %	Other NA
Date: 11-14-97								
Time: 0850								
Method: Sub. pump								

PURGE DATA:

	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Date: 11-14-97								
Method: Sub. Pump	Initial							
Monitor Reading (ppm): –	1							
Well Casing Diameter & Material	2							
Type: Steel 4.25"	3							
Total Well Depth (TD): 35'				N.A.				
Static Water Level (WL): 25'								
One Casing Volume (gal/L): 7.4								
Start Purge (hrs): 0840								
End Purge (hrs): 0850								
Total Purge Time (min): 10								
Total Vol. Purged (gal/L): 10								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC'S	4°C	(2) 40 ml vials	✓

OBSERVATIONS / NOTES:

collected sample from a depth of 35' bgs or 20' below initial ground water level.
moderate turbidity - tan color.
Volumetric lab.

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Paul Davis

GROUNDWATER SAMPLE LOG SHEET

Page___ of ___

Project Site Name: NWIRP-CALVERTON
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[■] Other Well Type: Temporary well
[] QA Sample Type:

Sample ID No.: SA-109-55
Sample Location: Connect. Ave
Sampled By: Paul Davis
C.O.C. No.:
Type of Sample:
[■] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 11-14-97	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Time: 0915	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	%	NA
Method: Sub. Pump								

PURGE DATA:

Date: 11-14-97	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method: Sub. Pump	Initial							
Monitor Reading (ppm): —	1							
Well Casing Diameter & Material	2							
Type: Steel 4.25"	3							
Total Well Depth (TD): 55'				N.A.				
Static Water Level (WL): 29'								
One Casing Volume (gal/L): 19.2								
Start Purge (hrs): 0904								
End Purge (hrs): 0914								
Total Purge Time (min): 10								
Total Vol. Purged (gal/L): 30								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC'S	4°C	(2) 40 ml vials	✓

OBSERVATIONS / NOTES:

Collected sample from a depth of 55' bgs or 40' below initial water level.
Slightly turbid - light tan water

Volumetric lab.

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Paul m. D

GROUNDWATER SAMPLE LOG SHEET

Page___ of ___

Project Site Name: NWIRP-CALVERTON
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[■] Other Well Type: Temporary well
[] QA Sample Type:

Sample ID No.: SA-109-75
Sample Location: Construct Aud
Sampled By: Paul Davis
C.O.C. No.:
Type of Sample:
[■] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	Salinity %	Other NA
Date: 11-14-97								
Time: 0945								
Method: Sub. Pump								

PURGE DATA:

	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Date: 11-14-97								
Method: Sub. Pump	Initial							
Monitor Reading (ppm): —	1							
Well Casing Diameter & Material	2							
Type: Steel 4.25"	3							
Total Well Depth (TD): 75'				N.A.				
Static Water Level (WL): 44'								
One Casing Volume (gal/L): 19.2								
Start Purge (hrs): 0930								
End Purge (hrs): 0945								
Total Purge Time (min): 15								
Total Vol. Purged (gal/L): 33								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC'S	4°C	(2) 40 ml vials	✓

OBSERVATIONS / NOTES:

Collected sample from a depth of 75' bgs or 60' below initial groundwater level.
moderate turbidity - tan
(purged dry - allow for recharge)
volumetric lab

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Paul M. D.

GROUNDWATER SAMPLE LOG SHEET

Page___ of ___

Project Site Name: NWIRP-CALVERTON
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[■] Other Well Type: Temporary well
[] QA Sample Type:

Sample ID No.: SA-109-95
Sample Location: Connect. Ave
Sampled By: Paul Davis
C.O.C. No.:
Type of Sample:
[■] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Date: 11-14-97	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	%	NA
Time: 1025								
Method: Disp. Bailer								

PURGE DATA:

	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Date: 11-14-97								
Method: Disp. Bailer	Initial							
Monitor Reading (ppm): —	1							
Well Casing Diameter & Material	2							
Type: Steel 4.25"	3							
Total Well Depth (TD): 95'				N.A.				
Static Water Level (WL): 89'								
One Casing Volume(gal/L): 4.4								
Start Purge (hrs): 1000								
End Purge (hrs): 1020								
Total Purge Time (min): 20								
Total Vol. Purged (gal/L): 5								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC'S	4°C	(2) 40 ml vials	✓

OBSERVATIONS / NOTES:

Collected sample from a depth of 95' bgs or 80' below initial ground water level.
turbid - brown water
volumetric lab.

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Paul M. D

GROUNDWATER SAMPLE LOG SHEET

Page___ of ___

Project Site Name: NWIRP-CALVERTON
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[■] Other Well Type: Temporary well
[] QA Sample Type:

Sample ID No.: SA-110-29
Sample Location: Connect. Ave
Sampled By: Paul Davis
C.O.C. No.:
Type of Sample:
[■] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Date: 11-14-97	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	%	NA
Time: 1253								
Method: Disp. Bailer								

PURGE DATA:

	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Date: 11-14-97	Initial							
Method: Disp. Bailer	1							
Monitor Reading (ppm): —	2							
Well Casing Diameter & Material	3							
Type: Steel 4.25"								
Total Well Depth (TD): 24'								
Static Water Level (WL): 24'								
One Casing Volume(gal/L): 3.7								
Start Purge (hrs): 1240								
End Purge (hrs): 1250								
Total Purge Time (min): 10								
Total Vol. Purged (gal/L): 4								

N.A.

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC'S	4°C	(2) 40 ml Vials	—

OBSERVATIONS / NOTES:

collected sample from a depth of 29' bgs or 5' below groundwater level.
Slightly turbid - light tan water
volumetric lab.

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Paul M. D—

GROUNDWATER SAMPLE LOG SHEET

Page ___ of ___

Project Site Name: NWIRP-CALVERTON
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[x] Other Well Type: Temporary well
[] QA Sample Type:

Sample ID No.: SA-110-44
Sample Location: Connect. Ave
Sampled By: Paul Davis
C.O.C. No.:
Type of Sample:
[x] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 11-14-97	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Time: 1315	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	%	NA
Method: Sub. Pump								

PURGE DATA:

Date: 11-14-97	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method: Sub. Pump	Initial							
Monitor Reading (ppm): —	1							
Well Casing Diameter & Material	2							
Type: Steel 4.25"	3							
Total Well Depth (TD): 44				N.A.				
Static Water Level (WL): 34								
One Casing Volume (gal/L): 7.4								
Start Purge (hrs): 1300								
End Purge (hrs): 1314								
Total Purge Time (min): 14								
Total Vol. Purged (gal/L): 15								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC'S	4°C	(2) 40 ml vials	✓

OBSERVATIONS / NOTES:

collected sample from a depth of 44' bgs or 20' below initial ground water level.
Very clear - not turbid water
Volumetric lab.

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Paul D

GROUNDWATER SAMPLE LOG SHEET

Page___ of ___

Project Site Name: NWIRP-CALVERTON
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[■] Other Well Type: Temporary Well
[] QA Sample Type:

Sample ID No.: SA-110-64
Sample Location: Connect. Ave
Sampled By: Paul Davis
C.O.C. No.:
Type of Sample:
[■] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Date: 11-14-97	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	%	NA
Time: 1345								
Method: Sub. Pump								

PURGE DATA:

	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Date: 11-14-97								
Method: Sub. Pump	Initial							
Monitor Reading (ppm): —	1							
Well Casing Diameter & Material	2							
Type: Steel 4.25"	3							
Total Well Depth (TD): 64'								
Static Water Level (WL): 55'								
One Casing Volume(gal/L): 6.6								
Start Purge (hrs): 1323								
End Purge (hrs): 1340								
Total Purge Time (min): 17								
Total Vol. Purged (gal/L): 20								

N.A.

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC'S	4°C	(2) 40 ml vials	✓

OBSERVATIONS / NOTES:

collected sample from a depth of 64' bgs or 40' below initial ground water level.
turbid - brown water
Volumetric Lab.

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Paul D

GROUNDWATER SAMPLE LOG SHEET

Page___ of ___

Project Site Name: NWIRP-CALVERTON
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[■] Other Well Type: Temporary well
[] QA Sample Type:

Sample ID No.: SA-110-84
Sample Location: Connect. Ave
Sampled By: Paul Davis
C.O.C. No.:
Type of Sample:
[■] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Date: 11-14-97	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	%	NA
Time: 1420								
Method: Sub. Pump								

PURGE DATA:

Date: 11-14-97	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method: Sub. Pump	Initial							
Monitor Reading (ppm): —	1							
Well Casing Diameter & Material	2							
Type: Steel 4.25"	3							
Total Well Depth (TD): 84'				N.A.				
Static Water Level (WL): 70'								
One Casing Volume (gal/L): 10.3								
Start Purge (hrs): 1355								
End Purge (hrs): 1419								
Total Purge Time (min): —								
Total Vol. Purged (gal/L): 13								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC'S	4°C	(2) 40 ml vials	✓

OBSERVATIONS / NOTES:

collected sample from a depth of 84' bgs or 60' below initial ground water level. (purged well dry)
moderate turbidity - brown

volumetric lab.

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Paul Davis

GROUNDWATER SAMPLE LOG SHEET

Page___ of ___

Project Site Name: NWIRP-CALVERTON
Project No.: 7398

[] Domestic Well Data
[] Monitoring Well Data
[■] Other Well Type: Temporary well
[] QA Sample Type:

Sample ID No.: SA-110-104
Sample Location: Conn. Ave
Sampled By: Paul Davis
C.O.C. No.:
Type of Sample:
[■] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Date: 11-14-97	Visual	Standard	mS/cm	Degrees C	NTU	mg/l	%	NA
Time: 1450								
Method: Disp. Bailer								

PURGE DATA:

	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Date: 11-14-97								
Method: Disp. Bailer	Initial							
Monitor Reading (ppm): —	1							
Well Casing Diameter & Material	2							
Type: Steel 4.25"	3							
Total Well Depth (TD): 104'								
Static Water Level (WL): 99'								
One Casing Volume(gal/L): 3.7								
Start Purge (hrs): 1430								
End Purge (hrs): 1450								
Total Purge Time (min): 20								
Total Vol. Purged (gal/L): 5								

N.A.

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC'S	4°C	(2) 40 ml vials	✓

OBSERVATIONS / NOTES:

collected sample from a depth of 104' bgs or 80' below initial ground water level.
moderate turbidity - brown
volumetric lab.

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Paul D

B.2

SUPPLEMENTAL GROUNDWATER INVESTIGATION

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: Calverton
Project No.:

[] Domestic Well Data
[■] Monitoring Well Data
[] Other Well Type:
[] QA Sample Type:

Sample ID No.: FC-MW02S-00
Sample Location: FC-MW02S
Sampled By: JD/CM
C.O.C. No.:
Type of Sample:
[■] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color	pH	S.C.	Temp.	Turbidity	DO	~~TBD~~	TBD
	Visual	Standard	mS/cm	°C	NTU	mg/l	ORP mV	
Date: 7/12/00								
Time: 1347								
Method: Low flow	Yellow	5.66	0.119	24.22	154.0	1.35	-92	

PURGE DATA:

Date: 7/12/00	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	TBD	TBD
Method: Redflow Pump								
Monitor Reading (ppm): 9.8								
Well Casing Diameter & Material								
Type: 4" PVC								
Total Well Depth (TD): 14.65								
Static Water Level (WL): 8.75								
One Casing Volume(gal/L): 3.75								
Start Purge (hrs): 1225								
End Purge (hrs): 1340								
Total Purge Time (min): 141 min								
Total Vol. Purged (gal/L): 13.5								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOCs	HCl	40 ml - glass vials (2)	2

OBSERVATIONS / NOTES:

14.65
8.75
5.90
x.653
1770
2950
3540
3.7521

The pump intake was set at 12 feet BTOC

Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	—

Signature(s): JD

TBD: To Be Determined

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: Culverton

PROJECT NUMBER:

WELL ID.: FC-MW02S-00

DATE: 7/12/00

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
1225	8.80	750	5.161	0.121	15.4	3.16	19.60	-32	Fuel Odor - slightly yellow
1230	8.80	400	5.164	0.119	12.4	3.28	20.00	-47	GW. no sheen present.
1235	8.80	150	5.165	0.118	11.1	2.79	20.98	-52	
1240	8.80	500	5.164	0.118	31.7	1.71	19.72	-54	
1245	8.80	300	5.166	0.117	33.9	1.56	20.47	-65	
1250	8.80	600	5.167	0.118	42.5	1.53	20.12	-69	
1255	8.80	350	5.167	0.117	42.5	1.47	21.56	-74	
1300	8.80	600	5.167	0.121	67.7	1.51	19.21	-76	
1305	8.80	350	5.169	0.118	72.5	1.42	20.46	-79	
1310	8.80	550	5.166	0.118	92.7	1.50	19.49	-79	
1315	8.80	450	5.169	0.118	113.0	1.34	20.93	-84	
1320	8.80	500	5.168	0.118	112.0	1.36	22.06	-85	
1325	8.80	500	5.166	0.121	127.0	1.35	21.84	-87	
1330	8.80	350	5.166	0.118	131.0	1.42	21.06	-88	
1335	8.80	400	5.167	0.118	141.0	1.37	21.20	-89	
1340	8.80	400	5.165	0.116	148.0	1.36	23.77	-91	
1345	8.80	400	5.166	0.118	154.0	1.35	24.22	-92	
1346	Stop Purge								
1347	Begin Sampling								

SIGNATURE(S): [illegible]

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP Calverton
Project No.: 3853

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Temporary Well
[] QA Sample Type:

Sample ID No.: FC-TW04-165-01
Sample Location: Fuel Cal Area
Sampled By: Vince Sh. Ukor A
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color	pH	S.C.	Temp.	Turbidity	DO	~~TBD~~	~~TBD~~
Date: 8-7-00	Visual	Standard	mS/cm	°C	NTU	mg/l	ORP	SAL
Time: 1120								
Method: Hydropunch	very cloudy	9.32	234	19.92	>990	8.11	38.7	0.0

PURGE DATA:

	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	TBD	TBD
Date: N/A								
Method:								
Monitor Reading (ppm): 0								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOCs	HCl	40 ml Vials (x2)	2

OBSERVATIONS / NOTES:

- Hydropunch Sampler initially set at 160 feet BGS. → No recovery
- Hydropunch Sampler re-installed to 165 feet BGS. for sampling
- no odors, stains, or elevated PID readings observed

Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	—

Signature(s):

TBD: To Be Determined

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP Calverton
Project No.: 3853

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Temporary well
[] QA Sample Type:

Sample ID No.: FC-TW04-180-01
Sample Location: Fuel Cell Area
Sampled By: Vince Shickort
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	TBD	TBD
Date: 8-7-00								
Time: 1246								
Method: Hydropunch	very cloudy	(see below*)						

PURGE DATA:

Date: N/A	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	TBD	TBD
Method:								
Monitor Reading (ppm): 0								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOCs	HCl	40 ml Vials (x2)	2

OBSERVATIONS / NOTES:

- Hydropunch sampler set at 180 feet BGS.
- *Insufficient volume recovered by Hydropunch for Field Parameters
- No odors, stains, or elevated PID readings observed

Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	

Signature(s):

TBD: To Be Determined

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP Calverton
Project No.: 3853

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Temporary Well
[] QA Sample Type:

Sample ID No.: FC-TW04-200-01
Sample Location: Fuel Cal Area
Sampled By: Vince Sheckora
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color	pH	S.C.	Temp.	Turbidity	DO	~~TBD~~	~~TBD~~
Date: 8-7-04	Visual	Standard	mS/cm	°C	NTU	mg/l	ORP	SAL
Time: 1420								
Method: Hydropunch	Very cloudy	9.08	167	14.26	>990	3.00	-38.2	0.0

PURGE DATA:

Date: N/A	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	TBD	TBD
Method:								
Monitor Reading (ppm): 0								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOCs	HCl	40 mL Vials (x2)	2

OBSERVATIONS / NOTES:

- Hydropunch Sampler set at depth of 200 feet BGS.
- No odors, stains, or elevated PID readings observed

Circle if Applicable:		Signature(s):
MS/MSD	Duplicate ID No.:	
—	—	

TBD: To Be Determined

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Page___ of ___

Project Site Name: NWIRP Calverton
Project No.: 3853

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Temporary Well
[] QA Sample Type:

Sample ID No.: FC-TW09-160-01
Sample Location: Fuel Calibration Area
Sampled By: Vince Shickora
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 7-31-00	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	TBD	~~TBD~~ color
Time: 1140								
Method: Hydropunch	(Insufficient	Volume	for	Field	Parameters)			very cloudy

PURGE DATA:

Date: N/A	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	TBD	TBD
Method:								
Monitor Reading (ppm): 0								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOCs	HCl	40 ml vials (x 2)	2

OBSERVATIONS / NOTES:

- Hydropunch sampler set at depth of 160 feet BGS
- Sample was very cloudy / Turbid
- No odors, stains or elevated PID readings observed.

Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	—

Signature(s):

TBD: To Be Determined

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Page___ of ___

Project Site Name: NWIRP Calverton
Project No.: 3853

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Temporary well
[] QA Sample Type:

Sample ID No.: FC-TW09-180-01
Sample Location: Fuel Calibration Area
Sampled By: Vince Shickord
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	~~TBD~~ ORP	~~TBD~~ SAL
Date: 7-31-00								
Time: 1442								
Method: Hydropunch	very cloudy	6.72	0.25	19.1	>990	6.7	161	0.0

PURGE DATA:

Date: N/A	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	TBD	TBD
Method:								
Monitor Reading (ppm): 0								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOCs	HCl	40 ml vials (x2)	2

OBSERVATIONS / NOTES:

- Hydropunch Sampler set at depth of 180 feet B.G.S.
- No odors, stains, or elevated PID reading observed

Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	—

Signature(s): [signature]

TBD: To Be Determined

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Page___ of ___

Project Site Name: NWIRP Calverton
Project No.: 3853

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Temporary Well
[] QA Sample Type:

Sample ID No.: FC-TW09-200-01
Sample Location: Fuel Calibration Area
Sampled By: Vince Shickora
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	~~TBD~~ ORP	~~TBD~~ SAL
Date: 7-31-00								
Time: 1630								
Method: Hydropunch	Very clear	6.80	0.13	17.1	>990	2.1	128	0.0

PURGE DATA:

Date: N/A	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	TBD	TBD
Method:								
Monitor Reading (ppm): 0								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOCs	HCl	40 ml Vials (x2)	2

OBSERVATIONS / NOTES:

- Hydropunch Sampler set at depth of 200 feet B.G.S.
- No odors, stains, or elevated PID readings observed

Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	—

Signature(s): [signature]

TBD: To Be Determined

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP Calverton
Project No.: 3853

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Temporary Well
[] QA Sample Type:

Sample ID No.: FC-TW20-105-01
Sample Location: Fuel Cal Area
Sampled By: Vince Shickora
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 8-2-00	Color	pH	S.C.	Temp.	Turbidity	DO	~~TBD~~	~~TBD~~
Time: 1325	Visual	Standard	mS/cm	°C	NTU	mg/l	ORP	SAL
Method: Hydropunch	Hazy/dirty	7.12	0.19	21.2	>990	5.9	181	0.0

PURGE DATA:

Date: N/A	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	TBD	TBD
Method:								
Monitor Reading (ppm): 0								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOCs	HCl	40 ml Vials (x2)	2

OBSERVATIONS / NOTES:

Hydropunch sampler set at depth of 100 feet B.G.S. initially. (No recovery)
Hydropunch was reinstalled to depth of 105 feet BGS. for sampling
- No odors, stains, or elevated PID readings observed

Circle if Applicable:

MS/MSD	Duplicate ID No.:
–	–

Signature(s): [signature]

TBD: To Be Determined

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Page___ of ___

Project Site Name: NWIRP Calverton
Project No.: 3853

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Temporary Well
[] QA Sample Type:

Sample ID No.: FC-TW20-120-01
Sample Location: Fuel Cal Area
Sampled By: Vince Shickora
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	~~TBD~~ ORP	~~TBD~~ SAL
Date: 8-2-00								
Time: 1425								
Method: Hydropunch	Very cloudy	8.40	106	22.74	>990	7.47	-33.7	0.0

PURGE DATA:

Date: N/A	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	TBD	TBD
Method:								
Monitor Reading (ppm):								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOCs	HCl	40 ml vials (x 2)	2

OBSERVATIONS / NOTES:

- Hydropunch Sampler set at depth of 120 feet B.G.S.
- No odors, stains, or elevated PID readings observed

Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	—

Signature(s):

TBD: To Be Determined

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP Calverton
Project No.: 3853

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Temporary Well
[] QA Sample Type:

Sample ID No.: FC-TW20-140-01
Sample Location: Fuel Cal Area
Sampled By: Vince Shickora
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 8-2-00	Color	pH	S.C.	Temp.	Turbidity	DO	~~TBD~~	~~TBD~~
Time: 1540	Visual	Standard	mS/cm	°C	NTU	mg/l	ORP	SAL
Method: Hydropunch	very cloudy	9.11	135	21.10	>490	9.92	-51.9	0.0

PURGE DATA:

Date: N/A	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	TBD	TBD
Method:								
Monitor Reading (ppm): 0								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOCs	HCl	40 ml vials (x2)	2

OBSERVATIONS / NOTES:

- Hydropunch sampler set at depth of 140 feet B.G.S.
- No odors, stains, or elevated PID readings observed

Circle if Applicable:

MS/MSD	Duplicate ID No.:
–	–

Signature(s):

TBD: To Be Determined

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP Calverton
Project No.: 3853

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Temporary Well
[] QA Sample Type:

Sample ID No.: FC-TW20-160-01
Sample Location: Fuel Cal Area
Sampled By: Vince Shickora
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color	pH	S.C.	Temp.	Turbidity	DO	~~TBD~~	~~TBD~~
Date: 8-3-00	Visual	Standard	mS/cm	°C	NTU	mg/l	ORP	SAL
Time: 0820								
Method: Hydropunch	very cloudy	9.26	136	18.55	>990	10.01	-18.1	0.0

PURGE DATA:

Date: N/A	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	TBD	TBD
Method:								
Monitor Reading (ppm):								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOCs	HCl	40 ml Vial (x2)	2

OBSERVATIONS / NOTES:

Hydropunch Sampler set at depth of 160 feet B.G.S.
No odors, stains, or elevated PID readings observed

Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	—

Signature(s): [signature]

TBD: To Be Determined

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP Calverton
Project No.: 3853

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Temporary Well
[] QA Sample Type:

Sample ID No.: SA-TW-111-10-01
Sample Location: Southern Area
Sampled By: Vince Shickora
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Date: 7-12-00	Visual	Standard	mS/cm	°C	NTU	mg/l	mV	NA
Time: 0945								
Method: Hydropunch	very cloudy	5.47	115	17.9	990	2.0	-54	—

PURGE DATA:

Date: N/A	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method:								
Monitor Reading (ppm): 0								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOCs	HCl	40 ml Vials (x2)	2

OBSERVATIONS / NOTES:

- Hydropunch Sampler set at depth of 10 feet BGS. This is approximately 5 feet below water Table of 5 feet BGS.
- No odors, stains, or elevated PID readings observed

Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	—

Signature(s): [illegible]

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP Calverton
Project No.: 3853

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Temporary Well
[] QA Sample Type:

Sample ID No.: SA-TW-111-25-..
Sample Location: Southern Area
Sampled By: Vince Shickora
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 7-12-00	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time: 1030	Visual	Standard	mS/cm	°C	NTU	mg/l	mV	NA
Method: Hydropunch	Very cloudy	6.15	68.3	18.4	1245	3.0	4.0	

PURGE DATA:

Date: N/A	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method:								
Monitor Reading (ppm): 0								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOCs	HCl	40ml Vials (x2)	2

OBSERVATIONS / NOTES:

- Hydropunch Sampler set at depth of 25 feet BGS. This is approximately 20 feet Below water table of 5 feet BGS.
- No odors, stains, or elevated PID readings observed

Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	—

Signature(s): [illegible]

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP Calverton
Project No.: 3853

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Temporary Well
[] QA Sample Type:

Sample ID No.: SA-TW-111-45-01
Sample Location: Southern Area
Sampled By: Vince Shickora
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 7-12-00	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time: 1115	Visual	Standard	mS/cm	°C	NTU	mg/l	mV	NA
Method: Hydropunch	Very cloudy	6.43	67.2	18.5	1380	6.7	3.0	-

PURGE DATA:

Date: N/A	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method:								
Monitor Reading (ppm): 0								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOCs	HCl	40 ml Vial (x2)	2

OBSERVATIONS / NOTES:

- Hydropunch sampler set at depth of 45 feet BGS. This is approximately 40 feet Below Water Table of 5 feet BGS.
- No odors, stains or elevated PID readings observed

Circle if Applicable:

MS/MSD	Duplicate ID No.:
-	SA-TW-111-50-01 @1125

Signature(s): [signature]

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP Calverton
Project No.: 3853

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Temporary Well
[] QA Sample Type:

Sample ID No.: SA-TW-111-65-01
Sample Location: Southern Area
Sampled By: Vince Shickora
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	ORP mV	Other NA
Date: 7-12-00								
Time: 1230								
Method: Hydropunch	Very Cloudy	7.15	53.1	16.4	945	1.5	-181	

PURGE DATA:

Date: N/A	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method:								
Monitor Reading (ppm): 0								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOCs	HCl	40 Ml Vials (x2)	2

OBSERVATIONS / NOTES:

- Hydropunch Sampler set at depth of 65 feet BGS. This is approximately 60 feet Below water table of 5 feet BGS.
- No odors, stains, or elevated PID readings observed

Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	—

Signature(s):

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP Calverton
Project No.: 3853

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Temporary Well
[] QA Sample Type:

Sample ID No.: SA-TW-111-85-01
Sample Location: Southern Area
Sampled By: Vince Shiskora
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 7-12-00	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time: 1340	Visual	Standard	mS/cm	°C	NTU	mg/l	mV	NA
Method: Hydropunch	very cloudy	7.21	54.5	16.1	928	1.8	-165	—

PURGE DATA:

Date: N/A	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method:								
Monitor Reading (ppm): 0								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOCs	HCl	40 ml vials (X2)	2

OBSERVATIONS / NOTES:

- Hydropunch Sampler set at depth of 85 feet BGS. This is approximately 85 feet Below water Table of 5 feet BGS.
- No odors, stains, or elevated PID readings observed.

Circle if Applicable:		Signature(s):
MS/MSD	Duplicate ID No.:	
—	—	[signature]

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP Calverton
Project No.: 3853

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Temporary Well
[] QA Sample Type:

Sample ID No.: SA-TW-112-22-01
Sample Location: Southern Area
Sampled By: Vince Shickora
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	ORP mV	Other NA
Date: 7-10-00								
Time: 1100								
Method: Hydropunch	Cloudy	7.39	190	15.7	604	3.55	-140	—

PURGE DATA:

Date: N/A	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method:								
Monitor Reading (ppm): 0								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOCs	HCl	40ml Vials (x2)	2

OBSERVATIONS / NOTES:

- Sample collected with Hydropunch sampler which was placed at a depth of roughly 22 feet Below Ground Surface and roughly 6 feet below water Table (water encountered at 16' BGS)
- No odors, Stains or PID readings observed.
- Split Sample collected and relinquished to Paul Shumner of Peconic Sportsmen Club.

Circle if Applicable:		Signature(s):
MS/MSD	Duplicate ID No.:	
—	—	[signature]

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP Calverton
Project No.: 3853

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Temporary Well
[] QA Sample Type:

Sample ID No.: SA-TW-112-35-01
Sample Location: Southern Area
Sampled By: Vince Shickora
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 7-10-00	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time: 1150	Visual	Standard	mS/cm	°C	NTU	mg/l	mV	NA
Method: Hydropunch	Cloudy	7.42	188	15.8	840	3.25	-135	–

PURGE DATA:

Date: N/A	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method:								
Monitor Reading (ppm): 0								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOCs	HCl	40 ml Vials (x2)	2

OBSERVATIONS / NOTES:

- Hydropunch Sampler placed at depth of roughly 35 feet BGS, which is approximately 20 feet below water surface (15 feet BGS)
- No odors, stains or PID readings observed
- Split sample obtained and relinquished to Paul Shumner of the Peconic Sportsmans Club.

Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	—

Signature(s): [signature]

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Page ___ of ___

Project Site Name: NWIRP Calverton
Project No.: 3853

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Temporary Well
[] QA Sample Type:

Sample ID No.: SA-TW-112-55-01
Sample Location: Southern Area
Sampled By: Vince Shickora
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 7-10-00	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time: 1250	Visual	Standard	mS/cm	°C	NTU	mg/l	mV	NA
Method: Hydropunch	Yellowish	7.44	184	15.5	944	2.33	-133	—

PURGE DATA:

Date: N/A	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method:								
Monitor Reading (ppm): 0								
Well Casing Diameter & Material Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOCs	HCl	40 ml Vials	2

OBSERVATIONS / NOTES:

- Hydropunch Sampler set at depth of approximately 55 feet BGS. This depth is roughly 40 feet Below water Table (15 feet BGS.)
- No odors, stains or elevated PID Readings observed.
- Split sample collected and relinquished to Paul Shumman of the Peconic Sportsmans club

Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	—

Signature(s):

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Page ___ of ___

Project Site Name: NWIRP Calverton
Project No.: 3853

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Temporary Well
[] QA Sample Type:

Sample ID No.: SA-TW-112-75-01
Sample Location: Southern Area
Sampled By: Vince Shickort
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Date: 7-10-00	Visual	Standard	mS/cm	°C	NTU	mg/l	mV	NA
Time: 1345								
Method: Hydropunch	very cloudy	7.77	104	16.7	1240	5.30	-20	—

PURGE DATA:

Date: N/A	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method:								
Monitor Reading (ppm): 0								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOCs	HCl	40 ml vials (x2)	2

OBSERVATIONS / NOTES:

- Hydropunch Sampler set at depth of approximately 75 feet BGS. This depth is roughly 60 feet below water Table of 15 feet BGS.
- No odors, stains, or elevated PID readings observed
- Split sample collected and relinquished to the custody of Paul Shumman of Peconic Sportsmans Club

Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	—

Signature(s):

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Page ___ of ___

Project Site Name: NWIRP Calverton
Project No.: 3853

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Temporary Well
[] QA Sample Type:

Sample ID No.: SA-TW-112-95-01
Sample Location: Southern Area
Sampled By: Vince Shickora
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	ORP mV	Other NA
Date: 7-10-00								
Time: 1440								
Method: Hydropunch	very cloudy	8.10	98	16.9	1620	4.28	-35	–

PURGE DATA:

Date: N/A	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method:								
Monitor Reading (ppm): 0								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOCs	HCl	40 ml Vials (x 2)	2

OBSERVATIONS / NOTES:

- Hydropunch Sampler set at depth of approximately 75 feet BGS. This depth is roughly 80 feet below water Table of 15 feet BGS.
- No odors, stains or elevated PID readings observed.
- Split Sample collected and relinquished to custody of Paul Shannon of Peconic Sportsmans Club.

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): WAS

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP Calverton
Project No.: 3853

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Temporary Well
[] QA Sample Type:

Sample ID No.: SA-TW-113-20-01
Sample Location: Southern Area
Sampled By: V. Shelton
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 7-11-00	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time: 1025	Visual	Standard	mS/cm	°C	NTU	mg/l	mV	NA
Method: Hydropunch	Cloudy	7.71	75	17.50	1703	2.20	-85.1	–

PURGE DATA:

Date: N/A	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method:								
Monitor Reading (ppm): 0								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOCs	HCl	40 ml Vials (x2)	2

OBSERVATIONS / NOTES:

- Hydropunch Sampler set at depth of 20 feet BGS. This is approximately 5 feet below water table of 15 feet BGS.
- No odors, stains, elevated PID readings observed
- Split sample collected and relinquished to custody of John Niemczyk of Peconic River Sportsmens Club

Circle if Applicable:		Signature(s):
MS/MSD	Duplicate ID No.:	
—	—	[signature]

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP Calverton
Project No.: 3853

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Temporary Well
[] QA Sample Type:

Sample ID No.: SA-TW-113-35-01
Sample Location: Southern Area
Sampled By: Vince Shickora
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	ORP mV	Other NA
Date: 7-11-00								
Time: 1115								
Method: Hydropunch	Cloudy	7.39	87	17.35	1350	2.19	-162	—

PURGE DATA:

Date: N/A	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method:								
Monitor Reading (ppm): 0								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOCs	HCl	40 ml Vials (x2)	2

OBSERVATIONS / NOTES:

- Hydropunch Sampler set at depth of approximately 35 feet B.G.S. This is roughly 20 feet below water table of 15 feet BGS.
- No odors, stains or elevated PID readings observed
- Split Sample collected and relinquished to custody of John Niemczyk of Peconic River Sportsmens Club.

Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	—

Signature(s): GAB

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP Calverton
Project No.: 3553

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Temporary Well
[] QA Sample Type:

Sample ID No.: SA-TW-113-60-01
Sample Location: Southern Area
Sampled By: Vince Shickora
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 7-11-00	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time: 1235	Visual	Standard	mS/cm	°C	NTU	mg/l	mV	NA
Method: Hydropunch	Cloudy	7.58	177	17.95	1900	2.52	-242	—

PURGE DATA:

Date: N/A	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method:								
Monitor Reading (ppm): 0								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOCs	HCl	40 ml vials (x2)	2

OBSERVATIONS / NOTES:

- Hydropunch sampler set at depth of approximately ~~55 feet~~ 60 feet BGS. This is roughly 45 feet below water table of 15 feet BGS. (The Sampler was dry when installed at 55 feet BGS.) VAS
- Split sample collected and relinquished to custody of ~~John Niemczyk~~ Jim Olivant of Peconic River Sportsman Club VAS

Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	—

Signature(s):

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Page ___ of ___

Project Site Name: NWERP Colverton
Project No.: 3853

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Temporary Well
[] QA Sample Type:

Sample ID No.: SA-TW-113-75-c.
Sample Location: Southern Area
Sampled By: Vince Shickora
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Date: 7-11-00	Visual	Standard	mS/cm	°C	NTU	mg/l	mV	NA
Time: 1345								
Method: Hydro punch	very clear	7.89	163	17.81	1725	4.40	-128	—

PURGE DATA:

Date: N/A	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method:								
Monitor Reading (ppm): 0								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOCs	HCl	40 ml vials (x 2)	2

OBSERVATIONS / NOTES:

- Hydropunch Sampler set at depth of approximately 75 feet BGS. This is roughly 60 feet below water table of 15 feet BGS.
- No odors, stains or elevated PID readings observed (VAS)
- Split sample collected and relinquished to custody of ~~Jon Blencoyk~~ Jim Olivent of Peconic River Sportsmans Club

Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	—

Signature(s): [signature]

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Page ___ of ___

Project Site Name: NWIRP Calverton
Project No.: 3853

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Temporary Well
[] QA Sample Type:

Sample ID No.: SA-TW-113-95-01
Sample Location: Southern Area
Sampled By: Vince Shickora
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 7-11-00	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time: 1435	Visual	Standard	mS/cm	°C	NTU	mg/l	mV	NA
Method: Hydropunch	very cloudy	7.88	175	17.20	1846	3.54	-211	—

PURGE DATA:

Date: N/A	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method:								
Monitor Reading (ppm): 0								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOCs	HCl	40 ml Vials (x2)	2

OBSERVATIONS / NOTES:

- Hydropunch sampler set at depth of approximately 95 feet BGS. this is roughly 80 feet below water Table of 15 feet BGS.
- No odors, stains or elevated PID readings observed.
- Split Sample collected and relinquished to custody of Jim Olivant of Peconic River Sportsmens Club

Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	—

Signature(s): [signature]

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP Calverton
Project No.: 3853

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Temporary Well
[] QA Sample Type:

Sample ID No.: FC-TW20-180-01
Sample Location: Fuel Cal Area
Sampled By: Vince Shickora
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	~~TBD~~ ORP	~~TBD~~ SAL
Date: 8-3-00								
Time: 0935								
Method: Hydropunch	very cloudy	8.84	127	20.13	>999.0	3.67	-145	0.0

PURGE DATA:

Date: N/A	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	TBD	TBD
Method:								
Monitor Reading (ppm):								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOCs	HCl	40 ml vials (x2)	2

OBSERVATIONS / NOTES:

Hydropunch Sampler set at depth of 180 feet B.G.S.
No odors, stains, or elevated PID readings observed

Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	—

Signature(s):

TBD: To Be Determined

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP Calverton
Project No.: 3853

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Temporary Well
[] QA Sample Type:

Sample ID No.: FC-TW20-200-01
Sample Location: Fuel Cal Area
Sampled By: Vince Shickora
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color	pH	S.C.	Temp.	Turbidity	DO	~~TBD~~	~~TBD~~
Date: 8-3-00	Visual	Standard	mS/cm	°C	NTU	mg/L (VAS)	ORP	SAL
Time: 1055								
Method: Hydropunch	very cloudy	8.56	116	20.82	>990	~~-120.1~~ 4.82	-120.1	0.0

PURGE DATA:

Date: N/A	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	TBD	TBD
Method:								
Monitor Reading (ppm):								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOCs	HCl	40 ml Vials (x2)	4

OBSERVATIONS / NOTES:

- Hydropunch Sampler set at depth of 200 feet B.G.S.
- No odors, stains, or elevated PID readings observed

Circle if Applicable:

MS/MSD	Duplicate ID No.:	Signature(s):
—	FC-TW20-210-01-D (1130 hours)	[signature]

TBD: To Be Determined

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP Calverton
Project No.: 3853

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Temporary Well
[] QA Sample Type:

Sample ID No.: FC-TW21-60-01
Sample Location: Fuel Calibration Area
Sampled By: Vince Stuckard
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 7-20-00	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time: 1110	Visual	Standard	mS/cm	°C	NTU	mg/l	mV	NA
Method: Hydropunch	very cloudy	7.85	0.184	18.9	>990	6.03	29	—

PURGE DATA:

Date: N/A	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method:								
Monitor Reading (ppm): 0								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOCs	HCl	40 ml vials (x2)	2

OBSERVATIONS / NOTES:

- Hydropunch sampler set at depth of 60 feet BGS.
- water table at this location is roughly 17 feet BGS.
- no odors, stains, or elevated PID readings observed

Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	—

Signature(s): [illegible]

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP Calverton
Project No.: 3853

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Temporary Wells
[] QA Sample Type:

Sample ID No.: FC-TW21-80-01
Sample Location: Fuel Calibration Area
Sampled By: Vince Shukert
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 7-20-00	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time: 1245	Visual	Standard	mS/cm	°C	NTU	mg/l	mV	NA
Method: Hydropunch	very cloudy	8.25	0.198	14.3	>490	6.49	51	—

PURGE DATA:

Date: N/A	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method:								
Monitor Reading (ppm): 0								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOCs	HCl	40 ml vials (x2)	2

OBSERVATIONS / NOTES:

- Hydropunch Sampler set at 80 feet BGS.
- Water table at this location is roughly 17 feet BGS.
- No odors, stains or elevated PID readings observed

Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	—

Signature(s):

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Page ___ of ___

Project Site Name: NWIRP Calverton
Project No.: 3853

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Temporary Well
[] QA Sample Type:

Sample ID No.: FC-TW21-100-0
Sample Location: Fuel Calibration Area
Sampled By: Vince Shickora
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Date: 7-20-00	Visual	Standard	mS/cm	°C	NTU	mg/l	mV	NA
Time: 1410								
Method: Hydropunch	Very cloudy	8.08	0.166	20.1	>990	5.81	90	–

PURGE DATA:

Date: N/A	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method:								
Monitor Reading (ppm):								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOCs	HCl	40 ml Vials (x2)	2

OBSERVATIONS / NOTES:

- Hydropunch sampler set at depth of 100 feet B.G.S.
- Water Table at this location roughly 17 feet B.G.S.
- No odors, stains, or elevated PID readings observed

Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	—

Signature(s):

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Page ___ of ___

Project Site Name: NWIRP Calverton
Project No.: 3853

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Temporary Well
[] QA Sample Type:

Sample ID No.: ET-TW06-60-01
Sample Location: Engine Test House
Sampled By: Vince Shickora
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 7-19-00	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time: 1050	Visual	Standard	mS/cm	°C	NTU	mg/l	mV	NA
Method: Hydropunch	very cloudy	7.98	73.2	19.2	>990	3.2	185	

PURGE DATA:

Date: N/A	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method:								
Monitor Reading (ppm): 0								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOCs	HCl	40 ml Vials (x2)	2

OBSERVATIONS / NOTES:

- Hydropunch Sampler set at depth of 60 feet BGS (water table at location is roughly 16 feet BGS
- No odors, stains, or elevated PID readings observed

Circle if Applicable:		Signature(s):
MS/MSD	Duplicate ID No.:	
—	—	

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Page___ of___

Project Site Name: NWIRP Calverton
Project No.: 3853

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Temporary Well
[] QA Sample Type:

Sample ID No.: ET-TW06-80-01
Sample Location: Eagle Test House
Sampled By: Vince Shickora
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Date: 7-19-00	Visual	Standard	mS/cm	°C	NTU	mg/l	mV	NA
Time: 1225								
Method: Hydropunch	Very cloudy	8.10	66.4	18.0	>990	1.8	165	—

PURGE DATA:

Date: N/A	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method:								
Monitor Reading (ppm): 0								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOCs	HCl	40ml Vials (x2)	2

OBSERVATIONS / NOTES:

- Hydropunch Sampler set at depth of 80 feet BGS.
- Water table at location approximately 16 feet BGS
- No odors, stains or elevated PID Readings observed

Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	—

Signature(s):

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Page ___ of ___

Project Site Name: NWIRP Calverton
Project No.: 3853

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Temporary Well
[] QA Sample Type:

Sample ID No.: FT-TW06-100-01
Sample Location: Engine Test House
Sampled By:
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 7-19-00	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time: 1345	Visual	Standard	mS/cm	°C	NTU	mg/l	mV	NA
Method: Hydropunch	Very cloudy	8.11	49.5	18.1	>990	1.0	-40	

PURGE DATA:

Date: N/A	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	Salinity	Other
Method:								
Monitor Reading (ppm): 0								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOCs	HCl	40 ml Vials (x2)	2

OBSERVATIONS / NOTES:

- Hydropunch sampler set at depth of 100 feet BGS.
- Water Table at location approximately 16 feet BGS.
- No Odors, stains, or elevated PID readings observed

Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	—

Signature(s):

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP Calverton
Project No.:

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Piezometer
[] QA Sample Type:

Sample ID No.: SA-PZ1015-18-01
Sample Location: SA-PZ-101-S
Sampled By:
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 7/5/00	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time: 1035	Visual	Standard	mS/cm	°C	NTU	mg/l	mV	NA
Method: "Soda straw"								

PURGE DATA:

Date: 7/5/00	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	~~Salinity~~ ORP	Other
Method: Peristaltic pump	0	6.50	366	14.64	77		91.4	
Monitor Reading (ppm):	2 gal	5.12	311	13.80	12		131	clear
Well Casing Diameter & Material	4	5.06	289	13.96	23		114	clear
Type: 1" PVC	6	5.09	277	13.83	20		126	
Total Well Depth (TD): 19.55 TOC	8	5.12	265	14.27	19		114	
Static Water Level (WL): 14.70 TOC	10	5.12	259	14.36	6.2		116	
One Casing Volume (gal/L): 0.2								
Start Purge (hrs): ~900	1020	5.14	257	14.30	7.3		114	
End Purge (hrs): 1030	1028	5.16	254	14.06	7.5		118	
Total Purge Time (min): 90	1050	5.16	256	14.08	6.3		120	
Total Vol. Purged (gal/L): 12								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC	—	2 x 40ml	✓

OBSERVATIONS / NOTES:

purge rate = 1 gal/8 min = .125 gpm

Approx 10 gal. of water were introduced into the borehole during drilling. This volume was purged ~~[illegible]~~ in addition to the normal (3x well volume) purge volume.

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Donald Kinkaler

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP Calverton
Project No.:

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: piezometer
[] QA Sample Type:

Sample ID No.: SA-PZ101I-47-01
Sample Location: SA-PZ101-I
Sampled By: DW
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 7/5/00	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	ORP mV	Other NA
Time: 1535								
Method: "soda straw"								

PURGE DATA:

Date: 7/5/00	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	~~Salinity~~ ORP	Other
Method: peristaltic pump	0 gal	5.67	94	14.26	580		90	lt. BRN
Monitor Reading (ppm):	5	6.48	92	13.59	25		35	clear
Well Casing Diameter & Material	10	5.83	93	13.81	41		11.6	"
Type: 1" PVC	15	5.77	92	13.58	14.6		5.1	"
Total Well Depth (TD): 49.3' toc	20	6.11	92	13.36	7.9		-2.1	"
Static Water Level (WL): 14.93' toc	25	5.92	91	13.48	67.1		-10	"
One Casing Volume (gal/L): 1.4	30	5.90	93	14.01	1.1		7.7	"
Start Purge (hrs): 1107	31.5	5.75	89	13.29	4.5		55.4	clear
End Purge (hrs): 1532	33	5.69	89	13.69	2.2		66.7	"
Total Purge Time (min): 225	34.5	5.70	90	13.	1.4		78.3	"
Total Vol. Purged (gal/L): 24.5								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC	—	2 x 40 ml	✓

OBSERVATIONS / NOTES:

purge rate = 1 gal / 8 min = 0.125 gpm
Approx. 30 gal. of water were added to borehole during drilling. This volume was purged in addition to the normal purge volume

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): David Whitlen

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Page___ of ___

Project Site Name: NWIRP Calverton
Project No.: 3853

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Piezometer
[] QA Sample Type:

Sample ID No.: SA-PZ101-D-80-01
Sample Location: Southern Area
Sampled By: Vince Shichora
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 7-5-00	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time: 1440	Visual	Standard	mS/cm	°C	NTU	mg/l	mV	NA
Method: Soda Straw meth.	Clear	6.49	168	13.74°	1.5	N/A	-56.2	-

PURGE DATA:

Date: 7-5-00	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	~~Salinity~~ ORP	Other
Method: Peristaltic Pump	Initial (*)	6.51	154	14.97°	220	NA*	27.9	Cloudy
Monitor Reading (ppm): 0	5 gallons	6.56	133	13.86°	190	(see below)	-59.2	cloudy
Well Casing Diameter & Material	10 gallons	6.87	173	13.95	118	N/A	-131.1	-
Type: 1 inch PVC	15 gallons	6.49	170	13.81	25	NA	-44.0	-
Total Well Depth (TD): 80'	20 gallons	6.47	169	13.85	19	N/A	-45.7	-
Static Water Level (WL): 14.97'	-			~~13.86~~ WL				
One Casing Volume (gal/L): 2.6	1	6.50	171	13.86	5.7	N/A	-49.1	-
Start Purge (hrs): 1120	2	6.48	169	13.84	3.0	N/A	-52.4	
End Purge (hrs): 1440	3	6.49	168	13.74	1.5	N/A	-56.2	-
Total Purge Time (min): 200								
Total Vol. Purged (gal/L): 28								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOCs	HCl	40 ml Vials (x 2)	☒

OBSERVATIONS / NOTES:

(*) Purged/developed well → removed 20 gallons prior to purge/sampling in order to remove the drillers water added to Auger Flights during Boring

- No odors or stains observed
- Pump flow rate → roughly 0.125 gpm

Note → D.O. Meter malfunctioned → No readings obtained

Circle if Applicable:

MS/MSD	Duplicate ID No.:
Yes	SA-PZ101-D-95-01

Signature(s):

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP Calverton
Project No.:

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Piezometer
[] QA Sample Type:

Sample ID No.: SA-PZ1024-10-01
Sample Location: SA PZ 1024
Sampled By: DW
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 7-5-00	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time: 1805	Visual	Standard	mS/cm	°C	NTU	mg/l	mV	NA
Method: "Sede sonde"		6.14	.149	15.51	19	—	-46	

PURGE DATA:

Date: 7/5/00	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	~~Salinity~~ ORP	~~Other~~ color
Method: peristaltic pump	0 gal	6.15	114	16.51	709	- Not working -	-7.2	Brown
Monitor Reading (ppm):	2	6.12	141	16.03	37		-31	
Well Casing Diameter & Material	4	6.10	147	15.98	135		-50	
Type: 1" PVC	6	6.18	151	15.82	18		-40	cloudy
Total Well Depth (TD): 11.6 toc	7	6.17	152	15.59	24		-49	
Static Water Level (WL): 5.69	10	6.19	154	15.77	35		-47	
One Casing Volume(gal/L): 0.24	10.2	6.15	153	15.64	21		-45	
Start Purge (hrs): 1633	10.5	6.10	150	15.56	23		-47	
End Purge (hrs): 1800	10.75	6.14	149	15.51	19		-46	
Total Purge Time (min): 87								
Total Vol. Purged (gal/L): 11								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC	—	2 x 40ml	✓

OBSERVATIONS / NOTES:

purge rate = 1 gal / 8 min = 0.125 gpm
Approx. 10 gallons of water were added to the borehole during drilling. This volume was purged in addition to the normal purge volume.

