N60200.AR.004656
NAS CECIL FIELD, FL
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FINAL REMEDIAL INVESTIGATION REPORT FOR OPERABLE UNIT 9 (OU 9) SITE 59 NAS CECIL FIELD FL

11/1/2006

TETRA TECH NUS INC

Comprehensive **L**ong-term **E**nvironmental **A**ction **N**avy

CONTRACT NUMBER N62467-94-D-0888

Remedial Investigation Report for Operable Unit 9, Site 59

Naval Air Station Cecil Field
Jacksonville, Florida

Contract Task Order 0359

November 2006

Naval Facilities Engineering Command
Southeast
2155 Eagle Drive
North Charleston, South Carolina 29406

TETRA TECH NUS, Inc.

030602/P

REMEDIAL INVESTIGATION REPORT
FOR
OPERABLE UNIT 9, SITE 59

NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

COMPREHENSIVE LONG-TERM
ENVIRONMENTAL ACTION NAVY (CLEAN) CONTRACT

Submitted to:
Naval Facilities Engineering Command
Southeast
2155 Eagle Drive
North Charleston, South Carolina 29406

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CONTRACT TASK ORDER 0359

NOVEMBER 2006

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CERTIFICATION OF TECHNICAL
DATA CONFORMITY

The Contractor, Tetra Tech NUS, Inc., hereby certifies that, to the best of its knowledge and belief, the technical data delivered herewith under Contract No. N62467-94-D-0888 are complete and accurate and comply with all requirements of this contract.

DATE: November 9, 2006

COMPANY CERTIFICATION AUTHORIZATION NUMBER: 7988
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This document that describes the Remedial Investigation for Operable Unit 9, Site 59, Naval Air Station Cecil Field, Jacksonville, Florida, has been prepared under the direction of a Florida-registered professional engineer. The work and professional opinions rendered in this report were conducted or developed in accordance with commonly accepted procedures consistent with applicable standards of practice.

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ACRONYMS

ABB-ES	ABB Environmental Services, Inc.
amsl	Above mean sea level
ATSDR	Agency for Toxic Substances and Disease Registry
BCT	BRAC Cleanup Team
bgs	Below ground surface
BRAC	Base Realignment and Closure
BTEX	Benzene, toluene, ethylbenzene, and xylenes
°C	Degrees Celsius
CLEAN	Comprehensive Long-Term Environmental Action Navy
COC	Contaminant of concern
CTO	Contract Task Order
DCE	Dichloroethene
DHC	*Dehalococcoides spp.*
DNA	Deoxyribonucleic acid
DO	Dissolved oxygen
DPT	Direct-push technology
DQO	Data quality objective
EBS	Environmental Baseline Survey
EISOPQAM	Environmental Investigations Standard Operating Procedures and Quality Assurance Manual
FAC	Florida Administrative Code
FDEP	Florida Department of Environmental Protection
f_{oc}	Fractional organic carbon
FS	Feasibility Study
FSP	Field Sampling Plan
GCTL	Groundwater Cleanup Target Level
HLA	Harding Lawson Associates
HSA	Hollow-stem auger
IBDS	Inorganic Background Data Set
ID	Inside diameter
IR	Installation Restoration
JETC	Jet Engine Test Cell
K	Hydraulic conductivity
K_d	Soil/water partition coefficient
K_{oc}	Organic carbon partition coefficient

K_{ow}	Octonal/water partition coefficient
MCL	Maximum Contaminant Level
MDL	Method detection limit
NAS	Naval Air Station
NAVFAC EFD SOUTH	Naval Facilities Engineering Command, Engineering Field Division South
NAVD	North American Vertical Datum
n_e	Effective porosity
NSF	National Sanitation Foundation
NTU	Nephelometric turbidity unit
ORP	Oxidation-reduction potential
OU	Operable Unit
PAH	Polynuclear aromatic hydrocarbon
PCB	Polychlorinated biphenyl
PCE	Tetrachloroethene
PID	Photoionization detector
POL	Petroleum, oil, and lubricants
PQL	Practical quantitation limit
PRE	Preliminary Risk Evaluation
PRG	Preliminary Remediation Goal
PSC	Potential Source of Contamination
PVC	Polyvinyl chloride
QA	Quality assurance
QC	Quality control
qPCR	Quantitative polymerase chain reaction
%R	Percent recovery
RAO	Remedial Action Objective
RAP	Remedial Action Plan
RI	Remedial Investigation
RL	Reporting limit
RPD	Relative percent difference
RQL	Required quantitation limit
S	Storage coefficient
SAR	Site Assessment Report
SAOR	Sampling and Analysis Outline and Report
SCS	Soil Conservation Service
SCTL	Soil Cleanup Target Level
SDG	Sample delivery group
SOP	Standard operating procedure

SPECAP	Specific capacity
SVOC	Semivolatile organic compound
S_y	Specific yield
TCE	Trichloroethene
TOC	Total organic carbon
TOR	Top of rock
TRPH	Total recoverable petroleum hydrocarbons
TtNUS	Tetra Tech NUS, Inc.
USDA	United States Department of Agriculture
U.S. EPA	United States Environmental Protection Agency
VOC	Volatile organic compound

EXECUTIVE SUMMARY

This Remedial Investigation (RI) Report for Operable Unit (OU) 9, Site 59, Naval Air Station (NAS) Cecil Field, Jacksonville, Florida, has been prepared by Tetra Tech NUS, Inc. (TtNUS) for Naval Facilities Engineering Command, Engineering Field Division South (NAVFAC EFD SOUTH) under the Navy Comprehensive Long-Term Environmental Action Navy (CLEAN) Program, Contract Number N62467-94-D-0888, Contract Task Order (CTO) 0359. This report describes the field investigation and subsequent findings of the RI at Site 59, the Buildings 324 and 1845 Area.

Site 59 is located in the Main Base area of NAS Cecil Field, near the northern end of the north-south runways. Buildings associated with Site 59 include 324, 334, 339, 811, 814, 815, 837LN, 885, and 1845. Installation Restoration (IR) Program investigations in the Building 324 area began after a Due Diligence Investigation was conducted by Golder Associates in November 2003. Trichloroethene (TCE) was detected at concentrations greater than Florida Department of Environmental Protection (FDEP) Groundwater Cleanup Target Levels (GCTLs) in several 25- to 30-foot deep wells during this investigation. Also in November 2003, CDM conducted a soil investigation in the Building 324 area to assess potential soil sources based on the Golder groundwater data. Twenty-five soil samples were collected, based on photoionization detector (PID) readings, from depths between 2 and 7 feet bgs. All samples were non-detect for volatile organic compounds (VOCs).

In December 2003, TtNUS resampled two temporary wells installed by Golder and confirmed the previous TCE results. Permanent monitoring wells were then installed at the locations of the resampled wells. from January to April 2004, TtNUS conducted a groundwater investigation using direct-push technology (DPT) to evaluate the extent of groundwater TCE contamination in the Building 324 area. A total of 188 DPT groundwater samples were collected from 68 locations at depths from 10 to approximately 100 feet bgs and analyzed for VOCs. Six existing permanent wells were also sampled and analyzed for VOCs. TCE concentrations greater than the GCTL were detected in an area extending from the area northwest of Building 324 to the western side of Hangar 1845. Vertically, TCE exceedances were detected from 30 to approximately 100 feet bgs. Four soil samples were also collected in the area northwest of Building 324 (at the maximum TCE concentration detected in groundwater at that time) and analyzed for VOCs. All results were less than detection limits.

Environmental investigations associated with Building 815 involved an aircraft wash rack located north of the building, just south of Building 1845. In this area, naphthalene and total recoverable petroleum hydrocarbons (TRPH) concentrations in shallow surficial groundwater exceeded FDEP GCTLs. The extent of contamination was delineated, and semi-annual monitoring was proposed and approved under the Petroleum Program. However, after 3 years of monitoring, naphthalene concentrations continued to

exceed the applicable criterion, and an additional soil investigation was undertaken to evaluate possible soil sources in the area. No soil contamination was detected, and preparation of a Remedial Action Plan (RAP) to address groundwater contamination was recommended. However, at the February 2005 BCT meeting, it was decided that the Building 815 Wash Rack Area groundwater contamination would be addressed with Site 59 groundwater.

RI field activities at Site 59 began in September 2004 and included permanent monitoring well installation and groundwater sampling. Utilizing data gathered during the RI, a human health Preliminary Risk Evaluation (PRE) and an ecological risk evaluation were conducted to evaluate potential risks to human health and the environment posed by the site. A total of 57 monitoring wells at 21 locations were installed at Site 59 during the RI, and these and three previously installed monitoring wells were sampled to delineate the horizontal and vertical extent of groundwater contamination. Based on previous analytical data from a due diligence investigation by Golder Associates, confirmatory sampling by TtNUS in 2003, and temporary well installation by TtNUS in 2004, groundwater samples were analyzed for VOCs only. To evaluate the potential for natural attenuation at the site, samples from 20 wells were also analyzed for geochemical indicator parameters. In addition, three wells included in the Building 815 Wash Rack Area monitoring program were resampled to provide more current data for the site. Three additional wells to be sampled were covered by asphalt or concrete at the time of sampling.

The horizontal and vertical extent of groundwater contamination at Site 59 was defined during the RI. Groundwater contamination was evaluated in four zones of the surficial aquifer at the site, including approximately 30 feet bgs, 50 feet bgs, 70 to 80 feet bgs, and at the top of the first rock unit beneath the site [top-of-rock (TOR) zone].

At the 30-foot depth, two TCE plumes delineated based on exceedances of the FDEP GCTL of 3 µg/L were identified as follows:

- A northern plume beginning just north of Building 324, centered west of Building 818, and extending southeast to Building 1845. This plume extends approximately 540 feet to the southeast, with an average width of approximately 150 feet, and covers approximately 82,000 square feet.

- A southern plume oriented approximately east-west between Buildings 1845 and 815 with maximum dimensions of approximately 130 feet by 400 feet. This plume covers approximately 42,000 square feet.

At the 50-foot depth, two TCE plumes were also identified as follows:

- A northern plume with a more east-west orientation than at 30 feet bgs, but that it is still centered just west of Building 818. Maximum dimensions of the plume are 300 feet by 450 feet, and this plume covers an area of approximately 84,000 square feet.

- The position of the southern plume shifts from between Buildings 1845 and 815 in the 30-foot zone to encompassing most of Building 1845 and extending to Building 815, and the orientation changes from east-west to northwest-southeast. The plume extends in a general southeast direction for approximately 560 feet with an average width of approximately 220 feet, and the area covered by this plume is approximately 115,000 square feet.

At the 70- to 80-foot depth, the plumes coalesce into a single area extending from southeast of Building 324 to within Building 1845, with a northwest-southeast orientation, and the center shifts toward the northwestern corner of Building 1845. This plume extends to the southeast approximately 720 feet, with a width of approximately 130 feet in the northern portion and expanding to approximately 300 feet in the southern section. This plume covers approximately 150,000 square feet.

In the TOR zone, the single plume decreases in size to approximately 18,500 square feet, has the same general orientation as in the 70- to 80-foot zone, and is centered at the northwestern corner of Building 1845. This plume extends approximately 200 feet in a southeastward direction and is approximately 100 feet wide.

TCE concentrations in excess of the GCTL occur in surficial aquifer from approximately 30 feet bgs to the top of the bedrock. TCE was not detected in the bedrock well installed at the location of the only TCE GCTL exceedance in the TOR zone. No specific sources of chlorinated VOC contamination were identified. The presence of chlorinated contamination is likely a result of past spills, leaks, and/or poor waste handling practices. Solvents were reportedly used and stored in several buildings associated with the site.

At the Building 815 Wash Rack Area, naphthalene and TRPH concentrations in excess of GCTLs (based on the most recent data for each well) are encompassed by a plume extending approximately 130 feet southeast and with an average width of approximately 50 feet, covering and an area of approximately 6,500 square feet. Contamination in this area is limited to the shallow portion of the surficial aquifer (to 15 feet bgs).

The human health PRE indicated that residential exposure to groundwater from Site 59 could result in adverse impacts. Concentrations of TCE and vinyl chloride in groundwater resulted in risks exceeding United States Environmental Protection Agency's (U.S. EPA's) target risk range and FDEP target risk

based on potential future use of groundwater as a drinking water source. The ecological risk evaluation indicated negligible ecological risks based on the limited extent and poor quality of habitat in the site area and the lack of significant and/or complete exposure pathways for soil and surface water.

Based on the results of the RI, unacceptable risks associated with by potential future groundwater use at OU 9, Site 59, and the recommended Remedial Action Objective (RAO) is to prevent ingestion of groundwater with concentrations of TCE in excess of the FDEP GCTL.

Recommendations to meet this objective include one or more of the following:

- Remediation of contaminated groundwater to conform to FDEP criteria
- Implementation of land use controls to prevent the use of groundwater as a potable water source
- Continued monitoring of the plume

Based on the results of previous investigations and limited resampling during the RI, the following RAO is recommended for groundwater at Building 815 Wash Rack Area:

- Prevent ingestion of groundwater with concentrations naphthalene and TRPH greater than FDEP GCTLs.

An evaluation of remedial actions to meet the RAOs for Site 59 and the Building 815 Wash Rack Area will be conducted as part of a Feasibility Study (FS).

1.0 INTRODUCTION

This Remedial Investigation (RI) Report for Operable Unit (OU) 9, Site 59 at Naval Air Station (NAS) Cecil Field, Jacksonville, Florida has been prepared by Tetra Tech NUS, Inc. (TtNUS) for Naval Facilities Engineering Command, Engineering Field Division South (NAVFAC EFD SOUTH) under the Comprehensive Long-Term Environmental Action Navy (CLEAN) Program, Contract Number N62467-94-D-0888, Contract Task Order (CTO) 0359. This report describes the field investigations and subsequent findings at Site 59, Buildings 324/1845 Area.

The RI was conducted to determine the nature and extent of contamination, to assess the human health and environmental risks posed by contamination, and to provide a basis for selecting alternatives for remediation of the site. Because the risks posed by the site are not expected to be significant and the site is located within an industrial area in accordance with current reuse plans, the Base Realignment and Closure (BRAC) Cleanup Team (BCT) agreed that a Preliminary Risk Evaluation (PRE) would be acceptable, rather than a Baseline Risk Assessment.

The RI fieldwork was conducted between September 2004 and January 2006, in accordance with the Final RI Work Plan for Site 59 (TtNUS, 2004b) and subsequent BCT decisions.

1.1 PURPOSE OF REPORT

This report presents the results of the RI conducted at Site 59. It includes a description of the field investigation, a presentation of the data, and summaries of the human health PRE and the ecological risk assessment.

The results and conclusions of this report will be used to develop a Feasibility Study (FS) for the site to develop, screen, and evaluate remedial alternatives based on risk assessments and remediation criteria.

1.2 SITE DESCRIPTION AND BACKGROUND

Figure 1-1 is a general location map for Site 59, and Figure 1-2 is a site location map. Figure 1-3 shows the site layout, existing monitoring wells, and locations at which RI wells were installed.

Site 59 is located in the Main Base area of NAS Cecil Field, near the end of the north-south runways. Facilities associated with Site 59 include Buildings 324, 334, 339, 811, 814, 815, 837LN, 885, and 1845, two sanitary sewer lift stations (LS-1 and LS-2), an oil-water separator associated with Building 334 (334-OW), and Potential Source of Contamination (PSC) 56, Stormwater Retention Pond.

Building 324 was constructed in 1989 as a one-story sheet metal building on a concrete slab. According to the 1994 Environmental Baseline Survey (EBS), the building was periodically used by a private contractor for engine maintenance activities (ABB-ES, 1994). Hazardous material storage lockers were located on the northwestern side of the building. The contents of the lockers were unknown, but no indications of releases were noted in the EBS. Hazardous materials reported used at the facility included paint, paint remover, and corrosion preventative.

Buildings 334, 339, and 811 and 334-OW were part of the Jet Engine Test Cell (JETC) facility at which jet engines were mounted to test racks inside the buildings and powered for testing. Buildings 334 and 339 were built in 1959, and Building 811 was built in 1975. Engine testing results were monitored in an adjacent control room, and exhaust was discharged to a conical structure and vented outside in accordance with a Florida Department of Environmental Protection (FDEP) air emissions permit. Petroleum-related contamination associated with two underground storage tanks and one above-ground storage tank used to supply fuel for engine testing is being addressed under the FDEP Petroleum Program. Contaminated soil associated with the storage tanks was excavated, and contaminated groundwater in the shallow portion of the surficial aquifer is currently being addressed via an air sparging system.

Building 815, a concrete aircraft hangar built in 1970, includes a two-story administrative office area on the western side and an aircraft maintenance area on the eastern side. Hazardous materials used in the hangar were stored in a small, adjacent building. Building 837LN was a line shack providing office space, equipment storage, and a break area for flight maintenance crews. A hazardous materials locker was at one time located adjacent to the line shack but was subsequently moved to the northern side of Hangar 815. Materials stored in the locker included petroleum products, cleaning compounds, paints, lacquers, and thinner. A waste petroleum, oil, and lubricant (POL) accumulation point was located at the southwestern corner of Building 837LN, and Building 815 was a hazardous waste satellite accumulation area. Environmental investigations associated with Building 815 involved an electrical transformer on the western side of the building (outside of the Site 59 area) and an aircraft wash rack located north of the building, just south of Building 1845 (within the Site 59 area). A small area of polychlorinated biphenyl (PCB)-contaminated soil was delineated and excavated from the transformer area in 2000, and the excavated soil was properly disposed off site. Following this removal action, soil in this area no longer represents a threat to human health or the environment. In the Building 815 Wash Rack Area, naphthalene and total recoverable petroleum hydrocarbons (TRPH) concentrations in shallow surficial groundwater exceeded criteria. The extent of contamination was delineated, and semi-annual monitoring was proposed and approved under the Petroleum Program. However, after 3 years of monitoring, naphthalene concentrations continued to exceed the applicable criterion, and an additional soil

investigation was undertaken to evaluate possible soil sources in the area. No soil contamination was detected, and preparation of a Remedial Action Plan (RAP) was recommended. At the February 2005 BCT meeting, it was decided that the Building 815 Wash Rack Area groundwater contamination would be addressed with Site 59 groundwater.

Building 1845 is a concrete maintenance hangar built in 1985, with a two-story administrative office area on the western side and an aircraft maintenance area on the eastern side. A hazardous waste satellite accumulation area was located at the southern side of the hangar. Building 885, built in 1980, is a one-story cinderblock building located west of Building 1845 that was used as a hazardous materials storage locker. No information about the types of materials stored in the locker was included in the 1994 EBS.

A 1998 Due Diligence Investigation conducted by Golder Associates in the areas of Buildings 815 and 1845 included identification of areas of environmental impacts and sampling within the current boundaries of Site 59 (Golder Associates, 1998). Based on data from this investigation, groundwater flow in the upper, intermediate, and lower portions of the surficial aquifer was south to southeast, and a downward vertical gradient between the units was observed. Elevated concentrations of VOCs in soil were detected in a sample from soil boring SB-15, located south of Building 1845, near the area of an aircraft wash rack and a former hazardous waste storage area.

PSC 56, the stormwater retention pond located southwest of Building 1845, was identified based on sampling conducted as part of a Due Diligence Investigation conducted by Golder Associates in the areas of Buildings 815 and 1845 (Golder Associates, 1998). The Golder investigation included surface water and sediment sampling within the pond and soil sampling on the southern side of Building 1845. Volatile organic compounds (VOCs) and inorganics were detected in sediment from the pond, and VOCs were detected in soil samples. TtNUS conducted a subsequent investigation in the area that included surface water, sediment, and soil sampling. Risks to human health and ecological receptors due to detected concentrations in sediment were determined to be negligible, and no analytes were detected in soil or surface water samples collected as part of the PSC investigation. Based on these results, no further action was approved for PSC 56 (TtNUS, 2001).

Installation Restoration (IR) Program investigations in the Building 324 area began after a Due Diligence Investigation was conducted by Golder Associates in November 2003. Fifteen temporary wells, including five shallow wells screened from 5 to 15 feet below ground surface (bgs) and 10 deep wells screened from 25 to 30 feet bgs, were installed, sampled, and analyzed for volatiles, semivolatiles, and metals. Trichloroethene (TCE) was detected at concentrations greater than FDEP Groundwater Cleanup Target Levels (GCTLs) in several deep (25- to 30-foot) wells (Golder Associates, 2004). Also in November 2003, CDM conducted a soil investigation in the Building 324 area to assess potential soil sources based on the

Golder groundwater data. Twenty-eight Geoprobe® borings were advanced with continuous soil sampling to the water table (6.5 to 7 feet bgs). Twenty-five soil samples were collected, based on photoionization detector (PID) readings, from depths between 2 and 7 feet bgs. All samples were non-detect for volatile organic compounds (VOCs).

In December 2003, TtNUS resampled two temporary wells installed by Golder and confirmed the previous TCE results. Permanent monitoring wells were then installed at the locations of the resampled wells. In January 2004, TtNUS began a groundwater investigation using direct-push technology (DPT) to evaluate the extent of groundwater TCE contamination in the Building 324 area. During Phase I of this investigation, 37 groundwater samples were collected from temporary wells at 26 locations at depths of 10, 30, 50, and 70 feet bgs and analyzed for VOCs. TCE was detected at concentrations of up to 3,160 µg/L in an area northwest of Building 324. TCE was also detected at concentrations of 1,350 and 2,650 µg/L at the furthest downgradient (southeastern) location. TtNUS collected four soil samples in the area northwest of Building 324 (where TCE was detected at 3,160 µg/L) and analyzed them for VOCs. All results were less than detection limits.

The Phase II DPT investigation was conducted in February and March 2004 and included the collection of 151 groundwater samples from temporary wells at 42 locations at depths of 15, 30, 50, 60, 70, and 90 feet bgs and refusal (typically about 100 feet bgs). Six existing permanent wells were also sampled and analyzed for VOCs. TCE concentrations greater than the GCTL were detected in an area extending from the area northwest of Building 324 to the western side of Hangar 1845. Vertically, TCE exceedances were detected from 30 to approximately 100 feet bgs.

Site 59 existing groundwater data are presented in Table 1-1, and TCE exceedances in pre-RI samples are presented on Figure 1-4.

1.3 DOCUMENT ORGANIZATION

This RI Report has been organized with the intent of meeting the general format requirements specified in the October 1988 RI/FS guidance document (U.S. EPA, 1988) and the requirements of the RI Work Plan for Site 59 (TtNUS, 2004b).

Section 1.0, Introduction, summarizes the purpose of the report, provides site background information, summarizes previous investigations, and provides the report outline.

Section 2.0, Study Area Investigation, provides a summary of investigative procedures (e.g., groundwater sampling and analysis, water level measurement, hydraulic testing, etc.) used at the site.

Although Sections 1.0 and 2.0 are generally consistent with the format required by the RI/FS guidance document, Section 3.0, General Data Evaluation Procedures, is an additional section that describes data analysis and interpretation methods. Section 3.0 includes a discussion of data validation procedures and human health and environmental risk assessment components such as data evaluation, toxicity assessment, and exposure assessment. The results of the data validation and quality assurance (QA)/quality control (QC) samples are also discussed in this section.

Section 4.0, Physical Characteristics of the Study Area, conforms to the typical Section 3.0 of an RI Report.

Section 5.0, Nature and Extent of Contamination, describes the nature and extent of contamination at the site.

Section 6.0, Contaminant Fate and Transport, describes general contaminant fate and transport characteristics and provides an evaluation of site-specific contaminant fate and transport information, including a discussion of natural attenuation.

Section 7.0, Human Health Preliminary Risk Evaluation, describes the data evaluation, exposure assessment, and risk characterization.

Section 8.0, Ecological Risk Assessment, describes the ecological risk assessment.

Section 9.0, Summary, Conclusions, and Recommendations, provides an overall summary, conclusions, and recommendations.

Supplemental information for this report is included in Appendices A through E.

TABLE 1-1

SUMMARY OF EXISTING GROUNDWATER ANALYTICAL RESULTS
OPERABLE UNIT 9, SITE 59
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

Parameter	FDEP GCTL	CEF-324-01I		CEF-324-02I		CEF-324-TW-01	CEF-324-TW-02	CEF-324-TW-03	CEF-324-TW-04
		25-30		25-30		30	30	30	30
		12/16/2003	12/23/2003	12/16/2003	12/23/2003				
1,1-DICHLOROETHENE	7	2.5 U	0.5 U	2.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-BUTANONE	4,200	13 U	2.5 U	13 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
2-HEXANONE	280	13 U	2.5 U	13 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
ACETONE	700	25 U	5 U	25 U	5 U	5 U	5 U	5 U	5 U
BENZENE	1	2.5 U	0.5 U	2.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	0.6	2.5 U	0.5 U	2.5 U	**1.1**	0.5 U	0.5 U	0.5 U	0.5 U
CARBON DISULFIDE	700	5 U	1 U	5 U	1 U	1 U	1 U	1 U	1 U
CHLOROFORM	5.7	2.5 U	**1.2**	2.5 U	**3**	0.5 U	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	70	**3.3 J**	**0.58 J**	2.5 U	**0.59 J**	**4.3**	0.5 U	**1.6**	0.5 U
ETHYLBENZENE	30	2.5 U	0.5 U	2.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5	5 U	1 U	5 U	1 U	1 U	1 U	1 U	1 U
TOLUENE	40	2.5 U	0.5 U	2.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	3	**399**	**79.5**	**295**	**86.4**	**694**	**28.6**	**277**	**8.5**

TABLE 1-1

SUMMARY OF EXISTING GROUNDWATER ANALYTICAL RESULTS
OPERABLE UNIT 9, SITE 59
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

Parameter	FDEP GCTL	CEF-324-TW-05	CEF-324-TW-06	CEF-324-TW-07	CEF-324-TW-08	CEF-324-TW-08	CEF-324-TW-08	CEF-324-TW-08	CEF-324-TW-08
		30	**30**	**30**	**30**	**50**	**60**	**90**	**100**
1,1-DICHLOROETHENE	7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-BUTANONE	4,200	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
2-HEXANONE	280	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
ACETONE	700	5 U	5 U	5 U	5 U	5 U	**258 J**	5 U	**489 J**
BENZENE	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	0.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CARBON DISULFIDE	700	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CHLOROFORM	5.7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	70	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	30	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TOLUENE	40	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	3	**22.1**	**9.4**	**17.8**	**36.8**	**41.4**	**6.7**	**5.9**	**4.4**

TABLE 1-1

SUMMARY OF EXISTING GROUNDWATER ANALYTICAL RESULTS
OPERABLE UNIT 9, SITE 59
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

Parameter	FDEP GCTL	CEF-324-TW-09	CEF-324-TW-10	CEF-324-TW-11		CEF-324-TW-11	CEF-324-TW-12	CEF-324-TW-13	CEF-324-TW-14
		30	30	12		50	30	30	30
				Sample	Duplicate				
1,1-DICHLOROETHENE	7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-BUTANONE	4,200	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
2-HEXANONE	280	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
ACETONE	700	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
BENZENE	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	0.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CARBON DISULFIDE	700	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CHLOROFORM	5.7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	70	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	30	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TOLUENE	40	**0.52 J**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	3	**3.1**	0.5 U	0.5 U	0.5 U	**2**	**13.4**	**4.2**	0.5 U

TABLE 1-1

SUMMARY OF EXISTING GROUNDWATER ANALYTICAL RESULTS
OPERABLE UNIT 9, SITE 59
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

Parameter	FDEP GCTL	CEF-324-TW-15	CEF-324-TW-15	CEF-324-TW-15	CEF-324-TW-15	CEF-324-TW-15	CEF-324-TW-15	CEF-324-TW-16
		12	30	50	70	90	100	30
1,1-DICHLOROETHENE	7	0.5 U	**0.97 J**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-BUTANONE	4,200	2.5 U	2.5 U	2.5 U	2.5 U	**3.3 J**	2.5 U	2.5 U
2-HEXANONE	280	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
ACETONE	700	5 U	5 U	5 U	5 U	**16.4 J**	**12.4 J**	5 U
BENZENE	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	0.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CARBON DISULFIDE	700	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CHLOROFORM	5.7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	70	0.5 U	**3**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	30	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TOLUENE	40	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	3	0.5 U	**3160**	**0.84 J**	**1.2**	**4.5**	**6**	**10**

TABLE 1-1

SUMMARY OF EXISTING GROUNDWATER ANALYTICAL RESULTS
OPERABLE UNIT 9, SITE 59
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

Parameter	FDEP GCTL	CEF-324-TW-17		CEF-324-TW-18	CEF-324-TW-19	CEF-324-TW-20	CEF-324-TW-21	CEF-324-TW-22	CEF-324-TW-23
		30		30	30	30	30	30	30
		Sample	Duplicate						
1,1-DICHLOROETHENE	7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-BUTANONE	4,200	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
2-HEXANONE	280	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
ACETONE	700	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
BENZENE	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	0.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CARBON DISULFIDE	700	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CHLOROFORM	5.7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	70	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	30	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TOLUENE	40	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	3	**3**	**3.9**	0.5 U	**10.4**	0.5 U	0.5 U	0.5 U	**0.57 J**

TABLE 1-1

SUMMARY OF EXISTING GROUNDWATER ANALYTICAL RESULTS
OPERABLE UNIT 9, SITE 59
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

Parameter	FDEP GCTL	CEF-324-TW-24	CEF-324-TW-25	CEF-324-TW-26	CEF-324-TW-26	CEF-324-TW-26	CEF-324-TW-26	CEF-324-TW-27	CEF-324-TW-27
		30	**30**	**30**	**30**	**70**	**88**	**30**	**50**
1,1-DICHLOROETHENE	7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U
2-BUTANONE	4,200	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	25 U
2-HEXANONE	280	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	25 U
ACETONE	700	5 U	5 U	5 U	5 U	**40.5 J**	**7.6 J**	5 U	50 U
BENZENE	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U
BROMODICHLOROMETHANE	0.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U
CARBON DISULFIDE	700	1 U	1 U	1 U	1 U	1 U	1 U	1 U	10 U
CHLOROFORM	5.7	0.5 U	0.5 U	0.5 U	0.5 U	**0.68 J**	0.5 U	0.5 U	5 U
CIS-1,2-DICHLOROETHENE	70	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U
ETHYLBENZENE	30	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U
METHYLENE CHLORIDE	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	10 U
TOLUENE	40	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U
TRICHLOROETHENE	3	**37.1**	**10.7**	**1.3**	0.5 U	0.5 U	0.5 U	**1.4**	**2650**

TABLE 1-1

SUMMARY OF EXISTING GROUNDWATER ANALYTICAL RESULTS
OPERABLE UNIT 9, SITE 59
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

Parameter	FDEP GCTL	CEF-324-TW-27	CEF-324-TW-27	CEF-324-TW-27	CEF-324-TW-28	CEF-324-TW-28	CEF-324-TW-28		CEF-324-TW-28
		70	90	100	15	30	50		70
							Sample	Duplicate	
1,1-DICHLOROETHENE	7	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-BUTANONE	4,200	25 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
2-HEXANONE	280	25 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
ACETONE	700	50 U	**1840 J**	**60.7 J**	**282 J**	**342 J**	**1490 J**	**964 J**	**1360 J**
BENZENE	1	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	0.6	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CARBON DISULFIDE	700	10 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CHLOROFORM	5.7	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	70	5 U	**3.7**	0.5 U	0.5 U	0.5 U	**1.3**	**1.6**	0.5 U
ETHYLBENZENE	30	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5	10 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TOLUENE	40	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	3	**1350**	**151**	**22.2**	0.5 U	0.5 U	**1760**	**1800**	**8**

TABLE 1-1

SUMMARY OF EXISTING GROUNDWATER ANALYTICAL RESULTS
OPERABLE UNIT 9, SITE 59
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

Parameter	FDEP GCTL	CEF-324-TW-28	CEF-324-TW-29	CEF-324-TW-29	CEF-324-TW-29	CEF-324-TW-29	CEF-324-TW-29	CEF-324-TW-29	
		84	15	30	50	70	90	97	
								Sample	Duplicate
1,1-DICHLOROETHENE	7	0.5 U	0.5 U	0.5 U	0.5 U	2.5 U	0.5 U	0.5 U	0.5 U
2-BUTANONE	4,200	2.5 U	2.5 U	2.5 U	2.5 U	13 U	**2.6 J**	2.5 U	**3.2 J**
2-HEXANONE	280	2.5 U	2.5 U	2.5 U	2.5 U	13 U	2.5 U	2.5 U	2.5 U
ACETONE	700	**200 J**	**4520 J**	**1950 J**	**1200 J**	**604 J**	**481 J**	**376 J**	**317 J**
BENZENE	1	0.5 U	0.5 U	0.5 U	0.5 U	2.5 U	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	0.6	0.5 U	0.5 U	0.5 U	0.5 U	2.5 U	0.5 U	0.5 U	0.5 U
CARBON DISULFIDE	700	1 U	1 U	1 U	1 U	5 U	1 U	1 U	1 U
CHLOROFORM	5.7	0.5 U	0.5 U	0.5 U	0.5 U	2.5 U	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	70	0.5 U	0.5 U	0.5 U	**0.68 J**	2.5 U	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	30	0.5 U	0.5 U	0.5 U	0.5 U	2.5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5	1 U	1 U	1 U	1 U	**9.5 J**	1 U	1 U	1 U
TOLUENE	40	0.5 U	0.5 U	0.5 U	0.5 U	2.5 U	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	3	**53.9**	0.5 U	0.5 U	**369**	**2.8 J**	**10.5**	**3.2**	**3.1**

TABLE 1-1

SUMMARY OF EXISTING GROUNDWATER ANALYTICAL RESULTS
OPERABLE UNIT 9, SITE 59
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

Parameter	FDEP GCTL	CEF-324-TW-30	CEF-324-TW-30	CEF-324-TW-30	CEF-324-TW-30	CEF-324-TW-30	CEF-324-TW-31	CEF-324-TW-31	CEF-324-TW-31
		15	30	50	70	90	50	70	90
1,1-DICHLOROETHENE	7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	10 U	0.5 U	0.5 U
2-BUTANONE	4,200	**2.7 J**	2.5 U	2.5 U	2.5 U	**2.9 J**	50 U	4.4 U	**4.9 J**
2-HEXANONE	280	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	50 U	2.5 U	**3.7 J**
ACETONE	700	**3210 J**	**3940 J**	**587 J**	**141 J**	**423 J**	118 U	196 U	**76.7 J**
BENZENE	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	10 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	0.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	10 U	0.5 U	0.5 U
CARBON DISULFIDE	700	1 U	1 U	1 U	**1.3**	1 U	20 U	1 U	1 U
CHLOROFORM	5.7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	10 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	70	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	10 U	0.5 U	0.5 U
ETHYLBENZENE	30	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	10 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5	1 U	1 U	1 U	1 U	1 U	20 U	1 U	1 U
TOLUENE	40	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	10 U	0.5 U	0.5 U
TRICHLOROETHENE	3	**0.57 J**	**0.62 J**	**12.2**	**4.4**	**1.8**	**1510**	**12**	**18**

TABLE 1-1

SUMMARY OF EXISTING GROUNDWATER ANALYTICAL RESULTS
OPERABLE UNIT 9, SITE 59
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

Parameter	FDEP GCTL	CEF-324-TW-31	CEF-324-TW-32	CEF-324-TW-32	CEF-324-TW-32	CEF-324-TW-32	CEF-324-TW-33	CEF-324-TW-34	CEF-324-TW-34
		100	**50**	**70**	**90**	**98.5**	**50**	**50**	**70**
1,1-DICHLOROETHENE	7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-BUTANONE	4,200	**3.3 J**	2.5 U	3.2 U	2.5 U	2.7 U	2.5 U	2.5 U	2.5 U
2-HEXANONE	280	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
ACETONE	700	**61.2 J**	45.5 U	74.4 U	26.5 U	22.5 U	**1900 J**	**95.9 J**	**365 J**
BENZENE	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	0.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CARBON DISULFIDE	700	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CHLOROFORM	5.7	0.5 U	**1.4**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	70	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**0.75 J**	0.5 U
ETHYLBENZENE	30	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TOLUENE	40	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	3	**2.5**	**28.8**	**2.2**	**3.4**	**6.6**	**21.2**	**233**	**2.1**

TABLE 1-1

SUMMARY OF EXISTING GROUNDWATER ANALYTICAL RESULTS
OPERABLE UNIT 9, SITE 59
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

Parameter	FDEP GCTL	CEF-324-TW-35a	CEF-324-TW-35a	CEF-324-TW-35a	CEF-324-TW-36	CEF-324-TW-36	CEF-324-TW-37		CEF-324-TW-37
		50	70	90	50	70	30		50
							Sample	Duplicate	
1,1-DICHLOROETHENE	7	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	1 U
2-BUTANONE	4,200	2.5 U	**3.9 J**	2.5 U	5 U	2.5 U	2.5 U	2.5 U	5 U
2-HEXANONE	280	2.5 U	**2.9 J**	2.5 U	5 U	2.5 U	2.5 U	2.5 U	5 U
ACETONE	700	**231 J**	**21.3 J**	**154 J**	**656 J**	**256 J**	**110 J**	**100 J**	**388 J**
BENZENE	1	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	1 U
BROMODICHLOROMETHANE	0.6	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	1 U
CARBON DISULFIDE	700	1 U	1 U	1 U	2 U	1 U	1 U	1 U	2 U
CHLOROFORM	5.7	0.5 U	**4.8**	0.5 U	1 U	0.5 U	0.5 U	0.5 U	1 U
CIS-1,2-DICHLOROETHENE	70	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	1 U
ETHYLBENZENE	30	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	1 U
METHYLENE CHLORIDE	5	1 U	1 U	1 U	**5.7 J**	1 U	1 U	1 U	**5.5 J**
TOLUENE	40	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U	1 U
TRICHLOROETHENE	3	**3.1**	0.5 U	0.5 U	1 U	0.5 U	**1.8**	**2.1**	**21.7**

TABLE 1-1

SUMMARY OF EXISTING GROUNDWATER ANALYTICAL RESULTS
OPERABLE UNIT 9, SITE 59
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

Parameter	FDEP GCTL	CEF-324-TW-37	CEF-324-TW-37	CEF-324-TW-38	CEF-324-TW-38	CEF-324-TW-38	CEF-324-TW-39	CEF-324-TW-39	CEF-324-TW-39
		70	**87**	**50**	**70**	**87**	**30**	**50**	**70**
1,1-DICHLOROETHENE	7	0.5 U	2.5 U	10 U	2.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-BUTANONE	4,200	2.5 U	13 U	50 U	13 U	**5.4 J**	2.5 U	2.5 U	**4.1 J**
2-HEXANONE	280	2.5 U	13 U	50 U	13 U	2.5 U	2.5 U	2.5 U	2.5 U
ACETONE	700	**210 J**	**707 J**	100 U	25 U	**338 J**	**250 J**	**216 J**	**318 J**
BENZENE	1	0.5 U	2.5 U	10 U	2.5 U	0.5 U	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	0.6	**1**	2.5 U	10 U	2.5 U	0.5 U	0.5 U	**0.96 J**	0.5 U
CARBON DISULFIDE	700	1 U	5 U	20 U	5 U	1 U	1 U	1 U	1 U
CHLOROFORM	5.7	**6.1**	2.5 U	10 U	2.5 U	**4.3**	0.5 U	**2.8**	0.5 U
CIS-1,2-DICHLOROETHENE	70	0.5 U	2.5 U	10 U	2.5 U	0.5 U	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	30	0.5 U	2.5 U	10 U	2.5 U	0.5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5	1 U	5 U	20 U	5 U	1 U	1 U	1 U	1 U
TOLUENE	40	**0.74 J**	2.5 U	10 U	2.5 U	0.5 U	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	3	**1.1**	2.5 U	**1200**	**336**	**17.5**	0.5 U	0.5 U	0.5 U

TABLE 1-1

SUMMARY OF EXISTING GROUNDWATER ANALYTICAL RESULTS
OPERABLE UNIT 9, SITE 59
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

Parameter	FDEP GCTL	CEF-324-TW-39	CEF-324-TW-39	CEF-324-TW-40	CEF-324-TW-40	CEF-324-TW-40	CEF-324-TW-40	CEF-324-TW-41	CEF-324-TW-41
		90	100	50	70	90	100	50	70
1,1-DICHLOROETHENE	7	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U
2-BUTANONE	4,200	2.5 U	2.5 U	2.5 U	**4.1 J**	5 U	**4.5 J**	2.5 U	2.5 U
2-HEXANONE	280	2.5 U	2.5 U	2.5 U	2.5 U	5 U	2.5 U	2.5 U	2.5 U
ACETONE	700	**374 J**	**18.8 J**	**125 J**	**165**	**1930 J**	**36 J**	**8.8 J**	**38.2 J**
BENZENE	1	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	0.6	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U
CARBON DISULFIDE	700	**2**	1 U	1 U	1 U	2 U	1 U	1 U	1 U
CHLOROFORM	5.7	0.5 U	**6.5**	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	70	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	30	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5	1 U	1 U	1 U	1 U	2 U	1 U	1 U	1 U
TOLUENE	40	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	3	0.5 U	0.5 U	0.5 U	**0.54 J**	1 U	**1.4**	**1.2**	0.5 U

TABLE 1-1

SUMMARY OF EXISTING GROUNDWATER ANALYTICAL RESULTS
OPERABLE UNIT 9, SITE 59
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

Parameter	FDEP GCTL	CEF-324-TW-41	CEF-324-TW-41	CEF-324-TW-42		CEF-324-TW-42	CEF-324-TW-42	CEF-324-TW-42	CEF-324-TW-43
		90	100	50		70	90	100	50
				Sample	Duplicate				
1,1-DICHLOROETHENE	7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-BUTANONE	4,200	**8.1 J**	2.5 U	**2.9 J**	**2.8 J**	2.5 U	2.5 U	**2.9 J**	2.5 U
2-HEXANONE	280	**3.2 J**	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
ACETONE	700	**40.7 J**	**28.6 J**	**16.8 J**	**15.7 J**	**89.6 J**	**13.7 J**	**16.1 J**	5 U
BENZENE	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	0.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CARBON DISULFIDE	700	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CHLOROFORM	5.7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**1**	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	70	0.5 U	0.5 U	0.5 U	0.5 U	**1.2**	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	30	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TOLUENE	40	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	3	0.5 U	**0.51 J**	**0.82 J**	**0.96 J**	**20.2**	**44.9**	**0.63 J**	**1.3**

TABLE 1-1

SUMMARY OF EXISTING GROUNDWATER ANALYTICAL RESULTS
OPERABLE UNIT 9, SITE 59
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

Parameter	FDEP GCTL	CEF-324-TW-43	CEF-324-TW-43	CEF-324-TW-43	CEF-324-TW-44	CEF-324-TW-44	CEF-324-TW-44	CEF-324-TW-45	CEF-324-TW-45
		70	**90**	**100**	**50**	**70**	**90**	**50**	**70**
1,1-DICHLOROETHENE	7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-BUTANONE	4,200	2.5 U	**6.3**	**2.6 J**	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
2-HEXANONE	280	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
ACETONE	700	5 U	**17.4 J**	5 U	5 U	**8.8 J**	**15.3 J**	5 U	14.8 U
BENZENE	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	0.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CARBON DISULFIDE	700	1 U	**1.5**	**1.3**	1 U	1 U	1 U	1 U	1 U
CHLOROFORM	5.7	**0.89 J**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**1.1**
CIS-1,2-DICHLOROETHENE	70	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	30	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TOLUENE	40	**1.8**	0.5 U	**0.89 J**	0.5 U	0.5 U	**0.8 J**	0.5 U	**0.72 J**
TRICHLOROETHENE	3	0.5 U	**0.79 J**	**0.92 J**	0.5 U	**79.5**	0.88 J	**14.1**	**2.7**

TABLE 1-1

SUMMARY OF EXISTING GROUNDWATER ANALYTICAL RESULTS
OPERABLE UNIT 9, SITE 59
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

Parameter	FDEP GCTL	CEF-324-TW-45	CEF-324-TW-45	CEF-324-TW-46a		CEF-324-TW-46a	CEF-324-TW-46a	CEF-324-TW-46a	CEF-324-TW-47a
		90	100	50		70	90	100	50
				Sample	Duplicate				
1,1-DICHLOROETHENE	7	0.5 U	0.5 U	0.5 U	0.5 U	2.5 U	0.5 U	0.5 U	0.5 U
2-BUTANONE	4,200	2.5 U	2.5 U	2.5 U	2.5 U	13 U	2.5 U	2.5 U	2.5 U
2-HEXANONE	280	2.5 U	2.5 U	2.5 U	2.5 U	13 U	2.5 U	2.5 U	2.5 U
ACETONE	700	**64.4 J**	5 U	5 U	5 U	25 U	5 U	5 U	5 U
BENZENE	1	0.5 U	0.5 U	0.5 U	0.5 U	2.5 U	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	0.6	0.5 U	0.5 U	0.5 U	0.5 U	2.5 U	0.5 U	0.5 U	0.5 U
CARBON DISULFIDE	700	1 U	1 U	1 U	1 U	5 U	1 U	1 U	1 U
CHLOROFORM	5.7	0.5 U	0.5 U	**1.5**	**1.6**	2.5 U	0.5 U	**4.5**	**1.9**
CIS-1,2-DICHLOROETHENE	70	0.5 U	0.5 U	0.5 U	0.5 U	2.5 U	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	30	0.5 U	0.5 U	0.5 U	0.5 U	2.5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5	1 U	1 U	1 U	1 U	5 U	1 U	1 U	1 U
TOLUENE	40	0.5 U	0.5 U	0.5 U	**0.53 J**	2.5 U	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	3	**0.51 J**	**1.1**	**250**	**227**	**216**	**17.8**	**9.7**	0.5 U

TABLE 1-1

SUMMARY OF EXISTING GROUNDWATER ANALYTICAL RESULTS
OPERABLE UNIT 9, SITE 59
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

Parameter	FDEP GCTL	CEF-324-TW-47a	CEF-324-TW-47a	CEF-324-TW-47a	CEF-324-TW-48	CEF-324-TW-48	CEF-324-TW-48	CEF-324-TW-49	CEF-324-TW-49
		70	**90**	**98**	**50**	**70**	**82**	**50**	**70**
1,1-DICHLOROETHENE	7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-BUTANONE	4,200	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
2-HEXANONE	280	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
ACETONE	700	5 U	5 U	5 U	5 U	5 U	**22.6 J**	5 U	5 U
BENZENE	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	0.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CARBON DISULFIDE	700	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CHLOROFORM	5.7	**0.91 J**	0.5 U	**0.62 J**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	70	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	30	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TOLUENE	40	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**2.1**	0.5 U	0.5 U
TRICHLOROETHENE	3	**2.2**	0.5 U	0.5 U	0.5 U	**2**	**1.6**	0.5 U	**0.74 J**

TABLE 1-1

SUMMARY OF EXISTING GROUNDWATER ANALYTICAL RESULTS
OPERABLE UNIT 9, SITE 59
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

Parameter	FDEP GCTL	CEF-324-TW-49	CEF-324-TW-49	CEF-324-TW-50	CEF-324-TW-50	CEF-324-TW-50	CEF-324-TW-50	CEF-324-TW-51	CEF-324-TW-51
		90	100	50	70	90	100	50	70
1,1-DICHLOROETHENE	7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-BUTANONE	4,200	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	**2.9 J**
2-HEXANONE	280	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
ACETONE	700	**23.6 J**	**18.7 J**	**15.8 J**	**17.6 J**	5 U	**15.3 J**	**8.7 J**	**13.1 J**
BENZENE	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	0.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CARBON DISULFIDE	700	1 U	1 U	1 U	1 U	**1.5**	1 U	1 U	1 U
CHLOROFORM	5.7	**0.95 J**	**1.2**	0.5 U	0.5 U	0.5 U	**1.3**	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	70	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**0.51 J**
ETHYLBENZENE	30	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TOLUENE	40	0.5 U	0.5 U	**0.69 J**	0.5 U	**0.89 J**	0.5 U	0.5 U	1.4
TRICHLOROETHENE	3	0.5 U	0.5 U	0.5 U	**4.6**	0.5 U	0.5 U	0.5 U	**9**

TABLE 1-1

SUMMARY OF EXISTING GROUNDWATER ANALYTICAL RESULTS
OPERABLE UNIT 9, SITE 59
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

Parameter	FDEP GCTL	CEF-324-TW-51	CEF-324-TW-51	CEF-324-TW-52	CEF-324-TW-52	CEF-324-TW-52	CEF-324-TW-53	CEF-324-TW-53	CEF-324-TW-53
		90	**98**	**50**	**70**	**79**	**50**	**70**	**82**
1,1-DICHLOROETHENE	7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-BUTANONE	4,200	**3.9 J**	**9.5**	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
2-HEXANONE	280	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
ACETONE	700	**17.8 J**	**47.5 J**	5 U	5 U	5 U	5 U	5 U	5 U
BENZENE	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	0.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CARBON DISULFIDE	700	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CHLOROFORM	5.7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	70	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	30	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TOLUENE	40	0.5 U	**1**	0.5 U	0.5 U	**0.93 J**	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	3	0.5 U	0.5 U	**13.3**	**0.51 J**	**2**	**1.1**	0.5 U	0.5 U

TABLE 1-1

SUMMARY OF EXISTING GROUNDWATER ANALYTICAL RESULTS
OPERABLE UNIT 9, SITE 59
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

Parameter	FDEP GCTL	CEF-324-TW-54	CEF-324-TW-54	CEF-324-TW-54	CEF-324-TW-54	CEF-324-TW-55	CEF-324-TW-55	CEF-324-TW-55	CEF-324-TW-55
		50	70	90	100	50	70	90	100
1,1-DICHLOROETHENE	7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-BUTANONE	4,200	2.5 U	2.5 U	2.5 U	**5.3**	2.5 U	**3.8 J**	2.5 U	**8.3**
2-HEXANONE	280	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
ACETONE	700	**7.8**	**9.3**	**16.5**	**13.9**	**7.3**	**22.2**	**17.6**	**33.9**
BENZENE	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	0.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CARBON DISULFIDE	700	1 U	**1.7**	**1.4**	1 U	**1.4**	**1.3**	**1.3**	**1.2**
CHLOROFORM	5.7	0.5 U	0.5 U	**0.52 J**	**8.4**	0.5 U	**1.9**	**1.2**	**2.1**
CIS-1,2-DICHLOROETHENE	70	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	30	0.5 U	0.5 U	**0.85 J**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TOLUENE	40	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.8 J
TRICHLOROETHENE	3	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

TABLE 1-1

SUMMARY OF EXISTING GROUNDWATER ANALYTICAL RESULTS
OPERABLE UNIT 9, SITE 59
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

Parameter	FDEP GCTL	CEF-324-TW-56	CEF-324-TW-56	CEF-324-TW-56	CEF-324-TW-56	CEF-324-TW-56	CEF-324-TW-57	CEF-324-TW-57	CEF-324-TW-57
		30	50	70	90	100	30	50	70
1,1-DICHLOROETHENE	7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2.5 U	1 U	0.5 U
2-BUTANONE	4,200	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	13 U	5 U	2.5 U
2-HEXANONE	280	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	13 U	5 U	2.5 U
ACETONE	700	**9.1 J**	**11.3**	**19.2**	**18.6**	**16.8**	25 U	10 U	5 U
BENZENE	1	**2.2**	0.5 U	0.5 U	0.5 U	0.5 U	2.5 U	1 U	0.5 U
BROMODICHLOROMETHANE	0.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2.5 U	1 U	0.5 U
CARBON DISULFIDE	700	1 U	**1.4**	**1.1**	**1.5**	1 U	5 U	2 U	**1.1**
CHLOROFORM	5.7	0.5 U	0.5 U	0.5 U	**0.79 J**	**0.67 J**	2.5 U	1 U	0.5 U
CIS-1,2-DICHLOROETHENE	70	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2.5 U	1 U	0.5 U
ETHYLBENZENE	30	**9.7**	0.5 U	0.5 U	0.5 U	0.5 U	2.5 U	1 U	0.5 U
METHYLENE CHLORIDE	5	1 U	1 U	1 U	1 U	1 U	5 U	2 U	1 U
TOLUENE	40	0.5 U	0.5 U	**0.54 J**	0.5 U	0.5 U	2.5 U	1 U	0.5 U
TRICHLOROETHENE	3	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2.5 U	**191**	0.5 U

TABLE 1-1

SUMMARY OF EXISTING GROUNDWATER ANALYTICAL RESULTS
OPERABLE UNIT 9, SITE 59
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

Parameter	FDEP GCTL	CEF-324-TW-57	CEF-324-TW-57	CEF-324-TW-58	CEF-324-TW-58	CEF-324-TW-58	CEF-324-TW-59	CEF-324-TW-59	CEF-324-TW-59
		90	**100**	**50**	**70**	**78**	**50**	**90**	**97**
1,1-DICHLOROETHENE	7	0.5 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-BUTANONE	4,200	2.5 U	2.5 U	25 U	2.5 U	2.5 U	2.5 U	2.5 U	**3.3 J**
2-HEXANONE	280	2.5 U	2.5 U	25 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
ACETONE	700	5 U	**15 J**	50 U	**16.7 J**	5 U	**10.5 J**	**20.8 J**	**26 J**
BENZENE	1	0.5 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	0.6	0.5 U	**0.58 J**	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CARBON DISULFIDE	700	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U
CHLOROFORM	5.7	**2.6**	**9.9**	5 U	0.5 U	0.5 U	0.5 U	**0.94 J**	0.5 U
CIS-1,2-DICHLOROETHENE	70	0.5 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	30	0.5 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5	1 U	1 U	10 U	1 U	1 U	1 U	1 U	1 U
TOLUENE	40	**0.91 J**	0.5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	3	**8.7**	**2.8**	**988**	0.5 U	**7.8**	0.5 U	0.5 U	0.5 U

TABLE 1-1

SUMMARY OF EXISTING GROUNDWATER ANALYTICAL RESULTS
OPERABLE UNIT 9, SITE 59
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

Parameter	FDEP GCTL	CEF-324-TW-60	CEF-324-TW-60	CEF-324-TW-60	CEF-324-TW-61	CEF-324-TW-61	CEF-324-TW-61	CEF-324-TW-62	CEF-324-TW-62
		50	**90**	**100**	**50**	**70**	**83**	**70**	**90**
1,1-DICHLOROETHENE	7	0.5 U	2.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-BUTANONE	4,200	2.5 U	13 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
2-HEXANONE	280	2.5 U	13 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
ACETONE	700	**6 J**	35 U	**87.7 J**	**8.2 J**	**27.5 J**	**6.7 J**	**6.4 J**	**13.5 J**
BENZENE	1	0.5 U	2.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	0.6	0.5 U	2.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CARBON DISULFIDE	700	1 U	5 U	1 U	1 U	1 U	1 U	**1.2**	1 U
CHLOROFORM	5.7	0.5 U	2.5 U	**0.77 J**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	70	0.5 U	2.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	30	0.5 U	2.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5	1 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U
TOLUENE	40	0.5 U	2.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	3	0.5 U	2.5 U	0.5 U	**0.66 J**	0.5 U	0.5 U	0.5 U	0.5 U

TABLE 1-1

SUMMARY OF EXISTING GROUNDWATER ANALYTICAL RESULTS
OPERABLE UNIT 9, SITE 59
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

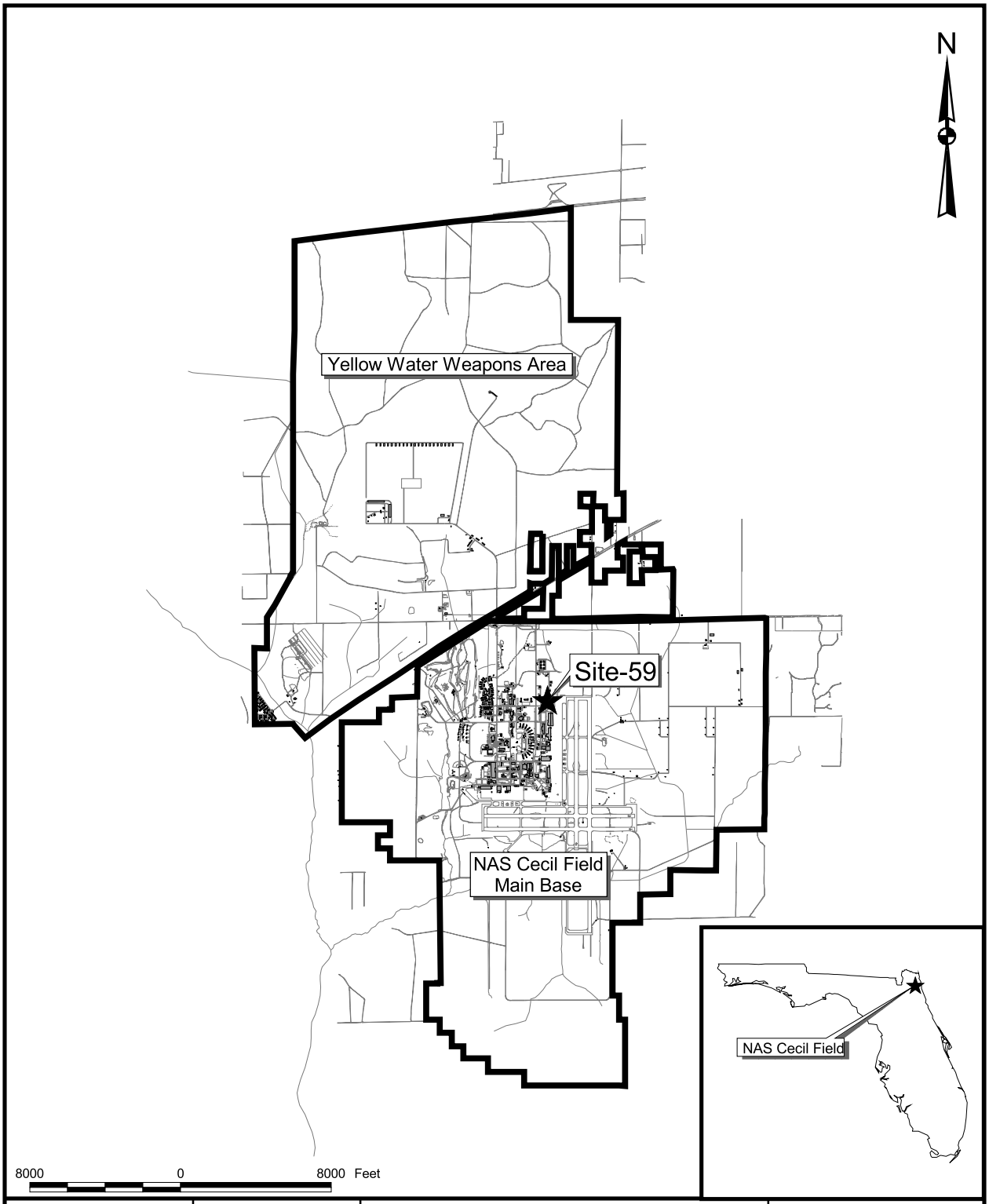
Parameter	FDEP GCTL	CEF-324-TW-63	CEF-324-TW-63	CEF-324-TW-64	CEF-324-TW-64	CEF-324-TW-64	CEF-324-TW-64	CEF-324-TW-65	CEF-324-TW-65
		70	**90**	**30**	**50**	**70**	**81**	**30**	**50**
1,1-DICHLOROETHENE	7	0.5 U	1 U	2.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-BUTANONE	4,200	2.5 U	5 U	13 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
2-HEXANONE	280	2.5 U	5 U	13 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
ACETONE	700	**13.4 J**	10 U	**26.9 J**	**7.6 J**	**5.5 J**	**19.9 J**	**42.2 J**	**6.7 J**
BENZENE	1	0.5 U	1 U	2.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	0.6	0.5 U	1 U	2.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CARBON DISULFIDE	700	1 U	2 U	5 U	1 U	1 U	1 U	1 U	**10.5**
CHLOROFORM	5.7	**1**	1 U	2.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	70	0.5 U	1 U	2.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	30	0.5 U	1 U	2.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5	1 U	2 U	**9.9 J**	1 U	1 U	1 U	1 U	1 U
TOLUENE	40	0.5 U	1 U	3.5 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	3	0.5 U	1 U	2.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

TABLE 1-1

SUMMARY OF EXISTING GROUNDWATER ANALYTICAL RESULTS
OU 9, SITE 59 - BUILDINGS 324/1845 AREA REMEDIAL INVESTIGATION
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

Parameter	FDEP GCTL	CEF-324-TW-65	NG-02D		NG-02I	NG-12D	NG-12I
		75	43-48		33-38	45-50	32.5-37.5
			Sample	Duplicate			
1,1-DICHLOROETHENE	7	0.5 U	2.5 U	5 U	0.5 U	10 U	0.5 U
2-BUTANONE	4,200	2.5 U	13 U	25 U	2.5 U	50 U	2.5 U
2-HEXANONE	280	2.5 U	13 U	25 U	2.5 U	50 U	2.5 U
ACETONE	700	**34.4 J**	25 U	50 U	5 U	100 U	5 U
BENZENE	1	0.5 U	2.5 U	5 U	0.5 U	10 U	0.5 U
BROMODICHLOROMETHANE	0.6	0.5 U	2.5 U	5 U	0.5 U	10 U	0.5 U
CARBON DISULFIDE	700	1 U	5 U	10 U	1 U	20 U	1 U
CHLOROFORM	5.7	0.5 U	2.5 U	5 U	0.5 U	10 U	0.5 U
CIS-1,2-DICHLOROETHENE	70	0.5 U	2.5 U	5 U	0.5 U	10 U	**2.2**
ETHYLBENZENE	30	0.5 U	2.5 U	5 U	0.5 U	10 U	0.5 U
METHYLENE CHLORIDE	5	1 U	5 U	10 U	1 U	20 U	1 U
TOLUENE	40	0.5 U	2.5 U	5 U	0.5 U	10 U	0.5 U
TRICHLOROETHENE	3	0.5 U	**404**	**477**	**28.8**	**1170**	**4.3**

All results reported in µg/L.
Temporary well samples collected from January to April 2004 and analyzed for volatile organics only.
Florida Department of Environmental Protection Groundwater Cleanup Target Goal (FDEP, 2005).
Bolded values exceed detection limit. Shaded values exceed FDEP GCTL.
U = Not detected at associated detection limit.
J = Estimated concentration.
NG-02D, NG-02I, NG-12D, and NG-12I were sampled in March 2004.



DRAWN BY MJJ	DATE 10Jan06	GENERAL LOCATION MAP OU 9, SITE 59 REMEDIAL INVESTIGATION REPORT NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NUMBER 8925
CHECKED BY	DATE		APPROVED BY DATE
COST/SCHEDULE-AREA			APPROVED BY DATE
SCALE AS NOTED			DRAWING NO. FIGURE 1-1 / REV 0

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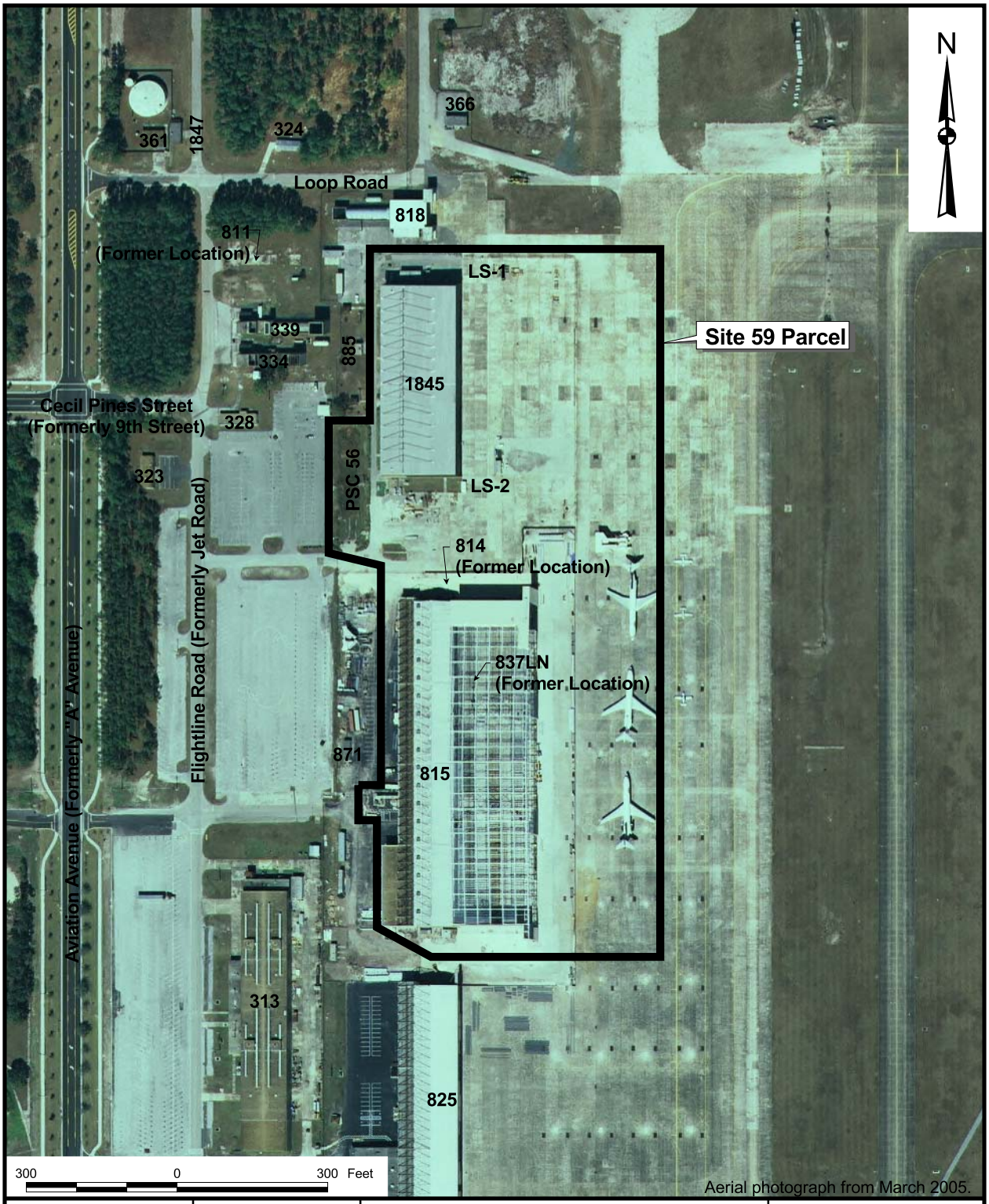
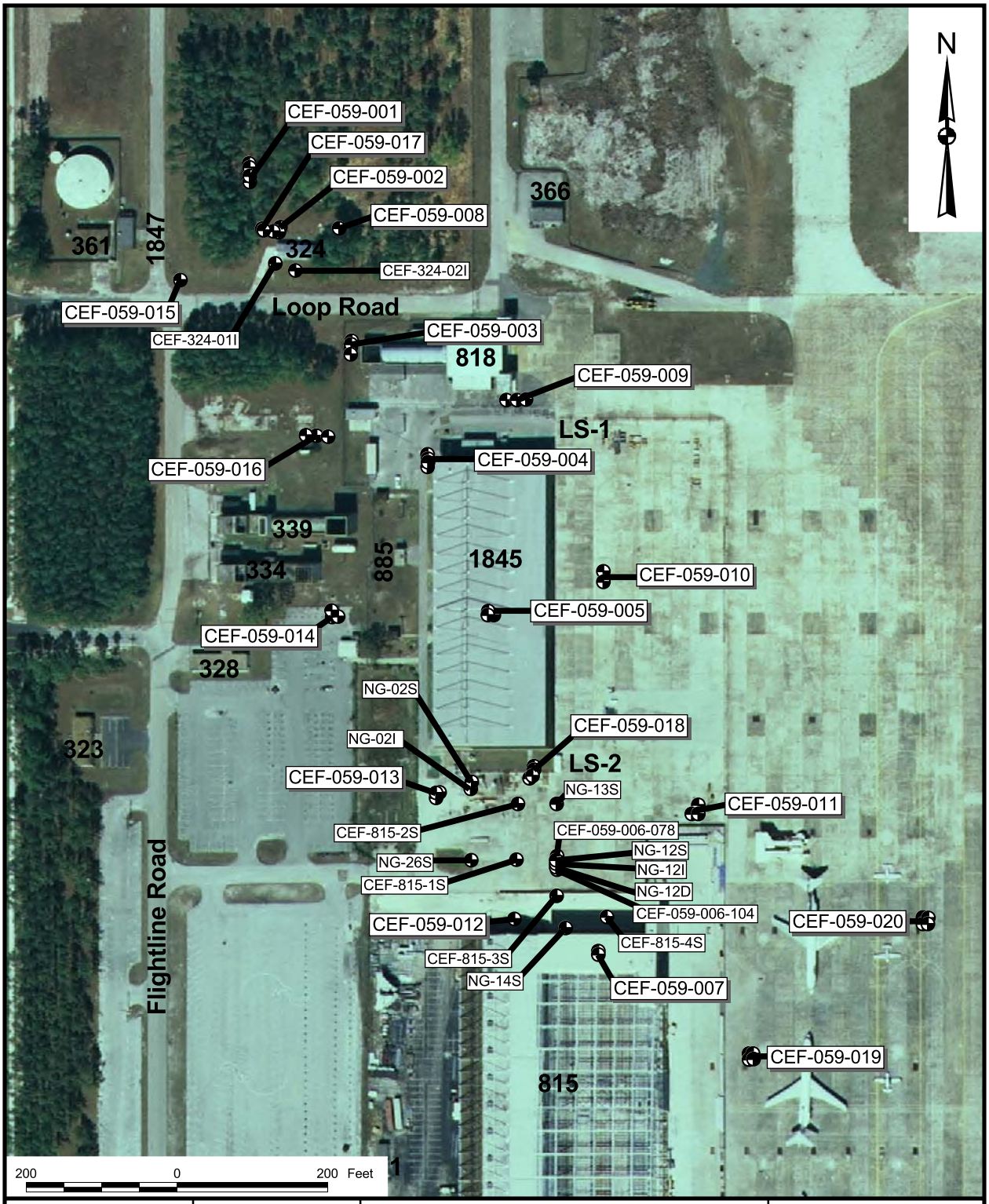


DRAWN BY MJJ	DATE 10Jan06	SITE LOCATION MAP OU 9, SITE 59 REMEDIAL INVESTIGATION REPORT NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NUMBER 8925
CHECKED BY	DATE		APPROVED BY DATE
COST/SCHEDULE-AREA			APPROVED BY DATE
SCALE AS NOTED			DRAWING NO. FIGURE 1-2 / REV 0

P:\GIS\NAS_CecilField\Site-59_RI.apr 25Feb06 MJJ Layout01



DRAWN BY MJJ — DATE 10Jan06	NAVFAC	SITE LAYOUT AND MONITORING WELL LOCATIONS OU 9, SITE 59 REMEDIAL INVESTIGATION REPORT NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NUMBER 8925
CHECKED BY — DATE			APPROVED BY — DATE
COST/SCHEDULE-AREA			APPROVED BY — DATE
SCALE AS NOTED			DRAWING NO. FIGURE 1-3 — REV 0

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N
Loop Road
Loop Road
Flightline Road
361
1847
324
366
818
339
334
885
1845
328
323
LS-1
LS-2
815
871
SB-15
1.3 (TW26-030)
0.5 U (TW26-050)
0.5 U (TW26-070)
0.5 U (TW26-088)
10.7* (TW25-030)
37.1* (TW24-030)
277* (TW03-030)
1 U (TW36-050)
0.5 U (TW36-070)
0.5 U (TW15-012)
3160* (TW15-030)
0.84 J (TW15-050)
1.2 (TW15-070)
4.5* (TW15-090)
6* (TW15-100)
3 (TW17-030)
3.9* (TW17-030-D)
10* (TW16-030)
4.2* (TW13-030)
0.5 U (TW18-030)
694* (TW01-030)
0.5 U (TW14-030)
8.5* (TW04-030)
1.8 (TW37-030)
2.1 (TW37-030-D)
21.7* (TW37-050)
1.1 (TW37-070)
2.5 U (TW37-087)
28.6* (TW02-030)
0.5 U (TW20-030)
10.4* (TW19-030)
22.1* (TW05-030)
0.5 U (TW11-012)
0.5 U (TW11-012-D)
2 (TW11-050)
399* (TW-2D)
79.5* (01I)
28.8* (TW32-050)
2.2 (TW32-070)
3.4* (TW32-090)
6.6* (TW32-098.5)
0.5 U (TW10-030)
3.1* (TW35-050)
0.5 U (TW35-070)
0.5 U (TW35-090)
295* (TW-10D)
86.4* (02I)
36.8* (TW08-030)
41.4* (TW08-050)
6.7* (TW08-060)
5.9* (TW08-090)
4.4* (TW08-100)
1.2 (TW41-050)
0.5 U (TW41-070)
0.5 U (TW41-090)
0.51 J (TW41-100)
233* (TW34-050)
2.1 (TW34-070)
9.4* (TW06-030)
17.8* (TW07-030)
3.1* (TW09-030)
0.57 J (TW30-015)
0.62 J (TW30-030)
12.2* (TW30-050)
4.4* (TW30-070)
1.8 (TW30-090)
1510* (TW31-050)
12* (TW31-070)
18* (TW31-090)
2.5 (TW31-100)
21.2* (TW33-050)
13.4* (TW12-030)
0.5 U (TW39-030)
0.5 U (TW39-050)
0.5 U (TW39-070)
0.5 U (TW39-090)
0.5 U (TW39-100)
0.57 J (TW23-030)
0.5 U (TW21-030)
14.1* (TW45-050)
2.7 (TW45-070)
0.51 J (TW45-090)
1.1 (TW45-100)
0.5 U (TW22-030)
1.4 (TW27-030)
2650* (TW27-050)
1350* (TW27-070)
151* (TW27-090)
22.2* (TW27-100)
0.5 U (TW47-050)
2.2 (TW47-070)
0.5 U (TW47-090)
0.5 U (TW47-098)
1.3 (TW43-050)
0.5 U (TW43-070)
0.79 J (TW43-090)
0.92 J (TW43-100)
0.5 U (TW29-015)
0.5 U (TW29-030)
369* (TW29-050)
2.8 J (TW29-070)
10.5* (TW29-090)
3.2* (TW29-097)
3.1* (TW29-097-D)
0.82 J (TW42-050)
0.96 J (TW42-050-D)
20.2* (TW42-070)
44.9* (TW42-090)
0.63 J (TW42-100)
1760* (TW25-050)
0.5 U (TW28-015)
0.5 U (TW28-030)
1800* (TW28-050-D)
8* (TW28-070)
53.9* (TW28-084)
0.5 U (TW51-050)
9* (TW51-070)
0.5 U (TW51-090)
0.5 U (TW51-098)
0.5 U (TW62-070)
0.5 U (TW62-090)
0.5 U (TW40-050)
0.54 J (TW40-070)
1 U (TW40-090)
1.4 (TW40-100)
0.5 U (TW44-050)
79.5* (TW44-070)
0.88 J (TW44-090)
1200* (TW38-050)
336* (TW38-070)
17.5* (TW38-087)
0.5 U (TW54-050)
0.5 U (TW54-070)
0.5 U (TW54-090)
0.5 U (TW54-100)
250* (TW46-050)
227* (TW46-050-D)
216* (TW46-070)
17.8* (TW46-090)
9.7* (TW46-100)
0.5 U (TW50-050)
4.6* (TW50-070)
0.5 U (TW50-090)
0.5 U (TW50-100)
0.5 U (TW63-070)
1 U (TW63-090)
0.5 U (TW55-050)
0.5 U (TW55-070)
0.5 U (TW55-090)
0.5 U (TW55-100)
0.5 U (TW49-050)
0.74 J (TW49-070)
0.5 U (TW49-090)
0.5 U (TW49-100)
2.5 U (TW57-030)
191* (TW57-050)
0.5 U (TW57-070)
8.7* (TW57-090)
2.8 (TW57-100)
0.5 U (TW48-050)
2 (TW48-070)
1.3 (TW48-082)
0.5 U (TW56-030)
0.5 U (TW56-050)
0.5 U (TW56-070)
0.5 U (TW56-090)
0.5 U (TW56-100)
0.5 U (TW60-050)
2.5 U (TW60-090)
0.5 U (TW60-100)
13.3* (TW52-050)
0.51 J (TW52-070)
2 (TW52-079)
1.1 (TW53-050)
0.5 U (TW53-070)
0.5 U (TW53-082)
1 U (NG-02S)
79.7* (NG-02I)
28.8* (W-02I-01)
404* (W-02D-01)
477* (W-02D-01-D)
988* (TW58-050)
0.5 U (TW58-070)
7.8* (TW58-078)
0.5 U (TW59-050)
0.5 U (TW59-090)
0.5 U (TW59-097)
1 U (NG-12I)
3.6 J* (NG-12I)
4.3* (W-12I-01)
1810* (NG-12D)
1170* (W-12D-01)
0.66 J (TW61-050)
0.5 U (TW61-070)
0.5 U (TW61-083)
2.5 U (TW64-030)
0.5 U (TW64-050)
0.5 U (TW64-070)
0.5 U (TW64-081)
0.5 U (TW65-030)
0.5 U (TW65-050)
0.5 U (TW65-070)
0.5 U (TW65-075)
0.5 U (TW66-030)
0.5 U (TW66-050)
0.5 U (TW66-070)
0.5 U (TW66-080)
Legend
Monitoring Well
Temporary Well Location
Soil Boring Location
TCE Concentration in ug/L
* indicates GCTL exceedance (3 ug/L)
J = estimated concentration
U = not detected at associated detection limit
Sample Location (D = duplicate)
Sample Depth (bgs)
0.5 U (TW51-050)
50 0 50 Feet
P:\GIS\NAS_CecilField\Site-59_RI.apr 25Feb06 MJJ Layout03
DRAWN BY MJJ
DATE 17Jan06
CHECKED BY
DATE
DATE
SCALE AS NOTED
NAVFAC
EXISTING GROUNDWATER TCE RESULTS
OU 9, SITE 59
REMEDIAL INVESTIGATION REPORT
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA
CONTRACT NO. 8925
OWNER NO.
APPROVED BY
DATE
DRAWING NO. FIGURE 1-4
REV. 0
Aerial photograph from March 2005.

2.0 STUDY AREA INVESTIGATION

The RI field investigation at Site 59 was conducted between September 2004 and January 2006. During the field investigation, permanent monitoring wells were installed, groundwater samples were collected from these and existing wells, geotechnical soil samples were collected, and aquifer tests were conducted. Information collected during the investigation was used to determine risks in the PRE and will be used to evaluate remedial alternatives for the FS. The following sections discuss the field investigation activities conducted at Site 59. Sample log sheets, chain of custody forms, and survey data from RI field activities are included in Appendix A. Boring logs and monitoring well construction data are included in Appendix B.

Soil sampling was conducted by Golder Associates in November 2003 to investigate whether a soil source is associated with TCE groundwater contamination detected in the Building 324 area. Twenty-five soil samples were collected in the area around Building 324 and analyzed for VOC. No VOCs were detected in these soil samples. No additional soil sampling was required as part of the RI.

2.1 GROUNDWATER INVESTIGATION

The objective of the groundwater investigation was to evaluate the nature and extent of groundwater contaminated with TCE in the Buildings 324 and 1845 area.

Forty-three wells at 16 locations were initially proposed in the RI Work Plan for installation at Site 59 to delineate the horizontal and vertical extent of contamination. These included the following:

- Nine wells screened at approximately 30 feet bgs.
- Thirteen wells screened at approximately 50 feet bgs.
- Three wells screened at approximately 70 feet bgs.
- Seven wells screened at approximately 80 feet bgs.
- Ten wells screened at the base of the surficial aquifer [top-of-rock (TOR) wells].
- One bedrock well installed in the first water-bearing bedrock zone at the location of the greatest TCE concentration in a TOR well.

Of these 43 proposed wells, 37 were installed in September and October 2004, two were installed in June 2005, the bedrock well was installed in November 2005, and three (CEF-059-005-TOR, CEF-059-007-030 and -TOR) were later deemed not required. Based on data from the September and October field investigation, 17 additional wells were proposed and installed in February and June 2005 to complete delineation of the horizontal and vertical extent of contamination. The total number of Site 59

wells sampled as part of the RI was 60, including 57 new and three previously installed wells at 21 locations (see Figure 1-3).

Location 001 is located upgradient of the detected contamination approximately 100 feet northwest of Building 324 and included wells screened at approximately 30, 50, 80, and 120 feet bgs. Location 002 wells were installed at the location of the maximum TCE concentration detected during DPT sampling (3,160 µg/L at approximately 25 feet northwest of Building 324) and included wells screened at approximately 30, 50, and 120 feet bgs. Location 003 wells were installed at the second highest TCE concentration detected during the DPT investigation (2,650 µg/L, just west of Building 818) and included wells screened at approximately 30, 50, 70, and 120 feet bgs. All wells at locations 001, 002, and 003 were installed in October 2004.

Location 004 wells were installed approximately 175 feet downplume (southeast) of location 003, near the northwestern corner of Hangar 1845, and include wells screened in the surficial aquifer at approximately 30, 50, 70, and 110 feet bgs and a bedrock well installed in the first water-bearing zone of the Hawthorn formation underlying the surficial aquifer. Wells CEF-059-004-053, -073, and -112 were installed in October 2004 based on the RI Work Plan, and CEF-059-004-033 was installed in June 2005 based on a decision at the April 2005 BCT meeting to confirm conditions downgradient of CEF-059-003-035. The bedrock well, CEF-059-004-135, was installed in November 2005 to vertically delineate TCE contamination detected in the TOR well at this location.

Location 005 wells were installed in October 2004 within Hangar 1845, an area from which no samples were collected during the DPT investigation. This cluster included wells screened at approximately 30, 50, and 70 feet bgs. A TOR well was proposed at this location, but it could not be installed because of interferences with the drill rig and hangar ceiling. In addition, location 005 wells were moved approximately 50 feet from the originally proposed locations. These modifications to the work plan were approved by the BCT at the September 2004 meeting.

Location 006 is approximately 150 feet south of Hangar 1845 at the previous maximum detection of TCE in this area and includes the following:

- Previously installed well NG-12I, screened at approximately 30 feet bgs.
- Previously installed well NG-12D, screened at approximately 50 feet bgs.
- CEF-059-006-104, a TOR well installed in September 2004.
- CEF-059-006-078 installed in June 2005, based on decisions at the February and April 2005 BCT meetings, to investigate TCE concentrations vertically between NG-12D (1,810 µg/L) and CEF-059-006-104 (non-detect).

Location 007 wells were installed downgradient of the southernmost contamination detected prior to the RI, approximately 280 feet southeast of Hangar 1845. Three wells, screened at 30 and 50 feet bgs and at the TOR, were proposed at this location in the RI Work Plan. Construction activities to expand Hangar 815 delayed drilling and well installation at this location. In September 2004, prior to the start of field activities, the BCT agreed to evaluate data from location 006 to decide which wells, if any, at location 007 would be required for delineation. At the April 2005 BCT meeting, it was decided based on data from location 006 that wells screened at approximately 50 and 75 feet bgs would be installed at location 007 to evaluate conditions downgradient of NG-12D. In June 2005, after construction activities were completed at Hangar 815, CEF-059-007-053 and -078 were installed.

Location 008 included a 30-foot well only located approximately 100 feet east (sidegradient) of location 002. Location 009 wells are sidegradient (east) of the plume, approximately 65 feet north of Hangar 1845 wells, and are screened at approximately 50, 80, and 110 feet bgs. Location 010 wells are approximately 65 feet east (sidegradient) of Hangar 1845 and are screened at approximately 50 and 80 feet bgs. Location 011 wells are approximately 175 feet east (sidegradient) of location 006 and south of Hangar 1845 and are screened at approximately 30, 50, and 80 feet bgs. Wells at locations 008, 009, 010, and 011 were installed in October 2004.

Location 012 includes a 50-foot well only and is approximately 80 feet southwest of location 006. This well was installed in June 2005 (after Hangar 815 construction activities) to evaluate the horizontal extent of contamination at NG-12D. Installation of this well was approved at the April 2005 BCT meeting.

Location 013 is sidegradient (west) of the plume, approximately 75 feet south of Hangar 1845, and includes wells screened at approximately 30, 50, and 80 feet bgs. Location 014 is also sidegradient, approximately 130 feet west, of Hangar 1845 and includes wells screened at approximately 50, 80 and 120 feet bgs. Location 015 is approximately 130 feet southwest (sidegradient) of location 002 and includes one well screened at approximately 30 feet bgs. Location 016 is sidegradient at approximately 140 feet southwest of location 003 and 180 feet northwest of location 004 and includes wells screened at approximately 50, 80, and 120 feet bgs. Wells at locations 013, 014, 015, and 016 were installed in October 2004.

Previously installed well NG-02I (screened from 33 to 38 feet bgs) located approximately 100 feet south of Hangar 1845 was also sampled during the RI.

In February 2005, the BCT decided to install two wells, screened at approximately 30 and 50 feet bgs at location 017, just west of location 002 near the northwestern corner of Building 324, to further evaluate

the discrepancy between TCE concentrations in DPT groundwater samples from this location (3,160 µg/L) and the concentration in the sample from the permanent well (CEF-059-002-028) installed at this location (12.1 µg/L). These wells were installed in February 2005.

In April 2005, the BCT decided to install 12 additional wells to further delineate the extent of contamination at Site 59. These wells, four each at locations 018, 019, and 020, were installed in June 2005 and screened at approximately 30, 50, and 75 feet bgs and at the TOR. Location 018 wells were installed to evaluate conditions downgradient of locations 004 and 005 and upgradient of location 006, and also to evaluate soil VOC detections at location SB-15 during the 1998 Golder investigation of the Buildings 815 and 1845 area (Golder Associates, 1998) (see Figure 1-4). Location 019 wells were installed as downgradient, clean wells, and location 020 wells were installed as sidegradient clean wells.

2.1.1 Monitoring Well Construction and Installation

Table 2-1 lists the construction and installation details for the newly installed and existing monitoring wells sampled as part of the RI. Monitoring well construction logs are included in Appendix B. New and existing wells sampled during the RI are shown on Figure 1-3.

Groundwater monitoring wells installed as part of this investigation were installed in general accordance with applicable Department of the Navy, Southern Division Naval Facilities Engineering Command, Monitoring Well Design, Installation, Construction, and Development Guidelines, State of Florida Well Standards and Regulations, and the United States Environmental Protection Agency (U.S. EPA) Region 4 Environmental Investigations Standard Operating Procedure and Quality Assurance Manual (EISOPQAM) (U.S. EPA, 1996a). In some cases, slight modifications to well installation and/or construction methods were required due to site conditions, geologic settings, or other factors.

Two-Inch Wells

Rotosonic drilling techniques were used to install 26 wells at 15 locations during the RI. These wells included deeper wells (70- to 80-foot and TOR wells) and two shallower wells scheduled for slug testing and geotechnical sample collection, and all but one were installed in September and October 2004. The bedrock well was installed in November 2005 using Rotosonic techniques. A 6-inch temporary drive casing was used to drill to approximately 123 feet bgs and then a 4-inch drive casing was used to drill to 138 feet bgs. The 2-inch well was installed within the 4-inch casing, with the screen set from 125 to 135 feet bgs. Hollow-stem auger (HSA) techniques were used to install two 2-inch wells at location 017 in February 2005.

Two-inch wells were constructed of 2-inch inside diameter (ID), Schedule 40, flush-threaded, National Sanitation Foundation (NSF)-approved polyvinyl chloride (PVC) well screen and compatibly threaded PVC riser. Overburden well screens were 5 feet long with 0.010-inch slots. The bedrock well was constructed of 2-inch ID, Schedule 40, flush-threaded, NSF-approved PVC well screen and compatibly threaded PVC riser. The bedrock well screen was 10 feet long with 0.010-inch slots.

A primary filter pack of clean silica sand was installed around each well screen. This filter pack consisted of a sand mixture retained by U.S. Standard Sieve Nos. 20-30 (20/30 sand). The sand pack was installed around the screen generally to approximately 2 feet above the top of the well screen. A bentonite seal consisting of hydrated bentonite pellets was installed above the sand pack. The thickness of the bentonite seal was generally 3 feet. The annular space above the bentonite seal was backfilled with a 10 percent bentonite/Type II Portland cement grout mixture to within approximately 2 feet of land surface. Concrete was used to fill the remaining annular space and to construct the well pad. Stainless steel casing stabilizers were used for 70- to 80-foot and TOR wells.

The overburden 2-inch wells were completed with 8-inch ID, flush-mounted, protective steel covers with bolt-on lids. The bedrock well was completed with a 6-inch protective steel cover. Wells installed in the flightline apron were completed with 12-inch round pads, and other wells were completed with sloping 2-foot- by 2-foot-wide by 6-inch-thick concrete surface pads installed flush with the ground surface.

Microwells

A total of 29 wells (30-foot and 50-foot depths) at 17 locations were installed as ¾-inch ID microwells using DPT. These wells were constructed of Schedule 40 PVC riser and pre-packed, 5-foot-long screens with 0.010-inch slots. The screens were pre-packed with 20/40 sand. Well seals were constructed of 30/65 sand or bentonite, with thicknesses from 2 to 3.8 feet. For 20 of the wells, natural formation materials were used to fill the annulus above the seal to the water table, and then Type II Portland cement filled the remaining annulus to approximately 2 feet bgs. For the remaining nine wells, the annulus above the seal was filled with Type II Portland cement. Concrete was used from 2 feet bgs and was used to construct the well pads.

These wells were completed with 8-inch ID, flush-mounted, protective steel covers with bolt-on lids. Wells installed in the flightline apron and at location 005 (within Building 1845) were completed with 12-inch round pads, and other wells were completed with sloping 2-foot- by 2-foot-wide by 6-inch-thick concrete surface pads installed flush with the ground surface.

At the conclusion of the well installation activities, all new well locations were surveyed. At each well location, the elevation of the ground surface, the protective cover, and the measuring point on the PVC

well casing were surveyed. In addition, the horizontal position of each well was surveyed. The elevations are based upon the National American Vertical Datum (NAVD) 1988, and the horizontal locations are based upon the State Plane Coordinates for Florida East Zone, North American Datum, 1983/90. The survey data for each new and existing well are listed in Appendix A. Well elevation data are included in Table 2-1.

2.1.2 Monitoring Well Development

Following installation, each monitoring well was developed by surging and pumping to remove drill cuttings and formation fines from the area around the well screen. During development, pH, temperature, turbidity, and specific conductivity measurements were collected after each borehole volume was removed. Wells were considered developed after these readings stabilized, as determined using the following criteria: pH ±0.1 unit, temperature ±1.0°C, turbidity less than 10 nephelometric turbidity units (NTUs), and specific conductivity ±10 percent. A minimum of five times the standing water volume in the well casing plus five times the water volume in the saturated gravel pack (assuming 30 percent porosity) was removed. Water quality measurements and volumes removed were recorded for each well on a well development form, included in Appendix C.

2.1.3 Water Level Measurements

One round of synoptic water level measurements was collected from Site 59 wells on January 5, 2006, and the data were used to generate a potentiometric surface map for the site. One round of synoptic water level measurements was collected from Building 815 Wash Rack Area wells on January 13, 2006, and the data were used to generate a potentiometric surface map for this site.

The referenced measuring point for each well was clearly marked on each permanent well installed as part of the RI and is located on the northern side of the PVC well casing. Water level measurements were noted with the time and recorded to the nearest 0.01 foot. Water level measurement logs are included in Appendix C.

2.1.4 Groundwater Sampling

2.1.4.1 Site 59 Sampling

2.1.4.1.1 Contaminants of Concern

Groundwater sampling for the RI at Site 59 was conducted in accordance with procedures described in Section 7.2.3 of the Field Sampling Plan (FSP) for the Sites 36 and 37 RI (TtNUS, 1998). Groundwater samples were collected using low-flow sampling techniques. Groundwater samples were collected at Site

59 from November 11 through 17, 2004, February 17 and 25, 2005, June 20 through 22, 2005, November 22, 2005, and January 3 and 4, 2006. Groundwater samples were collected at Building 815 Wash Rack Area wells on January 13 and 16, 2006.

Before a groundwater sample was obtained from each monitoring well, the static water level in the well was measured to within 0.01-foot accuracy from a marked location on the top of the well riser pipe. A headspace reading was obtained in the well's riser pipe using a PID.

Groundwater samples were collected from monitoring wells using dedicated medical-grade flexible silicon and rigid Teflon™ tubing and a peristaltic pump. The tubing was lowered in the wells to approximately the midpoint of the well screens. The wells were then purged in accordance with the low-flow sampling techniques specified in Section 7.2.3 of the FSP for the Sites 36 and 37 RI (TtNUS, 1998). During purging, water quality parameters [pH, temperature, specific conductance, turbidity, and dissolved oxygen(DO)] were measured using a Horiba U-10 meter and recorded approximately every 10 minutes until the parameters stabilized and the minimum purge volume was removed. The minimum purge volume with negligible drawdown (0.3 foot or less) was two saturated screen length volumes. Stabilization of the above parameters was defined as follows: temperature ±1.0 ºC, pH ±0.1 units, turbidity less than 10 NTUs and specific conductance ±3 percent. If all field parameters except turbidity stabilized (i.e., a turbidity reading of less than 10 NTUs could not be reached), purging was considered complete after removal of five saturated screen volumes.

Water level data, flow rates, and water-quality data collected during purging were recorded on Low-Flow Purge Data Sheets, included in Appendix A.

Immediately before sampling, the temperature, pH, specific conductance, turbidity, and DO of the water were measured and recorded on the Groundwater Sample Log Sheet (see Appendix A). Samples for VOC analysis were collected first using the “soda straw” method as described in Section FS 2221 of the FDEP Groundwater Sampling Standard Operating Procedure (SOP) (FS 2200) (FDEP, 2002). Sample containers for all other analyses were then filled by allowing the pump discharge to flow gently down the inside of the container with minimal turbulence. Samples for dissolved metals analysis were collected using an in-line, 1-micron, disposable particulate filter based on FDEP guidance (FDEP, 1994). Sample containers were immediately labeled and placed in a cooler with ice.

Sample preservation, packaging, and shipping requirements were followed in accordance with Section 7.3.1 of the FSP for the RI for Sites 36 and 37 (TtNUS, 1998).

Groundwater sampling and analysis conducted as part of the Site 59 RI is summarized in Table 2-2. Fifty-seven new wells (40 originally proposed and 17 additional) and three previously installed wells were sampled and analyzed for VOCs to determine the horizontal and vertical boundaries of Site 59 groundwater contamination and to provide contaminant trend data within the site area. Forty groundwater samples, including 37 newly constructed wells and three previously installed wells, were collected as part of the original RI field activities in November 2004. In February 2005, two new wells were sampled and two previously installed wells (CEF-059-004-053 and 004-112) were resampled. The 17 wells proposed based on data from the first two sampling events were sampled in June 2005. The bedrock well was installed and sampled in November 2005.

2.1.4.1.2 Natural Attenuation Parameters

To evaluate the potential for natural attenuation at the site, samples from 10 wells were initially analyzed for field and laboratory geochemical parameters. Natural attenuation parameters measured in the field included alkalinity, carbon dioxide, DO, ferrous iron, hydrogen sulfide, oxidation-reduction potential (ORP), pH, specific conductivity, sulfide, and temperature. Natural attenuation parameters measured by fixed-base laboratory methods included alkalinity, chloride, dissolved iron, nitrate, nitrite, sulfate, dissolved sulfide, orthophosphate, methane, ethane, ethane, and total organic carbon (TOC). After installation of additional wells, natural attenuation sampling was conducted at these 10 and an additional 10 wells for an abbreviated list of parameters chosen based on evaluation of the original data. The abbreviated list of parameters included field analyses for carbon dioxide, DO, ferrous iron, hydrogen sulfide, ORP, pH, sulfide, and temperature and fixed-base analyses for alkalinity, chloride, methane, ethane, ethene, and sulfate. The wells sampled for natural attenuation parameters are indicated in Table 2-2.

2.1.4.1.3 Microbial Analyses

Bacterial analysis was conducted on samples from four wells to evaluate whether dechlorinating microbes were present, and if present, at what levels. The wells at which this analysis was conducted included CEF-059-002-028, -003-053, -004-073, and NG-12I.

The only known group of bacteria capable of dechlorinating tetrachloroethene (PCE) and/or TCE to ethane is *Dehalococcoides spp.* (DHC). A quantitative polymerase chain reaction (qPCR) technique known as Bio-Dechlor CENSUS™ licensed by Regenesis Bioremediation Products was used to detect and quantify DHC in groundwater samples from wells at the site. The qPCR method uses a nucleic acid-based approach in which many copies of a target gene are made, and as each copy is made, a fluorescent marker is released. The amount of fluorescence measured throughout the amplification process is used to determine the number of targeted genes in a sample. The cell count of the targeted

organism is obtained by correlating the number of gene copies measured with that of the known target organism.

At Site 59, the qPCR Bio-Dechlor CENSUS™ method was used to determine the number of DHC gene copies in deoxyribonucleic acid (DNA) extracted from each sample. The qPCR results for all four samples from Site 59 were non-detect.

2.1.4.2 Building 815 Wash Rack Sampling

At the February 2005 BCT meeting, it was decided that the Building 815 Wash Rack Area groundwater contamination would be addressed with Site 59 groundwater. The Supplemental Soil Assessment Letter Report (TtNUS, 2005) recommended completion of a groundwater sampling event prior to preparation of a RAP for this site because of the amount of time that had passed since the last semi-annual monitoring event (July 2003). Additional groundwater sampling was conducted in January 2006 and included the analysis of samples from three wells (CEF-815-01S, NG-26S, and NG-12S) for VOCs, SVOCs, TRPH, and manganese. Three additional wells (CEF-815-3S and -4S and NG-14S) were to be sampled but were covered by asphalt or concrete at the time of sampling.

The groundwater contamination at this site will be addressed with Site 59 groundwater contamination; therefore, the results are presented in the RI and will be used in the Site 59 FS. Sampling was conducted in general accordance with Section 2.1.4. A synoptic round of water level measurements was collected in the shallow surficial aquifer wells (screened from approximately 5 to 15 feet bgs) in the Building 815 area on January 13, 2006.

2.2 GEOLOGIC AND HYDROGEOLOGIC INVESTIGATION

Geologic and hydrogeologic information was obtained as part of the RI to investigate the existing and potential fate and transport mechanisms for groundwater and COCs at Site 59. Furthermore, site-specific geologic and hydrogeologic information is required to evaluate remediation alternatives. The following sections describe the procedures used during this investigation to collect site-specific geologic and hydrogeologic information.

2.2.1 <u>Geotechnical Analysis</u>

Geotechnical samples were collected at Site 59 during this investigation for the analysis of engineering parameters and for use in contaminant fate and transport evaluations at the following approximate depths and locations:

- 30 and 80 feet bgs at location 001
- 117 feet bgs at location 002
- 50 and 80 feet bgs at location 009
- 50 and 115 feet bgs at location 014

These samples were collected at Site 59 in general accordance with procedures outlined in Section 2.3.2 of the RI Report for Sites 36 and 37 (TtNUS, 1999) and were analyzed for the following geotechnical parameters:

- Grain-size analysis
- pH
- Specific gravity
- Bulk density
- Fractional organic carbon (f_{oc})

Geotechnical samples were also to be analyzed for porosity; however, sampling difficulties associated with loose sands did not allow collection of samples for porosity analyses.

Numerous previous studies at NAS Cecil Field have confirmed that shallow subsurface materials consist of a fairly uniform sand with varying relatively amounts of silt and clay. Because of the relative homogeneity of the shallow aquifer materials, eight Shelby tube samples at four locations were proposed to confirm that site-specific data were within the range of previous values. Because of scheduling issues, the samples proposed at location 007 (50-foot and TOR intervals) were not collected and were replaced by a sample from the TOR interval at location 002.

2.2.2 Specific Capacity Testing

Specific capacity (SPECAP) tests were performed at wells CEF-059-001-028 and 001-083, CEF-059-009-053 and -009-083, and CEF-059-014-120. The objective of the SPECAP tests was to determine the productivity or yield per unit of drawdown of the aquifer in which the well is screened in order to estimate hydraulic conductivity and transmissivity. Although there is published information concerning formation hydraulic conductivities at NAS Cecil Field, SPECAP tests were conducted to verify and confirm the hydraulic conductivity values previously determined.

Specific capacity is defined as yield divided by drawdown and is normally expressed as gallons per minute per foot of drawdown. Both the pumping rate and the stabilized drawdown are measured simultaneously after a sufficient amount of time has elapsed for the well to reach equilibrium. Dividing the

yield rate by the stabilized drawdown, when both are measured simultaneously, gives the specific capacity. Specific capacity can vary with pumping duration, and specific capacity decreases as pumping time increases. Additionally, specific capacity generally decreases as the discharge rate increases. Both of these responses are due to dewatering of the aquifer within the cone of depression. For a given amount of drawdown, the yield progressively decreases as the saturated thickness of the aquifer is reduced. Specific capacity may also vary with yield as a function of the well efficiency.

The procedure for conducting the SPECAP tests at Site 59 consisted of the following general steps:

1. After the well was properly developed, pumping was continued at a constant rate.

2. The pumping rate and drawdown were measured simultaneously at regular and frequent intervals, and the data were recorded on the Monitoring Well Development Record, included in Appendix C. Drawdown was measured using an In-Situ miniTROLL data logging probe.

3. Pumping continued until drawdown stabilized (generally, measurements within 0.03 foot over a 10-minute interval were considered stable).

4. Pumping was terminated and water level recovery was measured.

To perform the SPECAP tests, a submersible pump was used to pump the well. Aquifer parameters were calculated from the SPECAP test data using a computer program developed by Bradbury and Rothschild (1985) based on equations presented in Lohman (1972). The results are included in Appendix C.

TABLE 2-1

MONITORING WELL CONSTRUCTION INFORMATION
OPERABLE UNIT 9, SITE 59
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

Well Location	Well ID	Date Installed	Diameter (in inches)	Drilling Method	Total Depth (in feet bgs)	Screened Interval (in feet bgs)	Ground Surface Elevation (in feet amsl)	Top of casing Elevation (in feet amsl)
Site 59 Wells								
001	CEF-059-001-028	28-Oct-04	2	Rotosonic	28.5	23 to 28	78.80	78.71
	CEF-059-001-053	21-Oct-04	0.75	DPT	53.5	48 to 53	78.89	78.95
	CEF-059-001-083	18-Oct-04	2	Rotosonic	84	78 to 83	78.62	78.42
	CEF-059-001-121	18-Oct-04	2	Rotosonic	125	116.5 to 121.5	78.79	78.72
002	CEF-059-002-028	15-Oct-04	0.75	DPT	28.5	23 to 28	79.20	79.13
	CEF-059-002-053	17-Oct-04	0.75	DPT	53	47.8 to 52.8	79.29	79.20
	CEF-059-002-120	19-Oct-04	2	Rotosonic	121	115.5 to 120.5	79.28	79.25
003	CEF-059-003-035	15-Oct-04	0.75	DPT	36	30.5 to 35.5	77.69	77.49
	CEF-059-003-053	17-Oct-04	0.75	DPT	53	47.8 to 52.8	77.63	77.44
	CEF-059-003-073	17-Oct-04	0.75	DPT	73	67.8 to 72.8	77.64	77.42
	CEF-059-003-121	03-Oct-04	2	Rotosonic	123	116.5 to 121.5	77.64	77.63
004	CEF-059-004-033	09-Jun-05	0.75	DPT	33	28 to 33	77.11	76.90
	CEF-059-004-053	18-Oct-04	0.75	DPT	53	47.8 to 52.8	77.23	77.03
	CEF-059-004-073	18-Oct-04	0.75	DPT	73	67.8 to 72.8	77.23	77.04
	CEF-059-004-112	01-Oct-04	2	Rotosonic	120	107 to 112	77.18	76.86
	CEF-059-004-135 (Bedrock)	19-Nov-05	2	Rotosonic	138	125 to 135	NA	NA
005	CEF-059-005-033	15-Oct-04	0.75	DPT	33.5	28 to 33	77.72	77.35
	CEF-059-005-053	21-Oct-04	0.75	DPT	53.5	48 to 53	77.77	77.60
	CEF-059-005-073	21-Oct-04	0.75	DPT	73.5	68 to 73	77.73	77.44
006	NG-12I (existing)	08-Jun-98	2	Mud rotary	38	32.5 to 37.5	NA	76.01
	NG-12D (existing)	04-Jun-98	2	Mud rotary	57	45 to 50	NA	76.04
	CEF-059-006-078	12-Jun-05	2	Rotosonic	78.8	73.6 to 78.6	75.87	75.65
	CEF-059-006-104	30-Sep-04	2	Rotosonic	104.5	99.5 to 104 5	75.99	75.78

TABLE 2-1

MONITORING WELL CONSTRUCTION INFORMATION
OPERABLE UNIT 9, SITE 59
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

Well Location	Well ID	Date Installed	Diameter (in inches)	Drilling Method	Total Depth (in feet bgs)	Screened Interval (in feet bgs)	Ground Surface Elevation (in feet amsl)	Top of casing Elevation (in feet amsl)
Site 59 Wells (continued)								
007	CEF-059-007-053	11-Jun-05	0.75	DPT	53	48 to 53	75.86	75.44
	CEF-059-007-078	11-Jun-05	2	Rotosonic	78.3	73 to 78	75.85	75.62
008	CEF-059-008-028	15-Oct-04	0.75	DPT	28.5	23 to 28	79.01	79.03
009	CEF-059-009-053	15-Oct-04	2	Rotosonic	54	48 to 53	78.06	77.84
	CEF-059-009-083	14-Oct-04	2	Rotosonic	84	78 to 83	78.06	77.88
	CEF-059-009-113	14-Oct-04	2	Rotosonic	118	108.5 to 113.5	78.11	77.85
010	CEF-059-010-053	20-Oct-04	0.75	DPT	53.5	48 to 53	76.82	76.53
	CEF-059-010-083	13-Oct-04	2	Rotosonic	84	78 to 83	76.82	76.57
011	CEF-059-011-033	15-Oct-04	0.75	DPT	33.5	28 to 33	75.94	75.70
	CEF-059-011-053	20-Oct-04	0.75	DPT	53.5	48 to 53	75.79	75.53
	CEF-059-011-083	07-Oct-04	2	Rotosonic	84	78 to 83	75.80	75.43
012	CEF-059-012-053	10-Jun-05	0.75	DPT	53	48 to 53	75.84	75.69
013	CEF-059-013-032	14-Oct-04	0.75	DPT	33.5	27 to 32	76.70	76.55
	CEF-059-013-053	20-Oct-04	0.75	DPT	53.5	48 to 53	76.74	76.47
	CEF-059-013-083	07-Oct-04	2	Rotosonic	84	78 to 83	76.76	76.59
014	CEF-059-014-053	17-Oct-04	0.75	DPT	53	47.8 to 52.8	77.29	76.92
	CEF-059-014-083	15-Oct-04	2	Rotosonic	84	78 to 83	77.12	77.05
	CEF-059-014-120	05-Oct-04	2	Rotosonic	130	115.5 to 120.5	77.32	77.11
015	CEF-059-015-028	15-Oct-04	0.75	DPT	28.5	23 to 28	77.86	77.86
016	CEF-059-016-053	17-Oct-04	0.75	DPT	53	47.8 to 52.8	78.28	78.06
	CEF-059-016-083	17-Oct-04	2	Rotosonic	84	78 to 83	78.22	78.03
	CEF-059-016-119	16-Oct-04	2	Rotosonic	119	114 to 119	78.36	78.22
017	CEF-059-017-028	18-Feb-05	2	HSA	28.5	23 to 28	NA	NA
	CEF-059-017-053	18-Feb-05	2	HSA	53.5	48 to 53	NA	NA

TABLE 2-1

MONITORING WELL CONSTRUCTION INFORMATION
OPERABLE UNIT 9, SITE 59
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

Well Location	Well ID	Date Installed	Diameter (in inches)	Drilling Method	Total Depth (in feet bgs)	Screened Interval (in feet bgs)	Ground Surface Elevation (in feet amsl)	Top of casing Elevation (in feet amsl)
Site 59 Wells (continued)								
018	CEF-059-018-033	08-Jun-05	0.75	DPT	33	28 to 33	77.13	76.82
	CEF-059-018-053	09-Jun-05	0.75	DPT	53	48 to 53	77.07	76.79
	CEF-059-018-078	12-Jun-05	2	Rotosonic	78.5	73.2 to 78.2	76.30	75.92
	CEF-059-018-105	12-Jun-05	2	Rotosonic	105	99.8 to 104.8	76.53	76.15
019	CEF-059-019-032	08-Jun-05	0.75	DPT	32.1	27 to 32	74.74	74.37
	CEF-059-019-051	08-Jun-05	0.75	DPT	51.4	47 to 51	74.87	74.49
	CEF-059-019-078	10-Jun-05	2	Rotosonic	78.5	73 to 78	74.79	74.54
	CEF-059-019-106	10-Jun-05	2	Rotosonic	106.3	101 to 106	74.86	74.58
020	CEF-059-020-033	09-Jun-05	0.75	DPT	33	28 to 33	77.07	76.50
	CEF-059-020-053	10-Jun-05	0.75	DPT	53	48 to 53	77.02	76.49
	CEF-059-020-078	09-Jun-05	2	Rotosonic	78.5	73 to 78	77.12	76.83
	CEF-059-020-099	08-Jun-05	2	Rotosonic	105	94.5 to 99.5	77.08	76.81
NG-02I	NG-02I (existing)	01-Jun-98	2	Mud rotary	39	33 to 38	NA	76.72
Building 815 Wells								
CEF-815-1S		15-Dec-95	2	NA	14	4 to 14	NA	75.56
CEF-815-3S*		15-Dec-95	2	NA	13	3 to 13	NA	75.64
CEF-815-4S*		29-Sep-99	2	NA	14	4 to 14	NA	75.75
NG-12S		05-Jun-98	2	NA	14	4 to 14	NA	75.69
NG-14S*		17-Jun-98	2	NA	14	4 to 14	NA	76.04
NG-26S		17-Jun-98	2	NA	14	4 to 14	NA	75.84

* Covered with asphalt/concrete; not sampled during the RI.
DPT = Direct-push technology
HSA = Hollow-stem auger.
Elevation is referenced to 1988 National American Vertical Datum (NAVD).

NA = Not available.
bgs = Below ground surface.
amsl = Above mean sea level.

TABLE 2-2

MONITORING WELLS AND SAMPLING RATIONALE
OPERABLE UNIT 9, SITE 59
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

Well Location	Well ID	Screened Interval (feet bgs)	Analysis						Rationale and Comments
			V	S	M	P	NA	B	
Site 59 Wells									
001	CEF-059-001-028	23 to 28	x	-	-	-	x	-	Upgradient, approximately 100 feet northwest of the northwestern corner of Building 324.
	CEF-059-001-053	48 to 53	x	-	-	-	-	-	
	CEF-059-001-083	78 to 83	x	-	-	-	x	-	
	CEF-059-001-121 (TOR)	116.5 to 121.5	x	-	-	-	-	-	
002	CEF-059-002-028	23 to 28	x	x	x	x	x	x	At location of maximum TCE concentration (3,160 µg/L at 30 feet bgs) detected in DPT samples. TCE at less than 10 µg/L in DPT samples from 90 and 100 feet.
	CEF-059-002-053	47.8 to 52.8	x	-	-	-	-	-	
	CEF-059-002-120 (TOR)	115.5 to 120.5	x	-	-	-	x	-	
003	CEF-059-003-035	30.5 to 35.5	x	-	-	-	-	-	At location of second highest TCE concentration (2,650 µg/L at 50 feet bgs) detected in DPT samples. In DPT samples, TCE at 1,350 µg/L at 70 feet, 151 µg/L at 90 feet, and 22.2 µg/L at 100 feet.
	CEF-059-003-053	47.8 to 52.8	x	-	-	-	x	x	
	CEF-059-003-073	67.8 to 72.8	x	-	-	-	-	-	
	CEF-059-003-121 (TOR)	116.5 to 121.5	x	-	-	-	x	-	
004	CEF-059-004-033	28 to 33	X	-	-	-	-	-	Approximately 175 feet southeast (downplume) of Location 003, near the southern extent of exceedances in the area north of Hangar 1845.
	CEF-059-004-053	47.8 to 52.8	x	-	-	-	x	-	
	CEF-059-004-073	67.8 to 72.8	x	-	-	-	x	x	
	CEF-059-004-112 (TOR)	107 to 112	x	-	-	-	-	-	
	CEF-059-004-135 (Bedrock)		x	-	-	-	-	-	
005	CEF-059-005-033	28 to 33	x	-	-	-	-	-	Inside Hangar 1845 to fill data gap in this area. Downgradient (southeast) of TCE northern exceedances and upgradient (northwest) of southern exceedances.
	CEF-059-005-053	48 to 53	x	-	-	-	x	-	
	CEF-059-005-073	68 to 73	x	-	-	-	-	-	
006	NG-12I (existing)	32.5 to 37.5	x	-	-	-	-	x	At the location of maximum detection of TCE south of Hangar 1845 (1,170 µg/L in existing well NG-12D, screened at 45 to 50 feet bgs).
	NG-12D (existing)	45 to 50	x	-	-	-	x	-	
	CEF-059-006-078	73.6 to 78.6	x	-	-	-	x	-	
	CEF-059-006-104 (TOR)	99.5 to 104 5	x	-	-	-	-	-	
007	CEF-059-007-053	48 to 53	x	-	-	-	x	-	Downgradient (southeast) of furthest downgradient TCE exceedance detected in DPT sampling.
	CEF-059-007-078	73 to 78	x	-	-	-	x	-	
008	CEF-059-008-028	23 to 28	x	-	-	-	-	-	Sidegradient (east) of TCE exceedances between Buildings 324 and 818.
009	CEF-059-009-053	48 to 53	x	-	-	-	-	-	Sidegradient (east) of TCE exceedances between Buildings 818 and 1845.
	CEF-059-009-083	78 to 83	x	-	-	-	-	-	
	CEF-059-009-113 (TOR)	108.5 to 113.5	x	-	-	-	-	-	

TABLE 2-2

MONITORING WELLS AND SAMPLING RATIONALE
OPERABLE UNIT 9, SITE 59
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

Well Location	Well ID	Screened Interval (feet bgs)	Analysis						Rationale and Comments
			V	S	M	P	NA	B	
Site 59 Wells (continued)									
010	CEF-059-010-053	48 to 53	x	-	-	-	-	-	Sidegradient (east) of 50-foot exceedances, below 70-foot exceedance.
	CEF-059-010-083	78 to 83	x	-	-	-	-	-	
011	CEF-059-011-033	28 to 33	x	-	-	-	-	-	Sidegradient (east) of TCE exceedances south of Hangar 1845.
	CEF-059-011-053	48 to 53	x	-	-	-	-	-	
	CEF-059-011-083	78 to 83	x	-	-	-	-	-	
012	CEF-059-012-053	48 to 53	x	-	-	-	-	-	Downplume (southwest) of southern exceedances; upgradient of Hangar 815.
013	CEF-059-013-032	27 to 32	x	-	-	-	-	-	Sidegradient (west) of southern exceedances.
	CEF-059-013-053	48 to 53	x	-	-	-	-	-	
	CEF-059-013-083	78 to 83	x	-	-	-	-	-	
014	CEF-059-014-053	47.8 to 52.8	x	-	-	-	-	-	Sidegradient (west) of Hangar 1845 area.
	CEF-059-014-083	78 to 83	x	-	-	-	-	-	
	CEF-059-014-120 (TOR)	115.5 to 120.5	x	-	-	-	-	-	
015	CEF-059-015-028	23 to 28	x	-	-	-	-	-	Sidegradient (west) of northern exceedances.
016	CEF-059-016-053	47.8 to 52.8	x	-	-	-	-	-	Sidegradient (west) of northern exceedances.
	CEF-059-016-083	78 to 83	x	-	-	-	-	-	
	CEF-059-016-119 (TOR)	114 to 119	x	-	-	-	-	-	
017	CEF-059-017-028	23 to 28	x	-	-	-	-	-	Just west of location 002, near northwestern corner of Building 324, to evaluate discrepancy between TCE in temporary and permanent wells in this area.
	CEF-059-017-053	48 to 53	x	-	-	-	-	-	
018	CEF-059-018-033	28 to 33	x	-	-	-	-	-	Installed near southeastern corner of Hangar 1845 to evaluate conditions downgradient of locations 004 and 005 and upgradient of location 006. Also to evaluate soil VOC detections during 1998 Golder investigation (SB-15).
	CEF-059-018-053	48 to 53	x	-	-	-	-	-	
	CEF-059-018-078	73.2 to 78.2	x	-	-	-	-	-	
	CEF-059-018-105 (TOR)	99.8 to 104.8	x	-	-	-	-	-	
019	CEF-059-019-032	27 to 32	x	-	-	-	-	-	Downgradient, clean wells, located southeast of location 007.
	CEF-059-019-053	47 to 51	x	-	-	-	-	-	
	CEF-059-019-078	73 to 78	x	-	-	-	-	-	
	CEF-059-019-106 (TOR)	101 to 106	x	-	-	-	-	-	
020	CEF-059-020-033	28 to 33	x	-	-	-	-	-	Sidegradient, clean wells, located southeast of location 011 and east of 007.
	CEF-059-020-053	48 to 53	x						
	CEF-059-020-078	73 to 78	x	-	-	-	-	-	
	CEF-059-020-099 (TOR)	94.5 to 99.5	x	-	-	-	-	-	
NG-02I	NG-02I	33 to 38	x	-	-	-	-	-	Existing well at which TCE was detected at 28.8 µg/L.

TABLE 2-2

MONITORING WELLS AND SAMPLING RATIONALE
OPERABLE UNIT 9, SITE 59
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

Well Location	Well ID	Screened Interval (feet bgs)	Analysis						Rationale and Comments
			V	S	M	P	NA	B	
Building 815 Wells									
	CEF-815-1S	4 to 14	x	x**	-	-	-	-	Building 815 petroleum plume source area well
	CEF-815-3S	3 to 13	x	x**	-	-	-	-	Building 815 petroleum plume source area well. Could not be sampled during RI - covered by asphalt.
	CEF-815-4S	4 to 14	x	x**	-	-	-	-	Building 815 well with previous vinyl chloride exceedance. Could not be sampled during RI - covered by concrete.
	NG-12S	4 to 14	x	x**	-	-	-	-	Building 815 petroleum plume source area well
	NG-14S	4 to 14	x	x**	-	-	-	-	Building 815 perimeter well. Could not be sampled during RI - covered by concrete.
	NG-26S	4 to 14	x	x**	-	-	-	-	Building 815 perimeter well

bgs = Below ground surface.
V = Analyzed for volatile organic compounds via Method SW-846 8260B.
S = Analyzed for semivolatile organic compounds via Method SW-846 8270C.
M = Analyzed for metals via Method SW-846 6010B.
P = Analyzed for polychlorinated biphenyls (PCBs) via Method SW-846 8082.
NA = Analyzed for field and fixed-base natural attenuation parameters.
B = Bacterial analyses for bioaugmentation evaluation.
*TOR = Top-of-rock wells are screened at the bottom of surficial aquifer.
** Building 815 wells sampled for naphthalene only by Method SW-846 8270C.
Bedrock well was installed in the first water-bearing zone at the location of the maximum TCE concentration in a TOR well.

3.0 GENERAL DATA EVALUATION PROCEDURES

3.1 DATA QUALITY

Various data QA/QC measures were implemented during the field investigations performed at Site 59. These quality measures were conducted to ensure that the resultant data were suitable for their intended uses (i.e., nature and extent determination, risk assessment, etc.). A brief summary of these measures is provided in this report. Section 3.1.1 contains a summary of the data quality objectives (DQOs). Field QC samples are discussed in Section 3.1.2. A summary of the data validation procedures and the results of the data validation process are included in Section 3.1.3.

3.1.1 Data Quality Objectives

DQOs established for this project considered existing site information and data, identification of the problem, development of a strategic site plan, specification of control and monitoring criteria, and an evaluation of the data collected during the investigation to determine the nature and extent of contamination.

The data obtained during the investigation were evaluated and used to satisfy and support the DQOs. As part of the evaluation process, and in order to provide data of satisfactory quality, all field and laboratory analyses include requirements for precision, accuracy, and completeness. These parameters are briefly summarized in this section.

3.1.1.1 Precision

Precision characterizes the amount of variability and bias inherent in a data set. This parameter also describes the reproducibility of measurements of the same parameters for samples under similar conditions. Precision is expressed as a relative percent difference (RPD), which is defined as the relation of the range relative to the mean RPDs. RPDs, which are typically expressed as percentages, are used to evaluate laboratory duplicate precision and are calculated as follows:

$$RPD = \frac{|V1 - V2|}{(V1 + V2)/2} \times 100$$

where RPD = relative percent difference

V1, V2 = two results obtained by analyzing duplicate samples

The precision objectives for parameters are specified in the associated analytical protocols. A general precision objective of ±30 percent for aqueous matrices was employed for this project.

Field duplicates monitor the consistency with which environmental samples were obtained and analyzed. RPDs were calculated for each set of field and laboratory duplicates generated for the investigation.

During the Site 59 RI, seven field duplicate pairs were collected. The total number of samples collected was 62; therefore, the 10 percent frequency criterion was met.

3.1.1.2 Accuracy

The degree of accuracy of a measurement, which is expressed as a percent recovery (%R), is based on a comparison of the measured value with an accepted reference or true value. Accuracy measurements are determined by the analysis of "spiked" samples (i.e., blank, surrogate, or matrix spikes). These analyses measure the accuracy of the laboratory operations as affected by the sample matrix. %R is calculated using the following equation:

$$\%R = \frac{Ss - So}{S} \times 100$$

where	%R	=	percent recovery
	Ss	=	result of spiked sample
	So	=	result of non-spiked sample
	S	=	concentration of spiked amount

In general, a %R range of 75 to 125 defines the accuracy objective for the analytical data. It should be noted however that the analytical laboratory details analyte-specific %R values. All accuracy objectives were met; therefore, no qualifiers were assigned for failure to meet the accuracy objectives (per data validation protocols) of the associated analytical data.

3.1.1.3 Completeness

Completeness is a measure of the amount of valid data obtained from the laboratory analyses in relation to the total amount of data collected. Completeness is typically expressed as a percentage and is determined using the following equation:

$$\%C = \frac{V}{T} \times 100$$

where %C = percent completeness
V = number of results determined to be valid
T = total number of results

Under ideal conditions, the completeness objective would be 100 percent. However, samples can be rendered unusable during shipping and preparation (e.g., bottles broken or extracts accidentally destroyed) or analysis (e.g., loss of instrument sensitivity, strong matrix effects). Because no chemical analytical results were qualified as unusable during the Site 59 RI, the calculated percent completeness for all chemical analytical data collected during the field investigation is 100 percent, indicating that the data completeness objective for the project was achieved.

3.1.2 Field Quality Control Samples

At Site 59, the following seven field duplicate pairs were collected in support of the groundwater sampling effort:

- CEF-059-004-053 / DU01
- CEF-059-005-053 / DU02
- CEF-059-006-104 / DU03
- CEF-059- 008-028 / DU04
- CEF-059-004-033 / DU05
- CEF-059-006-078 / DU06
- CEF-059-018-033 / DU07

All duplicate samples were analyzed for VOCs, and samples CEF-059-DU01 and DU02 was also analyzed for natural attenuation parameters. Field duplicate imprecision (RPD greater than 30 percent) was noted for methane analysis of sample pair CEF-059-004-053/CEF-059-DU01, and positive results were qualified as estimated.

Trip blanks and rinse blanks were not collected as part of the environmental sampling program as agreed to by the BCT for all investigations at NAS Cecil Field.

3.1.3 Data Validation

All samples were subjected to a limited data validation. Data validation is an objective systematic process in which analytical data are reviewed to ascertain the validity of the reported results and to identify for the data user the possible limitation of these results. The limited data validation review

consisted of an evaluation of the data to eliminate false positives and to preclude false negatives. The limited data validation review evaluated environmental samples for data completeness, holding time compliance, calibration compliance, and laboratory blank contamination. The limited data validation review was primarily limited to the aforementioned criteria; however, if non-compliances compromising false negatives or false positives were noted, the reviewer took appropriate action to qualify the data. This section summarizes the various aspects of the data validation process.

3.1.3.1 General Data Validation Procedures

Validation of data generated for samples collected during the field effort was completed in accordance with the procedures outlined in Navy guidance (Sampling and Chemical Analysis Quality Assurance Requirements for the Navy Installation Restoration Program, NFESC 20.2-047B). A limited data validation was performed for all samples analyzed via SW-846 methods. Data were validated in accordance with the U.S. EPA Contract Laboratory Program National Functional Guidelines for Organic and Inorganic Data Review.

The limited data validation process included consideration of the following: data completeness, holding time compliance, calibration compliance, laboratory-generated blanks, and detection limits.

Data completeness considered a review and evaluation of the hardcopy data deliverables and the electronic data files received from the analytical laboratory. All hard-copy analytical results and electronic data were reviewed for accuracy.

An evaluation of holding time compliance was performed on all environmental samples. All environmental soil samples met holding time requirements.

Calibration standards were evaluated to assess compliance with the analytical method. An evaluation of the calibration standards aided in the elimination of false negatives. An assessment of calibration non-compliance also was used to qualify positive and non-detected results.

Evaluation of laboratory blank analyses aided in the elimination of false positive results. Laboratory artifacts and contaminants present in method blanks were used to establish action levels and were correlated to associated environmental samples. Positive results in environmental samples less than the established blank action level for an associated group of environmental samples were considered false positives.

The overall determination of data utility or reliability was based upon laboratory compliance with specified methods and adherence to QC requirements. Non-compliances observed during the validation process

typically resulted in the qualification of the associated analytical data. The qualifiers alert the data user to imprecise or estimated results and, in the worst case, unreliable and unusable data.

The net results of the validation process were summarized in sample delivery group (SDG)-specific technical reports consisting of a memorandum, a section of qualified analytical results, and a supporting documentation section that provided the rationale for changes and/or qualification of the data. These memoranda provide a detailed explanation of the results of the data validation review and are provided in Appendix D of this report.

3.1.3.2 Data Validation Qualifiers

As mentioned previously, the qualification of analytical data during the validation process (i.e., application of U, J, UJ, UR, and R qualifiers) was conducted as required by the U.S. EPA Functional Guidelines. The attachment of the data qualifiers to analytical results signifies the occurrence of QC non-compliances that were noted during the course of data validation. The various data qualifiers are defined as follows:

U - Indicates that the chemical was not detected at the numerical detection limit (sample-specific quantitation limit) noted. Non-detected results from the laboratory are reported in this manner. This qualifier is also added to a positive result (reported by the laboratory) if the detected concentration is determined to be attributable to contamination introduced during field sampling or laboratory analysis.

UJ - Indicates that the chemical was not detected. However, the detection limit (sample-specific quantitation limit) is considered to be estimated based on problems encountered during laboratory analysis. The associated numerical detection limit is regarded as inaccurate or imprecise.

J - Indicates that the chemical was detected. However, the associated numerical result is not a precise representation of the amount that is actually present in the sample. The laboratory-reported concentration is considered to be an estimate of the true concentration.

I - Indicates that the reported value is between the laboratory method detection limit (MDL) and the laboratory practical quantitation limit (PQL).

UR - Indicates that the chemical may or may not be present. The non-detected analytical result reported by the laboratory is considered to be unreliable and unusable. This qualifier is applied in cases of gross technical deficiencies (i.e., holding times missed by a factor of two times the specified time limit, severe calibration non-compliances, and extremely low quality control recoveries).

R - Indicates that the chemical may or may not be present. The positive analytical result reported by the laboratory is considered to be unreliable and unusable. This qualifier is applied in cases of gross technical deficiencies.

The preceding data qualifiers may be categorized as indicative of major or minor problems. Major problems are defined as issues that result in the rejection of data, qualified with UR and R data validation qualifiers. These data are considered invalid and are not used for risk assessment and decision-making purposes. Minor problems are defined as issues resulting in the estimation of data, qualified with U, J, and UJ data validation qualifiers. Estimated analytical results are considered to be suitable for risk assessment and decision-making purposes.

3.1.3.3 Summary of Data Validation Results

Analytes detected in laboratory blanks associated with samples from Site 59 included methylene chloride and several inorganics including aluminum, arsenic, calcium, chromium, copper, iron, lead, selenium, sodium, thallium, vanadium, and zinc. Positive results for the aforementioned analytes, at concentrations less than the established action level established for each SDG, were considered to be false positives.

In general, analytical results for some analytes were qualified as estimated (J for positive results and UJ for non-detected results) for observed non-compliances with holding times and field duplicate imprecision. Positive results reported at concentrations greater than the MDL but less than the reporting limit (RL) were also qualified as estimated because of potential uncertainty near the detection limit. The positive methylene chloride result for one sample was qualified as estimated (J), although methylene chloride was not detected in the associated laboratory blank, because the positive result was assumed to be due to laboratory contamination. Positive results for acetone in four other samples were qualified as estimated (J), although acetone was not detected in the associated laboratory blank, because the positive result was assumed to be due to laboratory contamination. Other single, low-level detections of common laboratory contaminants such as acetone, bromodichloromethane, carbon disulfide, chloroform, chloromethane, and methylene chloride were assumed to be due to laboratory contamination, although the results were not qualified as such. Calibration verification for several parameters in three SDGs failed to meet QC criteria, but no data qualifiers were required.

3.2 HUMAN HEALTH RISK ASSESSMENT PROCEDURES

The objective of a human health risk assessment is to characterize the risks associated with potential exposures to site-related constituents. For Site 59 at NAS Cecil Field, the human health risk assessment for groundwater was conducted as a PRE (see Section 7.0). The human health PRE is a screening-level evaluation of potential risks from site constituents to human receptors at the site. Although a site may

have numerous hypothetical receptors, it is common to use the most sensitive human receptor for risk calculations as a site-screening tool. At Site 59, the focus of the investigation was on groundwater; therefore, for groundwater, the residential receptor was used to evaluate potential risks at the site.

3.2.1 Data Evaluation

Groundwater screening values are taken from U.S. EPA's Current Drinking Water Standards (U.S. EPA, 2002) and FDEP GCTLs (FDEP, 2005) as provided in Florida Administrative Code (FAC) 62-777. These criteria meet or are more restrictive than U.S. EPA federal Maximum Contaminant Levels (MCLs). Selection of the appropriate FDEP GCTL is contingent on the yield and water quality of the aquifer. The aquifer being investigated at Site 59 is regarded as being of sufficient yield and quality; therefore, the groundwater criteria for sufficient-yield aquifers were used in the PRE.

The documents described above contain both primary drinking water standards that are mostly human health-based and secondary standards that are established for potability or aesthetic reasons. Risk-based drinking water standards were also developed for those compounds with standards that are not health based. These were developed in accordance with the protocol set forth in FAC 62-777. These values are presented in the human health PRE. Data were also compared to U.S. EPA Region 9 Preliminary Remediation Goals (PRGs) (U.S. EPA, 2004). These four sets of values are presented in the human health PRE.

Analytes detected in groundwater in at least one sample at concentrations greater than their respective groundwater screening values are further evaluated in the human health PRE.

3.2.2 Toxicity Screening

The human health PRE for groundwater was conducted in two steps. First, all analytes detected in at least one groundwater sample were compared to the medium-specific screening values described above. All analytes detected at concentrations less than these screening values were dropped from further consideration. Analytes detected in at least one sample at a concentration greater than the medium-specific screening values were further evaluated. The PRE was conducted by simply generating a ratio between the maximum detected analyte concentration and the appropriate screening value.

For groundwater, a ratio greater than 1 based on a comparison to a primary health-based drinking water standard suggests a potential risk to human health. It is inappropriate to use secondary drinking water standards to calculate a health-based risk ratio because these standards are based on the aesthetic qualities of water. However, this ratio may serve as a useful risk management tool. To determine potential health risk from these constituents, comparisons were made to U.S. EPA Region 9 PRGs.

3.3 ECOLOGICAL RISK ASSESSMENT PROCEDURES

The assessment of the impacts of site contamination on ecological receptors followed the general approach recommended in the most recent U.S. EPA guidance for performing ecological risk assessments (U.S. EPA, 1997 and 2000) and was conducted in accordance with Navy policy (Department of the Navy, 1999). The ecological risk assessment for Site 59 is presented in Section 8.0.

An ecological risk assessment starts with preliminary problem formulation. This first phase of an ecological risk assessment includes general descriptions of the site, with emphasis on the habitats and ecological receptors that are present. This phase also involves characterization of contaminant sources and migration pathways and evaluation of routes of contaminant exposure.

For Site 59, no complete pathways were identified, so no additional steps in the assessment were required.

3.4 FLORIDA STANDARDS

Analytical data were compared to FDEP GCTLs, which meet or exceed MCLs. These criteria were originally contained in FAC 62-785. The criteria, now in FAC 62-777, were finalized in August 1999 and revised in April 2005. FAC 62-777 cites FAC 62-550 for primary and secondary standards. The results of the comparisons will serve as the initial step toward determining compliance with State standards. These comparisons to criteria are provided in Section 5.0, Nature and Extent of Contamination.

For water, there are four sets of criteria to consider: Groundwater Criteria, Freshwater Surface Water Criteria, Marine Surface Water Criteria, and Groundwater of Low Yield/Poor Quality. For each contaminant, the Groundwater Criterion must be considered. The Low Yield/Poor Quality Criteria were not considered because groundwater at Site 59 does not does not meet the requirements of the category covered by these criteria.

4.0 PHYSICAL CHARACTERISTICS OF THE STUDY AREA

4.1 SURFACE FEATURES

Site 59 is essentially flat with very little change in elevation. Elevations range from approximately 75 feet above mean sea level (amsl) in the southeastern portion of the site to approximately 79 feet amsl in the northwestern portion of the site.

Grassy and wooded areas surround Building 324 north of Loop Road, a wooded area is located southeast of the intersection of Flightline Road and Loop Road, and grassy areas surround Building 334 and 339 and extend between a parking lot along Flightline Road and Hangar 1845. The areas around Building 818 and south of Hangar 1845 are paved, and the concrete flight apron covers the portion of the site east of Hangar 1845 (see Figure 1-2).

4.2 SURFACE HYDROLOGY/STORM SEWERS

Surface water runoff in the Site 59 area is collected by the storm sewer system. Grass-lined drainage ditches receive runoff along Loop Road near Building 324. Runoff from other areas of the site is generally collected by below-ground storm sewer pipes that discharge to a flightline outfall on the eastern side of the north-south runways. A stormwater retention pond located in the southwestern portion of the site, southwest of Hangar 1846, was investigated as PSC 56. The pond received discharges from floor drains in Hangar 1845 and from a nearby oil/water separator. No further action was recommended based on the results of the PSC investigation of the stormwater pond (TtNUS, 2001).

4.3 SOILS

Soils in the NAS Cecil Field area are generally sandy, moderately well drained to very poorly drained, and nearly level to gently sloping soils occurring in broad flatwoods areas (USDA, 1978). The western portion of the facility has Leon-Ridgeland-Wesconnett soils, and the eastern portion has Pelham-Mascotte-Sapelo soils. Leon-Ridgeland-Wesconnett soils consist of 30 percent soils of the Leon Series, 14 percent of the Ridgeland Series, and 12 percent of the Wesconnett Series. Pelham-Mascotte-Sapelo soils consist of 25 percent Pelham, 15 percent Mascotte, and 12 percent Sapelo soils. Remaining soils in both units consist of minor amounts of other soil types.

Soils of the Leon Series, formed in thick beds of marine sediments, have a typical surface layer including 5 inches of very dark gray fine sand and 3 inches of dark gray fine sand. The subsurface layer consists of dark-colored, weakly cemented, fine sand from approximately 8 to 18 inches bgs, black fine sand from 18 to 26 inches bgs, very dark grey fine sand from 27 to 36 bgs, and dark brown fine sand from 37 to

45 inches bgs. From 45 to 80 inches or more, typical Leon Series soils have another layer of dark-colored, weakly cemented, fine sand. The Ridgeland Series consists of a typical surface layer of approximately 6 inches of very dark gray fine sand underlain by 10 inches of dark, weakly cemented fine sand. Below this is very pale brown fine sand from 16 to 31 inches bgs and then another layer of dark-colored, weakly cemented fine sand from 31 to 80 inches bgs. Wesconnett soils formed in thick marine deposits and occur in shallow depressions and drainageways. They typically have an approximately 2-inch surface layer of black fine sand, then dark, weakly cemented fine sand to 32 inches bgs, a pale brown fine sand layer from 32 to 44 inches bgs underlain by dark-colored, weakly cemented fine sand to depths of 80 inches bgs or more.

Pelham soils formed in marine deposits of sandy and loamy sediments. Typically, these soils have a surface layer consisting of very dark gray loamy fine sand and a subsurface layer consisting of light gray fine sand. The subsoil consists of light brownish-gray fine sandy loam and sandy clay loam from approximately 21 to 69 inches or more bgs. Mascotte soils, also formed in marine deposits of sandy and loamy sediments, typically have a surface layer of black fine sand and a subsurface layer of gray and light brownish-gray fine sand. A layer of black, weakly cemented loamy fine sand occurs from approximately 15 to 24 inches bgs, and a layer of sandy clay loam extends beneath this to a depth of approximately 58 inches. Gray fine sand extends from 58 inches bgs to depths of 80 inches or more. The Sapelo Series, formed in thick deposits of loamy marine sediments, has a typical surface layer of black fine sand to 3 inches bgs, dark gray fine sand to 6 inches bgs, and a subsurface layer of light brownish-gray fine sand to 23 inches bgs. This is underlain by a dark-colored weakly cemented sandy layer from 23 to 56 inches bgs and a gray loamy subsoil to depths of 80 inches or more.

Soils at Site 59 and the surrounding areas are classified as Boulogne, Arents, Sapelo, and urban land. Within the Site 59 area, Arents soils generally occur around Hangar 1845, Boulogne soils occur generally south of Loop Road and east of Flightline Road, Sapelo soils generally occur around Building 324, and urban land soils occur slightly south of Hangar 1845.

Arents soils are described as nearly level, poorly drained soils that have been reworked by man-made, earth-moving activities. These soils typically consist of mixed soil material, generally dominated by sands, without an orderly sequence of horizons. Arents materials include light gray, grayish brown, very pale brown, yellow, black, dark reddish brown, strong brown, and red fine-grained sand, sandy loam, and sandy clay loam (ABB-ES, 1996). Boulogne fine sands are nearly level, poorly drained soils that are located in flatwoods and formed in thick sandy marine sediments. The surface layer is very dark gray fine sand approximately 6 inches thick. The upper 10 inches of subsoil consists of dark organic-stained, brown fine sand that is coated with organic matter. The next 15 inches is very pale brown fine sand. The

lower part of the subsoil, to a depth of 80 inches, is dark organic-stained fine sand coated with organic matter, colored reddish brown to 39 inches and black below this depth (USDA, 1998).

Sapelo fine sand is a nearly level, poorly drained soil in broad flatwood areas. Typically, the surface layer is black and dark gray fine sand approximately 6 inches thick. The subsurface layer extends to 23 inches bgs and consists of light brownish gray fine sand. Below this is a layer of very pale brown sand that extends to approximately 56 inches bgs. The lower part of the subsoil, to depths of 80 inches or more, is gray. Urban land soils occur in areas that are 85 percent or more covered by streets, buildings, parking lots, and other man-made structures (ABB-ES, 1996).

4.4 GEOLOGY

4.4.1 Physiography

White (1970) divided the State of Florida into three major physiographic regions: the Northern Zone, the Central Zone, and the Southern Zone. NAS Cecil Field is located within a broad, continuous highland of the Northern Zone called the Duval Upland. The Duval Upland is an irregular flat plain consisting of a series of marine terraces of Pleistocene age. During the Pleistocene, a series of drops in sea level resulted in the formation of ancient shorelines or “scarps” and ancient “terraces” (Cooke, 1945). The eastern boundary off the Duval Upland is at approximately 25 feet amsl; the scarp forming the western boundary of this feature is at approximately 100 feet amsl.

Eight marine terraces have been identified in northeastern Florida, and seven of those terraces have been identified in Duval County (Fairchild, 1972). In order of ascending age, the terraces are called Coharie, Sunderland, Wicomico, Penholoway, Talbot, Pamlico, and Silver Bluff. The Wicomico, Penholoway, and Talbot terraces occur between 25 and 100 feet amsl. As previously described, those elevations set the boundaries for the Duval Upland. NAS Cecil Field is located on remnants of the Wicomico and Penholoway terraces.

4.4.2 Regional Geology

The basement rocks of North Florida are Jurassic age and earlier and consist principally of tholeiitic basalts and diabases (Heatherington and Mueller, 1997). A significant structural low called the Jacksonville Basin formed during the Paleocene or Eocene beneath the area now known as Duval County (Goodell and Yon, 1960). The late Mesozoic and early Paleogene were periods of carbonate deposition intersected by evaporite sediments that formed the sub-Floridan confining unit. North Florida’s Paleogene geologic history is principally one of marine carbonate deposition that gave rise to an extensive aquifer system called the Floridan aquifer system (Scott, 1992). These carbonates remained

relatively pure without a siliciclastic sediment supply due to the presence of the Gulf Trough (Suwannee Straits). However, in the late Oligocene to early Miocene, the Appalachian mountain range experienced renewed uplift and erosion resulting in a flood of siliciclastics (sands and clays) that filled the Straits (and the Jacksonville Basin) and covered the carbonate platform of Florida. Though there was initial mixing of the carbonates and siliciclastics, the Miocene age sediments were principally sands and clays that formed an effective aquitard called the Hawthorn Group (Scott, 1988). The thickness of the Hawthorn Group sediments, ranging from 250 feet in southern Duval County to about 500 feet in north-central Duval County (Leve, 1965), is a result of the filling of the Jacksonville Basin. The sediments of the Hawthorn Group are principally identifiable by the occurrence of phosphate, as well as a mixture of carbonates and siliciclastics (Scott, 1988). The sediments overlying the Hawthorn consist of siliciclastics (mostly sands), without phosphates and carbonates, deposited during Pleistocene and Holocene times.

4.4.3 Site Geology

The majority of surficial sediments encountered during drilling at the site included fine to very fine sands with varying minor amounts of silt. Isolated, discontinuous, relatively thin clay layers (less than 5 feet, usually less than 1 or 2 feet) were encountered within the top 40 feet. Starting at approximately 90 feet bgs, but deeper at some locations, the clay content increased significantly. In the approximately 20 to 30 feet above bedrock, sandy clay and clayey sand layers of varying thicknesses and generally localized extent were interspersed with sand. A cross section based on the geologic data collected during the RI is presented as Figure 4-1.

As described in Section 2.2.1, Shelby tube samples were collected from 30 and 80 feet bgs at location 001, 117 feet bgs at location 002, 50 and 80 feet bgs at location 009, and 50 and 115 feet bgs at location 014. Geotechnical analyses performed on these samples included grain-size analysis, pH, bulk density, and specific gravity, and f_{oc}.

The sieve analyses indicated that the sample from 30-foot bgs interval was composed of 100 percent sand. The samples from the 50-foot bgs interval were composed of 99.4 and 100 percent sand. The samples from 80 feet bgs were composed of 84.1 and 100 percent sand, and the samples from the TOR interval were composed of 99.6 and 99.3 percent sand.

The specific gravities of Site 59 samples ranged from the 1.9 to 2.1, and the bulk densities ranged from 1.4 to 1.5 g/ml, which generally correspond with the overall composition (sand) and mineralogy (quartz) of the samples.

Appendix E contains the geotechnical laboratory data.

4.5 HYDROGEOLOGY

4.5.1 Regional Hydrogeology

Table 4-1 describes the local lithology and associated hydrogeologic units of southern Duval County and adjacent northern Clay County. The table was compiled from well log data from three wells within 10 miles of NAS Cecil Field (Johnson, 1986).

Three main hydrogeologic units underlie the site. These units, in ascending order, are the Floridan aquifer system, the intermediate aquifer system or confining unit, and the surficial aquifer system (Southeastern Geological Society, 1986).

4.5.1.1 Floridan Aquifer System

The Floridan aquifer system in Duval County consists of several units. These units, in ascending order, are the Oldsmar Limestone, Lake City Limestone, Avon Park Limestone, and Ocala Group. Because an effective aquitard is present above the Floridan, only the Ocala Group will be discussed. Several authors (Leve, 1965 and Scott, 1992) consider the lower basal deposits of the overlying Hawthorn Group, which are transmissive limestones and sands, as part of the Floridan aquifer system. The Ocala Group consists of massive, fossiliferous limestones of Eocene age. The top of the Floridan aquifer system is approximately 290 to 430 feet bgs in the vicinity of the site. The Ocala Group is about 520 feet thick (Leve, 1965). The Floridan aquifer system is under confined conditions and is the major source of public water supply in the area.

4.5.1.2 Intermediate Aquifer System or Confining Unit

Overlying the Ocala Group are the sediments of the Hawthorn Group that consist of interbedded phosphatic carbonates and siliciclastics (Scott, 1992). As presented on Table 4-1, the individual formations of the Hawthorn Group from oldest to youngest are the Coosawhatchie, Marks Head, and Penney Farms. These sediments are predominantly siliciclastic and typically have low permeabilities that restrict groundwater flow and form a confining unit. The top of the Hawthorn Group is approximately 40 to 100 feet bgs (Halford, 1998) at NAS Cecil Field. Limestone and dolomite units in the Hawthorn Group may act as isolated intermediate aquifers suitable for small domestic and irrigation wells.

4.5.1.3 Surficial Aquifer System

The surficial aquifer system consists of sandy (non-clayey to clayey) Pleistocene and Recent deposits and sandy, clayey shell beds and limestones of the upper part of the Hawthorn Group. Halford (1998) specifically subdivides these deposits into an upper surficial sand aquifer, a blue marl confining unit, and

an upper-rock aquifer. These deposits are generally 40 feet to 100 feet thick and are 85 feet to 100 feet thick in the Cecil Field area. They are susceptible to contamination because of their shallow depth.

4.5.2 Site Hydrogeology

4.5.2.1 General Description

Depth to groundwater in November 2004 and February 2005 ranged from approximately 6 to 8 feet bgs. In January 2006, depth to groundwater ranged from approximately 3 to 6 feet bgs. Figures 4-2 through 4-5 present potentiometric surface maps for Site 59. Figure 4-6 is a potentiometric surface map for the shallow surficial zone in the Building 815 Wash Rack Area.

4.5.2.2 Aquifer Characteristics

SPECAP tests were performed at wells CEF-059-001-028 and 001-083, CEF-059-009-053 and 009-083, and CEF-059-014-120 to determine each well's specific capacity, hydraulic conductivity, and transmissivity. The data were analyzed and values were estimated using a computerized technique from Bradbury and Rothschild (1985). The data and calculations are provided in Appendix C.

In the calculations, the storage coefficient (S) is the same as the specific yield (Sy) of the aquifer for unconfined aquifers. The storage coefficient was estimated to be 0.30 based on referenced information published by C.W. Fetter (1988) and by M. Kasenow and P. Pare (1995). According to Fetter (1988), the storage coefficient in unconfined aquifers ranges from 0.02 to 0.30.

In general, hydraulic conductivity (K) values for unconsolidated sediments like silty sands and fine sands range from 2.8×10^{-2} to 2.8 feet per day (Fetter, 1988). Halford (1998) estimates the horizontal hydraulic conductivity for NAS Cecil Field at 0.6 to 5 ft/day for the surficial aquifer. The calculated hydraulic conductivity values are as follows:

- CEF-059-001-028: K = 31.7 feet per day
- CEF-059-001-083: K = 42.9 feet per day
- CEF-059-009-053: K = 14.2 feet per day
- CEF-059-009-083: K = 32.1 feet per day

These are similar to Sites 36 and 37 hydraulic conductivity values, which ranged from 18 to 96 feet per day for wells screened between 35 and 85 feet bgs.

4.5.2.3 Groundwater Flow

The monitoring wells at Site 59 were surveyed to establish top of casing and ground elevations to the nearest 0.01 foot. All elevations are based on NAVD 1988. Table 4-2 presents groundwater level measurements and groundwater elevation data for Site 59.

The direction of groundwater flow in all aquifer zones at Site 59 is to the southeast, consistent with nearby sites such as Sites 36 and 37 (see Figures 4-2 through 4-5). The horizontal groundwater gradient in the 30-foot and 50-foot zones were both estimated to be 0.003; the gradient in the 70- to 80-foot zone was estimated to be 0.002. These values are within the range of gradients measured at Sites 36 and 37 (0.001 to 0.007).

The velocity of groundwater flow can be calculated from a modified form of Darcy's equation:

$$V_h = K_h \times i/n_e$$

Where:

V_h	=	horizontal velocity, feet per day
K_h	=	horizontal hydraulic conductivity, feet per day
i	=	hydraulic gradient, dimensionless
n_e	=	effective porosity, dimensionless (assumed at 0.30 for fine sands)

For Site 59, values used to calculate a range of groundwater velocities were as follows:

K_h	=	14.2 and 42.9 feet per day (minimum and maximum values)
i	=	0.0025 (average)
n_e	=	0.30

The resulting range of V_h values is 0.12 to 0.36 feet per day or 43.8 to 131 feet per year.

4.6 FDEP GROUNDWATER CLASSIFICATION

According to FAC 62-520.410 (Classification of Ground Water, Usage, Reclassification), the surficial aquifer system in northeastern Florida comes under the classification of G-II. The code's definition of G-II is as follows: "Potable water use, ground water in aquifers which has a total dissolved solids content of less than 10,000 mg/L, unless otherwise classified by the Commission." The total dissolved solids levels of the surficial aquifer system in the area of NAS Cecil Field have been shown by Fairchild (1972) to be

between 146 and 309 mg/L. Also, Leve (1965) has indicated that the surficial aquifer system is suitable for domestic use.

4.7 FUTURE LAND USE

According to the plans made by the City of Jacksonville, the anticipated future land use for the areas around Site 59 includes aviation-related industrial and commercial activities.

TABLE 4-1

REGIONAL HYDROSTRATIGRAPHY
OPERABLE UNIT 9, SITE 59
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

System	Series	Stratigraphic Unit	Depth to Top of Unit (feet bgs)	Thickness of Unit (feet)	General Lithology	Hydrogeologic Unit	Aquifer Use
Quarternary	Holocene	Undifferentiated	0	40 to 70	Quartz sand, fine- to medium-grained, unconsolidated to poorly indurated, nonclayey to clayey, trace heavy minerals, sandy, clayey shell bed and limestone at base, fossiliferous.	Surficial Aquifer System	Lawn irrigation, stock, and domestic use.
	Pleistocene						
Tertiary	Miocene	Hawthorn Group	40 to 70	252 to 370	Interbedded sand, clay, limestone and dolomite. Also contains phosphate and mollusk molds.	Intermediate Aquifer System or Confining Unit. As a whole, this unit acts as a confining unit. Limestone and dolomite units within the Hawthorn Group may act as small intermediate aquifers.	Small domestic and irrigation wells.
		Coosawhatchie Formation	40 to 70	102 to 119			
		Marks Head Formation	142 to 180	56 to 101			
		Penney Farms Formation	224 to 280	68 to 150			
	Eocene	Ocala Group	292 to 430	110 to 520*	Limestone, white to light gray, grainstone to wackestone, fossiliferous, Bryozoan facies, moderately recrystallized.	Floridan Aquifer System. The top of the aquifer may be present in basal limestone and sand units of the Hawthorn Group.	Public and domestic supply wells and industrial uses.