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Donald Whelan

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP Calverton
Project No.: 3353

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Piezometer
[] QA Sample Type:

Sample ID No.: SA-PZ102I-37-01
Sample Location:
Sampled By: DW
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Date: 7/6/00	Visual	Standard	mS/cm	°C	NTU	mg/l	mV	NA
Time: 1415								
Method: Sedimeter								

PURGE DATA:

Date: 7/6/00	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	~~Salinity~~ ORP	Other
Method: peristaltic pump	0	6.49	127	14.52	218	2.46	-56	
Monitor Reading (ppm):	5	6.57	124	13.72	18.2	2.53	-60	
Well Casing Diameter & Material	10	6.33	119	13.55	9.5	3.46	-22	
Type: 1" PVC	15	6.48	122	13.81	252	2.71	-24	
Total Well Depth (TD): 37'	20	6.55	126	14.26	266	2.10	-25	
Static Water Level (WL): 5.76' TOC	25	6.67	121	13.2	28	2.75	-78	
One Casing Volume(gal/L): 14	30	6.66	119	13.5	27	1.91	-85	
Start Purge (hrs): 1200	31.5	6.69	125	13.24	26	2.94	-92	
End Purge (hrs): 1410	32	6.73	126	13.22	20	2.60	-99	
Total Purge Time (min): 130	34.5	6.76	124	12.99	18	2.44	-114	
Total Vol. Purged (gal/L): 34.5								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC	—	3 x 40 ml	✓

OBSERVATIONS / NOTES:

Approx. 30 gal. of water were added to the borehole during drilling. This volume was purged in addition to the normal purge volume

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Donald Nuhsbaum

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Page ___ of ___

Project Site Name: NWIRP Colverton
Project No.: 3853

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Piezometer
[] QA Sample Type:

Sample ID No.: SA-PZ102-D-80-01
Sample Location: Southern Area
Sampled By: Vince Strickland
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Date: 7-5-00	Visual	Standard	mS/cm	°C	NTU	mg/l	mV	NA
Time: 1805								
Method: Soda Straw Method	clear	6.73	76.0	13.44	0	N/A	-67.5	–

PURGE DATA:

	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	~~Salinity~~ ORP	Other
Date: 7-5-00								
Method: Peristaltic Pump	Initial	6.90	71.0	14.83	45.2	*(see below)	49.5	–
Monitor Reading (ppm): 0	5 gallons	6.67	71.0	13.94	12.9	N/A	-43.1	–
Well Casing Diameter & Material	10 gallons	6.72	71.0	13.64	6.2	N/A	-64.3	–
Type: 1 inch PVC	15 gallons	6.83	74.0	13.35	2.5	N/A	-53.4	–
Total Well Depth (TD): 80' BGS	20 gallons	6.75	76.0	13.48	1.1	N/A	-64.9	–
Static Water Level (WL): 6.05'	25 gallons	6.73	76.0	13.52	1.0	N/A	-73.3	–
One Casing Volume (gal/L): 3.03	–	–	–	+	–	–	–	–
Start Purge (hrs): 1620	1	6.70	75.0	13.51	0	N/A	-77.1	–
End Purge (hrs): 1802	2	6.72	75.0	13.47	0	N/A	-69.9	–
Total Purge Time (min): 102	3	6.73	76.0	13.44	0	N/A	-67.5	–
Total Vol. Purged (gal/L): 34								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC	HCl	40 ml Vials (x2)	2

OBSERVATIONS / NOTES:

developed well by pumping 25 gallons prior to purge/sampling in order to remove the drillers water added to Augers during boring.

- pump flow rate → roughly 0.275 gpm

*D.O. meter inoperable → No reading collected

Circle if Applicable:

MS/MSD	Duplicate ID No.:
NO	N/A

Signature(s):

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP CALVERTON
Project No.: 3853

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: TEMPORARY WELL
[] QA Sample Type:

Sample ID No.: SA-PZ102-100-01
Sample Location: SA-PZ102-D-A
Sampled By: R. GOOD
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	TBD	TBD
Date: 8-9-00								
Time: 1000								
Method: HYDROPUNCH	DK BRN	-NA-	-NA-	-NA-	-NA-	-NA-		

PURGE DATA:

Date: — N.A. —	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	TBD	TBD
Method:								
Monitor Reading (ppm):								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC	HCl	2 x 40 ml Vial	2

OBSERVATIONS / NOTES:

INSUFFICIENT VOLUME FOR FIELD MEASUREMENTS. SAMPLE OBTAINED FROM HYDROPUNCH SAMPLER SET AT 100 FT. BELOW GROUND IN SA-PZ102-D-A.

NO ODORS OR PID READINGS ABOVE BACKGROUND

Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	—

Signature(s): [signature] 8/9/00

TBD: To Be Determined

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP CALVERTON
Project No.: 3853

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: TEMPORARY WELL
[] QA Sample Type:

Sample ID No.: SA-PZ102-125-01
Sample Location: SOUTHERN AREA
Sampled By: ROBERT GOOD
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 8-9-00	Color	pH	S.C.	Temp.	Turbidity	DO	TBD	TBD
Time: 1125	Visual	Standard	mS/cm	°C	NTU	mg/l	ORP mV	
Method: HYDROPUNCH	DK GRY	8.06	136	12.05	2100	14.14	-204	

PURGE DATA:

Date: — N.A. —	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	TBD	TBD
Method:								
Monitor Reading (ppm):								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC	HCl	2 x 40 ml Vials	2

OBSERVATIONS / NOTES:

HYDRO PUNCH SAMPLER SET AT 120 FT BELOW GROUND IN SA-PZ102-D-A, HOWEVER, THERE WAS INSUFFICIENT WATER COLLECTED FOR SAMPLE VOLUME REQUIREMENTS. HYDRO PUNCH SAMPLER SET AT 125 FT. BELOW GROUND IN SA-PZ102-D-A WHERE SAMPLE WAS OBTAINED. NO ODORS OR P.I.D. READINGS ABOVE BACKGROUND

Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	—

Signature(s): [signature] 8/9/00

TBD: To Be Determined

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP CALVERTON
Project No.: 3853

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: TEMPORARY WELL
[] QA Sample Type:

Sample ID No.: SA-PZ102-140-01
Sample Location: SOUTHERN AREA
Sampled By: ROBERT GOOD
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 8-9-00	Color	pH	S.C.	Temp.	Turbidity	DO	~~TBD~~ ORP	TBD
Time: 1235	Visual	Standard	mS/cm	°C	NTU	mg/l	mV	
Method: HYDROPUNCH	DK. GRY	8.64	160	17.75	2790	7.64	-170	

PURGE DATA:

Date: — NA —	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	TBD	TBD
Method:								
Monitor Reading (ppm):								
Well Casing Diameter & Material								
Type:								
Total Well Depth (TD):								
Static Water Level (WL):								
One Casing Volume(gal/L):								
Start Purge (hrs):								
End Purge (hrs):								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC	HCl	2 x 40 mL Vials	2

OBSERVATIONS / NOTES:

HYDROPUNCH SAMPLER SET AT 140 FT. BELOW GROUND IN SA-PZ102-D-A.
NO ODORS OR ELEVATED P.I.D READINGS ABOVE BACKGROUND

Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	—

Signature(s): [signature] 8/9/00

TBD: To Be Determined

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP Calverton
Project No.: 3753

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type:
[] QA Sample Type:

Sample ID No.: SA-PZ1035-29-01
Sample Location:
Sampled By: DW
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 7/1/00	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time: 1105	Visual	Standard	mS/cm	°C	NTU	mg/l	mV	NA
Method: "Soda straw"								

PURGE DATA:

Date: 7/1/00	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	~~Salinity~~ ORP	Other
Method: peristaltic pump	0	7.91	97	13.0	14.5		34.3	clear
Monitor Reading (ppm):	2	6.41	88	13.47	5.2	9.07	81	"
Well Casing Diameter & Material	4	6.43	86	14.30	2.4	9.31	73	"
Type: 1" PVC	6	6.39	86	14.33	1.8	9.91	82	"
Total Well Depth (TD): ~32' TOC	8	6.25	83	15.61	2.8	10.57	93.6	"
Static Water Level (WL): 26.74'	10	6.11	88	15.05	1.1	9.01	106	
One Casing Volume(gal/L): 0.21								
Start Purge (hrs): 0743	0.25	6.21	86	14.60	4.0	9.37	107	"
End Purge (hrs): 1150	0.5	6.36	86	14.55	0.3	10.09	97.4	"
Total Purge Time (min): 127	0.75	6.35	85	14.64	0.6	10.96	98.8	
Total Vol. Purged (gal/L): 0.75								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC	—	2 x 40 ml	✓

OBSERVATIONS / NOTES:

purge rate = 1 gal/10 min = .06 gpm

Approx. 10 gal. water were added to the borehole during drilling. This volume was purged in addition to the normal purge volume.

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Donald Whalen

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Page ___ of ___

Project Site Name: NWIRP Calverton
Project No.: 3853

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Piezometer
[] QA Sample Type:

Sample ID No.: SA-PZ103-I-40-01
Sample Location: Southern Area
Sampled By: Vince Stickford
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Date: 7-6-00	Visual	Standard	mS/cm	°C	NTU	mg/l	mV	NA
Time: 1325								
Method: Soda Straw	Clear							

PURGE DATA:

	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	~~Salinity~~ ORP	Other
Date: 7-6-00	Initial	6.17	65.00	13.93	13.4	9.65	112.8	clear
Method: Peristaltic pump	5 gallons	6.21	64.00	13.71	9.5	9.36	100.4	clear
Monitor Reading (ppm): 0	10 gallons	6.28	66.00	13.74	1.4	8.27	-33.1	clear
Well Casing Diameter & Material	15 gallons	6.37	67.00	13.70	1.1	8.43	36.6	clear
Type: 1 inch PVC	-	-	-	-	-	-	-	-
Total Well Depth (TD): 40' BGS	1	6.33	66.00	13.42	0	8.75	18.4	clear
Static Water Level (WL): 26.75'	2	6.31	66.00	13.41	0	8.68	22.4	clear
One Casing Volume (gal/L): 0.55	3	6.19	65.00	13.50	0	8.81	30.7	clear
Start Purge (hrs): 1135	4	6.09	65.00	13.49	0	8.88	36.4	clear
End Purge (hrs): 1325								
Total Purge Time (min): 110								
Total Vol. Purged (gal/L): 19								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOCs	HCl	40 ml vials (x2)	2

OBSERVATIONS / NOTES:

Developed well by pumping 15 gallons prior to purge / sampling in order to remove Drillers water added to Augers during boring
- Flow rate roughly 0.17 gallons per minute
- No odors or stains observed

Circle if Applicable:

MS/MSD	Duplicate ID No.:
N/A	N/A

Signature(s):

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP Calverton
Project No.: 3853

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Piezometer
[] QA Sample Type:

Sample ID No.: SA-PZ103.0-80-01
Sample Location: Southern Area
Sampled By: Vince Shukla
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 7-6-00	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time: 1130	Visual	Standard	mS/cm	°C	NTU	mg/l	mV	NA
Method: Soda Straw	Clear	6.34	55.0	13.10	0.5	8.96	93.5	clear

PURGE DATA:

Date: 7-6-00	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	~~Salinity~~ ORP	Other
Method: Peristaltic Pump	Initial	6.93	57.0	12.97	110.4	8.11	45.6	clear
Monitor Reading (ppm): 0	5 gallons	6.85	65.0	12.84	37.1	8.07	32.4	clear
Well Casing Diameter & Material	10 gallons	6.91	59.0	12.82	21.2	8.33	45.8	clear
Type: 1 inch PVC	15 gallons	6.32	56.0	12.94	8.1	8.74	85.1	clear
Total Well Depth (TD): 80' BGS	20 gallons	6.31	55.0	13.11	2.4	9.63	85.6	clear
Static Water Level (WL): 26.33'	25 gallons	6.32	55.0	13.03	1.1	9.02	94.2	clear
One Casing Volume (gal/L): 2.2	-	-	-	-	-	-	-	-
Start Purge (hrs): 0740	1	6.34	55.0	13.13	0.8	9.03	96.1	clear
End Purge (hrs): 1130	2	6.33	55.0	13.11	0.6	9.00	92.4	clear
Total Purge Time (min): 230	3	6.34	55.0	13.10	0.5	8.96	93.5	clear
Total Vol. Purged (gal/L): 33								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOCs	HCl	40 ml vial (x2)	2

OBSERVATIONS / NOTES:

Developed well by pumping 25 gallons prior to purge/sampling in order to remove drillers water added to Augers during Boring.

- no odors or stains observed.
- Flow rate of pump roughly 0.15 gallons per minute

Circle if Applicable:

MS/MSD	Duplicate ID No.:
N/A	N/A

Signature(s): [signature]

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP Calverton
Project No.: 3853

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: piezometer
[] QA Sample Type:

Sample ID No.: SA-PZ104S-9-01
Sample Location:
Sampled By: DW
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 7/6/00	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time: 1655	Visual	Standard	mS/cm	°C	NTU	mg/l	mV	NA
Method: Soda straw								

PURGE DATA:

Date: 7/6/98	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	~~Salinity~~ ORP	Other
Method: peristaltic pump	0 gal	6.27	134	16.32	1940	0.91	22	Dk. BRN
Monitor Reading (ppm):	1	6.03	103	15.03	1913	1.04	1.1	"
Well Casing Diameter & Matenal	2	6.18	89	15.78	528	0.89	7.2	
Type: 1" PVC	3	5.85	83	14.74	172	1.02	14.3	
Total Well Depth (TD): 9'	4	5.83	80	15.17	125	0.94	17.2	
Static Water Level (WL): 5.78	5	5.85	81	14.99	34	1.05	21.7	
One Casing Volume(gal/L): 0.2	5.5	5.85	86	14.24	15.1	1.19	22.1	
Start Purge (hrs): 1536	6	5.81	78	14.22	15.4	1.23	20.5	
End Purge (hrs): 1650	6.5	5.85	77	14.03	14.1	1.31	24.9	
Total Purge Time (min): 74								
Total Vol. Purged (gal/L): 6.5								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC	—	2 x 40 ml	✓

OBSERVATIONS / NOTES:

1542 purged Dry; lower flow rate; continue
Approx. 5 gallons of water were added to the borehole during drilling
This volume was purged in addition to the normal purge volume.

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): [illegible]

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NWIRP Calverton
Project No.: 3753

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type:
[] QA Sample Type:

Sample ID No.: SA-PZ104I-3501
Sample Location:
Sampled By: JW
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 7/6/00	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time: 1820	Visual	Standard	mS/cm	°C	NTU	mg/l	mV	NA
Method: "grab sample"								

PURGE DATA:

Date: 7/6/00	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	~~Salinity~~ Eff	Other
Method: peristaltic pump	0	6.43	60	13.46	20.2	6.87	45.1	
Monitor Reading (ppm):	5	5.78	62	12.49	4.5	7.64	80.3	
Well Casing Diameter & Material	10	5.71	62	12.28	8.4	8.16	96.3	
Type: 1" PVC	15	5.64	61	12.50	1.4	7.82	112.6	
Total Well Depth (TD): 35'	20	5.62	61	12.43	1.7	7.91	124	
Static Water Level (WL): 5.98	21.5	5.67	61	12.18	4.3	8.06	128	
One Casing Volume(gal/L): 1.3	23	5.65	61	12.36	4.0	7.97	130.5	
Start Purge (hrs): 1717	25	5.67	61	12.20	3.6	8.11	133	
End Purge (hrs): 1815								
Total Purge Time (min): 55								
Total Vol. Purged (gal/L): 25								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOC	—	2 x 40 ml	✓

OBSERVATIONS / NOTES:

Approx. 20 gal. of water were added to the borehole during drilling. This volume was purged in addition to the normal purge volume.

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): David Whalen

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Page ___ of ___

Project Site Name: DWIRP Calverton
Project No.: 3853

[] Domestic Well Data
[] Monitoring Well Data
[X] Other Well Type: Piezometer
[] QA Sample Type:

Sample ID No.: SA-PZ104-0-80-01
Sample Location: Southern Area
Sampled By: Vince Shickora
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 7-6-00	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	ORP mV	Other NA
Time: 1713								
Method: Soda Straw								

PURGE DATA:

Date: 7-6-00	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	~~Salinity~~ ORP	Other
Method: Peristaltic Pump	Initial	7.76	119.0	13.24	70.1	4.37	-14.7	Slightly cloudy
Monitor Reading (ppm): 0	5 gallons	6.94	113.0	12.71	55.2	3.97	-40.4	orange Tint
Well Casing Diameter & Material	10 gallons	6.85	110.0	12.65	16.3	3.45	-37.6	clear
Type: 2 inch PVC	15 gallons	6.66	106.0	12.57	9.5	3.25	-35.2	clear
Total Well Depth (TD): 80' BGS	20 gallons	6.57	105.0	12.60	3.3	3.16	-23.8	clear
Static Water Level (WL): 6.16'	25 gallons	6.53	104.0	12.71	2.2	2.00	-24.4	clear
One Casing Volume (gal/L): 3.02	-	-	-	-	-	-	-	-
Start Purge (hrs): 1538	1	6.55	103.0	12.68	2.7	2.04	-21.7	clear
End Purge (hrs): 1713	2	6.62	104.0	12.59	2.1	2.09	-26.8	clear
Total Purge Time (min): 95	3	6.66	104.0	12.63	1.5	2.12	-19.5	clear
Total Vol. Purged (gal/L): 35								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
VOCs	HCl	40ml vials (X2)	2

OBSERVATIONS / NOTES:

Developed well by pumping 25 gallons prior to Purge / Sampling in order to remove Drillers water added to Augers during Boring.
- Flow rate of pump roughly 0.36 gpm
- No odors or stains observed

Circle if Applicable:

MS/MSD	Duplicate ID No.:
N/A	N/A

Signature(s):

B.3

MONITORED NATURAL ATTENUATION GROUNDWATER INVESTIGATION

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: Calverton
Project No.: 3853

[] Domestic Well Data
[x] Monitoring Well Data
[] Other Well Type:
[] QA Sample Type:

Sample ID No.: FC-GW01S-00
Sample Location: FC-MW01S
Sampled By: JD/MW
C.O.C. No.:
Type of Sample:
[x] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 7/31/00	Color	pH	S.C.	Temp.	Turbidity	DO	TBD	TBD
Time: 1340	Visual	Standard	mS/cm	°C	NTU	mg/l	0.12D	
Method: Rediflow Pump	clear	5.90	0.123	18.3	1.28	0.94	-82.1	

PURGE DATA:

Date: 7/31/00	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	TBD	TBD
Method: Rediflow Pump								
Monitor Reading (ppm): 0.0								
Well Casing Diameter & Material								
Type: 4" PVC								
Total Well Depth (TD): 16.97								
Static Water Level (WL): 8.53								
One Casing Volume(gal/L): 5.51								
Start Purge (hrs): 1135								
End Purge (hrs): 1338								
Total Purge Time (min): 123								
Total Vol. Purged (gal/L): 18								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TCL VOA	HCL	40 ml VOA Vial	2
DRO	4C	Liter Amber Glass	2
GRO	HCl	40 ml VOA Vial	2
TOC	H2SO4	40 ml VOA Vial	2
COD	H2SO4	500 ml Poly	1
Dissolved Iron & Manganese	HNO3	500 ml Poly	1
CO2, Ethane, Ethene, Methane	4C	40 ml VOA Vial	3
Sulfide		Liter Poly	1
BOD	4C	Liter Poly	1
Chloride, Nitrate, Nitrite, Ortho, Sulfate	4C	Liter Poly	1

OBSERVATIONS / NOTES:

16.97
- 8.53
8.44
0.653 gal per foot
5.51 gal per vol

Pump intake located 13 feet BTOC

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): [illegible] for Matt Woolfor

TBD: To Be Determined

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: Calvicitos
PROJECT NUMBER: 3853

WELL ID.: FC-MW01S
DATE: 7/31/00

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
1135	8.53	500	6.01	0.136	19.52	0.86	17.67	-43.3	water had a yellow
1140	8.53	500	5.48	0.134	15.24	0.72	18.94	-48.4	tint
1150	8.53	500	5.93	0.133	8.79	0.63	18.77	-48.7	
1200	8.53	500	5.92	0.131	7.09	0.65	19.00	-49.4	
1210	8.53	500	5.93	0.125	5.13	0.69	18.82	-64.2	
1220	8.53	500	5.91	0.127	3.79	0.68	18.42	-66.9	
1230	8.53	500	5.91	0.128	3.82	0.73	18.58	-73.9	
1240	8.53	500	5.90	0.119	2.91	0.74	18.34	-72.6	
1250	8.53	500	5.91	0.127	2.34	0.81	19.37	-76.6	
1300	8.53	500	5.91	0.116	2.43	0.84	18.74	-79.8	
1310	8.53	500	5.92	0.119		0.88	19.20	-80.1	
1320	8.53	500	5.89	0.121	1.67	0.92	19.40	-79.1	
1330	8.53	500	5.89	0.124	1.25	0.94	18.59	-80.6	
1335	8.53	500	5.90	0.123	1.28	0.94	18.30	-82.1	

SIGNATURE(S): _____

SAMPLE LOG SHEET
NATURAL ATTENUATION PARAMETERS

etra Tech NUS, Inc.

Project Site Name: Galveston

Project No.: 3853

Sampled By: Jessica Donnelly

Sample ID No.: FL-GW015-00

Sample Location: FL-MW015

Duplicate: ☐

SAMPLING DATA:

Date: 7/31/00	Color	pH	S.C.	Temp.	Turbidity	DO	Sal.	ORP
Time: 1340	(Visual)	(SU)	(mS/cm)	(°C)	(NTU)	(Meter, mg/l)	(%)	mV
Method: Rediflow Pump	Clear	5.98	0.123	18.3	1.28	0.94	—	-82.1

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Divalent Iron

Equipment: HACH IR-18C

Analysis Time: 1400

Concentration: 2.0 mg/L

Notes:

Carbon Dioxide:

Equipment: Chemetrics Test Kit

Analysis Time: 1407

Range Used:	Range	Concentration ppm
☒	10 to 100 ppm	< 100
☒	100 to 1000 ppm	130
☐	250 to 2500 ppm	

Concentration: 130 ppm

Notes:

Dissolved Oxygen

Equipment: Chemetrics Test Kit

Analysis Time: 1415

Range Used:	Range	Concentration ppm
☒	0 to 1 ppm	0.2
☐	1 to 12 ppm	

Concentration: 0.2 ppm

Notes:

Hydrogen Sulfide

Equipment: HACH HS-C

Analysis Time: 1420

Concentration: 0.1 mg/L

Notes:

SAMPLE LOG SHEET
NATURAL ATTENUATION PARAMETERS

Tetra Tech NUS, Inc.

Project Site Name: Calverton

Project No.: 2853

Sampled By: Jessica Damelli

Sample ID No.: FC-GW01S-00

Sample Location: FC-MW01S

Duplicate: ☒

SAMPLING DATA:

Date: 7/31/00	Color	pH	S.C.	Temp.	Turbidity	DO	Sal.	ORP
Time: 1340	(Visual)	(SU)	(mS/cm)	(°C)	(NTU)	(Meter, mg/l)	(%)	mV
Method: Red. flow pump	Clear	5.48	0.123	18.3	1.28	0.44	—	-82.1

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Divalent Iron

Equipment: HACH IR-18C

Analysis Time: 1403

Concentration: 1.9 mg/L

Notes:

Carbon Dioxide:

Equipment: Chemetrics Test Kit

Analysis Time: 1410

Range Used:	Range	Concentration ppm
☒	10 to 100 ppm	< 100
☒	100 to 1000 ppm	130
☐	250 to 2500 ppm	

Concentration: 130 ppm

Notes:

Dissolved Oxygen

Equipment: Chemetrics Test Kit

Analysis Time: 1417

Range Used:	Range	Concentration ppm
☒	0 to 1 ppm	
☐	1 to 12 ppm	

Concentration: 0.3 ppm

Notes:

Hydrogen Sulfide

Equipment: HACH HS-C

Analysis Time: 1425

Concentration: 0.1 mg/L

Notes:

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: Calverton
Project No.: 3853

[] Domestic Well Data
[x] Monitoring Well Data
[] Other Well Type:
[] QA Sample Type:

Sample ID No.: FG-GW025-116-00
Sample Location: FG-MW025
Sampled By: Matt Woolford
C.O.C. No.:
Type of Sample:
[x] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color	pH	S.C.	Temp.	Turbidity	DO	TBD	TBD
Date: 8/1/00	Visual	Standard	mS/cm	°C	NTU	mg/l	ORP	
Time: 1140								
Method: Rediflow Pump	Brown	5.82	0.129	21.2	3.20	0.34	-158	

PURGE DATA:

Date: 8/1/00	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	TBD	TBD
Method: Rediflow Pump								
Monitor Reading (ppm):								
Well Casing Diameter & Material								
Type: 4" PVC								
Total Well Depth (TD): 14.71								
Static Water Level (WL): 8.43								
One Casing Volume(gal/L): 4.10								
Start Purge (hrs): 0935								
End Purge (hrs): 1135								
Total Purge Time (min): 120								
Total Vol. Purged (gal/L): 15								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TCL VOA	HCL	40 ml VOA Vial	2
TOC	H2S04	40 ml VOA Vial	2
COD	H2SO4	500 ml Poly	1
Dissolved Iron & Manganese	HNO3	500 ml Poly	1
CO2, Ethane, Ethene, Methane	4C	40 ml VOA Vial	3
Sulfide		Liter Poly	1
BOD	4C	Liter Poly	1
Chloride, Nitrate, Nitrite, Ortho, Sulfate	4C	Liter Poly	1

OBSERVATIONS / NOTES:

14.71
- 8.43
6.28
x0.653 gal per foot
4.10 gal vol

pump intake located 11.60 feet BTOC

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): for Jessica Donelli

TBD: To Be Determined

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: CALVERTON
PROJECT NUMBER: N3853-0300

WELL ID.: ~~B~~C-GW02 $
DATE: 8/1/00

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	Sal. (%)	ORP mV	Comments
0935	8.48	400	5.73	0.173	13.1	1.02	20.4	0.0	-	HORIBA TURB
0940	8.48	450	5.77	0.164	13.7	0.65	20.9	0.0	-	
0945	8.48	500	5.76	0.161	13.9	0.53	21.3	0.0	-	
0950	8.48	500	5.77	0.158	13.2	0.50	21.3	0.0	-141	
0955	8.48	500	5.78	0.153	13.5	0.46	21.2	0.0	-146	
1000	8.48	500	5.79	0.155	12.6	0.44	21.1	0.0	-150	
1005	8.48	500	5.79	0.148	3.73	0.42	21.1	0.0	-148	LAMOTTE TURB
1010	8.48	500	5.79	0.145	3.70	0.40	21.1	0.0	-150	LAMOTTE TURB
1015	8.48	500	5.79	0.142	-	0.40	21.1	0.0	-148	
1020	8.48	500	5.80	0.140	-	0.40	21.1	0.0	-151	
1025	8.48	500	5.80	0.140	3.50	0.39	21.2	0.0	-152	LAMOTTE
1030	8.48	500	5.80	0.139	3.45	0.38	21.2	0.0	-153	
1035	8.48	500	5.80	0.139	-	0.37	21.2	0.0	-158	
1040	8.48	500	5.81	0.138	-	0.36	21.2	0.0	-158	
1045	8.48	500	5.80	0.136	3.50	0.36	21.2	0.0	-160	
1050	8.48	500	5.81	0.135	3.40	0.36	21.2	0.0	-160	
1055	8.48	500	5.81	0.133	-	0.40	21.0	0.0	-167	
1100	8.48	500	5.81	0.133	-	0.41	21.1	0.0	-168	
1105	8.48	500	5.81	0.131	-	0.40	21.0	0.0	-169	
1110	-	-	-	-	-	-	-	-		GENERATOR RAN OUT OF GAS
1115	8.48	500	5.82	0.132	-	0.42	21.4	0.0	-165	
1120	8.48	500	5.81	0.131	3.50	0.44	21.1	0.0	-160	LAMOTTE TURB
1125	8.48	500	5.82	0.131	3.43	0.42	21.3	0.0	-155	
1130	8.48	500	5.82	0.130	3.35	0.40	21.2	0.0	-151	
1135	8.48	500	5.82	0.129	3.20	0.39	21.2	0.0	-158	
	SAMPLED @	1140								
1255	8.48	500	5.81	0.134	3.60	0.86	22.0	0.0	-113	PERISTALTIC READING
	SAMPLED @	1300								

SIGNATURE(S): _____

SAMPLE LOG SHEET
NATURAL ATTENUATION PARAMETERS

Tetra Tech NUS, Inc.

Project Site Name: Galveston

Project No.: 3853

Sampled By: Jessica Danielli

Sample ID No.: FL-GW02S-116-00

Sample Location: FL-MW02S

Duplicate: ☐

SAMPLING DATA:

	Color (Visual)	pH (SU)	S.C. (mS/cm)	Temp. (°C)	Turbidity (NTU)	DO (Meter, mg/l)	Sal. (%)	ORP mV
Date: 8/1/00								
Time: 1140								
Method: Rediflow Pump	Brown	5.82	0.124	21.2	3.20	0.34	—	-158

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Divalent Iron

Equipment: HACH IR-18C

Analysis Time: 1155

Concentration: 0.6 mg/L

Notes:

Carbon Dioxide:

Equipment: Chemetrics Test Kit

Analysis Time: 1200

Range Used:	Range	Concentration ppm
☒	10 to 100 ppm	< 100
☒	100 to 1000 ppm	140
☐	250 to 2500 ppm	

Concentration: 140 ppm

Notes:

Dissolved Oxygen

Equipment: Chemetrics Test Kit

Analysis Time: 1205

Range Used:	Range	Concentration ppm
☒	0 to 1 ppm	0.6
☐	1 to 12 ppm	

Concentration: 0.6 ppm

Notes:

Hydrogen Sulfide

Equipment: HACH HS-C

Analysis Time: 1212

Concentration: 0.5 mg/L

Notes:

SAMPLE LOG SHEET
NATURAL ATTENUATION PARAMETERS

Tetra Tech NUS, Inc.

Project Site Name: Calverton

Project No.: 3853

Sampled By: Jessica Daniell

Sample ID No.: FC-GW025-116-00

Sample Location: FC-MW025

Duplicate: ☒

SAMPLING DATA:

Date: 8/11/00	Color (Visual)	pH (SU)	S.C. (mS/cm)	Temp. (°C)	Turbidity (NTU)	DO (Meter, mg/l)	Sal. (%)	ORP mV
Time: 1140								
Method: Bladder Flow Pump	Brown	5.82	0.129	21.2	3.20	0.34	–	-158

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Divalent Iron

Equipment: HACH IR-18C

Analysis Time: 1158

Concentration: 2.0 mg/L

Notes:

Carbon Dioxide:

Equipment: Chemetrics Test Kit

Analysis Time: 1202

Range Used:	Range	Concentration ppm
☒	10 to 100 ppm	<100
☒	100 to 1000 ppm	140
☐	250 to 2500 ppm	

Concentration: 140 ppm

Notes:

Dissolved Oxygen

Equipment: Chemetrics Test Kit

Analysis Time: 1207

Range Used:	Range	Concentration ppm
☒	0 to 1 ppm	
☐	1 to 12 ppm	

Concentration: 0.5 ppm

Notes:

Hydrogen Sulfide

Equipment: HACH HS-C

Analysis Time: 1216

Concentration: 0.5 mg/L

Notes:

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: Calverton
Project No.: 3853

[] Domestic Well Data
[x] Monitoring Well Data
[] Other Well Type:
[] QA Sample Type:

Sample ID No.: FC-GW03S-116-00
Sample Location: FC-MW03S
Sampled By: Jessica Danielli
C.O.C. No.:
Type of Sample:
[x] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 8/1/00	Color	pH	S.C.	Temp.	Turbidity	DO	TBD	TBD
Time: 1148	Visual	Standard	mS/cm	°C	NTU	mg/l	012P	
Method: Rediflow Pump	Clear	6.60	65.00	23.58	1.4	3.51	65.8	

PURGE DATA:

Date: 8/1/00	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	TBD	TBD
Method: Rediflow Pump								
Monitor Reading (ppm): 0.0								
Well Casing Diameter & Material								
Type: 4" PVC								
Total Well Depth (TD): 15.34								
Static Water Level (WL): 8.00								
One Casing Volume(gal/L): 4.79								
Start Purge (hrs): 0940								
End Purge (hrs): 1147								
Total Purge Time (min): 127								
Total Vol. Purged (gal/L): 16								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TCL VOA	HCL	40 ml VOA Vial	2
TOC	H2S04	40 ml VOA Vial	2
COD	H2SO4	500 ml Poly	1
Dissolved Iron & Manganese	HNO3	500 ml Poly	1
CO2, Ethane, Ethene, Methane	4C	40 ml VOA Vial	3
Sulfide		Liter Poly	1
BOD	4C	Liter Poly	1
Chloride, Nitrate, Nitrite, Ortho, Sulfate	4C	Liter Poly	1

OBSERVATIONS / NOTES:

15.34
- 8.00
7.34
x .653 gal per foot
4.79 gal per vol

pump intake set at 11.70 feet BTOC

Circle if Applicable:

MS/MSD	Duplicate ID No.: GW FD-080100

Signature(s): for Jessica Danielli

TBD: To Be Determined

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: Calverton
PROJECT NUMBER: CTO 3853

WELL ID.: FC-MW03S
DATE: 8/1/60

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
0950	8.05	550	6.64	59.00	3.2	1.48	22.18	48.6	Slight fuel odor
0955	8.02	400	6.60	59.00	2.7	1.62	22.40	48.3	
1000	8.02	400	6.57	59.00	2.4	1.93	22.55	48.5	
1005	8.02	550	6.57	59.00	2.4	2.00	22.66	50.3	
1010	8.02	550	6.58	59.00	2.1	2.26	22.77	53.2	
1020	8.02	550	6.59	59.00	2.0	2.47	22.79	55.3	
1030	8.02	500	6.61	59.00	1.9	2.85	22.97	56.8	
1035	8.02	500	6.60	60.00	1.7	3.01	22.96	58.5	
1040	8.02	500	6.60	60.00	1.7	3.09	23.06	58.2	
1045	8.02	500	6.61	60.00	1.7	3.16	22.97	58.4	
1050	8.02	500	6.60	61.00	1.6	3.28	23.16	60.5	
1055	8.02	500	6.62	61.00	1.6	3.40	23.29	60.0	
1100	8.02	500	6.62	62.00	1.6	3.53	23.33	61.6	
1105	8.02	500	6.61	62.00	1.6	3.52	23.41	62.3	
1110	8.02	500	6.61	62.00	1.5	3.51	23.44	62.7	
1115	8.02	500	6.73	63.00	1.7	3.65	22.93	69.0	
1120	8.02	500	6.72	63.00	1.7	3.65	22.92	68.8	
1130	8.02	500	6.73	63.00	1.7	3.65	22.92	68.7	
1135	8.02	500	6.63	63.00	1.6	3.57	23.19	68.9	
1140	8.02	500	6.60	64.00	1.5	3.54	23.44	65.9	
1145	8.02	500	6.60	65.00	1.4	3.51	23.58	65.8	
1147	Stop Purging								
1148	Start Sampling								
1310	8.02	300	6.88	63.00	4.8	4.12	22.30	8.3	Peristaltic Reading.
	Sampled at 1315								

SIGNATURE(S): [illegible]

SAMPLE LOG SHEET
NATURAL ATTENUATION PARAMETERS

Tetra Tech NUS, Inc.

Project Site Name: Kalvicton

Project No.: 3853

Sampled By: Jessica Daniell

Sample ID No.: FC-GW035-116-06

Sample Location: FC-MW035

Duplicate: ☐

SAMPLING DATA:

Date: 8/1/00	Color	pH	S.C.	Temp.	Turbidity	DO	Sal.	ORP
Time: 1148	(Visual)	(SU)	(mS/cm)	(°C)	(NTU)	(Meter. mg/l)	(%)	mV
Method: Rediflow pump	Clear	6.60	65	23.58	1.4	3.51		65.8

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Divalent Iron

Equipment: HACH IR-18C

Analysis Time: 1220

Concentration: 0.1 mg/L

Notes:

Carbon Dioxide:

Equipment: Chemetrics Test Kit

Analysis Time: 1227

Range Used:	Range	Concentration ppm
☒	10 to 100 ppm	> 10
☐	100 to 1000 ppm	
☐	250 to 2500 ppm	

Concentration: > 10 ppm

Notes:

Dissolved Oxygen

Equipment: Chemetrics Test Kit

Analysis Time: 1231

Range Used:	Range	Concentration ppm
☒	0 to 1 ppm	1.0
☒	1 to 12 ppm	< 1.0

Concentration: < 1.0 ppm

Notes:

Hydrogen Sulfide

Equipment: HACH HS-C

Analysis Time: 1237

Concentration: 0.0 mg/L

Notes:

Tetra Tech NUS, Inc.

SAMPLE LOG SHEET
NATURAL ATTENUATION PARAMETERS

Project Site Name: Culverton
Project No.: 3853
Sampled By: Jessica Daniell

Sample ID No.: EC-GW03S-116-00
Sample Location: EC-MW03S
Duplicate: ☒

SAMPLING DATA:

Date: 8/1/00	Color (Visual)	pH (SU)	S.C. (mS/cm)	Temp. (°C)	Turbidity (NTU)	DO (Meter, mg/l)	Sal. (%)	ORP mV
Time: 1148								
Method: Redi-flow pump	Clear	6.60	65.00	23.58	1.4	3.51	–	65.8

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Divalent Iron

Equipment: HACH IR-18C

Analysis Time: 1225

Concentration: 0.1 mg/L

Notes:

Carbon Dioxide:

Equipment: Chemetrics Test Kit

Analysis Time: 1229

Range Used:	Range	Concentration ppm
☒	10 to 100 ppm	> 10
☐	100 to 1000 ppm	
☐	250 to 2500 ppm	

Concentration: > 10 ppm

Notes:

Dissolved Oxygen

Equipment: Chemetrics Test Kit

Analysis Time: 1233

Range Used:	Range	Concentration ppm
☒	0 to 1 ppm	1.0
☒	1 to 12 ppm	< 1.0

Concentration: < 1.0 ppm

Notes:

Hydrogen Sulfide

Equipment: HACH HS-C

Analysis Time: 1240

Concentration: 0.0 mg/L

Notes:

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: Calverton
Project No.: 3853

[] Domestic Well Data
[x] Monitoring Well Data
[] Other Well Type:
[] QA Sample Type:

Sample ID No.: SA-P2101-I-47-00
Sample Location: SA-P2101-I
Sampled By: JD/MW
C.O.C. No.:
Type of Sample:
[x] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color	pH	S.C.	Temp.	Turbidity	DO	TBD	TBD
Date: 8/2/00								
Time: 0825	Visual	Standard	mS/cm	°C	NTU	mg/l	ORP	
Method: Peristaltic Pump	Clear	6.57	75.00	12.69	0.66	2.34	35.9	

PURGE DATA:

Date: 8/2/00	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	TBD	TBD
Method: Peristaltic Pump								
Monitor Reading (ppm): 0.0								
Well Casing Diameter & Material								
Type: 1" PVC								
Total Well Depth (TD): 49.5								
Static Water Level (WL): 14.97								
One Casing Volume(gal/L): 2.27								
Start Purge (hrs): 0715								
End Purge (hrs): 0822								
Total Purge Time (min): 67								
Total Vol. Purged (gal/L): 7.0								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TCL VOA	HCL	40 ml VOA Vial	2
TOC	H2S04	40 ml VOA Vial	2
COD	H2SO4	500 ml Poly	1
Dissolved Iron & Manganese	HNO3	500 ml Poly	1
CO2, Ethane, Ethene, Methane	4C	40 ml VOA Vial	3
Sulfide		Liter Poly	1
BOD	4C	Liter Poly	1
Chloride, Nitrate, Nitrite, Ortho, Sulfate	4C	Liter Poly	1

OBSERVATIONS / NOTES:

49.50
-14.97
34.53
x .066 gal per foot
2.27 gal per vol

Tubing installed to 47 feet BTOC

Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	—

Signature(s): For Matt Woolford

TBD: To Be Determined

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: Calverton
PROJECT NUMBER: N3853
WELL ID.: SA-P2101-I
DATE: 8/2/00

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
0715	14.99	200	6.57	77.00	4.49	5.39	14.96	59.2	
0725	15.00	400	5.58	76.00	4.08	1.68	12.92	44.0	
0735	15.00	400	5.63	76.00	2.05	1.80	12.68	39.8	
0740	15.00	400	5.64	75.00	1.92	1.87	12.61	38.7	
0745	15.00	400	5.63	75.00	1.75	1.91	12.57	37.3	
0750	15.00	400	5.64	75.00	0.96	2.00	12.55	37.1	
0755	15.00	400	5.64	75.00	0.97	2.06	12.57	36.9	
0800	15.00	400	5.65	75.00	1.04	2.12	12.60	37.0	
0805	15.00	400	5.64	75.00	0.84	2.17	12.62	36.6	
0810	15.00	400	5.63	75.00	0.79	2.23	12.68	35.8	
0815	15.00	400	5.63	75.00	0.64	2.27	12.67	35.9	
0820	15.00	400	5.63	75.00	0.66	2.34	12.69	35.9	
0822	Stop Purging								
0825	Start Sampling								

SIGNATURE(S): [illegible]

PAGE 2 OF 2

SAMPLE LOG SHEET
NATURAL ATTENUATION PARAMETERS

Tetra Tech NUS, Inc.

Project Site Name: Calverton

Project No.: 3853

Sampled By: Jessica Danielli

Sample ID No.: SA-P2101-I-47-00

Sample Location: SA-P2101-I

Duplicate: ☐

SAMPLING DATA:

	Color (Visual)	pH (SU)	S.C. (mS/cm)	Temp. (°C)	Turbidity (NTU)	DO (Meter, mg/l)	Sal. (%)	ORP mV
Date: 8/2/00								
Time: 0825								
Method: Rediflow Pump	Clear	5.63	75.00	12.64	0.66	2.34	—	35.9

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Divalent Iron

Equipment: HACH IR-18C

Analysis Time: 0840

Concentration: 0.8 mg/L

Notes:

Carbon Dioxide:

Equipment: Chemetrics Test Kit

Analysis Time: 0853

Range Used:	Range	Concentration ppm
☒	10 to 100 ppm	< 100
☒	100 to 1000 ppm	110
☐	250 to 2500 ppm	

Concentration: 110 ppm

Notes:

Dissolved Oxygen

Equipment: Chemetrics Test Kit

Analysis Time: 0857

Range Used:	Range	Concentration ppm
☒	0 to 1 ppm	0.2
☐	1 to 12 ppm	

Concentration: 0.2 ppm

Notes:

Hydrogen Sulfide

Equipment: HACH HS-C

Analysis Time: 0900

Concentration: 0.0 mg/L

Notes:

SAMPLE LOG SHEET
NATURAL ATTENUATION PARAMETERS

Tetra Tech NUS, Inc.

Project Site Name: Culverton

Project No.: 3853

Sampled By: Jessica Danielli

Sample ID No.: SA-P2101-I-47-00

Sample Location: SA-P2101-I

Duplicate: ☒

SAMPLING DATA:

Date: 8/2/00	Color	pH	S.C.	Temp.	Turbidity	DO	Sal.	ORP
Time: 0825	(Visual)	(SU)	(mS/cm)	(°C)	(NTU)	(Meter, mg/l)	(%)	mV
Method: Peristaltic Straw	clear	5.63	75.00	12.69	0.66	2.34	—	35.9

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Divalent Iron

Equipment: HACH IR-18C

Analysis Time: 0845

Concentration: 0.8 mg/L

Notes:

Carbon Dioxide:

Equipment: Chemetrics Test Kit

Analysis Time: 0854

Range Used:	Range	Concentration ppm
☒	10 to 100 ppm	< 100
☒	100 to 1000 ppm	110
☐	250 to 2500 ppm	

Concentration: 110 ppm

Notes:

Dissolved Oxygen

Equipment: Chemetrics Test Kit

Analysis Time: 0858

Range Used:	Range	Concentration ppm
☒	0 to 1 ppm	
☐	1 to 12 ppm	

Concentration: 0.2 ppm

Notes:

Hydrogen Sulfide

Equipment: HACH HS-C

Analysis Time: 0905

Concentration: 0.0 mg/L

Notes:

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: Calverton
Project No.: 3853

[] Domestic Well Data
[x] Monitoring Well Data
[] Other Well Type:
[] QA Sample Type:

Sample ID No.: SA-P2104S-10S-00
Sample Location: SA-P2104-S
Sampled By: SD/MW
C.O.C. No.:
Type of Sample:
[x] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 8/2/00	Color	pH	S.C.	Temp.	Turbidity	DO	TBD	TBD
Time: 1045	Visual	Standard	mS/cm	°C	NTU	mg/l	0.12P	
Method: Peristaltic Straw	Clear	6.05	204.00	16.26	2.50	4.37	-82.5	

PURGE DATA:

Date: 8/2/00	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	TBD	TBD
Method: Peristaltic Pump								
Monitor Reading (ppm): 0.0								
Well Casing Diameter & Material								
Type: 1" PVC								
Total Well Depth (TD): 12.50								
Static Water Level (WL): 5.50								
One Casing Volume(gal/L): 0.4								
Start Purge (hrs): 0945								
End Purge (hrs): 10:42								
Total Purge Time (min): 57								
Total Vol. Purged (gal/L): 10								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TCL VOA	HCL	40 ml VOA Vial	2
TOC	H2S04	40 ml VOA Vial	2
COD	H2SO4	500 ml Poly	1
Dissolved Iron & Manganese	HNO3	500 ml Poly	1
CO2, Ethane, Ethene, Methane	4C	40 ml VOA Vial	3
Sulfide		Liter Poly	1
BOD	4C	Liter Poly	1
Chloride, Nitrate, Nitrite, Ortho, Sulfate	4C	Liter Poly	1

OBSERVATIONS / NOTES:

12.50
- 5.50
7.00
× 0.066 gal per foot
0.4 gal per well

Tubing installed to 10.5 feet BTOC

Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	—

Signature(s): for Matt Woodford

TBD: To Be Determined

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: Calverton
PROJECT NUMBER: 103853
WELL ID.: SA-P2104-S-
DATE: 8/2/00

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
0945	5.70	250 ml/min	6.11	384.00	~~[illegible]~~ 168.5	4.66	17.69	-85.8	GW - Slightly Brown in color.
0950	5.70	250	6.08	372.00	40.1	4.62	16.46	-96.3	
0955	5.70	300	6.09	330.00	12.01	4.71	16.27	-94.7	
1005	5.70	300	6.09	304.00	7.67	4.68	16.24	-93.4	
1010	5.70	300	6.11	280.00	6.18	4.61	16.15	-91.1	
1015	5.70	300	6.09	261.00	4.63	4.57	16.10	-89.1	
1020	5.70	300	6.08	249.00	4.05	4.52	16.22	-88.3	
1025	5.70	300	6.09	231.00	4.00	4.48	16.21	-87.8	
1030	5.70	300	6.07	219.00	3.00	4.43	16.26	-85.3	
1035	5.70	300	6.08	211.00	2.34	4.40	16.27	-83.6	
1040	5.70	300	6.05	204.00	2.80	4.37	16.26	-82.5	
1042	Stop Purging								
	* Purged over 10 ~~ge~~ well volumes - conductivity not stabilizing - possible malfunction of probe - well located adajacent to stream - also may affect conductivity *								
1045	Begin Sampling								

SIGNATURE(S): [illegible]

SAMPLE LOG SHEET
NATURAL ATTENUATION PARAMETERS

Tetra Tech NUS, Inc.