Compiled from lithologic logs of Florida Geological Survey wells W-14179, W-14193, and W-14219 (Johnson, 1986).
Some terminology from Scott (1992) and Southeastern Geological Society (1986).
bgs = Below ground surface.
* Thickness of Ocala Group taken from Leve (1965).

TABLE 4-2

WATER LEVELS AND POTENTIOMETRIC SURFACE ELEVATION DATA
OPERABLE UNIT 9, SITE 59, BUILDINGS 324/1845 AREA
REMEDIAL INVESTIGATION
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

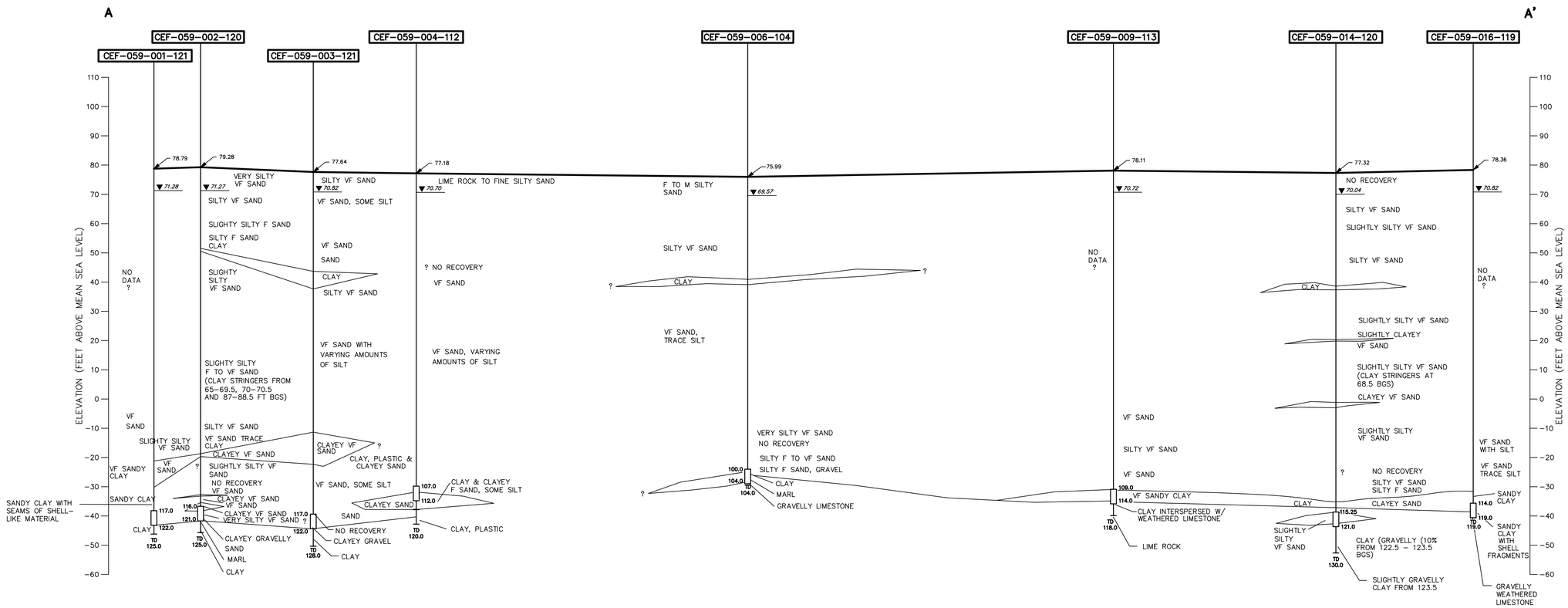
Well Location	Well ID	Top of Casing Elevation (in feet amsl)	Depth to Water (in feet below T.O.C.)	Elevation (in feet amsl)	Depth to Water (in feet below T.O.C.)	Elevation (in feet amsl)
			Feb-05		Jan-06*	
Site 59 Wells						
001	CEF-059-001-028	78.71	6.30	72.41	3.93	74.78
	CEF-059-001-053	78.95	6.68	72.27	5.48	73.47
	CEF-059-001-083	78.42	6.91	71.51	4.95	73.47
	CEF-059-001-121	78.72	7.44	71.28	3.57	75.15
002	CEF-059-002-028	79.13	6.93	72.20	4.13	75.00
	CEF-059-002-053	79.20	7.06	72.14	4.40	74.80
	CEF-059-002-120	79.25	7.98	71.27	5.99	73.26
003	CEF-059-003-035	77.49	5.70	71.79	3.04	74.45
	CEF-059-003-053	77.44	5.81	71.63	3.37	74.07
	CEF-059-003-073	77.42	6.12	71.30	3.91	73.51
	CEF-059-003-121	77.63	6.81	70.82	4.71	72.92
004	CEF-059-004-033	76.90	NM	-	2.92	73.98
	CEF-059-004-053	77.03	5.99	71.04	3.76	73.27
	CEF-059-004-073	77.04	6.21	70.83	4.06	72.98
	CEF-059-004-112	76.86	6.16	70.70	4.09	72.77
	CEF-059-004-135	NA	NM	-	5.70	-
005	CEF-059-005-033	77.35	6.75	70.60	4.77	72.58
	CEF-059-005-053	77.60	7.01	70.59	5.01	72.59
	CEF-059-005-073	77.44	7.00	70.44	5.00	72.44
006	NG-12I	76.01	6.05	69.96	4.45	71.56
	NG-12D	76.04	6.09	69.95	4.49	71.55
	CEF-059-006-078	75.65	NM	-	4.29	71.36
	CEF-059-006-104	75.78	6.21	69.57	4.40	71.38
007	CEF-059-007-053	75.44	NM	-	4.66	70.78
	CEF-059-007-078	75.62	NM	-	4.73	70.89
008	CEF-059-008-028	79.03	6.94	72.09	4.17	74.86
009	CEF-059-009-053	77.84	6.59	71.25	4.30	73.54
	CEF-059-009-083	77.88	7.01	70.87	4.95	72.93
	CEF-059-009-113	77.85	7.13	70.72	5.11	72.74
010	CEF-059-010-053	76.53	5.91	70.62	3.94	72.59
	CEF-059-010-083	76.57	6.19	70.38	4.22	72.35
011	CEF-059-011-033	75.70	6.09	69.61	4.48	71.22
	CEF-059-011-053	75.53	5.90	69.63	4.31	71.22
	CEF-059-011-083	75.43	5.89	69.54	4.18	71.25

TABLE 4-2

WATER LEVELS AND POTENTIOMETRIC SURFACE ELEVATION DATA
OPERABLE UNIT 9, SITE 59, BUILDINGS 324/1845 AREA
REMEDIAL INVESTIGATION
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

Well Location	Well ID	Top of Casing Elevation (in feet amsl)	Depth to Water (in feet below T.O.C.)	Elevation (in feet amsl)	Depth to Water (in feet below T.O.C.)	Elevation (in feet amsl)
			Feb-05		Jan-06*	
Site 59 Wells (continued)						
012	CEF-059-012-053	75.69	NM	-	4.36	71.33
013	CEF-059-013-032	76.55	6.64	69.91	4.83	71.72
	CEF-059-013-053	76.47	6.54	69.93	4.70	71.77
	CEF-059-013-083	76.59	6.69	69.9	4.72	71.87
014	CEF-059-014-053	76.92	6.26	70.66	4.09	72.83
	CEF-059-014-083	77.05	6.45	70.6	4.42	72.63
	CEF-059-014-120	77.11	7.07	70.04	4.98	72.13
015	CEF-059-015-028	77.86	5.74	72.12	3.07	74.79
016	CEF-059-016-053	78.06	6.71	71.35	4.37	73.69
	CEF-059-016-083	78.03	7.12	70.91	5.06	72.97
	CEF-059-016-119	78.22	7.40	70.82	5.35	72.87
017	CEF-059-017-028	NA	NM	-	4.13	-
	CEF-059-017-053	NA	NM	-	4.26	-
018	CEF-059-018-033	76.82	NM	-	4.88	71.94
	CEF-059-018-053	76.79	NM	-	4.95	71.84
	CEF-059-018-078	75.92	NM	-	4.33	71.59
	CEF-059-018-105	76.15	NM	-	4.42	71.73
019	CEF-059-019-032	74.37	NM	-	4.90	69.47
	CEF-059-019-051	74.49	NM	-	4.39	70.10
	CEF-059-019-078	74.54	NM	-	4.19	70.35
	CEF-059-019-106	74.58	NM	-	3.98	70.60
020	CEF-059-020-033	76.50	NM	-	6.34	70.16
	CEF-059-020-053	76.49	NM	-	5.88	70.61
	CEF-059-020-078	76.83	NM	-	6.11	70.72
	CEF-059-020-099	76.81	NM	-	5.89	70.92
NG-02I	NG-02I	76.72	6.44	70.28	4.65	72.07
Building 815 Wells						
CEF-815-1S		70.12	NM	-	4.74	65.38
CEF-815-2S		70.06	NM	-	4.52	65.54
CEF-815-3S		70.39	NM	-	4.23	66.16
NG-2S		70.45	NM	-	4.96	65.49
NG-12S		69.97	NM	-	4.74	65.23
NG-13S		70.33	NM	-	4.73	65.60

* Site 59 water levels were measured on January 5, 2006; Building 815 water levels were measured on January 13, 2006.
Elevation is referenced to 1988 National American Vertical Datum (NAVD).
bgs = Below ground surface.
amsl = Above mean sea level.
NA = Not available.
NM = Not measured.



LEGEND:

MONITORING WELL OR BORING NUMBER — CEF-059-009-113

GROUND SURFACE ELEVATION — 78.11

GROUND SURFACE

GROUNDWATER ELEVATION

TOP OF MONITORED INTERVAL (FT BGS) — 109.00

LITHOLOGIC CONTACT (INFERRED BETWEEN BORINGS)

BOTTOM OF MONITORED INTERVAL (FT BGS) — 114.0

TOTAL DEPTH OF WELL OR BORING (FT BGS) — TD=118.0

VF - VERY FINE
F- FINE
M - MEDIUM
FT BGS - FEET BELOW GROUND SURFACE

0 100 200
HORIZONTAL SCALE IN FEET

0 20 40
VERTICAL SCALE IN FEET

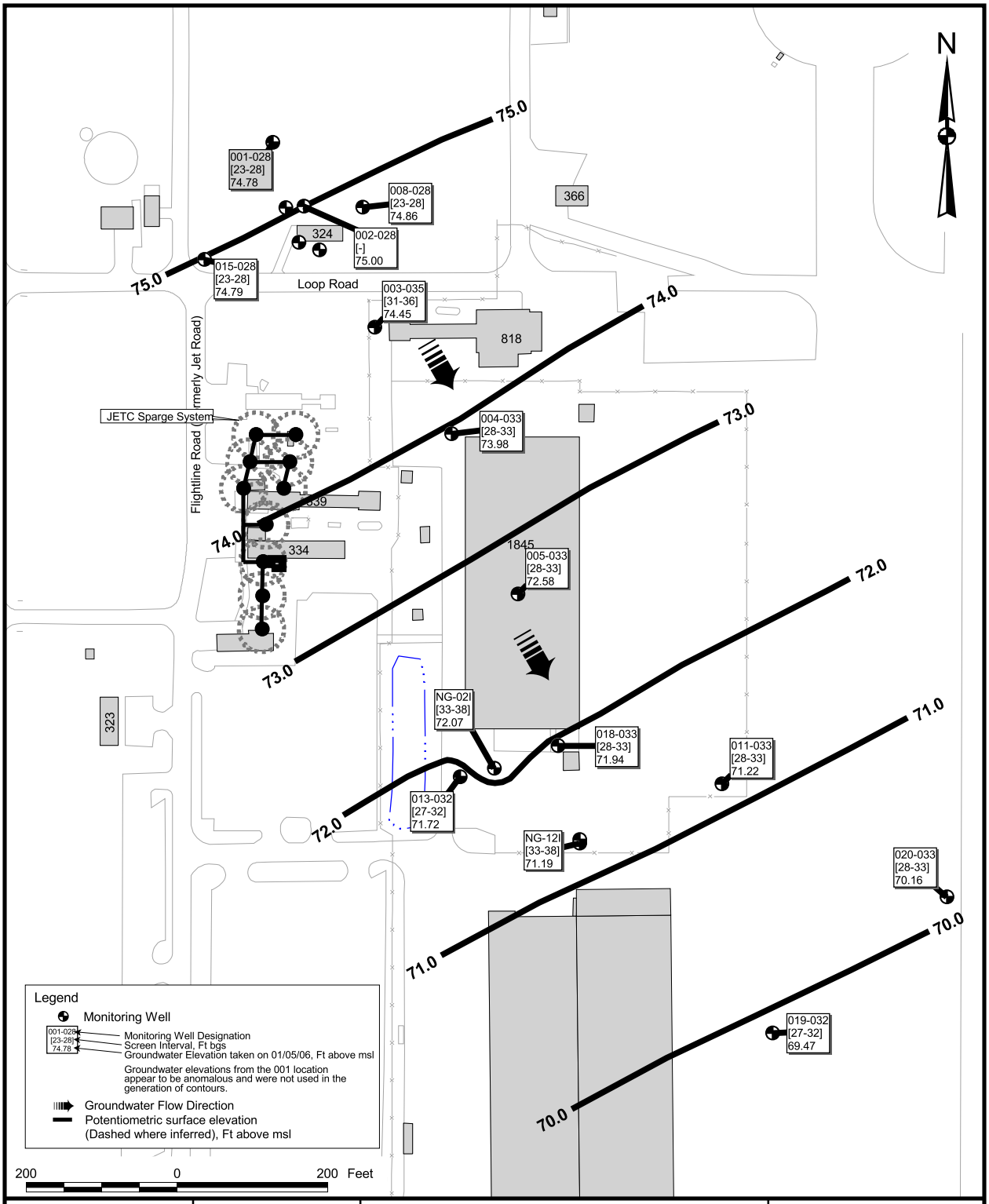
DRAWN BY DM	DATE 6/15/05	Tetra Tech NUS, Inc.	GENERALIZED GEOLOGIC CROSS SECTION OPERABLE UNIT 9, SITE 59 NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA
CHECKED BY	DATE		
REVISED BY	DATE		
SCALE AS NOTED			

CONTRACT NO. 8925	
OWNER NO. 0000	
APPROVED BY	DATE
DRAWING NO. FIGURE 4-1	REV. 0

DRAWING NO. FIGURE 4-1 REV. 0

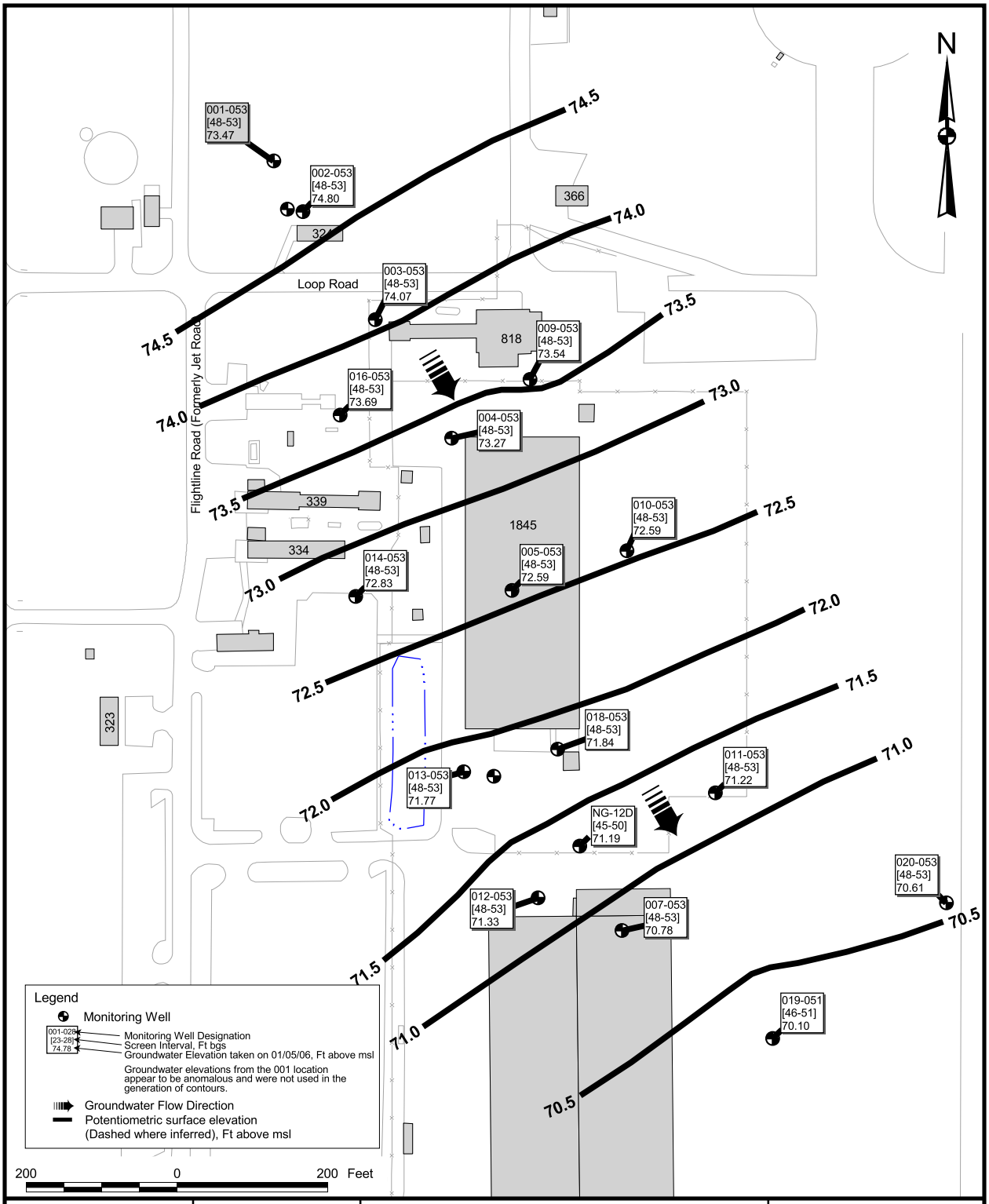
FORM CADD NO. TTNUS-D-STD.DWG - REV 1 - 9/11/98

ACAD:0039gx10.dwg 02/27/06 MF PIT



DRAWN BY MJJ	DATE 17Jan06	POTENTIOMETRIC SURFACE ELEVATION MAP 30-FOOT ZONE OU 9, SITE 59 REMEDIAL INVESTIGATION REPORT NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NUMBER 8925
CHECKED BY	DATE		APPROVED BY DATE
COST/SCHEDULE-AREA			APPROVED BY DATE
SCALE AS NOTED			DRAWING NO. FIGURE 4-2 / REV 0

P:\GIS\NAS_CecilField\Site-59_RI.apr 27Feb06 MJJ Layout08



DRAWN BY MJJ	DATE 17Jan06	POTENTIOMETRIC SURFACE ELEVATION MAP 50-FOOT ZONE OU 9, SITE 59 REMEDIAL INVESTIGATION REPORT NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NUMBER 8925
CHECKED BY	DATE		APPROVED BY DATE
COST/SCHEDULE-AREA			APPROVED BY DATE
SCALE AS NOTED			DRAWING NO. FIGURE 4-3 / REV 0

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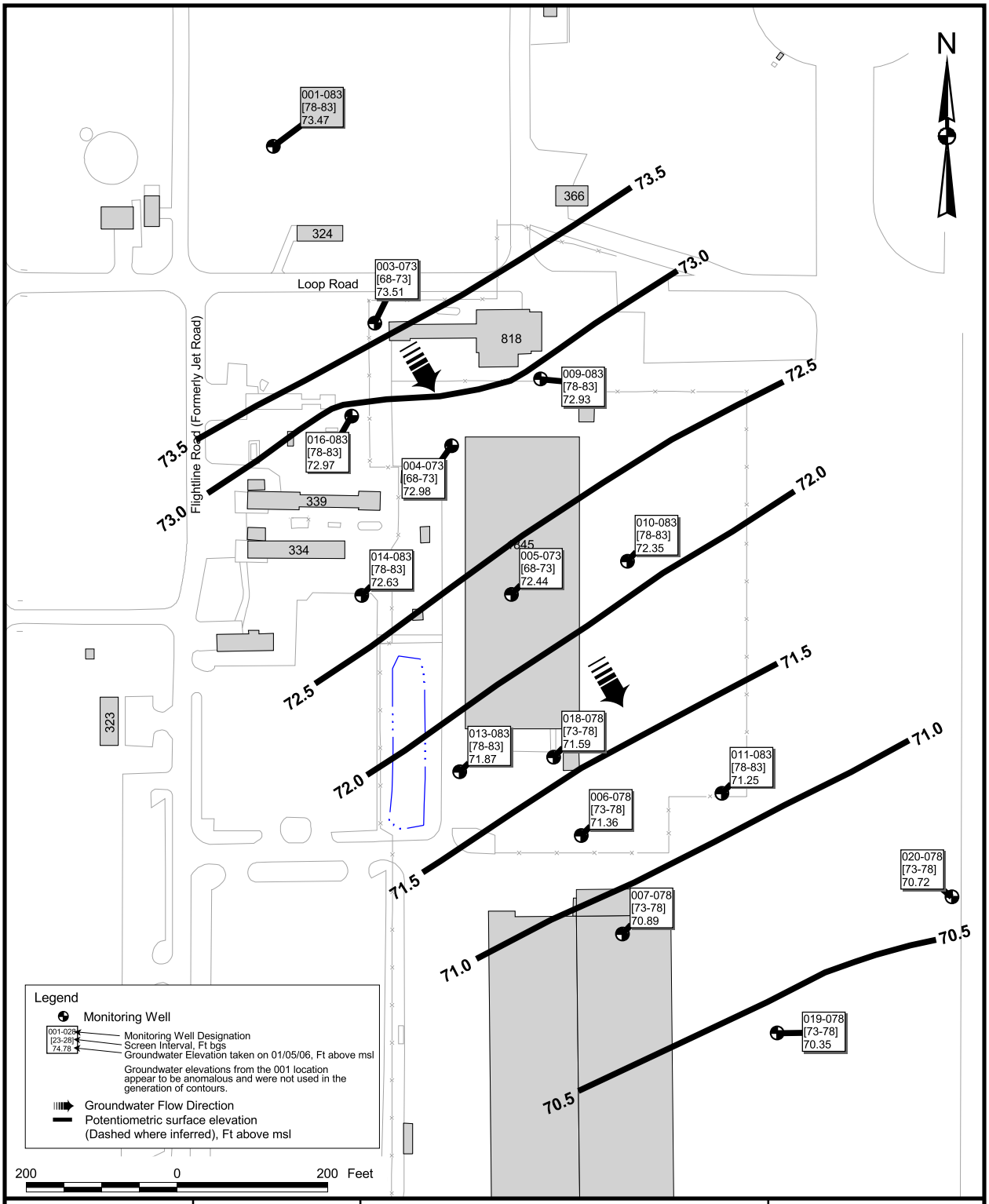

DRAWN BY MJJ	DATE 17Jan06	POTENTIOMETRIC SURFACE ELEVATION MAP 70- TO 80-FOOT ZONE OU 9, SITE 59 REMEDIAL INVESTIGATION REPORT NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NUMBER 8925
CHECKED BY	DATE		APPROVED BY DATE
COST/SCHEDULE-AREA			APPROVED BY DATE
SCALE AS NOTED			DRAWING NO. FIGURE 4-4 / REV 0

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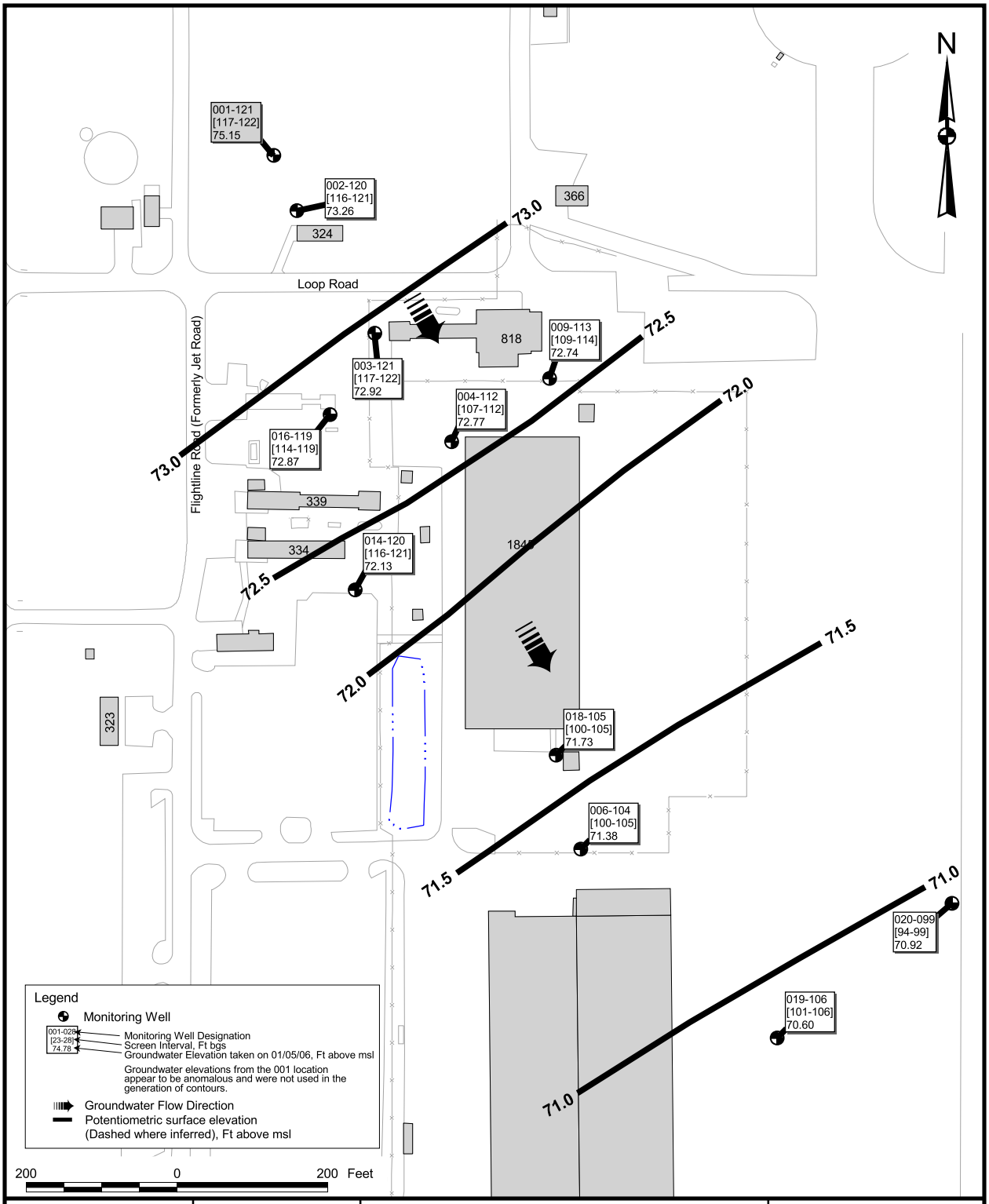
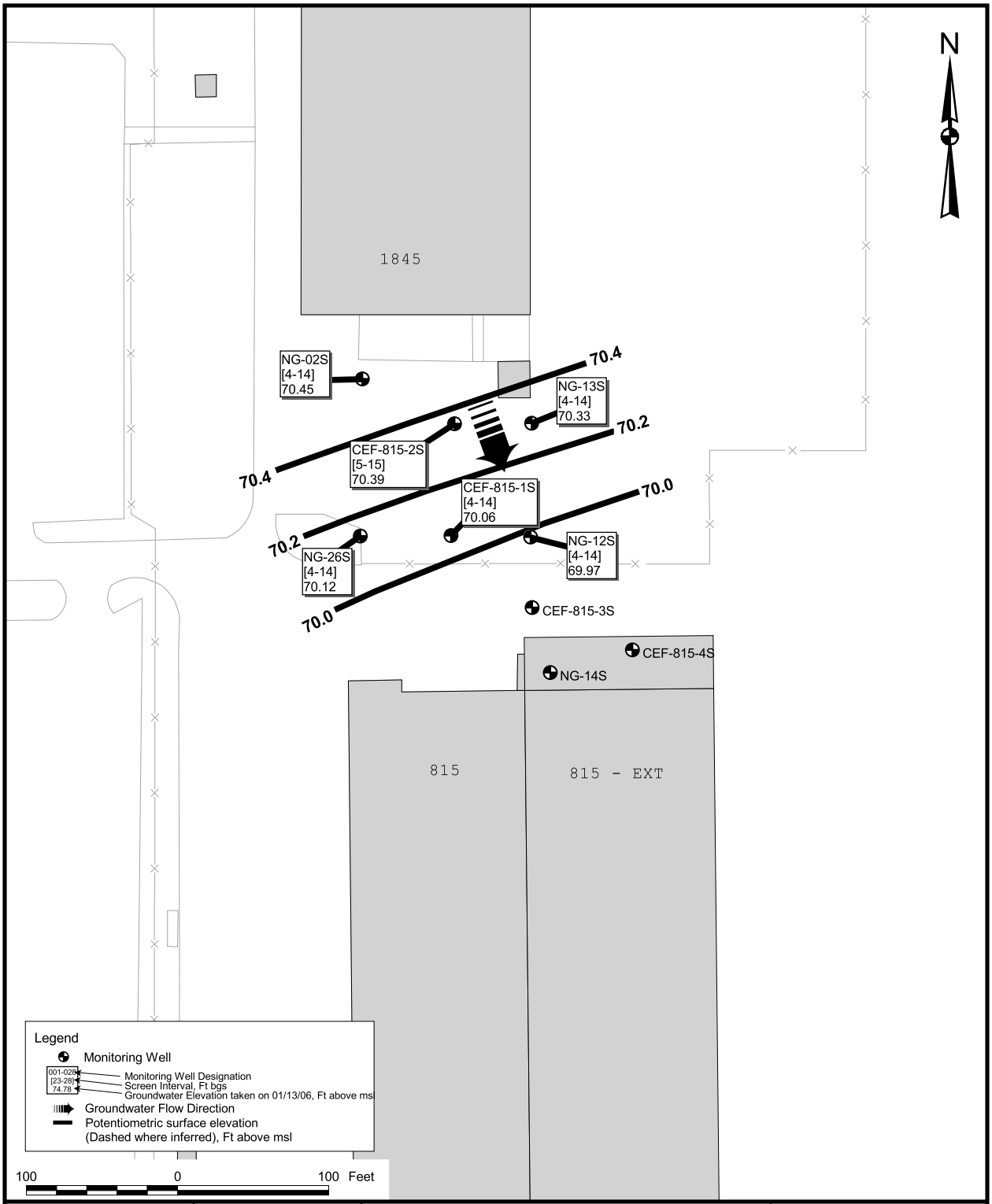


DRAWN BY MJJ	DATE 17Jan06	POTENTIOMETRIC SURFACE ELEVATION MAP TOP OF ROCK ZONE OU 9, SITE 59 REMEDIAL INVESTIGATION REPORT NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NUMBER 8925
CHECKED BY	DATE		APPROVED BY DATE
COST/SCHEDULE-AREA			APPROVED BY DATE
SCALE AS NOTED			DRAWING NO. FIGURE 4-5 / REV 0

P:\GIS\NAS_CecilField\Site-59_RI.apr 27Feb06 MJJ Layout11



DRAWN BY MJJ	DATE 19Jan06	POTENTIOMETRIC SURFACE ELEVATION MAP SHALLOW ZONE - BUILDING 815 WASH RACK AREA OU 9, SITE 59 REMEDIAL INVESTIGATION REPORT NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NUMBER 8925
CHECKED BY	DATE		APPROVED BY DATE
COST/SCHEDULE-AREA			APPROVED BY DATE
SCALE AS NOTED			DRAWING NO. FIGURE 4-6 / REV 0

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5.0 NATURE AND EXTENT OF CONTAMINATION

5.1 SITE 59

Groundwater samples were collected at Site 59 from a total of 60 permanent monitoring wells (57 new and three existing) and analyzed for VOCs as part of the Site 59 RI. Frequencies of detection and ranges of detected concentrations are presented in Table 5-1, and concentrations of contaminants of concern (COCs) detected at least once in groundwater samples from Site 59 are presented in Table 5-2. Figures 5-1 through 5-4 present TCE results for the 30-foot, 50-foot, 70- to 80-foot, and TOR zones, respectively.

Site-related VOCs detected in groundwater at Site 59 during the RI include TCE, 1,1-dichloroethene (DCE), cis-1,2-DCE, vinyl chloride, ethylbenzene, and toluene. Infrequent, low-level detections of common laboratory or field contaminants such as acetone, bromodichloromethane, carbon disulfide, chloroform, chloromethane, and methylene chloride are not considered to be site related and are not included in the discussion below. TCE was the only COC detected at concentrations greater than GCTLs during the RI. The TCE breakdown products 1,1-DCE, cis-1,2-DCE, and vinyl chloride were detected less frequently and at significantly lower concentrations in samples collected during the RI. Petroleum-related VOCs ethylbenzene and toluene were detected at low levels throughout the shallow surficial aquifer in the areas of Buildings 1845 and 815 and the flightline (locations 004, 005, 006, 007, 012, 018, 019, and 020) (see Figure 1-3).

TCE was detected in 21 of 60 groundwater samples collected at 12 locations during the RI at concentrations ranging from 1.3 to 1,810 µg/L. TCE was detected in eight wells at the 30-foot depth, seven wells at the 50-foot depth, four wells at the 70- to 80-foot depth, and in one TOR well. TCE concentrations exceeded the FDEP GCTL of 3 µg/L in seven of the eight 30-foot wells, six of seven of the 50-foot wells, four of four 70- to 80-foot wells, and in the TOR well in which it was detected. TCE breakdown products (1,1-DCE, cis-1,2-DCE, and vinyl chloride) were detected at low levels in 14 wells at eight locations. The most frequently detected breakdown product was cis-1,2-DCE in 15 wells at eight locations at concentrations ranging from an estimated 0.51 µg/L to 6.1 µg/L. 1,1-DCE was detected in two wells at two locations at estimated concentrations from 0.85 to 0.87 µg/L. Vinyl chloride was detected in one well at an estimated concentration of 0.68 µg/L.

Petroleum-related VOCs (ethylbenzene and toluene) were detected in 17 wells at nine locations. Toluene was detected in 16 wells at eight locations at concentrations ranging from an estimated average of 0.70 µg/L to 2.3 µg/L. Ethylbenzene was detected in one well at 2 µg/L. Toluene was the only VOC detected at downgradient locations CEF-059-007, 012, 019 and 020, in wells 018-078, 006-078, in the TOR well at location 018, and in the bedrock well. Ethylbenzene was the only detection at well 005-033.

The groundwater sample from CEF-059-002-028, located near the original TCE detections southwest of Building 324, was also analyzed for semivolatile organic compounds (SVOCs), PCBs, and inorganics to confirm the results of the Golder due diligence investigation and the Sampling and Analysis Report for Building 324 prepared by ABB-ES in July 1997. No SVOCs or PCBs were detected in this sample, and concentrations of metals were less than GCTLs and/or NAS Cecil Field Inorganic Background Data Set (IBDS) values (HLA, 1998). The analytical results for this sample are included in Appendix D with results from other RI sampling.

5.2 BUILDING 815 WASH RACK AREA

The nature and extent of this contamination was initially delineated under FDEP's Petroleum Program as part of the Site Assessment Report (SAR) investigation conducted in 1999 by TtNUS (2000). Semi-annual monitoring was conducted from November 2000 to July 2003. Monitoring results indicated decreases in TRPH concentrations in accordance with the milestone objectives included in the Natural Attenuation Monitoring Plan Approval Order (FDEP, 2000); however, milestone objectives for naphthalene were not met, and in fact, naphthalene concentrations in source area monitoring wells increased over the monitoring period. Recommendations in the groundwater monitoring report for the July 2003 sampling event included suspension of the monitoring program and preparation of a RAP to address groundwater contamination (TtNUS, 2004a). FDEP concurred with the recommendation to discontinue the monitoring program but requested a supplemental soil investigation to evaluate potential soil sources of contamination in the area. The soil investigation was conducted in 2005 and included collection and analysis of eight soil samples from just above the water table and capillary fringe. No soil sources were identified [TRPH only was detected at concentrations less than Soil Cleanup Target Levels (SCTLs)], and preparation of a RAP to address groundwater contamination was recommended. However, based on a decision at the February 2005 BCT meeting, the Building 815 Wash Rack Area groundwater contamination, which is located in the shallow surficial aquifer (to approximately 15 feet bgs) in the area of RI sampling location 006, will be addressed with Site 59 groundwater.

Table 5-3 includes analytical results from long-term monitoring and from samples collected at Building 815 Wash Rack Area wells during the RI. Figure 5-5 presents naphthalene and TRPH concentrations in groundwater from the 3-year monitoring program and shows the approximate extent of naphthalene and TRPH groundwater exceedances based on the most recent data. Wells CEF-815-1S, NG-12S, and NG-26S were sampled in January 2006 as part of RI activities. Additional wells proposed for sampling included CEF-815-3S, CEF-815-4S, and NG14S; however, these wells were covered by asphalt or concrete at the time of sampling.

Naphthalene and TRPH concentrations in CEF-815-1S exceeded GCTLs during January 2006 sampling. In addition, the most recent data from CEF-815-3S (July 2003) indicates an exceedance of the naphthalene GCTL. The plume outline presented on Figure 5-5 is based on these exceedances and encompasses an area of approximately 6,500 square feet.

5.3 COMPARISON TO STATE CRITERIA AND U.S. EPA PRGs

5.3.1 Site 59

Groundwater COCs detected at Site 59 in at least one monitoring well sample at concentrations greater than FDEP criteria include the following:

- TCE

Groundwater COCs detected at Site 59 in at least one monitoring sample at concentrations greater than the Region 9 PRGs include the following:

- TCE
- Vinyl chloride

5.3.2 Building 815 Wash Rack Area

Groundwater COCs detected at the Building 815 Wash Rack Area in at least one monitoring well sample at concentrations greater than FDEP criteria include the following:

- Naphthalene
- TPRH

5.4 SITE 59 SUMMARY

The horizontal and vertical extent of groundwater contamination at Site 59 was defined during the RI. TCE was detected in excess of its FDEP GCTL in 17 wells at 12 locations, including seven wells in the 30-foot zone, six wells in the 50-foot zone, four wells in the 70- to 80-foot zone, and in the TOR well at location 004. TCE was not detected in the bedrock well installed at location 004. The maximum detected concentration of TCE was 1,810 µg/L in well NG-12D (50-foot well at location 006).

At the 30-foot depth, TCE exceedances occur at two locations, one from just north of Building 324, centered west of Building 818, and extending southeast to Building 1845, and one oriented approximately

east-west between Buildings 1845 and 815 (see Figure 5-1). The northern plume covers approximately 82,000 square feet, and the southern plume covers approximately 42,000 square feet. At the 50-foot depth, the northern plume has a more east-west orientation, but it is still centered just west of Building 818 and covers an area of approximately 84,000 square feet. The position of the southern plume shifts from between Buildings 1845 and 815 to encompassing most of Building 1845 and extending to Building 815, and the orientation changes from east-west to northwest-southeast. The area covered by this plume is approximately 115,000 square feet. At the 70- to 80-foot depth, the plumes coalesce into a single area extending from southeast of Building 324 to within Building 1845, with a northwest-southeast orientation, and the center shifts toward the northwestern corner of Building 1845. This plume covers approximately 150,000 square feet. In the TOR zone, the single plume decreases in size to approximately 18,500 square feet, has the same general orientation as in the 70- to 80-foot zone, and is centered at the northwestern corner of Building 1845.

The presence of chlorinated ethene contamination in the Site 59 area is likely a result of past spills, leaks, and/or poor waste-handling practices. Solvents were reportedly used and stored in several buildings associated with the site. Hazardous waste storage areas were previously located southwest of Building 818 and west and south of Hangar 1845, and an additional area south of Hangar 1845 was noted during the 1998 Golder due diligence investigation as storing 55-gallon drums of solvent emulsion cleaner. Spillage and surface staining were noted in this area in the Due Diligence Report (Golder Associates, 1998).

TABLE 5-1

FREQUENCIES OF DETECTION FOR VOLATILE ORGANIC COMPOUNDS IN GROUNDWATER
OPERABLE UNIT 9, SITE 59
REMEDIAL INVESTIGATION
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

PARAMETER	FREQUENCY OF DETECTION	RANGE OF DETECTIONS	SAMPLE WITH MAXIMUM DETECTION	AVERAGE OF DETECTIONS
VOLATILE ORGANIC COMPOUNDS (ug/L)				
Acetone	6 / 60	6 J - 16.9 J	020-033	11.3
Bromodichlormethane	2 / 60	0.74 J - 0.75 J	006-104	0.75
Carbon disulfide	1 / 60	2.7	009-053	2.7
Chloroform	11 / 60	0.98 J - 5.35	006-104	2.40
Chloromethane	3 / 60	0.95 J - 2.2	020-033	1.48
1,1-Dichloroethene	2 / 60	0.85 J - 0.87 J	NG-12D	0.86
cis-1,2-Dichloroethene	15 / 60	0.51 J - 6.1	003-073	1.60
Ethylbenzene	1 / 60	2	005-033	2
Methylene chloride	1 / 60	5.8 J	001-053	5.8
Toluene	16 / 60	0.74 J - 2.3	019-106	1.26
Trichloroethene	21 / 60	1.3 - 1,810	NG-12D	286.4
Vinyl chloride	1 / 60	0.68 J	013-032	0.68

Sample and duplicate are considered one sample, with average used for ranges and averages of detections. If a sample or duplicate result is non-detect, one-half the detection limit is used for ranges and averages of detections.
If a well was sampled more than once, only the most recent results were used.
J - Estimated concentration.

TABLE 5-2

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
OPERABLE UNIT 9, SITE 59
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

PARAMETER	FDEP GCTL	CEF-059-001-028	CEF-059-001-053	CEF-059-001-083	CEF-059-001-121	CEF-059-002-028	CEF-059-002-053	CEF-059-002-120
ACETONE	6,300	5 U	5 U	5 U	5 U	5 U	5 U	5 U
BROMODICHLOROMETHANE	0.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CARBON DISULFIDE	700	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CHLOROFORM	70	0.5 U	1.3	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROMETHANE	2.7	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-DICHLOROETHENE	7*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	70*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	700**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5*	1 U	5.8 J	1 U	1 U	1 U	1 U	1 U
TOLUENE	1,000**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	3*	0.5 U	0.5 U	0.5 U	0.5 U	12.1	0.5 U	0.5 U
VINYL CHLORIDE	1*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

TABLE 5-2

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
OPERABLE UNIT 9, SITE 59
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

PARAMETER	FDEP GCTL	CEF-059-003-035	CEF-059-003-053	CEF-059-003-073	CEF-059-003-121	CEF-059-004-033	
						Sample	Duplicate
ACETONE	6,300	5 U	5 U	5 U	5 U	5 U	5 U
BROMODICHLOROMETHANE	0.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CARBON DISULFIDE	700	1 U	1 U	1 U	1 U	1 U	1 U
CHLOROFORM	70	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROMETHANE	2.7	1 U	1 U	1 U	1 U	1.4 J	1 U
1,1-DICHLOROETHENE	7*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	70*	2.9	1.1	6.1	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	700**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5*	1 U	1 U	1 U	1 U	1 U	1 U
TOLUENE	1,000**	0.5 U	0.5 U	0.5 U	0.5 U	0.71 J	0.7 J
TRICHLOROETHENE	3*	399	93.9	1,100	0.5 U	29	28.1
VINYL CHLORIDE	1*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

TABLE 5-2

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
OPERABLE UNIT 9, SITE 59
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

PARAMETER	FDEP GCTL	CEF-059-004-053			CEF-059-004-073	CEF-059-004-112		CEF-059-004-135
		Nov-04		Feb-05				
		Sample	Duplicate			Nov-04	Feb-05	
ACETONE	6,300	5 U	5 U	5 U	5 U	5 U	5 U	5 U
BROMODICHLOROMETHANE	0.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CARBON DISULFIDE	700	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CHLOROFORM	70	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2.1
CHLOROMETHANE	2.7	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-DICHLOROETHENE	7*	0.5 U	0.5 U	0.5 U	0.85 J	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	70*	0.5 U	1.2	0.5 U	2.1	1.1	0.62 J	0.5 U
ETHYLBENZENE	700**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5*	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TOLUENE	1,000**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.8
TRICHLOROETHENE	3*	0.5 UJ	529 J	0.5 U	1,670	532	373	0.5 U
VINYL CHLORIDE	1*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

TABLE 5-2

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
OPERABLE UNIT 9, SITE 59
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

PARAMETER	FDEP GCTL	CEF-059-005-033	CEF-059-005-053		CEF-059-005-073	Location 006	
			Sample	Duplicate		NG-12I***	NG-12D***
ACETONE	6,300	5 U	5 U	5 U	5 U	5 UJ	5 U
BROMODICHLOROMETHANE	0.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U
CARBON DISULFIDE	700	1 U	1 U	1 U	1 U	1 UJ	1 U
CHLOROFORM	70	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U
CHLOROMETHANE	2.7	1 U	1 U	1 U	1 U	1 UJ	1 U
1,1-DICHLOROETHENE	7*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.87 J
CIS-1,2-DICHLOROETHENE	70*	0.5 U	0.64 J	0.58 J	0.58 J	1.2 J	3.8 J
ETHYLBENZENE	700**	2	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U
METHYLENE CHLORIDE	5*	1 U	1 U	1 U	1 U	1 UJ	1 U
TOLUENE	1,000**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U
TRICHLOROETHENE	3*	0.5 U	165	169	175	3.6 J	1,810
VINYL CHLORIDE	1*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U

TABLE 5-2

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
OPERABLE UNIT 9, SITE 59
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

PARAMETER	FDEP GCTL	CEF-059-006-078		CEF-059-006-104		CEF-059-007-053	CEF-059-007-078
		Sample	Duplicate	Sample	Duplicate		
ACETONE	6,300	5 U	5 U	5 U	5 U	5 U	5 U
BROMODICHLOROMETHANE	0.6	0.5 U	0.5 U	0.73 J	0.77 J	0.5 U	0.5 U
CARBON DISULFIDE	700	1 U	1 U	1 U	1 U	1 U	1 U
CHLOROFORM	70	2	1.7	5.3	5.4	0.5 U	1.4
CHLOROMETHANE	2.7	1 U	1 U	1 U	1 U	1 U	1 U
1,1-DICHLOROETHENE	7*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	70*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	700**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5*	1 U	1 U	1 U	1 U	1 U	1 U
TOLUENE	1,000**	1.3	0.97 J	0.5 U	0.5 U	1.3	0.5 U
TRICHLOROETHENE	3*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
VINYL CHLORIDE	1*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

TABLE 5-2

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
OPERABLE UNIT 9, SITE 59
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

PARAMETER	FDEP GCTL	CEF-059-008-028		CEF-059-009-053	CEF-059-009-083	CEF-059-009-113	CEF-059-010-053
		Sample	Duplicate				
ACETONE	6,300	5 U	5 U	5 U	5 U	5 U	5 U
BROMODICHLOROMETHANE	0.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CARBON DISULFIDE	700	1 U	1 U	2.7	1 U	1 U	1 U
CHLOROFORM	70	0.5 U	0.5 U	0.5 U	0.5 U	0.98 J	0.5 U
CHLOROMETHANE	2.7	1 U	1 U	1 U	1 U	1 U	1 U
1,1-DICHLOROETHENE	7*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	70*	0.5 U	0.5 U	1.6	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	700**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5*	1 U	1 U	1 U	1 U	1 U	1 U
TOLUENE	1,000**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	3*	0.5 U	0.5 U	10.6	0.5 U	0.5 U	0.5 U
VINYL CHLORIDE	1*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

TABLE 5-2

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
OPERABLE UNIT 9, SITE 59
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

PARAMETER	FDEP GCTL	CEF-059-010-083	CEF-059-011-033	CEF-059-011-053	CEF-059-011-083	CEF-059-012-053	CEF-059-013-032	CEF-059-013-053
ACETONE	6,300	5 U	5 U	5 U	5 U	5 U	5 U	5 U
BROMODICHLOROMETHANE	0.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CARBON DISULFIDE	700	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CHLOROFORM	70	2	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROMETHANE	2.7	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-DICHLOROETHENE	7*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	70*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.51 J	0.5 U
ETHYLBENZENE	700**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5*	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TOLUENE	1,000**	0.5 U	0.5 U	0.5 U	0.5 U	0.93 J	0.5 U	0.5 U
TRICHLOROETHENE	3*	14.8	22.3	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
VINYL CHLORIDE	1*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.68 J	0.5 U

TABLE 5-2

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
OPERABLE UNIT 9, SITE 59
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

PARAMETER	FDEP GCTL	CEF-059-013-083	CEF-059-014-053	CEF-059-014-083	CEF-059-014-120	CEF-059-015-028	CEF-059-016-053	CEF-059-016-083
ACETONE	6,300	5 U	5 U	5 U	5 U	5 U	5 U	5 U
BROMODICHLOROMETHANE	0.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CARBON DISULFIDE	700	1 U	1 U	1 U	1 U	1 U	1 U	1 U
CHLOROFORM	70	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROMETHANE	2.7	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-DICHLOROETHENE	7*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	70*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	700**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5*	1 U	1 U	1 U	1 U	1 U	1 U	1 U
TOLUENE	1,000**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
TRICHLOROETHENE	3*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5.9	0.5 U
VINYL CHLORIDE	1*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

TABLE 5-2

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
OPERABLE UNIT 9, SITE 59
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

PARAMETER	FDEP GCTL	CEF-059-016-119	CEF-059-017-028	CEF-059-017-053	CEF-059-018-033		CEF-059-018-053
					Sample	Duplicate	
ACETONE	6,300	5 U	6 J	15 J	12.5 J	5 U	9.4 J
BROMODICHLOROMETHANE	0.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CARBON DISULFIDE	700	1 U	1 U	1 U	1 U	1 U	1 U
CHLOROFORM	70	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROMETHANE	2.7	1 U	1 U	1 U	1 U	1 U	1 U
1,1-DICHLOROETHENE	7*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	70*	0.5 U	0.5 U	0.5 U	0.56 J	0.53 J	0.59 J
ETHYLBENZENE	700**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5*	1 U	1 U	1 U	1 U	1 U	1 U
TOLUENE	1,000**	0.5 U	0.5 U	0.5 U	0.74 J	0.92 J	1.1
TRICHLOROETHENE	3*	0.5 U	14.6	1.3	1.4	1.4	30.8
VINYL CHLORIDE	1*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

TABLE 5-2

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
OPERABLE UNIT 9, SITE 59
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

PARAMETER	FDEP GCTL	CEF-059-018-078	CEF-059-018-105	CEF-059-019-032	CEF-059-019-051	CEF-059-019-078	CEF-059-019-106
ACETONE	6,300	5 U	7.8 J	5 U	5 U	5 U	5 U
BROMODICHLOROMETHANE	0.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CARBON DISULFIDE	700	1 U	1 U	1 U	1 U	1 U	1 U
CHLOROFORM	70	2.4	2.7	0.5 U	0.5 U	1.8	0.5 U
CHLOROMETHANE	2.7	1 U	1 U	1 U	1 U	1 U	1.3 J
1,1-DICHLOROETHENE	7*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CIS-1,2-DICHLOROETHENE	70*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	700**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5*	1 U	1 U	1 U	1 U	1 U	1 U
TOLUENE	1,000**	1.5	1.5	0.5 U	0.5 U	1.3	2.3
TRICHLOROETHENE	3*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
VINYL CHLORIDE	1*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

TABLE 5-2

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
OPERABLE UNIT 9, SITE 59
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

PARAMETER	FDEP GCTL	CEF-059-020-033	CEF-059-020-053	CEF-059-020-078	CEF-059-020-099	NG-02I***	REGION 9 PRG	FEDERAL MCL
ACETONE	6,300	**16.9 J**	5 U	5 U	5 U	5 U	5,500	NC
BROMODICHLOROMETHANE	0.6	0.5 U	0.5 U	**0.74 J**	0.5 U	0.5 U	0.18	NC
CARBON DISULFIDE	700	1 U	1 U	1 U	1 U	1 U	1,000	NC
CHLOROFORM	70	0.5 U	0.5 U	**4.5**	0.5 U	0.5 U	0.17	NC
CHLOROMETHANE	2.7	2.2	1 U	1 U	1 U	1 U	160	NC
1,1-DICHLOROETHENE	7*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	340	7
CIS-1,2-DICHLOROETHENE	70*	0.5 U	0.5 U	0.5 U	0.5 U	**0.76 J**	61	70
ETHYLBENZENE	700**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1,300	700
METHYLENE CHLORIDE	5*	1 U	1 U	1 U	1 U	1 U	4.3	NC
TOLUENE	1,000**	**0.91 J**	**0.94 J**	**1**	**1.2**	0.5 U	720	1,000
TRICHLOROETHENE	3*	0.5 U	0.5 U	0.5 U	0.5 U	**79.7**	0.028	5
VINYL CHLORIDE	1*	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.02	2

* Primary.
** Secondary.
***NG-12I screened interval = 32.5 to 37.5 feet below ground surface (bgs); NG-12D screened interval = 45 to 50 feet bgs; NG-2I screened interval = 33 to 38 feet bgs
FDEP GCTL = Florida Department of Environmental Protection Groundwater Cleanup Target Level, FAC 62-777 (FDEP, 2005)
United States Environmental Protection Agency Region 9 Preliminary Remediation Goal (U.S. EPA, 2004).
Federal Maximum Contaminant Levels (U.S. EPA, 2002).
U = Not detected at associated detection limit.
J = Estimated concentration.
Bolded values exceed detection limits; values in shaded cells exceed one or more criteria.
All concnetrations are in µg/L.

TABLE 5-3

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
BUILDING 815 WASH RACK AREA
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

PARAMETER	FDEP GCTL	CEF-815-1S									
		Oct-99	Nov-00	01-May-01	22-May-01	Dec-01	Jun-02	Jul-02	Jan-03	Jul-03	Jan-06
Volatile Organic Compounds (µg/L)											
cis-1,2-Dichloroethene	70	1 U	NA	NA	NA	NA	NA	NA	NA	NA	0.5 U
trans-1,2-Dichloroether	100	1 U	NA	NA	NA	NA	NA	NA	NA	NA	0.5 U
Trichloroethene	3	1 U	NA	NA	NA	NA	NA	NA	NA	NA	0.5 U
Total xylenes	20	**0.94 J**	NA	NA	NA	NA	NA	NA	NA	NA	1 U
Vinyl chloride	1	1 U	NA	NA	NA	NA	NA	NA	NA	NA	0.5 U
Polynuclear Aromatic Hydrocarbons (µg/L)											
1-Methylnaphtahlene	28	**12**	14.8	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	28	**17**	18	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	20	**13**	4.4 U	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	210	**3.8**	4.4 U	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	280	**4.9**	2.2 U	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	14	**177**	**192**	**250**	**248**	**129**	**299**	**205**	**152**	**256**	**140**
Phenanthrene	210	**15.2**	2.2 U	NA	NA	NA	NA	NA	NA	NA	NA
Total Recoverable Petorleum Hydrocarbons (mg/L)											
TRPH	5	**34**	**21**	**16.8**	NA	**15.5**	**22.7**	**16.3**	**12.2**	**12.5**	**9.45**

TABLE 5-3

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
BUILDING 815 WASH RACK AREA
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

PARAMETER	FDEP GCTL	CEF-815-2S	CEF-815-3S								
		Oct-99	Oct-99	Nov-00		Dec-00	May-01	Dec-01	Jun-02	Jan-03	Jul-03
				Sample	Duplicate						
Volatile Organic Compounds (µg/L)											
cis-1,2-Dichloroethene	70	1 U	1 UJ	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroether	100	1 U	1 UJ	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	3	1 U	1 UJ	NA	NA	NA	NA	NA	NA	NA	NA
Total xylenes	20	3 U	3 UJ	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	1	1 U	1 UJ	NA	NA	NA	NA	NA	NA	NA	NA
Polynuclear Aromatic Hydrocarbons (µg/L)											
1-Methylnaphtahlene	28	**1.4**	1 UJ	2.2 U	2 U	2.2 U	NA	NA	NA	NA	NA
2-Methylnaphthalene	28	**1.8**	1 UJ	2.2 U	2 U	2.2 U	NA	NA	NA	NA	NA
Acenaphthene	20	**3.2**	1 UJ	4.4 U	4 U	4.4 U	NA	NA	NA	NA	NA
Acenaphthylene	210	**1.1**	**2 J**	4.4 U	4 U	4.4 U	NA	NA	NA	NA	NA
Fluorene	280	**1.1**	1 UJ	2.2 U	2 U	2.2 U	NA	NA	NA	NA	NA
Naphthalene	14	**55**	**12.5 J**	**22.9**	**21.9**	**25.6**	**25**	**28.1**	**54.8**	**39.9**	**18.6**
Phenanthrene	210	**4.1**	**1.3 J**	2.2 U	2.2 U	2.2 U	NA	NA	NA	NA	NA
Total Recoverable Petorleum Hydrocarbons (mg/L)											
TRPH	5	**4.5**	**3.82**	**4.57**	**2.9**	NA	**2.07**	**1.38**	**5.48**	**5.2**	**1.80**

TABLE 5-3

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
BUILDING 815 WASH RACK AREA
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

PARAMETER	FDEP GCTL	CEF-815-4S		NG-12S								
		Feb-00	May-00	Oct-99	Nov-00	May-01		Dec-01	Jun-02	Jan-03	Jul-03	Jan-06
						Sample	Duplicate					
Volatile Organic Compounds (µg/L)												
cis-1,2-Dichloroethene	70	**6.9**	6.3	1 U	NA	NA	NA	NA	NA	NA	NA	0.5 U
trans-1,2-Dichloroether	100	**3**	1.8	1 U	NA	NA	NA	NA	NA	NA	NA	0.5 U
Trichloroethene	3	**2.3**	1.7	1 U	NA	NA	NA	NA	NA	NA	NA	0.5 U
Total xylenes	20	3 U	3 U	3 U	NA	NA	NA	NA	NA	NA	NA	1 U
Vinyl chloride	1	**1.3**	**0.64 J**	1 U	NA	NA	NA	NA	NA	NA	NA	0.5 U
Polynuclear Aromatic Hydrocarbons (µg/L)												
1-Methylnaphtahlene	28	**1.4**	1 U	1 U	2.2 U	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	28	**1.8**	1 U	1 U	2.2 U	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	20	**3.2**	1 U	1 U	4.4 U	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	210	**1.1**	1 U	**3**	4.4 U	NA	NA	NA	NA	NA	NA	NA
Fluorene	280	**1.1**	1 U	1 U	2.2 U	NA	NA	NA	NA	NA	NA	NA
Naphthalene	14	**55**	1 U	**4.4**	**9.2**	**8.2**	**8**	**7.1**	**3.4**	**13.2**	**39.9**	**13.6**
Phenanthrene	210	**4.1**	1 U	1 U	2.2 U	NA	NA	NA	NA	NA	NA	NA
Total Recoverable Petorleum Hydrocarbons (mg/L)												
TRPH	5	**4.5**	**0.396**	**12**	**4.2**	**3.12**	**3.35**	**2.18**	**1.59**	**1.74**	**3.70**	**1.85**

TABLE 5-3

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
BUILDING 815 WASH RACK AREA
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

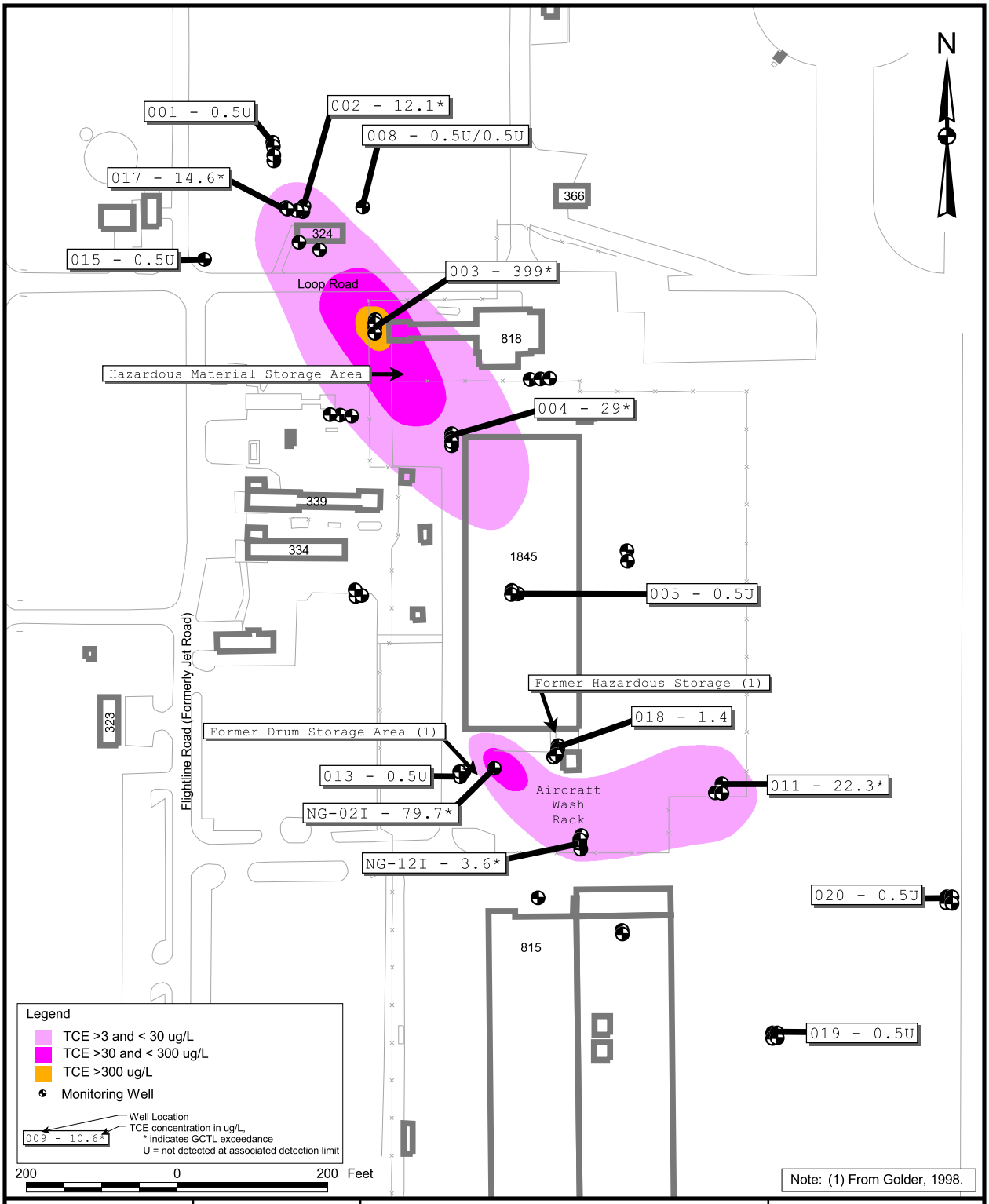
PARAMETER	FDEP GCTL	NG-12I	NG-13S	NG-2S	NG-14S					
		Oct-99	Feb-00	Feb-00	Oct-99	May-01	Dec-01	Jun-02	Jan-03	Jul-03
Volatile Organic Compounds (µg/L)										
cis-1,2-Dichloroethene	70	1 U	1 U	1 U	1 U	NA	NA	NA	NA	NA
trans-1,2-Dichloroether	100	1 U	1 U	1 U	1 U	NA	NA	NA	NA	NA
Trichloroethene	3	1 U	1 U	1 U	1 U	NA	NA	NA	NA	NA
Total xylenes	20	3 U	3 U	3 U	3 U	NA	NA	NA	NA	NA
Vinyl chloride	1	1 U	1 U	1 U	1 U	NA	NA	NA	NA	NA
Polynuclear Aromatic Hydrocarbons (µg/L)										
1-Methylnaphtahlene	28	1 U	1 U	2.2 U	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	28	1 U	1 U	2.2 U	NA	NA	NA	NA	NA	NA
Acenaphthene	20	1 U	1 U	4.4 U	NA	NA	NA	NA	NA	NA
Acenaphthylene	210	1 U	1 U	4.4 U	NA	NA	NA	NA	NA	NA
Fluorene	280	1 U	1 U	2.2 U	NA	NA	NA	NA	NA	NA
Naphthalene	14	1 U	1 U	2.2 U	NA	**1 J**	2 U	**1 J**	**0.99 J**	**1.1 J**
Phenanthrene	210	1 U	1 U	2.2 U	NA	NA	NA	NA	NA	NA
Total Recoverable Petorleum Hydrocarbons (mg/L)										
TRPH	5	0.5 U	**0.41**	**0.418**	NA	**0.806**	**0.547**	**0.953**	**0.677**	**0.804**

TABLE 5-3

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
BUILDING 815 WASH RACK AREA
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

PARAMETER	FDEP GCTL	NG-26S									
		Feb-00	Nov-00	01-May-01	22-May-01	Dec-01	Jun-02		Jan-03	Jul-03	Jan-06
							Sample	Duplicate			
Volatile Organic Compounds (µg/L)											
cis-1,2-Dichloroethene	70	1 U	NA	NA	NA	NA	NA	NA	NA	NA	0.5 U
trans-1,2-Dichloroether	100	1 U	NA	NA	NA	NA	NA	NA	NA	NA	0.5 U
Trichloroethene	3	1 U	NA	NA	NA	NA	NA	NA	NA	NA	0.5 U
Total xylenes	20	3 U	NA	NA	NA	NA	NA	NA	NA	NA	1 U
Vinyl chloride	1	1 U	NA	NA	NA	NA	NA	NA	NA	NA	0.5 U
Polynuclear Aromatic Hydrocarbons (µg/L)											
1-Methylnaphtahlene	28	2.2 U	2.2 U	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	28	2.2 U	2.2 U	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	20	4.4 U	4.4 U	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	210	4.4 U	4.4 U	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	280	2.2 U	2.2 U	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	14	**10.9**	**4.9**	**7.6**	NA	2 U	**3.9**	**4.1**	**3.3**	**6.3**	0.97 U
Phenanthrene	210	2.2 U	2.2 U	NA	NA	NA	NA	NA	NA	NA	NA
Total Recoverable Petorleum Hydrocarbons (mg/L)											
TRPH	5	**2.62**	**3.85**	**7.1**	**6.04**	**1.36**	**2.19**	**1.73**	**1.02**	**1.29**	**0.550**

FDEP GCTL = Florida Department of Environmental Protection Groundwater Cleanup Target Level, FAC 62-777 (FDEP, 2005).
U = Not detected at associated detection limit.
J = Estimated concentration.
Bolded values exceed detection limits; values in shaded cells exceed GCTLs.



DRAWN BY MJJ	DATE 17Jan06	VOCs IN GROUNDWATER, RI DATA 30-FOOT ZONE OU 9, SITE 59 REMEDIAL INVESTIGATION REPORT NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NUMBER 8925
CHECKED BY	DATE		APPROVED BY DATE
COST/SCHEDULE-AREA			APPROVED BY DATE
SCALE AS NOTED			DRAWING NO. FIGURE 5-1 / REV 0

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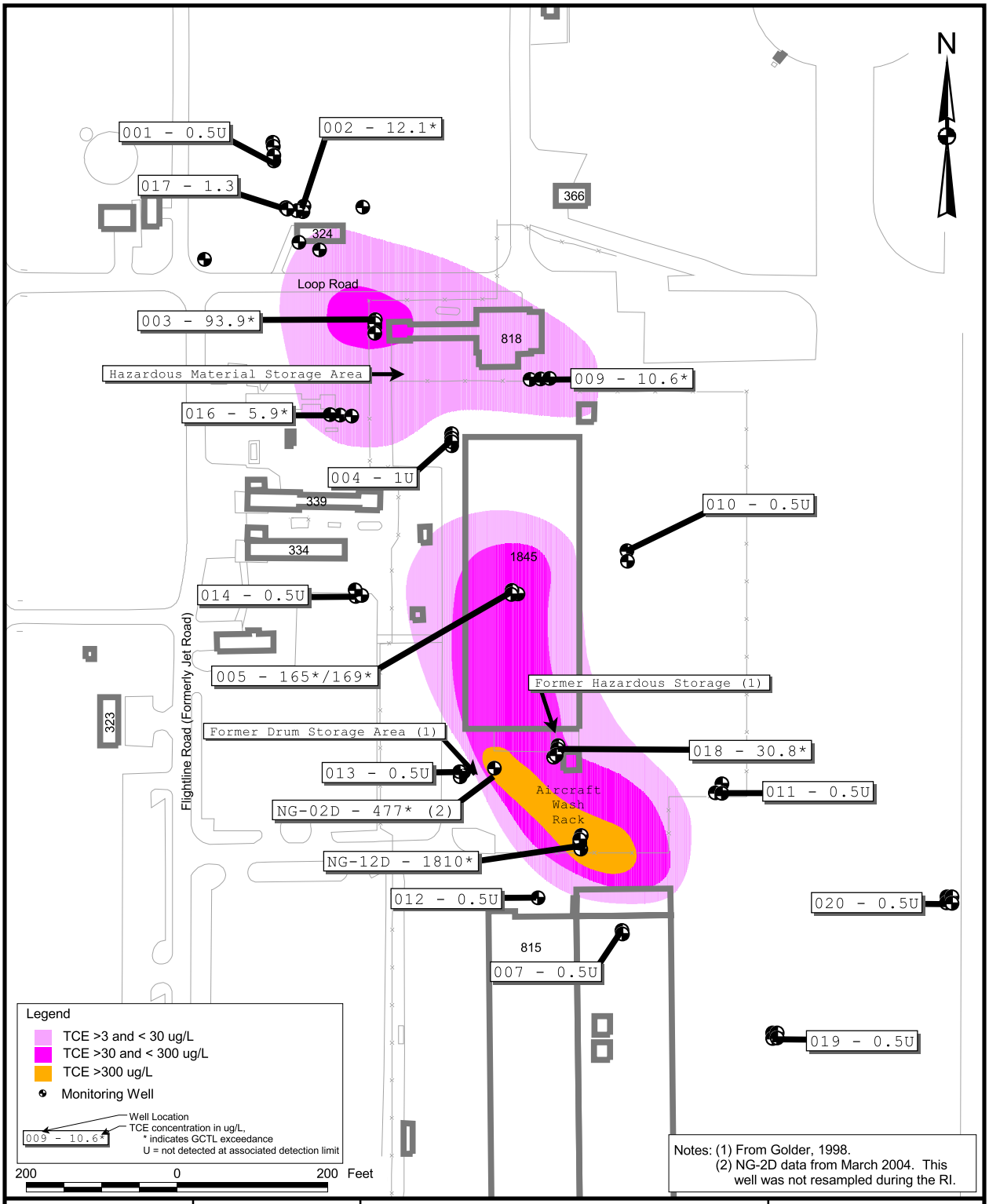

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CHECKED BY	DATE		APPROVED BY DATE
COST/SCHEDULE-AREA			APPROVED BY DATE
SCALE AS NOTED			DRAWING NO. FIGURE 5-2 / REV 0

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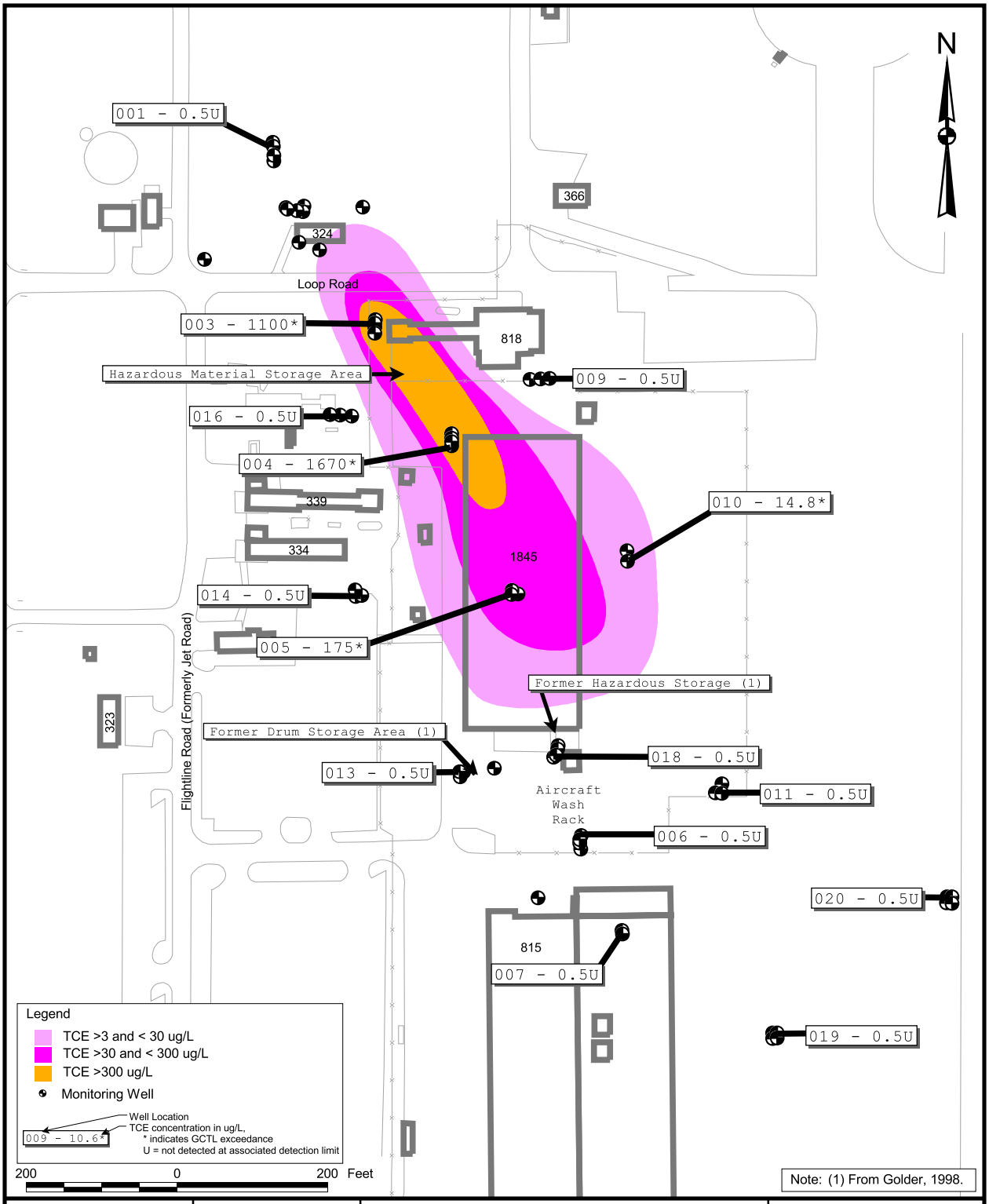

DRAWN BY MJJ	DATE 17Jan06	VOCs IN GROUNDWATER, RI DATA 70- TO 80-FOOT ZONE OU 9, SITE 59 REMEDIAL INVESTIGATION REPORT NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NUMBER 8925
CHECKED BY	DATE		APPROVED BY DATE
COST/SCHEDULE-AREA			APPROVED BY DATE
SCALE AS NOTED			DRAWING NO. FIGURE 5-3 / REV 0

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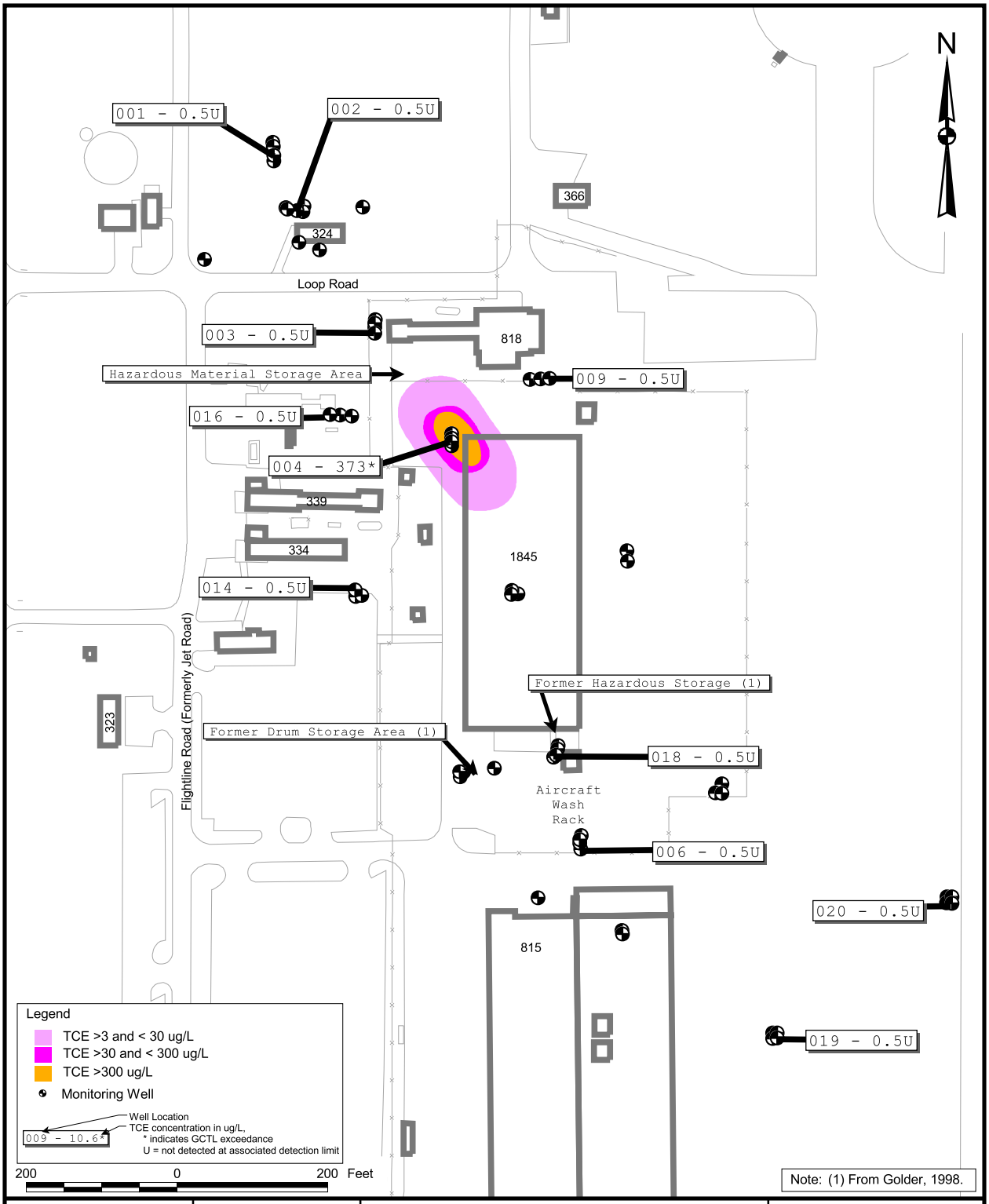

DRAWN BY MJJ	DATE 17Jan06	VOCs IN GROUNDWATER, RI DATA TOP OF ROCK ZONE OU 9, SITE 59 REMEDIAL INVESTIGATION REPORT NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NUMBER 8925
CHECKED BY	DATE		APPROVED BY DATE
COST/SCHEDULE-AREA			APPROVED BY DATE
SCALE AS NOTED			DRAWING NO. FIGURE 5-4 / REV 0

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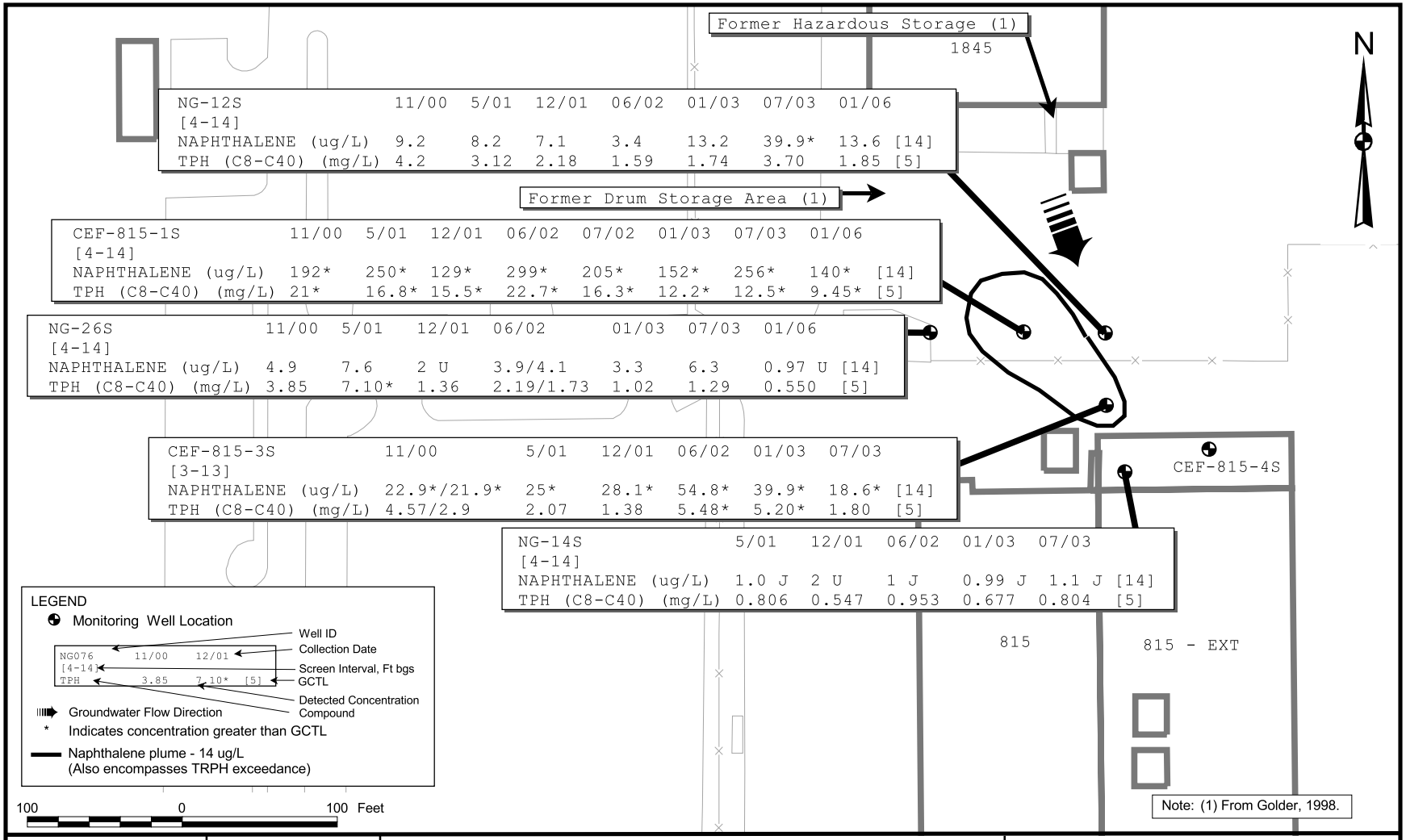

DRAWN BY	DATE
MJJ	19Jan06
CHECKED BY	DATE
COST/SCHEDULE-AREA	
SCALE	AS NOTED

GROUNDWATER CONCENTRATIONS
BUILDING 815 WASH RACK AREA
OU 9, SITE 59
REMEDIAL INVESTIGATION REPORT
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

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6.0 CONTAMINANT FATE AND TRANSPORT

6.1 CHEMICAL AND PHYSICAL PROPERTIES

Various chemical and physical properties of the detected site compounds are presented and discussed in this section. These parameters may be used to estimate the environmental behavior of site chemicals. Physical and chemical properties of the chemicals found at Site 59 are summarized in Table 6-1.

Literature values for specific gravity, vapor pressure, water solubility, octanol/water partition coefficient, organic carbon partition coefficient, Henry's Law constant, and distribution coefficient are presented when available. Calculated values, obtained using approximation methods, are presented when literature values are not available. A discussion of the environmental significance of each of these parameters follows.

Specific Gravity

Specific gravity is the ratio of the weight of a given volume of pure chemical at a specified temperature to the weight of the same volume of water at a given temperature. Its primary use is to determine whether a contaminant will have a tendency to float or sink in water if it is present as a pure compound or at very high concentrations. Contaminants with a specific gravity greater than 1 will tend to sink, whereas contaminants with a specific gravity less than 1 will tend to float. This parameter becomes important in discussions regarding the potential presence of free product or nonaqueous-phase liquids.

Vapor Pressure

Vapor pressure provides an indication of the rate at which a chemical volatilizes from both soil and water. It is of primary importance at environmental interfaces, such as surface soil/air and surface water/air. Volatilization is not as important when evaluating contaminated groundwater and subsurface soils that are not exposed to the atmosphere. Chemicals with higher vapor pressures are expected to enter the atmosphere much more readily than chemicals with lower vapor pressures. Compounds with vapor pressures greater than 10^{-2} millimeters of mercury are more likely to be present in the vapor phase than in the liquid phase, and compounds with vapor pressures less than 10^{-7} millimeters of mercury are more likely to be associated with the liquid phase.

Solubility

Solubility is an expression of the amount of a contaminant that can enter into solution with water at a given temperature. The rate at which a chemical is leached from a waste deposit by infiltrating

precipitation is proportional to its water solubility; therefore, soluble chemicals are more readily leached than less soluble chemicals. Water solubilities indicate that the VOCs (e.g., monocyclic aromatics and halogenated aliphatics) are at least one order of magnitude more water soluble than polynuclear aromatic hydrocarbons (PAHs).

Octanol/Water Partition Coefficient

The octanol/water partition coefficient (K_{ow}) is expressed as the ratio of a contaminant's concentration in octanol to its concentration in water. Because octanol is chemically similar to biological lipids, this ratio can be used to approximate the partitioning of a chemical between aqueous environments and biomass. A linear relationship between the K_{ow} and the uptake of chemicals by fatty tissues of animal and human receptors, the bioconcentration factor, has been determined (Lyman et al., 1990). Chemicals with K_{ow} values greater than 1 are more soluble in octanol than water and can be expected to be found at higher concentrations in biomass than the surrounding aqueous environment.

Distribution Coefficient and Organic Carbon Partition Coefficient

The soil/water distribution coefficient (K_d) is an expression of the equilibrium distribution of an organic compound between the soil matrix of aquifer and the aqueous phase of the aquifer. It is a ratio of the sorbed contaminant concentration to the dissolved contaminant concentration. The higher the K_d, the higher the potential for sorption to the aquifer matrix. K_d varies with the solubility of a contaminant and the total surface area of the aquifer matrix available for sorption. Organic carbon and clay minerals, with high ratios of surface area to volume, generally present the majority of sorption sites in an aquifer. Values of K_d normalized relative to the total organic content of the aquifer matrix (ratio of K_d to TOC) are expressed as organic carbon partition coefficients (K_{oc}s). Chemicals with high K_{oc} values generally have low water solubilities and vice versa. This parameter may be used to infer the relative rates at which more mobile chemicals (monocyclic aromatics and halogenated aliphatics) are transported in groundwater. PAHs are relatively immobile in the soil and are preferentially bound to the soil. These compounds are not subject to groundwater transport to the same extent as compounds with lower K_{oc} values. Contaminants with K_{oc} values lower than 50 are considered very mobile, 50 to 150 are considered mobile, and 150 to 500 are considered moderately mobile.

Henry's Law Constant

Henry's Law governs the partitioning of a contaminant between the liquid phase and the gaseous phase. This law states that the concentration of a contaminant in the gaseous phase is directly proportional to the contaminant's concentration in the liquid phase and is a fixed chemical characteristic. The Henry's Law constant, or the air/water partition coefficient, is an expression of the tendency of a contaminant to

volatilize from groundwater into soil gas. In general, chemicals having a Henry's Law constant of less than or equal to 1 x 10^{-5} atm-m^3/mole, such as pesticides and PCBs, should volatilize very little and be present only in minute amounts in the atmosphere or soil gas. For chemicals with a Henry's Law constant greater than 5 x 10^{-3} atm-m^3/mole, volatilization and diffusion in soil gas could be significant.

Retardation Factor

Adsorption to the soil matrix can reduce the rate at which a dissolved contaminant moves through an aquifer. The degree of this retardation is related to properties of the contaminant and the aquifer. For organic chemicals, the chemical's K_{oc} and the amount of organic carbon present within the aquifer matrix (f_{oc}) are the primary controls over the amount of retardation that will occur because organic chemicals have varying affinities for adsorbing onto organic carbon present within the aquifer. The retardation factor for an organic chemical is the ratio of the groundwater seepage velocity to the rate that the chemical migrates in groundwater. For example, if groundwater seepage velocity was 100 feet per year and a chemical had a retardation factor of 2, the organic chemical would migrate at 50 feet per year. Retardation factors were calculated for TCE and naphthalene, the main COCs at Site 59, based on the following:

$$R = 1 + [(K_d * \rho_b) / n_e]$$

where:

K_d	=	soil/water distribution coefficient
ρ_b	=	bulk density
n_e	=	effective porosity

$$K_d = K_{oc} * f_{oc}$$

where:

K_{oc}	=	organic carbon partition coefficient
f_{oc}	=	fraction organic carbon

For Site 59, values used were as follows:

K_{oc}	=	166 L/kg for TCE and 2,000 L/kg for naphthalene (see Table 6-1)
ρ_b	=	1.47 kg/L (average of results in Appendix E)
n_e	=	0.30 (assumed for fine sands)
f_{oc}	=	0.41% (average of results in Appendix E)

The resulting retardation factors are 4.33 for TCE and 41.18 for naphthalene, and based on the range of groundwater seepage velocities calculated in Section 4.5.2.3 (43.8 to 131 feet per year), TCE would be expected to migrate from 10.1 to 30.3 feet per year, and naphthalene would be expected to migrate from 1.1 to 3.2 feet per year.

6.1.1 Volatile Organic Compounds

VOCs detected at Site 59 include TCE, chlorinated breakdown products of TCE, and petroleum-related hydrocarbons. When exposed to the atmosphere, these compounds partition predominantly into the vapor phase. VOCs in general are considered moderately soluble in water. Chlorinated VOCs are generally more dense (specific gravity greater than 1) and more soluble in water than petroleum-related constituents. TCE (the most chlorinated aliphatic detected at Site 59) and ethylbenzene and toluene have the highest K_{oc} values and are preferentially bound to soil and less mobile than the remaining VOCs detected at the site. K_{ow} values vary among the VOCs detected at the site, but bioaccumulation/bioconcentration of these compounds is relatively low compared to chemicals such as PCBs and certain pesticides. Henry's Law constants for the VOCs detected at the site indicate that these compounds can readily volatilize from groundwater to soil gas.

6.1.2 Polynuclear Aromatic Hydrocarbons

Naphthalene has a specific gravity slightly greater than water and has lower water solubility than VOCs. Vapor pressure values are significantly lower for PAHs than for VOCs, but volatilization when exposed to the atmosphere is still a significant transport mechanism for these compounds. K_{oc} values are high and indicate that these compounds are more likely to sorb to soil and so are less mobile than VOCs. PAHs have higher K_{ow} values and so may have higher bioaccumulation/bioconcentration rates than VOCs. Henry's Law constants for the PAHs indicate that these compounds have a moderate tendency to partition from groundwater to soil gas.

6.2 CONTAMINANT PERSISTENCE

The persistence of various classes of chemicals is discussed in this section. Several transformation mechanisms affect chemical persistence, such as hydrolysis, biodegradation, photolysis, and oxidation/reduction reactions. The following general classes of compounds are discussed:

- Monocyclic aromatics
- Halogenated aliphatics

Site-specific discussions of biodegradation in groundwater are presented in Section 6.3.2.

6.2.1 Monocyclic Aromatics

Monocyclic aromatic compounds such as BTEX are not considered to be persistent in the environment, particularly in comparison to other organic chemicals such as PCBs and pesticides. Monocyclic aromatics are subject to degradation via the action of both soil and aquatic microorganisms. The biodegradation of these compounds in the soil matrix is dependent on the abundance of microflora, macronutrient availability, soil reaction (pH), temperature, and other factors.

In the event that these compounds discharge to surface water bodies, volatilization and biodegradation may occur relatively rapidly. For example, a reported first-order biodegradation rate constant for benzene is 0.11 day^{-1} in aquatic systems (Lyman et al., 1990). This corresponds to an aquatic half life of approximately 6 days. Other monocyclic aromatics are subject to similar degradation processes in aquatic environments (U.S. EPA, 1982). Other degradation processes, such as hydrolysis and photolysis, are considered to be insignificant fate mechanisms for monocyclic aromatics in aquatic systems (U.S. EPA, 1982). However, some monocyclic aromatics such as benzene and toluene have been shown to undergo clay-, mineral-, and soil-catalyzed oxidation (Dragun, 1988).

6.2.2 Halogenated Aliphatics

Halogenated aliphatic hydrocarbons such TCE are subject to abiotic dehalogenation. This process is an elimination reaction that results in the formation of an ethene from a saturated halogenated compound (Olsen and Davis, 1990). Therefore, the presence of dichloroethane in groundwater in association with ethanes may be a result of this process. Hydrolysis, photolysis, and oxidation are generally not considered to be significant fate processes for the chlorinated ethanes. Limited hydrolysis of saturated aliphatics (i.e., alkanes) may occur, but it does not appear to be a significant degradation mechanism for unsaturated species (i.e., alkenes) (U.S. EPA, 1982).

6.2.3 Polynuclear Aromatic Hydrocarbons

PAHs have very low solubilities, vapor pressures, and Henry's Law constants and high K_{oc}s and K_{ow}s. The low molecular-weight PAHs (e.g., acenaphthene, anthracene, fluorene, phenanthrene) may volatilize from surface waters, while the high-molecular-weight PAHs [e.g., benzo(a)pyrene, benzo(a)anthracene, chrysene, etc.] are less likely to volatilize. PAHs in soil are much more likely to bind to soil and be transported via mass transport mechanisms than to go into solution and be transported by groundwater movement. PAHs are subject to degradation via aerobic bacteria but may be relatively persistent in the absence of microbial population or macronutrients such as phosphorus and nitrogen.

Bioconcentration of PAHs in aquatic organisms is greater for the higher-molecular-weight compounds than the lower-molecular-weight compounds. PAHs can be bioaccumulated from water, sediments, or lower organisms in the food chain.

Landspreading applications have indicated that PAHs are highly amenable to microbial degradation in soil. The rate of degradation is influenced by temperature, pH, oxygen concentrations, initial chemical concentrations, and moisture. Photolysis, hydrolysis, and oxidation are not important fate processes for the degradation of PAHs in soil (ATSDR, 1990).

The most important processes that affect the fate of PAHs in water are photo oxidation, chemical oxidation, and biodegradation. PAHs do not contain functional groups that are susceptible to hydrolytic action, and hydrolysis is considered to be an insignificant degradation mechanism. The rate of photodegradation is influenced by water depth, turbidity, and temperature. Benzo(a)pyrene, chrysene, fluorene, and pyrene are reported to be resistant to photodegradation. PAHs may also be oxidized by chlorination and ozonation and may be metabolized by microbes under oxygenated conditions (ATSDR, 1990).

6.3 NATURAL ATTENUATION

Fixed-base laboratory analyses and field analytical tests were performed on groundwater samples from selected wells at Site 59 for biodegradation-related natural attenuation parameters. The fixed-base laboratory parameters included alkalinity, chloride, methane, ethane, ethene, sulfate, and TOC. Field analytical tests included pH, temperature, DO, hydrogen sulfide, sulfide, carbon dioxide, ferrous iron, and ORP. Natural attenuation parameter results are presented in Figures 6-1 through 6-6.

6.3.1 Natural Attenuation Overview

The following provides a general overview of the processes involved in natural attenuation via biodegradation and of the parameters collected to evaluate natural attenuation at Site 59. Section 6.3.2 provides a site-specific evaluation of the results of natural attenuation sampling at Site 59.

DO is utilized as an electron acceptor during microbial aerobic respiration to mineralize hydrocarbons such as benzene, toluene, ethylbenzene, and xylenes (BTEX), which act as electron donors, into carbon dioxide and water, providing microorganisms with carbon and energy. Aerobic respiration, or oxygen reduction, is generally the most efficient process by which BTEX constituents are degraded. For chlorinated hydrocarbons, anaerobic degradation pathways are generally more efficient than aerobic pathways.

At DO concentrations greater than approximately 0.5 to 1 mg/L (aerobic conditions), microorganisms can break down natural or anthropogenic sources of carbon, including BTEX, through aerobic respiration. DO decreases as oxygen in the aquifer is consumed by these reactions, and anaerobic microbes become more successful than aerobic microbes. At DO concentrations less than 0.5 mg/L and if nitrate is present in the aquifer, microbes that use nitrate as an electron acceptor begin to increase hydrocarbon degradation through nitrate-reducing biodegradation processes. As the supply of nitrate in the aquifer is utilized, iron-reducing microbes begin to degrade hydrocarbons via iron reduction. As bio-available iron becomes depleted, sulfate-reducing microbes begin degradation of hydrocarbons via sulfate reduction. Following sulfate reduction, degradation via methanogenesis is the dominant process. In the degradation of fuel hydrocarbons, the contaminant is the carbon source and electron donor for the microbes during these reactions.

These same processes are involved in biodegradation of chlorinated compounds via reductive dechlorination. The microbial breakdown of anthropogenic organic carbon (or co-located BTEX constituents) via nitrate, iron, or sulfate reduction or methanogenesis releases hydrogen, and the hydrogen reacts with the chlorinated compounds (electron acceptors) by replacing a chlorine. Many factors, including the natural geochemical makeup of the aquifer and complex oxidation-reduction conditions, affect whether and to what degree each process can occur.

Dissolved Oxygen

In aquifers that typically exhibit aerobic conditions, DO concentrations less than 1.0 to 0.5 mg/L in contaminated areas suggest that indigenous anaerobic bacterial populations are established and actively degrading natural organic carbon or anthropogenic carbon sources (e.g., petroleum hydrocarbons) in these areas. As stated above, anaerobic biodegradation is more efficient at reducing concentrations of chlorinated contaminants compared to BTEX constituents.

Nitrate and Nitrite

During nitrate reduction, bacteria can use nitrate as an electron acceptor to degrade hydrocarbons, generating nitrite and carbon dioxide. However, nitrate may compete with chlorinated hydrocarbons as electron acceptors if present at moderate concentrations (greater than 1 mg/L). Therefore, in order for reductive dechlorination to occur, nitrate concentrations should be between 0.5 mg/L and 1.0 mg/L.

Ferrous Iron

Under anaerobic conditions, ferric iron (iron III) can be used as an electron acceptor. Ferric iron available to microorganisms cannot be measured since it is insoluble; however, soluble ferrous iron can be used as

an indicator. Increasing concentrations of ferrous iron along the flow path within the plume area indicate that biodegradation by iron reduction may be occurring. In addition, reducing conditions are likely when ferrous iron concentrations are greater than 1.0 mg/L.

Sulfate, Sulfide, and Hydrogen Sulfide

Sulfate reduction occurs after the ferric iron electron acceptors have been exhausted. During sulfate reduction, anaerobic bacteria can use sulfate as an electron acceptor to degrade hydrocarbons. However, the chlorinated solvents themselves can be used as electron acceptors during reductive dechlorination, and sulfate may compete as an electron acceptor if present at moderate concentrations (greater than 20 mg/L). Therefore, in order for reductive dechlorination to occur, sulfate should be at concentrations less than 20.0 mg/L in the plume. The process of sulfate reduction results in the generation of hydrogen sulfide. A decreasing trend in sulfate concentration, coupled with an increasing trend in hydrogen sulfide/sulfide in the direction of groundwater flow, is a strong positive indicator of a sulfate-reducing environment.

Methane, Ethene, and Ethane

During methanogenesis (an anaerobic biodegradation process), some types of bacteria utilize carbon dioxide as an electron acceptor, generating methane as a by-product of fermentation. Methane in groundwater is indicative of strong reducing conditions. The presence of methane above background concentrations in areas of contaminated groundwater is a key indicator of biodegradation of hydrocarbons. Ethene and ethane are by-products from the reductive dechlorination of chlorinated ethenes. The presence of ethene and ethane in areas of contaminated groundwater is a key indicator of biodegradation of the chlorinated ethenes.

Oxidation-Reduction Potential

ORP of groundwater is a measure of the relative tendency of the groundwater solution to accept or donate electrons, as well as the amount of energy released during electron transfers within the solution. ORP depends upon and influences the rates and types of biodegradation processes; therefore, measurement of ORP can provide evidence of the types of biodegradation processes that are active in a particular plume or even within different portions of the same plume. In general, reductive dechlorination is possible at ORP levels of less than 50 millivolts, and reductive pathways are likely at ORP levels of less than -100 millivolts. However, great care must be taken during the evaluation of ORP data because most natural waters usually have mixed potentials that cannot be related to a single electron couple. ORP should only be used as a qualitative indicator of the overall oxidation-reduction state of an aquifer.

Total Organic Carbon

Because chlorinated hydrocarbons are used as electron acceptors during reductive dechlorination, there also needs to be a sufficient supply of organic carbon as the primary substrate for microbial growth. Such a supply can come from native organic carbon in the aquifer or other anthropogenic sources such as BTEX. Organic carbon concentrations greater than 20 mg/L in the aquifer indicate a sufficient supply of carbon to act as the primary substrate. TOC is a measure of the natural and anthropogenic carbon present in the aquifer.

Carbon Dioxide and Alkalinity

Carbon dioxide is both produced and utilized during the biodegradation of hydrocarbons. Carbon dioxide is produced during aerobic respiration and during anaerobic processes of denitrification, iron reduction, and sulfate reduction. Carbon dioxide is utilized during the anaerobic process of methanogenesis as an electron receptor in the generation of methane as a by-product of fermentation. Carbon dioxide concentrations approximately two times the concentrations in the background wells are an indication that biodegradation processes (except methanogenesis) are occurring.

Alkalinity is a measure of the aquifier's buffering (neutralizing) capacity of acids in water and is expressed as a concentration of calcium carbonate. Alkalinity can give a general indication of the amount of carbon dioxide generated in a plume.

Chloride

Chloride is released into groundwater during dechlorination of a chlorinated solvent plume. Therefore, an increase in chloride ion concentration in the downgradient direction can provide direct evidence that dechlorination is occurring.

pH

pH is a measurement of the hydrogen ion (H^+) concentration in terms of its negative logarithm. The scale ranges from 0 to 14; values less than 7 are considered acidic and values greater than 7 are considered basic. pH affects the presence and efficiency of bacterial populations in natural groundwater conditions. Neutral groundwater (i.e., pH 7) is the preferred condition for most microbes.

Temperature

The temperature of groundwater affects the solubility of oxygen and other geochemical species, as well as the metabolic activity of bacteria. Microbes are generally more active and efficient in warmer water. Biochemical processes are accelerated at temperatures greater than approximately 20 degrees Celsius.

6.3.2 Natural Attenuation Evaluation

The following discussion utilizes data from the most recent natural attenuation indicator parameter sampling, conducted in January 2006 at 20 wells at Site 59.

DO concentrations were 1.0 mg/L or less in all 20 wells sampled for natural attenuation indicator parameters, and less than 0.5 mg/L in 9 of 20 wells, indicating that groundwater conditions are generally anaerobic across the site.

Nitrate and nitrite were not detected in the 10 wells initially sampled for natural attenuation parameters; therefore, nitrate and nitrite analyses were not conducted during the January 2006 natural attenuation sampling event. The lack of nitrate indicates that it is not competing with chlorinated hydrocarbons as an electron acceptor, and the lack of nitrate and nitrite indicate that nitrate reduction is not a viable biodegradation pathway at the site.

Ferrous iron concentrations greater than 1 mg/L were detected in 8 of 20 wells at Site 59. In the 30-foot zone, ferrous iron concentrations decreased from the upgradient (001) location to the 002 location but then increased in a downgradient direction to the 006 location. Concentrations were greater than 1 mg/L in 30-foot wells at the 005 and 006 locations. In the 50-foot zone, ferrous iron concentrations generally increased in the downgradient direction, except at the 006 location. Concentrations at the 004, 005, and 007 locations were greater than 1 mg/L. In the 70- to 80-foot zone, ferrous iron concentrations were generally consistent across the site and were less than 1 mg/L. In the TOR zone, ferrous iron concentrations generally increased in a downgradient direction and were greater than 1 mg/L at locations 004 and 018.

Sulfate concentrations varied, but within each zone, concentrations generally decreased in a downgradient direction within and sometimes downgradient of each plume. Sulfate concentrations increased between the northern and southern plumes in the 30-foot zone and downgradient of the southern plume in the 50-foot zone. Hydrogen sulfide and sulfide were consistently detected across the site, although concentrations were generally not significantly greater than in the upgradient wells. Based on these data, sulfate reduction may be occurring but does not appear to be a major biodegradation pathway at the site.

Methane concentrations were greater than the average background concentration (5.8 µg/L) in 15 of the 20 wells sampled for natural attenuation parameters, and concentrations were greater than two times the average background concentration in 10 of 20 wells, suggesting methanogenic activity is occurring at the site. Chloride concentrations were greater than the average background concentration (5.4 mg/L) in 11 of the 20 wells sampled for natural attenuation parameters, suggesting that chloride is being released as a result of reductive dechlorination.

ORP values were less than 50 millivolts in 13 of 30 wells sampled, indicating that reductive pathways are possible across the site. TOC concentrations at the upgradient location were 0.62 mg/L in the 30-foot ozone and 1.2 mg/L in the 70- to 80-foot zone, indicating an inadequate supply of natural carbon to be used in reductive dechlorination processes. Carbon dioxide and alkalinity data do not generally provide supporting evidence for biodegradation at the site. Carbon dioxide concentrations were less than two times the average upgradient concentration in all wells, and only the alkalinity concentrations in the TOR zone at locations 002, 003, 004, and 018 were greater than two times the average background concentration.

At Site 59, pH values ranged from 4.38 to 7.79, with 6 of 20 wells having pH values between the optimal range of 5 to 9. Temperature values ranged from 21.33 to 25.10 degrees ^{o}C, indicating favorable conditions for biochemical processes.

At Site 59, concentrations of dissolved oxygen, ferrous iron, and methane (and possibly sulfate/sulfides) and ORP values suggest conditions generally favorable for reductive dechlorination. Alkalinity concentrations suggest biological activity in the TOR zone, and groundwater temperatures are within the optimal range for biochemical processes. However, pH values at more than half of the wells sampled for natural attenuation parameters were slightly less than the range favorable for the reductive pathway. In addition, an adequate supply of natural carbon does not appear to be available at the site for use as an electron donor in the dechlorination process. The most direct indication of biodegradation of TCE is the presence of daughter products, which were detected at relatively few locations at low concentrations at Site 59. This suggests that, although existing geochemical conditions may be somewhat favorable for reductive dechlorination, this biodegradation mechanism is not occurring to an appreciable extent at the site.

TABLE 6-1

ENVIRONMENTAL FATE AND TRANSPORT PARAMETERS FOR ORGANIC CHEMICALS
OPERABLE UNIT 9, SITE 59
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

Parameter	Specific Gravity (g/mL at 20/4°C)	Vapor Pressure (mm Hg at 20°C)	Solubility in Water (mg/L at 25°C)	Octanol/Water Partition Coefficient	Organic Carbon Partition Coefficient	Henry's Law Constant (atm-m^3/mole at 25°C)
MONOCYCLIC AROMATICS						
Ethylbenzene	0.8670	7	152 (20°C)	1,413	363 (1)	7.90 to 8.43E-3
Toluene	0.8669	28 (25°C)	535	525	182 (1)	5.94E-3
HALOGENATED ALIPHATICS						
1,1-Dichloroethene	1.213	500	2,500	20.9	58.9 (1)	0.19
cis-1,2-Dichloroethene	1.2837	180	3,500	72.4	35.5 (1)	4.08E-3 (24.8°C)
Trichloroethene	1.465	74 (25°C)	1,366	263	166 (1)	0.011
Vinyl chloride	0.9106	2,530	2,763	22.9	18.6 (1)	2.78E-2 (1)
POLYNUCLEAR AROMATIC HYDROCARBONS						
Naphthalene	1.162	0.087	31.7 (20°C)	7,244	2,000(1)	4.60E-4

References:
Ethylbenzene: ATSDR, 1999.
Toluene: ATSDR, 2000.
1,1-DCE: ATSDR, 1994.
1,2-DCE: ATSDR, 1996.
TCE: ATSDR, 1997.
Vinyl chloride: ATSDR, 1997.
Naphthalene: ATSDR, 1995.

1 U.S. EPA, 1996b.

TABLE 6-2

NATURAL ATTENUATION INDICATOR PARAMETER DATA
OPERABLE UNIT 9, SITE 59
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

PARAMETER	UNIT	Location 001			
		CEF-059-001-028		CEF-059-001-083	
		Nov-04	Jan-06	Nov-04	Jan-06
ALKALINITY	mg/L	5.5	6.5	11.5	7.5
CARBON DIOXIDE	mg/L	< 10	65	< 10	35
DISSOLVED OXYGEN	mg/L	0.8	1.0	0.8	0.6
FERROUS IRON	mg/L	1.68	1.54	1.15	0.42
HYDROGEN SULFIDE	mg/L	0	1.0	0	0.7
FIELD SULFIDE	mg/L	0.01	0.33	0.12	0.08
OXIDATION-REDUCTION POTENTIAL	mV	327.6	70.2	72.5	34.8
pH	S.U.	4.54	4.71	5.21	4.94
SPECIFIC CONDUCTANCE	mS/cm	0.078	0.047	2.8	0.031
TEMPERATURE	^{o}C	22.15	21.33	22.82	21.64
TURBIDITY	NTU	0	625	28	7.7
CHLORIDE	mg/L	7.7	4.2	9.6	6.5
NITRATE	mg/L	0.05 U	NA	0.05 U	NA
NITRITE	mg/L	0.05 U	NA	0.05 U	NA
ORTHOPHOSPHATE	mg/L	0.02 U	NA	0.18	NA
SULFATE	mg/L	31.6	7.7	4.6	1.0 U
TOTAL ORGANIC CARBON	mg/L	0.62 J	NA	1.2	NA
SULFIDE (DISSOLVED)	mg/L	1 U	NA	1 U	NA
ETHANE	µg/L	0.6 U	0.60 U	0.6 U	0.60 U
ETHENE	µg/L	0.8 U	0.80 U	0.8 U	0.80 U
METHANE	µg/L	16.1	3.52	7.31	8.15

TABLE 6-2

NATURAL ATTENUATION INDICATOR PARAMETER DATA
OPERABLE UNIT 9, SITE 59
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

PARAMETER	UNIT	Location 002			
		CEF-059-002-028		CEF-059-002-120	
		Nov-04	Jan-06	Nov-04	Jan-06
ALKALINITY	mg/L	2.5 U	4.0 I	204	165
CARBON DIOXIDE	mg/L	70	60	10 U	10
DISSOLVED OXYGEN	mg/L	1	0.29	2	0.08
FERROUS IRON	mg/L	0.94	0.79	1.05	0.24
HYDROGEN SULFIDE	mg/L	0	0	0	0.5
FIELD SULFIDE	mg/L	0.02	0.09	0.02	0.06
OXIDATION-REDUCTION POTENTIAL	mV	370.2	102.0	-118.7	-163.0
pH	S.U.	4.25	4.56	7.29	7.79
SPECIFIC CONDUCTANCE	mS/cm	0.076	0.072	26.47	0.303
TEMPERATURE	^{o}C	22.52	22.64	22.52	22.38
TURBIDITY	NTU	6.9	240	9.8	8.3
CHLORIDE	mg/L	8.7	4.9	13.7	9.6
NITRATE	mg/L	0.05 U	NA	0.05 UJ	NA
NITRITE	mg/L	0.05 U	NA	0.05 UJ	NA
ORTHOPHOSPHATE	mg/L	0.02 U	NA	1 J	NA
SULFATE	mg/L	28.6	20.3	17.6	3.1
TOTAL ORGANIC CARBON	mg/L	0.5 U	NA	6.7	NA
SULFIDE (DISSOLVED)	mg/L	1 U	NA	0.59	NA
ETHANE	µg/L	0.6 U	0.60 U	0.6 U	0.60 U
ETHENE	µg/L	0.8 U	0.80 U	0.8 U	0.80 U
METHANE	µg/L	4.77	17.4	66.9	80.0

TABLE 6-2

NATURAL ATTENUATION INDICATOR PARAMETER DATA
OPERABLE UNIT 9, SITE 59
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

PARAMETER	UNIT	Location 003					
		CEF-059-003-035	CEF-059-003-053		CEF-059-003-073	CEF-059-003-121	
		Jan-06	Nov-04	Jan-06	Jan-06	Nov-04	Jan-06
ALKALINITY	mg/L	5.5	11	5.5	6.5	220	93.0
CARBON DIOXIDE	mg/L	80	60	90	40	11	16
DISSOLVED OXYGEN	mg/L	0.25	0	0.18	0.24	1.8	0.15
FERROUS IRON	mg/L	0.86	5.2	0.58	0.68	1.29	0.39
HYDROGEN SULFIDE	mg/L	0	0.3	0.3	0	0.7	0
FIELD SULFIDE	mg/L	0.02	0.32	0.05	0.13	0.08	0.06
OXIDATION-REDUCTION POTENTIAL	mV	70.9	141.2	81.7	47.8	38.9	-88.6
pH	S.U.	4.38	4.89	4.49	4.61	7.31	7.34
SPECIFIC CONDUCTANCE	mS/cm	0.069	0.069	0.058	0.053	0.472	0.382
TEMPERATURE	^{o}C	22.65	22.74	22.65	22.32	23.95	22.72
TURBIDITY	NTU	1.4	45	3.5	8.6	2.21	0.05
CHLORIDE	mg/L	6.8	9	4.6	4.8	12.3	9.8
NITRATE	mg/L	NA	0.05 U	NA	NA	0.05 U	NA
NITRITE	mg/L	NA	0.05 U	NA	NA	0.05 U	NA
ORTHOPHOSPHATE	mg/L	NA	0.23	NA	NA	0.72	NA
SULFATE	mg/L	13.7	13.5	12.8	9.5	5.6	1.8 I
TOTAL ORGANIC CARBON	mg/L	NA	1	NA	NA	2.4	NA
SULFIDE (DISSOLVED)	mg/L	NA	1 U	NA	NA	1 U	NA
ETHANE	µg/L	0.6 U	0.6 U	0.6 U	0.6 U	3.53	0.6 U
ETHENE	µg/L	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
METHANE	µg/L	56.2	2.71	2.2	3.05	122	88.9

TABLE 6-2

NATURAL ATTENUATION INDICATOR PARAMETER DATA
OPERABLE UNIT 9, SITE 59
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

PARAMETER	UNIT	Location 004				
		CEF-059-004-053		CEF-059-004-073		CEF-059-004-112
		Nov-04	Jan-06	Nov-04	Jan-06	Jan-06
ALKALINITY	mg/L	18	9.5	8	6.5	42.0
CARBON DIOXIDE	mg/L	< 10	70	< 10	75	18
DISSOLVED OXYGEN	mg/L	0.8	0.8	0.6	0.8	0.6
FERROUS IRON	mg/L	8.6	2.64	9.2	0.82	1.46
HYDROGEN SULFIDE	mg/L	0	0.7	0	1.0	0
FIELD SULFIDE	mg/L	0.19	0.39	0.22	0.27	0.03
OXIDATION-REDUCTION POTENTIAL	mV	28.3	52.9	48.1	39.1	-129.8
pH	S.U.	5.47	4.75	5.05	4.38	7.15
SPECIFIC CONDUCTANCE	mS/cm	0.082	0.056	0.06	0.054	0.321
TEMPERATURE	^{o}C	23.02	22.24	24.17	22.52	22.63
TURBIDITY	NTU	321	140	12	90	21
CHLORIDE	mg/L	8.1	5.9	8.4	4.8	11.3
NITRATE	mg/L	0.05 U	NA	0.05 U	NA	NA
NITRITE	mg/L	0.05 U	NA	0.05 U	NA	NA
ORTHOPHOSPHATE	mg/L	0.047 J	NA	0.21	NA	NA
SULFATE	mg/L	13.2	8.0	12.3	9.4	1.0 U
TOTAL ORGANIC CARBON	mg/L	1.4	NA	0.56 J	NA	NA
SULFIDE (DISSOLVED)	mg/L	1 U	NA	1 U	NA	NA
ETHANE	µg/L	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
ETHENE	µg/L	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
METHANE	µg/L	5.03 J	9.87	5.15	7.79	282

TABLE 6-2

NATURAL ATTENUATION INDICATOR PARAMETER DATA
OPERABLE UNIT 9, SITE 59
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

PARAMETER	UNIT	Location 005			Location 006		
		CEF-059-005-033	CEF-059-005-053		NG-12I*	NG-12D**	
		Jan-06	Nov-04	Jan-06	Jan-06	Nov-04	Jan-06
ALKALINITY	mg/L	6.5	22.5	5.5	9.5	2.5 U	4.5 I
CARBON DIOXIDE	mg/L	90	10 U	70	80	< 10	70
DISSOLVED OXYGEN	mg/L	0.3	0.6	0.4	0.8	2	0.8
FERROUS IRON	mg/L	2.27	7.8	1.29	2.96	0.96	0.55
HYDROGEN SULFIDE	mg/L	2.0	0	0	0.5	0	0
FIELD SULFIDE	mg/L	0.36	0.08	0.02	0.03	0.09	0.2
OXIDATION-REDUCTION POTENTIAL	mV	43.0	19.3	47.2	96.9	160.5	150.5
pH	S.U.	4.56	5.98	4.53	4.87	4.55	4.65
SPECIFIC CONDUCTANCE	mS/cm	0.108	0.09	0.049	0.060	0.042	0.041
TEMPERATURE	^{o}C	23.32	23.38	22.90	25.02	25.57	24.25
TURBIDITY	NTU	3.8	7.8	8.2	0.60	0	1.1
CHLORIDE	mg/L	5.1	9.9	6.1	4.9	7.6	3.8
NITRATE	mg/L	NA	0.05 U	NA	NA	0.05 U	NA
NITRITE	mg/L	NA	0.05 U	NA	NA	0.05 U	NA
ORTHOPHOSPHATE	mg/L	NA	0.074 J	NA	NA	0.02 U	NA
SULFATE	mg/L	31.2	7	6.8	9.1	11.7	5.5
TOTAL ORGANIC CARBON	mg/L	NA	1.4	NA	NA	0.68 J	NA
SULFIDE (DISSOLVED)	mg/L	NA	1 U	NA	NA	1 U	NA
ETHANE	µg/L	0.6 U	0.43	0.6 U	0.6 U	0.6 U	0.6 U
ETHENE	µg/L	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
METHANE	µg/L	778	20.3	29.0	483	110	95.9

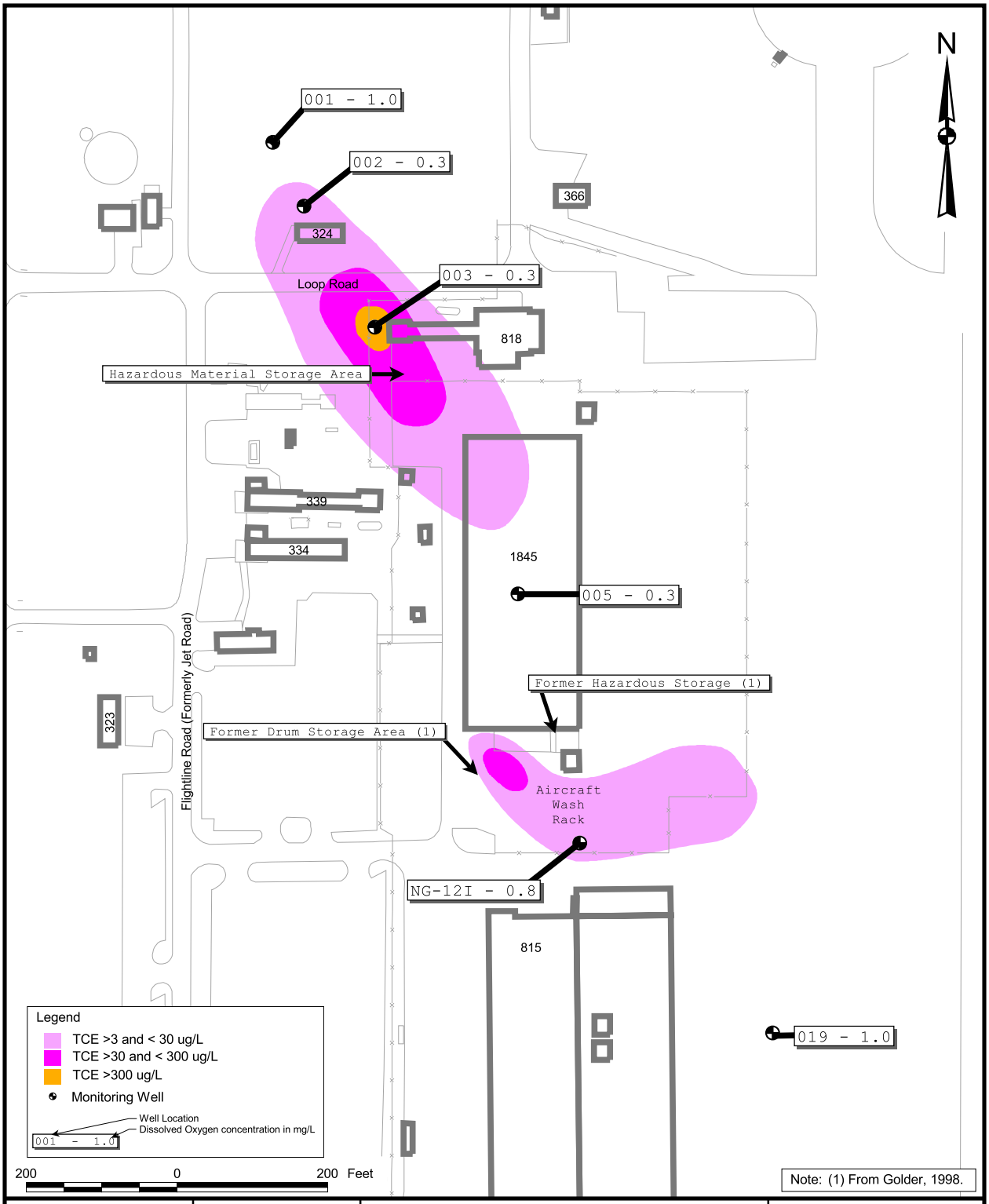
TABLE 6-2

NATURAL ATTENUATION INDICATOR PARAMETER DATA
OPERABLE UNIT 9, SITE 59
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

PARAMETER	UNIT	Location 006 (continued)	Location 007		Location 018	Location 019
		CEF-059-006-078	CEF-059-007-053	CEF-059-007-078	CEF-059-018-105	CEF-059-019-032
		Jan-06	Jan-06	Jan-06	Jan-06	Jan-06
ALKALINITY	mg/L	8.0	10.0	9.5	36.0	6.0
CARBON DIOXIDE	mg/L	60	80	70	90	30
DISSOLVED OXYGEN	mg/L	1.0	0.4	0.8	1.0	1.0
FERROUS IRON	mg/L	0.76	3.19	0.77	1.08	0.41
HYDROGEN SULFIDE	mg/L	1.0	1.0	1.0	0.0	0.3
FIELD SULFIDE	mg/L	0.34	0.72	0.27	0.05	0.02
OXIDATION-REDUCTION POTENTIAL	mV	33.2	28.9	40.7	32.5	44.8
pH	S.U.	4.64	5.37	5.13	5.82	4.77
SPECIFIC CONDUCTANCE	mS/cm	0.042	0.084	0.046	0.116	0.034
TEMPERATURE	^{o}C	24.21	22.88	22.79	22.96	25.10
TURBIDITY	NTU	8.4	70	9.8	7.1	9.3
CHLORIDE	mg/L	6.4	5.1	5.5	13.6	6.1
NITRATE	mg/L	NA	NA	NA	NA	NA
NITRITE	mg/L	NA	NA	NA	NA	NA
ORTHOPHOSPHATE	mg/L	NA	NA	NA	NA	NA
SULFATE	mg/L	2.7	19.3	5	1.0 U	1.1 I
TOTAL ORGANIC CARBON	mg/L	NA	NA	NA	NA	NA
SULFIDE (DISSOLVED)	mg/L	NA	NA	NA	NA	NA
ETHANE	µg/L	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
ETHENE	µg/L	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U
METHANE	µg/L	9.90	3.75	22.1	51.9	1.42

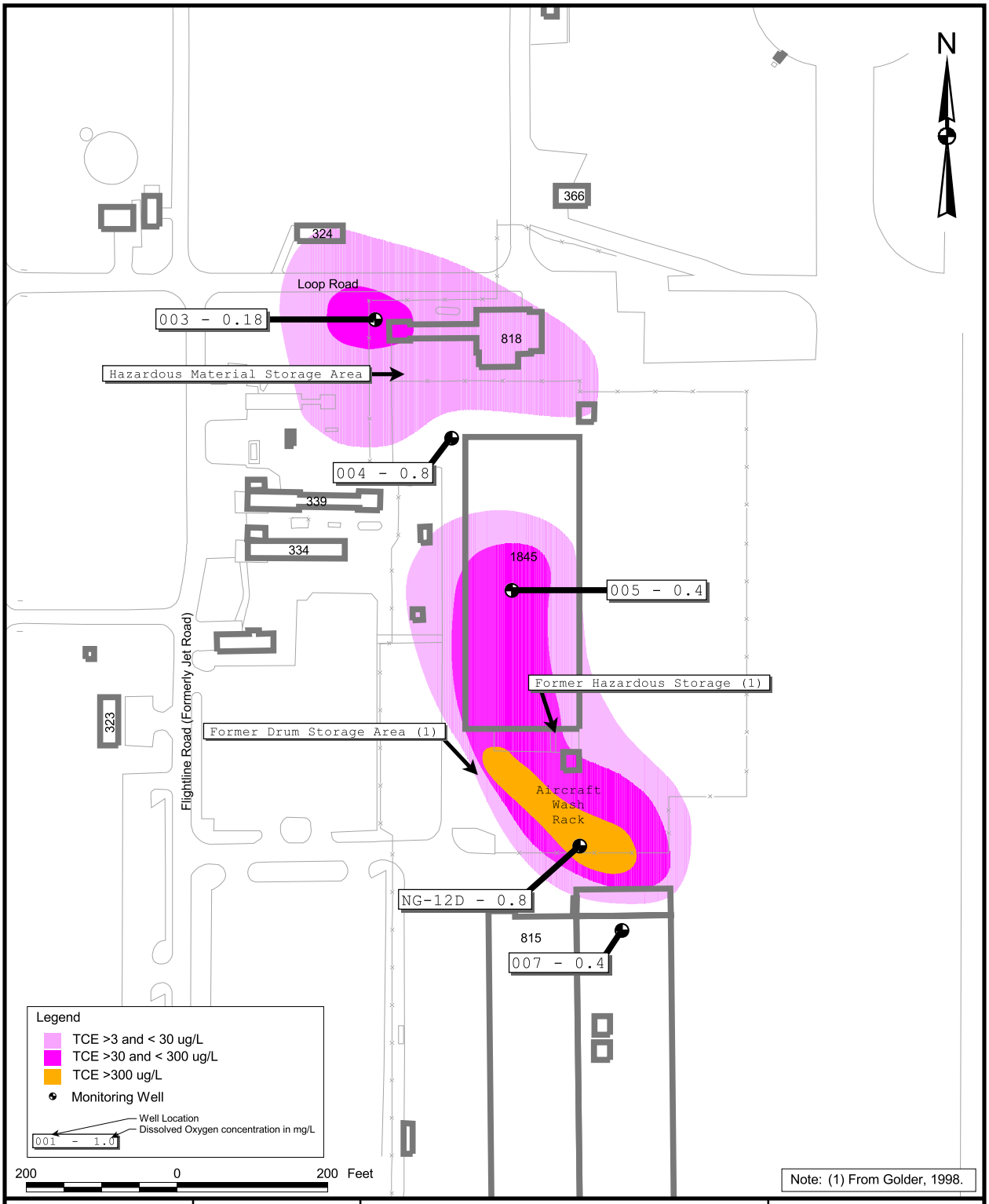
NA = Not analyzed.
J = Estimated concentration.
I = Reported value between laboratory method detection limit and laboratory practical quantitation limit.
U = Not detected at detection limit listed.
* NG-12I is screened from 32.5 to 37.5 feet below ground surface.
** NG-12D is screened from 45 to 50 feet below ground surface.

mV = millivolts.
S.U. = Standard units.
mS/cm = milliSiemen per centimeter.
^{o}C = Degrees Celsius.
NTU = Nephelometric turbidity units.
mg/L = milligrams per liter.
µg/L = micrograms per liter.



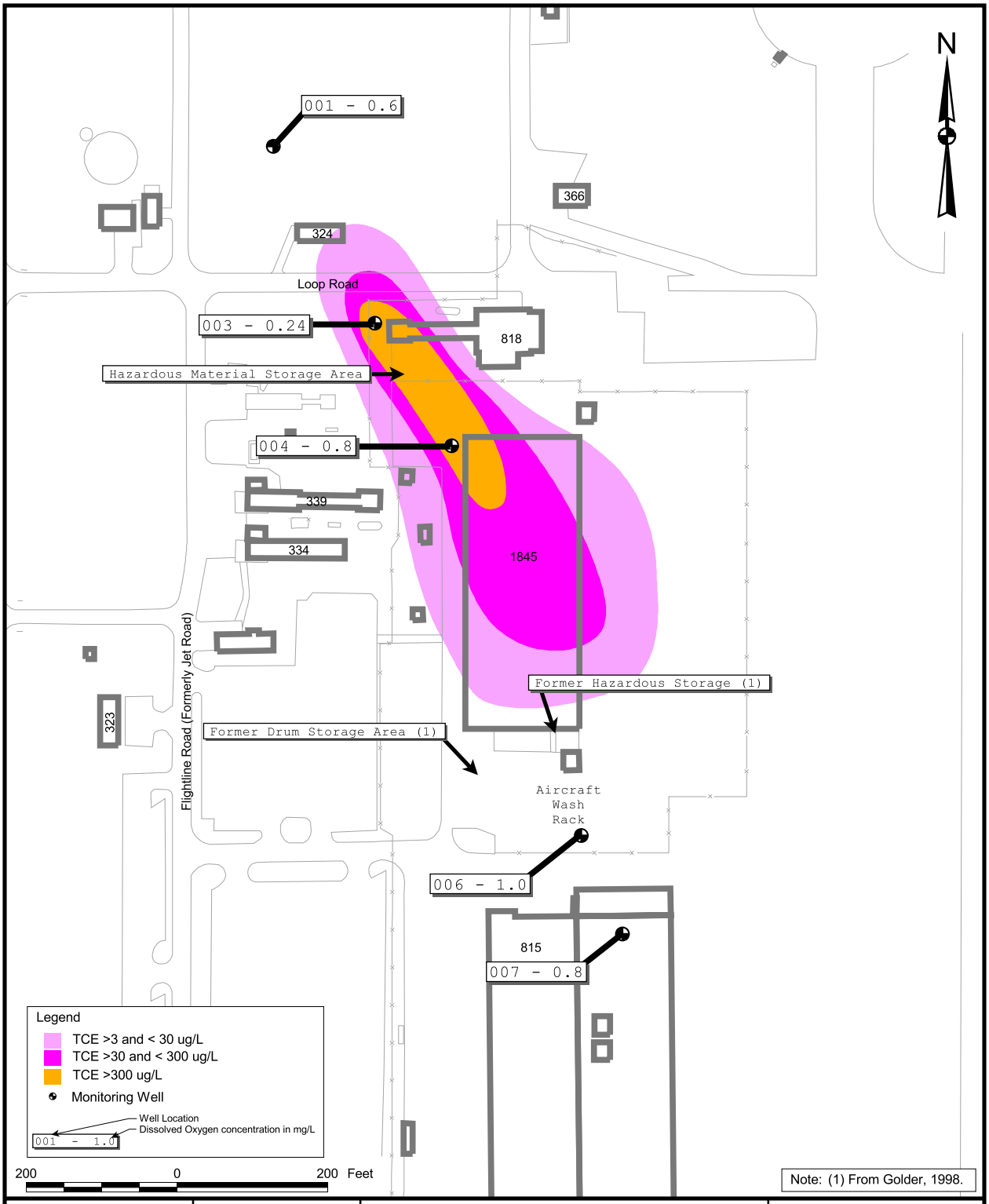
DRAWN BY MJJ	DATE 19Jan06	DISSOLVED OXYGEN IN GROUNDWATER 30-FOOT ZONE OU 9, SITE 59 REMEDIAL INVESTIGATION REPORT NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NUMBER 8925
CHECKED BY	DATE		APPROVED BY / DATE
COST/SCHEDULE-AREA			APPROVED BY / DATE
SCALE AS NOTED			DRAWING NO. FIGURE 6-1 / REV 0

P:\GIS\NAS_CecilField\Site-59_RI.apr 25Feb06 MJJ Layout121



DRAWN BY MJJ	DATE 19Jan06	DISSOLVED OXYGEN IN GROUNDWATER 50-FOOT ZONE OU 9, SITE 59 REMEDIAL INVESTIGATION REPORT NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NUMBER 8925
CHECKED BY	DATE		APPROVED BY DATE
COST/SCHEDULE-AREA			APPROVED BY DATE
SCALE AS NOTED			DRAWING NO. FIGURE 6-2 / REV 0

P:\GIS\NAS_CecilField\Site-59_RI.apr 25Feb06 MJJ Layout122



DRAWN BY MJJ	DATE 19Jan06	DISSOLVED OXYGEN IN GROUNDWATER 70- TO 80-FOOT ZONE OU 9, SITE 59 REMEDIAL INVESTIGATION REPORT NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NUMBER 8925
CHECKED BY	DATE		APPROVED BY DATE
COST/SCHEDULE-AREA			APPROVED BY DATE
SCALE AS NOTED			DRAWING NO. FIGURE 6-3 / REV 0

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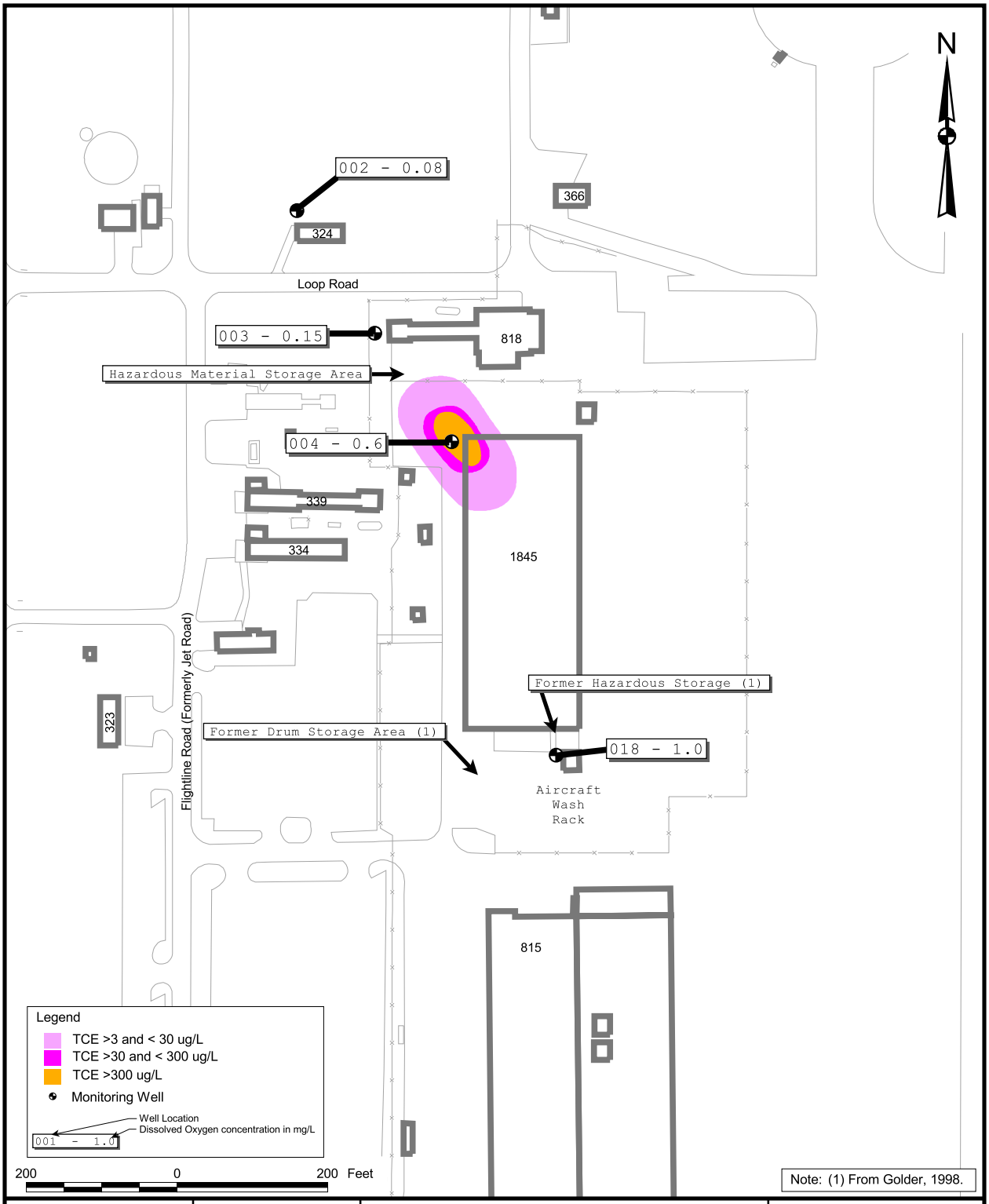
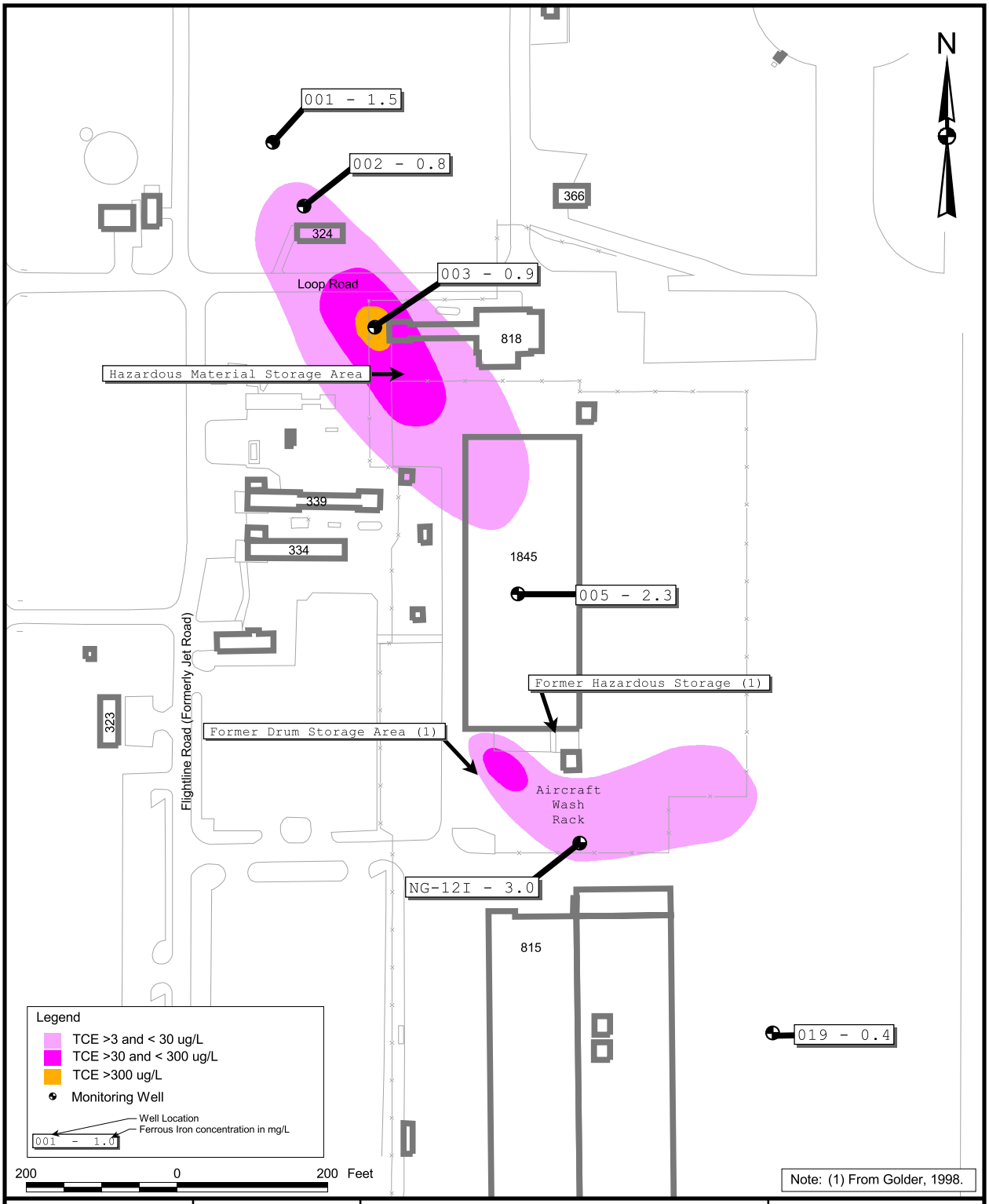


Note: (1) From Golder, 1998.