Project Site Name: Calverton

Project No.: 3853

Sampled By: Jessica Daniels

Sample ID No.: SA-P21045-105-00

Sample Location: SA-P21045

Duplicate: ☐

SAMPLING DATA:

	Color (Visual)	pH (SU)	S.C. (mS/cm)	Temp. (°C)	Turbidity (NTU)	DO (Meter, mg/l)	Sal. (%)	ORP mV
Date: 8/2/00								
Time: 1045								
Method: Peristaltic Straw	Clear	6.05	204.00	16.26	2.80	4.37	—	-82.5

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Divalent Iron

Equipment: HACH IR-18C

Analysis Time: 1105

Concentration: 2.1 mg/L

Notes:

Carbon Dioxide:

Equipment: Chemetrics Test Kit

Analysis Time: 1108

Range Used:	Range	Concentration ppm
☒	10 to 100 ppm	< 100
☒	100 to 1000 ppm	160
☐	250 to 2500 ppm	

Concentration: 50 ppm

Notes:

Dissolved Oxygen

Equipment: Chemetrics Test Kit

Analysis Time: 1110

Range Used:	Range	Concentration ppm
☒	0 to 1 ppm	
☐	1 to 12 ppm	

Concentration: 0.1 ppm

Notes:

Hydrogen Sulfide

Equipment: HACH HS-C

Analysis Time: 1103

Concentration: 0.0 mg/L

Notes:

Tetra Tech NUS, Inc.

SAMPLE LOG SHEET
NATURAL ATTENUATION PARAMETERS

Project Site Name: Calverton

Project No.: 3853

Sampled By:

Sample ID No.: SA-P21045-105-00

Sample Location: SA-P21045

Duplicate: ☒

SAMPLING DATA:

	Color (Visual)	pH (SU)	S.C. (mS/cm)	Temp. (°C)	Turbidity (NTU)	DO (Meter, mg/l)	Sal. (%)	ORP mV
Date: 8/2/00								
Time: 1045								
Method: Peristaltic Straw	clear	6.05	204.00	16.26	2.80	4.37	—	-82.5

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Divalent Iron

Equipment: HACH IR-18C

Analysis Time: 1107

Concentration: 2.1 mg/L

Notes:

Carbon Dioxide:

Equipment: Chemetrics Test Kit

Analysis Time: 1109

Range Used:	Range	Concentration ppm
☒	10 to 100 ppm	< 100
☒	100 to 1000 ppm	160
☐	250 to 2500 ppm	

Concentration: 160 ppm

Notes:

Dissolved Oxygen

Equipment: Chemetrics Test Kit

Analysis Time: 1111

Range Used:	Range	Concentration ppm
☒	0 to 1 ppm	
☐	1 to 12 ppm	

Concentration: 0.1 ppm

Notes:

Hydrogen Sulfide

Equipment: HACH HS-C

Analysis Time: 1115

Concentration: 0.0 mg/L

Notes:

APPENDIX C
CHAIN OF CUSTODY FORMS

Tetra Tech NUS

CHAIN OF CUSTODY RECORD

PROJECT NO.: ~~5253~~ 2852

SITE NAME: NWIRP Calverton

SAMPLERS (SIGNATURE): [illegible]

STATION NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	40 ml vial VOC						REMARKS
	7/5/00	1035		X	SA-PZ101S-15-01	2	2						
		1535		X	SA-PZ101I-47-01	2	2						
		1140		X	SA-PZ101-D-90-01	6	6						Do MS/MSD
		1500		X	SA-PZ101-D-95-01	2	2						
		1115		X	SA-PZ102S-10-01	2	2						
		[illegible]		X	SA-PZ102-D-90-01	2	2						
	7/6/00	1415		X	SA-PZ102I-37-01	2	2						
		1105		X	SA-PZ103S-29-01	2	2						
		1325		X	SA-PZ103-I-110-01	2	2						
		1150		X	SA-PZ103-D-50-01	2	2						
		1655		X	SA-PZ104S-9-01	2	2						
		1820		X	SA-PZ104I-35-01	2	2						
		1713		X	SA-PZ104-D-90-01	2	2						
	7/7	1013		X	TB-070500	2	2						

RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):
[illegible]	7/7/00 1000				
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED FOR LABORATORY BY (SIGNATURE):	DATE / TIME:	REMARKS: Delivered by Courier to Lab	

CHAIN OF CUSTODY RECORD

PROJECT NO.: 3853-0300

SITE NAME: NWIRP Calverton

SAMPLERS (SIGNATURE): [illegible]

STATION NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	40 ml vial VOCs						REMARKS
	7/12/00	1100		✓	SA-TW-112-22-01	2	2						
	7/12/00	1150		✓	SA-TW-112-35-01	2	2						
	7/12/00	1250		✓	SA-TW-112-55-01	2	2						
	7/10/00	1345		✓	SA-TW-112-75-01	2	2						
	7/12/00	1440		✓	SA-TW-112-95-01	2	2						
	6/21/00	1000		✓	(Trip Blank) TB-071000	2	2						
	7/10/00	1752		✓	ECM-MW01-0007	2	2						
	7/11/00	0940		✓	SA-SW-RG01	2	2						
	7/11/00	0947		✓	SA-SW-RG02	2	2						
					Temperature Blank	1							

RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):
[illegible]	7/11/00 1045				
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED FOR LABORATORY (SIGNATURE):	DATE / TIME:	REMARKS:	

CHAIN OF CUSTODY RECORD

PROJECT NO.: 3853-0300

SITE NAME: NWIRP Calverton

SAMPLERS (SIGNATURE):

STATION NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	40 ml Vials VOCs						REMARKS
	7/11/00	1025		X	SA-TW-113-20-01	2	2						
	7/11/00	1115		X	SA-TW-113-35-01	2	2						
	7/11/00	1238		X	SA-TW-113-60-01	2	2						
	7/11/00	1345		X	SA-TW-113-75-01	2	2						
	7/11/00	1435		X	SA-TW-113-95-01	2	2						
	7/10/00	0911		X	(Trip Blank) TB-071100	2	2						
	7/11/00	1503		X	ECM-MW02-0007	2	2						
	7/11/00	1758		X	FD-GW105-00	2	2						
	7/11/00	1942		X	FD-GW34D-00	2	2						
					Temperature Blank	1							

RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):
	7/12/00 0800				
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED FOR LABORATORY BY (SIGNATURE):	DATE / TIME:	REMARKS:	

CHAIN OF CUSTODY RECORD

PROJECT NO.: 3853-0300

SITE NAME: NWIRP Calverton

SAMPLERS (SIGNATURE): [signature]

STATION NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	40 ml VOAs						REMARKS
	7/12/00	0945		X	SA-TW-111-10-01	2	2						
	7/12/00	1030		X	SA-TW-111-25-01	2	2						
	7/12/00	1115		X	SA-TW-111-45-01	2	2						
	7/12/00	1125		X	SA-TW-111-50-01	2	2						
	7/12/00	1230		X	SA-TW-111-65-01	2	2						
	7/12/00	1340		X	SA-TW-111-85-01	2	2						
	7/13/00	0955		X	OTH-MW01-02-18-01	2	2						
	7/13/00	1045		X	OTH-MW01-02-34-01	2	2						
	7/13/00	1345		X	OTH-MW01-03-23-01	2	2						
	7/13/00	1440		X	OTH-MW01-03-33-01	2	2						
	~~7/14/00~~ 7/13/00	1600		X	Trip Blank (TB-071300)	2	2						
	7/12/00	1107		X	OTH-MW02	2	2						
	7/12/00	1347		X	EC-GW02S15-00	2	2						
	7/12/00	1635		X	EC-GW03S15-00	2	2						

RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):
[signature]	7/14/00 1030				
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED FOR LABORATORY (SIGNATURE):	DATE / TIME:	REMARKS: Delivered by Laboratory courier	

CHAIN OF CUSTODY RECORD

PROJECT NO.: 3853

SITE NAME: MWIRP Calverton

SAMPLERS (SIGNATURE): [illegible]

STATION NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	40 ml Vials VOCs						REMARKS
	7/19/00	1050		X	ET-TW06-60-01	2	2						
	7/19/00	1235		X	ET-TW06-80-01	2	2						
	7/19/00	1345		X	ET-TW06-100-01	2	2						
	7/19/00	0906		X	(Trip Blank) TB-071900	2	2						
	7/20/00	1320		X	OTH-MW03	2	2						
	7/20/00	1110		X	FC-TW21-60-01	2	2						
	7/20/00	1245		X	FC-TW21-80-01	2	2						
	7/20/00	1410		X	FC-TW21-100-01	2	2						
	7/21/00	[illegible]		[illegible]	[illegible]	2	2						
					Temperature Blank	1							

RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):
[illegible]	7/21/00 1030				
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED FOR LABORATORY BY (SIGNATURE):	DATE / TIME:	REMARKS:	

CHAIN OF CUSTODY RECORD

PROJECT NO.: 3853

SITE NAME: NWIRP Calverton

SAMPLERS (SIGNATURE):

STATION NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	40ml Vials						REMARKS
	7/31/00	1140		X	FC-TW09-160-01	2	2						
	7/31/00	1442		X	FC-TW09-180-01	2	2						
	7/31/00	1630		X	FC-TW09-200-01	2	2						
	8/1/00	1430		X	OTH-MW02-01-18-01	2	2						
	8/1/00	1525		X	OTH-MW02-01-33-01	2	2						
					Temperature Blank	1							

RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):
	8-2-00 0730				
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):
RE ISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED FOR LABORATORY BY (SIGNATURE):	DATE / TIME:	REMARKS: Shipped by Laboratory C	

CHAIN OF CUSTODY RECORD

PROJECT NO.: CTC- -853

SITE NAME: Calverton

SAMPLERS (SIGNATURE): J. Daniels

STATION NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	REMARKS
1	1/31/00	1100		✓	TB-07 5100	2	2									
2	7/31/00	1300		✓	FC-EWCIS-CC	14	2	2	2	1	1		2	1	1	
					Temp Blank	1										

RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):
Jessica Daniels	7/31/00 1500				
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED FOR LABORATORY BY (SIGNATURE):	DATE / TIME:	REMARKS: FEDEX AIRBILL #810817874357	

CHAIN OF CUSTODY RECORD

PROJECT NO.: CTC-3853

SITE NAME: Calverton

SAMPLERS (SIGNATURE): Danielle

STATION NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	1 Liter PCM Amber Glass						REMARKS
1	7/31	1340		✓	FC-GWC15-00	1	1						
					Temp Blank	1							

RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):
Jessica Daniels	7/31/00 1510				
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED FOR LABORATORY BY (SIGNATURE):	DATE / TIME:	REMARKS: FEDEX AIRBILL 810817074368	

CHAIN OF CUSTODY RECORD

PROJECT NO.: CTC-3953

SITE NAME: Carleton

SAMPLERS (SIGNATURE): Jessica Ranucci

STATION NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	[illegible]	TCL VOCs/PCBs	[illegible]	[illegible]	[illegible]	[illegible]	REMARKS
1	[illegible]	[illegible]		✓	GW7B-[illegible]	2	2						
2	[illegible]	[illegible]		✓	GW7B-[illegible]	2	2						
3	[illegible]	[illegible]		✓	GW7B-[illegible]-DI	2	2						
4	[illegible]	[illegible]		✓	GW7B-[illegible]-PCI	2	2						
5	[illegible]	[illegible]		✓	FC-GW[illegible]	11	3	1	1	3	2	1	1
6	[illegible]	[illegible]		✓	FC-GW[illegible]	15	6	1	1	3	2	1	1 RUN MS/MSD ON VOC DUPLICATE OF FC-GW03
7	[illegible]	[illegible]		✓	GW7D-[illegible]	11	2	1	1	3	2	1	1
8	[illegible]	[illegible]		✓	FC-GW[illegible]	2	2						
9	[illegible]	[illegible]		✓	FC-GW[illegible]	2	2						
					Temperature Blank	2							

RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):
Jessica Ranucci	[illegible] 1550				
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED FOR LABORATORY BY (SIGNATURE):	DATE / TIME:	REMARKS: Sent to Lab via Fedex Airbill # 816 [illegible] 4579	

CHAIN OF CUSTODY RECORD

PROJECT NO.: CTO-3853

SITE NAME: Calverton

SAMPLERS (SIGNATURE): Jessica Daniell

STATION NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	Nitrate	Chloride	Sulfate	TC-RCRA				REMARKS
1	6/01	1140		✓	FC-GW03S-11-6-00	1	1							
2	6/01	1148		✓	FC-GW03S-11-6-00	1	1							
3	6/01	1200		✓	GWFD-C8C100	1	1							DUPLICATE OF FC-GW03S
					Temperature Blank	1								

RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):
Jessica Daniell	6/1/00 1505				
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED FOR LABORATORY BY (SIGNATURE):	DATE / TIME:	REMARKS: Sent to Lab via Fedex Air Bill # 810817874360	

CHAIN OF CUSTODY RECORD

PROJECT NO.: N3853

SITE NAME: Calverton

SAMPLERS (SIGNATURE): Jessica Danielli

STATION NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	Total Metals TAL LCS	Total Metals TCL	Hexavalent Chromium	Sulfate, Sulfide, Phosphate	Methane, Ethane, Ethene	Total Cyanide	Total Manganese	Total Zinc	REMARKS
1	6/12/10	1625		✓	GWTB-C8C2C0	2	2								
2	6/12/10	1145		✓	SA-P2104-I-47-C0	11	2	2	3	1	1	1	1		
3	6/12/10	1145		✓	SA-P2104-S-10.5-C0	11	2	2	3	1	1	1	1		
					Temperature Blank										

RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):
Jessica Danielli	6/12/10 1230				
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED FOR LABORATORY BY (SIGNATURE):	DATE / TIME:	REMARKS: Sent to lab via FedEx Airbill # 6C539217 4670	

CHAIN OF CUSTODY RECORD

PROJECT NO.:	SITE NAME:
N 3853	Calverton

SAMPLERS (SIGNATURE): Jessica Daniecki

STATION NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	[illegible]						REMARKS
1	11-2-10	0625		✓	SA-P2K01-I-47-CO	1	1						
2	11/2/10	1115		✓	SA-P2K04-S-10.5-CO	1	1						
					Temperature Blank	1							

RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):
Jessica Daniecki	11/2/10 1221				
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED FOR LABORATORY BY (SIGNATURE):	DATE / TIME:	REMARKS: Sent to Lab via FedEx Airbill # 805392174661	

CHAIN OF CUSTODY RECORD Tetra Tech NUS

PROJECT NO.: 3853

SITE NAME: NWIRP Calverton

SAMPLERS (SIGNATURE): Vince Shickora

STATION NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	40ml Vials VOCs						REMARKS
	8/3/00	1325		X	FC-TW20-105-01	2	2						
	8/3/00	1425		X	FC-TW20-120-01	2	2						
	8/3/00	1540		X	FC-TW20-140-01	2	2						
	8/3/00	0820		X	FC-TW20-160-01	2	2						
	8/3/00	0935		X	FC-TW20-180-01	2	2						
	8/3/00	1055		X	FC-TW20-200-01	2	2						
	8/3/00	1130		X	FC-TW20-210-01D	2	2						
	8/3/00	0800		X	(Trip Blank) TB-080200	2	2						

RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):
	8-3-00 1300				
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED FOR LABORATORY BY (SIGNATURE):	DATE / TIME:	REMARKS: Shipped by Laboratory Courier	

CHAIN OF CUSTODY RECORD

PROJECT NO.: 3853-0300

SITE NAME: NWIRP Calverton

SAMPLERS (SIGNATURE): [signature]

STATION NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	40ml VIALS VOCs						REMARKS
	8/7/00	1120		X	FC-TW04-165-01	2	2						
	8/7/00	1246		X	FC-TW04-180-01	2	2						
	8/7/00	1420		X	FC-TW04-200-01	2	2						
	8/1/00	1006		X	(Trip Blank) TB-080700	2	2						
					Temperature Blank	1							

RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):
[signature]	8-8-00 0600				
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED FOR LABORATORY BY (SIGNATURE):	DATE / TIME:	REMARKS: Shipped by Laboratory Courier	

CHAIN OF CUSTODY RECORD

PROJECT NO.: 3853.0300

SITE NAME: NWIRP CALVERTON

SAMPLERS (SIGNATURE): ROBERT GOOD

STATION NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	40 mL VOC						REMARKS
	8/8/00	1006		✓	(TRIP BLANK) TB080900	2	2						
	8/9/00	1000		✓	SA-PZ102-100-01	2	2						
	8/9/00	1125		✓	SA-PZ102-125-01	2	2						
	8/9/00	1235		✓	SA-PZ102-140-01	2	2						
	8/10/00	0930		✓	RB081000 (RINSATE)	2	2						
	8/11/00	0930		✓	ECM-TW20-45-01	2	2						
	8/11/00	1020		✓	ECM-TW20-60-01	2	2						
	8/11/00	1122		✓	ECM-TW20-80-01	2	2						
	8/11/00	1235		✓	ECM-TW20-100-01	2	2						
	8/11/00	1340		✓	ECM-TW20-120-01	2	2						
					VAS 8-14-00								
					TEMPERATURE BLANK	1							

RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):
	8/11/00				
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED FOR LABORATORY BY (SIGNATURE):	DATE / TIME:	REMARKS: PICKED UP BY LABORATORY COURIER @ 1400 HRS. TIME 8/11/00	

COC #1

CHAIN OF CUSTODY RECORD

PROJECT NO.:	SITE NAME:
1398	NWTRP CALVERTON

SAMPLERS (SIGNATURE): [illegible]

STATION NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	Low 10A Soil Gas Low VOC						REMARKS
[illegible]	3/28	013		✓	FTTB01	2	2						TRIP BLANK
[illegible]	3/28	[illegible]		✓	FTGWDU01	2	2						DUPLICATE
[illegible]	3/28	0823		✓	FTGW0119	2	2						
[illegible]	3/28	0851		✓	FTGW0134	2	2						

RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):
[illegible]	[illegible]				
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED FOR LABORATORY BY (SIGNATURE):	DATE / TIME:	REMARKS: LAB PICKUP	

CHAIN OF CUSTODY RECORD

COC #2

PROJECT NO.: 7341B

SITE NAME: CALVERTON

SAMPLERS (SIGNATURE):

STATION NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS							REMARKS
[illegible]	[illegible]	[illegible]		✓	[illegible]	2	2						
	[illegible]	[illegible]		✓	[illegible]	2	2						
	"	[illegible]		✓	[illegible]	2	2						
	"	[illegible]		✓	[illegible]	2	2						

RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):
[illegible]					
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED FOR LABORATORY BY (SIGNATURE):	DATE / TIME:	REMARKS: L/B Pickup	

COC # 4

CHAIN OF CUSTODY RECORD

PROJECT NO.: 7398

SITE NAME: NWIRP CALVERTON

SAMPLERS (SIGNATURE): [signature]

STATION NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	8260 Full VOA Glass Twin VOC						REMARKS
	4/2	1400		✓	JF7B03	2	2						TRIP BLANK
	"	1402		✓	JFGW0321	2	2						VOC + FREON
	"	1427		✓	JFGW0336	2	2						VOC + FREON
	"	000		✓	JFGWDU07	2	2						DUPLICATE w/FREON
	"	1512		✓	FDGW0117	2	2						JUST VOC
	"	1531		✓	FDGW0136	2	2						" "
	4/3	1017		✓	FCGW0109	2	2						" "
	"	1034		✓	FCGW0124	2	2						" "
	"	1114		✓	FCGW0144	2	2						" "

RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):
[signature]	4/3/97 1400				
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED FOR LABORATORY BY (SIGNATURE):	DATE / TIME:	REMARKS: LAB PICKUP	

CHAIN OF CUSTODY RECORD FOR → 4/2/97 COC #3

PROJECT NO.: 7398

SITE NAME: NUTRP CALVERTON

SAMPLERS (SIGNATURE): [signature]

STATION NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	LEAD VOA TAL LEAD VOA VOC						REMARKS
	4/1	1334			LT TB02	2	2						TRIP BLANK
	"	1346			LTGW0311	2	2						
	"	1358			LTGW0326	2	2						
	4/2	0911			JFGW0121	2	2						VOC + FREON
	"	0958			JFGW0136	2	2						" "
	"	1124			JFGW0224	2	2						" "
	"	1136			JFGW0239	2	2						" "

RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):
[signature]	4/2/97 1400				
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED FOR LABORATORY BY (SIGNATURE):	DATE / TIME:	REMARKS: LAB PICKUP	

CHAIN OF CUSTODY RECORD

COC # 5

PROJECT NO.: 7398

SITE NAME: NWIRP CALVERTON

SAMPLERS (SIGNATURE):

STATION NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	VOA VGAS	SOC SVOC					REMARKS
	4/8	1334		✓	FCGW0210	2	2						~~TRIP BLANK~~
	"	1344		✓	FCGW0225	2	2						
	"	1430		✓	FCGW0245	2	2						
	"	1510		✓	FCGW0310	2	2						
	"	1530		✓	FCGW0325	2	2						
	"	1544		✓	FCGW0345	2	2						
	"	1600		✓	FCTB04	2	2						TRIP BLANK
	4/4	1055		✓	JFGW0425	2	2						
	4/4	1130		✓	JFGW0445	2	2						

RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):
	4/4/07 1100				
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED FOR LABORATORY BY (SIGNATURE):	DATE / TIME:	REMARKS: CAB Pick up	

COC 6

CHAIN OF CUSTODY RECORD

PROJECT NO.: 7398

SITE NAME: NWIRP CALVERTON

SAMPLERS (SIGNATURE): [signature]

STATION NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	VOC VOA VIAL CHLORINATED VOC						REMARKS
	4/4	0000		✓	JFDUOB	2	2						DUPLICATE
	"	1417		✓	JFGWO525	2	2						
	"	143x		✓	JFGWO545	2	2						~~DUPLICATE~~ (LM)

RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):
[signature]	4/5/99 1400				
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED FOR LABORATORY BY (SIGNATURE):	DATE / TIME:	REMARKS: LAB PICKUP	

COC #7

CHAIN OF CUSTODY RECORD

PROJECT NO.: 7398

SITE NAME: NWIRP CALVERTON

SAMPLERS (SIGNATURE): Roland Marshall

STATION NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	VOC & FREON						REMARKS
	4/5	1347		✓	FCGW0480	2	2						—
	"	1453		✓	FCGW0410G	2	2						—
	"	0900		✓	FCTB05	2	2						TRIP BLANK
	4/6	1017		✓	JFGW0625	2	2						VOC & FREON
	"	1043		✓	JFGW0640	2	2						VOC & FREON
	"	1128		✓	FTGW0219	2	2						—
	"	1145		✓	FTGW0234	2	2						—
	"	1409		✓	FTGW0411	2	2						—
	"	1425		✓	FTGW0426	2	2						—

RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):
Roland Marshall	4/7/93 0900				
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED FOR LABORATORY BY (SIGNATURE):	DATE / TIME:	REMARKS: LAB Pickup	

COC · 9

CHAIN OF CUSTODY RECORD

PROJECT NO.: 7398

SITE NAME: NWIRP CALVERTON

SAMPLERS (SIGNATURE):

STATION NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	Low Level VOC						REMARKS
	9/9	900		✓	ETTB07	2	2						TRIP BLANK
	"	1008		✓	ETGW0546	2	2						
	"	1029		✓	ETGW0526	2	2						
	"	1038		✓	ETGW0511	2	2						
	"	1112		✓	ETGW0646	2	2						
	"	1159		✓	ETGW0626	2	2						
	"	1211		✓	ETGW0611	2	2						
	"	1444		✓	FDGW0219	2	2						
	"	1512		✓	FDGW0234	2	2						

RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):
	9/9/97 1100				
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED FOR LABORATORY BY (SIGNATURE):	DATE / TIME:	REMARKS: LAB PICKUP	

1 of 2 COC #13

CHAIN OF CUSTODY RECORD

PROJECT NO.: 7398

SITE NAME: NWIRP CALVERTON

SAMPLERS (SIGNATURE): [signature]

STATION NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	40 ml VOA VOCs							REMARKS
	4/9	0900		✓	FCTB10	2	2							TRIP BLANK
	"	1000		✓	FCDV04	2	2							DUPLICATE
	"	0923		✓	FCGW0513	2	2							
	"	0944		✓	FCGW0528	2	2							
	"	1008		✓	FCGW0548	2	2							
	"	1114		✓	FCGW0615	2	2							
	"	1129		✓	FCGW0630	2	2							
	"	1159		✓	FCGW0650	2	2							
	"	1509		✓	ETGW0815	2	2							
	"	1523		✓	ETGW0830	2	2							
	"	1546		✓	ETGW0850	2	2							
	4/10													
					GO TO NEXT PAGE									

RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):
[signature]	4/12/07 1400				
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED FOR LABORATORY BY (SIGNATURE):	DATE / TIME:	REMARKS: LAB PICKUP	

CHAIN OF CUSTODY RECORD

2 of 2 COC # 15

PROJECT NO.: 7398

SITE NAME: NWIRP CALVERTON

SAMPLERS (SIGNATURE): [signature]

STATION NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	624 VOA VGC						REMARKS
	4/21	1037		✓	NPG1W0145	2	2						
	"	1113		✓	NPG1W0160	2	2						
	"	1103		✓	FCG1W0715	2	2						
	"	1110		✓	FCG1W0730	2	2						
	"	1142		✓	FCG1W0750	2	2						
	"	1514		✓	ETG1W0715	2	2						
	"	1614		✓	ETG1W0730	2	2						
	"	1624		✓	ETG1W0750	2	2						

RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):
[signature]	4/21/97 1115				
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED FOR LABORATORY BY (SIGNATURE):	DATE / TIME:	REMARKS: LAB PICKUP	

COC #15

CHAIN OF CUSTODY RECORD

PROJECT NO.: 7378

SITE NAME: NWIRP-CALVERTON

SAMPLERS (SIGNATURE): Jessica Kennedy

STATION NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	40 ml VOA VOCs						REMARKS
	5/6	1100		X	NPTB12	2	2						TRIP BLANK
	5/6	1050		X	FCGW04120	2	2						
	5/6	1145		X	FCGW04140	2	2						

RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):
Jessica Kennedy	5/7/97 1400				
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED FOR LABORATORY BY (SIGNATURE):	DATE / TIME:	REMARKS: lab Pick-up	

Order No. 70440

CHAIN OF CUSTODY RECORD

PROJECT NO.:	SITE NAME:
73518	[illegible]

SAMPLERS (SIGNATURE): [illegible]

STATION NO.	DATE 47	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	[illegible]						REMARKS
	5/8	0900		X	NB-TOLD	2	2						[illegible]
	5/8	1555		X	FT-GW04-19	2	2						
	5/8	1610		X	FT-GW04-34	2	2						
	5/9	1010		X	FT-GW12-11	2	2						
	5/9	1030		X	FT-GW12-26	2	2						
	5/9	1120		X	FT-GW13-11	2	2						
	5/9	1140		X	FT-GW13-26	2	2						
	5/9	1210		X	FT-GW14-11	2	2						
	5/9	1230		X	FT-GW14-26	2	2						
	5/9	0000		X	FT DUP06	2	2						[illegible]

RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):
[illegible]	5/9/17 [illegible]				
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED FOR LABORATORY BY (SIGNATURE):	DATE / TIME:	REMARKS: Lab Pick up	

Order No. 70440 (0693)

COC 11-17
page 1 of 2

CHAIN OF CUSTODY RECORD

PROJECT NO.: 7388

SITE NAME: NWIRP - Colville

SAMPLERS (SIGNATURE): Teresa Lawrence

STATION NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	40 mL VIAL VOCs						REMARKS
	5/10	1300		X	ET-TB14	2	2						TRIP BLANK
	5/10	1420		X	ET-GW11-15	2	2						
	5/10	1445		X	ET-GW11-40	2	2						
	5/10	1530		X	ET-GW11-70	2	2						
	5/11	~~0805~~ 0905		X	ET-GW10-~~14~~ 17	2	2						
	5/11	945		X	ET-GW10-~~1~~ 42	2	2						
	5/11	1030		X	ET-GW10-~~1~~ 72	2	2						
	5/11	1330		X	ET-GW09-12	2	2						
	5/11	1345		X	ET-GW09-37	2	2						
	5/11	1440		X	ET-GW09-67	2	2						
	5/11	000		X	ET-DUP07	2	2						Duplicate
	5/11	1545		X	FC-GW11-11	2	2						
	5/11	1610		X	FC-GW11-26	2	2						
	5/11	1640		X	FC-GW11-46	2	2						

RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):
Teresa Lawrence	5/12/17 1400				
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED FOR LABORATORY BY (SIGNATURE):	DATE / TIME:	REMARKS: Lab Pick-up	

Order No. 70440

COC 11 18

CHAIN OF CUSTODY RECORD

PROJECT NO.: 7398

SITE NAME: NWIRP - Colverton

SAMPLERS (SIGNATURE): Teresa Acuoyo

STATION NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	40 ml VIAL VOAs						REMARKS
	5/12	1600		X	JF - GW16 - 20	2	2	(15)					
	5/12	1630		X	JF - GW16 - 35	2	2	(15)					
	5/12	1300		X	JF - TB15	2	2						TRIP BLANK
	5/13	1030		X	FC GW09 - 100	2	2						
	5/13	1120		X	FC - GW09 - 120	2	2						
	5/13	1200		X	FC - GW09 - 140	2	2						

RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):
Teresa Acuoyo	5/13/97 1400				
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED FOR LABORATORY BY (SIGNATURE):	DATE / TIME:	REMARKS: Lab Pick-up	

Order No. 70440 (0693)

CHAIN OF CUSTODY RECORD

(1)(0 14 1)

PROJECT NO.: 7398

SITE NAME: NIWRP-Calverton

SAMPLERS (SIGNATURE): Teresa Hawkins

STATION NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	40 ml vial VOCs						REMARKS
	5/13	1300		x	JF-TB15	2	2						TRIP BLANK
	5/13	1505		x	JF-GW15-20	2	2						
	5/13	1530		x	JF-GW15-35	2	2						
	5/13	0000		x	JF-DUP-08	2	2						Duplicate
	5/14	1200		x	FC-GW10-100	2	2						
	5/14	1330		x	FC-GW10-120	2	2						
	5/14	1415		x	FC-GW10-140	2	2						

RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):
Teresa Hawkins	5/14/07 1530				
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED FOR LABORATORY BY (SIGNATURE):	DATE / TIME:	REMARKS: LAB PICK-UP	

COC # 20

CHAIN OF CUSTODY RECORD

PROJECT NO.: 7398

SITE NAME: NUSHIP - Charleston

SAMPLERS (SIGNATURE): [illegible]

STATION NO.	DATE 97	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	HCl 40ml VOCs						REMARKS
	5/19	1715		X	FC TB116	2	2						Trip Blank
	5/20	0950		X	FC GW08-100	2	2						
	5/20	1030		X	FC - GW08-120	2	2						
	5/20	1115		X	FC GW08-140	2	2						

RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):
[illegible]	5/20/97 1460				
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED FOR LABORATORY BY (SIGNATURE):	DATE / TIME:	REMARKS: 1st Pick-up	

Order No. 70440 (0693)

COC # 23
PAGE 1 OF 2

CHAIN OF CUSTODY RECORD

PROJECT NO.: 7398

SITE NAME: NWRP-Calistoga

SAMPLERS (SIGNATURE): Teresa Lawyer

STATION NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	40 mL VIAL VOCs							REMARKS
	6/3	1225		x	ET-TB-21	2	2							TRIP BLANK 84799706
	6/4	0910		X	ET-GW15-11	2	2							84809706
	6/4	0930		X	ET-GW15-26	2	2							84819706
	6/4	0955		x	ET-GW15-46	2	2							84829706
	6/4	0000		x	ET-DUP 14	2	2							DUPLICATE 84839706
	6/4	0950		X	FC-GW12-11	2	2							84849706
	6/4	1115		X	FC-GW12-26	2	2							84859706
	6/4	1440		X	FC-GW12-46	2	2							84869706
	6/4	1330		X	FC-GW13-14	2	2							84879706
	6/4	1350		x	FC-GW13-29	2	2							84889706
	6/4	1415		x	FC-GW13-49	2	2							84899706
	6/5	0850		X	ET-GW16-15	2	2							84909706
	6/5	0915		x	ET-GW16-40	2	2							84919706
	6/5	1015		X	ET-GW16-70	2	2							84929706

RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):
Teresa Lawyer	6/5/97 1400				
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED FOR LABORATORY BY (SIGNATURE):	DATE / TIME:	REMARKS: LAB PICK-UP	

COC #23
Page 2 of 2

CHAIN OF CUSTODY RECORD

PROJECT NO.: 7398

SITE NAME: NWIRP - Colverton

SAMPLERS (SIGNATURE): Teresa Alvarez

STATION NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	40 ml VOAs						REMARKS
	6/5	0000		X	ET DUP 15	2	2						Duplicate 84939706

RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):
Teresa Alvarez	6/5/97 1400				
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED FOR LABORATORY BY (SIGNATURE):	DATE / TIME:	REMARKS: Lab Pick-up	

Order No. 70440 (0693)

COC #24

CHAIN OF CUSTODY RECORD

PROJECT NO.: 7398

SITE NAME: NWIRP - Colverton

SAMPLERS (SIGNATURE): Teresa Dawson

STATION NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	40 mL VIAL VOCS						REMARKS
	6/5	1300		X	FT-TB22	2	2						TRIP BLANK 85279706
	6/5	1330		X	FT-GW03-48	2	2						85289706
	6/5	1430		X	FT-GW03-68	2	2						85299706
	6/6	1140		X	FC-GW04A-30	2	2						85309706
	6/6	1200		X	FC-GW04A-40	2	2						85319706
	6/6	1245		X	FC-GW04A-60	2	2						85329706

RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):
Teresa Dawson	6/6/97 1330				
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED FOR LABORATORY BY (SIGNATURE):	DATE / TIME:	REMARKS: LAB PICK-UP	

COC # 25

CHAIN OF CUSTODY RECORD

PROJECT NO.: 7398

SITE NAME: NWIRP-Calverton

SAMPLERS (SIGNATURE): Teresa Aeuozi

STATION NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	40 ml VIAL VOCs						REMARKS
	6/6	1400		X	SA-TB23	2	2						TRIP BLANK 85559706
	6/6	1600		X	FC-GW04A-80	2	2						85569706
	6/8	1510		X	SA-GW101-17	2	2						85579706
	6/8	1530		X	SA-GW101-32	2	2						85589706

RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):
Teresa Aeuozi	6/9/97 1400				
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED FOR LABORATORY BY (SIGNATURE):	DATE / TIME:	REMARKS: Lab pick-up	

Order No. 70440 (0693)

,N OF CUSTODY RECORD

COC # 29

PROJECT NO.:	SITE NAME:
7398	KWIRP Chemical

SAMPLERS (SIGNATURE): Teresa Thurston

STATION NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	40 mL VIAL VOCs						REMARKS
[illegible] →	6/9	0800		X	ET-TB-27	2	2						TRIP BLANK 89669707
	6/9	1050		X	ET-GW8-70	2	2						89677707
	6/9	1330		X	ET-GW8-90	2	2						89687707
	6/10	1015		X	ET-GW7-70	2	2						89697707
	6/10	1130		X	ET-GW7-90	2	2						89707707
	6/10	0000		X	ET-DUP 17	2	2						Duplicate 89717707

RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):
Teresa Thurston	7/10/97 1400	LAB			
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED FOR LABORATORY BY (SIGNATURE):	DATE / TIME:	REMARKS:	
				Lab Pick-up	

COC #27

CHAIN OF CUSTODY RECORD

PROJECT NO.: 7398

SITE NAME: NWIRP - Calverton

SAMPLERS (SIGNATURE): Teresa Scuoza

STATION NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	40 ml VIAL VOCs						REMARKS
	6/19	0900		X	SA-TB25	2	2						TRIP BLANK 87249706
	6/19	1015		X	SA-GW103-17	2	2						87259706
	6/19	1045		X	SA-GW103-32	2	2						87269706
	6/19	0000		X	SA-DUP16	2	2						Duplicate 87279706
	6/19	1115		X	SA-GW103-52	2	2						87289706
	6/19	1215		X	SA-GW103-72	2	2						87299706
	6/19	1440		X	SA-GW102-11	2	2						87309706
	6/19	1500		X	SA-GW102-26	2	2						87319706
	6/19	1530		X	SA-GW102-46	2	2						87329706
	6/20	1130		X	SA-GW101-72	2	2						87337706

RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):
Teresa Scuoza	6/20/97 1402				
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED FOR LABORATORY BY (SIGNATURE):	DATE / TIME:	REMARKS: LAB PICK-UP	

Order No. 20440 (0693)

COC # 27

CHAIN OF CUSTODY RECORD

PROJECT NO.: 7398

SITE NAME: NWIRP- Calverton

SAMPLERS (SIGNATURE): Teresa Acuoyo

STATION NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	40 ml VOC						REMARKS
	6/19	0900		X	SA-TB25	2	2						TRIP BLANK
	6/19	1015		X	SA-GW103-17	2	2						
	6/19	1045		X	SA-GW103-32	2	2						
	6/19	1000		X	SA-DUP16	2	2						Duplicate
	6/19	1115		X	SA-GW103-52	2	2						
	6/19	1215		X	SA-GW103-72	2	2						
	6/19	1440		X	SA-GW102-11	2	2						
	6/19	1500		X	SA-GW102-26	2	2						
	6/19	1530		X	SA-GW102-46	2	2						
	~~6/20~~	~~1130~~		~~X~~	~~SA-GW101-12~~	~~2~~	~~2~~						(SAMPLE WAS LEFT OUT. PUT ON COC # 28)

RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):
Teresa Acuoyo	6/20/97 1102				
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED FOR LABORATORY BY (SIGNATURE):	DATE / TIME:	REMARKS: LAB PICK-UP	

COC # 28

CHAIN OF CUSTODY RECORD

PROJECT NO.: 7398

SITE NAME: NWIRP Colverton

SAMPLERS (SIGNATURE): Teresa Dawgel

STATION NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	40 ml VIAL VOCS						REMARKS
	6/20	1130		X	SA-GW101-72	2	2						87337706
	6/20	1430		X	SA-TB26	2	2						TRIP BLANK 87337706

RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED FOR LABORATORY BY (SIGNATURE):	DATE / TIME:	REMARKS: LAB PICK-UP	

Order No. 70440 (0693)

COC #31

CHAIN OF CUSTODY RECORD

PROJECT NO.: 7398

SITE NAME: NWIRP - Colville

SAMPLERS (SIGNATURE): Teresa Alonzo

STATION NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	40 ml VIAL VOAS						REMARKS
	7/14	0730		X	SA - TB - 29	2	2						TRIP BLANK 90139707
	7/14	0940		X	SA - GW104 - 17	2	2						90149707
	7/14	0950		X	SA - GW101 - 32	2	2						90159707
	7/14	1010		X	SA - GW101 - 32	2	2						90169707
	7/14	1100		X	SA - GW104 - 72	2	2						90179707
	7/14	1250		X	SA - GW105 - 17	2	2						90189707
	7/14	1305		X	SA - GW105 - 32	2	2						90199707
	7/14	1330		X	SA - GW105 - 32	2	2						90209707
	7/14	1400		X	SA - GW105 - 72	2	2						90219707

RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):
Teresa Alonzo	9/14/97 1200				
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED FOR LABORATORY BY (SIGNATURE):	DATE / TIME:	REMARKS: LAB PICK UP	

Order No. 70440 (

COC #31

CHAIN OF CUSTODY RECORD

PROJECT NO.: 7398

SITE NAME: NAWRP-Calverton

SAMPLERS (SIGNATURE): Teresa Alvarez

STATION NO.	DATE '97	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	40 ml VOCs						REMARKS
	8/12	0700		X	FT-TB-29	2	2						TRIP BLANK 12439708
	8/13	0930		X	FT-GW08-45	2	2						12449708
	8/13	1030		X	FT-GW08-65	2	2						12459708
	8/13	0000		X	FT-DUP-18	2	2						Duplicate 12469708
	8/13	1200		X	FT-GW08-85	2	2						12479708
	8/14	0940		X	SA-GW106-(12)07	2	2						12489708
	8/14	1045		X	SA-GW106-27	2	2						12499708
	8/14	1200		X	SA-GW106-47	2	2						12509708
	8/14	1300		X	SA-GW106-67	2	2						12519708
	8/14	0000		X	SA-DUP 19	2	2						12529708

RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):
Teresa Alvarez	8/14/97 1400	Lab			
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED FOR LABORATORY BY (SIGNATURE):	DATE / TIME:	REMARKS: Lab Pick-up	

Order No. 70440 (0693)

COC # 32

CHAIN OF CUSTODY RECORD

PROJECT NO.: 7398

SITE NAME: NWIRP - Colville

SAMPLERS (SIGNATURE): Teresa Hennings

STATION NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	40 mL VIAL VOCs						REMARKS
	8/14	1400		x	SA-TB-31	2	2						TRIP BLANK 12609708
	8/14	1045 1845	TC	x	SA-GW107-25	2	2						12619708
	8/15	0835		x	SA-GW107-40	2	2						12629708
	8/15	0910		x	SA-GW107-60	2	2						12639708
	8/15	0950		x	SA-GW107-80	2	2						12649708

RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):
Teresa Hennings	8/15/97 1400				
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED FOR LABORATORY BY (SIGNATURE):	DATE / TIME:	REMARKS: Lab Pick-up	

CHAIN OF CUSTODY RECORD

PROJECT NO.:	SITE NAME:
7398	UMAP - Calumet

SAMPLERS (SIGNATURE):

STATION NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	VOCs						REMARKS
SA.	11/13/97	1035		✓	SA-100-23	2	2						
SA.	11/13/97	1105		✓	SA-100-30	2	2						
SA.	11/13/97	1120		✓	SA 100-58	2	2						
SA	11/13/97	1325		✓	SA 100-70	2	2						
SA	11/13/97	1455		✓	SA 100-78	2	2						

RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):
Paul M. [illegible]	11/13/97 1430	[illegible]			
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED FOR LABORATORY BY (SIGNATURE):	DATE / TIME:	REMARKS:	

CHAIN OF CUSTODY RECORD

Brown & Root

PROJECT NO.:	SITE NAME:
1398	NWIRP-Calverton
SAMPLERS (SIGNATURE):	Paul M. D

STATION NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	VOCs							REMARKS
SA	11/14/00	0815		✓	SA-109-20	2	2							
SA		0850		✓	SA-109-35	2	2							
SA		0915		✓	SA-109-55	2	2							
SA		0940		✓	SA-109-75	2	2							
SA		1253		✓	SA-110-29	2	2							
SA		1315		✓	SA-110-44	2	2							
SA		1345		✓	SA-110-64	2	2							
SA		1420		✓	SA-110-84	2	2							
SA		1450		✓	SA-110-101	2	2							
SA	↓	1525		✓	SA-109-95	2	2							

RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):
Paul M. D	11/14/00	PM			
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED FOR LABORATORY BY (SIGNATURE):	DATE / TIME:	REMARKS:	

[redacted] [redacted]

Chain of Custody Record

Quanterra

#5 of 5

QUA-4124 0797

Client: Brown & Root Environmental	Project Manager: Dave Brayack	Date: 11/14/97	Chain of Custody Number: 03001
Address: 600 Andersen Drive, Bldg. 7	Telephone Number (Area Code)/Fax Number: (412) 921 8375 / (412) 921 4040	Lab Number:	Page ____ of ____
City: Pittsburgh; State: PA; Zip Code:	Site Contact: S. Patselis	Lab Contact: Veronica Berlat	
Project Name: NWIRP	Carrier/Waybill Number:		
Contract/Purchase Order/Quote No.:			

Analysis (Attach list if more space is needed): VOC - 8260; Cadmium only

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Aqueous	Sed.	Soil		Containers & Preservatives: Unpres.	H2SO4	HNOS	HCl	NaOH	ZnAc/NaOH	HNO3	VOC - 8260	Cadmium only	Special Instructions/ Conditions of Receipt
TB-111497	11/14/97	0800	X							X				2		Lab Provided Trip Blk
ECM-MW01	11/14/97	0940	X										X		1	
ECM-MW02	11/14/97	1100	X										X		1	
FC-MW07-S	11/14/97	1425	X							X				2		
FC-MW08-S	11/14/97	1605	X							X				2		
FD-MW07	11/14/97	1705	X							X				2		

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months (A fee may be assessed if samples are retained longer than 3 months)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other ____

QC Requirements (Specify):

	Date	Time		Date	Time
1. Relinquished By: [signature]	11/14/97	1730	1. Received By		
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

Comments:

DISTRIBUTION: WHITE - Stays with the Sample; CANARY - Returned to Client with Report; PINK - Field Copy

APPENDIX D
BORING LOG SHEETS

D.1 Phase 2 Groundwater Investigation

D.2 Supplemental Groundwater Investigation

D.1

PHASE 2 GROUNDWATER INVESTIGATION

BORING LOG

PROJECT NAME: NWIRP Silverton
PROJECT NUMBER: 7398
DRILLING COMPANY: Miller Env Group
WATER LEVEL DATA:

BORING NUMBER: SA-GW106
DATE: 8/14/97
GEOLOGIST: T. Sawyer

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows/ 6" or RQD (%)	Sample Recovery/ Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS	Remarks	FID PID Reading (ppm)
0							vegetation on surface			
					"	"				
SS	5	2/2	18"		loose	tan	FINE GRAINED SAND			
	7	4/4					DAMP - VERY LITTLE SILT			
							WET AT BOTTOM OF SPOON			
10										
	10 12	2/2	12"							
		2/4								
	15	1/2	14"		loose	tan	FINE TO MED GRAINED SAND			
	17	2/3					WET - MICACEOUS			
20	20 22	2/2	13"							
		4/4								
	25	2/2	16"							
	27	4/6								
30	30 32	1/1					NO RECOVERY			
		3/2								
	35	1/3					NO RECOVERY			
	37	3/4								
40	40 42						NO RECOVERY			
					loose	tan	MED GRAINED SAND			
50										

*When rock coring enter rock brokeness.

CONVERTED TO WELL: ___ Yes X No; WELL I.D.#:
REMARKS:

Signature(s): Teresa Sawyer

BORING LOG

PROJECT NAME: NWIRP-Calverton
PROJECT NUMBER: 7398
DRILLING COMPANY: Miller
WATER LEVEL DATA: 71'

BORING NUMBER: SA-GW106-67
DATE: 8/14/97
GEOLOGIST: T Sawyer

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows/ 6" or RQD (%)	Sample Recovery/ Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS	Remarks	FID or PID Reading (ppm)
50							sand			
60							TD = 67'			
70										

*When rock coring enter rock brokeness.

CONVERTED TO WELL: ___ Yes X No; WELL I.D.#: ___

REMARKS: ___

Signature(s): Teresa Sawyer

BORING LOG

PROJECT NAME: NWIRP CALVERTON
PROJECT NUMBER: 7398
DRILLING COMPANY: MILLER
WATER LEVEL DATA:

BORING NUMBER: FC-MW07
DATE: 4/9/97
GEOLOGIST: MARSHALL

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows/ 6" or RQD (%)	Sample Recovery/ Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS	Remarks	FID or PID Reading (ppm)
	3.0									
S-1		4/5	1.8/2.0		LOOSE	LT. BR.	WHITE SAND w/YELLOW-			0
	5.0	6/7					BROWN SILT AND TR. GRAVEL			
S-2		7/7	2.0/2.0		LOOSE	LT BR	WHITE SAND w/YELLOW-			0
	7.0	7/7					BROWN SILT		WATER @	
	8.0								7½ FEET	
S-3		7/6	1.7/2.0		LOOSE	LT. BR	WET, WHITE SAND			0
	10.0	7/7					w/YELLOW-BROWN SILT			
~~S-4~~										
	~~12.0~~									
	13.0		1.9/2.0		LOOSE	LT. BR	WET, WHITE SAND			0
S-4		6/8	1/3				w/YELLOW-BROWN SILT			
	15.0	8/5	3/5							
	18.0									
S-5		1/2	1.4/2.0		LOOSE	LT. BR	WET, WHITE SAND			0
	2.0	2/4					w/YELLOW-BROWN SILT			
							TOTAL DEPTH = 18'			

*When rock coring enter rock brokeness.

CONVERTED TO WELL: ___ Yes ___ No; WELL I.D.#:
REMARKS: CME 51 HOLLOW STEM AUGER DRILL RIG

Signature(s):

BORING LOG

PROJECT NAME: NWRP-Calverton
PROJECT NUMBER: 7398
DRILLING COMPANY: MILLER ENV. GROUP
WATER LEVEL DATA:

BORING NUMBER: FC-MW08
DATE: 6/9/97
GEOLOGIST: TERESA JAWHER

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows/ 6" or RQD (%)	Sample Recovery/ Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS	Remarks	FID or PID Reading (ppm)
NA					LOOSE	BROWN	MED GRAINED SAND			0
							WITH SMALL AMOUNT OF			
							SILT			0
							↓			
					LOOSE	TAN	SATURATED MED GRAINED			0
5							SAND			
										0
10										
							↓			0
15										

*When rock coring enter rock brokeness.

CONVERTED TO WELL: X Yes ___ No; WELL I.D.#: FC-MW08
REMARKS: TRAILER MOUNTED HSA RIG

Signature(s): Teresa Jawher

BORING LOG

PROJECT NAME: NWIRP CALVERTON
PROJECT NUMBER: 7348
DRILLING COMPANY: MILLER
WATER LEVEL DATA:

BORING NUMBER: FC-GW04
DATE: 4/5/97
GEOLOGIST: MARSHALL

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows/ 6" or RQD (%)	Sample Recovery/ Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	FID or PID Reading (ppm)
							LT. BROWN SILTY SAND			0
							TO 4 FEET DEPTH			
									WATER @	
							WHITE SAND W/TRACE		7 FEET	
				25'			SILT			
										0
							WHITE SAND W/TRACE			
							SILT			
							WHITE SAND W/TR. SILT			
				50'						0
							THIN (1-2 FEET?)			
							GRAY CLAY LENS			
							AT APPROX. 60 FEET			
				75'						
										0
							WHITE SAND W/TR.			
							SILT			
1516		6/2	1.8	100'	SP	WH	SPLIT SPOON FROM	SP		0
		1/1					100' TO 102'			
							-WHITE SAND			
							W/TRACE SILT			

*When rock coring enter rock brokeness.

CONVERTED TO WELL: ___ Yes X No; WELL I.D.#: FC-GW04

REMARKS: -NO SPLIT SPOONS TAKEN EXCEPT @ 100'
-BORING LOG GENERATED FROM CUTTING
-1 LINE OF BORING LOG = 5 FEET

Signature(s): Robert Marshall

BORING LOG

PROJECT NAME: NWIRP - Bethton
PROJECT NUMBER: 7398
DRILLING COMPANY: Miller Env.
WATER LEVEL DATA:

BORING NUMBER: FC-GW08
DATE: 5/13/97
GEOLOGIST: T. Sawyer

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows/ 6" or RQD (%)	Sample Recovery/ Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS	Remarks	PID or FID Reading (ppm)
NA	NA	NA	NA				Grass on surface			
				▼		DK BROWN	MED. GRAIN SAND		SMELLS LIKE FUEL	40
						TAN	MED-GRAIN SAND - LITTLE SILT			
						GRAY	MED GRAIN WET SAND			150
20						TAN	M.G. SAND			50
										60
										30
40										10
60										
										3
										0
80										
										0
100										

*When rock coring enter rock brokeness.

CONVERTED TO WELL: ___ Yes X No;
WELL I.D.#: FC-GW08
REMARKS:

Signature(s): Teresa Sawyer

BORING LOG

PROJECT NAME: NWIRP - Colverton
PROJECT NUMBER: 7398
DRILLING COMPANY: Miller Env.
WATER LEVEL DATA:

BORING NUMBER: FC-GW08
DATE: 5/13/97
GEOLOGIST: TERESA SAWYER

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows/ 6" or RQD (%)	Sample Recovery/ Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS	Remarks	PID or FID Reading (ppm)
					LOOSE	TAN	COARSE-GRAINED SAND - SMALL			
							AMOUNT OF SILT			
120										
140										

*When rock coring enter rock brokeness.

CONVERTED TO WELL: ___ Yes X No;
WELL I.D.#:
REMARKS:

Signature(s): Teresa Sawyer

D.2

SUPPLEMENTAL GROUNDWATER INVESTIGATION

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: NWIRP Calverton
PROJECT NUMBER: 3853
DRILLING COMPANY: Delta Well + Pump
DRILLING RIG: Failing F-10
BORING NUMBER: FC-TW04
DATE: 8-7-00
GEOLOGIST: Vince Shickora
DRILLER: Mike Pellegrino

Time	Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Drilller BZ**
0815		0						Dark Brown Silty Clay		very moist	0	0	0	0
		3						Black-Brown-Tan Silty Sand		Strong Petroleum odor	95	0	121	0
0820		5												
		8						Same as above		moist	64	0	90	0
7		10			GW			Brown-Grey Silty Sand (Fine to Medium grain)		moist to wet very strong petroleum odor	129	0	186	0
0831		15												
0834		20						Same as above		wet	172	0	188	0
0837		25						Same as above		wet	160	0	181	0
0840		30						Brown-Tan Fine to Med. grain Sand (some silt)		wet	57	0	63	0
0843		35									55	4	73	0
0845		40						Same as above		wet	45	0	66	0
0847		45						Same as above		wet	47	0	68	0

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: 3.25"x5" HSA from 0' to 200'
2"x2' Split spoons @ five foot intervals from 160' to 200'

Converted to Well: Yes ____ No X Well I.D. #: ____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: NWIRP Calverton
PROJECT NUMBER: 3853
DRILLING COMPANY: Delta
DRILLING RIG: Pailing F-10

BORING NUMBER: FC-TW04
DATE: 8-7-00
GEOLOGIST: Vince Shickora
DRILLER: Mike Pellegrino

Time	Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
0849		50						Brown-Tan Fine to Med.		Petroleum odor	51	2	59	0
								grain Sand		wet				
0851		55						Same as above		wet	52	0	60	0
0853		60						Same as above		wet	47	0	55	0
0855		65						Harder-drilling - less returns		wet	29	0	47	0
								possible Clay layer?						
0857		70						Same as above		wet	31	0	45	0
0859		75						Same as above		wet	35	0	31	0
0902		80						Same as above		wet	37	3	46	0
0905		85						Same as above		wet	24	0	39	0
0908		90						Same as above		wet	31	0	46	0
0911		95						Brown-Gray clayey-Silty		(wet)	5	0	8	0
								Sand						
0913		100						Same as above			0	0	0	0
0916		105						Same as above		wet	0	0	0	0
0918		110						No returns		—	0	0	0	0

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: Descriptions from 0' to 160' done by observing cuttings brought to surface by Augers and may not be accurate

Converted to Well: Yes ____ No X Well I.D. #: ____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: NWIRP Calverton
PROJECT NUMBER: 3853
DRILLING COMPANY: Delta
DRILLING RIG: Failing F-10
BORING NUMBER: FC-TW04
DATE: 8-7-00
GEOLOGIST: Vinie Shukla
DRILLER: Mike Pellagrino

Time	Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Driller BZ**
0921		115		Auger				No returns		–	–	0	0	0
0923		120						No returns		–	–	0	0	0
0926		125						No returns		–	–	0	0	0
0929		130						Dark Brown-Grey Sandy Silty clay		wet	0	0	0	0
0931		135						Same as above		wet	0	0	0	0
0934		140						Same as above		wet	0	0	0	0
0936		145						Same as above		wet	0	0	0	0
0939		150						Same as above		wet	0	0	0	0
*0942		155						Same as above		wet	0	0	0	0
*1031		160						Same as above		wet				
1035	1	161	6/8	24"/24"				Brown-Grey		wet	0	0	0	0
		162	9/9	–				Silty Clay		(very plastic)				
		163		Auger										
		164												
1125		165												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks: (See previous pages)

Drilling Area Background (ppm): 0

Converted to Well: Yes ____ No X Well I.D. #: ____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: NWIRP Calverton
PROJECT NUMBER: 3853
DRILLING COMPANY: Deltz
DRILLING RIG: Failing F-10
BORING NUMBER: FC-TW04
DATE: 8-7-00
GEOLOGIST: Vince Shickora
DRILLER: Mike Pellegrino

Time	Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole** BZ	Driller BZ**
1126	2	166	6/7	24"/24"				Brown-Grey		wet	0	0	0	0
		167	8/9	-				Silty Clay		(very plastic)				
		168		Auger										
		169												
		170												
1132 1134	3	171	5/5	23"/24"				Same as above		wet	0	0	0	0
		172	6/8	-						(plastic)				
		173		Auger										
		174												
		175												
1142 1144	4	176	7/8	24"/24"				Same as above		(very plastic)	0	0	0	0
		177	7/7	-										
		178		Auger										
		179												
		180												
1203	5	181	7/8	21"/24"				Same as above		wet	0	0	0	0
		182	9/11	-				(lower 2 inches - Sandy)		(very plastic)				
		183		Auger										
		184												
		185												
1306 1308	6	186	8/11	22"/24"				Brown-Grey-Tan		wet	0	0	0	0
		187	13/14	-				Silty Sand (some clay)						
		188		Auger										
		189												
		190												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm): 0

Converted to Well: Yes ____ No X Well I.D. #: ____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: NWIRP Calverton
PROJECT NUMBER: 3853
DRILLING COMPANY: Delta
DRILLING RIG: Failing F-10
BORING NUMBER: FC-TW04
DATE: 8-7-00
GEOLOGIST: Vince Shickora
DRILLER: Mike Pellagrino

Time	Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Driller BZ**
1319	7	191	8/12	18"/24				Brown-Tan Poorly Sorted		(wet)	0	0	0	0
		192	15/18	–				Sand with some pebbles						
		193		Auger										
		194		↓										
		195												
1330 1332	8	196	22/28	11"/24"				Same as above		wet	0	0	0	0
		197	22/29	–				(some gravel)						
		198		Auger										
		199		↓										
		200												
1438	9	201	12/12					Brown-Tan-Grey Fine		wet	0	0	0	0
		202	20/26	–				To Medium grain Sand						
					EoB									

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks:

Converted to Well: Yes ____ No X Well I.D. #: ____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: NWIRP Calverton
PROJECT NUMBER: 3853
DRILLING COMPANY: Delta Well + Pump
DRILLING RIG: Failing F-10
BORING NUMBER: FC-TW09
DATE: 7-31-00
GEOLOGIST: Vince Shickora
DRILLER: Mike Pellegrino

Time	Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistancy or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Driller BZ**
0841		0						Dark Brown Silty Sand (some quartz pebbles)		moist	0	0	0	0
		3												
0848		5						Same as above		petroleum odor	15	0	21	0
		8						Brown-Tan fine to medium grain Sand (some pebbles)						
0859		10								wet at ±10 ft.	22	0	40	0
		15						Same as above						
		20						Same as above			25	0	45	0
		25						Same as above			40	0	65	0
0910		30						Same as above			75	0	82	0
		35						Same as above						
		40						Same as above			70	0	75	0
0930		45						Same as above			63	0	77	0

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: 3.25" x 5' HSA - 2" x 2' Split Spoons (160' to 200')
Descriptions from 0' to 160' conducted by observing cuttings brought to surface by Augers and may not be accurate

Converted to Well: Yes ____ No X Well I.D. #: ____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: NWIRP Calverton
PROJECT NUMBER: 3853
DRILLING COMPANY: Delta Well + Pump
DRILLING RIG: Failing F-10
BORING NUMBER: FC-TW09
DATE: 7-31-00
GEOLOGIST: Vince Shickora
DRILLER: Mike Pellegrino

Time	Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows/6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Drilled BZ**
0950		50						Brown-Tan Fine to Med. grain Sand		wet	47	0	66	0
		55						Same as above		wet	55	0	70	0
0950		60												
		65						Same as above		wet	38	0	41	0
1002		70												
		75						Same as above		(Harder Boring) (Possible clay layer)	49	0	57	0
		80												
1013		85						Same as above		wet	29	0	61	0
		90												
1019		95						No cuttings returned		—	-	-	-	-
		100												
		105						Dark Brown-Gray Silty Sand with Some clay		wet	20	0	41	0
1027		110												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: (see previous page)

Converted to Well: Yes ____ No X Well I.D. #: ____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: NWIRP Calverton
PROJECT NUMBER: 3853
DRILLING COMPANY: Delta Well + Pump
DRILLING RIG: Failing F-10
BORING NUMBER: FC-TW04
DATE: 7-31-00
GEOLOGIST: Vince Shuckora
DRILLER: Mike Pellegrino

Time	Sample No. and Type or RQD	Depth (FL) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Driller BZ**
		115						Same as above		wet	41	0	55	0
10.32		120												
		125						Same as above		wet	50	0	51	0
1038		130												
		135						Same as above		wet	29	0	37	0
		140												
								Gray Clay with		wet	0	0	0	0
		145						some silt						
		150												
1055		155						Same as above		wet	0	0	0	0
		160						Brown-Gray Clay						
1315	1	161	6/6	3"/24"				(very small amount of silt)		wet	0	0	0	0
		162	8/14	—										
		163		Auger										
		164		↓										
1328		165												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks: (See previous pages)

Drilling Area Background (ppm): 0

Converted to Well: Yes ____ No X Well I.D. #: ____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: NWIRP Calverton
PROJECT NUMBER: 3853
DRILLING COMPANY: Delta Well + Pump
DRILLING RIG: Failing F-10
BORING NUMBER: FC-TW09
DATE: 7-31-00
GEOLOGIST: Vince Shickora
DRILLER: Mike Pellegrino

Time	Sample No. and Type or RQD	Depth (Ft) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Driller BZ**
1330	2	166	3/4	24"/24"				Brown-Gray Clay		wet	0	0	0	0
		167	4/6	–				(small amount of silt)		(very plastic)				
		168		Auger										
		169		↓										
1340		170												
1343	3	171	7/6	24"/24"				Same as above		wet	0	0	0	0
		172	8/7	–						(very plastic)				
		173		Auger										
		174		↓										
		175												
1505	4	176	5/5	22"/24"				Same as above		wet	0	0	0	0
		177	7/9	–				(Lower 2 inchs Gray silty Sand)						
		178		Auger										
		179		↓										
1503		180												
1504	5	181	9/10	20"/24"				Alternating layers of		wet	0	0	0	0
		182	12/15	–				Gray-Brown Silt,						
		183		Auger				Clay and Sand						
		184		↓										
1515		185												
1519	6	186	8/8	23"/24"				Fine to Medium grain		wet	0	0	0	0
		187	9/12	–				Gray-Brown Sand with						
		188		Auger				≈10% gravel size						
		189		↓				rounded quartz						
1529		190												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: (see previous pages)

Converted to Well: Yes ___ No X Well I.D. #: ___

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: NWIRP Calverton
PROJECT NUMBER: 3853
DRILLING COMPANY: Delta Well + Pump
DRILLING RIG: Failing F-10

BORING NUMBER: FC-TW09
DATE: 7-31-00
GEOLOGIST: Vince Shickora
DRILLER: Mike Pellegrino

Time	Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Driller BZ**
1532	7	191	15/16	23"/24"				Same as above		wet	0	0	0	0
		192	19/21	–				(≈25% quartz pebbles)						
		193		Auger										
		194		↓										
		195												
1543 / 1549	8	196	5/8	14"/24"				Same as above		wet	0	0	0	0
		197	10/12	–				(≈5% quartz gravel)						
		198		Auger										
		199		↓										
		200						Brown-Grey fine		wet				
1635 / 1639	9	201						Medium grain			0	0	0	0
		202						Sand						
					EOB			(some quartz pebbles)						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks: (See previous pages)

Drilling Area Background (ppm): 0

Converted to Well: Yes ____ No X Well I.D. #: ____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: NWIRP Calverton
PROJECT NUMBER: 3853
DRILLING COMPANY: Delta Well and Pump
DRILLING RIG: Failing F-10
BORING NUMBER: FC-TW20
DATE: 8-2-00
GEOLOGIST: Vince Shickora
DRILLER: Mike Pellegrino

Time	Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Driller BZ**
1027		0						upper 8 inches Concrete		–	–	–	–	–
		3						Dark Brown Silty Sand with some quartz gravel		moist	0	0	0	0
1030		5						Same as above		slight petroleum odor	15	0	20	0
1037		8						Same as above		moist	8	0	10	0
		10						Brown Fine to Medium grain Sand (some quartz pebbles)		moist no odor	0	0	0	0
1046 1047		15			GW			Same as above		wet	0	0	0	0
1049 1050		20						Same as above		wet	0	0	0	0
1052		25						Same as above		wet	0	0	0	0
1055		30						Same as above		wet	0	0	0	0
1058		35						Same as above		wet	0	0	0	0
1100		40						Same as above		wet	0	0	0	0
1103		45						Same as above		wet	0	0	0	0

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: 3.25" x 5' HSA to Total depth
2"x2" split spoons @ 5' intervals from 100 ft. to 200 ft BGS.

Converted to Well: Yes ____ No X Well I.D. #: ____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: NWIRP Calverton
PROJECT NUMBER: 3853
DRILLING COMPANY: Delta Well + Pump
DRILLING RIG: Failing F-10

BORING NUMBER: FC-TW20
DATE: 8-2-00
GEOLOGIST: Vince Shickora
DRILLER: Mike Pellegrino

Time	Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistancy or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Driller BZ**
1106		50						Brown Fine to Medium grain Sand (some quartz pebbles)		wet	0	0	0	0
1108		55						Same as above		wet	0	0	0	0
1112		60						Same as above		wet	0	0	0	0
		65						Harder drilling - less return (possible Clay layer?)		wet	0	0	0	0
1119		70						Same as above		wet	0	0	0	0
1124		75						Same as above		wet	0	0	0	0
1129		80						Same as above		wet	0	0	0	0
1133		85						Dark Brown Silty Sand		wet	0	0	0	0
1136		90						Same as above		wet	0	0	0	0
* 1139		95						Same as above		wet	0	0	0	0
1235														
1243	1	100		—				Brown-Tan fine to						
		101	5/6	24-/24+				Medium grain Sand		wet	0	0	0	0
* 1252		102	5/7	—				with Quartz pebbles						
				Auger										
		105		↓										

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: Descriptions completed from 0' to 100' by observing cuttings brought to surface by Augers and may not be accurate

Converted to Well: Yes ____ No X Well I.D. #: ____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: NWIRP Calverton
PROJECT NUMBER: 3853
DRILLING COMPANY: Delta Well + Pump
DRILLING RIG: Failing F-70
BORING NUMBER: FC-TW20
DATE: 8-2-00
GEOLOGIST: Vince Shickora
DRILLER: Mike Pellegrino

Time	Sample No. and Type or RQD	Depth (FL) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Driller BZ**
1326	2	106	5/8	24"/24"				Brown-Tan fine to Med		wet	0	0	0	0
		107	11/14	–				grain Sand (some quartz pebbles)						
		108		Auger										
		109		↓										
1334		110												
1336	3	111	7/8	2"/24"										
		112	10/15	–				Same as above		wet	0	0	0	0
		113		Auger										
		114		↓										
1343		115												
	4	116	18/20	23/24				Same as above		wet	0	0	0	0
		117	22/32	–										
		118		Auger										
		119		↓										
1427		120						Brown-Tan-Grey fine						
1430	5	121	8/10	17"/24"				To medium grain Sand		wet	0	0	0	0
		122	14/16	–				with some quartz pebbles						
		123		Auger										
		124		↓										
1437		125												
1439	6	126	6/8	24"/24"				Brown-Grey		wet	0	0	0	0
		127	9/15	–				Silty Clay		(very plastic)				
		128		Auger										
		129		↓										
1450		130												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: (See previous pages) TAS
Hydropunch samples collected from 100', 120', 140', 160', 180' and 200' BGS.

Converted to Well: Yes ____ No X Well I.D. #: ____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: NWIRP Calverton
PROJECT NUMBER: 3853
DRILLING COMPANY: Delta Well + Pump
DRILLING RIG: Failing F-10
BORING NUMBER: FC-TW20
DATE: 8-2-00
GEOLOGIST: Vince Shickora
DRILLER: Mike Pellegrino

Time	Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Drilling BZ**
1452	7	131	6/6	23"/24"				Brown-Gray		wet	0	0	0	0
		132	7/9	—				Silty Clay		(very plastic)				
		133		Auger										
		134												
		135												
* 1500 / 1502	8	136	4/5	24"/24"				Same as above		wet	0	0	0	0
		137	7/6	—						(plastic)				
		138		Auger										
		139												
		140												
1542 / 1544	9	141	5/6	24"/24"				Same as above		wet	0	0	0	0
		142	6/7	—						(slightly Plastic)				
		143		Auger										
		144												
		145												
1551 / 1553	10	146	8/7	24"/24"				Same as above		wet	0	0	0	0
		147	9/7	—						(slightly Plastic)				
		148		Auger										
		149												
		150												
1602 / 1604	11	151	5/5	24"/24"				Same as above		wet	0	0	0	0
		152	5/6	—						(slightly plastic)				
		153		Auger										
		154												
		155												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks: (see previous pages)

Drilling Area Background (ppm): 0

Converted to Well: Yes ____ No X Well I.D. #: ____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: NWIRP Calverton
PROJECT NUMBER: 3853
DRILLING COMPANY: Delta Well + Pump
DRILLING RIG: Failing F-10
BORING NUMBER: FC-TW20
DATE: 8-7-00
GEOLOGIST: Vince Shickora
DRILLER: mike Pellegrino

Time	Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistancy or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole	Driller BZ
*0734	12	156	5/8	24"/24"				Brown-Gray		wet	0	0	0	0
		157	11/14	-				Silty Clay		(slightly plastic)				
		158		Auger										
		159												
0822		160												
0825	13	161	5/6					Same as above		wet	0	0	0	0
		162	7/7	-						(plastic)				
		163		Auger										
		164												
-5		165												
0838	14	166	6/8					Same as above		wet	0	0	0	0
		167	8/10	-						(plastic)				
		168		Auger										
		169												
0845		170												
0847	15	171	5/10	23"/24"				Same as above		wet	0	0	0	0
		172	10/11	-						(plastic)				
		173		Auger										
		174												
*0855		175												
0857	16	176	7/8					Same as above		wet	0	0	0	0
		177	7/7	-						(very plastic)				
		178		Auger										
		179												
		180												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks: (see previous pages)

Drilling Area Background (ppm): 0

Converted to Well: Yes ____ No X Well I.D. #: ____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: NWIRP Calverton
PROJECT NUMBER: 3853
DRILLING COMPANY: Delta Well & Pump
DRILLING RIG: Failing F-10
BORING NUMBER: FC-TW20
DATE: 8-7-00
GEOLOGIST: Vince Shickard
DRILLER: Mike Pellegrino

Time	Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Driller BZ**
0944	17	181	10/9	20"/24"				Brownish-Gray Poorly		wet	0	0	0	0
		182	10/12	–				Sorted Sand and Gravel						
		183		Auger				size quartz						
		184												
		185												
0951														
0953	18	186	7/10	10"/24"				Gray-Brown fine to		wet	0	0	0	0
		187	11/11	–				Medium grain Sand						
		188		Auger				(Some quartz pebbles)						
		189												
		190												
1002														
1004	19	191	12/14	19"/24"				Brown-Tan fine to		wet	0	0	0	0
		192	16/22	–				Med. Grain Sand with						
		193		Auger				Some quartz pebbles						
		194												
		195												
1013														
1015	20	196	7/8					Tan-Gray-white fine		wet	0	0	0	0
		197	10/14	–				to Medium grain Sand						
		198		Auger				(minor amount of silt)						
		199												
		200												
1100														
1102	21	201	9/10					Same as above		wet	0	0	0	0
		202	11/14											
					EOB									

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks: (See previous pages)

Drilling Area Background (ppm): 0

Converted to Well: Yes ____ No X Well I.D. #: ____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: NWIRP Calverton
PROJECT NUMBER: 3853
DRILLING COMPANY: Delta Well + Pump
DRILLING RIG: Failing F-10
BORING NUMBER: FC-TW21
DATE: 7-20-00
GEOLOGIST: Vince Shickora
DRILLER: Mike Pellegrino

Time	Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Driller BZ**
0956		0						Brown - Silty Sand with some small quartz pebbles		damp	0	0	0	0
0959		5								moist	0	0	0	0
1007		10						Light Brown - Tan Fine To medium grain Sand (Some quartz pebbles)		Moist	0	0	0	0
1009		15						Same as above		moist	0	0	0	0
1012		20			GW			Same as above		wet	0	0	0	0
1015		25						Same as above		wet	0	0	0	0
1018		30						Same as above		wet	0	0	0	0
1022		35						Same as above		wet	0	0	0	0
1024		40						Same as above		wet	0	0	0	0
1027		45						Same as above		wet	0	0	0	0
1029		50						Same as above		wet	0	0	0	0
								?						
		55						?						
1031 / 1118								Grey Silty Clay on		wet				
1120		60						Hydropunch at 60'			0	0	0	0

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: 3.25" X 5' HSA - 2"x2' Stainless Split Spoons (HSA → 0' to 60') (Split spoon 60' to 100') Descriptions conducted by observing cuttings brought to surface by Augers (0' to 60') and may not be accurate

Converted to Well: Yes ____ No X Well I.D. #: ____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: NWIRP Calverton
PROJECT NUMBER: 3853
DRILLING COMPANY: Delta Well + Pump
DRILLING RIG: Failing F-10

BORING NUMBER: ~~FC~~ VAS FC-TW21
DATE: 7-20-00
GEOLOGIST: Vince Shickora
DRILLER: Mike Pellegrino

Time	Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Driller BZ**
1125	1	61	7/8	9/24				Gray Silty Clay		wet	0	0	0	0
		62	14/10	—				with very minor amount of sand						
		63		Auger										
		64		↓										
1130		65		↓										
	2	66	5/5	24/24				Gray Silty Clay		wet	0	0	0	0
		67	5/7	—				(very plastic)						
		68		Auger										
		69		↓										
		70		↓										
1140	3	71	4/4	24/24				Same as above		wet	0	0	0	0
		72	5/4	—										
		73		Auger										
		74		↓										
		75		↓										
1149/1257	4	76	3/5	24/24				Same as above		wet	0	0	0	0
		77	4/4											
		78		Auger										
		79		↓										
1300		80		↓										
	5	81	3/4	24/24				Same as above		wet	0	0	0	0
		82	5/8	—										
		83		Auger										
		84		↓										
1307		85		↓										

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks: Hydropunch samples collected at 60' - 80' and 100'
(see also previous page)

Drilling Area Background (ppm): 0

Converted to Well: Yes ____ No X Well I.D. #: ____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: NWIRP Colverton
PROJECT NUMBER: 3853
DRILLING COMPANY: Delta Well & Pump
DRILLING RIG: Failing F-10
BORING NUMBER: FC-TW21
DATE: 7-20-00
GEOLOGIST: Vince Shickient
DRILLER: Mike Pellegrino

Time	Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Driller BZ**
1308	6	86	3/4	24/24				Gray - Silty Clay		wet	0	0	0	0
		87	5/5	—				with small amount of Sand throughout						
		88		Auger										
		89		↓										
1319		90		↓										
	7	91	5/6	14/24				Brown - Tan fine to		wet	0	0	0	0
		92	5/7	—				medium grain Sand						
		93		Auger				(some quartz pebbles) 2nd silt						
		94		↓										
		95		↓										
1717	8	96	7/9	20/24				Same as above		wet	0	0	0	0
		97	11/14	—										
		98		Auger										
		99		↓										
1420		100		↓										
	9	101	3/5	24/24				Same as above		wet	0	0	0	0
		102	4/8	—										
					EOB									

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: (See previous pages)

Converted to Well: Yes _____ No _____ Well I.D. #: _____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: NWIRP Calverton
PROJECT NUMBER: 3853
DRILLING COMPANY: Delta Well + Pump
DRILLING RIG: Failing F-10

BORING NUMBER: ET-TW06
DATE: 7-19-00
GEOLOGIST: Vince Shickora
DRILLER: Mike Pellegrino

Time	Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Driller BZ**
0900		0						Brown - Silty Sand		damp	0	0	0	0
0903		5						Tan-brown-white Fine to Med. grain Sand (some pebbles)		moist	0	0	0	0
0913		10									0	0	0	0
0916		15						Same as above		moist	0	0	0	0
					GW					wet at ≈ 16' BGS				
0919		20						Same as above			0	0	0	0
0922		25						Same as above		wet	0	0	0	0
0925		30						Same as above		wet	0	0	0	0
0927		35						Same as above		wet	0	0	0	0
0930		40						Same as above		wet	0	0	0	0
0932		45						Same as above		wet	0	0	0	0
0935		50						Same as above		wet	0	0	0	0
0938 / 1100		55						Same as above		wet	0	0	0	0
1102		60												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: 3.25" x 5' HSA → 2" x 2' Stainless split spoons (60' to 100')
(HSA only from 0' to 60') Descriptions from 0' to 60' done by observing cuttings brought to surface by Augers and may not be accurate

Converted to Well: Yes ____ No X Well I.D. #: ____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: NWIRP Calverton
PROJECT NUMBER: 3853
DRILLING COMPANY: Delta Well + Pump
DRILLING RIG: Failing F-10
BORING NUMBER: ET-TW06
DATE: 7-19-00
GEOLOGIST: Vince Shickora
DRILLER: Mike Pellegrino

Time	Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Driller BZ**
1103	1	61	4/4	24/24				Gray - Silty clay (minor amount of sand)		wet	0	0	0	0
		62	6/8	-										
		63		Auger										
		64		↓										
1112		65		↓										
1117	2	66	5/5	24/24				Gray - Silty Clay (very plastic)		wet	0	0	0	0
		67	6/8	-										
		68		Auger										
		69		↓										
		70		↓										
1122	3	71	6/8	10/24				Same as above		wet	0	0	0	0
		72	10/14	-										
		73		Auger										
		74		↓										
		75		↓										
1134	4	76	5/4	24/24				Same as above		wet	0	0	0	0
1225		77	7/9	-										
		78		Auger										
		79		↓										
1228		80		↓										
	5	81	4/6	23/24				Same as above		wet	0	0	0	0
		82	6/12	-										
		83		Auger										
		84		↓										
1238		85		↓										

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: (See previous page)

Hydropunch Groundwater samples collected from 60' - 80' - and 100'

Converted to Well: Yes ____ No X Well I.D. #: ____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: NWIRP Calverton
PROJECT NUMBER: 3853
DRILLING COMPANY: Delta Well & Pump
DRILLING RIG: Failing F-10

BORING NUMBER: ET-TW06
DATE: 7-19-00
GEOLOGIST: Vince Shickora
DRILLER: Mike Pellegrino

Time	Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Driller BZ**
1242	6	86	4/5	24/24				Gray-Silty Clay		wet	0	0	0	0
		87	5/7	—				Brown-Tan Silty Fine		wet	0	0	0	0
		88		Auger				to medium grain Sand						
		89												
		90												
1250	7	91	4/12	23/24				Gray-Brown-Tan Fine		wet	0	0	0	0
		92	16/21	—				To medium grain Gravelly						
		93		Auger				Sand (rounded quartz gravel)						
		94												
		95												
1301	8	96	7/8	15/24				Brown-Gray-Tan Fine		wet	0	0	0	0
		97	10/14	—				To medium grain Sand						
		98		~~Auger~~	Auger			(some rounded quartz pebbles)						
		99												
		100												
1355	9	101	7/8					Same as above		wet	0	0	0	0
		102	8/12	—				Dark Brown-Gray						
		103			EOB			Silty clay at 101ft.						
		104												
		105												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: (see previous pages)

Converted to Well: Yes _____ No _____ Well I.D. #: _____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: NWIRP Calverton
PROJECT NUMBER: 3853-0200
DRILLING COMPANY: Delta Well + Pump
DRILLING RIG: Failing Model F-10
BORING NUMBER: SA-PZ101-$
DATE: 6-6-00
GEOLOGIST: Vince Shickora
DRILLER: Mike Pellegrino

Sample No. and Type or RQD / Time	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (p: Sample	Sampler BZ	Borehole**
							Orange-Tan Medium to					
	5						Fine grain Silty Sand		moist	0	0	0
	10						Tan Medium to fine gr.		moist	0	0	0
							Sand (some silt present)					
	15			GW			white-Tan Medium to		wet	0	0	0
							fine gr. Sand					
	18											
	20			EOB			Same as above		wet	0	0	0

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: Continuous flight HSA to total depth. Descriptions done by examining cuttings brought to surface - Depths may not be accurate 4.25 inch X 5 foot Steel Auger Flights used

Converted to Well: Yes X No ____ Well I.D. #: SA-PZ101-$

(roughly 10 gallons of Drillers decon water placed into augers to prevent flowing sands)

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: NuIRP Calverton
PROJECT NUMBER: 3853-0200
DRILLING COMPANY: Delta Well + Pump
DRILLING RIG: Failing Model F-10

BORING NUMBER: SA-PZ101-I
DATE: 6-7-00
GEOLOGIST: Vince Shickora
DRILLER: Mike Pellegrino

Time	Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Driller BZ**
0902		1		Auger				Orange-Tan Fine to		moist	0	0	0	0
		2						Medium gr. Silty Sand						
		3												
		4												
		5									0	0	0	0
0920	1	6	3/7	18/24				Orange-Tan Fine to		moist	0	0	0	0
		7	8/7					Medium gr. Sand						
		8		Auger				(minimal amount of silt)						
		9												
		10												
0937	2	11	3/7	16/24				white-Tan Fine to		moist	0	0	0	0
		12	8/9					Medium gr. Sand						
		13		Auger	GW									
		14												
		15												
0953	3	16	3/4	16/24				Same as above		wet	0	0	0	0
		17	4/5							(No stains or odors)				
		18		Auger										
		19												
		20												
1005	4	21	4/6	24/24				Tan-Brown Fine to		wet	0	0	0	0
		22	6/13					Medium gr. Slightly						
		23		Auger				Silty Sand						
		24												
		25												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: 3.25 inch I.D. HSA (5 Ft length)
140 pound Hammer
2 inch x 2 Ft. Stainless Steel split spoons

Converted to Well: Yes ✓ No _____ Well I.D. #: SA-PZ101-I

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: UWIRP Calverton
PROJECT NUMBER: 3853-0200
DRILLING COMPANY: Delta Well and Pump
DRILLING RIG: Failing Model F-10
BORING NUMBER: SA-PZ101-I
DATE: 6-7-00
GEOLOGIST: Vince Shickora
DRILLER: Mike Pellegrino

Time	Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Driller BZ**
1017	5	26	2/2	14/24				Tan-Brown Fine to		wet	0	0	0	0
		27	3/5	↓				Medium gr. Slightly		(No stains or odors)				
		28		Auger				Silty Sand						
		29		↓										
		30		↓										
1027	6	31	2/2	11/24				Same as above		wet	0	0	0	0
		32	4/5	↓										
		33		Auger										
		34		↓										
		35		↓										
38	7	36	2/3	24/24				Same as above		wet	0	0	0	0
		37	4/5	↓						(No stains or odors)				
		38		Auger										
		39		↓										
		40		↓										
1057	8	41	6/8	19/24				Same as above		wet	0	0	0	0
		42	11/15	↓										
		43		Auger										
		44		↓										
		45		↓										
1118	9	46	6/7	0/24	Auger ↓			No recovery		—	0	0	0	0
		47	11/11											
					EOB									

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: (See previous page) Used bailer to remove flowing sand from 45' to 47'.
(Approx. 30 gallons of drillers decon water placed into Augers to prevent flowing sand)

Converted to Well: Yes ✓ No _____ Well I.D. #: SA-PZ101-I

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: NWIRP Calverton
PROJECT NUMBER: 3853-0200
DRILLING COMPANY: Delta Well & Pump
DRILLING RIG: Failing Model F-10
BORING NUMBER: SA-PZ101-D
DATE: 6-6-00
GEOLOGIST: Vince Shickora
DRILLER: Mike Pellegrino

Sample No. and Type or RQD* Time	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
							Orange-Tan Medium to						
0842	5						Fine grain Silty Sand		moist	0	0	0	0
0847	10						Tan Medium to fine gr.						
							Sand (minor silt)		moist	0	0	0	0
0850	15												
							White-Tan Medium to						
0852	20			(GW)			Fine gr. Sand		wet	0	0	0	0
	25						Same as above		wet	0	0	0	0
0857	30						Light Brown-Tan fine						
							to medium gr. Silty Sand		wet	0	0	0	0
	35												
0902	40												
							Same as above		wet	0	0	0	0
	45												
0909	50												
	55												
							Same as above		wet	0	0	0	0
0916	60												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: - Continuous Flight Hollow Stem Auguring completed to depth
- Descriptions done by examining cuttings brought to surface and may not be accurate (depth)
- 9.25 inch ID x 9 ft. Auger flights used.

Converted to Well: Yes X No _____ Well I.D. #: SA-PZ101-D

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: NWIRP Calverton
PROJECT NUMBER: 3853-0200
DRILLING COMPANY: Delta Well + Pump
DRILLING RIG: Failing
BORING NUMBER: SA-PZ101-D
DATE: 6-6-00
GEOLOGIST: Vince Shickora
DRILLER: Mike Pellegrino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
							Light Brown-Tan Fine to		wet	0	0	0	0
	65						Medium gr. Silty Sand						
0920	70												
	75												
							Same as above		wet	0	0	0	0
0925	80												
				T.D.									
				EOB									

* When rock coring, enter rock brokeness.

** Provide monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: No odors or stains observed throughout boring.
(roughly 30 gallons of drillers decon water placed into hole to prevent flowing sand)

Converted to Well: Yes X No ____ Well I.D. #: SA-PZ101-D

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: NWIRP Calverton
PROJECT NUMBER: 3853-0200
DRILLING COMPANY: Delta Well + Pump
DRILLING RIG: Failing Model F-10

BORING NUMBER: SA-PZ102-S
DATE: 6-8-00
GEOLOGIST: Vince Shickora
DRILLER: Mike Pellegrino

Time	Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Driller BZ**
1245		1						Dark Brown Fine to		very moist	0	0	0	0
								Medium Grain Silty						
		3						Sand						
					GW					wet	0	0	0	0
		5												
								Same as above						
1257		10						Same as above		Saturated	0	0	0	0
					EOB									

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: Continuous Flight Hollow Stem Auger to depth 3.25" x 5' Auger Flights used - No Stains or odors observed (roughly 10 gallons of driller's decon water placed into Augers to prevent Flowing Sands)

Converted to Well: Yes X No ____ Well I.D. #: SA-PZ102-S

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: NWIRP Calverton
PROJECT NUMBER: 3853-0200
DRILLING COMPANY: Delta Well + Pump
DRILLING RIG: Failing Model F-10
BORING NUMBER: SA-PZ102-I
DATE: 6-9-00
GEOLOGIST: Vince Shickora
DRILLER: Mike Pellegrino

Time	Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Driller BZ**
0747		1	/	Auger							0	0	0	0
		2	/	↓				Dark Brown Fine to Med.		moist to wet				
		3	/					Grain Silty Sand						
		4	/		GW									
		5	/	↓										
0759	1	6	3/1	15/24				Dark Brown Fine to Med		wet	0	0	0	0
		7	1/3	↓				grain Silt-Sand						
		8	/	Auger				(Small amount of clay)						
		9	/	↓										
		10	/											
0809	2	11	2/5	14/24				Brown-Tan Fine to		Saturated	0	0	0	0
		12	6/8	↓				Medium Grain Sand						
		13	/	Auger				(very small amount of silt)						
		14	/	↓										
		15	/											
0822	3	16	2/2	17/24				Tan-Light Brown Fine		Saturated	0	0	0	0
		17	4/9	↓				To Medium grain Sand						
		18	/	Auger										
		19	/	↓										
		20	/											
0833	4	21	3/3	23/24										
		22	3/8	↓				Same as above		Saturated	0	0	0	0
		23	/	Auger										
		24	/	↓										
		25	/											

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: 3.25 inch ID HSA x 5 ft.
140 pound Hammer → 2 inch x 2 ft. Stainless steel ~~Auger~~ Split Spoons

Converted to Well: Yes X No _____ Well I.D. #: SA-PZ102-I

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: NWIRP Calverton
PROJECT NUMBER: 3853-0200
DRILLING COMPANY: Delta Well + Pump
DRILLING RIG: Failing Model F-10
BORING NUMBER: SA-PZ102-I
DATE: 6-9-00
GEOLOGIST: Vince Shickora
DRILLER: Mike Pellegrino

	Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistancy or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Driller BZ**
0841	5	26	3/2	24/24				Light Brown - Tan fine						
		27	4/7	↓				To medium Grain Sand		Saturated	0	0	0	0
		28		Auger				(Small amount of Silt)						
		29		↓										
		30		↓										
0852	6	31	4/3	22/24				Light Brown - Tan fine						
		32	9/10	↓				to Medium grain Sand		Saturated	0	0	0	0
		33		Auger										
		34		↓										
		35		↓										
0903	7	36	4/4	24/24				Light Brown - Tan fine						
		37	6/13	↓				to Medium Grain Sand		Saturated	0	0	0	0
		38		Auger				(Small amount of silt)						
					EOB									

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: (See previous page) No odors or stains observed
-Use bailer to bail out flowing sand from 36 to 37' BGS before setting piezometer
(approx 40 gallons of Drillers decon water placed into Augers to prevent flowing sands

Converted to Well: Yes X No _____ Well I.D. #: SA-PZ102-I

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: NWIRP Calverton
PROJECT NUMBER: 3853-0200
DRILLING COMPANY: Delta Well + Pump
DRILLING RIG: Failing Model F-10
BORING NUMBER: SA-PZ102-D
DATE: 6-8-00
GEOLOGIST: Vince Shickora
DRILLER: Mike Pellegrino

Time	Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Driller BZ**
0740								Dark Brown Fine to		wet	0	0	0	0
0746		5			GW			Medium gr. Silty Sand						
0757		10						Same as above		very wet	0	0	0	0
0802		15						Same as above		Saturated	0	0	0	0
0806		20						Brown Fine to Medium grain Sand		Saturated	0	0	0	0
[illegible]07		25						Brown-Tan Fine to Medium gr. Sand		Saturated	0	0	0	0
0809		30												
0812		35						Same as above		Saturated	0	0	0	0
0814		40						Same as above		Saturated	0	0	0	0
0817		45						Same as above		Saturated	0	0	0	0
0819		50						Same as above		Saturated	0	0	0	0
0821		55						Same as above		Saturated	0	0	0	0
0846		60						Same as above		Saturated	0	0	0	0

* When rock conng, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: Continuous Flight HSA to Total Depth
Descriptions done by examining cuttings brought to surface and may not be accurate (to depth)
3.25 inch x 5 feet Auger Flights used

Converted to Well: Yes X No _____ Well I.D. #: SA-PZ102-D

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: NWIRP Calverton
PROJECT NUMBER: 3853-0200
DRILLING COMPANY: Delta Well + Pump
DRILLING RIG: Failing Model F-10
BORING NUMBER: SA-PZ102-D
DATE: 6-8-00
GEOLOGIST: Vince Shickora
DRILLER: Mike Pellegrino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Driller BZ**
							Brown-Tan fine to		Saturated	0	0	0	0
0852	65						Medium gr. Sand						
							(Minor amount of Silt)						
0854	70												
							Same as above		Saturated	0	0	0	0
0856	75						(some quartz pebbles)						
0858	80						Brown-Tan Poorly			0	0	0	0
				EOB			Sorted Fine to		Saturated				
							Coarse gr. Sand with						
							Some rounded quartz						
							pebbles						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: (See previous page) No stains or odors observed

(roughly 25 gallons of Drillers down water placed into Augers to prevent flowing sands)

Converted to Well: Yes X No ____ Well I.D. #: SA-PZ102-D

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: NWIRP Calverton
PROJECT NUMBER: 3853-0300
DRILLING COMPANY: Delta Well + Pump
DRILLING RIG: Failing Model F-10
BORING NUMBER: SA-PZ103-S
DATE: 6-12-00
GEOLOGIST: Vince Shickora
DRILLER: Mike Pellegrino

Time	Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ**	Borehole**	Driller BZ**
								Light Brown - Tan		(moist)	0	0	0	0
								Fine to Medium						
1249		5						grain Sand						
1254		10						Same as above		(moist)	0	0	0	0
1258		15						Same as above		(moist)	0	0	0	0
1302		20												
		23						Same as above		(wet)	0	0	0	0
					GW									
1306		25												
1310		29						Same as above		(wet)	0	0	0	0
					EOB									

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: Continuous Flight Hollow Stem Auger to Total depth
3.25" x 5ft. Hollow Stem Auger Flight used
No stains or odors observed (roughly 10 gallons water placed into well to prevent flushing s

Converted to Well: Yes ✓ No _____ Well I.D. #: SA-PZ103-S

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: NWIRP Calverton
PROJECT NUMBER: 3853-0300
DRILLING COMPANY: Deltawell + Pump
DRILLING RIG: Failing Model F-10

BORING NUMBER: SA-PZ103-I
DATE: 6-13-00
GEOLOGIST: Vince Snickora
DRILLER: Mike Pellegrino

Time	Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistancy or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Driller BZ**
0805		1		Auger				Orange-Brown fine to						
		2						Medium Silty Sand		(moist)	0	0	0	0
		3												
		4						Light Brown - Tan						
		5						Fine to medium Grain						
0817	1	6	5/9	24/24				Sand (A few small quartz pebbles)		(moist)	0	0	0	0
		7	11/12											
		8		Auger										
		9												
		10												
0827	2	11	4/6	16/24				Same as above		(moist)	0	0	0	0
		12	8/14											
		13		Auger										
		14												
		15												
0836	3	16	3/4	15/24				Same as above		(moist)	0	0	0	0
		17	5/7											
		18		Auger										
		19												
		20												
0845	4	21	2/3	19/24				Light Brown - Tan Fine		(moist)	0	0	0	0
		22	3/5					to medium grain Sand						
		23		Auger										
		24												
		25												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: 3.25" x 5' HSA - 140 pound Hammer
2" x 2' Stainless steel Split Spoons

Converted to Well: Yes X No ____ Well I.D. #: SA-PZ103-I

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: NWIRP Calverton
PROJECT NUMBER: 3853-0300
DRILLING COMPANY: Delta Well & Pump
DRILLING RIG: Failing Model F-10
BORING NUMBER: SA-PZ103-I
DATE: 6-13-00
GEOLOGIST: Vince Shickora
DRILLER: Mike Pellegrino

Time	Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Driller BZ**
0853	5	26	2/3	15/24				Brown-Tan Fine to		(wet)	0	0	0	0
		27	3/3	↓				Medium Grain Sand						
		28		Auger										
		29		↓										
		30												
0903	6	31	3/5	19/24				Same as above		(wet)	0	0	0	0
		32	7/7	↓										
		33		Auger										
		34		↓										
		35												
0914	7	36	2/2	14/24				Same as above		(wet)	0	0	0	0
		37	2/2	↓										
		38		Auger										
		39		↓										
0920		40												
					EOB									

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: (see previous page)
- Added roughly 15 gallons of Drillers decon water to Auger to prevent flowing sands

Converted to Well: Yes X No ____ Well I.D. #: SA-PZ103-I

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: NWIRP Calverton
PROJECT NUMBER: 3853-0300
DRILLING COMPANY: Delta well + Pump
DRILLING RIG: Failing Model F-10

BORING NUMBER: SA-PZ103-D
DATE: 6-12-00
GEOLOGIST: Vince Shickora
DRILLER: Mike Pellegrino

Time	Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Driller BZ**
0809								Light Brown-Tan Fine						
0814		5						to medium grain Sand		(moist)	0	0	0	0
0822		10						Same as above		(moist)	0	0	0	0
0831		15						Same as above		(moist)	0	0	0	0
0835		20						Same as above		(moist)	0	0	0	0
0838		25			GW			Same as above		(moist to wet)	0	0	0	0
0841		30						Same as above		(moist to wet)	0	0	0	0
0843		35						Same as above		(moist to wet)	0	0	0	0
0846		40						Same as above		(moist to wet)	0	0	0	0
0848		45						Same as above		(wet)	0	0	0	0
0851		50						Same as above		(wet)	0	0	0	0
0853		55						Same as above		(wet)	0	0	0	0
0856		60						Same as above		(wet)	0	0	0	0

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: Continuous Flight Hollow Stem Auger to Total depth
Descriptions done by examining cutting brought to surface and may not be accurate to depth.
3.25" x 5 Ft. Auger Flights used

Converted to Well: Yes X No ____ Well I.D. #: SA-PZ103-D

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: NWIRP Calverton
PROJECT NUMBER: 3853-0300
DRILLING COMPANY: Delta Well
DRILLING RIG: Failing F-10
BORING NUMBER: SA-PZ103-D
DATE: 6-12-00
GEOLOGIST: Vince Shickora
DRILLER: Mike Pellegrino

Time	Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Driller BZ**
								Brown - Tan fine to						
0900		65						Medium gr. Sand (with		(wet)	0	0	0	0
								very minor course Sand)						
0902		70						Same as above		(wet)	0	0	0	0
								(some silt present)						
0904		75						Brown fine to Medium						
								grain Silty Sand		(wet)	0	0	0	0
		80												
0907					EOB									
End Boring														

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: (see previous page) No odors or stains observed
(roughly 25 gallons of Drillers decon water placed into well to prevent flowing sands)

Converted to Well: Yes ✓ No _____ Well I.D. #: SA-PZ103-D

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: NWIRP Calverton
PROJECT NUMBER: 3853-0300
DRILLING COMPANY: Delta Well and Pump
DRILLING RIG: Failing Model F-10

BORING NUMBER: SA-PZ104-S
DATE: 6-13-00
GEOLOGIST: Vince Shickora
DRILLER: Mike Pellegrino

Time	Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (pp Sample	Sampler BZ	Borehole**
1252		1						Dark Brown Silt -					
								Sand (minor amount of clay)		very moist	0	0	0
		3											
1258		5			GW			Same as above		(moist to wet)	0	0	0
		7						Dark Brown Organic Material		(wet)	0	0	0
								(Peat) with Silt/Clay					
1304		10						Brown-Tan Silty Sand		wet	0	0	
					EOB			(Fine to Medium Grain)					

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: 3.25" x 5' HSA (continuous Flight to total depth)
(roughly 5 gallons of drillers deion water added to Augers to prevent flowing Sand

Converted to Well: Yes X No _____ Well I.D. #: SA-PZ104-S

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: NWIRP Calverton
PROJECT NUMBER: 3853-0300
DRILLING COMPANY: Delta well + Pump
DRILLING RIG: Failing Model F-10
BORING NUMBER: SA-PZ104-I
DATE: 6-14-00
GEOLOGIST: Vince Shickora
DRILLER: Mike Pellegrino

Time	Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistancy or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
1248		1	/	Auger				Dark Brown Clayey		(very moist)	0	0	0	0
		2	/	↓				Silt and Sand						
		3	/											
		4	/											
		5	/	↓										
1300	1	6	1/1	13/24				Black - organic material		(wet)	0	0	0	0
		7	1/1	↓				with silty Clay (Peat)						
		8	/	Auger				(leaves, roots, etc)						
		9	/	↓										
		10	/	↓										
-8	2	11	1/2	15/24				Dark Brown Fine to Med.		(wet)	0	0	0	0
		12	2/4	↓				Grain Silty Sand with						
		13	/	Auger				small amount of Clay						
		14	/	↓										
		15	/	↓										
1317	3	16	2/2	20/24				Same as above		(saturated)	0	0	0	0
		17	1/3	↓										
		18	/	Auger										
		19	/	↓										
		20	/	↓										
1325	4	21	2/2	17/24				Tan - Brown Fine to						
		22	3/5	↓				Medium Grain Sand		(saturated)	0	0	0	0
		23	/	Auger										
		24	/	↓										
		25	/	↓										

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: 3.25" X 5' Hollow Stem Augers - 140 pound Hammer
2" X 2' Stainless Steel split Spoons

Converted to Well: Yes X No _____ Well I.D. #: SA-PZ104-I

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: NWIRP Calverton
PROJECT NUMBER: 3853-0300
DRILLING COMPANY: Delta Well and Pump
DRILLING RIG: Failing F-10
BORING NUMBER: SA-PZ104-I
DATE: 6-14-00
GEOLOGIST: Vince Shickora
DRILLER: Mike Pellegrino

Time	Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Driller BZ**
1335	5	26	1/1	21/24				Tan-Brown fine to		(saturated)	0	0	0	0
		27	1/2	↓				Medium grain Sand						
		28		Auger				(Some rounded quartz pebbles)						
		29												
		30		↓										
1344	6	31	2/3	22/24				Same as above		(saturated)	0	0	0	0
		32	4/6	↓										
		33		Auger										
		34												
1351		35		↓				Same as above						
					EOB									

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: (see previous page)
(roughly 20 gallons of driller decon water added to Augers to prevent flowing sand.)