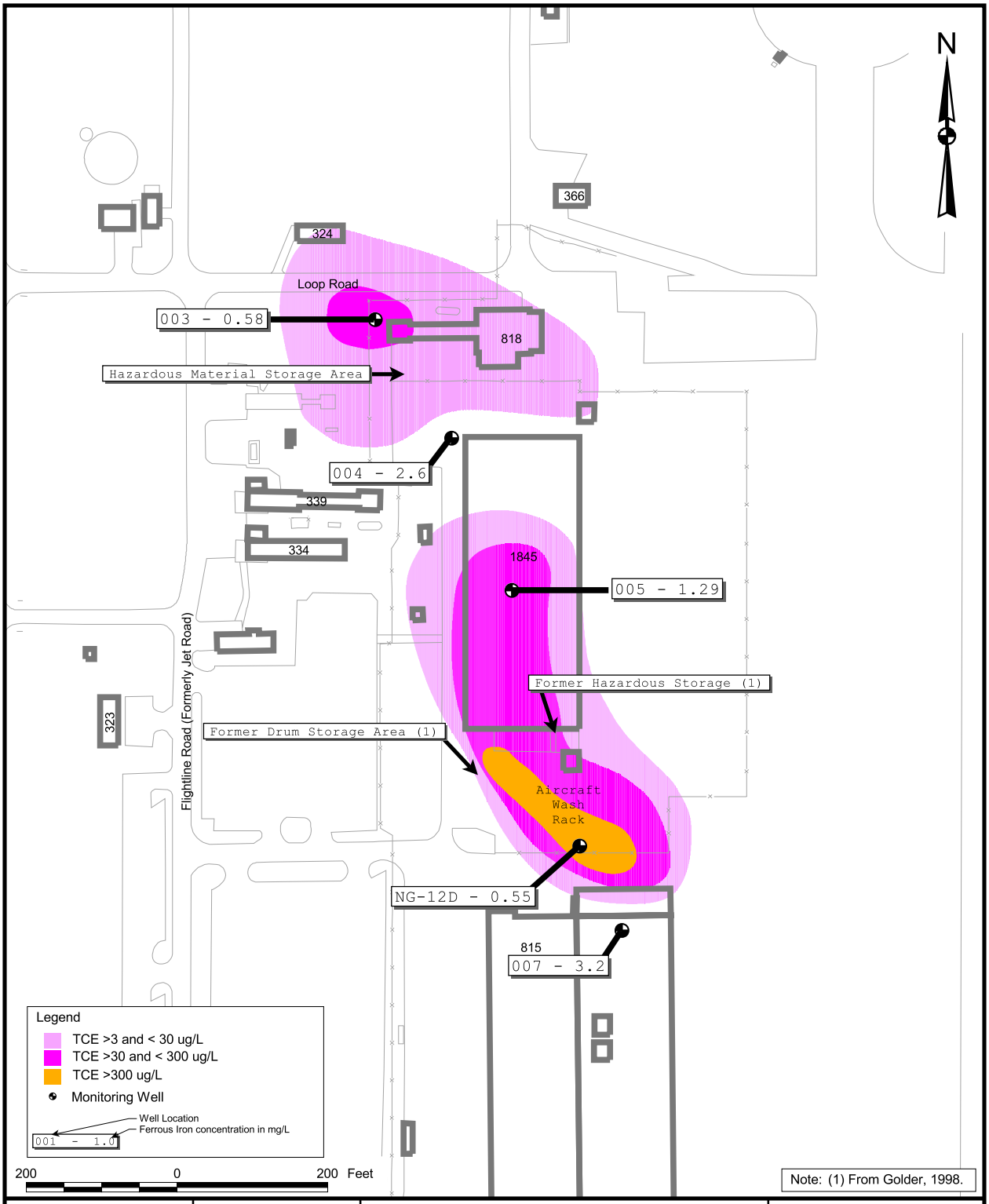
DRAWN BY MJJ	DATE 19Jan06	DISSOLVED OXYGEN IN GROUNDWATER TOP OF ROCK ZONE OU 9, SITE 59 REMEDIAL INVESTIGATION REPORT NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NUMBER 8925
CHECKED BY	DATE		APPROVED BY DATE
COST/SCHEDULE-AREA			APPROVED BY DATE
SCALE AS NOTED			DRAWING NO. FIGURE 6-4 / REV 0

P:\GIS\NAS_CecilField\Site-59_RI.apr 25Feb06 MJJ Layout124



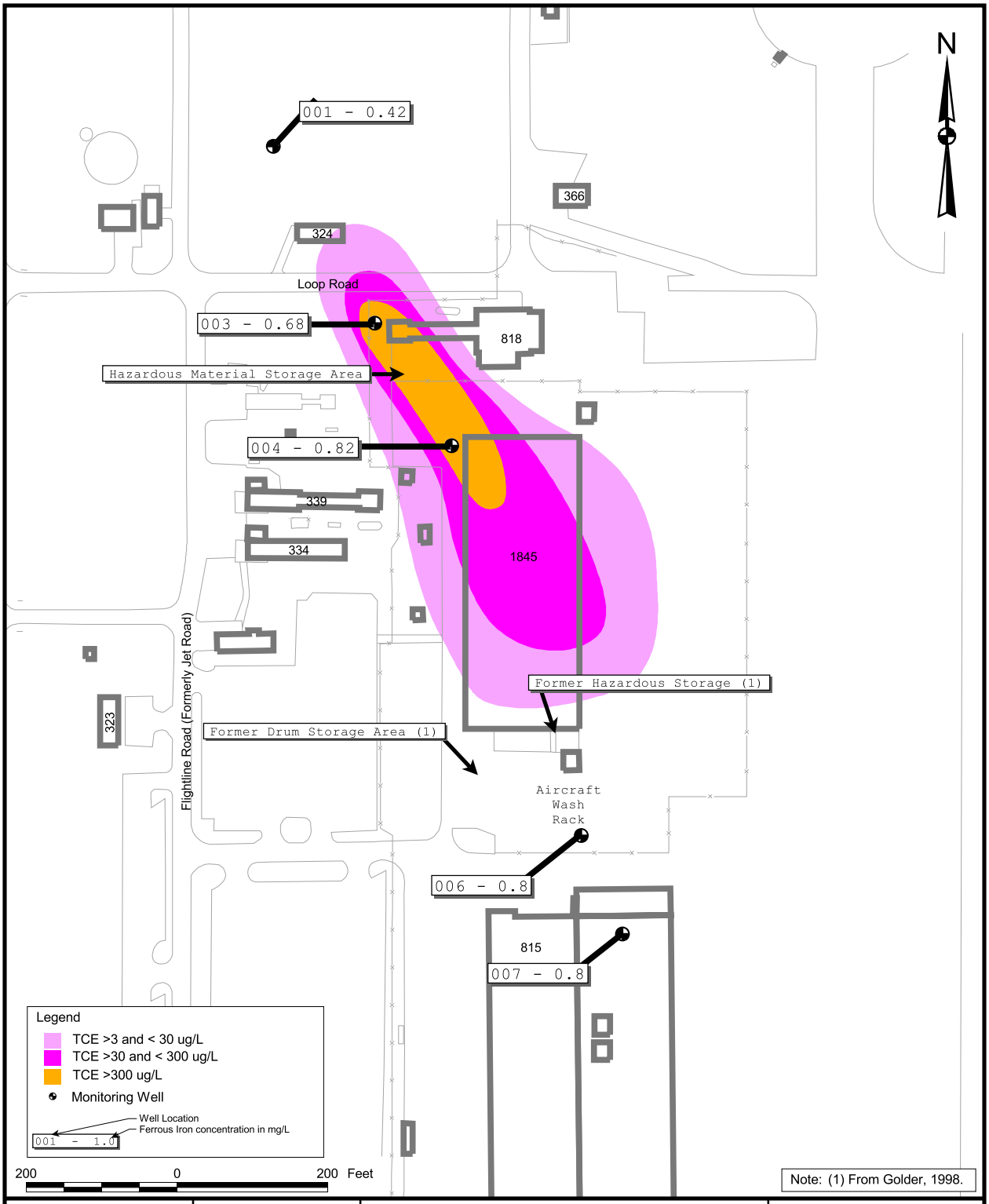
DRAWN BY MJJ	DATE 19Jan06	FERROUS IRON IN GROUNDWATER 30-FOOT ZONE OU 9, SITE 59 REMEDIAL INVESTIGATION REPORT NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NUMBER 8925
CHECKED BY	DATE		APPROVED BY DATE
COST/SCHEDULE-AREA			APPROVED BY DATE
SCALE AS NOTED			DRAWING NO. FIGURE 6-5 / REV 0

P:\GIS\NAS_CecilField\Site-59_RI.apr 25Feb06 MJJ Layout131



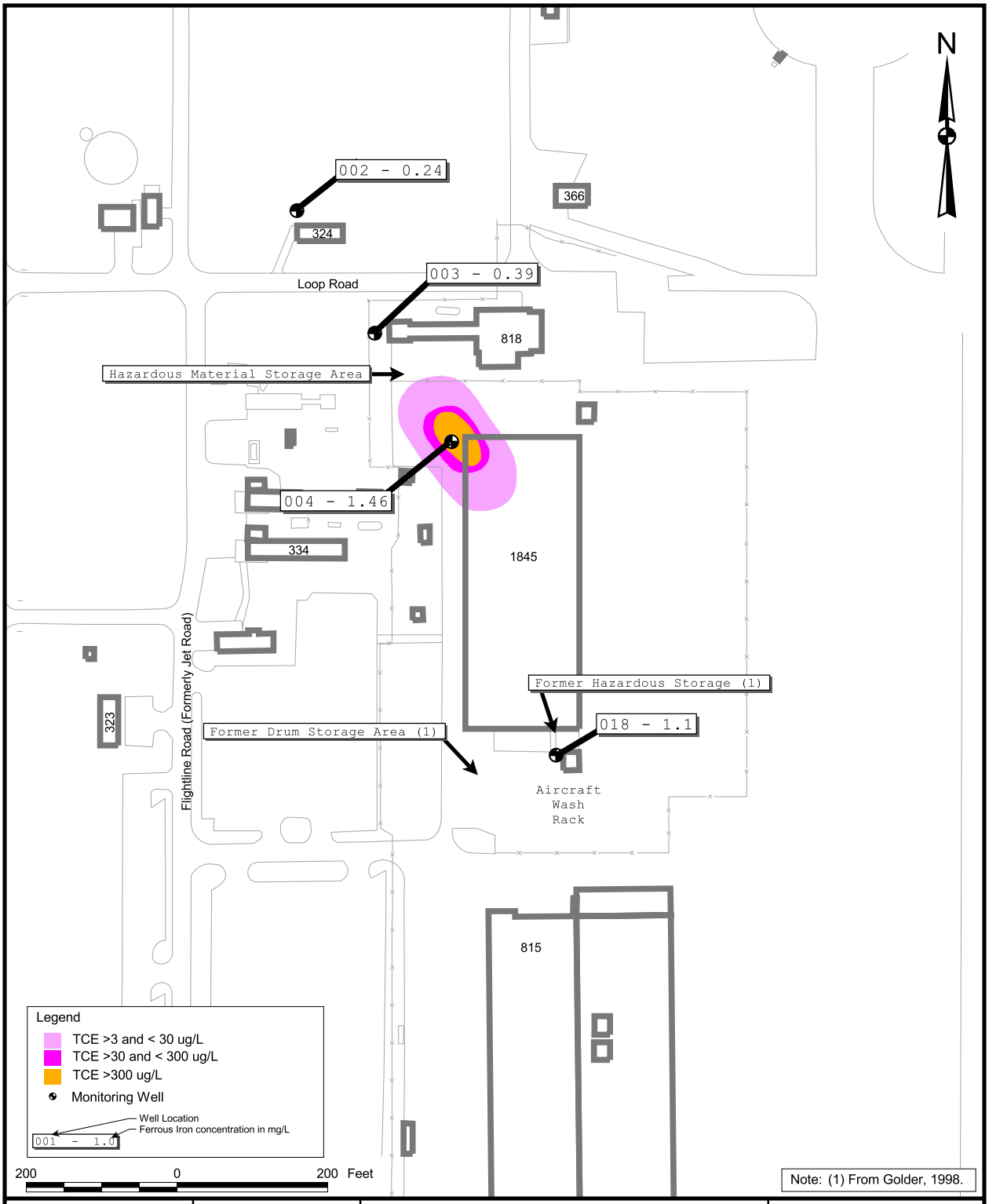
DRAWN BY MJJ	DATE 19Jan06	FERROUS IRON IN GROUNDWATER 50-FOOT ZONE OU 9, SITE 59 REMEDIAL INVESTIGATION REPORT NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NUMBER 8925
CHECKED BY	DATE		APPROVED BY DATE
COST/SCHEDULE-AREA			APPROVED BY DATE
SCALE AS NOTED			DRAWING NO. FIGURE 6-6 / REV 0

P:\GIS\NAS_CecilField\Site-59_RI.apr 25Feb06 MJJ Layout132



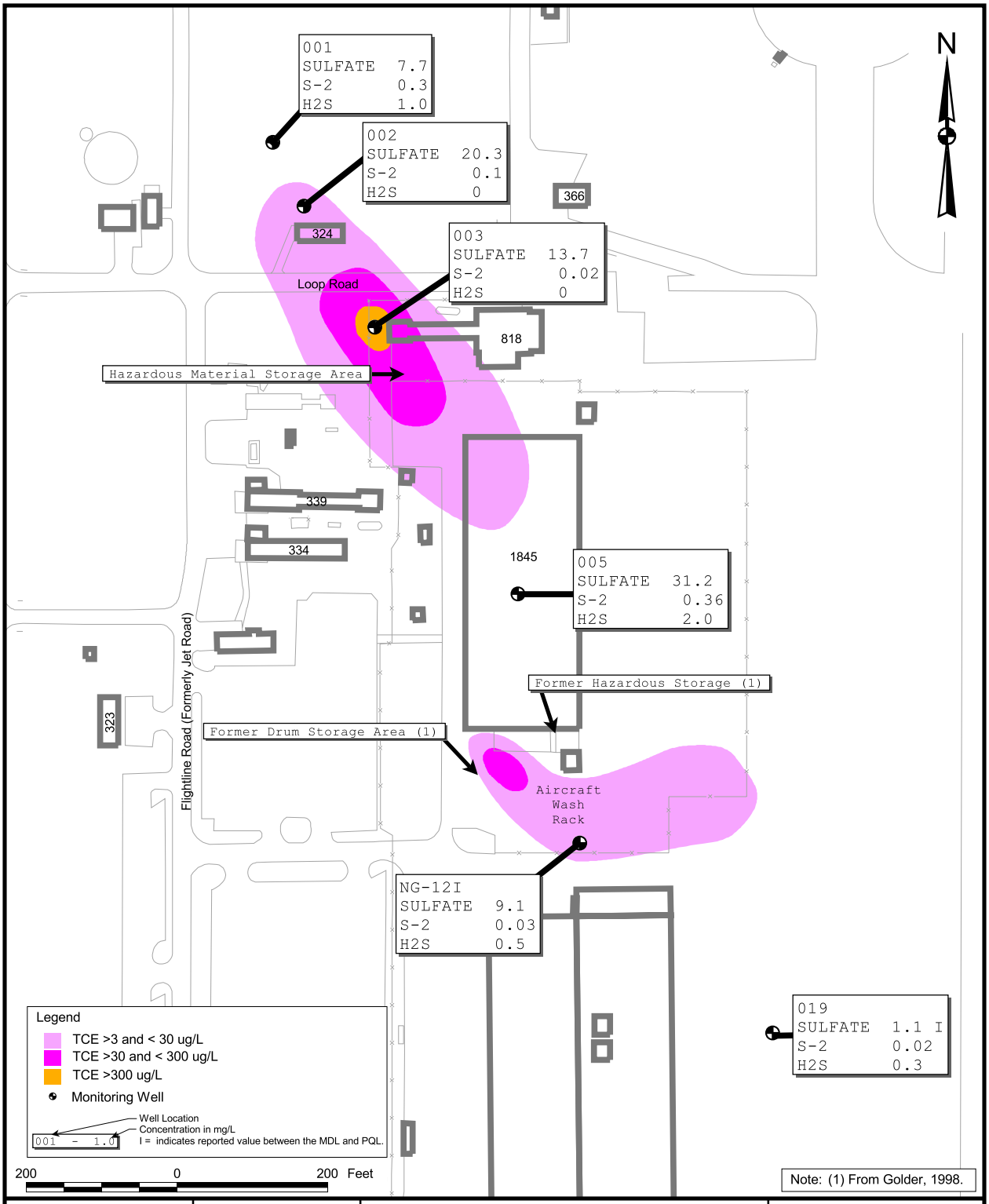
DRAWN BY MJJ	DATE 19Jan06	FERROUS IRON IN GROUNDWATER 70- TO 80-FOOT ZONE OU 9, SITE 59 REMEDIAL INVESTIGATION REPORT NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NUMBER 8925
CHECKED BY	DATE		APPROVED BY DATE
COST/SCHEDULE-AREA			APPROVED BY DATE
SCALE AS NOTED			DRAWING NO. FIGURE 6-7 / REV 0

P:\GIS\NAS_CecilField\Site-59_RI.apr 25Feb06 MJJ Layout133



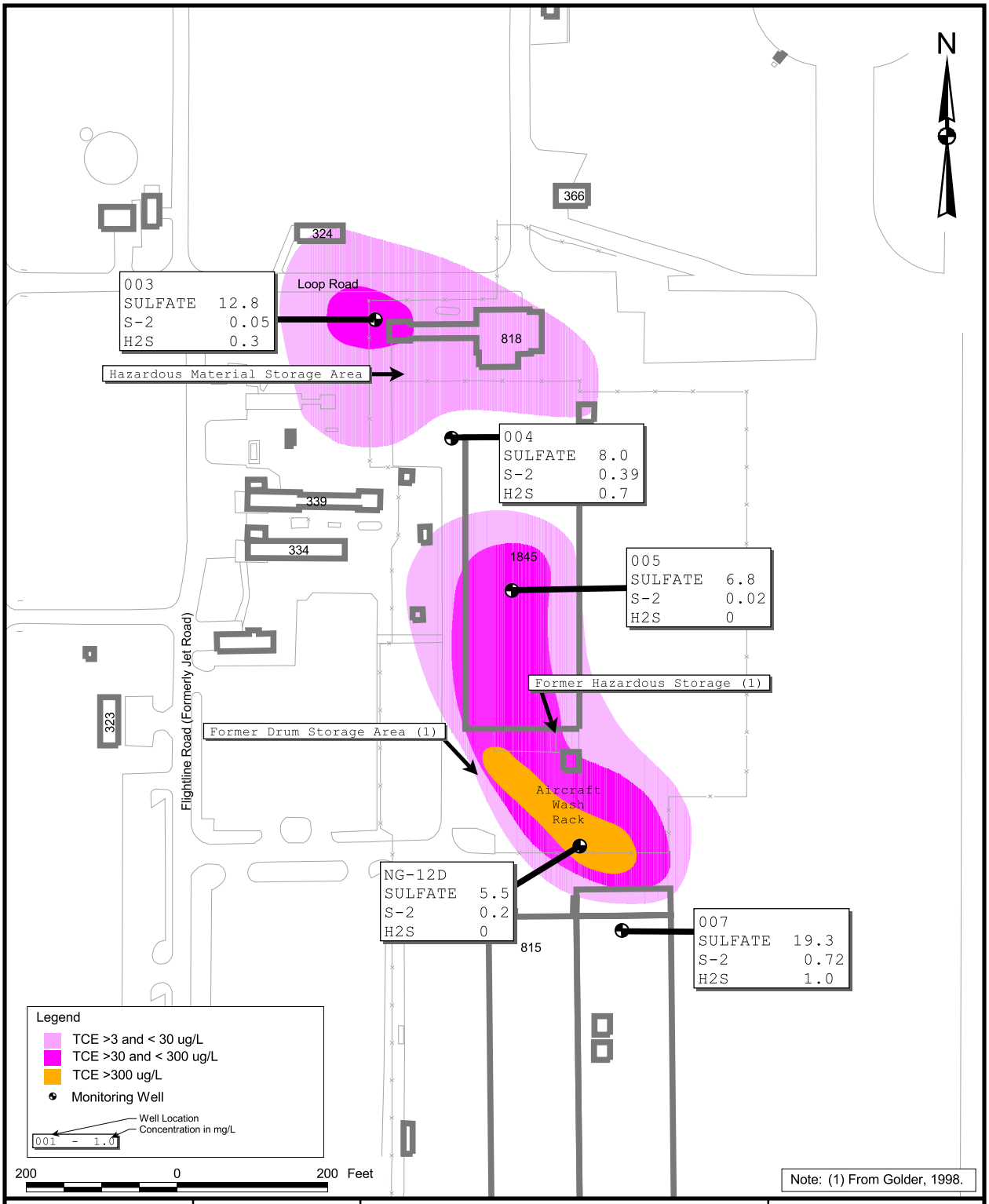
DRAWN BY MJJ	DATE 19Jan06	FERROUS IRON IN GROUNDWATER TOP OF ROCK ZONE OU 9, SITE 59 REMEDIAL INVESTIGATION REPORT NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NUMBER 8925
CHECKED BY	DATE		APPROVED BY DATE
COST/SCHEDULE-AREA			APPROVED BY DATE
SCALE AS NOTED			DRAWING NO. FIGURE 6-8 / REV 0

P:\GIS\NAS_CecilField\Site-59_RI.apr 25Feb06 MJJ Layout134



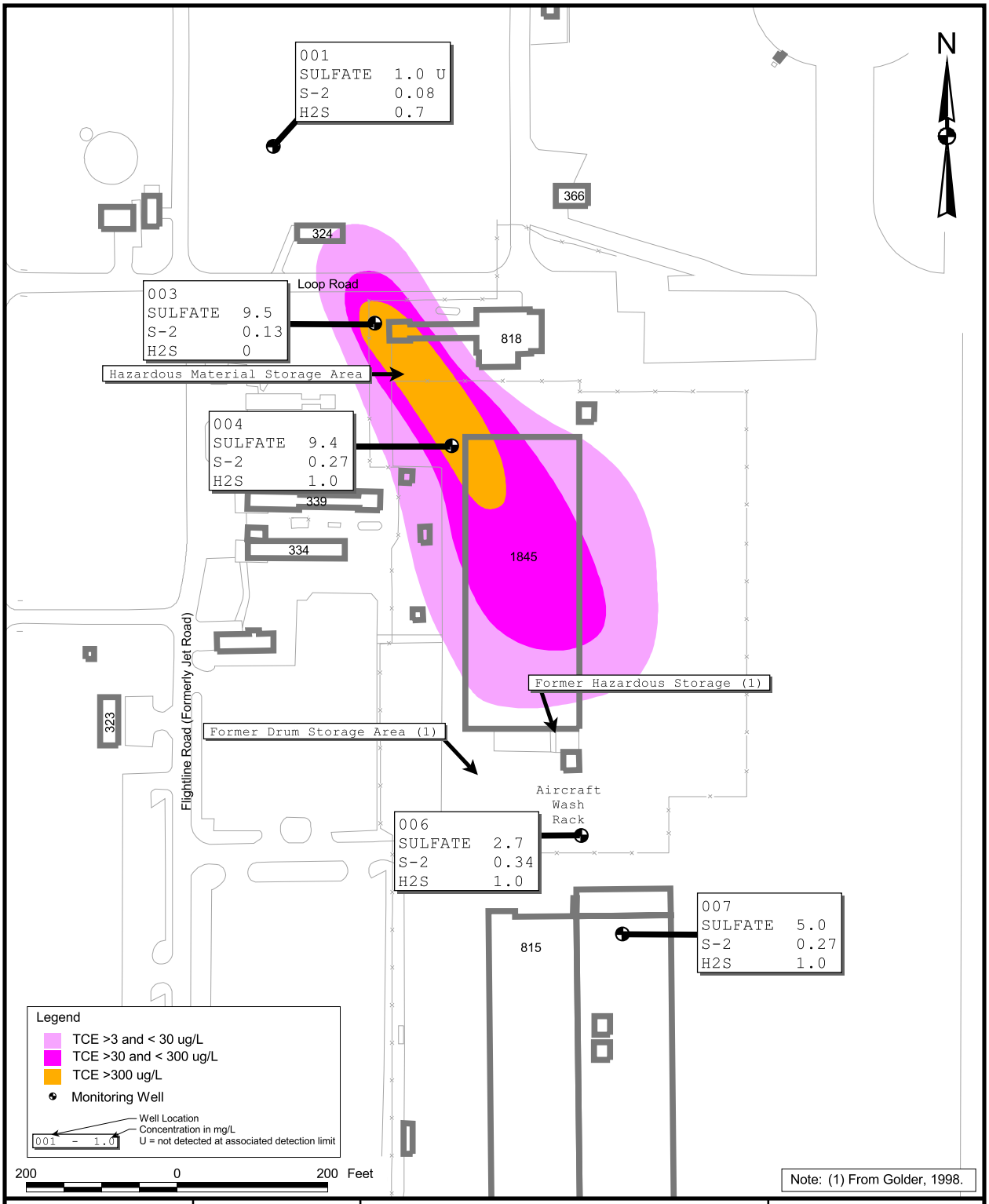
DRAWN BY MJJ	DATE 19Jan06	SULFATE, SULFIDE (S-2), AND HYDROGEN SULFIDE (H2S) IN GROUNDWATER 30-FOOT ZONE OU 9, SITE 59 REMEDIAL INVESTIGATION REPORT NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NUMBER 8925
CHECKED BY	DATE		APPROVED BY DATE
COST/SCHEDULE-AREA			APPROVED BY DATE
SCALE AS NOTED			DRAWING NO. FIGURE 6-9 REV 0

P:\GIS\NAS_CecilField\Site-59_RI.apr 25Feb06 MJJ Layout141



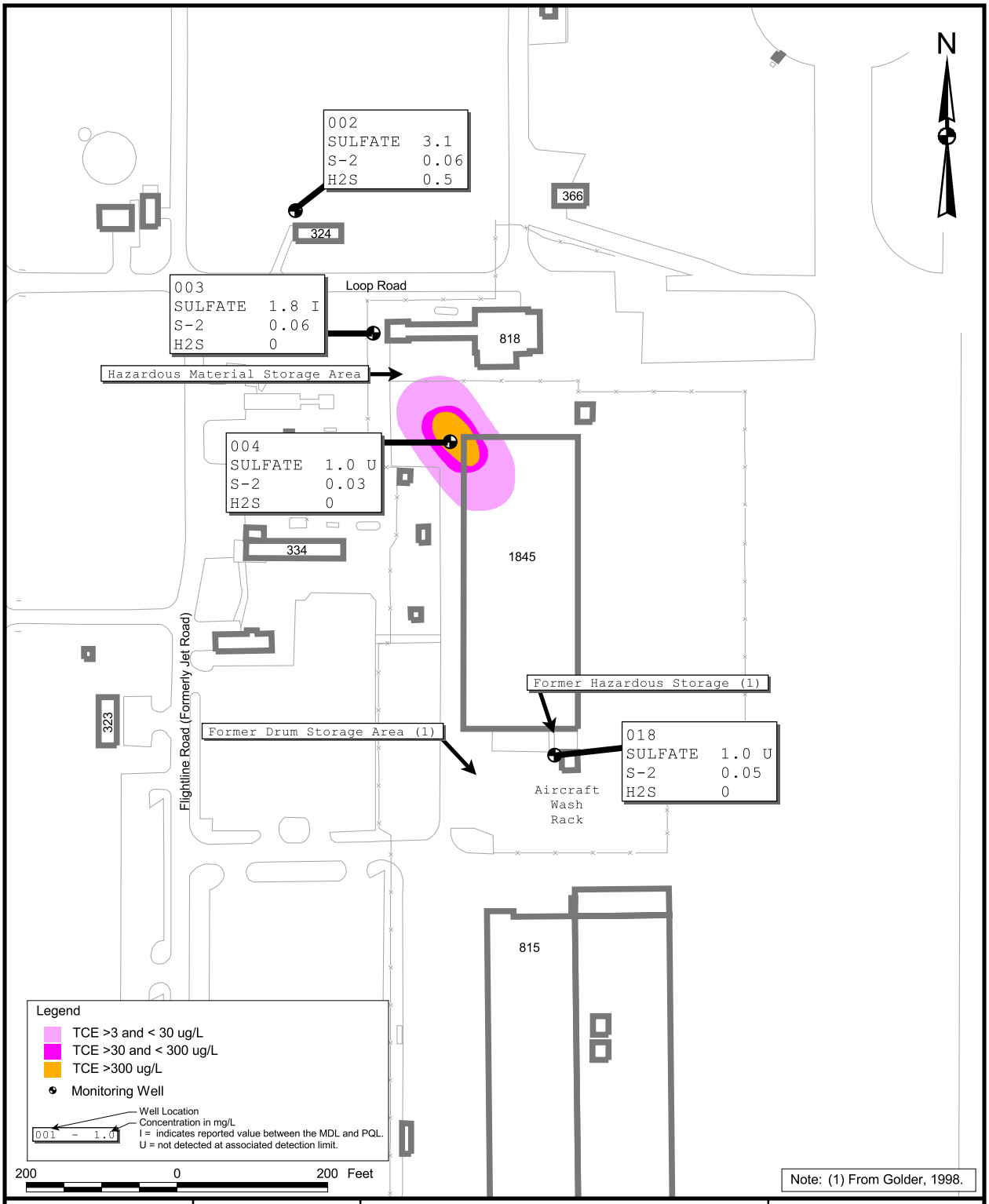
DRAWN BY MJJ	DATE 19Jan06	SULFATE, SULFIDE (S-2), AND HYDROGEN SULFIDE (H2S) IN GROUNDWATER 50-FOOT ZONE OU 9, SITE 59 REMEDIAL INVESTIGATION REPORT NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NUMBER 8925
CHECKED BY	DATE		APPROVED BY DATE
COST/SCHEDULE-AREA			APPROVED BY DATE
SCALE AS NOTED			DRAWING NO. FIGURE 6-10 / REV 0

P:\GIS\NAS_CecilField\Site-59_RI.apr 25Feb06 MJJ Layout142



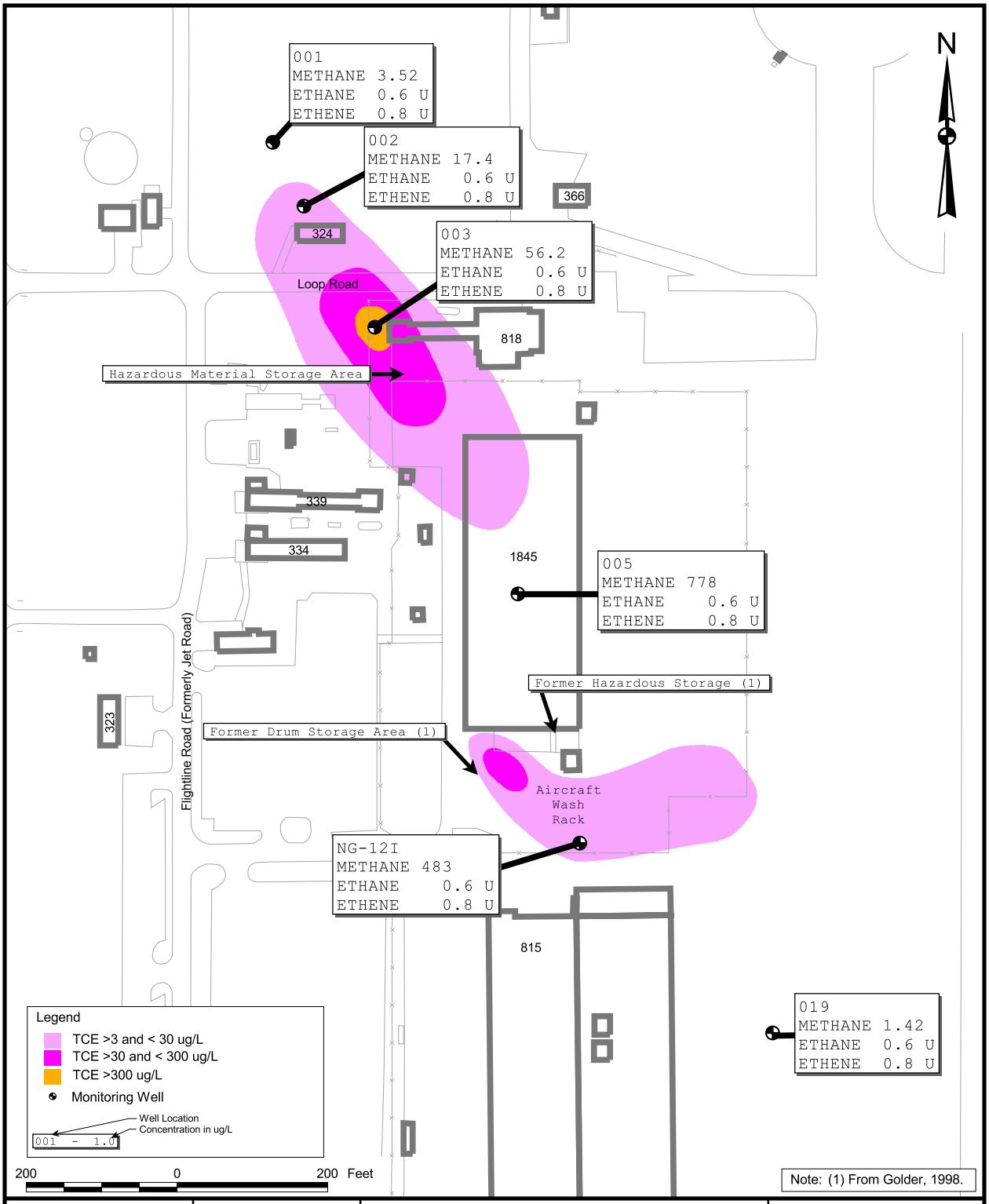
DRAWN BY MJJ	DATE 19Jan06	SULFATE, SULFIDE (S-2), AND HYDROGEN SULFIDE (H2S) IN GROUNDWATER 70- TO 80-FOOT ZONE OU 9, SITE 59 REMEDIAL INVESTIGATION REPORT NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NUMBER 8925
CHECKED BY	DATE		APPROVED BY DATE
COST/SCHEDULE-AREA			APPROVED BY DATE
SCALE AS NOTED			DRAWING NO. FIGURE 6-11 REV 0

P:\GIS\NAS_CecilField\Site-59_RI.apr 25Feb06 MJJ Layout143



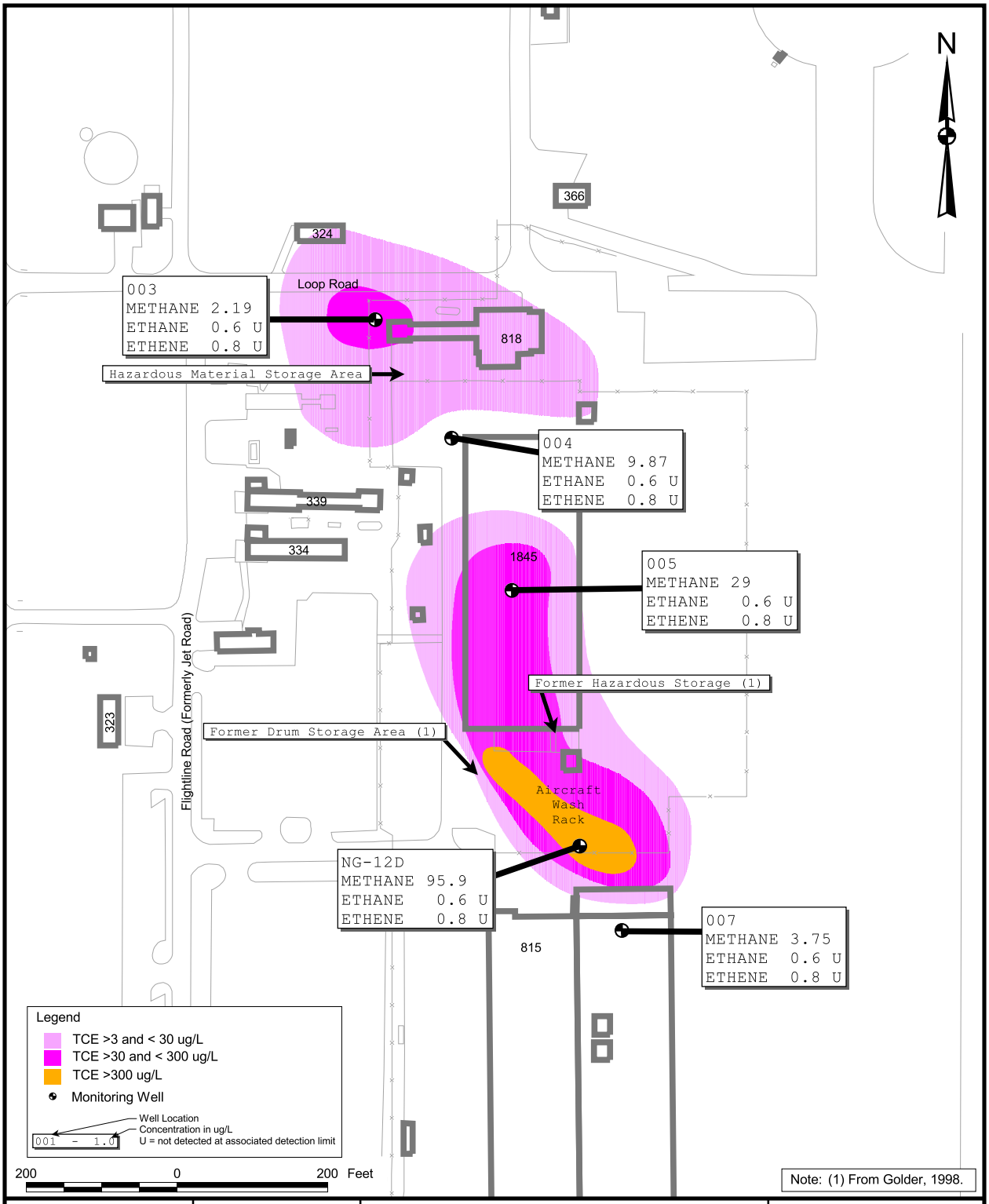
DRAWN BY MJJ	DATE 19Jan06	SULFATE, SULFIDE (S-2), AND HYDROGEN SULFIDE (H2S) IN GROUNDWATER TOP OF ROCK ZONE OU 9, SITE 59 REMEDIAL INVESTIGATION REPORT NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NUMBER 8925
CHECKED BY	DATE		APPROVED BY DATE
COST/SCHEDULE-AREA			APPROVED BY DATE
SCALE AS NOTED			DRAWING NO. FIGURE 6-12 / REV 0

P:\GIS\NAS_CecilField\Site-59_RI.apr 25Feb06 MJJ Layout144



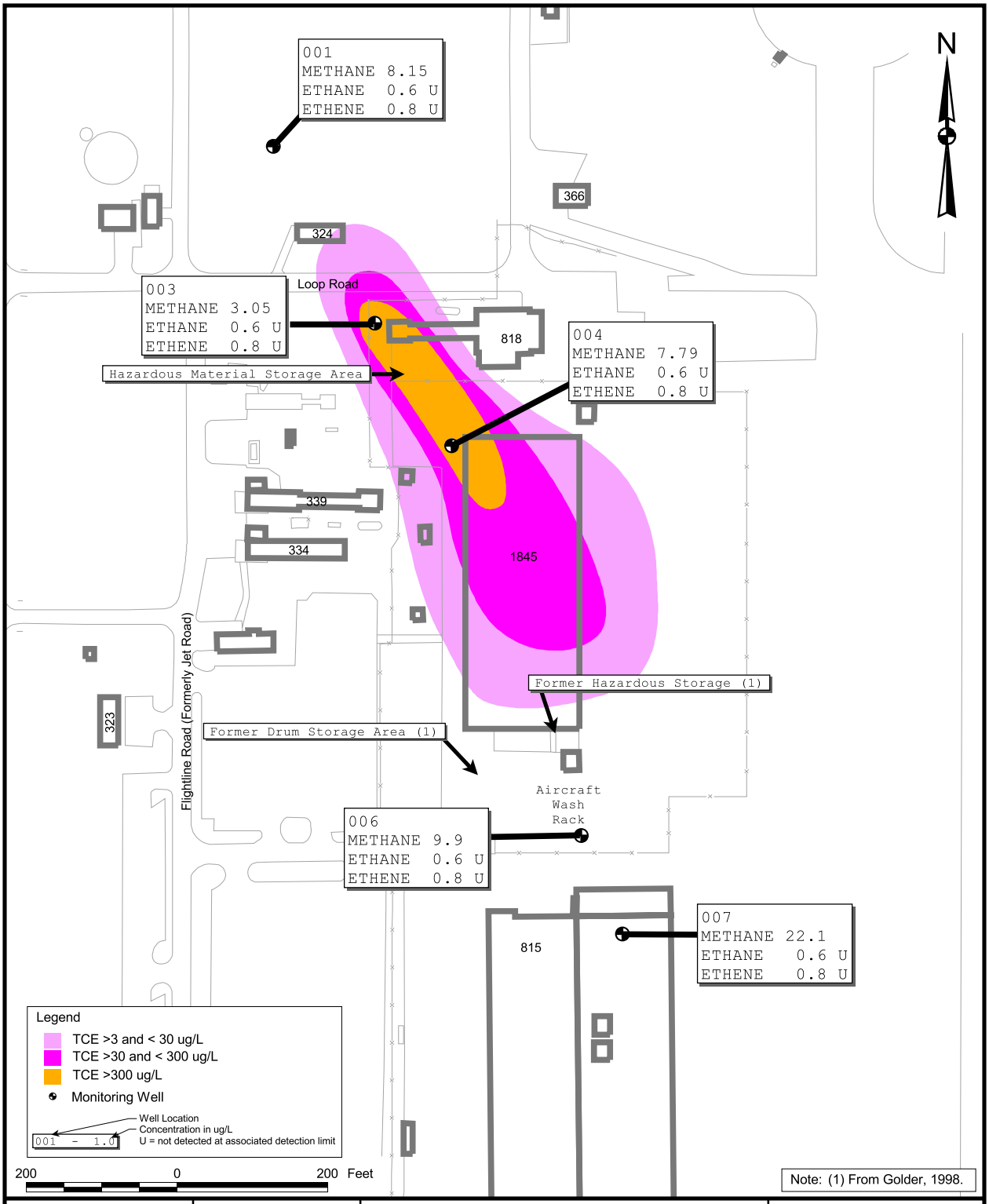
DRAWN BY MJJ	DATE 19Jan06	METHANE, ETHANE, AND ETHENE IN GROUNDWATER 30-FOOT ZONE OU 9, SITE 59 REMEDIAL INVESTIGATION REPORT NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NUMBER 8925
CHECKED BY	DATE		APPROVED BY DATE
COST/SCHEDULE-AREA			APPROVED BY DATE
SCALE AS NOTED			DRAWING NO. FIGURE 6-13 / REV 0

P:\GIS\NAS_CecilField\Site-59_RI.apr 25Feb06 MJJ Layout151



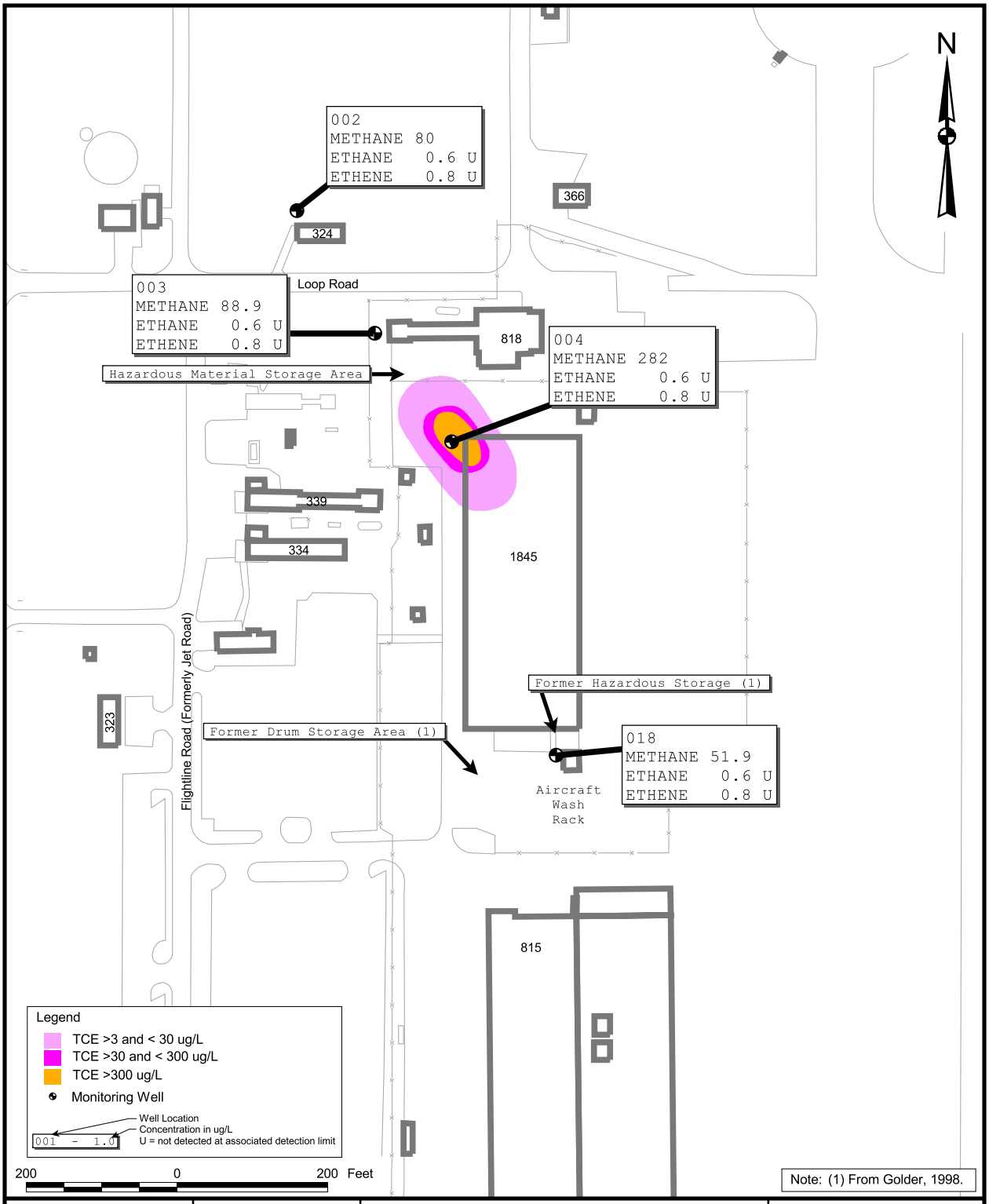
DRAWN BY MJJ	DATE 19Jan06	METHANE, ETHANE, AND ETHENE IN GROUNDWATER 50-FOOT ZONE OU 9, SITE 59 REMEDIAL INVESTIGATION REPORT NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NUMBER 8925
CHECKED BY	DATE		APPROVED BY DATE
COST/SCHEDULE-AREA			APPROVED BY DATE
SCALE AS NOTED			DRAWING NO. FIGURE 6-14 / REV 0

P:\GIS\NAS_CecilField\Site-59_RI.apr 25Feb06 MJJ Layout152



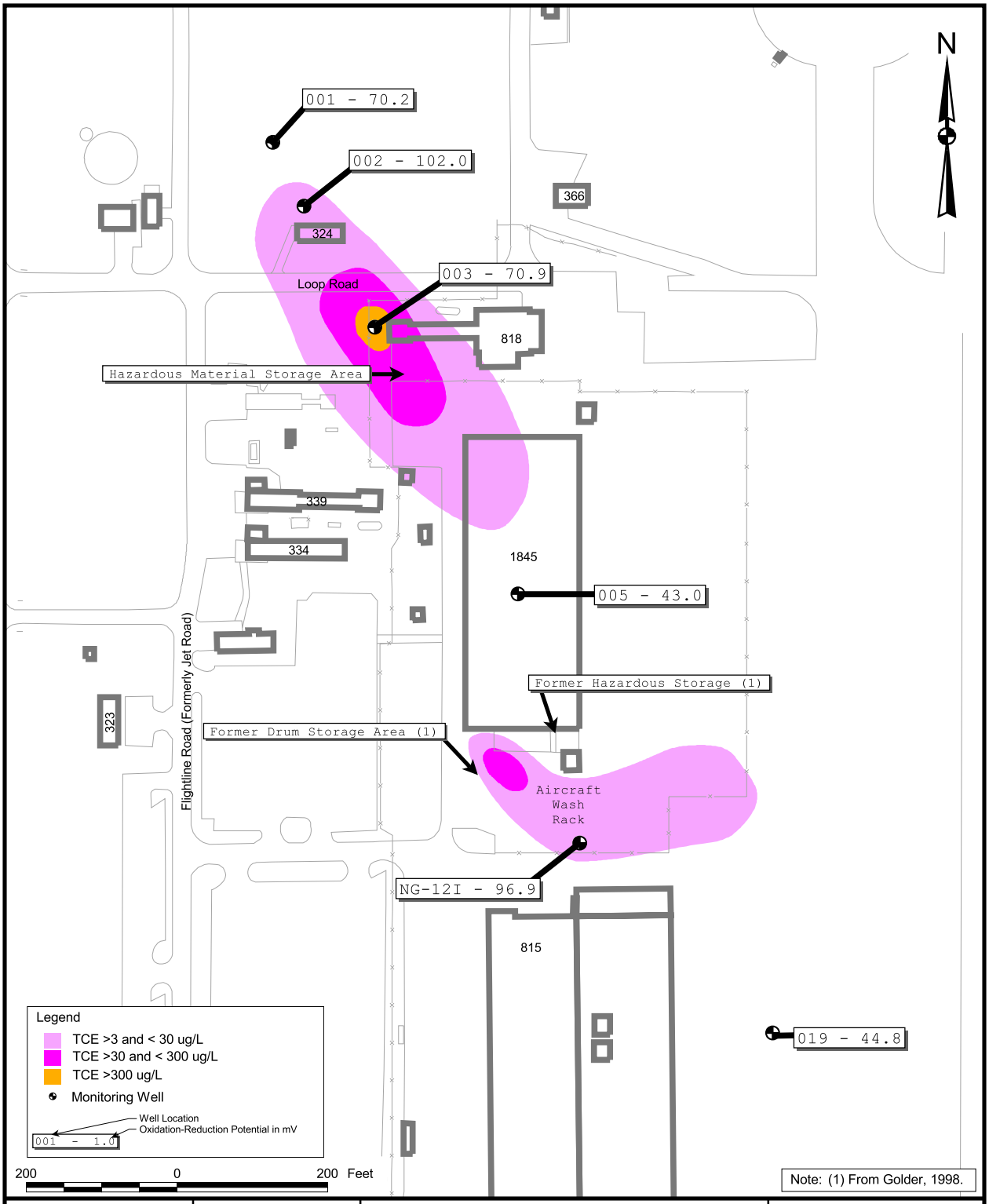
DRAWN BY MJJ	DATE 19Jan06	METHANE, ETHANE, AND ETHENE IN GROUNDWATER 70- TO 80-FOOT ZONE OU 9, SITE 59 REMEDIAL INVESTIGATION REPORT NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NUMBER 8925
CHECKED BY	DATE		APPROVED BY DATE
COST/SCHEDULE-AREA			APPROVED BY DATE
SCALE AS NOTED			DRAWING NO. FIGURE 6-15 / REV 0

P:\GIS\NAS_CecilField\Site-59_RI.apr 25Feb06 MJJ Layout153



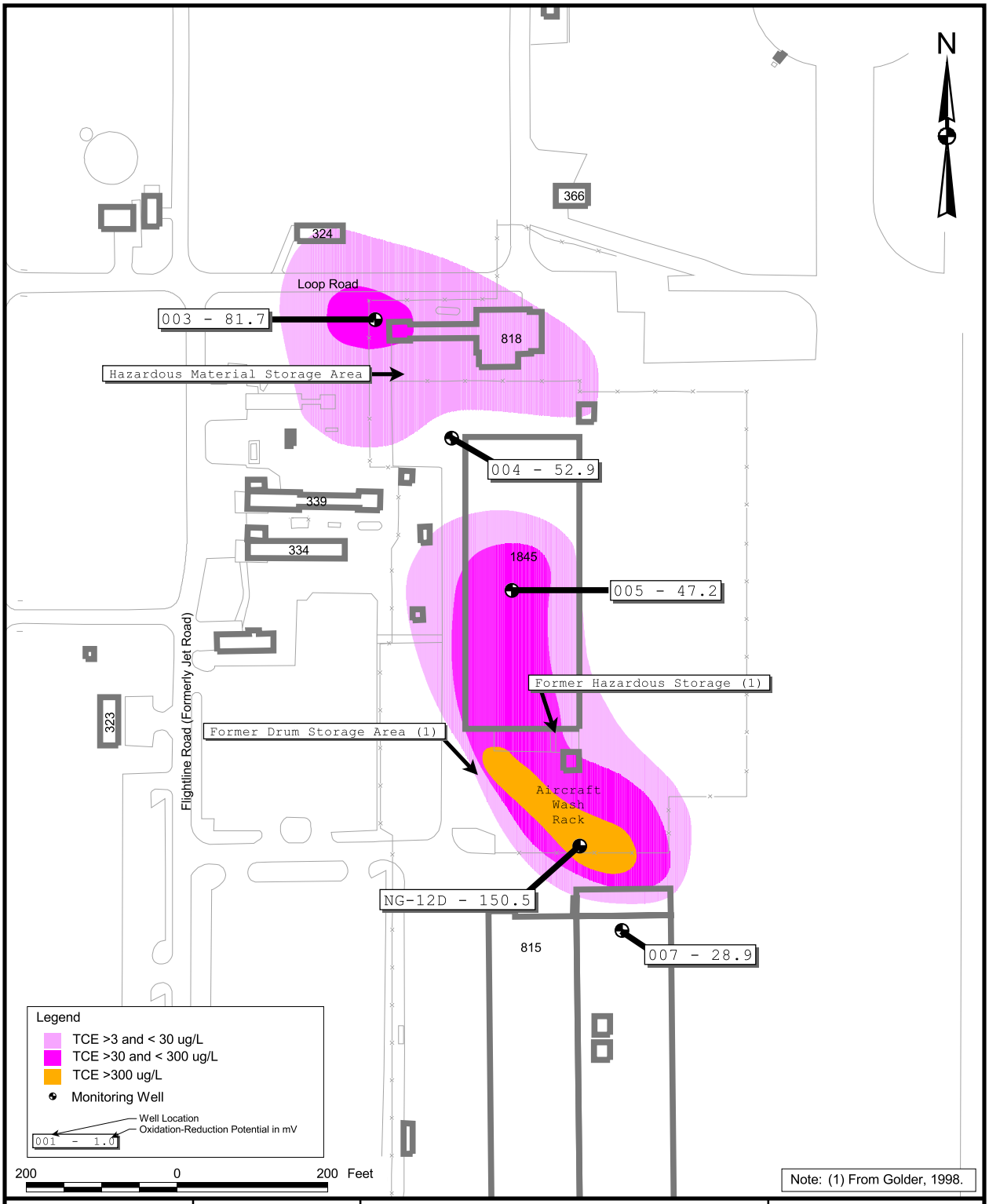
DRAWN BY MJJ	DATE 19Jan06	METHANE, ETHANE, AND ETHENE IN GROUNDWATER TOP OF ROCK ZONE OU 9, SITE 59 REMEDIAL INVESTIGATION REPORT NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NUMBER 8925
CHECKED BY	DATE		APPROVED BY DATE
COST/SCHEDULE-AREA			APPROVED BY DATE
SCALE AS NOTED			DRAWING NO. FIGURE 6-16 / REV 0

P:\GIS\NAS_CecilField\Site-59_RI.apr 25Feb06 MJJ Layout154



DRAWN BY MJJ	DATE 19Jan06	OXIDATION-REDUCTION POTENTIAL IN GROUNDWATER 30-FOOT ZONE OU 9, SITE 59 REMEDIAL INVESTIGATION REPORT NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NUMBER 8925
CHECKED BY	DATE		APPROVED BY DATE
COST/SCHEDULE-AREA			APPROVED BY DATE
SCALE AS NOTED			DRAWING NO. FIGURE 6-17 / REV 0

P:\GIS\NAS_CecilField\Site-59_RI.apr 25Feb06 MJJ Layout161



DRAWN BY MJJ	DATE 19Jan06	OXIDATION-REDUCTION POTENTIAL IN GROUNDWATER 50-FOOT ZONE OU 9, SITE 59 REMEDIAL INVESTIGATION REPORT NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NUMBER 8925
CHECKED BY	DATE		APPROVED BY DATE
COST/SCHEDULE-AREA			APPROVED BY DATE
SCALE AS NOTED			DRAWING NO. FIGURE 6-18 / REV 0

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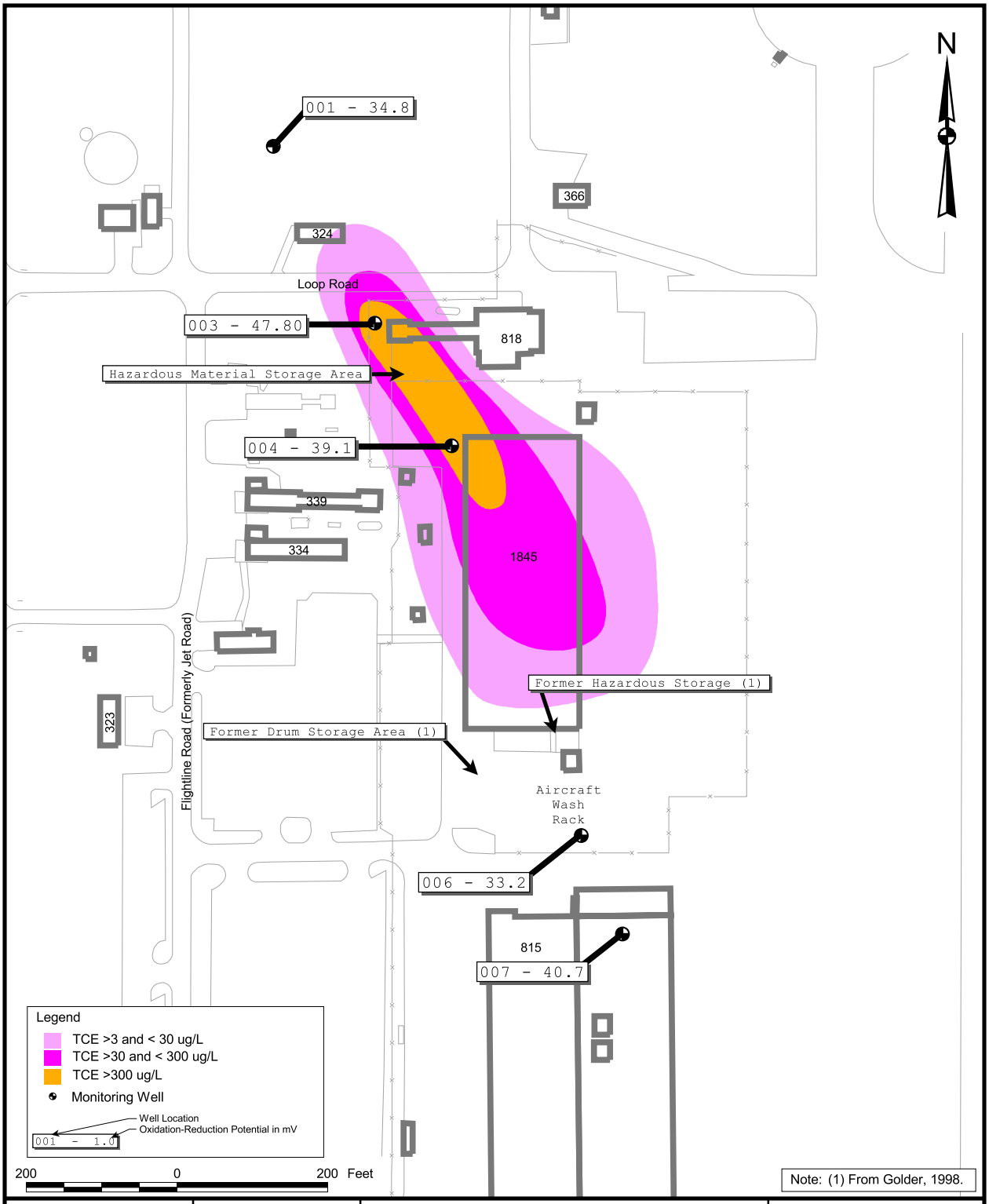

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CHECKED BY	DATE		APPROVED BY / DATE
COST/SCHEDULE-AREA			APPROVED BY / DATE
SCALE AS NOTED	NAVFAC		DRAWING NO. FIGURE 6-19 / REV 0

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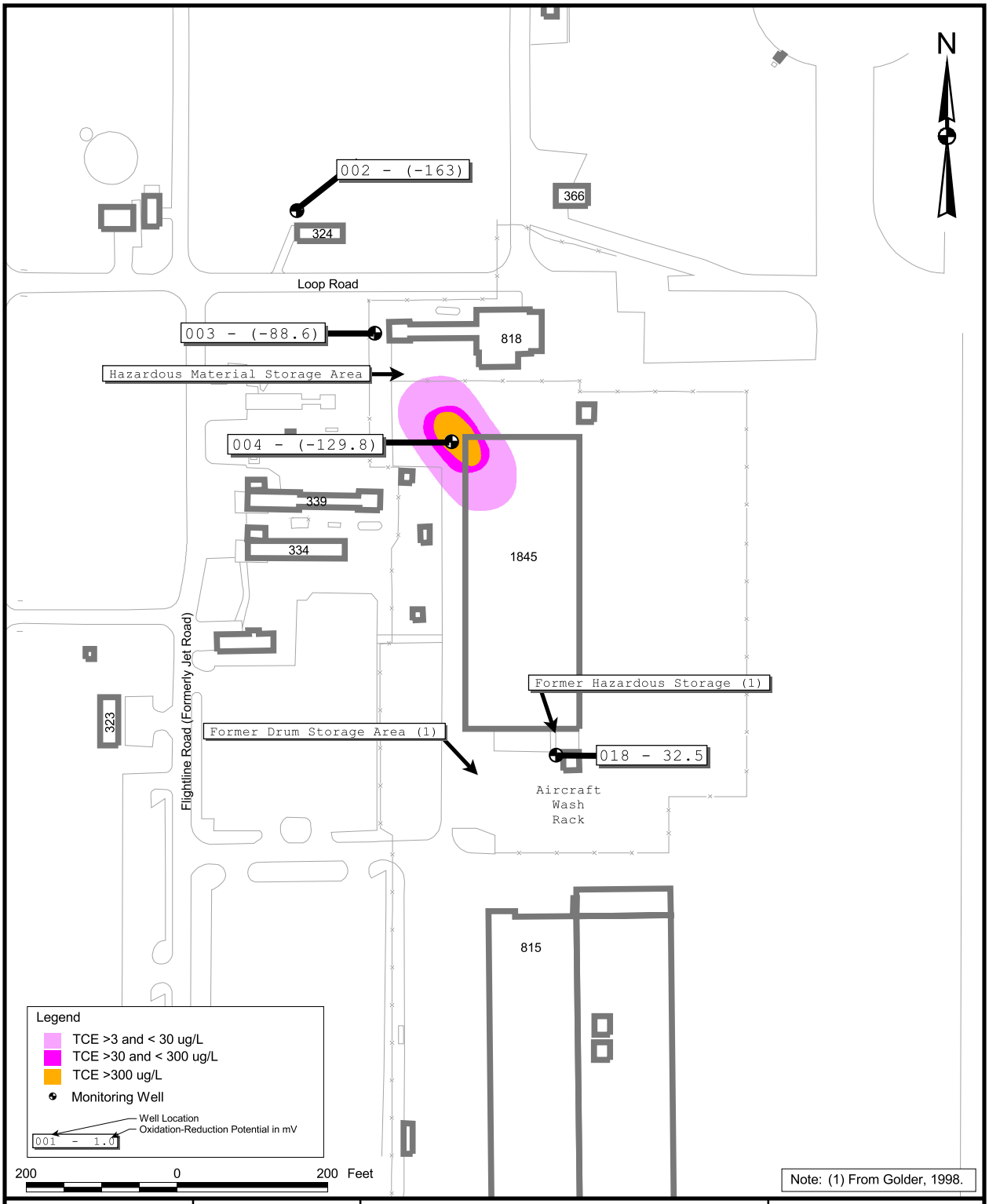

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CHECKED BY	DATE		APPROVED BY DATE
COST/SCHEDULE-AREA			APPROVED BY DATE
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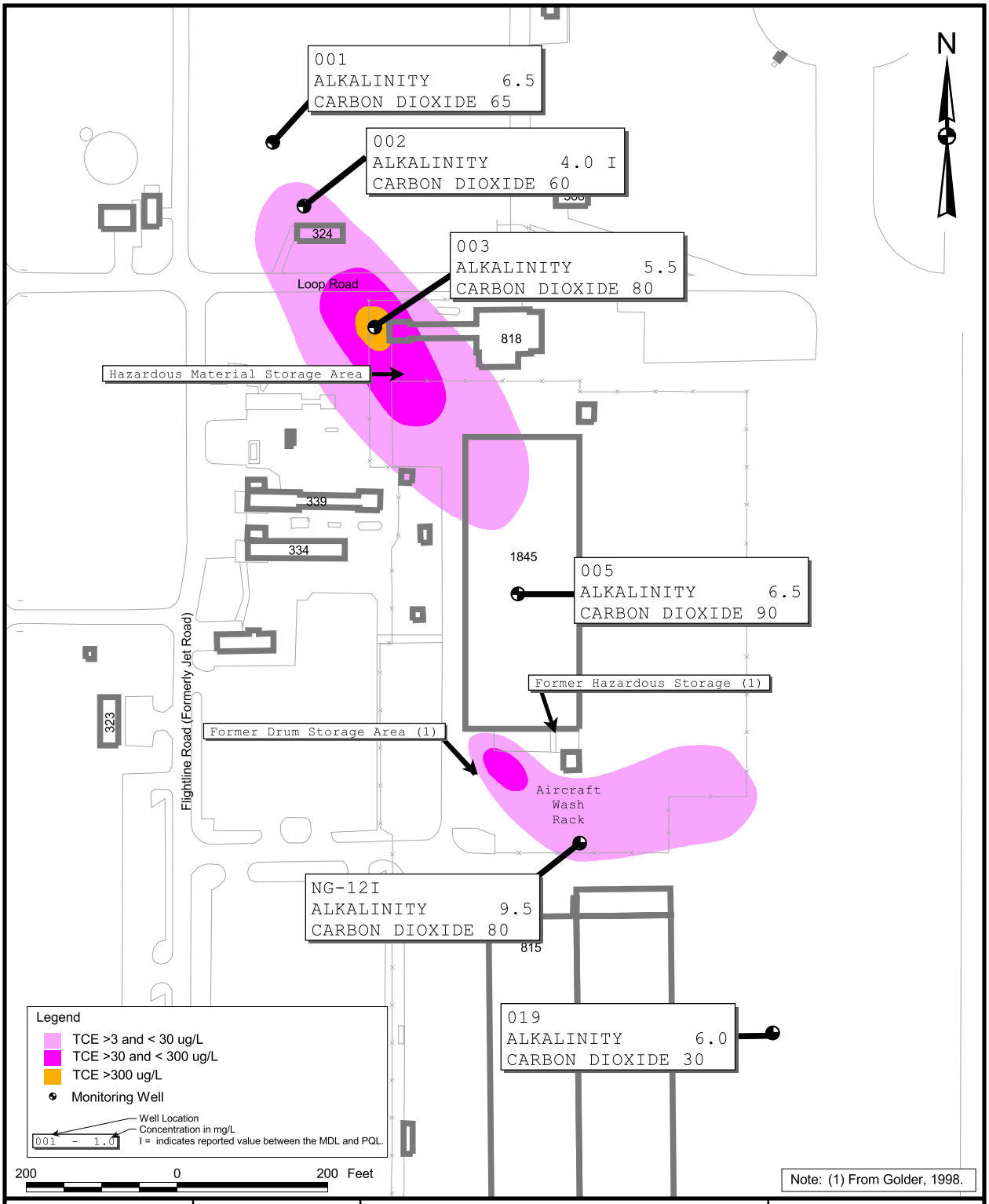

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CHECKED BY	DATE		APPROVED BY DATE
COST/SCHEDULE-AREA			APPROVED BY DATE
SCALE AS NOTED			DRAWING NO. FIGURE 6-21 / REV 0

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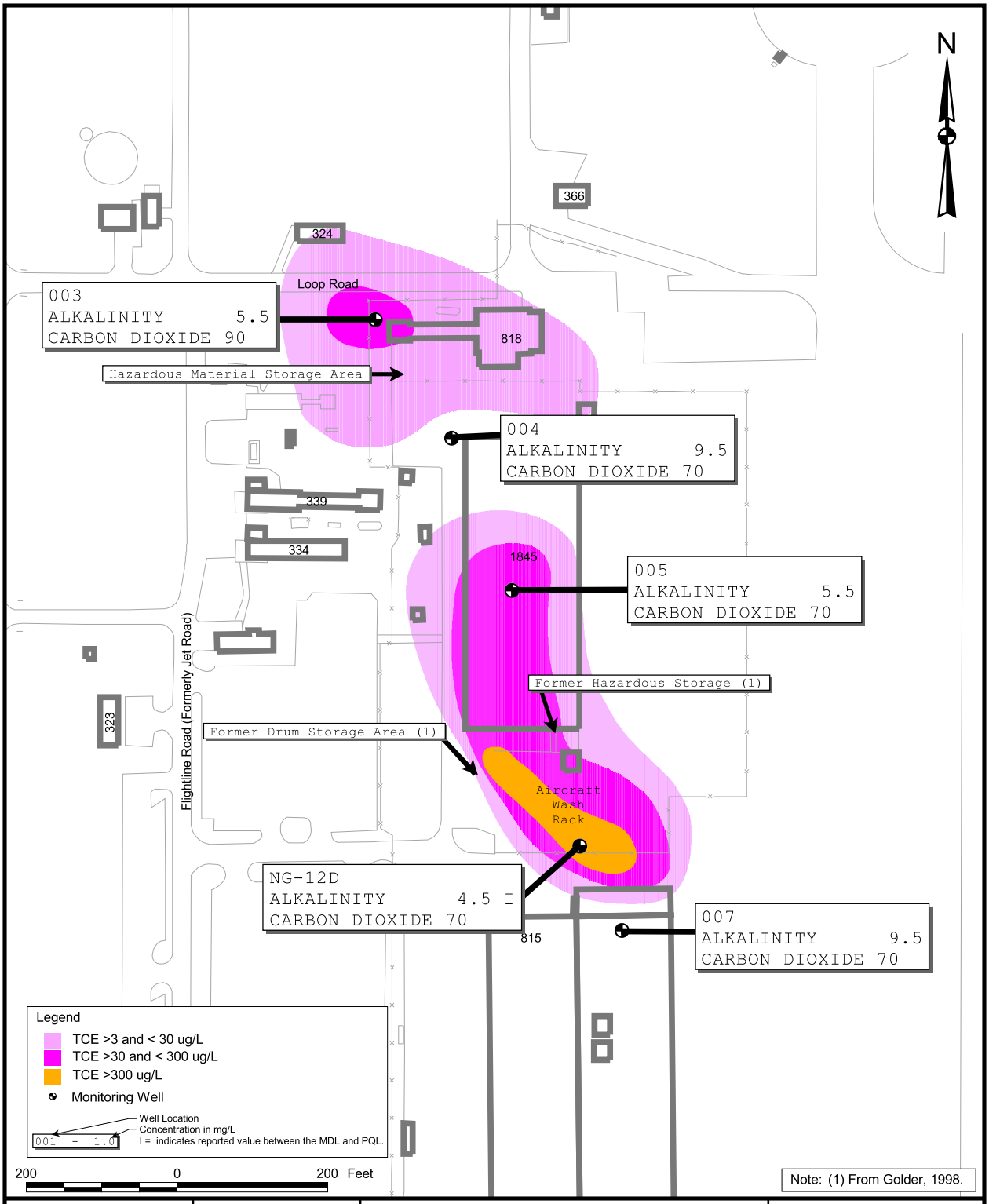

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CHECKED BY	DATE		APPROVED BY DATE
COST/SCHEDULE-AREA			APPROVED BY DATE
SCALE AS NOTED			DRAWING NO. FIGURE 6-22 / REV 0

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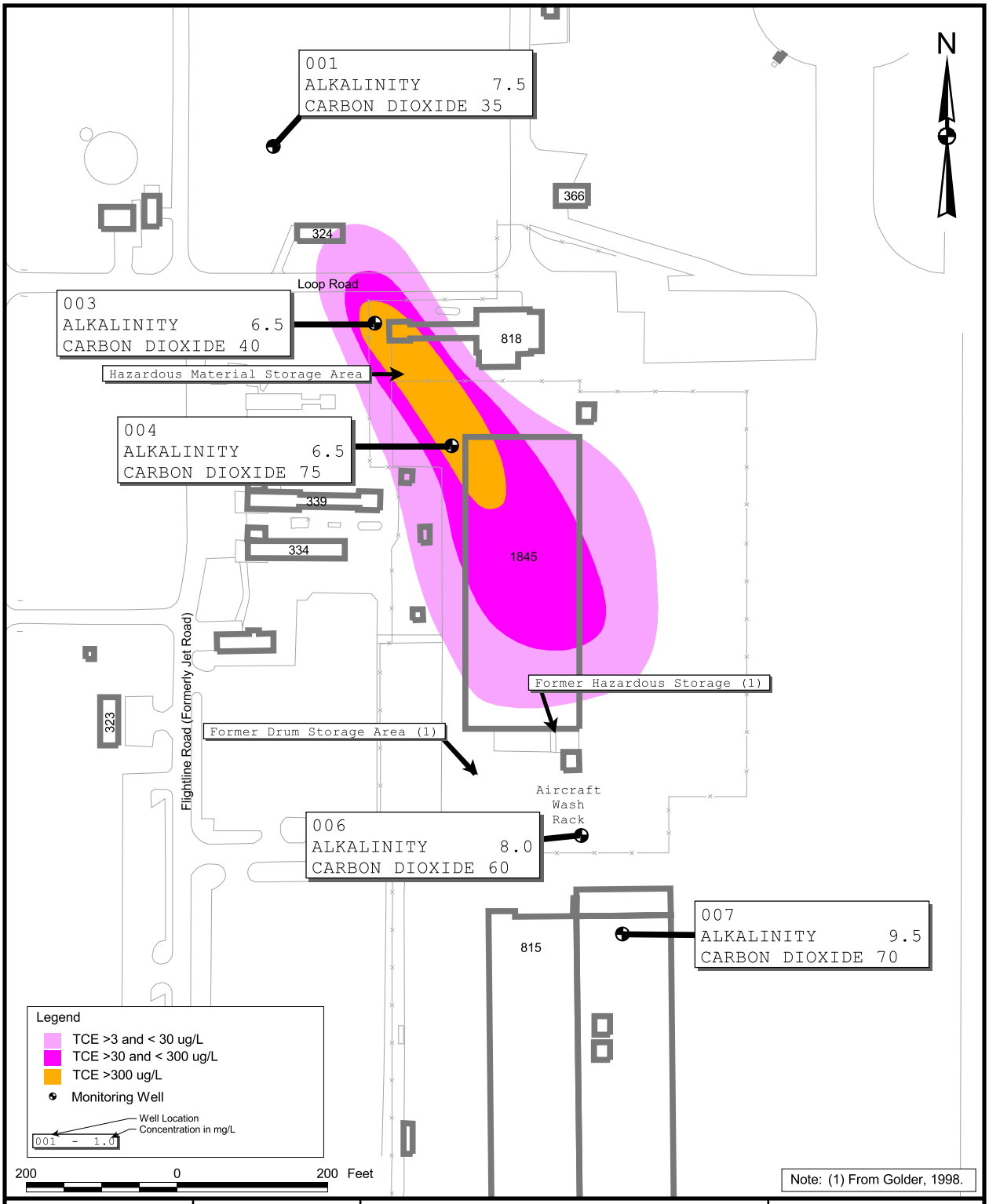

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CHECKED BY	DATE		APPROVED BY DATE
COST/SCHEDULE-AREA			APPROVED BY DATE
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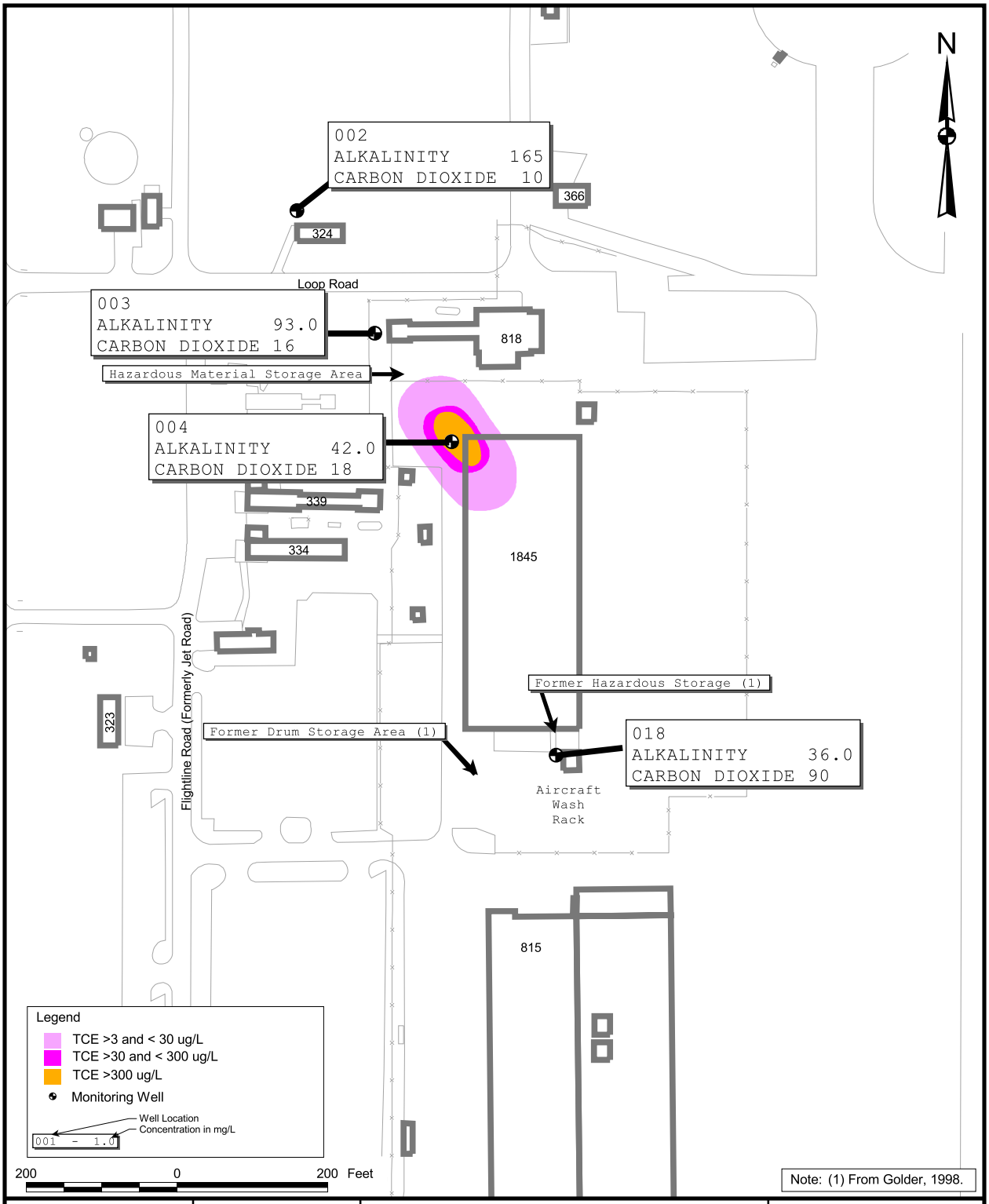

DRAWN BY MJJ	DATE 19Jan06	ALKALINITY AND CARBON DIOXIDE IN GROUNDWATER TOP OF ROCK ZONE OU 9, SITE 59 REMEDIAL INVESTIGATION REPORT NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NUMBER 8925
CHECKED BY	DATE		APPROVED BY DATE
COST/SCHEDULE-AREA			APPROVED BY DATE
SCALE AS NOTED			DRAWING NO. FIGURE 6-24 / REV 0

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7.0 HUMAN HEALTH PRELIMINARY RISK EVALUATION

A human health PRE was conducted to evaluate the potential risks to human receptors from exposure to groundwater at Site 59 in a residential setting. The risk assessment methodology was discussed in Section 3.2.

7.1 GROUNDWATER EVALUATION

Table 7-1 presents VOCs detected at concentrations exceeding U.S. EPA's current drinking water standards (U.S. EPA, 2002), FDEP GCTLs (FDEP, 2005), or U.S. EPA Region 9 PRGs (U.S. EPA, 2004). TCE was detected at concentrations greater than its MCL and FDEP GCTL. To assess potential risks associated with residential groundwater consumption, the maximum detected concentration of TCE was compared to its Region 9 PRG. The maximum detected concentration of TCE was 64,643 times greater than its Region 9 PRG. This corresponds to a cancer risk of 6.46×10^{-2}, which exceeds U.S. EPA's target risk range of 1×10^{-4} to 1×10^{-6} and FDEP's target risk level of 1×10^{-6}. The maximum detected concentration of vinyl chloride was 34 times greater than its Region 9 PRG. This corresponds to a cancer risk of 3.4×10^{-5}, which is within U.S. EPA's target risk range and greater than FDEP's target risk level.

7.2 HUMAN HEALTH PRE CONCLUSIONS

The PRE analysis for Site 59 indicates that exposure to groundwater could potentially result in adverse health effects. These effects would stem from exposure to TCE and vinyl chloride.

TABLE 7-1

GROUNDWATER ANALYTES DETECTED AT CONCENTRATIONS GREATER THAN SCREENING CRITERIA OPERABLE UNIT 9, SITE 59 NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA

Parameter	Frequency Of Detection[1]	Screening Concentration[2]	U.S. EPA MCL	FDEP GCTL	U.S. EPA Region 9 PRG	Risk Ratio[3]	C or N[4]
Volatile Organic Compounds (µg/L)							
1,1-DCE	2 / 61	0.87	7	7 P	340	0.0026	C
cis-1,2-DCE	16 / 61	6.1	70	70 P	61	0.1	N
Ethylbenzene	1 / 61	2	700	30 S	1,300	0.0015	N
Toluene	15 / 61	2.3	1,000	40 S	720	0.0032	N
TCE	21 / 61	1,810	5	3 P	0.028	64,643	C
Vinyl chloride	1 / 61	0.68	2	1 P	0.02	34	C

1. Frequency of detection is the number of samples in which the analyte was detected over the total number of samples analyzed.
2. Maximum detected concentration selected for screening criteria.
3. Ratio of screening concentration to Region 9 PRG.
4. Carcinogen (C) or noncarcinogen (N).

U.S. EPA MCL = United States Environmental Protection Agency Maximum Contaminant Level, July 2002.
FDEP GCTL = Florida Department of Environmental Protection Groundwater Cleanup Target Level, Florida Administrative Code 62-777, April 2005.
U.S. EPA Region 9 PRG = Preliminary Remediation Goal, October 2004.
P = Primary standard.
S = Secondary standard.

8.0 ECOLOGICAL RISK ASSESSMENT

Site 59 is located in a developed portion of NAS Cecil Field. The site consists mainly of buildings, parking lots, and the concrete flight apron. Terrestrial habitats consist of small areas of turf grass and ornamental shrubbery and small, isolated, areas of slash pines. The majority of Site 59 is paved. Grassy areas and slash pines surround Building 324 north of Loop Road, and a small area of slash pines is located southeast of the intersection of Flightline Road and Loop Road. Grassy areas surround Building 334 and 339 and extend between a parking lot along Flightline Road and Hangar 1845. The areas around Building 818 and south of Hangar 1845 are paved, and the concrete flight apron covers the portion of the site east of Hangar 1845 (see Figure 1-3). No surface water is present at or near the site. Surface water runoff in the Site 59 area is collected by the storm sewer system. Thus, Site 59 and the adjacent areas provide only limited terrestrial habitat of poor quality in an urban or industrial-type setting. Ecological receptors in the vicinity of Site 59 consist of those typically found in urban areas, such as terrestrial invertebrates, lizards, songbirds, and exotic rodents such as the Norway rat, black rat, and house mouse.

Groundwater flow at Site 59 is primarily toward the southeast. Data from the RI indicate that the leading edge of the plume is approximately 2,800 feet from the associated storm sewer outfall (on the western side of the north-south runways) and an additional approximately 3,000 feet from Sal Taylor Creek in the direction of flow. It is unlikely that groundwater contaminated at concentrations of concern could travel the distance necessary to reach the outfall or Sal Taylor Creek and impact surface water. For this reason, the groundwater exposure route is not applicable for ecological receptors. Soil contamination was not detected during previous investigations in the Building 324 area, and no additional soil sampling was required as part of the Site 59 RI.

A complete exposure pathway has three components: a source of contaminants that can be released to the environment, a route of contaminant transport through an environmental medium, and an exposure or contact point for an ecological receptor. Because ecological receptors will not directly contact the groundwater and the groundwater does not discharge to a nearby surface water body, the groundwater exposure pathway for ecological receptors is not complete. Surface water bodies do not exist at the site, and no soil contamination has been detected. Thus, a route of contaminant exposure to terrestrial species is largely absent. For these reasons, a significant exposure pathway to terrestrial receptors does not exist at Site 59, so ecological risks were not further evaluated.

9.0 SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

9.1 SUMMARY

9.1.1 Nature and Extent of Contamination – Site 59

The horizontal and vertical extent of groundwater contamination at Site 59 was defined during the RI.

At the 30-foot depth, two TCE plumes were identified as follows:

- A northern plume beginning just north of Building 324, centered west of Building 818, and extending southeast to Building 1845. This plume covers extends approximately 540 feet to the southeast, with an average width of approximately 150 feet and covers approximately 82,000 square feet.

- A southern plume oriented approximately east-west between Buildings 1845 and 815 with maximum dimensions of approximately 130 feet by 400 feet. This plume covers approximately 42,000 square feet.

At the 50-foot depth, two TCE plumes were also identified as follows:

- A northern plume with a more east-west orientation than at 30 feet bgs, but that it is still centered just west of Building 818. Maximum dimensions of the plume are 300 feet by 450 feet, and this plume covers an area of approximately 84,000 square feet.

- The position of the southern plume shifts from between Buildings 1845 and 815 in the 30-foot zone to encompassing most of Building 1845 and extending to Building 815, and the orientation changes from east-west to northwest-southeast. The plume extends in a general southeast direction for approximately 560 feet with an average width of approximately 220 feet, and the area covered by this plume is approximately 115,000 square feet.

At the 70- to 80-foot depth, the plumes coalesce into a single area extending from southeast of Building 324 to within Building 1845, with a northwest-southeast orientation, and the center shifts toward the northwestern corner of Building 1845. This plume extends to the southeast approximately 720 feet with a width of approximately 130 feet in the northern portion and expanding to approximately 300 feet in the southern section. This plume covers approximately 150,000 square feet.

In the TOR zone, the single plume decreases in size to approximately 18,500 square feet, has the same general orientation as in the 70- to 80-foot zone, and is centered at the northwestern corner of Building 1845. This plume extends approximately 200 feet in a southeast direction and is approximately 100 feet wide.

TCE concentrations in excess of the GCTL occur in surficial aquifer from approximately 30 feet bgs to the top of the bedrock. No specific sources of chlorinated VOC contamination were identified. The presence of chlorinated solvent contamination is likely a result of past spills, leaks, and/or poor waste handling practices. Solvents were reportedly used and stored in several buildings associated with the site.

9.1.2 Nature and Extent of Contamination – Building 815 Wash Rack Area

Naphthalene and TRPH concentrations in excess of GCTLs (based on the most recent data for each well) are encompassed by a plume extending approximately 130 feet southeast and with an average width of approximately 50 feet and covering and an area of approximately 6,500 square feet. Contamination in this area is limited to the shallow portion of the surficial aquifer (to 15 feet bgs).

9.1.3 Site 59 Human Health Risk Assessment

The PRE for Site 59 indicates that residential exposure to groundwater could potentially result in adverse health effects. Constituents resulting in risks exceeding U.S. EPA's risk range and FDEP's target risk include TCE and vinyl chloride.

9.1.4 Site 59 Ecological Risk Assessment

The site consists primarily of buildings, parking lots, and the flight apron. The limited terrestrial habitat is of marginal quality and results in little use of the site by terrestrial wildlife. There are no complete exposure pathways for ecological receptors at the site; therefore, ecological risks were not further evaluated.

9.2 CONCLUSIONS

9.2.1 Data Limitations and Recommendations for Future Work

The primary purpose of the RI at Site 59 was to delineate the contaminant plume in groundwater. Data from previous investigations indicated that VOCs were the primary contaminants; therefore, these were the analytical parameters chosen for groundwater samples. The results of the RI were successful in identifying the nature and extent of the Site 59 contaminant plumes as defined by FDEP GCTLs.

Because remediation alternatives have yet to be evaluated, there may be data gaps for particular alternatives. Some additional data may be required for a particular remedial option.

Additional data may be required for the Building 815 Wash Rack Area to provide sufficient information to complete the review of remedial options.

9.2.2 Recommended Remedial Action Objectives

Based on the results of the investigation, the following Remedial Action Objective (RAO) is recommended for groundwater at Site 59:

- Prevent ingestion of groundwater with concentrations TCE greater than the FDEP GCTL

Based on the results of the investigation, the following RAO is recommended for groundwater at Building 815 Wash Rack Area:

- Prevent ingestion of groundwater with concentrations naphthalene and TRPH greater than the FDEP GCTL

Recommended actions to meet these objectives include one or more of the following:

- Remediation of contaminated groundwater to conform to FDEP criteria
- Implementation of land use controls to prevent the use of the groundwater as a potable water source
- Continued monitoring of the plume

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APPENDIX A

SAMPLE LOG SHEETS, CHAIN OF CUSTODY RECORDS, AND SURVEY DATA

A.1 GROUNDWATER SAMPLE LOG SHEETS AND LOW-FLOW PURGE DATA SHEETS

A.2 CHAIN OF CUSTODY RECORDS

A.3 SURVEY DATA

A.1 GROUNDWATER SAMPLE LOG SHEETS AND LOW-FLOW PURGE DATA SHEETS

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: NAS Cecil Field, Site 59 RI
Project No.: N8925.SW0.050.120
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: CEF-59-001- 028 -RI
Sample Location: CEF-59-001-028
Sampler: C. Gleason

SAMPLING DATA

	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO ~~mg/L~~ %	Temp. °C	ORP mV	
Date: 11/11/09								
Time: ~~1040~~ 1140 MD								
Method: Peristaltic	Clear	4.54	0.078	0.0	15.2	22.15	327.6	

PURGE DATA

Date: 11/11/09
Method: Peristaltic
Monitor Reading (ppm): 0.0
Well Casing Diameter: 2 inch
Well Casing Material: PVC
Total Well Depth (ft): 28
Static Water Level (ft): 5.18
One Screen Volume(gal/L): 3.1
Start Purge (hrs): 1100
End Purge (hrs): 1135
Total Purge Time (min): 35
Total Vol. Purged (gal/L): 10.5

See Attached Low Flow Purge Data Sheet for Purge Data

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
TCL VOCs	HCl	3 - 40ml vials	Accutest	✓
MEE	HCl	3 - 40ml vials	Accutest	✓
Iron (Dissolved)	HNO_3	1 - 500 mL Plastic	Accutest	✓
Alkalinity	None	1 - 1 Liter Plastic	Accutest	✓
Cl-, SO_4^{-2}, PO_4, NO_2^-, NO_3^-	None	combine with above	Accutest	✓
SULFIDE (DISSOLVED)	NaOH	3 - 250 mL Plastic	Accutest	✓
TOC	H_2SO_4	1 - 125 mL amber glass	Accutest	✓

OBSERVATIONS / NOTES

~Dissolved=Filtered
* Filtered samples must be labeled 'F' for groundwater filtered

Metals filtered through 1 micron filter.

Background PID = 0.0
BZ PID= 0.0
BOREHOLE PID= 0.0

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #: 359-1

Check if Collected:

[ ] DUPLICATE
[ ] MS/MSD

ID No.:

Signature(s):

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120
WELL ID.: CEF-59-001-028
DATE: 11/11/04

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO ~~(mg/L)~~	Temp. (Celsius)	ORP (mV)	Comments
1100	5.18									
1105	5.24	300	1.5	4.56	0.081	2.4	18.7	22.17	337.4	
1110	5.24	300	3.6	4.47	0.082	2.2	15.2	22.11	332.1	
1115	5.24	300	4.5	4.55	0.081	0.0	14.7	22.08	306.1	
1120	5.24	300	6.6	4.54	0.081	0.0	15.7	22.10	314.6	
1125	5.24	300	7.5	4.54	0.078	0.0	16.1	22.10	321.7	
1130	5.24	300	9.0	4.54	0.078	0.0	16.4	22.12	325.2	
1135	5.24	300	10.5	4.54	0.078	0.0	15.2	22.15	327.6	

SIGNATURE(S): C Sloan

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: NAS Cecil Field, Site 59 RI
Project No.: N8925.SW0.050.120
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: CEF-59-001- 028 -RI
Sample Location: CEF-59-001-028
Sampler: P. LEVERETTE

SAMPLING DATA

	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
Date: 1/3/06								
Time: 1258								
Method: Peristaltic	Lt. Brown	4.71	0.047	625	0.18	21.33	70.2	

PURGE DATA

Date: 1/3/06
Method: Peristaltic
Monitor Reading (ppm): 0
Well Casing Diameter: ~~1/2~~ inch 3/4
Well Casing Material: PVC
Total Well Depth (ft): 28
Static Water Level (ft): 4.05
One Screen Volume(gal): ~~0.2~~ 0.43
Start Purge (hrs): 1231
End Purge (hrs): 1256
Total Purge Time (min): 25
Total Vol. Purged (gal): 5.0

See Attached Low Flow Purge Data Sheet for Purge Data

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
MEE	HCl	3 x 40ml glass vials	Accutest	✓
Alkalinity	None	1 - 1 L Plastic	Accutest	✓
Chloride	None	1 - 1 L Plastic	Accutest	✓
Sulfate	None	1 - 1 L Plastic	Accutest	✓

OBSERVATIONS / NOTES

*PURGED OVER 5 WELL VOLUMES + TURBIDITY WOULD NOT GO DOWN. SAMPLED WHILE STILL TURBID

Background PID = 0
BZ PID= 0
BOREHOLE PID= 0

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #:

Check if Collected:

[ ] DUPLICATE
[ ] MS/MSD

ID No.: None.

Signature(s):

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120
WELL ID.: CEF-59-001-028
DATE: 1/3/05

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
1231	4.05	200	—	—	—	—	—	—	—	START PURGE
1236	4.29	200	1.0	5.62	0.068	40	0.90	21.44	38.7	
1241	4.30	200	2.0	4.81	0.053	650	0.48	21.31	64.6	
1246	4.30	200	3.0	4.74	0.049	600	0.30	21.28	71.7	
1251	4.30	200	4.0	4.72	0.047	600	0.23	21.32	71.0	
1256	4.30	200	5.0	4.71	0.047	625	0.18	21.33	70.2	

SAMPLE TIME 1258

SIGNATURE(S):

Tetra Tech NUS, Inc.

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Project Site Name: **NAS Cecil Field Site 59 RI**
Sample ID No.: **CEF-059-001- 028-RI**
Project No.: **N8925.SW0.50.120**
Sample Location: **CEF-059-001-028**
Sampled By: PL
Duplicate: ☐
Field Analyst: PL
Blank: ☐
Field Form Checked as per QA/QC Checklist (initials):

SAMPLING DATA:

	Color (Visual)	pH (SU)	S.C. (mS/cm)	Turbidity (NTU)	DO (Meter, mg/l)	Temp. (°C)	ORP (Eh) (+/- mv)
Date: 1/3/06							
Time: 1258							
Method: Peristaltic	Lt Brown	4.71	0.047	625	0.18	21.33	70.2

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Dissolved Oxygen:
Equipment: Chemetrics K-7501 or K-7512
Range ☑ 0 - 1.0 mg/L ☑ 1 - 12 mg/L
Analysis Time: 1300
Concentration: 1.0 mg/L
Notes:

Sulfide (S^{2-}):
Equipment: DR-890
Program/Module: 93 / 610 nm
Analysis Time: 1305
Concentration: 0.33 mg/L
Notes:

Carbon Dioxide:
Equipment: (Range: 10 to 100 mg/L)
CHEMetrics K1910, K1920, or K1925.
Analysis Time: 1308
Concentration: 65 mg/L
Notes:

Ferrous Iron (Fe^{2+}):
Equipment: DR-890
IR-18C Color Wheel
Program/Module: ~~33 / 500~~nm
Analysis Time: 1312
Concentration: 1.54 mg/L
Filtered: ☐
Notes:

Hydrogen Sulfide (H_2S):
Equipment: HS-C
Exceeded 5.0 mg/L range on color chart: ☐
Analysis Time: 1318
Concentration: 1.0 mg/L
Notes:

QA/QC Checklist:
All data fields have been completed as necessary: ☐
Correct measurement units are cited in the SAMPLING DATA block: ☐
Multiplication is correct for each *Multiplier* table: ☐
Final concentration is within the appropriate *Range Used* block: ☐
QA/QC sample (e.g., Std. Additions, etc.) frequency is appropriate as per the project planning documents: ☐
Title block is initialized by person who performed the QA/QC Checklist: ☐

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: NAS Cecil Field, Site 59 RI
Project No.: N8925.SW0.050.120
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: CEF-59-001- 053 -RI
Sample Location: CEF-59-001-053
Sampler: SAB

SAMPLING DATA

	Color	pH	S.C.	Turbidity	DO	Temp.	ORP	
Date: 11/11/04		S.U.	mS/cm	NTU	mg/L	°C	mV	
Time: 1030								
Method: Peristaltic	Muddy Brown	5.75	5.012	7999	2.4	22.28	-79.1	

PURGE DATA

Date: 11/11/04
Method: Peristaltic
Monitor Reading (ppm):
Well Casing Diameter: 0.75 inch
Well Casing Material: PVC
Total Well Depth (ft): 53
Static Water Level (ft): 5.50
One Screen Volume(gal/L): 0.721
Start Purge (hrs): 1000
End Purge (hrs): 1025
Total Purge Time (min): 25
Total Vol. Purged (gal/L): 5

See Attached Low Flow Purge Data Sheet for Purge Data

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
TCL VOCs	HCl	3 x 40ml glass vials	Accutest	SAB

OBSERVATIONS / NOTES

Background PID = Ø
BZ PID= Ø
BOREHOLE PID= 0.6

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #: 359-1

Check if Collected:

☐ DUPLICATE
☐ MS/MSD
ID No.:

Signature(s): Shine A. Ballard

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120
WELL ID.: CEF-59-001-053
DATE: 11/11/04

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
~~0900~~	~~5.50~~	—	—	—	—	—	—	—	—	—
~~0900~~ ~~6.98~~ 1000	~~6.98~~	200	2.0	5.87	6.111	>999	4.6	22.30	-85.3	Pumping As Slow As Possible
1015	6.21	200	3.0	5.85	5.680	>999	3.3	22.30	-85.6	"
1020	6.24	200	4.0	5.81	5.220	>999	2.7	22.28	-84.1	"
1025	6.24	200	5.0	5.75	5.012	>999	2.4	22.28	-79.1	"

SIGNATURE(S): Shim A. Ballard

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: **NAS Cecil Field, Site 59 RI**
Project No.: **N8925.SW0.050.120**
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: **CEF-59-001- 083 -RI**
Sample Location: **CEF-59-001-083**
Sampler: SAB

SAMPLING DATA

	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
Date: 11/11/04								
Time: ~~1145~~ 1200	MILKY							
Method: Peristaltic	CLEAR	5.21	2.80	28	8.0	22.82	72.5	

PURGE DATA

Date: 11/11/04
Method: Peristaltic
Monitor Reading (ppm):
Well Casing Diameter: 2 inch
Well Casing Material: PVC
Total Well Depth (ft): 83
Static Water Level (ft): 6.36
One Screen Volume(gal/L) 3.1
Start Purge (hrs): 1105
End Purge (hrs): 1200
Total Purge Time (min): 55
Total Vol. Purged (gal/L) 16.5

See Attached Low Flow Purge Data Sheet for Purge Data

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
TCL VOCs	HCl	3 x 40ml glass vials	Accutest	SAB
MEE	HCl	3 - 40ml vials	Accutest	SAB
Iron (Dissolved)	HNO_3	1 - 500 mL Plastic	Accutest	SAB
Alkalinity	None	1 - 1 Liter Plastic	Accutest	SAB
Cl-, SO_4^{-2}, PO_4, NO_2^-, NO_3^-	None	combine with above	Accutest	SAB
SULFIDE (DISSOLVED)	NaOH	3 - 250 mL Plastic	Accutest	SAB
TOC	H_2SO_4	1 - 125 mL amber glass	Accutest	SAB

OBSERVATIONS / NOTES

Background PID = Ø
BZ PID= Ø
BOREHOLE PID= Ø

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #: 359-1

Check if Collected:
☐ DUPLICATE
☐ MS/MSD
ID No.: NONE

Signature(s): Shana A. Ballard

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120
WELL ID.: CEF-59-001-083
DATE: 11/11/04

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
1105	6.36	—	—	—	—	—	—	—	—	—
1115	6.38	300	3.0	5.34	2.921	99.5	13.8	22.38	59.5	
1120	6.41	300	4.5	5.24	2.757	40.0	8.9	22.37	67.3	
1125	6.41	300	6.0	5.22	2.744	39.0	8.0	22.36	68.0	
1130	6.43	300	7.5	5.22	2.787	37.0	7.60	22.39	61.3	
1135	6.40	300	9.0	5.23	2.767	36	7.6	22.48	65.6	
1140	6.38	300	10.5	5.23	2.734	33	8.5	22.65	74.6	
1145	6.41	300	12.0	5.22	2.668	31	9.1	22.76	74.9	
1150	6.43	300	13.5	5.23	2.707	32	9.0	22.86	71.2	
1155	6.43	300	15.0	5.21	2.829	30	8.2	22.80	73.3	
1200	6.43	300	16.5	5.21	2.800	28	8.0	22.82	72.5	

SIGNATURE(S): Shina A. Bellard

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: **NAS Cecil Field, Site 59 RI**
Project No.: **N8925.SW0.050.120**
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: **CEF-59-001- 083 -RI**
Sample Location: **CEF-59-001-083**
Sampler: TERRY COTTENOIR

SAMPLING DATA

Date: 01/03/06 Time: 1255	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
Method: Peristaltic	CLEAR	4.94	0.031	7.7	0.09	21.64	34.8	

PURGE DATA

Date: 01/03/06	See Attached Low Flow Purge Data Sheet for Purge Data
Method: Peristaltic	
Monitor Reading (ppm): Ø	
Well Casing Diameter: 2 inch	
Well Casing Material: PVC	
Total Well Depth (ft): 83	
Static Water Level (ft): 5.10	
One Screen Volume(gal/L): 3.1	
Start Purge (hrs): 1228	
End Purge (hrs): 1253	
Total Purge Time (min): 25	
Total Vol. Purged (gal/L): 10.0	

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
MEE	HCl	3 x 40ml glass vials	Accutest	✓
Alkalinity	None	1 - 1 L Plastic	Accutest	✓
Chloride	None	1 - 1 L Plastic	Accutest	✓
Sulfate	None	1 - 1 L Plastic	Accutest	✓

OBSERVATIONS / NOTES

Background PID = Ø
BZ PID= Ø
BOREHOLE PID= Ø

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811

COC #:

Check if Collected:

[ ] DUPLICATE — ID No.: None.
[ ] MS/MSD

Signature(s): Terry Cottenoir

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120
WELL ID.: CEF-59-001-083
DATE: 01/03/05

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
1228	5.10	400	-	-	-	-	-	-	-	START PURGE
1238	5.13	400	4.0	4.97	0.031	14	0.17	21.81	49.5	H_2O CLEAR
1243	5.13	400	6.0	4.95	0.031	8.9	0.13	21.69	41.6	H_2O CLEAR
1248	5.13	400	8.0	4.94	0.030	8.2	0.11	21.63	39.1	H_2O CLEAR
1253	5.13	400	10.0	4.94	0.031	7.7	0.09	21.64	34.8	END PURGE

SAMPLE TIME 1255

SIGNATURE(S): Terry Otterson

Tetra Tech NUS, Inc.

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Project Site Name: **NAS Cecil Field Site 59 RI**
Sample ID No.: **CEF-059-001- 083-RI**
Project No.: **N8925.SW0.50.120**
Sample Location: **CEF-059-001-083**
Sampled By: TERRY COTTENOIR
Duplicate: ☐
Field Analyst: TERRY COTTENOIR
Blank: ☐
Field Form Checked as per QA/QC Checklist (initials):

SAMPLING DATA:

Date: 01/03/06	Color (Visual)	pH (SU)	S.C. (mS/cm)	Turbidity (NTU)	DO (Meter, mg/l)	Temp. (°C)	ORP (Eh) (+/- mv)
Time: 1255							
Method: Peristaltic	CLEAR	4.94	0.031	7.7	0.09	21.64	34.8

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Dissolved Oxygen:
Equipment: Chemetrics K-7501 or K-7512
Range ☒ 0 - 1.0 mg/L ☐ 1 - 12 mg/L
Analysis Time: 1315
Concentration: 0.6 mg/L
Notes:

Sulfide (S^{2-}):
Equipment: DR-890
Program/Module: 93 / 610 nm
Analysis Time: 1311
Concentration: 0.08 mg/L
Notes:

Carbon Dioxide:
Equipment: (Range: 10 to 100 mg/L)
CHEMetrics K1910, K1920, or K1925.
Analysis Time: 1321
Concentration: 35 mg/L
Notes:

Ferrous Iron (Fe^{2+}):
Equipment: DR-890 IR-18C Color Wheel
Program/Module: 33 / 500nm
Analysis Time: 1312
Concentration: 0.42 mg/L
Filtered: ☐
Notes:

Hydrogen Sulfide (H_2S):
Equipment: HS-C
Exceeded 5.0 mg/L range on color chart: ☐
Analysis Time: 1318
Concentration: 0.7 mg/L
Notes:

QA/QC Checklist:
All data fields have been completed as necessary: ☐
Correct measurement units are cited in the SAMPLING DATA block: ☐
Multiplication is correct for each *Multiplier* table: ☐
Final concentration is within the appropriate *Range Used* block: ☐
QA/QC sample (e.g., Std. Additions, etc.) frequency is appropriate as per the project planning documents: ☐
Title block is initialized by person who performed the QA/QC Checklist: ☐

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: NAS Cecil Field, Site 59 RI
Project No.: N8925.SW0.050.120
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: CEF-59-001- 121 -RI
Sample Location: CEF-59-001-121
Sampler: C Galeato

SAMPLING DATA

Date: 11/11/04	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
Time: 1035								
Method: Peristaltic	Clear	7.29	0.481	5.4	59.3	22.25	-36.2	

PURGE DATA

Date: 11/11/04	See Attached Low Flow Purge Data Sheet for Purge Data
Method: Peristaltic	
Monitor Reading (ppm): 0.0	
Well Casing Diameter: 2 inch	
Well Casing Material: PVC	
Total Well Depth (ft): 121	
Static Water Level (ft): 6.37	
One Screen Volume(gal/L): 3.1	
Start Purge (hrs): 0925	
End Purge (hrs): 1030	
Total Purge Time (min): 65	
Total Vol. Purged (gal/L): 9.71	

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
TCL VOCs	HCl	3 x 40ml glass vials	Accutest	✓

OBSERVATIONS / NOTES

Background PID = 0.0
BZ PID = 0.0
BOREHOLE PID = 0.0

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #: 359-1

Check If Collected:

[ ] DUPLICATE
[ ] MS/MSD

ID No.:

Signature(s): C Galeato

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120
WELL ID.: CEF-59-001-121
DATE: 11/11/04

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO ~~(mg/L)~~ %	Temp. (Celsius)	ORP (mV)	Comments
0925	6.33									
0935	8.10	150	1.50	7.29	0.480	17	59.2	21.95	-59.4	Pumping slow as possible
0940	8.90	150	~~0.75~~ 2.25	7.36	0.495	14	86.3	21.99	-41.2	"
0945	9.50	150	3.00	7.38	0.498	16	85.3	22.03	-40.1	"
0950	9.91	150	3.75	7.40	0.492	11	88.5	22.04	-33.5	"
0955	10.43	150	4.50	7.40	0.487	9.8	76.1	22.10	-31.7	
1000	10.67	150	5.25	7.39	0.483	7.1	53.1	22.13	-31.1	
1005	10.96	150	6.00	7.37	0.485	6.6	62.4	22.20	-27.0	
1010	11.22	150	6.75	7.36	0.485	6.1	60.1	22.24	-31.2	
1015	11.34	150	7.50	7.34	0.485	5.8	61.3	22.24	-31.1	
1020	11.71	150	8.25	7.31	0.484	5.6	59.4	22.25	-32.0	
1025	11.87	150	9.00	7.30	0.484	5.6	62.2	22.24	-33.5	
1030	12.00	150	9.75	7.29	0.481	5.4	59.3	22.25	-36.2	

SIGNATURE(S): C Slack

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: NAS Cecil Field, Site 59 RI
Project No.: N8925.SW0.050.120
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: CEF-59-002- 028 -RI
Sample Location: CEF-59-002-028
Sampler: P. LEVERETTE

SAMPLING DATA

Date: 11/16/04	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
Time: 1520								
Method: Peristaltic	CLEAR	4.25	0.076	6.9	1.25	22.52	370.2	

PURGE DATA

Date: 11/16/04	
Method: Peristaltic	
Monitor Reading (ppm): 0	
Well Casing Diameter: ~~2 inch~~ 0.75 inch	See Attached Low Flow Purge Data Sheet for Purge Data
Well Casing Material: PVC	
Total Well Depth (ft): 28	
Static Water Level (ft): 6.44	
One Screen Volume(gal): 0.72	
Start Purge (hrs): 1450	
End Purge (hrs): 1515	
Total Purge Time (min): 25	
Total Vol. Purged (gal): 5.0	

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
TCL VOCs	HCl	3 x 40ml glass vials	Accutest	✓
SVOCs	None	2 - 1 liter glass amber	Accutest	✓
TCL Metals	HNO_3	1 - 1 Liter Plastic	Accutest	✓
PCBs	None	1 - 1 liter glass amber	Accutest	✓
MEE	HCl	3 - 40ml vials	Accutest	✓
Iron (Dissolved)	HNO_3	1 - 500 mL Plastic	Accutest	✓
Alkalinity	None	1 - 1 Liter Plastic	Accutest	✓
Cl-, SO_4^{-2}, PO_4, NO_2^-, NO_3^-	None	combine with above	Accutest	✓
SULFIDE (DISSOLVED)	NaOH	3 - 250 mL Plastic	Accutest	✓
TOC	H_2SO_4	1 - 125 mL amber glass	Accutest	✓
Dhc (qPCR and DGGE)	None	1 - 1 Liter Plastic	Microbial Insights	✓

OBSERVATIONS / NOTES

Background PID = 0
BZ PID = 0
BOREHOLE PID = 0

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #: 359-6
LAB: Microbial Insights
Rockford, TN
COC #: 359-5

Check if Collected:

[ ] DUPLICATE
[x] MSMSD

ID No.: None

Signature(s):

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120
WELL ID.: CEF-59-002-028
DATE: 11/16/04

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
1450	6.44	200	—	—	—	—	—	—	—	START PURGE
1455	6.57	200	1.0	4.75	0.078	550	2.43	22.74	289.3	
1500	6.57	200	2.0	4.25	0.077	130	1.27	22.63	353.7	
1505	6.57	200	3.0	4.24	0.076	36	1.23	22.57	365.6	
1510	6.57	200	4.0	4.24	0.076	12.8	1.21	22.54	367.3	
1515	6.57	200	5.0	4.25	0.076	6.9	1.25	22.52	370.2	

SAMPLE TIME 1520

SIGNATURE(S):

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: NAS Cecil Field, Site 59 RI
Project No.: N8925.SW0.050.120
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: CEF-59-002- 028 -RI
Sample Location: CEF-59-002-028
Sampler: TERRY COTTENOIR

SAMPLING DATA

Date: 01/03/06	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
Time: 1145								
Method: Peristaltic	CLOUDY	4.56	0.072	240	0.29	22.64	102.0	

PURGE DATA

Date: 01/03/06	See Attached Low Flow Purge Data Sheet for Purge Data
Method: Peristaltic	
Monitor Reading (ppm): Ø	
Well Casing Diameter: ~~2 inch~~ ~~0.75 inch~~ 3/4 inch	
Well Casing Material: PVC	
Total Well Depth (ft): 28	
Static Water Level (ft): 4.20	
One Screen Volume(gal/L): ~~0.20~~ (FL) 0.43	
Start Purge (hrs): 1123	
End Purge (hrs): 1143	
Total Purge Time (min): 20	
Total Vol. Purged (gal/L): 5.0	

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
MEE	HCl	3 x 40ml glass vials	Accutest	✓
Alkalinity	None	1 - 1 L Plastic	Accutest	✓
Chloride	None	1 - 1 L Plastic	Accutest	✓
Sulfate	None	1 - 1 L Plastic	Accutest	✓

OBSERVATIONS / NOTES

PURGED OVER 5 WELL VOLUMES TO TRY TO BRING TURBIDITY DOWN. SAMPLED WHILE STILL TURBID.

Background PID = Ø
BZ PID= Ø
BOREHOLE PID= Ø

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811

COC #:

Check if Collected:

[ ] DUPLICATE — ID No.: None.
[ ] MS/MSD

Signature(s): Terry Cottenoir

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120
WELL ID.: CEF-59-002-028
DATE: 01/03/06

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
1123	4.20	200	-	-	-	-	-	-	-	START PURGE
1128	4.34	200	1.0	5.29	0.074	240	0.65	22.54	72.3	H_2O CLOUDY
1133	4.34	200	2.0	4.67	0.071	>1000	0.50	22.49	91.7	H_2O CLOUDY
1138	4.34	200	3.0	4.57	0.072	600	0.30	22.63	98.7	H_2O CLOUDY
1143	4.34	400	5.0	4.56	0.072	240	0.29	22.64	102.0	END PURGE

SAMPLE TIME 1145

SIGNATURE(S): Terry Patterson

Tetra Tech NUS, Inc.

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Project Site Name: **NAS Cecil Field Site 59 RI**
Sample ID No.: **CEF-059-002- 028-RI**
Project No.: **N8925.SW0.50.120**
Sample Location: **CEF-059-002-028**
Sampled By: TERRY COTTENOIR
Duplicate: ☐
Field Analyst: TERRY COTTENOIR
Blank: ☐
Field Form Checked as per QA/QC Checklist (initials): ☐

SAMPLING DATA:

Date: 01/03/06	Color	pH	S.C.	Turbidity	DO	Temp.	ORP (Eh)
Time: 1145	(Visual)	(SU)	(mS/cm)	(NTU)	(Meter, mg/l)	(^{0}C)	(+/- mv)
Method: Peristaltic	CLOUDY	4.56	0.072	240	0.29	22.64	102.0

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Dissolved Oxygen:
Equipment: Chemetrics (K-7501) or K-7512
Range ☒ 0 - 1.0 mg/L ☐ 1 - 12 mg/L
Analysis Time: 1205
Concentration: 0.6 mg/L
Notes:

Sulfide (S^{2-}):
Equipment: (DR-890)
Program/Module: 93 / 610 nm
Analysis Time: 1203
Concentration: 0.09 mg/L
Notes:

Carbon Dioxide:
Equipment: (Range: 10 to 100 mg/L)
CHEMetrics (K1910) K1920, or K1925.
Analysis Time: 1211
Concentration: 60 mg/L
Notes:

Ferrous Iron (Fe^{2+}):
Equipment: (DR-890) IR-18C Color Wheel
Program/Module: 33 / 500nm
Analysis Time: 1204
Concentration: 0.79 mg/L
Filtered: ☐
Notes:

Hydrogen Sulfide (H_2S):
Equipment: (HS-C)
Exceeded 5.0 mg/L range on color chart: ☐
Analysis Time: 1212
Concentration: 0.0 mg/L
Notes:

QA/QC Checklist:
All data fields have been completed as necessary: ☐
Correct measurement units are cited in the SAMPLING DATA block: ☐
Multiplication is correct for each *Multiplier* table: ☐
Final concentration is within the appropriate *Range Used* block: ☐
QA/QC sample (e.g., Std. Additions, etc.) frequency is appropriate as per the project planning documents: ☐
Title block is initialized by person who performed the QA/QC Checklist: ☐

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: NAS Cecil Field, Site 59 RI
Project No.: N8925.SW0.050.120
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: CEF-59-002- 053 -RI
Sample Location: CEF-59-002-053
Sampler: C Gleaton

SAMPLING DATA

	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO ~~mg/L~~ %	Temp. °C	ORP mV	
Date: 11/11/04 Time: 1515 Method: Peristaltic	Brown	5.40	0.069	350	14.4	22.88	45.6	

PURGE DATA

Date: 11/11/04
Method: Peristaltic
Monitor Reading (ppm): 0.2
Well Casing Diameter: 0.75 inch
Well Casing Material: PVC
Total Well Depth (ft): 53
Static Water Level (ft): 6.0
One Screen Volume(gal/L): .75
Start Purge (hrs): 1430
End Purge (hrs): 1510
Total Purge Time (min): 40
Total Vol. Purged (gal/L): 4.0

See Attached Low Flow Purge Data Sheet for Purge Data

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
TCL VOCs	HCl	3 x 40ml glass vials	Accutest	✓

OBSERVATIONS / NOTES

Background PID = 0.0
BZ PID = 0.0
BOREHOLE PID = 0.0

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #: 359-2

Check if Collected:

☐ DUPLICATE
☐ MS/MSD

ID No.:

Signature(s): C Gleaton

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120
WELL ID.: CEF-59-002-053
DATE: 11/11/09

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO ~~(mg/L)~~ do	Temp. (Celsius)	ORP (mV)	Comments
1430	6.0									
1435	6.18	100	~~1.0~~ .5	5.54	0.074	2.0	33.6	23.44	24.9	
1440	6.18	100	1.0	5.39	0.067	11	22.4	23.31	27.1	
1445	6.18	100	1.5	5.32	0.066	12	15.7	23.14	31.0	
1450	6.18	100	2.0	5.29	0.065	14	18.7	23.06	35.3	
1455	6.18	100	2.5	5.32	0.065	28	12.3	22.89	37.5	
1500	6.18	100	3.0	5.36	0.069	32	14.5	22.85	40.5	
1505	6.18	100	3.5	5.39	0.069	75	14.3	22.87	42.9	
1510	6.18	100	4.0	5.46	0.069	350	14.4	22.88	45.6	

SIGNATURE(S): [illegible]

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: NAS Cecil Field, Site 59 RI
Project No.: N8925.SW0.050.120
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: CEF-59-002- 120 -RI
Sample Location: CEF-59-002-120
Sampler: SAB

SAMPLING DATA

	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO ~~mg/L~~ %	Temp. °C	ORP mV	
Date: 11/11/04	Yellowish							
Time: 1550								
Method: Peristaltic	CLEAR	7.29	26.47	9.8	4.0	22.52	-118.7	

PURGE DATA

Date: 11/11/04
Method: Peristaltic
Monitor Reading (ppm):
Well Casing Diameter: 2 inch
Well Casing Material: PVC
Total Well Depth (ft): 120
Static Water Level (ft): 6.93
One Screen Volume(gal): 3.1
Start Purge (hrs): 1425
End Purge (hrs): 1545
Total Purge Time (min): 105
Total Vol. Purged (gal): 16

See Attached Low Flow Purge Data Sheet for Purge Data

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
TCL VOCs	HCl	3 x 40ml glass vials	Accutest	✓
MEE	HCl	3 - 40ml vials	Accutest	✓
Iron (Dissolved)	HNO_3	1 - 500 mL Plastic	Accutest	✓
Alkalinity	None	1 - 1 Liter Plastic	Accutest	✓
Cl^-, SO_4^{-2}, PO_4, NO_2^-, NO_3^-	None	combine with above	Accutest	✓
SULFIDE (DISSOLVED)	NaOH	3 - 250 mL Plastic	Accutest	✓
TOC	H_2SO_4	1 - 125 mL amber glass	Accutest	✓

OBSERVATIONS / NOTES

Background PID = 0.0
BZ PID= 0.0
BOREHOLE PID= 0.0

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #: 359-2

Check if Collected:

[ ] DUPLICATE
[ ] MS/MSD

ID No.: None

Signature(s): Shana A. Ballard

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: NAS Cecil Field, Site 59 RI
Project No.: N8925.SW0.050.120
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: CEF-59-002- 120 -RI
Sample Location: CEF-59-002-120
Sampler: TERRY COTTENOIR

SAMPLING DATA

Date: 1/3/06	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
Time: 1100								
Method: Peristaltic	CLEAR	7.79	0.303	8.3	0.08	22.37	-163.0	

PURGE DATA

Date: 1/3/06	See Attached Low Flow Purge Data Sheet for Purge Data
Method: Peristaltic	
Monitor Reading (ppm): Ø	
Well Casing Diameter: 2 inch	
Well Casing Material: PVC	
Total Well Depth (ft): 120	
Static Water Level (ft): 6.16	
One Screen Volume(gal/L): 3.1	
Start Purge (hrs): 1032	
End Purge (hrs): 1057	
Total Purge Time (min): 25	
Total Vol. Purged (gal/L): 10.0	

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
MEE	HCl	3 x 40ml glass vials	Accutest	✓
Alkalinity	None	1 - 1 L Plastic	Accutest	✓
Chloride	None	1 - 1 L Plastic	Accutest	✓
Sulfate	None	1 - 1 L Plastic	Accutest	✓

OBSERVATIONS / NOTES

Background PID = Ø
BZ PID= Ø
BOREHOLE PID= Ø

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #:

Check if Collected:

[ ] DUPLICATE
[ ] MS/MSD

ID No.: None.

Signature(s): Terry Cottenoir

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120
WELL ID.: CEF-59-002-120
DATE: 1 / 3 /06

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
1032	6.16	400	–	–	–	–	–	–	–	START PURGE
1042	6.24	400	4.0	7.89	0.311	13.0	0.30	22.32	-114.2	H_2O CLEAR
1052	6.24	400	8.0	7.82	0.303	9.8	0.10	22.36	-154.9	H_2O CLEAR
1057	6.24	400	10.0	7.79	0.303	8.3	0.08	22.37	-163.0	H_2O CLEAR/END PURGE
	SAMPLE	TIME	1100							

SIGNATURE(S): Terry Cotterman

Tetra Tech NUS, Inc.

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Project Site Name: **NAS Cecil Field Site 59 RI**
Sample ID No.: **CEF-059-002- 120-RI**
Project No.: **N8925.SW0.50.120**
Sample Location: **CEF-059-002-120**
Sampled By: TERRY COTTENOIR
Duplicate: ☐
Field Analyst: TERRY COTTENOIR
Blank: ☐
Field Form Checked as per QA/QC Checklist (initials): ☐

SAMPLING DATA:

Date: 01/03/06	Color	pH	S.C.	Turbidity	DO	Temp.	ORP (Eh)
Time: 1100	(Visual)	(SU)	(mS/cm)	(NTU)	(Meter, mg/l)	(^{0}C)	(+/- mv)
Method: Peristaltic	CLEAR	7.79	0.303	8.3	0.08	22.37	-163.0

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Dissolved Oxygen:
Equipment: Chemetrics K-7501 or K-7512
Range ☒ 0 - 1.0 mg/L ☐ 1 - 12 mg/L
Analysis Time: 1102
Concentration: 0.8 mg/L
Notes:

Sulfide (S^{2-}):
Equipment: DR-890
Program/Module: 93 / 610 nm
Analysis Time: 1104
Concentration: 0.06 mg/L
Notes:

Carbon Dioxide:
Equipment: (Range: 10 to 100 mg/L)
CHEMetrics K1910, K1920, or K1925.
Analysis Time: 1106
Concentration: 10 mg/L
Notes:

Ferrous Iron (Fe^{2+}):
Equipment: DR-890
IR-18C Color Wheel
Program/Module: 33 / 500nm
Analysis Time: 1110
Concentration: 0.24 mg/L
Filtered: ☐
Notes:

Hydrogen Sulfide (H_2S):
Equipment: HS-C
Exceeded 5.0 mg/L range on color chart: ☐
Analysis Time: 1115
Concentration: 0.5 mg/L
Notes:

QA/QC Checklist:
All data fields have been completed as necessary: ☐
Correct measurement units are cited in the SAMPLING DATA block: ☐
Multiplication is correct for each *Multiplier* table: ☐
Final concentration is within the appropriate *Range Used* block: ☐
QA/QC sample (e.g., Std. Additions, etc.) frequency is appropriate as per the project planning documents: ☐
Title block is initialized by person who performed the QA/QC Checklist: ☐

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: NAS Cecil Field, Site 59 RI
Project No.: N8925.SW0.050.120
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: CEF-59-003- 035 -RI
Sample Location: CEF-59-003-035
Sampler: PS

SAMPLING DATA

	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
Date: 11-10-04								
Time: 11:45								
Method: Peristaltic	Clear	4.89	0.053	39.5	6.3	24.11	148.6	

PURGE DATA

Date: 11-11-04
Method: Low Flow Peristaltic
Monitor Reading (ppm): 0
Well Casing Diameter: 0.75 inch
Well Casing Material: PVC
Total Well Depth (ft): 35
Static Water Level (ft): 6.89
One Screen Volume(gal/L): ~~3.1~~ 0.72
Start Purge (hrs): 1115
End Purge (hrs): 1145
Total Purge Time (min): 30
Total Vol. Purged (gal/L): 5

See Attached Low Flow Purge Data Sheet for Purge Data

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
TCL VOCs	HCl	3 - 40ml vials	Accutest	PS

OBSERVATIONS / NOTES

~Dissolved=Filtered
* Filtered samples must be labeled 'F' for groundwater filtered

Metals filtered through 1 micron filter.

Background PID = 0
BZ PID= ~~1.7~~ 0
BOREHOLE PID= 1.3

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #: 359-1

Check if Collected:

☐ DUPLICATE
☐ MS/MSD

ID No.: None

Signature(s): [signature]

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120
WELL ID.: CEF-59-003-035
DATE: 11/11/04

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
11:15	6.89	300mL								
11:25	6.91	300mL	3L	4.88	0.054	168	6.3	23.97	164.2	
11:35	7.00	300mL	4L	4.88	0.054	157.1	6.3	24.16	156.8	
11:45	7.00	100mL	5L	4.89	0.053	225	6.3	24.11	148.6	
	Sample		1145							

SIGNATURE(S): [illegible]

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: **NAS Cecil Field, Site 59 RI**
Project No.: **N8925.SW0.050.120**
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: **CEF-59-003- 035 -RI**
Sample Location: **CEF-59-003-035**
Sampler: P. LEVERETTE

SAMPLING DATA

	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
Date: 1/3/06								
Time: 1424								
Method: Peristaltic	CLEAR	4.38	0.069	1.4	0.25	22.65	70.9	

PURGE DATA

Date: 1/3/06	See Attached Low Flow Purge Data Sheet for Purge Data
Method: Peristaltic	
Monitor Reading (ppm): 0	
Well Casing Diameter ~~1/2~~ inch 3/4	
Well Casing Material: PVC	
Total Well Depth (ft): 35	
Static Water Level (ft): 3.23	
One Screen Volume(gal): ~~0.20~~ .43	
Start Purge (hrs): 1403	
End Purge (hrs): 1423	
Total Purge Time (min): 20	
Total Vol. Purged (gal): 4.0	

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
MEE	HCl	3 x 40ml glass vials	Accutest	✓
Alkalinity	None	1 - 1 L Plastic	Accutest	✓
Chloride	None	1 - 1 L Plastic	Accutest	✓
Sulfate	None	1 - 1 L Plastic	Accutest	✓

OBSERVATIONS / NOTES

Background PID = 0
BZ PID= 0
BOREHOLE PID= 0

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #:

Check if Collected:

[ ] DUPLICATE — ID No.: None.
[ ] MS/MSD

Signature(s):

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120

WELL ID.: CEF-59-003-035
DATE: 1/3/06

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
1403	3.23	200	—	—	—	—	—	—	—	START PURGE
1408	3.34	200	1.0	4.48	0.067	28	0.73	22.51	68.9	
1413	3.34	200	2.0	4.41	0.072	5.1	0.37	22.58	71.9	
1418	3.34	200	3.0	4.39	0.072	2.1	0.28	22.56	71.9	
1423	3.34	200	4.0	4.38	0.069	1.4	0.25	22.65	70.9	
	SAMPLE TIME		1424							

SIGNATURE(S):

Tetra Tech NUS, Inc.

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Project Site Name: **NAS Cecil Field Site 59 RI**
Sample ID No.: **CEF-059-003- 035-RI**
Project No.: **N8925.SW0.50.120**
Sample Location: **CEF-059-003-035**
Sampled By: PL
Duplicate: ☐
Field Analyst: PL
Blank: ☐
Field Form Checked as per QA/QC Checklist (initials):

SAMPLING DATA:

	Color (Visual)	pH (SU)	S.C. (mS/cm)	Turbidity (NTU)	DO (Meter, mg/l)	Temp. (^{0}C)	ORP (Eh) (+/- mv)
Date: 1/3/06							
Time: 1424							
Method: Peristaltic	CLEAR	4.38	0.069	1.4	0.25	22.65	70.9

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Dissolved Oxygen:
Equipment: Chemetrics K-7501 or K-7512
Range ☑ 0 - 1.0 mg/L ☐ 1 - 12 mg/L
Analysis Time: 1426
Concentration: 1.0 mg/L
Notes:

Sulfide (S^{2-}):
Equipment: DR-890
Program/Module: 93 / 610 nm
Analysis Time: 1432
Concentration: 0.02 mg/L
Notes:

Carbon Dioxide:
Equipment: (Range: 10 to 100 mg/L)
CHEMetrics K1910, K1920, or K1925.
Analysis Time: 1435
Concentration: 80 mg/L
Notes:

Ferrous Iron (Fe^{2+}):
Equipment: DR-890 IR-18C Color Wheel
Program/Module: 33 / 500nm
Analysis Time: 1439
Concentration: 0.86 mg/L
Filtered: ☐
Notes:

Hydrogen Sulfide (H_2S):
Equipment: HS-C
Exceeded 5.0 mg/L range on color chart: ☐
Analysis Time: 1442
Concentration: 0.0 mg/L
Notes:

QA/QC Checklist:
All data fields have been completed as necessary: ☐
Correct measurement units are cited in the SAMPLING DATA block: ☐
Multiplication is correct for each *Multiplier* table: ☐
Final concentration is within the appropriate *Range Used* block: ☐
QA/QC sample (e.g., Std. Additions, etc.) frequency is appropriate as per the project planning documents: ☐
Title block is initialized by person who performed the QA/QC Checklist: ☐

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: NAS Cecil Field, Site 59 RI
Project No.: N8925.SW0.050.120
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: CEF-59-003- 053 -RI
Sample Location: CEF-59-003-053
Sampler:

SAMPLING DATA

	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
Date: 11/16/04 Time: 1710 Method: Peristaltic	CLEAR	4.89	0.069	45	1.12	22.74	141.2	

PURGE DATA

Date: 11/16/04
Method: Peristaltic
Monitor Reading (ppm): 0
Well Casing Diameter: 0.75 inch
Well Casing Material: PVC
Total Well Depth (ft): 53
Static Water Level (ft): 5.46
One Screen Volume(gal/L): 0.72
Start Purge (hrs): 1640
End Purge (hrs): 1705
Total Purge Time (min): 25
Total Vol. Purged (gal/L): 5.0

See Attached Low Flow Purge Data Sheet for Purge Data

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
TCL VOCs	HCl	3 x 40ml glass vials	Accutest	✓
Dhc (qPCR and DGGE)	None	1 - 1 Liter Plastic	Microbial Insights	✓
MEE	HCl	3 - 40ml vials	Accutest	✓
Iron (Dissolved)	HNO_3	1 - 500 mL Plastic	Accutest	✓
Alkalinity	None	1 - 1 Liter Plastic	Accutest	✓
Cl-, SO_4^{-2}, PO_4, NO_2^-, NO_3^-	None	combine with above	Accutest	✓
SULFIDE (DISSOLVED)	NaOH	3 - 250 mL Plastic	Accutest	✓
TOC	H_2SO_4	1 - 125 mL amber glass	Accutest	✓

OBSERVATIONS / NOTES

Background PID = 0
BZ PID= 0
BOREHOLE PID= 0

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #: 359-6
LAB: Microbial Insights
Rockford, TN
COC #: 359-5

Check if Collected:

[ ] DUPLICATE
[ ] MS/MSD

ID No.: None

Signature(s):

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120
WELL ID.: CEF-59-003-053
DATE: 11/16/04

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
1640	5.46	200	—	—	—	—	—	—	—	START PURGE
1645	5.54	200	1.00	5.19	0.071	80	1.20	23.19	143.4	
1650	5.54	200	2.0	5.05	0.070	75	0.87	23.04	139.8	
1655	5.54	200	3.0	4.98	0.070	75	0.73	22.98	139.0	
1700	5.54	200	4.0	4.92	0.069	57	1.[illegible]	22.89	140.5	
1705	5.54	200	5.0	[illegible]89	0.069	45	1.12	22.74	141.2	
~~1708~~	~~5.~~		~~5.5~~							

SAMPLE TIME 1710

SIGNATURE(S): [signature]

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: **NAS Cecil Field, Site 59 RI**
Project No.: **N8925.SW0.050.120**
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: **CEF-59-003- 053 -RI**
Sample Location: **CEF-59-003-053**
Sampler: TERRY COTTENOIR

SAMPLING DATA

Date: 01/03/06	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
Time: 1425								
Method: Peristaltic	CLEAR	4.49	0.058	3.5	0.18	22.65	81.7	

PURGE DATA

Date: 01/03/06	See Attached Low Flow Purge Data Sheet for Purge Data
Method: Peristaltic	
Monitor Reading (ppm): Ø	
Well Casing Diameter: 2 inch	
Well Casing Material: PVC	
Total Well Depth (ft): 53	
Static Water Level (ft): 3.43	
One Screen Volume(gal/L): 0.20	
Start Purge (hrs): 1403	
End Purge (hrs): 1423	
Total Purge Time (min): 20	
Total Vol. Purged (gal/L) 4.0	

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
MEE	HCl	3 x 40ml glass vials	Accutest	✓
Alkalinity	None	1 - 1 L Plastic	Accutest	✓
Chloride	None	1 - 1 L Plastic	Accutest	✓
Sulfate	None	1 - 1 L Plastic	Accutest	✓

OBSERVATIONS / NOTES

Background PID = Ø
BZ PID= Ø
BOREHOLE PID= Ø

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #:

Check if Collected:

[ ] DUPLICATE
[ ] MS/MSD

ID No.: None.

Signature(s):

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120

WELL ID.: CEF-59-003-053
DATE: 01/02/06

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
1403	3.43	200	–	–	–	–	–	–	–	START PURGE
1408	3.62	200	1.0	4.63	0.058	20	0.48	22.64	77.7	H_2O CLEAR
1413	3.62	200	2.0	4.52	0.059	14	0.29	22.63	82.7	H_2O CLEAR
1418	3.62	200	3.0	4.49	0.058	6.8	0.20	22.62	83.3	H_2O CLEAR
1423	3.62	200	4.0	4.49	0.058	3.5	0.18	22.65	81.7	END PURGE

SAMPLE TIME 1425

SIGNATURE(S): Terry Ottenson

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Tetra Tech NUS, Inc.

Project Site Name: **NAS Cecil Field Site 59 RI**
Sample ID No.: **CEF-059-003- 053-RI**
Project No.: **N8925.SW0.50.120**
Sample Location: **CEF-059-003-053**
Sampled By: TERRY COTTENOIR
Duplicate: ☐
Field Analyst: TERRY COTTENOIR
Blank: ☐
Field Form Checked as per QA/QC Checklist (initials):

SAMPLING DATA:

Date: 01/03/06	Color	pH	S.C.	Turbidity	DO	Temp.	ORP (Eh)
Time: 1425	(Visual)	(SU)	(mS/cm)	(NTU)	(Meter, mg/l)	(^{0}C)	(+/- mv)
Method: Peristaltic	CLEAR	4.49	0.058	3.5	0.18	22.65	81.7

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Dissolved Oxygen:
Equipment: Chemetrics K-7501 or K-7512
Range ☐ 0 - 1.0 mg/L ☑ 1 - 12 mg/L
Analysis Time: 1450
Concentration: 1.0 mg/L
Notes:

Sulfide (S^{2-}):
Equipment: DR-890
Program/Module: 93 / 610 nm
Analysis Time: 1456
Concentration: 0.05 mg/L
Notes:

Carbon Dioxide:
Equipment: (Range: 10 to 100 mg/L)
CHEMetrics K1910, K1920, or K1925.
Analysis Time: 1500
Concentration: 90 mg/L
Notes:

Ferrous Iron (Fe^{2+}):
Equipment: DR-890
IR-18C Color Wheel
Program/Module: 33 / 500nm
Analysis Time: 1503
Concentration: 0.58 mg/L
Filtered: ☐
Notes:

Hydrogen Sulfide (H_2S):
Equipment: HS-C
Exceeded 5.0 mg/L range on color chart: ☐
Analysis Time: 1507
Concentration: 0.3 mg/L
Notes:

QA/QC Checklist:

All data fields have been completed as necessary: ☐
Correct measurement units are cited in the SAMPLING DATA block: ☐
Multiplication is correct for each *Multiplier* table: ☐
Final concentration is within the appropriate *Range Used* block: ☐
QA/QC sample (e.g., Std. Additions, etc.) frequency is appropriate as per the project planning documents: ☐
Title block is initialized by person who performed the QA/QC Checklist: ☐

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: NAS Cecil Field, Site 59 RI
Project No.: N8925.SW0.050.120
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: CEF-59-003- 073 -RI
Sample Location: CEF-59-003-073
Sampler: PL

SAMPLING DATA

Date: 11/17/04	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
Time: 0905								
Method: Peristaltic	Lt. Brown	5.49	0.094	110	0.40	22.37	17.3	

PURGE DATA

Date: 11/17/04
Method: Peristaltic
Monitor Reading (ppm): 0
Well Casing Diameter: 0.75 inch
Well Casing Material: PVC
Total Well Depth (ft): 73
Static Water Level (ft): 5.68
One Screen Volume(gal): 0.72
Start Purge (hrs): 0825
End Purge (hrs): 0900
Total Purge Time (min): 35
Total Vol. Purged (gal): 4.0

See Attached Low Flow Purge Data Sheet for Purge Data

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
TCL VOCs	HCl	3 x 40ml glass vials	Accutest	✓

OBSERVATIONS / NOTES

Background PID = 0
BZ PID= 0
BOREHOLE PID= 0

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #: 359-7

Check if Collected:

[ ] DUPLICATE
[ ] MS/MSD

ID No.: NONE

Signature(s):

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120
WELL ID.: CEF-59-003-073
DATE: 11/17/04

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
0825	5.68	200	—	—	—	—	—	—	—	START PURGE
0830	5.85	200	1.0	5.34	0.085	>1000	2.01	22.76	44.9	
0840	5.81	100	2.0	5.47	0.091	>1000	0.76	22.38	28.2	
0850	5.81	100	3.0	5.49	0.094	300	0.48	22.37	19.6	
0855	5.81	100	3.5	5.49	0.094	190	0.42	22.37	18.2	
0900	5.81	100	4.0	5.49	0.094	110	0.40	22.37	17.3	

SAMPLE TIME 0905

SIGNATURE(S):

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: **NAS Cecil Field, Site 59 RI**
Project No.: **N8925.SW0.050.120**
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: **CEF-59-003- 073 -RI**
Sample Location: **CEF-59-003-073**
Sampler: P. LEVERETTE

SAMPLING DATA

Date: 1/3/06	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
Time: 1538								
Method: Peristaltic	CLEAR	4.61	0.053	8.6	0.24	22.32	47.8	

PURGE DATA

Date: 1/3/06	See Attached Low Flow Purge Data Sheet for Purge Data
Method: Peristaltic	
Monitor Reading (ppm): 0	
Well Casing Diameter: ~~2 inch~~ 3/4	
Well Casing Material: PVC	
Total Well Depth (ft): 73	
Static Water Level (ft): 4.08	
One Screen Volume(gal): 0.43	
Start Purge (hrs): 1516	
End Purge (hrs): 1536	
Total Purge Time (min): 20	
Total Vol. Purged (gal): 4.0	

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
MEE	HCl	3 x 40ml glass vials	Accutest	✓
Alkalinity	None	1 - 1 L Plastic	Accutest	✓
Chloride	None	1 - 1 L Plastic	Accutest	✓
Sulfate	None	1 - 1 L Plastic	Accutest	✓

OBSERVATIONS / NOTES

Background PID = 0
BZ PID= 0
BOREHOLE PID= 0

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811

COC #:

Check if Collected:

[ ] DUPLICATE
[ ] MS/MSD

ID No.: None.

Signature(s):

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
WELL ID.: CEF-59-003-073
PROJECT NUMBER: N8925.SW0.050.120
DATE: 1/3/06

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
1516	4.08	200	—	—	—	—	—	—	—	START PURGE
1521	4.20	200	1.0	4.86	0.053	150	1.02	22.35	41.9	
1526	4.20	200	2.0	4.66	0.053	36	0.32	22.31	48.2	
1531	4.20	200	3.0	4.63	0.053	14	0.27	22.30	48.4	
1536	4.20	200	4.0	4.61	0.053	8.6	0.24	22.32	47.8	
	SAMPLE	TIME	1538							

SIGNATURE(S):

Tetra Tech NUS, Inc.

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Project Site Name: **NAS Cecil Field Site 59 RI**
Project No.: **N8925.SW0.50.120**
Sampled By: PL
Field Analyst: PL
Field Form Checked as per QA/QC Checklist (initials):

Sample ID No.: **CEF-059-003- 073-RI**
Sample Location: **CEF-059-003-073**
Duplicate: ☐
Blank: ☐

SAMPLING DATA:

Date: 1/3/06	Color (Visual)	pH (SU)	S.C. (mS/cm)	Turbidity (NTU)	DO (Meter, mg/l)	Temp. (^{0}C)	ORP (Eh) (+/- mv)
Time: 1538							
Method: Peristaltic	CLEAR	4.61	0.053	8.6	0.24	22.32	47.8

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Dissolved Oxygen:
Equipment: Chemetrics (K-7501) or K-7512 Range ☒ 0 - 1.0 mg/L ☐ 1 - 12 mg/L
Analysis Time: 1551
Concentration: 0.8 mg/L
Notes:

Sulfide (S^{2-}):
Equipment: (DR-890)
Program/Module: 93 / 610 nm
Analysis Time: 1549
Concentration: 0.13 mg/L
Notes:

Carbon Dioxide:
Equipment: (Range: 10 to 100 mg/L)
CHEMetrics (K1910), K1920, or K1925.
Analysis Time: 1558
Concentration: 40 mg/L
Notes:

Ferrous Iron (Fe^{2+}):
Equipment: (DR-890) IR-18C Color Wheel
Program/Module: 33 / 500nm
Analysis Time: 1550
Concentration: 0.68 mg/L
Filtered: ☐
Notes:

Hydrogen Sulfide (H_2S):
Equipment: (HS-C)
Exceeded 5.0 mg/L range on color chart: ☐
Analysis Time: 1556
Concentration: 0.0 mg/L
Notes:

QA/QC Checklist:
All data fields have been completed as necessary: ☐
Correct measurement units are cited in the SAMPLING DATA block: ☐
Multiplication is correct for each *Multiplier* table: ☐
Final concentration is within the appropriate *Range Used* block: ☐
QA/QC sample (e.g., Std. Additions, etc.) frequency is appropriate as per the project planning documents: ☐
Title block is initialized by person who performed the QA/QC Checklist: ☐

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: NAS Cecil Field, Site 59 RI
Project No.: N8925.SW0.050.120
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: CEF-59-003- 121 -RI
Sample Location: CEF-59-003-121
Sampler: CAS NELSON

SAMPLING DATA

Date: 11/4/04 Time: 1045	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
Method: Low Flow Peristaltic	Clear	7.31	0.472	2.21	7.8	23.95	38.9	

PURGE DATA

Date: 11/11/04
Method: Low Flow Peristaltic
Monitor Reading (ppm): .03
Well Casing Diameter: 2 inch
Well Casing Material: PVC
Total Well Depth (ft): 121
Static Water Level (ft): 7.04
One Screen Volume(gal): 3.1
Start Purge (hrs): 09:20
End Purge (hrs): 10:40
Total Purge Time (min): 80 min
Total Vol. Purged (gal): 10L

See Attached Low Flow Purge Data Sheet for Purge Data

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
TCL VOCs	HCl	3 x 40ml glass vials	Accutest	✓
MEE	HCl	3 - 40ml vials	Accutest	✓
Iron (Dissolved)	HNO_3	1 - 500 mL Plastic	Accutest	✓
Alkalinity	None	1 - 1 Liter Plastic	Accutest	✓
Cl-, SO_4^{-2}, PO_4, NO_2^-, NO_3^-	None	combine with above	Accutest	✓
SULFIDE (DISSOLVED)	NaOH	3 - 250 mL Plastic	Accutest	✓
TOC	H_2SO_4	1 - 125 mL amber glass	Accutest	✓

OBSERVATIONS / NOTES

Background PID = .03
BZ PID= .04
BOREHOLE PID= .04

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #: 32359-1

Check if Collected:

[ ] DUPLICATE
[ ] MS/MSD

ID No.: None

Signature(s):

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120
WELL ID.: CEF-59-003-121
DATE: 11/4/04

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
09:20	7.04	125 mL								
	7.63									
09:40	7.70	125 mL	2.50	7.41	0.478	~~42.7~~ 42.7	38.0	23.66	-25.8	Pumping as slow as possible
09:50	7.81	125 mL	3.75	7.38	0.478	31.8	26.7	24.02	26.4	
10:00	7.91	125 mL	5.00 mL	7.36	0.477	15.2	12.9	24.36	-32.1	
1010	7.98	125	6.25 mL	7.35	0.475	8.5	8.8	24.19	-34.4	
1020	8.08	125	7.5	7.32	0.474	3.8	9.2	24.03	-36.6	
10:30	8.10	125	8.75	7.31	0.743	2.9	8.6	24.00	37.4	
10:40	8.12	125	10.0	7.31	0.472	2.21	7.8	23.95	38.9	
		Sample Time 10:45								

SIGNATURE(S):

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: **NAS Cecil Field, Site 59 RI**
Project No.: **N8925.SW0.050.120**
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: **CEF-59-003- 121 -RI**
Sample Location: **CEF-59-003-121**
Sampler: TERRY COTTENOIR

SAMPLING DATA

Date: 1/3/06	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
Time: 1505								
Method: Peristaltic	CLEAR	7.34	0.382	0.05	0.15	22.72	-88.6	

PURGE DATA

Date: 1/3/06	See Attached Low Flow Purge Data Sheet for Purge Data
Method: Peristaltic	
Monitor Reading (ppm): Ø	
Well Casing Diameter: 2 inch	
Well Casing Material: PVC	
Total Well Depth (ft): **121**	
Static Water Level (ft): 4.87	
One Screen Volume(gal/L): 3.1	
Start Purge (hrs): 1437	
End Purge (hrs): 1503	
Total Purge Time (min): 25	
Total Vol. Purged (gal/L): 10.0	

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
MEE	HCl	3 x 40ml glass vials	Accutest	✓
Alkalinity	None	1 - 1 L Plastic	Accutest	✓
Chloride	None	1 - 1 L Plastic	Accutest	✓
Sulfate	None	1 - 1 L Plastic	Accutest	✓

OBSERVATIONS / NOTES

Background PID = Ø
BZ PID= Ø
BOREHOLE PID= Ø

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #:

Check if Collected:

[ ] DUPLICATE — ID No.: None.
[ ] MS/MSD

Signature(s): Terry Cottenoir

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120
WELL ID.: CEF-59-003-121
DATE: 1 / 3 /06

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
1437	4.87	400	-	-	-	-	-	-	-	START PURGE
1447	5.03	400	4.0	7.32	0.386	1.3	0.32	22.85	-62.7	H_2O CLEAR
1452	5.03	400	6.0	7.31	0.387	0.30	0.19	22.82	-74.0	H_2O CLEAR
1457	5.03	400	8.0	7.32	0.385	0.45	0.17	22.71	-80.7	H_2O CLEAR
1502	5.03	400	10.0	7.34	0.382	0.05	0.15	22.72	-88.6	END PURGE

SAMPLE TIME 1505

SIGNATURE(S): Terry Cottenoir

Tetra Tech NUS, Inc.

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Project Site Name: **NAS Cecil Field Site 59 RI**
Sample ID No.: **CEF-059-003- 121-RI**
Project No.: **N8925.SW0.50.120**
Sample Location: **CEF-059-003-0121**
Sampled By: TERRY COTTENOIR
Duplicate: ☐
Field Analyst: TERRY COTTENOIR
Blank: ☐
Field Form Checked as per QA/QC Checklist (initials): ☐

SAMPLING DATA:

Date: 1/3/06	Color (Visual)	pH (SU)	S.C. (mS/cm)	Turbidity (NTU)	DO (Meter, mg/l)	Temp. (^{0}C)	ORP (Eh) (+/- mv)
Time: 1505							
Method: Peristaltic	CLEAR	7.34	0.382	0.05	0.15	22.72	-88.6

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Dissolved Oxygen:
Equipment: Chemetrics (K-7501) or K-7512
Range ☒ 0 - 1.0 mg/L ☐ 1 - 12 mg/L
Analysis Time: 1526
Concentration: 0.6 mg/L
Notes:

Sulfide (S^{2-}):
Equipment: (DR-890)
Program/Module: 93 / 610 nm
Analysis Time: 1521
Concentration: 0.06 mg/L
Notes:

Carbon Dioxide:
Equipment: (Range: 10 to 100 mg/L)
CHEMetrics (K1910), K1920, or K1925.
Analysis Time: 1530
Concentration: 16 mg/L
Notes:

Ferrous Iron (Fe^{2+}):
Equipment: (DR-890) IR-18C Color Wheel
Program/Module: 33 / 500nm
Analysis Time: 1522
Concentration: 0.39 mg/L
Filtered: ☐
Notes:

Hydrogen Sulfide (H_2S):
Equipment: (HS-C)
Exceeded 5.0 mg/L range on color chart: ☐
Analysis Time: 1529
Concentration: 0.0 mg/L
Notes:

QA/QC Checklist:
All data fields have been completed as necessary: ☐
Correct measurement units are cited in the SAMPLING DATA block: ☐
Multiplication is correct for each *Multiplier* table: ☐
Final concentration is within the appropriate *Range Used* block: ☐
QA/QC sample (e.g., Std. Additions, etc.) frequency is appropriate as per the project planning documents: ☐
Title block is initialized by person who performed the QA/QC Checklist: ☐

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: **NAS Cecil Field, Site 59 RI**
Project No.: **N8925.SW0.050.120**
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: **CEF-59-004- 033 -RI**
Sample Location: **CEF-59-004-033**
Sampler: P. LEVERETTE

SAMPLING DATA

Date: 6/21/05 Time: 0950	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
Method: Peristaltic	CLEAR	4.83	0.170	8.43	0.21	24.79	30.3	

PURGE DATA

Date: 6/21/05	See Attached Low Flow Purge Data Sheet for Purge Data
Method: Peristaltic	
Monitor Reading (ppm):	
Well Casing Diameter: 1/2 inch	
Well Casing Material: PVC	
Total Well Depth (ft): 33	
Static Water Level (ft): 4.99	
One Screen Volume(gal): 0.75	
Start Purge (hrs): 0917	
End Purge (hrs): 0947	
Total Purge Time (min): 30	
Total Vol. Purged (gal): 4.0	

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
TCL VOCs	HCl	3 x 40ml glass vials	Accutest	✓

OBSERVATIONS / NOTES

0.75
5
3.75 L = 5 VOLUMES

Background PID =
BZ PID=
BOREHOLE PID=

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #: 3122/3123

Check if Collected:

[ ] DUPLICATE — ID No.: ~~None~~. CEF-59-DU05-RI
[ ] MS/MSD

Signature(s):

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120
WELL ID.: CEF-59-004-033
DATE: 6/21/05

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
0917	4.99	200	—	—	—	—	—	—	—	Start Purge
0922	5.02	200	1.0	4.79	0.187	70.2	1.29	24.48	43.7	
0927	5.02	200	2.0	4.83	0.180	36.1	0.61	24.55	39.6	
0932	5.01	~~100~~	~~3.0~~ 2.5	4.85	0.177	19.4	0.33	24.63	34.2	
0937	5.01	100	3.0	4.84	0.172	12.61	0.27	24.81	32.8	
0942	5.01	100	3.5	4.83	0.171	10.88	0.23	24.82	31.6	
0947	5.01	100	4.0	4.83	0.170	8.43	0.21	24.79	30.3	

Sample Time 0950

SIGNATURE(S): [signature]

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: NAS Cecil Field, Site 59 RI
Project No.: N8925.SW0.050.120
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: CEF-59-004- 053 -RI
Sample Location: CEF-59-004-053
Sampler: C Gleaton

SAMPLING DATA

Date: 11/16/04	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
Time: 1015								
Method: Peristaltic	Gray	5.47	0.082	321	0.61	23.02	28.3	

PURGE DATA

Date: 11/16/04	See Attached Low Flow Purge Data Sheet for Purge Data
Method: Peristaltic	
Monitor Reading (ppm): 0.0	
Well Casing Diameter: 0.75 inch	
Well Casing Material: PVC	
Total Well Depth (ft): 53	
Static Water Level (ft): 6.72	
One Screen Volume(gal/L): 0.71	
Start Purge (hrs): 0230	
End Purge (hrs): 1010	
Total Purge Time (min): 40	
Total Vol. Purged (gal/L): 4.0	

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
TCL VOCs	HCl	3 x 40ml glass vials	Accutest	✓
MEE	HCl	3 - 40ml vials	Accutest	✓
Iron (Dissolved)	HNO_3	1 - 500 mL Plastic	Accutest	✓
Alkalinity	None	1 - 1 Liter Plastic	Accutest	✓
Cl-, SO_4^{-2}, PO_4, NO_2^-, NO_3^-	None	combine with above	Accutest	✓
SULFIDE (DISSOLVED)	NaOH	3 - 250 mL Plastic	Accutest	✓
TOC	H_2SO_4	1 - 125 mL amber glass	Accutest	✓

OBSERVATIONS / NOTES

Background PID = 0.6
BZ PID=0.0
BOREHOLE PID=0.0

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #: 359-4

Check if Collected:

[X] DUPLICATE
[ ] MS/MSD

ID No.: CEF-59-DU01-RI

Signature(s): C Gleaton

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120
WELL ID.: CEF-59-004-053
DATE: 11/16/09

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
0930	6.72									
0935	6.89	100	0.5	5.78	0.118	+999	1.65	22.81	2.4	
0940	6.89	100	1.0	5.60	0.092	+999	1.08	22.73	21.8	
0945	6.89	100	1.5	5.60	0.090	698	1.00	22.73	24.3	
0950	6.89	100	2.0	5.58	0.085	376	0.80	22.90	28.7	
0955	6.89	100	2.5	5.50	0.083	248	0.70	22.94	30.2	
1000	6.89	100	3.0	5.50	0.083	257	0.65	23.02	29.7	
1005	6.89	100	3.5	5.49	0.082	312	0.62	23.05	28.2	
1010	6.89	100	4.0	5.47	0.082	321	0.61	23.02	28.3	

SIGNATURE(S): C Gleason

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: NAS Cecil Field, Site 59 RI
Project No.: N8925.SW0.050.120
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: CEF-59-004- 053 -RIA
Sample Location: CEF-59-004-053
Sampler: S. Rome

SAMPLING DATA

	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
Date: 2/17/05 Time: 1555 Method: Peristaltic	Clear	5.19	0.069	34	0.11	23.15	78.1	

PURGE DATA

Date: 2/17/05
Method: Peristaltic
Monitor Reading (ppm):
Well Casing Diameter: 0.75 inch
Well Casing Material: PVC
Total Well Depth (ft): 53
Static Water Level (ft): 6.24
One Screen Volume(gal/L): 0.72
Start Purge (hrs): 1500
End Purge (hrs): 1535 ~~1530~~
Total Purge Time (min): 35
Total Vol. Purged (gal/L): ~~2.88~~ 4.0

See Attached Low Flow Purge Data Sheet for Purge Data

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
TCL VOCs	HCl	3 x 40ml glass vials	Accutest	✓

OBSERVATIONS / NOTES

Background PID = 0.0
BZ PID= 0.0
BOREHOLE PID= 0.4

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #: 59-021505

Check if Collected:

[ ] DUPLICATE
[ ] MS/MSD

ID No.: None.

Signature(s): S. Rome

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120
WELL ID.: CEF-59-004-053
DATE: 2/17/05

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
1510	6.28	200/min	Initial	5.27	5.26	750	0.17	22.77	77.0	Corrected Cum. Vols
1515	6.39	200/min	~~0.7210~~	5.17	0.069	400	0.20	22.95	82.1	- 1.0 L
1520	6.42	200/min	~~1.4420~~	5.18	0.069	365	0.14	23.13	80.5	- 2.0 L
1525	6.39	200/min	~~2.1630~~	5.18	0.069	340	0.12	23.15	79.2	- 3.0 L
1530	6.37	200/min	~~2.8840~~	5.18	0.069	34	0.11	23.15	79.1	- 4.0 L
										Volumes corrected due to data entry error.

SR

SIGNATURE(S): S. Kono

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: NAS Cecil Field, Site 59 RI
Project No.: N8925.SW0.050.120
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: CEF-59-004- 053 -RI
Sample Location: CEF-59-004-053
Sampler: P. LEVERETTE

SAMPLING DATA

	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
Date: 1/4/06 Time: 0945 Method: Peristaltic	WHITE	4.75	0.056	140	0.18	22.24	52.9	

PURGE DATA

Date: 1/4/06
Method: Peristaltic
Monitor Reading (ppm): 0
Well Casing Diameter: ~~2~~ inch 3/4
Well Casing Material: PVC
Total Well Depth (ft): 53
Static Water Level (ft): 3.94
One Screen Volume(gal): 0.43
Start Purge (hrs): 0918
End Purge (hrs): 0943
Total Purge Time (min): 25
Total Vol. Purged (gal): 5.0

See Attached Low Flow Purge Data Sheet for Purge Data

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
MEE	HCl	3 x 40ml glass vials	Accutest	✓
Alkalinity	None	1 - 1 L Plastic	Accutest	✓
Chloride	None	1 - 1 L Plastic	Accutest	✓
Sulfate	None	1 - 1 L Plastic	Accutest	✓

OBSERVATIONS / NOTES

* PURGED OVER 5 WELL VOLUMES + ALL READINGS WERE STABLE BUT TURBIDITY WOULD NOT COME DOWN. SAMPLED WHILE STILL TURBID.

Background PID = 0
BZ PID= 0
BOREHOLE PID= 0

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #:

Check if Collected:

☐ DUPLICATE
☒ MS/MSD

ID No.: ~~None~~ CEF-59-004-053-RI

Signature(s):

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
WELL ID.: CEF-59-004-053
PROJECT NUMBER: N8925.SW0.050.120
DATE: 1/4/05

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
0918	3.94	200	—	—	—	—	—	—	—	START PURGE
0923	4.19	200	1.0	5.31	0.065	110	0.66	22.70	41.0	
0928	4.19	200	2.0	4.93	0.059	130	0.31	22.20	52.2	
0933	4.19	200	3.0	4.82	0.058	140	0.24	22.24	55.6	
0938	4.19	200	4.0	4.78	0.057	150	0.20	22.27	54.0	
0943	4.19	200	5.0	4.75	0.056	140	0.18	22.24	52.9	

SAMPLE TIME 0945

SIGNATURE(S):

Tetra Tech NUS, Inc.