Converted to Well: Yes X No ____ Well I.D. #: SA-PZ104-I

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: NWIRP Calverton
PROJECT NUMBER: 3853-0300
DRILLING COMPANY: Delta Well + Pump
DRILLING RIG: Failing Model F-10

BORING NUMBER: SA-PZ104-0
DATE: 6-14-00
GEOLOGIST: Vince Shickura
DRILLER: Mike Pellegrino

Time	Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Driller BZ**
0750								Dark Brown Clayey		(very moist)	0	0	0	0
0756		5						Silt and Sand						
								(organic peat layer at ≈ 7 Ft.)		(wet)	0	0	0	0
0802		10						Black organic peat - clay		(wet)	0	0	0	0
0805		15						Dark Brown Fine grain		(wet)	0	0	0	0
								Silty Sand (some clay)						
0808		20						Same as above (No clay)		(wet)	0	0	0	0
0810		25						Dark Brown Fine to Medium		(saturated)	0	0	0	0
								grain Sand (very little silt)						
0812		30						Same as above		(saturated)	0	0	0	0
0816		35						Same as above		(saturated)	0	0	0	0
0819		40						Brown-Tan Fine grain		(Saturated)	0	0	0	0
								Sand (minor amount silt)						
0821		45						Same as above		(saturated)	0	0	0	0
0825		50						Same as above		(saturated)	0	0	0	0
								(some quartz pebbles)						
0828		55						Brown-tan fine grain		(saturated)	0	0	0	0
								Silty SAND						
0832		60												
								Same as above		(saturated)	0	0	0	0

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: 3.25" x 5' HSA - Continuous Flight to depth
Description done by observing cuttings brought to surface and may not be accurate for depth

Converted to Well: Yes X No ____ Well I.D. #: SA-PZ104-0

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: NWIRP Calverton
PROJECT NUMBER: 3853-C300
DRILLING COMPANY: Delta Well & Pump
DRILLING RIG: Failing Model F-10

BORING NUMBER: SA-PZ104-D
DATE: 6-14-00
GEOLOGIST: Vince Shicki
DRILLER: Mike Pellegrino

Time	Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Drilling BZ**
								Brown-Tan Fine to Medium		(saturated)	0	0	0	0
0835		65						grain Silty Sand						
0837		70						Same as above		(saturated)	0	0	0	0
								(very small amount of clay)						
0839		75						Same as above		(saturated)	0	0	0	0
0841		80						Same as above		(saturated)	0	0	0	0
					EOB									

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: (see previous page)
(Roughly 25 gallons of drillers decon water placed into Augers to prevent flowing sands)

Converted to Well: Yes X No _____ Well I.D. #: SA-PZ104-D

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: NWIRP CALVERTON
PROJECT NUMBER: 3853
DRILLING COMPANY: DELTA WELL & PUMP
DRILLING RIG: FAILING F-10

BORING NUMBER: SA-P2102-D-A
DATE: 8-9-00
GEOLOGIST: R. GOOD
DRILLER: MIKE PELLEGRINO

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ**	Borehole**	Driller BZ**
0841	0					BRN	FGR-MGR SILTY SAND		MOIST	0	0	0	0
0816	5			▽					WET TO				
0831 0833									SATURATED	0	0	0	0
	10					BRN	AS ABOVE ... (SOME QTZ						
0834							PEBBLES POSS.)						
	15												
0837													
	20					BRN	FGR - MGR SAND		SATURATED	0	0	0	0
0839						& GRAY							
	25												
0842													
	30						AS ABOVE POSS SOME		SATURATED	0	0	0	0
0844							COARSE SAND & FINE						
	35						GRAVEL						
0847							(POSS CLAY LAYER @ 35' TO 37' BASED ON DRILLING						
	40						PROPERTIES)		SATURATED	0	0	0	0
0850							(POSS CLAY OR SILT 43' TO						
	45						50' BASED ON DRILLING PROPERTIES)						
0853													
	50								SATURATED	0	0	0	0
0857						BRN	FGR-MGR SAND W/ SOME						
	55					& GRAY	CGR SAND & FINE GRAVEL						
0902													
	60								SATURATED	0	0	0	0
0904													

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: 3.25" x 5' HSA TO TOTAL DEPTH (3.25" I.D.) DESCRIPTIONS APPX. FROM AUGER CUTTINGS & DRILLING PROPERTIES - NO DIRECT SAMPLES OBTAINED

Converted to Well: Yes ____ No ✓ Well I.D. #: N.A.

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: NWIRP CALVERTON
PROJECT NUMBER: 3853
DRILLING COMPANY: DELTA WELL & PUMP
DRILLING RIG: FAILING F-10

BORING NUMBER: SA-PZ102-D-A
DATE: 8-9-00
GEOLOGIST: R. GOOD
DRILLER: MIKE PELLEGRINO

Sample No. and Type or RQD	Depth (FL) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/FL) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	BoreHole**	Driller BZ**
0904						BRN &	FGR-MGR SAND W SOME CGR SAND &						
	65												
0907						GRAY	FINE GRAVEL						
	70								SATURATED	0	0	0	0
0909													
	75												
0911													
	80								SATURATED	0	0	0	0
0913													
	85												
0915													
	90								SATURATED	0	0	0	0
0919	95												
1006									DRIVE HYDROPUNCH SAMPLER 95'-100'				
	100'					DK GRAY	SILTY FGR SAND		OPEN 99'-100'				
1009									SATURATED	0	0	0	0
	105												
1012													
	110								SATURATED	0	0	0	0
1016	115												
						DK OLIVE	SILTY FGR SAND AND/OR		DRIVE HYDROPUNCH SAMPLER 115'-120'				
1053	120					GRAY	SILT (POSS SM CLAY)		OPEN 119'-120'	0	0	0	0
									DRIVE HYDROPUNCH SAMPLER 120'-125'				
	125								OPEN 124'-125'				

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: 3.25" I.D. HSA

Converted to Well: Yes ____ No ✓ Well I.D. #: N.A.

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: NWIRP CALVERTON
BORING NUMBER: SA-PZ102-D-A
PROJECT NUMBER: 3853
DATE: 8-9-00
DRILLING COMPANY: DELTA WELL & PUMP
GEOLOGIST: R. GOOD
DRILLING RIG: FAILING F-10
DRILLER: MIKE PELLEGRINO

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	125												
						DK OLIVE	SILTY FINE SAND AND/OR SILTY CLAY						
	130					GRAY	↓		SATURATED	0	0	0	0
1138	135						↓						
									DRIVE HYDROPUNCH SAMPLER 135'-140'				
									OPEN 135'-140'				

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: 3.25" HSA TO 135'
NATURAL GAMMA LOG BOREHOLE TO 130'
BACK FILL BOREHOLE w/ CEMENT-BENTONITE GROUT

Converted to Well: Yes ____ No ✓ Well I.D. #: N.A.

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: NWIRP Calverton
PROJECT NUMBER: 3853
DRILLING COMPANY: Delta Well + Pump
DRILLING RIG: Failing F-10

BORING NUMBER: SA-TW-111
DATE: 7-12-00
GEOLOGIST: Vince Shickora
DRILLER: Mike Pellegrino

Time	Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Driller BZ**
0850		0						Dark Brown Silty Sand		Moist	0	0	0	0
								with Some Peat like Mat.						
0900		5								wet at ≈ 5.0'	0	0	0	0
0948					GW			Brown - Fine to Medium						
		10						grain Sand with some			0	0	0	0
								quartz pebbles		wet				
0957		15												
								Light Brown - Tan Fine						
1001		20						To medium grain Sand		(wet)	0	0	0	0
1038								with quartz pebbles						
1041		25												
1043		30						Same as above		wet	0	0	0	0
1046		35												
1048		40						Same as above		wet	0	0	0	0
1125														
1129		45												
1132		50						Same as above		wet	0	0	0	0
1136		55												
1140		60						Same as above		wet	0	0	0	0

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: 3.25" x 5' HSA
Description done by observing cuttings brought to surface by HSA and may not be accurate

Converted to Well: Yes ____ No X Well I.D. #: ____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: NWIRP Calverton
PROJECT NUMBER: 3853
DRILLING COMPANY: Delta Well & Pump
DRILLING RIG: Failing F-10
BORING NUMBER: SA-TW-111
DATE: 7-12-00
GEOLOGIST: Vince Shickora
DRILLER: Mike Pellegrino

Time	Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Drilled BZ**
1238		60						Grey silty Clay seen			0	0	0	0
								on Hydropunch Sampler		wet				
1240		65												
								unknown						
1243		70												
1245		75								wet	0	0	0	0
1247		80												
		85								wet	0	0	0	0
					EOB									

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: (See previous page)

Converted to Well: Yes _____ No _____ Well I.D. #: _____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: NWIRP Calverton
PROJECT NUMBER: 3853
DRILLING COMPANY: Delta Well + Pump
DRILLING RIG: Failing F-10

BORING NUMBER: SA-TW-112
DATE: 7-10-00
GEOLOGIST: Vince Shickora
DRILLER: Mike Pellegrino

Time	Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Drillers BZ**
0948		0						orange-Brown Fine to		(moist)	0	0	0	0
								Medium gr. Silty Sand						
0958		5												
								light Brown-Tan Fine		(moist)	0	0	0	0
1003		10						To medium gr. Sand						
		15			GW			Tan-white Fine to		wet at roughly	0	0	0	0
								Medium gr. Sand		15' BGS				
1021		20						(some quartz pebbles						
1115 ↓		25						Same as above		wet	0	0	0	0
1118		30												
								Same as above		wet	0	0	0	0
1121 / 1155 ↓		35												
1158		40						Same as above		wet	0	0	0	0
1200		45												
1204 / 1255 ↓		50						Same as above		wet	0	0	0	0
		55												
1258		60						Same as above		wet	0	0	0	0

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks: Hollow Stem Auger (3.25" x 5')
(see next page)

Drilling Area Background (ppm): 0

Converted to Well: Yes ____ No X Well I.D. #: ____

Tetra Tech NUS, Inc.

BORING LOG

Page ___ of ___

PROJECT NAME: NWIRP Calverton
PROJECT NUMBER: 3553
DRILLING COMPANY: Delta Well + Pump
DRILLING RIG: Failing Model F-10
BORING NUMBER: SA-TW-112
DATE: 7-10-00
GEOLOGIST: Vince Shickora
DRILLER: Mike Pellegrino

	Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Driller BZ**
1258		60						Light Brown - Tan - white		wet	0	0	0	0
								fine to Medium grain						
1301		65						Sand (some pebbles)						
1304		70						Same as above		wet	0	0	0	0
								Gray Clay layer		wet				
1355		75						at ≈ 72' to 75'		(clay seen on sampler)				
1358		80						unknown			0	0	0	0
2		85						unknown						
1404		90												
								unknown			0	0	0	0
		95												
					EOB									

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: Hollow Stem Auger (3.25' x 5') to 90' total depth
-descriptions done by observing cuttings brought to surface and may not be accurate for depth

Converted to Well: Yes ____ No X Well I.D. #: ____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: NWIRP Calverton
PROJECT NUMBER: 3553
DRILLING COMPANY: Delta Well + Pump
DRILLING RIG: Failing F-10

BORING NUMBER: SA-TW-113
DATE: 7-11-00
GEOLOGIST: Vince Shickora
DRILLER: Mike Pellegrino

Time	Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
0928		0			GW			Brown fine to Medium grain Silty Sand		damp to moist	0	0	0	0
0933		5						Brown fine to Medium grain Sand with some quartz pebbles		moist	0	0	0	0
0938		10												
0942		15								wet at ≈ 14.5'	0	0	0	0
1036								Light Brown - Tan fine To medium grain Sand						
1042		20								wet	0	0	0	0
1045		25						Same as above		wet	0	0	0	0
1047		30						Same as above		wet	0	0	0	0
1125														
1128		35						Same as above		wet	0	0	0	0
1130		40						Same as above		wet	0	0	0	0
1133		45						Same as above		wet	0	0	0	0
1136		50												
1205		55												
1301								Same as above		wet	0	0	0	0
1307		60												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: 3.25" x 5' HSA to total depth
Sample descriptions done by observing cuttings brought to surface by Augers and May not be accurate to depth

Converted to Well: Yes ____ No X Well I.D. #: ____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: NWIRP Calverton
PROJECT NUMBER: 3853
DRILLING COMPANY: Delta Well + Pump
DRILLING RIG: Failing F-10
BORING NUMBER: SA-TW-113
DATE: 7-11-00
GEOLOGIST: Vince Shickora
DRILLER: Mike Pellegrino

Time	Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistancy or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Driller BZ**
1307		60						Same as above		wet	0	0	0	0
1311		65						Same as above		wet	0	0	0	0
1314		70												
								Same as above		wet	0	0	0	0
		75												
		80						Same as above		wet	0	0	0	0
		85												
		90												
								Same as above		wet	0	0	0	0
		95												
					EOB									

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks: (see previous page)

Drilling Area Background (ppm): 0

Converted to Well: Yes ____ No X Well I.D. #: ____

APPENDIX E

MONITORING WELL CONSTRUCTION SHEETS

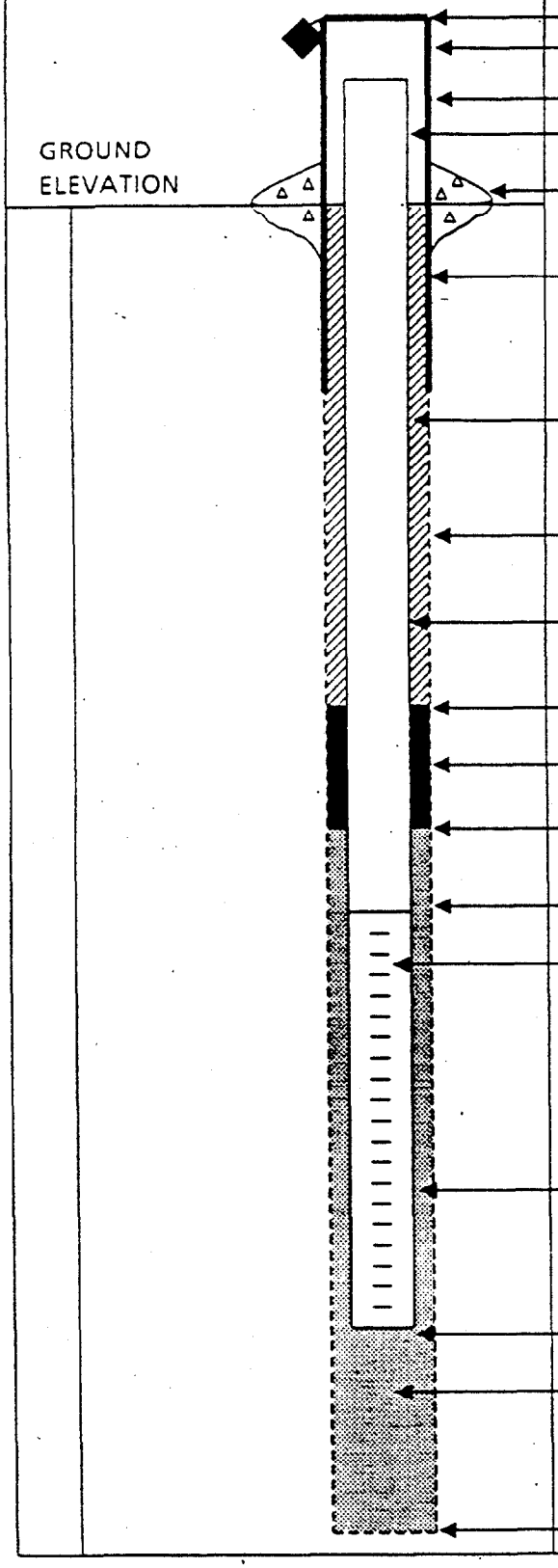
BORING NO.: _____

OVERBURDEN
MONITORING WELL SHEET

PROJECT: CALVERTON
PROJECT NO.: 7398
ELEVATION: _____
FIELD GEOLOGIST: MARSHALL

LOCATION: _____
BORING: _____
DATE: 4/9/97

DRILLER: MILLER
DRILLING METHOD: HSA
DEVELOPMENT METHOD: _____



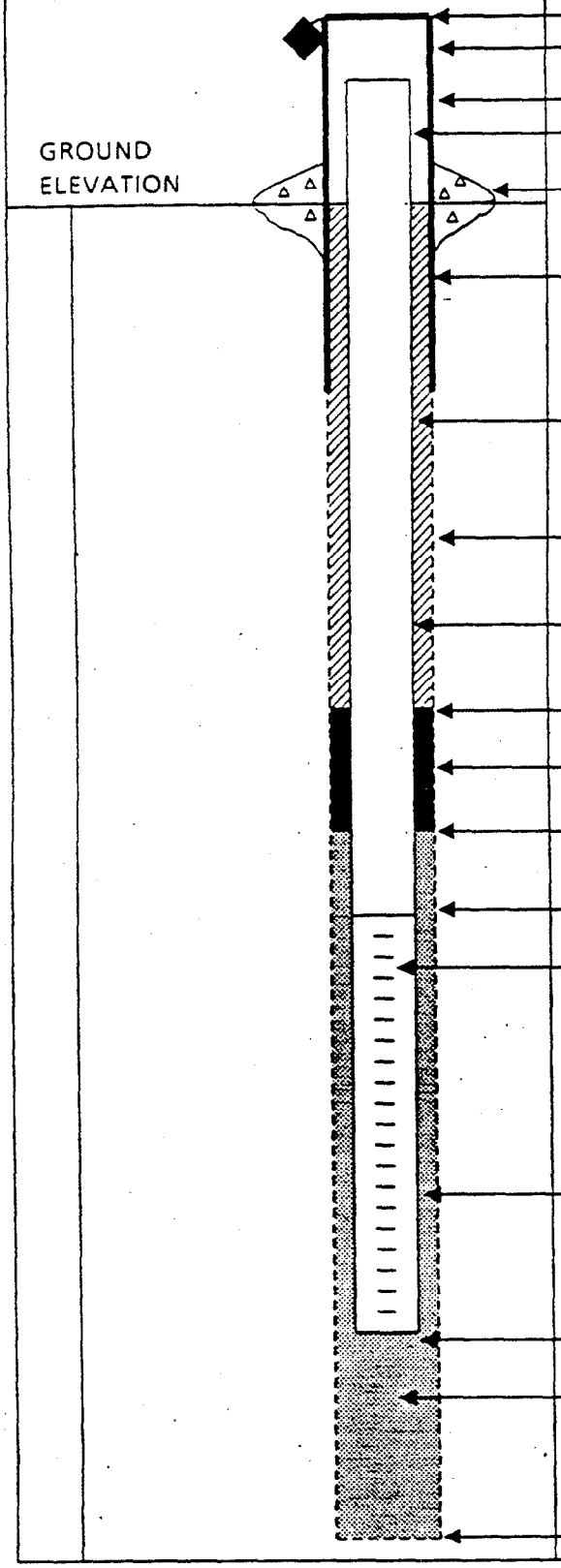
ELEVATION OF TOP OF SURFACE CASING: _____
ELEVATION OF TOP OF RISER PIPE: _____
STICK - UP TOP OF SURFACE CASING: 2 1/2
STICK - UP RISER PIPE: 2 1/2
TYPE OF SURFACE SEAL: CEMENT
I.D. OF SURFACE CASING: 8"
TYPE OF SURFACE CASING: STEEL STICKUP
RISER PIPE I.D. 4"
TYPE OF RISER PIPE: PVC
BOREHOLE DIAMETER: 8"
TYPE OF BACKFILL: GROUT
ELEVATION / DEPTH TOP OF SEAL: 1'
TYPE OF SEAL: BENTONITE PELLETS
DEPTH TOP OF SAND PACK: 3'
ELEVATION / DEPTH TOP OF SCREEN: 15'
TYPE OF SCREEN: PVC
SLOT SIZE x LENGTH: 20 slot x10'
I.D. OF SCREEN: 4"
TYPE OF SAND PACK: #1 SAND
ELEVATION / DEPTH BOTTOM OF SCREEN: 15'
ELEVATION / DEPTH BOTTOM OF SAND PACK: 1
TYPE OF BACKFILL BELOW OBSERVATION WELL: SAND
ELEVATION / DEPTH OF HOLE: 18'

OVERBURDEN
MONITORING WELL SHEET

PROJECT NWIRP-Calverton
PROJECT NO. 7398
ELEVATION
FIELD GEOLOGIST TERESA SAWYER

LOCATION Calverton, NY
BORING FC-MW08
DATE 6/9/97

DRILLER M. Mueller
DRILLING METHOD HSA
DEVELOPMENT METHOD Sub pump & air



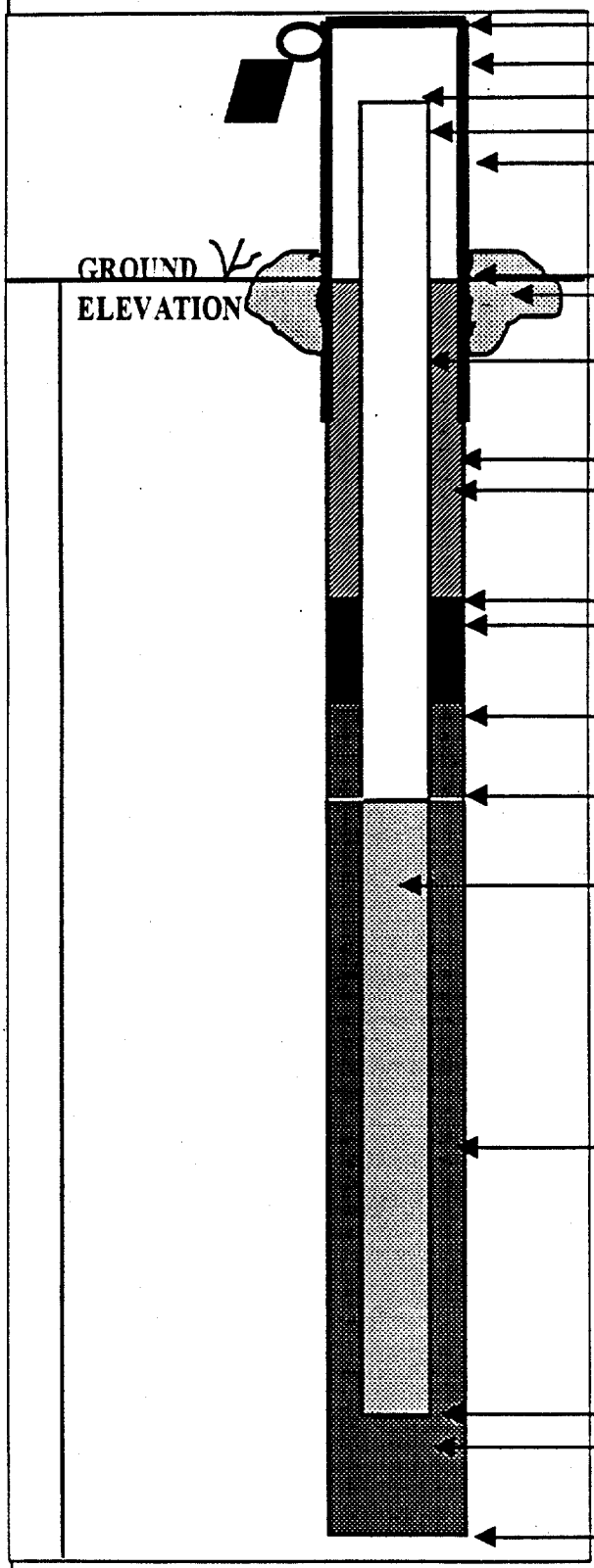
ELEVATION OF TOP OF SURFACE CASING :
ELEVATION OF TOP OF RISER PIPE:
STICK - UP TOP OF SURFACE CASING
STICK - UP RISER PIPE : 2.5
TYPE OF SURFACE SEAL: Concrete
I.D. OF SURFACE CASING: 8"
TYPE OF SURFACE CASING: Steel
RISER PIPE I.D. 4"
TYPE OF RISER PIPE: Schedule 40 PVC
BOREHOLE DIAMETER: 10.25"
TYPE OF BACKFILL: Concrete
ELEVATION / DEPTH TOP OF SEAL: NA
TYPE OF SEAL: NA
DEPTH TOP OF SAND PACK: 1.5
ELEVATION / DEPTH TOP OF SCREEN: 12
TYPE OF SCREEN: Schedule 40 PVC
SLOT SIZE x LENGTH: .020 slot 10'
I.D. OF SCREEN: 4"
TYPE OF SAND PACK: #1 FILTER SAND
ELEVATION / DEPTH BOTTOM OF SCREEN: 12
ELEVATION / DEPTH BOTTOM OF SAND PACK: 1
TYPE OF BACKFILL BELOW OBSERVATION WELL: #1 FILTER SAND
ELEVATION / DEPTH OF HOLE: 15

BORING NO.: SA-PZ101-5

Tetra Tech NUS, Inc.

OVERBURDEN MONITORING WELL SHEET

PROJECT:	NWIRP Calverton	DRILLING Co.:	Delta Well	BORING No.:	SA-PZ101-5
PROJECT No.:	3853-0200	DRILLER:	Mike Pellegrino	DATE COMPLETED:	6-6-00
SITE:	Southern Area	DRILLING METHOD:	HSA	NORTHING:	–
GEOLOGIST:	Vince Shickora	DEV. METHOD:	–	EASTING:	–



ELEVATION OF TOP OF SURFACE CASING:

STICK-UP TOP OF SURFACE CASING:

ELEVATION OF TOP OF RISER PIPE:

RISER STICK-UP ABOVE GROUND SURFACE: ≈ 2.5'

I.D. OF SURFACE CASING: 3 inch

TYPE OF SURFACE CASING: Steel

GROUND ELEVATION:

TYPE OF SURFACE SEAL: Natural Sand

RISER PIPE I.D.: one inch

TYPE OF RISER PIPE: PVC

BOREHOLE DIAMETER: 6 inch

TYPE OF BACKFILL: Natural material

ELEVATION / DEPTH OF SEAL: 2.5'

TYPE OF SEAL: 3/8 inch bentonite pellets

ELEVATION / DEPTH TOP OF FILTER PACK: 4.5'

ELEVATION / DEPTH TOP OF SCREEN: 12.5'

TYPE OF SCREEN: PVC

SLOT SIZE X LENGTH: ~~0.002~~ VAS .002" x 5'

I.D. OF SCREEN: one inch

TYPE OF FILTER PACK: Natural material -
Boring allowed to collapse around well screen

ELEVATION / DEPTH BOTTOM OF SCREEN: 17.5'

ELEVATION / DEPTH BOTTOM OF FILTER PACK: 17.5'

TYPE OF BACKFILL BELOW WELL: Natural
Boring allowed to collapse around well

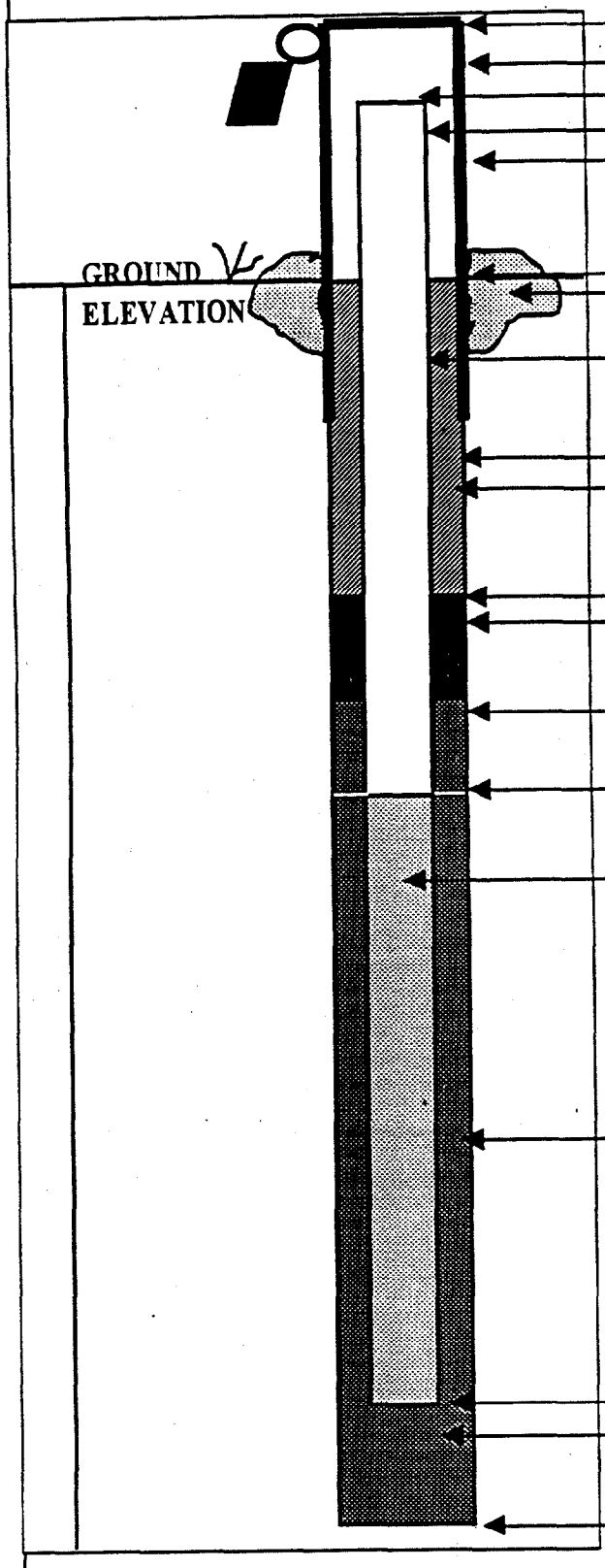
ELEVATION / DEPTH OF BOREHOLE: 18'

BORING NO.: SA-PZ101-I

Tetra Tech NUS, Inc.

OVERBURDEN MONITORING WELL SHEET

PROJECT:	NWIRP Calverton	DRILLING Co.:	Delta Well	BORING No.:	SA-PZ101
PROJECT No.:	3853-020C	DRILLER:	Mike Pellegrino	DATE COMPLETED:	6-7-00
SITE:	Southern Area	DRILLING METHOD:	HSA	NORTHING:	–
GEOLOGIST:	Vince Shickora	DEV. METHOD:	–	EASTING:	–



ELEVATION OF TOP OF SURFACE CASING:

STICK-UP TOP OF SURFACE CASING:

ELEVATION OF TOP OF RISER PIPE:

RISER STICK-UP ABOVE GROUND SURFACE: ± 2.5'

I.D. OF SURFACE CASING: 3 inch

TYPE OF SURFACE CASING: Steel

GROUND ELEVATION:

TYPE OF SURFACE SEAL: Natural material - Bentonite grout to ± 5 ft. BGS

RISER PIPE I.D.: One inch

TYPE OF RISER PIPE: PVC

BOREHOLE DIAMETER: 6 inch

TYPE OF BACKFILL: Bentonite grout

ELEVATION / DEPTH OF SEAL:

TYPE OF SEAL: Bentonite grout

ELEVATION / DEPTH TOP OF FILTER PACK: 32'

ELEVATION / DEPTH TOP OF SCREEN: 42'

TYPE OF SCREEN: PVC

SLOT SIZE X LENGTH: .002" X 5'

I.D. OF SCREEN: One inch

TYPE OF FILTER PACK: Natural material

Boring allowed to collapse around well screen

ELEVATION / DEPTH BOTTOM OF SCREEN: 47'

ELEVATION / DEPTH BOTTOM OF FILTER PACK: 47

TYPE OF BACKFILL BELOW WELL: Natural - Boring allowed to collapse around well

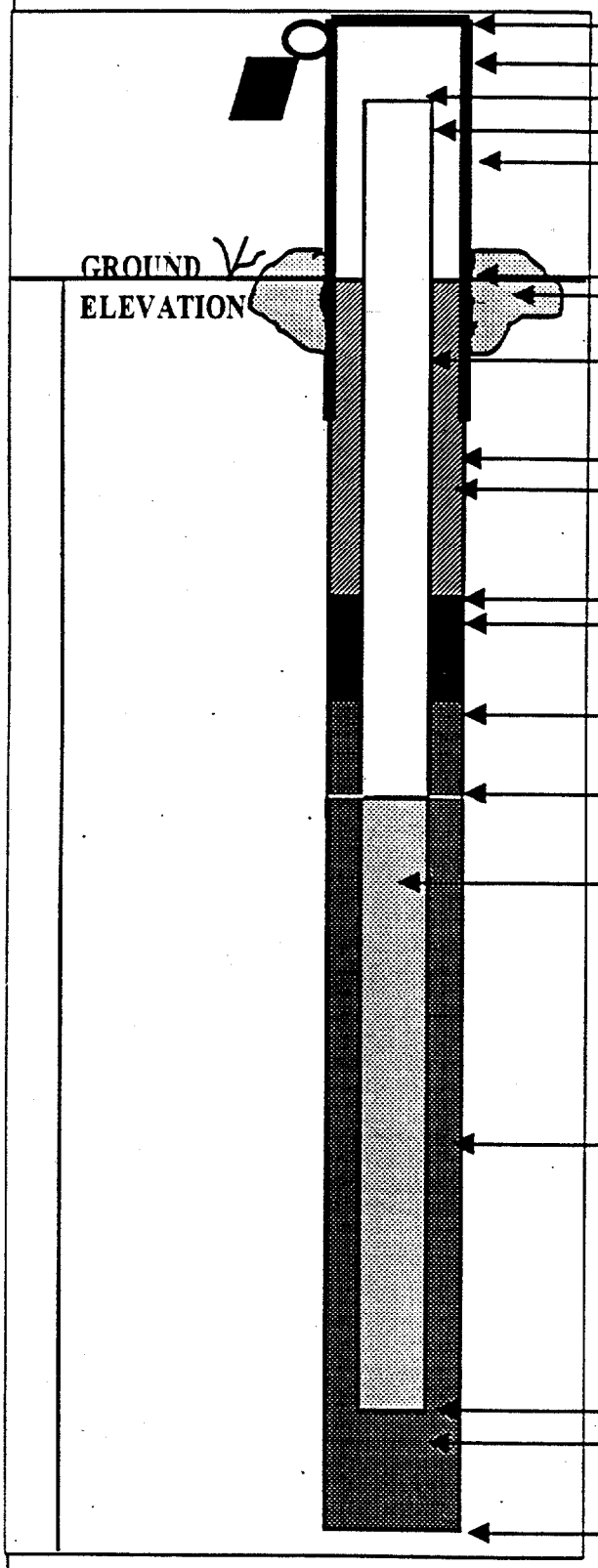
ELEVATION / DEPTH OF BOREHOLE: 47'

BORING NO.: SA-PZ101-D

Tetra Tech NUS, Inc.

OVERBURDEN MONITORING WELL SHEET

PROJECT:	NWIRP Calverton	DRILLING Co.:	Delta Well	BORING No.:	SA-PZ101-D
PROJECT No.:	3853-0200	DRILLER:	Mike Pellegrino	DATE COMPLETED:	6-6-00
SITE:	Southern Area	DRILLING METHOD:	Hollow Stem Auger	NORTHING:	–
GEOLOGIST:	Vince Shickora	DEV. METHOD:	–	EASTING:	–



ELEVATION OF TOP OF SURFACE CASING:

STICK-UP TOP OF SURFACE CASING:

ELEVATION OF TOP OF RISER PIPE:

RISER STICK-UP ABOVE GROUND SURFACE: ≈ 2.5 Ft.

I.D. OF SURFACE CASING: 3 inch

TYPE OF SURFACE CASING: Steel

GROUND ELEVATION:

TYPE OF SURFACE SEAL: Natural sand

Bentonite grout to ≈ 5 Ft. BGS.

RISER PIPE I.D.: One inch

TYPE OF RISER PIPE: PVC

BOREHOLE DIAMETER: 6 inch O.D.

TYPE OF BACKFILL:

Bentonite Grout

VAS

ELEVATION / DEPTH OF SEAL: ~~66'~~ NA

TYPE OF SEAL: Bentonite Grout

ELEVATION / DEPTH TOP OF FILTER PACK: 66'

ELEVATION / DEPTH TOP OF SCREEN: 75'

TYPE OF SCREEN: PVC

VAS

SLOT SIZE X LENGTH: ~~0.002~~ 0.002" X 5 Ft

I.D. OF SCREEN: One inch

TYPE OF FILTER PACK: Natural material -

Boring allowed to collapse around well screen

ELEVATION / DEPTH BOTTOM OF SCREEN: 80'

ELEVATION / DEPTH BOTTOM OF FILTER PACK: –

TYPE OF BACKFILL BELOW WELL: Natural -

Boring allowed to collapse around well

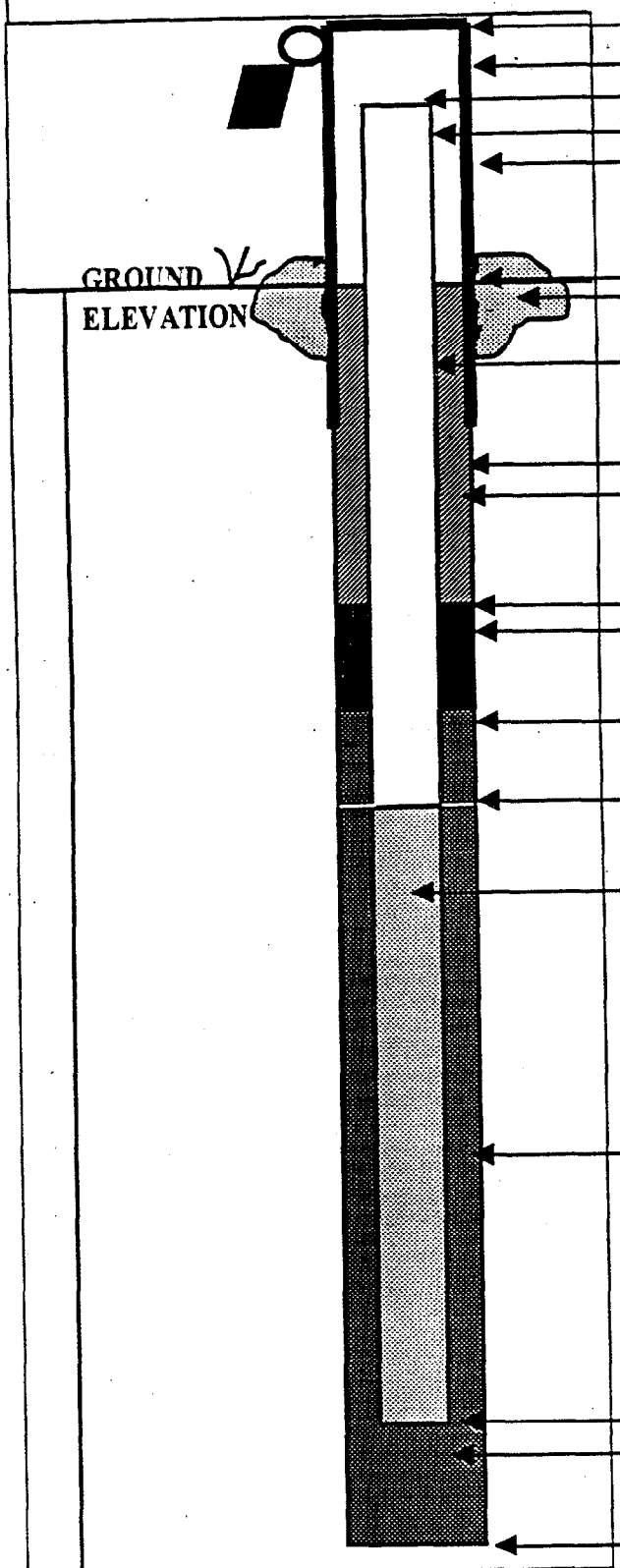
ELEVATION / DEPTH OF BOREHOLE: 80'

BORING NO.: SA-PZ102-S

Tetra Tech NUS, Inc.