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Project Site Name: **NAS Cecil Field Site 59 RI**
Sample ID No.: **CEF-059-004- 053-RI**
Project No.: **N8925.SW0.50.120**
Sample Location: **CEF-059-004-053**
Sampled By: PL
Duplicate: ☐
Field Analyst: PL
Blank: ☐
Field Form Checked as per QA/QC Checklist (initials): ☐

SAMPLING DATA:

Date: 1/4/06	Color	pH	S.C.	Turbidity	DO	Temp.	ORP (Eh)
Time: 0945	(Visual)	(SU)	(mS/cm)	(NTU)	(Meter, mg/l)	(^{0}C)	(+/- mv)
Method: Peristaltic	WHITE	4.75	0.056	140	0.18	22.24	52.9

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Dissolved Oxygen:
Equipment: Chemetrics K-7501 or K-7512
Range ☒ 0 - 1.0 mg/L ☐ 1 - 12 mg/L
Analysis Time: 0950
Concentration: 0.8 mg/L
Notes:

Sulfide (S^{2-}):
Equipment: DR-890
Program/Module: 93 / 610 nm
Analysis Time: 0954
Concentration: 0.39 mg/L
Notes:

Carbon Dioxide:
Equipment: (Range: 10 to 100 mg/L)
CHEMetrics K1910, K1920, or K1925.
Analysis Time: 0957
Concentration: 70 mg/L
Notes:

Ferrous Iron (Fe^{2+}):
Equipment: DR-890 IR-18C Color Wheel
Program/Module: 33 / 500nm
Analysis Time: 1003
Concentration: 2.64 mg/L
Filtered: ☐
Notes:

Hydrogen Sulfide (H_2S):
Equipment: HS-C
Exceeded 5.0 mg/L range on color chart: ☐
Analysis Time: 1007
Concentration: 0.7 mg/L
Notes:

QA/QC Checklist:
All data fields have been completed as necessary: ☐
Correct measurement units are cited in the SAMPLING DATA block: ☐
Multiplication is correct for each *Multiplier* table: ☐
Final concentration is within the appropriate *Range Used* block: ☐
QA/QC sample (e.g., Std. Additions, etc.) frequency is appropriate as per the project planning documents: ☐
Title block is initialized by person who performed the QA/QC Checklist: ☐

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: NAS Cecil Field, Site 59 RI
Project No.: N8925.SW0.050.120
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: CEF-59-004- 073 -RI
Sample Location: CEF-59-004-073
Sampler: GMS Nelson

SAMPLING DATA

	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
Date: 11/16/04 Time: 11:15 Method: Low Flow Peristaltic	Clear	5.05	0.060	12	0.37	24.17	48.1	

PURGE DATA

Date: 11/16/04	See Attached Low Flow Purge Data Sheet for Purge Data
Method: Low Flow Peristaltic	
Monitor Reading (ppm):	
Well Casing Diameter: 0.75 inch	
Well Casing Material: PVC	
Total Well Depth (ft): 73	
Static Water Level (ft): 5.95	
One Screen Volume(gal/L): .72	
Start Purge (hrs): 10:25	
End Purge (hrs): 11:05	
Total Purge Time (min): 40 min	
Total Vol. Purged (gal/L): 4 L	

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
TCL VOCs	HCl	3 x 40ml glass vials	Accutest	✓
Dhc (qPCR and DGGE)	None	1 - 1 Liter Plastic	Microbial Insights	✓
MEE	HCl	3 - 40ml vials	Accutest	✓
Iron (Dissolved)	HNO_3	1 - 500 mL Plastic	Accutest	✓
Alkalinity	None	1 - 1 Liter Plastic	Accutest	✓
Cl-, SO_4^{-2}, PO_4, NO_2^-, NO_3^-	None	combine with above	Accutest	✓
SULFIDE (DISSOLVED)	NaOH	3 - 250 mL Plastic	Accutest	✓
TOC	H_2SO_4	1 - 125 mL amber glass	Accutest	✓

OBSERVATIONS / NOTES

Background PID = 0.0
BZ PID= 0.0
BOREHOLE PID= 0.0

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #: 359-4
LAB: Microbial Insights
Rockford, TN
COC #: 359-5

Check if Collected:

[ ] DUPLICATE
[ ] MS/MSD

ID No.: None

Signature(s):

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120

WELL ID.: CEF-59-004-073
DATE: 11/16/04

Time (HHMM)	Water Level (Feet BTOC)	Flow (ml/min)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
10:25	5.95	100mL								
10:30	5.95	100mL	.5L	5.03	0.056	100	1.63	23.37	63.3	
10:35	5.95	100mL	1L	5.02	0.057	110	1.39	23.36	62.3	
10:40	5.95	100mL	1.5L	5.02	0.057	120	1.30	23.37	62.2	
10:45	5.95	100mL	2.0L	5.03	0.059	55	.99	23.42	57.1	
10:50	5.95	100mL	2.5L	5.02	0.059	50	0.67	23.41	55.9	
10:55	5.95	100mL	3.0L	5.04	0.059	26	0.52	23.87	57.5	
11:00	5.95	100mL	3.5L	5.05	0.060	19	0.44	24.03	53.9	
11:05	5.95	100mL	4.0L	5.05	0.060	12	0.37	24.17	48.1	
			Sampled			11:15				

SIGNATURE(S):

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: **NAS Cecil Field, Site 59 RI**
Project No.: **N8925.SW0.050.120**
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: **CEF-59-004- 073 -RI**
Sample Location: **CEF-59-004-073**
Sampler: P. LOVERETTE

SAMPLING DATA

Date: 1/4/06	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
Time: 1050								
Method: Peristaltic	Lt. White	4.38	0.054	90	0.24	22.52	39.1	

PURGE DATA

Date: 1/4/06	See Attached Low Flow Purge Data Sheet for Purge Data
Method: Peristaltic	
Monitor Reading (ppm): 0	
Well Casing Diameter: ~~2~~ inch 3/4	
Well Casing Material: PVC	
Total Well Depth (ft): 73	
Static Water Level (ft): 4.25	
One Screen Volume(gal): 0.43	
Start Purge (hrs): 1023	
End Purge (hrs): 1048	
Total Purge Time (min): 25	
Total Vol. Purged (gal): 5.0	

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
MEE	HCl	3 x 40ml glass vials	Accutest	✓
Alkalinity	None	1 - 1 L Plastic	Accutest	✓
Chloride	None	1 - 1 L Plastic	Accutest	✓
Sulfate	None	1 - 1 L Plastic	Accutest	✓

OBSERVATIONS / NOTES

* PURGED OVER 5 WELL VOLUMES & TURBIDITY WOULD NOT COME DOWN. ALL OTHER PARAMETERS WERE STABLE SO WELL WAS SAMPLED TURBID

Background PID = 0
BZ PID= 0
BOREHOLE PID= 0

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #:

Check if Collected:

☐ DUPLICATE
☐ MS/MSD

ID No.: None.

Signature(s):

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120
WELL ID.: CEF-59-004-073
DATE: 1/4/06

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
1023	4.25	200	—	—	—	—	—	—	—	Start Purge
1028	4.51	200	1.0	4.65	0.051	80	1.14	22.14	42.0	
1033	4.51	200	2.0	4.47	0.053	90	0.44	22.46	41.8	
1038	4.51	200	3.0	4.41	0.054	85	0.31	22.43	40.8	
1043	4.51	200	4.0	4.40	0.054	85	0.25	22.48	39.4	
1048	4.51	200	5.0	4.38	0.054	90	0.24	22.52	39.1	

Sample Time 1050

SIGNATURE(S):

Tetra Tech NUS, Inc.

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Project Site Name: **NAS Cecil Field Site 59 RI**
Sample ID No.: **CEF-059-004- 073-RI**
Project No.: **N8925.SW0.50.120**
Sample Location: **CEF-059-004-073**
Sampled By: PL
Duplicate: ☐
Field Analyst: PL
Blank: ☐
Field Form Checked as per QA/QC Checklist (initials): ☐

SAMPLING DATA:

	Color (Visual)	pH (SU)	S.C. (mS/cm)	Turbidity (NTU)	DO (Meter, mg/l)	Temp. (^{0}C)	ORP (Eh) (+/- mv)
Date: 1/4/06							
Time: 1050							
Method: Peristaltic	Lt. WHITE	4.38	0.054	90	0.24	22.52	39.1

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Dissolved Oxygen:
Equipment: Chemetrics K-7501 or K-7512
Range ☒ 0 - 1.0 mg/L ☐ 1 - 12 mg/L
Analysis Time: 1055
Concentration: 0.8 mg/L
Notes:

Sulfide (S^{2-}):
Equipment: DR-890
Program/Module: 93 / 610 nm
Analysis Time: 1059
Concentration: 0.27 mg/L
Notes:

Carbon Dioxide:
Equipment: (Range: 10 to 100 mg/L)
CHEMetrics K1910, K1920, or K1925.
Analysis Time: 1102
Concentration: 75 mg/L
Notes:

Ferrous Iron (Fe^{2+}):
Equipment: DR-890
IR-18C Color Wheel
Program/Module: 33 / 500nm
Analysis Time: 1106
Concentration: 0.82 mg/L
Filtered: ☐
Notes:

Hydrogen Sulfide (H_2S):
Equipment: HS-C
Exceeded 5.0 mg/L range on color chart: ☐
Analysis Time: 1110
Concentration: PW 1.0 mg/L
Notes:

QA/QC Checklist:
All data fields have been completed as necessary: ☐
Correct measurement units are cited in the SAMPLING DATA block: ☐
Multiplication is correct for each *Multiplier* table: ☐
Final concentration is within the appropriate *Range Used* block: ☐
QA/QC sample (e.g., Std. Additions, etc.) frequency is appropriate as per the project planning documents: ☐
Title block is initialized by person who performed the QA/QC Checklist: ☐

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: NAS Cecil Field, Site 59 RI
Project No.: N8925.SW0.050.120
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: CEF-59-004- 112 -RI
Sample Location: CEF-59-004-112
Sampler: Gus Nelson

SAMPLING DATA

Date: 11/16/04	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
Time: 10:15								
Method: Low Flow Peristaltic	Clear	7.14	0.306	9.9	0.75	22.97	-77.9	

PURGE DATA

Date: 11/16/04
Method: Low Flow Peristaltic
Monitor Reading (ppm): 0.0
Well Casing Diameter: 2 inch
Well Casing Material: PVC
Total Well Depth (ft): 112
Static Water Level (ft): 5.76 5.76
One Screen Volume(gal): 3.1
Start Purge (hrs): 09:35
End Purge (hrs): 10:10
Total Purge Time (min): 35m
Total Vol. Purged (gal): 11.5 L

See Attached Low Flow Purge Data Sheet for Purge Data

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
TCL VOCs	HCl	3 x 40ml glass vials	Accutest	✓

OBSERVATIONS / NOTES

Background PID = 0.0
BZ PID= 0.0
BOREHOLE PID= 0.0

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #: 359-4

Check if Collected:

[ ] DUPLICATE
[ ] MS/MSD

ID No.: None

Signature(s): Gus Nelson

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120
WELL ID.: CEF-59-004-112
DATE: 11/16/01

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
09:35	5.76	300mL								
09:40	5.76	300mL	1.5L	7.00	0.295	11	2.12	22.96	-50.7	
09:45	5.77	300mL	3.0L	7.01	0.294	9.5	1.86	22.95	-53.7	
09:50	5.77	300mL	4.5L	7.03	0.295	6.4	1.52	22.95	-58.1	
09:55	5.77	300mL	7.0L	7.13	0.306	2.1	1.17	22.94	-72.3	
10:00	5.77	300mL	8.5L	7.16	0.306	1.6	0.95	22.98	-75.6	
10:05	5.77	300mL	10.2L	7.14	0.306	6.1	0.77	22.95	~~-77.9~~ -77.9	
10:10	5.77	300mL	11.5L	7.14	0.306	9.8	0.75	22.97	-77.9	

Sampled 10:15

SIGNATURE(S):

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: **NAS Cecil Field, Site 59 RI**
Project No.: **N8925.SW0.050.120**
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: **CEF-59-004- 112 -RIA**
Sample Location: **CEF-59-004-112**
Sampler: P. LEVERETTE

SAMPLING DATA

Date: 2/17/05	Color	pH	S.C.	Turbidity	DO	Temp.	ORP	
Time: 1550	(R)	S.U.	mS/cm	NTU	mg/L	°C	mV	
Method: Peristaltic	~~CLEAR~~	6.95	0.411	1.8	0.16	23.23	-133.4	

PURGE DATA

Date: 2/17/05
Method: Peristaltic
Monitor Reading (ppm): 0.9
Well Casing Diameter: 2 inch
Well Casing Material: PVC
Total Well Depth (ft): **112**
Static Water Level (ft): 6.45
One Screen Volume(gal/L): 3.1
Start Purge (hrs): 1510
End Purge (hrs): 1545
Total Purge Time (min): 35
Total Vol. Purged (gal/L): 10.5

See Attached Low Flow Purge Data Sheet for Purge Data

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
TCL VOCs	HCl	3 x 40ml glass vials	Accutest	✓

OBSERVATIONS / NOTES

Background PID = 0
BZ PID= 0
BOREHOLE PID= 0.9

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #: 59-021505

Check if Collected:
[ ] DUPLICATE
[ ] MS/MSD
ID No.: none

Signature(s):

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120
WELL ID.: CEF-59-004-112
DATE: 2/17/05

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
1510	6.45	300	—	—	—	—	—	—	—	START PURGE
1515	6.69	300	1.5	7.05	0.390	4.3	0.48	22.81	-133.1	
1520	6.71	300	3.0	7.06	0.422	3.1	0.24	22.85	-147.9	
1530	6.71	300	6.0	7.01	0.423	2.5	0.20	23.03	-142.8	
1535	6.71	300	7.5	6.98	0.414	2.2	0.18	23.07	-136.3	
1540	6.71	300	9.0	6.97	0.413	1.9	0.17	23.12	-128.1	
1545	6.71	300	10.5	6.95	0.411	1.8	0.16	23.23	-133.4	

SAMPLE TIME 1550

SIGNATURE(S):

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: NAS Cecil Field, Site 59 RI
Project No.: N8925.SW0.050.120
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: CEF-59-004- 112 -RI
Sample Location: CEF-59-004-112
Sampler: TERRY COTTENOIR

SAMPLING DATA

Date: 1/4/06 Time: 1000	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
Method: Peristaltic	CLEAR	7.15	0.321	21	0.47	22.63	-129.8	

PURGE DATA

Date: 1/4/06
Method: Peristaltic
Monitor Reading (ppm): Ø
Well Casing Diameter: 2 inch
Well Casing Material: PVC
Total Well Depth (ft): 112
Static Water Level (ft): 4.15
One Screen Volume(gal/L): 3.1
Start Purge (hrs): 0917
End Purge (hrs): 0957
Total Purge Time (min): 40
Total Vol. Purged (gal/L): 16.0

See Attached Low Flow Purge Data Sheet for Purge Data

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
MEE	HCl	3 x 40ml glass vials	Accutest	✓
Alkalinity	None	1 - 1 L Plastic	Accutest	✓
Chloride	None	1 - 1 L Plastic	Accutest	✓
Sulfate	None	1 - 1 L Plastic	Accutest	✓

OBSERVATIONS / NOTES

PURGED 5 WELL VOLUMES TO TRY TO STABLIZE H_2O AND BRING TURBIDITY DOWN. SAMPLE WHILE STILL TURBID BUT ALL READING WERE STABLE

Background PID = Ø
BZ PID= Ø
BOREHOLE PID= Ø

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #:

Check if Collected:

☒ DUPLICATE — ID No.: CEF-59-DU01-RI
☐ MS/MSD — None.

Signature(s): Terry Cottenoir

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120
WELL ID.: CEF-59-004-112
DATE: 1 /4 /06

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
0917	4.15	400	-	-	-	-	-	-	-	START PURGE
0927	4.31	400	4.0	9.25	0.208	45	1.25	22.50	60.8	H_2O SLIGHTLY CLOUDY
0932	4.31	400	6.0	8.34	0.255	40	1.05	22.52	-147.4	H_2O SLIGHTLY CLOUDY
0937	4.31	400	8.0	7.64	0.288	35	0.94	22.52	-141.3	H_2O SLIGHTLY CLOUDY
0942	4.31	400	10.0	7.41	0.299	32	0.68	22.58	-135.0	H_2O SLIGHTLY CLOUDY
0947	4.31	400	12.0	7.30	0.306	28	0.62	22.54	-133.1	H_2O SLIGHTLY CLOUDY
0952	4.31	400	14.0	7.20	0.314	23	0.52	22.61	-131.5	H_2O CLEAR
0957	4.31	400	16.0	7.15	0.321	21	0.47	22.63	-129.8	END PURGE

SAMPLE TIME 1000

SIGNATURE(S): Terry Cotterman

Tetra Tech NUS, Inc.

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Project Site Name: **NAS Cecil Field Site 59 RI**
Project No.: **N8925.SW0.50.120**
Sampled By: TERRY COTTENOIR
Field Analyst: TERRY COTTENOIR
Field Form Checked as per QA/QC Checklist (initials):

Sample ID No.: **CEF-059-004- 112-RI**
Sample Location: **CEF-059-004-112**
Duplicate: ☒
Blank: ☐

SAMPLING DATA:

Date: 1/4/06	Color	pH	S.C.	Turbidity	DO	Temp.	ORP (Eh)	
Time: 1000	(Visual)	(SU)	(mS/cm)	(NTU)	(Meter, mg/l)	(^{0}C)	(+/- mv)	
Method: Peristaltic	CLEAR	7.15	0.321	21	0.47	22.63	-129.8	

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Dissolved Oxygen:
Equipment: Chemetrics K-7501 or K-7512
Range ☒ 0 - 1.0 mg/L ☐ 1 - 12 mg/L
Analysis Time: 1031
Concentration: 0.6 mg/L DUP: 0.6 mg/L
Notes:

Sulfide (S^{2-}):
Equipment: DR-890
Program/Module: 93 / 610 nm
Analysis Time: 1029
Concentration: 0.03 mg/L DUP: 0.05 mg/L
Notes:

Carbon Dioxide:
Equipment: (Range: 10 to 100 mg/L)
CHEMetrics K1910, K1920, or K1925.
Analysis Time: 1035
Concentration: 18 mg/L DUP: 16 mg/L
Notes:

Ferrous Iron (Fe^{2+}):
Equipment: DR-890 IR-18C Color Wheel
Program/Module: 33 / 500nm
Analysis Time: 1030
Concentration: 1.46 mg/L DUP: 1.41 mg/L
Filtered: ☐
Notes:

Hydrogen Sulfide (H_2S):
Equipment: HS-C
Exceeded 5.0 mg/L range on color chart: ☐
Analysis Time: 1034
Concentration: 0.0 mg/L DUP: 0.0 mg/L
Notes:

QA/QC Checklist:
All data fields have been completed as necessary: ☐
Correct measurement units are cited in the SAMPLING DATA block: ☐
Multiplication is correct for each *Multiplier* table: ☐
Final concentration is within the appropriate *Range Used* block: ☐
QA/QC sample (e.g., Std. Additions, etc.) frequency is appropriate as per the project planning documents: ☐
Title block is initialized by person who performed the QA/QC Checklist: ☐

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: **NAS Cecil Field, Site 59**
Project No.: **112GN8925**
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: **CEF-059-004-135-RI**
Sample Locatior **CEF-059-004**
Sampler: TERRY COTTENOIR

SAMPLING DATA

	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	Other
Date: 11/22/2005 Time: 1222 Method: Peristaltic	CLEAR	7.76	.539	5	0.50	24.16	-394.0	

PURGE DATA

Date: 11/22/2005
Method: Peristaltic
Monitor Reading (ppm): 0
Well Casing Diameter: 2 inch
Well Casing Material: PVC
Total Well Depth (ft) **135**
Static Water Level (ft): 6.75
One Casing Volume (gal/L): 3.3
Start Purge (hrs): 1154
End Purge (hrs): 1219
Total Purge Time (min): 25
Total Vol. Purged (gal/L): 10.0

See Attached Low Flow Purge Data Sheet for Purge Data

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
TCL VOCs	HCl	3 x 40ml glass vials	Accutest	✓

OBSERVATIONS / NOTES

Background PID = 0
BZ PID= 0
BOREHOLE PID= 0

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #: 3204

Check if Collected:
☐ DUPLICATE
☐ MS/MSD
ID No.:

Signature(s): Terry Cottenoir

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: Cecil Field, Site 59
PROJECT NUMBER: 112GN8925

WELL ID.: CEF-059-004
DATE: 11/22/2005

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
1154	6.75	400	–	–	–	–	–	–	–	START PURGE
1204	6.81	400	4.0	7.81	.484	20	0.69	24.22	-429.5	H_2O CLEAR
1209	6.81	400	6.0	7.83	.505	12	0.53	24.20	-384.7	H_2O CLEAR
1214	6.81	400	8.0	7.77	.521	8	0.52	24.17	-376.6	H_2O CLEAR
1219	6.81	400	10.0	7.76	.539	5	0.50	24.16	-394.0	END PURGE
SAMPLE TIME 1222										

SIGNATURE(S): Terry Cottenoir

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: NAS Cecil Field, Site 59 RI
Project No.: N8925.SW0.050.120
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: CEF-59-005- 033 -RI
Sample Location: CEF-59-005-033
Sampler: Gus Nelson

SAMPLING DATA

	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
Date: 11/17/04 Time: 10.30 Method: Low Flow Peristaltic	Clear	4.53	0.104	40	8.20	23.39	92.1	

PURGE DATA

Date: 11/17/04
Method: Low Flow Peristaltic
Monitor Reading (ppm): 0.0
Well Casing Diameter: 0.75 inch
Well Casing Material: PVC
Total Well Depth (ft): 33
Static Water Level (ft): 7.45
One Screen Volume(gal/L): .72
Start Purge (hrs): 09:45
End Purge (hrs): 10:25
Total Purge Time (min): 45m
Total Vol. Purged (gal/L): 4.0L

See Attached Low Flow Purge Data Sheet for Purge Data

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
TCL VOCs	HCl	3 - 40ml vials	Accutest	✓

OBSERVATIONS / NOTES

~Dissolved=Filtered
* Filtered samples must be labeled 'F' for groundwater filtered

Metals filtered through 1 micron filter.

Background PID = 0.0
BZ PID= 0.0
BOREHOLE PID= 0.0

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #: 359-7

Check if Collected:

[ ] DUPLICATE
[ ] MS/MSD

ID No.:

Signature(s):

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120
WELL ID.: CEF-59-005-033
DATE: 11/17/04

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
09:45	07.56	100mL								
09:50	07.56	100 mL	500mL	5.10	0.143	750	16.44	23.52	23.3	
09:55	07.56	100mL	1L	5.0	0.130	+999	12.39	23.54	37.5	
10:00	7.56	100mL	1.5L	4.81	0.117	+999	9.47	23.46	63.9	
10:05	7.56	100mL	2L	4.69	0.112	650	8.64	23.42	76.2	
10:10	7.56	100mL	2.5L	4.67	0.111	430	9.16	23.42	78.2	
10:15	7.56	100mL	3.0	4.59	0.107	220	8.23	23.40	87.1	
10:20	7.56	100mL	3.5	4.56	0.105	45	7.96	23.39	90.0	
10:25	7.56	100mL	4.0	4.53	0.104	40	[redacted]	23.39	92.1	

Sampled 10:30

SIGNATURE(S):

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: NAS Cecil Field, Site 59 RI
Project No.: N8925.SW0.050.120
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: CEF-59-005- 033 -RI
Sample Location: CEF-59-005-033
Sampler: TERRY COTTENOIR

SAMPLING DATA

Date: 1/4/06 Time: 1704 Method: Peristaltic	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
	CLEAR	4.56	0.108	3.8	0.36	23.32	43.0	

PURGE DATA

Date: 1/4/06	See Attached Low Flow Purge Data Sheet for Purge Data
Method: Peristaltic	
Monitor Reading (ppm): Ø	
Well Casing Diameter: ~~2 inch~~ 3/4 inch	
Well Casing Material: PVC	
Total Well Depth (ft): 33	
Static Water Level (ft): 4.78	
One Screen Volume(gal/L): 0.43	
Start Purge (hrs): 1641	
End Purge (hrs): 1701	
Total Purge Time (min): 20	
Total Vol. Purged (gal/L): 4.0	

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
MEE	HCl	3 x 40ml glass vials	Accutest	✓
Alkalinity	None	1 - 1 L Plastic	Accutest	✓
Chloride	None	1 - 1 L Plastic	Accutest	✓
Sulfate	None	1 - 1 L Plastic	Accutest	✓

OBSERVATIONS / NOTES

Background PID = Ø
BZ PID= Ø
BOREHOLE PID= Ø

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #:

Check if Collected:

[ ] DUPLICATE
[ ] MS/MSD

ID No.: None.

Signature(s): Terry Cottenoir

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120
WELL ID.: CEF-59-005-033
DATE: 1/4/06

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
1641	4.78	200	-	-	-	-	-	-	-	START PURGE
1646	4.95	200	1.0	4.86	0.100	85	0.83	23.26	39.8	H2O SLIGHTLY CLOUDY
1651	4.95	200	2.0	4.61	0.106	20	0.59	23.31	47.4	H2O CLEAR
1656	4.95	200	3.0	4.57	0.107	5.9	0.40	23.32	46.2	H2O CLEAR
1701	4.95	200	4.0	4.56	0.108	3.8	0.36	23.32	43.0	END PURGE

SAMPLE TIME 1704

SIGNATURE(S): Terry Cottenoir

Tetra Tech NUS, Inc.

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Project Site Name: **NAS Cecil Field Site 59 RI**
Project No.: **N8925.SW0.50.120**
Sampled By: TERRY COTTENOIR
Field Analyst: TERRY COTTENOIR
Field Form Checked as per QA/QC Checklist (initials):

Sample ID No.: **CEF-059-005- 033-RI**
Sample Location: **CEF-059-005-033**
Duplicate: ☐
Blank: ☐

SAMPLING DATA:

Date: 1/4/06	Color (Visual)	pH (SU)	S.C. (mS/cm)	Turbidity (NTU)	DO (Meter, mg/l)	Temp. (^{0}C)	ORP (Eh) (+/- mv)
Time: 1704							
Method: Peristaltic	CLEAR	4.56	0.108	3.8	0.36	23.32	43.0

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Dissolved Oxygen:
Equipment: Chemetrics K-7501 or K-7512
Range ☒ 0 - 1.0 mg/L ☐ 1 - 12 mg/L
Analysis Time: 1712
Concentration: 0.3 mg/L
Notes:

Sulfide (S^{2-}):
Equipment: DR-890
Program/Module: 93 / 610 nm
Analysis Time: 1718
Concentration: 0.36 mg/L
Notes:

Carbon Dioxide:
Equipment: (Range: 10 to 100 mg/L)
CHEMetrics K1910, K1920, or K1925.
Analysis Time: 1720
Concentration: 90 mg/L
Notes:

Ferrous Iron (Fe^{2+}):
Equipment: DR-890 IR-18C Color Wheel
Program/Module: 33 / 500nm
Analysis Time: 1719
Concentration: 2.27 mg/L
Filtered: ☐
Notes:

Hydrogen Sulfide (H_2S):
Equipment: HS-C
Exceeded 5.0 mg/L range on color chart: ☐
Analysis Time: 1715
Concentration: 2.0 mg/L
Notes:

QA/QC Checklist:
All data fields have been completed as necessary: ☐
Correct measurement units are cited in the SAMPLING DATA block: ☐
Multiplication is correct for each *Multiplier* table: ☐
Final concentration is within the appropriate *Range Used* block: ☐
QA/QC sample (e.g., Std. Additions, etc.) frequency is appropriate as per the project planning documents: ☐
Title block is initialized by person who performed the QA/QC Checklist: ☐

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: NAS Cecil Field, Site 59 RI
Project No.: N8925.SW0.050.120
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: CEF-59-005- 053 -RI
Sample Location: CEF-59-005-053
Sampler: C Gleason

SAMPLING DATA

	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
Date: 11/17/04								
Time: 0915								
Method: Peristaltic	Clear	5.98	0.090	7.8	0.48	23.38	19.3	

PURGE DATA

Date: 11/17/04	See Attached Low Flow Purge Data Sheet for Purge Data
Method: Peristaltic	
Monitor Reading (ppm): 0.0	
Well Casing Diameter: 0.75 inch	
Well Casing Material: PVC	
Total Well Depth (ft): 53	
Static Water Level (ft): 7.78	
One Screen Volume(gal/L): 0.72	
Start Purge (hrs): 0845	
End Purge (hrs): 0910	
Total Purge Time (min): 25	
Total Vol. Purged (gal/L): 25	

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
TCL VOCs	HCl	3 x 40ml glass vials	Accutest	✓
MEE	HCl	3 - 40ml vials	Accutest	✓
Iron (Dissolved)	HNO_3	1 - 500 mL Plastic	Accutest	✓
Alkalinity	None	1 - 1 Liter Plastic	Accutest	✓
Cl-, SO_4^{-2}, PO_4, NO_2^-, NO_3^-	None	combine with above	Accutest	✓
SULFIDE (DISSOLVED)	NaOH	3 - 250 mL Plastic	Accutest	✓
TOC	H_2SO_4	1 - 125 mL amber glass	Accutest	✓

OBSERVATIONS / NOTES

Background PID = 0.0
BZ PID = 0.0
BOREHOLE PID = 0.0

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #: 359-7

Check if Collected:

[X] DUPLICATE
[ ] MS/MSD

ID No.: CEF-59-DU02-RI

Signature(s): C Gleason

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120
WELL ID.: CEF-59-005-053
DATE: 11/17/04

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
~~0845~~	~~7.78~~	~~100~~	~~0.5~~							
0850	7.92	100	0.5	6.17	0.099	7.6	1.32	22.60	6.1	
0855	7.92	100	1.0	6.08	0.097	8.1	0.50	23.28	-5.3	
0900	7.92	100	1.5	5.97	0.091	7.9	0.49	23.34	7.0	
0905	7.92	100	2.0	5.98	0.090	7.6	0.46	23.36	16.9	
0910	7.92	100	2.5	5.98	0.090	7.8	0.48	23.38	19.3	

SIGNATURE(S): C Flecke

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: **NAS Cecil Field, Site 59 RI**
Project No.: **N8925.SW0.050.120**
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: **CEF-59-005- 053 -RI**
Sample Location: **CEF-59-005-053**
Sampler: P. LAVERETTE

SAMPLING DATA

Date: 1/4/06	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
Time: 1702								
Method: Peristaltic	CLEAR	4.53	0.049	8.2	0.31	22.90	47.2	

PURGE DATA

Date: 1/4/06	See Attached Low Flow Purge Data Sheet for Purge Data
Method: Peristaltic	
Monitor Reading (ppm): 0	
Well Casing Diameter: ~~2 inch~~ 3/4	
Well Casing Material: PVC	
Total Well Depth (ft): 53	
Static Water Level (ft): 5.18	
One Screen Volume(gal/L): 0.43	
Start Purge (hrs): 1640	
End Purge (hrs): 1700	
Total Purge Time (min): 20	
Total Vol. Purged (gal/L): 4.0	

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
MEE	HCl	3 x 40ml glass vials	Accutest	✓
Alkalinity	None	1 - 1 L Plastic	Accutest	✓
Chloride	None	1 - 1 L Plastic	Accutest	✓
Sulfate	None	1 - 1 L Plastic	Accutest	✓

OBSERVATIONS / NOTES

Background PID =0
BZ PID=0
BOREHOLE PID=0

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #:

Check if Collected:

[ ] DUPLICATE — ID No.: None.
[ ] MS/MSD

Signature(s):

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120
WELL ID.: CEF-59-005-053
DATE: 1/4/06

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
1640	5.18	200	—	—	—	—	—	—	—	START PURGE
1645	5.39	200	1.0	5.34	0.056	26	0.89	23.03	42.2	
1650	5.39	200	2.0	4.61	0.051	13	0.72	22.96	51.0	
1655	5.39	200	3.0	4.56	0.050	9.8	0.37	22.92	48.7	
1700	5.39	200	4.0	4.53	0.049	8.2	0.31	22.90	47.2	
	SAMPLE	TIME	1702							

SIGNATURE(S):

Tetra Tech NUS, Inc.

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Project Site Name: **NAS Cecil Field Site 59 RI**
Sample ID No.: **CEF-059-005- 053-RI**
Project No.: **N8925.SW0.50.120**
Sample Location: **CEF-059-005-053**
Sampled By: PL
Duplicate: ☐
Field Analyst: PL
Blank: ☐
Field Form Checked as per QA/QC Checklist (initials): ☐

SAMPLING DATA:

Date: 1/4/06	Color (Visual)	pH (SU)	S.C. (mS/cm)	Turbidity (NTU)	DO (Meter, mg/l)	Temp. (°C)	ORP (Eh) (+/- mv)
Time: 1702							
Method: Peristaltic	CLEAR	4.53	0.049	8.2	0.31	22.90	47.2

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Dissolved Oxygen:
Equipment: Chemetrics K-7501 or K-7512
Range ☒ 0 - 1.0 mg/L ☐ 1 - 12 mg/L
Analysis Time: 1707
Concentration: 0.4 mg/L
Notes:

Sulfide (S^{2-}):
Equipment: DR-890
Program/Module: 93 / 610 nm
Analysis Time: 1710
Concentration: 0.02 mg/L
Notes:

Carbon Dioxide:
Equipment: (Range: 10 to 100 mg/L)
CHEMetrics K1910, K1920, or K1925.
Analysis Time: 1715
Concentration: 70 mg/L
Notes:

Ferrous Iron (Fe^{2+}):
Equipment: DR-890 IR-18C Color Wheel
Program/Module: 33 / 500nm
Analysis Time: 1718
Concentration: 1.29 mg/L
Filtered: ☐
Notes:

Hydrogen Sulfide (H_2S):
Equipment: HS-C
Exceeded 5.0 mg/L range on color chart: ☐
Analysis Time: 1722
Concentration: 0.0 mg/L
Notes:

QA/QC Checklist:
All data fields have been completed as necessary: ☐
Correct measurement units are cited in the SAMPLING DATA block: ☐
Multiplication is correct for each *Multiplier* table: ☐
Final concentration is within the appropriate *Range Used* block: ☐
QA/QC sample (e.g., Std. Additions, etc.) frequency is appropriate as per the project planning documents: ☐
Title block is initialized by person who performed the QA/QC Checklist: ☐

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: NAS Cecil Field, Site 59 RI
Project No.: N8925.SW0.050.120
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: CEF-59-005- 073 -RI
Sample Location: CEF-59-005-073
Sampler: Gus Nelson

SAMPLING DATA

	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
Date: 11/17/04 Time: 09:30								
Method: Low Flow Peristaltic	Clear	4.55	0.059	0.0	8.82	23.25	89.7	

PURGE DATA

Date: 11/17/04
Method: Low Flow Peristaltic
Monitor Reading (ppm): 0.0
Well Casing Diameter: 0.75 inch
Well Casing Material: PVC
Total Well Depth (ft): 73
Static Water Level (ft): 7.85
One Screen Volume(gal/L): .72
Start Purge (hrs): 08:45
End Purge (hrs): 09:25
Total Purge Time (min): 45m
Total Vol. Purged (gal/L): 4L

See Attached Low Flow Purge Data Sheet for Purge Data

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
TCL VOCs	HCl	3 x 40ml glass vials	Accutest	✓

OBSERVATIONS / NOTES

Background PID = 0.0
BZ PID= 0.0
BOREHOLE PID= 0.9

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #: 359-7

Check if Collected:

[ ] DUPLICATE
[ ] MS/MSD

ID No.:

Signature(s):

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120
WELL ID.: CEF-59-005-073
DATE: 1/17/04

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
08:45	7.89	100mL								
08:50	7.89	100mL	500mL	5.40	0.072	18	19.90	23.01	28.4	
08:55	7.89	100mL	1L	5.35	0.071	3.5	15.02	23.20	19.6	
09:00	7.89	100mL	1.5L	5.21	0.068	0.0	12.65	23.27	14.3	
09:05	7.89	100mL	2L	5.01	0.064	0.0	12.81	23.27	28.8	
09:10	7.89	100mL	2.5L	4.83	0.061	0.0	10.79	23.27	47.5	
09:15	7.89	100mL	3.0	4.72	0.059	0.0	9.96	23.27	65.0	
09:20	7.89	100mL	3.5L	4.62	0.058	0.0	10.76	23.27	75.7	
09:25	7.89	100mL	4.0L	4.55	0.059	0.0	8.82	23.25	89.7	
			Sampled			09:30				

SIGNATURE(S):

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: NAS Cecil Field, Site 59 RI
Project No.: N8925.SW0.050.120
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: NG-12I -RI
Sample Location: NG-12I
Sampler: C. Gleason

SAMPLING DATA

Date: 11/16/04	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
Time: 1545								
Method: Peristaltic	Clear	4.80	0.052	3.1	0.43	25.01	87.9	

PURGE DATA

Date: 11/16/04
Method: Peristaltic
Monitor Reading (ppm): 0.0
Well Casing Diameter: 2 inch
Well Casing Material: PVC
Total Well Depth (ft): 37.5
Static Water Level (ft): 6.79
One Screen Volume(gal/L): 3.1
Start Purge (hrs): 1500
End Purge (hrs): 1540
Total Purge Time (min): 40
Total Vol. Purged (gal/L): 12

See Attached Low Flow Purge Data Sheet for Purge Data

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
TCL VOCs	HCl	3 x 40ml glass vials	Accutest	✓
Dhc (qPCR and DGGE)	None	1 - 1 Liter Plastic	Microbial Insights	✓

OBSERVATIONS / NOTES

Background PID = 0.0
BZ PID = 0.0
BOREHOLE PID = 0.0

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #: ~~359-5 and~~ 359-6
LAB: MD Microbial Insights
Rockford, TN
COC #: 359-5

Check if Collected:

[ ] DUPLICATE
[ ] MS/MSD

ID No.: None

Signature(s): C. Gleason

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120
WELL ID.: NG-12I
DATE: 11/16/04

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
1500	6.79									
1505	6.91	300	1.5	5.05	0.057	60	1.18	25.48	146.3	
1510	6.91	300	3.0	4.91	0.054	39	0.61	25.35	91.2	
1515	6.91	300	4.5	4.86	0.053	23	0.48	25.30	90.5	
1520	6.91	300	6.0	4.85	0.053	18	0.47	25.29	90.4	
1525	6.91	300	7.5	4.82	0.052	6.3	0.42	25.10	89.5	
1530	6.91	300	9.0	4.81	0.052	6.1	0.45	25.03	89.7	
1535	6.91	300	10.5	4.81	0.052	3.4	0.46	25.00	89.5	
1540	6.91	300	12.0	4.80	0.052	3.1	0.43	25.01	87.9	

SIGNATURE(S): C Slaton

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: NAS Cecil Field, Site 59 RI
Project No.: N8925.SW0.050.120
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: CEF-NG-12I-RI
Sample Location: CEF-NG-12I
Sampler: TERRY COTTENOIR

SAMPLING DATA

Date: 1/4/06	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
Time: 1524								
Method: Peristaltic	CLEAR	4.81	0.060	0.60	0.16	25.02	96.9	

PURGE DATA

Date: 1/4/06
Method: Peristaltic
Monitor Reading (ppm): Ø
Well Casing Diameter: 2 inch
Well Casing Material: PVC
Total Well Depth (ft): 38
Static Water Level (ft): 4.47
One Screen Volume(gal): 3.1
Start Purge (hrs): 1456
End Purge (hrs): 1521
Total Purge Time (min): 25
Total Vol. Purged (gal): 10.0

See Attached Low Flow Purge Data Sheet for Purge Data

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
MEE	HCl	3 x 40ml glass vials	Accutest	✓
Alkalinity	None	1 - 1 L Plastic	Accutest	✓
Chloride	None	1 - 1 L Plastic	Accutest	✓
Sulfate	None	1 - 1 L Plastic	Accutest	✓

OBSERVATIONS / NOTES

Background PID = Ø
BZ PID= Ø
BOREHOLE PID= Ø

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #:

Check if Collected:

[ ] DUPLICATE
[ ] MS/MSD

ID No.: None.

Signature(s): Terry Cottenoir

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120
WELL ID.: CEF-NG-12I
DATE: 1 /4 /06

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
1456	4.47	400	–	–	–	–	–	–	–	START PURGE
1506	4.66	400	4.0	4.84	0.061	8.5	0.19	25.06	107.0	H_2O CLEAR
1511	4.66	400	6.0	4.83	0.061	4.2	0.17	25.07	103.9	H_2O CLEAR
1516	4.66	400	8.0	4.81	0.060	1.3	0.16	25.09	100.1	H_2O CLEAR
1521	4.66	400	10.0	4.81	0.060	0.60	0.16	25.02	96.9	END PURGE
	SAMPLE	TIME	1524							

SIGNATURE(S): Terry Cotterman

Tetra Tech NUS, Inc.

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Project Site Name: **NAS Cecil Field Site 59 RI**
Project No.: **N8925.SW0.50.120**
Sampled By: TERRY COTTENOIR
Field Analyst: TERRY COTTENOIR
Field Form Checked as per QA/QC Checklist (initials):

Sample ID No.: **CEF-NG-12I-RI**
Sample Location: **CEF-NG-12I**
Duplicate: ☐
Blank: ☐

SAMPLING DATA:

Date: 1/4/06	Color (Visual)	pH (SU)	S.C. (mS/cm)	Turbidity (NTU)	DO (Meter, mg/l)	Temp. (^{0}C)	ORP (Eh) (+/- mv)
Time: 1524							
Method: Peristaltic	CLEAR	4.87	0.060	0.60	0.76	25.02	96.9

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Dissolved Oxygen:
Equipment: Chemetrics (K-7501) or K-7512
Range ☒ 0 - 1.0 mg/L ☐ 1 - 12 mg/L
Analysis Time: 1541
Concentration: 0.8 mg/L
Notes:

Sulfide (S^{2-}):
Equipment: (DR-890)
Program/Module: 93 / 610 nm
Analysis Time: 1539
Concentration: 0.03 mg/L
Notes:

Carbon Dioxide:
Equipment: (Range: 10 to 100 mg/L)
CHEMetrics (K1910), K1920, or K1925.
Analysis Time: 1544
Concentration: 80 mg/L
Notes:

Ferrous Iron (Fe^{2+}):
Equipment: (DR-890) IR-18C Color Wheel
Program/Module: 33 / 500nm
Analysis Time: 1540
Concentration: 2.96 mg/L
Filtered: ☐
Notes:

Hydrogen Sulfide (H_2S):
Equipment: (HS-C)
Exceeded 5.0 mg/L range on color chart: ☐
Analysis Time: 1542
Concentration: 0.5 mg/L
Notes:

QA/QC Checklist:
All data fields have been completed as necessary: ☐
Correct measurement units are cited in the SAMPLING DATA block: ☐
Multiplication is correct for each *Multiplier* table: ☐
Final concentration is within the appropriate *Range Used* block: ☐
QA/QC sample (e.g., Std. Additions, etc.) frequency is appropriate as per the project planning documents: ☐
Title block is initialized by person who performed the QA/QC Checklist: ☐

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: NAS Cecil Field, Site 59 RI
Project No.: N8925.SW0.050.120
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: NG-12D -RI
Sample Location: NG-12D
Sampler: GUS NELSON

SAMPLING DATA

	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
Date: 11/16/04 Time: 15:15 Method: Low Flow Peristaltic	clear	4.55	0.042	0.00	0.43	25.57	160.5	

PURGE DATA

Date: 11/16/04
Method: Low Flow Peristaltic
Monitor Reading (ppm): 0.0
Well Casing Diameter: 2 inch
Well Casing Material: PVC
Total Well Depth (ft): 50
Static Water Level (ft): 5.81
One Screen Volume(gal/L): ~~0.2~~ 3.1 mwi
Start Purge (hrs): 14:15
End Purge (hrs): 15:00
Total Purge Time (min): 45 min
Total Vol. Purged (gal/L): 9L

See Attached Low Flow Purge Data Sheet for Purge Data

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
TCL VOCs	HCl	3 x 40ml glass vials	Accutest	✓
MEE	HCl	3 - 40ml vials	Accutest	✓
Iron (Dissolved)	HNO_3	1 - 500 mL Plastic	Accutest	✓
Alkalinity	None	1 - 1 Liter Plastic	Accutest	✓
Cl-, SO_4^{-2}, PO_4, NO_2^-, NO_3^-	None	combine with above	Accutest	✓
SULFIDE (DISSOLVED)	NaOH	3 - 250 mL Plastic	Accutest	✓
TOC	H_2SO_4	1 - 125 mL amber glass	Accutest	✓

OBSERVATIONS / NOTES

Background PID = 0.0
BZ PID= 0.0
BOREHOLE PID= 0.0

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #: 359-6

Check if Collected:

[ ] DUPLICATE
[ ] MS/MSD

ID No.: none

Signature(s):

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120
WELL ID.: NG-12D
DATE: 11/16/04

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
14:15	5.85	200m								
14:20	5.85	200mL	1L	4.67	0.038	3.1	1.76	26.01	207.6	
14:25	5.85	200mL	2L	4.64	0.039	.90	1.13	25.95	203.0	
14:30	5.85	200mL	3L	4.60	0.039	.30	0.96	25.87	195.2	
14:35	5.85	200mL	4L	4.57	0.039	0.00	0.67	25.66	183.9	
14:40	5.85	200mL	5L	4.56	0.040	0.00	0.55	25.65	177.0	
14:45	5.85	200mL	6L	4.55	0.040	0.00	0.48	25.63	170.7	
14:50	5.85	200mL	7L	4.55	0.040	0.00	0.45	25.60	166.5	
14:55	5.85	200mL	8L	4.56	0.041	0.00	0.43	25.60	162.8	
15:00	5.85	200mL	9L	4.55	0.042	0.00	0.43	25.57	160.5	
			Sampled			15:15				

SIGNATURE(S):

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: NAS Cecil Field, Site 59 RI
Project No.: N8925.SW0.050.120
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: CEF-NG-12D-RI
Sample Location: CEF-NG-12D
Sampler: TERRY COTTENOIR

SAMPLING DATA

	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
Date: 1/4/06								
Time: 1449								
Method: Peristaltic	CLEAR	4.65	0.041	1.1	0.18	24.25	150.5	

PURGE DATA

Date: 1/4/06
Method: Peristaltic
Monitor Reading (ppm): Ø
Well Casing Diameter: 2 inch
Well Casing Material: PVC
Total Well Depth (ft): 57
Static Water Level (ft): 4.51
One Screen Volume(gal/L): 3.1
Start Purge (hrs): 1421
End Purge (hrs): 1446
Total Purge Time (min): 25
Total Vol. Purged (gal/L): 10.0

See Attached Low Flow Purge Data Sheet for Purge Data

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
MEE	HCl	3 x 40ml glass vials	Accutest	✓
Alkalinity	None	1 - 1 L Plastic	Accutest	✓
Chloride	None	1 - 1 L Plastic	Accutest	✓
Sulfate	None	1 - 1 L Plastic	Accutest	✓

OBSERVATIONS / NOTES

Background PID = Ø
BZ PID= Ø
BOREHOLE PID= Ø

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #:

Check if Collected:

[ ] DUPLICATE
[ ] MS/MSD

ID No.: None.

Signature(s): Terry Cottenoir

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120
WELL ID.: CEF-NG-12D
DATE: 1/4/06

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
1421	4.51	400	-	-	-	-	-	-	-	START PURGE
1431	4.64	400	4.0	4.66	0.041	3.4	0.27	24.17	148.7	H_2O CLEAR
1436	4.64	400	6.0	4.65	0.041	2.6	0.22	24.15	149.9	H_2O CLEAR
1441	4.64	400	8.0	4.65	0.041	1.5	0.20	24.22	150.5	H_2O CLEAR
1446	4.64	400	10.0	4.65	0.041	1.1	0.18	24.25	150.5	END PURGE
	SAMPLE	TIME	1449							

SIGNATURE(S): Terry Cottenois

Tetra Tech NUS, Inc.

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Project Site Name: **NAS Cecil Field Site 59 RI**
Sample ID No.: **CEF-NG-12D-RI**
Project No.: **N8925.SW0.50.120**
Sample Location: **CEF-NG-12D**
Sampled By: TERRY COTTENOIR
Duplicate: ☐
Field Analyst: TERRY COTTENOIR
Blank: ☐
Field Form Checked as per QA/QC Checklist (initials):

SAMPLING DATA:

Date: 1/4/06	Color (Visual)	pH (SU)	S.C. (mS/cm)	Turbidity (NTU)	DO (Meter, mg/l)	Temp. (°C)	ORP (Eh) (+/- mv)
Time: 1449							
Method: Peristaltic	CLEAR	4.65	0.041	1.1	0.18	24.25	150.5

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Dissolved Oxygen:
Equipment: Chemetrics K-7501 or K-7512
Range ☒ 0 - 1.0 mg/L ☐ 1 - 12 mg/L
Analysis Time: 1506
Concentration: 0.8 mg/L
Notes:

Sulfide (S^{2-}):
Equipment: DR-890
Program/Module: 93 / 610 nm
Analysis Time: 1504
Concentration: 0.2 mg/L
Notes:

Carbon Dioxide:
Equipment: (Range: 10 to 100 mg/L)
CHEMetrics K1910, K1920, or K1925.
Analysis Time: 1510
Concentration: 70 mg/L
Notes:

Ferrous Iron (Fe^{2+}):
Equipment: DR-890
IR-18C Color Wheel
Program/Module: 33 / 500nm
Analysis Time: 1505
Concentration: 0.55 mg/L
Filtered: ☐
Notes:

Hydrogen Sulfide (H_2S):
Equipment: HS-C
Exceeded 5.0 mg/L range on color chart: ☐
Analysis Time: 1507
Concentration: 0.0 mg/L
Notes:

QA/QC Checklist:
All data fields have been completed as necessary: ☐
Correct measurement units are cited in the SAMPLING DATA block: ☐
Multiplication is correct for each *Multiplier* table: ☐
Final concentration is within the appropriate *Range Used* block: ☐
QA/QC sample (e.g., Std. Additions, etc.) frequency is appropriate as per the project planning documents: ☐
Title block is initialized by person who performed the QA/QC Checklist: ☐

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: **NAS Cecil Field, Site 59 RI**
Project No.: **N8925.SW0.050.120**
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: **CEF-59-006- 078 -RI**
Sample Location: **CEF-59-006-078**
Sampler: P. LEVERETTE

SAMPLING DATA

	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
Date: 6/21/05								
Time: 1555								
Method: Peristaltic	Cloudy	5.65	0.127	50.3	0.15	26.76	-149.1	

PURGE DATA

Date: 6/21/05
Method: Peristaltic
Monitor Reading (ppm):
Well Casing Diameter: 2 inch
Well Casing Material: PVC
Total Well Depth (ft): 78
Static Water Level (ft): 5.83
One Screen Volume(gal): 3.1
Start Purge (hrs): 14.29
End Purge (hrs): 1554
Total Purge Time (min): 85
Total Vol. Purged (gal): ~~15.5~~ 16.0

See Attached Low Flow Purge Data Sheet for Purge Data

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
TCL VOCs	HCl	3 x 40ml glass vials	Accutest	✓

OBSERVATIONS / NOTES

Background PID =
BZ PID=
BOREHOLE PID=

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #: 3122/3123

Check if Collected:

[ ] DUPLICATE
[ ] MS/MSD

ID No.: ~~None~~ CEF-59-DU06-RI

Signature(s):

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120
WELL ID.: CEF-59-006-078
DATE: 6/21/05

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
1429	5.83	400	—	—	—	—	—	—	—	START PURGE
1434	5.89	400	2.0	6.27	0.256	269	0.93	25.97	-30.0	
1439	5.89	400	4.0	6.11	0.241	169	0.37	25.89	-50.0	
1444	5.89	400	6.0	5.91	0.199	141	0.24	25.61	-63.8	
1449	5.89	400	8.0	5.79	0.182	120	0.17	25.52	-75.2	
1454	5.89	400	10.0	5.80	0.188	116	0.19	25.59	-76.3	
1504	5.89	100	11.0	5.76	0.166	92.8	0.17	26.38	-91.1	
1514	5.87	100	12.0	5.72	0.152	75.7	0.18	27.26	-114.4	
1524	5.87	100	13.0	5.70	0.143	70.3	0.16	26.98	-125.0	
1534	5.87	100	14.0	5.67	0.133	63.5	0.13	26.77	-138.8	
1544	5.87	100	15.0	5.66	0.126	55.9	0.14	26.87	-142.6	
1554	5.87	100	~~15.5~~ 16.0	5.65	0.127	50.3	0.15	26.76	-147.1	

SAMPLE TIME 1555

SIGNATURE(S):

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: **NAS Cecil Field, Site 59 RI**
Project No.: **N8925.SW0.050.120**
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: **CEF-59-006- 078 -RI**
Sample Location: **CEF-59-006-078**
Sampler: P. Leverette

SAMPLING DATA

Date: 1/4/06	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
Time: 1443								
Method: Peristaltic	CLEAR	4.64	0.042	8.4	0.56	24.21	33.2	

PURGE DATA

Date: 1/4/06	See Attached Low Flow Purge Data Sheet for Purge Data
Method: Peristaltic	
Monitor Reading (ppm): 0	
Well Casing Diameter: 2 inch	
Well Casing Material: PVC	
Total Well Depth (ft): 78	
Static Water Level (ft): 4.44	
One Screen Volume(gal/L): 3.1	
Start Purge (hrs): 1421	
End Purge (hrs): 1441	
Total Purge Time (min): 20	
Total Vol. Purged (gal/L): 10.0	

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
MEE	HCl	3 x 40ml glass vials	Accutest	✓
Alkalinity	None	1 - 1 L Plastic	Accutest	✓
Chloride	None	1 - 1 L Plastic	Accutest	✓
Sulfate	None	1 - 1 L Plastic	Accutest	✓

OBSERVATIONS / NOTES

Background PID = 0
BZ PID=0
BOREHOLE PID=0

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #:

Check if Collected:

[ ] DUPLICATE
[ ] MS/MSD

ID No.: None.

Signature(s):

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
WELL ID.: CEF-59-006-078
PROJECT NUMBER: N8925.SW0.050.120
DATE:

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
1421	4.44	400	—							
1426	4.50	400	2.0	5.00	0.048	36	0.69	24.25	29.1	
1431	4.50	400	6.0	4.72	0.043	20	0.46	24.21	32.4	
1436	4.50	400	8.0	4.66	0.042	13	0.35	24.15	33.3	
1441	4.50	400	10.0	4.64	0.042	8.4	0.56	24.21	33.2	
	SAMPLE	TIME	1443							

SIGNATURE(S):

Tetra Tech NUS, Inc.

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Project Site Name: **NAS Cecil Field Site 59 RI**
Sample ID No.: **CEF-059-006- 078-RI**
Project No.: **N8925.SW0.50.120**
Sample Location: **CEF-059-006-078**
Sampled By: PL
Duplicate: ☐
Field Analyst: PL
Blank: ☐
Field Form Checked as per QA/QC Checklist (initials):

SAMPLING DATA:

Date: 1/4/06	Color	pH	S.C.	Turbidity	DO	Temp.	ORP (Eh)
Time: 1443	(Visual)	(SU)	(mS/cm)	(NTU)	(Meter, mg/l)	(^{0}C)	(+/- mv)
Method: Peristaltic	CLEAR	4.64	0.042	8.4	0.56	24.21	33.2

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Dissolved Oxygen:
Equipment: Chemetrics K-7501 or K-7512
Range ☒ 0 - 1.0 mg/L ☐ 1 - 12 mg/L
Analysis Time: 1450
Concentration: 1.0 mg/L
Notes:

Sulfide (S^{2-}):
Equipment: DR-890
Program/Module: 93 / 610 nm
Analysis Time: 1454
Concentration: 0.34 mg/L
Notes:

Carbon Dioxide:
Equipment: (Range: 10 to 100 mg/L)
CHEMetrics K1910, K1920, or K1925.
Analysis Time: 1459
Concentration: 60 mg/L
Notes:

Ferrous Iron (Fe^{2+}):
Equipment: DR-890
IR-18C Color Wheel
Program/Module: 33 / 500nm
Analysis Time: 1503
Concentration: 0.76 mg/L
Filtered: ☐
Notes:

Hydrogen Sulfide (H_2S):
Equipment: HS-C
Exceeded 5.0 mg/L range on color chart: ☐
Analysis Time: 1506
Concentration: 1.0 mg/L
Notes:

QA/QC Checklist:
All data fields have been completed as necessary: ☐
Correct measurement units are cited in the SAMPLING DATA block: ☐
Multiplication is correct for each *Multiplier* table: ☐
Final concentration is within the appropriate *Range Used* block: ☐
QA/QC sample (e.g., Std. Additions, etc.) frequency is appropriate as per the project planning documents: ☐
Title block is initialized by person who performed the QA/QC Checklist: ☐

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: NAS Cecil Field, Site 59 RI
Project No.: N8925.SW0.050.120
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: CEF-59-006- 104 -RI
Sample Location: CEF-59-006-104
Sampler: C Gleeton

SAMPLING DATA

Date: 11/16/04	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
Time: 1445								
Method: Peristaltic	Clear	6.62	0.239	10	0.51	24.88	-104.2	

PURGE DATA

Date: 11/16/04	See Attached Low Flow Purge Data Sheet for Purge Data
Method: Peristaltic	
Monitor Reading (ppm): 0.0	
Well Casing Diameter: 2 inch	
Well Casing Material: PVC	
Total Well Depth (ft): 104	
Static Water Level (ft): 6.93	
One Screen Volume(gal/L): 3.1	
Start Purge (hrs): 1405	
End Purge (hrs): 1440	
Total Purge Time (min): 35	
Total Vol. Purged (gal/L): 10.5	

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
TCL VOCs	HCl	3 x 40ml glass vials	Accutest	✓

OBSERVATIONS / NOTES

Background PID = 0.0
BZ PID= 0.0
BOREHOLE PID= 0.0

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #: 359-6

Check if Collected:

[X] DUPLICATE
[ ] MS/MSD

ID No.: CEF-59-DU03-RI

Signature(s): C Gleeton

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120
WELL ID.: CEF-59-006-104
DATE: 11/16/04

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
1405	6.93									
1410	7.01	300	1.5	6.73	0.244	23	1.44	25.13	-89.2	
1415	7.01	300	3.0	6.71	0.242	15	0.98	25.05	-94.8	
1420	7.01	300	4.5	6.68	0.239	13	0.76	24.99	-96.8	
1425	7.01	300	6.0	6.68	0.238	10	0.62	24.98	-97.1	
1430	7.01	300	7.5	6.65	0.237	10	0.54	24.88	-96.6	
1435	7.01	300	9.0	6.64	0.237	10	0.52	24.88	-99.3	
1440	7.01	300	10.5	6.64	0.239	10	0.51	24.88	-104.1	

SIGNATURE(S): C Slater

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: **NAS Cecil Field, Site 59 RI**
Project No.: **N8925.SW0.050.120**
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: **CEF-59-007- 053 -RI**
Sample Location: **CEF-59-007-053**
Sampler: DS

SAMPLING DATA

Date: 6-20-05	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
Time: 1400								
Method: Peristaltic	Lt. TAN	5.92	0.123	221	0.29	23.69	-137	

PURGE DATA

Date: 6-20-05
Method: Peristaltic
Monitor Reading (ppm): 0
Well Casing Diameter: ~~1~~ 2 inch
Well Casing Material: PVC
Total Well Depth (ft): 53
Static Water Level (ft): 5.75
One Screen Volume(gal/L): 41.0 (~0.4) = 0.02 x 5 x 3.78 = .4
Start Purge (hrs): 1320
End Purge (hrs): 1400
Total Purge Time (min): 40
Total Vol. Purged (gal/L): 6

See Attached Low Flow Purge Data Sheet for Purge Data

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
TCL VOCs	HCl	3 x 40ml glass vials	Accutest	DS

OBSERVATIONS / NOTES

Lt. TAN → to yellow Silts in H_2O Column

Background PID = 0
BZ PID= 0
BOREHOLE PID= 0

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #: 3122/3123

Check if Collected:

[ ] DUPLICATE
[ ] MS/MSD

ID No.: None.

Signature(s):

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120
WELL ID.: CEF-59-007-053
DATE: 6-20-05

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
1320	5.75	300								
1330	5.93	200	2	6.08	0.130	888	0.26	23.84	-97.3	Silts tan color
1340	5.94	200	2	5.99	0.126	455	0.43	23.78	-123.2	in bottom of well
1350	5.79	100	1	5.96	0.125	276	0.30	23.70	-135	
1400	5.79	100	1	5.92	0.123	221	0.29	23.69	-137	

1400 sample

SIGNATURE(S): RDSb

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: **NAS Cecil Field, Site 59 RI**
Project No.: **N8925.SW0.050.120**
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: **CEF-59-007- 053 -RI**
Sample Location: **CEF-59-007-053**
Sampler: TERRY COTTENOIR

SAMPLING DATA

Date: 1/4/06	Color	pH	S.C.	Turbidity	DO	Temp.	ORP	
Time: 1248	CLEAR	S.U.	mS/cm	NTU	mg/L	°C	mV	
Method: Peristaltic	~~GRAY~~	5.37	0.084	70	0.48	22.88	28.9	

PURGE DATA

Date: 1/4/06
Method: Peristaltic
Monitor Reading (ppm): Ø
Well Casing Diameter: ~~2 inch~~ 3/4 inch
Well Casing Material: PVC
Total Well Depth (ft): 53
Static Water Level (ft): 4.72
One Screen Volume(gal/L): 0.43
Start Purge (hrs): 1226
End Purge (hrs): 1246
Total Purge Time (min): 20
Total Vol. Purged (gal/L): 4.0

See Attached Low Flow Purge Data Sheet for Purge Data

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
MEE	HCl	3 x 40ml glass vials	Accutest	✓
Alkalinity	None	1 - 1 L Plastic	Accutest	✓
Chloride	None	1 - 1 L Plastic	Accutest	✓
Sulfate	None	1 - 1 L Plastic	Accutest	✓

OBSERVATIONS / NOTES

PURGED MORE THAN 5 WELL VOLUMES IN ORDER TO BRING TURBIDITY DOWN AND STABILIZE WATER. SAMPLED WHILE STILL TURBID AND UNSTABLE.

Background PID = Ø
BZ PID= Ø
BOREHOLE PID= Ø

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #:

Check if Collected:

[ ] DUPLICATE
[ ] MS/MSD

ID No.: None.

Signature(s): Terry Cottenoir

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120
WELL ID.: CEF-59-007-053
DATE: 1 / 4 / 06

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
1226	4.72	200	-	-	-	-	-	-	-	START PURGE
1231	4.89	200	1.0	6.09	0.103	650	1.10	22.38	-30.2	H_2O GRAY
1236	4.89	200	2.0	5.74	0.093	390	0.72	22.49	4.1	H_2O GRAY
1241	4.89	200	3.0	5.61	0.088	200	0.65	22.50	15.3	H_2O GRAY
1246	4.89	200	4.0	5.37	0.084	70	0.48	22.88	28.9	END PURGE

SAMPLE TIME 1248

SIGNATURE(S): Terry Cottenoir

Tetra Tech NUS, Inc.

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Project Site Name: **NAS Cecil Field Site 59 RI**
Project No.: **N8925.SW0.50.120**
Sampled By: TERRY COTTENOIR
Field Analyst: PL
Field Form Checked as per QA/QC Checklist (initials):

Sample ID No.: **CEF-059-007- 053-RI**
Sample Location: **CEF-059-007-053**
Duplicate: ☐
Blank: ☐

SAMPLING DATA:

	Color (Visual)	pH (SU)	S.C. (mS/cm)	Turbidity (NTU)	DO (Meter, mg/l)	Temp. (^{0}C)	ORP (Eh) (+/- mv)
Date: 1/4/06							
Time: 1248							
Method: Peristaltic	CLEAR	5.37	0.084	70	0.48	22.88	28.9

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Dissolved Oxygen:
Equipment: Chemetrics K-7501 or K-7512 Range ☒ 0 - 1.0 mg/L ☐ 1 - 12 mg/L
Analysis Time: 1325
Concentration: 0.4 mg/L
Notes:

Sulfide (S^{2-}):
Equipment: DR-890
Program/Module: 93 / 610 nm
Analysis Time: 1328
Concentration: 0.72 mg/L
Notes:

Carbon Dioxide:
Equipment: (Range: 10 to 100 mg/L)
CHEMetrics K1910, K1920, or K1925.
Analysis Time: 1333
Concentration: 80 mg/L
Notes:

Ferrous Iron (Fe^{2+}):
Equipment: DR-890 IR-18C Color Wheel
Program/Module: 33 / 500nm
Analysis Time: 1337
Concentration: 3.19 mg/L
Filtered: ☐
Notes:

Hydrogen Sulfide (H_2S):
Equipment: HS-C
Exceeded 5.0 mg/L range on color chart: ☐
Analysis Time: 1340
Concentration: 1.0 mg/L
Notes:

QA/QC Checklist:
All data fields have been completed as necessary: ☐
Correct measurement units are cited in the SAMPLING DATA block: ☐
Multiplication is correct for each *Multiplier* table: ☐
Final concentration is within the appropriate *Range Used* block: ☐
QA/QC sample (e.g., Std. Additions, etc.) frequency is appropriate as per the project planning documents: ☐
Title block is initialized by person who performed the QA/QC Checklist: ☐

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: **NAS Cecil Field, Site 59 RI**
Project No.: **N8925.SW0.050.120**
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: **CEF-59-007- 078 -RI**
Sample Location: **CEF-59-007-078**
Sampler: DS

SAMPLING DATA

Date: 6-20-05	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
Time: 1150								
Method: Peristaltic	CL	6.65	0.071	42.8	0.62	23.71	12.9	

PURGE DATA

Date: 6-20-05	See Attached Low Flow Purge Data Sheet for Purge Data
Method: Peristaltic	
Monitor Reading (ppm): 0	
Well Casing Diameter: 2 inch	
Well Casing Material: PVC	
Total Well Depth (ft): 78	
Static Water Level (ft): 6.10	
One Screen Volume(gal/L): 3.1	
Start Purge (hrs): 1015	
End Purge (hrs): 1150	
Total Purge Time (min): 95	
Total Vol. Purged (gal/L): 15.5	

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
TCL VOCs	HCl	3 x 40ml glass vials	Accutest	DS

OBSERVATIONS / NOTES

Background PID = 0
BZ PID=
BOREHOLE PID= 0

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #: 3122/3123

Check if Collected:
- [ ] DUPLICATE
- [ ] MS/MSD

ID No.: None.

Signature(s): [illegible]

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

3.5

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120
WELL ID.: CEF-59-007-078
DATE: 6-20-05

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO % (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
1015	6.10	400								
1025	6.78	400	4	5.52	0.068	67.8	1.22	23.59	44	Silts in bottom of well
1035	6.78	400	8	5.42	0.068	90.8	0.25	23.61	51.8	
1045	6.13	100	9	5.55	0.069	89.3	0.45	23.66	41.5	
1055	6.12	100	10	5.60	0.068	80.0	0.82	23.75	33.7	
1105	6.12	100	11	5.57	0.067	71.5	0.69	23.71	34.1	
1115	6.12	100	12	5.54	0.067	61.7	0.63	23.71	33.6	
1125	6.12	100	13	5.63	0.069	54.1	0.65	23.74	16.6	
1135	6.12	100	14	5.64	0.070	46.9	0.57	23.80	14.5	
1145	6.12	100	15	5.66	0.072	43.4	0.64	23.81	13.9	
1150	6.12	100	15.5	6.63	0.071	42.8	0.62	23.71	12.9	
	1150	SAMPLE								

SIGNATURE(S): [signature]

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: **NAS Cecil Field, Site 59 RI**
Project No.: **N8925.SW0.050.120**
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: **CEF-59-007- 078 -RI**
Sample Location: **CEF-59-007-078**
Sampler: TERRY COTTENOIR

SAMPLING DATA

Date: 1/4/06 Time: 1330	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
Method: Peristaltic	CLEAR	5.13	0.046	9.8	0.35	22.79	40.7	

PURGE DATA

Date: 1/4/06	See Attached Low Flow Purge Data Sheet for Purge Data
Method: Peristaltic	
Monitor Reading (ppm): Ø	
Well Casing Diameter: 2 inch	
Well Casing Material: PVC	
Total Well Depth (ft): 78	
Static Water Level (ft): 4.78	
One Screen Volume(gal/L): 3.1	
Start Purge (hrs): 1302	
End Purge (hrs): 1327	
Total Purge Time (min): 25	
Total Vol. Purged (gal/L): 10.0	

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
MEE	HCl	3 x 40ml glass vials	Accutest	✓
Alkalinity	None	1 - 1 L Plastic	Accutest	✓
Chloride	None	1 - 1 L Plastic	Accutest	✓
Sulfate	None	1 - 1 L Plastic	Accutest	✓

OBSERVATIONS / NOTES

Background PID = Ø
BZ PID= Ø
BOREHOLE PID= Ø

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #:

Check if Collected:

☐ DUPLICATE ID No.: None.
☐ MS/MSD

Signature(s): Terry Cottenoir

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120
WELL ID.: CEF-59-007-078
DATE: 1/4/06

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
1302	4.78	400	-	-	-	-	-	-	-	START PURGE
1312	4.92	400	4.0	5.27	0.049	50	0.71	22.70	52.6	H_2O CLEAR
1317	4.92	400	6.0	5.20	0.046	38	0.49	22.75	49.1	H_2O CLEAR
1322	4.92	400	8.0	5.16	0.048	23	0.53	22.77	45.6	H_2O CLEAR
1327	4.92	400	10.0	5.13	0.046	9.8	0.35	22.79	40.7	END PURGE

SAMPLE TIME 1330

SIGNATURE(S): Terry Cottenori

Tetra Tech NUS, Inc.

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Project Site Name: **NAS Cecil Field Site 59 RI**
Sample ID No.: **CEF-059-007- 078-RI**
Project No.: **N8925.SW0.50.120**
Sample Location: **CEF-059-007-078**
Sampled By: TERRY COTTENOIR
Duplicate: ☐
Field Analyst: TERRY COTTENOIR
Blank: ☐
Field Form Checked as per QA/QC Checklist (initials):

SAMPLING DATA:

Date: 1/4/06	Color	pH	S.C.	Turbidity	DO	Temp.	ORP (Eh)
Time: 1330	(Visual)	(SU)	(mS/cm)	(NTU)	(Meter, mg/l)	(^{0}C)	(+/- mv)
Method: Peristaltic	CLEAR	5.13	0.046	9.8	0.35	22.79	40.7

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Dissolved Oxygen:
Equipment: Chemetrics K-7501 or K-7512
Range ☒ 0 - 1.0 mg/L ☐ 1 - 12 mg/L
Analysis Time: 1350
Concentration: 0.8 mg/L
Notes:

Sulfide (S^{2-}):
Equipment: DR-890
Program/Module: 93 / 610 nm
Analysis Time: 1351
Concentration: 0.27 mg/L
Notes:

Carbon Dioxide:
Equipment: (Range: 10 to 100 mg/L)
CHEMetrics K1910, K1920, or K1925.
Analysis Time: 1355
Concentration: 70 mg/L
Notes:

Ferrous Iron (Fe^{2+}):
Equipment: DR-890 IR-18C Color Wheel
Program/Module: 33 / 500nm
Analysis Time: 1352
Concentration: 0.77 mg/L
Filtered: ☐
Notes:

Hydrogen Sulfide (H_2S):
Equipment: HS-C
Exceeded 5.0 mg/L range on color chart: ☐
Analysis Time: 1353
Concentration: 1.0 mg/L
Notes:

QA/QC Checklist:
All data fields have been completed as necessary: ☐
Correct measurement units are cited in the SAMPLING DATA block: ☐
Multiplication is correct for each *Multiplier* table: ☐
Final concentration is within the appropriate *Range Used* block: ☐
QA/QC sample (e.g., Std. Additions, etc.) frequency is appropriate as per the project planning documents: ☐
Title block is initialized by person who performed the QA/QC Checklist: ☐

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: NAS Cecil Field, Site 59 RI
Project No.: N8925.SW0.050.120
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: CEF-59-008- 028 -RI
Sample Location: CEF-59-008-028
Sampler: C Gleason

SAMPLING DATA

	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO ~~mg/L~~ %	Temp. °C	ORP mV	
Date: 11/11/04								
Time: 1650								
Method: Peristaltic	Gray	4.86	0.052	+999	17.1	21.68	279.5	

PURGE DATA

Date: 11/11/04
Method: Peristaltic
Monitor Reading (ppm): 0.0
Well Casing Diameter: 0.75 inch
Well Casing Material: PVC
Total Well Depth (ft): 28
Static Water Level (ft): 6.45
One Screen Volume(gal/~~L~~): .75
Start Purge (hrs): 1625
End Purge (hrs): 1645
Total Purge Time (min): 20
Total Vol. Purged (gal/~~L~~): 4.0

See Attached Low Flow Purge Data Sheet for Purge Data

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
TCL VOCs	HCl	3 x 40ml glass vials	Accutest	✓

OBSERVATIONS / NOTES

Background PID = 0.0
BZ PID = 0.0
BOREHOLE PID = 0.0

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #: 359-2

Check if Collected:

[X] DUPLICATE
[ ] MS/MSD

ID No.: CEF-59-DU04-RI

Signature(s): C Gleason

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120
WELL ID.: CEF-59-008-028
DATE: 11/11/04

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO % ~~(mg/L)~~	Temp. (Celsius)	ORP (mV)	Comments
1625	6.45									
1630	6.59	200	1.0	4.83	0.052	+999	21.2	21.73	242.3	
1635	6.59	200	2.0	4.80	0.052	+999	18.7	21.69	251.8	
1640	6.59	200	3.0	4.83	0.052	+999	17.5	21.66	268.4	
1645	6.59	200	4.0	4.86	0.052	+999	17.1	21.68	279.5	

SIGNATURE(S): C Slat

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: NAS Cecil Field, Site 59 RI
Project No.: N8925.SW0.050.120
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: CEF-59-009- 053 -RI
Sample Location: CEF-59-009-053
Sampler: P. LEVERETTE

SAMPLING DATA

	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
Date: 11/17/04								
Time: 1110								
Method: Peristaltic	Lt. brn	5.54	0.053	35	0.26	24.29	15.0	

PURGE DATA

Date: 11/17/04
Method: Peristaltic
Monitor Reading (ppm): 0
Well Casing Diameter: 2 inch
Well Casing Material: PVC
Total Well Depth (ft): 53
Static Water Level (ft): 6.48
One Screen Volume(gal): 3.1
Start Purge (hrs): 0920
End Purge (hrs): 1105
Total Purge Time (min): 105
Total Vol. Purged (gal): 15.5

See Attached Low Flow Purge Data Sheet for Purge Data

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
TCL VOCs	HCl	3 x 40ml glass vials	Accutest	✓

OBSERVATIONS / NOTES

Background PID = 0
BZ PID= 0
BOREHOLE PID= 0

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #: 359-7

Check if Collected:

[ ] DUPLICATE
[ ] MS/MSD

ID No.: None

Signature(s):

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120
WELL ID.: CEF-59-009-~~085~~ 53
DATE: 11/17/04

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
0920	6.48	300	—	—	—	—	—	—	—	START PURGE
0930	6.64	300	3.0	5.41	0.052	40	0.64	24.12	64.1	
0940	6.64	300	6.0	5.44	0.051	45	0.47	24.09	52.6	
0950	6.60	200	8.0	5.46	0.051	37	0.49	23.89	40.1	
1000	6.58	100	9.0	5.46	0.051	37	0.43	23.94	35.5	
1010	6.58	100	10.0	5.47	0.052	36	0.41	24.00	32.8	
1020	6.58	100	11.0	5.49	0.051	35	0.38	24.07	27.9	
1030	6.58	100	12.0	5.49	0.052	37	0.34	24.15	24.3	
1040	6.58	100	13.0	5.51	0.052	40	0.32	24.22	20.6	
1050	6.58	100	14.0	5.52	0.052	38	0.31	24.29	18.7	
1100	6.58	100	15.0	5.53	0.053	34	0.29	24.30	16.9	
1105	6.58	100	15.5	5.54	0.053	35	0.26	24.29	15.0	

SAMPLE TIME 1110

SIGNATURE(S):

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: NAS Cecil Field, Site 59 RI
Project No.: N8925.SW0.050.120
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: CEF-59-009- 083 -RI
Sample Location: CEF-59-009-083
Sampler: DS

SAMPLING DATA

	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO ~~mg/L~~ %	Temp. °C	ORP mV	
Date: 11-11-04 Time: 1705 Method: Peristaltic	LT GRAY	5.61	0.083	338	3.2	24.31	42.2	

PURGE DATA

Date: 11-11-04	See Attached Low Flow Purge Data Sheet for Purge Data
Method: Peristaltic	
Monitor Reading (ppm): 0	
Well Casing Diameter: 2 inch	
Well Casing Material: PVC	
Total Well Depth (ft): 83	
Static Water Level (ft): ~~1525~~ 6.42	
One Screen Volume(gal/L): 3.1	
Start Purge (hrs): 1525	
End Purge (hrs): 1655	
Total Purge Time (min): 90	
Total Vol. Purged (gal/L): 16	

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
TCL VOCs	HCl	3 x 40ml glass vials	Accutest	DS

OBSERVATIONS / NOTES

Background PID = 0
BZ PID= ~~0~~ 0
BOREHOLE PID= 8

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #: 359.2

Check If Collected:

[ ] DUPLICATE
[ ] MS/MSD

ID No.: None

Signature(s): [illegible]

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120
WELL ID.: CEF-59-009-~~053~~ 83
DATE: 11-11-04

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
1525	6.42	300		–	Silty					Began very silty
1530	6.48	300		–	Silty					Put tube on bottom
1545	6.48	300	6 l	5.74	0.086	293	12.6	24.82	87.4	of well to pump silt.
1555	6.48	300	9 l	5.70	0.089	290	9.2	24.55	80.1	Tubing min screen 5.40
1605	6.48	100	10 l	5.63	0.086	285	4.8	24.29	71.3	still silty
1615	6.48	100	11	5.64	0.084	284	4.2	24.25	65.2	
1625	6.48	100	12	5.65	0.083	275	4.0	24.33	62.4	
1635	6.48	100	13	5.61	0.083	313	4.5	24.32	56.4	
1645	6.48	100	14	5.61	0.083	351	3.6	24.32	51.6	
1655	6.48	100	15	5.61	0.083	349	3.3	24.30	45.5	
1705	6.48	100	16	5.61	0.083	338	3.2	24.31	42.2	
	1705	sample								

SIGNATURE(S): [illegible]

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: NAS Cecil Field, Site 59 RI
Project No.: N8925.SW0.050.120
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: CEF-59-009- 113 -RI
Sample Location: CEF-59-009-113
Sampler:

SAMPLING DATA

	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO ~~mg/L~~ %	Temp. °C	ORP mV	
Date: 11-11-04								
Time: 1600								
Method: Peristaltic	Lt Gry	6.31	0.226	78	5.1	25.11	12.6	

PURGE DATA

Date: 11-11-04
Method: Peristaltic
Monitor Reading (ppm):
Well Casing Diameter: 2 inch
Well Casing Material: PVC
Total Well Depth (ft): 113
Static Water Level (ft): 6.48
One Screen Volume(gal/L): 3.1
Start Purge (hrs): 1440
End Purge (hrs): 1600
Total Purge Time (min): 80
Total Vol. Purged (gal/L): 15.5

See Attached Low Flow Purge Data Sheet for Purge Data

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
TCL VOCs	HCl	3 x 40ml glass vials	Accutest	DS

OBSERVATIONS / NOTES

Background PID = 0
BZ PID= 0
BOREHOLE PID= 0.5

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #: 359-2

Check if Collected:

[ ] DUPLICATE
[ ] MS/MSD

ID No.:

Signature(s): DS

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120
WELL ID.: CEF-59-009-113
DATE: 11-11-04

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
1440	7.63	350		6.48						Not clear ~~from~~ at
1450	7.71	350	3.5	6.48	0.224	107	17.4	25.20	8.8	beginning
1455	7.72	350		6.54	0.249		11.3	25.23	12.7	
1510	7.72	350	10.5	6.37	0.225	127	9.7	25.28	28.1	
1520	7.65	100	11.5	6.35	0.227		7.2	25.41	24.6	Pumps slow as possible
1530	7.65	100	12.5	6.36	0.227	106	8.9	25.28	17.0	
1540	7.65	100	13.5	6.35	0.227	109	6.3	25.27	16.1	
1550	7.65	100	14.5	6.32	0.226	89	5.5	25.07	13.4	
1600	7.65	100	15.5	6.31	0.226	78	5.1	25.11	12.6	

1600 Sample

SIGNATURE(S): [illegible]

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: NAS Cecil Field, Site 59 RI
Project No.: N8925.SW0.050.120
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: CEF-59-010- 053 -RI
Sample Location: CEF-59-010-053
Sampler: C Gleason

SAMPLING DATA

Date: 11/12/04	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO ~~mg/L~~ %	Temp. °C	ORP mV	
Time: 1335								
Method: Peristaltic	Clear	5.52	0.080	45	13.7	25.89	108.0	

PURGE DATA

Date: 11/12/04
Method: Peristaltic
Monitor Reading (ppm): 0.2
Well Casing Diameter: 0.75 inch
Well Casing Material: PVC
Total Well Depth (ft): 53
Static Water Level (ft): 6.51
One Screen Volume(gal/L): 0.72
Start Purge (hrs): 1250
End Purge (hrs): 1330
Total Purge Time (min): 40
Total Vol. Purged (gal/L): 4.0

See Attached Low Flow Purge Data Sheet for Purge Data

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
TCL VOCs	HCl	3 x 40ml glass vials	Accutest	✓

OBSERVATIONS / NOTES

Background PID = 0.0
BZ PID = 0.0
BOREHOLE PID = 0.0

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #: 359-3

Check if Collected:

[ ] DUPLICATE
[X] MS/MSD

ID No.: CEF-59-010-053-RI ~~None~~ MD

Signature(s): C Gleason

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120
WELL ID.: CEF-59-010-053
DATE: 11/12/04

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO ~~(mg/L)~~ %	Temp. (Celsius)	ORP (mV)	Comments
1250	6.81									
1255	6.62	100	.5	6.58	0.133	+999	37.0	26.44	19.8	
1300	6.62	100	1.0	5.88	0.104	572	18.8	25.92	67.2	
1305	6.62	100	1.5	5.69	0.095	320	16.2	26.12	81.8	
1310	6.62	100	2.0	5.60	0.089	200	14.4	26.11	93.4	
1315	6.62	100	2.5	5.57	0.084	110	13.8	26.03	100.2	
1320	6.62	100	3.0	5.56	0.081	65	13.9	25.98	104.7	
1325	6.62	100	3.5	5.52	0.080	50	13.3	25.94	106.5	
1330	6.62	100	4.0	5.52	0.080	45	13.7	25.89	108.0	

SIGNATURE(S): C Wlaton

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: NAS Cecil Field, Site 59 RI
Project No.: N8925.SW0.050.120
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: CEF-59-010- 083 -RI
Sample Location: CEF-59-010-083
Sampler: GUS NC/SOV

SAMPLING DATA

	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
Date: 11/12/04								
Time: 1410	Clear							
Method: Low flow Peristaltic		5.86	0.100	37.2	3.4	25.63	-41.7	

PURGE DATA

Date: 11/12/04
Method: Low Flow Peristaltic
Monitor Reading (ppm): 0.0
Well Casing Diameter: 2 inch
Well Casing Material: PVC
Total Well Depth (ft): 83
Static Water Level (ft): 5.75
One Screen Volume(gal/L): 3.1
Start Purge (hrs): 12:50
End Purge (hrs): 14:05
Total Purge Time (min): 75 min
Total Vol. Purged (gal/L): 15L

See Attached Low Flow Purge Data Sheet for Purge Data

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
TCL VOCs	HCl	3 x 40ml glass vials	Accutest	✓

OBSERVATIONS / NOTES

Background PID = 0.0
BZ PID= 0.0
BOREHOLE PID= 0.0

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #: 359-3

Check if Collected:

[ ] DUPLICATE
[ ] MS/MSD

ID No.: None

Signature(s):

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120
WELL ID.: CEF-59-010-083
DATE: 11/12/08

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
12:50	5.82	200mL								
12:55	5.82	200mL	1L	6.05	0.121	29.3	11.3	26.17	-29.5	
13:00	5.82	200mL	2L	6.04	0.121	27.2	10.7	26.07	-40.6	
13:05	5.82	200mL	3L	6.01	0.119	24.9	7.4	26.01	-42.3	
13:10	5.82	200mL	4L	6.02	0.117	22.6	6.5	25.98	-45.7	
13:15	5.83	200mL	5L	6.01	0.114	24.7	6.0	25.94	-46.0	
13:20	5.83	200mL	6L	5.96	0.113	24.1	6.6	25.93	-43.1	
13:25	5.83	200mL	7L	5.97	0.113	23.7	5.5	25.93	-44.1	
13:30	5.83	200mL	8L	5.95	0.112	22.3	5.1	25.90	-44.5	
13:35	5.83	200mL	9L	5.91	0.107	20.6	4.4	25.79	-43.3	
13:40	5.83	200mL	10L	5.90	0.105	20.1	4.2	25.74	-42.7	
13:45	5.83	200mL	11L	5.88	0.104	18.9	4.0	25.71	-42.0	
13:50	5.83	200mL	12L	5.85	0.101	18.8	3.7	25.67	-44.2	
13:55	5.83	200mL	13L	5.85	0.100	18.6	3.6	25.62	-41.5	
14:00	5.83	200mL	14L	5.86	0.100	37.1	3.5	25.65	-41.8	
14:05	5.83	200mL	15L	5.86	0.100	37.2	3.4	25.63	-41.7	
		Sample Time 14:10								

SIGNATURE(S):

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: NAS Cecil Field, Site 59 RI
Project No.: N6925.SW0.050.120
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: CEF-59-011- 033 -RI
Sample Location: CEF-59-011-033
Sampler: Gus Nikolov

SAMPLING DATA

	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
Date: 11/15/04								
Time: 16:00								
Method: Low Flow Peristaltic	Cloudy	4.43	0.084	250	1.99	24.77	184	

PURGE DATA

Date: 11/15/04	See Attached Low Flow Purge Data Sheet for Purge Data
Method: Low Flow Peristaltic	
Monitor Reading (ppm): 0.0	
Well Casing Diameter: 0.75 inch	
Well Casing Material: PVC	
Total Well Depth (ft): 33	
Static Water Level (ft): 6.97	
One Screen Volume(gal/L): .72	
Start Purge (hrs): 13:10	
End Purge (hrs): 13:50	
Total Purge Time (min): 40 min	
Total Vol. Purged (gal/L): 4 L	

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
TCL VOCs	HCl	3 - 40ml vials	Accutest	✓

OBSERVATIONS / NOTES

-Dissolved=Filtered
* Filtered samples must be labeled 'F' for groundwater filtered

Metals filtered through 1 micron filter.

Background PID = 0.0
BZ PID= 0.0
BOREHOLE PID= 0.0

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #: 359-3

Check If Collected:
[ ] DUPLICATE ID No.:
[ ] MS/MSD

Signature(s):

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120
WELL ID.: CEF-59-011-033
DATE: 11/15/04

Time	Water Level	Flow	Cum. Vol.	pH	Cond.	Turb.	DO	Temp.	ORP	Comments
(hh:mm)	(feet BTOC)	(mL/min)	(liters)	(S.U.)	(mS/cm)	(NTU)	(mg/L)	(Celsius)	(mV)	
15:10	7.70	100mL								
15:15	7.70	100mL	500mL	4.40	0.088	+999	42.6	24.91	181.0	
15:20	7.70	100mL	1L	4.41	0.089	+999	40.7	24.93	181.6	
15:25	7.70	100mL	1.5L	4.44	0.087	+999	3.23	24.85	183.7	
15:30	7.70	100mL	2L	4.42	0.087	+999	3.07	24.85	184.1	
15:35	7.70	100mL	2.5L	4.41	0.087	550	2.46	24.62	186.4	
15:40	7.70	100mL	3.0L	4.38	0.086	280	2.41	24.60	186.6	
15:45	7.70	100mL	3.5L	4.44	0.087	250	2.03	24.77	183.7	
15:50	7.70	100mL	4L	4.43	0.086	250	1.99	24.47	186.0	
		Sample @		AT	16:00					

SIGNATURE(S):

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: NAS Cecil Field, Site 59 RI
Project No.: N8925.SW0.050.120
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: CEF-59-011- 053 -RI
Sample Location: CEF-59-011-053
Sampler: Gus Nielson

SAMPLING DATA

	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
Date: 11/15/04								
Time: 16:55								
Method: Low Flow Peristaltic	Clear	5.67	0.074	6.1	1.57	24.60	70.3	

PURGE DATA

Date: 11/15/04
Method: Low Flow Peristaltic
Monitor Reading (ppm): 0.0
Well Casing Diameter: 0.75 inch
Well Casing Material: PVC
Total Well Depth (ft): 53
Static Water Level (ft): 6.78
One Screen Volume(gal/L): .72
Start Purge (hrs): 16:10
End Purge (hrs): 16:55
Total Purge Time (min): 45 min
Total Vol. Purged (gal/L): 46

See Attached Low Flow Purge Data Sheet for Purge Data

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
TCL VOCs	HCl	3 x 40ml glass vials	Accutest	✓

OBSERVATIONS / NOTES

Background PID = 0.0
BZ PID= 0.0
BOREHOLE PID= --

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #: 359-3

Check if Collected:
[ ] DUPLICATE
[✓] MS/MSD

ID No.: CEF-59-011-053-RI

Signature(s):

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.060.120
WELL ID.: CEF-59-011-053
DATE: 11/15/04

Time	Water Level	Flow	Cum. Vol.	pH	Cond.	Turb.	DO	Temp.	ORP	Comments
(HH:MM)	(FEET BTOC)	(ml/min)	(liters)	(S.U.)	(mS/cm)	(NTU)	(mg/L)	(CELSIUS)	(mV)	
16:10	6.78	100mL								
16:15	6.78	100mL	500mL	5.69	0.089	52	4.07	24.87	54.9	
16:20	6.78	100mL	1L	5.67	0.085	38	3.87	24.83	59.6	
16:25	6.78	100mL	1.5L	5.65	0.089	21	3.52	24.81	64.0	
16:30	6.78	100mL	2.0L	5.65	0.078	15	2.87	24.74	69.6	
16:35	6.78	100mL	2.5L	5.66	0.076	10	2.24	24.67	70.4	
16:40	6.78	100mL	3.0L	5.67	0.075	8.0	1.80	24.61	64.6	
16:45	6.79	100mL	3.5L	5.67	0.074	8.0	1.59	24.61	70.0	
16:50	6.79	100mL	4.0L	5.67	0.074	6.1	1.57	24.60	70.3	
		Sampled			16:50					

SIGNATURE(S):

TETRA TECH JAX Fax:9046386165 Nov 15 2004 11:22 P.08

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: NAS Cecil Field, Site 59 RI
Project No.: N8925.SW0.050.120
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: CEF-59-011- 083 -RI
Sample Location: CEF-59-011-083
Sampler: C Gleaton

SAMPLING DATA

	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
Date: 11/15/04								
Time: 1225								
Method: Peristaltic	Cloudy	5.65	0.074	20	0.25	24.82	17.5	

PURGE DATA

Date: 11/15/04
Method: Peristaltic
Monitor Reading (ppm): 0.0
Well Casing Diameter: 2 inch
Well Casing Material: PVC
Total Well Depth (ft): 83
Static Water Level (ft): 5.63
One Screen Volume(gal/L): 3.1
Start Purge (hrs): 1500
End Purge (hrs): 1620
Total Purge Time (min): 80
Total Vol. Purged (gal/L): 16

See Attached Low Flow Purge Data Sheet for Purge Data

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
TCL VOCs	HCl	3 x 40ml glass vials	Accutest	✓

OBSERVATIONS / NOTES

Background PID = 0.0
BZ PID = 0.0
BOREHOLE PID = 0.0

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #: 359-3

Check if Collected:
[ ] DUPLICATE
[ ] MS/MSD
ID No.:

Signature(s): C Gleaton

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120
WELL ID.: CEF-59-~~013~~ 011-083
DATE: 11/15/04

Time	Water Level	Flow	Cum. Vol.	pH	Cond.	Turb.	DO	Temp.	ORP	Comments
1500	5.63									
1505	5.72	200	1.0	6.18	0.118	+999	2.28	25.55	30.6	
1510	5.72	200	2.0	6.09	0.117	562	1.49	25.43	27.1	
1515	5.72	200	3.0	6.05	0.115	290	0.94	25.32	22.9	
1520	5.72	200	4.0	5.97	0.111	247	0.69	25.17	24.2	
1525	5.72	200	5.0	5.92	0.105	210	0.57	25.14	23.0	
1530	5.72	200	6.0	5.87	0.099	182	0.50	25.09	22.2	
1535	5.72	200	7.0	5.82	0.095	170	0.42	25.07	25.2	
1540	5.72	200	8.0	5.74	0.089	150	0.37	25.01	27.2	
1545	5.72	200	9.0	5.73	0.087	135	0.34	25.00	27.6	
1550	5.72	200	10.0	5.70	0.079	130	0.38	24.81	27.7	
1555	5.72	200	11.0	5.68	0.079	126	0.32	24.74	25.1	
1600	5.72	200	12.0	5.68	0.078	117	0.31	24.75	25.4	
1605	5.72	200	13.0	5.65	0.075	110	0.29	24.84	23.1	
1610	5.72	200	14.0	5.67	0.075	100	0.28	24.75	20.1	
1615	5.72	200	15.0	5.68	0.075	100	0.27	24.82	17.8	
1620	5.72	200	16.0	5.65	0.074	90	0.25	24.82	17.5	

SIGNATURE(S): C Gilbertson

TETRA TECH JAX Fax:9042366165 NOV 15 2004 11:26 P.12

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: **NAS Cecil Field, Site 59 RI**
Project No.: **N8925.SW0.050.120**
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: **CEF-59-012- 053 -RI**
Sample Location: **CEF-59-012-053**
Sampler: DS

SAMPLING DATA

Date: 6-21-05	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
Time: 1515								
Method: Peristaltic	CL	5.58	0.131	16.8	0.21	25.09	41.6	

PURGE DATA

Date: 6-21-05	See Attached Low Flow Purge Data Sheet for Purge Data
Method: Peristaltic	
Monitor Reading (ppm): 0	
Well Casing Diameter: ~~2~~ 4 inch	
Well Casing Material: PVC	
Total Well Depth (ft): 53	
Static Water Level (ft): 2.01	
One Screen Volume(gal): 0.21	
Start Purge (hrs): 1435	
End Purge (hrs): 1515	
Total Purge Time (min): 40	
Total Vol. Purged (gal): 0.8	

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
TCL VOCs	HCl	3 x 40ml glass vials	Accutest	DS

OBSERVATIONS / NOTES

Background PID = 0
BZ PID= 0
BOREHOLE PID= 0

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #: 3122/3123

Check if Collected:

[ ] DUPLICATE — ID No.: None.
[ ] MS/MSD

Signature(s):

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120
WELL ID.: CEF-59-012-053
DATE: 6-21-05

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
1435	6.01									
1445	6.22	200	2	6.39	0.195	456	0.22	24.62	49.3	
1455	6.20	200	2	5.63	0.140	67.	0.16	24.80	42.8	
1505	6.21	200	2	5.61	0.134	30.6	0.20	25.01	42.4	
1515	6.21	200	2	5.58	0.131	16.9	0.21	25.09	44.6	
1515	Sample									

SIGNATURE(S): D Oke

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: NAS Cecil Field, Site 59 RI
Project No.: N8925.SWC.050.120
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: CEF-59-013- 032 -RI
Sample Location: CEF-59-013-032
Sampler: C Gleaton

SAMPLING DATA

	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
Date: 11/15/04								
Time: 1305								
Method: Peristaltic	Brown	5.56	0.117	475	0.40	24.89	-22.2	

PURGE DATA

Date: 11/15/04
Method: Peristaltic
Monitor Reading (ppm): 0.0
Well Casing Diameter: 0.75 inch
Well Casing Material: PVC
Total Well Depth (ft): 32
Static Water Level (ft): 7.27
One Screen Volume(gal/L): .72
Start Purge (hrs): 1220
End Purge (hrs): 1300
Total Purge Time (min): 40
Total Vol. Purged (gal/L): 4.0

See Attached Low Flow Purge Data Sheet for Purge Data

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
TCL VOCs	HCl	3 - 40ml vials	Accutest	✓

OBSERVATIONS / NOTES

~Dissolved=Filtered
* Filtered samples must be labeled 'F' for groundwater filtered

Metals filtered through 1 micron filter.

Background PID = 0.0
BZ PID= 0.0
BOREHOLE PID=0.0

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #: 359-3

QA/QC Collected

☐ DUPLICATE
☐ MS/MSD

ID No.:

Signature(s): C Gleaton

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N6925.SW0.050.120

WELL ID.: CEF-59-013-032
DATE: 11/15/04

Time	Water Level	Flow	Cum. Vol.	pH	Cond.	Turb.	DO	Temp.	ORP	Comments
1220	7.27									
1225	7.56	100	0.5	5.73	0.130	+999	4.73	24.99	128	
1230	7.56	100	1.0	5.75	0.132	+999	2.01	24.92	-0.5	
1235	7.56	100	1.5	5.69	0.127	+999	0.84	24.73	-11.2	
1240	7.56	100	2.0	5.66	0.124	+999	0.65	24.89	-14.8	
1245	7.56	100	2.5	5.61	0.118	+999	0.46	24.85	-17.8	
1250	7.56	100	3.0	5.59	0.117	+999	0.45	24.88	-19.3	
1255	7.56	100	3.5	5.57	0.115	+999	0.42	24.85	-19.7	
1300	7.56	100	4.0	5.56	0.117	775	0.40	24.89	-22.2	

SIGNATURE(S): [signature]

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: NAS Cecil Field, Site 59 RI
Project No.: N8925.SW0.050.120
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: CEF-59-013- 053 -RI
Sample Location: CEF-59-013-053
Sampler: C Gloton

SAMPLING DATA

	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
Date: 11/15/04								
Time: 1400								
Method: Peristaltic	Clear	6.28	0.201	37	0.33	24.52	-6.2	

PURGE DATA

Date: 11/15/04
Method: Peristaltic
Monitor Reading (ppm): 0.0
Well Casing Diameter: 0.75 inch
Well Casing Material: PVC
Total Well Depth (ft): 53
Static Water Level (ft): 7.19
One Screen Volume(gal/L): .72
Start Purge (hrs): 1315
End Purge (hrs): 1355
Total Purge Time (min): 40
Total Vol. Purged (gal/L): 4.0

See Attached Low Flow Purge Data Sheet for Purge Data

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
TCL VOCs	HCl	3 x 40ml glass vials	Accutest	✓

OBSERVATIONS / NOTES

Background PID = 0.0
BZ PID = 0.0
BOREHOLE PID = 0.0

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #: 359-3

Check if Collected

[ ] DUPLICATE
[ ] MS/MSD

ID No.:

Signature(s): C Gloton

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120
WELL ID.: CEF-59-013-053
DATE: 11/15/04

Time	Water Level	Flow	Cum. Vol.	pH	Cond.	Turb.	DO	Temp.	ORP	Comments
1315	7.14									
1320	7.32	100	0.5	6.73	0.226	+999	0.86	24.78	-48.7	
1325	7.32	100	1.0	6.40	0.220	500	0.47	24.52	-21.2	
1330	7.32	100	1.5	6.39	0.222	450	0.54	24.42	-10.6	
1335	7.32	100	2.0	6.38	0.219	220	0.40	24.53	-12.6	
1340	7.32	100	2.5	6.38	0.213	140	0.39	24.53	-16.6	
1345	7.32	100	3.0	6.34	0.207	85	0.37	24.55	-11.6	
1350	7.32	100	3.5	6.28	0.200	50	0.35	24.56	-4.7	
1355	7.32	100	4.0	6.28	0.201	37	0.33	24.52	-6.3	

SIGNATURE(S): C Sl

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: NAS Cecil Field, Site 59 RI
Project No.: N8925.SW0.050.120
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: CEF-59-013- 083 -RI
Sample Location: CEF-59-013-083
Sampler: Gus Nelson

SAMPLING DATA

	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
Date: 11/15/04 Time: 13:45 Method: Peristaltic	Clear	4.81	0.05	14	.72	23.88	118.5	

PURGE DATA

Date: 11/15/04
Method: Low Flow Peristaltic
Monitor Reading (ppm): 0.0
Well Casing Diameter: 2 inch
Well Casing Material: PVC
Total Well Depth (ft): 83
Static Water Level (ft): 6.3
One Screen Volume(gal/L): 3.1
Start Purge (hrs): 12:40
End Purge (hrs): 13:40
Total Purge Time (min): 60min
Total Vol. Purged (gal/L): 15mL

See Attached Low Flow Purge Data Sheet for Purge Data

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
TCL VOCs	HCl	3 x 40ml glass vials	Accutest	✓

OBSERVATIONS / NOTES

Background PID = 0.0
BZ PID= 0.0
BOREHOLE PID= 0.0

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #: 359-3

Check if Collected:

[ ] DUPLICATE ID No.:
[ ] MS/MSD

Signature(s):

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120

WELL ID.: ~~CEF-59-011-083~~ 013
DATE: 11/15/04

Time	Water Level	Flow	Cum. Vol.	pH	Cond.	Turb.	DO	Temp.	ORP	Comments
(24 hour)	(Depth to DTW)	(ml/min)	(Liters)	(S.U.)	(mS/cm)	(NTU)	(mg/L)	(Celsius)	(mv)	
12:40	6.30	250mL								
12:45	6.30	250mL	1.5L	4.87	0.081	140	24.0	24.02	148.8	
12:50	6.30	250mL	2.5L	4.89	0.085	50	1.22	24.14	123.4	
12:55	6.30	250mL	3.75L	4.86	0.083	38	0.67	23.90	129.4	
13:00	6.30	250mL	5.0L	4.84	0.083	31	0.66	23.84	130.0	
13:05	6.30	250mL	6.25L	4.87	0.080	23	0.51	23.72	124.4	
13:10	6.30	250mL	7.50L	4.88	0.079	21	0.52	23.71	123.1	
13:15	6.30	250mL	8.75L	4.89	0.079	20	0.50	23.76	121.7	
13:20	6.30	250mL	10.0L	4.87	0.079	20	0.49	23.83	120.2	
13:25	6.30	250mL	11.25L	4.90	0.075	19	0.64	23.79	122.5	
13:30	6.30	250mL	12.50L	4.80	0.076	19	0.65	23.84	120.0	
13:35	6.30	250mL	13.75L	4.79	0.075	19	0.64	23.86	119.0	
13:40	6.30	250m	15.0L	4.81	0.075	19	1.72	23.88	118.5	

SIGNATURE(S):

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: NAS Cecil Field, Site 59 RI
Project No.: N8925.SW0.050.120
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: CEF-59-014- 053 -RI
Sample Location: CEF-59-014-053
Sampler: C. Gleaton

SAMPLING DATA

	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
Date: 11/15/04								
Time: 0925								
Method: Peristaltic	Clear	5.91	0.125	6.9	1.87	22.93	-264	

PURGE DATA

Date: 11/15/04
Method: Peristaltic
Monitor Reading (ppm): 0.0
Well Casing Diameter: 0.75 inch
Well Casing Material: PVC
Total Well Depth (ft): 53
Static Water Level (ft): 6.75
One Screen Volume(gal/L): 0.72
Start Purge (hrs): 0900
End Purge (hrs): 0920
Total Purge Time (min): 20
Total Vol. Purged (gal/L): 2.5

See Attached Low Flow Purge Data Sheet for Purge Data

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
TCL VOCs	HCl	3 x 40ml glass vials	Accutest	✓

OBSERVATIONS / NOTES

Background PID = 0.0
BZ PID = 0.0
BOREHOLE PID = 0.0

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #: 359-3

Check if Collected:

[ ] DUPLICATE
[ ] MS/MSD

ID No.:

Signature(s): C Gleaton

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59, RI
PROJECT NUMBER: N8925.SW0.050.120
WELL ID.: CEF-59-014-053
DATE: 11/15/04

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
0900	6.75									
0905	6.91	100	0.5	5.92	0.073	6.5	1.82	22.92	-40.6	
0910	6.91	100	1.0	5.93	0.128	6.2	1.85	22.96	-48.6	
0915	6.91	100	2.0	5.90	0.125	6.7	1.82	22.90	-37.2	
0920	6.91	100	2.5	5.91	0.125	6.9	1.87	22.93	-26.4	

SIGNATURE(S): C S Lent

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: NAS Cecil Field, Site 59 RI
Project No.: N8925.SW0.050.120
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: CEF-59-014- 083 -RI
Sample Location: CEF-59-014-083
Sampler: C Gleaton

SAMPLING DATA

	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
Date: 11/15/04								
Time: 1050								
Method: Peristaltic	Clear	8.01	0.083	6.3	0.60	24.07	13.1	

PURGE DATA

Date: 11/15/04
Method: Peristaltic
Monitor Reading (ppm):
Well Casing Diameter: 2 inch
Well Casing Material: PVC
Total Well Depth (ft): 83
Static Water Level (ft): 7.00
One Screen Volume(gal/L): 3.1
Start Purge (hrs): 1000
End Purge (hrs): 1045
Total Purge Time (min): 45
Total Vol. Purged (gal/L): 9.0

See Attached Low Flow Purge Data Sheet for Purge Data

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
TCL VOCs	HCl	3 x 40ml glass vials	Accutest	✓

OBSERVATIONS / NOTES

Background PID =
BZ PID=
BOREHOLE PID=

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #: 359-3

Check if Collected:

☐ DUPLICATE
☐ MS/MSD

ID No.:

Signature(s): C Gleaton

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120
WELL ID.: CEF-59-014-083
DATE: 11/15/04

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
1000	7.00									
1005	7.04	200	1.0	5.82	0.095	13	3.05	23.35	44.1	
1010	7.04	200	2.0	5.77	0.090	8.7	2.15	23.57	41.9	
1015	7.04	200	3.0	5.55	0.083	7.2	1.19	23.76	52.1	
1020	7.04	200	4.0	5.17	0.082	7.6	1.10	23.88	39.9	
1025	7.04	200	5.0	5.14	0.079	7.5	0.94	23.96	36.1	
1030	7.04	200	6.0	5.08	0.080	8.1	0.95	23.98	30.8	
1035	7.04	200	7.0	5.02	0.077	6.2	0.63	24.10	28.4	
1040	7.04	200	8.0	5.03	0.078	6.1	0.59	24.05	19.2	
1045	7.04	200	9.0	5.01	0.082	6.3	0.60	24.07	13.1	

SIGNATURE(S): C. Sleator

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: NAS Cecil Field, Site 59 RI
Project No.: N8925.SW0.050.120
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: CEF-59-014- 120 -RI
Sample Location: CEF-59-014-120
Sampler: Gus Nicholson

SAMPLING DATA

	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
Date: 11/15/04 Time: 10:10 Method: Low Flow Peristaltic	Clear	7.03	0.419	1.0	0.15	23.33	-25.8	

PURGE DATA

Date: 11/15/04
Method: Low Flow Peristaltic
Monitor Reading (ppm): 0.0
Well Casing Diameter: 2 inch
Well Casing Material: PVC
Total Well Depth (ft): 120
Static Water Level (ft): 7.24
One Screen Volume(gal/L): 3.1
Start Purge (hrs): 09:10
End Purge (hrs): 10:00
Total Purge Time (min): 50 min
Total Vol. Purged (gal/L): 10 L

See Attached Low Flow Purge Data Sheet for Purge Data

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
TCL VOCs	HCl	3 x 40ml glass vials	Accutest	✓

OBSERVATIONS / NOTES

Background PID = 0.0
BZ PID= 0.0
BOREHOLE PID= 0.6

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #: 359-3

Check If Collected:

[ ] DUPLICATE
[ ] MS/MSD

ID No.:

Signature(s):

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120
WELL ID.: CEF-59-014-120
DATE: 11/5/04

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
09:10	7.24	200mL								
09:15	7.24	200mL	1L	7.07	0.376	6.58	1.45	23.26	-35.1	
09:20	7.24	200mL	2L	7.07	0.377	3.1	1.15	23.28	-35.5	
09:25	7.24	200mL	3L	7.10	0.387	2.36	0.85	23.35	-34.9	
09:30	7.24	200mL	4L	7.15	0.408	2.32	0.45	23.26	-36.3	
09:35	7.24	200mL	5L	7.14	0.419	1.39	.27	23.35	-34.1	
09:40	7.30	200mL	6L	7.12	0.419	1.37	0.26	23.39	-32.8	
09:45	7.33	200mL	7L	7.11	0.420	1.5	0.28	23.39	-31.9	
09:50	7.33	200mL	8L	7.10	0.420	1.3	0.21	23.39	-32.3	
09:55	7.31	200mL	9L	7.04	0.420	.80	0.19	23.33	-27.	
10:00	7.31	200m	10L	7.03	0.419	1.0	0.15	23.33	-25.8	

Sampled at 10:10

SIGNATURE(S):

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: NAS Cecil Field, Site 59 RI
Project No.: N8925.SW0.050.120
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: CEF-59-015- 028 -RI
Sample Location: CEF-59-015-028
Sampler: GUS NELSON

SAMPLING DATA

	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
Date: 11/16/04 Time: 17:25 Method: Low Flow Peristaltic	Cloudy	5.09	0.102	+999	0.38	23.50	58.6	

PURGE DATA

Date: 11/16/04
Method: Low Flow Peristaltic
Monitor Reading (ppm): 0.0
Well Casing Diameter: 0.75 inch
Well Casing Material: PVC
Total Well Depth (ft): 28
Static Water Level (ft): 5.90
One Screen Volume(gal): .72
Start Purge (hrs): 16:45
End Purge (hrs): 17:20
Total Purge Time (min): 35 min
Total Vol. Purged (gal): 3.5

See Attached Low Flow Purge Data Sheet for Purge Data

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
TCL VOCs	HCl	3 x 40ml glass vials	Accutest	✓

OBSERVATIONS / NOTES

Background PID = 0.0
BZ PID= 0.0
BOREHOLE PID= 0.0

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #: 359-6

Check if Collected

[ ] DUPLICATE
[ ] MS/MSD
ID No.:

Signature(s):

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120

WELL ID.: CEF-59-015-028
DATE: 11/16/04

Time (HH:MM)	Water Level (Feet BTOC)	Flow (mL/min)	Cum. Vol. (Liters)	pH (SU)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
16:45	6.02	100mL								
16:50	6.02	100mL	500mL	5.54	0.115	+999	0.83	28.69	32.9	
16:55	6.02	100mL	1L	5.39	0.109	+999	0.42	23.66	39.0	
17:00	6.02	100mL	1.5	5.35	0.108	+999	0.40	23.64	41.2	
17:05	6.02	100mL	2.0	5.19	0.103	+999	0.36	23.59	53.2	
17:10	6.02	100mL	2.5	5.16	0.103	+999	0.37	23.60	55.8	
17:15	6.02	100mL	3.0	5.10	0.102	+999	0.40	23.54	58.5	
17:20	6.02	100mL	3.5	5.09	0.102	+999	0.38	23.50	58.6	
		Sampled			17:25					

SIGNATURE(S):

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: NAS Cecil Field, Site 59 RI
Project No.: N8925.SW0.050.120
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: CEF-59-016- 053 -RI
Sample Location: CEF-59-016-053
Sampler: SAB

SAMPLING DATA

	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO ~~mg/L~~ %	Temp. °C	ORP mV	
Date: 11/12/04								
Time: 0950								
Method: Peristaltic	Beige	5.28	0.110	10	6.3	24.07	48.9	

PURGE DATA

Date: 11/12/04	See Attached Low Flow Purge Data Sheet for Purge Data
Method: Peristaltic	
Monitor Reading (ppm):	
Well Casing Diameter: 0.75 inch	
Well Casing Material: PVC	
Total Well Depth (ft): 53	
Static Water Level (ft): 5.95	
One Screen Volume(gal/L): 0.724	
Start Purge (hrs): 0905	
End Purge (hrs): 0945	
Total Purge Time (min): 40	
Total Vol. Purged (gal/L): 4.0	

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
TCL VOCs	HCl	3 x 40ml glass vials	Accutest	SAB

OBSERVATIONS / NOTES

Background PID = 0
BZ PID= 0
BOREHOLE PID= 0

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #: 359-2

Check if Collected:

[ ] DUPLICATE
[ ] MS/MSD

ID No.: none

Signature(s): Shane A. Ballard

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120
WELL ID.: CEF-59-016-053
DATE: 1/12/04

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
0905	5.95	—	—	—	—	—	—	—	—	—
0915	6.23	~~200~~ 100	~~2~~ 1	5.18	0.102	65	15.1	24.11	72.6	
0920	6.21	~~200~~ 100	1.5	5.18	0.103	40	13.1	24.09	70.1	
0925	6.21	~~200~~ 100	2.0	5.19	0.104	38	8.9	24.01	66.2	
0930	6.21	100	2.5	5.20	0.105	26	7.4	24.00	63.2	
0935	6.21	100	3.0	5.24	0.107	19	7.3	24.04	55.6	
0940	6.23	100	3.5	5.25	0.108	13	6.8	24.05	50.7	
0945	6.23	100	4.0	5.28	0.110	10	6.3	24.07	48.9	

SIGNATURE(S): Sheila A. Bollard

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: NAS Cecil Field, Site 59 RI
Project No.: N8925.SW0.050.120
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: CEF-59-016- 083 -RI
Sample Location: CEF-59-016-083
Sampler: GMS NEY50-2

SAMPLING DATA

	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO ~~mg/L~~ %	Temp. °C	ORP mV	
Date: 11/12/04 Time: ~~0910~~ 10:30 Method: Peristaltic	Cloudy	5.31	0.53	49.0	1.72	24.62	111.6	

PURGE DATA

Date: 11/12/04
Method: Low Flow Peristaltic
Monitor Reading (ppm): 0.0
Well Casing Diameter: 2 inch
Well Casing Material: PVC
Total Well Depth (ft): 83
Static Water Level (ft): 7.5
One Screen Volume(gal/L): 3.1
Start Purge (hrs): 09:10
End Purge (hrs): 10:25
Total Purge Time (min): 75 min
Total Vol. Purged (gal/L): 15 L

See Attached Low Flow Purge Data Sheet for Purge Data

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
TCL VOCs	HCl	3 x 40ml glass vials	Accutest	✓

OBSERVATIONS / NOTES

Background PID = 0.0
BZ PID= 0.0
BOREHOLE PID= 0.0

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #: 359-2

Check if Collected:

☐ DUPLICATE
☐ MS/MSD

ID No.: None

Signature(s):

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120
WELL ID.: CEF-59-016-083
DATE: 11/12/04

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO ~~(mg/L)~~ %	Temp. (Celsius)	ORP (mV)	Comments
09:10	7.55	200mL								
09:15	7.55	200mL	1L	5.46	.419	141	30.0	24.41	116.4	
09:20	7.55	200mL	2L	5.43	.546	139	26.3	24.32	122.1	
09:25	7.55	200mL	3L	5.39	.275	137	~~7.60~~ 2.01	24.12	125.3	
09:30	7.55	200mL	4L	5.34	.153	107	1.90	23.89	124.3	
09:35	7.56	200mL	5L	5.34	.271	82.2	1.80	24.03	119.6	
09:40	7.56	200mL	6L	5.33	.072	73.5	1.77	24.08	119.9	
09:45	7.56	200mL	7L	5.32	.073	66.4	1.77	23.96	115.3	
09:50	7.56	200mL	8L	5.32	.083	61.2	1.77	23.95	115.4	
09:55	7.56	200mL	9L	5.32	.071	60.1	1.78	23.96	113.8	
10:00	7.57	200mL	10L	5.29	.036	58.3	1.80	24.06	112.3	
10:05	7.57	200mL	11L	5.29	.033	58.2	1.79	24.15	113.2	
10:10	7.57	200mL	12L	5.33	.176	53.3	1.82	24.11	108.0	
10:15	7.57	200mL	13L	5.32	.056	50.2	1.81	24.45	108.7	
10:20	7.56	200mL	14L	5.31	.053	49.3	1.72	24.51	111.5	
10:25	7.56	200m	15L	5.31	0.053	49.0	1.72	24.62	111.6	

SIGNATURE(S):

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: NAS Cecil Field, Site 59 RI
Project No.: N8925.SW0.050.120
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: CEF-59-016- 119 -RI
Sample Location: CEF-59-016-119
Sampler: C Gleaton

SAMPLING DATA

	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
Date: 11/12/04								
Time: 1615								
Method: Peristaltic	Clear	7.19	0.345	8.7	15.7	24.55	-43.2	

PURGE DATA

Date: 11/12/04
Method: Peristaltic
Monitor Reading (ppm): cl
Well Casing Diameter: 2 inch
Well Casing Material: PVC
Total Well Depth (ft): 119
Static Water Level (ft): 6.38
One Screen Volume(gal/L): 3.1
Start Purge (hrs): 0905
End Purge (hrs): 1010
Total Purge Time (min): 65
Total Vol. Purged (gal/L): 9.75

See Attached Low Flow Purge Data Sheet for Purge Data

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
TCL VOCs	HCl	3 x 40ml glass vials	Accutest	✓

OBSERVATIONS / NOTES

Background PID = 0.0
BZ PID= 0.0
BOREHOLE PID=0.0

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #: 359-2

Check if Collected:

[ ] DUPLICATE
[ ] MS/MSD

ID No.:

Signature(s): C Gleaton

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120
WELL ID.: CEF-59-016-119
DATE: 11/12/04

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO ~~(mg/L)~~ (%)	Temp. (Celsius)	ORP (mV)	Comments
0905	6.38									
0910	7.15	150	.750	6.83	0.269	+999	59.6	24.11	-15.4	Pumping slow as possible
0915	7.96	150	1.5	6.94	0.302	+999	50.5	24.62	-28.7	
0920	8.58	150	2.25	7.01	0.337	320	25.4	24.97	-35.3	
0925	8.89	150	3.0	7.03	0.337	38	24.1	24.98	-32.7	
0930	9.30	150	3.75	7.09	0.338	23	20.1	24.71	-36.1	
0935	9.59	150	4.50	7.16	0.339	19	18.6	24.36	-38.7	
0940	9.92	150	5.25	7.20	0.340	15	18.2	24.37	-41.2	
0945	10.32	150	6.00	7.20	0.342	15	16.3	24.47	-42.2	
0950	10.47	150	6.75	7.20	0.343	9.6	15.5	24.51	-42.0	
0955	10.53	150	7.50	7.20	0.343	9.1	16.4	24.51	-41.7	
1000	10.69	150	8.25	7.21	0.344	9.3	15.9	24.54	-42.8	
1005	10.74	150	9.00	7.20	0.344	9.1	15.8	24.58	-41.8	
1010	10.82	150	9.75	7.19	0.345	8.7	15.7	24.55	-43.2	

SIGNATURE(S): C Hester

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: NAS Cecil Field, Site 59 RI
Project No.: N8925.SW0.050.120
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: CEF-59-017- 028 -RI
Sample Location: CEF-59-017-028
Sampler: PL/AP

SAMPLING DATA

Date: 2/25/05 Time: 0940	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
Method: Peristaltic	CLEAR	5.04	0.100	3.69	0.21	21.48	183.4	

PURGE DATA

Date: 2/25/05
Method: Peristaltic
Monitor Reading (ppm): 1.1
Well Casing Diameter: 2 inch
Well Casing Material: PVC
Total Well Depth (ft): 28
Static Water Level (ft): 7.38
One Screen Volume(gal): 3.1
Start Purge (hrs): 0904
End Purge (hrs): 0939
Total Purge Time (min): 35
Total Vol. Purged (gal): 10.5

See Attached Low Flow Purge Data Sheet for Purge Data

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
TCL VOCs	HCl	3 x 40ml glass vials	Accutest	✓

OBSERVATIONS / NOTES

Background PID = 0.2
BZ PID= 0
BOREHOLE PID= 1.1

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #: 59-022505

Check if Collected:

[ ] DUPLICATE
[ ] MS/MSD

ID No.: None.

Signature(s):

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120

WELL ID.: CEF-59-017-028
DATE: 2/25/05

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
0904	7.38	300	—	—	—	—	—	—	—	Start Purge
0914	7.46	300	3.0	5.00	0.092	7.1	0.49	21.32	170.0	
0924	7.46	300	6.0	5.02	0.096	5.89	0.35	21.32	177.8	
0929	7.46	300	7.5	5.03	0.102	5.12	0.27	21.37	179.3	
0934	7.46	300	9.0	5.05	0.104	4.36	0.25	21.43	180.3	
0939	7.46	300	10.5	5.04	0.100	3.69	0.21	21.48	183.4	

Sample Time 0940

SIGNATURE(S):

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: **NAS Cecil Field, Site 59 RI**
Project No.: **N8925.SW0.050.120**
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: **CEF-59-017- 053 -RI**
Sample Location: **CEF-59-017-053**
Sampler: PL/AP

SAMPLING DATA

	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
Date: 2/25/05 Time: 1110 Method: Peristaltic	Lt. Brn	5.75	0.280	223	0.20	21.56	28.8	

PURGE DATA

Date: 2/25/05
Method: Peristaltic
Monitor Reading (ppm): 1.2
Well Casing Diameter: 2 inch
Well Casing Material: PVC
Total Well Depth (ft): 53
Static Water Level (ft): 7.43
One Screen Volume(gal): 3.1
Start Purge (hrs): 0945
End Purge (hrs): 1105
Total Purge Time (min): 80
Total Vol. Purged (gal): 16.0

See Attached Low Flow Purge Data Sheet for Purge Data

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
TCL VOCs	HCl	3 x 40ml glass vials	Accutest	✓

OBSERVATIONS / NOTES

Background PID = 0.2
BZ PID= 0
BOREHOLE PID= 1.2

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #: 59-022505

Check if Collected:
☐ DUPLICATE ID No.: None.
☐ MS/MSD

Signature(s):

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120
WELL ID.: CEF-59-017-053
DATE: 2/25/05

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
0945	7.43	200	—	—	—	—	—	—	—	Start Purge
0955	7.61	200	2.0	6.17	0.463	>1000	0.65	21.54	58.7	
1005	7.61	200	4.0	6.13	0.463	819	0.39	21.68	47.3	
1015	7.61	200	6.0	6.08	0.438	643	0.34	21.68	46.4	
1025	7.61	200	8.0	6.01	0.400	432	0.38	21.52	47.2	
1030	7.61	200	9.0	5.94	0.365	389	0.32	21.47	46.4	
1035	7.61	200	10.0	5.88	0.341	346	0.29	21.39	45.6	
1045	7.61	200	12.0	5.84	0.329	327	0.27	21.31	45.3	
1055	7.61	200	14.0	5.77	0.286	294	0.21	21.62	35.8	
1105	7.61	200	16.0	5.75	0.280	223	0.20	21.56	28.8	
		Sample Time	1110							

SIGNATURE(S):

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: NAS Cecil Field, Site 59 RI
Project No.: N8925.SW0.050.120
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: CEF-59-018- 033 -RI
Sample Location: CEF-59-018-033
Sampler: RS

SAMPLING DATA

Date: 6-22-05	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
Time: 1100								
Method: Peristaltic	CL	5.64	0.090	288	0.16	25.49	76.3	

PURGE DATA

Date: 6-22-05
Method: Peristaltic
Monitor Reading (ppm): 0
Well Casing Diameter: 1/2 inch
Well Casing Material: PVC
Total Well Depth (ft): 33
Static Water Level (ft): 6.61
One Screen Volume(gal/L): <1 ~ .4 l
Start Purge (hrs): 1015
End Purge (hrs): 1055
Total Purge Time (min): 40
Total Vol. Purged (gal/L): 6

See Attached Low Flow Purge Data Sheet for Purge Data

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
TCL VOCs	HCl	3 x 40ml glass vials	Accutest	RS

OBSERVATIONS / NOTES

Background PID = 0
BZ PID= 0
BOREHOLE PID= 0

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #: 3122 / 3123

Check if Collected:

[ ] DUPLICATE
[X] MS/MSD

ID No.: ~~None~~ MO
CEF-59-018-033

Signature(s): RS

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120
WELL ID.: CEF-59-018-033
DATE: 6-22-05

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
1015	6.61	200	2							
1025	6.84	200	2	5.75	0.093	512	0.36	24.63	93.5	Yellow Silts in well
1035	6.85	200	2	5.73	0.092	305	0.37	25.53	87.2	
1045	6.63	100	5	5.67	0.092	295	0.21	25.95	75.6	
1055	6.63	100	6	5.64	0.090	288	0.16	25.49	76.3	
1100	Sample									

SIGNATURE(S): RD

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: **NAS Cecil Field, Site 59 RI**
Project No.: **N8925.SW0.050.120**
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: **CEF-59-018- 053 -RI**
Sample Location: **CEF-59-018-053**
Sampler: P. Levenette

SAMPLING DATA

	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
Date: 6/22/05								
Time: 1055								
Method: Peristaltic	CLEAR	5.23	0.118	12.4	0.18	25.26	-65.4	

PURGE DATA

Date: 6/22/05
Method: Peristaltic
Monitor Reading (ppm):
Well Casing Diameter: 1/2 inch
Well Casing Material: PVC
Total Well Depth (ft): 53
Static Water Level (ft): 6.50
One Screen Volume(gal/O) 0.75
Start Purge (hrs): 1021
End Purge (hrs): 1051
Total Purge Time (min): 30
Total Vol. Purged (gal/O): 4.0

See Attached Low Flow Purge Data Sheet for Purge Data

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
TCL VOCs	HCl	3 x 40ml glass vials	Accutest	✓

OBSERVATIONS / NOTES

Background PID =
BZ PID=
BOREHOLE PID=

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #: 3122/3123

Check if Collected:

[ ] DUPLICATE
[ ] MS/MSD

ID No.: None.

Signature(s):

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120
WELL ID.: CEF-59-018-053
DATE: 6/22/05

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
1021	6.50	200	—	—	—	—	—	—	—	Start Purge
1026	6.67	200	1.0	5.84	0.146	520	0.70	24.98	-13.6	
1031	6.67	200	2.0	5.57	0.137	186.2	0.35	25.02	-28.8	
1036	6.66	100	2.5	5.48	0.120	98.4	0.20	24.99	-39.7	
1041	6.66	100	3.0	5.43	0.129	31.6	0.20	25.17	-69.9	
1046	6.66	100	3.5	5.39	0.122	15.0	0.21	25.14	-87.3	
1051	6.66	100	4.0	5.23	0.118	12.4	0.18	25.26	-65.4	
	Sample Time 1055									

SIGNATURE(S):

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: **NAS Cecil Field, Site 59 RI**
Project No.: **N8925.SW0.050.120**
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: **CEF-59-018- 078 -RI**
Sample Location: **CEF-59-018-078**
Sampler: DS

SAMPLING DATA

	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
Date: 06-22-05								
Time: 1010								
Method: Peristaltic	Clear	6.24	0.122	12	0.22	26.33	1.6	

PURGE DATA

Date: 6-22-05
Method: Peristaltic
Monitor Reading (ppm): 0
Well Casing Diameter: 2 inch
Well Casing Material: PVC
Total Well Depth (ft): 78
Static Water Level (ft): 6.00
One Screen Volume(gal/L): 3.1
Start Purge (hrs): 0900
End Purge (hrs): 1010
Total Purge Time (min): 70
Total Vol. Purged (gal/L): 17

See Attached Low Flow Purge Data Sheet for Purge Data

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
TCL VOCs	HCl	3 x 40ml glass vials	Accutest	DS

OBSERVATIONS / NOTES

Background PID = 0
BZ PID= 0
BOREHOLE PID= 0

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #: 3122 / 3123

Check if Collected:
[ ] DUPLICATE
[ ] MS/MSD
ID No.: None.

Signature(s): DS

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120
WELL ID.: CEF-59-018-078
DATE: 6-22-05

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
0900	6.00	300								
0910	6.09	300	3	6.19	0.128	55.	0.54	24.76	3.7	
0920	6.09	300	6	6.24	0.127	29	0.44	24.96	3.4	
0930	6.09	300	9	6.25	0.126	21	0.32	24.86	5.9	
0940	6.09	300	12	6.21	0.124	17	0.19	24.92	9.2	
0950	6.09	300	15	6.23	0.123	14	0.13	24.84	3.7	
1000	6.01	100	16	6.20	0.123	13	0.26	25.74	4.4	
1010	6.01	100	17	6.24	0.122	12	0.22	26.33	1.6	
1010	Sample									

SIGNATURE(S): [signature]

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: **NAS Cecil Field, Site 59 RI**
Project No.: **N8925.SW0.050.120**
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: **CEF-59-018- 105 -RI**
Sample Location: **CEF-59-018-105**
Sampler: P. LEVERETTE

SAMPLING DATA

Date: 6/22/05	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
Time: 1015								
Method: Peristaltic	Cloudy	6.59	0.178	61.3	0.15	25.55	-151.3	

PURGE DATA

Date: 6/22/05	See Attached Low Flow Purge Data Sheet for Purge Data
Method: Peristaltic	
Monitor Reading (ppm):	
Well Casing Diameter: 2 inch	
Well Casing Material: PVC	
Total Well Depth (ft): 105	
Static Water Level (ft): 6.18	
One Screen Volume(gal): 3.1	
Start Purge (hrs): 0909	
End Purge (hrs): 1014	
Total Purge Time (min): 65	
Total Vol. Purged (gal): 15.5	

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
TCL VOCs	HCl	3 x 40ml glass vials	Accutest	✓

OBSERVATIONS / NOTES

Background PID =
BZ PID=
BOREHOLE PID=

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #: 3122 | 3123

Check if Collected:

[ ] DUPLICATE
[ ] MS/MSD

ID No.: None.

Signature(s):

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
WELL ID.: CEF-59-018-105
PROJECT NUMBER: N8925.SW0.050.120
DATE: 6/22/05

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
0909	6.18	400	—	—	—	—	—	—	—	START PURGE
0914	6.30	400	2.0	6.70	0.259	778	0.51	24.50	-104.5	
0919	6.30	400	4.0	6.76	0.244	382	0.31	24.44	-114.3	
0924	6.30	400	6.0	6.70	0.226	179	0.31	24.45	-88.7	
0929	6.30	400	8.0	6.68	0.220	106.6	0.37	24.30	-121.1	
0934	6.30	400	10.0	6.64	0.216	79.9	0.29	24.36	-107.9	
0939	6.30	400	12.0	6.62	0.210	67.1	0.26	24.70	-124.0	
0949	6.27	100	13.0	6.60	0.208	69.9	0.23	25.23	-78.1	
0959	6.27	100	14.0	6.60	0.199	61.2	0.18	25.48	-134.5	
1009	6.27	100	15.0	6.59	0.181	63.4	0.16	25.52	-156.0	
1014	6.27	100	15.5	6.59	0.178	61.3	0.15	25.55	-151.3	

SAMPLE TIME 1015

SIGNATURE(S): [signature]

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site:	NAS Cecil Field, Site 59 RI	Sample ID No.:	CEF-59-018- 105 -RI
Project No.:	N8925.SW0.050.120	Sample Location:	CEF-59-018-105
[X] Monitoring Well		Sampler:	P. LEVERETTE
[ ] Domestic Well			
[ ] Other:			

SAMPLING DATA

Date: 1/4/06	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
Time: 1613								
Method: Peristaltic	CLEAR	5.82	0.116	7.1	0.27	22.96	32.5	

PURGE DATA

Date: 1/4/06	See Attached Low Flow Purge Data Sheet for Purge Data
Method: Peristaltic	
Monitor Reading (ppm): 0	
Well Casing Diameter: 2 inch	
Well Casing Material: PVC	
Total Well Depth (ft): 105	
Static Water Level (ft): 4.55	
One Screen Volume(gal/L): 3.1	
Start Purge (hrs): 1546	
End Purge (hrs): 1611	
Total Purge Time (min): 25	
Total Vol. Purged (gal/L): 10.0	

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
MEE	HCl	3 x 40ml glass vials	Accutest	✓
Alkalinity	None	1 - 1 L Plastic	Accutest	✓
Chloride	None	1 - 1 L Plastic	Accutest	✓
Sulfate	None	1 - 1 L Plastic	Accutest	✓

OBSERVATIONS / NOTES

Background PID = 0
BZ PID= 0
BOREHOLE PID= 0

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811

COC #:

Check if Collected:

- [ ] DUPLICATE — ID No.: None.
- [ ] MS/MSD

Signature(s):

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120
WELL ID.: CEF-59-018-105
DATE: 1/4/06

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
1546	4.55	400	—	—	—	—	—	—	—	START PURGE
1556	4.73	400	4.0	5.83	0.119	22	0.44	23.10	29.1	
1601	4.73	400	6.0	5.83	0.118	13	0.32	23.03	30.6	
1606	4.73	400	8.0	5.81	0.117	8.8	0.29	22.98	32.1	
1611	4.73	400	10.0	5.82	0.116	7.1	0.27	22.96	32.5	
SAMPLE	TIME	1613								

SIGNATURE(S):

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Tetra Tech NUS, Inc.

Project Site Name: **NAS Cecil Field Site 59 RI**
Sample ID No.: **CEF-059-018- 105-RI**
Project No.: **N8925.SW0.50.120**
Sample Location: **CEF-059-018-105**
Sampled By: PL
Duplicate: ☐
Field Analyst: PL
Blank: ☐
Field Form Checked as per QA/QC Checklist (initials): ☐

SAMPLING DATA:

	Color (Visual)	pH (SU)	S.C. (mS/cm)	Turbidity (NTU)	DO (Meter, mg/l)	Temp. (^{0}C)	ORP (Eh) (+/- mv)
Date: 1/4/06							
Time: 1613							
Method: Peristaltic	CLEAR	5.82	0.116	7.1	0.27	22.96	32.5

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Dissolved Oxygen:
Equipment: Chemetrics K-7501 or K-7512
Range ☒ 0 - 1.0 mg/L ☐ 1 - 12 mg/L
Analysis Time: 1619
Concentration: 1.0 mg/L
Notes:

Sulfide (S^{2-}):
Equipment: DR-890
Program/Module: 93 / 610 nm
Analysis Time: 1623
Concentration: 0.05 mg/L
Notes:

Carbon Dioxide:
Equipment: (Range: 10 to 100 mg/L)
CHEMetrics K1910, K1920, or K1925.
Analysis Time: 1628
Concentration: 90 mg/L
Notes:

Ferrous Iron (Fe^{2+}):
Equipment: DR-890 IR-18C Color Wheel
Program/Module: 33 / 500nm
Analysis Time: 1632
Concentration: 1.08 mg/L
Filtered: ☐
Notes:

Hydrogen Sulfide (H_2S):
Equipment: HS-C
Exceeded 5.0 mg/L range on color chart: ☐
Analysis Time: 1635
Concentration: 0.0 mg/L
Notes:

QA/QC Checklist:
All data fields have been completed as necessary: ☐
Correct measurement units are cited in the SAMPLING DATA block: ☐
Multiplication is correct for each *Multiplier* table: ☐
Final concentration is within the appropriate *Range Used* block: ☐
QA/QC sample (e.g., Std. Additions, etc.) frequency is appropriate as per the project planning documents: ☐
Title block is initialized by person who performed the QA/QC Checklist: ☐

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: **NAS Cecil Field, Site 59 RI**
Project No.: **N8925.SW0.050.120**
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: **CEF-59-019- 032 -RI**
Sample Location: **CEF-59-019-032**
Sampler: P. LEVERETTE

SAMPLING DATA

	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
Date: 6/20/05								
Time: 1410								
Method: Peristaltic	Brn-Org.	4.86	0.047	547	0.42	26.37	-20.4	

PURGE DATA

Date: 6/20/05	See Attached Low Flow Purge Data Sheet for Purge Data
Method: Peristaltic	
Monitor Reading (ppm):	
Well Casing Diameter: 1/2 inch	
Well Casing Material: PVC	
Total Well Depth (ft): 32	
Static Water Level (ft): 5.79	
One Screen Volume(gal): 0.75	
Start Purge (hrs): 1347	
End Purge (hrs): 1407	
Total Purge Time (min): 30	
Total Vol. Purged (gal): 4.0	

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
TCL VOCs	HCl	3 x 40ml glass vials	Accutest	✓

OBSERVATIONS / NOTES

0.75
5
3.75 L = 5 VOLUMES
WENT 5 VOLUMES.

Background PID =
BZ PID=
BOREHOLE PID=

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #: 3/22/3/23

Check if Collected:

[ ] DUPLICATE
[ ] MS/MSD

ID No.: None.

Signature(s):

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120
WELL ID.: CEF-59-019-032
DATE: 6/20/05

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
1347	5.79	200	-	—	—	—	—	—	—	START PURGE
1352	5.93	200	1.0	4.93	0.049	1097	0.67	26.66	-21.3	
1357	5.94	200	2.0	4.84	0.047	753	0.51	26.62	-29.6	
1402	5.94	200	3.0	4.91	0.048	560	0.39	26.46	-36.5	
1407	5.94	200	4.0	4.86	0.047	547	0.42	26.37	-20.4	
	SAMPLE TIME		1410							

SIGNATURE(S):

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: **NAS Cecil Field, Site 59 RI**
Project No.: **N8925.SW0.050.120**
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: **CEF-59-019- 032 -RI**
Sample Location: **CEF-59-019-032**
Sampler: P. LeVerne

SAMPLING DATA

	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
Date: 1/4/06								
Time: 1302								
Method: Peristaltic	CLEAR	4.77	0.034	9.3	0.20	25.10	44.8	

PURGE DATA

Date: 1/4/06	See Attached Low Flow Purge Data Sheet for Purge Data
Method: Peristaltic	
Monitor Reading (ppm): 0	
Well Casing Diameter: ~~2~~ inch 3/4	
Well Casing Material: PVC	
Total Well Depth (ft): 32	
Static Water Level (ft): 5.61	
One Screen Volume(gal/L): 0.43	
Start Purge (hrs): 1235	
End Purge (hrs): 1300	
Total Purge Time (min): 25	
Total Vol. Purged (gal/L): 5.0	

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
MEE	HCl	3 x 40ml glass vials	Accutest	✓
Alkalinity	None	1 - 1 L Plastic	Accutest	✓
Chloride	None	1 - 1 L Plastic	Accutest	✓
Sulfate	None	1 - 1 L Plastic	Accutest	✓

OBSERVATIONS / NOTES

Background PID = 0
BZ PID= 0
BOREHOLE PID= 0

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811

COC #:

Check if Collected:

[ ] DUPLICATE
[ ] MS/MSD

ID No.: None.

Signature(s):

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120
WELL ID.: CEF-59-019-032
DATE: 1/4/06

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
1235	5.61	200	—	—	—	—	—	—	—	Start Purge
1240	5.80	200	1.0	5.05	0.038	100	0.60	24.57	41.5	
1245	5.80	200	2.0	4.91	0.034	29	0.30	24.99	46.8	
1250	5.80	200	3.0	4.81	0.034	21	0.34	25.07	45.0	
1255	5.80	200	4.0	4.78	0.034	14	0.23	25.04	44.4	
1300	5.80	200	5.0	4.77	0.034	9.3	0.20	25.10	44.8	
	Sample Time 1302									

SIGNATURE(S):

Tetra Tech NUS, Inc.

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Project Site Name: **NAS Cecil Field Site 59 RI**
Sample ID No.: **CEF-059-019- 032-RI**
Project No.: **N8925.SW0.50.120**
Sample Location: **CEF-059-019-032**
Sampled By: PC
Duplicate: ☐
Field Analyst: PC
Blank: ☐
Field Form Checked as per QA/QC Checklist (initials):

SAMPLING DATA:

Date: 1/4/06	Color	pH	S.C.	Turbidity	DO	Temp.	ORP (Eh)
Time: 1302	(Visual)	(SU)	(mS/cm)	(NTU)	(Meter, mg/l)	(°C)	(+/- mv)
Method: Peristaltic	CLEAR	4.77	0.034	9.3	0.20	25.10	44.8

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Dissolved Oxygen:
Equipment: Chemetrics K-7501 or K-7512
Range ☒ 0 - 1.0 mg/L ☒ 1 - 12 mg/L
Analysis Time: 1306
Concentration: 1.0 mg/L
Notes:

Sulfide (S^{2-}):
Equipment: DR-890
Program/Module: 93 / 610 nm
Analysis Time: 1316
Concentration: 0.02 mg/L
Notes:

Carbon Dioxide:
Equipment: (Range: 10 to 100 mg/L)
CHEMetrics K7910, K1920, or K1925.
Analysis Time: 1315
Concentration: 30 mg/L
Notes:

Ferrous Iron (Fe^{2+}):
Equipment: DR-890 IR-18C Color Wheel
Program/Module: 33 / 500nm
Analysis Time: 1317
Concentration: 0.41 mg/L
Filtered: ☐
Notes:

Hydrogen Sulfide (H_2S):
Equipment: HS-C
Exceeded 5.0 mg/L range on color chart: ☐
Analysis Time: 1320
Concentration: 0.3 mg/L
Notes:

QA/QC Checklist:
All data fields have been completed as necessary: ☐
Correct measurement units are cited in the SAMPLING DATA block: ☐
Multiplication is correct for each *Multiplier* table: ☐
Final concentration is within the appropriate *Range Used* block: ☐
QA/QC sample (e.g., Std. Additions, etc.) frequency is appropriate as per the project planning documents: ☐
Title block is initialized by person who performed the QA/QC Checklist: ☐

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: **NAS Cecil Field, Site 59 RI**
Project No.: **N8925.SW0.050.120**
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: **CEF-59-019- 051 -RI**
Sample Location: **CEF-59-019-051**
Sampler: DS

SAMPLING DATA

	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
Date: 6-20-05 Time: 1450								
Method: Peristaltic	LI. TAN	5.70	0.068	854	0.52	26.36	44.2	

PURGE DATA

Date: 6.20.05	See Attached Low Flow Purge Data Sheet for Purge Data
Method: Peristaltic	
Monitor Reading (ppm): 0	
Well Casing Diameter: ~~1~~/2 inch	
Well Casing Material: PVC	
Total Well Depth (ft): 51	
Static Water Level (ft): 5.53	
One Screen Volume(gal/L):	
Start Purge (hrs): 1410	
End Purge (hrs): 1450	
Total Purge Time (min): 40	
Total Vol. Purged (gal/L): 6	

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
TCL VOCs	HCl	3 x 40ml glass vials	Accutest	DS

OBSERVATIONS / NOTES

Background PID = 0
BZ PID= 0
BOREHOLE PID= 0

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #: 3122/3123

Check if Collected:

[ ] DUPLICATE
[ ] MS/MSD

ID No.: None.

Signature(s):

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120
WELL ID.: CEF-59-020-053
DATE: 6.20.05

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
1410	5.53	200								
1420	5.69	200	2	5.84	0.082	+999	0.22	26.43	51.4	Brown silts
1430	5.69	200	2	5.76	0.075	+999	0.34	26.26	53.4	"
1440	5.58	100	1	5.73	0.071	+999	0.49	26.43	45.7	
1450	5.56	100	1	5.70	0.068	854	0.52	26.36	44.2	
1450	SAMPLE									

SIGNATURE(S): RO

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: **NAS Cecil Field, Site 59 RI**
Project No.: **N8925.SW0.050.120**
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: **CEF-59-019- 078 -RI**
Sample Location: **CEF-59-019-078**
Sampler: D. LEVERETTE

SAMPLING DATA

Date: 6/20/05	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
Time: 1555								
Method: Peristaltic	Lt. Brn	5.69	0.097	181	0.14	26.44	-118.9	

PURGE DATA

Date: 6/20/05	See Attached Low Flow Purge Data Sheet for Purge Data
Method: Peristaltic	
Monitor Reading (ppm):	
Well Casing Diameter: 2 inch	
Well Casing Material: PVC	
Total Well Depth (ft): 78	
Static Water Level (ft): 5.45	
One Screen Volume(gal): 3.1	
Start Purge (hrs): 1436	
End Purge (hrs): 1551	
Total Purge Time (min): 75	
Total Vol. Purged (gal): 15.5	

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
TCL VOCs	HCl	3 x 40ml glass vials	Accutest	✓

OBSERVATIONS / NOTES

PURGED 5 VOLUMES

Background PID =
BZ PID=
BOREHOLE PID=

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #: 3122 / 3123

Check if Collected:

☐ DUPLICATE
☐ MS/MSD

ID No.: None.

Signature(s):

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
WELL ID.: CEF-59-019-078
PROJECT NUMBER: N8925.SW0.050.120
DATE:

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
1436	5.45	400	—	—	—	—	—	—	—	Start Purge
1446	5.51	400	4.0	~~26.61~~ 5.78	0.126	608	0.40	26.61	-121.9	
1456	5.52	400	8.0	5.71	0.110	413	0.29	26.18	-119.7	
1506	5.51	200	10.0	5.68	0.098	315	0.18	26.49	-134.7	
1516	5.51	200	12.0	5.66	0.093	258	0.15	26.33	-121.6	
1526	5.50	100	13.0	5.71	0.098	222	0.14	26.79	-106.6	
1536	5.50	100	14.0	5.72	0.094	183	0.23	26.47	-110.4	
1546	5.50	100	15.0	5.68	0.096	183	0.14	26.45	-116.0	
1551	5.50	100	15.5	5.69	0.097	181	0.14	26.44	-118.9	

Sample Time 1555

SIGNATURE(S):

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site:	NAS Cecil Field, Site 59 RI	Sample ID No.:	CEF-59-019- 106 -RI
Project No.:	N8925.SW0.050.120	Sample Location:	CEF-59-019-106
[X] Monitoring Well		Sampler:	DS
[ ] Domestic Well			
[ ] Other:			

SAMPLING DATA

Date: 6-20-05	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
Time: 1615								
Method: Peristaltic	Clear	6.91	0.331	9.21	0.78	27.99	-74.1	

PURGE DATA

Date: 6.20.05	See Attached Low Flow Purge Data Sheet for Purge Data
Method: Peristaltic	
Monitor Reading (ppm): 0	
Well Casing Diameter: 2 inch	
Well Casing Material: PVC	
Total Well Depth (ft): 106	
Static Water Level (ft): 5.62	
One Screen Volume(gal/L): 3.1	
Start Purge (hrs): 1505	
End Purge (hrs): 1615	
Total Purge Time (min): 70	
Total Vol. Purged (gal/L): 15.5	

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
TCL VOCs	HCl	3 x 40ml glass vials	Accutest	DS

OBSERVATIONS / NOTES

Background PID = 0
BZ PID= 0
BOREHOLE PID= 0

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811

COC #: 3122/3123

Check if Collected:

- [ ] DUPLICATE — ID No.: None.
- [ ] MS/MSD

Signature(s): [signature]

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120
WELL ID.: CEF-59-019-106
DATE: 6.20.05

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
1505	5.62	350								
1515	5.88	350	3.5	6.90	0.321	26.7	0.66	26.76	-74.3	Very Clear
1525	5.89	350	7	6.88	0.326	36.9	0.63	26.72	-76.0	
1535	5.89	350	9	6.84	0.328	30.2	0.61	26.79	-66.0	
1545	5.89	350	12.5	6.82	0.327	25.2	0.62	27.02	-68.2	
1555	5.63	~~350~~ 100	13	6.86	0.330	26.1	0.48	26.86	-72.3	
1605	5.63	100	14	6.89	0.331	9.36	0.72	28.09	-74.0	
1615	5.63	100	15	6.91	0.331	9.21	0.78	27.99	-74.1	
1615	Sample									

SIGNATURE(S):

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: NAS Cecil Field, Site 59 RI
Project No.: N8925.SW0.050.120
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: CEF-59-020- ~~078~~ 033 -RI
Sample Location: CEF-59-020-~~078~~ 033
Sampler: P. Levere[redacted]

SAMPLING DATA

	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
Date: 6/21/05 Time: 1055 Method: Peristaltic	Brown	5.16	0.093	>1000	0.12	26.64	-106.2	

PURGE DATA

Date: 6/21/05	See Attached Low Flow Purge Data Sheet for Purge Data
Method: Peristaltic	
Monitor Reading (ppm):	
Well Casing Diameter: 1/2 inch	
Well Casing Material: PVC	
Total Well Depth (ft): ~~78~~ 033	
Static Water Level (ft): 7.19	
One Screen Volume(gal/L): 3.1	
Start Purge (hrs): 1016	
End Purge (hrs): 1051	
Total Purge Time (min): 45	
Total Vol. Purged (gal/L): 4.0	

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
TCL VOCs	HCl	3 x 40ml glass vials	Accutest	✓

OBSERVATIONS / NOTES

Went 5 volumes due to turbidity

Background PID =
BZ PID=
BOREHOLE PID=

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #: 3122/3123

Check if Collected:

[ ] DUPLICATE
[ ] MS/MSD

ID No.: None.

Signature(s):

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120
WELL ID.: CEF-59-020-~~078~~ 033
DATE: 6/21/05

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
1016	7.19	200	—	—	—	—	—	—	—	START PURGE
1021	7.35	200	~~1.0~~	5.31	0.102	>1000	0.62	26.04	-86.7	
1026	7.33	100	~~2~~.5	5.27	0.096	>1000	0.33	26.18	-103.9	
1031	7.33	100	~~3.0~~ 2.0	5.26	0.103	>1000	0.24	26.31	-114.6	
1036	7.33	100	~~3~~.5	5.21	0.101	>1000	0.33	26.60	-117.4	
1041	7.33	100	~~4.0~~ 3.0	5.19	0.101	>1000	0.25	26.63	-117.1	
1046	7.33	100	3.5	5.15	0.096	>1000	0.16	26.53	-115.7	
1051	7.33	100	4.0	5.16	0.093	>1000	0.12	26.64	-106.2	

SAMPLE TIME 1055

SIGNATURE(S):

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: **NAS Cecil Field, Site 59 RI**
Project No.: **N8925.SW0.050.120**
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: **CEF-59-020-** ~~033~~ 053 **-RI**
Sample Location: **CEF-59-020-**~~033~~053
Sampler: DS

SAMPLING DATA

	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
Date: 06-21-05 Time: 1050 Method: Peristaltic	Clear	5.44	0.061	34	0.26	26.14	60.7	

PURGE DATA

Date: 6-21-05	
Method: Peristaltic	
Monitor Reading (ppm): 0	
Well Casing Diameter: ~~1~~ 2 inch	See Attached Low Flow Purge Data Sheet for Purge Data
Well Casing Material: PVC	
Total Well Depth (ft): ~~83~~ 53	
Static Water Level (ft): 7.16	
One Screen Volume(gal/L): ~~3.4~~ <1	0.02 x 5 x 3.78 = ~.4 l
Start Purge (hrs): 1010	
End Purge (hrs): 1050	
Total Purge Time (min): 40	
Total Vol. Purged (gal/L): 8	

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
TCL VOCs	HCl	3 x 40ml glass vials	Accutest	DS

OBSERVATIONS / NOTES

Background PID = 0
BZ PID= 0
BOREHOLE PID= 0

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #: 3122/3123

Check if Collected:
☐ DUPLICATE
☐ MS/MSD
ID No.: None.

Signature(s):

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120

WELL ID.: CEF-59-020-~~033~~ 053
DATE: 6-21-05

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
1010	7.16	200								
1020	7.28	200	2	5.82	0.089	174	0.38	26.49	28.7	Yellow silty color
1030	7.28	200	2	5.68	0.074	66	0.18	26.39	43.2	"
1040	7.28	200	2	5.54	0.068	46	0.20	26.32	55.3	
1050	7.28	200	2	5.44	0.061	34	0.26	26.14	60.7	
1050	sample									

SIGNATURE(S):

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: **NAS Cecil Field, Site 59 RI**
Project No.: **N8925.SW0.050.120**
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: CEF-59-020- ~~053~~ 078 -RI
Sample Location: CEF-59-020-~~053~~ 078
Sampler: P. Levenette

SAMPLING DATA

	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
Date: 6/21/05 Time: 1410 Method: Peristaltic	Clear	5.61	0.133	32.1	0.37	27.22	-58.6	

PURGE DATA

Date: 6/21/05
Method: Peristaltic
Monitor Reading (ppm):
Well Casing Diameter: 2 inch
Well Casing Material: PVC
Total Well Depth (ft): ~~53~~ 78
Static Water Level (ft): 7.48
One Screen Volume(gal/L): 3.1
Start Purge (hrs): 1244
End Purge (hrs): 1409
Total Purge Time (min): 85
Total Vol. Purged (gal/L): 15.5

See Attached Low Flow Purge Data Sheet for Purge Data

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
TCL VOCs	HCl	3 x 40ml glass vials	Accutest	✓

OBSERVATIONS / NOTES

Background PID =
BZ PID=
BOREHOLE PID=

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #: 3122/3123

Check if Collected:

[ ] DUPLICATE
[ ] MS/MSD

ID No.: None.

Signature(s):

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120

WELL ID.: CEF-59-020-~~053~~ 078
DATE: 6/21/05

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
1244	7.48	400	—	—	—	—	—	—	—	START PURGE
1249	7.55	400	2.0	6.18	0.246	207	2.03	26.74	60.8	
1254	7.55	400	4.0	6.03	0.230	151	1.67	26.52	25.6	
1259	7.55	400	6.0	5.89	0.205	129	1.11	26.35	-10.5	
1304	7.55	400	8.0	5.83	0.197	101.1	0.73	26.44	-20.8	
1309	7.55	400	10.0	5.76	0.173	83.6	0.53	26.52	-24.7	
1319	7.53	100	11.0	5.68	0.156	68.3	0.44	26.57	-27.2	
1329	7.53	100	12.0	5.66	0.152	55.9	0.40	26.60	-34.4	
1339	7.53	100	13.0	5.61	0.144	51.0	0.42	27.70	-44.8	
1349	7.53	100	14.0	5.61	0.135	43.6	0.41	27.36	-49.2	
1359	7.53	100	15.0	5.60	0.132	37.3	0.41	27.21	-53.9	
1409	7.53	100	15.5	5.61	0.133	32.1	0.37	27.22	-58.6	

SAMPLE TIME 1410

SIGNATURE(S): [signature]

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project / Site: **NAS Cecil Field, Site 59 RI**
Project No.: **N8925.SW0.050.120**
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: **CEF-59-020- 099 -RI**
Sample Location: **CEF-59-020-099**
Sampler: RS

SAMPLING DATA

	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
Date: 6-21-05								
Time: 1355								
Method: Peristaltic	Clear							

PURGE DATA

Date: 6-21-05
Method: Peristaltic
Monitor Reading (ppm): 0
Well Casing Diameter: 2 inch
Well Casing Material: PVC
Total Well Depth (ft): 99
Static Water Level (ft): 7.37
One Screen Volume(gal/L): 3.1
Start Purge (hrs): 1240
End Purge (hrs): 1355
Total Purge Time (min): 75
Total Vol. Purged (gal/L): 15.5

See Attached Low Flow Purge Data Sheet for Purge Data

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
TCL VOCs	HCl	3 x 40ml glass vials	Accutest	DS

OBSERVATIONS / NOTES

Background PID = 0
BZ PID= 0
BOREHOLE PID= 0

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #: 3122/3123

Check if Collected:

[ ] DUPLICATE
[ ] MS/MSD

ID No.: None.

Signature(s): DS

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120
WELL ID.: CEF-59-020-099
DATE:

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
1240	7.37									Lots of Sand in well
1250	7.48	300	3	7.16	0.360	36	0.359	26.28	-72.6	
1300	7.47	300	6	6.96	0.347	24	0.26	26.60	-71.4	
1310	7.47	300	9	6.94	0.350	21	0.19	26.68	-72.5	
1320	7.40	300	12	6.94	0.353	28	0.15	26.63	-78.4	
1330	7.39	100	13	7.00	0.354	26	0.16	27.10	-83.7	
1340	7.39	100	14	7.01	0.357	24	0.18	27.70	-87.0	
1350	7.39	100	15	7.00	0.352	20	0.16	27.53	-86.1	
1355	7.	100	15.5	7.00	0.353	20	0.17	27.61	-86.7	

SIGNATURE(S):

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project / Site: NAS Cecil Field, Site 59 RI
Project No.: N8925.SW0.050.120
[X] Monitoring Well
[ ] Domestic Well
[ ] Other:

Sample ID No.: NG-02I -RI
Sample Location: NG-02I
Sampler: Gus Nelson

SAMPLING DATA

	Color	pH S.U.	S.C. mS/cm	Turbidity NTU	DO mg/L	Temp. °C	ORP mV	
Date: 11/15/04 Time: 14:55 Method: Low Flow Peristaltic	Clear	4.62	0.077	4.4	1.32	24.06	156.7	

PURGE DATA

Date: 11/15/04
Method: Low Flow Peristaltic
Monitor Reading (ppm): 0.0
Well Casing Diameter: 2 inch
Well Casing Material: PVC
Total Well Depth (ft): 38
Static Water Level (ft): 6.12
One Screen Volume(gal/L): 6.2
Start Purge (hrs): 14:00
End Purge (hrs): 14:55
Total Purge Time (min): 55 min
Total Vol. Purged (gal/L): 10 L

See Attached Low Flow Purge Data Sheet for Purge Data

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Laboratory	Collected
TCL VOCs	HCl	3 x 40ml glass vials	Accutest	✓

OBSERVATIONS / NOTES

Background PID = 0.0
BZ PID= 0.0
BOREHOLE PID= 0.0

LAB INFO

LAB: Accutest
4405 Vineland Rd., C-15
Orlando, FL 32811
COC #: 359-3

Check if Collected:
[ ] DUPLICATE
[ ] MS/MSD
ID No.:

Signature(s):

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, Site 59 RI
PROJECT NUMBER: N8925.SW0.050.120
WELL ID.: NG-02I
DATE: 11/15/04

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
14:00	6.12	200mL								
14:05	6.12	200mL	1L	4.47	0.081	75	1.87	24.24	176.6	
14:10	6.12	200mL	2L	4.56	0.072	45	1.71	24.20	166.8	
14:15	6.12	200mL	3L	4.56	0.079	35	1.70	24.19	166.5	
14:20	6.12	200mL	4L	4.57	0.079	29	1.71	24.17	165.6	
14:25	6.12	200mL	5L	4.57	0.078	27	1.69	24.17	165.9	
14:30	6.12	200mL	6L	4.60	0.078	17	1.71	24.18	162.7	
14:35	6.12	200mL	7L	4.60	0.077	11	2.62	24.10	161.5	METER moved
14:40	6.12	200mL	8L	4.58	0.077	7.0	1.48	24.11	162.9	
14:45	6.12	200mL	9L	4.60	0.077	5.6	1.39	24.08	159.0	
14:50	6.12	200mL	10L	4.62	0.077	4.4	1.32	24.06	156.7	

Sampled 14:55

SIGNATURE(S):

A.2 CHAIN OF CUSTODY RECORDS

TETRA TECH NUS, INC. CHAIN OF CUSTODY NUMBER 359-1 PAGE 1 OF

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
N8925 CT0359	SITE 59 NASCF	MARK SPERANZA	412 921 8916	ACCUTEST H. WANDREY
SAMPLERS (SIGNATURE)		FIELD OPERATIONS LEADER	PHONE NUMBER	ADDRESS
DRC		MERV DALE	904 636 6125	4405 Vineland Rd., C-15
		CARRIER/WAYBILL NUMBER		CITY, STATE
		Courier		ORLANDO, FL 32811

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2004	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAP (G) COMP (C)	No. OF CONTAINERS	TCL VOCs	M.E.E.	ALKALINITY	Select ions	TOC	Dissolved Fe	Dissolved Sulfide	COMMENTS
CONTAINER TYPE PLASTIC (P) or GLASS (G)									G	G	P	P	G	P	P	
PRESERVATIVE USED									HCL	HCL	NITIC	NITIC	H_2SO_4	HNO_3	NaOH ZnAc	
TYPE OF ANALYSIS																
11/11	1030	CEF.59.001.053.RI				GW	G	3	✓							Cool to 4°C
11/11	1035	CEF.59.001.121.RI				GW	G	3	✓							
11/11	1045	CEF-59.003.121.RI				GW	G	8	✓	✓	✓	✓	✓			Work Release
11/11	1045	CEF.59.003.121.RI.F				GW	G	4						✓	✓	N8925-WR 480(SS)
11/11	1140	CEF.59.001.028.RI				GW	G	8	✓	✓	✓	✓	✓			
11/11	1140 MD	CEF.59.001.028.RI.F				GW	G	4						✓	✓	* See Attached
11/11	1200	CEF.59.001.083.RI				GW	G	8	✓	✓	✓	✓	✓			Table 1 & 2 for
11/11	1200	CEF.59.001.083.RI.F				GW	G	4						✓	✓	a list of analytes
11/11	1145	CEF.59.003.035.RI				GW	G	3	✓							and methods.

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY	11/11/04	1409	1. RECEIVED BY	11-11-04	14:09
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

TETRA TECH NUS, INC.

CHAIN OF CUSTODY

NUMBER 359-2

PROJECT NO: N8925 CTO 359	FACILITY: SITE 59, NASCF	PROJECT MANAGER: MARK SPERANZA	PHONE NUMBER: 412 921 8916	LABORATORY NAME AND CONTACT: ACCUTEST H. WANDREY
SAMPLERS (SIGNATURE): [illegible]		FIELD OPERATIONS LEADER: MERV DALE	PHONE NUMBER: 904 636 6125	ADDRESS: 4405 Vineland Rd., O-15
		CARRIER/WAYBILL NUMBER: Courier		CITY, STATE: ORLANDO, FL 32811

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2004	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	TCL VOCs	M.E.E.	Alkalinity	Select Ions	TOC	Dissolved Fe	Dissolved Sulfide	COMMENTS
CONTAINER TYPE PLASTIC (P) or GLASS (G)									G	G	P	P	G	P	P	
PRESERVATIVE USED									HCl	HCl	None	None	H_2SO_4	HNO_3	NaOH ZNAC	
TYPE OF ANALYSIS									*	*	*	*	*	*	*	
11/11	1515	CEF-59-002-053-RI				GW	G	3	✓							Cool to 4°C
11/11	1550	CEF-59-002-120-RI				GW	G	8	✓	✓	✓	✓	✓			
11/11	1550	CEF-59-002-120-RI-F				GW	G	4						✓	✓	WORK Release
11/11	1600	CEF-59-009-113-RI				GW	G	3	✓							N8925-WR 480 (5'S)
11/11	1650	CEF-59-008-028-RI				GW	G	3	✓							
11/11	1705	CEF-59-009-083-RI				GW	G	3	✓							See attached
11/11	0000	CEF-59-DU04-RI				GW	G	3	✓							Table 1 & 2 for
11/12	0950	CEF-59-016-053-RI				GW	G	3	✓							a list of Analytes
11/12	1015	CEF-59-016-117-RI				GW	G	3	✓							and methods.
11/12	1030	CEF-59-016-083-RI				GW	G	3	✓							

1. RELINQUISHED BY [illegible]	DATE 11/12/04	TIME 1420	1. RECEIVED BY [illegible]	DATE 11/12/04	TIME 15:20
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

A TECH NUS, INC. CHAIN OF CUSTODY NUMBER 359-3 PAGE 1 OF ____

PROJECT NO: N8925, CTO 359	FACILITY: SITE 59, NASCF	PROJECT MANAGER: MARK SPERANZA	PHONE NUMBER: 412 921 8916
LABORATORY NAME AND CONTACT: ACCUTEST H. WANDREY	SAMPLERS (SIGNATURE): [signature]	FIELD OPERATIONS LEADER: MERV DALE	PHONE NUMBER: 904 636 6125
ADDRESS: 4405 VINELAND RD., C-15	CARRIER/WAYBILL NUMBER: COURIER	CITY, STATE: ORLANDO, FL 32811	

STANDARD TAT ☒
RUSH TAT ☐ ☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

CONTAINER TYPE PLASTIC (P) or GLASS (G): G
PRESERVATIVE USED: HCL

DATE YEAR 2004	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAP (G) COMP (C)	NO. OF CONTAINERS	TYPE OF ANALYSIS: TCL VOCs *	COMMENTS
11/12	1335	CEF-59-010-053-RI				GW	G	9**	✓	Cool to 4°C
11/12	1410	CEF-59-010-083-RI				GW	G	3	✓	
11/15	0925	CEF-59-014-053-RI				GW	G	3	✓	Work Release
11/15	1010	CEF-59-014-120-RI				GW	G	3	✓	N8925-WR 480(55)
11/15	1050	CEF-59-014-083-RI				GW	G	3	✓	
11/15	1305	CEF-59-013-032-RI				GW	G	3	✓	* See Attached
11/15	1345	CEF-59-013-083-RI				GW	G	3	✓	Tables 1&2 for
11/15	1400	CEF-59-013-053-RI				GW	G	3	✓	list of analytes
11/15	1455	NG-021-RI				GW	G	3	✓	and methods.
11/15	1600	CEF-59-011-033-RI				GW	G	3	✓	
11/15	1625	CEF-59-011-083-RI				GW	G	3	✓	** Use extra
11/15	1655	CEF-59-011-053-RI				GW	G	9**	✓	Volume for Lab
										MS/MSD.

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY: [signature]	11/16/04	1630	1. RECEIVED BY: [signature]	11/16/04	16:30
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

TETRA TECH NUS, INC.

CHAIN OF CUSTODY

NUMBER 359-4

PAGE 1 OF 1

PROJECT NO: N8925 CTO 359	FACILITY: SITE 59, NASCF	PROJECT MANAGER: MARK SPERANZA	PHONE NUMBER: 412 921 8916	LABORATORY NAME AND CONTACT: ACCUTEST H. WANFREY
SAMPLERS (SIGNATURE): Marvin W. Dale FOR GW/CG		FIELD OPERATIONS LEADER: MERV DALE	PHONE NUMBER: 904 636 6125	ADDRESS: 4405 Vineland Rd. C-15
		CARRIER/WAYBILL NUMBER: Courier		CITY, STATE: ORLANDO, FL 32811

STANDARD TAT [X]
RUSH TAT [ ]
[ ] 24 hr. [ ] 48 hr. [ ] 72 hr. [ ] 7 day [ ] 14 day

DATE (YEAR 2004)	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAP (G) COMP (C)	No. OF CONTAINERS	TCL VOCs	M.E.E. RSK SOP 147/175	Alkalinity & Select. *	TOC	Dissolved Iron *	Dissolved Sulfide *			COMMENTS
CONTAINER TYPE PLASTIC (P) or GLASS (G)									G	G	P	G	P	P			
PRESERVATIVE USED									HCL	HCL	None	H_2SO_4	HNO_3	NaOH ZnAc			
11/16	1015	CEF-59-004-053-RI				GW	G	8	✓	✓	✓	✓					Cool to 4°C
11/16	1015	CEF.59.004.053.RI.F				GW	G	4					✓	✓			
11/16	1015	CEF.59.004.112.RI				GW	G	3	✓								Work Release
11/16	1115	CEF.59.004.073.RI				GW	G	8	✓	✓	✓	✓					N8925 WR 480(5'5")
11/16	1115	CEF.59.004.073.RI.F				GW	G	4					✓	✓			
11/16	0000	CEF.59.DU01.RI				GW	G	8	✓	✓	✓	✓					*See Attached
11/16	0000	CEF.59.DU01.RI.F				GW	G	4					✓	✓			Tables 1 & 2 for
																	List of Analytes
																	and methods.

1. RELINQUISHED BY: Marvin W. Dale	DATE: 11/16/04	TIME: 1630	1. RECEIVED BY: [signature]	DATE: 11/16/04	TIME: 16:30
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTI WHITE (ACCOMPANIES SAMPLE) YELLOW (FIE. OPY) PINK (FILE COPY)

4/02R

FORM NO. TtNUS-001

TT A TECH NUS, INC. CHAIN OF CUSTODY NUMBER 359-5 PAGE 1 OF

PROJECT NO: N8923, CTO359	FACILITY: SITE 59, CECIL	PROJECT MANAGER: MARK SKERANZA	PHONE NUMBER: 412 921 8916	LABORATORY NAME AND CONTACT: MICROBIAL INSIGHTS Jeannie
SAMPLERS (SIGNATURE): [signature]		FIELD OPERATIONS LEADER: MERVIN W. DALE	PHONE NUMBER: 904 636 6125	ADDRESS: 2340 STOCK CREEK Blvd.
		CARRIER/WAYBILL NUMBER: Fedex 8410 3239 9262		CITY, STATE: ROCKFORD, TN 37853

STANDARD TAT ☒
RUSH TAT ☐ ☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

CONTAINER TYPE PLASTIC (P) or GLASS (G): P

PRESERVATIVE USED: None

TYPE OF ANALYSIS: Dhc *

DATE YEAR 2004	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAP (G) COMP (C)	No. OF CONTAINERS	Dhc *	COMMENTS
11/16	1115	CEF.59.004.073.RI				GW	G	1	✓	Cool to 4°C
11/16	1520	CEF.59.002.028.RI				GW	G	1	✓	
11/16	1545	~~CEF 59~~ NG-12I-RI				GW	G	1	✓	*See attached
11/16	1710	CEF-59-003-053-RI				GW	G	1	✓	Table 1 for
										list of Analytes
										and methods.

1. RELINQUISHED BY [signature]	DATE 16 NOV 04	TIME 1730	1. RECEIVED BY Fedex	DATE 11/16/04	TIME
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

TETRA TECH NUS, INC.

CHAIN OF CUSTODY

NUMBER 359-6

PROJECT NO: N8925, CTO359	FACILITY: SITE 59, NASCF	PROJECT MANAGER: MARK SPERANZA	PHONE NUMBER: 412 921 8916
LABORATORY NAME AND CONTACT: ACCUTEST H. WANDREY			
SAMPLERS (SIGNATURE)	FIELD OPERATIONS LEADER: MERV DALE	PHONE NUMBER: 904/636 6125	ADDRESS: 4405 Vineland Rd. C-15
	CARRIER/WAYBILL NUMBER: Courier		CITY, STATE: ORLANDO, FL 32811

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2004	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	TCL VOCs	M.E.E. RSK SOPs	ALKALINITY/SELECT IONS	TOC	TCL SVOCs	PCBs	Dissolved Sulfide	DISSOLVED Fe	TAL METALS	COMMENTS
CONTAINER TYPE PLASTIC (P) or GLASS (G)									G	G	P	G	G	G	P	P		
PRESERVATIVE USED									HCl	HCl	None	H_2SO_4	None	None	NaOH ZnAc	HNO_3		
TYPE OF ANALYSIS									*	*	*	*	*	*	*	*		
11/16	1445	CEF.59.006.104.RI				GW	G	3	✓									Cool to 4°C
11/16	1515	~~CEF 59~~ MD NG.12D.RI				GW	G	8	✓	✓	✓	✓						
11/16	1515	NG.12D.RI-F				GW	G	4							✓	✓		Work Release
11/16	1520	CEF.59.002.028.RI				GW	G	12	✓	✓	✓	✓	✓	✓			✓	N8925-WR480(SS)
11/16	1520	CEF.59.002.028.RI.F				GW	G	4							✓	✓		
11/16	1545	NG-12I-RI				GW	G	3	✓									* See attached
11/16	1710	CEF.59.003.053.RI				GW	G	8	✓	✓	✓	✓						Tables 1 & 2 for
11/16	1710	CEF.59.003.053.RI.F				GW	G	4							✓	✓		list of analytes
11/16	1725	CEF.59.015.028.RI				GW	G	3	✓									and methods.
11/16	0000	CEF.59.D103.RI				GW	G	3	✓									

1. RELINQUISHED BY: William N Dale	DATE: 11/17/04	TIME: 1130	1. RECEIVED BY: L. Vert	DATE: 11/17/04	TIME: 12:30
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

A TECH NUS, INC. CHAIN OF CUSTODY NUMBER 359-7 PAGE 1 OF 1

PROJECT NO: N8925, CT0359	FACILITY: SITE 59	PROJECT MANAGER: MARK SPERANZA	PHONE NUMBER: 412 921 8916	LABORATORY NAME AND CONTACT: ACCUTEST A. WANDREY
SAMPLERS (SIGNATURE)		FIELD OPERATIONS LEADER: MERV DALE	PHONE NUMBER: 904 6366125	ADDRESS: 4405 Vineland Rd., C-15
		CARRIER/WAYBILL NUMBER: Courier		CITY, STATE: ORLANDO, FL 32811

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

CONTAINER TYPE PLASTIC (P) or GLASS (G): G G P P G P P

PRESERVATIVE USED: HCl HCl None None H_2SO_4 HNO_3 NaOH ZnAc

DATE YEAR 2004	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	TCL VOCs	M.E.E. RSKSOPs	Alkalinity	Select Ions	TOC	Dissolved Fe	Dissolved Sulfide	COMMENTS
11/17	0905	CEF.59.003.073.RI				GW	G	3	✓							Cool to 4°C
11/17	0915	CEF.59.005.053.RI				GW	G	8	✓	✓	✓	✓	✓			
11/17	0915	CEF.59.005.053.RI.F				GW	G	4						✓	✓	WORK Release
11/17	0930	CEF.59.005.073.RI				GW	G	3	✓							N8925-WR480 (SS)
11/17	1030	CEF.59.005.033.RI				GW	G	3	✓							
11/17	1110	CEF.59.009.053.RI				GW	G	3	✓							*See attached
~~11/17~~	~~0000~~	~~CEF.59.DU02~~														Tables 1 & 2 for
11/17	0000	CEF.59.DU02.RI				GW	G	8	✓	✓	✓	✓	✓			list of analytes
11/17	0000	CEF.59.DU02.RI.F				GW	G	4						✓	✓	& methods!

1. RELINQUISHED BY: Merv Dale	DATE 11/17/04	TIME 1230	1. RECEIVED BY: M. Vel	DATE 11/17/04	TIME 12:30
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

TETRA TECH NUS, INC. CHAIN OF CUSTODY | NUMBER 59-021505 | PAGE 1 OF 1

PROJECT NO: N8975 CTO359	FACILITY: SITE 59, NASCF	PROJECT MANAGER MARK SPERANZA	PHONE NUMBER 412 921 8916	LABORATORY NAME AND CONTACT: ACCUTEST H. WANDREY
SAMPLERS (SIGNATURE)		FIELD OPERATIONS LEADER MERV DALE	PHONE NUMBER 904 636 6125	ADDRESS 4405 Vineland Rd. C-15
		CARRIER/WAYBILL NUMBER Fedex 8427 1834 9546		CITY, STATE ORLANDO, FL 32811

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

CONTAINER TYPE PLASTIC (P) or GLASS (G): G
PRESERVATIVE USED: HCL

DATE YEAR 2005	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAP (G) COMP (C)	No. OF CONTAINERS	TYPE OF ANALYSIS: 8260B VOCs								COMMENTS
2/17	1550	CEF-59-004-112-RIA				GW	G	3	✓								Cool to 4°C
2/17	1555	CEF-59-004-053-RIA				GW	G	3	✓								
																	Work Release 100/204

1. RELINQUISHED BY Merv W. Dale	DATE 2/18/05	TIME 1705	1. RECEIVED BY Fedex	DATE 2/18/05	TIME —
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

TETRA TECH NUS, INC.

CHAIN OF CUSTODY

NUMBER 59-022505

PAGE 1 OF 1

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
N8925, CTO 359	SITE 59, NASCF	MARK SPERANZA	412 921 8916	ACCUTEST H. WANARCY

SAMPLERS (SIGNATURE)	FIELD OPERATIONS LEADER	PHONE NUMBER	ADDRESS
	MERV Dale	904 636 6125	4405 Vineland Rd. C-15
	CARRIER/WAYBILL NUMBER		CITY, STATE
	Fedex		ORLANDO, FL 32811

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

CONTAINER TYPE PLASTIC (P) or GLASS (G): G

PRESERVATIVE USED: HCL

TYPE OF ANALYSIS: TCL VOCs 8260B

DATE YEAR 2005	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAP (G) COMP (C)	No. OF CONTAINERS	TCL VOCs 8260B								COMMENTS
2/25	0940	CEF-59-017-028-RI				GW	G	3	✓								Cool to 4°C
2/25	1110	CEF-59-017-053-RI				GW	G	3	✓								
																	Work Release 1001204

1. RELINQUISHED BY	DATE	TIME	1. RECEIVED BY	DATE	TIME
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

TETRA TECH NUS, INC. CHAIN OF CUSTODY NUMBER 3122 PAGE 1 OF 2

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
N9625	SITE 59 MASCF	MARK SPERANZA	407 921 8916	ACCUTEST H. WANDRIV
SAMPLERS (SIGNATURE)		FIELD OPERATIONS LEADER	PHONE NUMBER	ADDRESS
		MERV DALE	904 636 6125	4405 Vineland Rd. C-15
		CARRIER/WAYBILL NUMBER		CITY, STATE
		COURIER		ORLANDO, FL 32811

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

CONTAINER TYPE PLASTIC (P) or GLASS (G): G
PRESERVATIVE USED: HCL

DATE YEAR 2005	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	TYPE OF ANALYSIS: TCL VOCs	COMMENTS
6/20	1150	CEF-59-007-078-RI				GW	G	3	X	Cool to 4°C
6/20	1400	CEF-59-007-053-RI						3	X	
6/20	1410	CEF-59-019-037-RI						3	X	Work Release
6/20	1450	CEF-59-019-051-RI						3	X	1002973
6/20	1555	CEF-59-019-078-RI						3	X	
6/20	1615	CEF-59-019-106-RI						3	X	
6/21	0950	CEF-59-004-033-RI						3	X	
6/21	1050	CEF-59-~~004~~ 020-053-RI						3	X	
6/21	1410	CEF-59-~~004~~ 020-078-RI						3	X	
6/21	1555	CEF-59-~~004~~ 020-099-RI						3	X	
6/21	1515	CEF-59-012-053-RI						3	X	
6/21	1055	CEF-59-020-033-RI						3	X	
6/21	1555	CEF-59-006-078-RI						3	X	

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY Merv W. Dale	06/23/05	1603	1. RECEIVED BY D. Vial	6/23/05	16:04
2. RELINQUISHED BY			2. RECEIVED BY		
3. RELINQUISHED BY			3. RECEIVED BY		

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

TETRA TECH NUS, INC.

CHAIN OF CUSTODY

NUMBER 3123

PROJECT NO: N8925	FACILITY: SITE 59, NASCF	PROJECT MANAGER: MARK SPERANZA	PHONE NUMBER: 412 921 8916
			LABORATORY NAME AND CONTACT: ACCUTEST U. WANDREY
SAMPLERS (SIGNATURE)		FIELD OPERATIONS LEADER: Merv Dale	PHONE NUMBER: 904 636 6125
			ADDRESS: 4405 Vineland Rd. C-15
		CARRIER/WAYBILL NUMBER: Courier	CITY, STATE: ORLANDO, FL 32811

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

CONTAINER TYPE PLASTIC (P) or GLASS (G): G

PRESERVATIVE USED: HCl

DATE YEAR 2005	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	TYPE OF ANALYSIS: TCL VOCs	COMMENTS
6/21	0000	CCF-59-0005-RI				GW	G	3	X	Cool to 4°C
6/21	0000	CCF-59-0006-RI						3	X	
6/22	1100	CCF-59-018-033-RI						3	X	Work Release
6/22	1100	CCF-59-018-033						6	X	1002973
6/22	1055	CCF-59-018-053-RI						3	X	
6/22	1010	CCF-59-018-078-RI						3	X	
6/22	1015	CCF-59-018-165-RI						3	X	

1. RELINQUISHED BY: Merv W. Dale	DATE: 06/23/05	TIME: 1603	1. RECEIVED BY: [illegible]	DATE: 6/23/05	TIME: 16:03
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

TETRA TECH NUS, INC. CHAIN OF CUSTODY | NUMBER 3204 F36866 PAGE 1 OF 1

PROJECT NO: 112GN8925	FACILITY: CECIL FIELD, SITE 59	PROJECT MANAGER MARK SPERANZA	PHONE NUMBER (412)921-8916	LABORATORY NAME AND CONTACT: Accutest
SAMPLERS (SIGNATURE) Terry Cottenoir		FIELD OPERATIONS LEADER TERRY COTTENOIR	PHONE NUMBER (904)636-6125	ADDRESS 4405 Vineland Rd., C-15
		CARRIER/WAYBILL NUMBER FED EX 7902 3057 3873		CITY, STATE Orlando, FL

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

CONTAINER TYPE PLASTIC (P) or GLASS (G): G
PRESERVATIVE USED: HCL
TYPE OF ANALYSIS: TCL VOCs

	DATE YEAR 2005	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	TCL VOCs								COMMENTS
1)	11/22	1222	CEF-059-004-135-RI			135	GW	G	3	X								

1. RELINQUISHED BY Terry Cottenoir	DATE 11/22/05	TIME 1630	1. RECEIVED BY [signature]	DATE	TIME
2. RELINQUISHED BY [signature]	DATE 11/23/05	TIME 0900	2. RECEIVED BY [signature]	DATE 11/23/05	TIME 0900
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS 2.2°

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TINUS-001

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER 2241 | PAGE 1 OF 2

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
N0039	Cecil Field Site 59	Mark Sabanza	800-245-2730	Accutest H. Vandery
SAMPLERS (SIGNATURE)		FIELD OPERATIONS LEADER	PHONE NUMBER	ADDRESS
		Pete Levesque	(904) 636-6125	4405 Vineland Rd C-15
		CARRIER/WAYBILL NUMBER		CITY, STATE
		Courier Pick-Up		Orlando, FL 32811

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

CONTAINER TYPE PLASTIC (P) or GLASS (G): G P P P
PRESERVATIVE USED: HCL - - -

DATE YEAR 2006	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	MEE (RSK 147/175)	ALKALINITY (EPA 310.1)	CHLORIDE (EPA 300)	SULFATE (EPA 300)					COMMENTS
1/3	1100	CEF-59-002-120-RI				GW	G	4	X	X	X	X					Cool to 4°C
1/3	1145	CEF-59-002-028-RI						4	X	X	X	X					
1/3	1255	CEF-59-001-083-RI						4	X	X	X	X					
1/3	1258	CEF-59-001-028-RI						4	X	X	X	X					Reference:
1/3	1424	CEF-59-003-035-RI						4	X	X	X	X					CTO 078
1/3	1425	CEF-59-003-053-RI						4	X	X	X	X					N0039
1/3	1505	CEF-59-003-121-RI						4	X	X	X	X					
1/3	1538	CEF-59-003-073-RI						4	X	X	X	X					
1/4	0945	CEF-59-004-053-RI						12	X	X	X	X					
1/4	1000	CEF-59-004-112-RI						4	X	X	X	X					
1/4	1050	CEF-59-004-073-RI						4	X	X	X	X					
1/4	0000	CEF-59-D401-RI						4	X	X	X	X					
1/4	1302	CEF-59-019-032-RI						4	X	X	X	X					

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY	1/5/06	1420	1. RECEIVED BY	1-5-06	1420
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER 2240 | PAGE 2 OF 2

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
N0039	Cecil Field Site 59	Mark Speranza	850-245-2230	Accutest H. Wanberg
SAMPLERS (SIGNATURE)		FIELD OPERATIONS LEADER	PHONE NUMBER	ADDRESS
[signature]		Pete Loveletre	(904) 636-6125	4405 Vineland Rd C-15
		CARRIER/WAYBILL NUMBER		CITY, STATE
Terry [illegible]		Courier Pick-up		Orlando, FL 32811

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

CONTAINER TYPE PLASTIC (P) or GLASS (G): G P P P
PRESERVATIVE USED: HCL / / /

DATE YEAR 2006	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	MEE (RSK 147/175)	Alkalinity (EPA 310.1)	Chloride (EPA 300)	Sulfate (EPA 300)					COMMENTS
1/4	1248	CEF-59-007-053-RI				GW	G	4	X	X	X	X					Cool to 4°C
1/4	1330	CEF-59-007-078-RI						4	X	X	X	X					
1/4	1443	CEF-59-006-078-RI						4	X	X	X	X					
1/4	1449	CEF-NG-12D-RI						4	X	X	X	X					Reference:
1/4	1524	CEF-NG-12I-RI						4	X	X	X	X					CTO 078
1/4	1613	CEF-59-018-105-RI						4	X	X	X	X					N0039
1/4	1702	CEF-59-105-053-RI						4	X	X	X	X					
1/4	1704	CEF-59-005-033-RI						4	X	X	X	X					

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY [signature]	1/5/06	1420	1. RECEIVED BY [signature]	1-5-06	1420
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

TETRA TECH NUS, INC.

CHAIN OF CUSTODY

NUMBER 2242

PAGE 1 OF 1

PROJECT NO: 112GN0039	FACILITY: CECIL FIELD	PROJECT MANAGER: MARK SPERANZA	PHONE NUMBER: (412) 965-7047	LABORATORY NAME AND CONTACT: ACCUTEST
SAMPLERS (SIGNATURE): Terry Cotterman		FIELD OPERATIONS LEADER: ALAN PATE	PHONE NUMBER: (904) 636-6125	ADDRESS:
		CARRIER/WAYBILL NUMBER: ACCUTEST COURIER		CITY, STATE: ORLANDO, FL

STANDARD TAT ☐
RUSH TAT ☒
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☒ 7 day ☐ 14 day

DATE YEAR 2006	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	VOCs 8260	PAH 8310	TRPH FL-PRO					COMMENTS
CONTAINER TYPE PLASTIC (P) or GLASS (G)									G	G	G					
PRESERVATIVE USED									HCl	None	H_2SO_4					
1/13	1000	CEF-815-015-RI				GW	G	7	3	2	2					*Cool to 4°C
1/16	1045	CEF-NG-265-RI				GW	G	7	3	2	2					
1/16	1140	CEF-NG-125-RI				GW	G	7	3	2	2					*Method 8310 To report only Naphthalene.

1. RELINQUISHED BY: Terry Cotterman	DATE: 1/16/06	TIME: 14:13	1. RECEIVED BY: (Accutest)	DATE: 1/16/06	TIME: 14:13
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

A.3 SURVEY DATA

LOCATION	NORTHING	EASTING	GROUND SURFACE	TOP OF CASING	TOP OF CASING
CEF-059-001-028	2146632.6700	377656.8200	78.8000	79.00	78.71
CEF-059-001-053	2146607.9500	377657.7300	78.8900	79.14	78.95
CEF-059-001-083	2146627.5200	377657.6300	78.6200	78.75	78.42
CEF-059-001-121	2146615.8300	377657.7500	78.7900	78.92	78.72
CEF-059-002-028	2146547.9400	377697.9900	79.2000	79.40	79.13
CEF-059-002-053	2146541.0200	377696.3700	79.2900	79.37	79.20
CEF-059-002-120	2146542.2500	377688.9000	79.2800	79.43	79.25
CEF-059-003-035	2146387.7500	377791.8100	77.6900	77.78	77.49
CEF-059-003-053	2146397.5200	377792.9800	77.6300	77.74	77.44
CEF-059-003-073	2146392.6400	377792.2300	77.6400	77.77	77.42
CEF-059-003-121	2146379.3400	377791.8300	77.6400	77.87	77.63
CEF-059-004-033	2146246.5600	377893.7400	77.1100	77.15	76.90
CEF-059-004-053	2146240.4100	377894.1100	77.2300	77.24	77.03
CEF-059-004-073	2146229.9500	377893.7600	77.2300	77.24	77.04
CEF-059-004-112	2146235.7700	377893.9800	77.1800	77.19	76.86
CEF-059-005-033	2146033.3300	377981.7100	77.7200	77.72	77.35
CEF-059-005-053	2146038.2700	377974.2300	77.7700	77.77	77.60
CEF-059-005-073	2146033.0000	377973.5300	77.7300	77.72	77.44
CEF-059-006-078	2145713.0600	378065.9200	75.8700	75.93	75.65
CEF-059-006-104	2145694.9400	378065.5200	75.9900	76.03	75.78
CEF-059-007-053	2145587.0500	378120.2800	75.8600	75.86	75.44
CEF-059-007-078	2145582.2900	378120.3800	75.8500	75.85	75.62
CEF-059-008-028	2146546.7400	377776.1100	79.0100	79.27	79.03
CEF-059-009-053	2146318.4500	377998.1800	78.0600	78.08	77.84
CEF-059-009-083	2146318.6600	378011.9500	78.0600	78.10	77.88
CEF-059-009-113	2146319.3000	378024.1600	78.1100	78.08	77.85
CEF-059-010-053	2146091.1700	378126.9800	76.8200	76.87	76.53
CEF-059-010-083	2146077.0500	378127.1500	76.8200	76.87	76.57
CEF-059-011-033	2145781.3300	378252.8600	75.9400	75.91	75.70
CEF-059-011-053	2145769.3900	378244.0300	75.7900	75.78	75.53
CEF-059-011-083	2145769.2200	378252.9800	75.8000	75.81	75.43
CEF-059-012-053	2145630.1600	378008.6400	75.8400	75.90	75.69
CEF-059-013-032	2145790.8500	377905.0500	76.7000	76.80	76.55
CEF-059-013-053	2145797.5900	377909.7600	76.7400	76.78	76.47
CEF-059-013-083	2145797.4300	377904.7800	76.7600	76.83	76.59
CEF-059-014-053	2146030.5500	377766.9500	77.2900	77.24	76.92
CEF-059-014-083	2146031.5000	377774.6600	77.1200	77.16	77.05
CEF-059-014-120	2146039.1400	377766.2800	77.3200	77.27	77.11
CEF-059-015-028	2146477.7900	377565.9000	77.8600	78.07	77.86
CEF-059-016-053	2146271.1200	377746.0200	78.2800	78.35	78.06
CEF-059-016-083	2146269.8900	377761.3400	78.2200	78.34	78.03
CEF-059-016-119	2146271.6100	377732.5100	78.3600	78.43	78.22
CEF-059-018-033	2145832.5200	378035.0400	77.1300	77.12	76.82
CEF-059-018-053	2145827.8900	378034.9800	77.0700	77.11	76.79
CEF-059-018-078	2145816.8900	378029.2700	76.3000	76.30	75.92
CEF-059-018-105	2145819.6500	378032.7200	76.5300	76.52	76.15
CEF-059-019-032	2145451.1000	378320.1100	74.7400	74.76	74.37
CEF-059-019-051	2145443.3600	378320.2400	74.8700	74.87	74.49
CEF-059-019-078	2145451.1700	378325.8900	74.7900	74.77	74.54
CEF-059-019-106	2145444.2200	378326.3400	74.8600	74.83	74.58

LOCATION	NORTHING	EASTING	GROUND SURFACE	TOP OF CASING	TOP OF CASING
CEF-059-020-033	2145631.6800	378551.2700	77.0700	77.05	76.50
CEF-059-020-053	2145623.4700	378550.9200	77.0200	77.00	76.49
CEF-059-020-078	2145631.5600	378557.9700	77.1200	77.11	76.83
CEF-059-020-099	2145623.1100	378557.9100	77.0800	77.07	76.81
CEF-324-01I	2146500.0700	377691.5800	78.9500	79.01	78.68
CEF-324-02I	2146490.5600	377718.4100	79.0900	79.18	78.84
CEF-815-1S	2145708.4200	378011.4700	77.1000	0.00	76.94
CEF-815-2S	2145782.4700	378013.8300	77.0000	0.00	76.92
CEF-815-3S	2145660.8840	378065.0430		76.08	75.64
CEF-815-4S	2145632.8420	378131.3460		76.02	75.75
NG-02I	2145802.2900	377950.6300		0.00	76.72
NG-02S	2145812.0700	377952.5300		0.00	76.74
NG-12D	2145698.8160	378064.2940		76.00	75.68
NG-12I	2145702.9740	378064.2380		75.97	75.64
NG-12S	2145707.6160	378064.1550		75.96	75.69
NG-13S	2145782.7162	378064.6425		76.04	76.04
NG-14S	2145617.9060	378076.8760		76.08	77.71
NG-26S	2145708.1454	377951.3477	76.1000	76.20	75.84

APPENDIX B

BORING AND WELL RECORDS

B.1 BORING LOGS

B.2 MONITORING WELL CONSTRUCTION SHEETS

B.3 WELL CONFORMANCE REPORTS

B.1 BORING LOGS

BORING LOG

PROJECT NAME: Cecil Field, Site 59
PROJECT NUMBER: N8925
DRILLING COMPANY: Miller Drilling
DRILLING RIG: Versa-Sonic Rig

BORING NO.: CEF-59-001
DATE: 10/17-10/18/2004
GEOLOGIST: D. Siefken
DRILLER: Tracey Thrasher

Depth Top (Ft.) or Run No.	Depth Bottom (Ft.) or Run No.	Sample Recovery (%)	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID (ppm): Borehole**	PID/FID (ppm): Driller BZ**
80	90	100		gray	very fine sand	SP	moist, trace of silt		
90	100	100		gray	very fine sand	SP	moist, trace of silt		
100	109	100		olive gray	very fine sandy clay	SC	moist		
109	110	100		gray	very fine sand	SP	moist, trace of silt		
110	120	100		olive green	sandy clay	SC	white seams of shell-like matter		
120	121	100		olive green	sandy clay	SC	soft, wet		
121	125	100		olive green	clay	CH	stiff, almost dry		
					EOB @ 125 feet bls.				

* 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): _____

Remarks: Began soil descriptions at 80 feet for Location 001 since sufficient soil data exists at nearby Location 002.
Only need sufficient soil data to set well at top-of-rock (TOR) or confining bed.

Converted to Well: Yes X No _____ Well I.D. #: CEF-059-001-121

BORING LOG

PROJECT NAME: Cecil Field, Site 59
PROJECT NUMBER: N8925
DRILLING COMPANY: Miller Drilling
DRILLING RIG: Versa-Sonic Rig

BORING NO.: CEF-59-002
DATE: 10/3 - 10/4/2004
GEOLOGIST: M. Dale
DRILLER: Tracey Thrasher

Depth Top (Ft.) or Run No.	Depth Bottom (Ft.) or Run No.	Sample Recovery (%)	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION Color	MATERIAL DESCRIPTION Material Classification	USCS *	Remarks	PID/FID (ppm) Borehole**	PID/FID (ppm) Driller BZ**
0	5	100		dk. brown	very silty, very fine sand	SM	damp	0	0
5	5.5	100		gray brown	very silty, very fine sand	SM	damp		
5.5	6	100		lt.brn, yel. org	very silty, very fine sand	SM	damp		
6	8.5	100		lt.brn,gry.brn,yel.org	very silty, very fine sand	SM	damp		
8.5	10	100		yellow orange	silty very fine sand	SM	wet		
10	13	100		lt.brn,brn,lt.gry	silty very fine sand	SM	wet		
13	19	100		lt. brown	silty very fine sand	SM	wet		
19	19.75	100		gray brown	slightly silty fine sand	SM	wet, shell frags		
19.75	20	100		gray brown	slightly silty fine sand	SM	wet		
20	22	100		gray brown	silty fine sand	SM	wet		
22	27.75	100		lt. brown	silty fine sand	SM	wet		
27.75	28.75	100		olive green	clay	CH	damp, soft		
28.75	30	100		green gray	slightly silty very fine sand	SM	damp		
30	32	100		lt. gray	slightly silty very fine sand	SM	damp		
32	35	100		green gray	slightly silty very fine sand	SM	damp		
35	65	100		green gray	slightly silty very fine sand	SM	wet		
65	69.5	100		green gray	slightly silty fine sand	SM	wet, clay stringers		
69.5	70	100		lt.gray	slightly silty very fine sand	SM	wet		
70	70.5	100		green gray	slightly silty fine sand	SM	wet, clay stringers		
70.5	87	100		green gray	slightly silty very fine sand	SM	wet		
87	88.5	100		olive green	slightly silty fine sand	SM	wet, clay stringers		
88.5	90	100		green gray	silty very fine sand	SM	wet		
90	95	50		lt.gray	very fine sand, trace of clay	SP	wet		

* 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): 0.0

Converted to Well: Yes X No _____ Well I.D. #: CEF-059-002-120

BORING LOG

PROJECT NAME: Cecil Field, Site 59
PROJECT NUMBER: N8925
DRILLING COMPANY: Miller Drilling
DRILLING RIG: Versa-Sonic Rig

BORING NO.: CEF-59-002
DATE: 10/3 - 10/4/2004
GEOLOGIST: M. Dale
DRILLER: Tracey Thrasher

Depth Top (Ft.) or Run No.	Depth Bottom (Ft.) or Run No.	Sample Recovery (%)	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID (ppm): Borehole**	PID/FID (ppm): Driller BZ**
95	98	100		light gray	slightly silty very fine sand	SP	wet		
98	99	100		gray	clayey very fine sand	SM	wet		
99	100	100		green gray	slightly silty very fine sand	SM	wet		
100	105	0			No Recovery				
105	110	100		green gray to lt. gray	very fine sand	SP	wet		
110	112	100		green gray	very fine sand	SP	wet		
112	112.5	100		olive green	clayey very fine sand	SC	moist, with shell fragments		
112.5	114.7	100		green gray	very fine sand	SP	moist		
114.7	115.00	100		olive green	clayey very fine sand	SC	moist		
115.00	117.5	100		olive green	clayey very fine sand	SC	moist w/ trace of shell pieces		
117.5	120	100		olive green	very silty, very fine sand	SM	moist w/ lots of shell pieces		
120	120.50	100		olive green	clayey gravelly sand	SC	moist w/ pieces of limestone		
120.50	121	100		light gray	marl (fizzes in HCl)		damp		
121	124	100		olive green	clay	CL	damp; very stiff		
124	125	100		light gray	clay	CL	damp (doesn't fizz in HCl)	0	0
					EOB @ 125 feet bls.				

* 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): 0.0

Converted to Well: Yes X No _____ Well I.D. #: CEF-059-002-120

BORING LOG

PROJECT NAME: Cecil Field, Site 59
PROJECT NUMBER: N8925
DRILLING COMPANY: Miller Drilling
DRILLING RIG: Versa-Sonic Rig
BORING NO.: CEF-59-003
DATE: 10/2 - 10/3/2004
GEOLOGIST: D. Siefken
DRILLER: Tracey Thrasher

Depth Top (Ft.) or Run No.	Depth Bottom (Ft.) or Run No.	Sample Recovery (%)	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION Color	MATERIAL DESCRIPTION Material Classification	USCS *	Remarks	PID/FID (ppm) Borehole**	PID/FID (ppm) Driller BZ**
0	5	100		lt. brown, brown	silty, very fine sand	SM	dry		
5	10	100		dk. brown	very fine sand, some silt	SM	damp		
10	15	100		lt. brown	very fine sand, some silt	SM	damp		
15	21	100		very lt. brown	very fine sand	SM	damp		
21	25	100		white	very fine sand	SM	damp, sugar sand		
25	34	100		very lt. gray	sand	SM	damp		
34	40	100		dk. olive gray	clay	CL	wet, very soft		
40	42	100		olive gray	silty, very fine sand	SM	wet	0	0
42	78	100		gray	very fine sand, trace of silt	SP	damp	0	0
78	80	100		dk. olive gray	silty, very fine sand	SM	damp	0	0
80	85	100		gray	very fine sand, some silt	SP	damp		
85	87.5	100		dk. olive gray	silty, very fine sand	SM	damp		
87.5	89	100		gray	very fine sand, some silt	SP	damp		
89	98	100		dk. olive gray	clayey, very fine sand	SC	damp to wet	0	0
98	98.5	100		dk. olive	clay, plastic	CL	soft		
98.5	100	100		dk. olive gray	clayey sand	SC	damp to wet		
100	105	100		gray	very fine sand, some silt	SP	wet		
105	110	100		gray	very fine sand, some silt	SP	damp		
110	114.5	100		olive gray	very fine sand, some silt	SP	wet		
114.5	115	100		dk. olive gray	very tight clayey sand	SC	damp to wet		
115	120	0		No Recovery	No Recovery		No Recovery		
120	121	100		greenish gray	clayey gravel	GC	wet, TOR		
121	125	100		greenish gray	clay	CH	damp, very stiff		
125	128	100		lt. gray	clay	CH	damp, very stiff		

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks: TOR - top of rock. EOB @ 128 feet bls.

Drilling Area Background (ppm): 0.0

Converted to Well: Yes X No _____ Well I.D. #: CEF-059-003-121

BORING LOG

PROJECT NAME: Cecil Field, Site 59
PROJECT NUMBER: N8925
DRILLING COMPANY: Miller Drilling
DRILLING RIG: Versa-Sonic Rig

BORING NO.: CEF-59-004
DATE: 10/1/2004
GEOLOGIST: D. Siefken
DRILLER: Tracey Thrasher

Depth Top (Ft.) or Run No.	Depth Bottom (Ft.) or Run No.	Sample Recovery (%)	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID (ppm): Borehole**	PID/FID (ppm): Driller BZ**
0	5	100		white to brown	limerock to fine silty sand		dry		
5	15	100		lt. brown	silty, very fine sand	SM	damp		
15	27	100		very lt. brown	silty, very fine sand	SM	damp	0	0
27	30	100		yellowish orange	silty, very fine sand	SM	wet		
30	35	0		No Recovery	No Recovery		No Recovery	0	0
35	40	100		white	very fine sand	SP	wet		
40	45	50		lt.gray	very fine sand, some silts	SM	wet	0	0
45	46	100		olive gray	very fine sandy silt	SM	damp, very soft		
46	50	100		gray	very fine sand, some silts	SP	damp		
50	90	100		lt. gray	very fine sand, some silts	SP	wet/damp	0	0
90	109	100		lt. gray	very fine sand, trace of silt	SP	damp	0	0
109	112	100		dk. olive gray	clayey fine sand, some silt	SC	damp	0	0
112	112.5	100		dk. olive gray	clay with lt. green mottles	CH	dry, very firm		
12.5	115	100		olive gray	clay with lt. green mottles	CH	dry, very firm		
115	117.5	100		greenish gray	gravely silts	GM	damp		
117.5	118.5	100		olive gray	plastic clay	CH	damp, stiff		
118.5	120	100		greenish gray	plastic clay	CH	damp, stiff		
					EOB @ 120 feet bls.				

* 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): 0.0

Converted to Well: Yes X No _____ Well I.D. #: CEF-059-004-112

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: CEF- Site 59
PROJECT NUMBER: 1126N 0039
DRILLING COMPANY: Miller Drilling
DRILLING RIG: Sonic

BORING NUMBER: CEF-059-004-135
DATE: 11/16/05
GEOLOGIST: Mark Petersen
DRILLER: Tracey Thrasher

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**
							Asphalt						
1	0-10		5'				Gravel Backfill						
							Brown Silty Sand						
									▽				
													0
2	~~10~~		10'		Soft		Light Brown Silty Sand						
3	~~20~~		10'		Soft		Light Brown Silty Sand						
4	~~30~~		10'		Soft		Light Brown Silty Sand						
					Firm		Grey Sandy Clay						
5	~~40~~		10'				grades into wet flowing sand						
					Soft		Grey Sand						

* When rock coring, enter rock brokenes.

** 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 X No _____ Well I.D. #: _____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: CEF- Site 59
PROJECT NUMBER: 1126N8039
DRILLING COMPANY: Miller Drilling
DRILLING RIG: Sonic

BORING NUMBER: CEF-059-004-135
DATE: 11/16/05
GEOLOGIST: Mark Peterson
DRILLER: Tracey Thrasher

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	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
6	50		10'		Soft		Grey Sand						
							well sorted						
7	60		10'				Same						0
							- increasing clay						
							content						
8	70		10'		Soft		Grey Sand						
9	80		10'		Soft		Grey Sand						
							Sandy Clay Stringers						
							from 82-86						
10	90		10'		Soft		Grey Sand						
	100												

* When rock coring, enter rock brokenness.

** 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 X No _____ Well I.D. #: _____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: CEF- Site 59
PROJECT NUMBER: 1126N0039
DRILLING COMPANY: Miller Drilling
DRILLING RIG: Sonic

BORING NUMBER: CEF-059-004-135
DATE: 11/16/05
GEOLOGIST: Mark Peterson
DRILLER: Tracey Thrasher

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**
	100												
11			8'		Soft		Grey Sand						
				109'									0
	110												
12					Firm		Grey Weathered LS		Still moist				
							and Clay		grades into				
									LS at 118'				
				118'									
	120				Hard		LS and dense Clay		Dryer than				
13							very tight		above. slightly				
									moist. Solid				
									Aquitard to				
				126'									
					Firm		Weathered LS and		Aquiclude.				
							Sandy Clay - moist						
	130												
14							good porosity		should produce				
									water				
				135'									
					Hard		Grey Clay and LS		Dry				
	140'			138'									

* 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 X No _____ Well I.D. #: _____

BORING LOG

PROJECT NAME: Cecil Field, Site 59
PROJECT NUMBER: N8925
DRILLING COMPANY: Miller Drilling
DRILLING RIG: Versa-Sonic Rig
BORING NO.: CEF-59-006
DATE: 9/30/2004
GEOLOGIST: D. Siefken
DRILLER: Tracey Thrasher

Depth Top (Ft.) or Run No.	Depth Bottom (Ft.) or Run No.	Sample Recovery (%)	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID (ppm): Borehole**	PID/FID (ppm): Driller BZ**
0	1	100		NA	concrete		concrete		
1	5	100		brown	fine to medium silty sand	SM	moist	0	0
5	10	100		dk. brown	silty, very fine sand	SM	wet		
10	12.5	100		lt.brown	silty, very fine sand	SM	moist		
12.5	15	100		lt. gray brown	silty, very fine sand	SM	moist		
15	19	100		dk. brown	silty, very fine sand	SM	wet		
19	20	100		brown	silty, very fine sand	SM	wet		
20	25	100		gray	silty, very fine sand	SM	wet		
25	35	100		gray	trace of silt, very fine sand	SP	moist		
35	35.5	100		olive gray	clay	CL	soft, damp		
35.5	38	100		greenish gray	trace of silt, very fine sand	SP	damp		
38	60	100		gray	trace of silt, very fine sand	SP	moist		
60	87	100		lt. gray	trace of silt, very fine sand	SP	moist		
87	90	100		dk. gray	very silty, very fine sand	SM	moist		
90	93	0		No Recovery	No Recovery		No Recovery		
93	100	100		gray	silty, very fine sand	SM	moist		
100	101.5	100		dk. gray	silty, fine sand	SM	moist		
101.5	102	100		dk. gray	silty, fine sand, gravel	GM	moist		
102	103	100		dk. gray	clay	CL	very stiff, damp		
103	103.5	100		lt. gray	marl		fizz in HCL, damp		
103.5	104	100		lt. gray	gravelly limestone		weathered, fizz in HCL		

* 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): 0.0

Remarks: OVA not working after 10 ft. EOB @ 104 feet bls.

Converted to Well: Yes X No _____ Well I.D. #: CEF-059-006-104

BORING LOG

PROJECT NAME: Cecil Field, Site 59
PROJECT NUMBER: N8925
DRILLING COMPANY: Miller Drilling
DRILLING RIG: Versa-Sonic Rig
BORING NO.: CEF-59-009
DATE: 10/14/2004
GEOLOGIST: D. Siefken
DRILLER: Tracey Thrasher

Depth Top (Ft.) or Run No.	Depth Bottom (Ft.) or Run No.	Sample Recovery (%)	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID (ppm): Borehole**	PID/FID (ppm): Driller BZ**
80	90	100		light gray	very fine sand	SP	moist, some silt		
90	100	100		olive green	silty, very fine sand	SM	moist		
100	110	100		light gray to gray	very fine sand	SP	moist, some silt		
110	113	100		olive green	very fine sandy, clay	SC	moist to wet		
113	114	100		olive green	clay	CL	soft		
114	114.5	100		white	weathered limestone		fizzes with HCL		
114.5	118	100		olive green	clay	CH	firm		
118	118.1	100			limerock				
					EOB @ 118.1 feet bls.				

* 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):

Remarks: Began soil descriptions at 80 feet for Location 009 since sufficient soil data exists at nearby Location 003.
Only need sufficient soil data to set well at top-of-rock (TOR) or confining bed.

Converted to Well: Yes X No _____ Well I.D. #: CEF-059-009-113

BORING LOG

PROJECT NAME: Cecil Field, Site 59
PROJECT NUMBER: N8925
DRILLING COMPANY: Miller Drilling
DRILLING RIG: Versa-Sonic Rig

BORING NO.: CEF-59-014
DATE: 10/8/2004
GEOLOGIST: M. Dale
DRILLER: Tracey Thrasher

Depth Top (Ft.) or Run No.	Depth Bottom (Ft.) or Run No.	Sample Recovery (%)	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID (ppm): Borehole**	PID/FID (ppm): Driller BZ**
5	5.5	100		yellow	limerock		dry, road base fell in hole	0	0
5.5	6.5	100		brn, gry, yel org	silty very fine sand	SM	damp		
6.5	10	100		gray brown	silty very fine sand	SM	wet at 7'		
10	18	100		lt. brown	silty very fine sand	SM	wet	0	0
18	20	100		lt. gray	slightly silty very fine sand	SM	wet		
20	21	100		lt. gray brown	silty very fine sand	SM	wet		
21	23	100		gray brown	silty very fine sand	SM	wet		
23	26.5	100		lt. brown	silty very fine sand	SM	wet		
26.5	30	100		brown	silty very fine sand	SM	wet		
30	38.75	100		green gray	slightly silty very fine sand	SM	wet	0	0
38.75	40	100		olive green	clay	CH	damp, soft		
40	45	100		green gray	slightly silty very fine sand	SM	moist		
45	53	100		lt. green gray	slightly silty very fine sand	SM	moist		
53	55	100		green gray	slightly silty very fine sand	SM	moist	0	0
55	57	100		lt.green gray	slightly silty very fine sand	SM	moist		
57	57.5	100		green gray	slightly clayey v. fine sand	SC	moist		
57.5	65	100		lt.green gray	slightly silty very fine sand	SM	moist		
65	70	100		lt.green gray	slightly silty very fine sand	SM	wet, clay stringers@68.5		
70	71.5	100		lt.green gray	slightly silty very fine sand	SM	Wet		
71.5	72.5	100		lt. gray	slightly silty very fine sand	SM	wet		
72.5	75	100		gray	slightly silty very fine sand	SM	wet		

* 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): 0.0

Converted to Well: Yes X No _____ Well I.D. #: CEF-059-014-120

BORING LOG

PROJECT NAME: Cecil Field, Site 59
PROJECT NUMBER: N8925
DRILLING COMPANY: Miller Drilling
DRILLING RIG: Versa-Sonic Rig

BORING NO.: CEF-59-014
DATE: 10/4 - 10/5/2004
GEOLOGIST: M. Dale
DRILLER: Tracey Thrasher

Depth Top (Ft.) or Run No.	Depth Bottom (Ft.) or Run No.	Sample Recovery (%)	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID (ppm): Borehole**	PID/FID (ppm): Driller BZ**
75	78.5	100		green gray	slightly silty very fine sand	SM	wet, clay stringer@76'		
78.5	80	100		olive green	clayey very fine sand	SC	wet		
80	87	100		green gray	slightly silty very fine sand	SM	wet		
87	90	100		dk. Green ray	slightly silty very fine sand	SM	wet		
90	100	100		green gray	slightly silty very fine sand	SM	wet		
100	105	0		No Recovery	No Recovery		No Recovery		
105	110	100		gray	silty very fine sand	SM	wet		
110	112.5	100		dk.gray, gray	silty fine sand	SM	wet		
112.5	112.75	100		dk. Gray	clayey sand	SC	wet, phosphate pebbles		
112.75	114.5	100		olive green	clayey sand	SC	moist		
114.5	115	100		blck.,olive green	clay	CL	moist		
115	115.25	100		olive green	clay	CL	moist		
115.25	120	100		green gray	slightly silty very fine sand	SM/SP	wet		
120	122.5	100		olive green	clay	CL	damp, soft		
122.5	123.5	100		olive green	gravelly (<10%) clay	CL	damp, some phosphate		
123.5	124.5	100		blue green	clay	CH	damp, med.stiff w/shell frag		
124.5	125.25	100		green gray	slightly gravelly clay	CL	damp		
125.25	129.25	100		green gray	slightly gravelly clay	CL	damp, interspersed gray		
129.25	130	100		green gray	slightly gravelly clay	CL	damp		
					EOB @ 130 feet bls.				

* 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): 0.0

Converted to Well: Yes X No _____ Well I.D. #: CEF-059-014-120

BORING LOG

PROJECT NAME: Cecil Field, Site 59
PROJECT NUMBER: N8925
DRILLING COMPANY: Miller Drilling
DRILLING RIG: Versa-Sonic Rig
BORING NO.: CEF-59-016
DATE: 10/16/2004
GEOLOGIST: D. Siefken
DRILLER: Tracey Thrasher

Depth Top (Ft.) or Run No.	Depth Bottom (Ft.) or Run No.	Sample Recovery (%)	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION Color	Material Classification	USCS *	Remarks	PID/FID (ppm) Borehole**	Driller BZ**
90	100	100		olive gray	very fine sand w/silt	SM			
100	110	100		gray	very fine sand	SP	trace of silt		
110	117	100		olive green	sandy clay	SC			
117	118	100		olive green	sandy clay	SC	with shell fragments		
118	119	100		white	gravelly weathered limestone		rock fizzes in HCL, also has shell pieces		
					EOB @ 119 feet bls.				

* 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):

Remarks: Began soil descriptions at 90 feet for Location 016 since sufficient soil data exists at nearby Location 003.
Only need sufficient soil data to set well at top-of-rock (TOR) or confining bed.

Converted to Well: Yes X No _____ Well I.D. #: CEF-059-016-119

BORING LOG

Tetra Tech NUS, Inc.

PROJECT NAME: Remedial Investigation
PROJECT NUMBER: N8925
DRILLING COMPANY: Partridge Well Co.
DRILLING RIG: DRILMASTER 400
BORING NO.: 002
DATE: 02/18/2005
GEOLOGIST: Mervin W. Dale
DRILLER: Jeff Weatherford

Sample No. and Type or RQD (MD)	Depth (Ft.) or Run No.	Blows / 6" or RQD (%) (MD)	Sample Recovery / Sample Length (MD)	Lithology Change (Depth/Ft.) or Screened Interval (MD)	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness (MD)	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	0-1					black	SILTY FINE SAND	SM	dry				
	1-2					GRAY	SILTY FINE SAND	SM	dry				
	2-4					Lt. gray	silty FINE SAND	SM	dry			0.8	0.2
	4-6					dk. brn	SILTY FINE SAND	SM	Moist				
	6-8					brown	SILTY FINE SAND	SM	wet				
	8-18					brown	SILTY FINE SAND	SM	wet				
	18-25					Lt. brown	SILTY FINE SAND	SM	wet, flowing			0.1	0.2
	25-50					yel. org.	SILTY FINE SAND	SM	wet, flowing			0.3	0.1 *
	50-55.5					gray brn	silty fine SAND	SM	wet, flowing				
							EOB @ 55.5 ft. bls.						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area 0.0

Background (ppm): 0.2

Remarks: * @ 50 FT.

Converted to Well: Yes X No ____ Well I.D. #: CEF-59-017-053

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: R.I. @ SITE 59
PROJECT NUMBER: N8925
DRILLING COMPANY: PROSONIC
DRILLING RIG: SR-078 ROTOSONIC
BORING NUMBER: 07
DATE: 06/12/2005
GEOLOGIST: MERV DALE
DRILLER: VERN SCOTT JR.

	Top Sample No. and Type or RQD Depth	Bottom 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	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Driller BZ**
MD	90	~~90~~ 91		1/1		DK. GRAY		CLAYEY SAND	SC	Wet		0	0	0
MD	91	91		1/1		DK. GRAY		SILTY FINE SAND	SM	Wet				
		97.5				—	—	—	—	—				
	97.5	97.6		1/1		OLIVE GRY		CLAY	CH	PLASTIC, MOIST				
										APPROX. 1" thick				
	97.6	99		1/1		DK. GRAY		SILTY FINE SAND	SM	WET				
	99.0	99.1		1/1		OLIVE GRAY		CLAY	CH	PLASTIC, MOIST				
										APPROX. 1" thick				
	99.1	100		1/1		DK. GRAY		SILTY FINE SAND	SM	WET				
	100	101		1/1		—		BROWN WOOD	—	SOME FINE SAND, WET				
	101	104.75		1/1		DK. GRAY		SILTY FINE SAND	SM	Wet				
	104.75-105			1/1		OLIVE GRAY		CLAY w/weathered limerock	CL	Moist				
								EOB @ 105' b/s.						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks: b/s = below land surface

Drilling Area Background (ppm): 0.0

Converted to Well: Yes X No _____ Well I.D. #: CEF-059-018-105

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: CECIL FIELD 59
PROJECT NUMBER: N8925
DRILLING COMPANY: PROSONIC
DRILLING RIG: SRD-78 ROTOSONIC

BORING No.: CEF-59-019-106
DATE: 6-9-05
GEOLOGIST: CONTI
DRILLER: VERN SCOTT JR.

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**
	90												
	95												
					DENSE	GRAY	SILTY F/M SAND	SP	MOIST → WET				
	100		10/10										
					DENSE	GRAY	SILTY F/M SAND	SP	MOIST → WET				
1600 HRS													
	105						TR CLAY LENS	≈	104.5 → 105				
				106		MED	SANDY CLAY TO 106		NO SIGN OF L.S.				
					M SOFT	GRAY	INDURATED L.S./ CLAYSTONE w/		MOIST				
			5/5										
				109			SHELL FRAGS.		↓				
	110			110	HARD	GRAY	WEATH L.S.	VBR	WET				
									LOOKS LIKE COQUINA				

* 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 _____ Well I.D. #: CEF-59-019-106

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: SITE 59 RI
PROJECT NUMBER: N8925
DRILLING COMPANY: PROSONIC
DRILLING RIG: SRO 78 - ROTOSONIC

BORING No.: CEF-59-020-99
DATE: 6-8-05
GEOLOGIST: CONTI
DRILLER: VERN SCOTT JR.

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**
	90												
	95			94.5									
					DENSE	MED GRAY	SILTY F/M SAND		MOIST → WET	0			
							TR CLAY 99 → 99.5						
	100			99.5									
		NA	10/10		M SOFT	GRAY TO TAN GRAY	INDURATED LIMESTONE - CLAYEY		HIGHLY WEATH.	0			
	105												
				TD					CONTACT AT ≈ 99.5'				
									BACKFILLED W/ PELLETS				
							WELL SCR 94.5 - 99.5		105-101 ± 1/2 HR TO HYDRATE				
									SAND FROM 101 TO 92'				
									PELLETS TO 89				

* 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: ROTOSONIC METHOD - 6" CASING DRIVEN USING INNER CORE BARREL - ONLY SAMPLED LAST 10' FOR LITH.

Converted to Well: Yes ✓ No _____ Well I.D. #: _____

B.2 MONITORING WELL CONSTRUCTION SHEETS

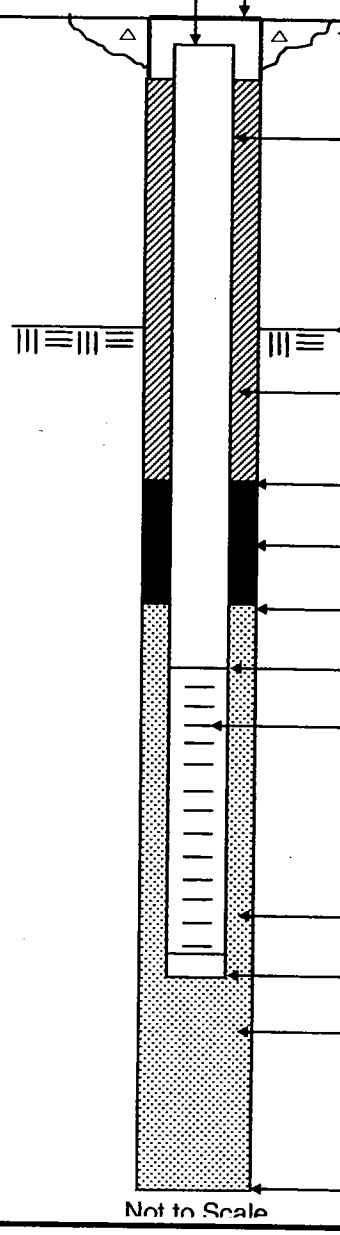
Tetra Tech NUS, Inc.

WELL No.: CEF-59-001-028

MONITORING WELL SHEET

PROJECT:	Site 59, RI	DRILLING Co.:	Miller Drilling	BORING No.:	001-03
PROJECT No.:	N8925	DRILLER:	Tracy Thrasher	DATE COMPLETED:	Oct 18, 2004
SITE:	59 @ Cecil Field	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	Merv Dale	DEV. METHOD:	Sub. pump	EASTING:	

Ground Elevation =
Datum:



Elevation / Depth of Top of Riser: 1' 0"

Elevation / Height of Top of Surface Casing: 1' 2"

I.D. of Surface Casing: 8"

Type of Surface Casing: Steel boltdown

Type of Surface Seal: Quikrete 2'x2'x6" PAD

I.D. of Riser: 2"

Type of Riser: Schedule 40 PVC

Borehole Diameter: 6"

Elevation / Depth Top of Rock: 1' NA

Type of Backfill: Type II portland cement

Elevation / Depth of Seal: 1' 18'

Type of Seal: 3/8" bentonite pellets

Elevation / Depth of Top of Filter Pack: 1' 21'

Elevation / Depth of Top of Screen: 1' 23'

Type of Screen: Schedule 40 PVC

Slot Size x Length: 0.01" x 5 FT.

I.D. of Screen: 2"

Type of Filter Pack: #1 Sand

Elevation / Depth of Bottom of Screen: 1' 28.0'

Elevation / Depth of Bottom of Filter Pack: 1' 28.5'

Type of Backfill Below Well: #1 SAND

Elevation / Total Depth of Borehole: 1' 28.5'

Tetra Tech NUS, Inc.

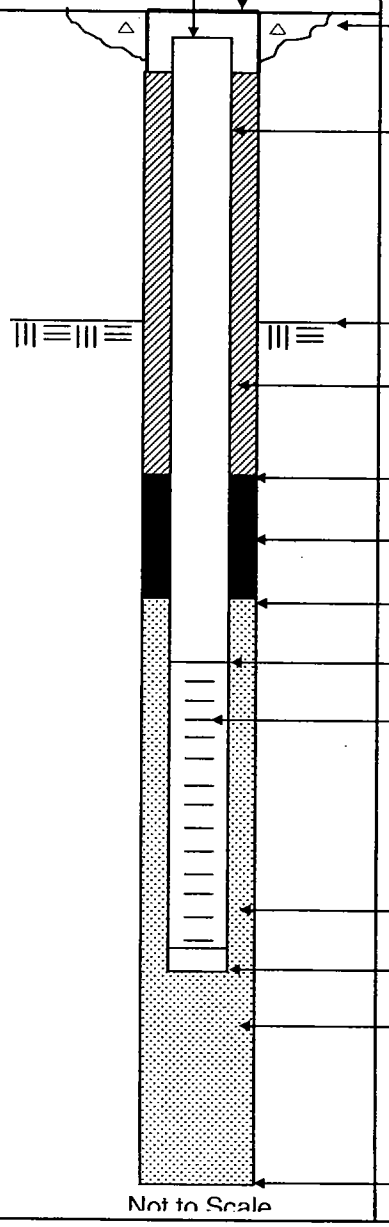
WELL No.: CEF-59- 001-053

MONITORING WELL SHEET

PROJECT:	Site 59, RI	DRILLING Co.:	Miller Drilling	BORING No.:	001-04
PROJECT No.:	N8925	DRILLER:	Haz Huntoon	DATE COMPLETED:	10-21-04
SITE:	59 @ Cecil Field	DRILLING METHOD:	DPT	NORTHING:	
GEOLOGIST:	MERY DAVE	DEV. METHOD:	peristaltic	EASTING:	

Ground Elevation =

Datum:



Not to Scale

Elevation / Depth of Top of Riser: / 0"

Elevation / Height of Top of Surface Casing: / 2"

I.D. of Surface Casing: 8"

Type of Surface Casing: Steel, boltdown

Type of Surface Seal: ~~Quikcrete~~ Concrete MO 2'x2'x6" PAD

I.D. of Riser: 3/4"

Type of Riser: Schedule 40 PVC

Borehole Diameter: 2"

Elevation / Depth Top of Rock: / NA

Type of Backfill: Natural Formation 43- Type II Portland Cement (water table to surface)

Elevation / Depth of Seal: / 43'

Type of Seal: 30/65 Sand

Elevation / Depth of Top of Filter Pack: / 46'

Elevation / Depth of Top of Screen: / 48'

Type of Screen: Schedule 40 PVC -(Pre-PACK)

Slot Size x Length: 0.01" X 5 FT.

I.D. of Screen: 3/4"

Type of Filter Pack: #1 Sand

Elevation / Depth of Bottom of Screen: / 53'

Elevation / Depth of Bottom of Filter Pack: / 53.5'

Type of Backfill Below Well: #1 Sand

Elevation / Total Depth of Borehole: / 53.5'

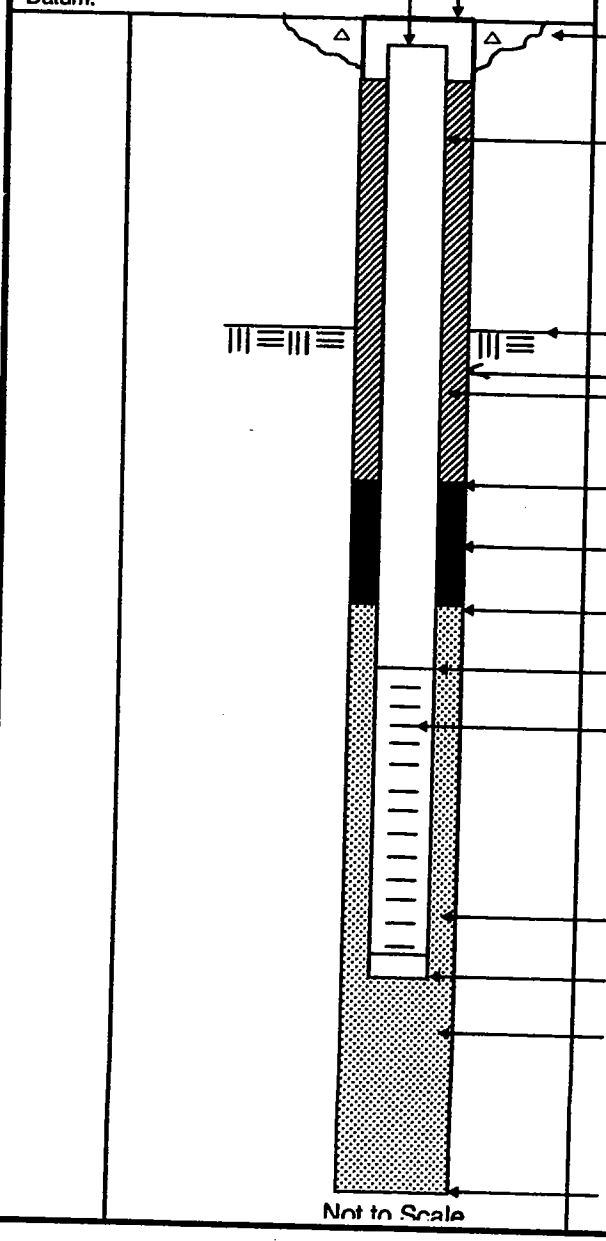
Tetra Tech NUS, Inc.

WELL No.: CEF-59- 001-083

MONITORING WELL SHEET

PROJECT:	Site 59, RI	DRILLING Co.:	Miller Drilling	BORING No.:	001-02
PROJECT No.:	N8925	DRILLER:	Tracy Thrasher	DATE COMPLETED:	Oct 18, 2004
SITE:	59 @ Cecil Field	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	Merv Dale	DEV. METHOD:	Sub. pump	EASTING:	

Ground Elevation =
Datum:



Elevation / Depth of Top of Riser: 1 0"

Elevation / Height of Top of Surface Casing: 1 2"

I.D. of Surface Casing: 8"

Type of Surface Casing: Steel bolt down

Type of Surface Seal: Quikrete 2'x2'x6" PAD

I.D. of Riser: 2"

Type of Riser: Schedule 40 PVC

Borehole Diameter: 6"

Elevation / Depth Top of Rock: 1 NA

STAINLESS STEEL STABILIZER 1~42'

Type of Backfill: Type II Portland cement

Elevation / Depth of Seal: 1 73'

Type of Seal: 3/8" pellet bentonite

Elevation / Depth of Top of Filter Pack: 1 76'

Elevation / Depth of Top of Screen: 1 78'

Type of Screen: Schedule 40 PVC

Slot Size x Length: 0.01" x 5 FT.

I.D. of Screen: 2"

Type of Filter Pack: #1 Sand

Elevation / Depth of Bottom of Screen: 1 83'

Elevation / Depth of Bottom of Filter Pack: 1 84'

Type of Backfill Below Well: #1 SAND

Elevation / Total Depth of Borehole: 1 84'

Tetra Tech NUS, Inc.

WELL No.: CEF-59- 001-121

MONITORING WELL SHEET

PROJECT:	Site 59, RI	DRILLING Co.:	Miller Drilling	BORING No.:	001-01
PROJECT No.:	N8925	DRILLER:	Tracy Thrasher	DATE COMPLETED:	Oct 18 2004
SITE:	59 @ Cecil Field	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	Merv Dale	DEV. METHOD:	Sub. pump	EASTING:	

Ground Elevation =
Datum:

Not to Scale

Elevation / Depth of Top of Riser: 1 0"

Elevation / Height of Top of Surface Casing: 1 2"

I.D. of Surface Casing: 8"

Type of Surface Casing: Steel, boltdown

Type of Surface Seal: Quikrete 2'x2'x6" PAD

I.D. of Riser: 2"

Type of Riser: Schedule 40 PVC

Borehole Diameter: 6"

Elevation / Depth Top of Rock: 1 NA

STAINLESS STEEL STABILIZER 1~62'

Type of Backfill: Type II Portland Cement

Elevation / Depth of Seal: 1 111.5'

Type of Seal: 3/8" bentonite Pellets

Elevation / Depth of Top of Filter Pack: 1 114.5'

STAINLESS STEEL STABILIZER 1~115'

Elevation / Depth of Top of Screen: 1 116.5'

Type of Screen: Schedule 40 PVC

Slot Size x Length: 0.01" x 5 FT.

I.D. of Screen: 2"

Type of Filter Pack: #1 Sand

Elevation / Depth of Bottom of Screen: 1 121.5'

Elevation / Depth of Bottom of Filter Pack: 1 123.5'

Type of Backfill Below Well: bentonite 125 - 123.5, #1 sand 123.5 - 121.5

Elevation / Total Depth of Borehole: 1 ~~121.5~~ 125'

bentonite 125 - 123.5, #1 Sand 123 - 121.5

Tetra Tech NUS, Inc.

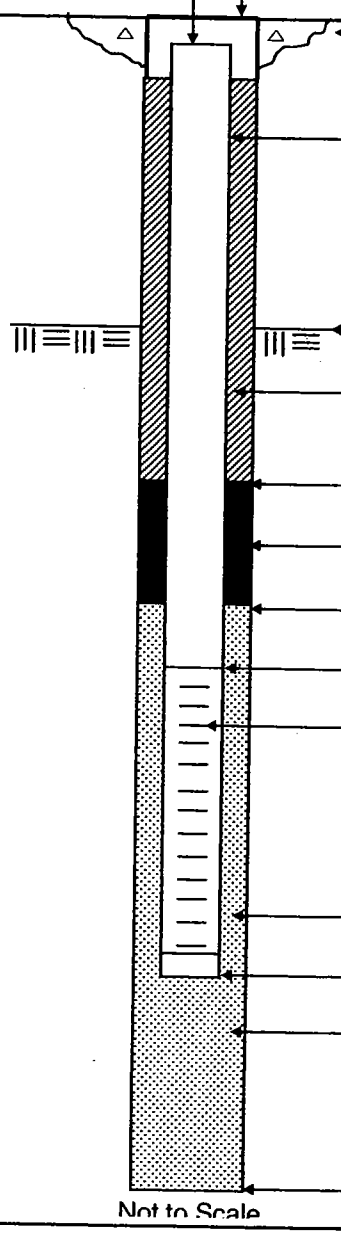
WELL No.: CEF-59-002-~~30~~ 028 MD

MONITORING WELL SHEET

PROJECT:	Site 59, RI	DRILLING Co.:	Miller Drilling	BORING No.:	002-~~30~~ 02 MD
PROJECT No.:	N8925	DRILLER:	Haz Huntoon	DATE COMPLETED:	10/15/00
SITE:	59 @ Cecil Field	DRILLING METHOD:	DPT	NORTHING:	
GEOLOGIST:	P. LeVerette	DEV. METHOD:	peristaltic	EASTING:	

Ground Elevation =

Datum:



Not to Scale

Elevation / Depth of Top of Riser: 1 0"

Elevation / Height of Top of Surface Casing: 1 2"

I.D. of Surface Casing: 8"

Type of Surface Casing: Steel, Bolt Down

Type of Surface Seal: ~~Grout~~ Concrete MD 2'x2'x6" PAD

I.D. of Riser: 3/4"

Type of Riser: PVC, Sch. 40

Borehole Diameter: 2"

Elevation / Depth Top of Rock: 1 NA

Type of Backfill: Natural Soil (Type II Portland Cement from water table to surface)

Elevation / Depth of Seal: 1 20'

Type of Seal: 30-65 SAND

Elevation / Depth of Top of Filter Pack: 1 22'

Elevation / Depth of Top of Screen: 1 23'

Type of Screen: Pre-Pack PVC (Sch. 40)

Slot Size x Length: 0.010" x 5'

I.D. of Screen: 3/4"

Type of Filter Pack: #1 Sand

Elevation / Depth of Bottom of Screen: 1 28'

Elevation / Depth of Bottom of Filter Pack: 1 28½'

Type of Backfill Below Well: Natural Soil

Elevation / Total Depth of Borehole: 1 28½'

Tetra Tech NUS, Inc.

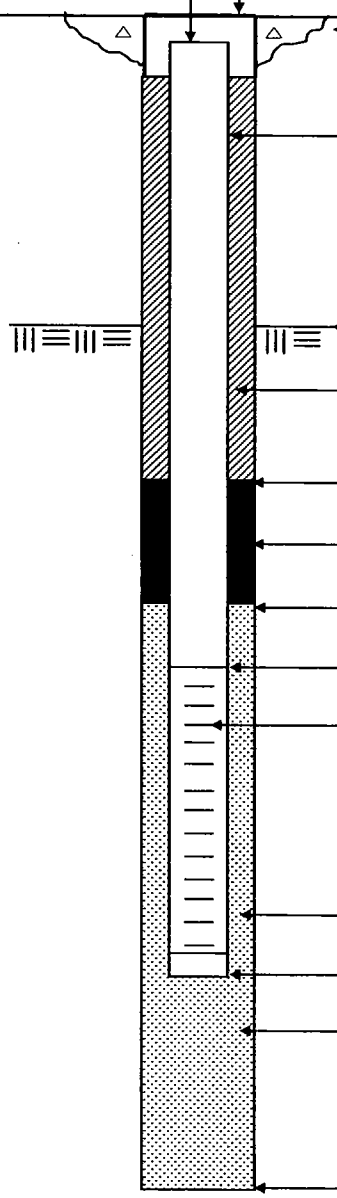
WELL No.: CEF-59- 002-053

MONITORING WELL SHEET

PROJECT:	Site 59, RI	DRILLING Co.:	Miller Drilling	~~BORING~~ LOCATION No.:	002-03
PROJECT No.:	N8925	DRILLER:	Haz Huntoon	DATE COMPLETED:	10/17/04
SITE:	59 @ Cecil Field	DRILLING METHOD:	DPT	NORTHING:	
GEOLOGIST:	Merv Dale	DEV. METHOD:	Peristaltic	EASTING:	

Ground Elevation =

Datum:



Not to Scale

Elevation / Depth of Top of Riser: 1 0"

Elevation / Height of Top of Surface Casing: 1 2"

I.D. of Surface Casing: 8"

Type of Surface Casing: ~~Quikrete~~ Steel boltdown

Type of Surface Seal: ~~Quikrete~~ Concrete MD

I.D. of Riser: 0.75 inch

Type of Riser: Sch. 40 PVC

Borehole Diameter: 3 inch

Elevation / Depth Top of Rock: N/A

Type of Backfill: NATURAL SOIL to water table, then top with Type II Portland Cement.

Elevation / Depth of Seal: ~43'

Type of Seal: 30/65 fine sand

Elevation / Depth of Top of Filter Pack: ~46.8'

Elevation / Depth of Top of Screen: 147.8'

Type of Screen: Sch. 40 PVC (Pre-Pack)

Slot Size x Length: 0.010 IN. X 5 FT.

I.D. of Screen: 0.75 inch

Type of Filter Pack: No. 1 sand

Elevation / Depth of Bottom of Screen: 152.8'

Elevation / Depth of Bottom of Filter Pack: 153'

Type of Backfill Below Well: NATURAL SOIL

Elevation / Total Depth of Borehole: 153'

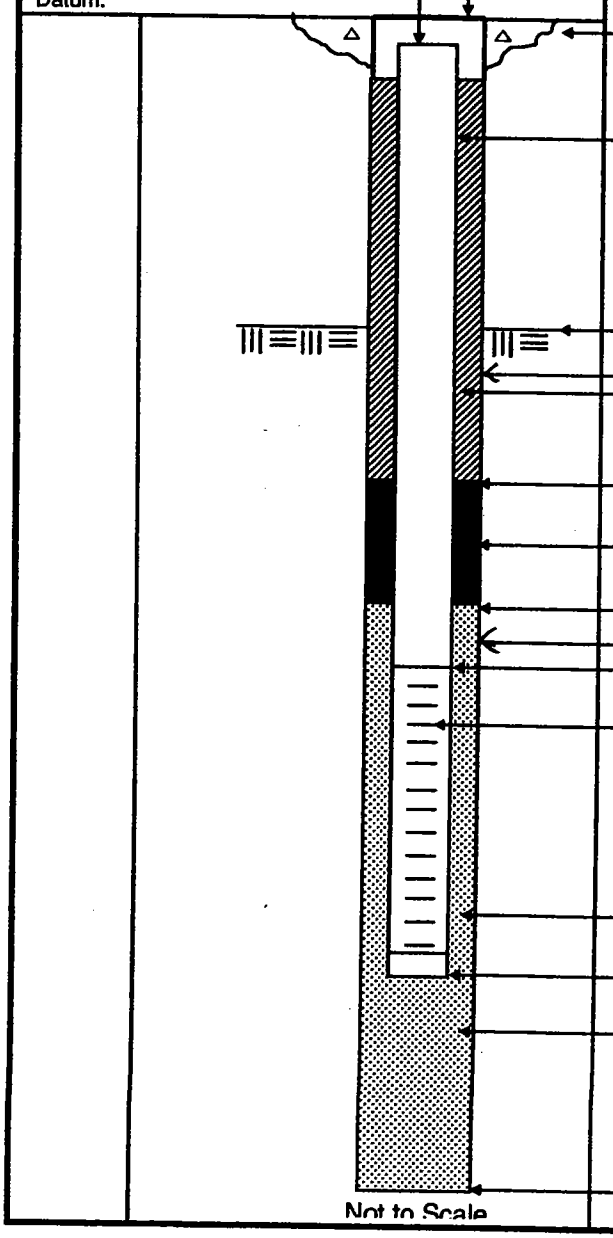
Tetra Tech NUS, Inc.

WELL No.: CEF-59- 002-120

MONITORING WELL SHEET

PROJECT:	Site 59, RI	DRILLING Co.:	Miller Drilling	BORING No.:	002-01
PROJECT No.:	N8925	DRILLER:	Tracy Thrasher	DATE COMPLETED:	10/19-04
SITE:	59 @ Cecil Field	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	Merv Dale	DEV. METHOD:	Sub. pump	EASTING:	

Ground Elevation =
Datum:



Not to Scale

Elevation / Depth of Top of Riser: 1 0"

Elevation / Height of Top of Surface Casing: 1 2"

I.D. of Surface Casing: 8"

Type of Surface Casing: Steel, bolt down

Type of Surface Seal: Quikrete 2'x2'x6" PAD

I.D. of Riser: 2"

Type of Riser: Schedule 40 PVC

Borehole Diameter: 6"

Elevation / Depth Top of Rock: 1 NA

STAINLESS STEEL STABILIZER 1~61'

Type of Backfill: Type II Portland Cement

Elevation / Depth of Seal: 1100.5'

Type of Seal: 3/8" pellet Bentonite

Elevation / Depth of Top of Filter Pack: 1113.5'

STAINLESS STEEL STABILIZER 1~114'

Elevation / Depth of Top of Screen: 1115.5'

Type of Screen: Schedule 40 PVC

Slot Size x Length: 0.01" x 5 FT.

I.D. of Screen: 2"

Type of Filter Pack: #1 Sand

Elevation / Depth of Bottom of Screen: 1 120.5'

Elevation / Depth of Bottom of Filter Pack: 1 ~~123~~ ~~120.5~~ 121' PS

Type of Backfill Below Well: #1 SAND

Elevation / Total Depth of Borehole: 1 ~~125~~ ~~120.~~ 121 PS

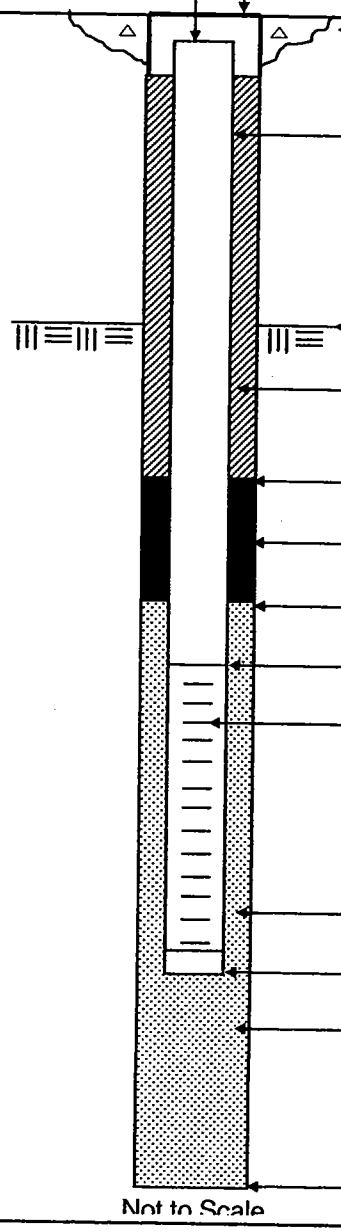
Tetra Tech NUS, Inc.

WELL No.: CEF-59-003-~~30~~ 035 MD

MONITORING WELL SHEET

PROJECT:	Site 59, RI	DRILLING Co.:	Miller Drilling	BORING No.:	003-~~30~~02 MD
PROJECT No.:	N8925	DRILLER:	Haz Huntoon	DATE COMPLETED:	10/15/04
SITE:	59 @ Cecil Field	DRILLING METHOD:	DPT	NORTHING:	
GEOLOGIST:	P. Leverette	DEV. METHOD:	peristaltic	EASTING:	

Ground Elevation =
Datum:



Not to Scale

Elevation / Depth of Top of Riser: 1 0"

Elevation / Height of Top of Surface Casing: 1 2"

I.D. of Surface Casing: 8"

Type of Surface Casing: STEEL, BOLT DOWN

Type of Surface Seal: ~~GROUT~~ 2'x2'x6" PAD Concrete MD

I.D. of Riser: 3/4"

Type of Riser: PVC, Sch. 40

Borehole Diameter: 2"

Elevation / Depth Top of Rock: 1 NA

Type of Backfill: NATURAL SOIL to water table then top with Type II Portland Cement

Elevation / Depth of Seal: 1 27½'

Type of Seal: 30-65 SAND

Elevation / Depth of Top of Filter Pack: 1 29½'

Elevation / Depth of Top of Screen: 130½'

Type of Screen: PRE-PACK PVC, Sch. 40

Slot Size x Length: 0.010" x 5'

I.D. of Screen: 3/4"

Type of Filter Pack: #1 SAND

Elevation / Depth of Bottom of Screen: 135½'

Elevation / Depth of Bottom of Filter Pack: 1 36'

Type of Backfill Below Well: NATURAL SOIL

Elevation / Total Depth of Borehole: 1 36'

Tetra Tech NUS, Inc.

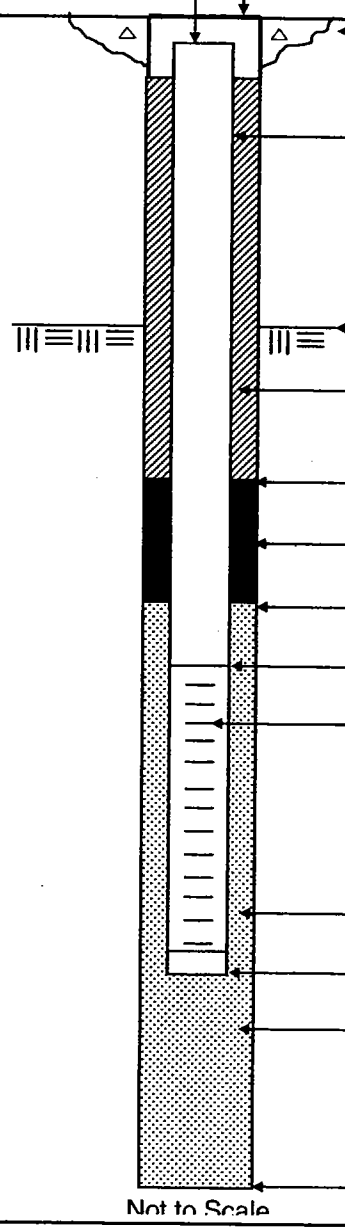
WELL No.: CEF-59-003-053

MONITORING WELL SHEET

PROJECT:	Site 59, RI	DRILLING Co.:	Miller Drilling	BORING No.:	003-04
PROJECT No.:	N8925	DRILLER:	Haz Huntoon	DATE COMPLETED:	10/17/04
SITE:	59 @ Cecil Field	DRILLING METHOD:	DPT	NORTHING:	
GEOLOGIST:	Mery Dale	DEV. METHOD:	Peristaltic	EASTING:	

Ground Elevation =

Datum:



Not to Scale

Elevation / Depth of Top of Riser: 1 0"

Elevation / Height of Top of Surface Casing: 1 2"

I.D. of Surface Casing: 8"

Type of Surface Casing: Steel, boltdown

Type of Surface Seal: ~~Quikrete~~ 2'x2'x6" PAD Concrete MD

I.D. of Riser: 0.75 INCH

Type of Riser: Sch. 40 PVC

Borehole Diameter: 3 INCH

Elevation / Depth Top of Rock: N/A

Type of Backfill: NATURAL SOIL to ▽, then top with Type II Portland Cement

Elevation / Depth of Seal: 1 ~43'

Type of Seal: 30/65 Fine Sand

Elevation / Depth of Top of Filter Pack: 1 ~46.8'

Elevation / Depth of Top of Screen: 1 47.8'

Type of Screen: Sch. 40 PVC (Pre-pack)

Slot Size x Length: 0.010 IN. x 5 FT.

I.D. of Screen: 0.75 INCH

Type of Filter Pack: No. 1 SAND

Elevation / Depth of Bottom of Screen: 1 52.8'

Elevation / Depth of Bottom of Filter Pack: 1 53'

Type of Backfill Below Well: NATURAL SOIL

Elevation / Total Depth of Borehole: 1 53'

Tetra Tech NUS, Inc.

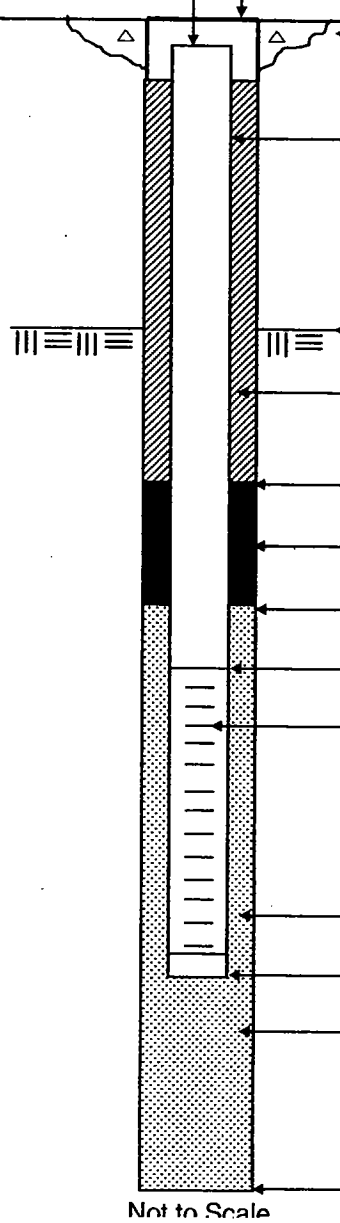
WELL No.: CEF-59- 003-073

MONITORING WELL SHEET

PROJECT:	Site 59, RI	DRILLING Co.:	Miller Drilling	BORING No.:	003-03
PROJECT No.:	N8925	DRILLER:	Haz Huntoon	DATE COMPLETED:	10/17/04
SITE:	59 @ Cecil Field	DRILLING METHOD:	DPT	NORTHING:	
GEOLOGIST:	MERV DALE	DEV. METHOD:	Peristaltic	EASTING:	

Ground Elevation =

Datum:



Not to Scale

Elevation / Depth of Top of Riser: 1 0"

Elevation / Height of Top of Surface Casing: 1 2"

I.D. of Surface Casing: 8"

Type of Surface Casing: Steel, boltdown

Type of Surface Seal: Quikrete

2'x2'x6" PAD Concrete

I.D. of Riser: 0.75 inch

Type of Riser: Sch. 40 PVC

Borehole Diameter: 3 inch

Elevation / Depth Top of Rock: N/A

Type of Backfill: NATURAL SOIL to ∇, then top with Type II Portland Cement

Elevation / Depth of Seal: 1~65'

Type of Seal: 30/65 Fine Sand

Elevation / Depth of Top of Filter Pack: 1~67'

Elevation / Depth of Top of Screen: 167.8'

Type of Screen: Sch. 40 PVC (Pre-Pack)

Slot Size x Length: 0.010 IN. x 5 FT.

I.D. of Screen: 0.75 inch

Type of Filter Pack: NO. 1 Filter Sand

Elevation / Depth of Bottom of Screen: 172.8'

Elevation / Depth of Bottom of Filter Pack: 173'

Type of Backfill Below Well: NATURAL SOIL

Elevation / Total Depth of Borehole: 173'

Tetra Tech NUS, Inc.

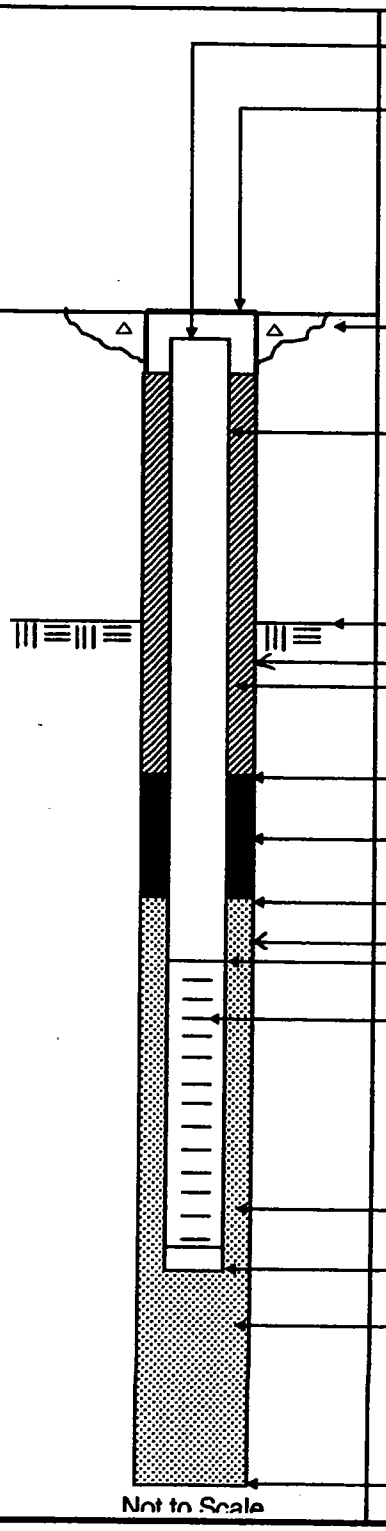
WELL No.: CEF-59- 003-121

MONITORING WELL SHEET

PROJECT:	Site 59, RI	DRILLING Co.:	Miller Drilling	BORING No.:	003-01
PROJECT No.:	N8925	DRILLER:	Tracy Thrasher	DATE COMPLETED:	10-3-04
SITE:	59 @ Cecil Field	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	Merv Dale	DEV. METHOD:	Sub. pump	EASTING:	

Ground Elevation =

Datum:



Elevation / Depth of Top of Riser: 1 0"

Elevation / Height of Top of Surface Casing: 1 3"

I.D. of Surface Casing: 8"

Type of Surface Casing: Steel, boltdown

Type of Surface Seal: Quikrete 2'x2'x6" PAD

I.D. of Riser: 2"

Type of Riser: Schedule 40 PVC

Borehole Diameter: 6"

Elevation / Depth Top of Rock: 1 NA

STAINLESS STEEL STABILIZER 1~61'

Type of Backfill: Type II Portland Cement

Elevation / Depth of Seal: 1111.5'

Type of Seal: Bentonite 3/8" pellets

Elevation / Depth of Top of Filter Pack: 1114.5'

STAINLESS STEEL STABILIZER 1~115'

Elevation / Depth of Top of Screen: 1116.5'

Type of Screen: Schedule 40 PVC

Slot Size x Length: 0.01" x 5 FT.

I.D. of Screen: 2"

Type of Filter Pack: #1 SAND

Elevation / Depth of Bottom of Screen: 1121.5'

Elevation / Depth of Bottom of Filter Pack: 1123'

Type of Backfill Below Well: #1 SAND

Elevation / Total Depth of Borehole: 1123'

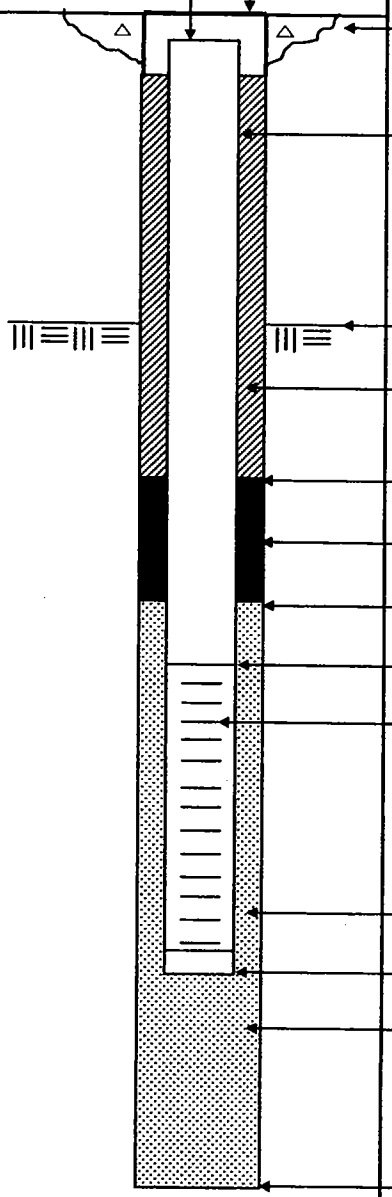
Tetra Tech NUS, Inc.

WELL No.: CEF-59-004-33

MONITORING WELL SHEET

PROJECT:	Site 59 RI	DRILLING Co.:	Prosonic	BORING No.:	
PROJECT No.:	N8925	DRILLER:	W. Lindsey	DATE COMPLETED:	6-9-05
SITE:	59 @ Cecil Field	DRILLING METHOD:	DPT	NORTHING:	
GEOLOGIST:	S. McGuire	DEV. METHOD:	Peristaltic	EASTING:	

Ground Elevation =
Datum:



Not to Scale

Elevation / Depth of Top of Riser: 1 2 IN.

Elevation / Height of Top of Surface Casing: 1 0 IN.

I.D. of Surface Casing: 8 INCHES

Type of Surface Casing: Steel boltdown manhole

Type of Surface Seal: Concrete

I.D. of Riser: 3/4 inch

Type of Riser: Sch. 40 PVC

Borehole Diameter: 2.25 IN.

Elevation / Depth Top of Rock: N/A

Type of Backfill: ~~Natural formation to~~ MD
Type I/II Portland Cement ~~(water table to surface)~~

Elevation / Depth of Seal: 26.10 FT.

Type of Seal: Bentonite

Elevation / Depth of Top of Filter Pack: 28.10 FT.

Elevation / Depth of Top of Screen: 28.10 FT.

Type of Screen: Sch. 40 PVC

Slot Size x Length: 0.010 inch x 5 ft.

I.D. of Screen: 3/4 inch

Type of Filter Pack: 20/40 Sand

Elevation / Depth of Bottom of Screen: 33.10 FT.

Elevation / Depth of Bottom of Filter Pack: 133.0 FT.

Type of Backfill Below Well: 20/40 SAND

Elevation / Total Depth of Borehole: 133.0 FT.

Tetra Tech NUS, Inc.

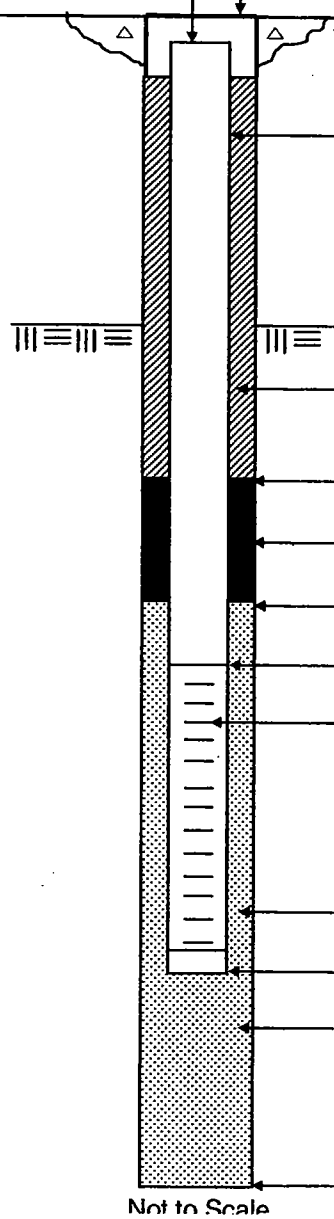
WELL No.: CEF-59-004-053

MONITORING WELL SHEET

PROJECT:	Site 59, RI	DRILLING Co.:	Miller Drilling	~~BORING~~ LOCATION No.:	004-03
PROJECT No.:	N8925	DRILLER:	Haz Huntoon	DATE COMPLETED:	10/18/04
SITE:	59 @ Cecil Field	DRILLING METHOD:	DPT	NORTHING:	
GEOLOGIST:	P. Everette	DEV. METHOD:	Peristaltic	EASTING:	

Ground Elevation =

Datum:



Not to Scale

Elevation / Depth of Top of Riser: 1 2"

Elevation / Height of Top of Surface Casing: 1 0"

I.D. of Surface Casing: 8"

Type of Surface Casing: Steel, bolt down

Type of Surface Seal: Quikrete Concrete 2'x2'x6" PAD

I.D. of Riser: 3/4"

Type of Riser: Sch. 40 PVC

Borehole Diameter: 3 inch

Elevation / Depth Top of Rock: N/A

Type of Backfill: Natural Soil to ∇, then top with Type II Portland Cement.

Elevation / Depth of Seal: 143'

Type of Seal: 30-65 fine sand

Elevation / Depth of Top of Filter Pack: 146.8'

Elevation / Depth of Top of Screen: 147.8'

Type of Screen: Pre-Pack Sch. 40 PVC

Slot Size x Length: 0.010" x 5'

I.D. of Screen: 3/4"

Type of Filter Pack: No. 1 Sand

Elevation / Depth of Bottom of Screen: 152.8'

Elevation / Depth of Bottom of Filter Pack: 153'

Type of Backfill Below Well: Natural Soil

Elevation / Total Depth of Borehole: 153'

Tetra Tech NUS, Inc.

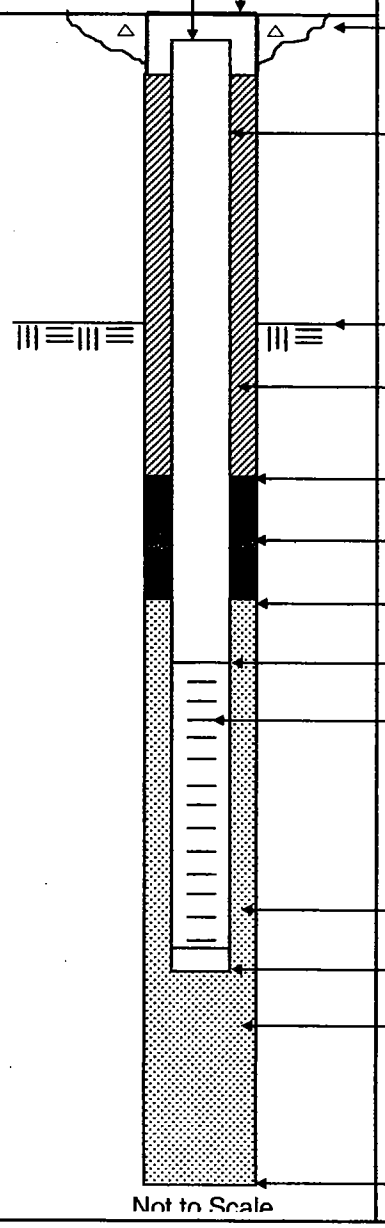
WELL No.: CEF-59-004-073

MONITORING WELL SHEET

PROJECT:	Site 59, RI	DRILLING Co.:	Miller Drilling	~~BORING~~ LOCATION No.:	004-02
PROJECT No.:	N8925	DRILLER:	Haz Huntoon	DATE COMPLETED:	10/18/04
SITE:	59 @ Cecil Field	DRILLING METHOD:	DPT	NORTHING:	
GEOLOGIST:	P. Leverette	DEV. METHOD:	Peristaltic	EASTING:	

Ground Elevation =

Datum:



Elevation / Depth of Top of Riser: 1 2"

Elevation / Height of Top of Surface Casing: 1 0"

I.D. of Surface Casing: 8"

Type of Surface Casing: Steel, bolt down

Type of Surface Seal: Quikrete Concrete 2'x2'x 6" PAD

I.D. of Riser: 3/4"

Type of Riser: Sch. 40 PVC

Borehole Diameter: 3"

Elevation / Depth Top of Rock: NA

Type of Backfill: Natural Soil to ▽, then top with Type II Portland Cement.

Elevation / Depth of Seal: 1 65'

Type of Seal: ~~30~~ 50-65 Fine Sand

Elevation / Depth of Top of Filter Pack: 1 67'

Elevation / Depth of Top of Screen: 1 67.8'

Type of Screen: Pre-Pack Sch. 40 PVC

Slot Size x Length: 0.010" x 5'

I.D. of Screen: 3/4"

Type of Filter Pack: #1 Sand

Elevation / Depth of Bottom of Screen: 1 72.8'

Elevation / Depth of Bottom of Filter Pack: 1 73'

Type of Backfill Below Well: Natural Soil

Elevation / Total Depth of Borehole: 1 73'

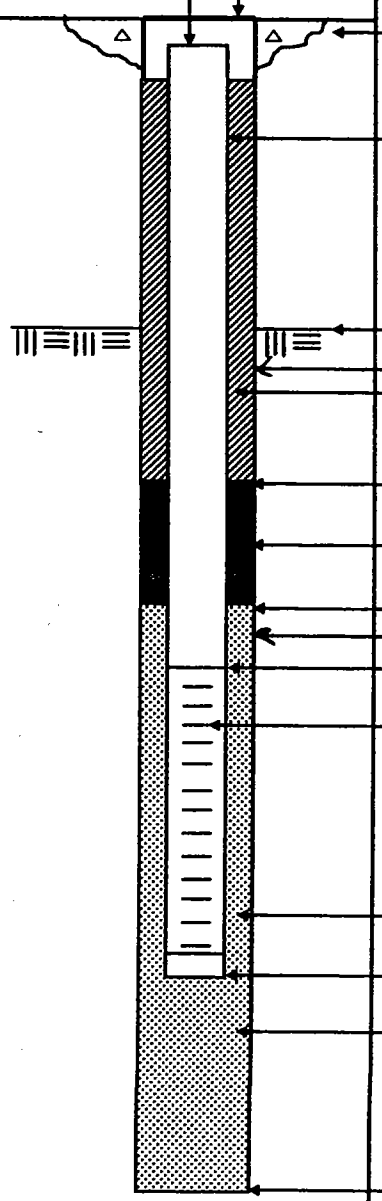
Tetra Tech NUS, Inc.

WELL No.: CEF-59- 004-112

MONITORING WELL SHEET

PROJECT:	Site 59, RI	DRILLING Co.:	Miller Drilling	BORING No.:	004-01
PROJECT No.:	N8925	DRILLER:	Tracy Thrasher	DATE COMPLETED:	10-1-04
SITE:	59 @ Cecil Field	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	Merv Dale	DEV. METHOD:	Sub. pump	EASTING:	

Ground Elevation =
Datum:



Not to Scale

Elevation / Depth of Top of Riser: 1 2"

Elevation / Height of Top of Surface Casing: 1 0"

I.D. of Surface Casing: 8"

Type of Surface Casing: Steel, holtdown

Type of Surface Seal: Quikrete 2'x2'x6" PAD

I.D. of Riser: 2"

Type of Riser: Schedule 40 PVC

Borehole Diameter: 6"

Elevation / Depth Top of Rock: 1 NA

STAINLESS STEEL STABILIZER 1~57'

Type of Backfill: Type II Portland cement

Elevation / Depth of Seal: 1102'

Type of Seal: 3/8" bentonite pellets

Elevation / Depth of Top of Filter Pack: 1105'

STAINLESS STEEL STABILIZER ~106'

Elevation / Depth of Top of Screen: 1107'

Type of Screen: Schedule 40 PVC

Slot Size x Length: 0.01" x 5 FT.

I.D. of Screen: 2"

Type of Filter Pack: #1 Sand

Elevation / Depth of Bottom of Screen: 1 112'

Elevation / Depth of Bottom of Filter Pack: 1 114'

Type of Backfill Below Well: 120-114 bentonite 114-112 Sand #1

Elevation / Total Depth of Borehole: 1 120'

Tetra Tech NUS, Inc.

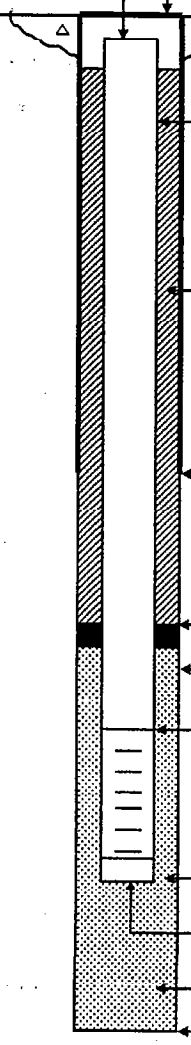
WELL No.: CEF-059-004-135'

DOUBLE CASED MONITORING WELL SHEET

PROJECT:	N0039	DRILLING Co.:	Miller	BORING No.:	CEF-059-004-135'
PROJECT No.:	N0039	DRILLER:	Tracy Thrasher	DATE COMPLETED:	11/14/05
SITE:	59	DRILLING METHOD:	Sonic	NORTHING:	
GEOLOGIST:	Mark Peterson	DEV. METHOD:	Pump & Surge	EASTING:	

Ground Elevation =

Datum:



Not to Scale

Elevation / Depth of Top of Riser: /

Elevation / Height of Top of Surface Casing: /

I.D. of Surface Casing: Temp Casing - 6"

Type of Surface Casing: Steel

Type of Surface Seal: Bentonite / Cement Quickcrete for pad

I.D. of Riser: 2"

Type of Riser: PVC

Borehole Diameter: 6"

Type of Backfill: Bentonite Cement Grout

Elevation / Depth of Bottom of Surface Casing: Note - Temp Casing. / 122'

Elevation / Depth of Seal: / 121'

Type of Seal: Bentonite Plug

Elevation / Depth of Top of Filter Pack: / 123

Elevation / Depth of Top of Screen: / 124.5

Type of Screen: PVC

Slot Size x Length: 010" - 10'

I.D. of Screen: 2"

Type of Filter Pack: DSI #1 Filter Sand

Elevation / Depth of Bottom of Screen: / 135'

Elevation / Depth of Bottom of Filter Pack: / 135'

Elevation / Total Depth of Borehole: / 138'

Tetra Tech NUS, Inc.

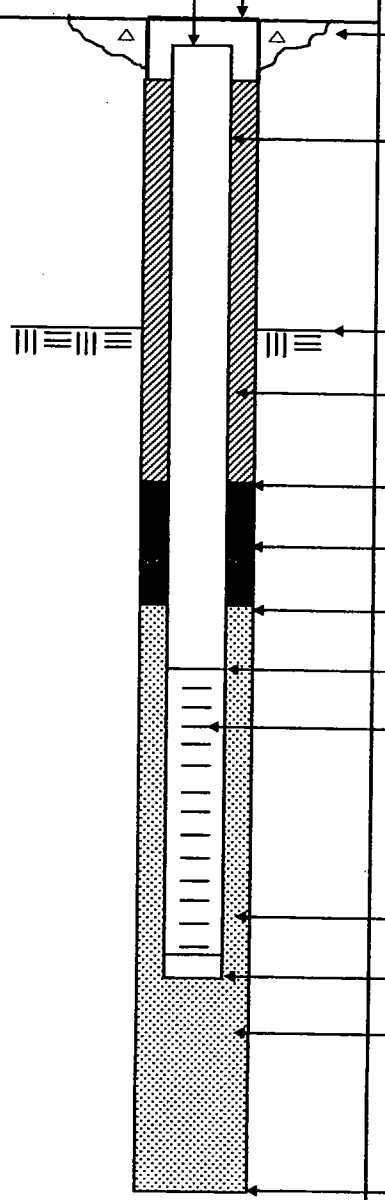
WELL No.: CEF-59-005-~~30~~ 033 MD

MONITORING WELL SHEET

PROJECT:	Site 59, RI	DRILLING Co.:	Miller Drilling	BORING No.:	005-~~30~~ 01 MD
PROJECT No.:	N8925	DRILLER:	Haz Huntoon	DATE COMPLETED:	10/15/04
SITE:	59 @ Cecil Field	DRILLING METHOD:	DPT	NORTHING:	
GEOLOGIST:	P. Lenerette	DEV. METHOD:	Peristaltic	EASTING:	

Ground Elevation =

Datum:



Not to Scale

Elevation / Depth of Top of Riser: 1 2"

Elevation / Height of Top of Surface Casing: 1 0"

I.D. of Surface Casing: 8"

Type of Surface Casing: Steel, Bolt Down

Type of Surface Seal: ~~Grout~~ Concrete MD
Round 12" Diam Pad

I.D. of Riser: 3/4"

Type of Riser: PVC, Sch. 40

Borehole Diameter: 2"

Elevation / Depth Top of Rock: 1 NA

Type of Backfill: Natural
Soil to ∇, then top with Type II Portland Cement

Elevation / Depth of Seal: 1 25'

Type of Seal: 30-65 Sand

Elevation / Depth of Top of Filter Pack: 1 27'

Elevation / Depth of Top of Screen: 1 28'

Type of Screen: Pre-Pack PVC, Sch. 40

Slot Size x Length: 0.010" x 5'

I.D. of Screen: 3/4"

Type of Filter Pack: #1 Filter Sand

Elevation / Depth of Bottom of Screen: 1 33'

Elevation / Depth of Bottom of Filter Pack: 1 33.5'

Type of Backfill Below Well:
Natural Soil

Elevation / Total Depth of Borehole: 1 33.5'

Tetra Tech NUS, Inc.

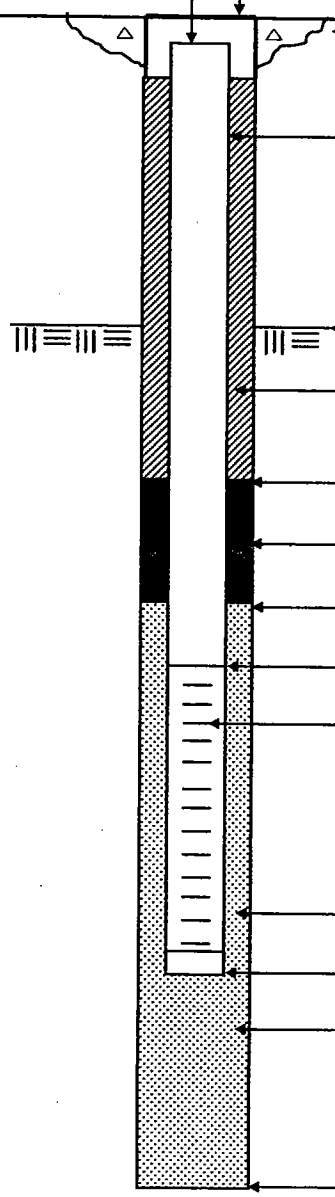
WELL No.: CEF-59-005-053

MONITORING WELL SHEET

PROJECT:	Site 59, RI	DRILLING Co.:	Miller Drilling	BORING No.:	005-03
PROJECT No.:	N8925	DRILLER:	Haz Huntoon	DATE COMPLETED:	10-21-04
SITE:	59 @ Cecil Field	DRILLING METHOD:	DPT	NORTHING:	
GEOLOGIST:	M. DALE (D.S)	DEV. METHOD:	Peristaltic	EASTING:	

Ground Elevation =

Datum:



Not to Scale

Elevation / Depth of Top of Riser: 1 2"

Elevation / Height of Top of Surface Casing: 1 0"

I.D. of Surface Casing: 8"

Type of Surface Casing: Steel, boltdown

Type of Surface Seal: Quikrete Concrete Round 12 in. Diam. Pad

I.D. of Riser: 3/4"

Type of Riser: Schedule 40 PVC

Borehole Diameter: 2"

Elevation / Depth Top of Rock: 1 NA

Type of Backfill: Natural Fill 43'-7' Type I portland cement 7' to surface

Elevation / Depth of Seal: 1 43'

Type of Seal: 30/65 Sand

Elevation / Depth of Top of Filter Pack: 1 46'

Elevation / Depth of Top of Screen: 1 48'

Type of Screen: Schedule 40 PVC (Pre-Pack)

Slot Size x Length: 0.01" x 5'

I.D. of Screen: 3/4"

Type of Filter Pack: #1 Sand

Elevation / Depth of Bottom of Screen: 1 53'

Elevation / Depth of Bottom of Filter Pack: 1 53.5'

Type of Backfill Below Well: #1 SAND

Elevation / Total Depth of Borehole: 1 53.5'

Tetra Tech NUS, Inc.

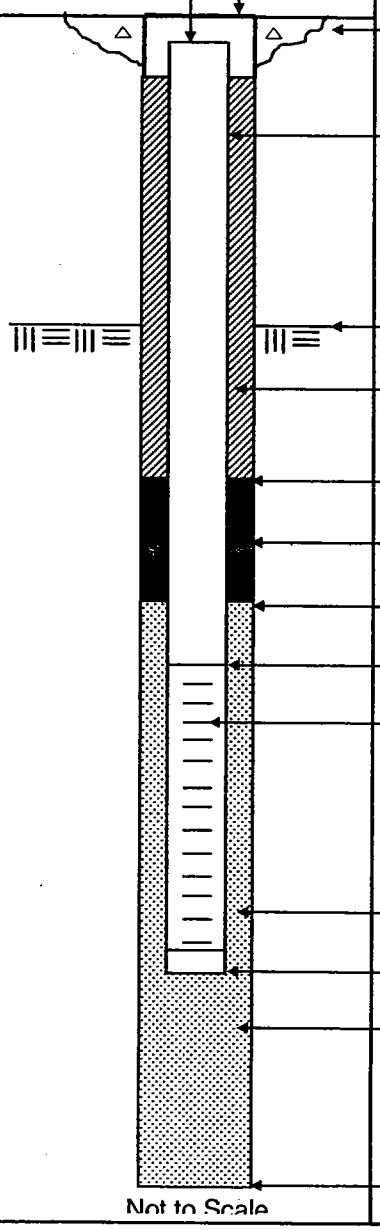
WELL No.: CEF-59- 005-073

MONITORING WELL SHEET

PROJECT:	Site 59, RI	DRILLING Co.:	Miller Drilling	BORING No.:	005-02
PROJECT No.:	N8925	DRILLER:	Haz Huntoon	DATE COMPLETED:	10-21-04
SITE:	59 @ Cecil Field	DRILLING METHOD:	DPT	NORTHING:	
GEOLOGIST:	M. DALE	DEV. METHOD:	Peristaltic	EASTING:	

Ground Elevation =

Datum:



Elevation / Depth of Top of Riser: 1 2"

Elevation / Height of Top of Surface Casing: 1 0"

I.D. of Surface Casing: 8"

Type of Surface Casing: 8" Steel, boltdown

Type of Surface Seal: Quikrete CONCRETE Round 12 IN. Diam PAD.

I.D. of Riser: 3/4"

Type of Riser: Schedule 40 PVC

Borehole Diameter: 2"

Elevation / Depth Top of Rock: N/A

Type of Backfill: Natural Formation to ∇ Type II portland cement from ∇ to land surface

Elevation / Depth of Seal: 1 63'

Type of Seal: 30-65 Sand

Elevation / Depth of Top of Filter Pack: 1 66'

Elevation / Depth of Top of Screen: 1 68'

Type of Screen: Schedule 40 PVC (Pre-pack)

Slot Size x Length: 0.01" x 5'

I.D. of Screen: 3/4"

Type of Filter Pack: #1 Sand

Elevation / Depth of Bottom of Screen: 1 73'

Elevation / Depth of Bottom of Filter Pack: 1 73.5'

Type of Backfill Below Well: #1 Sand

Elevation / Total Depth of Borehole: 1 73.5'

Tetra Tech NUS, Inc.

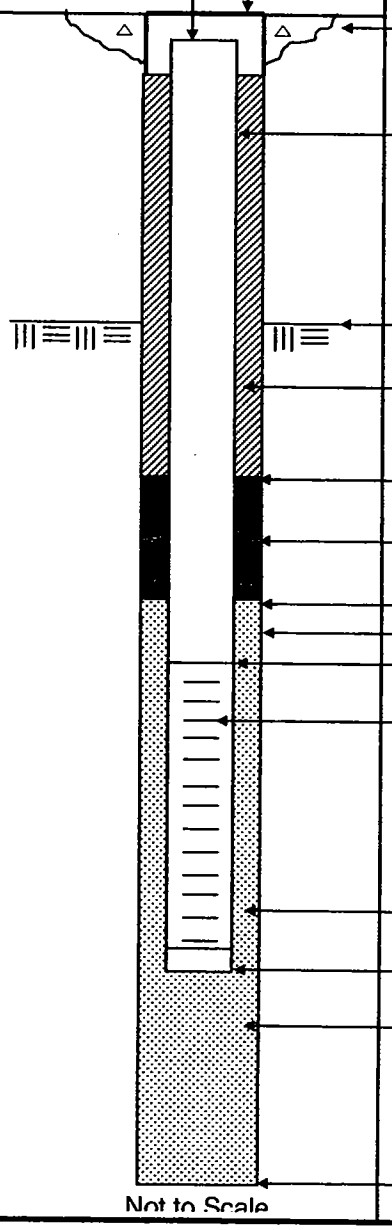
WELL No.: CEF-059-006-078

MONITORING WELL SHEET

PROJECT:	Site 59 R. I.	DRILLING Co.:	Prosonic	BORING No.:	05
PROJECT No.:	N8925	DRILLER:	V. Scott JR.	DATE COMPLETED:	06/12/05
SITE:	59 @ Cecil Field	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	M. DALE	DEV. METHOD:	Submersible	EASTING:	

Ground Elevation =

Datum:



Not to Scale

Elevation / Depth of Top of Riser:		1 2IN,
Elevation / Height of Top of Surface Casing:		1 0IN.
I.D. of Surface Casing:	8 inch	
Type of Surface Casing:	Steel boltdown manhole	
Type of Surface Seal:	Concrete	
I.D. of Riser:	2 inch	
Type of Riser:	Schedule 40 PVC	
Borehole Diameter:	6 inches	
Elevation / Depth Top of Rock:		N/A
Type of Backfill:	Type I/II Portland Cement	
Elevation / Depth of Seal:		1 67'
Type of Seal:	Bentonite 3/8" Envirosplug	
Elevation / Depth of Top of Filter Pack:		1 70'
Stainless Steel Stabilizer		39' AND 69'
Elevation / Depth of Top of Screen:		1 73' 6"
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010 inch x 5 foot	
I.D. of Screen:	2 inch	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		1 78' 6"
Elevation / Depth of Bottom of Filter Pack:		1 78' 10"
Type of Backfill Below Well:	20/30 GRADE FILTERSAND	
Elevation / Total Depth of Borehole:		1 78' 10"

Tetra Tech NUS, Inc.

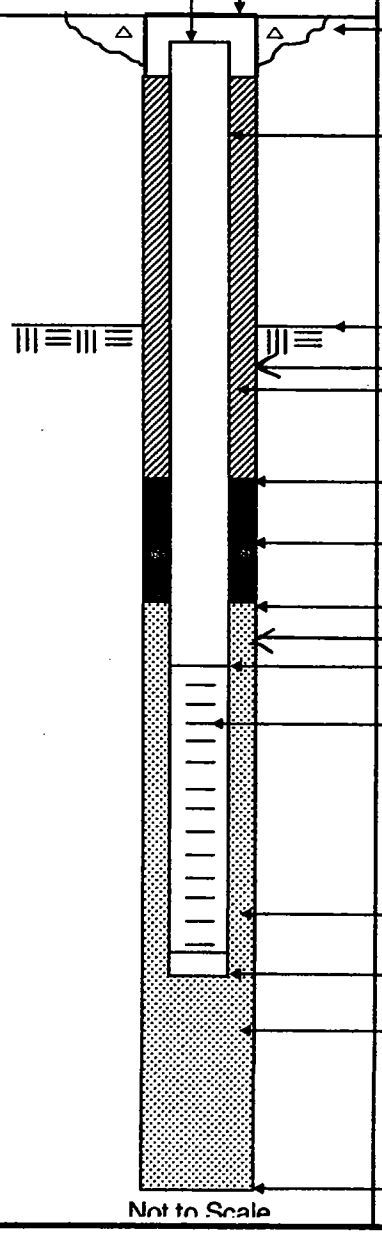
WELL No.: CEF-59- 006-104

MONITORING WELL SHEET

PROJECT:	Site 59, RI	DRILLING Co.:	Miller Drilling	BORING No.:	006-01
PROJECT No.:	N8925	DRILLER:	Tracy Thrasher	DATE COMPLETED:	9-30-04
SITE:	59 @ Cecil Field	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	Merv Dale	DEV. METHOD:	Sub. pump	EASTING:	

Ground Elevation =

Datum:



Not to Scale

Elevation / Depth of Top of Riser: 1 2"

Elevation / Height of Top of Surface Casing: 1 0"

I.D. of Surface Casing: 8"

Type of Surface Casing: Steel, boltdown

Type of Surface Seal: Quik Crete 12" ROUND PAD IN APRON

I.D. of Riser: 2"

Type of Riser: Schedule 40 PVC

Borehole Diameter: 6"

Elevation / Depth Top of Rock: 1 NA

STAINLESS STEEL STABILIZER 1 ~52'

Type of Backfill: Type II Portland Cement

Elevation / Depth of Seal: 1 94.5'

Type of Seal: Bentonite 3/8" Pellets

Elevation / Depth of Top of Filter Pack: 1 97.5'

STAINLESS STEEL STABILIZER 1 ~98'

Elevation / Depth of Top of Screen: 1 99.5'

Type of Screen: Schedule 40 PVC

Slot Size x Length: 0.01 inch x 5 FT.

I.D. of Screen: 2"

Type of Filter Pack: #1 Sand

Elevation / Depth of Bottom of Screen: 1 104.5'

Elevation / Depth of Bottom of Filter Pack: 1 104.5'

Type of Backfill Below Well: ~~#1 Sand~~ None

Elevation / Total Depth of Borehole: 1 104.5'

Tetra Tech NUS, Inc.

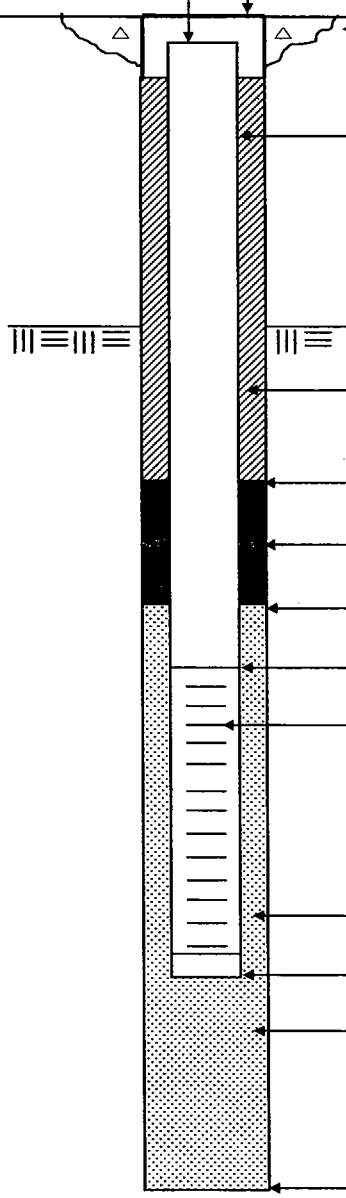
WELL No.: CEF-59-007-53

MONITORING WELL SHEET

PROJECT:	Site 59 RI	DRILLING Co.:	Prosonic	BORING No.:	
PROJECT No.:	N8925	DRILLER:	W. Lindsey	DATE COMPLETED:	6-11-05
SITE:	59 @ Cecil Field	DRILLING METHOD:	DPT	NORTHING:	
GEOLOGIST:	S. McGuire	DEV. METHOD:	Peristaltic	EASTING:	

Ground Elevation =

Datum:



Not to Scale

Elevation / Depth of Top of Riser: 1 2 IN.

Elevation / Height of Top of Surface Casing: 1 0 IN.

I.D. of Surface Casing: 8 INCHES

Type of Surface Casing: Steel boltdown manhole

Type of Surface Seal: Concrete

I.D. of Riser: 3/4 inch

Type of Riser: Sch. 40 PVC

Borehole Diameter: 2.25 IN.

Elevation / Depth Top of Rock: N/A

Type of Backfill: ~~Natural formation to~~ MD
Type I/II Portland Cement ~~(water table to surface)~~

Elevation / Depth of Seal: 46.00 FT.

Type of Seal: Bentonite

Elevation / Depth of Top of Filter Pack: 48.10 FT.

Elevation / Depth of Top of Screen: 48.10 FT.

Type of Screen: Sch. 40 PVC

Slot Size x Length: 0.010 inch x 5 ft.

I.D. of Screen: 3/4 inch

Type of Filter Pack: 20/40 Sand

Elevation / Depth of Bottom of Screen: 53.10 FT.

Elevation / Depth of Bottom of Filter Pack: 153.0 FT.

Type of Backfill Below Well: 20/40 Sand

Elevation / Total Depth of Borehole: 153.0 FT.

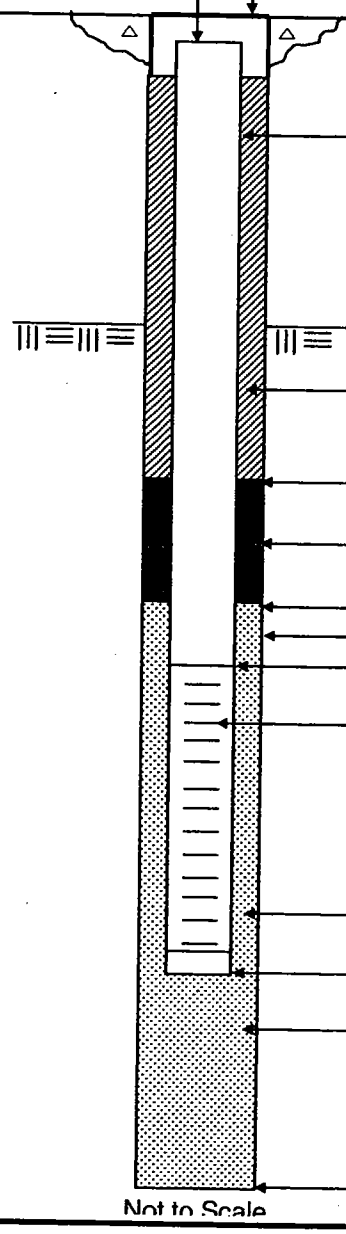
Tetra Tech NUS, Inc.

WELL No.: CEF-059-007-078

MONITORING WELL SHEET

PROJECT:	Site 59 R. I.	DRILLING Co.:	Prosonic	BORING No.:	06
PROJECT No.:	N8925	DRILLER:	V. Scott JR.	DATE COMPLETED:	06/11/05
SITE:	59 @ Cecil Field	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	M. DALE	DEV. METHOD:	Submersible	EASTING:	

Ground Elevation =
Datum:



Not to Scale

Elevation / Depth of Top of Riser: 1 2IN.

Elevation / Height of Top of Surface Casing: 1 0 IN.

I.D. of Surface Casing: 8 inch

Type of Surface Casing: Steel boltdown manhole

Type of Surface Seal: Concrete

I.D. of Riser: 2 inch

Type of Riser: Schedule 40 PVC

Borehole Diameter: 6 INCHES

Elevation / Depth Top of Rock: N/A

Type of Backfill: Type I/II Portland Cement

Elevation / Depth of Seal: ~~1 67'~~ 65'3" MD

Type of Seal: Bentonite, 3/8" pellets ENVIROplug

Elevation / Depth of Top of Filter Pack: 1 70'

Stainless Steel Stabilizer ~~39' & 69'~~

Elevation / Depth of Top of Screen: ~~1 73'~~

Type of Screen: Sch. 40 PVC

Slot Size x Length: 0.010 inch x 5 foot

I.D. of Screen: 2 inch

Type of Filter Pack: 20/30 Filter Sand

Elevation / Depth of Bottom of Screen: 1 78'

Elevation / Depth of Bottom of Filter Pack: 178'3"

Type of Backfill Below Well: 20/30 GRADE FILTER SAND

Elevation / Total Depth of Borehole: 178'3"

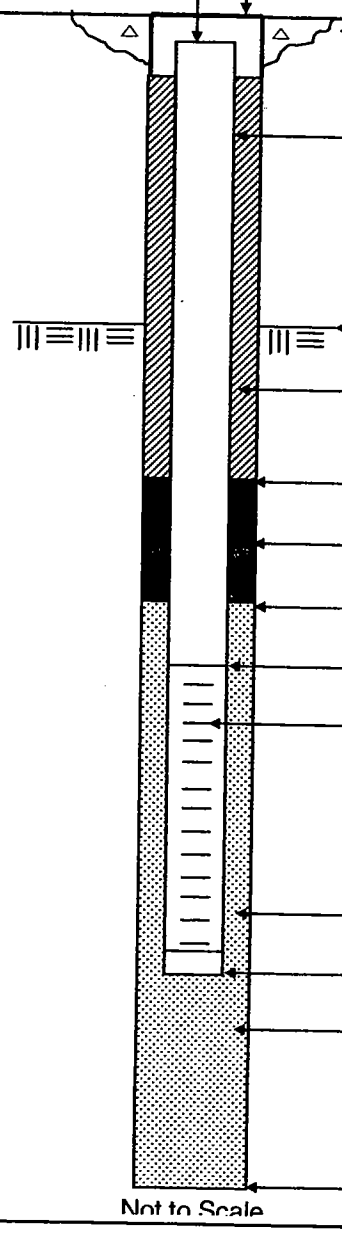
Tetra Tech NUS, Inc.

WELL No.: CEF-59-008-~~30~~ 028 MD

MONITORING WELL SHEET

PROJECT:	Site 59, RI	DRILLING Co.:	Miller Drilling	BORING No.:	008-3001
PROJECT No.:	N8925	DRILLER:	Haz Huntoon	DATE COMPLETED:	10/5/04 MD
SITE:	59 @ Cecil Field	DRILLING METHOD:	DPT	NORTHING:	
GEOLOGIST:	P. Colorotte	DEV. METHOD:	Peristaltic	EASTING:	

Ground Elevation =
Datum:



Elevation / Depth of Top of Riser: 1' 0"

Elevation / Height of Top of Surface Casing: 1' 2"

I.D. of Surface Casing: 8"

Type of Surface Casing: Steel Bolt Down

Type of Surface Seal: ~~Grout~~ Concrete MD 2'x2'x6" PAD

I.D. of Riser: 3/4"

Type of Riser: PVC, Sch. 40

Borehole Diameter: 2"

Elevation / Depth Top of Rock: 1' NA

Type of Backfill: Natural Soil to 9' top w/ Type II cement.

Elevation / Depth of Seal: 1' 20'

Type of Seal: 30-65 Sand

Elevation / Depth of Top of Filter Pack: 1' 22'

Elevation / Depth of Top of Screen: 1' 23'

Type of Screen: Pre-Pack PVC, Sch. 40

Slot Size x Length: 0.010" x 5'

I.D. of Screen: 3/4"

Type of Filter Pack: #2 Sand

Elevation / Depth of Bottom of Screen: 1' 28'

Elevation / Depth of Bottom of Filter Pack: 1' 28½'

Type of Backfill Below Well: Natural Soil

Elevation / Total Depth of Borehole: 1' 28½'

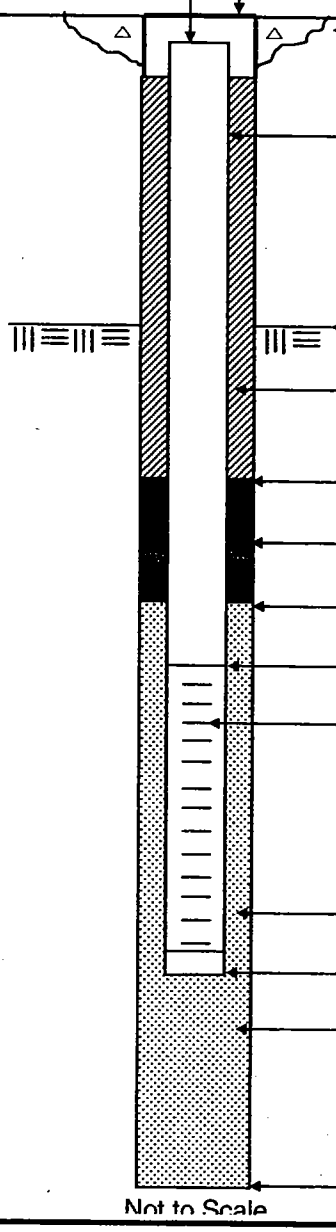
Tetra Tech NUS, Inc.

WELL No.: CEF-59- 009-053

MONITORING WELL SHEET

PROJECT:	Site 59, RI	DRILLING Co.:	Miller Drilling	BORING No.:	009-03
PROJECT No.:	N8925	DRILLER:	Tracy Thrasher	DATE COMPLETED:	10-15-04
SITE:	59 @ Cecil Field	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	Merv Dale	DEV. METHOD:	Sub. Pump	EASTING:	

Ground Elevation =
Datum:



Elevation / Depth of Top of Riser: 1 2"

Elevation / Height of Top of Surface Casing: 1 0"

I.D. of Surface Casing: 8"

Type of Surface Casing: Steel, boltdown

Type of Surface Seal: Quikrete 2' x 2' x 6" PAD

I.D. of Riser: 2"

Type of Riser: Schedule 40 PVC

Borehole Diameter: 6"

Elevation / Depth Top of Rock: 1 NA

Type of Backfill: Type II Portland Cement

Elevation / Depth of Seal: 1 43'

Type of Seal: 3/8" bentonite pellets

Elevation / Depth of Top of Filter Pack: 1 46'

Elevation / Depth of Top of Screen: 1 48'

Type of Screen: Schedule 40 PVC

Slot Size x Length: 0.01" x 5 FT.

I.D. of Screen: 2"

Type of Filter Pack: #1 Sand

Elevation / Depth of Bottom of Screen: 1 53'

Elevation / Depth of Bottom of Filter Pack: 1 54'

Type of Backfill Below Well: #1 Sand

Elevation / Total Depth of Borehole: 1 54'

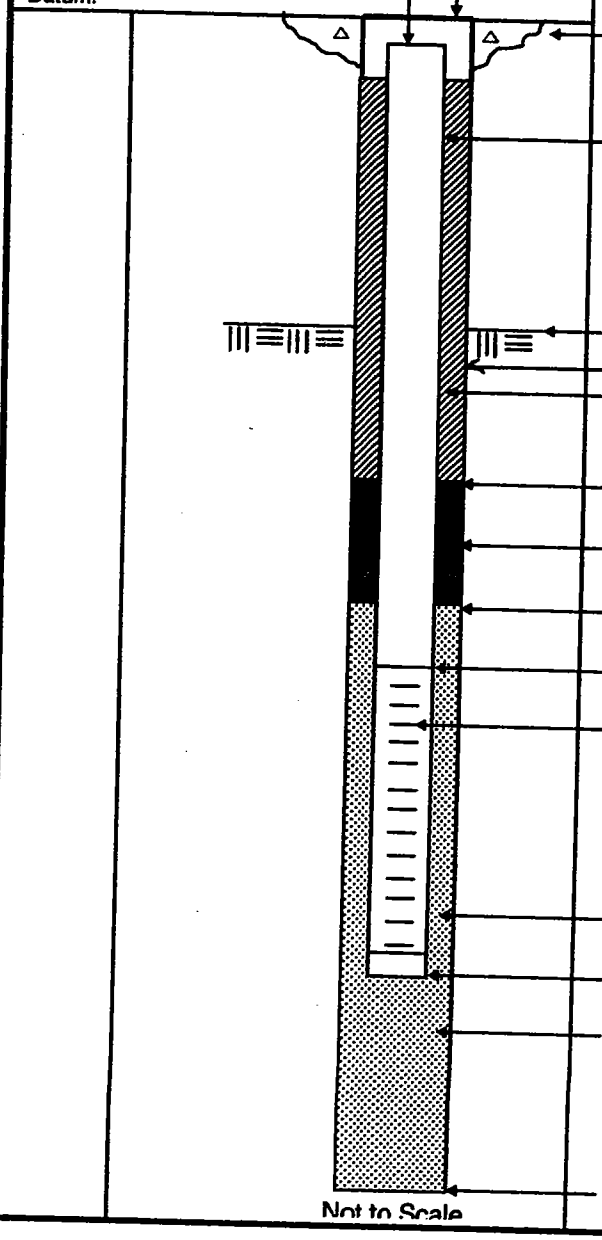
Tetra Tech NUS, Inc.

WELL No.: CEF-59- 009-083

MONITORING WELL SHEET

PROJECT:	Site 59, RI	DRILLING Co.:	Miller Drilling	BORING No.:	009-02
PROJECT No.:	N8925	DRILLER:	Tracy Thrasher	DATE COMPLETED:	10-14-04
SITE:	59 @ Cecil Field	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	Merv Dale	DEV. METHOD:	Sub. pump	EASTING:	

Ground Elevation =
Datum:



Elevation / Depth of Top of Riser: 1 2"

Elevation / Height of Top of Surface Casing: 1 0"

I.D. of Surface Casing: 8"

Type of Surface Casing: Steel, boltdown

Type of Surface Seal: Quikrete 2'x2'x6" PAD

I.D. of Riser: 2"

Type of Riser: Schedule 40 pvc

Borehole Diameter: 6"

Elevation / Depth Top of Rock: 1 NA

STAINLESS STEEL STABILIZER 1~41'

Type of Backfill: Type II Portland cement

Elevation / Depth of Seal: 1 73'

Type of Seal: 3/8" Bentonite Pellets

Elevation / Depth of Top of Filter Pack: 1 76'

Elevation / Depth of Top of Screen: 1 78'

Type of Screen: Schedule 40 pvc

Slot Size x Length: 0.01" x 5FT.

I.D. of Screen: 2"

Type of Filter Pack: #1 Sand

Elevation / Depth of Bottom of Screen: 1 83'

Elevation / Depth of Bottom of Filter Pack: 1 84'

Type of Backfill Below Well: #1 Sand

Elevation / Total Depth of Borehole: 1 84'

Tetra Tech NUS, Inc.

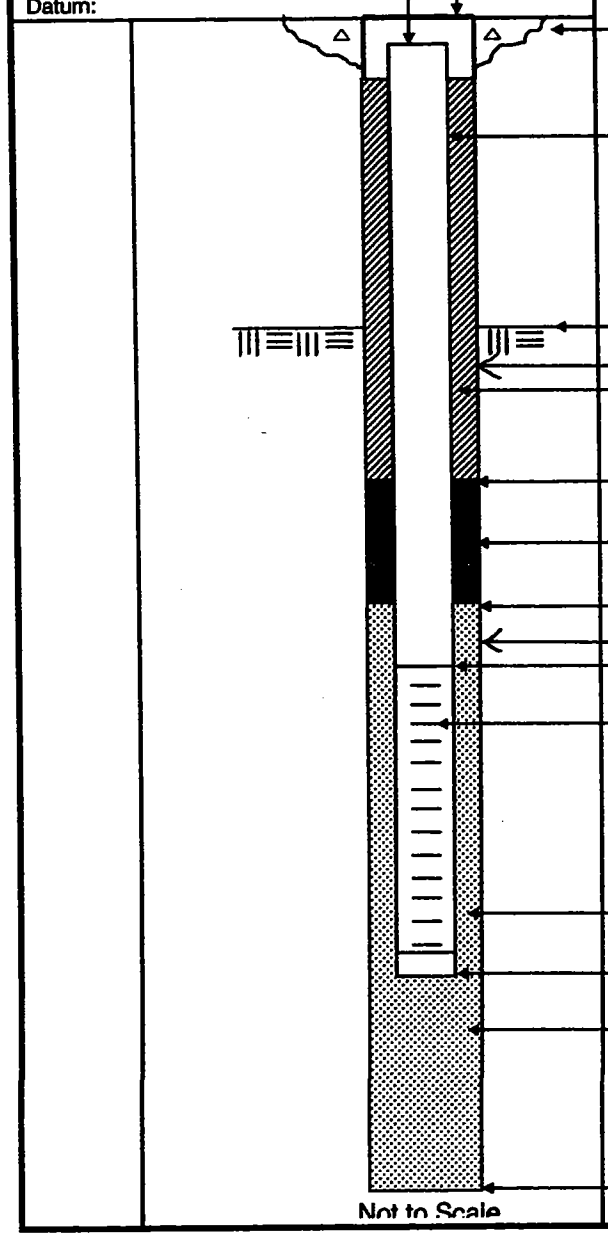
WELL No.: CEF-59- 009-113

MONITORING WELL SHEET

PROJECT:	Site 59, RI	DRILLING Co.:	Miller Drilling	BORING No.:	009-01
PROJECT No.:	N8925	DRILLER:	Tracy Thrasher	DATE COMPLETED:	10-14-04
SITE:	59 @ Cecil Field	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	Merv Dale	DEV. METHOD:	Sub. Pump	EASTING:	

Ground Elevation =

Datum:



Not to Scale

Elevation / Depth of Top of Riser: 1 2"

Elevation / Height of Top of Surface Casing: 1 0"

I.D. of Surface Casing: 8"

Type of Surface Casing: Steel, boltdown

Type of Surface Seal: Quikrete 2'x2'x6" PAD

I.D. of Riser: 2"

Type of Riser: Schedule 40 PVC

Borehole Diameter: 6"

Elevation / Depth Top of Rock: 1 NA

STAINLESS STEEL STABILIZER 1~57'

Type of Backfill: Type II Portland cement.