OVERBURDEN MONITORING WELL SHEET

PROJECT:	NWIRP Calverton	DRILLING Co.:	Delta Well	BORING No.:	SA-PZ-10
PROJECT No.:	3853-0200	DRILLER:	Mike Pellegrino	DATE COMPLETED:	6-8-[illegible]
SITE:	Southern Area	DRILLING METHOD:	HSA	NORTHING:	-
GEOLOGIST:	Vince Shickora	DEV. METHOD:	-	EASTING:	-



ELEVATION OF TOP OF SURFACE CASING:

STICK-UP TOP OF SURFACE CASING:

ELEVATION OF TOP OF RISER PIPE:

RISER STICK-UP ABOVE GROUND SURFACE: ≈2.5'

I.D. OF SURFACE CASING: 3 inch

TYPE OF SURFACE CASING: Steel

GROUND ELEVATION:

TYPE OF SURFACE SEAL: Natural material

RISER PIPE I.D.: one inch

TYPE OF RISER PIPE: PVC

BOREHOLE DIAMETER: 6 inch

TYPE OF BACKFILL: Bentonite Grout to 2.0' BGS

ELEVATION / DEPTH OF SEAL: NA

TYPE OF SEAL: Bentonite Grout

ELEVATION / DEPTH TOP OF FILTER PACK: 3.0'

ELEVATION / DEPTH TOP OF SCREEN: 4.5'

TYPE OF SCREEN: PVC

SLOT SIZE X LENGTH: 0.02" x 5'

I.D. OF SCREEN: one inch

TYPE OF FILTER PACK: Natural material - Boring allowed to collapse around well

ELEVATION / DEPTH BOTTOM OF SCREEN: 9.5'

ELEVATION / DEPTH BOTTOM OF FILTER PACK: -

TYPE OF BACKFILL BELOW WELL: Natural - Boring allowed to collapse around well screen

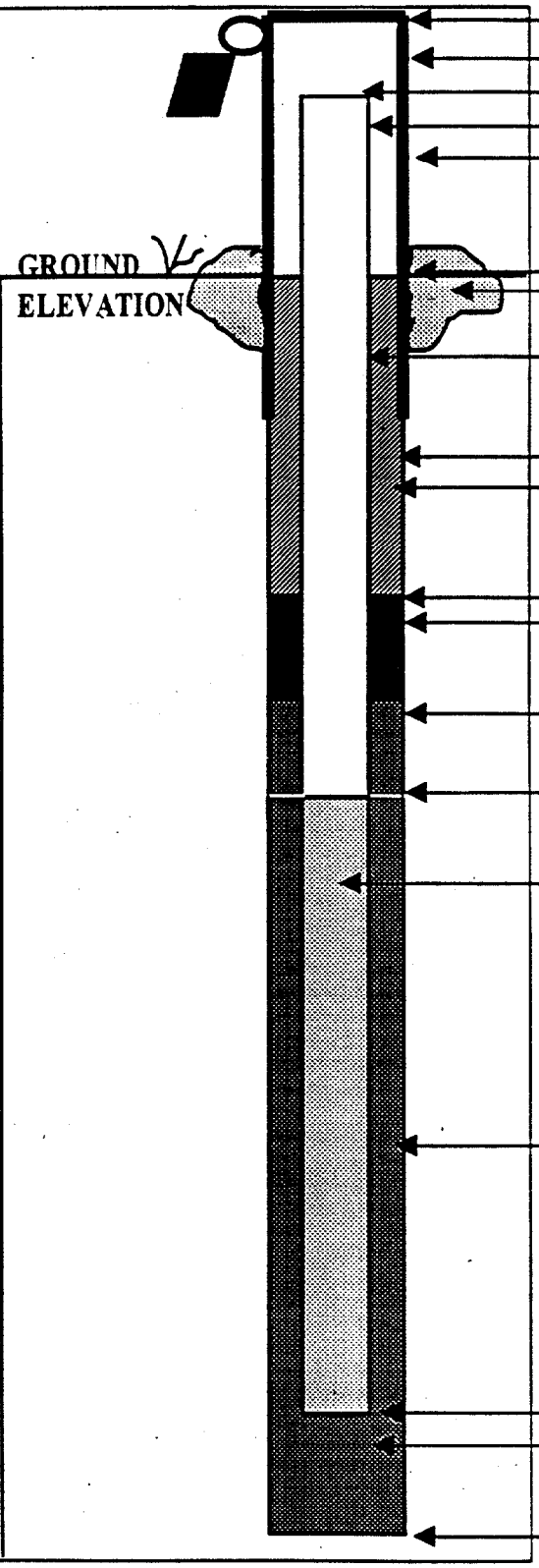
ELEVATION / DEPTH OF BOREHOLE: 10'

BORING NO.: SA-PZ102-I

Tetra Tech NUS, Inc.

OVERBURDEN MONITORING WELL SHEET

PROJECT:	NWIRP Calverton	DRILLING Co.:	Delta Well	BORING No.:	SA-PZ102-I
PROJECT No.:	3853-0200	DRILLER:	Mike Pellegrino	DATE COMPLETED:	6-9-00
SITE:	Southern Area	DRILLING METHOD:	HSA	NORTHING:	-
GEOLOGIST:	Vince Shickora	DEV. METHOD:	-	EASTING:	-



ELEVATION OF TOP OF SURFACE CASING:

STICK-UP TOP OF SURFACE CASING:

ELEVATION OF TOP OF RISER PIPE:

RISER STICK-UP ABOVE GROUND SURFACE: ≈ 2.5 ft.

I.D. OF SURFACE CASING: 3 inch

TYPE OF SURFACE CASING: Steel

GROUND ELEVATION:

TYPE OF SURFACE SEAL: Natural material

RISER PIPE I.D.: one inch

TYPE OF RISER PIPE: PVC

BOREHOLE DIAMETER: 6 inch

TYPE OF BACKFILL: Bentonite grout to 5 ft. BGS

ELEVATION / DEPTH OF SEAL: 24'

TYPE OF SEAL: Bentonite grout

ELEVATION / DEPTH TOP OF FILTER PACK: 25'

ELEVATION / DEPTH TOP OF SCREEN: 32'

TYPE OF SCREEN: PVC

SLOT SIZE X LENGTH: 0.02" x 5 ft.

I.D. OF SCREEN: one inch

TYPE OF FILTER PACK: Natural material - Boring allowed to collapse around well

ELEVATION / DEPTH BOTTOM OF SCREEN: 37'

ELEVATION / DEPTH BOTTOM OF FILTER PACK: -

TYPE OF BACKFILL BELOW WELL: Natural - Boring allowed to collapse around well screen

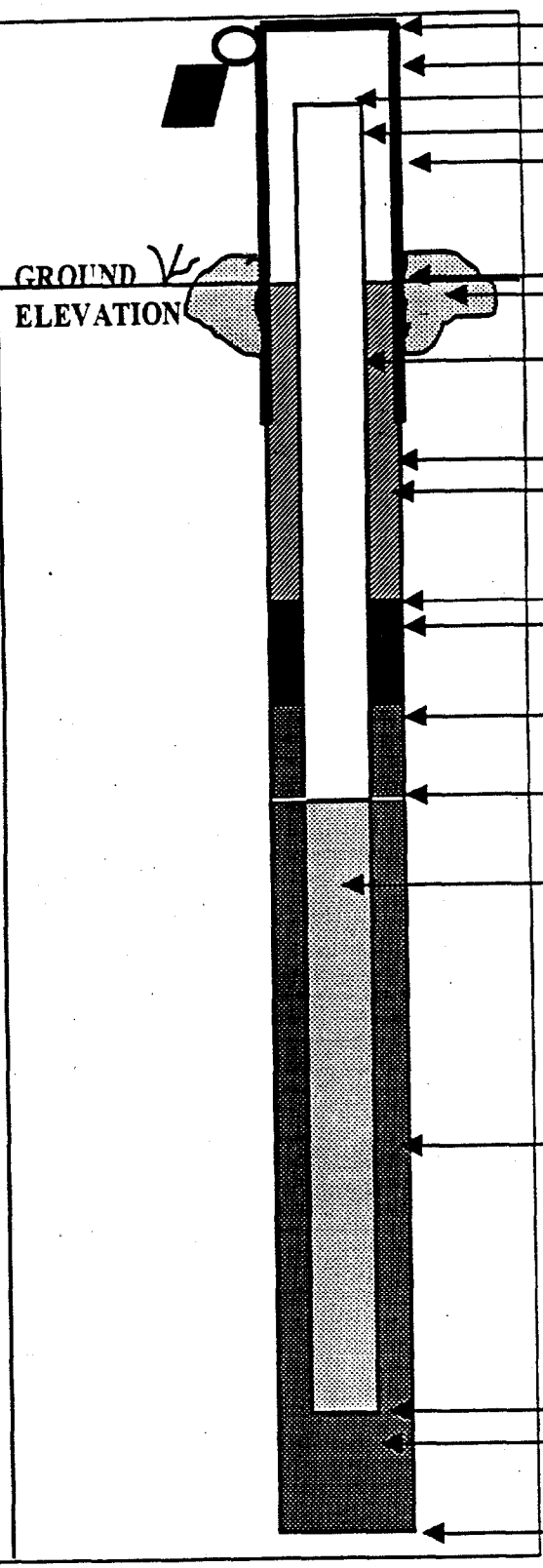
ELEVATION / DEPTH OF BOREHOLE: 38'

BORING NO.: SA-PZ102-D

Tetra Tech NUS, Inc.

OVERBURDEN MONITORING WELL SHEET

PROJECT:	NWIRP Calverton	DRILLING Co.:	Delta Well	BORING No.:	SA-PZ10[illegible]
PROJECT No.:	3853-0200	DRILLER:	Mike Pellegrino	DATE COMPLETED:	6-8-[illegible]
SITE:	Southern Area	DRILLING METHOD:	HSA	NORTHING:	-
GEOLOGIST:	Vince Shickora	DEV. METHOD:	-	EASTING:	-



ELEVATION OF TOP OF SURFACE CASING:

STICK-UP TOP OF SURFACE CASING:

ELEVATION OF TOP OF RISER PIPE:

RISER STICK-UP ABOVE GROUND SURFACE: ≈2.5 ft.

I.D. OF SURFACE CASING: 3 inch

TYPE OF SURFACE CASING: Steel

GROUND ELEVATION:

TYPE OF SURFACE SEAL: Natural material

RISER PIPE I.D.: one inch

TYPE OF RISER PIPE: PVC

BOREHOLE DIAMETER: 6 inch

TYPE OF BACKFILL: Bentonite Grout to 5 ft. BGS

ELEVATION / DEPTH OF SEAL: N/A

TYPE OF SEAL: Bentonite Grout

ELEVATION / DEPTH TOP OF FILTER PACK: 65'

ELEVATION / DEPTH TOP OF SCREEN: 75'

TYPE OF SCREEN: PVC

SLOT SIZE X LENGTH: 0.02" X 5'

I.D. OF SCREEN: one inch

TYPE OF FILTER PACK: Natural Material - Boring allowed to collapse around well

ELEVATION / DEPTH BOTTOM OF SCREEN: 80'

ELEVATION / DEPTH BOTTOM OF FILTER PACK: -

TYPE OF BACKFILL BELOW WELL: Natural - Boring allowed to collapse around well screen

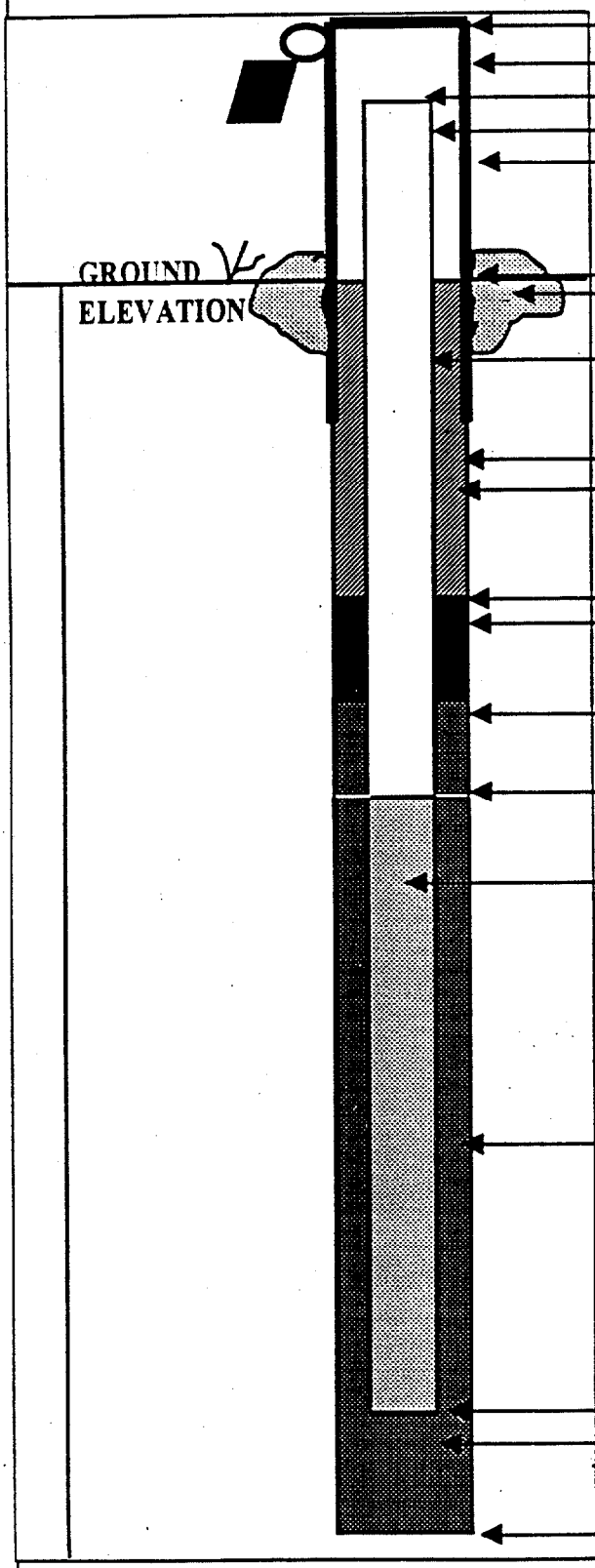
ELEVATION / DEPTH OF BOREHOLE: 80'

BORING NO.: SA-PZ103-S

Tetra Tech NUS, Inc.

OVERBURDEN MONITORING WELL SHEET

PROJECT:	NWIRP Calverton	DRILLING Co.:	Delta Well	BORING No.:	SA-PZ103-S
PROJECT No.:	3853-0300	DRILLER:	Mike Pellegrino	DATE COMPLETED:	6-12-00
SITE:	Southern Area	DRILLING METHOD:	HSA	NORTHING:	
GEOLOGIST:	Vince Shickora	DEV. METHOD:		EASTING:	



ELEVATION OF TOP OF SURFACE CASING:

STICK-UP TOP OF SURFACE CASING:

ELEVATION OF TOP OF RISER PIPE:

RISER STICK-UP ABOVE GROUND SURFACE: ≈ 2.5 Ft.

I.D. OF SURFACE CASING: 6 inch

TYPE OF SURFACE CASING: Steel

GROUND ELEVATION:

TYPE OF SURFACE SEAL: Natural

RISER PIPE I.D.: one inch

TYPE OF RISER PIPE: PVC

BOREHOLE DIAMETER: 6 inch

TYPE OF BACKFILL: Bentonite grout From 16' to 5' BGS

ELEVATION / DEPTH OF SEAL:

TYPE OF SEAL: Bentonite grout

ELEVATION / DEPTH TOP OF FILTER PACK: 16'

ELEVATION / DEPTH TOP OF SCREEN: 24'

TYPE OF SCREEN: PVC

SLOT SIZE X LENGTH: 0.02" X 5'

I.D. OF SCREEN: one inch

TYPE OF FILTER PACK: Natural Material - Boring allowed to collapse around well

ELEVATION / DEPTH BOTTOM OF SCREEN: 29'

ELEVATION / DEPTH BOTTOM OF FILTER PACK: -

TYPE OF BACKFILL BELOW WELL: Natural - Boring allowed to collapse around well screen

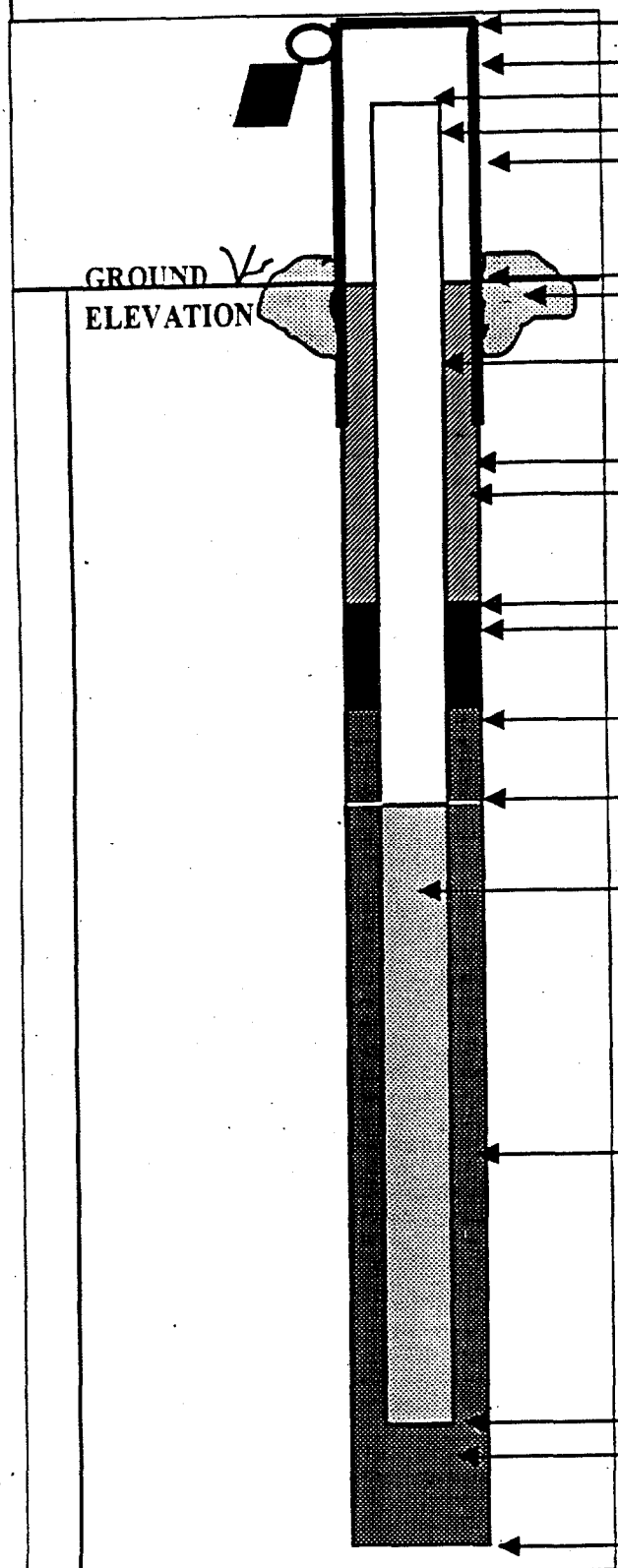
ELEVATION / DEPTH OF BOREHOLE: 29'

BORING NO.: SA-PZ103-I

Tetra Tech NUS, Inc.

OVERBURDEN MONITORING WELL SHEET

PROJECT:	NWIRP Calverton	DRILLING Co.:	Delta well	BORING No.:	SA-PZ103
PROJECT No.:	3853-0300	DRILLER:	Mike Pellegrino	DATE COMPLETED:	6-13-00
SITE:	Southern Area	DRILLING METHOD:	HSA	NORTHING:	
GEOLOGIST:	Vince Shickora	DEV. METHOD:		EASTING:	



ELEVATION OF TOP OF SURFACE CASING:

STICK-UP TOP OF SURFACE CASING:

ELEVATION OF TOP OF RISER PIPE:

RISER STICK-UP ABOVE GROUND SURFACE: ≈ 2.5 ft.

I.D. OF SURFACE CASING: 6 inch

TYPE OF SURFACE CASING: steel

GROUND ELEVATION:

TYPE OF SURFACE SEAL: Natural Material

RISER PIPE I.D.: one inch

TYPE OF RISER PIPE: one inch PVC

BOREHOLE DIAMETER: 6 inch

TYPE OF BACKFILL: Bentonite grout
From 25' to 5' BGS

ELEVATION / DEPTH OF SEAL: -

TYPE OF SEAL: Bentonite grout

ELEVATION / DEPTH TOP OF FILTER PACK: 25'

ELEVATION / DEPTH TOP OF SCREEN: 35'

TYPE OF SCREEN: PVC

SLOT SIZE X LENGTH: 0.02" X 5'

I.D. OF SCREEN: one inch

TYPE OF FILTER PACK: Natural Material -
Boring allowed to collapse around well

ELEVATION / DEPTH BOTTOM OF SCREEN: 40'

ELEVATION / DEPTH BOTTOM OF FILTER PACK: -

TYPE OF BACKFILL BELOW WELL: Natural -
Boring allowed to collapse around well screen

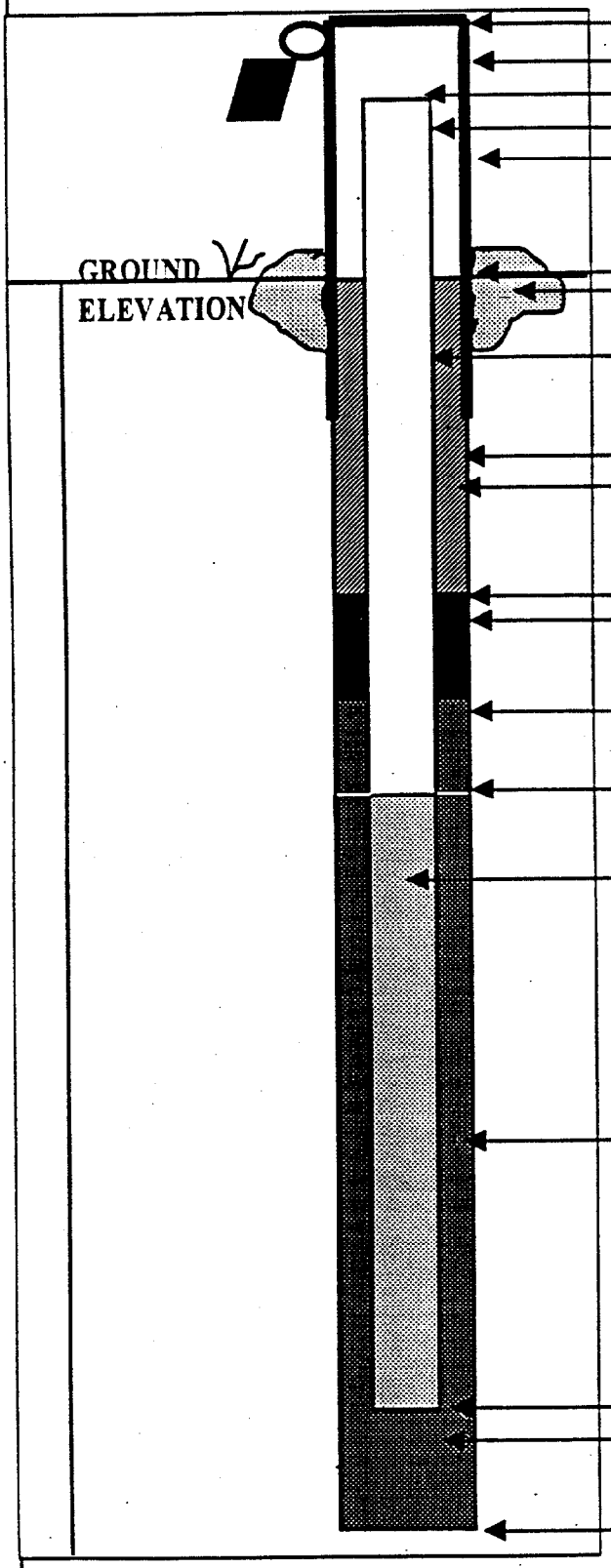
ELEVATION / DEPTH OF BOREHOLE: 40'

BORING NO.: SA-PZ103-D

Tetra Tech NUS, Inc.

OVERBURDEN MONITORING WELL SHEET

PROJECT:	NWIRP Calverton	DRILLING Co.:	Delta Well	BORING No.:	SA-PZ103-D
PROJECT No.:	3853-0300	DRILLER:	Mike Pellegrino	DATE COMPLETED:	6-12-00
SITE:	Southern Area	DRILLING METHOD:	HSA	NORTHING:	
GEOLOGIST:	Vinie Shickora	DEV. METHOD:	-	EASTING:	



ELEVATION OF TOP OF SURFACE CASING:

STICK-UP TOP OF SURFACE CASING:

ELEVATION OF TOP OF RISER PIPE:

RISER STICK-UP ABOVE GROUND SURFACE: 2.5 Ft.

I.D. OF SURFACE CASING: 3 inch

TYPE OF SURFACE CASING: Steel

GROUND ELEVATION:

TYPE OF SURFACE SEAL: Natural Material

RISER PIPE I.D.: one inch

TYPE OF RISER PIPE: PVC

BOREHOLE DIAMETER: 6 inch

TYPE OF BACKFILL: Bentonite grout from 65' to 5' BGS

ELEVATION / DEPTH OF SEAL:

TYPE OF SEAL: Bentonite grout

ELEVATION / DEPTH TOP OF FILTER PACK: 65'

ELEVATION / DEPTH TOP OF SCREEN: 75'

TYPE OF SCREEN: PVC

SLOT SIZE X LENGTH: 0.02" X 5'

I.D. OF SCREEN: one inch

TYPE OF FILTER PACK: Natural Material - Boring allowed to collapse around well

ELEVATION / DEPTH BOTTOM OF SCREEN: 80'

ELEVATION / DEPTH BOTTOM OF FILTER PACK: -

TYPE OF BACKFILL BELOW WELL: Natural - Boring allowed to collapse around well screen

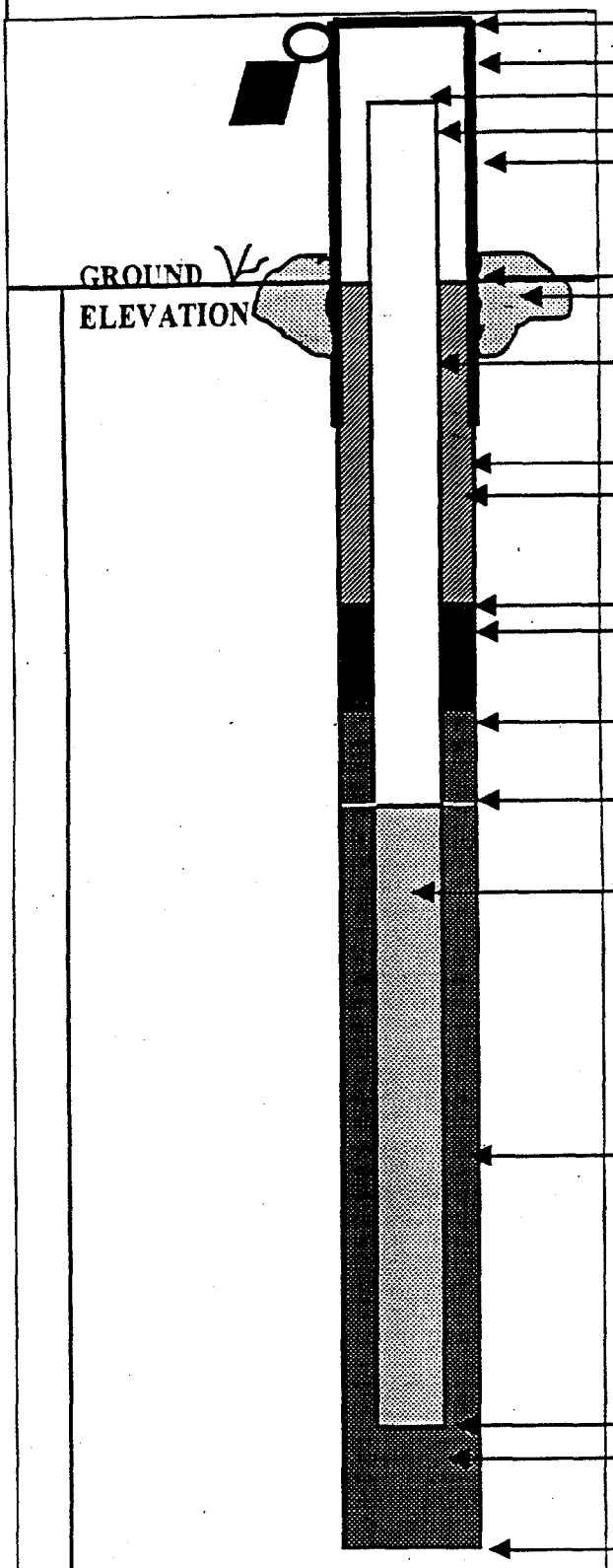
ELEVATION / DEPTH OF BOREHOLE: 80'

BORING NO.: SA-PZ104-$

Tetra Tech NUS, Inc.

OVERBURDEN MONITORING WELL SHEET

PROJECT:	NWIRP Calverton	DRILLING Co.:	Delta Well	BORING No.:	SA-PZ104
PROJECT No.:	3853-0300	DRILLER:	Mike Pellegrino	DATE COMPLETED:	6-13-00
SITE:	Southern Area	DRILLING METHOD:	HSA	NORTHING:	
GEOLOGIST:	Vince Shickora	DEV. METHOD:		EASTING:	



ELEVATION OF TOP OF SURFACE CASING:

STICK-UP TOP OF SURFACE CASING:

ELEVATION OF TOP OF RISER PIPE:

RISER STICK-UP ABOVE GROUND SURFACE: ≈2.5 ft.

I.D. OF SURFACE CASING: 6 inch

TYPE OF SURFACE CASING: Steel

GROUND ELEVATION:

TYPE OF SURFACE SEAL: Natural material

RISER PIPE I.D.: one inch

TYPE OF RISER PIPE: PVC

BOREHOLE DIAMETER:

TYPE OF BACKFILL: Natural material

ELEVATION / DEPTH OF SEAL: 2'

TYPE OF SEAL: Bentonite slurry

ELEVATION / DEPTH TOP OF FILTER PACK: 3'

ELEVATION / DEPTH TOP OF SCREEN: 4'

TYPE OF SCREEN: PVC

SLOT SIZE X LENGTH: 0.02" x 5'

I.D. OF SCREEN: one inch

TYPE OF FILTER PACK: Natural Material - Boring allowed to collapse around well

ELEVATION / DEPTH BOTTOM OF SCREEN: 9'

ELEVATION / DEPTH BOTTOM OF FILTER PACK: 10'

TYPE OF BACKFILL BELOW WELL: Natural - Boring allowed to collapse around well screen

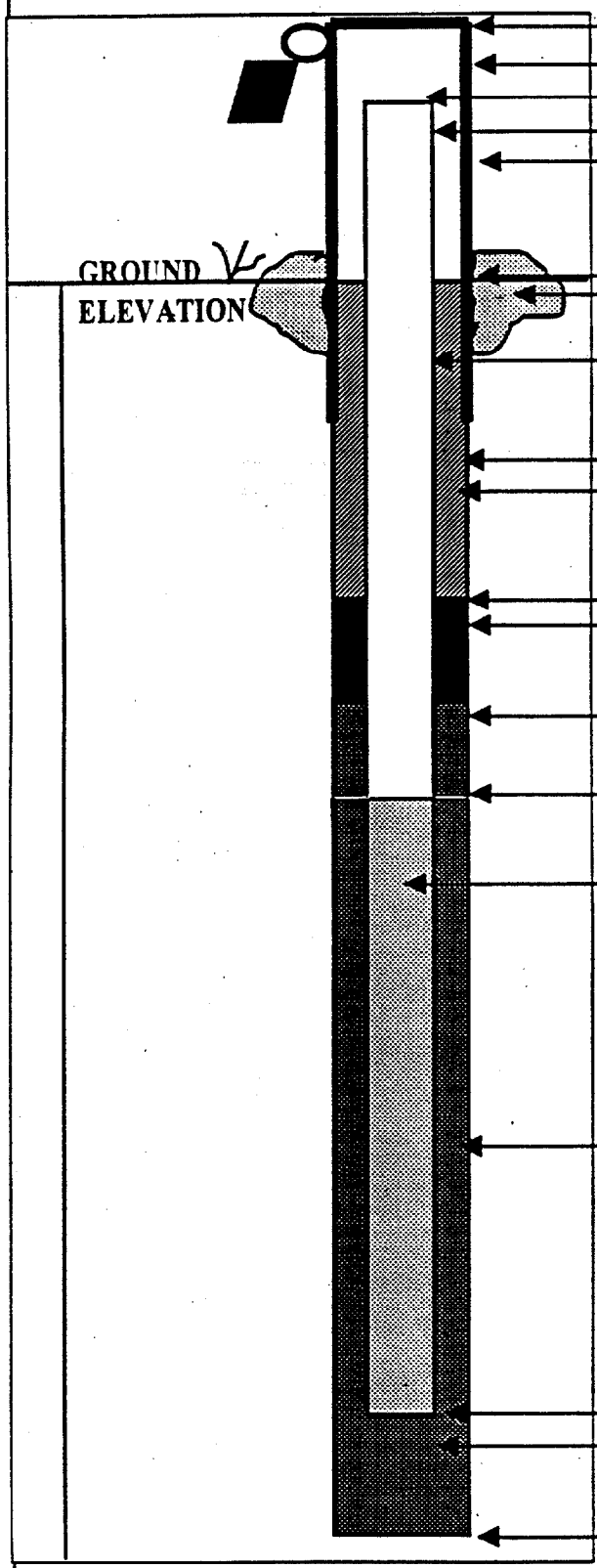
ELEVATION / DEPTH OF BOREHOLE: 10'

BORING NO.: SA-PZ 104

Tetra Tech NUS, Inc.

OVERBURDEN MONITORING WELL SHEET

PROJECT:	NWIRP Calverton	DRILLING Co.:	Delta Well	BORING No.:	SA-PZ104-I
PROJECT No.:	3853-0300	DRILLER:	Mike Pellegrino	DATE COMPLETED:	6-14-00
SITE:	Southern Area	DRILLING METHOD:	HSA	NORTHING:	
GEOLOGIST:	Vince Shickora	DEV. METHOD:		EASTING:	



ELEVATION OF TOP OF SURFACE CASING:

STICK-UP TOP OF SURFACE CASING:

ELEVATION OF TOP OF RISER PIPE:

RISER STICK-UP ABOVE GROUND SURFACE: ≈ 2.5 ft.

I.D. OF SURFACE CASING: 6 inch

TYPE OF SURFACE CASING: Steel

GROUND ELEVATION:

TYPE OF SURFACE SEAL: Natural material

RISER PIPE I.D.: one inch

TYPE OF RISER PIPE: PVC

BOREHOLE DIAMETER: 6 inch

TYPE OF BACKFILL: Bentonite grout
From 20' to 5' BGS

ELEVATION / DEPTH OF SEAL: –

TYPE OF SEAL: Bentonite grout

ELEVATION / DEPTH TOP OF FILTER PACK: 20'

ELEVATION / DEPTH TOP OF SCREEN: 29.5'

TYPE OF SCREEN: PVC

SLOT SIZE X LENGTH: 0.02" X 5'

I.D. OF SCREEN: one inch

TYPE OF FILTER PACK: Natural material -
Boring allowed to collapse around well

ELEVATION / DEPTH BOTTOM OF SCREEN: 34.5

ELEVATION / DEPTH BOTTOM OF FILTER PACK: 34.5

TYPE OF BACKFILL BELOW WELL: Natural -
Boring allowed to collapse around well screen

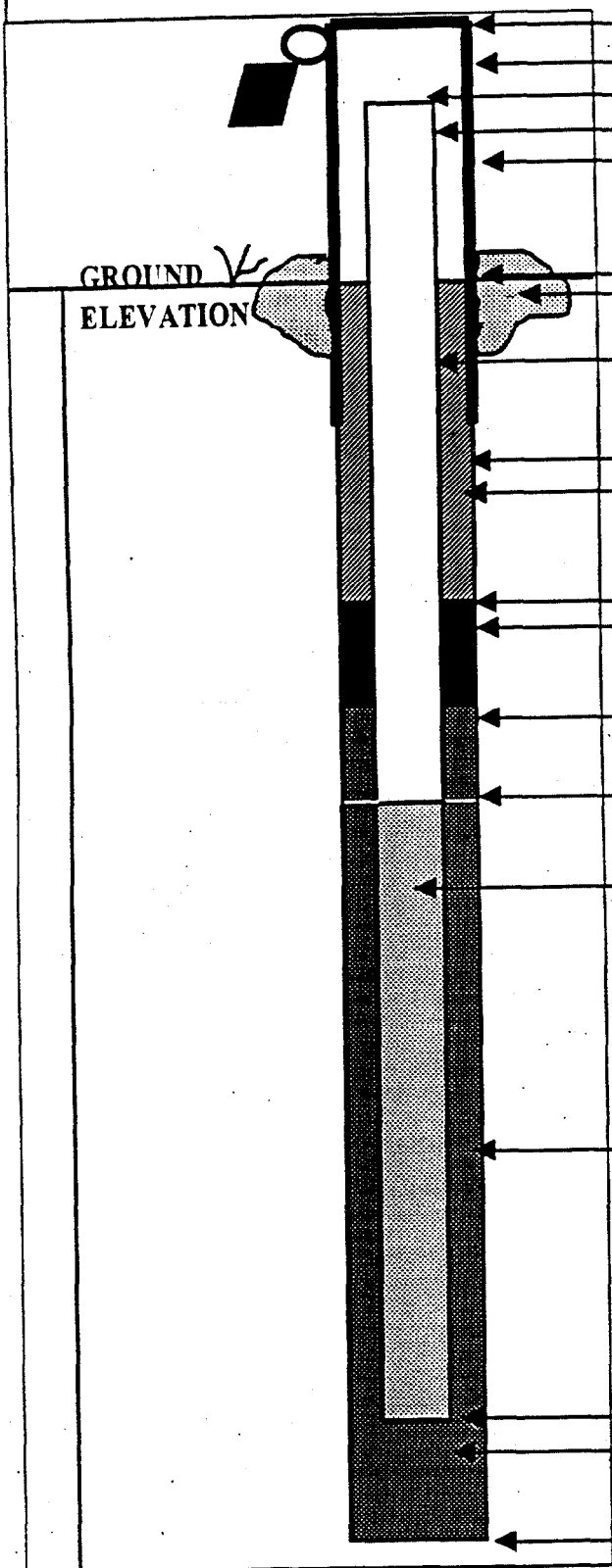
ELEVATION / DEPTH OF BOREHOLE: 35'

BORING NO.: SA-PZ104-D

Tetra Tech NUS, Inc.

OVERBURDEN MONITORING WELL SHEET

PROJECT:	NWIRP Calverton	DRILLING Co.:	Delta Well	BORING No.:	SA-PZ104
PROJECT No.:	3853-0300	DRILLER:	Mike Pellegrino	DATE COMPLETED:	6-14-00
SITE:	Southern Area	DRILLING METHOD:	HSA	NORTHING:	
GEOLOGIST:	Vince Shickira	DEV. METHOD:		EASTING:	



ELEVATION OF TOP OF SURFACE CASING:

STICK-UP TOP OF SURFACE CASING:

ELEVATION OF TOP OF RISER PIPE:

RISER STICK-UP ABOVE GROUND SURFACE: ≈2.5 ft.

I.D. OF SURFACE CASING: 6 inch

TYPE OF SURFACE CASING: Steel

GROUND ELEVATION:

TYPE OF SURFACE SEAL: Natural Material

RISER PIPE I.D.: one inch

TYPE OF RISER PIPE: PVC

BOREHOLE DIAMETER: 6 inch

TYPE OF BACKFILL: Bentonite Grout

From 69' to 5' BGS

ELEVATION / DEPTH OF SEAL: -

TYPE OF SEAL: Bentonite grout

ELEVATION / DEPTH TOP OF FILTER PACK: 59'

ELEVATION / DEPTH TOP OF SCREEN: 69'

TYPE OF SCREEN: PVC

SLOT SIZE X LENGTH: 0.02" x 5'

I.D. OF SCREEN: one inch

TYPE OF FILTER PACK: Natural material -

Boring allowed to collapse around well

VAS

ELEVATION / DEPTH BOTTOM OF SCREEN: 74' ~~79~~

ELEVATION / DEPTH BOTTOM OF FILTER PACK: 74

TYPE OF BACKFILL BELOW WELL: Natural -

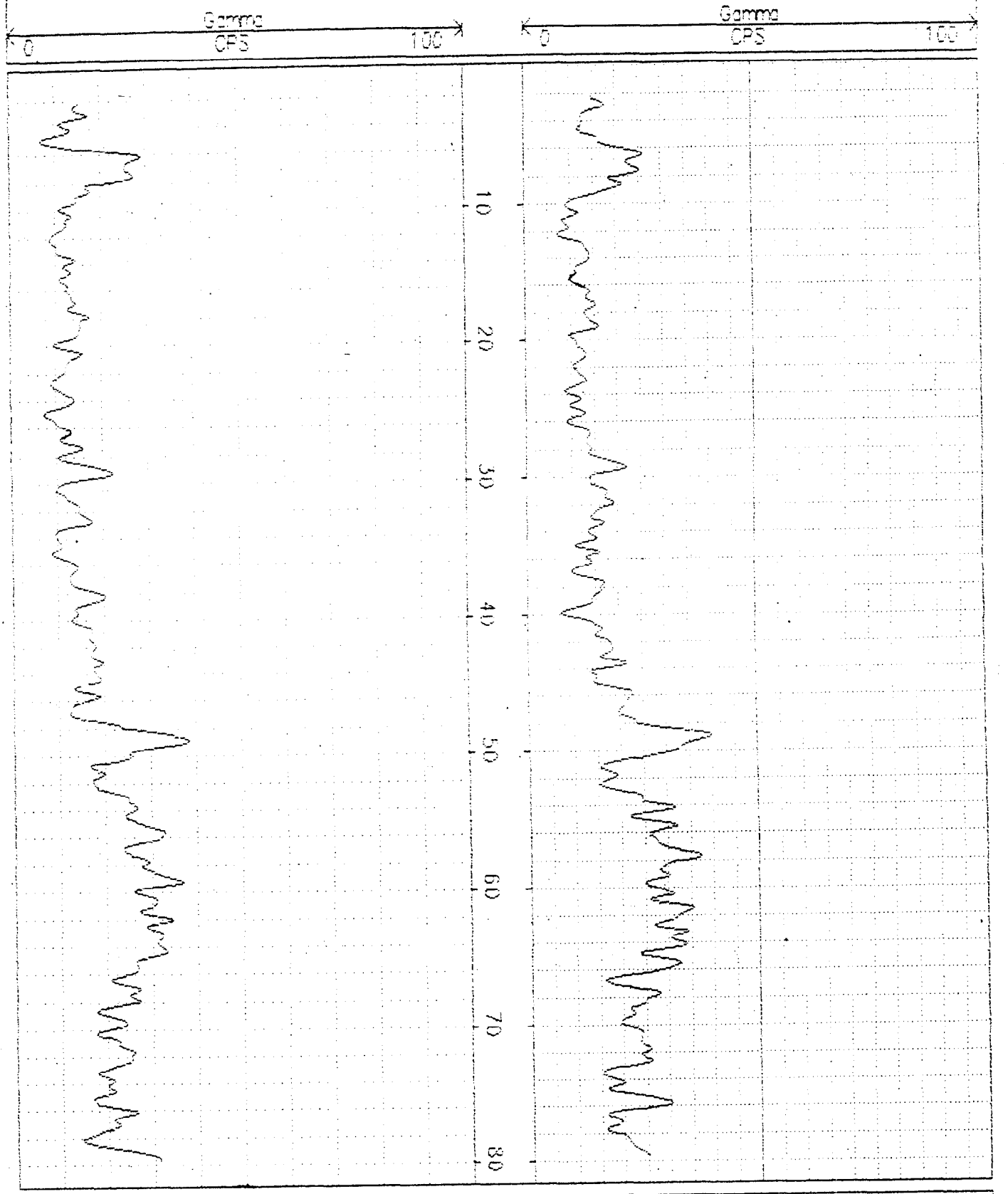
Boring allowed to collapse around well screen

ELEVATION / DEPTH OF BOREHOLE: 80'