Elevation / Depth of Seal: 1103.5'

Type of Seal: 3/8" Bentonite Pellets

Elevation / Depth of Top of Filter Pack: 1106.5'

STAINLESS STEEL STABILIZER 1~107'

Elevation / Depth of Top of Screen: 1108.5

Type of Screen: Schedule 40 PVC

Slot Size x Length: 0.01" x 5 FT.

I.D. of Screen: 2"

Type of Filter Pack: #1 Sand

Elevation / Depth of Bottom of Screen: 1113.5'

Elevation / Depth of Bottom of Filter Pack: 1114'

Type of Backfill Below Well: Natural formation 118-114 114-113.5 - #1 SAND

Elevation / Total Depth of Borehole: 1118'

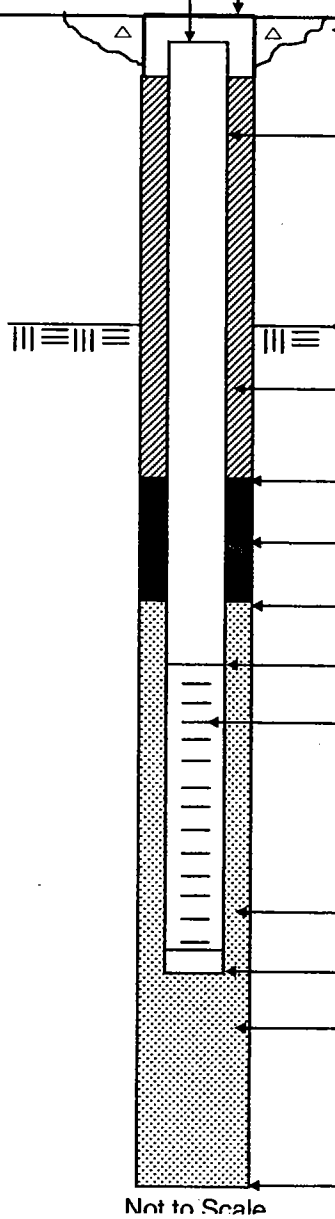
Tetra Tech NUS, Inc.

WELL No.: CEF-59-010-053

MONITORING WELL SHEET

PROJECT:	Site 59, RI	DRILLING Co.:	Miller Drilling	BORING No.:	010-02
PROJECT No.:	N8925	DRILLER:	Haz Huntoon	DATE COMPLETED:	10-20-04
SITE:	59 @ Cecil Field	DRILLING METHOD:	DPT	NORTHING:	
GEOLOGIST:	M. Dave	DEV. METHOD:	Peristaltic	EASTING:	

Ground Elevation =
Datum:



Not to Scale

Elevation / Depth of Top of Riser: / 2"

Elevation / Height of Top of Surface Casing: / 0"

I.D. of Surface Casing: 8"

Type of Surface Casing: Steel, boltdown

Type of Surface Seal: Quikrete Concrete

I.D. of Riser: 3/4"

Type of Riser: Schedule 40 PVC

Borehole Diameter: 2"

Elevation / Depth Top of Rock: / NA

Type of Backfill: NATURAL Formation - Type I Portland Cement 6' bls to surface

Elevation / Depth of Seal: / 43'

Type of Seal: 30/65 SAND

Elevation / Depth of Top of Filter Pack: / 46'

Elevation / Depth of Top of Screen: / 48'

Type of Screen: Schedule 40 PVC (Pre-pack)

Slot Size x Length: 0.010" ~~50~~ X 5' MD

I.D. of Screen: 3/4"

Type of Filter Pack: #1 Sand + Pre packed well

Elevation / Depth of Bottom of Screen: / 53'

Elevation / Depth of Bottom of Filter Pack: / 53.5'

Type of Backfill Below Well: #1 Sand

Elevation / Total Depth of Borehole: / 53.5'

Tetra Tech NUS, Inc.

WELL No.: CEF-59- 010-083

MONITORING WELL SHEET

PROJECT:	Site 59, RI	DRILLING Co.:	Miller Drilling	BORING No.:	010-01
PROJECT No.:	N8925	DRILLER:	Tracy Thrasher	DATE COMPLETED:	OCT 13, 2004
SITE:	59 @ Cecil Field	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	Merv Dale	DEV. METHOD:		EASTING:	

Ground Elevation =
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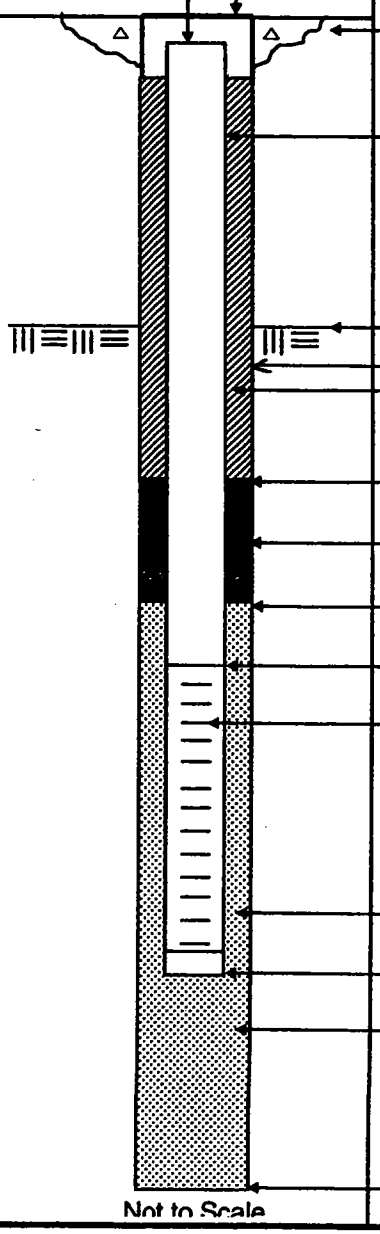


Elevation / Depth of Top of Riser: 1 2"

Elevation / Height of Top of Surface Casing: 1 0"

I.D. of Surface Casing: 8"

Type of Surface Casing: Steel, bolt down

Type of Surface Seal: Quikrete

I.D. of Riser: 2"

Type of Riser: Schedule 40 PVC

Borehole Diameter: 6"

Elevation / Depth Top of Rock: 1 NA

STAINLESS STEEL STABILIZER 1~42'

Type of Backfill: Type II Portland Cement

Elevation / Depth of Seal: 1 73'

Type of Seal: 3/8" bentonite Pellets

Elevation / Depth of Top of Filter Pack: 1 76'

Elevation / Depth of Top of Screen: 1 78'

Type of Screen: Schedule 40 PVC

Slot Size x Length: 0.01" X 5 FT.

I.D. of Screen: 2"

Type of Filter Pack: #1 Sand

Elevation / Depth of Bottom of Screen: 1 83'

Elevation / Depth of Bottom of Filter Pack: 1 84'

Type of Backfill Below Well: #1 sand

Elevation / Total Depth of Borehole: 1 84'

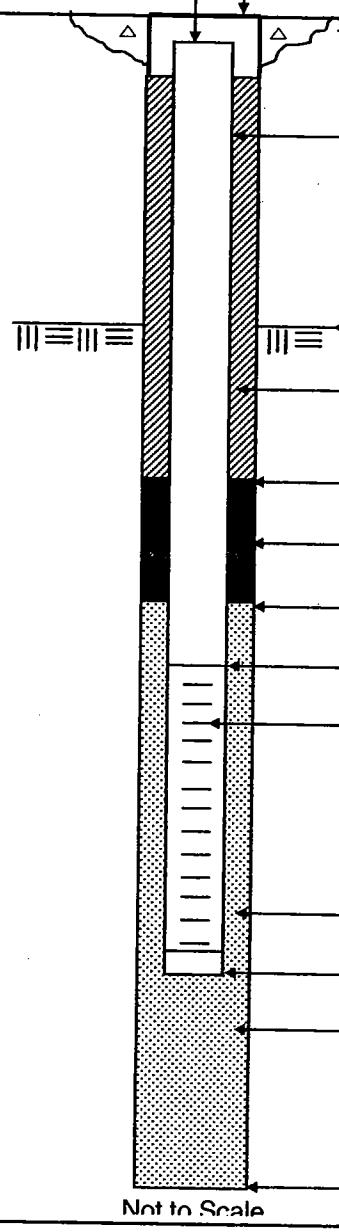
Tetra Tech NUS, Inc.

WELL No.: CEF-59-011-~~30~~ 033

MONITORING WELL SHEET

PROJECT:	Site 59, RI	DRILLING Co.:	Miller Drilling	BORING No.:	011-~~30~~ 02 MD
PROJECT No.:	N8925	DRILLER:	Haz Huntoon	DATE COMPLETED:	10/15/04
SITE:	59 @ Cecil Field	DRILLING METHOD:	DPT	NORTHING:	
GEOLOGIST:	P. LEVERETTE	DEV. METHOD:	peristaltic	EASTING:	

Ground Elevation =
Datum:



Not to Scale

Elevation / Depth of Top of Riser: 1 2"

Elevation / Height of Top of Surface Casing: 1 0"

I.D. of Surface Casing: ~~[illegible]~~ 8"

Type of Surface Casing: Steel Bolt Down

Type of Surface Seal: ~~Grout~~ Concrete MD
12" Round Pad in Apron

I.D. of Riser: 3/4"

Type of Riser: PVC, Sch. 40

Borehole Diameter: 2"

Elevation / Depth Top of Rock: 1 NA

Type of Backfill: Natural Soil to ▽, then top w/ Type II Portland.

Elevation / Depth of Seal: 1 25'

Type of Seal: 30-65 sand

Elevation / Depth of Top of Filter Pack: 1 27'

Elevation / Depth of Top of Screen: 1 28'

Type of Screen: Pre-Pack PVC, Sch. 40

Slot Size x Length: 0.010" x 5'

I.D. of Screen: 3/4"

Type of Filter Pack: #1 sand

Elevation / Depth of Bottom of Screen: 1 33'

Elevation / Depth of Bottom of Filter Pack: 1 33.5'

Type of Backfill Below Well: Natural Soil

Elevation / Total Depth of Borehole: 1 33.5'

Tetra Tech NUS, Inc.

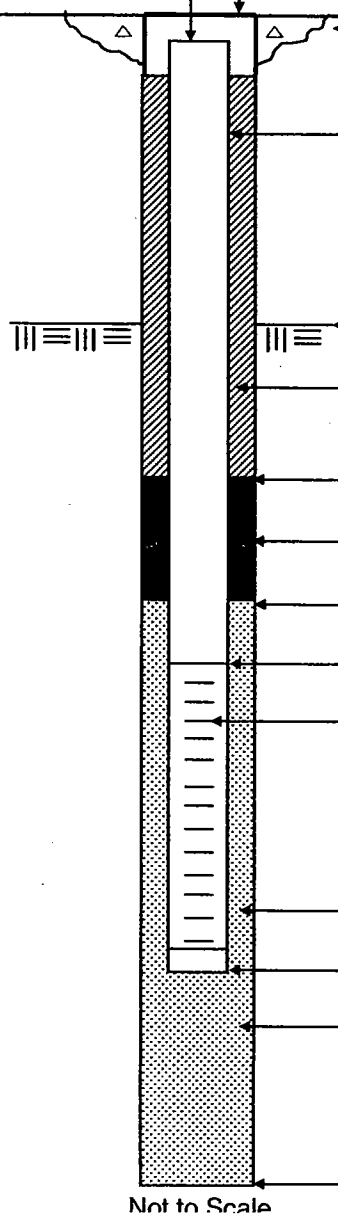
WELL No.: CEF-59- 011-053

MONITORING WELL SHEET

PROJECT:	Site 59, RI	DRILLING Co.:	Miller Drilling	BORING No.:	011-03
PROJECT No.:	N8925	DRILLER:	Haz Huntoon	DATE COMPLETED:	10-20-04
SITE:	59 @ Cecil Field	DRILLING METHOD:	DPT	NORTHING:	
GEOLOGIST:	M. Dale	DEV. METHOD:	Peristaltic	EASTING:	

Ground Elevation =

Datum:



Not to Scale

Elevation / Depth of Top of Riser: 1 2"

Elevation / Height of Top of Surface Casing: 1 0"

I.D. of Surface Casing: 8"

Type of Surface Casing: Steel, boltdown

Type of Surface Seal: Quikrete Concrete 12" Round Pad in Apron

I.D. of Riser: 3/4"

Type of Riser: Schedule 40 PVC

Borehole Diameter: 3"

Elevation / Depth Top of Rock: 1 NA

Type of Backfill: Natural formation Type II portland cement 6' bls to surface.

Elevation / Depth of Seal: 1 43'

Type of Seal: 30/65 Sand

Elevation / Depth of Top of Filter Pack: 1 46'

Elevation / Depth of Top of Screen: 1 48'

Type of Screen: Schedule 40 (Pre pack)

Slot Size x Length: 0.010" x 5'

I.D. of Screen: 3/4" (Pre-pack)

Type of Filter Pack: #1 Sand

Elevation / Depth of Bottom of Screen: 1 53'

Elevation / Depth of Bottom of Filter Pack: 1 53.5'

Type of Backfill Below Well: #1 Sand

Elevation / Total Depth of Borehole: 1 53.5'

Tetra Tech NUS, Inc.

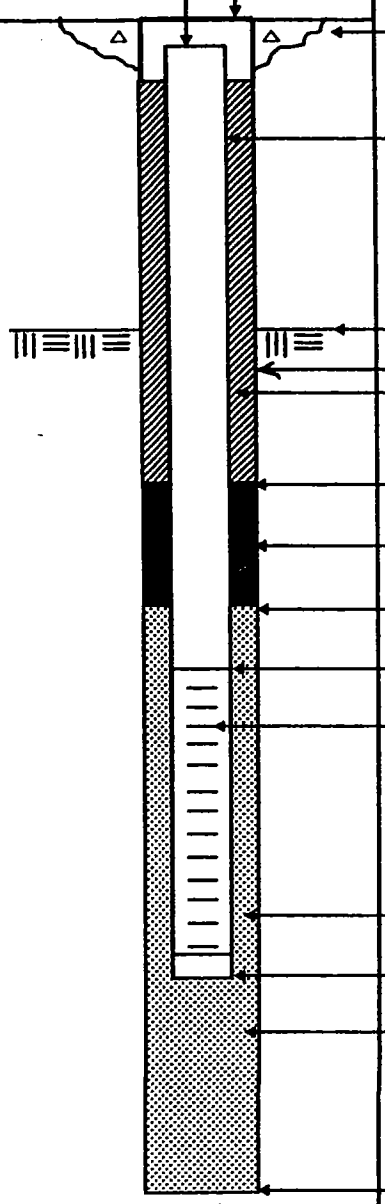
WELL No.: CEF-59- 011-083

MONITORING WELL SHEET

PROJECT:	Site 59, RI	DRILLING Co.:	Miller Drilling	BORING No.:	011-01
PROJECT No.:	N8925	DRILLER:	Tracy Thrasher	DATE COMPLETED:	10/7/04
SITE:	59 @ Cecil Field	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	Merv Dale	DEV. METHOD:	Sub. pump	EASTING:	

Ground Elevation =

Datum:



Not to Scale

Elevation / Depth of Top of Riser: 1 2"

Elevation / Height of Top of Surface Casing: 1 0"

I.D. of Surface Casing: 8"

Type of Surface Casing: Steel, boltdown

Type of Surface Seal: Quikrete 12" ROUND PAD IN APRON

I.D. of Riser: 2"

Type of Riser: Schedule 40 PVC

Borehole Diameter: 6"

Elevation / Depth Top of Rock: INA

STAINLESS STEEL STABILIZER ~42'

Type of Backfill: Type II Portland Cement

Elevation / Depth of Seal: 1 73'

Type of Seal: 3/8" bentonite pellets

Elevation / Depth of Top of Filter Pack: 1 76'

Elevation / Depth of Top of Screen: 1 78'

Type of Screen: Schedule 40 PVC

Slot Size x Length: 0.01" x 5 FT.

I.D. of Screen: 2

Type of Filter Pack: #1 Sand

Elevation / Depth of Bottom of Screen: 1 83'

Elevation / Depth of Bottom of Filter Pack: 1 84'

Type of Backfill Below Well: #1 Sand

Elevation / Total Depth of Borehole: 1 84'

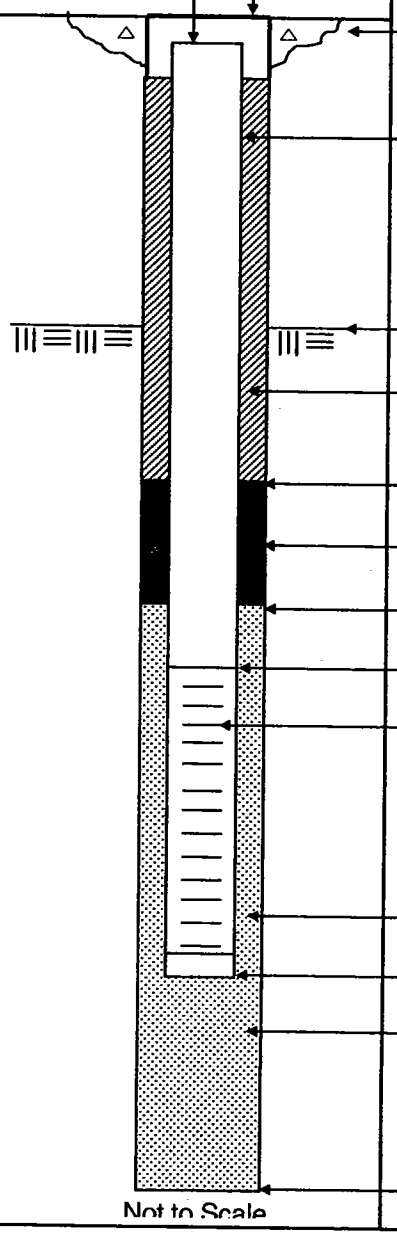
Tetra Tech NUS, Inc.

WELL No.: CEF-59-012-53

MONITORING WELL SHEET

PROJECT:	Site 59 RI	DRILLING Co.:	Prosonic	BORING No.:	
PROJECT No.:	N8925	DRILLER:	W. Lindsey	DATE COMPLETED:	6-10-05
SITE:	59 @ Cecil Field	DRILLING METHOD:	DPT	NORTHING:	
GEOLOGIST:	S. McGuire	DEV. METHOD:	Peristaltic	EASTING:	

Ground Elevation =
Datum:



Not to Scale

Elevation / Depth of Top of Riser: 1.2 IN.

Elevation / Height of Top of Surface Casing: 1 0.5 IN.

I.D. of Surface Casing: 8 INCHES

Type of Surface Casing: Steel boltdown manhole

Type of Surface Seal: Concrete

I.D. of Riser: 3/4 inch

Type of Riser: Sch. 40 PVC

Borehole Diameter: 2.25 IN.

Elevation / Depth Top of Rock: N/A

Type of Backfill: ~~Natural formation to~~ NO Type I/II Portland Cement ~~(water table to surface)~~

Elevation / Depth of Seal: 46.0 FT.

Type of Seal: Bentonite

Elevation / Depth of Top of Filter Pack: 48.0 FT.

Elevation / Depth of Top of Screen: 48.10 FT.

Type of Screen: Sch. 40 PVC

Slot Size x Length: 0.010 inch x 5 ft.

I.D. of Screen: 3/4 inch

Type of Filter Pack: 20/40 sand

Elevation / Depth of Bottom of Screen: 53.10 FT.

Elevation / Depth of Bottom of Filter Pack: 153.0 FT.

Type of Backfill Below Well: 20/40 Sand

Elevation / Total Depth of Borehole: 153.0 FT.

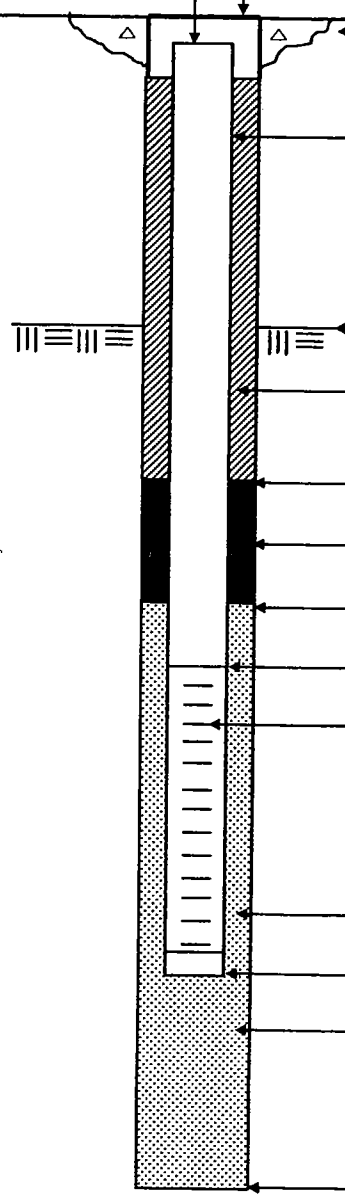
Tetra Tech NUS, Inc.

WELL No.: CEF-59-013-~~30~~ 032

MONITORING WELL SHEET

PROJECT:	Site 59, RI	DRILLING Co.:	Miller Drilling	BORING No.:	013-~~30~~ 02
PROJECT No.:	N8925	DRILLER:	Haz Huntoon	DATE COMPLETED:	10/14/04
SITE:	59 @ Cecil Field	DRILLING METHOD:	DPT	NORTHING:	
GEOLOGIST:	P. Leverette	DEV. METHOD:	Peristaltic	EASTING:	

Ground Elevation =
Datum:



Not to Scale

Elevation / Depth of Top of Riser: 1 2"

Elevation / Height of Top of Surface Casing: 1 0"

I.D. of Surface Casing: 8"

Type of Surface Casing: Steel Bolt Down

Type of Surface Seal: ~~Grout~~ Concrete 2'x2'x6" PAD

I.D. of Riser: 3/4"

Type of Riser: PVC, Sch. 40

Borehole Diameter: 2"

Elevation / Depth Top of Rock: NA

Type of Backfill: Natural Soil to 7, then top with Type II cement.

Elevation / Depth of Seal: 124'

Type of Seal: 30-65 sand

Elevation / Depth of Top of Filter Pack: 126'

Elevation / Depth of Top of Screen: 127'

Type of Screen: Pre-Pack PVC, Sch. 40

Slot Size x Length: 0.010" x 5"

I.D. of Screen: 3/4"

Type of Filter Pack: #2 Filter Sand

Elevation / Depth of Bottom of Screen: 132'

Elevation / Depth of Bottom of Filter Pack: 132'

Type of Backfill Below Well: Natural Soil

Elevation / Total Depth of Borehole: 133.5'

Tetra Tech NUS, Inc.

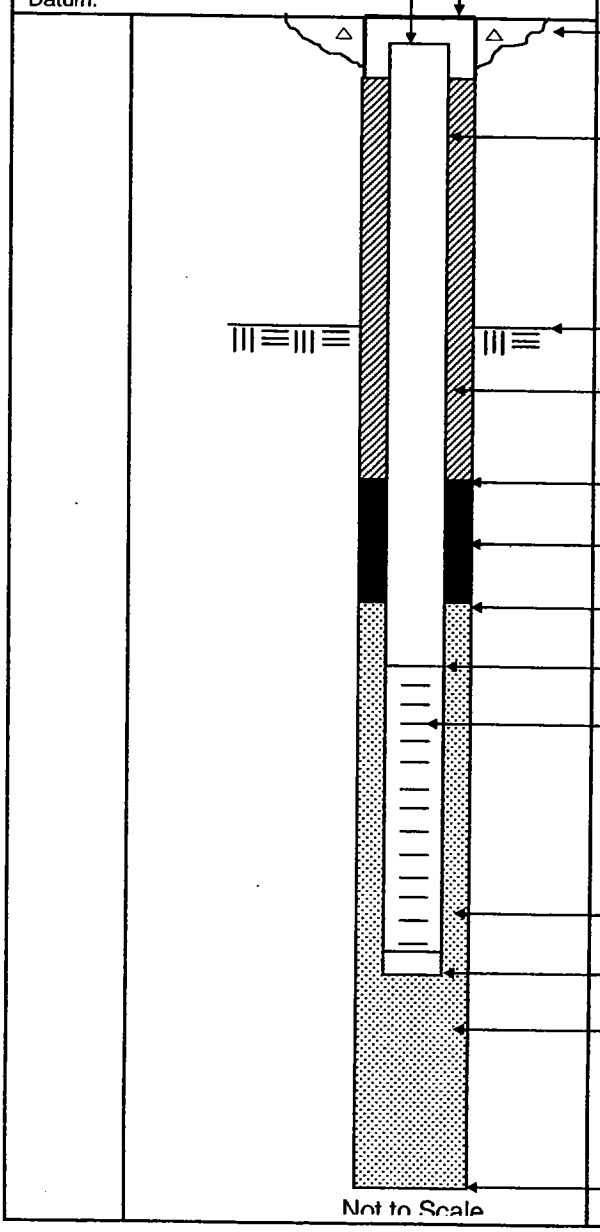
WELL No.: CEF-59- 013-053

MONITORING WELL SHEET

PROJECT:	Site 59, RI	DRILLING Co.:	Miller Drilling	BORING No.:	013-03
PROJECT No.:	N8925	DRILLER:	Haz Huntoon	DATE COMPLETED:	10-20-04
SITE:	59 @ Cecil Field	DRILLING METHOD:	DPT	NORTHING:	
GEOLOGIST:	Mery Dame	DEV. METHOD:	Peristaltic ~~Sub. Pump~~	EASTING:	

Ground Elevation =

Datum:



Not to Scale

Elevation / Depth of Top of Riser: 1 2"

Elevation / Height of Top of Surface Casing: 1 0"

I.D. of Surface Casing: 8"

Type of Surface Casing: Steel, boltdown

Type of Surface Seal: Quikrete Concrete 2'x2'x6" PAD

I.D. of Riser: 3/4"

Type of Riser: Schedule 40 PVC

Borehole Diameter: 3"

Elevation / Depth Top of Rock: 1 NA

Type of Backfill: Natural formation Type II portland cement 6' to surface

Elevation / Depth of Seal: 1 ~~30/65 SAND~~ 43'

Type of Seal: 30/65 Sand Seal

Elevation / Depth of Top of Filter Pack: 1 46'

Elevation / Depth of Top of Screen: 1 48'

Type of Screen: Pre-Pack, PVC, Schedule 40

Slot Size x Length: 0.01" x 5'

I.D. of Screen: 3/4"

Type of Filter Pack: #1 Sand

Elevation / Depth of Bottom of Screen: 1 53'

Elevation / Depth of Bottom of Filter Pack: 1 53.5'

Type of Backfill Below Well: #1 Sand

Elevation / Total Depth of Borehole: 1 53.5'

Tetra Tech NUS, Inc.

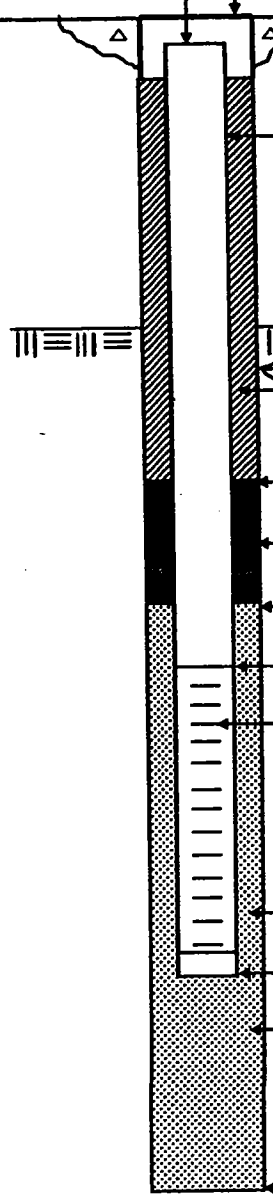
WELL No.: CEF-59- 013-083

MONITORING WELL SHEET

PROJECT:	Site 59, RI	DRILLING Co.:	Miller Drilling	BORING No.:	013-01
PROJECT No.:	N8925	DRILLER:	Tracy Thrasher	DATE COMPLETED:	10-7-04
SITE:	59 @ Cecil Field	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	Merv Dale	DEV. METHOD:		EASTING:	

Ground Elevation =

Datum:



Not to Scale

Elevation / Depth of Top of Riser: 1 2"

Elevation / Height of Top of Surface Casing: 1 0"

I.D. of Surface Casing: 8"

Type of Surface Casing: Steel, bolt down

Type of Surface Seal: Quikrete 2' x 2' x 6" PAD

I.D. of Riser: 2"

Type of Riser: 6" schedule 40 PVC

Borehole Diameter: 6"

Elevation / Depth Top of Rock: 1 NA

STAINLESS STEEL STABILIZER 1 ~42'

Type of Backfill: Type II Portland Cement

Elevation / Depth of Seal: 1 73'

Type of Seal: 3/8" bentonite Pellets

Elevation / Depth of Top of Filter Pack: 1 76'

Elevation / Depth of Top of Screen: 1 78'

Type of Screen: Schedule 40 PVC

Slot Size x Length: 0.01" x 5 FT.

I.D. of Screen: 2"

Type of Filter Pack: #1 Sand

Elevation / Depth of Bottom of Screen: 1 83'

Elevation / Depth of Bottom of Filter Pack: 1 84'

Type of Backfill Below Well: #1 SAND

Elevation / Total Depth of Borehole: 1 84'

Tetra Tech NUS, Inc.

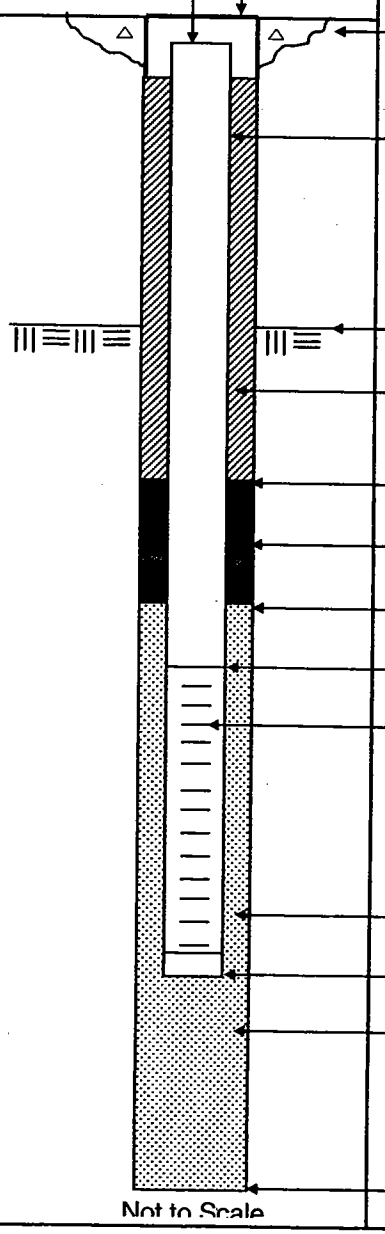
WELL No.: CEF-59-014-053

MONITORING WELL SHEET

PROJECT:	Site 59, RI	DRILLING Co.:	Miller Drilling	~~BORING~~ Location No.:	014-03
PROJECT No.:	N8925	DRILLER:	Haz Huntoon	DATE COMPLETED:	10/17/04
SITE:	59 @ Cecil Field	DRILLING METHOD:	DPT	NORTHING:	
GEOLOGIST:	MERV Davis	DEV. METHOD:	Peristaltic	EASTING:	

Ground Elevation =

Datum:



Not to Scale

Elevation / Depth of Top of Riser: 1 2"

Elevation / Height of Top of Surface Casing: 1 1"

I.D. of Surface Casing: ~~Steel~~ 8"

Type of Surface Casing: Steel, boltdown

Type of Surface Seal: Quikrete Concrete 2'x2'x6" PAD

I.D. of Riser: 0.75 inch

Type of Riser: Sch. 40 PVC

Borehole Diameter: 3 inch

Elevation / Depth Top of Rock: N/A

Type of Backfill: NATURAL SOIL to 9, THEN TOP W/ Type II Portland cement.

Elevation / Depth of Seal: 1 ~43'

Type of Seal: 30/65 Fine Sand

Elevation / Depth of Top of Filter Pack: 1 ~46.8'

Elevation / Depth of Top of Screen: 1 47.8'

Type of Screen: Sch. 40 PVC (Pre-pack)

Slot Size x Length: 0.010 IN. X 5 FT.

I.D. of Screen: 0.75 inch

Type of Filter Pack: No. 1 Sand

Elevation / Depth of Bottom of Screen: 152.8'

Elevation / Depth of Bottom of Filter Pack: 1 53'

Type of Backfill Below Well: NATURAL SOIL

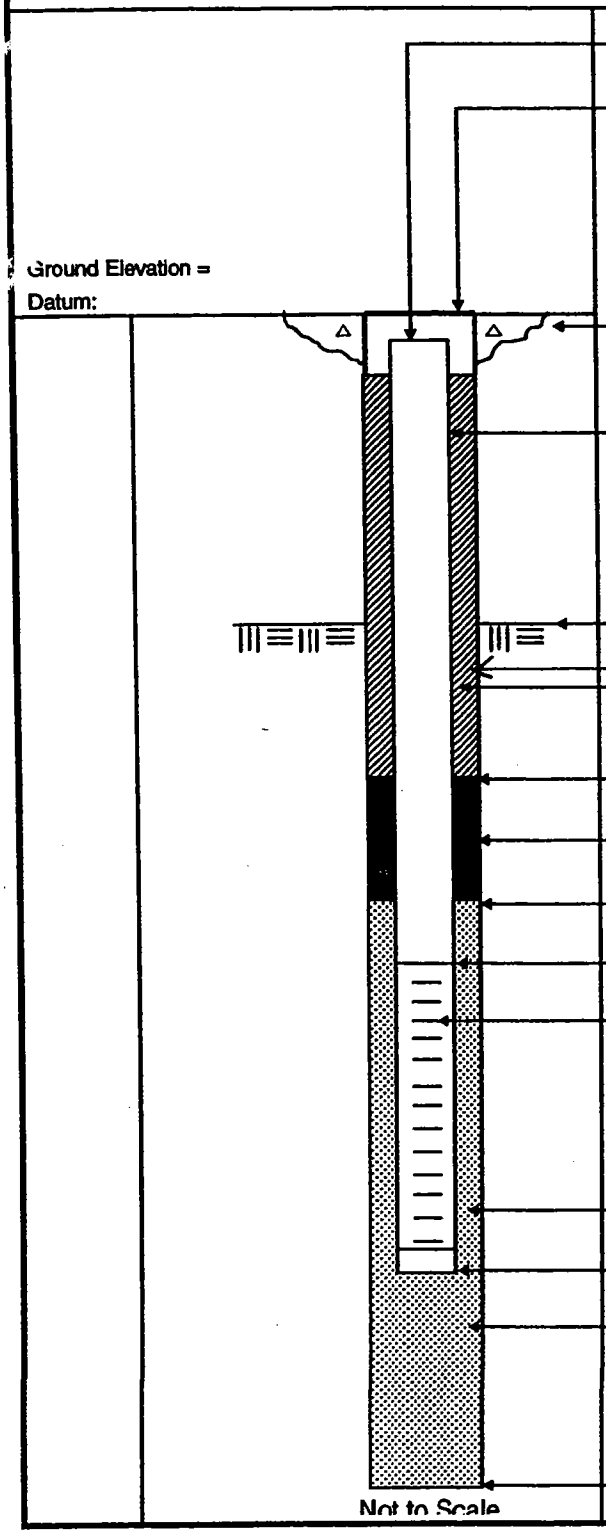
Elevation / Total Depth of Borehole: 1 53'

Tetra Tech NUS, Inc.

WELL No.: CEF-59- 014-083

MONITORING WELL SHEET

PROJECT:	Site 59, RI	DRILLING Co.:	Miller Drilling	BORING No.:	014-02
PROJECT No.:	N8925	DRILLER:	Tracy Thrasher	DATE COMPLETED:	Oct 15, 2004
SITE:	59 @ Cecil Field	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	Merv Dale	DEV. METHOD:	Sub. pump	EASTING:	



Elevation / Depth of Top of Riser: / 2"

Elevation / Height of Top of Surface Casing: / 1"

I.D. of Surface Casing: 8"

Type of Surface Casing: Steel, boltdown

Type of Surface Seal: Quikrete 2' x 2' x 6" PAD

I.D. of Riser: 2"

Type of Riser: Schedule 40 PVC

Borehole Diameter: 6"

Elevation / Depth Top of Rock: / NA

STAINLESS STEEL STABILIZER / ~42'

Type of Backfill: Type II Portland Cement

Elevation / Depth of Seal: / 73'

Type of Seal: 3/8" bentonite Pellets

Elevation / Depth of Top of Filter Pack: / 76'

Elevation / Depth of Top of Screen: / 78'

Type of Screen: Schedule 40 PVC

Slot Size x Length: 0.01" x 5 FT.

I.D. of Screen: 2"

Type of Filter Pack: #1 Sand

Elevation / Depth of Bottom of Screen: / 83'

Elevation / Depth of Bottom of Filter Pack: / 84'

Type of Backfill Below Well: #1 Sand

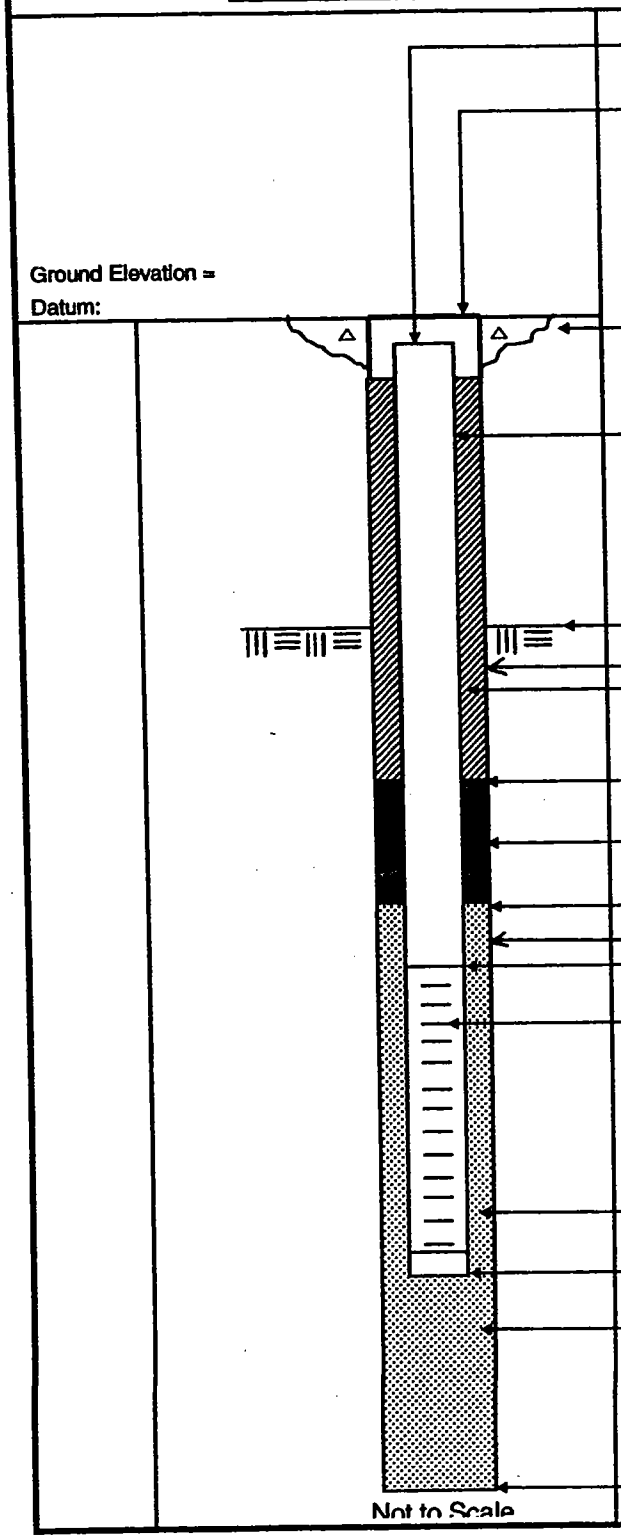
Elevation / Total Depth of Borehole: / 84'

Tetra Tech NUS, Inc.

WELL No.: CEF-59- 014-120

MONITORING WELL SHEET

PROJECT:	Site 59, RI	DRILLING Co.:	Miller Drilling	BORING No.:	014-01
PROJECT No.:	N8925	DRILLER:	Tracy Thrasher	DATE COMPLETED:	Oct 5, 2004
SITE:	59 @ Cecil Field	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	Merv Dale	DEV. METHOD:	Sub. pump	EASTING:	



Elevation / Depth of Top of Riser: / 2"

Elevation / Height of Top of Surface Casing: / 1"

I.D. of Surface Casing: 8"

Type of Surface Casing: Steel, bolt down

Type of Surface Seal: Quikrete 2' x 2' x 6" PAD

I.D. of Riser: 2"

Type of Riser: Schedule 40 PVC

Borehole Diameter: 6"

Elevation / Depth Top of Rock: / NA

STAINLESS STEEL STABILIZER / ~61'

Type of Backfill: 3/8 Type II Portland Cement

Elevation / Depth of Seal: / 100.5'

Type of Seal: ~~#1 Sand~~ 3/8" bentonite Pellets

Elevation / Depth of Top of Filter Pack: / 113.5'

STAINLESS STEEL STABILIZER / ~114'

Elevation / Depth of Top of Screen: / 115.5'

Type of Screen: Schedule 40 PVC

Slot Size x Length: 0.01" x 5 FT.

I.D. of Screen: 2"

Type of Filter Pack: #1 SAND

Elevation / Depth of Bottom of Screen: / 120.5'

Elevation / Depth of Bottom of Filter Pack: / 123'

Type of Backfill Below Well: 130-123 Natural formation -123-120.5 #1 SAND

Elevation / Total Depth of Borehole: / 130'

Tetra Tech NUS, Inc.

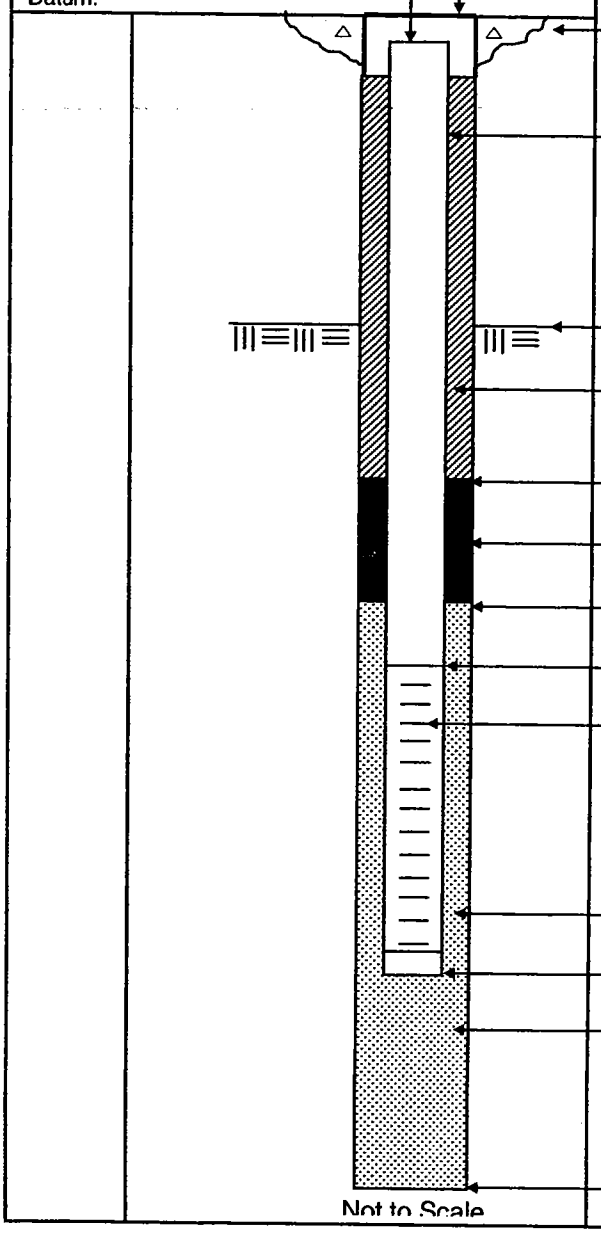
WELL No.: CEF-59- 015-~~30~~ 028 MD

MONITORING WELL SHEET

PROJECT:	Site 59, RI	DRILLING Co.:	Miller Drilling	BORING No.:	015 - ~~30~~ 01 MD
PROJECT No.:	N8925	DRILLER:	Haz Huntoon	DATE COMPLETED:	10/15/04
SITE:	59 @ Cecil Field	DRILLING METHOD:	DPT	NORTHING:	
GEOLOGIST:	P. Leverette	DEV. METHOD:	Peristaltic	EASTING:	

Ground Elevation =

Datum:



Elevation / Depth of Top of Riser: 1 2"

Elevation / Height of Top of Surface Casing: 1 1"

I.D. of Surface Casing: 8"

Type of Surface Casing: Steel Bolt Down

Type of Surface Seal: ~~Grout~~ Concrete 2'x2'x6" PAD

I.D. of Riser: 3/4"

Type of Riser: PVC, Sch. 40

Borehole Diameter: 2"

Elevation / Depth Top of Rock: 1 NA

Type of Backfill: Natural Soil to ∇, then top with Type II Portland Cement

Elevation / Depth of Seal: 1 20'

Type of Seal: 30-65 Sand

Elevation / Depth of Top of Filter Pack: 1 22'

Elevation / Depth of Top of Screen: 1 23'

Type of Screen: Pre-Pack PVC, Sch. 40

Slot Size x Length: 0.010" x 5'

I.D. of Screen: 3/4"

Type of Filter Pack: #1 Sand

Elevation / Depth of Bottom of Screen: 128'

Elevation / Depth of Bottom of Filter Pack: 128½'

Type of Backfill Below Well: Natural Soil

Elevation / Total Depth of Borehole: 128½'

Tetra Tech NUS, Inc.

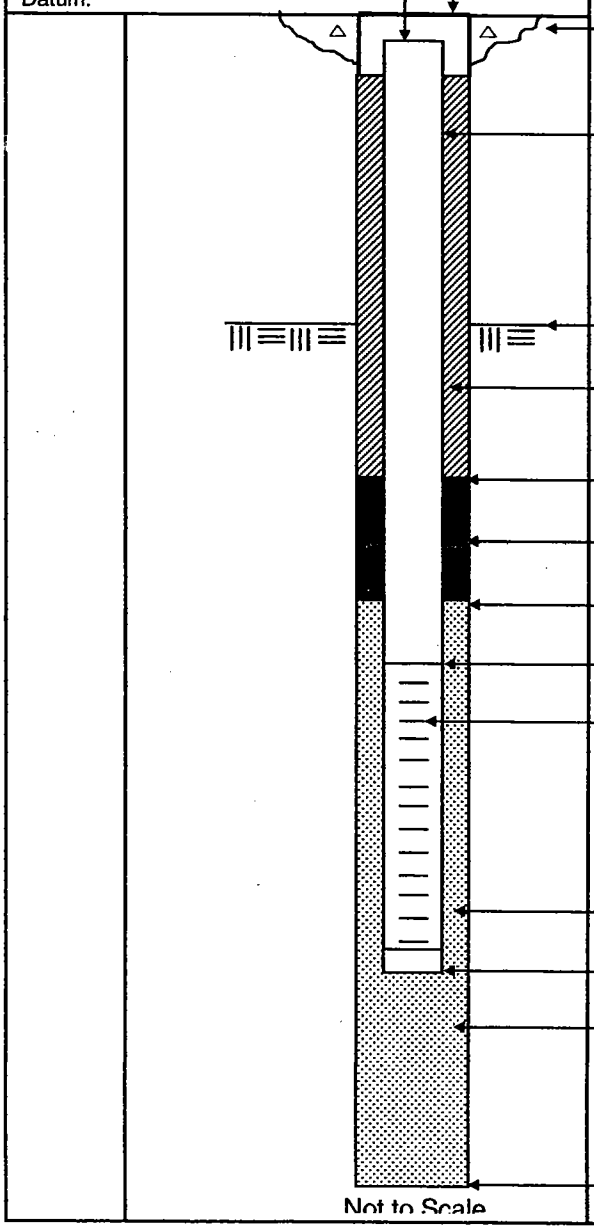
WELL No.: CEF-59-016-053

MONITORING WELL SHEET

PROJECT:	Site 59, RI	DRILLING Co.:	Miller Drilling	BORING No.:	016-03
PROJECT No.:	N8925	DRILLER:	Haz Huntoon	DATE COMPLETED:	10/17/04
SITE:	59 @ Cecil Field	DRILLING METHOD:	DPT	NORTHING:	
GEOLOGIST:	MERY DALE	DEV. METHOD:	Peristaltic	EASTING:	

Ground Elevation =

Datum:



Elevation / Depth of Top of Riser: 12"

Elevation / Height of Top of Surface Casing: 11"

I.D. of Surface Casing: 8"

Type of Surface Casing: Steel, boltdown

Type of Surface Seal: Quikrete Concrete, 2'x2'x6" PAD

I.D. of Riser: 0.75 inch

Type of Riser: Sch. 40 PVC

Borehole Diameter: 3 INCH

Elevation / Depth Top of Rock: N/A

Type of Backfill: NATURAL SOIL to ▽, THEN TOP W/ Type II Portland Cement

Elevation / Depth of Seal: ~43'

Type of Seal: 30/65 Fine Sand

Elevation / Depth of Top of Filter Pack: ~46.8'

Elevation / Depth of Top of Screen: 47.8'

Type of Screen: Sch. 40 PVC (Pre-pack)

Slot Size x Length: 0.010 INCH X 5 FT.

I.D. of Screen: 0.75 INCH

Type of Filter Pack: NO. 1 SAND

Elevation / Depth of Bottom of Screen: 52.8'

Elevation / Depth of Bottom of Filter Pack: 53'

Type of Backfill Below Well: NATURAL SOIL

Elevation / Total Depth of Borehole: 53'

Tetra Tech NUS, Inc.

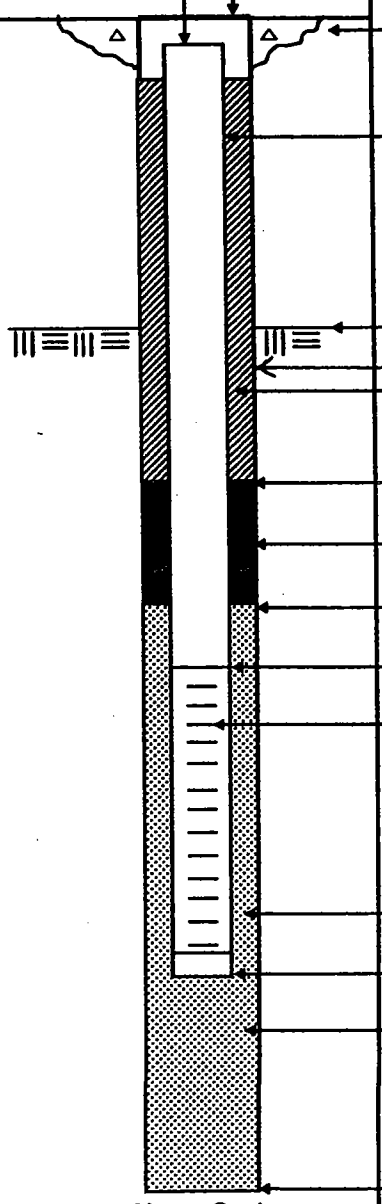
WELL No.: CEF-59-016-083

MONITORING WELL SHEET

PROJECT:	Site 59, RI	DRILLING Co.:	Miller Drilling	BORING No.:	016-02
PROJECT No.:	N8925	DRILLER:	Tracy Thrasher	DATE COMPLETED:	Oct 17, 2004
SITE:	59 @ Cecil Field	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	Merv Dale	DEV. METHOD:	Sub pump	EASTING:	

Ground Elevation =

Datum:



Not to Scale

Elevation / Depth of Top of Riser: 1 2"

Elevation / Height of Top of Surface Casing: 1 1"

I.D. of Surface Casing: 8"

Type of Surface Casing: Steel, bolt-down

Type of Surface Seal: Quikrete 2'x2'x6" PAD

I.D. of Riser: 2"

Type of Riser: Schedule 40 PVC

Borehole Diameter: 6"

Elevation / Depth Top of Rock: 1 NA

STAINLESS STEEL STABILIZER 1 ~42'

Type of Backfill: Type II portland cement

Elevation / Depth of Seal: 1 73'

Type of Seal: 3/8" pellet bentonite

Elevation / Depth of Top of Filter Pack: 1 76'

Elevation / Depth of Top of Screen: 1 78'

Type of Screen: Schedule 40 PVC

Slot Size x Length: 0.01" X 5 FT.

I.D. of Screen: 2"

Type of Filter Pack: #1 Sand

Elevation / Depth of Bottom of Screen: 1 83'

Elevation / Depth of Bottom of Filter Pack: 1 84'

Type of Backfill Below Well: #1 Sand

Elevation / Total Depth of Borehole: 1 84'

Tetra Tech NUS, Inc.

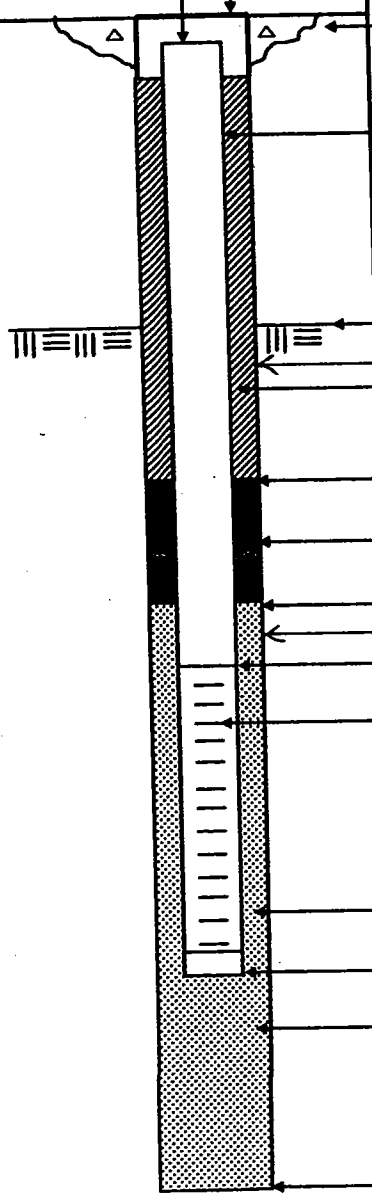
WELL No.: CEF-59- 016-119

MONITORING WELL SHEET

PROJECT:	Site 59, RI	DRILLING Co.:	Miller Drilling	BORING No.:	016-01
PROJECT No.:	N8925	DRILLER:	Tracy Thrasher	DATE COMPLETED:	Oct 16, 2004
SITE:	59 @ Cecil Field	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	Merv Dale	DEV. METHOD:	Sub. pump	EASTING:	

Ground Elevation =

Datum:



Not to Scale

Elevation / Depth of Top of Riser: / 2"

Elevation / Height of Top of Surface Casing: / 1"

I.D. of Surface Casing: 8"

Type of Surface Casing: Steel, boltdown

Type of Surface Seal: Quikrete 2'x2'x6" PAD

I.D. of Riser: 2"

Type of Riser: Schedule 40 PVC

Borehole Diameter: 6"

Elevation / Depth Top of Rock: / NA

STAINLESS STEEL STABILIZER / ~58'

Type of Backfill: Type II Portland Cement

Elevation / Depth of Seal: / ~~110~~ 109'

Type of Seal: 3/8" bentonite Pellets

Elevation / Depth of Top of Filter Pack: / 112'

STAINLESS STEEL STABILIZER / ~113'

Elevation / Depth of Top of Screen: / 114'

Type of Screen: Schedule 40 PVC

Slot Size x Length: 0.01" x 5 FT.

I.D. of Screen: 2"

Type of Filter Pack: #1 Sand

Elevation / Depth of Bottom of Screen: / 119'

Elevation / Depth of Bottom of Filter Pack: / 119'

Type of Backfill Below Well: None

Elevation / Total Depth of Borehole: / 119'

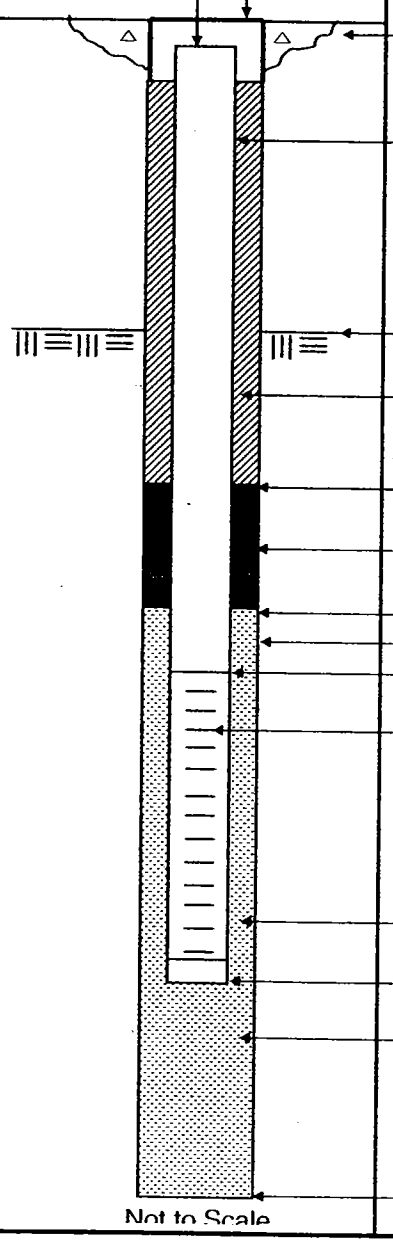
Tetra Tech NUS, Inc.

WELL No.: CEF-59-017-028

MONITORING WELL SHEET

PROJECT:	R. I.	DRILLING Co.:	Partridge Well	BORING No.:	001
PROJECT No.:	N8925	DRILLER:	J. Weatherford	DATE COMPLETED:	2/18/05
SITE:	59	DRILLING METHOD:	Hollow Stem	NORTHING:	
GEOLOGIST:	Merv Dale	DEV. METHOD:	Bladder Pump	EASTING:	

Ground Elevation =
Datum:



Elevation / Depth of Top of Riser: 11 IN.

Elevation / Height of Top of Surface Casing: 10.5 IN.

I.D. of Surface Casing: 8 inch

Type of Surface Casing: Steel boltdown manhole

Type of Surface Seal: Concrete 2' x 2' x 6"

I.D. of Riser: 2 inch

Type of Riser: Schedule 40 PVC

Borehole Diameter: 8 inch

Elevation / Depth Top of Rock: N/A

Type of Backfill: Type I/II Portland Cement

Elevation / Depth of Seal: 121 FT.

Type of Seal: Bentonite pellets

Elevation / Depth of Top of Filter Pack: 122 FT.

Stainless Steel Stabilizer N/A

Elevation / Depth of Top of Screen: 123 FT.

Type of Screen: Sch. 40 PVC

Slot Size x Length: 0.010 inch x 5 foot

I.D. of Screen: 2 inch

Type of Filter Pack: 20/30 Filter Sand

Elevation / Depth of Bottom of Screen: 128 FT.

Elevation / Depth of Bottom of Filter Pack: 128.5 FT.

Type of Backfill Below Well: 20/30 Filter Sand

Elevation / Total Depth of Borehole: 128.5 FT.

Tetra Tech NUS, Inc.

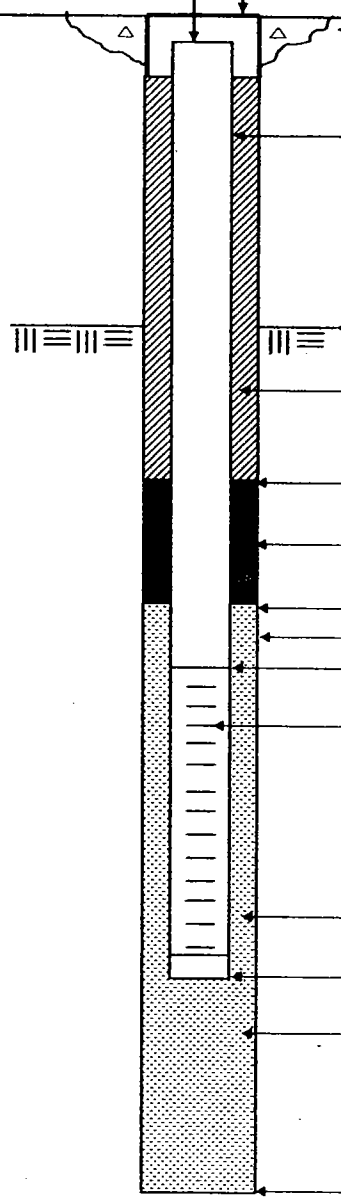
WELL No.: CEF-59-017-053

MONITORING WELL SHEET

PROJECT:	R. I.	DRILLING Co.:	Partridge Well	BORING No.:	002
PROJECT No.:	N8925	DRILLER:	J. Weatherford	DATE COMPLETED:	02/18/05
SITE:	59	DRILLING METHOD:	Hollow Stem	NORTHING:	
GEOLOGIST:	Merv Dale	DEV. METHOD:	Bladder Pump	EASTING:	

Ground Elevation =

Datum:



Not to Scale

Elevation / Depth of Top of Riser: 1 1 IN.

Elevation / Height of Top of Surface Casing: 1 0.5 IN.

I.D. of Surface Casing: 8 inch

Type of Surface Casing: Steel boltdown manhole

Type of Surface Seal: Concrete 2' x 2' x 6"

I.D. of Riser: 2 inch

Type of Riser: Schedule 40 PVC

Borehole Diameter: 8 inch

Elevation / Depth Top of Rock: N/A

Type of Backfill: Type I/II Portland Cement

Elevation / Depth of Seal: 1 45 FT.

Type of Seal: Bentonite pellets

Elevation / Depth of Top of Filter Pack: 1 47 FT.

Stainless Steel Stabilizer N/A

Elevation / Depth of Top of Screen: 1 48 FT.

Type of Screen: Sch. 40 PVC

Slot Size x Length: 0.010 inch x 5 foot

I.D. of Screen: 2 inch

Type of Filter Pack: 20/30 Filter Sand

Elevation / Depth of Bottom of Screen: 1 53 FT.

Elevation / Depth of Bottom of Filter Pack: 1 53.5 FT.

Type of Backfill Below Well: 20/30 Filter Sand

Elevation / Total Depth of Borehole: 1 53.5 FT.

Tetra Tech NUS, Inc.

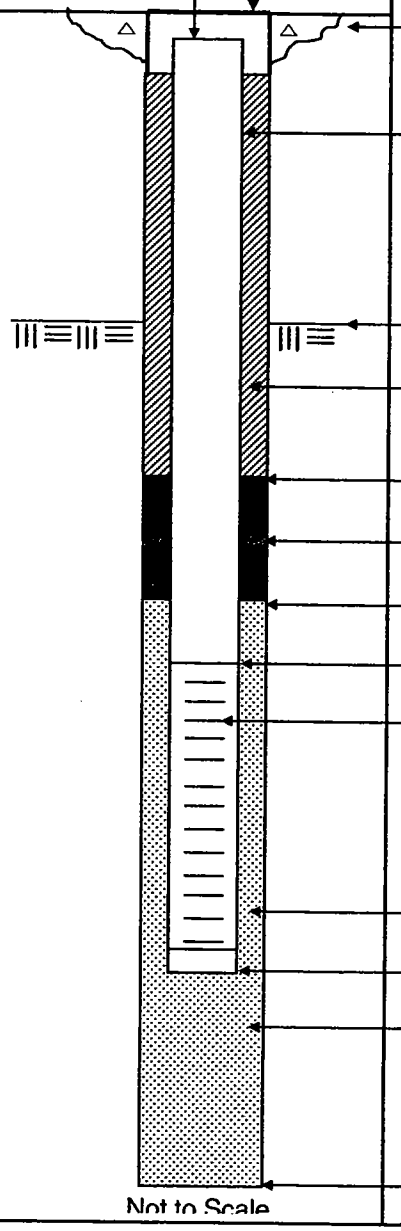
WELL No.: CEF-59-18-33

MONITORING WELL SHEET

PROJECT:	Site 59 RI	DRILLING Co.:	Prosonic	BORING No.:	
PROJECT No.:	N8925	DRILLER:	W. Lindsey	DATE COMPLETED:	6-8-05
SITE:	59 @ Cecil Field	DRILLING METHOD:	DPT	NORTHING:	
GEOLOGIST:	S. McGuire	DEV. METHOD:	Peristaltic	EASTING:	

Ground Elevation =

Datum:



Not to Scale

Elevation / Depth of Top of Riser: 12 IN.

Elevation / Height of Top of Surface Casing: 1 MD 10 IN.

I.D. of Surface Casing: 8 inches

Type of Surface Casing: Steel boltdown manhole

Type of Surface Seal: Concrete

I.D. of Riser: 3/4 inch

Type of Riser: Sch. 40 PVC

Borehole Diameter: 2.25 IN.

Elevation / Depth Top of Rock: N/A

Type of Backfill: ~~Natural formation to~~ ND

Type I/II Portland Cement (~~water table to surface~~)

Elevation / Depth of Seal: 26.10 FT.

Type of Seal: Bentonite

Elevation / Depth of Top of Filter Pack: 28.10 FT.

Elevation / Depth of Top of Screen: 28.10 FT.

Type of Screen: Sch. 40 PVC

Slot Size x Length: 0.010 inch x 5 ft.

I.D. of Screen: 3/4 inch

Type of Filter Pack: 20/40 sand

Elevation / Depth of Bottom of Screen: 33.10 FT.

Elevation / Depth of Bottom of Filter Pack: 133.0 FT.

Type of Backfill Below Well: 20/40 Sand

Elevation / Total Depth of Borehole: 133.0 FT.

Tetra Tech NUS, Inc.

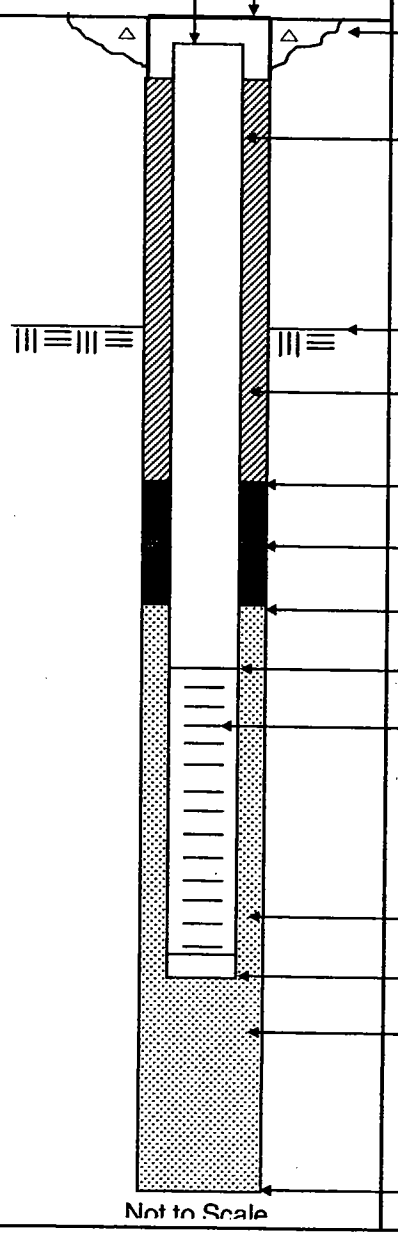
WELL No.: CEF-59-18-~~53~~ 53

MONITORING WELL SHEET

PROJECT:	Site 59 RI	DRILLING Co.:	Prosonic	BORING No.:	
PROJECT No.:	N8925	DRILLER:	W. Lindsey	DATE COMPLETED:	6-9-05
SITE:	59 @ Cecil Field	DRILLING METHOD:	DPT	NORTHING:	
GEOLOGIST:	S. McGuire	DEV. METHOD:	Peristaltic	EASTING:	

Ground Elevation =

Datum:



Not to Scale

Elevation / Depth of Top of Riser:	12 IN.
Elevation / Height of Top of Surface Casing:	18 IN. MD
I.D. of Surface Casing:	8 INCHES
Type of Surface Casing:	Steel boltdown manhole
Type of Surface Seal:	Concrete
I.D. of Riser:	3/4 inch
Type of Riser:	Sch. 40 PVC
Borehole Diameter:	2.25 IN.
Elevation / Depth Top of Rock:	N/A
Type of Backfill:	~~Natural formation to~~ MD Type I/II Portland Cement ~~(water table to surface)~~
Elevation / Depth of Seal:	~~2~~4 6.10 FT.
Type of Seal:	Bentonite
Elevation / Depth of Top of Filter Pack:	~~2~~4 8.10 FT.
Elevation / Depth of Top of Screen:	~~4~~4 8.10 FT.
Type of Screen:	Sch. 40 PVC
Slot Size x Length:	0.010 inch x 5 ft.
I.D. of Screen:	3/4 inch
Type of Filter Pack:	20/40 Sand
Elevation / Depth of Bottom of Screen:	~~3~~5 3.10 FT.
Elevation / Depth of Bottom of Filter Pack:	~~1~~5 3.0 FT.
Type of Backfill Below Well:	20/40 Sand
Elevation / Total Depth of Borehole:	~~1~~5 3.0 FT.

Tetra Tech NUS, Inc.

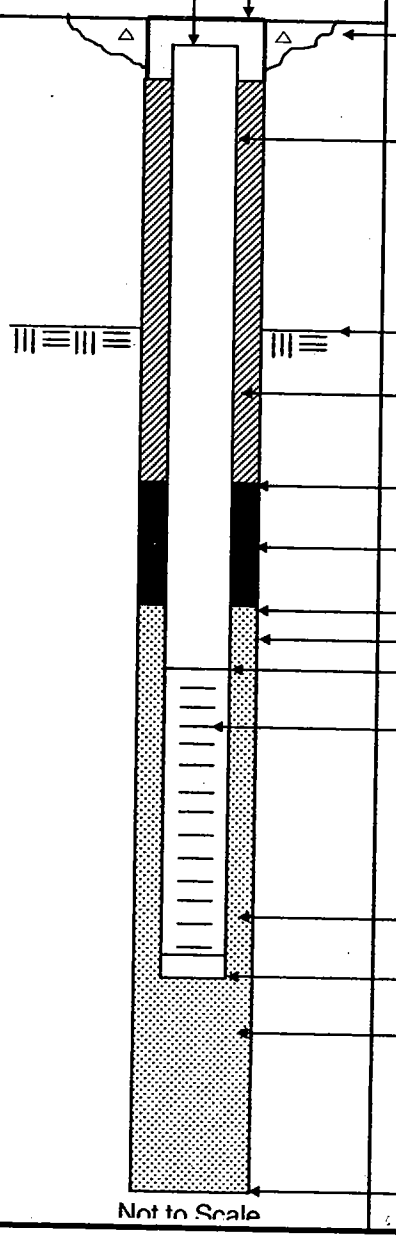
WELL No.: CEF-059-018-078

MONITORING WELL SHEET

PROJECT:	Site 59 R. I.	DRILLING Co.:	Prosonic	BORING No.:	08
PROJECT No.:	N8925	DRILLER:	V. SCOTT, JR.	DATE COMPLETED:	06/12/05
SITE:	59 @ Cecil Field	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	M. DALE	DEV. METHOD:	Elec. Submersible	EASTING:	

Ground Elevation =

Datum:



Not to Scale

Elevation / Depth of Top of Riser: 1 2 IN.

Elevation / Height of Top of Surface Casing: 1 0 IN.

I.D. of Surface Casing: 8 inch

Type of Surface Casing: Steel boltdown manhole

Type of Surface Seal: Concrete

I.D. of Riser: 2 inch

Type of Riser: Schedule 40 PVC

Borehole Diameter: 6 INCHES

Elevation / Depth Top of Rock: N/A

Type of Backfill: Type I/II Portland Cement

Elevation / Depth of Seal: 165'7"

Type of Seal: Bentonite, 3/8" coated pellets ENVIROPLUG

Elevation / Depth of Top of Filter Pack: 170'

Stainless Steel Stabilizer 39' AND 68'

Elevation / Depth of Top of Screen: 173'2"

Type of Screen: Sch. 40 PVC

Slot Size x Length: 0.010 inch x 5 foot

I.D. of Screen: 2 inch

Type of Filter Pack: 20/30 Filter Sand

Elevation / Depth of Bottom of Screen: 178'2"

Elevation / Depth of Bottom of Filter Pack: 178'6"

Type of Backfill Below Well: 20/30 Filter Sand

Elevation / Total Depth of Borehole: 178'6"

Tetra Tech NUS, Inc.

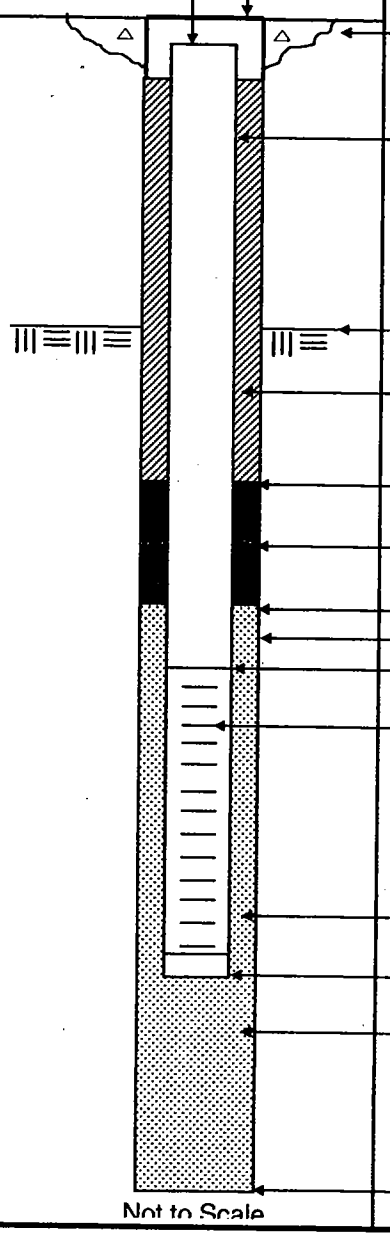
WELL No.: CEF-059-018-105

MONITORING WELL SHEET

PROJECT:	Site 59 R. I.	DRILLING Co.:	Prosonic	BORING No.:	07
PROJECT No.:	N8925	DRILLER:	V. SCOTT, JR.	DATE COMPLETED:	06/12/05
SITE:	59 @ Cecil Field	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	M. DALE	DEV. METHOD:	Elec. Submersible	EASTING:	

Ground Elevation =

Datum:



Not to Scale

Elevation / Depth of Top of Riser:	1 2 IN.
Elevation / Height of Top of Surface Casing:	1 0 IN.
I.D. of Surface Casing:	8 inch
Type of Surface Casing:	Steel boltdown manhole
Type of Surface Seal:	Concrete
I.D. of Riser:	2 inch
Type of Riser:	Schedule 40 PVC
Borehole Diameter:	6 inches
Elevation / Depth Top of Rock:	N/A
Type of Backfill:	Type I/II Portland Cement
Elevation / Depth of Seal:	1 92'
Type of Seal:	Bentonite
Elevation / Depth of Top of Filter Pack:	1 96.5'
Stainless Steel Stabilizer	40' AND 95'
Elevation / Depth of Top of Screen:	1 99'8"
Type of Screen:	Sch. 40 PVC
Slot Size x Length:	0.010 inch x 5 foot
I.D. of Screen:	2 inch
Type of Filter Pack:	20/30 Filter Sand
Elevation / Depth of Bottom of Screen:	1 104'8"
Elevation / Depth of Bottom of Filter Pack:	1 105'
Type of Backfill Below Well:	20/30 Filter Sand
Elevation / Total Depth of Borehole:	1 105'

Tetra Tech NUS, Inc.

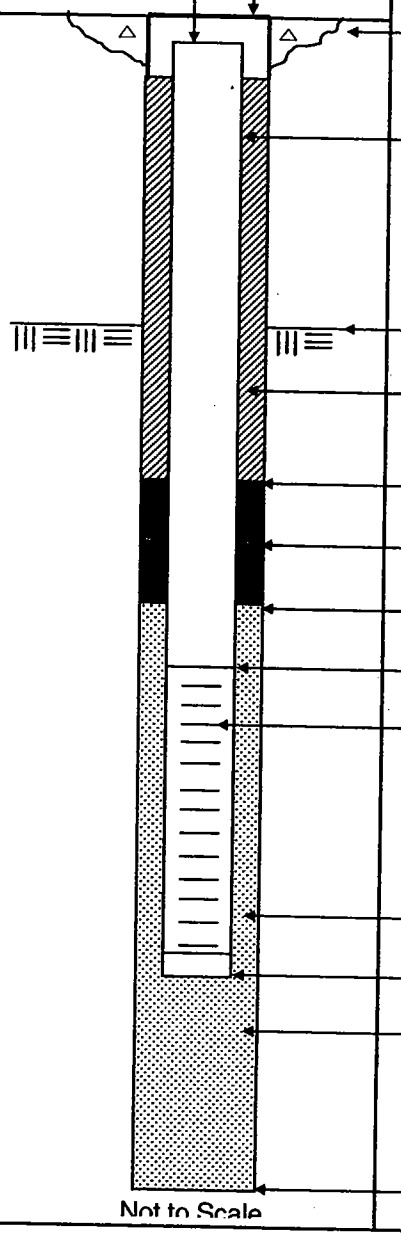
WELL No.: CEF-59-19-33

MONITORING WELL SHEET

PROJECT:	Site 59 RI	DRILLING Co.:	Prosonic	BORING No.:	
PROJECT No.:	N8925	DRILLER:	W. Lindsey	DATE COMPLETED:	6-8-05
SITE:	59 @ Cecil Field	DRILLING METHOD:	DPT	NORTHING:	
GEOLOGIST:	S. McGuire	DEV. METHOD:	Peristaltic	EASTING:	

Ground Elevation =

Datum:



Not to Scale

Elevation / Depth of Top of Riser: 12 IN.

Elevation / Height of Top of Surface Casing: 10 IN.

I.D. of Surface Casing: 8 INCHES

Type of Surface Casing: Steel boltdown manhole

Type of Surface Seal: Concrete

I.D. of Riser: 3/4 inch

Type of Riser: Sch. 40 PVC

Borehole Diameter: 2.25 IN.

Elevation / Depth Top of Rock: N/A

Type of Backfill: ~~Natural formation to~~ MD

Type I/II Portland Cement ~~(water table to surface)~~

Elevation / Depth of Seal: 25.10 FT.

Type of Seal: Bentonite

Elevation / Depth of Top of Filter Pack: 27.10 FT.

Elevation / Depth of Top of Screen: 27.10 FT.

Type of Screen: Sch. 40 PVC

Slot Size x Length: 0.010 inch x 5 ft.

I.D. of Screen: 3/4 inch

Type of Filter Pack: 20/40 Sand

Elevation / Depth of Bottom of Screen: 32.11 FT.

Elevation / Depth of Bottom of Filter Pack: 132.1 FT.

Type of Backfill Below Well: 20/40 Sand

Elevation / Total Depth of Borehole: 132.1 FT.

Tetra Tech NUS, Inc.

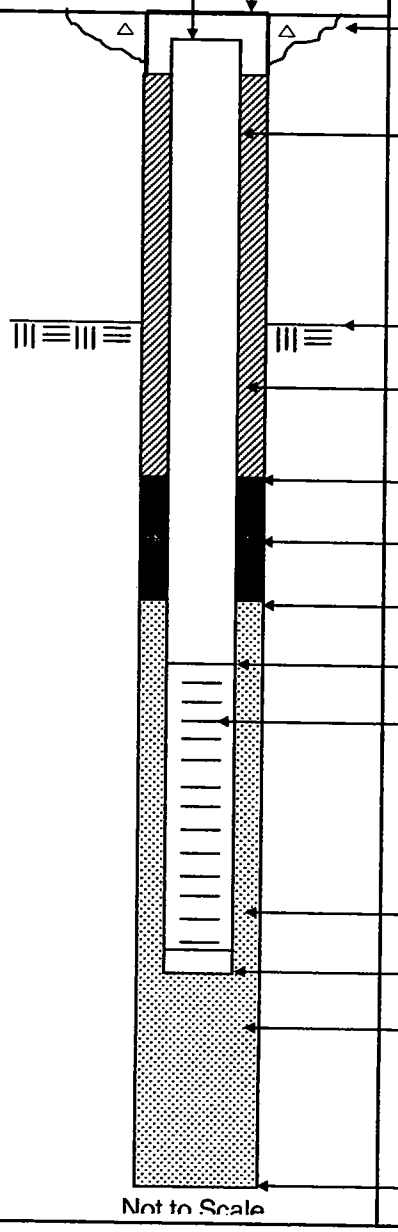
WELL No.: CEF-59-19-53

MONITORING WELL SHEET

PROJECT:	Site 59 RI	DRILLING Co.:	Prosonic	BORING No.:	
PROJECT No.:	N8925	DRILLER:	W. Lindsey	DATE COMPLETED:	6-8-05
SITE:	59 @ Cecil Field	DRILLING METHOD:	DPT	NORTHING:	
GEOLOGIST:	S. McGuire	DEV. METHOD:	Peristaltic	EASTING:	

Ground Elevation =

Datum:



Not to Scale

Elevation / Depth of Top of Riser: 12 IN.

Elevation / Height of Top of Surface Casing: 10 IN.

I.D. of Surface Casing: 8 Inches

Type of Surface Casing: Steel boltdown manhole

Type of Surface Seal: Concrete

I.D. of Riser: 3/4 inch

Type of Riser: Sch. 40 PVC

Borehole Diameter: 2.25 INCHES

Elevation / Depth Top of Rock: N/A

Type of Backfill: ~~Natural formation to~~ MD
Type I/II Portland Cement ~~(water table to surface)~~

Elevation / Depth of Seal: 45.0 FT.

Type of Seal: Bentonite

Elevation / Depth of Top of Filter Pack: 47.0 FT.

Elevation / Depth of Top of Screen: 47.0 FT.

Type of Screen: Sch. 40 PVC

Slot Size x Length: 0.010 inch x 5 ft.

I.D. of Screen: 3/4 inch

Type of Filter Pack: 20/40 Sand

Elevation / Depth of Bottom of Screen: 51.4 FT.

Elevation / Depth of Bottom of Filter Pack: 151.4 FT.

Type of Backfill Below Well: 20/40 SAND

Elevation / Total Depth of Borehole: 151.4 FT.

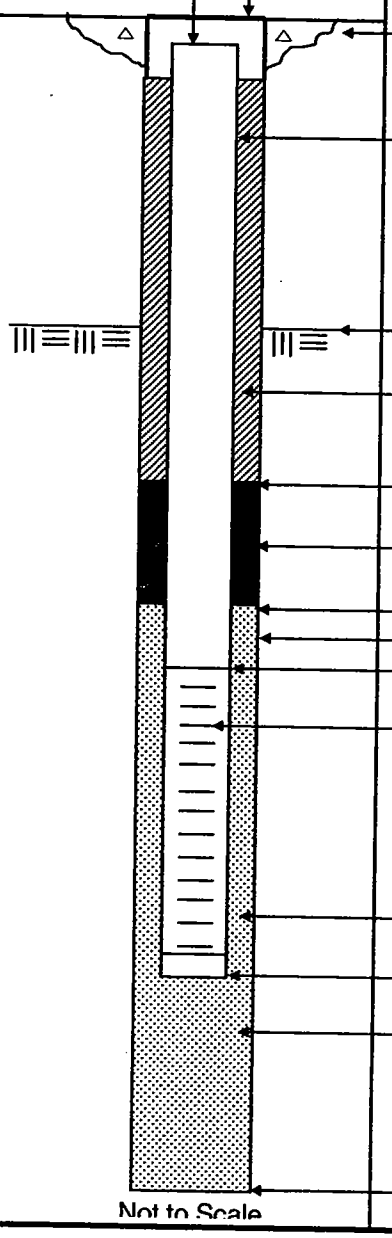
Tetra Tech NUS, Inc.

WELL No.: CEF-059-019-078

MONITORING WELL SHEET

PROJECT:	Site 59 R. I.	DRILLING Co.:	Prosonic	BORING No.:	04
PROJECT No.:	N8925	DRILLER:	V. SCOTT JR.	DATE COMPLETED:	06/10/05
SITE:	59 @ Cecil Field	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	M. Dale	DEV. METHOD:	Submersible	EASTING:	

Ground Elevation =
Datum:



Not to Scale

Elevation / Depth of Top of Riser:	1 2 IN.
Elevation / Height of Top of Surface Casing:	1 0 IN.
I.D. of Surface Casing:	8 inch
Type of Surface Casing:	Steel boltdown manhole
Type of Surface Seal:	Concrete
I.D. of Riser:	2 inch
Type of Riser:	Schedule 40 PVC
Borehole Diameter:	6 INCH
Elevation / Depth Top of Rock:	N/A
Type of Backfill:	Type I/II Portland Cement
Elevation / Depth of Seal:	~~65' 3"~~ 1 66' 66' MWD
Type of Seal:	Bentonite 3/8" pellets Enviroplug
Elevation / Depth of Top of Filter Pack:	1 70'
Stainless Steel Stabilizer	39' AND 69'
Elevation / Depth of Top of Screen:	1 73'
Type of Screen:	Sch. 40 PVC
Slot Size x Length:	0.010 inch x 5 foot
I.D. of Screen:	2 inch
Type of Filter Pack:	20/30 Filter Sand
Elevation / Depth of Bottom of Screen:	1 78'
Elevation / Depth of Bottom of Filter Pack:	1 78.5'
Type of Backfill Below Well:	20/30 GRADE FILTER SAND
Elevation / Total Depth of Borehole:	1 78.5'

Tetra Tech NUS, Inc.

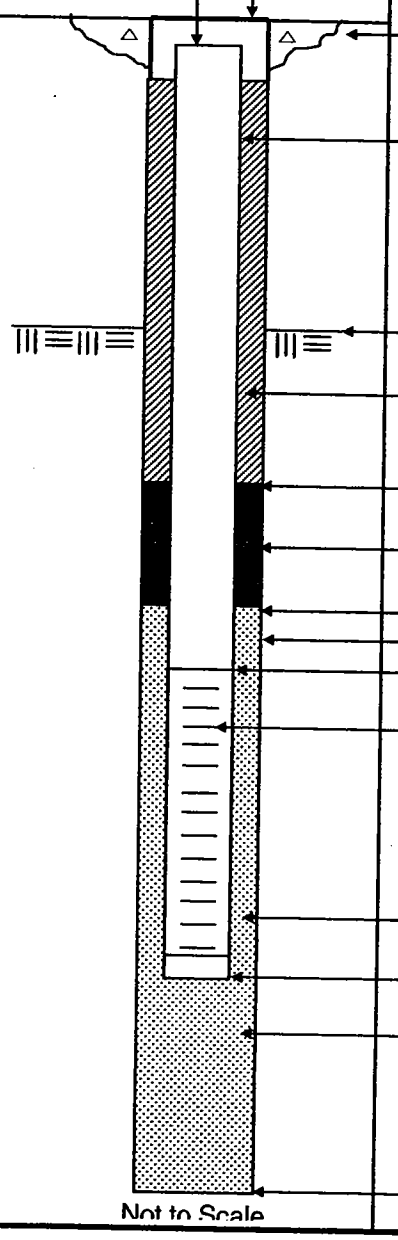
WELL No.: CEF-59-019-106

MONITORING WELL SHEET

PROJECT:	Site 59 R. I.	DRILLING Co.:	Prosonic	BORING No.:	03
PROJECT No.:	N8925	DRILLER:	VERN SCOTT JR	DATE COMPLETED:	06/10/05
SITE:	59 @ Cecil Field	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	Mery Dale	DEV. METHOD:	Submersible	EASTING:	

Ground Elevation =

Datum:



Not to Scale

Elevation / Depth of Top of Riser: 1 2IN.

Elevation / Height of Top of Surface Casing: 1 0IN.

I.D. of Surface Casing: 8 inch

Type of Surface Casing: Steel boltdown manhole

Type of Surface Seal: Concrete

I.D. of Riser: 2 inch

Type of Riser: Schedule 40 PVC

Borehole Diameter: 6"

Elevation / Depth Top of Rock: N/A

Type of Backfill: Type I/II Portland Cement

Elevation / Depth of Seal: 1 88'

Type of Seal: Bentonite 3/8" Hole plug

Elevation / Depth of Top of Filter Pack: 1 98'

Stainless Steel Stabilizer 40' & 91'

Elevation / Depth of Top of Screen: 1101'

Type of Screen: Sch. 40 PVC

Slot Size x Length: 0.010 inch x 5 foot

I.D. of Screen: 2 inch

Type of Filter Pack: 20/30 Filter Sand

Elevation / Depth of Bottom of Screen: 1106'

Elevation / Depth of Bottom of Filter Pack: 1106.3'

Type of Backfill Below Well: 20/30 SAND (FILTER GRADE)

Elevation / Total Depth of Borehole: 1106.3'

Tetra Tech NUS, Inc.

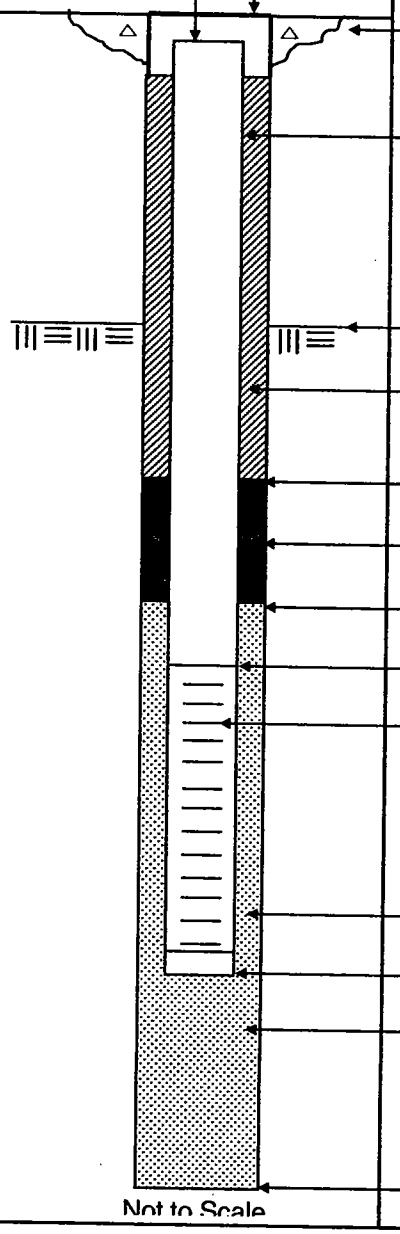
WELL No.: CEF-59-20-33

MONITORING WELL SHEET

PROJECT:	Site 59 RI	DRILLING Co.:	Prosonic	BORING No.:	
PROJECT No.:	N8925	DRILLER:	W. Lindsey	DATE COMPLETED:	6-9-05
SITE:	59 @ Cecil Field	DRILLING METHOD:	DPT	NORTHING:	
GEOLOGIST:	S. McGuire	DEV. METHOD:	Peristaltic	EASTING:	

Ground Elevation =

Datum:



Not to Scale

Elevation / Depth of Top of Riser: 1 2 IN.

Elevation / Height of Top of Surface Casing: 1 0 IN.

I.D. of Surface Casing: 8 INCHES

Type of Surface Casing: Steel boltdown manhole

Type of Surface Seal: Concrete

I.D. of Riser: 3/4 inch

Type of Riser: Sch. 40 PVC

Borehole Diameter: 2.25 IN.

Elevation / Depth Top of Rock: N/A

Type of Backfill: ~~Natural formation to~~ ND
Type I/II Portland Cement ~~(water table to surface)~~

Elevation / Depth of Seal: 26.10 FT.

Type of Seal: Bentonite

Elevation / Depth of Top of Filter Pack: 28.10 FT.

Elevation / Depth of Top of Screen: 28.10 FT.

Type of Screen: Sch. 40 PVC

Slot Size x Length: 0.010 inch x 5 ft.

I.D. of Screen: 3/4 inch

Type of Filter Pack: 20/40 sand

Elevation / Depth of Bottom of Screen: 33.10 FT.

Elevation / Depth of Bottom of Filter Pack: 133.0 FT.

Type of Backfill Below Well: 20/40 Sand

Elevation / Total Depth of Borehole: 133.0 FT.

Tetra Tech NUS, Inc.

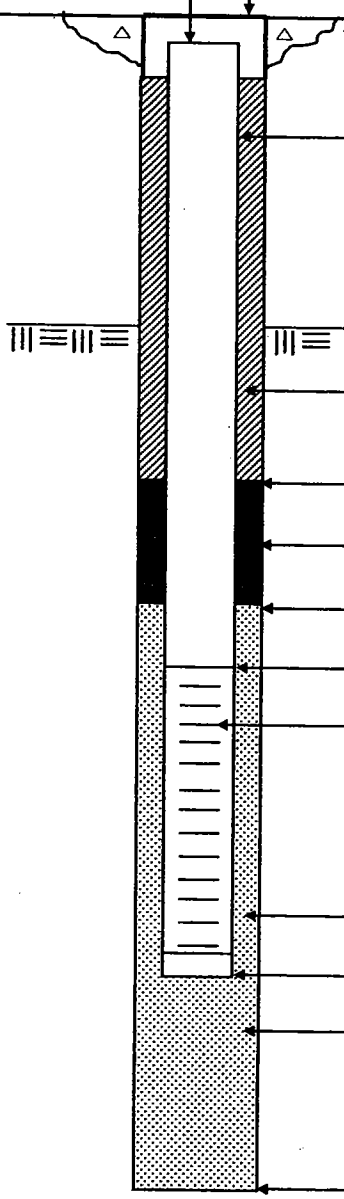
WELL No.: CEF-59-20-53

MONITORING WELL SHEET

PROJECT:	Site 59 RI	DRILLING Co.:	Prosonic	BORING No.:	
PROJECT No.:	N8925	DRILLER:	W. Lindsey	DATE COMPLETED:	6-10-05
SITE:	59 @ Cecil Field	DRILLING METHOD:	DPT	NORTHING:	
GEOLOGIST:	S. McGuire	DEV. METHOD:	Peristaltic	EASTING:	

Ground Elevation =

Datum:



Not to Scale

Elevation / Depth of Top of Riser: 1.21 IN.

Elevation / Height of Top of Surface Casing: 1.0 IN.

I.D. of Surface Casing: 8 INCHES

Type of Surface Casing: Steel boltdown manhole

Type of Surface Seal: Concrete

I.D. of Riser: 3/4 inch

Type of Riser: Sch. 40 PVC

Borehole Diameter: 2.25 IN.

Elevation / Depth Top of Rock: N/A

Type of Backfill: ~~Natural formation to~~ MD
Type I/II Portland Cement ~~(water table to surface)~~

Elevation / Depth of Seal: 46.10 FT.

Type of Seal: Bentonite

Elevation / Depth of Top of Filter Pack: 48.20 FT.

Elevation / Depth of Top of Screen: 48.1.0 FT.

Type of Screen: Sch. 40 PVC

Slot Size x Length: 0.010 inch x 5 ft.

I.D. of Screen: 3/4 inch

Type of Filter Pack: 20/40 Sand

Elevation / Depth of Bottom of Screen: 53.10 FT.

Elevation / Depth of Bottom of Filter Pack: 153.0 FT.

Type of Backfill Below Well: 20/40 Sand

Elevation / Total Depth of Borehole: 153.0 FT.

Tetra Tech NUS, Inc.

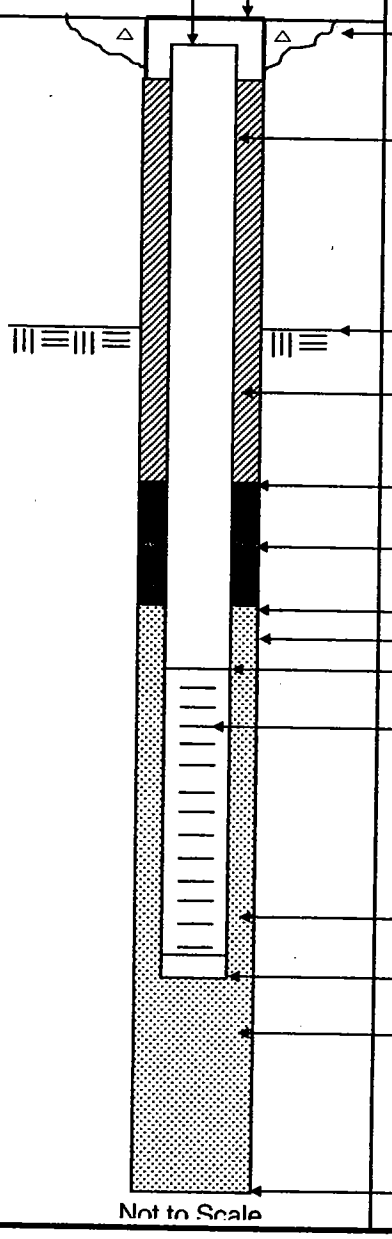
WELL No.: CEF-59-020-78

MONITORING WELL SHEET

PROJECT:	Site 59 R. I.	DRILLING Co.:	Prosonic	BORING No.:	-02
PROJECT No.:	N8925	DRILLER:	VERN	DATE COMPLETED:	6-9-05
SITE:	59 @ Cecil Field	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	CONTI	DEV. METHOD:	Submersible	EASTING:	

Ground Elevation =

Datum:



Elevation / Depth of Top of Riser: 1 2 IN.

Elevation / Height of Top of Surface Casing: 1 0 IN.

I.D. of Surface Casing: 8 inch

Type of Surface Casing: Steel boltdown manhole

Type of Surface Seal: Concrete

I.D. of Riser: 2 inch

Type of Riser: Schedule 40 PVC

Borehole Diameter: 6"

Elevation / Depth Top of Rock: N/A

Type of Backfill: Type I/II Portland Cement

Elevation / Depth of Seal: 167 FT.

Type of Seal: Bentonite

Elevation / Depth of Top of Filter Pack: 170 FT.

Stainless Steel Stabilizer

Elevation / Depth of Top of Screen: 173 FT.

Type of Screen: Sch. 40 PVC

Slot Size x Length: 0.010 inch x 5 foot

I.D. of Screen: 2 inch

Type of Filter Pack: 20/30 Filter Sand

Elevation / Depth of Bottom of Screen: 178 FT.

Elevation / Depth of Bottom of Filter Pack: 178.5 FT.

Type of Backfill Below Well: 20/30 SAND

Elevation / Total Depth of Borehole: 178.5 FT.

Tetra Tech NUS, Inc.

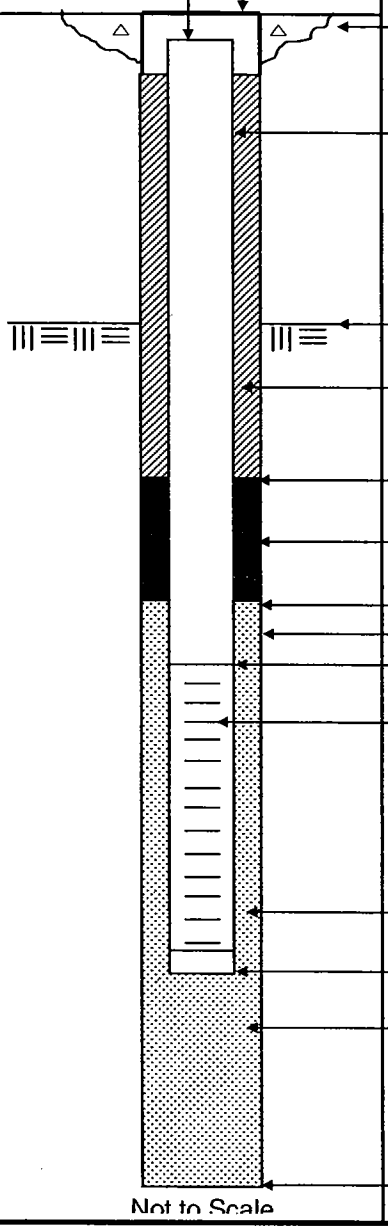
WELL No.: CEF-59-020-99

MONITORING WELL SHEET

PROJECT:	Site 59 R. I.	DRILLING Co.:	Prosonic	BORING No.:	01
PROJECT No.:	N8925	DRILLER:	V. Scott JR.	DATE COMPLETED:	6-8-05
SITE:	59 @ Cecil Field	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	CONTI	DEV. METHOD:	Submersible	EASTING:	

Ground Elevation =

Datum:



Elevation / Depth of Top of Riser: 1 2IN.

Elevation / Height of Top of Surface Casing: 1 0IN.

I.D. of Surface Casing: 8 inch

Type of Surface Casing: Steel boltdown manhole

Type of Surface Seal: Concrete

I.D. of Riser: 2 inch

Type of Riser: Schedule 40 PVC

Borehole Diameter: 6"

Elevation / Depth Top of Rock: N/A

Type of Backfill: Type I/II Portland Cement (12 BAGS)

Elevation / Depth of Seal: 1 81

Type of Seal: Bentonite Pellets

Elevation / Depth of Top of Filter Pack: 1 92

Stainless Steel Stabilizer

Elevation / Depth of Top of Screen: 1 94.5

Type of Screen: Sch. 40 PVC

Slot Size x Length: 0.010 inch x 5 foot

I.D. of Screen: 2 inch

Type of Filter Pack: 20/30 Filter Sand

Elevation / Depth of Bottom of Screen: 1 99.5

Elevation / Depth of Bottom of Filter Pack: 1 101

Type of Backfill Below Well: PELLETS 105'-101

Elevation / Total Depth of Borehole: 1 105

B.3 CONFORMANCE REPORTS

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-059-001-028
Site Name: Bldg. 324 (SITE 59)
Date Installed: 10/18/04
Project Name: Remedial INVESTIGATION

Site Geologist: MERVIN W. DALE
Drilling Company: MILLER DRILLING
Driller: TRACY THRASHER
Project Number: N8925

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	Sch. 40 PVC, 2 IN. DIAM., 10 FT. SECTIONS,	Flush threaded DSI*, Christiana, TN	NO
Well Screen	Sch. 40 PVC, 2 IN. DIAM., 0.010 IN. SLOTS, 5 FT.	Flush threaded DSI, Christiana, TN	NO
End Cap	Sch. 40 PVC, 2 IN. DIAM., Flat, Flush thread, 2 IN. Long	DSI, Christiana, TN	NO
Drilling Fluid	Potable WATER	Fire hydrant at Fire Station next to B.82	NO
Drilling Fluid Additives	None	—	—
Backfill Material	Filter Sand and/or bentonite	DSI, CHRISTIANA, TN.	NO
Annular Filter Pack	Filter Pack Sand No. 1	DSI, CHRISTIANA, TN.	NO
Bentonite Seal	Shur-PEL, 3/8 IN. DIAM.	DSI, Christiana, TN.	NO
Annular Grout	Type II Portland Cement	CEMEX	NO
Surface Cement	QUIKRete	QUIKrete Atlanta, GA	NO
Protective Casing	Steel Boltdown Manhole Flush MT. 8" DIAM.	PEMCO, HIALEAH, FL	NO
Paint	None		
Rod Lubricant	* WELL GUARD	Jet Lube **	NO
Compressor Oil	None		

* DSI = DRILLER'S SERVICE, INC.
** Petroleum-free

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Mervin W. Dale

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-059-001-053
Site Name: Bldg. 324 (SITE 59)
Date Installed: 10-21-04
Project Name: SITE 59, Remedial INVESTIGATION

Site Geologist: MERVIN W. DALE
Drilling Company: MINER DRILLING
Driller: HAZ HUNTOON
Project Number: N8925

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	Sch. 40 PVC, 3/4 IN. inside DIAM., 10 FT. SECTIONS, Flush threaded	Geoinsight	No
Well Screen	Sch. 40 PVC, 3/4" I.D., 5', 0.010" slots, pre-pack	Geoinsight, LAS Cruces, NM	NO
End Cap	Sch. 40 PVC, 3/4" I.D., 2" long	Geoinsight, LAS Cruces, NM	NO
Drilling Fluid	Potable WATER	Fire hydrant at Bldg. 171 (fire sta.)	NO
Drilling Fluid Additives	None	—	—
Backfill Material	None	—	—
Annular Filter Pack	Filter PACK SAND NO. 1	DSI, CHRISTIANA, TN.	NO
~~Bentonite~~ Seal, FINE SAND	30/65 SAND	STANDARD SAND, JACKSONVILLE, FL	NO
Annular Grout	Type II Portland Cement	CEMEX	NO
Surface Cement	Quikrete	Quikrete, Atlanta, GA.	NO
Protective Casing	Steel boltdown MANHOLE, Flush MT., 8" DIAM.	PEMCO, HIALEAH, FL	NO
Paint	None	—	—
Rod Lubricant	None	—	—
Compressor Oil	None	—	—

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Mervin W. Dale

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-059-001-083
Site Name: Bldg. 324 (SITE 59)
Date Installed: 10/18/04
Project Name: Remedial INVESTIGATION

Site Geologist: MERVIN W. DALE
Drilling Company: MILLER DRILLING
Driller: TRACY THRASHER
Project Number: N8925

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	Sch. 40 PVC, 2 IN. DIAM., 10 FT. SECTIONS,	Flush threaded DSI*, Christiana, TN	NO
Well Screen	Sch. 40 PVC, 2 IN. DIAM., 0.010 IN. SLOTS, 5 FT.	Flush threaded DSI, Christiana, TN	NO
End Cap	Sch. 40 PVC, 2 IN. DIAM, Flat, Flush thread, 2 IN. Long	DSI, Christiana, TN	NO
Drilling Fluid	Potable Water	Fire hydrant at Fire Station next to B.82	NO
Drilling Fluid Additives	None	—	—
Backfill Material	Filter Sand and/or bentonite	DSI, CHRISTIANA, TN.	NO
Annular Filter Pack	Filter Pack Sand No. 1	DSI, CHRISTIANA, TN.	NO
Bentonite Seal	Shur-Pel, 3/8 IN. DIAM.	DSI, Christiana, TN.	NO
Annular Grout	Type II Portland Cement	CEMEX	NO
Surface Cement	QUIKRete	QUIKrete Atlanta, GA	NO
Protective Casing	Steel Boltdown Manhole Flush mt. 8" DIAM.	PEMCO, HIALEAH, FL	NO
Paint	None	—	—
Rod Lubricant	* WELL GUARD	Jet Lube **	NO
Compressor Oil	None	—	—
STABILIZER	STAINLESS STEEL, 1' LONG (ribbed)	DSI, CHRISTIANA, TN	NO

*DSI = DRILLER'S SERVICE, INC.

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

**Petroleum-free

Signature of Site Geologist: Mervin W. Dale

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-059-001-121
Site Name: Bldg. 324 (SITE 59)
Date Installed: 10/18/04
Project Name: Remedial INVESTIGATION

Site Geologist: MERVIN W. DALE
Drilling Company: MILLER DRILLING
Driller: TRACY THRASHER
Project Number: N8925

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	Sch. 40 PVC, 2 IN. DIAM., 10 FT. SECTIONS,	Flush threaded DSI*, Christiana, TN	NO
Well Screen	Sch. 40 PVC, 2 IN. DIAM., 0.010 IN. SLOTS, 5 FT.	Flush threaded DSI, Christiana, TN	NO
End Cap	Sch. 40 PVC, 2 IN. DIAM., Flat, Flush thread, 2 IN. Long	DSI, Christiana, TN	NO
Drilling Fluid	Potable Water	Fire Hydrant at Fire Station next to B.82	NO
Drilling Fluid Additives	None	—	—
Backfill Material	Filter Sand and/or bentonite	DSI, CHRISTIANA, TN.	NO
Annular Filter Pack	Filter Pack Sand No. 1	DSI, CHRISTIANA, TN.	NO
Bentonite Seal	Shur-PEL, 3/8 IN. DIAM.	DSI, Christiana, TN.	NO
Annular Grout	Type II Portland Cement	CEMEX	NO
Surface Cement	QUIKRete	QUIKrete, Atlanta, GA	NO
Protective Casing	Steel Boltdown Manhole Flush mt. 8" DIAM.	PEMCO, HIALEAH, FL	NO
Paint	None	—	—
Rod Lubricant	# WELL GUARD	Jet Lube **	NO
Compressor Oil	None	—	—
STABILIZER	STAINLESS STEEL, 1' LONG (ribbed)	DSI, CHRISTIANA, TN	NO

*DSI = DRILLER'S SERVICE, INC.

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

** Petroleum-free

Signature of Site Geologist: Mervin W. Dale

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-059-002-028
Site Name: Bldg. 324 (SITE 59)
Date Installed: 10/15/04
Project Name: SITE 59, Remedial INVESTIGATION

Site Geologist: MERVIN W. DALE
Drilling Company: MINER DRILLING
Driller: HAZ HUNTOON
Project Number: N8925

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	Sch. 40 PVC, 3/4 IN. inside DIAM., 10 FT. SECTIONS, Flush threaded	Geoinsight	NO
Well Screen	Sch. 40 PVC, 3/4" I.D., 5', 0.010" slots, pre-pack	Geoinsight, LAS CRUCES, NM	NO
End Cap	Sch. 40 PVC, 3/4" I.D., 2" long	Geoinsight, LAS CRUCES, NM	NO
Drilling Fluid	Potable WATER	Fire hydrant at Bldg. 171 (fire sta.)	NO
Drilling Fluid Additives	None	—	—
Backfill Material	None	—	—
Annular Filter Pack	Filter PACK SAND NO. 1	DSI, CHRISTIANA, TN.	NO
~~Bentonite~~ Seal, FINE SAND	30/65 SAND	STANDARD SAND, JACKSONVILLE, FL	NO
Annular Grout	Type II Portland Cement	CEMEX	NO
Surface Cement	QUIKRETE	QUIKRETE, ATLANTA, GA.	NO
Protective Casing	Steel boltdown MANHOLE, Flush MT., 8" DIAM.	PEMCO, HIALEAH, FL	NO
Paint	None	—	—
Rod Lubricant	None	—	—
Compressor Oil	None	—	—

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Mervin W. Dale

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-059-002-053
Site Name: Bldg. 324 (SITE 59)
Date Installed: 10/17/04
Project Name: SITE 59, Remedial INVESTIGATION

Site Geologist: MERVIN W. DALE
Drilling Company: MILLER DRILLING
Driller: HAZ HUNTOON
Project Number: N8925

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	Sch. 40 PVC, 3/4 IN. inside DIAM., 10 FT. SECTIONS, Flush threaded	Geoinsight	No
Well Screen	Sch. 40 PVC, 3/4" I.D., 5', 0.010" slots, pre-pack	Geoinsight, LAS CRUCES, NM	NO
End Cap	Sch. 40 PVC, 3/4" I.D., 2" long	Geoinsight, LAS CRUCES, NM	NO
Drilling Fluid	Potable WATER	Fire hydrant at Bldg. 171 (fire sta.)	NO
Drilling Fluid Additives	None	—	—
Backfill Material	None	—	—
Annular Filter Pack	Filter PACK SAND NO. 1	DSI, CHRISTIANA, TN.	NO
~~Bentonite~~ Seal, FINE SAND	30/65 SAND	STANDARD SAND, JACKSONVILLE, FL	NO
Annular Grout	Type II Portland Cement	CEMEX	NO
Surface Cement	Quikrete	Quikrete, Atlanta, GA.	NO
Protective Casing	Steel boltdown MANHOLE, Flush mt., 8" DIAM.	PEMCO, HIALEAH, FL	NO
Paint	None	—	—
Rod Lubricant	None	—	—
Compressor Oil	None	—	—

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Mervin W. Dale

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-059-002-120
Site Name: Bldg. 324 (SITE 59)
Date Installed: 10-19-04
Project Name: Remedial INVESTIGATION

Site Geologist: MERVIN W. DALE
Drilling Company: MILLER DRILLING
Driller: TRACY THRASHER
Project Number: N8925

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	Sch. 40 PVC, 2 IN. DIAM., 10 FT. SECTIONS,	Flush-threaded DSI*, Christiana, TN	NO
Well Screen	Sch. 40 PVC, 2 IN. DIAM., 0.010 IN. SLOTS, 5 FT.	Flush threaded DSI, Christiana, TN	NO
End Cap	Sch. 40 PVC, 2 IN. DIAM, Flat, Flush thread, 2 IN. Long	DSI, Christiana, TN	NO
Drilling Fluid	Potable WATER	Fire hydrant at Fire Station next to B.82	NO
Drilling Fluid Additives	None	—	—
Backfill Material	Filter Sand and/or bentonite	DSI, CHRISTIANA, TN.	NO
Annular Filter Pack	Filter Pack Sand No. 1	DSI, CHRISTIANA, TN.	NO
Bentonite Seal	Shur-PEL, 3/8 IN. DIAM.	DSI, Christiana, TN.	NO
Annular Grout	Type II Portland Cement	CEMEX	NO
Surface Cement	QUIKRete	QUIKRete Atlanta, GA	NO
Protective Casing	Steel Boltdown Manhole Flush mt. 8" DIAM.	PEMCO, HIALEAH, FL	NO
Paint	None	—	—
Rod Lubricant	# WELL GUARD	Jet Lube **	NO
Compressor Oil	None	—	—
STABILIZER	STAINLESS STEEL, 1' LONG (ribbed)	DSI, CHRISTIANA, TN	NO

*DSI = DRILLER'S SERVICE, INC.
** Petroleum-free

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Mervin W. Dale

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-059-003-035
Site Name: Bldg. 324 (SITE 59)
Date Installed: 10-15-04
Project Name: SITE 59, Remedial INVESTIGATION

Site Geologist: MERVIN W. DALE
Drilling Company: MILLER DRILLING
Driller: HAZ HUNTOON
Project Number: N8925

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	Sch. 40 PVC, 3/4 IN. inside DIAM., 10 FT. SECTIONS, Flush threaded	Geoinsight	No
Well Screen	Sch. 40 PVC, 3/4" I.D., 5', 0.010" slots, pre-pack	Geoinsight, LAS CRUCES, NM	NO
End Cap	Sch. 40 PVC, 3/4" I.D., 2" long	Geoinsight, LAS CRUCES, NM	NO
Drilling Fluid	Potable WATER	Fire hydrant At Bldg. 171 (fire sta.)	NO
Drilling Fluid Additives	None	—	—
Backfill Material	None	—	—
Annular Filter Pack	Filter PACK SAND NO. 1	DSI, CHRISTIANA, TN.	NO
~~Bentonite~~ Seal, FINE SAND	30/65 SAND	STANDARD SAND, JACKSONVILLE, FL	NO
Annular Grout	Type II Portland Cement	CEMEX	NO
Surface Cement	Quikrete	Quikrete, Atlanta, GA.	NO
Protective Casing	Steel boltdown MANHOLE, Flush MT., 8" DIAM.	PEMCO, HIALEAH, FL	NO
Paint	None	—	—
Rod Lubricant	None	—	—
Compressor Oil	None	—	—

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Mervin W. Dale

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-059-003-053
Site Name: Bldg. 324 (SITE 59)
Date Installed: 10-17-04
Project Name: SITE 59, Remedial INVESTIGATION

Site Geologist: MERVIN W. DALE
Drilling Company: MINER DRILLING
Driller: HAZ HUNTOON
Project Number: N8925

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	Sch. 40 PVC, 3/4 IN. inside DIAM., 10 FT. SECTIONS, Flush threaded	Geoinsight	No
Well Screen	Sch. 40 PVC, 3/4" I.D., 5', 0.010" slots, pre-pack	Geoinsight, LAS Cruces, NM	NO
End Cap	Sch. 40 PVC, 3/4" I.D., 2" long	Geoinsight, LAS Cruces, NM	NO
Drilling Fluid	Potable WATER	Fire hydrant at Bldg. 171 (fire sta.)	NO
Drilling Fluid Additives	None	—	—
Backfill Material	None	—	—
Annular Filter Pack	Filter Pack Sand No. 1	DSI, CHRISTIANA, TN.	NO
~~Bentonite~~ Seal, FINE SAND	30/65 SAND	STANDARD SAND, JACKSONVILLE, FL	NO
Annular Grout	Type II Portland Cement	CEMEX	NO
Surface Cement	Quikrete	Quikrete, Atlanta, GA.	NO
Protective Casing	Steel boltdown Manhole, Flush Mt., 8" DIAM.	PEMCO, HIALEAH, FL	NO
Paint	None	—	—
Rod Lubricant	None	—	—
Compressor Oil	None	—	—

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Mervin W. Dale

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-059-003-073
Site Name: Bldg. 324 (SITE 59)
Date Installed: 10-17-04
Project Name: SITE 59, Remedial INVESTIGATION

Site Geologist: MERVIN W. DALE
Drilling Company: MILLER DRILLING
Driller: HAZ HUNTOON
Project Number: N8925

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	Sch. 40 PVC, 3/4 IN. inside DIAM., 10 FT. SECTIONS, Flush threaded	Geoinsight	NO
Well Screen	Sch. 40 PVC, 3/4" I.D., 5', 0.010" slots, pre-pack	Geoinsight, LAS CRUCES, NM	NO
End Cap	Sch. 40 PVC, 3/4" I.D., 2" long	Geoinsight, LAS CRUCES, NM	NO
Drilling Fluid	Potable WATER	Fire hydrant at Bldg. 171 (fire sta.)	NO
Drilling Fluid Additives	None	—	—
Backfill Material	None	—	—
Annular Filter Pack	Filter PACK SAND NO. 1	DSI, CHRISTIANA, TN.	NO
~~Bentonite~~ Seal, FINE SAND	30/65 SAND	STANDARD SAND, JACKSONVILLE, FL	NO
Annular Grout	Type II Portland Cement	CEMEX	NO
Surface Cement	QUIKRETE	QUIKRETE, ATLANTA, GA.	NO
Protective Casing	Steel bolt-down MANHOLE, Flush MT., 8" DIAM.	PEMCO, HIALEAH, FL	NO
Paint	None	—	—
Rod Lubricant	None	—	—
Compressor Oil	None	—	—

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Mervin W. Dale

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-059-003-121
Site Name: Bldg. 324 (SITE 59)
Date Installed: 10/3/04
Project Name: Remedial INVESTIGATION

Site Geologist: MERVIN W. DALE
Drilling Company: MILLER DRILLING
Driller: TRACY THRASHER
Project Number: N8925

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	Sch. 40 PVC, 2 IN. DIAM., 10 FT. SECTIONS,	Flush threaded DSI*, Christiana, TN	NO
Well Screen	Sch. 40 PVC, 2 IN. DIAM., 0.010 IN. SLOTS, 5 FT.	Flush threaded DSI, Christiana, TN	NO
End Cap	Sch. 40 PVC, 2 IN. DIAM., Flat, Flush thread, 2 IN. Long	DSI, Christiana, TN	NO
Drilling Fluid	Potable WATER	Fire hydrant at Fire Station next to B.82	NO
Drilling Fluid Additives	None	—	—
Backfill Material	Filter Sand and/or bentonite	DSI, CHRISTIANA, TN.	NO
Annular Filter Pack	Filter Pack Sand No. 1	DSI, CHRISTIANA, TN.	NO
Bentonite Seal	Shur-PEL, 3/8 IN. DIAM.	DSI, Christiana, TN.	NO
Annular Grout	Type II Portland Cement	CEMEX	NO
Surface Cement	QUIKRete	QUIKRete Atlanta, GA	NO
Protective Casing	Steel Boltdown Manhole Flush mt. 8" DIAM.	PEMCO, HIALEAH, FL	NO
Paint	None	—	—
Rod Lubricant	* WELL GUARD	Jet Lube **	NO
Compressor Oil	None	—	—
STABILIZER	STAINLESS STEEL, 1' Long (ribbed)	DSI, CHRISTIANA, TN	NO

* DSI = DRILLER'S SERVICE, INC.
** Petroleum-free

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Mervin W. Dale

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-59-004-33
Site Name: CECIL FIELD - SITE 59
Date Installed: 6-9-05
Project Name: R.I.

Site Geologist: S. McGuire
Drilling Company: PROSONIC
Driller: BILL LINDSEY
Project Number: N8925

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	3/4 INCH, Sch. 40 PVC	GEO INSIGHT, LAS CRUCES, NM	NO
Well Screen	3/4 INCH, SPPS, 10 SLOT, Sd. 40 PVC	GEO INSIGHT, LAS CRUCES, NM	NO
End Cap	3/4 INCH, WELL PT.	GEO INSIGHT, LAS CRUCES, NM	NO
Drilling Fluid	None	—	—
Drilling Fluid Additives	None	—	—
Backfill Material	None	—	—
Annular Filter Pack	20/40 GRADE FILTER SAND	PART OF SPPS well screen	NO
Bentonite Seal	2 FT. Long Pre-pack BENTONITE WRAP	GEO INSIGHT, LAS CRUCES, NM	NO
Annular Grout	Type I/II Portland cement	QUIKRETE, ATLANTA, GA.	NO.
Surface Cement	QUIKRETE Concrete	QUIKRETE, ATLANTA, GA.	NO.
Protective Casing	Steel boltdown, 8 IN. DIAM. manhole	TEMCO, HIALEAH, FL.	NO.
Paint	None	—	—
Rod Lubricant	None	—	—
Compressor Oil	None	—	—

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Melvin W. Dale FOR S.M.

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-059-004-053
Site Name: Bldg. 324 (SITE 59)
Date Installed: 10/18/04
Project Name: SITE 59, Remedial INVESTIGATION

Site Geologist: MERVIN W. DALE
Drilling Company: MILLER DRILLING
Driller: HAZ HUNTOON
Project Number: N8925

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	Sch. 40 PVC, 3/4 IN. inside DIAM., 10 FT. SECTIONS, Flush threaded	Geoinsight	No
Well Screen	Sch. 40 PVC, 3/4" I.D., 5', 0.010" slots, pre-pack	Geoinsight, LAS Cruces, NM	NO
End Cap	Sch. 40 PVC, 3/4" I.D., 2" long	Geoinsight, LAS Cruces, NM	NO
Drilling Fluid	Potable water	Fire hydrant at Bldg. 171 (fire sta.)	NO
Drilling Fluid Additives	None	—	—
Backfill Material	None	—	—
Annular Filter Pack	Filter Pack Sand No. 1	DSI, CHRISTIANA, TN.	NO
~~Bentonite~~ Seal, FINE SAND	30/65 SAND	STANDARD SAND, JACKSONVILLE, FL	NO
Annular Grout	Type II Portland Cement	CEMEX	NO
Surface Cement	Quikrete	Quikrete, Atlanta, GA.	NO
Protective Casing	Steel bolt down Manhole, Flush mt., 8" DIAM.	PEMCO, HIALEAH, FL	NO
Paint	None	—	—
Rod Lubricant	None	—	—
Compressor Oil	None	—	—

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Mervin W. Dale

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-059-004-073
Site Name: Bldg. 324 (SITE 59)
Date Installed: 10/18/04
Project Name: SITE 59, Remedial INVESTIGATION

Site Geologist: MERVIN W. DALE
Drilling Company: MILLER DRILLING
Driller: HAZ HUNTOON
Project Number: N8925

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	Sch. 40 PVC, 3/4 IN. inside DIAM., 10 FT. SECTIONS, Flush threaded	Geoinsight	NO
Well Screen	Sch. 40 PVC, 3/4" I.D., 5', 0.010" slots, pre-pack	Geoinsight, LAS CRUCES, NM	NO
End Cap	Sch. 40 PVC, 3/4" I.D., 2" long	Geoinsight, LAS CRUCES, NM	NO
Drilling Fluid	Potable water	Fire hydrant at Bldg. 171 (fire sta.)	NO
Drilling Fluid Additives	None	—	—
Backfill Material	None	—	—
Annular Filter Pack	Filter Pack Sand No. 1	DSI, CHRISTIANA, TN.	NO
~~Bentonite~~ Seal, FINE SAND	30/65 SAND	STANDARD SAND, JACKSONVILLE, FL	NO
Annular Grout	Type II Portland Cement	CEMEX	NO
Surface Cement	Quikrete	Quikrete, Atlanta, GA.	NO
Protective Casing	Steel bolt-down Manhole, Flush mt., 8" DIAM.	PEMCO, HIALEAH, FL	NO
Paint	None	—	—
Rod Lubricant	None	—	—
Compressor Oil	None	—	—

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Mervin W. Dale

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-059-~~003~~ MD 004-112
Site Name: Bldg. 324 (SITE 59)
Date Installed: 10-1-04
Project Name: Remedial INVESTIGATION

Site Geologist: MERVIN W. DALE
Drilling Company: MILLER DRILLING
Driller: TRACY THRASHER
Project Number: N8925

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	Sch. 40 PVC, 2 IN. DIAM., 10 FT. SECTIONS,	Flush threaded DSI*, Christiana, TN	NO
Well Screen	Sch. 40 PVC, 2 IN. DIAM., 0.010 IN. SLOTS, 5 FT.	Flush threaded DSI, Christiana, TN	NO
End Cap	Sch. 40 PVC, 2 IN. DIAM., Flat, Flush thread, 2 IN. Long	DSI, Christiana, TN	NO
Drilling Fluid	Potable WATER	Fire hydrant at Fire Station next to B.82	NO
Drilling Fluid Additives	None	—	—
Backfill Material	Filter Sand and/or bentonite	DSI, CHRISTIANA, TN.	NO
Annular Filter Pack	Filter Pack Sand No. 1	DSI, CHRISTIANA, TN.	NO
Bentonite Seal	Shur-PEL, 3/8 IN. DIAM.	DSI, Christiana, TN.	NO
Annular Grout	Type II Portland Cement	CEMEX	NO
Surface Cement	QUIKRete	QUIKrete Atlanta, GA	NO
Protective Casing	Steel Boltdown Manhole Flush mt. 8" DIAM.	PEMCO, HIALEAH, FL	NO
Paint	None	—	—
Rod Lubricant	WELL GUARD	Jet Lube **	NO
Compressor Oil	None	—	—
STABILIZER	STAINLESS STEEL, 1' Long (ribbed)	DSI, CHRISTIANA, TN	NO

*DSI = DRILLER'S SERVICE, INC.
** Petroleum-free

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Mervin W. Dale

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-059-005-033
Site Name: Bldg. 324 (SITE 59)
Date Installed: 10-15-04
Project Name: SITE 59, Remedial INVESTIGATION

Site Geologist: MERVIN W. DALE
Drilling Company: MILLER DRILLING
Driller: HAZ HUNTOON
Project Number: N8925

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	Sch. 40 PVC, 3/4 IN. inside DIAM., 10 FT. SECTIONS, Flush threaded	Geoinsight	No
Well Screen	Sch. 40 PVC, 3/4" I.D., 5', 0.010" slots, pre-pack	Geoinsight, LAS Cruces, NM	NO
End Cap	Sch. 40 PVC, 3/4" I.D., 2" long	Geoinsight, LAS Cruces, NM	NO
Drilling Fluid	Potable water	Fire hydrant at Bldg. 171 (fire sta.)	NO
Drilling Fluid Additives	None	—	—
Backfill Material	None	—	—
Annular Filter Pack	Filter Pack Sand No. 1	DSI, CHRISTIANA, TN.	NO
~~Bentonite~~ Seal, FINE SAND	30/65 Sand	STANDARD SAND, JACKSONVILLE, FL	NO
Annular Grout	Type II Portland Cement	CEMEX	NO
Surface Cement	Quikrete	Quikrete, Atlanta, GA.	NO
Protective Casing	Steel boltdown Manhole, Flush mt., 8" DIAM.	PEMCO, HIALEAH, FL	NO
Paint	None	—	—
Rod Lubricant	None	—	—
Compressor Oil	None	—	—

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Mervin W. Dale

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF.059.005.053
Site Name: Bldg. 324 (SITE 59)
Date Installed: 10-21-04
Project Name: SITE 59, Remedial INVESTIGATION

Site Geologist: MERVIN W. DALE
Drilling Company: MINER DRILLING
Driller: HAZ HUNTOON
Project Number: N8925

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	Sch. 40 PVC, 3/4 IN. inside DIAM., 10 FT. SECTIONS, Flush threaded	Geoinsight	No
Well Screen	Sch. 40 PVC, 3/4" I.D., 5', 0.010" slots, pre-pack	Geoinsight, LAS Cruces, NM	NO
End Cap	Sch. 40 PVC, 3/4" I.D., 2" long	Geoinsight, LAS Cruces, NM	NO
Drilling Fluid	Potable WATER	Fire hydrant at Bldg. 171 (fire sta.)	NO
Drilling Fluid Additives	None	—	—
Backfill Material	None	—	—
Annular Filter Pack	Filter PACK SAND NO. 1	DSI, CHRISTIANA, TN.	NO
~~Bentonite~~ Seal, FINE SAND	30/65 SAND	STANDARD SAND, JACKSONVILLE, FL	NO
Annular Grout	Type II Portland Cement	CEMEX	NO
Surface Cement	QUIKRETE	QUIKRETE, ATLANTA, GA.	NO
Protective Casing	Steel boltdown MANHOLE, Flush MT., 8" DIAM.	PEMCO, HIALEAH, FL	NO
Paint	None	—	—
Rod Lubricant	None	—	—
Compressor Oil	None	—	—

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Mervin W. Dale

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-059-005-073
Site Name: Bldg. 324 (SITE 59)
Date Installed: 10-21-04
Project Name: SITE 59, Remedial INVESTIGATION

Site Geologist: MERVIN W. DALE
Drilling Company: MILLER DRILLING
Driller: HAZ HUNTOON
Project Number: N8925

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	Sch. 40 PVC, 3/4 IN. inside DIAM., 10 FT. SECTIONS, Flush threaded	Geoinsight	NO
Well Screen	Sch. 40 PVC, 3/4" I.D., 5', 0.010" slots, pre-pack	Geoinsight, LAS CRUCES, NM	NO
End Cap	Sch. 40 PVC, 3/4" I.D., 2" long	Geoinsight, LAS CRUCES, NM	NO
Drilling Fluid	Potable water	Fire hydrant at Bldg. 171 (fire sta.)	NO
Drilling Fluid Additives	None	—	—
Backfill Material	None	—	—
Annular Filter Pack	Filter Pack Sand No. 1	DSI, CHRISTIANA, TN.	NO
~~Bentonite~~ Seal, FINE SAND	30/65 SAND	STANDARD SAND, JACKSONVILLE, FL	NO
Annular Grout	Type II Portland Cement	CEMEX	NO
Surface Cement	Quikrete	Quikrete, Atlanta, GA.	NO
Protective Casing	Steel bolt-down Manhole, Flush mt., 8" DIAM.	PEMCO, HIALEAH, FL	NO
Paint	None	—	—
Rod Lubricant	None	—	—
Compressor Oil	None	—	—

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Mervin W. Dale

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-59-006-078
Site Name: CECIL FIELD - SITE 59
Date Installed: 06/11/05
Project Name: R.I.

Site Geologist: MERVIN DALE
Drilling Company: PROSONIC
Driller: VERN SCOTT
Project Number: N8925

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	2" DIAM. Sch. 40 PVC, 5' Long, 0.010"	Machine Slot / ENV. Mfg. Manhattan, KS	NO
Well Screen	2" DIAM., Sch. 40 PVC, 10' lengths, flush thread	/ ENV. Mfg. Manhattan KS	NO
End Cap	2" DIAM., Well pt., 4" long	ENV. MFG., MANHATTAN, KS	NO
Drilling Fluid	None	—	—
Drilling Fluid Additives	None	—	—
Backfill Material	None	—	—
Annular Filter Pack	20/30 GRADE CLEAN SAND	STANDARD SILICA CO., DAVENPORT, FL	NO
Bentonite Seal	3/8" COATED ENVIROPLUG	WYO-BEN, INC., BILLINGS, MT.	NO
Annular Grout	TYPE I/II PORTLAND, CEMENT	QUIKRETE, ATLANTA, GA.	NO
Surface Cement	QUIKRete Concrete	QUIKrete, Atlanta, GA.	NO
Protective Casing	Steel, boltdown, 8 inch. diam. manhole	PEMCO, Hialeah, FL	NO
Paint	None	—	—
Rod Lubricant	None	—	—
Compressor Oil	None	—	—

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Mervin W. Dale

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-059-006-104
Site Name: Bldg. 324 (SITE 59)
Date Installed: 9-30-04
Project Name: Remedial INVESTIGATION

Site Geologist: MERVIN W. DALE
Drilling Company: MILLER DRILLING
Driller: TRACY THRASHER
Project Number: N8925

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	Sch. 40 PVC, 2 IN. DIAM., 10 FT. SECTIONS	Flush threaded DSI*, Christiana, TN	NO
Well Screen	Sch. 40 PVC, 2 IN. DIAM., 0.010 IN. SLOTS, 5 FT.	Flush threaded DSI, Christiana, TN	NO
End Cap	Sch. 40 PVC, 2 IN. DIAM, Flat, Flush thread, 2 IN. Long	DSI, Christiana, TN	NO
Drilling Fluid	Potable WATER	Fire hydrant at Fire Station next to B.82	NO
Drilling Fluid Additives	None	—	—
Backfill Material	Filter Sand and/or bentonite	DSI, CHRISTIANA, TN.	NO
Annular Filter Pack	Filter Pack Sand No. 1	DSI, CHRISTIANA, TN.	NO
Bentonite Seal	Stur-PEL, 3/8 IN. DIAM.	DSI, Christiana, TN.	NO
Annular Grout	Type II Portland Cement	CEMEX	NO
Surface Cement	QUIKRete	QUIKrete Atlanta, GA	NO
Protective Casing	Steel Boltdown Manhole Flush mt. 8" DIAM.	PEMCO, HIALEAH, FL	NO
Paint	None	—	—
Rod Lubricant	* WELL GUARD	Jet Lube **	NO
Compressor Oil	None	—	—
STABILIZER	STAINLESS STEEL, 1' LONG (ribbed)	DSI, CHRISTIANA, TN	NO

*DSI = DRILLER'S SERVICE, INC.
** Petroleum-free

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Mervin W. Dale

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-59-007-53
Site Name: CECIL FIELD - SITE 59
Date Installed: 6-11-05
Project Name: R.I.

Site Geologist: S. McGuire
Drilling Company: PROSONIC
Driller: BILL LINDSEY
Project Number: N8925

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	3/4 INCH, Sch. 40 PVC	GEO INSIGHT, LAS CRUCES, NM	NO
Well Screen	3/4 INCH, SPPS, 10 SLOT, Sch. 40 PVC	GEO INSIGHT, LAS CRUCES, NM	NO
End Cap	3/4 INCH, WELL PT.	GEO INSIGHT, LAS CRUCES, NM	NO
Drilling Fluid	None	—	—
Drilling Fluid Additives	None	—	—
Backfill Material	None	—	—
Annular Filter Pack	20/40 GRADE FILTER SAND	PART OF SPPS well screen	NO
Bentonite Seal	2 FT. Long Pre-pack BENTONITE WRAP	GEO INSIGHT, LAS CRUCES, NM	NO
Annular Grout	Type I/II Portland cement	Quikrete, Atlanta, GA.	NO.
Surface Cement	Quikrete Concrete	Quikrete, Atlanta, GA.	NO.
Protective Casing	Steel bolt down, 8 IN. DIAM. manhole	FEMCO, HIALEAH, FL.	NO.
Paint	None	—	—
Rod Lubricant	None	—	—
Compressor Oil	None	—	—

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Mervin W. Dale FOR S.M.

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-59-007-078
Site Name: CECIL FIELD - SITE 59
Date Installed: 06/11/05
Project Name: R.I.

Site Geologist: MERVIN DALE
Drilling Company: PROSONIC
Driller: VERN SCOTT
Project Number: N8925

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	2" DIAM., Sch. 40 PVC, 5' Long, 0.010" Machine Slot	ENV. Mfg. Manhattan, KS	NO
Well Screen	2" DIAM., Sch. 40 PVC, 10' lengths, flush thread	ENV. Mfg., Manhattan KS	NO
End Cap	2" DIAM., Well pt., 4" long	ENV. MFG., MANHATTAN, KS	NO
Drilling Fluid	None	—	—
Drilling Fluid Additives	None	—	—
Backfill Material	None	—	—
Annular Filter Pack	20/30 GRADE CLEAN SAND	STANDARD SILICA CO., DAVENPORT, FL	NO
Bentonite Seal	3/8" COATED ENVIROPLUG	WYO-BEN, INC., BILLINGS, MT.	NO
Annular Grout	TYPE I/II PORTLAND, CEMENT	QUIKRETE, ATLANTA, GA.	NO
Surface Cement	Quikrete Concrete	Quikrete Atlanta GA.	NO
Protective Casing	Steel, boltdown, 8 inch diam. Manhole,	PEMCO, Hialeah, FL	NO
Paint	None	—	—
Rod Lubricant	None	—	—
Compressor Oil	None	—	—

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Mervin W. Dale

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-059-008-028
Site Name: Bldg. 324 (SITE 59)
Date Installed: ~~5~~ 10-15-04
Project Name: SITE 59, Remedial INVESTIGATION

Site Geologist: MERVIN W. DALE
Drilling Company: MILLER DRILLING
Driller: HAZ HUNTOON
Project Number: N8925

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	Sch. 40 PVC, 3/4 IN. inside DIAM., 10 FT. SECTIONS, Flush threaded	Geoinsight	NO
Well Screen	Sch. 40 PVC, 3/4" I.D., 5', 0.010" slots, pre-pack	Geoinsight, LAS CRUCES NM	NO
End Cap	Sch. 40 PVC, 3/4" I.D., 2" long	Geoinsight, LAS CRUCES NM	NO
Drilling Fluid	Potable water	Fire hydrant at Bldg. 171 (fire sta.)	NO
Drilling Fluid Additives	None	—	—
Backfill Material	None	—	—
Annular Filter Pack	Filter Pack Sand No. 1	DSI, CHRISTIANA, TN.	NO
~~Bentonite~~ Seal, FINE SAND	30/65 SAND	STANDARD SAND, JACKSONVILLE, FL	NO
Annular Grout	Type II Portland Cement	CEMEX	NO
Surface Cement	Quikrete	Quikrete, Atlanta, GA.	NO
Protective Casing	Steel bolt-down Manhole, Flush mt., 8" DIAM.	PEMCO, HIALEAH, FL	NO
Paint	None	—	—
Rod Lubricant	None	—	—
Compressor Oil	None	—	—

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Mervin W. Dale

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-059-009-053
Site Name: Bldg. 324 (SITE 59)
Date Installed: 10-15-04
Project Name: Remedial INVESTIGATION

Site Geologist: MERVIN W. DALE
Drilling Company: MILLER DRILLING
Driller: TRACY THRASHER
Project Number: N8925

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	Sch. 40 PVC, 2 IN. DIAM., 10 FT. SECTIONS,	Flush threaded DSI*, Christiana, TN	NO
Well Screen	Sch. 40 PVC, 2 IN. DIAM., 0.010 IN. SLOTS, 5 FT.	Flush threaded DSI, Christiana, TN	NO
End Cap	Sch. 40 PVC, 2 IN. DIAM., Flat, Flush thread, 2 IN. Long	DSI, Christiana, TN	NO
Drilling Fluid	Potable WATER	Fire hydrant at Fire Station next to B.82	NO
Drilling Fluid Additives	None	—	—
Backfill Material	Filter Sand and/or bentonite	DSI, CHRISTIANA, TN.	NO
Annular Filter Pack	Filter Pack Sand No. 1	DSI, CHRISTIANA, TN.	NO
Bentonite Seal	Shur-PEL, 3/8 IN. DIAM.	DSI, Christiana, TN.	NO
Annular Grout	Type II Portland Cement	CEMEX	NO
Surface Cement	QUIKRete	QUIKRete Atlanta, GA	NO
Protective Casing	Steel Boltdown Manhole Flush mt. 8" DIAM.	PEMCO, HIALEAH, FL	NO
Paint	None		
Rod Lubricant	* WELL GUARD	Jet Lube **	NO
Compressor Oil	None		

* DSI = DRILLER'S SERVICE, INC.

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

** Petroleum-free

Signature of Site Geologist: Mervin W. Dale

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-059-009-083
Site Name: Bldg. 324 (SITE 59)
Date Installed: 10-14-04
Project Name: Remedial INVESTIGATION

Site Geologist: MERVIN W. DALE
Drilling Company: MILLER DRILLING
Driller: TRACY THRASHER
Project Number: N8925

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	Sch. 40 PVC, 2 IN. DIAM., 10 FT. SECTIONS,	Flush threaded DSI*, Christiana, TN	NO
Well Screen	Sch. 40 PVC, 2 IN. DIAM., 0.010 IN. SLOTS, 5 FT.	Flush threaded DSI, Christiana, TN	NO
End Cap	Sch. 40 PVC, 2 IN. DIAM., Flat, Flush thread, 2 IN. Long	DSI, Christiana, TN	NO
Drilling Fluid	Potable WATER	Fire hydrant at Fire Station next to B.82	NO
Drilling Fluid Additives	None	—	—
Backfill Material	Filter Sand and/or bentonite	DSI, CHRISTIANA, TN.	NO
Annular Filter Pack	Filter Pack Sand No. 1	DSI, CHRISTIANA, TN.	NO
Bentonite Seal	Stur-PEL, 3/8 IN. DIAM.	DSI, Christiana, TN.	NO
Annular Grout	Type II Portland Cement	CEMEX	NO
Surface Cement	QUIKRete	QUIKrete Atlanta, GA	NO
Protective Casing	Steel Boltdown Manhole Flush mt. 8" DIAM.	PEMCO, HIALEAH, FL	NO
Paint	None	—	—
Rod Lubricant	* WELL GUARD	Jet Lube **	NO
Compressor Oil	None	—	—
STABILIZER	STAINLESS STEEL, 1' Long (ribbed)	DSI, CHRISTIANA, TN	NO

*DSI = DRILLER'S SERVICE, INC.

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

**Petroleum-free

Signature of Site Geologist: Mervin W. Dale

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-059-009-113
Site Name: Bldg. 324 (SITE 59)
Date Installed: 10-14-04
Project Name: Remedial INVESTIGATION

Site Geologist: MERVIN W. DALE
Drilling Company: MILLER DRILLING
Driller: TRACY THRASHER
Project Number: N8925

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	Sch. 40 PVC, 2 IN. DIAM., 10 FT. SECTIONS,	Flush threaded DSI*, Christiana, TN	NO
Well Screen	Sch. 40 PVC, 2 IN. DIAM., 0.010 IN. SLOTS, 5 FT.	Flush threaded DSI, Christiana, TN	NO
End Cap	Sch. 40 PVC, 2 IN. DIAM., Flat, Flush thread, 2 IN. Long	DSI, Christiana, TN	NO
Drilling Fluid	Potable WATER	Fire hydrant at Fire Station next to B.82	NO
Drilling Fluid Additives	None	—	—
Backfill Material	Filter Sand and/or bentonite	DSI, CHRISTIANA, TN.	NO
Annular Filter Pack	Filter Pack Sand No. 1	DSI, CHRISTIANA, TN.	NO
Bentonite Seal	Shur-PEL, 3/8 IN. DIAM.	DSI, Christiana, TN.	NO
Annular Grout	Type II Portland Cement	CEMEX	NO
Surface Cement	QUIKRete	QUIKRete Atlanta, GA	NO
Protective Casing	Steel Boltdown Manhole Flush mt. 8" DIAM.	PEMCO, HIALEAH, FL	NO
Paint	None	—	—
Rod Lubricant	* WELL GUARD	Jet Lube **	NO
Compressor Oil	None	—	—
STABILIZER	STAINLESS STEEL, 1' Long (ribbed)	DSI, CHRISTIANA, TN	NO

*DSI = DRILLER'S SERVICE, INC.
** Petroleum-free

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Mervin W. Dale

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-059-010-053
Site Name: Bldg. 324 (SITE 59)
Date Installed: 10-20-04
Project Name: SITE 59, Remedial INVESTIGATION

Site Geologist: MERVIN W. DALE
Drilling Company: MILLER DRILLING
Driller: HAZ HUNTOON
Project Number: N8925

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	Sch. 40 PVC, 3/4 IN. inside DIAM., 10 FT. SECTIONS, Flush threaded	Geoinsight	No
Well Screen	Sch. 40 PVC, 3/4" I.D., 5', 0.010" slots, pre-pack	Geoinsight, LAS CRUCES, NM	NO
End Cap	Sch. 40 PVC, 3/4" I.D., 2" long	Geoinsight, LAS CRUCES, NM	NO
Drilling Fluid	Potable WATER	Fire hydrant At Bldg. 171 (fire sta.)	NO
Drilling Fluid Additives	None	—	—
Backfill Material	None	—	—
Annular Filter Pack	Filter PACK SAND NO. 1	DSI, CHRISTIANA, TN.	NO
~~Bentonite~~ Seal, FINE SAND	30/65 SAND	STANDARD SAND, JACKSONVILLE, FL	NO
Annular Grout	Type II Portland Cement	CEMEX	NO
Surface Cement	Quikrete	Quikrete, Atlanta, GA.	NO
Protective Casing	Steel boltdown MANHOLE, Flush mt., 8" DIAM.	PEMCO, HIALEAH, FL	NO
Paint	None	—	—
Rod Lubricant	None	—	—
Compressor Oil	None	—	—

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Mervin W. Dale

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-059-010-083
Site Name: Bldg. 324 (SITE 59)
Date Installed: 10-13-04
Project Name: Remedial INVESTIGATION

Site Geologist: MERVIN W. DALE
Drilling Company: MILLER DRILLING
Driller: TRACY THRASHER
Project Number: N8925

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	Sch. 40 PVC, 2 IN. DIAM., 10 FT. SECTIONS,	Flush-threaded DSI*, Christiana, TN	NO
Well Screen	Sch. 40 PVC, 2 IN. DIAM., 0.010 IN. SLOTS, 5 FT.	Flush threaded DSI, Christiana, TN	NO
End Cap	Sch. 40 PVC, 2 IN. DIAM, Flat, Flush thread, 2 IN. Long	DSI, Christiana, TN	NO
Drilling Fluid	Potable Water	Fire hydrant at Fire Station next to B.82	NO
Drilling Fluid Additives	None	—	—
Backfill Material	Filter Sand and/or bentonite	DSI, CHRISTIANA, TN.	NO
Annular Filter Pack	Filter Pack Sand No. 1	DSI, CHRISTIANA, TN.	NO
Bentonite Seal	Stur-PEL, 3/8 IN. DIAM.	DSI, Christiana, TN.	NO
Annular Grout	Type II Portland Cement	CEMEX	NO
Surface Cement	QUIKRete	QUIKrete, Atlanta, GA	NO
Protective Casing	Steel Boltdown Manhole Flush mt. 8" DIAM.	PEMCO, HIALEAH, FL	NO
Paint	None	—	—
Rod Lubricant	* WELL GUARD	Jet Lube **	NO
Compressor Oil	None	—	—
STABILIZER	STAINLESS STEEL, 1' Long, (ribbed)	DSI, CHRISTIANA, TN.	NO

*DSI = DRILLER'S SERVICE, INC.

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

** Petroleum-free

Signature of Site Geologist: Mervin W. Dale

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-059-011-033
Site Name: Bldg. 324 (SITE 59)
Date Installed: 10-15-04
Project Name: SITE 59, Remedial INVESTIGATION

Site Geologist: MERVIN W. DALE
Drilling Company: MILLER DRILLING
Driller: HAZ HUNTOON
Project Number: N8925

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	Sch. 40 PVC, 3/4 IN. ~~DIAM.~~ inside, 10 FT. SECTIONS, Flush threaded	Geoinsight	NO
Well Screen	Sch. 40 PVC, 3/4" I.D., 5', 0.010" slots, pre-pack	Geoinsight, Las Cruces, NM	NO
End Cap	Sch. 40 PVC, 3/4" I.D., 2" long	Geoinsight, Las Cruces, NM	NO
Drilling Fluid	Potable water	Fire hydrant at Bldg. 171 (fire sta.)	NO
Drilling Fluid Additives	None	—	—
Backfill Material	None	—	—
Annular Filter Pack	Filter Pack Sand No. 1	DSI, CHRISTIANA, TN.	NO
~~Bentonite~~ Seal, Fine Sand	30/65 Sand	STANDARD SAND, JACKSONVILLE, FL	NO
Annular Grout	Type II Portland Cement	CEMEX	NO
Surface Cement	Quikrete	Quikrete, Atlanta, GA.	NO
Protective Casing	Steel bolt-down manhole, Flush mt., 8" DIAM.	PEMCO, HIALEAH, FL	NO
Paint	None	—	—
Rod Lubricant	None	—	—
Compressor Oil	None	—	—

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Mervin W. Dale

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-059-011-053
Site Name: Bldg. 324 (SITE 59)
Date Installed: 10-20-04
Project Name: SITE 59, Remedial INVESTIGATION

Site Geologist: MERVIN W. DALE
Drilling Company: MILLER DRILLING
Driller: HAZ HUNTOON
Project Number: N8925

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	Sch. 40 PVC, 3/4 IN. inside DIAM., 10 FT. SECTIONS, Flush threaded	Geoinsight	NO
Well Screen	Sch. 40 PVC, 3/4" I.D., 5', 0.010" slots, pre-pack	Geoinsight, LAS CRUCES, NM	NO
End Cap	Sch. 40 PVC, 3/4" I.D., 2" long	Geoinsight, LAS CRUCES, NM	NO
Drilling Fluid	Potable WATER	Fire hydrant at Bldg. 171 (fire sta.)	NO
Drilling Fluid Additives	None	—	—
Backfill Material	NONE	—	—
Annular Filter Pack	Filter PACK SAND NO. 1	DSI, CHRISTIANA, TN.	NO
~~Bentonite~~ Seal, FINE SAND	30/65 SAND	STANDARD SAND, JACKSONVILLE, FL	NO
Annular Grout	Type II Portland Cement	CEMEX	NO
Surface Cement	QUIKRETE	QUIKRETE, ATLANTA, GA.	NO
Protective Casing	Steel bolt-down MANHOLE, Flush mt., 8" DIAM.	PEMCO, HIALEAH, FL	NO
Paint	None	—	—
Rod Lubricant	None	—	—
Compressor Oil	None	—	—

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Mervin W. Dale

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-059-011-0B3
Site Name: Bldg. 324 (SITE 59)
Date Installed: 10-7-04
Project Name: Remedial INVESTIGATION

Site Geologist: MERVIN W. DALE
Drilling Company: MILLER DRILLING
Driller: TRACY THRASHER
Project Number: N8925

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	Sch. 40 PVC, 2 IN. DIAM., 10 FT. SECTIONS	Flush threaded DSI*, Christiana, TN	NO
Well Screen	Sch. 40 PVC, 2 IN. DIAM., 0.010 IN. SLOTS, 5 FT.	Flush threaded DSI, Christiana, TN	NO
End Cap	Sch. 40 PVC, 2 IN. DIAM. Flat, Flush thread, 2 IN. Long	DSI, Christiana, TN	NO
Drilling Fluid	Potable WATER	Fire hydrant at Fire Station next to B.82	NO
Drilling Fluid Additives	None	—	—
Backfill Material	Filter Sand and/or bentonite	DSI, CHRISTIANA, TN.	NO
Annular Filter Pack	Filter Pack Sand No. 1	DSI, CHRISTIANA, TN.	NO
Bentonite Seal	Shur-PEL, 3/8 IN. DIAM.	DSI, Christiana, TN.	NO
Annular Grout	Type II Portland Cement	CEMEX	NO
Surface Cement	QUIKRete	QUIKrete Atlanta, GA	NO
Protective Casing	Steel Boltdown Manhole Flush mt. 8" DIAM.	PEMCO, HIALEAH, FL	NO
Paint	None	—	—
Rod Lubricant	* WELL GUARD	Jet Lube **	NO
Compressor Oil	None	—	—
STABILIZER	STAINLESS STEEL, 1' Long (ribbed)	DSI, CHRISTIANA, TN.	NO

* DSI = DRILLER'S SERVICE, INC.
** Petroleum-free

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Mervin W. Dale

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-59-012-53
Site Name: CECIL FIELD - SITE 59
Date Installed: 6-10-05
Project Name: R.I.