APPENDIX F

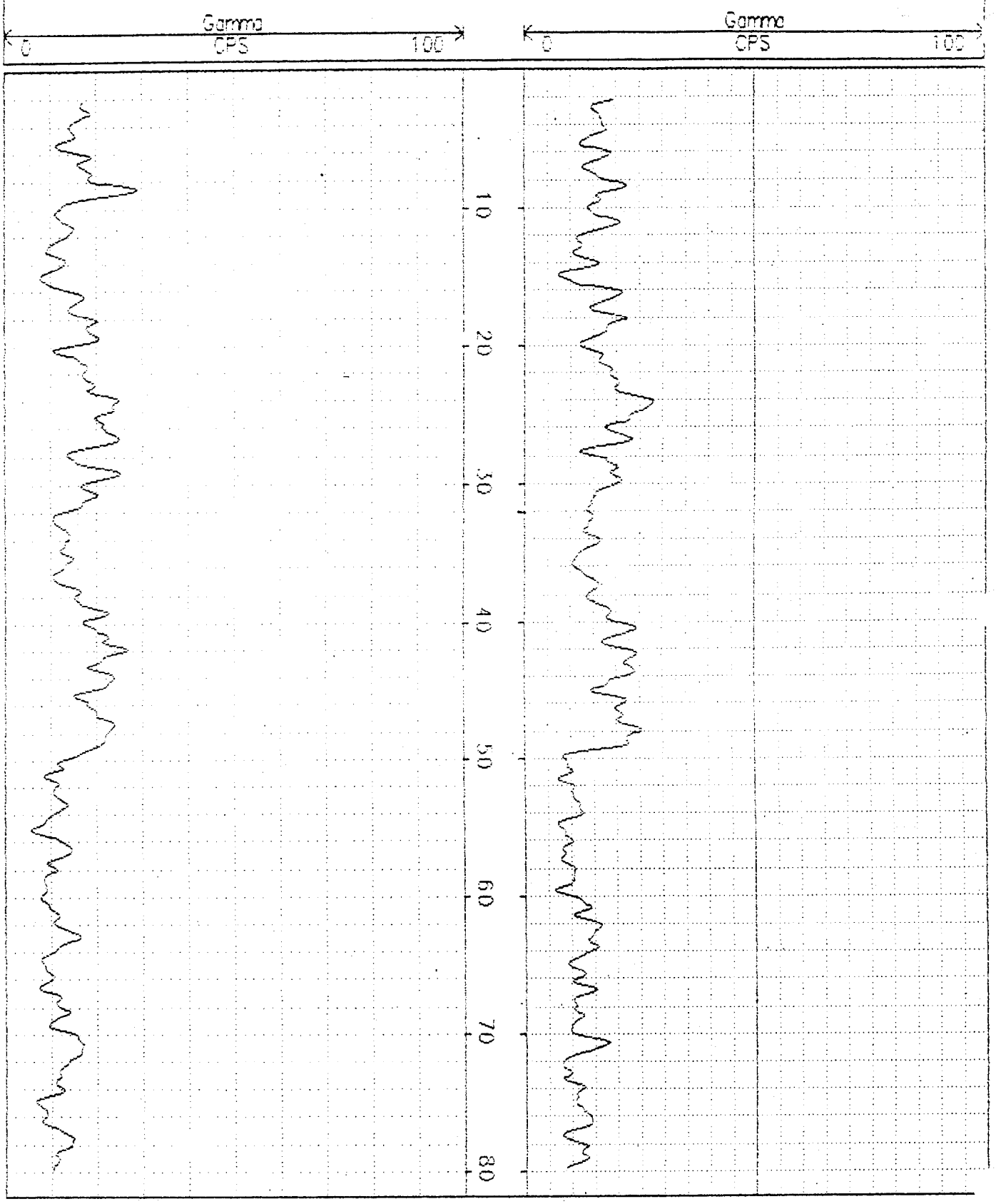
GAMMA RAY LOG SHEETS

(C:\NWIRP\PZ-1D.AB1) NWIRP CALVERTON PZ-1D 6/6/00



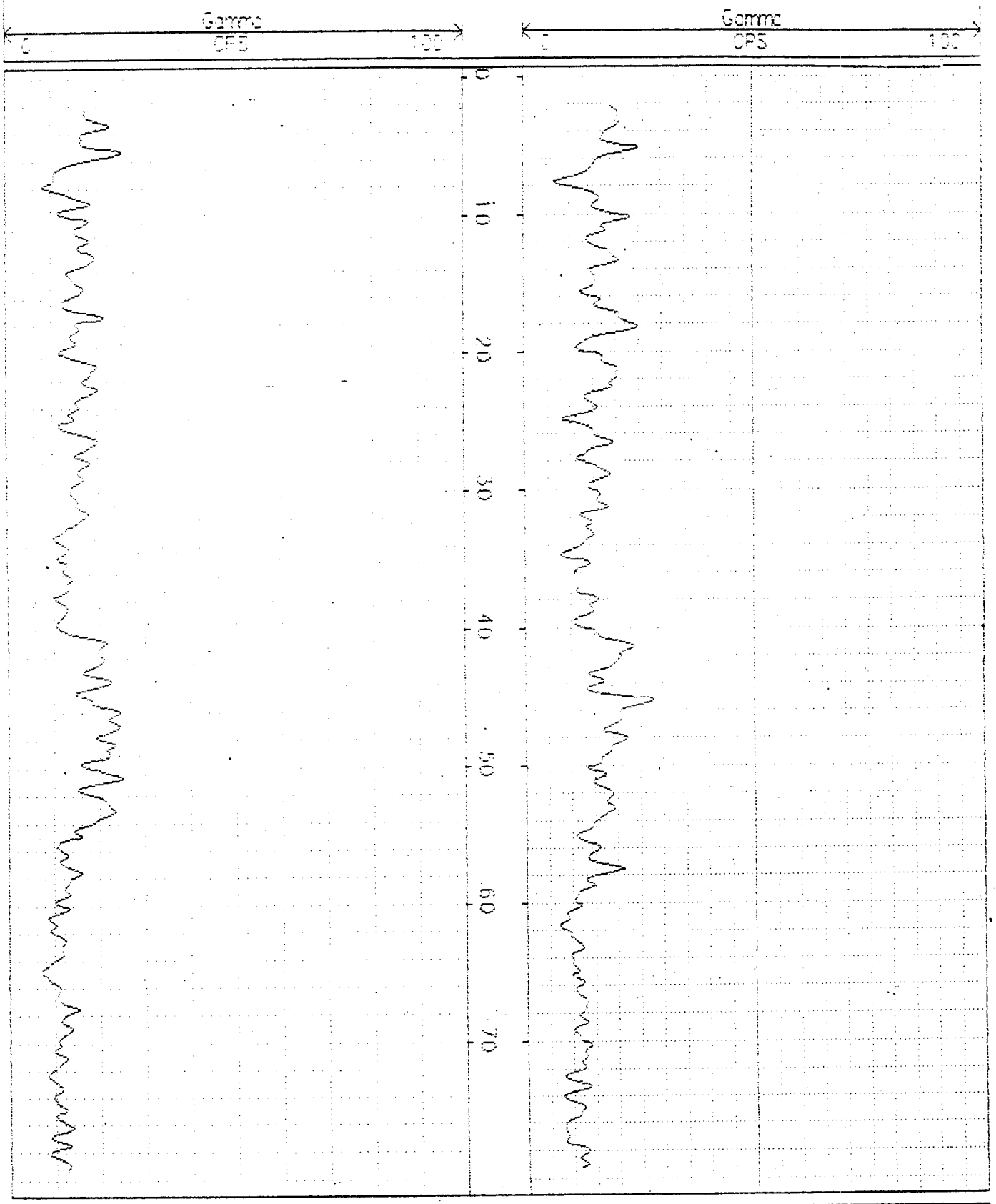
(C:\NWIRP\PZ-1D.AB1) NWIRP CALVERTON PZ-1D 6/6/00

(C:\NWIRP\PZ-2D.AB1) NWIRP CALVERTON PZ-2D 6/8/00



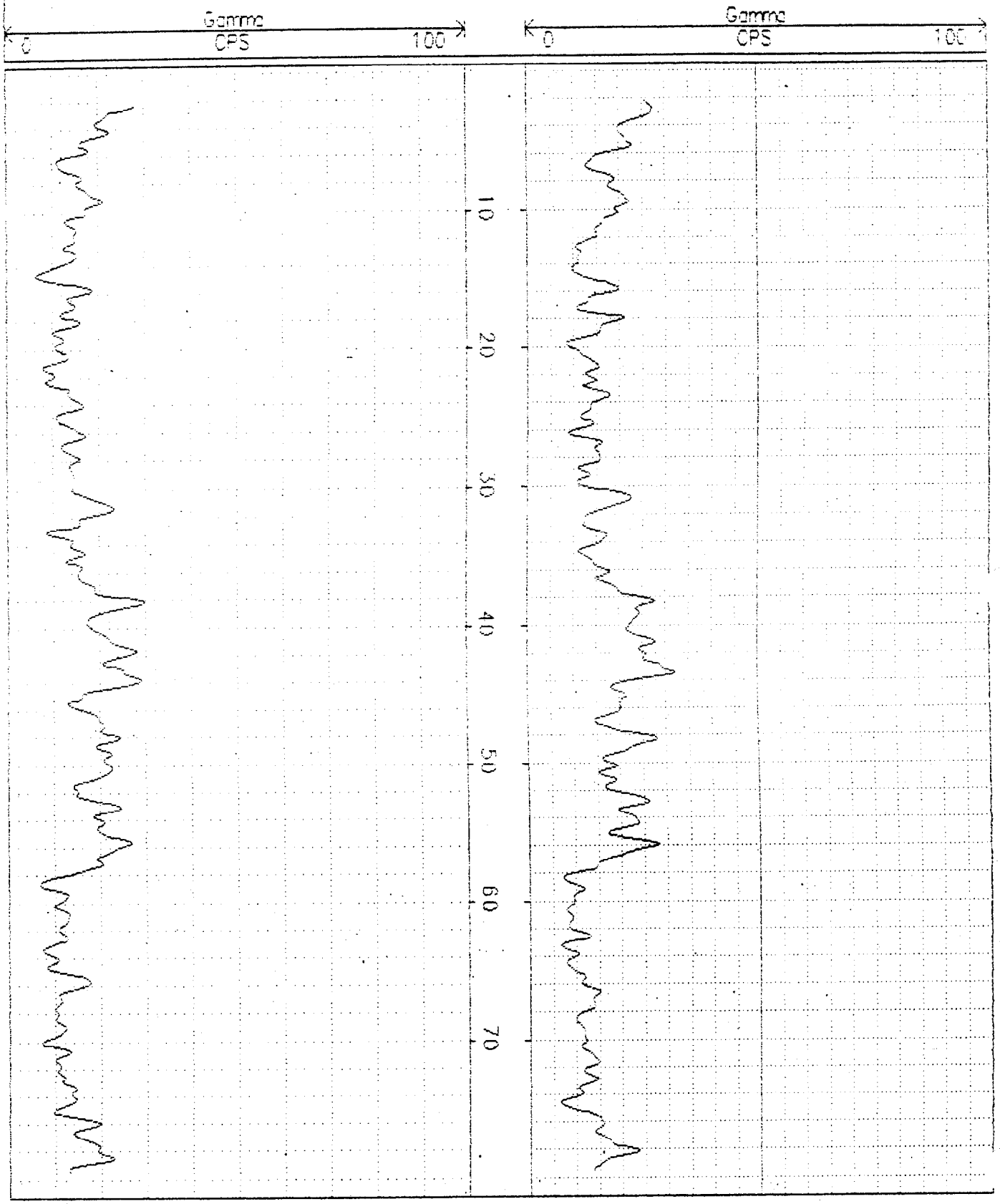
(C:\NWIRP\PZ-2D.AB1) NWIRP CALVERTON PZ-2D 6/8/00

(C:\NWIRP\PZ-3D.AB1) NWIRP CALVERTON PZ-3D 6/12/00



(C:\NWIRP\PZ-3D.AB1) NWIRP CALVERTON PZ-3D 6/12/00

(C:\NWIRP\PZ-4D.AB1) NWIRP CALVERTON PZ-4D 6/14/00



Gamma
CPS
0
100
Gamma
CPS
0
100
(C:\NWIRP\PZ-4D.AB1) NWIRP CALVERTON PZ-4D 6/14/00

APPENDIX G

BIOSCREEN MODELING

APPENDIX G
GROUNDWATER FATE AND TRANSPORT MODELING

1.0 INTRODUCTION

This appendix describes the groundwater modeling that was performed for Site 6A at the Naval Weapons Industrial Reserve Plant (NWIRP), Calverton, New York. The objectives of the modeling effort were to:

- simulate the current distribution of contaminants in the shallow groundwater system,
- evaluate the potential migration of contaminants in the future,
- estimate the potential concentrations and arrival times of contaminants reaching the Peconic River, and
- estimate the approximate times required for the contaminant concentrations in the shallow aquifer to decline below acceptable criteria under natural attenuation and source removal scenarios.

An overall evaluation has been performed to determine whether monitored natural attenuation (MNA) is a viable remediation alternative. The MNA evaluation considers the presence of biodegradable organic compounds, plume stability over time, and use of two groundwater transport models to predict the migration and biodegradation rates of the contaminants.

The primary contaminants present in the groundwater system include: 1,1,1-trichloroethane (TCA), 1,1-dichloroethane (DCA), 1,1-dichloroethene (1,1-DCE), chloroethane (CA), trichlorotrifluoroethane (Freon-113), benzene, toluene, ethylbenzene, and xylene (BTEX). The majority of the contaminant mass is located 40 feet below ground surface (bgs) or shallower. Section 3.0 of the main report describe the spatial distribution of contaminants in greater detail. Modeling of contaminant transport was limited to the lateral migration of contaminants in the upper portion of the aquifer (i.e., the uppermost 30 feet of saturated materials).

Section 2.0 of this appendix presents a summary of site conditions and the factors that influence the mobility, migration, biodegradation, and ultimate fate of the contaminants. Section 3.0 briefly describes the model codes that were used to perform the modeling, the limitations of the models, and the basic assumptions inherent to the models. Section 4.0 presents the input variables used to construct the different models. The calibration and results of the models are presented in Section 5.0. The results of groundwater modeling are summarized in Section 6.0.

2.0 SUMMARY OF SITE CONDITIONS

Details regarding site conditions can be found in the main body of this report. The material summarized in this section pertains mainly to the conditions and factors that affect the current distribution, mobility, and transport of contaminants in the groundwater system at Site 6A. The data and general conclusions summarized in this section are derived primarily from reports pertaining to Site 6A and vicinity:

- RFI Report for NWIRP (Halliburton NUS, August 1995)
- RFI Addendum for NWIRP (Halliburton NUS, September 1995)
- Phase 2 RFI for NWIRP, Sites 6A, 10A, 10B, and Southern Area (CF Braun Engineering Corp., January 1998)
- Calverton Ponds Area Cooperative Groundwater Study (The Nature Conservancy, April 1998)

2.1 GEOLOGY AND HYDRAULIC PROPERTIES

The uppermost Pleistocene deposits at Site 6A are composed primarily of fine to medium sand with varying amounts of silt and clay. This unit is roughly 50 to 60 feet thick (see Figure 2-3 in the main report). Based on pumping test results, the average horizontal hydraulic conductivity of the shallow sandy sediments is about 91 feet/day and the vertical hydraulic conductivity is approximately 8.5 feet/day (see Section 2.5.3 of the main report).

Beneath the upper sand layer lies a silty clay unit that is roughly 30 feet thick (see Figure 2-3 in the main report). This layer has relatively low permeability and has likely confined most of the contaminant migration in the upper sand layer.

Some contaminants have moved downward through the silty clay in the source area (Figure 3-6), but this mass is relatively small compared to the mass in the laterally migrating plume. Modeling activities described in this appendix are limited to the laterally migrating plume and do not account for the contaminants currently located below the upper sand layer.

2.2 HYDROGEOLOGY

The groundwater table is generally present at shallow depths (<10 feet bgs) beneath Site 6A. A local groundwater divide passes through NWIRP Calverton in an east-west direction. Shallow groundwater on the south side of the facility is generally flowing southeast toward the Peconic River. Previous investigations have shown that the Peconic River is the receptor of groundwater discharge in the area

(see Section 2.5.2 of the main report). The hydraulic gradient across the southeastern portion of the facility is approximately 0.0012.

Using a value of 91 feet/day for horizontal hydraulic conductivity, 0.0012 for hydraulic gradient, and assuming a value of 0.25 for the effective porosity of fine to medium sand (Domenico and Schwartz, 1990), the velocity of groundwater flow (i.e., seepage velocity) is approximately 160 feet/year. As mentioned above, all groundwater at Site 6A is flowing toward the Peconic River. No active water-supply wells or other extraction wells currently lie between Site 6A and the Peconic River, so the ultimate receptor of the contaminated groundwater will be the Peconic River (which lies about 6200 feet downgradient of the contaminant source area).

2.3 NATURE AND EXTENT OF GROUNDWATER CONTAMINATION

Permanent and temporary monitoring wells have been installed and groundwater samples collected at Sites 6A and 10B, and Southern Area between 1994 and 2000. The primary contaminants of concern at Site 6A have been identified as:

- 1,1,1-trichloroethane (TCA)
- 1,1-dichloroethane (DCA)
- 1,1-dichloroethene (1,1-DCE)
- chloroethane (CA)
- trichlorotrifluoroethane (Freon-113)
- benzene, toluene, ethylbenzene, and xylene (BTEX)

TCA apparently was used as a solvent in the Fuel Calibration Area (Site 6A) and was spilled on the ground. DCA, 1,1-DCE, and CA are sequential degradation products of TCA as the TCA migrates through the soil and groundwater system (Aziz et al., 2000). The exact use of Freon-113 at Site 6A is unknown. However, it is assumed that is was spilled at the ground surface in the general vicinity. Benzene, toluene, ethylbenzene, and xylene are components of JP-4 and other aviation fuels. These compounds were apparently spilled at the Fuel Calibration test pad and perhaps the Engine Test House (Site 10B), located to the southeast of Site 6A.

The dates and amounts of spillage for these compounds are unknown. Based on dates that each location was actively used, it is assumed that the fuels and Freon-113 were spilled around 1975. It is assumed that TCA might have been spilled around 1980.

The groundwater analytical data from the RFI, RFI Addendum, Phase 2 RFI, and recently collected samples have been reviewed. The highest concentrations of these compounds found in the shallow

subsurface (i.e., 0 to 40 feet below the water table [bwt]) are listed in Table G-1. The groundwater data, listed from top to bottom in Table G-1, lie along a path that extends from wells FC-MW-02-S and FC-TW-04 on the northwest side to wells SA-TW-113 and SA-PZ-101 on the southeast side. The length of the path between wells FC-MW-02-S and SA-PZ-101 is approximately 5400 feet. The distance from well FC-MW-02-S to the Peconic River along this path is roughly 6200 feet. This pathline represents the best approximation of the plume centerline.

The highest concentrations of chlorinated solvents were found in monitoring well FC-MW-02-S and temporary monitoring well FC-TW-04 (which was located directly adjacent to well FC-MW-02-S). It is assumed that the area in the immediate vicinity of these two wells is where the main TCA and fuel spill(s) occurred and is the source area for the groundwater contamination. Note: a leaking underground storage tank at the Engine Test House (Site 10B) may have also contributed to the BTEX found in downgradient wells near the Engine Test House.

The primary location of spillage for the Freon-113 is unknown. The highest concentrations of Freon-113 were found in two shallow (20 feet bwt) temporary wells (ET-TW-07A and ET-TW-08A) located on the northeastern side of the Engine Test House Area and downgradient of Site 6A (Table G-1). A few minor detections of Freon-113 were found in ET-TW-15A (0.0008 to 0.004 mg/L); however, Freon-113 was not found in any other wells in the area. Freon-113 was not detected in any sample collected from ET-TW-11A, either, which is located about 350 feet directly downgradient of wells ET-TW-07A and ET-TW-08A.

Based on groundwater flow velocities and the distribution of contaminants, it is believed that the contamination found in wells SA-TW-113 and SA-PZ-101 in the Southern Area is not contiguous with the groundwater plume extending from the Fuel Calibration Area. First, the groundwater velocity in the vicinity of Site 6A has been estimated to be roughly 160 feet/year. If the groundwater containing TCA has been migrating for 20 years (1980 to 2000) since it was initially spilled, the distance that it would potentially travel is about 3,200 feet. To travel a distance of 5,400 feet, the groundwater would need approximately 34 years of travel. Retardation factors of 2.0 and 1.2 have been calculated for TCA and DCA, respectively (see Table G-2). It would take roughly 68 and 41 years, respectively, for TCA and DCA to travel between wells FC-MW-02-S and SA-PZ-101. These times required for subsurface travel are longer than the amount of time that has elapsed since the assumed spill and even the earliest possible spill date in the 1950s. Therefore, this line of evidence suggests that the contamination found in wells SA-TW-113 and SA-PZ-101 in the Southern Area is not directly contiguous with the groundwater plume extending from the Fuel Calibration Area. The second line of evidence is the fact that concentrations of contaminants found in the Engine Test House Area are much lower than the maximum concentrations found in downgradient wells SA-TW-113 and SA-PZ-101. Therefore, it is unlikely that the contamination found in wells SA-TW-113 and SA-PZ-101 is a direct extension of the plume found beneath the Engine Test House Area. It is more likely that the contamination found in wells SA-TW-113 and SA-PZ-101 traveled a short distance

below ground in the Fuel Calibration Area, was pumped to the surface by the recovery wells operating in this area from approximately 1990, and then traveled overland in ditches and culverts flowing south and southeast. At some point, the contaminants must have reentered the subsurface and affected the wells in the Southern Area.

For modeling purposes, it is assumed that the farthest distance traveled by contaminants in a continuous plume emanating from Site 6A was found at well ET-TW-11. At this location in 1997, TCA was detected at 0.0057 mg/L and toluene was detected at 0.005 mg/L at a depth of about 40 feet bgs (see Table G-1). All other contaminants were not detected in this well. Well ET-TW-11 is located in the Engine Test House Area and is about 1500 feet downgradient of well FC-MW-02-S. If TCA has been traveling at about 80 feet/year (i.e., 160/2), as previously estimated, then it would take about 19 years of elapsed time for the TCA to reach well ET-TW-11. This results in a spill time of about 1978 (i.e., 1997-19=1978), which matches quite closely with the estimated spill date of 1980 presented above. Through these assumptions and calculations, the best estimate for continuous length of plume originating at Site 6A is 1500 feet and the best estimate for TCA spill date is 1978 to 1980. The spill date for the fuels is assumed to be slightly earlier (1975).

It is conservatively assumed that spillage of the Freon-113 occurred close to well ET-TW-08, and that the spillage occurred about 1975.

3.0 MODELING SOFTWARE AND MODELING ASSUMPTIONS

Two different model codes were used to evaluate the migration and fate of the groundwater contaminants. Both BIOCHLOR and BIOSCREEN are USEPA approved models and both are one-dimensional analytical transport models with the option of one-, two-, or three-dimensional dispersion.

3.1 BIOSCREEN MODEL

The BIOSCREEN model is a simple analytical groundwater transport model that simulates the advection of a single contaminant in one dimension and the dispersion of the contaminant in one, two, or three dimensions. It is based on an analytical model developed by Domenico (1987). The original Domenico model allowed for the effects of adsorption and first-order biodegradation. The BIOSCREEN model includes these features, but has an additional option for simulating biodegradation. The dissolved mass in the "source plane" can undergo an instantaneous reduction in concentration that is related to the amount of electron acceptors in the groundwater entering the contaminated zone from an upgradient direction. This "instantaneous reaction" occurs in the source area. No more contaminant degradation can subsequently occur in the downgradient direction. A User's Manual for this model (Newell et al., 1996; 1997) describes the development and formulation of the transport model. This model was developed by the USEPA primarily to simulate the natural attenuation of fuel compounds (e.g., BTEX).

For NWIRP Calverton Site 6A modeling described in this Appendix, the first-order biodegradation option provided results that had a better match with the observed field data. Hence, the first-order decay option was used in all BIOSCREEN model runs.

BIOSCREEN was used to model the transport of BTEX compounds and Freon-113. It was also used to simulate the decay of TCA contaminant mass (solid and dissolved phase) in the source area over time, which can not be accomplished with the BIOCHLOR model.

The starting solid-phase mass at the source at time equals zero is user-defined. The source mass decays over time, either by defining the starting dissolved phase concentration or by defining a solid-phase decay rate. The contaminated groundwater leaving the source area flows through a plane that is perpendicular to the direction of groundwater flow (i.e., a planar source).

The basic assumptions inherent to this model are:

- groundwater advection is horizontal and one-dimensional
- dispersion of the contaminant during migration can be in one-, two-, or three- dimensions

- no new contaminant mass is added to the aquifer during migration
- contaminants can only exit the model domain via biodegradation or adsorption
- no new water enters the flow path after leaving the source plane (i.e., no precipitation recharge is allowed downgradient of the source area).

3.2 BIOCHLOR MODEL

The development of the USEPA BIOCHLOR model (Aziz et al., 2000) followed shortly after BIOSCREEN and is quite similar to BIOSCREEN. It is also a one-dimensional analytical transport model that allows dispersion in three dimensions. Contaminant transport rate is affected by adsorption and first-order biodegradation. BIOCHLOR lacks two important features that are found in BIOSCREEN. First, there is no source term that can decline with time. The dissolved contaminant concentration assigned by the user at the source is constant through time and does not deplete. As a result, all simulations using this model are overly conservative because source depletion through time can not occur.

The second primary feature that is lacking in the BIOCHLOR model is that there is no option for instantaneous reaction between contaminant mass in the aquifer with electron donors or acceptors originating from upgradient of the source; only first-order reactions (or zero decay) are allowable options.

BIOCHLOR, however, does have two features that BIOSCREEN does not. These features are very important when analyzing contaminants that are linked in a decay chain (i.e., parent compound decays to daughter compound). BIOCHLOR can simulate the simultaneous movement of more than one compound if they are related in a decay chain. For example, TCA commonly degrades sequentially to DCA and then to CA. Commonly, TCA also hydrolyzes to some extent, which forms small amounts of 1,1-DCE (this side reaction is not simulated in the BIOCHLOR code). The TCA degradation chain is one of the two biodecay chains of chlorinated solvents that BIOCHLOR was especially designed to address.

The second feature that BIOCHLOR has that is lacking in BIOSCREEN is that two different zones can be created, and the first-order decay rate for each compound can be assigned different values in each zone. Thus, if there is a zone near the source that is low in dissolved oxygen, sulfate, and other electron acceptors, then the zone is anaerobic and can have decay rates assigned for each compound which are appropriate for anaerobic conditions. Conversely, if the second zone is aerobic, the decay rates of the compounds can be adjusted to match the ability of each compound to degrade under aerobic conditions. This is helpful for simulating TCA, DCA, and CA, where decay rates for the first two compounds are generally higher under anaerobic conditions. The decay rate for CA can be higher under aerobic conditions.

4.0 INPUT VARIABLES FOR MODEL SIMULATIONS

4.1 ADVECTION

Dissolved contaminants migrate along with flowing groundwater. The velocity of the groundwater (i.e., seepage velocity) is a model input parameter that greatly affects the rate at which contaminants can migrate. Seepage velocity (v) is computed as follows:

$$v=Kl/n$$

where K is the average hydraulic conductivity (feet/day), I is the average hydraulic gradient (unitless), and n is the effective porosity (unitless). The seepage velocity calculation was presented in Section 2.2 of this appendix and is approximately 160 feet/year. This value was used for each model simulation.

4.2 DISPERSION

Dispersion is the process whereby a plume expands in size during migration, and is due primarily to physical mixing processes (i.e., hydrodynamic dispersion). For the Site 6A model simulations, the following conservative estimates were used:

- longitudinal dispersivity of 30 feet,
- transverse dispersivity of 3 feet, and
- vertical dispersivity of 0.3 feet.

4.3 ADSORPTION AND RETARDATION

During migration, contaminants sorb to and desorb from the aquifer matrix. This has the effect of slowing down the velocity of the contaminants with respect to the groundwater flow. The equilibrium constant which is typically used to represent the amount of contaminant sorbed versus the amount in solution is the distribution coefficient (Kd). For organic compounds, the Kd constant is usually broken into two other components:

$$Kd = Koc * foc$$

where the Koc is the partitioning constant between the dissolved phase and the amount of contaminant sorbed to the organic carbon fraction of the aquifer matrix. The value of Koc for each organic compound is different, because their sorption behavior is variable. Table G-2 lists the value of Koc used for each organic compound. A single value of 0.001 was used to represent the organic carbon fraction in the

aquifer matrix. This is a conservative value and is typically used as the default value in transport models when site-specific data are not available (ASTM, 1995). Once a Kd value is estimated for each compound (see Table G-2), then a retardation factor (R) is computed for each compound according to the following equation:

$$R = 1 + ((Kd * pb)/n)$$

where pb is the dry bulk density of the aquifer matrix. The effective porosity has already been estimated to be 0.25 (see Section 2.2). Bulk density has been estimated to be 1.7 kg/L, which is a value used frequently when no site-specific data are available (Newell et al., 1996; Aziz et al., 2000). Retardation factors have been calculated for each organic contaminant and are presented in Table G-2.

4.4 SOURCE CONCENTRATIONS

As presented in Section 2.3, the highest concentrations of most contaminants were found in wells FC-MW-02-S, FC-TW-04-1, and FC-TW-09-1 (see Table G-1). The concentrations detected in these wells are assumed to represent the highest concentrations at the head of the groundwater plume as it leaves the source (i.e., spill area), except for Freon-113. The spills involving TCA and BTEX probably occurred at different times, but both appear to have occurred in relatively close proximity of each other.

Samples have been collected from monitoring well FC-MW-02-S four times. Analytical results are summarized in Table G-1. One sample was collected in Fall 1994, one sample was collected in Spring 1995, and two samples were collected in 2000. Figure G-1 shows an 86% decline of TCA in well FC-MW-02-S over a six-year period. TCA decreased approximately 50% every two years. Concentrations of DCA, 1,1-DCE, and CA are assumed to be zero in 1980 (assumed spill date). Concentrations of these three compounds rise between 1980 and 1995 as a result of TCA degradation. By 1995, the analytical data indicate that DCA and 1,1-DCE are definitely decreasing. The CA concentration trend is harder to interpret, but it too appears to be declining between 1995 and 2000. CA increased from 0.340 mg/L in 1994 to 0.720 mg/L in July 2000, and then inexplicably became nondetectable in August 2000. The contaminant concentrations found in the July 2000 sample from well FC-MW-02-S were used to represent the current concentrations of dissolved solvents in the source area because CA was still present in the well sample, which is therefore more conservative.

Benzene was not detected in the August 1994 FC-MW-02-S sample, was detected at 0.003 mg/L in March 1995, and nondetectable again in the two 2000 samples. Ethylbenzene and xylene both increased slightly between the 1994 and 1995 samples, but then decreased by 2000. Toluene, however, decreased steadily between 1994 and 2000. Based on the trends of the BTEX concentrations in well FC-MW-02-S, BTEX concentrations have displayed an overall decline in the source area between 1994 and 2000.

The highest concentrations of benzene were found in the 1994 sample from temporary well FC-TW-12-1 (see Table G-1). The highest concentrations of toluene and xylene were found in monitoring well FC-TW-09-1 in 1994. The highest concentration of ethylbenzene was found in temporary well FC-TW-04-1 in 1994.

Listed below are the contaminant concentrations found in the respective source areas that conservatively represent recent or relatively recent conditions:

TCA	2.20 mg/L	FC-MW-02-S	July 2000
1,1-DCA	3.60 mg/L	FC-MW-02-S	July 2000
CA	0.72 mg/L	FC-MW-02-S	July 2000
1,1-DCE	0.037 mg/L	FC-MW-02-S	July 2000
Benzene	0.074 mg/L	FC-TW-12-1	August 1994
Toluene	0.320 mg/L	FC-TW-09-1	August 1994
Ethylbenzene	0.173 mg/L	FC-TW-04-1	August 1994
Xylene	1.065 mg/L	FC-TW-09-1	August 1994
Freon-113	0.152 mg/L	ET-TW-07-30	1997

4.5 FIRST-ORDER BIODEGRADATION RATES

First order biodegradation rates cited in scientific literature are summarized by Howard et al. (1991). The minimum and maximum biodegradation rates (half-lives) cited in this reference for the "Groundwater" category are listed in Table G-2. Also listed in Table G-2 is the computed arithmetic average of the minimum and maximum values. These average values were used as initial estimates for modeling purposes. They were adjusted during several runs of the model until modeling results fit the observed contaminant distribution along the centerline of the plume. Note that these biodegradation half-lives apply to the dissolved phase of contaminants as they travel in the plume; these degradation rates are not the same as the "Source Halflife" in the BIOSCREEN model and should not be used for that parameter (see Newell et al., 1996).

5.0 MODELING RESULTS

5.1 BENZENE

The highest benzene concentration detected at Site 6A was 0.745 mg/L, which was found in temporary well FC-TW-12-1 in August 1994. The next highest concentration was 0.0116 mg/L found in temporary well FC-TW-09-1, also in 1994. Benzene has not been found in well FC-MW-02-S since March 1995. Benzene has not been found in any of the wells downgradient of FC-TW-12-1, except for a minor detection (0.0019 mg/L) in well ET-TW-07. Because benzene has decreased so rapidly in the source area and has not been found in downgradient wells, the migration of benzene in the groundwater system was not simulated. It is estimated that the concentrations of benzene will degrade to less than 0.0007 mg/L (the NY MCL) everywhere in the plume in less than 5 years.

5.2 TOLUENE

A toluene concentration of 0.40 mg/L (found in well FC-TW-09-1) was the highest concentration of toluene near the source area in 1994. The migration of toluene was simulated using the BIOSCREEN model code. The input data are presented in Figure G-2. Through calibration, the best values for source mass and 1975 starting concentration of dissolved toluene in the source area were 40 kg of mass and 1.2 mg/L, respectively (Figure G-2). The biodegradation half-life value was adjusted upward from 0.05 year to 2.2 years, which slowed down the degradation rate of toluene in the plume considerably. Using these source terms and biodegradation rate, a concentration distribution along the plume centerline was predicted for 1995 that matched the measured concentrations very well (Figure G-3). Most measured values along the centerline were on the predicted line or below. Only the value of 0.138 mg/L found in well FC-TW-14-1 lies above the line. According to the model results, the concentration of toluene at 1100 feet from the source should be about 0.005 mg/L in 1995 (Figure G-3). Toluene in well ET-TW-05 was measured at 0.0086 mg/L at this distance. Concentrations below 0.005 mg/L should be expected everywhere greater than 1200 feet downgradient of the source.

When the simulation was continued another 30 years (2025), the maximum concentration of toluene found in the aquifer was 0.080 mg/L. Approximately 80 additional years would need to elapse (i.e., 2105) before toluene decreases below 0.005 mg/L (the NY MCL) everywhere in the aquifer.

The model was allowed to simulate 25 years elapsed time (2000). At that time, the source mass declined from 40 kg down to 10.3 kg, through source depletion, and the toluene concentration at the source decreased from 1.2 mg/L in 1975 down to 0.31 mg/L in 2000. To simulate a remedial action at the source in the year 2000, the source mass was reduced by 90%, yielding a mass of 1.03 kg after remediation.

The starting toluene concentration emanating from the source was also reduced, down to 0.31 mg/L, based on the predicted value from the previous simulation. This second model run for toluene, starting in 2000, showed that remedial action at the source with 90% effectiveness will shorten the amount of time needed for the toluene concentrations to drop beneath 0.005 mg/L everywhere in the aquifer from the year 2105 (natural attenuation scenario) down to the year 2009 (nine years after remediation). Thus, source remediation could potentially shorten the time to attain the NY MCL in the aquifer by 96 years.

5.3 ETHYLBENZENE

Starting in 1975, the mass of ethylbenzene in the source area was estimated to be 123 kg and the dissolved concentration leaving the source was estimated to be 15.2 mg/L (Figure G-4). Using a slow degradation rate (half-life = 1.6 years) for the dissolved ethylbenzene in the plume, and an elapsed time of 20 years, the BIOSCREEN model predicted ethylbenzene concentrations along the plume centerline that closely matched the concentrations detected in 1994 (Figure G-5). The predicted concentration near the source of 0.176 mg/L was almost identical to the highest concentration detected (0.173 mg/L) in well FC-TW-04-1. The value of 0.0087 mg/L found in well ET-TW-05, located 1100 feet from the source, is very close to the predicted value of 0.006 mg/L. At distances of 1200 feet or more from the source area, ethylbenzene concentrations were predicted to be less than 0.005 mg/L (the NY MCL).

When the model simulated a total elapsed time of 37 years (i.e., 2012), the concentrations of ethylbenzene everywhere in the plume was predicted to be less than 0.005 mg/L (the NY MCL). After 50 years of total elapsed time (i.e., 2025), the concentrations of ethylbenzene everywhere in the plume were less than 0.001 mg/L.

The model was allowed to simulate 25 years elapsed time (2000). At that time, the source mass declined from 123 kg down to 0.5 kg and the ethylbenzene concentration at the source decreased from 15.2 mg/L in 1975 down to 0.058 mg/L in 2000. To simulate a remedial action at the source in the year 2000, the source mass, predicted at year 2000, was reduced by 90%, yielding a mass of 0.05 kg after remediation. The starting ethylbenzene concentration emanating from the source was reduced to 0.058 mg/L, as predicted by the previous ethylbenzene simulation. This second model run for ethylbenzene, starting in 2000, showed that remedial action at the source with 90% effectiveness will shorten the amount of time needed for the ethylbenzene concentrations to drop beneath 0.005 mg/L everywhere in the aquifer from the year 2012 (natural attenuation scenario) down to the year 2003, only three years after remediation.

5.4 XYLENE

Starting in 1975, the mass of xylene in the source area was estimated to be about 140 kg and the dissolved concentration leaving the source was estimated to be 4.0 mg/L (Figure G-6). Using a slow

biodegradation rate (half-life = 1.6 years) for dissolved xylene in the plume and an elapsed time of 20 years, the BIOSCREEN model predicted xylene concentrations along the plume centerline that closely matched the concentrations detected in 1994 (Figure G-7). The predicted concentration near the source of 1.426 mg/L was almost identical to the highest concentration detected (1.494 mg/L) in well FC-TW-09-1. The value of 0.183 mg/L found in well ET-TW-14-1, located about 350 feet from the source, is close to the predicted value of 0.129 mg/L (interpolated from Figure G-7). In 1995, at distances of 900 feet or more from the source area, xylene concentrations were predicted to be less than 0.005 mg/L (the NY MCL).

When the model simulated a total elapsed time of 50 years (i.e., 2025), a maximum concentration of xylene (0.304 mg/L) was predicted to occur next to the source area. A total of 130 years elapsed time (i.e., 2105) was necessary before the model predicted xylene concentrations everywhere in the plume to be below 0.005 mg/L (the NY MCL).

The model was allowed to simulate 25 years elapsed time (2000). At that time, the source mass had declined from 140 kg down to 38.6 kg and the dissolved xylene concentration at the source decreased from 4.0 mg/L in 1975 down to 1.10 mg/L in 2000. To simulate a remedial action at the source in the year 2000, the source mass was reduced by 90%, yielding a new mass of 3.86 kg after remediation. The starting xylene concentration emanating from the source was also reduced, down to 1.10 mg/L, as per the previous simulation. This second model run for xylene, starting in 2000, showed that remedial action at the source with 90% effectiveness will shorten the amount of time needed for the xylene concentrations to drop beneath 0.005 mg/L (the NY MCL) everywhere in the aquifer from the year 2105 (natural attenuation scenario) down to the year 2012, twelve years after remediation. Thus, source remediation would shorten the time to compliance by about 93 years.

5.5 FREON-113

Very few detections of Freon-113 have occurred at Site 6A: 0.106 mg/L in one sample from well FC-TW-04 at 75 feet bwt, and lower concentrations (< 0.001mg/L) in shallow samples (20 feet bwt) from wells FC-TW-06 and FC-TW-07. However, at the Engine Test House (Site 10B), moderate concentrations were found in wells ET-TW-07 and ET-TW-08 located on the far east side of Site 10B. The highest concentration (0.152 mg/L) was found in temporary well ET-TW-07 at 20 feet bwt. There is no source area specifically known for this Freon-113, and there has been no trail of detectable Freon-113 in the downgradient direction. In particular, Freon-113 was <u>not</u> detected in well ET-TW-11, located about 200 feet downgradient of well ET-TW-07. There is no reliable estimate concerning the amount of Freon-113 that might have been spilled, or the time that the spill or spills may have occurred.

Therefore, the attempt to simulate the movement of Freon-113 in the shallow aquifer is only approximate. BIOSCREEN was used for this simulation (Figure G-8). A small starting mass (15 kg) was assumed. It

was also assumed that Freon-113 was spilled somewhere near wells ET-TW-07 and ET-TW-08 in 1975. Using a dissolved concentration at the source of 0.5 mg/L at time = 0 years (1975) and a biodegradation half-life of 1.5 years for Freon-113 in the plume, the BIOSCREEN model predicted the distribution of Freon-113 downgradient of the source as shown on Figure G-9. The predicted concentration of Freon-113 near the source after 20 years (0.150 mg/L) is nearly identical to the highest concentration detected in well ET-TW-07 (0.152 mg/L) in 1997. The plot of predicted plume centerline concentrations (Figure G-9) shows concentrations above 0.005 mg/L as far downgradient as 600 feet. However, the site data show that Freon-113 is not detected at distances of 175 feet or more downgradient of well ET-TW-07. After 50 years of simulated time (2025), the model predicted that the maximum Freon-113 concentration near the source would be 0.25 mg/L. After 75 years of elapsed time (i.e., 2050), the predicted concentrations are less than 0.005 mg/L (the NY MCL) everywhere in the plume.

If the source area is hypothetically remediated in year 2000 in the same way as described above (i.e., 90% reduction in year 2000 source mass), then the predicted concentrations of Freon-113 will be less than 0.005 mg/L everywhere in the plume after 6 years (i.e., 2006).

5.6 TCA, DCA, AND CA

The BIOCHLOR model code was used to simulate the migration of the contaminants TCA, DCA, and CA simultaneously as a degradation chain. Since only a constant source can be used in the model, recent (July 2000) concentrations found in well FC-MW-02-S were used to represent dissolved concentrations of contaminants as they exited the source area. These concentrations were 2.2, 3.6, and 0.72 mg/L, respectively (Figure G-10). The biodegradation half-lives of these compounds were increased in "Zone 1" of the model until the model-predicted concentrations along the centerline at 20 years elapsed time (i.e., 2000) matched or exceeded the measured concentrations along the centerline. Figure G-11 shows the predicted and actual concentrations along the centerline after 20 years. Only the concentrations of TCA and CA found in one of the wells (well ET-TW-05) exceeded the predicted concentrations. This well is located about 1,100 feet downgradient of the source. At 1500 feet downgradient of the source (well ET-TW-11), measured and predicted concentrations of all three compounds are 0.007 mg/L or less. Although they have different degradation half-lives, the three compounds decrease in parallel between 500 and 1500 feet from the source (see Figure G-11). This occurs because the decrease in DCA is affected by the concentration changes in its parent compound (TCA), as well as its own degradation rate. Likewise, the decrease in CA concentrations depends on the concentration profile and degradation rate of its parent (DCA) in a downgradient direction.

At 1500 feet downgradient, the concentrations of BTEX compounds have decreased below detection. At this point along the plume centerline, it is assumed that the shallow groundwater system becomes more aerobic and the biodegradation rates of TCA and DCA decrease substantially. Very conservative

biodegradation half-lives have been entered for the three compounds in "Zone 2" of the model at 1500 feet. Half-life values of 6, 5, and 4 years were entered for TCA, DCA, and CA, respectively (Figure G-10).

Because of the longer biodegradation half-lives after 1500 feet distance from the source, the predicted concentration profiles flatten out at distances greater than 1500 feet (Figure G-12). At year 20 (i.e., 2000), the model predicts that concentrations of these three compounds will be below 0.005 mg/L everywhere beyond 1600 feet from the source. Also notable in Figure G-12 is the predicted graph of total chlorinated ethane compound concentrations with no degradation as a function of distance from source. This line declines rapidly near 4500 feet from the source. This is the distance the plume should travel after 20 years, assuming a seepage velocity of 160 feet/year. According to this conservative model, the contaminant plume should not have reached wells SA-PZ-101 or SA-TW-113, which are almost 5,400 feet downgradient of the source area. The fact that there were significant contaminant concentrations found in these two temporary wells in 1997 suggests that overland flow in culverts and ditches carried the contaminants a significant portion of the way southeastward before they reentered the groundwater system.

As stated previously, one of the limitations of the BIOCHLOR model code is that it does not have the capability of simulating a variable source term (i.e., a depleting source term); it simply represents the source as a constant concentration in the groundwater at the source. Alternatively, BIOSCREEN has the ability to have a declining source. The model has a starting mass assigned to the aquifer at the source. The contaminant mass does not biodegrade, but is simply depleted as the contaminant is flushed from the source area.

In order to more realistically assess the decrease in TCA and its daughters in the aquifer over time, the TCA in the source and the plume was simulated using BIOSCREEN, in addition to the BIOCHLOR modeling described above. The input data for simulating TCA migration with a depleting source is presented in Figure G-13. The same Koc, Rf, dispersivity, and biodegradation half-life values were used as in the previous BIOCHLOR TCA model runs. An initial TCA mass of 450 kg was assigned to the source area in 1980 (Figure G-13). The initial dissolved TCA concentration at the source was estimated to be 35 mg/L. Using these input values, the predicted TCA concentration near the source in 1995 (4.263 mg/L) was lower than the actual measurements for the well samples (12.75 mg/L), as shown in Figure G-14. However, the predicted values overestimated the measured values between 0 and 600 feet downgradient of the source. The model underestimates the plume concentrations between 600 and 1200 feet downgradient of the source. At 1500 feet, the model predicted a TCA concentration of <0.001 mg/L; whereas, a value of 0.006 mg/L was detected in well ET-TW-11. The model was allowed to run another 5 years (year 2000). The TCA concentration near the source was predicted to be 2.113 mg/L, which is almost identical to the actual measurements in well FC-MW-02-S (2.08 mg/L). After 50 years (i.e., 2030), the model predicts the TCA concentration near the source to reach 0.031mg/L. At 63 years (year 2043),

the predicted TCA concentrations decrease everywhere in the aquifer to less than 0.005 mg/L (the NY MCL).

The model predictions for the year 20 showed that the mass remaining in the source area was 27.2 kg and the dissolved TCA concentration to be 2.113 mg/L. To simulate a source remediation in the year 2000, 90% of the year 2000 mass was removed, leaving 2.72 kg. A new BIOSCREEN run was performed using this source mass and a source TCA concentration of 2.113 mg/L. The simulation of this remediation scenario showed that the maximum concentration of TCA remaining in the aquifer is predicted to be less than 0.005 mg/L (the NY MCL) in about 10 years. Thus, remediation of the source area, with 90% mass removal, could shorten the cleanup time in the aquifer by about 33 years.

5.7 1,1-DCE

The highest concentration of 1,1-DCE found at Site 6A or downgradient was 0.290 mg/L, found in well FC-MW-02-S in 1994 (Table G-1). It has decreased significantly between 1994 and 2000, as shown in Figure G-1. The 1,1-DCE concentrations will always be less than the TCA concentrations, because:

- 1,1-DCE is the daughter product of TCA and always decreases as TCA decreases,
- 1,1-DCE has shorter degradation half-life than TCA (Table G-2).

Therefore, 1,1-DCA transport and fate has not been simulated. When the TCA MCL is met in the aquifer, then the 1,1-DCE MCL (0.005 mg/L) will also be met.

6.0 FATE OF CHEMICALS IN GROUNDWATER

6.1 MASS OF CONTAMINANTS DEGRADED

The BIOSCREEN models predicted that 91.6% of the total TCA mass and 98.9% of the total ethylbenzene mass will be degraded after 20 years of simulation. The model runs suggest that 60% of the total toluene mass and 61% of the xylene mass will also be degraded after 20 years. Thus, the relative rate of mass decay is much higher for the TCA and ethylbenzene than for toluene and xylene. The migration of 1,2 – DCA and CA were performed using the BIOCHLOR modeling software, only. As a result, the concentrations of contaminants were held constant at the source and gradual decay at the source could not occur.

6.2 MASS OF CONTAMINANTS REMAINING IN THE SHALLOW AQUIFER

BY 2000, the mass of dissolved contaminants remaining in the aquifer is relatively small and should continue to decline through time. After 20 years of migration, the BIOSCREEN models predict that 54.8, 37.8, and 16.1 kg of xylene, TCA, and toluene will remain in the shallow aquifer. The amount of mass present for the other contaminants will be significantly less.

6.3 MASS OF CONTAMINANTS ARRIVING AT PECONIC RIVER

According to the model predictions, no contamination originating from Site 6A and migrating strictly through the subsurface reaches the Peconic River now, nor will it reach the river in the future. Thus, there should be zero impact to the river caused by subsurface migration of contaminants from Site 6A. However, the contamination that entered the subsurface from drainage ditches to the southeast of Site 10B (i.e., Southern Area) has the potential to ultimately enter the Peconic River, thereby causing a very small impact to the chemistry of the River.

REFERENCES

American Society for Testing and Materials (ASTM). 1995. Standard Guide for Risk-Based Corrective Action Applied at Petroleum Release Sites. ASTM E-1739-95, Philadelphia, PA.

Aziz, C.E., C.J. Newell, J.R. Gonzales, P. Haas, T.P. Clement, and Y. Sun. 2000. BIOCHLOR, Natural Attenuation Decision Support System, User's Manual, Version 1.0. U.S. Environmental Protection Agency Report EPA/600/R-00/008.

C.F. Braun Engineering Corp. 1998. Phase 2 RCRA Facility Investigation for Naval Weapons Industrial Reserve Plant, Calverton, New York, Sites 6A, 10A, 10B, and Southern Area, Volume 1. Prepared for Northern Division, Naval Facilities Engineering Command.

Domenico, P.A. 1987. An Analytical Model for Multidimensional Transport of a Decaying Contaminant Series. Journal of Hydrology, Vol. 91, pp. 49-58.

Domenico, P.A., and F.W. Schwartz. 1990. Physical and Chemical Hydrogeology, Wiley, New York, NY.

Halliburton NUS. 1995a. RCRA Facility Investigation for Naval Weapons Industrial Reserve Plant, Calverton, New York. Volume 1, Prepared for Northern Division, Naval Facilities Engineering Command, August 1995.

Halliburton NUS. 1995b. RCRA Facility Investigation Addendum for Naval Weapons Industrial Reserve Plant, Calverton, New York. Volume 1, Prepared for Northern Division, Naval Facilities Engineering Command, September 1995.

Howard, P.H., R.S. Boethling, W.F. Jarvis, W.M. Meylan, and E.M. Michalenko. 1991. Handbook of Environmental Degradation Rates. Lewis Publishers, Boca Raton, Florida.

Howard, P.H., G.W. Sage, W.F. Jarvis, and D.A. Gray. 1990. Handbook of Environmental Fate and Exposure Data for Organic Chemicals, Volume II, Solvents. Lewis Publishers, Chelsea, Michigan.

The Nature Conservancy. 1998. Calverton Ponds Area Cooperative Groundwater Study. Letter Report.

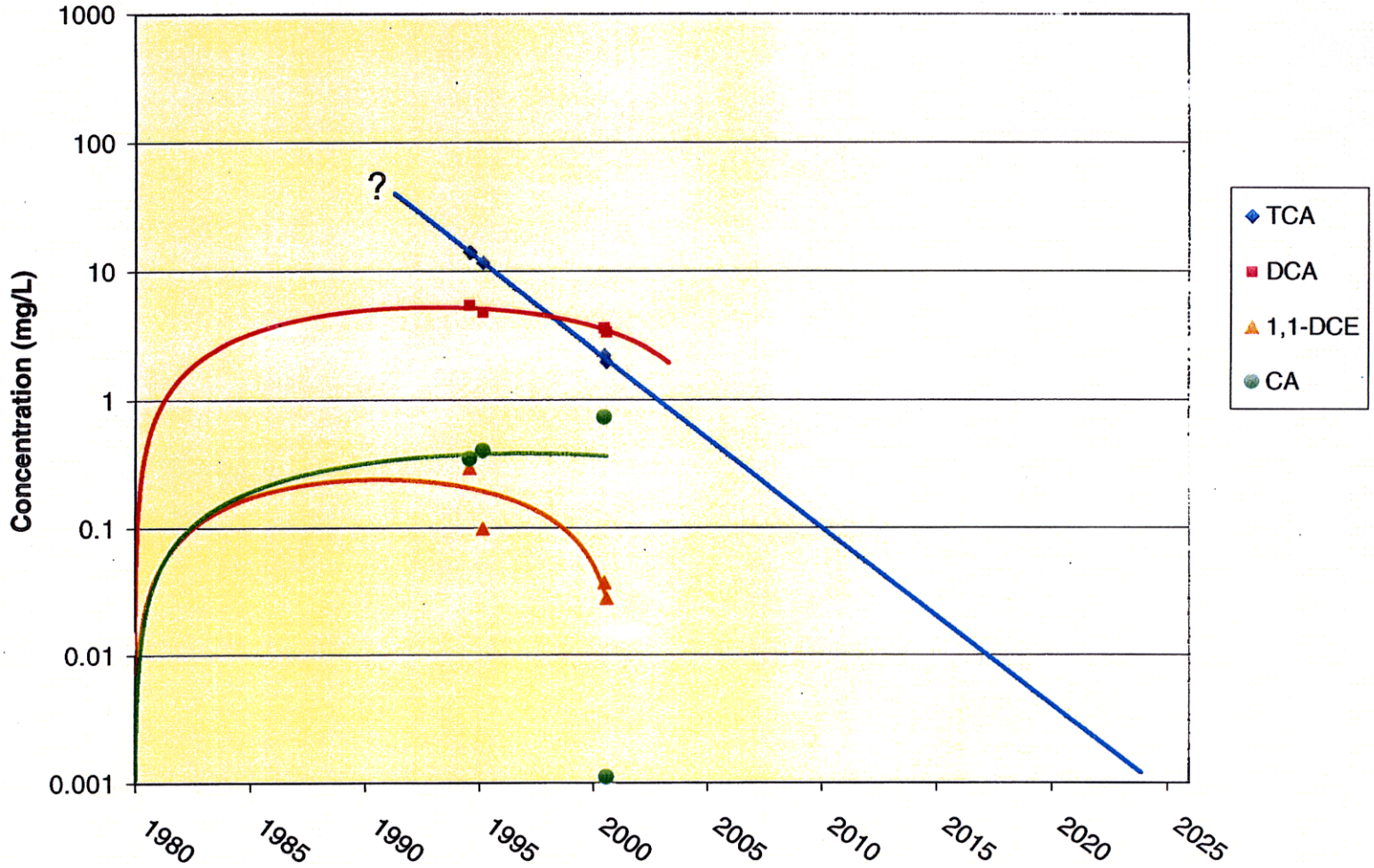
Newell, C.J., R.K. McLeod, and J.R. Gonzales. 1996. BIOSCREEN Natural Attenuation Decision Support System, User's Manual, Version 1.3. U.S. Environmental Protection Agency, Report EPA/600/R-96/087.

Newell, C.J., R.K. McLeod, and J.R. Gonzales. 1997. BIOSCREEN Natural Attenuation Decision Support System, User's Manual, Version 1.4 Revisions. U.S. Environmental Protection Agency, July 1997.

U. S. Environmental Protection Agency (USEPA), 1986, Superfund Public Health Evaluation Manual. EPA 540/1-86/080 (OSWER Directive 9285.4-1).

FIGURE G-1

TCA, DCA, 1,1-DCE, AND CA CONCENTRATIONS IN WELL FC-MW-02-S THROUGH TIME



00600 E B8Y

FIGURE G-2

INPUT DATA FOR TOLUENE TRANSPORT MODEL USING BIOSCREEN

BIOSCREEN Natural Attenuation Decision Support System

Air Force Center for Environmental Excellence — *Version 1.4*

NWIRP Calverton
Site 6A, Toluene
Run Name

Data Input Instructions:

115 ↑ or 0.02

1. Enter value directly....or
2. Calculate by filling in grey cells below. (To restore formulas, hit button below).

Variable* — Data used directly in model.
20 — Value calculated by model. (Don't enter any data).

1. HYDROGEOLOGY

Seepage Velocity*	Vs	159.4	(ft/yr)
or		↑ or	
Hydraulic Conductivity	K	3.2E-02	(cm/sec)
Hydraulic Gradient	i	0.0012	(ft/ft)
Porosity	n	0.25	(-)

2. DISPERSION

Longitudinal Dispersivity*	alpha x	30.0	(ft)
Transverse Dispersivity*	alpha y	3.0	(ft)
Vertical Dispersivity*	alpha z	0.3	(ft)
or		↑ or	
Estimated Plume Length	Lp	400	(ft)

3. ADSORPTION

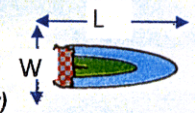
Retardation Factor*	R	1.9	(-)
or		↑ or	
Soil Bulk Density	rho	1.7	(kg/l)
Partition Coefficient	Koc	135	(L/kg)
FractionOrganicCarbon	foc	1.0E-3	(-)

4. BIODEGRADATION

1st Order Decay Coeff*	lambda	3.2E-1	(per yr)
or		↑ or	
Solute Half-Life	t-half	2.20	(year)
or Instantaneous Reaction Model			
Delta Oxygen*	DO		(mg/L)
Delta Nitrate*	NO3		(mg/L)
Observed Ferrous Iron*	Fe2+		(mg/L)
Delta Sulfate*	SO4		(mg/L)
Observed Methane*	CH4		(mg/L)

5. GENERAL

Modeled Area Length*	1600	(ft)
Modeled Area Width*	400	(ft)
Simulation Time*	20	(yr)



6. SOURCE DATA

Source Thickness in Sat.Zone* 20 (ft)

Source Zones:

Width* (ft)	Conc. (mg/L)*
50	0
50	0
80	1.2
50	0
50	0

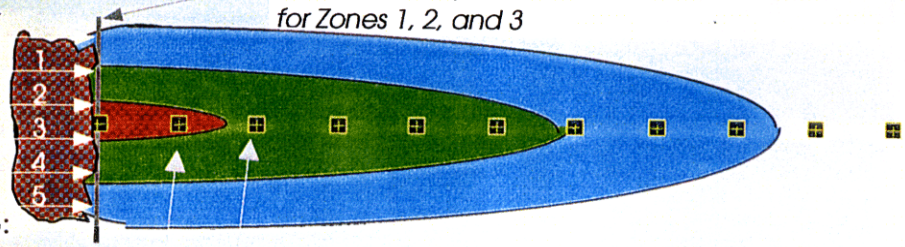
Source Halflife (see Help): #VALUE! 10 (yr)

Inst. React. ↑ ↑ 1st Order

Soluble Mass 40.00 (Kg)

In Source NAPL, Soil

Vertical Plane Source: Look at Plume Cross-Section and Input Concentrations & Widths for Zones 1, 2, and 3



View of Plume Looking Down

Observed Centerline Concentrations at Monitoring Wells
If No Data Leave Blank or Enter "0"

7. FIELD DATA FOR COMPARISON

Concentration (mg/L)											
Dist. from Source (ft)											

8. CHOOSE TYPE OF OUTPUT TO SEE:

RUN CENTERLINE — View Output

RUN ARRAY — View Output

Help

Recalculate This Sheet

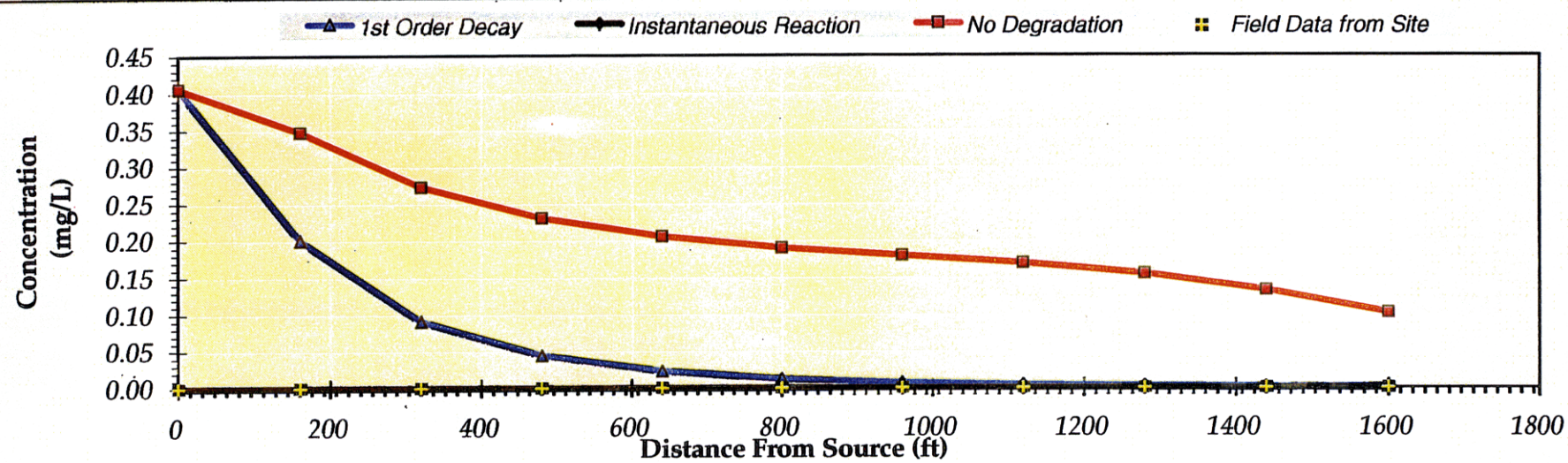
Paste Example Dataset

Restore Formulas for Vs, Dispersivities, R, lambda, other

FIGURE G-3

PREDICTED DISTRIBUTION OF TOLUENE CONCENTRATIONS ALONG THE PLUME CENTERLINE IN 1995

TYPE OF MODEL	Distance from Source (ft) 0	160	320	480	640	800	960	1120	1280	1440	1600
No Degradation	0.406	0.347	0.272	0.230	0.205	0.190	0.179	0.169	0.155	0.132	0.102
1st Order Decay	0.406	0.200	0.091	0.044	0.023	0.012	0.007	0.004	0.002	0.001	0.001
Inst. Reaction	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
Field Data from Site											



Replay Animation

Next Timestep

Prev Timestep

Time: 20 Years

Return to Input

Recalculate This Sheet

FIGURE G-4

INPUT DATA FOR ETHYLBENZENE TRANSPORT MODEL USING BIOSCREEN

BIOSCREEN Natural Attenuation Decision Support System

Air Force Center for Environmental Excellence — *Version 1.4*

NWIRP Calverton
Site 6A, Ethylbenzene
Run Name

Data Input Instructions:

115 ↑ or 0.02

1. Enter value directly....or
2. Calculate by filling in grey cells below. (To restore formulas, hit button below).

Variable* — Data used directly in model.
20 — Value calculated by model. (Don't enter any data).

1. HYDROGEOLOGY

Seepage Velocity*	Vs	159.4	(ft/yr)
or		↑ or	
Hydraulic Conductivity	K	3.2E-02	(cm/sec)
Hydraulic Gradient	i	0.0012	(ft/ft)
Porosity	n	0.25	(-)

2. DISPERSION

Longitudinal Dispersivity*	alpha x	30.0	(ft)
Transverse Dispersivity*	alpha y	3.0	(ft)
Vertical Dispersivity*	alpha z	0.3	(ft)
or		↑ or	
Estimated Plume Length	Lp	400	(ft)

3. ADSORPTION

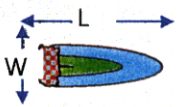
Retardation Factor*	R	1.6	(-)
or		↑ or	
Soil Bulk Density	rho	1.7	(kg/l)
Partition Coefficient	Koc	95	(L/kg)
FractionOrganicCarbon	foc	1.0E-3	(-)

4. BIODEGRADATION

1st Order Decay Coeff*	lambda	4.3E-1	(per yr)
or		↑ or	
Solute Half-Life	t-half	1.60	(year)
or Instantaneous Reaction Model			
Delta Oxygen*	DO		(mg/L)
Delta Nitrate*	NO3		(mg/L)
Observed Ferrous Iron*	Fe2+		(mg/L)
Delta Sulfate*	SO4		(mg/L)
Observed Methane*	CH4		(mg/L)

5. GENERAL

Modeled Area Length*	1600	(ft)
Modeled Area Width*	400	(ft)
Simulation Time*	20	(yr)



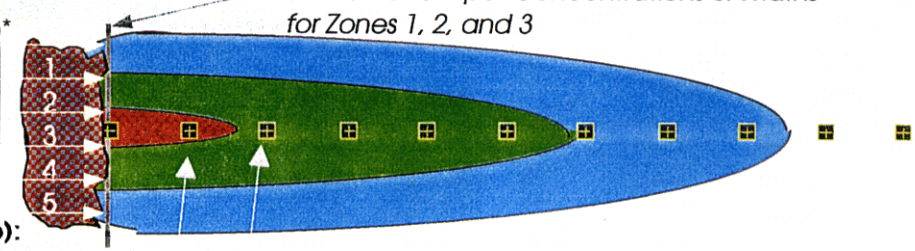
6. SOURCE DATA

Source Thickness in Sat.Zone* 20 (ft)

Source Zones:

Width* (ft)	Conc. (mg/L)*
50	0
50	0
80	15.2
50	0
50	0

Vertical Plane Source: Look at Plume Cross-Section and Input Concentrations & Widths for Zones 1, 2, and 3



View of Plume Looking Down

Source Halflife (see Help):

#VALUE! 3 (yr)

Inst. React. ↑ ↑ 1st Order

Soluble Mass 123 (Kg)
In Source NAPL, Soil

Observed Centerline Concentrations at Monitoring Wells
If No Data Leave Blank or Enter "0"

7. FIELD DATA FOR COMPARISON

Concentration (mg/L)											
Dist. from Source (ft)											

8. CHOOSE TYPE OF OUTPUT TO SEE:

RUN CENTERLINE — View Output

RUN ARRAY — View Output

Help

Recalculate This Sheet

Paste Example Dataset

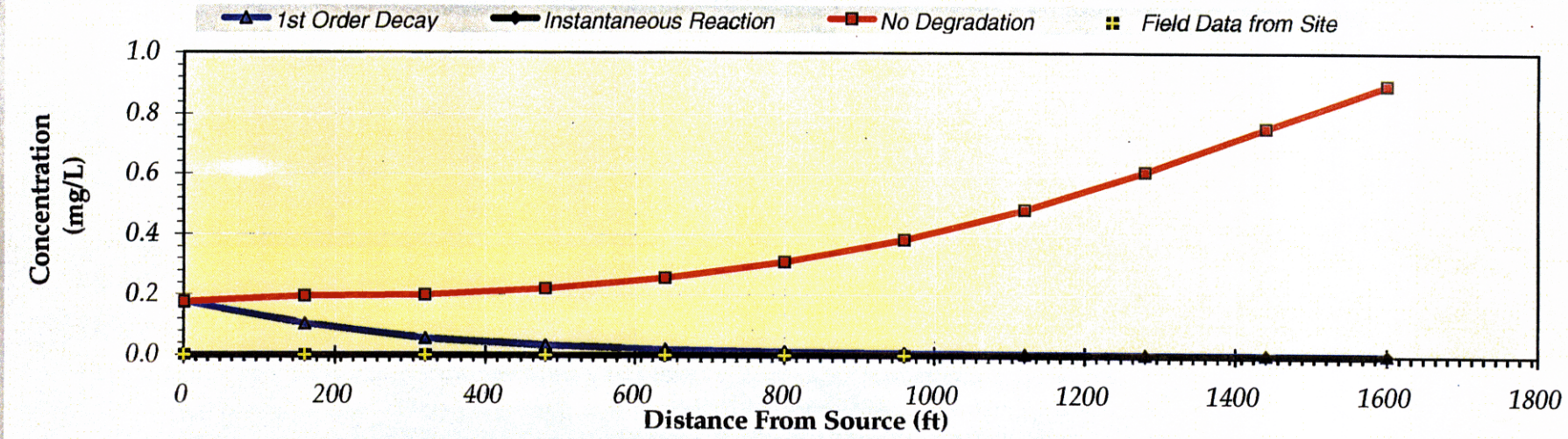
Restore Formulas for Vs, Dispersivities, R, lambda, other

FIGURE G-5

DISTRIBUTION OF ETHYLBENZENE CONCENTRATIONS ALONG THE PLUME CENTERLINE IN 1995

DISSOLVED HYDROCARBON CONCENTRATION ALONG PLUME CENTERLINE (mg/L at Z=0)

TYPE OF MODEL	Distance from Source (ft) 0	160	320	480	640	800	960	1120	1280	1440	1600
No Degradation	0.176	0.196	0.200	0.220	0.256	0.309	0.383	0.481	0.607	0.753	0.895
1st Order Decay	0.176	0.103	0.056	0.032	0.020	0.013	0.008	0.006	0.004	0.003	0.002
Inst. Reaction	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Field Data from Site											



Calculate Animation

Time: 20 Years

Return to Input

Recalculate This Sheet

FIGURE G-6

INPUT DATA FOR XYLENE TRANSPORT MODEL

BIOSCREEN Natural Attenuation Decision Support System

Air Force Center for Environmental Excellence — *Version 1.4*

NWIRP Calverton
Site 6A, Xylene
Run Name

Data Input Instructions:

115 ↑ or 0.02

1. *Enter value directly....or*
2. *Calculate by filling in grey cells below. (To restore formulas, hit button below).*

Variable*	*Data used directly in model.*
20	*Value calculated by model. (Don't enter any data).*

1. HYDROGEOLOGY

Seepage Velocity*	*Vs*	159.4	*(ft/yr)*
or		↑ or	
Hydraulic Conductivity	*K*	3.2E-02	*(cm/sec)*
Hydraulic Gradient	*i*	0.0012	*(ft/ft)*
Porosity	*n*	0.25	*(-)*

2. DISPERSION

Longitudinal Dispersivity*	*alpha x*	30.0	*(ft)*
Transverse Dispersivity*	*alpha y*	3.0	*(ft)*
Vertical Dispersivity*	*alpha z*	0.3	*(ft)*
or		↑ or	
Estimated Plume Length	*Lp*	400	*(ft)*

3. ADSORPTION

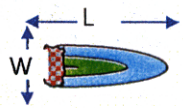
Retardation Factor*	*R*	2.6	*(-)*
or		↑ or	
Soil Bulk Density	*rho*	1.7	*(kg/l)*
Partition Coefficient	*Koc*	240	*(L/kg)*
FractionOrganicCarbon	*foc*	1.0E-3	*(-)*

4. BIODEGRADATION

1st Order Decay Coeff*	*lambda*	4.3E-1	*(per yr)*
or		↑ or	
Solute Half-Life	*t-half*	1.60	*(year)*
or Instantaneous Reaction Model			
Delta Oxygen*	*DO*		*(mg/L)*
Delta Nitrate*	*NO3*		*(mg/L)*
Observed Ferrous Iron*	*Fe2+*		*(mg/L)*
Delta Sulfate*	*SO4*		*(mg/L)*
Observed Methane*	*CH4*		*(mg/L)*

5. GENERAL

Modeled Area Length*	1600	*(ft)*
Modeled Area Width*	400	*(ft)*
Simulation Time*	20	*(yr)*



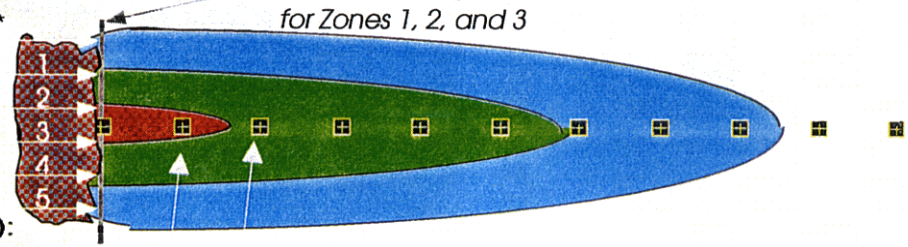
6. SOURCE DATA

Source Thickness in Sat.Zone* 20 *(ft)*

Vertical Plane Source: Look at Plume Cross-Section and Input Concentrations & Widths for Zones 1, 2, and 3

Source Zones:

Width* (ft)	Conc. (mg/L)*
50	0
50	0
80	4
50	0
50	0



View of Plume Looking Down

Source Halflife (see Help):

#VALUE!	10	*(yr)*
Inst. React. ↑	↑ 1st Order	
Soluble Mass	140	*(Kg)*
In Source NAPL, Soil		

Observed Centerline Concentrations at Monitoring Wells
If No Data Leave Blank or Enter "0"

7. FIELD DATA FOR COMPARISON

Concentration (mg/L)											
Dist. from Source (ft)											

8. CHOOSE TYPE OF OUTPUT TO SEE:

RUN CENTERLINE — **View Output**

RUN ARRAY — **View Output**

Help

Recalculate This Sheet

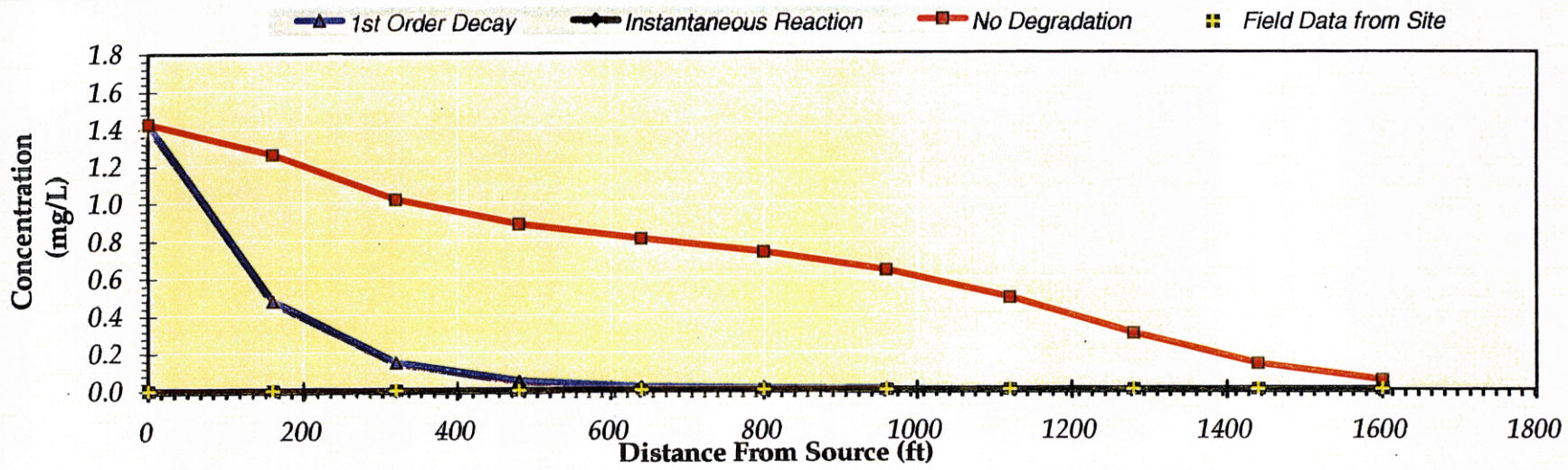
Paste Example Dataset

Restore Formulas for Vs, Dispersivities, R, lambda, other

FIGURE G-7

PREDICTED DISTRIBUTION OF XYLENE CONCENTRATIONS ALONG PLUME CENTERLINE IN 1995

TYPE OF MODEL	Distance from Source (ft) 0	160	320	480	640	800	960	1120	1280	1440	1600
No Degradation	1.426	1.259	1.018	0.886	0.806	0.735	0.637	0.491	0.298	0.133	0.046
1st Order Decay	1.426	0.478	0.147	0.049	0.017	0.006	0.002	0.001	0.000	0.000	0.000
Inst. Reaction	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
Field Data from Site											



Calculate Animation

Time: 20.0 Years

Return to Input

Recalculate This Sheet

FIGURE G-8

INPUT DATA FOR FREON-113 TRANSPORT MODEL

BIOSCREEN Natural Attenuation Decision Support System

Air Force Center for Environmental Excellence — *Version 1.4*

NWIRP Calverton
Site 6A, Freon-113
Run Name

Data Input Instructions:

115 ↑ or 0.02

1. *Enter value directly....or*
2. *Calculate by filling in grey cells below. (To restore formulas, hit button below).*

Variable* — *Data used directly in model.*
20 — *Value calculated by model. (Don't enter any data).*

1. HYDROGEOLOGY

Seepage Velocity*	*Vs*	159.4	*(ft/yr)*
or		↑ or	
Hydraulic Conductivity	*K*	3.2E-02	*(cm/sec)*
Hydraulic Gradient	*i*	0.0012	*(ft/ft)*
Porosity	*n*	0.25	*(-)*

2. DISPERSION

Longitudinal Dispersivity*	*alpha x*	30.0	*(ft)*
Transverse Dispersivity*	*alpha y*	3.0	*(ft)*
Vertical Dispersivity*	*alpha z*	0.3	*(ft)*
or		↑ or	
Estimated Plume Length	*Lp*	400	*(ft)*

3. ADSORPTION

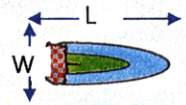
Retardation Factor*	*R*	2.5	*(-)*
or		↑ or	
Soil Bulk Density	*rho*	1.7	*(kg/l)*
Partition Coefficient	*Koc*	225	*(L/kg)*
FractionOrganicCarbon	*foc*	1.0E-3	*(-)*

4. BIODEGRADATION

1st Order Decay Coeff*	*lambda*	4.6E-1	*(per yr)*
or		↑ or	
Solute Half-Life	*t-half*	1.50	*(year)*
or Instantaneous Reaction Model			
Delta Oxygen*	*DO*		*(mg/L)*
Delta Nitrate*	*NO3*		*(mg/L)*
Observed Ferrous Iron*	*Fe2+*		*(mg/L)*
Delta Sulfate*	*SO4*		*(mg/L)*
Observed Methane*	*CH4*		*(mg/L)*

5. GENERAL

Modeled Area Length*	1600	*(ft)*
Modeled Area Width*	400	*(ft)*
Simulation Time*	20	*(yr)*



6. SOURCE DATA

Source Thickness in Sat.Zone* 20 *(ft)*

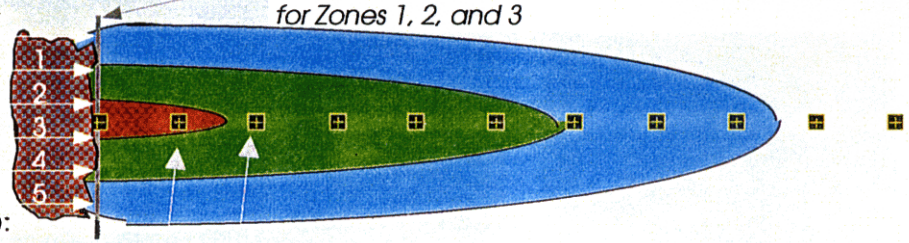
Source Zones:

Width* (ft)	Conc. (mg/L)*
50	0
50	0
80	0.5
50	0
50	0

Source Halflife (see Help):

#VALUE!	10	*(yr)*
Inst. React. ↑	↑ 1st Order	
Soluble Mass	15.00	*(Kg)*
In Source NAPL, Soil		

Vertical Plane Source: Look at Plume Cross-Section and Input Concentrations & Widths for Zones 1, 2, and 3



View of Plume Looking Down

Observed Centerline Concentrations at Monitoring Wells
If No Data Leave Blank or Enter "0"

7. FIELD DATA FOR COMPARISON

Concentration (mg/L)											
Dist. from Source (ft)											

8. CHOOSE TYPE OF OUTPUT TO SEE:

RUN CENTERLINE — **View Output**

RUN ARRAY — **View Output**

Help

Recalculate This Sheet

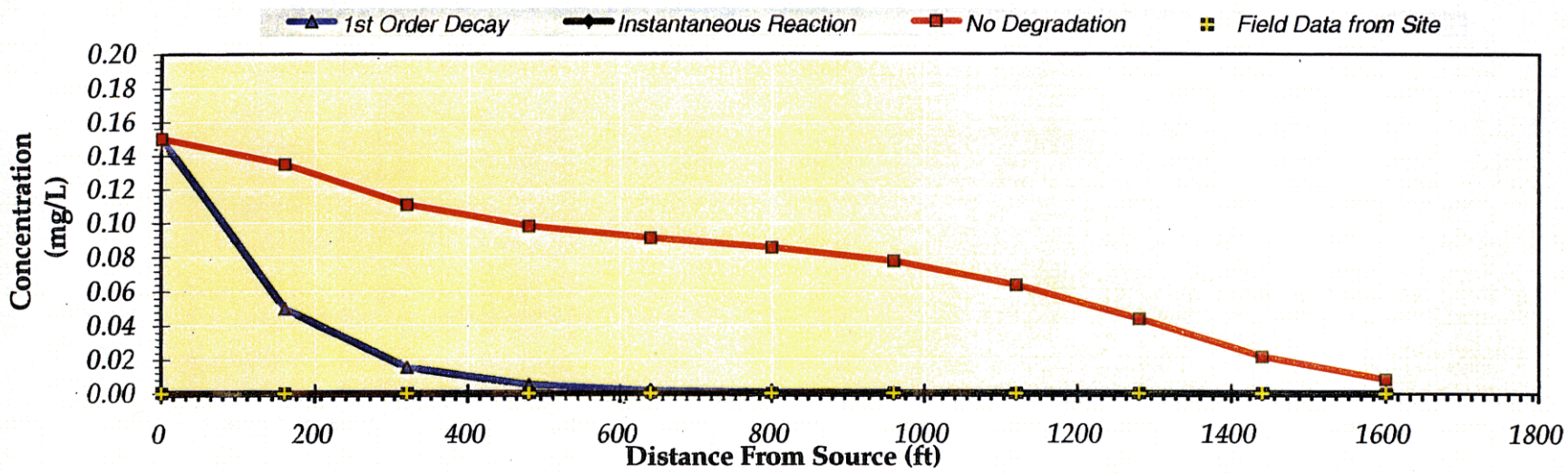
Paste Example Dataset

Restore Formulas for Vs, Dispersivities, R, lambda, other

FIGURE G-9

PREDICTED DISTRIBUTION OF FREON-113 ALONG PLUME CENTERLINE IN 1995

TYPE OF MODEL	Distance from Source (ft)										
	0	160	320	480	640	800	960	1120	1280	1440	1600
No Degradation	0.150	0.135	0.111	0.098	0.091	0.086	0.077	0.064	0.044	0.022	0.008
1st Order Decay	0.150	0.050	0.015	0.005	0.002	0.001	0.000	0.000	0.000	0.000	0.000
Inst. Reaction	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
Field Data from Site											



Replay Animation | Next Timestep | Prev Timestep

Time: 20.0 Years

Return to Input | Recalculate This Sheet

FIGURE G-10

INPUT DATA FOR BIOCHLOR MODEL RUN INVOLVING TCA, DCA, AND CA SIMULTANEOUSLY

BIOCHLOR Natural Attenuation Decision Support System

Version 1.0

NWIRP Calverton
TCA/DCA/CA
Run Name

Data Input Instructions:

115 ← 1. Enter value directly....or
or 2. Calculate by filling in gray
0.02 cells. Press Enter, then (C)
(To restore formulas, hit "Restore Formulas" button)
Variable* = Data used directly in model.

Test if Biotransformation is Occurring → Natural Attenuation Screening Protocol

TYPE OF CHLORINATED SOLVENT: Ethenes ○ Ethanes ◉

1. ADVECTION

Seepage Velocity*	Vs	159.4	(ft/yr)
or			
Hydraulic Conductivity	K	3.2E-02	(cm/sec)
Hydraulic Gradient	i	0.0012	(ft/ft)
Effective Porosity	n	0.25	(-)

2. DISPERSION

Alpha x Calc. Method	30	(ft)
(Alpha y) / (Alpha x)	0.1	(-)
(Alpha z) / (Alpha x)	0.01	(-)

Change Alpha x Calc. Method

3. ADSORPTION

Retardation Factor* → R

or

Soil Bulk Density, rho	1.7	(kg/L)		
FractionOrganicCarbon, foc	1.0E-3	(-)		
Partition Coefficient	Koc			
TCA	152	(L/kg)	2.0	(-)
DCA	30	(L/kg)	1.2	(-)
CA	15	(L/kg)	1.1	(-)

Common R (used in model)* = 1.2

4. BIOTRANSFORMATION

-1st Order Decay Coef*

Zone 1

	λ (1/yr)	half-life (yrs)	Yield*
TCA → DCA	0.495	1.40	0.74
DCA → CA	1.155	0.60	0.65
CA → Ethane	0.990	0.70	0.47

Zone 2

	λ (1/yr)	half-life (yrs)
TCA → DCA	0.116	6.00
DCA → CA	0.139	5.00
CA → Ethane	0.173	4.00

5. GENERAL

Simulation Time*	20	(yr)
Modeled Area Width*	400	(ft)
Modeled Area Length*	1600	(ft)
Zone 1 Length*	1500	(ft)
Zone 2 Length*	100	(ft)

L, W

Zone 2= L - Zone 1

6. SOURCE DATA

Source Options

TYPE: Single Planar

Source Thickness in Sat. Zone* 20 (ft)

Width* (ft) 100

Conc. (mg/L)*	C1
TCA	2.2
DCA	3.6
CA	.72

Vertical Plane Source: Determine Source Well Location and Input Solvent Concentrations

View of Plume Looking Down

Observed Centerline Conc. at Monitoring Wells

7. FIELD DATA FOR COMPARISON

TCA Conc. (mg/L)	.02	.135	.014	.166	.026	.001	.001	.006			
DCA Conc. (mg/L)	.001	.001	.039	.001	.001	.008	.001	.001			
CA Conc. (mg/L)	.001	.001	.005	.045	.001	.001	.001	.001			
Dist. from Source (ft)	100	350	500	1100	1150	1250	1325	1500			

8. CHOOSE TYPE OF OUTPUT TO SEE:

RUN CENTERLINE | RUN ARRAY | Help | Restore Formulas | RESET | SEE OUTPUT | Paste Example

FIGURE G-11

PREDICTED CONCENTRATIONS OF TCA, DCA, AND CA IN 1995 FROM 0 TO 1600 FEET DOWNGRADIENT OF THE SOURCE

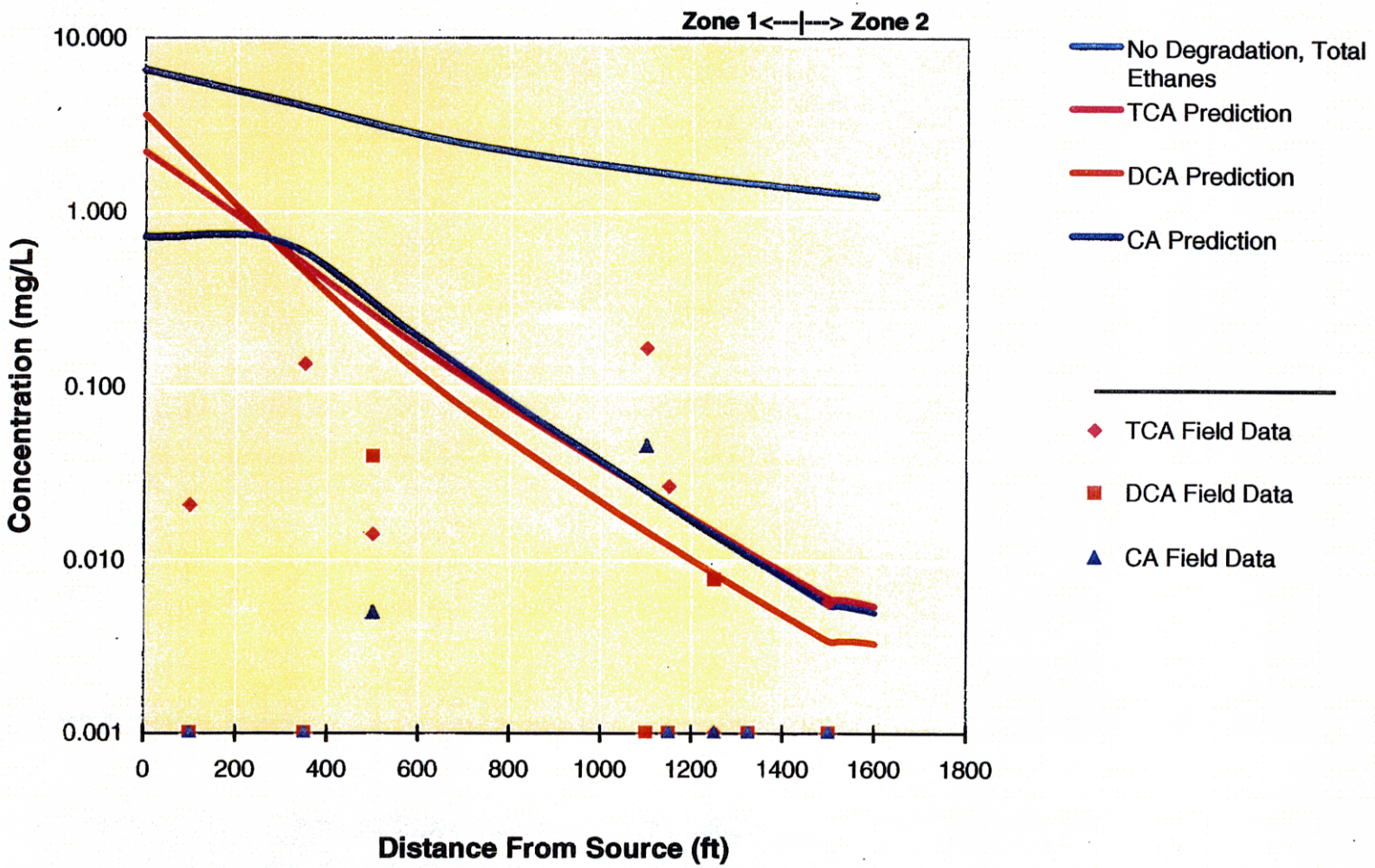


FIGURE G-12

PREDICTED CONCENTRATIONS OF TCA, DCA, AND CA IN 1995
(0 TO 7000 FEET DISTANCE FROM THE SOURCE)

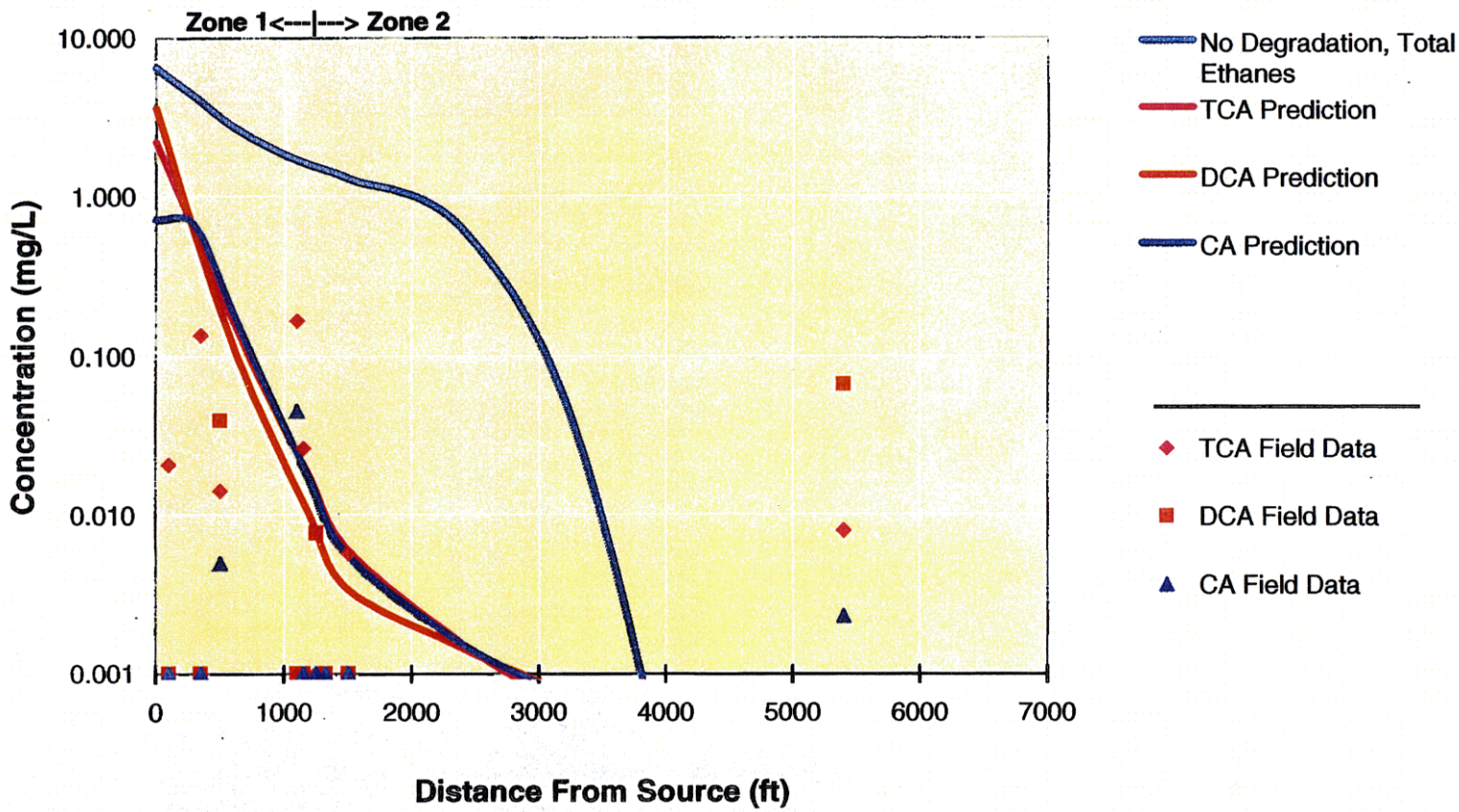


FIGURE G-13

INPUT DATA FOR TCA TRANSPORT MODEL USING BIOSCREEN

BIOSCREEN Natural Attenuation Decision Support System

Air Force Center for Environmental Excellence — *Version 1.4*

NWIRP Calverton
Site 6A, TCA Run1
Run Name

Data Input Instructions:

115 ↑ or 0.02

1. Enter value directly....or
2. Calculate by filling in grey cells below. (To restore formulas, hit button below).

Variable* — Data used directly in model.
20 — Value calculated by model. (Don't enter any data).

1. HYDROGEOLOGY

Seepage Velocity*	Vs	159.4	(ft/yr)
or		↑ or	
Hydraulic Conductivity	K	3.2E-02	(cm/sec)
Hydraulic Gradient	i	0.0012	(ft/ft)
Porosity	n	0.25	(-)

2. DISPERSION

Longitudinal Dispersivity*	alpha x	30.0	(ft)
Transverse Dispersivity*	alpha y	3.0	(ft)
Vertical Dispersivity*	alpha z	0.3	(ft)
or		↑ or	
Estimated Plume Length	Lp	400	(ft)

3. ADSORPTION

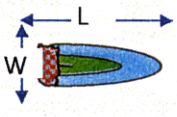
Retardation Factor*	R	2.0	(-)
or		↑ or	
Soil Bulk Density	rho	1.7	(kg/l)
Partition Coefficient	Koc	152	(L/kg)
FractionOrganicCarbon	foc	1.0E-3	(-)

4. BIODEGRADATION

1st Order Decay Coeff*	lambda	5.8E-1	(per yr)
or		↑ or	
Solute Half-Life	t-half	1.20	(year)
or Instantaneous Reaction Model			
Delta Oxygen*	DO		(mg/L)
Delta Nitrate*	NO3		(mg/L)
Observed Ferrous Iron*	Fe2+		(mg/L)
Delta Sulfate*	SO4		(mg/L)
Observed Methane*	CH4		(mg/L)

5. GENERAL

Modeled Area Length*	1600	(ft)
Modeled Area Width*	400	(ft)
Simulation Time*	15	(yr)



6. SOURCE DATA

Source Thickness in Sat.Zone* 20 (ft)

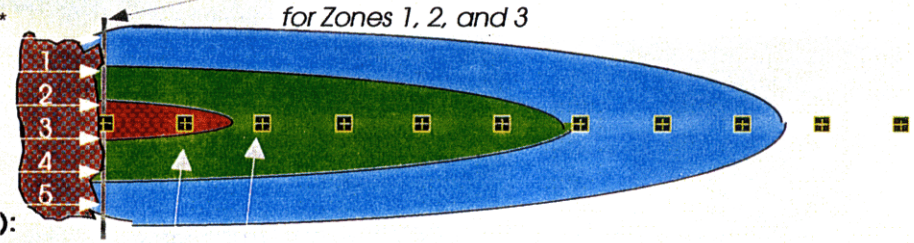
Source Zones:

Width* (ft)	Conc. (mg/L)*
50	0
50	0
80	35
50	0
50	0

Source Halflife (see Help):

#VALUE!	5	(yr)
Inst. React.	↑ 1st Order	
Soluble Mass	450	(Kg)
In Source NAPL, Soil		

Vertical Plane Source: Look at Plume Cross-Section and Input Concentrations & Widths for Zones 1, 2, and 3



View of Plume Looking Down

7. FIELD DATA FOR COMPARISON

Observed Centerline Concentrations at Monitoring Wells
If No Data Leave Blank or Enter "0"

Concentration (mg/L)	12.75	.001	.02	.135	.014	.166	.026	.001	.001	.006	
Dist. from Source (ft)	25	50	100	350	500	1100	1150	1250	1325	1500	

8. CHOOSE TYPE OF OUTPUT TO SEE:

RUN CENTERLINE — View Output

RUN ARRAY — View Output

Help

Recalculate This Sheet

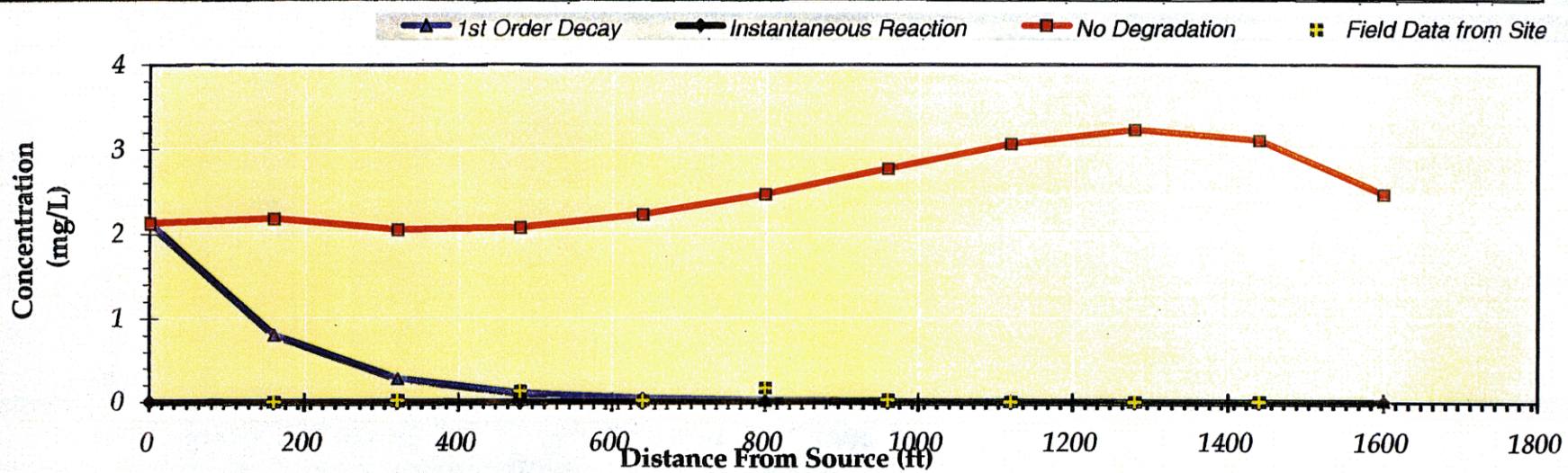
Paste Example Dataset

Restore Formulas for Vs, Dispersivities, R, lambda, other

FIGURE G-14

PREDICTED CONCENTRATIONS OF TCA ALONG PLUME CENTERLINE IN 2000 USING BIOSCREEN

TYPE OF MODEL	Distance from Source (ft) 0	160	320	480	640	800	960	1120	1280	1440	1600
No Degradation	2.113	2.167	2.037	2.067	2.213	2.451	2.753	3.052	3.218	3.090	2.447
1st Order Decay	2.113	0.802	0.279	0.105	0.042	0.017	0.007	0.003	0.001	0.001	0.000
Inst. Reaction	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
Field Data from Site	12.750	0.001	0.020	0.135	0.014	0.166	0.026	0.001	0.001	0.006	



Replay Animation | Next Timestep | Prev Timestep

Time: 20.0 Years

Return to Input | Recalculate This Sheet