Site Geologist: S. McGuire
Drilling Company: PROSONIC
Driller: BILL LINDSEY
Project Number: N8925

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	3/4 INCH, Sch. 40 PVC	GEO INSIGHT, LAS CRUCES, NM	NO
Well Screen	3/4 INCH, SPPS 10 SLOT, Sd. 40 PVC	GEO INSIGHT, LAS CRUCES, NM	NO
End Cap	3/4 INCH, WELL PT.	GEO INSIGHT, LAS CRUCES, NM	NO
Drilling Fluid	None	—	—
Drilling Fluid Additives	None	—	—
Backfill Material	None	—	—
Annular Filter Pack	20/40 GRADE FILTER SAND	PART OF SPPS well screen	NO
Bentonite Seal	2 FT. Long Pre-pack BENTONITE WRAP	GEO INSIGHT, LAS CRUCES, NM	NO
Annular Grout	Type I/II Portland cement	Quikrete, Atlanta, GA.	NO.
Surface Cement	Quikrete Concrete	Quikrete, Atlanta, GA.	NO.
Protective Casing	Steel bolt down, 8 IN. DIAM. manhole	FEMCO, HIALEAH, FL.	NO.
Paint	None	—	—
Rod Lubricant	None	—	—
Compressor Oil	None	—	—

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Melvin W. Dale FOR S.M.

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-059-013-032
Site Name: Bldg. 324 (SITE 59)
Date Installed: 10-14-04
Project Name: SITE 59, Remedial INVESTIGATION

Site Geologist: MERVIN W. DALE
Drilling Company: MILLER DRILLING
Driller: HAZ HUNTOON
Project Number: N8925

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	Sch. 40 PVC, 3/4 IN. ~~DIAM.~~ inside, 10 FT. SECTIONS, Flush threaded	Geoinsight	No
Well Screen	Sch. 40 PVC, 3/4" I.D., 5', 0.010" slots, pre-pack	Geoinsight, Las Cruces, NM	No
End Cap	Sch. 40 PVC, 3/4" I.D., 2" long	Geoinsight, Las Cruces, NM	No
Drilling Fluid	Potable water	Fire hydrant at Bldg. 171 (fire sta.)	No
Drilling Fluid Additives	None	—	—
Backfill Material	None	—	—
Annular Filter Pack	Filter Pack Sand No. 1	DSI, Christiana, TN.	No
~~Bentonite~~ Seal, Fine Sand	30/65 Sand	Standard Sand, Jacksonville, FL	No
Annular Grout	Type II Portland Cement	CEMEX	No
Surface Cement	Quikrete	Quikrete, Atlanta, GA.	No
Protective Casing	Steel boltdown manhole, Flush mt., 8" DIAM.	PEMCO, Hialeah, FL	No
Paint	None	—	—
Rod Lubricant	None	—	—
Compressor Oil	None	—	—

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Mervin W. Dale

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-059-013-053
Site Name: Bldg. 324 (SITE 59)
Date Installed: 10-20-04
Project Name: SITE 59, Remedial INVESTIGATION

Site Geologist: MERVIN W. DALE
Drilling Company: MILLER DRILLING
Driller: HAZ HUNTOON
Project Number: N8925

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	Sch. 40 PVC, 3/4 IN. ~~DIAM.~~ inside, 10 FT. SECTIONS, Flush threaded	Geoinsight	No
Well Screen	Sch. 40 PVC, 3/4" I.D., 5', 0.010" slots, pre-pack	Geoinsight, LAS CRUCES, NM	NO
End Cap	Sch. 40 PVC, 3/4" I.D., 2" long	Geoinsight, LAS CRUCES, NM	NO
Drilling Fluid	Potable WATER	Fire hydrant At Bldg. 171 (fire sta.)	NO
Drilling Fluid Additives	None	—	—
Backfill Material	None	—	—
Annular Filter Pack	Filter PACK SAND NO. 1	DSI, CHRISTIANA, TN.	NO
~~Bentonite~~ Seal, FINE SAND	30/65 SAND	STANDARD SAND, JACKSONVILLE, FL	NO
Annular Grout	Type II Portland Cement	CEMEX	NO
Surface Cement	QUIKRETE	QUIKRETE, ATLANTA, GA.	NO
Protective Casing	Steel boltdown MANHOLE, Flush Mt., 8" DIAM.	PEMCO, HIALEAH, FL	NO
Paint	None	—	—
Rod Lubricant	None	—	—
Compressor Oil	None	—	—

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Mervin W. Dale

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-059-013-083
Site Name: Bldg. 324 (SITE 59)
Date Installed: 10-7-04
Project Name: Remedial INVESTIGATION

Site Geologist: MERVIN W. DALE
Drilling Company: MILLER DRILLING
Driller: TRACY THRASHER
Project Number: N8925

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	Sch. 40 PVC, 2 IN. DIAM., 10 FT. SECTIONS	Flush-threaded DSI*, Christiana, TN	NO
Well Screen	Sch. 40 PVC, 2 IN. DIAM., 0.010 IN. SLOTS, 5 FT.	Flush threaded DSI, Christiana, TN	NO
End Cap	Sch. 40 PVC, 2 IN. DIAM, Flat, Flush thread, 2 IN. Long	DSI, Christiana, TN	NO
Drilling Fluid	Potable WATER	Fire hydrant at Fire Station next to B.82	NO
Drilling Fluid Additives	None	—	—
Backfill Material	Filter Sand and/or bentonite	DSI, CHRISTIANA, TN.	NO
Annular Filter Pack	Filter Pack Sand No. 1	DSI, CHRISTIANA, TN.	NO
Bentonite Seal	Stur-PEL, 3/8 IN. DIAM.	DSI, Christiana, TN.	NO
Annular Grout	Type II Portland Cement	CEMEX	NO
Surface Cement	QUIKRete	QUIKrete, Atlanta, GA	NO
Protective Casing	Steel Boltdown Manhole Flush MT. 8" DIAM.	PEMCO, HIALEAH, FL	NO
Paint	None	—	—
Rod Lubricant	* WELL GUARD	Jet Lube **	NO
Compressor Oil	None	—	—
STABILIZER	STAINLESS STEEL, 1' LONG (ribbed)	DSI, CHRISTIANA, TN.	NO

*DSI = DRILLER'S SERVICE, INC.
** Petroleum-free

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Mervin W. Dale

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-059-014-053
Site Name: Bldg. 324 (SITE 59)
Date Installed: 10/17/04
Project Name: SITE 59, Remedial INVESTIGATION

Site Geologist: MERVIN W. DALE
Drilling Company: MILLER DRILLING
Driller: HAZ HUNTOON
Project Number: N8925

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	Sch. 40 PVC, 3/4 IN. outside DIAM., 10 FT. SECTIONS, Flush threaded	Geoinsight	No
Well Screen	Sch. 40 PVC, 3/4" I.D., 5', 0.010" slots, pre-pack	Geoinsight, LAS Cruces, NM	NO
End Cap	Sch. 40 PVC, 3/4" I.D., 2" long	Geoinsight, LAS Cruces, NM	NO
Drilling Fluid	Potable WATER	Fire hydrant at Bldg. 171 (fire sta.)	NO
Drilling Fluid Additives	None	—	—
Backfill Material	None	—	—
Annular Filter Pack	Filter PACK SAND NO. 1	DSI, CHRISTIANA, TN.	NO
~~Bentonite~~ Seal, FINE SAND	30/65 SAND	STANDARD SAND, JACKSONVILLE, FL	NO
Annular Grout	Type II Portland Cement	CEMEX	NO
Surface Cement	Quikrete	Quikrete, Atlanta, GA.	NO
Protective Casing	Steel boltdown MANHOLE, Flush mt., 8" DIAM.	PEMCO, HIALEAH, FL	NO
Paint	None	—	—
Rod Lubricant	None	—	—
Compressor Oil	None	—	—

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Mervin W. Dale

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-059-014-083
Site Name: Bldg. 324 (SITE 59)
Date Installed: 10-15-04
Project Name: Remedial INVESTIGATION

Site Geologist: MERVIN W. DALE
Drilling Company: MILLER DRILLING
Driller: TRACY THRASHER
Project Number: N8925

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	Sch. 40 PVC, 2 IN. DIAM., 10 FT. SECTIONS,	Flush threaded DSI*, Christiana, TN	NO
Well Screen	Sch. 40 PVC, 2 IN. DIAM., 0.010 IN. SLOTS, 5 FT.	Flush threaded DSI, Christiana, TN	NO
End Cap	Sch. 40 PVC, 2 IN. DIAM., Flat, Flush thread, 2 IN. Long	DSI, Christiana, TN	NO
Drilling Fluid	Potable WATER	Fire hydrant at Fire Station next to B.82	NO
Drilling Fluid Additives	None	—	—
Backfill Material	Filter Sand and/or bentonite	DSI, CHRISTIANA, TN.	NO
Annular Filter Pack	Filter Pack Sand No. 1	DSI, CHRISTIANA, TN.	NO
Bentonite Seal	Shur-PEL, 3/8 IN. DIAM.	DSI, Christiana, TN.	NO
Annular Grout	Type II Portland Cement	CEMEX	NO
Surface Cement	QUIKRete	QUIKrete, Atlanta, GA	NO
Protective Casing	Steel Boltdown Manhole Flush mt. 8" DIAM.	PEMCO, HIALEAH, FL	NO
Paint	None	—	—
Rod Lubricant	# WELL GUARD	Jet Lube **	NO
Compressor Oil	None	—	—
STABILIZER	STAINLESS STEEL, 1' Long (ribbed)	DSI, CHRISTIANA, TN	NO

*DSI = DRILLER'S SERVICE, INC.
** Petroleum-free

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Mervin W. Dale

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-059-014-120
Site Name: Bldg. 324 (SITE 59)
Date Installed: 10-5-04
Project Name: Remedial INVESTIGATION

Site Geologist: MERVIN W. DALE
Drilling Company: MILLER DRILLING
Driller: TRACY THRASHER
Project Number: N8925

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	Sch. 40 PVC, 2 IN. DIAM., 10 FT. SECTIONS,	Flush threaded DSI*, Christiana, TN	NO
Well Screen	Sch. 40 PVC, 2 IN. DIAM., 0.010 IN. SLOTS, 5 FT.	Flush threaded DSI, Christiana, TN	NO
End Cap	Sch. 40 PVC, 2 IN. DIAM., Flat, Flush thread, 2 IN. Long	DSI, Christiana, TN	NO
Drilling Fluid	Potable Water	Fire hydrant at Fire Station next to B.82	NO
Drilling Fluid Additives	None	—	—
Backfill Material	Filter Sand and/or bentonite	DSI, CHRISTIANA, TN.	NO
Annular Filter Pack	Filter Pack Sand No. 1	DSI, CHRISTIANA, TN.	NO
Bentonite Seal	Shur-Pel, 3/8 IN. DIAM.	DSI, Christiana, TN.	NO
Annular Grout	Type II Portland Cement	CEMEX	NO
Surface Cement	QUIKRete	QUIKrete Atlanta, GA	NO
Protective Casing	Steel Boltdown Manhole Flush mt. 8" DIAM.	PEMCO, HIALEAH, FL	NO
Paint	None	—	—
Rod Lubricant	* WELL GUARD	Jet Lube **	NO
Compressor Oil	None	—	—
STABILIZER	STAINLESS STEEL, 1' Long (ribbed)	DSI, CHRISTIANA, TN.	NO

*DSI = DRILLER'S SERVICE, INC.
** Petroleum-free

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Mervin W. Dale

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-059-015-028
Site Name: Bldg. 324 (SITE 59)
Date Installed: 10/15/04
Project Name: SITE 59, Remedial INVESTIGATION

Site Geologist: MERVIN W. DALE
Drilling Company: MILLER DRILLING
Driller: HAZ HUNTOON
Project Number: N8925

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	Sch. 40 PVC, 3/4 IN. inside DIAM., 10 FT. SECTIONS, Flush threaded	Geoinsight	No
Well Screen	Sch. 40 PVC, 3/4" I.D., 5', 0.010" slots, pre-pack	Geoinsight, LAS CRUCES, NM	NO
End Cap	Sch. 40 PVC, 3/4" I.D., 2" long	Geoinsight, LAS CRUCES, NM	NO
Drilling Fluid	Potable WATER	Fire hydrant at Bldg. 171 (fire sta.)	NO
Drilling Fluid Additives	None	—	—
Backfill Material	None	—	—
Annular Filter Pack	Filter PACK SAND NO. 1	DSI, CHRISTIANA, TN.	NO
~~Bentonite~~ Seal, FINE SAND	30/65 SAND	STANDARD SAND, JACKSONVILLE, FL	NO
Annular Grout	Type II Portland Cement	CEMEX	NO
Surface Cement	Quikrete	Quikrete, Atlanta, GA.	NO
Protective Casing	Steel boltdown MANHOLE, Flush mt., 8" DIAM.	PEMCO, HIALEAH, FL	NO
Paint	None	—	—
Rod Lubricant	None	—	—
Compressor Oil	None	—	—

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Mervin W. Dale

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-059-016-053
Site Name: Bldg. 324 (SITE 59)
Date Installed: 10/17/04
Project Name: SITE 59, Remedial INVESTIGATION

Site Geologist: MERVIN W. DALE
Drilling Company: MILLER DRILLING
Driller: HAZ HUNTOON
Project Number: N8925

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	Sch. 40 PVC, 3/4 IN. inside DIAM., 10 FT. SECTIONS, Flush threaded	Geoinsight	NO
Well Screen	Sch. 40 PVC, 3/4" I.D., 5', 0.010" slots, pre-pack	Geoinsight, LAS CRUCES, NM	NO
End Cap	Sch. 40 PVC, 3/4" I.D., 2" long	Geoinsight, LAS CRUCES, NM	NO
Drilling Fluid	Potable water	Fire hydrant at Bldg. 171 (Fire sta.)	NO
Drilling Fluid Additives	None	—	—
Backfill Material	None	—	—
Annular Filter Pack	Filter Pack Sand No. 1	DSI, CHRISTIANA, TN.	NO
~~Bentonite~~ Seal, FINE SAND	30/65 SAND	STANDARD SAND, JACKSONVILLE, FL	NO
Annular Grout	Type II Portland Cement	CEMEX	NO
Surface Cement	Quikrete	Quikrete, Atlanta, GA.	NO
Protective Casing	Steel boltdown manhole, Flush mt., 8" DIAM.	PEMCO, HIALEAH, FL	NO
Paint	None	—	—
Rod Lubricant	None	—	—
Compressor Oil	None	—	—

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Mervin W. Dale

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-059-016-083
Site Name: Bldg. 324 (SITE 59)
Date Installed: 10-17-04
Project Name: Remedial INVESTIGATION

Site Geologist: MERVIN W. DALE
Drilling Company: MILLER DRILLING
Driller: TRACY THRASHER
Project Number: N8925

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	Sch. 40 PVC, 2 IN. DIAM., 10 FT. SECTIONS,	Flush threaded DSI*, Christiana, TN	NO
Well Screen	Sch. 40 PVC, 2 IN. DIAM., 0.010 IN. SLOTS, 5 FT.	Flush threaded DSI, Christiana, TN	NO
End Cap	Sch. 40 PVC, 2 IN. DIAM, Flat, Flush thread, 2 IN. Long	DSI, Christiana, TN	NO
Drilling Fluid	Potable Water	Fire hydrant at Fire Station next to B.82	NO
Drilling Fluid Additives	None	—	—
Backfill Material	Filter Sand and/or bentonite	DSI, CHRISTIANA, TN.	NO
Annular Filter Pack	Filter Pack Sand No. 1	DSI, CHRISTIANA, TN.	NO
Bentonite Seal	Shur-Pel, 3/8 IN. DIAM.	DSI, Christiana, TN.	NO
Annular Grout	Type II Portland Cement	CEMEX	NO
Surface Cement	QUIKRete	QUIKrete Atlanta, GA	NO
Protective Casing	Steel Boltdown Manhole Flush mt. 8" DIAM.	PEMCO, HIALEAH, FL	NO
Paint	None	—	—
Rod Lubricant	* WELL GUARD	Jet Lube **	NO
Compressor Oil	None	—	—
STABILIZER	STAINLESS STEEL, 1' Long (ribbed)	DSI, CHRISTIANA, TN	NO

*DSI = DRILLER'S SERVICE, INC.
** Petroleum-free

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Mervin W. Dale

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-059-016-119
Site Name: Bldg. 324 (SITE 59)
Date Installed: 10-16-04
Project Name: Remedial INVESTIGATION

Site Geologist: MERVIN W. DALE
Drilling Company: MILLER DRILLING
Driller: TRACY THRASHER
Project Number: N8925

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	Sch. 40 PVC, 2 IN. DIAM., 10 FT. SECTIONS,	Flush threaded DSI*, Christiana, TN	NO
Well Screen	Sch. 40 PVC, 2 IN. DIAM., 0.010 IN. SLOTS, 5 FT.,	Flush threaded DSI, Christiana, TN	NO
End Cap	Sch. 40 PVC, 2 IN. DIAM, Flat, Flush thread, 2 IN. Long	DSI, Christiana, TN	NO
Drilling Fluid	Potable WATER	Fire hydrant at Fire Station next to B.82	NO
Drilling Fluid Additives	None	—	—
Backfill Material	filter sand and/or bentonite	DSI, CHRISTIANA, TN.	NO
Annular Filter Pack	Filter Pack Sand No. 1	DSI, CHRISTIANA, TN.	NO
Bentonite Seal	Shur-PEL, 3/8 IN. DIAM.	DSI, Christiana, TN.	NO
Annular Grout	Type II Portland Cement	CEMEX	NO
Surface Cement	QUIKRete	QUIKRete Atlanta, GA	NO
Protective Casing	Steel Boltdown Manhole Flush mt. 8" DIAM.	PEMCO, HIALEAH, FL	NO
Paint	None	—	—
Rod Lubricant	# WELL GUARD	Jet Lube **	NO
Compressor Oil	None	—	—
STABILIZER	STAINLESS STEEL, 1' Long (ribbed)	DSI, CHRISTIANA, TN	NO

*DSI = DRILLER'S SERVICE, INC.
** Petroleum-free

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Mervin W. Dale

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-059-017-028
Site Name: SITE 59, NAS CECIL FIELD
Date Installed: 02/18/2005
Project Name: REMEDIAL INVESTIGATION

Site Geologist: MERVIN W. DALE
Drilling Company: PARTRIDGE WELL CO.
Driller: JEFF WEATHERFORD
Project Number: N8925

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	Sch. 40 PVC, 2 IN. DIAM.	Atlantic Drilling Supply (ADS), JAX, FL	NO
Well Screen	Sch. 40 PVC, 2 IN. DIAM., 0.010 IN. SLOTS	ADS, JACKSONVILLE, FL	NO
End Cap well pt.	Sch. 40 PVC, 2 IN. DIAM., 6 inch long	ADS, JACKSONVILLE, FL	NO
Drilling Fluid	POTABLE WATER	Artesian Well @ Partridge	NO
Drilling Fluid Additives	NONE	—	—
Backfill Material	20/30 GRADE FILTER SAND	Standard Sand, JACKSONVILLE, FL	NO
Annular Filter Pack	20/30 GRADE FILTER SAND	Standard Sand, JACKSONVILLE, FL	NO
Bentonite Seal	ENVIROPLUG TABLETS 1/4 INCH (coated)	WYO-BEN, INC., Billings, MT.	NO
Annular Grout	Quikrete Type I/II Portland Cement	QUIKRETE Co., Atlanta, GA.	NO
Surface Cement	QUIKRETE Concrete	QUIKRETE Co., Atlanta, GA.	NO
Protective Casing	Steel, boltdown 8 inch manhole	ADS, JACKSONVILLE, FL	NO
Paint	None	—	—
Rod Lubricant	None	—	—
Compressor Oil	None	—	—

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Mervin W. Dale

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-059-017-053
Site Name: SITE 59, NAS CECIL FIELD
Date Installed: 02/18/2005
Project Name: REMEDIAL INVESTIGATION

Site Geologist: MERVIN W. DALE
Drilling Company: PARTRIDGE WELL CO.
Driller: JEFF WEATHERFORD
Project Number: N8925

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	Sch. 40 PVC, 2 IN. DIAM.	Atlantic Drilling Supply (ADS), JAX, FL	NO
Well Screen	Sch. 40 PVC, 2 IN. DIAM., 0.010 IN. SLOTS	ADS, JACKSONVILLE, FL	NO
End Cap	Sch. 40 PVC, 2 IN. DIAM., 6 IN. Long	ADS, JACKSONVILLE, FL	NO
Drilling Fluid	POTABLE WATER	ARTESIAN Well @ PARTRIDGE	NO
Drilling Fluid Additives	NONE	—	NO
Backfill Material	20/30 GRADE FILTER SAND	STANDARD SAND, JACKSONVILLE, FL	NO
Annular Filter Pack	20/30 GRADE FILTER SAND	STANDARD SAND, JACKSONVILLE, FL	NO
Bentonite Seal	ENVIROPLUG TABLETS 1/4 IN. (coated)	WYO-BEN, Inc., Billings, MT	NO
Annular Grout	QUIKRETE Type I/II Portland Cement	QUIKRETE, ATLANTA, GA	NO
Surface Cement	MWD QUIKRETE ~~Type I/II Portland Cem~~ Concrete	QUIKRETE, ATLANTA, GA	NO
Protective Casing	Steel bolt ~~down~~ down, 8 inch diam. MANhole	ADS, JACKSONVILLE, FL	NO
Paint	None MD	—	—
Rod Lubricant	None	—	—
Compressor Oil	None	—	—

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Mervin W. Dale

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-59-018-33
Site Name: CECIL FIELD - SITE 59
Date Installed: 6-8-05
Project Name: R.I.

Site Geologist: S. McGuire
Drilling Company: PROSONIC
Driller: BILL LINDSEY
Project Number: N8925

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	3/4 INCH, Sch. 40 PVC	GEOINSIGHT, LAS CRUCES, NM	NO
Well Screen	3/4 INCH, SPPS, 10 SLOT, Sd. 40 PVC	GEOINSIGHT, LAS CRUCES, NM	NO
End Cap	3/4 INCH, WELL PT.	GEOINSIGHT, LAS CRUCES, NM	NO
Drilling Fluid	None	—	—
Drilling Fluid Additives	None	—	—
Backfill Material	None	—	—
Annular Filter Pack	20/40 GRADE FILTER SAND	PART OF SPPS well screen	NO
Bentonite Seal	2 FT. Long Pre-pack BENTONITE WRAP	GEOINSIGHT, LAS CRUCES, NM	NO
Annular Grout	Type I/II Portland cement	Quikrete, Atlanta, GA.	NO.
Surface Cement	Quikrete Concrete	Quikrete, Atlanta, GA.	NO.
Protective Casing	Steel boltdown, 8 IN. DIAM. manhole	FEMCO, HIALEAH, FL.	NO.
Paint	None	—	—
Rod Lubricant	None	—	—
Compressor Oil	None	—	—

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Melvin W. Dale FOR S.M.

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-59-018-53
Site Name: CECIL FIELD - SITE 59
Date Installed: 6-9-05
Project Name: R.I.

Site Geologist: S. McGuire
Drilling Company: PROSONIC
Driller: BILL LINDSEY
Project Number: N8925

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	3/4 INCH, Sch. 40 PVC	GEO INSIGHT, LAS CRUCES, NM	NO
Well Screen	3/4 INCH, SPPS, 10 SLOT, Sd. 40 PVC	GEO INSIGHT, LAS CRUCES, NM	NO
End Cap	3/4 INCH, WELL PT.	GEO INSIGHT, LAS CRUCES, NM	NO
Drilling Fluid	None	—	—
Drilling Fluid Additives	None	—	—
Backfill Material	None	—	—
Annular Filter Pack	20/40 GRADE FILTER SAND	PART OF SPPS well screen	NO
Bentonite Seal	2 FT. Long Pre-pack BENTONITE WRAP	GEO INSIGHT, LAS CRUCES, NM	NO
Annular Grout	Type I/II Portland cement	Quikrete, Atlanta, GA.	NO.
Surface Cement	Quikrete Concrete	Quikrete, Atlanta, GA.	NO.
Protective Casing	Steel bolt down, 8 IN. DIAM. manhole	TEMCO, HIALEAH, FL.	NO.
Paint	None	—	—
Rod Lubricant	None	—	—
Compressor Oil	None	—	—

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Melvin W. Dale FOR S.M.

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-59-018-078
Site Name: CECIL FIELD - SITE 59
Date Installed: 06/12/05
Project Name: R.I.

Site Geologist: MERVIN DALE
Drilling Company: PROSONIC
Driller: VERN SCOTT
Project Number: N8925

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	2" DIAM. Sch. 40 PVC, 5' Long, 0.010" Machine Slot	ENV. Mfg. Manhattan, KS	NO
Well Screen	2" DIAM., Sch. 40 PVC, 10' lengths, flush thread	ENV. Mfg., MANHATTAN KS	NO
End Cap	2" DIAM., Well pt., 4" long	ENV. MFG., MANHATTAN, KS	NO
Drilling Fluid	None	—	—
Drilling Fluid Additives	None	—	—
Backfill Material	None	—	—
Annular Filter Pack	20/30 GRADE CLEAN SAND	STANDARD SILICA CO., DAVENPORT, FL	NO
Bentonite Seal	3/8" COATED ENVIROPLUG	WYO-BEN, INC., BILLINGS, MT.	NO
Annular Grout	TYPE I/II PORTLAND CEMENT	QUIKRETE, ATLANTA, GA.	NO
Surface Cement	QUIKrete Concrete	QUIKrete, Atlanta, GA.	NO
Protective Casing	Steel boltdown, 8 in. diam. manhole	PEMCO, HIALEAH, FL.	NO
Paint	None	—	—
Rod Lubricant	None	—	—
Compressor Oil	None	—	—

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Mervin W. Dale

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-59-018-105
Site Name: CECIL FIELD - SITE 59
Date Installed: 06/12/05
Project Name: R.I.

Site Geologist: MERVIN DALE
Drilling Company: PROSONIC
Driller: VERN SCOTT
Project Number: N8925

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	2" DIAM., Sch. 40 PVC, 5' Long, 0.010" Machine Slot	ENV. Mfg. Manhattan, KS	NO
Well Screen	2" DIAM., Sch. 40 PVC, 10' lengths, flush thread	ENV. Mfg., MANHATTAN KS	NO
End Cap	2" DIAM., Well pt., 4" long	ENV. MFG., MANHATTAN, KS	NO
Drilling Fluid	None	—	—
Drilling Fluid Additives	None	—	—
Backfill Material	None	—	—
Annular Filter Pack	20/30 GRADE CLEAN SAND	STANDARD SILICA CO., DAVENPORT, FL	NO
Bentonite Seal	3/8" COATED ENVIROPLUG	WYO-BEN, INC., BILLINGS, MT.	NO
Annular Grout	TYPE I/II PORTLAND CEMENT	QUIKRETE, ATLANTA, GA.	NO
Surface Cement	QUIKRETE CONCRETE	QUIKRETE, ATLANTA, GA.	NO
Protective Casing	STEEL, BOLTDOWN, 8 IN. DIAM. Manhole	PEMCO, HIALEAH, FL.	NO
Paint	None	—	—
Rod Lubricant	None	—	—
Compressor Oil	None	—	—

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Mervin W. Dale

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-59-019-33
Site Name: CECIL FIELD - SITE 59
Date Installed: 06-08-05
Project Name: R.I.

Site Geologist: S. McGuire
Drilling Company: PROSONIC
Driller: BILL LINDSEY
Project Number: N8925

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	3/4 INCH, Sch. 40 PVC	GEO INSIGHT, LAS CRUCES, NM	NO
Well Screen	3/4 INCH, SPPS, 10 SLOT, Sch. 40 PVC	GEO INSIGHT, LAS CRUCES, NM	NO
End Cap	3/4 INCH, WELL PT.	GEO INSIGHT, LAS CRUCES, NM	NO
Drilling Fluid	None	—	—
Drilling Fluid Additives	None	—	—
Backfill Material	None	—	—
Annular Filter Pack	20/40 GRADE FILTER SAND	PART OF SPPS well screen	NO
Bentonite Seal	2 FT. Long Pre-pack BENTONITE WRAP	GEO INSIGHT, LAS CRUCES, NM	NO
Annular Grout	Type I/II Portland cement	QUIKRETE, ATLANTA, GA.	NO.
Surface Cement	QUIKRETE Concrete	QUIKRETE, ATLANTA, GA.	NO.
Protective Casing	Steel boltdown, 8 IN. DIAM. MANHOLE	PEMCO, HIALEAH, FL.	NO.
Paint	None	—	—
Rod Lubricant	None	—	—
Compressor Oil	None	—	—

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Mervin W. Dale FOR S.M.

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-59-019-53
Site Name: CECIL FIELD - SITE 59
Date Installed: 06-08-05
Project Name: R.I.

Site Geologist: S. McGuire
Drilling Company: PROSONIC
Driller: BILL LINDSEY
Project Number: N8925

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	3/4 INCH, Sch. 40 PVC	GEOINSIGHT, LAS CRUCES, NM	NO
Well Screen	3/4 INCH, SPPS, 10 SLOT, Sch. 40 PVC	GEOINSIGHT, LAS CRUCES, NM	NO
End Cap	3/4 INCH, WELL PT.	GEOINSIGHT, LAS CRUCES, NM	NO
Drilling Fluid	None	—	—
Drilling Fluid Additives	None	—	—
Backfill Material	None	—	—
Annular Filter Pack	20/40 GRADE FILTER SAND	PART OF SPPS well screen	NO
Bentonite Seal	2 FT. Long Pre-pack BENTONITE WRAP	GEOINSIGHT, LAS CRUCES, NM	NO
Annular Grout	Type I/II Portland cement	QUIKRETE, ATLANTA, GA.	NO.
Surface Cement	QUIKRETE Concrete	QUIKRETE, ATLANTA, GA.	NO.
Protective Casing	Steel boltdown, 8 IN. DIAM. manhole	FEMCO, HIALEAH, FL.	NO.
Paint	None	—	—
Rod Lubricant	None	—	—
Compressor Oil	None	—	—

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Mervin W. Dale FOR S.M.

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-59-019-078
Site Name: CECIL FIELD - SITE 59
Date Installed: 06/10/05
Project Name: R.I.

Site Geologist: MERVIN DALE
Drilling Company: PROSONIC
Driller: VERN SCOTT
Project Number: N8925

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	2" DIAM., Sch. 40 PVC, 5' Long, 0.010" Machine Slot	ENV. Mfg. Manhattan, KS	NO
Well Screen	2" DIAM., Sch. 40 PVC, 10' lengths, flush thread	ENV. Mfg., Manhattan KS	NO
End Cap	2" DIAM., Well pt., 4" long	ENV. MFG., MANHATTAN, KS	NO
Drilling Fluid	None	—	—
Drilling Fluid Additives	None	—	—
Backfill Material	None	—	—
Annular Filter Pack	20/30 GRADE CLEAN SAND	STANDARD SILICA CO., DAVENPORT, FL	NO
Bentonite Seal	3/8" COATED ENVIROPLUG	WYO-BEN, INC., BILLINGS, MT.	NO
Annular Grout	TYPE I/II PORTLAND CEMENT	QUIKRETE, ATLANTA, GA.	NO
Surface Cement	Quikrete Concrete	Quikrete, Atlanta, GA.	NO
Protective Casing	Steel, bolt down, 8 inch diam. Manhole	PEMCO, Hialeah, FL	NO
Paint	None	—	—
Rod Lubricant	None	—	—
Compressor Oil	None	—	—

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Mervin W Dale

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-59-019-106
Site Name: CECIL FIELD - SITE 59
Date Installed: 06/10/2005
Project Name: R.I.

Site Geologist: DALE MERVEN
Drilling Company: PROSONIC
Driller: VERN SCOTT
Project Number: N8925

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	2" DIAM. Sch. 40 PVC, 5' long, 0.010" machine slot	ENV. Mfg., Manhattan, KS	NO
Well Screen	2" DIAM., Sch. 40 PVC, 10' lengths, flush thread	ENV. Mfg., Manhattan, KS.	NO
End Cap	2" DIAM, well pt., 4" long	ENV. Mfg., Manhattan, KS.	NO
Drilling Fluid	None	—	—
Drilling Fluid Additives	None	—	—
Backfill Material	None	—	—
Annular Filter Pack	20/30 GRADE CLEAN SAND	STANDARD SILICA CO., DAVENPORT, FL.	NO
Bentonite Seal	3/8" PELLETS HOLEPLUG	BAROID, HOUSTON, TX	NO
Annular Grout	Type I/II Portland cement	Quikrete, Atlanta, GA	NO
Surface Cement	Quikrete Concrete	Quikrete, Atlanta, GA.	NO
Protective Casing	Steel, boltdown, 8 in. diam. manhole	PEMCO, Hialeah, FL	NO
Paint	None	—	—
Rod Lubricant	None	—	—
Compressor Oil	None	—	—

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Merwin W. Dale

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-59-020-33
Site Name: CECIL FIELD - SITE 59
Date Installed: 06/09/05
Project Name: R.I.

Site Geologist: S. McGuire
Drilling Company: PROSONIC
Driller: BILL LINDSEY
Project Number: N8925

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	3/4 INCH, Sch. 40 PVC	GEOINSIGHT, LAS CRUCES, NM	NO
Well Screen	3/4 INCH, SPPS, 10 SLOT, Sd. 40 PVC	GEOINSIGHT, LAS CRUCES, NM	NO
End Cap	3/4 INCH, WELLPT.	GEOINSIGHT, LAS CRUCES, NM	NO
Drilling Fluid	None	—	—
Drilling Fluid Additives	None	—	—
Backfill Material	None	—	—
Annular Filter Pack	20/40 GRADE FILTER SAND	PART OF SPPS well screen	NO
Bentonite Seal	2 FT. Long Pre-pack BENTONITE WRAP	GEOINSIGHT, LAS CRUCES, NM	NO
Annular Grout	Type I/II Portland cement	Quikrete, Atlanta, GA.	NO.
Surface Cement	Quikrete Concrete	Quikrete, Atlanta, GA.	NO.
Protective Casing	Steel boltdown, 8 IN. DIAM. manhole	FEMCO, HIALEAH, FL.	NO.
Paint	None	—	—
Rod Lubricant	None	—	—
Compressor Oil	None	—	—

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Melvin W. Dale FOR S.M.

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-59-020-53
Site Name: CECIL FIELD - SITE 59
Date Installed: 06-10-05
Project Name: R.I.

Site Geologist: S. McGuire
Drilling Company: PROSONIC
Driller: BILL LINDSEY
Project Number: N8925

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	3/4 INCH, Sch. 40 PVC	GEO INSIGHT, LAS CRUCES, NM	NO
Well Screen	3/4 INCH, SPPS, 10 SLOT, Sch. 40 PVC	GEO INSIGHT, LAS CRUCES, NM	NO
End Cap	3/4 INCH, WELL PT.	GEO INSIGHT, LAS CRUCES, NM	NO
Drilling Fluid	None	—	—
Drilling Fluid Additives	None	—	—
Backfill Material	None	—	—
Annular Filter Pack	20/40 GRADE FILTER SAND	PART OF SPPS well screen	NO
Bentonite Seal	2 FT. Long Pre-pack BENTONITE WRAP	GEO INSIGHT, LAS CRUCES, NM	NO
Annular Grout	Type I/II Portland cement	QuiKrete, Atlanta, GA.	NO.
Surface Cement	QuiKrete Concrete	QuiKrete, Atlanta, GA.	NO.
Protective Casing	Steel bolt down, 8 IN. DIAM. manhole	FEMCO, HIALEAH, FL.	NO.
Paint	None	—	—
Rod Lubricant	None	—	—
Compressor Oil	None	—	—

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Melvin W. Dale FOR S.M.

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-059-020-078
Site Name: CECIL FIELD - 59
Date Installed: 6-9-05
Project Name: RI

Site Geologist: CONTI, STAN
Drilling Company: PROSONIC
Driller: VERN, SCOTT
Project Number: N8925

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	ENV. MANUFACTURING 2" PVC X10'	ENV. MANUFACTURING	N
Well Screen	2" PVC 10 SL	" "	N
End Cap	2" DIAM, Sch. 40 PVC, 4" Long, FT.	" "	
Drilling Fluid	NA	NA	
Drilling Fluid Additives	NA	NA	
Backfill Material	~~STANDARD SILICA SAND 20/30 SS~~	~~STANDARD SAND & SILICA CO~~	N
Annular Filter Pack	STANDARD SILICA SAND 20/30 SS	STANDARD SAND & SILICA CO. (50lb)	NO
Bentonite Seal	HOLE PLUG 3/4" BENTONITE	BAROID HOUSTON, TX (50lb Bag)	NO
Annular Grout	PORTLAND CEMENT TYPE I, II	COMMERCIAL GRADE QUIKRETE (94 lbs)	NO
Surface Cement	QuiKrete Concrete	QuiKrete, Atlanta, GA	NO
Protective Casing	Steel, boltdown, 8 in. diam. manhole	PEMCO, Hialeah, FL.	NO
Paint	None	—	—
Rod Lubricant	None	—	—
Compressor Oil	None	—	—

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: SJ Conti

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-059-020-099
Site Name: CECIL FIELD - 59
Date Installed: 6-8-05
Project Name: RI

Site Geologist: CONTI, STAN
Drilling Company: PROSONIC
Driller: VERN, SCOTT
Project Number: N8925

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	ENV. MANUFACTURING 2" PVC X10'	ENV. MANUFACTURING	N
Well Screen	2" PVC 10 SL	" "	N
End Cap	2" DIAM., Sch. 40 PVC, 4" Long, FT.	" "	
Drilling Fluid	NA	NA	
Drilling Fluid Additives	NA	NA	
Backfill Material	NA ~~STANDARD SILICA SAND 20/30 SS~~	~~STANDARD SAND & SILICA CO~~	N
Annular Filter Pack	STANDARD SILICA SAND 20/30 SS	STANDARD SAND & SILICA CO. (50lb)	NO
Bentonite Seal	HOLE PLUG 3/4" BENTONITE	BAROID HOUSTON, TX (50lb Bag)	NO
Annular Grout	PORTLAND CEMENT TYPE I, II	COMMERCIAL GRADE QUIKRETE (94 lbs)	NO
Surface Cement	QuiKrete, Concrete	QuiKrete, Atlanta, GA.	NO
Protective Casing	Steel, boltdown, 8 in. diam. manhole	PEMCO, Hialeah, FL.	NO.
Paint	None	—	—
Rod Lubricant	None	—	—
Compressor Oil	None	—	—

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: S J Conti

APPENDIX C

AQUIFER CHARACTERISTICS, CALCULATIONS, AND RECORDS

C.1 MONITORING WELL DEVELOPMENT LOGS

C.2 SYNOPTIC GROUNDWATER LEVEL MEASUREMENTS

C.3 AQUIFER TEST DATA AND CALCULATIONS

C.1 MONITORING WELL DEVELOPMENT LOGS

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Well: CEF-59-001-028
Site: 59 CECIL FIELD
Date Installed: 10-18-04
Date Developed: 10-20-04
Dev. Method: Pump
Pump Type: _____ Submersible

Depth to Bottom (ft.): 30.0
Static Water Level Before (ft.): 3.75
Static Water Level After (ft.): —
Screen Length (ft.): 5'
Specific Capacity: _____ N/A
Casing ID (in.): 2"

Responsible Personnel: S. McGuire
Drilling Co.: Miller
Project Name: SITE 59 RI
Project Number: N8925

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units: mS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
1840	Start							Drum DW-59-33
1850		26.5	6.58	22.70	6.88	0.246	400	
1900		53.0	6.58	22.68	6.66	0.233	425	
1910		79.5	6.58	22.66	6.31	0.222	510	Drum DW-59-34
1920		106.0	6.58	22.65	6.26	0.201	675	
1930		132.5	6.58	22.63	6.10	0.179	600	Drum DW-59-35
1940		159.0	6.58	22.62	5.93	0.166	70	

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Well: CEF-059-001-053
Site: 59 CECIL FIELD
Date Installed: 10/21/04
Date Developed: 10/26/04
Dev. Method: _Pump
Pump Type: ~~PER ISTALTIC~~ Submersible

Depth to Bottom (ft.): 53'
Static Water Level Before (ft.): —
Static Water Level After (ft.): —
Screen Length (ft.): 5'
Specific Capacity: N/A
Casing ID (in.): 0.75"

Responsible Personnel: C. METZ
Drilling Co.: MILLER
Project Name: SITE 59 RI
Project Number: N8925

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units: mS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
14:10		0	—	—	—	—	—	—
14:20		7.5		22.69	5.16	0.064	>999	
14:30		15		22.19	4.68	0.057	>999	
14:40		22.5		22.23	4.87	0.054	>999	
14:50		30		22.19	4.88	0.053	>999	
15:00		37.5		22.18	4.91	0.052	>999	
15:10		45		22.18	4.91	0.052	>999	

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Well: CEF-59-001-083
Site: 59 CECIL FIELD
Date Installed: 10-18-04
Date Developed: 10-21-04
Dev. Method: Pump
Pump Type: _____ Submersible

Depth to Bottom (ft.): 85.5
Static Water Level Before (ft.): 5.11
Static Water Level After (ft.): 5.20
Screen Length (ft.): 5'
Specific Capacity: _____ N/A
Casing ID (in.): 2"

Responsible Personnel: S. McGuire
Drilling Co.: Miller
Project Name: SITE 59 RI
Project Number: N8925

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units: mS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
0825	Start							
0835		26.5	6.30	23.15	5.85	0.091	>1000	Muddy/Gray Drum DW-59-36
0845		53.0	6.30	23.17	5.91	0.095	>1000	
0855		79.5	6.30	23.21	5.96	0.100	>1000	Drum DW-59-37
0905		106.0	6.30	23.24	5.81	0.108	>1000	
0915		132.5	6.30	23.26	5.79	0.113	>1000	Drum DW-59-38
0925		159.0	6.30	23.27	5.82	0.117	>1000	Muddy/Gray

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Well: CEF-59-001-121
Site: 59 CECIL FIELD
Date Installed: 10-18-04
Date Developed: 10-21-04
Dev. Method: Pump
Pump Type: _____ Submersible
Depth to Bottom (ft.): 120'
Static Water Level Before (ft.): 4.52
Static Water Level After (ft.): 52.4
Screen Length (ft.): 5'
Specific Capacity: _____ N/A
Casing ID (in.): 2"
Responsible Personnel: S. McGuire
Drilling Co.: Miller
Project Name: SITE 59 RI
Project Number: N8925

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units: mS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
0945	start		4.52					Drum ~~32~~ - DW-59-39
0955		11.4	117.0	23.72	7.35	0.498	280	chalky color
1005		22.8	95.5	23.68	7.39	0.482	75	1000 pump shut down
1015		34.2	98.5	23.99	7.28	0.477	55	clearing
1025		45.6	101.7	24.07	7.21	0.473	40	↓
1035		57.0	102.45	23.85	7.19	0.471	36	↓
1045		68.4	115.45	24.15	7.16	0.466	50	Drum DW-59-40
1055		79.8	115.57	23.82	7.12	0.460	55	clearing
1105		91.2	115.66	23.38	7.10	0.453	40	↓
1115		101.6	115.99	23.51	7.10	0.453	30	clear
1125		113.0	116.41	23.77	7.09	0.453	21	↓
1135		124.4	116.80	23.86	7.09	0.453	11	↓
1145		135.8	117.10	23.85	7.08	0.453	9.1	↓
1155		147.2	117.14	23.85	7.06	0.454	6.2	↓
1205		158.6	117.14	23.85	7.06	0.453	4.9	↓

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Well: CEF-59-002-028
Site: 59 CECIL FIELD
Date Installed: 10-15-04
Date Developed: 10-21-04
Dev. Method: _Pump_____
Pump Type: _____ Submersible

Depth to Bottom (ft.): 27.8
Static Water Level Before (ft.): 4.84
Static Water Level After (ft.): 4.85
Screen Length (ft.): 5'
Specific Capacity: _____ N/A
Casing ID (in.): 0.75

Responsible Personnel: S. McGuire
Drilling Co.: Miller
Project Name: SITE 59 RI
Project Number: N8925

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units: mS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
1440	start							
1450		2.5	5.45	22.82	4.99	0.083	>1000	Milky Brown
1500		5.0	5.46	22.80	4.67	0.078	>1000	↓
1510		7.5	5.46	22.89	4.63	0.078	>1000	chalky
1520		10.0	5.46	22.81		0.077	170	semi clear
1530		12.5	5.46	22.75		0.077	160	clear
1540		15.0	5.46	22.69		0.075	72	↓

002

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Well: CEF-59-002-053
Site: 59 CECIL FIELD
Date Installed: 10-17-04
Date Developed: 10-20-04
Dev. Method: Pump
Pump Type: _____ Submersible

Depth to Bottom (ft.): 55.4
Static Water Level Before (ft.): 6.66
Static Water Level After (ft.): 6.75
Screen Length (ft.): _____
Specific Capacity: _____ N/A
Casing ID (in.): 0.75

Responsible Personnel: S. McGuire
Drilling Co.: Miller
Project Name: N SITE 59 RI
Project Number: N8925

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units: mS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
1035	start							
1045		2.5	8.32	22.43	5.73	0.112	>1000	Mud / Gray brn
1055		5.0	8.32	22.42	5.40	0.077	>1000	↓
1105		7.5	8.32	22.37	5.18	0.062	>1000	
1115		10.0	8.32	22.43	5.08	0.054	>1000	
1125		12.5	8.32	22.46	5.00	0.053	>1000	
1135		15.0	8.32	22.51	4.98	0.051	>1000	✓

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Well: CEF-59-002-120
Site: 59 CECIL FIELD
Date Installed: 10-19-04
Date Developed: 10-21-04
Dev. Method: Pump
Pump Type: _____ Submersible

Depth to Bottom (ft.): 120
Static Water Level Before (ft.): 3.24
Static Water Level After (ft.): 5.61
Screen Length (ft.): 5'
Specific Capacity: _____ N/A
Casing ID (in.): 2"

Responsible Personnel: S. McGuire
Drilling Co.: Miller
Project Name: SITE 59 RI
Project Number: N8925

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units: mS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
1445	Start							
1455	10.5	~~127.7~~	58.7	23.62	6.58	0.346	>1000	Mud / Gray
1505	21.0	~~243.4~~	61.9	23.71	6.63	0.351	23	clearing
1515	31.5	~~366.1~~	61.9	23.76	6.80	0.384	16	clear
1525	42.0	~~24.8~~ 488.0	62.6	23.73	6.91	0.423	17	clear
1535	52.5	~~95.61~~	71.7	23.71	6.86	0.444	14	↓
1545	63.0	73.2	88.0	23.68	6.80	0.466	11	↓
1555	73.5	85.4	88.0	23.65	6.97	0.460	9.5	↓
1605	84.0	97.6	88.0	23.61	7.09	0.445	8.0	↓
1615	94.5	109.8	88.02	23.59	7.13	0.440	7.5	↓
1625	105	~~12.60~~	88.02	23.60	7.15	0.437	4.4	↓
		~~104~~						

Slow

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Well: CEF-059-003-0385 MWD
Site: 59 CECIL FIELD
Date Installed: 10/15/04
Date Developed: 10/26/04
Dev. Method: Pump
Pump Type: ~~PERISTALTIC~~ Submersible
Depth to Bottom (ft.): 36'
Static Water Level Before (ft.): —
Static Water Level After (ft.): —
Screen Length (ft.): 5'
Specific Capacity: N/A
Casing ID (in.): 0.75"
Responsible Personnel: C. METZ
Drilling Co.: MILLER
Project Name: SITE 59 RI
Project Number: N8925

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units: mS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
11:20		0	—	—	—	—	—	—
11:30		7.5		23.61	5.12	0.063	260	
11:40		15		23.40	4.97	0.057	90	
11:50		22.5		24.21	4.88	0.057	55	
12:00		30		23.62	4.82	0.056	40	
12:10		37.5		24.03	4.71	0.056	34	
12:20		45		23.65	4.67	0.055	28	

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Well: CEF-059-003-053
Site: 59 CECIL FIELD
Date Installed: 10/17/04
Date Developed: 10/26/04
Dev. Method: Pump
Pump Type: ~~PERISTALTIC~~ Submersible

Depth to Bottom (ft.): 53'
Static Water Level Before (ft.): —
Static Water Level After (ft.): —
Screen Length (ft.): 5'
Specific Capacity: N/A
Casing ID (in.): 0.75"

Responsible Personnel: C. METZ
Drilling Co.: MILLER
Project Name: SITE 59, RI
Project Number: N8925

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (~~Gal.~~) L	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units: mS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
0900	1"	0	—	—	—	—	—	—
0910	—	7.5	—	—	—	—	—	—
0920	—	15		22.86	5.71	0.139	500	
0930	—	22.5		22.87	5.72	0.133	370	
0940	—	30		22.89	5.65	0.123	240	
0950	—	37.5		22.90	5.63	0.117	180	
1000	—	45		22.92	5.53	0.112	140	

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Well: CEF-059-003-073
Site: 59 CECIL Field
Date Installed: 10/17/04
Date Developed: 10/26/04
Dev. Method: Pump
Pump Type: ~~PERISTALTIC~~ Submersible

Depth to Bottom (ft.): 73'
Static Water Level Before (ft.): —
Static Water Level After (ft.): —
Screen Length (ft.): 5'
Specific Capacity: N/A
Casing ID (in.): 0.75"

Responsible Personnel: C. METZ
Drilling Co.: MILLER
Project Name: SITE 59, RI
Project Number: N8925

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units: mS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
10:10		0	—	—	—	—	—	—
10:20		7.5	—	—	—	—	—	—
10:30		15		23.17	5.81	0.149	>999	
10:40		22.5		23.14	5.69	0.135	>999	
10:50		30		23.21	5.63	0.125	800	
11:00		37.5		23.21	5.58	0.120	650	
11:10		45		23.38	5.52	0.116	550	

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Well: CFF-59-003-121
Site: Site 59 CECIL Field
Date Installed: 10-3-04
Date Developed: 10/14/04
Dev. Method: Pump
Pump Type: _____ Submersible

Depth to Bottom (ft.): 121.5
Static Water Level Before (ft.): 7.09
Static Water Level After (ft.): 24.70
Screen Length (ft.): 5
Specific Capacity: _____ N/A
Casing ID (in.): 2

Responsible Personnel: C Gleaton
Drilling Co.: Miller
Project Name: SITE 59 RI
Project Number: N8925

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units: mS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
1100	.5	—	20.38	23.18	7.21	0.446	+999	Murky Gray
1110	.2	25	23.80	23.40	7.26	0.419	+999	Murky Gray
1120	.2	35	24.61	23.62	7.20	0.415	+999	Murky Gray
1130	.2	45	24.64	23.33	7.14	0.408	314	Gray
1140	—	49	24.68	23.27	7.14	0.408	120	Gray
1150	—	53	24.70	23.31	7.25	0.407	114	stopped pumping
1300	—	55	24.70	23.28	7.21	0.409	200	started pumping
1310	—	61	24.71	23.31	7.15	0.406	76	light grey
1320	—	64	24.70	23.33	7.15	0.407	30	light grey
1330	—	68	24.70	23.30	7.10	0.404	15	Clear
1340	—	72	24.73	23.30	7.06	0.404	7.6	Clear
1350	—	77	24.70	23.28	7.04	0.402	5.5	Clear
1400	—	83	24.70	23.28	7.04	0.402	2.1	Clear
1410	—	88	24.70	23.28	7.04	0.402	2.2	Clear
1420	—	91	24.70	23.28	7.04	0.401	2.2	Clear
1430	—	97	24.70	23.28	7.04	0.402	2.2	Clear

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Well: CEF-059-004-033
Site: NASCF, Site 59
Date Installed: 6/9/05
Date Developed: 6/17/05
Dev. Method: Pump
Pump Type: Peristaltic

Depth to Bottom (ft.): 32.55
Static Water Level Before (ft.): 4.74
Static Water Level After (ft.):
Screen Length (ft.): 5
Specific Capacity: n/a
Casing ID (in.): 0.75

Responsible Personnel: M. Dale, S. McGuire, and C. Odom
Drilling Co.: Prosonic Drilling Corporation
Project Name: RI
Project Number: N8925

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units: mS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
1400								cloudy light brn
1410		1.25	4.83	24.42	5.49	.123	48.6	clear
1420		2.5	4.84	24.55	5.40	.112	14.4	clear
1430		3.75	4.85	24.62	5.38	.113	7.06	clear
1440		5.0	4.85	24.66	5.31	.111	5.21	clear
1450		6.25	4.85	24.55	5.31	.106	3.87	clear
1500		7.50	4.85	24.21	5.29	.106	3.08	clear
1510		8.75	4.85	24.49	5.12	.101	2.87	clear

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Well: CEF-59-004-~~050~~ 053 MWD
Site: 59 Cecil Field
Date Installed: 10-21-04
Date Developed: 10-25-04
Dev. Method: Pump
Pump Type: Peristaltic Submersible

Depth to Bottom (ft.): 53'
Static Water Level Before (ft.): —
Static Water Level After (ft.): —
Screen Length (ft.): 5
Specific Capacity: N/A
Casing ID (in.): 0.75"

Responsible Personnel: C. Metz
Drilling Co.: Miller
Project Name: SITE 59 RI
Project Number: N8925

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (~~Gal.~~) L	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units: mS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
1640	2'	0	—	—	—	—	—	—
1650	—	7.5	—	23.83	5.33	0.099	450	
1700	—	15		23.80	5.28	0.095	330	
1710	—	22.5		23.78	5.25	0.091	250	
1720	—	30		23.71	5.22	0.889	220	
1730	—	37.5		23.65	5.20	0.087	190	
1740	—	45		23.63	5.19	0.082	150	

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Well: CEF-059-004-07~~0~~3 MWD
Site: 59 CECIL FIELD
Date Installed: 10-21-04
Date Developed: 10-25-04
Dev. Method: Pump
Pump Type: Peristaltic Submersible

Depth to Bottom (ft.): 78'
Static Water Level Before (ft.): –
Static Water Level After (ft.): –
Screen Length (ft.): 5
Specific Capacity: N/A
Casing ID (in.): 0.75"

Responsible Personnel: C. Metz
Drilling Co.: Miller
Project Name: SITE 59 RI
Project Number: N8925

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units: mS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
1745	2'	0						
1755		7.5		23.61	5.53	0.130	>999	
1805		15		23.65	5.53	0.124	>999	
1815		22.5		23.71	5.43	0.120	>999	
1825		30		23.67	5.38	0.114	280	
1835		37.5		23.63	5.33	0.105	190	
1845		45		23.61	5.30	0.100	150	

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Well: CEF-059-004-112
Site: Site 59 Cecil Field
Date Installed: 10/1/04
Date Developed: 10/15/04
Dev. Method: Pump
Pump Type: _____ Submersible
Depth to Bottom (ft.): 112
Static Water Level Before (ft.): 9.16
Static Water Level After (ft.): 14.23
Screen Length (ft.): 5
Specific Capacity: _____ N/A
Casing ID (in.): 2 in
Responsible Personnel: C Gleason
Drilling Co.: Miller
Project Name: Site 59 RI
Project Number: N8925

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units: mS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
0840	.5	8	14.21	23.14	7.55	0.335	+999	Clear / Gray
0850	.2	16	14.23	23.39	7.27	0.308	+999	Muddy Gray
0900	.2	25	14.23	23.18	7.06	0.298	321	Muddy Gray
0910	.2	33	14.23	23.19	7.02	0.294	174	Gray
0920	—	42	14.23	23.24	6.84	0.279	55	Gray / Clear
0930	—	50	14.23	23.23	6.83	0.279	67	Gray / Clear
0940	—	60	14.23	23.20	6.69	0.267	74	Clear
0950	—	68	14.23	23.19	6.65	0.270	87	Clear / Gray
1010	—	84	14.23	23.21	6.55	0.263	45	Clear / Gray
1030	—	103	14.23	23.18	6.50	0.256	34	Clear
1050	—	124	14.23	23.22	6.53	0.252	47	Clear
1010	—	142	14.23	23.22	6.56	0.256	51	Clear
1120	—	151	14.23	23.21	6.24	0.244	55	Clear

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Well: CEF-059-005-033
Site: 59 CECIL FIELD
Date Installed: 10-15-04
Date Developed: 10-25-04
Dev. Method: Pump
Pump Type: PERISTALTIC Submersible

Depth to Bottom (ft.): 34 TOC
Static Water Level Before (ft.): —
Static Water Level After (ft.): —
Screen Length (ft.): 5
Specific Capacity: N/A
Casing ID (in.): 0.75

Responsible Personnel: C. METZ
Drilling Co.: Miller
Project Name: SITE 59 RI
Project Number: N8925

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (~~Gal.~~ L)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units: mS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
1305	1"	0		23.57	5.26	0.121	50	
1315	—	7.5		23.55	5.28	0.114	33	
1325	—	15		23.56	5.23	0.109	26	
1335	—	22.5		23.55	5.19	0.106	16	
1345	—	30		23.55	5.18	0.103	10	
1355		37.5		23.54	5.16	0.101	10	
		45						

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Well: CEF-059-005-053 Depth to Bottom (ft.): 52.91 Responsible Personnel: C. Metz
Site: 59 Cecil Field Static Water Level Before (ft.): 5.60 Drilling Co.: Miller
Date Installed: 10-21-04 Static Water Level After (ft.): — Project Name: N Site 59, RI
Date Developed: 10-25-04 Screen Length (ft.): 5' Project Number: N8925
Dev. Method: Pump Specific Capacity: N/A
Pump Type: Peristaltic Submersible Casing ID (in.): .75"

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (~~Gal.~~) L	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units: mS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
1200	3"	0	5.60	—	—	—	—	—
1210	—	7.5	—	23.09	5.85	0.130	+999	
1220	—	15	—		5.72	0.117	185	
1230	—	22.5	—	23.04	5.63	0.108	80	
1240	—	30	—	23.04	5.59	0.103	70	
1250	—	37.5		23.05	5.55	0.100	60	
1300		45		23.05	5.52	0.097	55	

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Well: CEF-059-005-073
Site: 59 Cecil Field
Date Installed: 10-21-04
Date Developed: 10-28-04
Dev. Method: Pump
Pump Type: Peristaltic Submersible

Depth to Bottom (ft.): 73
Static Water Level Before (ft.): —
Static Water Level After (ft.): —
Screen Length (ft.): 5 ft.
Specific Capacity: N/A
Casing ID (in.): 0.75"

Responsible Personnel: C. Metz
Drilling Co.: Miller
Project Name: SITE 59 RI
Project Number: N8925

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units: mS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
1400	4"	0		—	42	—	—	
1410	—	7.5		23.05	5.59	0.094	360	
1420	—	15		23.03	5.34	0.086	140	
1430	—	22.5		23.02	5.29	0.081	20	
1440		30		23.02	5.25	0.078	30	
1450		37.5		23.03	5.29	0.076	18	
1500		45		23.03	5.28	0.075	10	

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Well: CEF-059- 008-78
Site: NASCF, Site 59
Date Installed: 6/12/05
Date Developed: 6/14/05
Dev. Method: Pump
Pump Type: Submersible

Depth to Bottom (ft.):
Static Water Level Before (ft.): 5.79
Static Water Level After (ft.):
Screen Length (ft.): 5
Specific Capacity: n/a
Casing ID (in.): 2.0

Responsible Personnel: M. Dale, S. McGuire, and C. Odom
Drilling Co.: Prosonic Drilling Corporation
Project Name: RI
Project Number: N8925

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units: mS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
1307		—		~~23.87~~	~~6.24~~	~~.178~~	~~above instrument recording limits~~	orange cloudy
1317		12.5	6.47	23.87	6.24	.178	above instrument recording limits	dark gry
1327		25	6.75	23.77	6.04	.150	"	dark gry
1337		37.5	6.73	23.74	5.70	.128	"	dark gry
1347		50	6.77	23.59	5.59	.115	"	dark gry
1357		62.5	6.79	23.75	5.52	.107	"	dark gry
1407		75	6.77	23.62	5.44	.094	"	dark gry
1417		87.5	6.77	23.56	5.50	.091	"	dark gry
1427		100	6.77	23.45	5.45	.092	"	dark gry
1437		112.5	6.79	23.55	5.34	.081	"	dark gry
1447		125	6.82	23.62	5.31	.075	"	dark gry
1457		137.5	6.82	23.55	5.30	.076	"	dark gry
1507		150	6.80	23.58	5.28	.068	"	dark gry
1515		159	6.80	23.76	5.26	.081	"	dark gry

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Well: CEF-59-006-104
Site: 59 Cecil Field
Date Installed: 09-30-04
Date Developed: 10-21-04
Dev. Method: _Pump_
Pump Type: _____ Submersible

Depth to Bottom (ft.): 107
Static Water Level Before (ft.): 6.10
Static Water Level After (ft.): 6.20
Screen Length (ft.): 5'
Specific Capacity: _____ N/A
Casing ID (in.): 2"

Responsible Personnel: S. McGuire
Drilling Co.: Miller
Project Name: SITE 59 RI
Project Number: N8925

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units: mS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
1705	Start							Dark Gray Drum 44
1715		22.71	9.91	23.63	6.58	0.207	>1000	
1725		45.42	9.91	23.59	6.46	0.195	>1000	
1735		68.13	9.91	23.57	6.43	0.193	>1000	Drum 45
1745		90.84	9.91	23.55	6.39	0.187	>1000	
1755		113.55	9.91	23.54	6.35	0.184	>1000	
1805		136.26	9.91	23.53	6.30	0.181	>1000	Drum 46
1815		158.97	9.91	23.52	6.41	0.178	>1000	

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Well: CEF-059-007-053
Site: NASCF, Site 59
Date Installed: 6-1-05
Date Developed: 6/16/05
Dev. Method: Pump
Pump Type: peristaltic

Depth to Bottom (ft.): 52.69
Static Water Level Before (ft.): 5.62
Static Water Level After (ft.):
Screen Length (ft.): 5
Specific Capacity: n/a
Casing ID (in.): .75

Responsible Personnel: M. Dale, S. McGuire, and C. Odom
Drilling Co.: Prosonic Drilling Corporation
Project Name: RI
Project Number: N8925

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units: mS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
0850								
0900		1.25	7.59	23.69	6.16	.162	above instrument detection limits	cloudy H2O
0910		2.5	7.55	23.74	5.77	.135	"	"
0920		3.75	7.55	23.74	5.66	.127	278	cloudy
0930		5.0	7.55	23.75	5.53	.121	122	cloudy
0940		6.25	7.56	23.77	5.39	.118	89.2	cloudy
0950		7.50	7.60	23.76	5.36	.116	72.4	"
1000		8.75	7.59	23.76	5.32	.113	61.2	"

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Well: CEF-059-007-078
Site: NASCF, Site 59
Date Installed: 6-11-05
Date Developed: 6/16/05
Dev. Method: Pump
Pump Type: submersible

Depth to Bottom (ft.): 80.14
Static Water Level Before (ft.): 5.99
Static Water Level After (ft.):
Screen Length (ft.): 5
Specific Capacity: n/a
Casing ID (in.): 2.0

Responsible Personnel: M. Dale, S. McGuire, and C. Odom
Drilling Co.: Prosonic Drilling Corporation
Project Name: RI
Project Number: N8925

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units: mS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
0830								
0840		12.5	6.66	23.56	6.20	.247	Above instrument detection limit	dark gry
0850		25	6.65	23.55	6.14	.225	"	"
0900		37.5	6.65	23.54	6.00	.213	"	"
0910		50.0	6.65	23.52	5.83	.179	"	"
0920		62.5	6.65	23.52	5.75	.165	"	"
0930		75	6.65	23.52	5.61	.145	"	"
0940		100	6.65	23.51	5.57	.138	"	"
0950		112.5	6.66	23.51	5.51	.134	"	"
1000		125	6.65	23.52	5.46	.125	"	"
1010		137.5	6.64	23.50	5.41	.119	"	"
1020		150	6.64	23.51	5.38	.116	"	"
1028		160		23.57	5.34	.106	"	"

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Well: CEF-59-008-028
Site: 59 CECIL FIELD
Date Installed: 10/15/04
Date Developed: 10-20-04
Dev. Method: Pump
Pump Type: _____ Submersible
Depth to Bottom (ft.): 29.7
Static Water Level Before (ft.): 6.85
Static Water Level After (ft.): 6.85
Screen Length (ft.): 5'
Specific Capacity: _____ N/A
Casing ID (in.): 0.75
Responsible Personnel: S. McGuire
Drilling Co.: Miller
Project Name: SITE 59 RI
Project Number: N8925

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units: mS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
0900	start							
0910		2.5	7.60	21.57	4.72	0.055	>1000	chalky white
0920		5.0	7.60	21.58	4.67	0.053	>1000	
0930		7.5	7.60	21.80	5.34	0.061	320	Clearing
0940		10.0	7.60	21.79	5.30	0.061	90	↓
0950		12.5	7.60	21.81	5.16	0.058	60	
1000		15.0	7.60	21.87	5.12	0.057	25	clear

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Well: CFF-59-009-053
Site: Site 59 Cecil Field
Date Installed: 10/15/04
Date Developed: 10/16/04
Dev. Method: Pump
Pump Type: _____ Submersible
Depth to Bottom (ft.): 51.6
Static Water Level Before (ft.): 4.85
Static Water Level After (ft.): —
Screen Length (ft.): 5ft
Specific Capacity: _____ N/A
Casing ID (in.): 2in
Responsible Personnel: C Gleaton
Drilling Co.: Miller
Project Name: SITE 59 RI
Project Number: N8925

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units: mS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
1710	.3	12	8.71	25.22	6.45	0.217	+999	Muddy Brown
1720	.3	24	9.62	25.19	6.02	0.187	+999	Muddy Brown
1730	.3	35	9.62	25.07	5.87	0.115	+999	Muddy Brown
1740	.3	46	9.62	24.97	5.64	0.108	+999	Muddy Brown
1750	.3	57	9.62	24.96	5.62	0.108	+999	Muddy Brown
1800	.3	69	9.62	24.88	5.62	0.098	+999	Muddy Brown
1810	.2	82	9.62	24.83	5.41	0.092	+999	Muddy Brown
1820	.2	94	9.62	24.83	5.42	0.092	+999	Muddy Brown
1830	.2	106	9.62	24.79	5.42	0.081	+999	Muddy Brown
1840	—	118	9.62	24.77	5.42	0.080	+999	Muddy Brown
1850	—	131	9.62	24.77	5.42	0.080	+999	Muddy Brown
1900	—	143	9.62	24.76	5.42	0.080	+999	Muddy Brown
1910	—	157	9.62	24.76	5.42	0.080	+999	Muddy Brown

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Well: CEF-59-009-083
Site: Site 59, Cecil Field
Date Installed: 10/14/04
Date Developed: 10/16/04
Dev. Method: _Pump_____
Pump Type: _____ Submersible

Depth to Bottom (ft.): 85.7
Static Water Level Before (ft.): 4.48
Static Water Level After (ft.): 6.29
Screen Length (ft.): 5ft
Specific Capacity: _____ N/A
Casing ID (in.): 2 in

Responsible Personnel: C Gleaton
Drilling Co.: Miller
Project Name: SITE 59 RI
Project Number: N8925

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units: mS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
1430	.3	12	6.82	25.25	6.52	0.170	+999	Light Brown
1440	.2	24	6.94	25.19	6.03	0.160	+999	Muddy Gray
1450	.2	34	6.94	25.07	5.77	0.134	+999	Muddy Gray
1500	.2	43	6.94	25.03	5.54	0.121	+999	Muddy Gray
1510	.2	55	6.94	25.01	5.52	0.110	+999	Muddy Gray
1520	.2	67	6.94	25.01	5.37	0.091	+999	Muddy Gray
1530	.2	78	6.94	25.00	5.33	0.088	+999	Muddy Gray
1540	.2	90	6.94	24.98	5.34	0.080	+999	Muddy Gray
1550	.2	101	6.94	24.97	5.20	0.067	+999	Muddy Gray
1600	—	113	6.94	24.86	5.20	0.067	+999	Muddy Gray
1610	—	124	6.94	24.82	5.19	0.064	+999	Muddy Gray
1620	—	136	6.94	24.82	5.19	0.059	+999	Muddy Gray
1630	—	150	6.94	24.80	5.19	0.057	+999	Muddy Gray
1640	—	160	6.94	24.80	5.19	0.052	+999	Muddy Gray

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Well: CEF-59-009-113
Site: Site 59 CECIL Field
Date Installed: 10/14/04
Date Developed: 10/16/04
Dev. Method: _Pump
Pump Type: _____ Submersible

Depth to Bottom (ft.): 115.4
Static Water Level Before (ft.): 5.63
Static Water Level After (ft.): 7.06
Screen Length (ft.): 5 ft
Specific Capacity: _____ N/A
Casing ID (in.): 2 inch

Responsible Personnel: C Gleaton
Drilling Co.: Miller
Project Name: SITE 59 RI
Project Number: N8925

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units: mS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
0940	.5	11	7.06	23.61	7.22	0.273	+999	Gray
0950	.5	22	7.06	24.66	7.21	0.276	+999	Muddy Gray
1000	.5	32	7.06	24.07	6.87	0.260	+999	Muddy Gray
1010	.5	42	7.06	24.02	6.64	0.243	+999	Muddy Gray
1020	.5	50	7.06	24.00	6.61	0.238	+999	Muddy Gray
1030	.5	58	7.06	23.94	6.39	0.226	+999	Muddy Gray
1040	.5	67	7.06	23.93	6.34	0.215	+999	Muddy Gray
1050	.5	78	7.06	23.89	6.27	0.206	500	Muddy Gray
1100	.1	86	7.06	23.89	6.24	0.202	400	Muddy Gray
1110	.1	94	7.06	23.88	6.20	0.200	310	Muddy Gray / stop
1230	.1	100	7.06	23.87	6.19	0.198	400	Gray / started
1240	.1	106	7.06	23.89	6.19	0.198	300	Gray
1250	—	112	7.06	23.86	6.19	0.199	450	Gray
1300	—	118	7.06	23.87	6.20	0.200	750	Gray
1310	—	124	7.06	23.87	6.20	0.199	380	Gray
1320	—	136	7.06	23.86	6.21	0.200	412	Gray
1330	—	148	7.06	23.86	6.19	0.201	274	Gray
1340	—	160	7.06	23.86	6.19	0.200	190	Gray

009

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Well: CEF-059-010-053
Site: 59 CECIL Field
Date Installed: 10-20-04
Date Developed: 10-25
Dev. Method: Pump
Pump Type: Peristaltic Submersible

Depth to Bottom (ft.): 52.9
Static Water Level Before (ft.): 4.91
Static Water Level After (ft.): —
Screen Length (ft.): 5
Specific Capacity: N/A
Casing ID (in.): .75

Responsible Personnel: C. Metz
Drilling Co.: Miller.
Project Name: SITE 59 RI
Project Number: N8925

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (~~Gal.~~) L	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units: mS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
1040	2"	0	4.91	24.47	5.75	0.091	+999	
1050	—	7.5	—	24.41	5.70	0.087	+999	
1100	—	15	—	24.44	5.57	0.079	590	
1110	—	22.5	—	24.44	5.48	0.073	160	
1120	—	30	—	24.47	5.37	0.070	100	
1130	—	37.5	—	24.50	5.31	0.06	80	
1140	—	45		24.53	5.26	0.063	70	

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Well: CEF-59-010-083
Site: 59 CECIL Field
Date Installed: 10/13/04
Date Developed: 10/15/04
Dev. Method: Pump
Pump Type: _____ Submersible

Depth to Bottom (ft.): 83
Static Water Level Before (ft.): 7.23
Static Water Level After (ft.): 10.06
Screen Length (ft.): 5ft
Specific Capacity: _____ N/A
Casing ID (in.): 2in

Responsible Personnel: C Gleaton
Drilling Co.: Miller
Project Name: SITE 59 RI
Project Number: NF925

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units: mS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
1700	.2	10	8.89	25.02	6.64	0.217	+999	Muddy Gray
1710	.2	22	9.93	24.81	6.03	0.168	+999	Muddy Gray
1720	.2	34	10.06	24.83	5.90	0.168	+999	Muddy Gray
1730	.2	50	10.06	24.83	5.69	0.142	+999	Muddy Gray
1740	.2	63	10.06	24.72	5.53	0.123	+999	Muddy Gray
1750	.2	76	10.06	24.73	5.43	0.103	+999	Muddy Gray
1800	.2	90	10.06	24.68	5.42	0.102	+999	Muddy Gray
1810	—	105	10.06	24.68	5.37	0.099	+999	Muddy Gray
1820	—	120	10.06	24.68	5.38	0.087	+999	Muddy Gray
1830	—	133	10.06	24.68	5.25	0.087	+999	Muddy Gray
1840	—	147	10.06	24.66	5.21	0.086	+999	Muddy Gray
1850	—	160	10.06	24.68	5.23	0.079	+999	Muddy Gray

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Well: CEF-59-011-033
Site: 59 CECIL Field
Date Installed: 10-15-04
Date Developed: 10-20-04
Dev. Method: Pump
Pump Type: _____ Submersible

Depth to Bottom (ft.): 32.95
Static Water Level Before (ft.): 7.55
Static Water Level After (ft.): 7.55
Screen Length (ft.): 5'
Specific Capacity: _____ N/A
Casing ID (in.): 0.75

Responsible Personnel: S. McGuire
Drilling Co.: Miller
Project Name: SITE 59 RI
Project Number: N8925

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units: mS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
1310	Start							
1320		2.5	8.38	25.88	5.00	0.100	>1000	Mud / Gray
1330		5.0	8.38	26.74	5.42	0.107	>1000	
1340		7.5	8.38	26.56	5.29	0.101	>1000	
1350		10.0	8.38	26.77	5.21	0.100	>1000	
1400		12.5	8.38	26.84	5.15	0.096	900	
1410		15.0	8.38	27.05	5.09	0.094	900	

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Well: CEF-059-011-053
Site: 59 CECIL Field
Date Installed: ~~[illegible]~~ 10-20-04
Date Developed: 10-25-04
Dev. Method: _Pump_____
Pump Type: PERISTALTIC Submersible

Depth to Bottom (ft.): 53'
Static Water Level Before (ft.): —
Static Water Level After (ft.): —
Screen Length (ft.): 5'
Specific Capacity: _____ N/A
Casing ID (in.): 0.75"

Responsible Personnel: C. METZ
Drilling Co.: Miller
Project Name: SITE 59, RI
Project Number: N8925

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units: mS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
1530	2'	0						
1540	—	7.5		24.82	6.30	0.109	190	
1550	—	15		24.80	6.19	0.099	80	
1600	—	22.5		24.77	6.08	0.089	50	
1610	—	30		24.78	5.98	0.084	30	
1620	—	37.5		24.74	5.92	0.079	20	
1630	—	45		24.71	5.90	0.077	15	

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Well: CEF-59-011-083
Site: 59 Cecil Field
Date Installed: 10/7/04
Date Developed: 10-18-04
Dev. Method: _Pump_____
Pump Type: _____ Submersible

Depth to Bottom (ft.): 85.17 TOC
Static Water Level Before (ft.): 7.53
Static Water Level After (ft.): 7.53
Screen Length (ft.): 5'
Specific Capacity: _____ N/A
Casing ID (in.): 2"

Responsible Personnel: S. McGuire
Drilling Co.: Miller
Project Name: SITE 59 RI
Project Number: N8925

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units: mS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
1410	start			~~25.39~~	~~6.27~~	~~0.179~~		Drum DW-59-24
1420		8	8.55	25.39	6.27	0.179	>1000	Mud / Gray
1430		16	8.55	25.16	6.00	0.157	>1000	" "
1440		24	8.55	25.11	5.86	0.134	>1000	
1450		32	8.55	25.21	5.79	0.127	>1000	
1500		40	8.55	25.29	5.67	0.121	>1000	
1510		48	8.55	25.02	5.60	0.110	>1000	
1520		56	8.55	24.99	5.63	0.112	>1000	Drum DW-59-25
1530		64	8.56	25.01	5.63	0.107	>1000	
1540		72	8.56	24.93	5.60	0.104	>1000	
1550		80	8.56	24.90	5.51	0.101	>1000	
1600		88	8.56	24.96	5.49	0.098	>1000	
1610		96	8.56	24.88	5.48	0.095	>1000	
1620		104	8.56	24.86	5.44	0.093	>1000	Drum DW-59-26
1630		113	8.56	24.85	5.43	0.090	>1000	
1640		122	8.56	24.81	5.40	0.088	>1000	
1650		130	8.56	24.81	5.36	0.086	>1000	
1700		138	8.56	24.82	5.30	0.085	>1000	

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Well: CEF-59-011-083
Site: 59 CECIC Field
Date Installed: 10/7/04
Date Developed: 10-18-04
Dev. Method: Pump
Pump Type: _____ Submersible

Depth to Bottom (ft.): 85.17
Static Water Level Before (ft.): 7.53
Static Water Level After (ft.): 7.53
Screen Length (ft.): 5'
Specific Capacity: _____ N/A
Casing ID (in.): 2"

Responsible Personnel: S. McGuire
Drilling Co.: Miller
Project Name: SITE 59 RI
Project Number: NB925

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units: mS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
1710		145	8.56	24.76	5.52	0.084	> 1000	Gray, Mud/silty
1720		153	8.56	24.60	5.36	0.081	> 1000	" "
1730		161	8.56	24.72	5.23	0.079	> 1000	" "
Development completed								

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Well: CEF-059-02-050
Site: NASCF, Site 59
Date Installed:
Date Developed: 6/20/05
Dev. Method: Pump PERISTALTIC
Pump Type: PERISTALTIC

Depth to Bottom (ft.): 52.92
Static Water Level Before (ft.): 5.74
Static Water Level After (ft.): 5.91
Screen Length (ft.): 5
Specific Capacity: n/a
Casing ID (in.): 1/2"

Responsible Personnel: P. LEVERETTE
Drilling Co.: Prosonic Drilling Corporation
Project Name:
Project Number: N8925

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units: mS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
1050	4"	–	5.74	–	–	–	–	START DEVELOPMENT
1055	–	1	–	23.72	5.58	0.153	>1000	CLOUDY LT. BROWN
1100	–	2	–	23.71	5.41	0.133	543	"
1105	–	3	–	23.72	5.34	0.120	287	"
1110	–	4	–	23.72	5.28	0.113	159	"
1115	–	5	–	23.76	5.23	0.102	106.3	"
1120	–	6	–	23.73	5.20	0.105	91.8	"
1125	–	7	–	23.75	5.17	0.102	76.9	"
1130	–	8	–	23.77	5.13	0.101	73.4	"
1135	–	9	–	23.79	5.11	0.098	70.6	"

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Well: CEF-59-013-032
Site: 59 CECIL FIELD
Date Installed: 10-14-04
Date Developed: 10-22-04
Dev. Method: Pump
Pump Type: _____ Submersible

Depth to Bottom (ft.): 30
Static Water Level Before (ft.): 5.80
Static Water Level After (ft.): 5.80
Screen Length (ft.): 5'
Specific Capacity: _____ N/A
Casing ID (in.): 0.75

Responsible Personnel: S. McGuire
Drilling Co.: Miller
Project Name: SITE 59 RI
Project Number: N8925

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units: mS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
0915	start							
0925		2.5	8.75	23.77	4.95	0.069	> 1000	Milky / chalky
0935		5.0	8.65	23.81	4.71	0.066	230	Chalky
0945		7.5	8.65	23.88	4.52	0.062	240	
0955		10.0	8.65	23.88	4.44	0.061	200	↓
1005		12.5	8.65	23.87	4.39	0.060	140	
1015		15.0	8.65	23.87	4.34	0.060	75	Clearing

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Well: CEF-59-013-053
Site: 59 CECIL FIELD
Date Installed: 10-20-04
Date Developed: 10-22-04
Dev. Method: Pump
Pump Type: _____ Submersible

Depth to Bottom (ft.): 53
Static Water Level Before (ft.): 5.56
Static Water Level After (ft.): 5.62
Screen Length (ft.): 5'
Specific Capacity: _____ N/A
Casing ID (in.): 0.75

Responsible Personnel: S. McGuire
Drilling Co.: Miller
Project Name: SITE 59 RI
Project Number: N8925

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units: mS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
0810	start		5.56					
0820		2.5	9.58	23.53	6.40	0.262	>1000	Milky Gray brn
0830		5.0	SP ~~23.5~~ 9.58	23.51	6.37	0.249	>1000	
0840		7.5	9.60	23.51	6.38	0.242	950	
0850		10.0	9.60	23.54	6.31	0.217	100	
0900		12.5	9.60	23.55	6.30	0.201	60	
0910		15.0	9.60	23.52	6.25	0.196	36	clear

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Well: CEF-59-013-083
Site: 59 CECIL FIELD
Date Installed: 10-7-04
Date Developed: 10-22-04
Dev. Method: Pump
Pump Type: _____ Submersible

Depth to Bottom (ft.): 85
Static Water Level Before (ft.): 5.65
Static Water Level After (ft.): 5.70
Screen Length (ft.): 5'
Specific Capacity: _____ N/A
Casing ID (in.): 2"

Responsible Personnel: S McGuire
Drilling Co.: Miller
Project Name: SITE 59 RI
Project Number: N8925

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units: mS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
0805	Start		5.65	SR				
0815		26.5	7.87	23.52	5.40	0.077	>1000	DK Gray
0825		53.0	7.87	23.50	5.40	0.078	>1000	
0835		79.5	7.89	23.50	5.40	0.075	>1000	chalky
0845		106.0	7.89	23.50	5.40	0.072	600	
0855		132.5	7.89	23.50	5.41	0.070	130	clearing / chalky
0905		159.0	7.89	23.51	5.23	0.069	100	

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Well: CEF-59-014-053
Site: 59 CECIL FIELD
Date Installed: 10/17/04
Date Developed: 10-19-04
Dev. Method: Pump
Pump Type: _____ Submersible

Depth to Bottom (ft.): 55.5
Static Water Level Before (ft.): 6.36
Static Water Level After (ft.): 6.39
Screen Length (ft.): 5'
Specific Capacity: _____ N/A
Casing ID (in.): 0.75

Responsible Personnel: S. McGuire
Drilling Co.: Miller
Project Name: SITE 59 RI
Project Number: N8925

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units: mS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
1625			6.36					Gray, silty
1635		2.5	6.98	23.86	5.94	0.178	>1000	
1645		5.0	6.98	23.85	5.96	0.153	~~>1000~~ 650	
1655		7.5	6.98	23.83	5.70	0.148	420	
1705		10.0	6.98	23.79	5.66	0.137	140	
1715		12.5	6.98	23.76	5.41	0.124	90	
1725		15.0	6.98	23.75	5.31	0.138	40	

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Well: CEF-59-014-083
Site: Site 59 CECIL Field
Date Installed: 10/15/04
Date Developed: 10-18-04
Dev. Method: _Pump_
Pump Type: _____ Submersible

Depth to Bottom (ft.): 80'
Static Water Level Before (ft.): _____
Static Water Level After (ft.): 5.70
Screen Length (ft.): 5'
Specific Capacity: _____ N/A
Casing ID (in.): 2"

Responsible Personnel: S. McGuire
Drilling Co.: Miller
Project Name: SITE 59 RI
Project Number: N8925

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units: mS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
0850	START							Drum DW-59-21
0900		15	6.96	24.45	6.26	0.222	> 1000	mud / Gray / Sulphur
0910		35	6.73	24.74	6.23	0.202	> 1000	" "
0920		45	6.73	24.59	6.13	0.195	> 1000	" "
0930		50	6.73	24.68	6.16	0.190	> 1000	" "
0940		55	6.73	24.57	6.11	0.176	> 1000	" "
0950		65	6.73	24.50	6.00	0.184	> 1000	Drum DW-59-22
1000		75	6.73	24.46	5.95	0.159	> 1000	
1010		83	6.73	24.40	5.90	0.151	> 1000	
1020		91	6.74	24.49	5.84	0.149	950	
1030		98	6.74	24.43	5.86	0.141	750	
1040		106	6.74	24.49	5.79	0.137	650	Drum DW-59-23
1050		114	6.74	24.60	5.84	0.131	550	Silty Gray
1100		122	6.74	24.72	5.76	0.117	500	
1110		130	6.74	24.81	5.78	0.119	450	
1120		138	6.74	24.55	5.65	0.107	400	
1130		146	6.74	24.53	5.68	0.103	370	
1140		153	6.72	24.57	5.57	0.109	360	Light Gray

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Well: CEF-S9-014-120
Site: Site 59 CECIL FIELD
Date Installed: 10/5/04
Date Developed: 10/19/04
Dev. Method: Pump
Pump Type: _____ Submersible
Depth to Bottom (ft.): 120.5
Static Water Level Before (ft.): 8.36
Static Water Level After (ft.): 23.90
Screen Length (ft.): 5
Specific Capacity: _____ N/A
Casing ID (in.): 2
Responsible Personnel: C Gleason
Drilling Co.: Miller
Project Name: SITE 59, RI
Project Number: N8925

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units: mS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
1540	2	6	23.62	24.47	7.61	0.417	847	Murky gray
1550	.8	12	23.74	24.16	7.10	0.390	+999	Murky gray
1600	.4	18	23.87	24.16	7.04	0.381	476	Gray, cloudy
1610	.2	24	23.91	24.12	7.01	0.374	154	Gray
1620	—	30	23.91	24.06	7.01	0.371	141	Gray
1630	—	38	23.90	23.98	6.99	0.368	70	Gray
1640	—	44	23.90	23.96	6.97	0.366	51	Clear
1650	—	50	23.90	23.96	6.98	0.364	40	Clear
1700	—	57	23.90	23.95	6.98	0.361	32	Clear
1710	—	64	23.90	23.93	6.98	0.357	29	Clear
1720	—	70	23.90	23.91	6.98	0.355	26	Clear
1730	—	76	23.90	23.89	6.98	0.355	25	Clear
1750	—	90	23.90	23.89	6.98	0.355	110	Clear
1810	—	104	23.90	23.86	6.98	0.354	107	Clear
1830	—	118	23.90	23.82	6.97	0.350	60	Clear
1850	—	133	23.90	23.81	6.97	0.355	55	Clear
1910	—	148	23.90	23.80	6.97	0.350	52	Clear

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Well: CEF-59-015-028
Site: 59 CECIL FIELD
Date Installed: 10/15/04
Date Developed: 10-19-04
Dev. Method: Pump
Pump Type: _____ Submersible

Depth to Bottom (ft.): 29.7
Static Water Level Before (ft.): 4.85
Static Water Level After (ft.): 4.87
Screen Length (ft.): 5'
Specific Capacity: _____ N/A
Casing ID (in.): 0.75'

Responsible Personnel: S. McGuire
Drilling Co.: Miller
Project Name: SITE 59 RI
Project Number: N8925

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units: mS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
1455	start							
1505		2.5	7.10	24.28	4.88	0.103	>1000	Gray, Silty
1515		5.0	7.10	24.36	4.79	0.102	600	
1525		7.5	7.10	24.20	4.62	0.101	500	
1535		10.0	7.10	24.25	4.71	0.101	300	
1545		12.5	7.10	24.13	4.62	0.100	270	
1555		15.0	7.10	24.31	4.59	0.100	198	LT Gray

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Well: CEF-59-016-053
Site: 59 CECIL FIELD
Date Installed: 10/17/04
Date Developed: 10-19-04
Dev. Method: Pump
Pump Type: _____ Submersible

Depth to Bottom (ft.): 55.6
Static Water Level Before (ft.): 7.10
Static Water Level After (ft.): 7.10
Screen Length (ft.): 5'
Specific Capacity: _____ N/A
Casing ID (in.): 0.75"

Responsible Personnel: S. McGuire
Drilling Co.: Miller
Project Name: SITE 59 RI
Project Number: N8925

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units: mS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
1320	Start		7.10					
1330		2.5	9.90	23.83	6.15	0.217	>1000	Gray, Silty
1340		5.0	9.70	23.75	5.84	0.160	>1000	↓
1350		7.5	9.70	23.71	5.80	0.152	>1000	↓
1400		10.0	9.70	23.68	5.64	0.145	160	↓
1410		12.5	9.70	23.78	5.62	0.136	95	↓
1420		15.0	9.70	24.01	5.72	0.140	42	↓ LT Gray

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Well: CEF-59-016-083
Site: 59 CECIL FIELD
Date Installed: 10-17-04
Date Developed: 10-20-04
Dev. Method: Pump
Pump Type: _____ Submersible

Depth to Bottom (ft.): 80'
Static Water Level Before (ft.): 5.55
Static Water Level After (ft.): —
Screen Length (ft.): 5'
Specific Capacity: _____ N/A
Casing ID (in.): 2"

Responsible Personnel: S. McGuire
Drilling Co.: Miller
Project Name: SITE 59 RI
Project Number: N8925

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units: mS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
1635	Start							Drum DW-59-30
1645		20	7.60	24.01	6.44	0.203	300	Chalky + clearing
1655		40	7.60	24.02	6.50	0.218	180	↓ Drum DW-59-31
1705		65	7.60	23.99	6.37	0.194	85	clearing
1715		SM ~~10~~ 90	7.60	24.00	6.24	0.101	80	↓
1725		106	7.60	24.01	6.15	0.078	75	↓ Drum DW-59-32
1735		128	7.60	23.93	6.16	0.100	60	↓
1745		155	7.60	24.02	6.19	0.126	48	clear

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Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

10-20-04

Well: CEF-59-016-119
Site: 59 CECIL FIELD
Date Installed: 10-16-04
Date Developed: 10-19-04
Dev. Method: Pump
Pump Type: Submersible

Depth to Bottom (ft.): 120.21
Static Water Level Before (ft.): 5.71
Static Water Level After (ft.): —
Screen Length (ft.): 5'
Specific Capacity: N/A
Casing ID (in.): 2"

Responsible Personnel: S. McGuire
Drilling Co.: Miller
Project Name: SITE 59 RI
Project Number: N8925

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units ____)	Turbidity (NTU)	Remarks (odor, color, etc.)
0745	Start							Drum DW-59-27
0755		6	31.25	25.17	8.83	0.259	230	Gray / Brn
0805		10	32.20	25.14	8.37	0.300	>1000	DK Brn
0815		13	32.35	25.22	7.80	0.367	80	LT Brn
0825		16	31.90	25.19	7.72	0.425	32	cloudy
0835	Stop							shut down
1355	Start	SRM ~~45~~	~~107.65~~	~~25.08~~	~~6.55~~	~~0.374~~	~~170~~ SRM	Restart 10-20-04
1425		45	107.65	25.08	6.55	0.374	170	Drum DW-59-29
1435		50	107.65	24.86	6.85	0.362	21	
1445		55	107.65	24.69	6.95	0.360	6.0	Drum DW-59-~~29~~ 27
1455		60 +76	107.65	24.64	6.99	0.366	2.5	This drum had 16 gallons
1505		81	107.65	24.54	7.00	0.364	3.0	from yesterday.
1530		105	107.65	24.59	6.98	0.363	5.2	

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Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Well: CEF-59-017-028
Site: ~~PSC 40~~ 59 MWA
Date Installed: 02/18/2005
Date Developed: 02/21/05
Dev. Method: _____ Pump
Pump Type: _____ Submersible

Depth to Bottom (ft.): 28.4
Static Water Level Before (ft.): 7.75
Static Water Level After (ft.): 7.30 * TIME 1513
Screen Length (ft.): 5
Specific Capacity: _____ N/A
Casing ID (in.): 2

Responsible Personnel: ~~AP~~ MDale
Drilling Co.: Partridge Well Drilling
Project Name: NAS CECIL FIELD
Project Number: ~~0039.DS0.05P.320~~ 8925 MWA

NOTE: 0.5 ft of rocks cut off at 1450.

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units: mS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
1300	<0.5	25	*	23.42	6.49	0.266	>1000	
1315	<0.5	50	*	22.44	5.74	0.135	91.2	clearing *
MP ~~1~~ 1313	—	68	*	22.61	5.81	0.113	107	
1319	—	100	*	22.36	5.57	0.105	17.7	~3gpm
1326	—	120	*	22.85	5.64	0.094	28.1	
1330	—	136	*	22.32	5.45	0.093	36.3	
1333	—	150	—	—	—	—	—	3 drums full

* Stop pump every 50 gals. to xfer hose to next drum.

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Well: CEF-59-017-053
Site: ~~PSC 40~~ 59 MWA
Date Installed: 02/18/2005
Date Developed: 02/21/2005
Dev. Method: _____ Pump
Pump Type: bladder ~~Submersible~~

Depth to Bottom (ft.): 52.4
Static Water Level Before (ft.): 7.51
Static Water Level After (ft.): 7.41 TIME 1509
Screen Length (ft.): 5
Specific Capacity: _____ N/A
Casing ID (in.): 2

Responsible Personnel: M. Dale
Drilling Co.: Partridge Well Drilling
Project Name: NAS CECIL FIELD
Project Number: ~~0039.DS0.05P.S20~~ MHA 8925

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units: mS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
1418	0.6	0	7.51 —	—	—	—	—	start
1422		18	— *	22.42	5.47	0.134	>1000	muddy, gray
1426		36	*	22.21	5.34	0.084	>1000	note: stop
1431		50+18=68	*	22.30	5.44	0.090	899	pump every
1435		75	*	22.38	5.42	0.076	530	50 gals to xfer
1439		100	*	22.26	5.29	0.066	360	to next drum
1442		115	*	22.41	5.39	0.080	373	
1444		125	*	22.40	5.31	0.064	216	
1449		150	*	22.52	5.33	0.064	156	sl. cldy
					Runs @ 3-5 gpm.			
			Did (ppm)					
			Start 0.2	BH / 0.2 BZ				
			end 0.4	BH / 0.2 BZ				
			BK = 0.2					

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Well: CEF-059-18-033
Site: NASCF, Site 59
Date Installed: 6/8/05
Date Developed: 6/27/05
Dev. Method: Pump
Pump Type: Peristaltic

Depth to Bottom (ft.): 32.49
Static Water Level Before (ft.): 7.27
Static Water Level After (ft.):
Screen Length (ft.): 5
Specific Capacity: n/a
Casing ID (in.): .75

Responsible Personnel: M. Dale, S. McGuire, and C. Odom
Drilling Co.: Prosonic Drilling Corporation
Project Name: RI
Project Number: N8925

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units: mS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
1615							[illegible]	cloudy lt brn
1625		1.25	7.44	24.57	5.75	.107	"	"
1635		2.5	7.45	24.34	5.66	.103	627	"
1645		3.75	7.60	24.42	5.55	.099	333	lt brn cloudy/clear
1655		5	7.55	24.33	5.39	.094	224	"
1705		6.25	7.55	24.25	5.34	.094	167	"
1715		7.5	7.55	24.23	5.37	.092	120	"
1725		8.75	7.50	24.17	5.34	.091	109.8	"

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Well: CEF-059-18-053
Site: NASCF, Site 59
Date Installed: 6/9/05
Date Developed: 6/17/05
Dev. Method: Pump
Pump Type: Peristaltic

Depth to Bottom (ft.): 52.61
Static Water Level Before (ft.): 6.29
Static Water Level After (ft.):
Screen Length (ft.): 5
Specific Capacity: n/a
Casing ID (in.): .75

Responsible Personnel: M. Dale, S. McGuire, and C. Odom
Drilling Co.: Prosonic Drilling Corporation
Project Name: RI
Project Number: N8925

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units: mS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
1615 ~~[illegible]~~							above instrument detection limit	cloudy sky
~~1625~~		~~1.25~~		~~24.61~~	~~5.26~~	~~.108~~	"	"
1625		1.25	6.84	24.09	5.48	.145	458	"
1635		2.5	6.77	23.91	5.37	.135	223	"
1645		3.75	6.72	24.07	5.27	.120	37.6	cloudy/clear sky
1655		5	6.73	24.00	5.21	.115	9.82	clear
1705		6.25	6.73	23.98	5.15	.110	12.3	clear
1715		7.5	6.74	24.01	5.17	.109	9.52	cloudy/clear sky
1725		8.75	6.73	23.99	5.13	.102	8.37	"

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Well: CEF-059-D18-078
Site: NASCF, Site 59
Date Installed: 6/12/05
Date Developed: 6/13/05
Dev. Method: Pump
Pump Type: submersible

Depth to Bottom (ft.): 79.5
Static Water Level Before (ft.): 6.46
Static Water Level After (ft.):
Screen Length (ft.): 5
Specific Capacity: n/a
Casing ID (in.): 2.0

Responsible Personnel: M. Dale, S. McGuire, and C. Odom
Drilling Co.: Prosonic Drilling Corporation
Project Name: RI
Project Number: N8925

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units: mS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
0928			6.46					
0956		—		26.26	6.58	.279	above limits	cloudy gry
1006		5 gal	6.95	26.65	6.53	.266	"	" / gry
1016		10 gal	6.96	26.41	6.39	.250	"	"
1026		15 gal	6.96	26.47	6.32	.244	"	"
1036		20 gal	6.56	25.99	6.22	.234	35.6	clear gry
1046		25 gal	6.59	26.22	6.15	.228	12.3	clear
1056		30	6.59	26.18	6.12	.223	7.55	clear
1106		35	6.61	26.66	6.14	.204	9.18	clear
1116		40	6.60	26.74	6.13	.188	8.64	clear
1126		45	6.58	25.59	5.96	.197	29.4	slightly cloudy
1136		50	6.58	26.02	5.98	.185	46.3	slightly cloudy
1141		52.5	6.58	25.97	5.98	.182	56.4	cloudy gry
1146		55	6.54	25.93	5.98	.181	63.3	cloudy gry
1156		60	6.58	25.69	5.89	.181	109.7	cloudy gry
1206		65	6.56	25.54	5.87	.181	129	cloudy gry
1216		70	6.56	25.44	5.83	.174	150	cloudy gry
1226		75	6.56	25.65	5.79	.171	517	cloudy gry

flow rate = 2L/min

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Well: CEF-059- 18-078
Site: NASCF, Site 59
Date Installed: 6/12/05
Date Developed: 6/13/05
Dev. Method: Pump
Pump Type: submersible

Depth to Bottom (ft.): 79.5
Static Water Level Before (ft.): 6.46
Static Water Level After (ft.):
Screen Length (ft.): 5
Specific Capacity: n/a
Casing ID (in.): 2.0

Responsible Personnel: M. Dale, S. McGuire, and C. Odom
Drilling Co.: Prosonic Drilling Corporation
Project Name: RI
Project Number: N8925

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units: mS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
1236		80	6.56	25.32	5.80	.167	283	cloudy gry
1246		85	6.59	25.28	5.77	.162	281	cloudy gry
1256		90	6.65	25.73	5.73	.155	311	cloudy gry
1306		95	6.85	25.78	5.73	.160	300	cloudy gry
1316		100	7.00	25.13	5.76	.152	305	cloudy gry
1326		105	7.02	25.08	5.71	.148	330	cloudy gry
1500								
1510		115	7.45	24.82	5.68	.140	340	cloudy gry
1520		125	7.45	24.55	5.60	.134	348	cloudy gry
1530		135	7.43	24.57	5.56	.126	435	cloudy gry
1540		145	7.42	24.54	5.54	.122	489	cloudy gry
1550		155	7.42	24.44	5.52	.117	550	cloudy gry
1555		160	7.42	24.41	5.51	.119	538	cloudy gry

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Well: CEF-059-18-TOR
Site: NASCF, Site 59
Date Installed: 6/12/05
Date Developed: 6/13/05-6/14/05
Dev. Method: Pump
Pump Type: Submersible

Depth to Bottom (ft.):
Static Water Level Before (ft.): 6.32
Static Water Level After (ft.):
Screen Length (ft.): 5
Specific Capacity: n/a
Casing ID (in.): 2.0

Responsible Personnel: M. Dale, S. McGuire, and C. Odom
Drilling Co.: Prosonic Drilling Corporation
Project Name: RI
Project Number: N8925

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units: mS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
1615			6.32					
1630								
1640		6 gal	8.09	24.77	6.45	.262	above limits	dark gry
1650		12 gal					"	"
1700		18	8.18	24.47	6.30	.225	"	dark gry
1710		24		24.44	6.28	.223	"	"
14 0837			6.13					
0848								
0856		34	7.89	24.09	6.45	.206	above limits	dark gry
0906		44	7.94	24.00	6.38	.199	"	"
0914		52		23.97	6.33	.196	"	"
0919			7.73					
0929		62	8.19	23.89	6.29	.195	"	dark gry
0939		74.5	8.25	23.86	6.24	.190	"	dark gry
0949		77	8.28	23.83	6.23	.181	"	dark gry
0959		89.5	8.27	23.81	6.21	.178	"	dark gry
1009		102	8.27	23.80	6.19	.177	"	"

start as 2nd drum

changed flow rate to 1.25 gal/min

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Well: CEF-059- 18 - TOR
Site: NASCF, Site 59
Date Installed:
Date Developed: 6/13/05-6/14/05
Dev. Method: Pump
Pump Type: Submersible

Depth to Bottom (ft.):
Static Water Level Before (ft.): 6.32
Static Water Level After (ft.): 6.11
Screen Length (ft.): 5
Specific Capacity: n/a
Casing ID (in.): 2.0

Responsible Personnel: M. Dale, S. McGuire, and C. Odom
Drilling Co.: Prosonic Drilling Corporation
Project Name: RI
Project Number: N8925

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units: mS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
1019		114.5	8.27	23.78	6.16	.173	above instrument recording limits	dark gry
1029		127.0	8.25	23.77	6.10	.175	"	"
1039		139.5	8.25	23.78	6.08	.172	"	"
1049		152.0	8.25	23.75	6.07	.168	"	"
1055		157.5						

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Well: CEF-059-DR-033
Site: NASCF, Site 59
Date Installed: 6-8-05
Date Developed: 6/15/05
Dev. Method: Pump
Pump Type: peristaltic

Depth to Bottom (ft.): 32.19
Static Water Level Before (ft.): 5.46
Static Water Level After (ft.):
Screen Length (ft.): 5
Specific Capacity: n/a
Casing ID (in.): .75

Responsible Personnel: M. Dale, S. McGuire, and C. Odom
Drilling Co.: Prosonic Drilling Corporation
Project Name: RI
Project Number: N8925

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units: mS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
0945								H brw cloudy
0955		1.25 gal	7.96	25.42	5.84	.045	above instrument recording limits	H brw cloudy
1005		2.5	8.10	25.37	5.65	.043	"	"
1015		3.75	8.12	25.50	5.60	.045	"	"
1025		5	8.16	25.61	5.33	.040	"	"
1035		6.25	8.19	25.59	5.34	.039	"	"
1045		7.5	8.20	25.74	5.33	.038	"	"
1055		8.75	8.20	~~24.7~~	~~5.38~~	.038	"	"
				25.64	5.32			

Pump @ .125 gal min

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Well: CEF-059-019-053
Site: NASCF, Site 59
Date Installed: 6-8-05
Date Developed: 6/15/05
Dev. Method: Pump
Pump Type: peristaltic

Depth to Bottom (ft.): 50.84
Static Water Level Before (ft.): 5.48
Static Water Level After (ft.):
Screen Length (ft.): 5
Specific Capacity: n/a
Casing ID (in.): .75

Responsible Personnel: M. Dale, S. McGuire, and C. Odom
Drilling Co.: Prosonic Drilling Corporation
Project Name: RI
Project Number: N8925

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units: mS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
1105								
1115		1.25	5.94	25.70	6.04	.065	above instrument recording limits	It brn cloudy
1125		2.5	5.93	25.67	5.81	.054	"	"
1135		3.75	5.93	25.64	5.62	.049	"	"
1145		5.0	5.95	25.81	5.70	.050	"	"
1155		6.25	5.94	25.72	5.48	.043	"	"
1205		7.5	5.97	25.87	5.23	.044	"	"
1215		8.75	5.98	25.85	5.26	.043	"	"

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Well: CEF-059-019-078
Site: NASCF, Site 59
Date Installed: 6/10/05
Date Developed: 6/15/05
Dev. Method: Pump
Pump Type: Submersible

Depth to Bottom (ft.): 80.36
Static Water Level Before (ft.): 5.32
Static Water Level After (ft.):
Screen Length (ft.): 5
Specific Capacity: n/a
Casing ID (in.): 2.0

Responsible Personnel: M. Dale, S. McGuire, and C. Odom
Drilling Co.: Prosonic Drilling Corporation
Project Name: RI
Project Number: N8925

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units: mS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
0945								sry turbid
0955		12.5	6.22	24.16	6.32	.195	above instrument recording limits	sry turbid
1005		25	6.28	24.16	5.90	.173	"	"
1015		37.5	6.19	24.13	5.66	.146	"	"
1025		50	6.22	24.12	5.60	.139	"	"
1035		62.5	6.20	24.08	5.53	.125	"	"
1045		75	6.20	24.10	5.45	.117	"	"
1055		87.5	6.20	24.08	5.37	.109	"	"
1105		100	6.21	24.07	5.33	.103	"	"
1115		112.5	6.20	24.03	5.31	.101	"	"
1125		125	6.18	24.03	5.30	.099	"	"
1135		137.5	6.18	24.02	5.28	.155	"	"
1145		150	6.18	24.06	5.24	.119	"	"
1153		159	6.18	24.03	5.23	.117	"	"

pump @ 1.25 gal min

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Well: CEF-059-029-606
Site: NASCF, Site 59
Date Installed: 6-10-05
Date Developed: 6/15/05
Dev. Method: Pump
Pump Type: 3.5 mersible

Depth to Bottom (ft.): 109.80
Static Water Level Before (ft.): 5.67
Static Water Level After (ft.):
Screen Length (ft.): 5
Specific Capacity: n/a
Casing ID (in.): 2.0

Responsible Personnel: M. Dale, S. McGuire, and C. Odom
Drilling Co.: Prosonic Drilling Corporation
Project Name: RI
Project Number: N8925

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units: mS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
1433								
1443		12.5	10.79	23.87	5.49	.477	above instrument recording limit	dark gry
1453		25.0	10.72	23.80	5.81	.482	"	"
1503		37.5	10.65	23.78	5.93	.488	"	"
1513		50.0	10.65	23.77	6.40	.470	"	"
1523		62.5	10.49	23.71	6.67	.481	79.8	cloudy gry
1533		75	10.65	23.67	6.79	.484	23.1	"
1543		87.5	10.55	23.68	6.82	.480	109.4	slightly cloudy gry
1553		100	10.89	23.59	6.85	.486	12.3	"
1603		112.5	10.99	23.66	6.85	.487	67.4	"
1613		125.0						
battery dead, no pumping								
1712	back online							
1722		137.5	9.79	23.80	6.88	.488	36.6	slighty cloudy gry
1732		150	10.75	23.67	6.87	.491	38.4	almost clear
1740		159	10.64	23.68	6.87	.489	32.8	"

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Well: CEF-059-20-33
Site: NASCF, Site 59
Date Installed: ~~6-7-05~~ 6-9-05
Date Developed: 6-12-05
Dev. Method: Pump
Pump Type: Peristaltic

Depth to Bottom (ft.): 32.4
Static Water Level Before (ft.): 7.20
Static Water Level After (ft.): 7.28
Screen Length (ft.): 5
Specific Capacity: n/a
Casing ID (in.): 3/4

Responsible Personnel: M. Dale, S. McGuire, and C. Odom
Drilling Co.: Prosonic Drilling Corporation
Project Name: RI
Project Number: N8925

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units: mS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
1250			7.20					
1300				29.03	5.16	0.101	>1000	Brown
1310				29.7	4.99	0.076	>1000	Gray
1320				29.12	4.70	0.051	>1000	Gray
1330				29.17	4.68	0.050		
1340				29.19	4.68	0.050		
1350				29.26	4.68	0.050		
1400				29.29	4.60	0.048		
1410				29.36	4.59	0.047		
1420				29.38	4.57	0.047		
1430				29.41	4.55	0.045		
1440				29.45	4.53	0.044		
1450				29.47	4.50	0.042		
1500				29.50	4.51	0.042	>1000	Not clearing at all
								Gray color
								water level indicator too
								big for tubing in 3/4" well
								to take readings

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Well: CEF-059-20-53
Site: NASCF, Site 59
Date Installed: 6-10-05
Date Developed: 6-12-05
Dev. Method: Pump
Pump Type: Peristaltic

Depth to Bottom (ft.): 53.0
Static Water Level Before (ft.): 7.60
Static Water Level After (ft.): 7.31
Screen Length (ft.): 5
Specific Capacity: n/a
Casing ID (in.): 3/4

Responsible Personnel: M. Dale, S. McGuire, and C. Odom
Drilling Co.: Prosonic Drilling Corporation
Project Name: RI
Project Number: N8925

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units: mS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
1005			7.60					Brown
1015				25.88	6.15	0.144	>1000	LT brn
1025				25.91	5.92	0.100	>1000	LT brn
1035				26.04	5.78	0.088	>1000	LT brn
1045				26.18	5.71	0.081	680	LT Gray
1055				26.35	5.60	0.077	392	LT Gray
1105				26.58	5.51	0.070	238	clearing
1115				26.55	5.42	0.061	202	
1125				26.52	5.37	0.057	156	
1135				26.66	5.29	0.056	~~54 62~~ 162	
1145				26.75	5.22	0.055	198	
1155				26.52	5.17	0.051	292	
1205				26.25	5.13	0.048	311	
1215				26.31	5.11	0.047	219	
1225				26.36	5.14	0.052	162	
1235				26.38	5.19	0.054	124	
1245		12.6		26.41	5.21	0.061	119	well too small to fit tubing
								and water level probe in.

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Well: CEF-059-20-78
Site: NASCF, Site 59
Date Installed: 6-9-05
Date Developed: 6-12-05
Dev. Method: Pump
Pump Type: Submersible

Depth to Bottom (ft.): 80.46
Static Water Level Before (ft.): 7.66
Static Water Level After (ft.): 7.63
Screen Length (ft.): 5
Specific Capacity: n/a
Casing ID (in.): 2"

Responsible Personnel: M. Dale, S. McGuire, and C. Odom
Drilling Co.: Prosonic Drilling Corporation
Project Name: RI
Project Number: N8925

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units: mS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
1310			30.2					
1410			41.62	25.37	5.16	0.89	> 1000	LT Gray
1420			45.8	25.21	5.10	0.075	> 1000	LT Gray
1430		112	~~112~~ 45.6	25.14	4.92	0.063	> 1000	LT Gray

Tetra Tech NUS, Inc.

MONITORING WELL DEVELOPMENT RECORD

Well: CEF-059-20-TOR
Site: NASCF, Site 59
Date Installed: 6-8-05
Date Developed: 6-12-~~04~~ 05 MD
Dev. Method: Pump
Pump Type: Submersible

Depth to Bottom (ft.):
Static Water Level Before (ft.): 7.39
Static Water Level After (ft.): 7.50
Screen Length (ft.): 5
Specific Capacity: n/a
Casing ID (in.): 2

Responsible Personnel: M. Dale, S. McGuire, and C. Odom
Drilling Co.: Prosonic Drilling Corporation
Project Name: RI
Project Number: N8925

Time	Estimated Sediment Thickness (Ft.)	Cumulative Water Volume (Gal.)	Water Level Readings (Ft. below TOC)	Temperature (Degrees C)	pH	Specific Conductance (Units: mS/cm)	Turbidity (NTU)	Remarks (odor, color, etc.)
1025			7.39					
1050			20.45				390	LT Gray
1125			40.21				179	LT Gray
1210			62.68				131	LT Gray
1240			62.71	25.59	5.10	0.114	123	Clear
1248			62.71	26.62	5.12	0.119	124	Clear
1250		112	62.71	26.67	5.17	0.126	121	Clear
								water level indicator
								100 ft max did not get
								total depth

C.2 SYNOPTIC GROUNDWATER LEVEL MEASUREMENTS

Tetra Tech NUS, Inc.

GROUNDWATER LEVEL MEASUREMENT SHEET

Project Name: Site 59 Remedial Investigation
Project No.: N8925 SW0 050 130
Location: Cecil Field
Personnel: Dave Siefken, Shina Ballard
Weather Conditions: Mostly sunny, Lo 52, Hi 76
Measuring Device: Testwell IP(serial # 5827)
Tidally Influenced: Yes ____ No _X__
Remarks: Heron # 11598

Well or Piezometer Number (CEF-059-)	Date	Time	Elevation of Reference Point (feet)*	Total Well Depth (feet)*	Water Level Indicator Reading (feet)*	Thickness of Free Product (feet)*	Groundwater Elevation (feet)*	Comments Air BZ/BH (ppm)
001-028	11/8/04	0940		28'5"	4.96			0/0
001-050	11/8/04	0930		53'5"	~~5.98~~ 5.34			0/0
001-083	11/8/04	0938		83'	6.16			0/0
001-121	11/8/04	0935			7.01			0/0
002-028	11/8/04	0			NR			/
002-053	11/8/04	0954		~~5.24~~	5.84			0/1.8
002-120	11/8/04	0948			7.22			0/.1
003-035	11-8				NR			0/1.7
003-053	11-8				NR			0/1.2
003-073	11-8				NR			0/1.7
003-121	11-8	1250			6.00			0/3.1
004-053	11-8				NR			0/2.0
004-073	11-8				NR			0/1.4
004-112	11-08	1132			5.43			0/1.1
005-033	11-8				NR			0/13.2
005-050	11-8				NR			0/17.4
005-070	11-8				NR			0/11.8
006-104	11/8/04	1105			5.70			0/24
008-028	11/8/04				NR			0/2.6
009-053	11-8	1147			6.15			0/2.2
009-083	11-8	1145			6.33			0/1.1
009-113	11-08	1140			6.45			0/1.9
010-050	11-8	—			NR			0/0.7
010-083	11-8	1115			5.56			0/2.1
011-033	11-8	—			NR			0/2.1

* All measurements to the nearest 0.01 foot Air BK = ____ ppm BK = background; BZ= breathing zone; and, BH = borehole of well.

NR- Heron would not respond.

Tetra Tech NUS, Inc.

GROUNDWATER LEVEL MEASUREMENT SHEET

Project Name: Site 59 Remedial Investigation
Project No.: N8925 SW0 050 130
Location: Cecil Field
Personnel: Dave Siefken, Shna Ballard
Weather Conditions: Mostly sunny, Lo 52, Hi 76
Measuring Device: Testwell IP(serial # 5827)
Tidally Influenced: Yes ___ No X
Remarks: Heron #11598

Well or Piezometer Number (CEF-059-)	Date	Time	Elevation of Reference Point (feet)*	Total Well Depth (feet)*	Water Level Indicator Reading (feet)*	Thickness of Free Product (feet)*	Groundwater Elevation (feet)*	Comments Air BZ/BH (ppm)
011-050	11-8				NR			0 / 1.8
011-083	11/8	1120			5.45			0/2.2
013-032	11/8/04	1056			NR			0 / 1.2
013-050	11/8/04	1059			NR			0 / 0.8
013-083	11/8/04	1049		83'6"	6.01			0/1.5
014-053	11/8/04	1037		53'	NR			0/3.2
014-083	11/8/04	1035		83'	5.72			0/2.9
014-120	11/8/04	1039			6.30			0/0.7
015-028	11/8/04	1019			NR			0/5.2
016-053	11/8/04	1031			NR			0/0.8
016-083	11/8/04	1033		83'	6.34			0/0.6
016-119	11/8/04	1029			6.57			0/0.2
NG-02I	11/8/04	1100		38'	5.91			0/0.9
NG-12I	11/8/04	1110			5.65			0/3.9
NG-12D	11/8/04	1108			5.70			0 / 1.1

* All measurements to the nearest 0.01 foot **Air BK =** ppm BK = background; BZ= breathing zone; and, BH = borehole of well.

Tetra Tech NUS, Inc.

GROUNDWATER LEVEL MEASUREMENT SHEET

Project Name: Site 59 Remedial Investigation
Location: Cecil Field
Weather Conditions: Mostly sunny, Lo 52, Hi 76
Tidally Influenced: Yes ___ No X

Project No.: N8925 SW0 050 130 C. Gleaton
Personnel: G. NELSON, D. SIEFKEN, S. BALLARD
Measuring Device: ~~Toetwell IP(serial #~~
Remarks: Solinst Water Levels 1530 & 3813

	Well or Piezometer Number (CEF-059-)	Date	Time	Elevation of Reference Point (feet)*	Total Well Depth (feet)*	Water Level Indicator Reading (feet)*	Thickness of Free Product (feet)*	Groundwater Elevation (feet)*	Comments Air BZ/BH (ppm)
	001-028	11/10/09	1534			6.12			
M	001-050	11/10/09	1530			6.52			
	001-083	11/10/09	1531			7.32			
	001-121	11/10/09	1533			7.80			
M	002-028	11/10/09	1536			7.15			
M	002-053	11/10/09	1537			6.97			
	002-120	11/10/09	1538			8.33			
M	003-035	11/10/09	1624			6.87			
M	003-053	11/10/09	1625			5.99			
M	003-073	11/10/09	1624			6.37			
	003-121	11/10/09	1623			7.15			
M	004-053	11/10/09	1612			6.50			
M	004-073	11/10/09	1610			6.55			
	004-112	11/10/09	1611			6.52			
M	005-033	11/10/09	1620			7.22			
M	005-050	11/10/09	1618			7.50			
M	005-070	11/10/09	1619			7.42			
	006-104	11/10/09	1611			5.82			0.0
M	008-028	11/10/09	1539			7.37			
	009-053	11/10/09	1635			6.17			
	009-083	11/10/09	1633			6.46			
	009-113	11/10/09	1630			6.60			
M	010-050	11/10/09	1614			6.48			
	010-083	11/10/09	1615			6.67			
M	011-033	11/10/09	1620			5.76			

* All measurements to the nearest 0.01 foot Air BK = ___ ppm BK = background; BZ = breathing zone; and, BH = borehole of well.

Monitor well 3/4" I.D. OTHERS ARE 2" wells.

Tetra Tech NUS, Inc.

GROUNDWATER LEVEL MEASUREMENT SHEET

Project Name: Site 53 Remedial Investigation
Project No.: N8926 SWO 050 130 C. Gleaton
Location: Cecil Field
Personnel: G. NELSON, D. SIEFKEN, S. BALLARD
Weather Conditions: Mostly sunny, Lo 52, Hi 76
Measuring Device: ~~Testwell II (serial #)~~
Tidally Influenced: Yes ___ No X
Remarks: SOUNDST WATER LEVELS 1530 & 3813

	Well or Piezometer Number (CEF-059-)	Date	Time	Elevation of Reference Point (feet)*	Total Well Depth (feet)*	Water Level Indicator Reading (feet)*	Thickness of Free Product (feet)*	Groundwater Elevation (feet)*	Comments Air BZ/BH (ppm)
M	011-050	11/10/04	1616			5.58			
	011-083	11/10/04	1618			5.53			
M	013-032	11/10/04	1607		~~6.14~~	6.14			
M	013-050	11/10/04	1604		~~6.00~~	6.00			
	013-083	11/10/04	1602		~~6.12~~	6.12			
M	014-053	11/10/04	1546			6.54			
	014-083	11/10/04	1545			6.78			
	014-120	11/10/04	1547			7.40			
M	015-028	11/10/04	1550			5.60			
M	016-053	11/10/04	1542			6.86			
	016-083	11/10/04	1543			7.44			
	016-119	11/10/04	1541			7.67			
	NG-02I	11/10/04	1609		~~5.95~~	5.95			
	NG-12I	11/10/04	1614			5.66			
	NG-12D	11/10/04	1612			5.76			

* All measurements to the nearest 0.01 foot Air BK = ___ ppm BK = background; BZ= breathing zone; and, BH = borehole of well.

Tetra Tech NUS, Inc.

GROUNDWATER LEVEL MEASUREMENT SHEET

Project Name: Site 59 Remedial Investigation
Project No.: N8925 SW0 050 130
Location: Cecil Field
Personnel: Pete Leverette, Alan Pate
Weather Conditions: Mostly sunny, Hi 71, Lo 53
Measuring Device: TESTWELL INTERFACE PROBE #5385
Tidally Influenced: Yes ___ No X
Remarks:

Well or Piezometer Number (CEF-059-)	Date	Time	Elevation of Reference Point (feet)*	Total Well Depth (feet)*	Water Level Indicator Reading (feet)*	Thickness of Free Product (feet)*	Groundwater Elevation (feet)*	Comments Air BZ/BH (ppm)
001-028	2/9/05	1419			6.30	0.0		0/0
001-050		1416			6.68			0/0
001-083		1418			6.91			0/0
001-121		1417			7.44			0/0
002-028		1412			6.93			0/0
002-053		1411			7.06			0/0
002-120		1410			7.98			0/0
003-035		1354		1354	5.70			0/0
003-053		1353		1353	5.81			0/0
003-073		1355		1355	6.12			0/0
003-121		1352		1352	6.81*			0/0
004-053		1440			5.99			0/0
004-073		1442			6.21			0/0
004-112		1441			6.16			0/0
005-033		1454		31.75	8.75			0/0
005-050		1455		52.90	7.01			0/0
005-070		1453		73.05	7.00			0/0
006-104		1504			6.21			0/0
008-028		1414			6.94			0/0
009-053		1359			6.59			0/0
009-083		1400			7.01			0/0
009-113		1401			7.13			0/0
010-050		1445			5.91			0/0
010-083		1446			6.19			0/0
011-033		1459			6.09			0/0

* All measurements to the nearest 0.01 foot **Air BK =** 0 **ppm** BK = background; BZ= breathing zone; and, BH = borehole of well.

* TESTED AGINST ANOTHER PROBE. SOLINST MINI PROBE READ 6.82 DUE TO A CRIMPED LINE

Tetra Tech NUS, Inc.

GROUNDWATER LEVEL MEASUREMENT SHEET

Project Name: Site 59 Remedial Investigation
Project No.: N8925 SW0 050 130
Location: Cecil Field
Personnel: Pete Leverette, Alan Pate
Weather Conditions: Mostly sunny, Hi 71, Lo 53
Measuring Device: Testwell # 5385
Tidally Influenced: Yes ___ No ___
Remarks:

Well or Piezometer Number (CEF-059-)	Date	Time	Elevation of Reference Point (feet)*	Total Well Depth (feet)*	Water Level Indicator Reading (feet)*	Thickness of Free Product (feet)*	Groundwater Elevation (feet)*	Comments Air BZ/BH (ppm)
011-050	2/9/05	1501			[redacted]	0.0		0/0
011-083		1500			[redacted]			0/0
013-032		1432			[redacted]			0/0
013-050		1434			[redacted]			0/0
013-083		1433			[redacted]			0/0
014-053		1426			[redacted]			0/0
014-083		1427			[redacted]			0/0
014-120		1425			[redacted]			0/0
015-028		1407			[redacted]			0/0
016-053		1422			[redacted]			0/0
016-083		1423			[redacted]			0/0
016-119		1421			[redacted]			0/0
NG-02I	2/9/05	1436			[redacted]	0.0		0/0
NG-12I		1505			[redacted]			0/0
NG-12D		1506			[redacted]			0/0

NEED NE WELL CA

* All measurements to the nearest 0.01 foot

Air BK = 0 **ppm**

BK = background; BZ= breathing zone; and, BH = borehole of well.

Tetra Tech NUS, Inc.

GROUNDWATER LEVEL MEASUREMENT SHEET

Project Name: NAS Cecil Field, Site 59 **Project No.:** N8925
Location: NAS Cecil Field **Personnel:** PL/TC
Weather Conditions: 65°F Partly Cloudy **Measuring Device:** Heron Dipper T
Tidally Influenced: Yes ___ No X **Remarks:**

Well or Piezometer Number CEF-59-	Date	Time	Elevation of Reference Point (feet)*	Total Well Depth (feet)*	Water Level Indicator Reading (feet)*	Thickness of Free Product (feet)*	Groundwater Elevation (feet)*	PID (ppm) BK/BH
001-028	1/5/06			28.5	3.93			0.0/0.0
001-053				53.5	5.48			0.0/2.7
001-083				84	4.95			0.0/0.6
001-121				125	3.57			0.0/0.0
002-028				28.5	4.13			0.0/0.3
002-053				53	4.40			0.0/8.5
002-120				121	5.99			0.0/0.0
003-035				36	3.04			0.0/5.3
003-053				53	3.37			0.0/4.9
003-073				73	3.91			0.0/4.8
003-121				123	(PW) ~~5.2~~ 4.71			0.0/5.2
004-033				33	2.92			0.0/0.0
004-053				53	3.76			0.0/1.5
004-073				73	4.06			0.0/6.9
004-112				120	4.09			0.0/0.0
004-135				138	5.70			0.0/0.0
005-033				33.5	4.77			0.0/0.0
005-053				53.5	5.01			0.0/0.0
005-073				73.5	5.00			0.0/0.0
NG-12I				38	4.45			0.0/0.0
NG-12D				57	4.49			0.0/0.0
006-078				78.8	4.29			0.0/0.0
006-104				104.5	4.40			0.0/0.0
007-053				53	4.66			0.0/0.0

ppm=parts per million; BK=background; and BH=borehole of the well.

* All measurements to the nearest 0.01 foot

Tetra Tech NUS, Inc.

GROUNDWATER LEVEL MEASUREMENT SHEET

Project Name: NAS Cecil Field, Site 59 **Project No.:** N8925
Location: NAS Cecil Field **Personnel:** PL/TC
Weather Conditions: **Measuring Device:**
Tidally Influenced: Yes ___ No X **Remarks:**

Well or Piezometer Number CEF-59-	Date	Time	Elevation of Reference Point (feet)*	Total Well Depth (feet)*	Water Level Indicator Reading (feet)*	Thickness of Free Product (feet)*	Groundwater Elevation (feet)*	PID (ppm) BK/BH
007-078				78.3	4.73			0.0/0.0
008-028				28.5	4.17			0.0/1.8
009-053				54	4.30			0.0/2.0
009-083				84	4.95			0.0/3.9
009-113				118	5.11			0.0/3.5
010-053				53.5	3.94			0.0/0.0
010-083				84	4.22			0.0/0.0
011-033				33.5	4.48			0.0/0.2
011-053				53.5	4.31			0.0/0.0
011-083				84	4.18			0.0/0.0
012-053				53	4.36			0.0/0.0
013-032				33.5	4.83			0.0/0.0
013-053				53.5	4.70			0.0/0.0
013-083				84	4.72			0.0/0.0
014-053				53	4.09			0.0/2.8
014-083				84	4.42			0.0/1.4
014-120				130	4.98			0.0/0.0
015-028				28.5	3.07			0.0/5.8
016-053				53	4.37			0.0/2.6
016-083				84	5.06			0.0/0.0
016-0119				119	5.35			0.0/0.0
017-028				28.5	4.13			0.0/3.8
017-053				53.5	4.26			0.0/9.2
018-033				33	4.88			0.0/0.0

ppm=parts per million; BK=background; and BH=borehole of the well.

* All measurements to the nearest 0.01 foot

Tetra Tech NUS, Inc.

GROUNDWATER LEVEL MEASUREMENT SHEET

Project Name: NAS Cecil Field, Site 59 **Project No.:** N8925
Location: NAS Cecil Field **Personnel:** PL/TC
Weather Conditions: **Measuring Device:**
Tidally Influenced: Yes ___ No X **Remarks:**

Well or Piezometer Number CEF-59-	Date	Time	Elevation of Reference Point (feet)*	Total Well Depth (feet)*	Water Level Indicator Reading (feet)*	Thickness of Free Product (feet)*	Groundwater Elevation (feet)*	PID (ppm) BK/BH
018-053				53	4.95			0.0/0.0
018-078				78.5	4.33			0.0/0.0
018-105				105	4.42			0.0/0.0
019-032				32.1	4.90			0.0/0.0
019-051				51.4	4.39			0.0/0.0
019-078				78.5	4.19			0.0/0.0
019-106				106.3	3.98			0.0/0.0
020-033				33	6.34			0.0/0.0
020-053				53	5.88			0.0/0.0
020-078				78.5	~~4.19~~ 6.11			0.0/0.0
020-099				105	5.89			0.0/0.0
NG-02I				39	4.65			0.0/0.0

ppm=parts per million; BK=background; and BH=borehole of the well.

* All measurements to the nearest 0.01 foot

Tetra Tech NUS, Inc.

GROUNDWATER LEVEL MEASUREMENT SHEET

Project Name: NAS Cecil Field, Site 59/BLDG 815
Project No.: N0039
Location: NAS Cecil Field
Personnel: AP/TC
Weather Conditions: 65°F CLOUDY
Measuring Device:
Tidally Influenced: Yes ___ No X
Remarks:

Well or Piezometer Number CEF-	Date	Time	Elevation of Reference Point (feet)*	Total Well Depth (feet)*	Water Level Indicator Reading (feet)*	Thickness of Free Product (feet)*	Groundwater Elevation (feet)*	PID (ppm) BK/BH
815-1S	1/13/2006	0930		13.1	4.52			0.0/0.0
815-2S	1/13/2006	0918		14	4.23			0.0/0.0
815-3S	1/13/2006	—		12.9	COVERED IN ASPHALT			—
815-4S	1/13/2006	—		14	COVERED IN CONCRETE			—
NG-02S	1/13/2006	0923		14	4.96			0.0/0.0
NG-12S	1/13/2006	0910		13.4	4.74			0.0/0.0
NG-13S	1/13/2006	0914		14	4.73			0.0/0.0
NG-14S	1/13/2006	—		14	COVERED IN CONCRETE			—
NG-26S	1/13/2006	0926		14.25	4.74			0.0/0.0

ppm=parts per million; BK=background; and BH=borehole of the well.

* All measurements to the nearest 0.01 foot

C.3 AQUIFER TEST DATA AND CALCULATIONS

In-Situ Inc. MiniTroll Pro

Report generated: 12/4/2004 8:18:42
Report from file: ...\SN06711 2004-12-03 122349 DR-009-083.bin
Win-Situ Version 4.5

Serial number: 6711
Firmware Version 3.09
Unit name:

Test name: DR-009-083

Test defined on: 12/3/2004 12:00:06
Test started on: 12/3/2004 12:23:49
Test stopped on: 12/3/2004 12:32:33
Test extracted on: N/A N/A

Data gathered using Logarithmic testing
Maximum time between data points: 1200.0 Seconds.
Number of data samples: 98

TOTAL DATA SAMPLES 98

Channel number [2]
Measurement type: Pressure
Channel name:
Sensor Range: 100 PSIG.
Specific gravity: 1

Date	Time	ET (sec)	Chan[2] Pressure Feet H2O
12/3/2004	12:23:49	0	75.407
12/3/2004	12:23:50	0.3	75.462
12/3/2004	12:23:50	0.6	75.482
12/3/2004	12:23:50	0.9	75.492
12/3/2004	12:23:51	1.2	75.497
12/3/2004	12:23:51	1.5	75.502
12/3/2004	12:23:51	1.8	75.502
12/3/2004	12:23:52	2.1	75.506
12/3/2004	12:23:52	2.4	75.506
12/3/2004	12:23:52	2.7	75.511
12/3/2004	12:23:52	3	75.511
12/3/2004	12:23:53	3.3	75.511
12/3/2004	12:23:53	3.6	75.511
12/3/2004	12:23:53	3.9	75.511
12/3/2004	12:23:54	4.2	75.511
12/3/2004	12:23:54	4.5	75.516
12/3/2004	12:23:54	4.8	75.516

12/3/2004	12:23:55	5.1	75.516
12/3/2004	12:23:55	5.4	75.516
12/3/2004	12:23:55	5.7	75.516
12/3/2004	12:23:55	6	75.51
12/3/2004	12:23:56	6.4	75.516
12/3/2004	12:23:56	6.7	75.516
12/3/2004	12:23:57	7.1	75.516
12/3/2004	12:23:57	7.5	75.516
12/3/2004	12:23:57	8	75.516
12/3/2004	12:23:58	8.4	75.516
12/3/2004	12:23:58	8.9	75.516
12/3/2004	12:23:59	9.5	75.516
12/3/2004	12:23:59	10	75.48
12/3/2004	12:24:00	10.6	75.471
12/3/2004	12:24:01	11.3	75.466
12/3/2004	12:24:01	11.9	75.461
12/3/2004	12:24:02	12.6	75.456
12/3/2004	12:24:03	13.4	75.45
12/3/2004	12:24:04	14.2	75.445
12/3/2004	12:24:04	15	75.445
12/3/2004	12:24:05	15.9	75.44
12/3/2004	12:24:06	16.8	75.44
12/3/2004	12:24:07	17.8	75.435
12/3/2004	12:24:08	18.9	75.435
12/3/2004	12:24:09	20	75.425
12/3/2004	12:24:11	21.2	75.264
12/3/2004	12:24:12	22.4	75.042
12/3/2004	12:24:13	23.8	74.872
12/3/2004	12:24:15	25.2	74.732
12/3/2004	12:24:16	26.7	74.603
12/3/2004	12:24:18	28.2	74.494
12/3/2004	12:24:19	29.8	74.401
12/3/2004	12:24:21	31.5	74.325
12/3/2004	12:24:23	33.3	74.246
12/3/2004	12:24:25	35.2	74.18
12/3/2004	12:24:27	37.3	74.129
12/3/2004	12:24:29	39.5	74.082
12/3/2004	12:24:31	41.8	74.041
12/3/2004	12:24:34	44.3	74.01
12/3/2004	12:24:36	46.9	73.984
12/3/2004	12:24:39	49.7	73.963
12/3/2004	12:24:42	52.6	73.953
12/3/2004	12:24:45	55.7	73.937
12/3/2004	12:24:48	59	73.927
12/3/2004	12:24:52	62.5	73.917
12/3/2004	12:24:56	66.2	73.911
12/3/2004	12:25:00	70.1	73.906
12/3/2004	12:25:04	74.3	73.901
12/3/2004	12:25:08	78.7	73.901
12/3/2004	12:25:13	83.4	73.897
12/3/2004	12:25:18	88.4	73.897
12/3/2004	12:25:23	93.7	73.887

12/3/2004	12:25:29	99.3	73.881
12/3/2004	12:25:35	105.2	73.871
12/3/2004	12:25:41	111.5	73.871
12/3/2004	12:25:48	118.1	73.862
12/3/2004	12:25:55	125.1	73.851
12/3/2004	12:26:02	132.6	73.846
12/3/2004	12:26:10	140.5	73.846
12/3/2004	12:26:18	148.9	73.841
12/3/2004	12:26:27	157.8	73.837
12/3/2004	12:26:37	167.2	73.832
12/3/2004	12:26:47	177.2	73.827
12/3/2004	12:26:57	187.8	73.827
12/3/2004	12:27:08	199	73.827
12/3/2004	12:27:20	210.9	73.821
12/3/2004	12:27:33	223.5	73.816
12/3/2004	12:27:46	236.8	73.817
12/3/2004	12:28:00	250.9	73.812
12/3/2004	12:28:15	265.8	73.812
12/3/2004	12:28:31	281.6	73.807
12/3/2004	12:28:48	298.4	73.802
12/3/2004	12:29:06	316.2	73.797
12/3/2004	12:29:24	335	73.797
12/3/2004	12:29:44	354.9	73.797
12/3/2004	12:30:05	376	73.803
12/3/2004	12:30:28	398.4	73.808
12/3/2004	12:30:52	422.1	73.808
12/3/2004	12:31:17	447.2	73.803
12/3/2004	12:31:43	473.8	73.803
12/3/2004	12:32:11	502	73.798

In-Situ Inc. MiniTroll Pro

Report generated: 12/4/2004 8:17:20
Report from file: ...\SN06711 2004-12-03 111608 DR-014-120.bin
Win-Situ Version 4.5

Serial number: 6711
Firmware Version 3.09
Unit name:

Test name: DR-014-120

Test defined on: 12/3/2004 9:36:33
Test started on: 12/3/2004 11:16:08
Test stopped on: 12/3/2004 11:59:06
Test extracted on: N/A N/A

Data gathered using Logarithmic testing
Maximum time between data points: 1200.0 Seconds.
Number of data samples: 126

TOTAL DATA SAMPLES 126

Channel number [2]
Measurement type: Pressure
Channel name:
Sensor Range: 100 PSIG.
Specific gravity: 1

Date	Time	ET (sec)	Chan[2] Pressure Feet H2O
12/3/2004	11:16:08	0	109.461
12/3/2004	11:16:08	0.3	109.537
12/3/2004	11:16:09	0.6	109.562
12/3/2004	11:16:09	0.9	109.577
12/3/2004	11:16:09	1.2	109.587
12/3/2004	11:16:10	1.5	109.592
12/3/2004	11:16:10	1.8	109.592
12/3/2004	11:16:10	2.1	109.597
12/3/2004	11:16:11	2.4	109.602
12/3/2004	11:16:11	2.7	109.602
12/3/2004	11:16:11	3	109.601
12/3/2004	11:16:11	3.3	109.606
12/3/2004	11:16:12	3.6	109.606
12/3/2004	11:16:12	3.9	109.606
12/3/2004	11:16:12	4.2	109.606
12/3/2004	11:16:13	4.5	109.606
12/3/2004	11:16:13	4.8	109.606

12/3/2004	11:16:13	5.1	109.611
12/3/2004	11:16:14	5.4	109.616
12/3/2004	11:16:14	5.7	109.611
12/3/2004	11:16:14	6	109.616
12/3/2004	11:16:14	6.4	109.611
12/3/2004	11:16:15	6.7	109.611
12/3/2004	11:16:15	7.1	109.611
12/3/2004	11:16:16	7.5	109.616
12/3/2004	11:16:16	8	109.611
12/3/2004	11:16:17	8.4	109.611
12/3/2004	11:16:17	8.9	109.611
12/3/2004	11:16:18	9.5	109.616
12/3/2004	11:16:18	10	109.566
12/3/2004	11:16:19	10.6	109.551
12/3/2004	11:16:19	11.3	109.541
12/3/2004	11:16:20	11.9	109.536
12/3/2004	11:16:21	12.6	109.53
12/3/2004	11:16:21	13.4	109.525
12/3/2004	11:16:22	14.2	109.525
12/3/2004	11:16:23	15	109.52
12/3/2004	11:16:24	15.9	109.515
12/3/2004	11:16:25	16.8	109.515
12/3/2004	11:16:26	17.8	109.51
12/3/2004	11:16:27	18.9	109.51
12/3/2004	11:16:28	20	109.505
12/3/2004	11:16:29	21.2	109.499
12/3/2004	11:16:31	22.4	109.499
12/3/2004	11:16:32	23.8	109.499
12/3/2004	11:16:33	25.2	109.499
12/3/2004	11:16:35	26.7	109.494
12/3/2004	11:16:36	28.2	109.494
12/3/2004	11:16:38	29.8	109.494
12/3/2004	11:16:40	31.5	109.49
12/3/2004	11:16:41	33.3	109.494
12/3/2004	11:16:43	35.2	109.495
12/3/2004	11:16:45	37.3	109.49
12/3/2004	11:16:48	39.5	109.485
12/3/2004	11:16:50	41.8	109.485
12/3/2004	11:16:52	44.3	109.159
12/3/2004	11:16:55	46.9	108.605
12/3/2004	11:16:58	49.7	108.088
12/3/2004	11:17:01	52.6	107.591
12/3/2004	11:17:04	55.7	107.079
12/3/2004	11:17:07	59	106.557
12/3/2004	11:17:11	62.5	106.045
12/3/2004	11:17:14	66.2	105.533
12/3/2004	11:17:18	70.1	105.02
12/3/2004	11:17:22	74.3	104.508
12/3/2004	11:17:27	78.7	104.023
12/3/2004	11:17:31	83.4	103.511
12/3/2004	11:17:36	88.4	102.999
12/3/2004	11:17:42	93.7	102.482

12/3/2004	11:17:47	99.3	101.959
12/3/2004	11:17:53	105.2	101.432
12/3/2004	11:18:00	111.5	100.894
12/3/2004	11:18:06	118.1	100.361
12/3/2004	11:18:13	125.1	99.621
12/3/2004	11:18:21	132.6	100.429
12/3/2004	11:18:29	140.5	101.06
12/3/2004	11:18:37	148.9	101.598
12/3/2004	11:18:46	157.8	102.095
12/3/2004	11:18:55	167.2	103.026
12/3/2004	11:19:05	177.2	103.393
12/3/2004	11:19:16	187.8	103.74
12/3/2004	11:19:27	199	104.071
12/3/2004	11:19:39	210.9	104.391
12/3/2004	11:19:52	223.5	104.691
12/3/2004	11:20:05	236.8	104.982
12/3/2004	11:20:19	250.9	105.261
12/3/2004	11:20:34	265.8	105.525
12/3/2004	11:20:50	281.6	105.779
12/3/2004	11:21:06	298.4	106.012
12/3/2004	11:21:24	316.2	106.239
12/3/2004	11:21:43	335	106.451
12/3/2004	11:22:03	354.9	106.658
12/3/2004	11:22:24	376	106.844
12/3/2004	11:22:46	398.4	107.031
12/3/2004	11:23:10	422.1	107.196
12/3/2004	11:23:35	447.2	107.357
12/3/2004	11:24:02	473.8	107.507
12/3/2004	11:24:30	502	107.641
12/3/2004	11:25:00	531.9	107.781
12/3/2004	11:25:32	563.5	107.9
12/3/2004	11:26:05	597	108.014
12/3/2004	11:26:41	632.5	108.122
12/3/2004	11:27:18	670.1	108.226
12/3/2004	11:27:58	709.9	108.319
12/3/2004	11:28:40	752.1	108.407
12/3/2004	11:29:25	796.8	108.49
12/3/2004	11:30:12	844.2	108.567
12/3/2004	11:31:02	894.4	108.645
12/3/2004	11:31:56	947.5	108.702
12/3/2004	11:32:52	1003.8	108.774
12/3/2004	11:33:51	1063.4	108.826
12/3/2004	11:34:55	1126.6	108.888
12/3/2004	11:36:02	1193.5	108.935
12/3/2004	11:37:12	1264.4	108.981
12/3/2004	11:38:28	1339.5	109.027
12/3/2004	11:39:47	1419	109.064
12/3/2004	11:41:11	1503.3	109.105
12/3/2004	11:42:41	1592.6	109.136
12/3/2004	11:44:15	1687.1	109.173
12/3/2004	11:45:55	1787.2	109.204
12/3/2004	11:47:41	1893.3	109.235

12/3/2004	11:49:34	2005.7	109.26
12/3/2004	11:51:33	2124.7	109.281
12/3/2004	11:53:39	2250.8	109.301
12/3/2004	11:55:52	2384.4	109.327
12/3/2004	11:58:14	2525.9	109.342

In-Situ Inc. MiniTroll Pro

Report generated: 12/4/2004 8:22:33
Report from file: ...\SN11079 2004-12-02 133439 DR-001-028.bin
Win-Situ Version 4.5

Serial number: 11079
Firmware Version 3.09
Unit name:

Test name: DR-001-028

Test defined on: 12/2/2004 13:32:33
Test started on: 12/2/2004 13:34:39
Test stopped on: 12/2/2004 13:41:35
Test extracted on: N/A N/A

Data gathered using Logarithmic testing
Maximum time between data points: 1200.0 Seconds.
Number of data samples: 94

TOTAL DATA SAMPLES 94

Channel number [2]
Measurement type: Pressure
Channel name:
Sensor Range: 15 PSIG.
Specific gravity: 1

Date	Time	ET (sec)	Chan[2] Pressure Feet H2O
12/2/2004	13:34:39	0	21.327
12/2/2004	13:34:39	0.3	21.335
12/2/2004	13:34:40	0.6	21.34
12/2/2004	13:34:40	0.9	21.343
12/2/2004	13:34:40	1.2	21.344
12/2/2004	13:34:41	1.5	21.342
12/2/2004	13:34:41	1.8	21.342
12/2/2004	13:34:41	2.1	21.342
12/2/2004	13:34:41	2.4	21.345
12/2/2004	13:34:42	2.7	21.346
12/2/2004	13:34:42	3	21.346
12/2/2004	13:34:42	3.3	21.346
12/2/2004	13:34:43	3.6	21.344
12/2/2004	13:34:43	3.9	21.345
12/2/2004	13:34:43	4.2	21.345
12/2/2004	13:34:44	4.5	21.345
12/2/2004	13:34:44	4.8	21.345

12/2/2004	13:34:44	5.1	21.345
12/2/2004	13:34:44	5.4	21.345
12/2/2004	13:34:45	5.7	21.346
12/2/2004	13:34:45	6	21.346
12/2/2004	13:34:45	6.4	21.345
12/2/2004	13:34:46	6.7	21.346
12/2/2004	13:34:46	7.1	21.347
12/2/2004	13:34:47	7.5	21.347
12/2/2004	13:34:47	8	21.347
12/2/2004	13:34:47	8.4	21.345
12/2/2004	13:34:48	8.9	21.346
12/2/2004	13:34:48	9.5	21.346
12/2/2004	13:34:49	10	21.341
12/2/2004	13:34:50	10.6	21.339
12/2/2004	13:34:50	11.3	21.339
12/2/2004	13:34:51	11.9	21.338
12/2/2004	13:34:52	12.6	21.337
12/2/2004	13:34:52	13.4	21.334
12/2/2004	13:34:53	14.2	21.333
12/2/2004	13:34:54	15	21.333
12/2/2004	13:34:55	15.9	21.335
12/2/2004	13:34:56	16.8	21.334
12/2/2004	13:34:57	17.8	21.334
12/2/2004	13:34:58	18.9	21.332
12/2/2004	13:34:59	20	21.332
12/2/2004	13:35:00	21.2	21.333
12/2/2004	13:35:01	22.4	21.33
12/2/2004	13:35:03	23.8	21.047
12/2/2004	13:35:04	25.2	21.021
12/2/2004	13:35:06	26.7	20.747
12/2/2004	13:35:07	28.2	20.547
12/2/2004	13:35:09	29.8	20.37
12/2/2004	13:35:11	31.5	20.215
12/2/2004	13:35:12	33.3	20.073
12/2/2004	13:35:14	35.2	19.958
12/2/2004	13:35:16	37.3	19.857
12/2/2004	13:35:19	39.5	19.769
12/2/2004	13:35:21	41.8	19.69
12/2/2004	13:35:23	44.3	19.626
12/2/2004	13:35:26	46.9	19.579
12/2/2004	13:35:29	49.7	19.533
12/2/2004	13:35:32	52.6	19.495
12/2/2004	13:35:35	55.7	19.462
12/2/2004	13:35:38	59	19.437
12/2/2004	13:35:42	62.5	19.415
12/2/2004	13:35:45	66.2	19.403
12/2/2004	13:35:49	70.1	19.383
12/2/2004	13:35:53	74.3	19.379
12/2/2004	13:35:58	78.7	19.367
12/2/2004	13:36:02	83.4	19.363
12/2/2004	13:36:07	88.4	19.352
12/2/2004	13:36:13	93.7	19.347

12/2/2004	13:36:18	99.3	19.342
12/2/2004	13:36:24	105.2	19.345
12/2/2004	13:36:31	111.5	19.338
12/2/2004	13:36:37	118.1	19.331
12/2/2004	13:36:44	125.1	19.33
12/2/2004	13:36:52	132.6	19.33
12/2/2004	13:37:00	140.5	19.364
12/2/2004	13:37:08	148.9	19.383
12/2/2004	13:37:17	157.8	19.389
12/2/2004	13:37:26	167.2	19.375
12/2/2004	13:37:36	177.2	19.364
12/2/2004	13:37:47	187.8	19.368
12/2/2004	13:37:58	199	19.381
12/2/2004	13:38:10	210.9	19.386
12/2/2004	13:38:23	223.5	19.382
12/2/2004	13:38:36	236.8	19.384
12/2/2004	13:38:50	250.9	19.368
12/2/2004	13:39:05	265.8	19.362
12/2/2004	13:39:21	281.6	19.362
12/2/2004	13:39:37	298.4	19.372
12/2/2004	13:39:55	316.2	19.383
12/2/2004	13:40:14	335	19.378
12/2/2004	13:40:34	354.9	19.372
12/2/2004	13:40:55	376	19.366
12/2/2004	13:41:17	398.4	19.337

In-Situ Inc. MiniTroll Pro

Report generated: 12/4/2004 8:10:47
Report from file: ...\SN06711 2004-12-02 141624 DR-001-083.bin
Win-Situ Version 4.5

Serial number: 6711
Firmware Version 3.09
Unit name:

Test name: DR-001-083

Test defined on: 12/2/2004 14:02:38
Test started on: 12/2/2004 14:16:24
Test stopped on: 12/2/2004 14:28:45
Test extracted on: N/A N/A

Data gathered using Logarithmic testing
Maximum time between data points: 1200.0 Seconds.
Number of data samples: 104

TOTAL DATA SAMPLES 104

Channel number [2]
Measurement type: Pressure
Channel name:
Sensor Range: 100 PSIG.
Specific gravity: 1

Date	Time	ET (sec)	Chan[2] Pressure Feet H2O
12/2/2004	14:16:24	0	73.496
12/2/2004	14:16:24	0.3	73.567
12/2/2004	14:16:24	0.6	73.591
12/2/2004	14:16:25	0.9	73.602
12/2/2004	14:16:25	1.2	73.607
12/2/2004	14:16:25	1.5	73.616
12/2/2004	14:16:26	1.8	73.616
12/2/2004	14:16:26	2.1	73.621
12/2/2004	14:16:26	2.4	73.627
12/2/2004	14:16:26	2.7	73.627
12/2/2004	14:16:27	3	73.627
12/2/2004	14:16:27	3.3	73.627
12/2/2004	14:16:27	3.6	73.627
12/2/2004	14:16:28	3.9	73.627
12/2/2004	14:16:28	4.2	73.632
12/2/2004	14:16:28	4.5	73.632
12/2/2004	14:16:29	4.8	73.631

12/2/2004	14:16:29	5.1	73.631
12/2/2004	14:16:29	5.4	73.631
12/2/2004	14:16:29	5.7	73.631
12/2/2004	14:16:30	6	73.631
12/2/2004	14:16:30	6.4	73.631
12/2/2004	14:16:31	6.7	73.631
12/2/2004	14:16:31	7.1	73.631
12/2/2004	14:16:31	7.5	73.631
12/2/2004	14:16:32	8	73.631
12/2/2004	14:16:32	8.4	73.636
12/2/2004	14:16:33	8.9	73.631
12/2/2004	14:16:33	9.5	73.636
12/2/2004	14:16:34	10	73.585
12/2/2004	14:16:34	10.6	73.58
12/2/2004	14:16:35	11.3	73.57
12/2/2004	14:16:36	11.9	73.571
12/2/2004	14:16:36	12.6	73.566
12/2/2004	14:16:37	13.4	73.566
12/2/2004	14:16:38	14.2	73.555
12/2/2004	14:16:39	15	73.55
12/2/2004	14:16:40	15.9	73.545
12/2/2004	14:16:41	16.8	73.545
12/2/2004	14:16:42	17.8	73.54
12/2/2004	14:16:43	18.9	73.54
12/2/2004	14:16:44	20	73.54
12/2/2004	14:16:45	21.2	73.535
12/2/2004	14:16:46	22.4	73.535
12/2/2004	14:16:48	23.8	73.529
12/2/2004	14:16:49	25.2	73.529
12/2/2004	14:16:50	26.7	73.529
12/2/2004	14:16:52	28.2	73.529
12/2/2004	14:16:54	29.8	73.524
12/2/2004	14:16:55	31.5	73.524
12/2/2004	14:16:57	33.3	73.519
12/2/2004	14:16:59	35.2	73.245
12/2/2004	14:17:01	37.3	72.94
12/2/2004	14:17:03	39.5	72.728
12/2/2004	14:17:06	41.8	72.564
12/2/2004	14:17:08	44.3	72.435
12/2/2004	14:17:11	46.9	72.347
12/2/2004	14:17:13	49.7	72.275
12/2/2004	14:17:16	52.6	72.228
12/2/2004	14:17:19	55.7	72.187
12/2/2004	14:17:23	59	72.161
12/2/2004	14:17:26	62.5	72.14
12/2/2004	14:17:30	66.2	72.125
12/2/2004	14:17:34	70.1	72.109
12/2/2004	14:17:38	74.3	72.1
12/2/2004	14:17:42	78.7	72.104
12/2/2004	14:17:47	83.4	72.115
12/2/2004	14:17:52	88.4	72.11
12/2/2004	14:17:57	93.7	72.105

12/2/2004	14:18:03	99.3	72.095
12/2/2004	14:18:09	105.2	72.09
12/2/2004	14:18:15	111.5	72.084
12/2/2004	14:18:22	118.1	72.074
12/2/2004	14:18:29	125.1	72.069
12/2/2004	14:18:36	132.6	72.064
12/2/2004	14:18:44	140.5	72.054
12/2/2004	14:18:53	148.9	72.043
12/2/2004	14:19:02	157.8	72.034
12/2/2004	14:19:11	167.2	72.029
12/2/2004	14:19:21	177.2	72.023
12/2/2004	14:19:32	187.8	72.013
12/2/2004	14:19:43	199	72.013
12/2/2004	14:19:55	210.9	72.013
12/2/2004	14:20:07	223.5	72.008
12/2/2004	14:20:21	236.8	71.998
12/2/2004	14:20:35	250.9	72.003
12/2/2004	14:20:50	265.8	71.992
12/2/2004	14:21:05	281.6	71.992
12/2/2004	14:21:22	298.4	71.992
12/2/2004	14:21:40	316.2	71.987
12/2/2004	14:21:59	335	71.982
12/2/2004	14:22:19	354.9	71.977
12/2/2004	14:22:40	376	71.978
12/2/2004	14:23:02	398.4	71.978
12/2/2004	14:23:26	422.1	71.973
12/2/2004	14:23:51	447.2	71.972
12/2/2004	14:24:18	473.8	71.968
12/2/2004	14:24:46	502	71.972
12/2/2004	14:25:16	531.9	71.977
12/2/2004	14:25:47	563.5	71.972
12/2/2004	14:26:21	597	71.973
12/2/2004	14:26:56	632.5	71.967
12/2/2004	14:27:34	670.1	71.961
12/2/2004	14:28:14	709.9	71.951

In-Situ Inc. MiniTroll Pro

Report generated: 12/4/2004 8:20:21
Report from file: ...\SN07676 2004-12-03 125058 DR-009-053.bin
Win-Situ Version 4.5

Serial number: 7676
Firmware Version 3.09
Unit name:

Test name: DR-009-053

Test defined on: 12/3/2004 12:49:58
Test started on: 12/3/2004 12:50:58
Test stopped on: 12/3/2004 13:00:46
Test extracted on: N/A N/A

Data gathered using Logarithmic testing
Maximum time between data points: 1200.0 Seconds.
Number of data samples: 100

TOTAL DATA SAMPLES 100

Channel number [2]
Measurement type: Pressure
Channel name:
Sensor Range: 30 PSIG.
Specific gravity: 1

Date	Time	ET (sec)	Chan[2] Pressure Feet H2O
12/3/2004	12:50:58	0	44.386
12/3/2004	12:50:58	0.3	44.423
12/3/2004	12:50:58	0.6	44.438
12/3/2004	12:50:59	0.9	44.445
12/3/2004	12:50:59	1.2	44.449
12/3/2004	12:50:59	1.5	44.452
12/3/2004	12:51:00	1.8	44.454
12/3/2004	12:51:00	2.1	44.457
12/3/2004	12:51:00	2.4	44.457
12/3/2004	12:51:01	2.7	44.459
12/3/2004	12:51:01	3	44.459
12/3/2004	12:51:01	3.3	44.459
12/3/2004	12:51:01	3.6	44.461
12/3/2004	12:51:02	3.9	44.461
12/3/2004	12:51:02	4.2	44.463
12/3/2004	12:51:02	4.5	44.463
12/3/2004	12:51:03	4.8	44.463

12/3/2004	12:51:03	5.1	44.463
12/3/2004	12:51:03	5.4	44.463
12/3/2004	12:51:04	5.7	44.465
12/3/2004	12:51:04	6	44.465
12/3/2004	12:51:04	6.4	44.465
12/3/2004	12:51:05	6.7	44.465
12/3/2004	12:51:05	7.1	44.465
12/3/2004	12:51:05	7.5	44.465
12/3/2004	12:51:06	8	44.465
12/3/2004	12:51:06	8.4	44.464
12/3/2004	12:51:07	8.9	44.465
12/3/2004	12:51:07	9.5	44.464
12/3/2004	12:51:08	10	44.443
12/3/2004	12:51:08	10.6	44.438
12/3/2004	12:51:09	11.3	44.435
12/3/2004	12:51:10	11.9	44.431
12/3/2004	12:51:10	12.6	44.427
12/3/2004	12:51:11	13.4	44.425
12/3/2004	12:51:12	14.2	44.422
12/3/2004	12:51:13	15	44.42
12/3/2004	12:51:14	15.9	44.42
12/3/2004	12:51:15	16.8	44.418
12/3/2004	12:51:16	17.8	44.414
12/3/2004	12:51:17	18.9	44.413
12/3/2004	12:51:18	20	44.411
12/3/2004	12:51:19	21.2	44.409
12/3/2004	12:51:20	22.4	44.409
12/3/2004	12:51:22	23.8	44.409
12/3/2004	12:51:23	25.2	44.16
12/3/2004	12:51:24	26.7	44.03
12/3/2004	12:51:26	28.2	43.77
12/3/2004	12:51:28	29.8	43.532
12/3/2004	12:51:29	31.5	43.307
12/3/2004	12:51:31	33.3	43.088
12/3/2004	12:51:33	35.2	42.883
12/3/2004	12:51:35	37.3	42.676
12/3/2004	12:51:37	39.5	42.495
12/3/2004	12:51:40	41.8	42.339
12/3/2004	12:51:42	44.3	42.187
12/3/2004	12:51:45	46.9	42.034
12/3/2004	12:51:47	49.7	41.898
12/3/2004	12:51:50	52.6	41.77
12/3/2004	12:51:53	55.7	41.647
12/3/2004	12:51:57	59	41.538
12/3/2004	12:52:00	62.5	41.437
12/3/2004	12:52:04	66.2	41.349
12/3/2004	12:52:08	70.1	41.261
12/3/2004	12:52:12	74.3	41.19
12/3/2004	12:52:16	78.7	41.124
12/3/2004	12:52:21	83.4	41.069
12/3/2004	12:52:26	88.4	41.018
12/3/2004	12:52:31	93.7	40.976

12/3/2004	12:52:37	99.3	40.934
12/3/2004	12:52:43	105.2	40.91
12/3/2004	12:52:49	111.5	40.881
12/3/2004	12:52:56	118.1	40.858
12/3/2004	12:53:03	125.1	40.845
12/3/2004	12:53:10	132.6	40.828
12/3/2004	12:53:18	140.5	40.82
12/3/2004	12:53:27	148.9	40.81
12/3/2004	12:53:36	157.8	40.794
12/3/2004	12:53:45	167.2	40.788
12/3/2004	12:53:55	177.2	40.78
12/3/2004	12:54:06	187.8	40.77
12/3/2004	12:54:17	199	40.774
12/3/2004	12:54:29	210.9	40.774
12/3/2004	12:54:41	223.5	40.782
12/3/2004	12:54:55	236.8	40.791
12/3/2004	12:55:09	250.9	40.785
12/3/2004	12:55:24	265.8	40.784
12/3/2004	12:55:39	281.6	40.747
12/3/2004	12:55:56	298.4	40.725
12/3/2004	12:56:14	316.2	40.723
12/3/2004	12:56:33	335	40.714
12/3/2004	12:56:53	354.9	40.716
12/3/2004	12:57:14	376	40.718
12/3/2004	12:57:36	398.4	40.703
12/3/2004	12:58:00	422.1	40.698
12/3/2004	12:58:25	447.2	40.694
12/3/2004	12:58:52	473.8	40.677
12/3/2004	12:59:20	502	40.696
12/3/2004	12:59:50	531.9	40.716
12/3/2004	13:00:21	563.5	40.725

****
DETERMINATION OF AQUIFER PROPERTIES BASED ON ANALYSIS OF
SPECIFIC CAPACITY TESTS
****

Copied from: Bradbury, K. R. and Rothschild, E. R., 1985. A computerized technique for estimating the hydraulic conductivity of aquifers from specific capacity data, Ground Water, 23(2), pp. 240-246.

WELL NUMBER CEF-059-001-028

WELL DIAMETER (IN) =	2	
STATIC WATER LEVEL (FT) =	5.07	
DEPTH TO WATER DURING TEST (FT) =		7.07
THE LENGTH OF THE TEST (HR) =		.0328
PUMPING RATE (GPM) =	2.26	
THICKNESS OF AQUIFER (FT) =		116
OPEN INTERVAL (FT) =	5	
STORAGE COEFFICIENT =	.3	
WELL-LOSS COEFFICIENT =	1	

SPECIFIC CAPACITY (GPM/FT) = 1.130014

TRANSMISSIVITY:	(FT*FT/SEC) =	4.251032E-02
	(FT*FT/DAY) =	3672.892
	(GAL/DAY/FT) =	27475.0

$K = T/b$

Where: T = Transmissivity
b = Thickness of aquifer

$K = 3672.892 \text{ ft} \times \text{ft/day} / 116 \text{ ft} = 31.66 \text{ ft/day}$

****
DETERMINATION OF AQUIFER PROPERTIES BASED ON ANALYSIS OF
SPECIFIC CAPACITY TESTS
****

Copied from: Bradbury, K. R. and Rothschild, E. R., 1985. A computerized technique for estimating the hydraulic conductivity of aquifers from specific capacity data, Ground Water, 23(2), pp. 240-246.

WELL NUMBER CEF-059-001-083

WELL DIAMETER (IN) =	2	
STATIC WATER LEVEL (FT) =	6.33	
DEPTH TO WATER DURING TEST (FT) =		7.813
THE LENGTH OF THE TEST (HR) =		.052
PUMPING RATE (GPM) =	2.26	
THICKNESS OF AQUIFER (FT) =		116
OPEN INTERVAL (FT) =	5	
STORAGE COEFFICIENT =	.3	
WELL-LOSS COEFFICIENT =	1	

SPECIFIC CAPACITY (GPM/FT) = 1.523964

TRANSMISSIVITY: (FT*FT/SEC) = 5.753663E-02
(FT*FT/DAY) = 4971.164
(GAL/DAY/FT) = 37186.7

$K = T/b$

Where: T = Transmissivity
b = Thickness of aquifer

$K = 4971.164 \text{ ft} \times \text{ft/day} / 116 \text{ ft} = 42.85 \text{ ft/day}$

****
DETERMINATION OF AQUIFER PROPERTIES BASED ON ANALYSIS OF
SPECIFIC CAPACITY TESTS
****

Copied from: Bradbury, K. R. and Rothschild, E. R., 1985. A computerized technique for estimating the hydraulic conductivity of aquifers from specific capacity data, Ground Water, 23(2), pp. 240-246.

WELL NUMBER CEF-059-009-053

WELL DIAMETER (IN) =	2	
STATIC WATER LEVEL (FT) =	6.55	
DEPTH TO WATER DURING TEST (FT) =		10.17
THE LENGTH OF THE TEST (HR) =		.052
PUMPING RATE (GPM) =	1.86	
THICKNESS OF AQUIFER (FT) =		105.5
OPEN INTERVAL (FT) =	5	
STORAGE COEFFICIENT =	.3	
WELL-LOSS COEFFICIENT =	1	

SPECIFIC CAPACITY (GPM/FT) = .5138147

TRANSMISSIVITY:	(FT*FT/SEC) =	1.728746E-02
	(FT*FT/DAY) =	1493.637
	(GAL/DAY/FT) =	11173

$K = T/b$

Where: T = Transmissivity
b = Thickness of aquifer

$K = 1493.637 \text{ ft} \times \text{ft/day} / 105.5 \text{ ft} = 14.16 \text{ ft/day}$

****
DETERMINATION OF AQUIFER PROPERTIES BASED ON ANALYSIS OF
SPECIFIC CAPACITY TESTS
****

Copied from: Bradbury, K. R. and Rothschild, E. R., 1985. A computerized technique for estimating the hydraulic conductivity of aquifers from specific capacity data, Ground Water, 23(2), pp. 240-246.

WELL NUMBER CEF-059-009-083

WELL DIAMETER (IN) =	2	
STATIC WATER LEVEL (FT) =	6.47	
DEPTH TO WATER DURING TEST (FT) =		8.08
THE LENGTH OF THE TEST (HR) =		.088
PUMPING RATE (GPM) =	1.86	
THICKNESS OF AQUIFER (FT) =		105.5
OPEN INTERVAL (FT) =	5	
STORAGE COEFFICIENT =	.3	
WELL-LOSS COEFFICIENT =	1	

SPECIFIC CAPACITY (GPM/FT) = 1.155292

TRANSMISSIVITY: (FT*FT/SEC) = 3.914523E-02
(FT*FT/DAY) = 3382.148
(GAL/DAY/FT) = 25300.

$K = T/b$

Where: T = Transmissivity
b = Thickness of aquifer

$K = 3382.148\ ft \times ft/day / 105.5\ ft = 32.06\ ft/day$

APPENDIX D

DATA VALIDATION SUMMARIES

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO: **M. SPERANZA** **DATE: JANUARY 12, 2005**

FROM: **D. SCHLOER** **CC: DV FILE**

SUBJECT: **ORGANIC DATA VALIDATION – VOC/OVG**
CTO 359, NAS CECIL FIELD
SDG: F28102

SAMPLES: 3/Aqueous/VOC

CEF-59-001-053-RI	CEF-59-001-121-RI	CEF-59-003-035-RI

3/Aqueous/VOC/OVG

CEF-59-001-028-RI	CEF-59-001-083-RI	CEF-59-003-121-RI

Overview

The sample set for CTO 359; NAS Cecil Field; SDG F28102 consists of six (6) groundwater environmental samples. As detailed above, the samples were analyzed for Volatile Organic Compounds (VOCs). Three samples were selected and analyzed for the dissolved gases (OVG): methane, ethane and ethene. No field duplicate pairs were included in this SDG.

The samples were collected by Tetra Tech NUS on October 22nd, 2004 and analyzed by Accutest Laboratories. All analyses were conducted in accordance with Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria using U.S. EPA Test Methods for Evaluating Solid Waste (SW-846) Method 8260B and the Robert S. Kerr Standard Operating Procedure RSK SOP – 147/175 analytical and reporting protocol.

The data contained in this SDG were validated with regard to the following parameters:

* • Data completeness
* • Holding times
* • Initial and continuing calibration
* • Blank results
* • Detection Limits

The symbol (*) indicates that all quality control criteria were met for this parameter. Problems affecting data quality are discussed below; documentation supporting these findings is presented in Appendix C. Qualified Analytical results are presented in Appendix A. Results as reported by the laboratory are presented in Appendix B.

VOA

The target VOC methylene chloride was detected in the environmental sample CEF-59-001-053-RI but not in the associated laboratory method blank. Methylene chloride is a common laboratory contaminant; therefore, the positive result reported for methylene chloride was qualified as estimated (J) in sample CEF-59-001-053-RI, due to suspected laboratory contamination.

Due to the presence of trichloroethylene at a concentration that exceeded the linear range of the instrument calibration, sample CEF-59-003-035-RI was reanalyzed at a 10X dilution factor. As noted on the sample result Form I, the laboratory reported the trichloroethylene result from the 10X dilution.

OVG

No data quality issues were noted.

Additional Comments

Nondetected organic compounds were reported at the sample-specific method detection limit (MDL). Positive results greater than the MDL but less than the sample Reporting Limit (RL) were qualified as estimated (J) due to uncertainty near the detection limit.

EXECUTIVE SUMMARY

Laboratory Performance Issues: One target VOC failed continuing calibration %D criterion; however, no data were qualified on this basis as only a limited data review was performed.

Other Factors Affecting Data Quality: One common laboratory contaminant was detected in one environmental sample but not in the associated method blank. The result was qualified as estimated due to suspected laboratory contamination.

The data for these analyses were reviewed with reference to the EPA Functional Guidelines for Organic Data Validation (10/99) and the NFESC guidelines entitled "Navy IRCDQM" (September, 1999). The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NFESC guidelines and the Quality Assurance Project Plan (QAPP)."

Tetra Tech NUS

Douglas Schloer
Chemist/Data Validator

TetraTech NUS

Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Support Documentation

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

Data Validation Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (e.g. % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (e.g. base-line drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; e.g. chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is greater than sample activity

PROJ_NO: 8925

SDG: F28102 MEDIA: WATER DATA FRACTION: OV

nsample	CEF-59-001-028-RI
samp_date	11/11/2004
lab_id	F28102-5
qc_type	NM
units	UG/L
Pct_Solids	0.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	0.5	U	
1,1,2,2-TETRACHLOROETHANE	0.3	U	
1,1,2-TRICHLOROETHANE	0.5	U	
1,1-DICHLOROETHANE	0.5	U	
1,1-DICHLOROETHENE	0.5	U	
1,2-DICHLOROETHANE	0.5	U	
1,2-DICHLOROPROPANE	0.5	U	
2-BUTANONE	2.5	U	
2-HEXANONE	2.5	U	
4-METHYL-2-PENTANONE	2.5	U	
ACETONE	5	U	
BENZENE	0.5	U	
BROMODICHLOROMETHANE	0.5	U	
BROMOFORM	0.5	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	0.5	U	
CHLOROBENZENE	0.5	U	
CHLORODIBROMOMETHANE	0.4	U	
CHLOROETHANE	1	U	
CHLOROFORM	0.5	U	
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	0.5	U	
CIS-1,3-DICHLOROPROPENE	0.3	U	
ETHYLBENZENE	0.5	U	
METHYLENE CHLORIDE	1	U	
STYRENE	0.5	U	
TETRACHLOROETHENE	0.5	U	
TOLUENE	0.5	U	
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	0.5	U	
TRANS-1,3-DICHLOROPROPENE	0.3	U	

nsample	CEF-59-001-028-RI
samp_date	11/11/2004
lab_id	F28102-5
qc_type	NM
units	UG/L
Pct_Solids	0.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
TRICHLOROETHENE	0.5	U	
VINYL CHLORIDE	0.5	U	

nsample	CEF-59-001-053-RI
samp_date	11/11/2004
lab_id	F28102-1
qc_type	NM
units	UG/L
Pct_Solids	0.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	0.5	U	
1,1,2,2-TETRACHLOROETHANE	0.3	U	
1,1,2-TRICHLOROETHANE	0.5	U	
1,1-DICHLOROETHANE	0.5	U	
1,1-DICHLOROETHENE	0.5	U	
1,2-DICHLOROETHANE	0.5	U	
1,2-DICHLOROPROPANE	0.5	U	
2-BUTANONE	2.5	U	
2-HEXANONE	2.5	U	
4-METHYL-2-PENTANONE	2.5	U	
ACETONE	5	U	
BENZENE	0.5	U	
BROMODICHLOROMETHANE	0.5	U	
BROMOFORM	0.5	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	0.5	U	
CHLOROBENZENE	0.5	U	
CHLORODIBROMOMETHANE	0.4	U	
CHLOROETHANE	1	U	
CHLOROFORM	1.3		
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	0.5	U	
CIS-1,3-DICHLOROPROPENE	0.3	U	
ETHYLBENZENE	0.5	U	
METHYLENE CHLORIDE	5.8	J	A
STYRENE	0.5	U	
TETRACHLOROETHENE	0.5	U	
TOLUENE	0.5	U	
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	0.5	U	
TRANS-1,3-DICHLOROPROPENE	0.3	U	

PROJ_NO: 8925

SDG: F28102 MEDIA: WATER DATA FRACTION: OV

nsample	CEF-59-001-053-RI
samp_date	11/11/2004
lab_id	F28102-1
qc_type	NM
units	UG/L
Pct_Solids	0.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
TRICHLOROETHENE	0.5	U	
VINYL CHLORIDE	0.5	U	

nsample	CEF-59-001-083-RI
samp_date	11/11/2004
lab_id	F28102-7
qc_type	NM
units	UG/L
Pct_Solids	0.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	0.5	U	
1,1,2,2-TETRACHLOROETHANE	0.3	U	
1,1,2-TRICHLOROETHANE	0.5	U	
1,1-DICHLOROETHANE	0.5	U	
1,1-DICHLOROETHENE	0.5	U	
1,2-DICHLOROETHANE	0.5	U	
1,2-DICHLOROPROPANE	0.5	U	
2-BUTANONE	2.5	U	
2-HEXANONE	2.5	U	
4-METHYL-2-PENTANONE	2.5	U	
ACETONE	5	U	
BENZENE	0.5	U	
BROMODICHLOROMETHANE	0.5	U	
BROMOFORM	0.5	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	0.5	U	
CHLOROBENZENE	0.5	U	
CHLORODIBROMOMETHANE	0.4	U	
CHLOROETHANE	1	U	
CHLOROFORM	0.5	U	
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	0.5	U	
CIS-1,3-DICHLOROPROPENE	0.3	U	
ETHYLBENZENE	0.5	U	
METHYLENE CHLORIDE	1	U	
STYRENE	0.5	U	
TETRACHLOROETHENE	0.5	U	
TOLUENE	0.5	U	
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	0.5	U	
TRANS-1,3-DICHLOROPROPENE	0.3	U	

nsample	CEF-59-001-083-RI
samp_date	11/11/2004
lab_id	F28102-7
qc_type	NM
units	UG/L
Pct_Solids	0.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
TRICHLOROETHENE	0.5	U	
VINYL CHLORIDE	0.5	U	

PROJ_NO: 8925

SDG: F28102 MEDIA: WATER DATA FRACTION: OV

nsample	CEF-59-001-121-RI
samp_date	11/11/2004
lab_id	F28102-2
qc_type	NM
units	UG/L
Pct_Solids	0.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	0.5	U	
1,1,2,2-TETRACHLOROETHANE	0.3	U	
1,1,2-TRICHLOROETHANE	0.5	U	
1,1-DICHLOROETHANE	0.5	U	
1,1-DICHLOROETHENE	0.5	U	
1,2-DICHLOROETHANE	0.5	U	
1,2-DICHLOROPROPANE	0.5	U	
2-BUTANONE	2.5	U	
2-HEXANONE	2.5	U	
4-METHYL-2-PENTANONE	2.5	U	
ACETONE	5	U	
BENZENE	0.5	U	
BROMODICHLOROMETHANE	0.5	U	
BROMOFORM	0.5	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	0.5	U	
CHLOROBENZENE	0.5	U	
CHLORODIBROMOMETHANE	0.4	U	
CHLOROETHANE	1	U	
CHLOROFORM	0.5	U	
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	0.5	U	
CIS-1,3-DICHLOROPROPENE	0.3	U	
ETHYLBENZENE	0.5	U	
METHYLENE CHLORIDE	1	U	
STYRENE	0.5	U	
TETRACHLOROETHENE	0.5	U	
TOLUENE	0.5	U	
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	0.5	U	
TRANS-1,3-DICHLOROPROPENE	0.3	U	

nsample	CEF-59-001-121-RI
samp_date	11/11/2004
lab_id	F28102-2
qc_type	NM
units	UG/L
Pct_Solids	0.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
TRICHLOROETHENE	0.5	U	
VINYL CHLORIDE	0.5	U	

nsample	CEF-59-003-035-RI
samp_date	11/11/2004
lab_id	F28102-9
qc_type	NM
units	UG/L
Pct_Solids	0.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	0.5	U	
1,1,2,2-TETRACHLOROETHANE	0.3	U	
1,1,2-TRICHLOROETHANE	0.5	U	
1,1-DICHLOROETHANE	0.5	U	
1,1-DICHLOROETHENE	0.5	U	
1,2-DICHLOROETHANE	0.5	U	
1,2-DICHLOROPROPANE	0.5	U	
2-BUTANONE	2.5	U	
2-HEXANONE	2.5	U	
4-METHYL-2-PENTANONE	2.5	U	
ACETONE	5	U	
BENZENE	0.5	U	
BROMODICHLOROMETHANE	0.5	U	
BROMOFORM	0.5	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	0.5	U	
CHLOROBENZENE	0.5	U	
CHLORODIBROMOMETHANE	0.4	U	
CHLOROETHANE	1	U	
CHLOROFORM	0.5	U	
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	2.9		
CIS-1,3-DICHLOROPROPENE	0.3	U	
ETHYLBENZENE	0.5	U	
METHYLENE CHLORIDE	1	U	
STYRENE	0.5	U	
TETRACHLOROETHENE	0.5	U	
TOLUENE	0.5	U	
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	0.5	U	
TRANS-1,3-DICHLOROPROPENE	0.3	U	

PROJ_NO: 8925

SDG: F28102 MEDIA: WATER DATA FRACTION: OV

nsample	CEF-59-003-035-RI
samp_date	11/11/2004
lab_id	F28102-9
qc_type	NM
units	UG/L
Pct_Solids	0.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
TRICHLOROETHENE	399		
VINYL CHLORIDE	0.5	U	

nsample	CEF-59-003-121-RI
samp_date	11/11/2004
lab_id	F28102-3
qc_type	NM
units	UG/L
Pct_Solids	0.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	0.5	U	
1,1,2,2-TETRACHLOROETHANE	0.3	U	
1,1,2-TRICHLOROETHANE	0.5	U	
1,1-DICHLOROETHANE	0.5	U	
1,1-DICHLOROETHENE	0.5	U	
1,2-DICHLOROETHANE	0.5	U	
1,2-DICHLOROPROPANE	0.5	U	
2-BUTANONE	2.5	U	
2-HEXANONE	2.5	U	
4-METHYL-2-PENTANONE	2.5	U	
ACETONE	5	U	
BENZENE	0.5	U	
BROMODICHLOROMETHANE	0.5	U	
BROMOFORM	0.5	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	0.5	U	
CHLOROBENZENE	0.5	U	
CHLORODIBROMOMETHANE	0.4	U	
CHLOROETHANE	1	U	
CHLOROFORM	0.5	U	
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	0.5	U	
CIS-1,3-DICHLOROPROPENE	0.3	U	
ETHYLBENZENE	0.5	U	
METHYLENE CHLORIDE	1	U	
STYRENE	0.5	U	
TETRACHLOROETHENE	0.5	U	
TOLUENE	0.5	U	
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	0.5	U	
TRANS-1,3-DICHLOROPROPENE	0.3	U	

nsample	CEF-59-003-121-RI
samp_date	11/11/2004
lab_id	F28102-3
qc_type	NM
units	UG/L
Pct_Solids	0.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
TRICHLOROETHENE	0.5	U	
VINYL CHLORIDE	0.5	U	

PROJ_NO: 8925

SDG: F28102 MEDIA: WATER DATA FRACTION: OVG

nsample	CEF-59-001-028-RI	nsample	CEF-59-001-083-RI	nsample	CEF-59-003-121-RI
samp_date	11/11/2004	samp_date	11/11/2004	samp_date	11/11/2004
lab_id	F28102-5	lab_id	F28102-7	lab_id	F28102-3
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/L	units	UG/L	units	UG/L
Pct_Solids	0.0	Pct_Solids	0.0	Pct_Solids	0.0
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ETHANE	0.6	U	
ETHENE	0.8	U	
METHANE	16.1		

Parameter	Result	Val Qual	Qual Code
ETHANE	0.6	U	
ETHENE	0.8	U	
METHANE	7.31		

Parameter	Result	Val Qual	Qual Code
ETHANE	3.53		
ETHENE	0.8	U	
METHANE	122		

Tetra Tech NUS

INTERNAL CORRESPONDENCE

TO:	**M. SPERANZA**	**DATE:**	**JANUARY 7, 2005**
FROM:	**EDWARD SEDLMYER**	**COPIES:**	**DV FILE**
SUBJECT:	**ORGANIC DATA VALIDATION- VOA/OVG CTO 359, NAS CECIL FIELD SDG F28124**		
SAMPLES:	9/Aqueous		

CEF-59-002-053-RI	CEF-59-002-120-RI	CEF-59-008-028-RI
CEF-59-009-083-RI	CEF-59-009-113-RI	CEF-59-016-053-RI
CEF-59-016-083-RI	CEF-59-016-119-RI	CEF-59-DU04-RI

OVERVIEW

The sample set for CTO 328 NAS Cecil Field, SDG F28124 consists of nine (9) aqueous environmental samples. All samples were analyzed for Target Compound List (TCL) volatile organic compounds (VOCs). Sample CEF-59-002-120-RI was analyzed for dissolved gases. One field duplicate was associated with this SDG: CEF-59-008-028-RI / CEF-59-DU04-RI

The samples were collected by TetraTech NUS on November 11 and 12, 2004 and analyzed by Accutest Laboratories. All analyses were conducted in accordance with Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria using SW-846 Methods 8260B and EPA Method RSK 147/175 analysis and reporting protocols. The data contained in this SDG were validated with regard to the following parameters:

* • Data completeness
* • Holding times
* • Initial/continuing calibrations
* • Laboratory method blank results
* • Detection Limits

The symbol (*) indicates that quality control criteria were met for this parameter. Problems affecting data quality are discussed below; documentation supporting these findings is presented in Appendix C. Qualified Analytical results are presented in Appendix A. Results as reported by the laboratory are presented in Appendix B.

The text of this report is formatted to address only gross non-compliances resulting in the rejection of data and the elimination of false positives.

Volatiles

No qualification of the data was necessary.

Dissolved Gases

No qualification of the data was necessary.

Additional Comments:

Positive results less than the reporting limit (RL) were qualified as estimated "J", due to uncertainty near the detection limit.

EXECUTIVE SUMMARY

Laboratory Performance Issues: None.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to the EPA Functional Guidelines for Organic Data Validation (10/99), and the NFESC guidelines IRCDQM (Sept., 1999). The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NFESC guidelines and the Quality Assurance Project Plan (QAPP)."

Edward Sedlmyer
Tetra Tech NUS

Edward Sedlmyer
Chemist/Data Validator

TetraTech NUS

Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:

Appendix A – Qualified Analytical Results
Appendix B – Results as Reported by the Laboratory
Appendix C – Support Documentation

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

Data Validation Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (e.g. % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (e.g. base-line drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; e.g. chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is greater than sample activity

PROJ_NO: 8925

SDG: F28124 MEDIA: WATER DATA FRACTION: OV

nsample	CEF-59-002-053-RI
samp_date	11/11/2004
lab_id	F28124-1
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Lab Qual	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	0.5	U	U	
1,1,2,2-TETRACHLOROETHANE	0.3	U	U	
1,1,2-TRICHLOROETHANE	0.5	U	U	
1,1-DICHLOROETHANE	0.5	U	U	
1,1-DICHLOROETHENE	0.5	U	U	
1,2-DICHLOROETHANE	0.5	U	U	
1,2-DICHLOROPROPANE	0.5	U	U	
2-BUTANONE	2.5	U	U	
2-HEXANONE	2.5	U	U	
4-METHYL-2-PENTANONE	2.5	U	U	
ACETONE	5	U	U	
BENZENE	0.5	U	U	
BROMODICHLOROMETHANE	0.5	U	U	
BROMOFORM	0.5	U	U	
BROMOMETHANE	1	U	U	
CARBON DISULFIDE	1	U	U	
CARBON TETRACHLORIDE	0.5	U	U	
CHLOROBENZENE	0.5	U	U	
CHLORODIBROMOMETHANE	0.4	U	U	
CHLOROETHANE	1	U	U	
CHLOROFORM	0.5	U	U	
CHLOROMETHANE	1	U	U	
CIS-1,2-DICHLOROETHENE	0.5	U	U	
CIS-1,3-DICHLOROPROPENE	0.3	U	U	
ETHYLBENZENE	0.5	U	U	
METHYLENE CHLORIDE	1	U	U	
STYRENE	0.5	U	U	
TETRACHLOROETHENE	0.5	U	U	
TOLUENE	0.5	U	U	
TOTAL XYLENES	1	U	U	
TRANS-1,2-DICHLOROETHENE	0.5	U	U	
TRANS-1,3-DICHLOROPROPENE	0.3	U	U	

nsample	CEF-59-002-053-RI
samp_date	11/11/2004
lab_id	F28124-1
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Lab Qual	Val Qual	Qual Code
TRICHLOROETHENE	0.5	U	U	
VINYL CHLORIDE	0.5	U	U	

nsample	CEF-59-002-120-RI
samp_date	11/11/2004
lab_id	F28124-2
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Lab Qual	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	0.5	U	U	
1,1,2,2-TETRACHLOROETHANE	0.3	U	U	
1,1,2-TRICHLOROETHANE	0.5	U	U	
1,1-DICHLOROETHANE	0.5	U	U	
1,1-DICHLOROETHENE	0.5	U	U	
1,2-DICHLOROETHANE	0.5	U	U	
1,2-DICHLOROPROPANE	0.5	U	U	
2-BUTANONE	2.5	U	U	
2-HEXANONE	2.5	U	U	
4-METHYL-2-PENTANONE	2.5	U	U	
ACETONE	5	U	U	
BENZENE	0.5	U	U	
BROMODICHLOROMETHANE	0.5	U	U	
BROMOFORM	0.5	U	U	
BROMOMETHANE	1	U	U	
CARBON DISULFIDE	1	U	U	
CARBON TETRACHLORIDE	0.5	U	U	
CHLOROBENZENE	0.5	U	U	
CHLORODIBROMOMETHANE	0.4	U	U	
CHLOROETHANE	1	U	U	
CHLOROFORM	0.5	U	U	
CHLOROMETHANE	1	U	U	
CIS-1,2-DICHLOROETHENE	0.5	U	U	
CIS-1,3-DICHLOROPROPENE	0.3	U	U	
ETHYLBENZENE	0.5	U	U	
METHYLENE CHLORIDE	1	U	U	
STYRENE	0.5	U	U	
TETRACHLOROETHENE	0.5	U	U	
TOLUENE	0.5	U	U	
TOTAL XYLENES	1	U	U	
TRANS-1,2-DICHLOROETHENE	0.5	U	U	
TRANS-1,3-DICHLOROPROPENE	0.3	U	U	

PROJ_NO: 8925

SDG: F28124 MEDIA: WATER DATA FRACTION: OV

nsample	CEF-59-002-120-RI
samp_date	11/11/2004
lab_id	F28124-2
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Lab Qual	Val Qual	Qual Code
TRICHLOROETHENE	0.5	U	U	
VINYL CHLORIDE	0.5	U	U	

nsample	CEF-59-008-028-RI
samp_date	11/11/2004
lab_id	F28124-5
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Lab Qual	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	0.5	U	U	
1,1,2,2-TETRACHLOROETHANE	0.3	U	U	
1,1,2-TRICHLOROETHANE	0.5	U	U	
1,1-DICHLOROETHANE	0.5	U	U	
1,1-DICHLOROETHENE	0.5	U	U	
1,2-DICHLOROETHANE	0.5	U	U	
1,2-DICHLOROPROPANE	0.5	U	U	
2-BUTANONE	2.5	U	U	
2-HEXANONE	2.5	U	U	
4-METHYL-2-PENTANONE	2.5	U	U	
ACETONE	5	U	U	
BENZENE	0.5	U	U	
BROMODICHLOROMETHANE	0.5	U	U	
BROMOFORM	0.5	U	U	
BROMOMETHANE	1	U	U	
CARBON DISULFIDE	1	U	U	
CARBON TETRACHLORIDE	0.5	U	U	
CHLOROBENZENE	0.5	U	U	
CHLORODIBROMOMETHANE	0.4	U	U	
CHLOROETHANE	1	U	U	
CHLOROFORM	0.5	U	U	
CHLOROMETHANE	1	U	U	
CIS-1,2-DICHLOROETHENE	0.5	U	U	
CIS-1,3-DICHLOROPROPENE	0.3	U	U	
ETHYLBENZENE	0.5	U	U	
METHYLENE CHLORIDE	1	U	U	
STYRENE	0.5	U	U	
TETRACHLOROETHENE	0.5	U	U	
TOLUENE	0.5	U	U	
TOTAL XYLENES	1	U	U	
TRANS-1,2-DICHLOROETHENE	0.5	U	U	
TRANS-1,3-DICHLOROPROPENE	0.3	U	U	

nsample	CEF-59-008-028-RI
samp_date	11/11/2004
lab_id	F28124-5
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Lab Qual	Val Qual	Qual Code
TRICHLOROETHENE	0.5	U	U	
VINYL CHLORIDE	0.5	U	U	

PROJ_NO: 8925

SDG: F28124 MEDIA: WATER DATA FRACTION: OV

nsample	CEF-59-009-083-RI
samp_date	11/11/2004
lab_id	F28124-6
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Lab Qual	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	0.5	U	U	
1,1,2,2-TETRACHLOROETHANE	0.3	U	U	
1,1,2-TRICHLOROETHANE	0.5	U	U	
1,1-DICHLOROETHANE	0.5	U	U	
1,1-DICHLOROETHENE	0.5	U	U	
1,2-DICHLOROETHANE	0.5	U	U	
1,2-DICHLOROPROPANE	0.5	U	U	
2-BUTANONE	2.5	U	U	
2-HEXANONE	2.5	U	U	
4-METHYL-2-PENTANONE	2.5	U	U	
ACETONE	5	U	U	
BENZENE	0.5	U	U	
BROMODICHLOROMETHANE	0.5	U	U	
BROMOFORM	0.5	U	U	
BROMOMETHANE	1	U	U	
CARBON DISULFIDE	1	U	U	
CARBON TETRACHLORIDE	0.5	U	U	
CHLOROBENZENE	0.5	U	U	
CHLORODIBROMOMETHANE	0.4	U	U	
CHLOROETHANE	1	U	U	
CHLOROFORM	0.5	U	U	
CHLOROMETHANE	1	U	U	
CIS-1,2-DICHLOROETHENE	0.5	U	U	
CIS-1,3-DICHLOROPROPENE	0.3	U	U	
ETHYLBENZENE	0.5	U	U	
METHYLENE CHLORIDE	1	U	U	
STYRENE	0.5	U	U	
TETRACHLOROETHENE	0.5	U	U	
TOLUENE	0.5	U	U	
TOTAL XYLENES	1	U	U	
TRANS-1,2-DICHLOROETHENE	0.5	U	U	
TRANS-1,3-DICHLOROPROPENE	0.3	U	U	

nsample	CEF-59-009-083-RI
samp_date	11/11/2004
lab_id	F28124-6
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Lab Qual	Val Qual	Qual Code
TRICHLOROETHENE	0.5	U	U	
VINYL CHLORIDE	0.5	U	U	

nsample	CEF-59-009-113-RI
samp_date	11/11/2004
lab_id	F28124-4
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Lab Qual	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	0.5	U	U	
1,1,2,2-TETRACHLOROETHANE	0.3	U	U	
1,1,2-TRICHLOROETHANE	0.5	U	U	
1,1-DICHLOROETHANE	0.5	U	U	
1,1-DICHLOROETHENE	0.5	U	U	
1,2-DICHLOROETHANE	0.5	U	U	
1,2-DICHLOROPROPANE	0.5	U	U	
2-BUTANONE	2.5	U	U	
2-HEXANONE	2.5	U	U	
4-METHYL-2-PENTANONE	2.5	U	U	
ACETONE	5	U	U	
BENZENE	0.5	U	U	
BROMODICHLOROMETHANE	0.5	U	U	
BROMOFORM	0.5	U	U	
BROMOMETHANE	1	U	U	
CARBON DISULFIDE	1	U	U	
CARBON TETRACHLORIDE	0.5	U	U	
CHLOROBENZENE	0.5	U	U	
CHLORODIBROMOMETHANE	0.4	U	U	
CHLOROETHANE	1	U	U	
CHLOROFORM	0.98	I	J	P
CHLOROMETHANE	1	U	U	
CIS-1,2-DICHLOROETHENE	0.5	U	U	
CIS-1,3-DICHLOROPROPENE	0.3	U	U	
ETHYLBENZENE	0.5	U	U	
METHYLENE CHLORIDE	1	U	U	
STYRENE	0.5	U	U	
TETRACHLOROETHENE	0.5	U	U	
TOLUENE	0.5	U	U	
TOTAL XYLENES	1	U	U	
TRANS-1,2-DICHLOROETHENE	0.5	U	U	
TRANS-1,3-DICHLOROPROPENE	0.3	U	U	

PROJ_NO: 8925

SDG: F28124 MEDIA: WATER DATA FRACTION: OV

nsample	CEF-59-009-113-RI
samp_date	11/11/2004
lab_id	F28124-4
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Lab Qual	Val Qual	Qual Code
TRICHLOROETHENE	0.5	U	U	
VINYL CHLORIDE	0.5	U	U	

nsample	CEF-59-016-053-RI
samp_date	11/12/2004
lab_id	F28124-8
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Lab Qual	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	0.5	U	U	
1,1,2,2-TETRACHLOROETHANE	0.3	U	U	
1,1,2-TRICHLOROETHANE	0.5	U	U	
1,1-DICHLOROETHANE	0.5	U	U	
1,1-DICHLOROETHENE	0.5	U	U	
1,2-DICHLOROETHANE	0.5	U	U	
1,2-DICHLOROPROPANE	0.5	U	U	
2-BUTANONE	2.5	U	U	
2-HEXANONE	2.5	U	U	
4-METHYL-2-PENTANONE	2.5	U	U	
ACETONE	5	U	U	
BENZENE	0.5	U	U	
BROMODICHLOROMETHANE	0.5	U	U	
BROMOFORM	0.5	U	U	
BROMOMETHANE	1	U	U	
CARBON DISULFIDE	1	U	U	
CARBON TETRACHLORIDE	0.5	U	U	
CHLOROBENZENE	0.5	U	U	
CHLORODIBROMOMETHANE	0.4	U	U	
CHLOROETHANE	1	U	U	
CHLOROFORM	0.5	U	U	
CHLOROMETHANE	1	U	U	
CIS-1,2-DICHLOROETHENE	0.5	U	U	
CIS-1,3-DICHLOROPROPENE	0.3	U	U	
ETHYLBENZENE	0.5	U	U	
METHYLENE CHLORIDE	1	U	U	
STYRENE	0.5	U	U	
TETRACHLOROETHENE	0.5	U	U	
TOLUENE	0.5	U	U	
TOTAL XYLENES	1	U	U	
TRANS-1,2-DICHLOROETHENE	0.5	U	U	
TRANS-1,3-DICHLOROPROPENE	0.3	U	U	

nsample	CEF-59-016-053-RI
samp_date	11/12/2004
lab_id	F28124-8
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Lab Qual	Val Qual	Qual Code
TRICHLOROETHENE	5.9			
VINYL CHLORIDE	0.5	U	U	

PROJ_NO: 8925

SDG: F28124 MEDIA: WATER DATA FRACTION: OV

nsample	CEF-59-016-083-RI
samp_date	11/12/2004
lab_id	F28124-10
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Lab Qual	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	0.5	U	U	
1,1,2,2-TETRACHLOROETHANE	0.3	U	U	
1,1,2-TRICHLOROETHANE	0.5	U	U	
1,1-DICHLOROETHANE	0.5	U	U	
1,1-DICHLOROETHENE	0.5	U	U	
1,2-DICHLOROETHANE	0.5	U	U	
1,2-DICHLOROPROPANE	0.5	U	U	
2-BUTANONE	2.5	U	U	
2-HEXANONE	2.5	U	U	
4-METHYL-2-PENTANONE	2.5	U	U	
ACETONE	5	U	U	
BENZENE	0.5	U	U	
BROMODICHLOROMETHANE	0.5	U	U	
BROMOFORM	0.5	U	U	
BROMOMETHANE	1	U	U	
CARBON DISULFIDE	1	U	U	
CARBON TETRACHLORIDE	0.5	U	U	
CHLOROBENZENE	0.5	U	U	
CHLORODIBROMOMETHANE	0.4	U	U	
CHLOROETHANE	1	U	U	
CHLOROFORM	0.5	U	U	
CHLOROMETHANE	1	U	U	
CIS-1,2-DICHLOROETHENE	0.5	U	U	
CIS-1,3-DICHLOROPROPENE	0.3	U	U	
ETHYLBENZENE	0.5	U	U	
METHYLENE CHLORIDE	1	U	U	
STYRENE	0.5	U	U	
TETRACHLOROETHENE	0.5	U	U	
TOLUENE	0.5	U	U	
TOTAL XYLENES	1	U	U	
TRANS-1,2-DICHLOROETHENE	0.5	U	U	
TRANS-1,3-DICHLOROPROPENE	0.3	U	U	

nsample	CEF-59-016-083-RI
samp_date	11/12/2004
lab_id	F28124-10
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Lab Qual	Val Qual	Qual Code
TRICHLOROETHENE	0.5	U	U	
VINYL CHLORIDE	0.5	U	U	

nsample	CEF-59-016-119-RI
samp_date	11/12/2004
lab_id	F28124-9
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Lab Qual	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	0.5	U	U	
1,1,2,2-TETRACHLOROETHANE	0.3	U	U	
1,1,2-TRICHLOROETHANE	0.5	U	U	
1,1-DICHLOROETHANE	0.5	U	U	
1,1-DICHLOROETHENE	0.5	U	U	
1,2-DICHLOROETHANE	0.5	U	U	
1,2-DICHLOROPROPANE	0.5	U	U	
2-BUTANONE	2.5	U	U	
2-HEXANONE	2.5	U	U	
4-METHYL-2-PENTANONE	2.5	U	U	
ACETONE	5	U	U	
BENZENE	0.5	U	U	
BROMODICHLOROMETHANE	0.5	U	U	
BROMOFORM	0.5	U	U	
BROMOMETHANE	1	U	U	
CARBON DISULFIDE	1	U	U	
CARBON TETRACHLORIDE	0.5	U	U	
CHLOROBENZENE	0.5	U	U	
CHLORODIBROMOMETHANE	0.4	U	U	
CHLOROETHANE	1	U	U	
CHLOROFORM	0.5	U	U	
CHLOROMETHANE	1	U	U	
CIS-1,2-DICHLOROETHENE	0.5	U	U	
CIS-1,3-DICHLOROPROPENE	0.3	U	U	
ETHYLBENZENE	0.5	U	U	
METHYLENE CHLORIDE	1	U	U	
STYRENE	0.5	U	U	
TETRACHLOROETHENE	0.5	U	U	
TOLUENE	0.5	U	U	
TOTAL XYLENES	1	U	U	
TRANS-1,2-DICHLOROETHENE	0.5	U	U	
TRANS-1,3-DICHLOROPROPENE	0.3	U	U	

PROJ_NO: 8925

SDG: F28124 MEDIA: WATER DATA FRACTION: OVG

nsample	CEF-59-002-120-RI
samp_date	11/11/2004
lab_id	F28124-2
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Lab Qual	Val Qual	Qual Code
ETHANE	0.6	U	U	
ETHENE	0.8	U	U	
METHANE	66.9			

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-002-053-RI		
Lab Sample ID:	F28124-1	**Date Sampled:**	11/11/04
Matrix:	AQ - Ground Water	**Date Received:**	11/12/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0027742.D	1	11/15/04	KW	n/a	n/a	VC1177
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	5.0 U	5.0	5.0	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	ug/l	
75-00-3	Chloroethane	1.0 U	1.0	1.0	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	ug/l	
75-15-0	Carbon disulfide	1.0 U	1.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	0.50 U	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	0.40 U	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
591-78-6	2-Hexanone	2.5 U	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	2.5 U	5.0	2.5	ug/l	
74-83-9	Methyl bromide	1.0 U	1.0	1.0	ug/l	
74-87-3	Methyl chloride	1.0 U	1.0	1.0	ug/l	
75-09-2	Methylene chloride	1.0 U	1.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	2.5 U	5.0	2.5	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.30 U	1.0	0.30	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	ug/l	

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U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF-59-002-053-RI		
Lab Sample ID:	F28124-1	**Date Sampled:**	11/11/04
Matrix:	AQ - Ground Water	**Date Received:**	11/12/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.0 U	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		86-115%
17060-07-0	1,2-Dichloroethane-D4	99%		73-126%
2037-26-5	Toluene-D8	99%		86-112%
460-00-4	4-Bromofluorobenzene	104%		83-119%

U = Not detected MDL - Method Detection Limit
RL = Reporting Limit
L = Indicates value exceeds calibration range
I = Result >= MDL but < RL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-002-120-RI		
Lab Sample ID:	F28124-2	**Date Sampled:**	11/11/04
Matrix:	AQ - Ground Water	**Date Received:**	11/12/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0027745.D	1	11/15/04	KW	n/a	n/a	VC1177
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	5.0 U	5.0	5.0	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	ug/l	
75-00-3	Chloroethane	1.0 U	1.0	1.0	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	ug/l	
75-15-0	Carbon disulfide	1.0 U	1.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	0.50 U	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	0.40 U	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
591-78-6	2-Hexanone	2.5 U	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	2.5 U	5.0	2.5	ug/l	
74-83-9	Methyl bromide	1.0 U	1.0	1.0	ug/l	
74-87-3	Methyl chloride	1.0 U	1.0	1.0	ug/l	
75-09-2	Methylene chloride	1.0 U	1.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	2.5 U	5.0	2.5	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.30 U	1.0	0.30	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	ug/l	

U = Not detected MDL - Method Detection Limit I = Result > = MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF-59-002-120-RI		
Lab Sample ID:	F28124-2	**Date Sampled:**	11/11/04
Matrix:	AQ - Ground Water	**Date Received:**	11/12/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.0 U	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		86-115%
17060-07-0	1,2-Dichloroethane-D4	98%		73-126%
2037-26-5	Toluene-D8	97%		86-112%
460-00-4	4-Bromofluorobenzene	96%		83-119%

U = Not detected MDL - Method Detection Limit I = Result > = MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-008-028-RI		
Lab Sample ID:	F28124-5	**Date Sampled:**	11/11/04
Matrix:	AQ - Ground Water	**Date Received:**	11/12/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0027747.D	1	11/15/04	KW	n/a	n/a	VC1177
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	5.0 U	5.0	5.0	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	ug/l	
75-00-3	Chloroethane	1.0 U	1.0	1.0	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	ug/l	
75-15-0	Carbon disulfide	1.0 U	1.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	0.50 U	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	0.40 U	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
591-78-6	2-Hexanone	2.5 U	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	2.5 U	5.0	2.5	ug/l	
74-83-9	Methyl bromide	1.0 U	1.0	1.0	ug/l	
74-87-3	Methyl chloride	1.0 U	1.0	1.0	ug/l	
75-09-2	Methylene chloride	1.0 U	1.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	2.5 U	5.0	2.5	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.30 U	1.0	0.30	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	ug/l	

U = Not detected MDL - Method Detection Limit I = Result > = MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-008-028-RI		
Lab Sample ID:	F28124-5	**Date Sampled:**	11/11/04
Matrix:	AQ - Ground Water	**Date Received:**	11/12/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.0 U	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		86-115%
17060-07-0	1,2-Dichloroethane-D4	96%		73-126%
2037-26-5	Toluene-D8	98%		86-112%
460-00-4	4-Bromofluorobenzene	102%		83-119%

U = Not detected MDL - Method Detection Limit I = Result > = MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-009-083-RI		
Lab Sample ID:	F28124-6	**Date Sampled:**	11/11/04
Matrix:	AQ - Ground Water	**Date Received:**	11/12/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	J012286.D	1	11/15/04	JG	n/a	n/a	VJ510
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	5.0 U	5.0	5.0	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	ug/l	
75-00-3	Chloroethane	1.0 U	1.0	1.0	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	ug/l	
75-15-0	Carbon disulfide	1.0 U	1.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	0.50 U	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	0.40 U	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
591-78-6	2-Hexanone	2.5 U	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	2.5 U	5.0	2.5	ug/l	
74-83-9	Methyl bromide	1.0 U	1.0	1.0	ug/l	
74-87-3	Methyl chloride	1.0 U	1.0	1.0	ug/l	
75-09-2	Methylene chloride	1.0 U	1.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	2.5 U	5.0	2.5	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.30 U	1.0	0.30	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	ug/l	

U = Not detected MDL - Method Detection Limit I = Result > = MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-009-083-RI		
Lab Sample ID:	F28124-6	**Date Sampled:**	11/11/04
Matrix:	AQ - Ground Water	**Date Received:**	11/12/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.0 U	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		86-115%
17060-07-0	1,2-Dichloroethane-D4	104%		73-126%
2037-26-5	Toluene-D8	90%		86-112%
460-00-4	4-Bromofluorobenzene	96%		83-119%

U = Not detected MDL - Method Detection Limit I = Result > = MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-009-113-RI		
Lab Sample ID:	F28124-4	**Date Sampled:**	11/11/04
Matrix:	AQ - Ground Water	**Date Received:**	11/12/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0027746.D	1	11/15/04	KW	n/a	n/a	VC1177
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	5.0 U	5.0	5.0	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	ug/l	
75-00-3	Chloroethane	1.0 U	1.0	1.0	ug/l	
67-66-3	Chloroform	0.98	1.0	0.50	ug/l	I
75-15-0	Carbon disulfide	1.0 U	1.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	0.50 U	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	0.40 U	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
591-78-6	2-Hexanone	2.5 U	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	2.5 U	5.0	2.5	ug/l	
74-83-9	Methyl bromide	1.0 U	1.0	1.0	ug/l	
74-87-3	Methyl chloride	1.0 U	1.0	1.0	ug/l	
75-09-2	Methylene chloride	1.0 U	1.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	2.5 U	5.0	2.5	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.30 U	1.0	0.30	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	ug/l	

U = Not detected MDL - Method Detection Limit I = Result > = MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-009-113-RI		
Lab Sample ID:	F28124-4	**Date Sampled:**	11/11/04
Matrix:	AQ - Ground Water	**Date Received:**	11/12/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.0 U	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		86-115%
17060-07-0	1,2-Dichloroethane-D4	97%		73-126%
2037-26-5	Toluene-D8	100%		86-112%
460-00-4	4-Bromofluorobenzene	100%		83-119%

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-016-053-RI		
Lab Sample ID:	F28124-8	**Date Sampled:**	11/12/04
Matrix:	AQ - Ground Water	**Date Received:**	11/12/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	J012288.D	1	11/15/04	JG	n/a	n/a	VJ510
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	5.0 U	5.0	5.0	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	ug/l	
75-00-3	Chloroethane	1.0 U	1.0	1.0	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	ug/l	
75-15-0	Carbon disulfide	1.0 U	1.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	0.50 U	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	0.40 U	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
591-78-6	2-Hexanone	2.5 U	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	2.5 U	5.0	2.5	ug/l	
74-83-9	Methyl bromide	1.0 U	1.0	1.0	ug/l	
74-87-3	Methyl chloride	1.0 U	1.0	1.0	ug/l	
75-09-2	Methylene chloride	1.0 U	1.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	2.5 U	5.0	2.5	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.30 U	1.0	0.30	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	ug/l	
79-01-6	Trichloroethylene	5.9	1.0	0.50	ug/l	

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-016-053-RI		
Lab Sample ID:	F28124-8	**Date Sampled:**	11/12/04
Matrix:	AQ - Ground Water	**Date Received:**	11/12/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.0 U	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		86-115%
17060-07-0	1,2-Dichloroethane-D4	106%		73-126%
2037-26-5	Toluene-D8	90%		86-112%
460-00-4	4-Bromofluorobenzene	91%		83-119%

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-016-083-RI		
Lab Sample ID:	F28124-10	**Date Sampled:**	11/12/04
Matrix:	AQ - Ground Water	**Date Received:**	11/12/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	J012290.D	1	11/15/04	JG	n/a	n/a	VJ510
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	5.0 U	5.0	5.0	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	ug/l	
75-00-3	Chloroethane	1.0 U	1.0	1.0	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	ug/l	
75-15-0	Carbon disulfide	1.0 U	1.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	0.50 U	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	0.40 U	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
591-78-6	2-Hexanone	2.5 U	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	2.5 U	5.0	2.5	ug/l	
74-83-9	Methyl bromide	1.0 U	1.0	1.0	ug/l	
74-87-3	Methyl chloride	1.0 U	1.0	1.0	ug/l	
75-09-2	Methylene chloride	1.0 U	1.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	2.5 U	5.0	2.5	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.30 U	1.0	0.30	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	ug/l	

U = Not detected MDL - Method Detection Limit I = Result > = MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-016-083-RI		
Lab Sample ID:	F28124-10	**Date Sampled:**	11/12/04
Matrix:	AQ - Ground Water	**Date Received:**	11/12/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.0 U	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		86-115%
17060-07-0	1,2-Dichloroethane-D4	105%		73-126%
2037-26-5	Toluene-D8	89%		86-112%
460-00-4	4-Bromofluorobenzene	89%		83-119%

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-016-119-RI		
Lab Sample ID:	F28124-9	**Date Sampled:**	11/12/04
Matrix:	AQ - Ground Water	**Date Received:**	11/12/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	J012289.D	1	11/15/04	JG	n/a	n/a	VJ510
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	5.0 U	5.0	5.0	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	ug/l	
75-00-3	Chloroethane	1.0 U	1.0	1.0	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	ug/l	
75-15-0	Carbon disulfide	1.0 U	1.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	0.50 U	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	0.40 U	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
591-78-6	2-Hexanone	2.5 U	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	2.5 U	5.0	2.5	ug/l	
74-83-9	Methyl bromide	1.0 U	1.0	1.0	ug/l	
74-87-3	Methyl chloride	1.0 U	1.0	1.0	ug/l	
75-09-2	Methylene chloride	1.0 U	1.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	2.5 U	5.0	2.5	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.30 U	1.0	0.30	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	ug/l	

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-016-119-RI		
Lab Sample ID:	F28124-9	**Date Sampled:**	11/12/04
Matrix:	AQ - Ground Water	**Date Received:**	11/12/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.0 U	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	105%		86-115%
17060-07-0	1,2-Dichloroethane-D4	106%		73-126%
2037-26-5	Toluene-D8	89%		86-112%
460-00-4	4-Bromofluorobenzene	90%		83-119%

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

2-9-05 JAD

Report of Analysis

Client Sample ID:	CEF-59-DU04-RI		
Lab Sample ID:	F28124-7	**Date Sampled:**	11/11/04
Matrix:	AQ - Ground Water	**Date Received:**	11/12/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	J012287.D	1	11/15/04	JG	n/a	n/a	VJ510
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	5.0 U	5.0	5.0	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	ug/l	
75-00-3	Chloroethane	1.0 U	1.0	1.0	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	ug/l	
75-15-0	Carbon disulfide	1.0 U	1.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	0.50 U	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	0.40 U	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
591-78-6	2-Hexanone	2.5 U	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	2.5 U	5.0	2.5	ug/l	
74-83-9	Methyl bromide	1.0 U	1.0	1.0	ug/l	
74-87-3	Methyl chloride	1.0 U	1.0	1.0	ug/l	
75-09-2	Methylene chloride	1.0 U	1.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	2.5 U	5.0	2.5	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.30 U	1.0	0.30	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	ug/l	

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-DUO4-RI		
Lab Sample ID:	F28124-7	**Date Sampled:**	11/11/04
Matrix:	AQ - Ground Water	**Date Received:**	11/12/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.0 U	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		86-115%
17060-07-0	1,2-Dichloroethane-D4	105%		73-126%
2037-26-5	Toluene-D8	91%		86-112%
460-00-4	4-Bromofluorobenzene	94%		83-119%

U = Not detected MDL - Method Detection Limit I = Result > = MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-002-120-RI		
Lab Sample ID:	F28124-2	**Date Sampled:**	11/11/04
Matrix:	AQ - Ground Water	**Date Received:**	11/12/04
Method:	RSKSOP-147/175	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XY015799.D	1	11/17/04	CV	n/a	n/a	GXY526
Run #2							

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	66.9	0.50	0.30	ug/l	
74-84-0	Ethane	0.60 U	1.0	0.60	ug/l	
74-85-1	Ethene	0.80 U	1.0	0.80	ug/l	

U = Not detected MDL - Method Detection Limit
RL = Reporting Limit
L = Indicates value exceeds calibration range

I = Result >= MDL but < RL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-001-028-RI		
Lab Sample ID:	F28102-5	**Date Sampled:**	11/11/04
Matrix:	AQ - Ground Water	**Date Received:**	11/11/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M0001897.D	1	11/13/04	NJ	n/a	n/a	VM81
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	5.0 U	5.0	5.0	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	ug/l	
75-00-3	Chloroethane	1.0 U	1.0	1.0	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	ug/l	
75-15-0	Carbon disulfide	1.0 U	1.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	0.50 U	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	0.40 U	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
591-78-6	2-Hexanone	2.5 U	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	2.5 U	5.0	2.5	ug/l	
74-83-9	Methyl bromide	1.0 U	1.0	1.0	ug/l	
74-87-3	Methyl chloride	1.0 U	1.0	1.0	ug/l	
75-09-2	Methylene chloride	1.0 U	1.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	2.5 U	5.0	2.5	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.30 U	1.0	0.30	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	ug/l	

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF-59-001-028-RI		
Lab Sample ID:	F28102-5	**Date Sampled:**	11/11/04
Matrix:	AQ - Ground Water	**Date Received:**	11/11/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.0 U	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		86-115%
17060-07-0	1,2-Dichloroethane-D4	102%		73-126%
2037-26-5	Toluene-D8	102%		86-112%
460-00-4	4-Bromofluorobenzene	107%		83-119%

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-001-053-RI		
Lab Sample ID:	F28102-1	**Date Sampled:**	11/11/04
Matrix:	AQ - Ground Water	**Date Received:**	11/11/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M0001894.D	1	11/13/04	NJ	n/a	n/a	VM81
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	5.0 U	5.0	5.0	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	ug/l	
75-00-3	Chloroethane	1.0 U	1.0	1.0	ug/l	
67-66-3	Chloroform	1.3	1.0	0.50	ug/l	
75-15-0	Carbon disulfide	1.0 U	1.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	0.50 U	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	0.40 U	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
591-78-6	2-Hexanone	2.5 U	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	2.5 U	5.0	2.5	ug/l	
74-83-9	Methyl bromide	1.0 U	1.0	1.0	ug/l	
74-87-3	Methyl chloride	1.0 U	1.0	1.0	ug/l	
75-09-2	Methylene chloride	5.8	1.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	2.5 U	5.0	2.5	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.30 U	1.0	0.30	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	ug/l	

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U = Not detected MDL - Method Detection Limit I = Result > = MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-001-053-RI		
Lab Sample ID:	F28102-1	**Date Sampled:**	11/11/04
Matrix:	AQ - Ground Water	**Date Received:**	11/11/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.0 U	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		86-115%
17060-07-0	1,2-Dichloroethane-D4	102%		73-126%
2037-26-5	Toluene-D8	100%		86-112%
460-00-4	4-Bromofluorobenzene	105%		83-119%

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-001-083-RI		
Lab Sample ID:	F28102-7	**Date Sampled:**	11/11/04
Matrix:	AQ - Ground Water	**Date Received:**	11/11/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M0001898.D	1	11/13/04	NJ	n/a	n/a	VM81
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	5.0 U	5.0	5.0	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	ug/l	
75-00-3	Chloroethane	1.0 U	1.0	1.0	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	ug/l	
75-15-0	Carbon disulfide	1.0 U	1.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	0.50 U	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	0.40 U	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
591-78-6	2-Hexanone	2.5 U	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	2.5 U	5.0	2.5	ug/l	
74-83-9	Methyl bromide	1.0 U	1.0	1.0	ug/l	
74-87-3	Methyl chloride	1.0 U	1.0	1.0	ug/l	
75-09-2	Methylene chloride	1.0 U	1.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	2.5 U	5.0	2.5	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.30 U	1.0	0.30	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	ug/l	

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF-59-001-083-RI		
Lab Sample ID:	F28102-7	**Date Sampled:**	11/11/04
Matrix:	AQ - Ground Water	**Date Received:**	11/11/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.0 U	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		86-115%
17060-07-0	1,2-Dichloroethane-D4	101%		73-126%
2037-26-5	Toluene-D8	101%		86-112%
460-00-4	4-Bromofluorobenzene	105%		83-119%

U = Not detected MDL - Method Detection Limit I = Result > = MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-001-121-RI		
Lab Sample ID:	F28102-2	**Date Sampled:**	11/11/04
Matrix:	AQ - Ground Water	**Date Received:**	11/11/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M0001895.D	1	11/13/04	NJ	n/a	n/a	VM81
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	5.0 U	5.0	5.0	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	ug/l	
75-00-3	Chloroethane	1.0 U	1.0	1.0	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	ug/l	
75-15-0	Carbon disulfide	1.0 U	1.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	0.50 U	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	0.40 U	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
591-78-6	2-Hexanone	2.5 U	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	2.5 U	5.0	2.5	ug/l	
74-83-9	Methyl bromide	1.0 U	1.0	1.0	ug/l	
74-87-3	Methyl chloride	1.0 U	1.0	1.0	ug/l	
75-09-2	Methylene chloride	1.0 U	1.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	2.5 U	5.0	2.5	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.30 U	1.0	0.30	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	ug/l	

000046

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-001-121-RI		
Lab Sample ID:	F28102-2	**Date Sampled:**	11/11/04
Matrix:	AQ - Ground Water	**Date Received:**	11/11/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.0 U	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		86-115%
17060-07-0	1,2-Dichloroethane-D4	103%		73-126%
2037-26-5	Toluene-D8	101%		86-112%
460-00-4	4-Bromofluorobenzene	106%		83-119%

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-003-035-RI		
Lab Sample ID:	F28102-9	**Date Sampled:**	11/11/04
Matrix:	AQ - Ground Water	**Date Received:**	11/11/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M0001899.D	1	11/13/04	NJ	n/a	n/a	VM81
Run #2	M0001908.D	10	11/15/04	NJ	n/a	n/a	VM82

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	5.0 U	5.0	5.0	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	ug/l	
75-00-3	Chloroethane	1.0 U	1.0	1.0	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	ug/l	
75-15-0	Carbon disulfide	1.0 U	1.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	0.50 U	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	0.40 U	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	2.9	1.0	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
591-78-6	2-Hexanone	2.5 U	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	2.5 U	5.0	2.5	ug/l	
74-83-9	Methyl bromide	1.0 U	1.0	1.0	ug/l	
74-87-3	Methyl chloride	1.0 U	1.0	1.0	ug/l	
75-09-2	Methylene chloride	1.0 U	1.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	2.5 U	5.0	2.5	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.30 U	1.0	0.30	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	ug/l	
79-01-6	Trichloroethylene	399 [a]	10	5.0	ug/l	

U = Not detected MDL - Method Detection Limit I = Result > = MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF-59-003-035-RI		
Lab Sample ID:	F28102-9	**Date Sampled:**	11/11/04
Matrix:	AQ - Ground Water	**Date Received:**	11/11/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.0 U	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%	101%	86-115%
17060-07-0	1,2-Dichloroethane-D4	101%	100%	73-126%
2037-26-5	Toluene-D8	102%	101%	86-112%
460-00-4	4-Bromofluorobenzene	101%	104%	83-119%

(a) Result is from Run# 2

000064

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-003-121-RI		
Lab Sample ID:	F28102-3	**Date Sampled:**	11/11/04
Matrix:	AQ - Ground Water	**Date Received:**	11/11/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M0001896.D	1	11/13/04	NJ	n/a	n/a	VM81
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	5.0 U	5.0	5.0	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	ug/l	
75-00-3	Chloroethane	1.0 U	1.0	1.0	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	ug/l	
75-15-0	Carbon disulfide	1.0 U	1.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	0.50 U	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	0.40 U	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
591-78-6	2-Hexanone	2.5 U	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	2.5 U	5.0	2.5	ug/l	
74-83-9	Methyl bromide	1.0 U	1.0	1.0	ug/l	
74-87-3	Methyl chloride	1.0 U	1.0	1.0	ug/l	
75-09-2	Methylene chloride	1.0 U	1.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	2.5 U	5.0	2.5	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.30 U	1.0	0.30	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	ug/l	

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-003-121-RI		
Lab Sample ID:	F28102-3	**Date Sampled:**	11/11/04
Matrix:	AQ - Ground Water	**Date Received:**	11/11/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.0 U	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		86-115%
17060-07-0	1,2-Dichloroethane-D4	101%		73-126%
2037-26-5	Toluene-D8	101%		86-112%
460-00-4	4-Bromofluorobenzene	106%		83-119%

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-001-028-RI		
Lab Sample ID:	F28102-5	**Date Sampled:**	11/11/04
Matrix:	AQ - Ground Water	**Date Received:**	11/11/04
Method:	RSKSOP-147/175	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XY015797.D	1	11/17/04	CV	n/a	n/a	GXY526
Run #2							

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	16.1	0.50	0.30	ug/l	
74-84-0	Ethane	0.60 U	1.0	0.60	ug/l	
74-85-1	Ethene	0.80 U	1.0	0.80	ug/l	

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-001-083-RI		
Lab Sample ID:	F28102-7	**Date Sampled:**	11/11/04
Matrix:	AQ - Ground Water	**Date Received:**	11/11/04
Method:	RSKSOP-147/175	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XY015798.D	1	11/17/04	CV	n/a	n/a	GXY526
Run #2							

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	7.31	0.50	0.30	ug/l	
74-84-0	Ethane	0.60 U	1.0	0.60	ug/l	
74-85-1	Ethene	0.80 U	1.0	0.80	ug/l	

U = Not detected MDL - Method Detection Limit
RL = Reporting Limit
L = Indicates value exceeds calibration range

I = Result >= MDL but < RL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-003-121-RI		
Lab Sample ID:	F28102-3	**Date Sampled:**	11/11/04
Matrix:	AQ - Ground Water	**Date Received:**	11/11/04
Method:	RSKSOP-147/175	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XY015796.D	1	11/17/04	CV	n/a	n/a	GXY526
Run #2							

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	122	0.50	0.30	ug/l	
74-84-0	Ethane	3.53	1.0	0.60	ug/l	
74-85-1	Ethene	0.80 U	1.0	0.80	ug/l	

U = Not detected MDL - Method Detection Limit
RL = Reporting Limit
L = Indicates value exceeds calibration range

I = Result >= MDL but < RL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound.

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO:	**M. SPERANZA**	**DATE:**	**DECEMBER 29, 2004**
FROM:	**ERIN M. FAUST**	**COPIES:**	**DV FILE**

SUBJECT: **INORGANIC DATA VALIDATION – METALS AND MISCELLANEOUS PARAMETERS**
CTO- 359 NAS CECIL FIELD
SAMPLE DELIVERY GROUPS (SDGs) – F28102 & F28237

SAMPLES: 6/Groundwater/

CEF-59-001-028-RI	CEF-59-001-083-RI	CEF-59-003-121-RI
CEF-59-002-028-RI	CEF-59-003-053-RI	NG-12D-RI

Overview

The sample set for NAS Cecil Field, CTO 359, SDGs F28102 & F28237, consists of six (6) groundwater environmental samples.

All samples were analyzed for alkalinity, chloride, nitrate, nitrite, orthophosphate, sulfate and total organic carbon (TOC) and dissolved iron and sulfide. In addition, sample CEF-59-002-028-RI was also analyzed for target analyte list (TAL) metals. Samples analyzed for dissolved iron and sulfide have the suffix "-F" appended to the sample name. The samples were collected by Tetra Tech NUS on November 11 and 16, 2004 and analyzed by Accutest Laboratories Southeast, Inc. under Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria. Analyses for chloride, nitrate, nitrite and sulfate were conducted using SW-846 method 9056. Dissolved iron and TAL metals analyses, with the exception of mercury, were conducted using SW-846 method 6010B. Mercury analyses were conducted using SW-846 method 7470A. Analyses for dissolved sulfide, alkalinity, orthophosphate and TOC were conducted using EPA methods 376.1, 310.1, 365.3 and 415.1, respectively.

Dissolved iron and TAL metals analyses, with the exception of mercury, were conducted using Inductively Coupled Plasma (ICP) methodologies. Analyses for mercury were conducted using Cold Vapor Atomic Absorption (CVAA) methodologies.

These data were evaluated based on the following parameters:

* • Data Completeness
* • Holding Times
* • Calibration Results
• Laboratory Blank Analyses
* • Matrix Spike Results
* • Sample Quantitation
* • Detection Limits

* - All quality control criteria were met for this parameter.

Laboratory Blank Analyses

The following contaminants were detected in the laboratory method/preparation blanks at the following maximum concentrations:

Analyte	Maximum Concentration	Action Level
Aluminum	21.5 µg/L	107.5 µg/L
Arsenic	4.6 µg/L	23.0 µg/L
Calcium	30.2 µg/L	151 µg/L
Chromium	0.48 µg/L	2.4 µg/L
Copper	1.2 µg/L	6.0 µg/L
Iron	38.9 µg/L	194.5 µg/L
Lead	1.6 µg/L	8.0 µg/L
Selenium	10.0 µg/L	50.0 µg/L
Sodium	157 µg/L	785 µg/L
Thallium	3.6 µg/L	18.0 µg/L
Vanadium	0.51 µg/L	2.55 µg/L
Zinc	1.0 µg/L	5.0 µg/L

An action level of 5X the maximum concentration was used to evaluate the sample data for blank contamination. Sample aliquot and dilution factors, if applicable, were taken into consideration when evaluating for blank contamination. The positive result less than the action level reported for vanadium in sample CEF-59-002-028-RI was qualified "U" as a result of laboratory blank contamination.

Notes

Sample CEF-59-003-121-RI was diluted by a factor of two for orthophosphate.

Executive Summary

Laboratory Performance: Several analytes were present in the laboratory method/preparation blanks.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Inorganic Data Review" (July 2002), and the NFESC document entitled "Navy IRCDQM" (September 1999).

The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Erin M Faust

Tetra Tech NUS
Erin M. Faust
Environmental Scientist

Tetra Tech NUS
Joseph A. Samchuck
Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

APPENDIX A
QUALIFIED ANALYTICAL RESULTS

Data Validation Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (e.g. % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (e.g. base-line drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; e.g. chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is greater than sample activity

PROJ_NO: 8925

SDG: F28102 MEDIA: WATER DATA FRACTION: MF

nsample	CEF-59-001-028-RI-F
samp_date	11/11/2004
lab_id	F28102-6
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Lab Qual	Val Qual	Qual Code
IRON	1680			

nsample	CEF-59-001-083-RI-F
samp_date	11/11/2004
lab_id	F28102-8
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Lab Qual	Val Qual	Qual Code
IRON	709			

nsample	CEF-59-003-121-RI-F
samp_date	11/11/2004
lab_id	F28102-4
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Lab Qual	Val Qual	Qual Code
IRON	1450			

PROJ_NO: 8925

SDG: F28237 MEDIA: WATER DATA FRACTION: M

nsample	CEF-59-002-028-RI
samp_date	11/16/2004
lab_id	F28237-4
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Lab Qual	Val Qual	Qual Code
ALUMINUM	821			
ANTIMONY	3.5	U	U	
ARSENIC	3.5	U	U	
BARIUM	20.5	I		
BERYLLIUM	0.80	U	U	
CADMIUM	0.30	U	U	
CALCIUM	3170			
CHROMIUM	2.4	U	U	
COBALT	1.0	U	U	
COPPER	1.4	U	U	
IRON	964			
LEAD	2.9	U	U	
MAGNESIUM	1090	I		
MANGANESE	1.2	I		
MERCURY	0.11	I		
NICKEL	0.80	U	U	
POTASSIUM	136	I		
SELENIUM	3.6	U	U	
SILVER	1.9	U	U	
SODIUM	4130	I		
THALLIUM	2.9	U	U	
VANADIUM	2.3	I	U	A
ZINC	5.1	U	U	

PROJ_NO: 8925

SDG: F28102 MEDIA: WATER DATA FRACTION: MISC

nsample	CEF-59-001-028-RI	nsample	CEF-59-001-083-RI	nsample	CEF-59-003-121-RI
samp_date	11/11/2004	samp_date	11/11/2004	samp_date	11/11/2004
lab_id	F28102-5	lab_id	F28102-7	lab_id	F28102-3
qc_type	NM	qc_type	NM	qc_type	NM
Pct_Solids		Pct_Solids		Pct_Solids	
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	units	Result	Val Qual	Qual Code
ALKALINITY	MG/L	5.5		
CHLORIDE	MG/L	7.7		
NITRATE-N	MG/L	0.05	U	
NITRITE-N	MG/L	0.05	U	
ORTHOPHOSPHATE	MG/L	0.02	U	
SULFATE	MG/L	31.6		
TOTAL ORGANIC CARBON	MG/L	0.62	J	P

Parameter	units	Result	Val Qual	Qual Code
ALKALINITY	MG/L	11.5		
CHLORIDE	MG/L	9.6		
NITRATE-N	MG/L	0.05	U	
NITRITE-N	MG/L	0.05	U	
ORTHOPHOSPHATE	MG/L	0.18		
SULFATE	MG/L	4.6		
TOTAL ORGANIC CARBON	MG/L	1.2		

Parameter	units	Result	Val Qual	Qual Code
ALKALINITY	MG/L	220		
CHLORIDE	MG/L	12.3		
NITRATE-N	MG/L	0.05	U	
NITRITE-N	MG/L	0.05	U	
ORTHOPHOSPHATE	MG/L	0.72		
SULFATE	MG/L	5.6		
TOTAL ORGANIC CARBON	MG/L	2.4		

PROJ_NO: 8925

SDG: F28237 MEDIA: WATER DATA FRACTION: MF

nsample	CEF-59-002-028-RI-F
samp_date	11/16/2004
lab_id	F28237-5
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Lab Qual	Val Qual	Qual Code
IRON	962			

nsample	CEF-59-003-053-RI-F
samp_date	11/16/2004
lab_id	F28237-8
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Lab Qual	Val Qual	Qual Code
IRON	6420			

nsample	NG-12D-RI-F
samp_date	11/16/2004
lab_id	F28237-3
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Lab Qual	Val Qual	Qual Code
IRON	626			

PROJ_NO: 8925

SDG: F28237 MEDIA: WATER DATA FRACTION: MISC

nsample	CEF-59-002-028-RI	nsample	CEF-59-003-053-RI	nsample	NG-12D-RI
samp_date	11/16/2004	samp_date	11/16/2004	samp_date	11/16/2004
lab_id	F28237-4	lab_id	F28237-7	lab_id	F28237-2
qc_type	NM	qc_type	NM	qc_type	NM
Pct_Solids		Pct_Solids		Pct_Solids	
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	units	Result	Val Qual	Qual Code
ALKALINITY	MG/L	2.5	U	
CHLORIDE	MG/L	8.7		
NITRATE-N	MG/L	0.05	U	
NITRITE-N	MG/L	0.05	U	
ORTHOPHOSPHATE	MG/L	0.02	U	
SULFATE	MG/L	28.6		
TOTAL ORGANIC CARBON	MG/L	0.5	U	

Parameter	units	Result	Val Qual	Qual Code
ALKALINITY	MG/L	11.0		
CHLORIDE	MG/L	9.0		
NITRATE-N	MG/L	0.05	U	
NITRITE-N	MG/L	0.05	U	
ORTHOPHOSPHATE	MG/L	0.23		
SULFATE	MG/L	13.5		
TOTAL ORGANIC CARBON	MG/L	1.0		

Parameter	units	Result	Val Qual	Qual Code
ALKALINITY	MG/L	2.5	U	
CHLORIDE	MG/L	7.6		
NITRATE-N	MG/L	0.05	U	
NITRITE-N	MG/L	0.05	U	
ORTHOPHOSPHATE	MG/L	0.02	U	
SULFATE	MG/L	11.7		
TOTAL ORGANIC CARBON	MG/L	0.68	J	P

PROJ_NO: 8925

SDG: F28102 MEDIA: WATER DATA FRACTION: MISCF

nsample	CEF-59-001-028-RI-F	nsample	CEF-59-001-083-RI-F	nsample	CEF-59-003-121-RI-F
samp_date	11/11/2004	samp_date	11/11/2004	samp_date	11/11/2004
lab_id	F28102-6	lab_id	F28102-8	lab_id	F28102-4
qc_type	NM	qc_type	NM	qc_type	NM
units	MG/L	units	MG/L	units	MG/L
Pct_Solids		Pct_Solids		Pct_Solids	
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Lab Qual	Val Qual	Qual Code
SULFIDE	1.0	U	U	

Parameter	Result	Lab Qual	Val Qual	Qual Code
SULFIDE	1.0	U	U	

Parameter	Result	Lab Qual	Val Qual	Qual Code
SULFIDE	1.0	U	U	

PROJ_NO: 8925

SDG: F28237 MEDIA: WATER DATA FRACTION: MISCF

nsample	CEF-59-002-028-RI-F	nsample	CEF-59-003-053-RI-F	nsample	NG-12D-RI-F
samp_date	11/16/2004	samp_date	11/16/2004	samp_date	11/16/2004
lab_id	F28237-5	lab_id	F28237-8	lab_id	F28237-3
qc_type	NM	qc_type	NM	qc_type	NM
units	MG/L	units	MG/L	units	MG/L
Pct_Solids		Pct_Solids		Pct_Solids	
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Lab Qual	Val Qual	Qual Code
SULFIDE	1.0	U	U	

Parameter	Result	Lab Qual	Val Qual	Qual Code
SULFIDE	1.0	U	U	

Parameter	Result	Lab Qual	Val Qual	Qual Code
SULFIDE	1.0	U	U	

APPENDIX B
RESULTS AS REPORTED BY THE LABORATORY

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-001-028-RI-F		
Lab Sample ID:	F28102-6	**Date Sampled:**	11/11/04
Matrix:	AQ - Groundwater Filtered	**Date Received:**	11/11/04
		Percent Solids:	n/a
Project:	Site 59-CTO 359		

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Iron	1680	300	48	ug/l	1	11/22/04	11/23/04	SM	SW846 6010B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA4100
(2) Prep QC Batch: MP7437

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
I = Indicates a result >= MDL but < RL

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-001-083-RI-F		
Lab Sample ID:	F28102-8	**Date Sampled:**	11/11/04
Matrix:	AQ - Groundwater Filtered	**Date Received:**	11/11/04
		Percent Solids:	n/a
Project:	Site 59-CTO 359		

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Iron	709	300	48	ug/l	1	11/22/04	11/23/04 SM	SW846 6010B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA4100
(2) Prep QC Batch: MP7437

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
I = Indicates a result >= MDL but < RL

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-003-121-RI-F		
Lab Sample ID:	F28102-4	**Date Sampled:**	11/11/04
Matrix:	AQ - Groundwater Filtered	**Date Received:**	11/11/04
		Percent Solids:	n/a
Project:	Site 59-CTO 359		

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Iron	1450	300	48	ug/l	1	11/22/04	11/23/04 SM	SW846 6010B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA4100
(2) Prep QC Batch: MP7437

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
I = Indicates a result >= MDL but < RL

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-002-028-RI		
Lab Sample ID:	F28237-4	**Date Sampled:**	11/16/04
Matrix:	AQ - Ground Water	**Date Received:**	11/18/04
		Percent Solids:	n/a
Project:	Site 59-CTO 359		

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Aluminum	821	200	20	ug/l	1	11/24/04	11/30/04	SM	SW846 6010B [1]	SW846 3010A [3]
Antimony	3.5 U	5.0	3.5	ug/l	1	11/24/04	11/30/04	SM	SW846 6010B [1]	SW846 3010A [3]
Arsenic	3.5 U	10	3.5	ug/l	1	11/24/04	11/30/04	SM	SW846 6010B [1]	SW846 3010A [3]
Barium	20.5 I	200	1.1	ug/l	1	11/24/04	11/30/04	SM	SW846 6010B [1]	SW846 3010A [3]
Beryllium	0.80 U	4.0	0.80	ug/l	1	11/24/04	11/30/04	SM	SW846 6010B [1]	SW846 3010A [3]
Cadmium	0.30 U	5.0	0.30	ug/l	1	11/24/04	11/30/04	SM	SW846 6010B [1]	SW846 3010A [3]
Calcium	3170	1000	42	ug/l	1	11/24/04	11/30/04	SM	SW846 6010B [1]	SW846 3010A [3]
Chromium	2.4 U	10	2.4	ug/l	1	11/24/04	11/30/04	SM	SW846 6010B [1]	SW846 3010A [3]
Cobalt	1.0 U	50	1.0	ug/l	1	11/24/04	11/30/04	SM	SW846 6010B [1]	SW846 3010A [3]
Copper	1.4 U	25	1.4	ug/l	1	11/24/04	11/30/04	SM	SW846 6010B [1]	SW846 3010A [3]
Iron	964	300	48	ug/l	1	11/24/04	11/30/04	SM	SW846 6010B [1]	SW846 3010A [3]
Lead	2.9 U	5.0	2.9	ug/l	1	11/24/04	11/30/04	SM	SW846 6010B [1]	SW846 3010A [3]
Magnesium	1090 I	5000	33	ug/l	1	11/24/04	11/30/04	SM	SW846 6010B [1]	SW846 3010A [3]
Manganese	1.2 I	15	0.60	ug/l	1	11/24/04	11/30/04	SM	SW846 6010B [1]	SW846 3010A [3]
Mercury	0.11 I	1.0	0.052	ug/l	1	11/30/04	11/30/04	JM	SW846 7470A [2]	SW846 7470A [4]
Nickel	0.80 U	40	0.80	ug/l	1	11/24/04	11/30/04	SM	SW846 6010B [1]	SW846 3010A [3]
Potassium	136 I	5000	51	ug/l	1	11/24/04	11/30/04	SM	SW846 6010B [1]	SW846 3010A [3]
Selenium	3.6 U	10	3.6	ug/l	1	11/24/04	11/30/04	SM	SW846 6010B [1]	SW846 3010A [3]
Silver	1.9 U	10	1.9	ug/l	1	11/24/04	11/30/04	SM	SW846 6010B [1]	SW846 3010A [3]
Sodium	4130 I	5000	200	ug/l	1	11/24/04	11/30/04	SM	SW846 6010B [1]	SW846 3010A [3]
Thallium	2.9 U	10	2.9	ug/l	1	11/24/04	11/30/04	SM	SW846 6010B [1]	SW846 3010A [3]
Vanadium	2.3 I	50	0.60	ug/l	1	11/24/04	11/30/04	SM	SW846 6010B [1]	SW846 3010A [3]
Zinc	5.1 U	20	5.1	ug/l	1	11/24/04	11/30/04	SM	SW846 6010B [1]	SW846 3010A [3]

(1) Instrument QC Batch: MA4109
(2) Instrument QC Batch: MA4112
(3) Prep QC Batch: MP7449
(4) Prep QC Batch: MP7464

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
I = Indicates a result >= MDL but < RL

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-002-028-RI-F		
Lab Sample ID:	F28237-5	**Date Sampled:**	11/16/04
Matrix:	AQ - Groundwater Filtered	**Date Received:**	11/18/04
		Percent Solids:	n/a
Project:	Site 59-CTO 359		

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Iron	962	300	48	ug/l	1	11/23/04	11/24/04	SM	SW846 6010B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA4101
(2) Prep QC Batch: MP7444

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
I = Indicates a result >= MDL but < RL

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-003-053-RI-F		
Lab Sample ID:	F28237-8	**Date Sampled:**	11/16/04
Matrix:	AQ - Groundwater Filtered	**Date Received:**	11/18/04
		Percent Solids:	n/a
Project:	Site 59-CTO 359		

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Iron	6420	300	48	ug/l	1	11/23/04	11/24/04	SM	SW846 6010B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA4101
(2) Prep QC Batch: MP7444

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
I = Indicates a result >= MDL but < RL

Accutest Laboratories

Report of Analysis

Client Sample ID:	NG-12D-RI-F		
Lab Sample ID:	F28237-3	**Date Sampled:**	11/16/04
Matrix:	AQ - Groundwater Filtered	**Date Received:**	11/18/04
		Percent Solids:	n/a
Project:	Site 59-CTO 359		

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Iron	626	300	48	ug/l	1	11/23/04	11/24/04	SM	SW846 6010B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA4101
(2) Prep QC Batch: MP7444

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
I = Indicates a result >= MDL but < RL

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-001-028-RI		
Lab Sample ID:	F28102-5	**Date Sampled:**	11/11/04
Matrix:	AQ - Ground Water	**Date Received:**	11/11/04
		Percent Solids:	n/a
Project:	Site 59-CTO 359		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3	5.5	5.0	2.5	mg/l	1	11/18/04	SM	EPA 310.1
Chloride	7.7	2.0	1.0	mg/l	1	11/12/04 13:54	MP	EPA 300/SW846 9056
Nitrogen, Nitrate	0.050 U	0.10	0.050	mg/l	1	11/12/04 13:54	MP	EPA 300/SW846 9056
Nitrogen, Nitrite	0.050 U	0.10	0.050	mg/l	1	11/12/04 13:54	MP	EPA 300/SW846 9056
Phosphate, Ortho	0.020 U	0.10	0.020	mg/l	1	11/12/04 09:00	KG	EPA 365.3
Sulfate	31.6	2.0	1.0	mg/l	1	11/12/04 13:54	MP	EPA 300/SW846 9056
Total Organic Carbon	0.62 I	1.0	0.50	mg/l	1	11/24/04	LE	EPA 415.1

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
I = Indicates a result >= MDL but < R

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-001-083-RI		
Lab Sample ID:	F28102-7	**Date Sampled:**	11/11/04
Matrix:	AQ - Ground Water	**Date Received:**	11/11/04
		Percent Solids:	n/a
Project:	Site 59-CTO 359		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3	11.5	5.0	2.5	mg/l	1	11/18/04	SM	EPA 310.1
Chloride	9.6	2.0	1.0	mg/l	1	11/12/04 14:08	MP	EPA 300/SW846 9056
Nitrogen, Nitrate	0.050 U	0.10	0.050	mg/l	1	11/12/04 14:08	MP	EPA 300/SW846 9056
Nitrogen, Nitrite	0.050 U	0.10	0.050	mg/l	1	11/12/04 14:08	MP	EPA 300/SW846 9056
Phosphate, Ortho	0.18	0.10	0.020	mg/l	1	11/12/04 09:00	KG	EPA 365.3
Sulfate	4.6	2.0	1.0	mg/l	1	11/12/04 14:08	MP	EPA 300/SW846 9056
Total Organic Carbon	1.2	1.0	0.50	mg/l	1	11/27/04	LE	EPA 415.1

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
I = Indicates a result >= MDL but < RL

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-003-121-RI		
Lab Sample ID:	F28102-3	**Date Sampled:**	11/11/04
Matrix:	AQ - Ground Water	**Date Received:**	11/11/04
		Percent Solids:	n/a
Project:	Site 59-CTO 359		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3	220	5.0	2.5	mg/l	1	11/18/04	SM	EPA 310.1
Chloride	12.3	2.0	1.0	mg/l	1	11/12/04 13:39	MP	EPA 300/SW846 9056
Nitrogen, Nitrate	0.050 U	0.10	0.050	mg/l	1	11/12/04 13:39	MP	EPA 300/SW846 9056
Nitrogen, Nitrite	0.050 U	0.10	0.050	mg/l	1	11/12/04 13:39	MP	EPA 300/SW846 9056
Phosphate, Ortho	0.72	0.20	0.040	mg/l	2	11/12/04 09:00	KG	EPA 365.3
Sulfate	5.6	2.0	1.0	mg/l	1	11/12/04 13:39	MP	EPA 300/SW846 9056
Total Organic Carbon	2.4	1.0	0.50	mg/l	1	11/24/04	LE	EPA 415.1

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
I = Indicates a result >= MDL but < RL

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-002-028-RI		
Lab Sample ID:	F28237-4	**Date Sampled:**	11/16/04
Matrix:	AQ - Ground Water	**Date Received:**	11/18/04
		Percent Solids:	n/a
Project:	Site 59-CTO 359		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3	2.5 U	5.0	2.5	mg/l	1	11/24/04	MCR	EPA 310.1
Chloride	8.7	2.0	1.0	mg/l	1	11/18/04 15:43	MP	EPA 300/SW846 9056
Nitrogen, Nitrate	0.050 U	0.10	0.050	mg/l	1	11/18/04 15:43	MP	EPA 300/SW846 9056
Nitrogen, Nitrite	0.050 U	0.10	0.050	mg/l	1	11/18/04 15:43	MP	EPA 300/SW846 9056
Phosphate, Ortho	0.020 U	0.10	0.020	mg/l	1	11/18/04 14:30	MP	EPA 365.3
Sulfate	28.6	2.0	1.0	mg/l	1	11/18/04 15:43	MP	EPA 300/SW846 9056
Total Organic Carbon	0.50 U	1.0	0.50	mg/l	1	12/03/04	LE	EPA 415.1

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
I = Indicates a result >= MDL but < RL

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-003-053-RI		
Lab Sample ID:	F28237-7	**Date Sampled:**	11/16/04
Matrix:	AQ - Ground Water	**Date Received:**	11/18/04
		Percent Solids:	n/a
Project:	Site 59-CTO 359		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3	11.0	5.0	2.5	mg/l	1	11/24/04	MCR	EPA 310.1
Chloride	9.0	2.0	1.0	mg/l	1	11/18/04 15:57	MP	EPA 300/SW846 9056
Nitrogen, Nitrate	0.050 U	0.10	0.050	mg/l	1	11/18/04 15:57	MP	EPA 300/SW846 9056
Nitrogen, Nitrite	0.050 U	0.10	0.050	mg/l	1	11/18/04 15:57	MP	EPA 300/SW846 9056
Phosphate, Ortho	0.23	0.10	0.020	mg/l	1	11/18/04 14:30	MP	EPA 365.3
Sulfate	13.5	2.0	1.0	mg/l	1	11/18/04 15:57	MP	EPA 300/SW846 9056
Total Organic Carbon	1.0	1.0	0.50	mg/l	1	12/03/04	LE	EPA 415.1

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
I = Indicates a result >= MDL but

Accutest Laboratories

Report of Analysis

Client Sample ID:	NG-12D-RI		
Lab Sample ID:	F28237-2	**Date Sampled:**	11/16/04
Matrix:	AQ - Ground Water	**Date Received:**	11/18/04
		Percent Solids:	n/a
Project:	Site 59-CTO 359		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3	2.5 U	5.0	2.5	mg/l	1	11/24/04	MCR	EPA 310.1
Chloride	7.6	2.0	1.0	mg/l	1	11/18/04 15:28	MP	EPA 300/SW846 9056
Nitrogen, Nitrate	0.050 U	0.10	0.050	mg/l	1	11/18/04 15:28	MP	EPA 300/SW846 9056
Nitrogen, Nitrite	0.050 U	0.10	0.050	mg/l	1	11/18/04 15:28	MP	EPA 300/SW846 9056
Phosphate, Ortho	0.020 U	0.10	0.020	mg/l	1	11/18/04 14:30	MP	EPA 365.3
Sulfate	11.7	2.0	1.0	mg/l	1	11/18/04 15:28	MP	EPA 300/SW846 9056
Total Organic Carbon	0.68 I	1.0	0.50	mg/l	1	12/03/04	LE	EPA 415.1

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
I = Indicates a result >= MDL but < RL

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-001-028-RI-F		
Lab Sample ID:	F28102-6	**Date Sampled:**	11/11/04
Matrix:	AQ - Groundwater Filtered	**Date Received:**	11/11/04
		Percent Solids:	n/a
Project:	Site 59-CTO 359		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Sulfide	1.0 U	1.0	1.0	mg/l	1	11/15/04	MP	EPA 376.1

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
I = Indicates a result >= MDL but < RL

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-001-083-RI-F		
Lab Sample ID:	F28102-8	**Date Sampled:**	11/11/04
Matrix:	AQ - Groundwater Filtered	**Date Received:**	11/11/04
		Percent Solids:	n/a
Project:	Site 59-CTO 359		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Sulfide	1.0 U	1.0	1.0	mg/l	1	11/15/04	MP	EPA 376.1

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
I = Indicates a result >= MDL but < RL

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-003-121-RI-F		
Lab Sample ID:	F28102-4	**Date Sampled:**	11/11/04
Matrix:	AQ - Groundwater Filtered	**Date Received:**	11/11/04
		Percent Solids:	n/a
Project:	Site 59-CTO 359		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Sulfide	1.0 U	1.0	1.0	mg/l	1	11/15/04	MP	EPA 376.1

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
I = Indicates a result >= MDL but < RL

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-002-028-RI-F		
Lab Sample ID:	F28237-5	**Date Sampled:**	11/16/04
Matrix:	AQ - Groundwater Filtered	**Date Received:**	11/18/04
		Percent Solids:	n/a
Project:	Site 59-CTO 359		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Sulfide	1.0 U	1.0	1.0	mg/l	1	11/22/04	MP	EPA 376.1

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
I = Indicates a result >= MDL but < RL

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-003-053-RI-F		
Lab Sample ID:	F28237-8	**Date Sampled:**	11/16/04
Matrix:	AQ - Groundwater Filtered	**Date Received:**	11/18/04
		Percent Solids:	n/a
Project:	Site 59-CTO 359		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Sulfide	1.0 U	1.0	1.0	mg/l	1	11/22/04	MP	EPA 376.1

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
I = Indicates a result >= MDL but < RL

Accutest Laboratories

Report of Analysis

Client Sample ID:	NG-12D-RI-F		
Lab Sample ID:	F28237-3	**Date Sampled:**	11/16/04
Matrix:	AQ - Groundwater Filtered	**Date Received:**	11/18/04
		Percent Solids:	n/a
Project:	Site 59-CTO 359		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Sulfide	1.0 U	1.0	1.0	mg/l	1	11/22/04	MP	EPA 376.1

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
I = Indicates a result >= MDL but < RL

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO:	**M. SPERANZA**	**DATE:**	**FEBRUARY 9, 2005**
FROM:	**ERIN M FAUST**	**COPIES:**	**DV FILE**

SUBJECT: **ORGANIC DATA VALIDATION - VOCs**
CTO 359 NAS CECIL FIELD
SAMPLE DELIVERY GROUP (SDG): F28196

SAMPLES: 12/Groundwater

CEF-59-010-053-RI	CEF-59-010-083-RI	CEF-59-011-033-RI
CEF-59-011-053-RI	CEF-59-011-083-RI	CEF-59-013-032-RI
CEF-59-013-053-RI	CEF-59-013-083-RI	CEF-59-014-053-RI
CEF-59-014-083-RI	CEF-59-014-120-RI	NG-02I-RI

Overview

The sample set for CTO 359, NAS Cecil Field, SDG F28196 consists of twelve (12) groundwater environmental samples. All samples were analyzed for target compound list (TCL) volatile organic compounds (VOCs).

The samples were collected by TetraTech NUS on November 12 and 15, 2004 and analyzed by Accutest Laboratories-Southeast. All analyses were conducted in accordance with Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria using SW-846 methods 8260B.

The data contained in this SDG were validated with regard to the following parameters:

* • Data Completeness
* • Holding Times
* • Initial and Continuing Calibration
* • Laboratory Method and Field Quality Control Blank Results
* • Detection Limits

The symbol (*) indicates that all quality control criteria were met for this parameter. Problems affecting data quality are discussed below; documentation supporting these findings is presented in Appendix C. Qualified Analytical results are presented in Appendix A. Results as reported by the Laboratory are presented in Appendix B.

The text of this report is formulated to address only gross noncompliances resulting in the rejection of data and the elimination of false positives.

Comments

Positive results below the reporting limit (RL) were qualified as estimated, J, due to uncertainty near the detection limit.

A trip blank was not included with the samples in this SDG.

Executive Summary

Laboratory Performance Issues: No laboratory-related issued affected data quality.

Other Factors Affecting Data Quality: Positive results below the reporting limit were qualified due to uncertainty near the detection limit. A trip blank was not included with the samples in this SDG.

The data for these analyses were reviewed with reference to the EPA Functional Guidelines for Organic Data Validation (October 1999) and the NFESC guidelines. The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NFESC guidelines and the Quality Assurance Project Plan (QAPP)."

Erin M Faust

Tetra Tech NUS
Erin M. Faust
Environmental Scientist

Tetra Tech NUS
Joseph A. Samchuck
Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Support Documentation

APPENDIX A
QUALIFIED ANALYTICAL RESULTS

Data Validation Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (e.g. % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (e.g. base-line drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; e.g. chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is greater than sample activity

PROJ_NO: 8925

SDG: F28196 MEDIA: WATER DATA FRACTION: OV

nsample	CEF-59-010-053-RI
samp_date	11/12/2004
lab_id	F28196-1
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Lab Qual	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	0.5	U	U	
1,1,2,2-TETRACHLOROETHANE	0.3	U	U	
1,1,2-TRICHLOROETHANE	0.5	U	U	
1,1-DICHLOROETHANE	0.5	U	U	
1,1-DICHLOROETHENE	0.5	U	U	
1,2-DICHLOROETHANE	0.5	U	U	
1,2-DICHLOROPROPANE	0.5	U	U	
2-BUTANONE	2.5	U	U	
2-HEXANONE	2.5	U	U	
4-METHYL-2-PENTANONE	2.5	U	U	
ACETONE	5	U	U	
BENZENE	0.5	U	U	
BROMODICHLOROMETHANE	0.5	U	U	
BROMOFORM	0.5	U	U	
BROMOMETHANE	1	U	U	
CARBON DISULFIDE	1	U	U	
CARBON TETRACHLORIDE	0.5	U	U	
CHLOROBENZENE	0.5	U	U	
CHLORODIBROMOMETHANE	0.4	U	U	
CHLOROETHANE	1	U	U	
CHLOROFORM	0.5	U	U	
CHLOROMETHANE	1	U	U	
CIS-1,2-DICHLOROETHENE	0.5	U	U	
CIS-1,3-DICHLOROPROPENE	0.3	U	U	
ETHYLBENZENE	0.5	U	U	
METHYLENE CHLORIDE	1	U	U	
STYRENE	0.5	U	U	
TETRACHLOROETHENE	0.5	U	U	
TOLUENE	0.5	U	U	
TOTAL XYLENES	1	U	U	
TRANS-1,2-DICHLOROETHENE	0.5	U	U	
TRANS-1,3-DICHLOROPROPENE	0.3	U	U	

nsample	CEF-59-010-053-RI
samp_date	11/12/2004
lab_id	F28196-1
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Lab Qual	Val Qual	Qual Code
TRICHLOROETHENE	0.5	U	U	
VINYL CHLORIDE	0.5	U	U	

nsample	CEF-59-010-083-RI
samp_date	11/15/2004
lab_id	F28196-2
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Lab Qual	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	0.5	U	U	
1,1,2,2-TETRACHLOROETHANE	0.3	U	U	
1,1,2-TRICHLOROETHANE	0.5	U	U	
1,1-DICHLOROETHANE	0.5	U	U	
1,1-DICHLOROETHENE	0.5	U	U	
1,2-DICHLOROETHANE	0.5	U	U	
1,2-DICHLOROPROPANE	0.5	U	U	
2-BUTANONE	2.5	U	U	
2-HEXANONE	2.5	U	U	
4-METHYL-2-PENTANONE	2.5	U	U	
ACETONE	5	U	U	
BENZENE	0.5	U	U	
BROMODICHLOROMETHANE	0.5	U	U	
BROMOFORM	0.5	U	U	
BROMOMETHANE	1	U	U	
CARBON DISULFIDE	1	U	U	
CARBON TETRACHLORIDE	0.5	U	U	
CHLOROBENZENE	0.5	U	U	
CHLORODIBROMOMETHANE	0.4	U	U	
CHLOROETHANE	1	U	U	
CHLOROFORM	2			
CHLOROMETHANE	1	U	U	
CIS-1,2-DICHLOROETHENE	0.5	U	U	
CIS-1,3-DICHLOROPROPENE	0.3	U	U	
ETHYLBENZENE	0.5	U	U	
METHYLENE CHLORIDE	1	U	U	
STYRENE	0.5	U	U	
TETRACHLOROETHENE	0.5	U	U	
TOLUENE	0.5	U	U	
TOTAL XYLENES	1	U	U	
TRANS-1,2-DICHLOROETHENE	0.5	U	U	
TRANS-1,3-DICHLOROPROPENE	0.3	U	U	

PROJ_NO: 8925

SDG: F28196 MEDIA: WATER DATA FRACTION: OV

nsample	CEF-59-010-083-RI
samp_date	11/15/2004
lab_id	F28196-2
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Lab Qual	Val Qual	Qual Code
TRICHLOROETHENE	14.8			
VINYL CHLORIDE	0.5	U	U	

nsample	CEF-59-011-033-RI
samp_date	11/15/2004
lab_id	F28196-10
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Lab Qual	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	0.5	U	U	
1,1,2,2-TETRACHLOROETHANE	0.3	U	U	
1,1,2-TRICHLOROETHANE	0.5	U	U	
1,1-DICHLOROETHANE	0.5	U	U	
1,1-DICHLOROETHENE	0.5	U	U	
1,2-DICHLOROETHANE	0.5	U	U	
1,2-DICHLOROPROPANE	0.5	U	U	
2-BUTANONE	2.5	U	U	
2-HEXANONE	2.5	U	U	
4-METHYL-2-PENTANONE	2.5	U	U	
ACETONE	5	U	U	
BENZENE	0.5	U	U	
BROMODICHLOROMETHANE	0.5	U	U	
BROMOFORM	0.5	U	U	
BROMOMETHANE	1	U	U	
CARBON DISULFIDE	1	U	U	
CARBON TETRACHLORIDE	0.5	U	U	
CHLOROBENZENE	0.5	U	U	
CHLORODIBROMOMETHANE	0.4	U	U	
CHLOROETHANE	1	U	U	
CHLOROFORM	0.5	U	U	
CHLOROMETHANE	1	U	U	
CIS-1,2-DICHLOROETHENE	0.5	U	U	
CIS-1,3-DICHLOROPROPENE	0.3	U	U	
ETHYLBENZENE	0.5	U	U	
METHYLENE CHLORIDE	1	U	U	
STYRENE	0.5	U	U	
TETRACHLOROETHENE	0.5	U	U	
TOLUENE	0.5	U	U	
TOTAL XYLENES	1	U	U	
TRANS-1,2-DICHLOROETHENE	0.5	U	U	
TRANS-1,3-DICHLOROPROPENE	0.3	U	U	

nsample	CEF-59-011-033-RI
samp_date	11/15/2004
lab_id	F28196-10
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Lab Qual	Val Qual	Qual Code
TRICHLOROETHENE	22.3			
VINYL CHLORIDE	0.5	U	U	

PROJ_NO: 8925

SDG: F28196 MEDIA: WATER DATA FRACTION: OV

nsample	CEF-59-011-053-RI
samp_date	11/15/2004
lab_id	F28196-12
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Lab Qual	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	0.5	U	U	
1,1,2,2-TETRACHLOROETHANE	0.3	U	U	
1,1,2-TRICHLOROETHANE	0.5	U	U	
1,1-DICHLOROETHANE	0.5	U	U	
1,1-DICHLOROETHENE	0.5	U	U	
1,2-DICHLOROETHANE	0.5	U	U	
1,2-DICHLOROPROPANE	0.5	U	U	
2-BUTANONE	2.5	U	U	
2-HEXANONE	2.5	U	U	
4-METHYL-2-PENTANONE	2.5	U	U	
ACETONE	5	U	U	
BENZENE	0.5	U	U	
BROMODICHLOROMETHANE	0.5	U	U	
BROMOFORM	0.5	U	U	
BROMOMETHANE	1	U	U	
CARBON DISULFIDE	1	U	U	
CARBON TETRACHLORIDE	0.5	U	U	
CHLOROBENZENE	0.5	U	U	
CHLORODIBROMOMETHANE	0.4	U	U	
CHLOROETHANE	1	U	U	
CHLOROFORM	0.5	U	U	
CHLOROMETHANE	1	U	U	
CIS-1,2-DICHLOROETHENE	0.5	U	U	
CIS-1,3-DICHLOROPROPENE	0.3	U	U	
ETHYLBENZENE	0.5	U	U	
METHYLENE CHLORIDE	1	U	U	
STYRENE	0.5	U	U	
TETRACHLOROETHENE	0.5	U	U	
TOLUENE	0.5	U	U	
TOTAL XYLENES	1	U	U	
TRANS-1,2-DICHLOROETHENE	0.5	U	U	
TRANS-1,3-DICHLOROPROPENE	0.3	U	U	

nsample	CEF-59-011-053-RI
samp_date	11/15/2004
lab_id	F28196-12
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Lab Qual	Val Qual	Qual Code
TRICHLOROETHENE	0.5	U	U	
VINYL CHLORIDE	0.5	U	U	

nsample	CEF-59-011-083-RI
samp_date	11/15/2004
lab_id	F28196-11
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Lab Qual	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	0.5	U	U	
1,1,2,2-TETRACHLOROETHANE	0.3	U	U	
1,1,2-TRICHLOROETHANE	0.5	U	U	
1,1-DICHLOROETHANE	0.5	U	U	
1,1-DICHLOROETHENE	0.5	U	U	
1,2-DICHLOROETHANE	0.5	U	U	
1,2-DICHLOROPROPANE	0.5	U	U	
2-BUTANONE	2.5	U	U	
2-HEXANONE	2.5	U	U	
4-METHYL-2-PENTANONE	2.5	U	U	
ACETONE	5	U	U	
BENZENE	0.5	U	U	
BROMODICHLOROMETHANE	0.5	U	U	
BROMOFORM	0.5	U	U	
BROMOMETHANE	1	U	U	
CARBON DISULFIDE	1	U	U	
CARBON TETRACHLORIDE	0.5	U	U	
CHLOROBENZENE	0.5	U	U	
CHLORODIBROMOMETHANE	0.4	U	U	
CHLOROETHANE	1	U	U	
CHLOROFORM	0.5	U	U	
CHLOROMETHANE	1	U	U	
CIS-1,2-DICHLOROETHENE	0.5	U	U	
CIS-1,3-DICHLOROPROPENE	0.3	U	U	
ETHYLBENZENE	0.5	U	U	
METHYLENE CHLORIDE	1	U	U	
STYRENE	0.5	U	U	
TETRACHLOROETHENE	0.5	U	U	
TOLUENE	0.5	U	U	
TOTAL XYLENES	1	U	U	
TRANS-1,2-DICHLOROETHENE	0.5	U	U	
TRANS-1,3-DICHLOROPROPENE	0.3	U	U	

PROJ_NO: 8925

SDG: F28196 MEDIA: WATER DATA FRACTION: OV

nsample	CEF-59-011-083-RI
samp_date	11/15/2004
lab_id	F28196-11
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Lab Qual	Val Qual	Qual Code
TRICHLOROETHENE	0.5	U	U	
VINYL CHLORIDE	0.5	U	U	

nsample	CEF-59-013-032-RI
samp_date	11/15/2004
lab_id	F28196-6
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Lab Qual	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	0.5	U	U	
1,1,2,2-TETRACHLOROETHANE	0.3	U	U	
1,1,2-TRICHLOROETHANE	0.5	U	U	
1,1-DICHLOROETHANE	0.5	U	U	
1,1-DICHLOROETHENE	0.5	U	U	
1,2-DICHLOROETHANE	0.5	U	U	
1,2-DICHLOROPROPANE	0.5	U	U	
2-BUTANONE	2.5	U	U	
2-HEXANONE	2.5	U	U	
4-METHYL-2-PENTANONE	2.5	U	U	
ACETONE	5	U	U	
BENZENE	0.5	U	U	
BROMODICHLOROMETHANE	0.5	U	U	
BROMOFORM	0.5	U	U	
BROMOMETHANE	1	U	U	
CARBON DISULFIDE	1	U	U	
CARBON TETRACHLORIDE	0.5	U	U	
CHLOROBENZENE	0.5	U	U	
CHLORODIBROMOMETHANE	0.4	U	U	
CHLOROETHANE	1	U	U	
CHLOROFORM	0.5	U	U	
CHLOROMETHANE	1	U	U	
CIS-1,2-DICHLOROETHENE	0.51	I	J	P
CIS-1,3-DICHLOROPROPENE	0.3	U	U	
ETHYLBENZENE	0.5	U	U	
METHYLENE CHLORIDE	1	U	U	
STYRENE	0.5	U	U	
TETRACHLOROETHENE	0.5	U	U	
TOLUENE	0.5	U	U	
TOTAL XYLENES	1	U	U	
TRANS-1,2-DICHLOROETHENE	0.5	U	U	
TRANS-1,3-DICHLOROPROPENE	0.3	U	U	

nsample	CEF-59-013-032-RI
samp_date	11/15/2004
lab_id	F28196-6
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Lab Qual	Val Qual	Qual Code
TRICHLOROETHENE	0.5	U	U	
VINYL CHLORIDE	0.68	I	J	P

PROJ_NO: 8925

SDG: F28196 MEDIA: WATER DATA FRACTION: OV

nsample	CEF-59-013-053-RI
samp_date	11/15/2004
lab_id	F28196-8
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Lab Qual	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	0.5	U	U	
1,1,2,2-TETRACHLOROETHANE	0.3	U	U	
1,1,2-TRICHLOROETHANE	0.5	U	U	
1,1-DICHLOROETHANE	0.5	U	U	
1,1-DICHLOROETHENE	0.5	U	U	
1,2-DICHLOROETHANE	0.5	U	U	
1,2-DICHLOROPROPANE	0.5	U	U	
2-BUTANONE	2.5	U	U	
2-HEXANONE	2.5	U	U	
4-METHYL-2-PENTANONE	2.5	U	U	
ACETONE	5	U	U	
BENZENE	0.5	U	U	
BROMODICHLOROMETHANE	0.5	U	U	
BROMOFORM	0.5	U	U	
BROMOMETHANE	1	U	U	
CARBON DISULFIDE	1	U	U	
CARBON TETRACHLORIDE	0.5	U	U	
CHLOROBENZENE	0.5	U	U	
CHLORODIBROMOMETHANE	0.4	U	U	
CHLOROETHANE	1	U	U	
CHLOROFORM	0.5	U	U	
CHLOROMETHANE	1	U	U	
CIS-1,2-DICHLOROETHENE	0.5	U	U	
CIS-1,3-DICHLOROPROPENE	0.3	U	U	
ETHYLBENZENE	0.5	U	U	
METHYLENE CHLORIDE	1	U	U	
STYRENE	0.5	U	U	
TETRACHLOROETHENE	0.5	U	U	
TOLUENE	0.5	U	U	
TOTAL XYLENES	1	U	U	
TRANS-1,2-DICHLOROETHENE	0.5	U	U	
TRANS-1,3-DICHLOROPROPENE	0.3	U	U	

nsample	CEF-59-013-053-RI
samp_date	11/15/2004
lab_id	F28196-8
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Lab Qual	Val Qual	Qual Code
TRICHLOROETHENE	0.5	U	U	
VINYL CHLORIDE	0.5	U	U	

nsample	CEF-59-013-083-RI
samp_date	11/15/2004
lab_id	F28196-7
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Lab Qual	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	0.5	U	U	
1,1,2,2-TETRACHLOROETHANE	0.3	U	U	
1,1,2-TRICHLOROETHANE	0.5	U	U	
1,1-DICHLOROETHANE	0.5	U	U	
1,1-DICHLOROETHENE	0.5	U	U	
1,2-DICHLOROETHANE	0.5	U	U	
1,2-DICHLOROPROPANE	0.5	U	U	
2-BUTANONE	2.5	U	U	
2-HEXANONE	2.5	U	U	
4-METHYL-2-PENTANONE	2.5	U	U	
ACETONE	5	U	U	
BENZENE	0.5	U	U	
BROMODICHLOROMETHANE	0.5	U	U	
BROMOFORM	0.5	U	U	
BROMOMETHANE	1	U	U	
CARBON DISULFIDE	1	U	U	
CARBON TETRACHLORIDE	0.5	U	U	
CHLOROBENZENE	0.5	U	U	
CHLORODIBROMOMETHANE	0.4	U	U	
CHLOROETHANE	1	U	U	
CHLOROFORM	0.5	U	U	
CHLOROMETHANE	1	U	U	
CIS-1,2-DICHLOROETHENE	0.5	U	U	
CIS-1,3-DICHLOROPROPENE	0.3	U	U	
ETHYLBENZENE	0.5	U	U	
METHYLENE CHLORIDE	1	U	U	
STYRENE	0.5	U	U	
TETRACHLOROETHENE	0.5	U	U	
TOLUENE	0.5	U	U	
TOTAL XYLENES	1	U	U	
TRANS-1,2-DICHLOROETHENE	0.5	U	U	
TRANS-1,3-DICHLOROPROPENE	0.3	U	U	

PROJ_NO: 8925

SDG: F28196 MEDIA: WATER DATA FRACTION: OV

nsample	CEF-59-013-083-RI
samp_date	11/15/2004
lab_id	F28196-7
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Lab Qual	Val Qual	Qual Code
TRICHLOROETHENE	0.5	U	U	
VINYL CHLORIDE	0.5	U	U	

nsample	CEF-59-014-053-RI
samp_date	11/15/2004
lab_id	F28196-3
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Lab Qual	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	0.5	U	U	
1,1,2,2-TETRACHLOROETHANE	0.3	U	U	
1,1,2-TRICHLOROETHANE	0.5	U	U	
1,1-DICHLOROETHANE	0.5	U	U	
1,1-DICHLOROETHENE	0.5	U	U	
1,2-DICHLOROETHANE	0.5	U	U	
1,2-DICHLOROPROPANE	0.5	U	U	
2-BUTANONE	2.5	U	U	
2-HEXANONE	2.5	U	U	
4-METHYL-2-PENTANONE	2.5	U	U	
ACETONE	5	U	U	
BENZENE	0.5	U	U	
BROMODICHLOROMETHANE	0.5	U	U	
BROMOFORM	0.5	U	U	
BROMOMETHANE	1	U	U	
CARBON DISULFIDE	1	U	U	
CARBON TETRACHLORIDE	0.5	U	U	
CHLOROBENZENE	0.5	U	U	
CHLORODIBROMOMETHANE	0.4	U	U	
CHLOROETHANE	1	U	U	
CHLOROFORM	0.5	U	U	
CHLOROMETHANE	1	U	U	
CIS-1,2-DICHLOROETHENE	0.5	U	U	
CIS-1,3-DICHLOROPROPENE	0.3	U	U	
ETHYLBENZENE	0.5	U	U	
METHYLENE CHLORIDE	1	U	U	
STYRENE	0.5	U	U	
TETRACHLOROETHENE	0.5	U	U	
TOLUENE	0.5	U	U	
TOTAL XYLENES	1	U	U	
TRANS-1,2-DICHLOROETHENE	0.5	U	U	
TRANS-1,3-DICHLOROPROPENE	0.3	U	U	

nsample	CEF-59-014-053-RI
samp_date	11/15/2004
lab_id	F28196-3
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Lab Qual	Val Qual	Qual Code
TRICHLOROETHENE	0.5	U	U	
VINYL CHLORIDE	0.5	U	U	

PROJ_NO: 8925

SDG: F28196 MEDIA: WATER DATA FRACTION: OV

nsample	CEF-59-014-083-RI
samp_date	11/15/2004
lab_id	F28196-5
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Lab Qual	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	0.5	U	U	
1,1,2,2-TETRACHLOROETHANE	0.3	U	U	
1,1,2-TRICHLOROETHANE	0.5	U	U	
1,1-DICHLOROETHANE	0.5	U	U	
1,1-DICHLOROETHENE	0.5	U	U	
1,2-DICHLOROETHANE	0.5	U	U	
1,2-DICHLOROPROPANE	0.5	U	U	
2-BUTANONE	2.5	U	U	
2-HEXANONE	2.5	U	U	
4-METHYL-2-PENTANONE	2.5	U	U	
ACETONE	5	U	U	
BENZENE	0.5	U	U	
BROMODICHLOROMETHANE	0.5	U	U	
BROMOFORM	0.5	U	U	
BROMOMETHANE	1	U	U	
CARBON DISULFIDE	1	U	U	
CARBON TETRACHLORIDE	0.5	U	U	
CHLOROBENZENE	0.5	U	U	
CHLORODIBROMOMETHANE	0.4	U	U	
CHLOROETHANE	1	U	U	
CHLOROFORM	0.5	U	U	
CHLOROMETHANE	1	U	U	
CIS-1,2-DICHLOROETHENE	0.5	U	U	
CIS-1,3-DICHLOROPROPENE	0.3	U	U	
ETHYLBENZENE	0.5	U	U	
METHYLENE CHLORIDE	1	U	U	
STYRENE	0.5	U	U	
TETRACHLOROETHENE	0.5	U	U	
TOLUENE	0.5	U	U	
TOTAL XYLENES	1	U	U	
TRANS-1,2-DICHLOROETHENE	0.5	U	U	
TRANS-1,3-DICHLOROPROPENE	0.3	U	U	

nsample	CEF-59-014-083-RI
samp_date	11/15/2004
lab_id	F28196-5
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Lab Qual	Val Qual	Qual Code
TRICHLOROETHENE	0.5	U	U	
VINYL CHLORIDE	0.5	U	U	

nsample	CEF-59-014-120-RI
samp_date	11/15/2004
lab_id	F28196-4
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Lab Qual	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	0.5	U	U	
1,1,2,2-TETRACHLOROETHANE	0.3	U	U	
1,1,2-TRICHLOROETHANE	0.5	U	U	
1,1-DICHLOROETHANE	0.5	U	U	
1,1-DICHLOROETHENE	0.5	U	U	
1,2-DICHLOROETHANE	0.5	U	U	
1,2-DICHLOROPROPANE	0.5	U	U	
2-BUTANONE	2.5	U	U	
2-HEXANONE	2.5	U	U	
4-METHYL-2-PENTANONE	2.5	U	U	
ACETONE	5	U	U	
BENZENE	0.5	U	U	
BROMODICHLOROMETHANE	0.5	U	U	
BROMOFORM	0.5	U	U	
BROMOMETHANE	1	U	U	
CARBON DISULFIDE	1	U	U	
CARBON TETRACHLORIDE	0.5	U	U	
CHLOROBENZENE	0.5	U	U	
CHLORODIBROMOMETHANE	0.4	U	U	
CHLOROETHANE	1	U	U	
CHLOROFORM	0.5	U	U	
CHLOROMETHANE	1	U	U	
CIS-1,2-DICHLOROETHENE	0.5	U	U	
CIS-1,3-DICHLOROPROPENE	0.3	U	U	
ETHYLBENZENE	0.5	U	U	
METHYLENE CHLORIDE	1	U	U	
STYRENE	0.5	U	U	
TETRACHLOROETHENE	0.5	U	U	
TOLUENE	0.5	U	U	
TOTAL XYLENES	1	U	U	
TRANS-1,2-DICHLOROETHENE	0.5	U	U	
TRANS-1,3-DICHLOROPROPENE	0.3	U	U	

PROJ_NO: 8925

SDG: F28196 MEDIA: WATER DATA FRACTION: OV

nsample	CEF-59-014-120-RI
samp_date	11/15/2004
lab_id	F28196-4
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Lab Qual	Val Qual	Qual Code
TRICHLOROETHENE	0.5	U	U	
VINYL CHLORIDE	0.5	U	U	

nsample	NG-02I-RI
samp_date	11/15/2004
lab_id	F28196-9
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Lab Qual	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	0.5	U	U	
1,1,2,2-TETRACHLOROETHANE	0.3	U	U	
1,1,2-TRICHLOROETHANE	0.5	U	U	
1,1-DICHLOROETHANE	0.5	U	U	
1,1-DICHLOROETHENE	0.5	U	U	
1,2-DICHLOROETHANE	0.5	U	U	
1,2-DICHLOROPROPANE	0.5	U	U	
2-BUTANONE	2.5	U	U	
2-HEXANONE	2.5	U	U	
4-METHYL-2-PENTANONE	2.5	U	U	
ACETONE	5	U	U	
BENZENE	0.5	U	U	
BROMODICHLOROMETHANE	0.5	U	U	
BROMOFORM	0.5	U	U	
BROMOMETHANE	1	U	U	
CARBON DISULFIDE	1	U	U	
CARBON TETRACHLORIDE	0.5	U	U	
CHLOROBENZENE	0.5	U	U	
CHLORODIBROMOMETHANE	0.4	U	U	
CHLOROETHANE	1	U	U	
CHLOROFORM	0.5	U	U	
CHLOROMETHANE	1	U	U	
CIS-1,2-DICHLOROETHENE	0.76	I	J	P
CIS-1,3-DICHLOROPROPENE	0.3	U	U	
ETHYLBENZENE	0.5	U	U	
METHYLENE CHLORIDE	1	U	U	
STYRENE	0.5	U	U	
TETRACHLOROETHENE	0.5	U	U	
TOLUENE	0.5	U	U	
TOTAL XYLENES	1	U	U	
TRANS-1,2-DICHLOROETHENE	0.5	U	U	
TRANS-1,3-DICHLOROPROPENE	0.3	U	U	

nsample	NG-02I-RI
samp_date	11/15/2004
lab_id	F28196-9
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Lab Qual	Val Qual	Qual Code
TRICHLOROETHENE	79.7			
VINYL CHLORIDE	0.5	U	U	

APPENDIX B
RESULTS AS REPORTED BY THE LABORATORY

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-010-053-RI		
Lab Sample ID:	F28196-1	**Date Sampled:**	11/12/04
Matrix:	AQ - Ground Water	**Date Received:**	11/17/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N0001777.D	1	11/17/04	NJ	n/a	n/a	VN79
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	5.0 U	5.0	5.0	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	ug/l	
75-00-3	Chloroethane	1.0 U	1.0	1.0	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	ug/l	
75-15-0	Carbon disulfide	1.0 U	1.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	0.50 U	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	0.40 U	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
591-78-6	2-Hexanone	2.5 U	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	2.5 U	5.0	2.5	ug/l	
74-83-9	Methyl bromide	1.0 U	1.0	1.0	ug/l	
74-87-3	Methyl chloride	1.0 U	1.0	1.0	ug/l	
75-09-2	Methylene chloride	1.0 U	1.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	2.5 U	5.0	2.5	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.30 U	1.0	0.30	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	ug/l	

000038

U = Not detected MDL - Method Detection Limit I = Result > = MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF-59-010-053-RI		
Lab Sample ID:	F28196-1	**Date Sampled:**	11/12/04
Matrix:	AQ - Ground Water	**Date Received:**	11/17/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.0 U	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		86-115%
17060-07-0	1,2-Dichloroethane-D4	98%		73-126%
2037-26-5	Toluene-D8	93%		86-112%
460-00-4	4-Bromofluorobenzene	100%		83-119%

U = Not detected MDL - Method Detection Limit I = Result > = MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-010-083-RI		
Lab Sample ID:	F28196-2	**Date Sampled:**	11/15/04
Matrix:	AQ - Ground Water	**Date Received:**	11/17/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N0001780.D	1	11/17/04	NJ	n/a	n/a	VN79
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	5.0 U	5.0	5.0	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	ug/l	
75-00-3	Chloroethane	1.0 U	1.0	1.0	ug/l	
67-66-3	Chloroform	2.0	1.0	0.50	ug/l	
75-15-0	Carbon disulfide	1.0 U	1.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	0.50 U	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	0.40 U	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
591-78-6	2-Hexanone	2.5 U	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	2.5 U	5.0	2.5	ug/l	
74-83-9	Methyl bromide	1.0 U	1.0	1.0	ug/l	
74-87-3	Methyl chloride	1.0 U	1.0	1.0	ug/l	
75-09-2	Methylene chloride	1.0 U	1.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	2.5 U	5.0	2.5	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.30 U	1.0	0.30	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	ug/l	
79-01-6	Trichloroethylene	14.8	1.0	0.50	ug/l	

U = Not detected MDL - Method Detection Limit I = Result > = MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF-59-010-083-RI		
Lab Sample ID:	F28196-2	**Date Sampled:**	11/15/04
Matrix:	AQ - Ground Water	**Date Received:**	11/17/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.0 U	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		86-115%
17060-07-0	1,2-Dichloroethane-D4	98%		73-126%
2037-26-5	Toluene-D8	93%		86-112%
460-00-4	4-Bromofluorobenzene	99%		83-119%

U = Not detected MDL - Method Detection Limit I = Result > = MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-011-033-RI		
Lab Sample ID:	F28196-10	**Date Sampled:**	11/15/04
Matrix:	AQ - Ground Water	**Date Received:**	11/17/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N0001797.D	1	11/18/04	NJ	n/a	n/a	VN80
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	5.0 U	5.0	5.0	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	ug/l	
75-00-3	Chloroethane	1.0 U	1.0	1.0	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	ug/l	
75-15-0	Carbon disulfide	1.0 U	1.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	0.50 U	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	0.40 U	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
591-78-6	2-Hexanone	2.5 U	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	2.5 U	5.0	2.5	ug/l	
74-83-9	Methyl bromide	1.0 U	1.0	1.0	ug/l	
74-87-3	Methyl chloride	1.0 U	1.0	1.0	ug/l	
75-09-2	Methylene chloride	1.0 U	1.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	2.5 U	5.0	2.5	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.30 U	1.0	0.30	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	ug/l	
79-01-6	Trichloroethylene	22.3	1.0	0.50	ug/l	

U = Not detected MDL - Method Detection Limit I = Result > = MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF-59-011-033-RI		
Lab Sample ID:	F28196-10	**Date Sampled:**	11/15/04
Matrix:	AQ - Ground Water	**Date Received:**	11/17/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.0 U	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		86-115%
17060-07-0	1,2-Dichloroethane-D4	97%		73-126%
2037-26-5	Toluene-D8	94%		86-112%
460-00-4	4-Bromofluorobenzene	96%		83-119%

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-011-053-RI		
Lab Sample ID:	F28196-12	**Date Sampled:**	11/15/04
Matrix:	AQ - Ground Water	**Date Received:**	11/17/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N0001799.D	1	11/18/04	NJ	n/a	n/a	VN80
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	5.0 U	5.0	5.0	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	ug/l	
75-00-3	Chloroethane	1.0 U	1.0	1.0	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	ug/l	
75-15-0	Carbon disulfide	1.0 U	1.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	0.50 U	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	0.40 U	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
591-78-6	2-Hexanone	2.5 U	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	2.5 U	5.0	2.5	ug/l	
74-83-9	Methyl bromide	1.0 U	1.0	1.0	ug/l	
74-87-3	Methyl chloride	1.0 U	1.0	1.0	ug/l	
75-09-2	Methylene chloride	1.0 U	1.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	2.5 U	5.0	2.5	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.30 U	1.0	0.30	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	ug/l	

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF-59-011-053-RI		
Lab Sample ID:	F28196-12	**Date Sampled:**	11/15/04
Matrix:	AQ - Ground Water	**Date Received:**	11/17/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.0 U	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		86-115%
17060-07-0	1,2-Dichloroethane-D4	103%		73-126%
2037-26-5	Toluene-D8	93%		86-112%
460-00-4	4-Bromofluorobenzene	95%		83-119%

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-011-083-RI		
Lab Sample ID:	F28196-11	**Date Sampled:**	11/15/04
Matrix:	AQ - Ground Water	**Date Received:**	11/17/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N0001798.D	1	11/18/04	NJ	n/a	n/a	VN80
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	5.0 U	5.0	5.0	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	ug/l	
75-00-3	Chloroethane	1.0 U	1.0	1.0	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	ug/l	
75-15-0	Carbon disulfide	1.0 U	1.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	0.50 U	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	0.40 U	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
591-78-6	2-Hexanone	2.5 U	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	2.5 U	5.0	2.5	ug/l	
74-83-9	Methyl bromide	1.0 U	1.0	1.0	ug/l	
74-87-3	Methyl chloride	1.0 U	1.0	1.0	ug/l	
75-09-2	Methylene chloride	1.0 U	1.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	2.5 U	5.0	2.5	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.30 U	1.0	0.30	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	ug/l	

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF-59-011-083-RI		
Lab Sample ID:	F28196-11	**Date Sampled:**	11/15/04
Matrix:	AQ - Ground Water	**Date Received:**	11/17/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.0 U	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		86-115%
17060-07-0	1,2-Dichloroethane-D4	103%		73-126%
2037-26-5	Toluene-D8	93%		86-112%
460-00-4	4-Bromofluorobenzene	96%		83-119%

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-013-032-RI		
Lab Sample ID:	F28196-6	**Date Sampled:**	11/15/04
Matrix:	AQ - Ground Water	**Date Received:**	11/17/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N0001784.D	1	11/17/04	NJ	n/a	n/a	VN79
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	5.0 U	5.0	5.0	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	ug/l	
75-00-3	Chloroethane	1.0 U	1.0	1.0	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	ug/l	
75-15-0	Carbon disulfide	1.0 U	1.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	0.50 U	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	0.40 U	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.51	1.0	0.50	ug/l	I
10061-01-5	cis-1,3-Dichloropropene	0.30 U	1.0	0:30	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
591-78-6	2-Hexanone	2.5 U	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	2.5 U	5.0	2.5	ug/l	
74-83-9	Methyl bromide	1.0 U	1.0	1.0	ug/l	
74-87-3	Methyl chloride	1.0 U	1.0	1.0	ug/l	
75-09-2	Methylene chloride	1.0 U	1.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	2.5 U	5.0	2.5	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.30 U	1.0	0.30	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	ug/l	

U = Not detected MDL - Method Detection Limit I = Result > = MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF-59-013-032-RI		
Lab Sample ID:	F28196-6	**Date Sampled:**	11/15/04
Matrix:	AQ - Ground Water	**Date Received:**	11/17/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	0.68	1.0	0.50	ug/l	I
1330-20-7	Xylene (total)	1.0 U	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		86-115%
17060-07-0	1,2-Dichloroethane-D4	102%		73-126%
2037-26-5	Toluene-D8	94%		86-112%
460-00-4	4-Bromofluorobenzene	99%		83-119%

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-013-053-RI		
Lab Sample ID:	F28196-8	**Date Sampled:**	11/15/04
Matrix:	AQ - Ground Water	**Date Received:**	11/17/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N0001786.D	1	11/17/04	NJ	n/a	n/a	VN79
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	5.0 U	5.0	5.0	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	ug/l	
75-00-3	Chloroethane	1.0 U	1.0	1.0	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	ug/l	
75-15-0	Carbon disulfide	1.0 U	1.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	0.50 U	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	0.40 U	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
591-78-6	2-Hexanone	2.5 U	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	2.5 U	5.0	2.5	ug/l	
74-83-9	Methyl bromide	1.0 U	1.0	1.0	ug/l	
74-87-3	Methyl chloride	1.0 U	1.0	1.0	ug/l	
75-09-2	Methylene chloride	1.0 U	1.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	2.5 U	5.0	2.5	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.30 U	1.0	0.30	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	ug/l	

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF-59-013-053-RI		
Lab Sample ID:	F28196-8	**Date Sampled:**	11/15/04
Matrix:	AQ - Ground Water	**Date Received:**	11/17/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.0 U	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		86-115%
17060-07-0	1,2-Dichloroethane-D4	103%		73-126%
2037-26-5	Toluene-D8	94%		86-112%
460-00-4	4-Bromofluorobenzene	97%		83-119%

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-013-083-RI		
Lab Sample ID:	F28196-7	**Date Sampled:**	11/15/04
Matrix:	AQ - Ground Water	**Date Received:**	11/17/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N0001785.D	1	11/17/04	NJ	n/a	n/a	VN79
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	5.0 U	5.0	5.0	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	ug/l	
75-00-3	Chloroethane	1.0 U	1.0	1.0	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	ug/l	
75-15-0	Carbon disulfide	1.0 U	1.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	0.50 U	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	0.40 U	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
591-78-6	2-Hexanone	2.5 U	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	2.5 U	5.0	2.5	ug/l	
74-83-9	Methyl bromide	1.0 U	1.0	1.0	ug/l	
74-87-3	Methyl chloride	1.0 U	1.0	1.0	ug/l	
75-09-2	Methylene chloride	1.0 U	1.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	2.5 U	5.0	2.5	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.30 U	1.0	0.30	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	ug/l	

U = Not detected MDL - Method Detection Limit I = Result > = MDL but < RL J = Estimated Value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF-59-013-083-RI		
Lab Sample ID:	F28196-7	**Date Sampled:**	11/15/04
Matrix:	AQ - Ground Water	**Date Received:**	11/17/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.0 U	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		86-115%
17060-07-0	1,2-Dichloroethane-D4	102%		73-126%
2037-26-5	Toluene-D8	94%		86-112%
460-00-4	4-Bromofluorobenzene	98%		83-119%

U = Not detected MDL - Method Detection Limit I = Result > = MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-014-053-RI		
Lab Sample ID:	F28196-3	**Date Sampled:**	11/15/04
Matrix:	AQ - Ground Water	**Date Received:**	11/17/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N0001781.D	1	11/17/04	NJ	n/a	n/a	VN79
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	5.0 U	5.0	5.0	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	ug/l	
75-00-3	Chloroethane	1.0 U	1.0	1.0	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	ug/l	
75-15-0	Carbon disulfide	1.0 U	1.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	0.50 U	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	0.40 U	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
591-78-6	2-Hexanone	2.5 U	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	2.5 U	5.0	2.5	ug/l	
74-83-9	Methyl bromide	1.0 U	1.0	1.0	ug/l	
74-87-3	Methyl chloride	1.0 U	1.0	1.0	ug/l	
75-09-2	Methylene chloride	1.0 U	1.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	2.5 U	5.0	2.5	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.30 U	1.0	0.30	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	ug/l	

U = Not detected MDL - Method Detection Limit I = Result > = MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF-59-014-053-RI		
Lab Sample ID:	F28196-3	**Date Sampled:**	11/15/04
Matrix:	AQ - Ground Water	**Date Received:**	11/17/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.0 U	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		86-115%
17060-07-0	1,2-Dichloroethane-D4	98%		73-126%
2037-26-5	Toluene-D8	93%		86-112%
460-00-4	4-Bromofluorobenzene	100%		83-119%

000048

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-014-083-RI		
Lab Sample ID:	F28196-5	**Date Sampled:**	11/15/04
Matrix:	AQ - Ground Water	**Date Received:**	11/17/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N0001783.D	1	11/17/04	NJ	n/a	n/a	VN79
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	5.0 U	5.0	5.0	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	ug/l	
75-00-3	Chloroethane	1.0 U	1.0	1.0	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	ug/l	
75-15-0	Carbon disulfide	1.0 U	1.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	0.50 U	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	0.40 U	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
591-78-6	2-Hexanone	2.5 U	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	2.5 U	5.0	2.5	ug/l	
74-83-9	Methyl bromide	1.0 U	1.0	1.0	ug/l	
74-87-3	Methyl chloride	1.0 U	1.0	1.0	ug/l	
75-09-2	Methylene chloride	1.0 U	1.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	2.5 U	5.0	2.5	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.30 U	1.0	0.30	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	ug/l	

000055

U = Not detected MDL - Method Detection Limit I = Result > = MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF-59-014-083-RI		
Lab Sample ID:	F28196-5	**Date Sampled:**	11/15/04
Matrix:	AQ - Ground Water	**Date Received:**	11/17/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.0 U	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		86-115%
17060-07-0	1,2-Dichloroethane-D4	101%		73-126%
2037-26-5	Toluene-D8	93%		86-112%
460-00-4	4-Bromofluorobenzene	100%		83-119%

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-014-120-RI		
Lab Sample ID:	F28196-4	**Date Sampled:**	11/15/04
Matrix:	AQ - Ground Water	**Date Received:**	11/17/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N0001782.D	1	11/17/04	NJ	n/a	n/a	VN79
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	5.0 U	5.0	5.0	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	ug/l	
75-00-3	Chloroethane	1.0 U	1.0	1.0	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	ug/l	
75-15-0	Carbon disulfide	1.0 U	1.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	0.50 U	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	0.40 U	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
591-78-6	2-Hexanone	2.5 U	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	2.5 U	5.0	2.5	ug/l	
74-83-9	Methyl bromide	1.0 U	1.0	1.0	ug/l	
74-87-3	Methyl chloride	1.0 U	1.0	1.0	ug/l	
75-09-2	Methylene chloride	1.0 U	1.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	2.5 U	5.0	2.5	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.30 U	1.0	0.30	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	ug/l	

000051

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF-59-014-120-RI		
Lab Sample ID:	F28196-4	**Date Sampled:**	11/15/04
Matrix:	AQ - Ground Water	**Date Received:**	11/17/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.0 U	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		86-115%
17060-07-0	1,2-Dichloroethane-D4	101%		73-126%
2037-26-5	Toluene-D8	94%		86-112%
460-00-4	4-Bromofluorobenzene	101%		83-119%

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	NG-02I-RI		
Lab Sample ID:	F28196-9	**Date Sampled:**	11/15/04
Matrix:	AQ - Ground Water	**Date Received:**	11/17/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N0001796.D	1	11/18/04	NJ	n/a	n/a	VN80
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	5.0 U	5.0	5.0	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	ug/l	
75-00-3	Chloroethane	1.0 U	1.0	1.0	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	ug/l	
75-15-0	Carbon disulfide	1.0 U	1.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	0.50 U	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	0.40 U	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.76	1.0	0.50	ug/l	I
10061-01-5	cis-1,3-Dichloropropene	0.30 U	1.0	0:30	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
591-78-6	2-Hexanone	2.5 U	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	2.5 U	5.0	2.5	ug/l	
74-83-9	Methyl bromide	1.0 U	1.0	1.0	ug/l	
74-87-3	Methyl chloride	1.0 U	1.0	1.0	ug/l	
75-09-2	Methylene chloride	1.0 U	1.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	2.5 U	5.0	2.5	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.30 U	1.0	0.30	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	ug/l	
79-01-6	Trichloroethylene	79.7	1.0	0.50	ug/l	

U = Not detected MDL - Method Detection Limit I = Result > = MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	NG-02I-RI		
Lab Sample ID:	F28196-9	**Date Sampled:**	11/15/04
Matrix:	AQ - Ground Water	**Date Received:**	11/17/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.0 U	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		86-115%
17060-07-0	1,2-Dichloroethane-D4	101%		73-126%
2037-26-5	Toluene-D8	93%		86-112%
460-00-4	4-Bromofluorobenzene	95%		83-119%

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO:	**M. SPERANZA**	**DATE:**	**FEBRUARY 9, 2005**
FROM:	**ERIN M FAUST**	**COPIES:**	**DV FILE**

SUBJECT: **INORGANIC AND ORGANIC DATA VALIDATION - DISSOLVED IRON, MISCELLANEOUS PARAMETERS, VOCs AND DISSOLVED GASES**
CTO 359 NAS CECIL FIELD
SAMPLE DELIVERY GROUP (SDG): F28199

SAMPLES: 4/Groundwater

CEF-59-004-053-RI CEF-59-004-073-RI CEF-59-004-112-RI
CEF-59-DU01-RI

Overview

The sample set for CTO 359, NAS Cecil Field, SDG F28199 consists of four (4) groundwater environmental samples. One (1) field duplicate pair (CEF-59-DU01-RI / CEF-59-004-053-RI) is included within this SDG.

All samples were analyzed for target compound list (TCL) volatile organic compounds (VOCs). All samples except CEF-59-004-112-RI were also analyzed for dissolved gases (methane, ethane and ethene), alkalinity, chloride, nitrate, nitrite, orthophosphate, sulfate, total organic carbon (TOC) and dissolved iron and sulfide. The portions of the samples analyzed for dissolved iron and sulfide have the suffix "-F" appended to the sample names. The samples were collected by TetraTech NUS on November 16, 2004 and analyzed by Accutest Laboratories-Southeast. All analyses were conducted in accordance with Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria. VOC analyses were conducted using SW-846 method 8260B. Analyses for dissolved gases were conducted using the RSKSOP 147/175 method. Analyses for chloride, nitrate, nitrite and sulfate were conducted using SW-846 method 9056. Analyses for alkalinity, orthophosphate and dissolved sulfide were conducted using EPA methods 310.1, 365.3 and 376.1, respectively. Dissolved iron analyses were conducted using SW-846 method 6010B.

The data contained in this SDG were validated with regard to the following parameters:

* • Data Completeness
* • Holding Times
* • Initial and Continuing Calibration Results
• Laboratory Method and Field Quality Control Blank Results
• Field Duplicate Results
• Detection Limits

The symbol (*) indicates that all quality control criteria were met for this parameter. Problems affecting data quality are discussed below; documentation supporting these findings is presented in Appendix C. Qualified Analytical results are presented in Appendix A. Results as reported by the Laboratory are presented in Appendix B.

The text of this report is formulated to address only gross noncompliances resulting in the rejection of data

and the elimination of false positives.

Laboratory Blank Analyses

The following contaminant was detected in the laboratory method blanks at the following maximum concentration:

Analyte	Maximum Concentration	Action Level
Iron	30.0 µg/L	150 µg/L

An action level of 5X the maximum concentration was used to evaluate the sample data for blank contamination. Sample aliquot and dilution factors, if applicable, were taken into consideration when evaluating for blank contamination. No validation action was necessary because the reported results for iron were greater than the action level.

Field Duplicate Results

Field duplicate imprecision (RPD > 30%) was noted for methane. The positive results reported for methane in the field duplicate pair were qualified as estimated, "J".

Detection Limits

Positive results below the reporting limit (RL) were qualified as estimated, "J", due to uncertainty near the detection limit.

Comments

There is a discrepancy between the results reported for trichloroethene in samples CEF-59-DU01-RI and CEF-59-004-053-RI. The result reported for trichloroethene in sample CEF-59-DU01-RI was 529 µg/L while trichloroethene was not detected at all in sample CEF-59-004-053-RI. Sample CEF-59-004-112-RI was found to contain trichloroethene at a concentration that was similar to the concentration in sample CEF-59-DU01-RI. In the opinion of the data reviewer, the bottles for the VOC analyses of samples CEF-59-004-053-RI and CEF-59-004-112-RI were either mislabeled or switched at the laboratory. No validation action was taken because the samples are scheduled to be re-collected.

A trip blank was not included with the samples in this SDG.

Executive Summary

Laboratory Performance Issues: No laboratory-related issued affected data quality.

Other Factors Affecting Data Quality: Field duplicate imprecision was noted for methane. Positive results below the reporting limit were qualified due to uncertainty near the detection limit. A trip blank was not included with the samples in this SDG.

The data for these analyses were reviewed with reference to the EPA "National Functional Guidelines for Organic Data Validation" (October 1999), the "National Functional Guidelines for Inorganic Data Review" (July 2002), and the NFESC document entitled "Navy IRCDQM" (September 1999).

The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NFESC guidelines and the Quality Assurance Project Plan (QAPP)."

Erin M Faust

Tetra Tech NUS
Erin M. Faust
Environmental Scientist

Tetra Tech NUS
Joseph A. Samchuck
Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Support Documentation

APPENDIX A
QUALIFIED ANALYTICAL RESULTS

Data Validation Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (e.g. % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (e.g. base-line drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; e.g. chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is greater than sample activity

PROJ_NO: 8925

SDG: F28199 MEDIA: WATER DATA FRACTION: MF

nsample	CEF-59-004-053-RI-F
samp_date	11/16/2004
lab_id	F28199-2
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Lab Qual	Val Qual	Qual Code
IRON	5210			

nsample	CEF-59-004-073-RI-F
samp_date	11/16/2004
lab_id	F28199-5
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Lab Qual	Val Qual	Qual Code
IRON	3730			

nsample	CEF-59-DU01-RI-F
samp_date	11/16/2004
lab_id	F28199-7
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	CEF-59-004-053-RI-F

Parameter	Result	Lab Qual	Val Qual	Qual Code
IRON	5150			

PROJ_NO: 8925

SDG: F28199 MEDIA: WATER DATA FRACTION: MISC

nsample	CEF-59-004-053-RI	nsample	CEF-59-004-073-RI	nsample	CEF-59-DU01-RI
samp_date	11/16/2004	samp_date	11/16/2004	samp_date	11/16/2004
lab_id	F28199-1	lab_id	F28199-4	lab_id	F28199-6
qc_type	NM	qc_type	NM	qc_type	NM
Pct_Solids		Pct_Solids		Pct_Solids	
DUP_OF:		DUP_OF:		DUP_OF:	CEF-59-004-053-RI

Parameter	units	Result	Lab Qual	Val Qual	Qual Code
ALKALINITY	MG/L	18.0			
CHLORIDE	MG/L	8.1			
NITRATE-N	MG/L	0.05	U	U	
NITRITE-N	MG/L	0.05	U	U	
ORTHOPHOSPHATE	MG/L	0.047	I	J	P
SULFATE	MG/L	13.2			
TOTAL ORGANIC CARBON	MG/L	1.4			

Parameter	units	Result	Lab Qual	Val Qual	Qual Code
ALKALINITY	MG/L	8.0			
CHLORIDE	MG/L	8.4			
NITRATE-N	MG/L	0.05	U	U	
NITRITE-N	MG/L	0.05	U	U	
ORTHOPHOSPHATE	MG/L	0.21			
SULFATE	MG/L	12.3			
TOTAL ORGANIC CARBON	MG/L	0.56	I	J	P

Parameter	units	Result	Lab Qual	Val Qual	Qual Code
ALKALINITY	MG/L	18.5			
CHLORIDE	MG/L	8.1			
NITRATE-N	MG/L	0.08	I	J	P
NITRITE-N	MG/L	0.05	U	U	
ORTHOPHOSPHATE	MG/L	0.054	I	J	P
SULFATE	MG/L	12.9			
TOTAL ORGANIC CARBON	MG/L	1.9			

PROJ_NO: 8925

SDG: F28199 MEDIA: WATER DATA FRACTION: OV

nsample	CEF-59-004-053-RI
samp_date	11/16/2004
lab_id	F28199-1
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Lab Qual	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	0.5	U	U	
1,1,2,2-TETRACHLOROETHANE	0.3	U	U	
1,1,2-TRICHLOROETHANE	0.5	U	U	
1,1-DICHLOROETHANE	0.5	U	U	
1,1-DICHLOROETHENE	0.5	U	U	
1,2-DICHLOROETHANE	0.5	U	U	
1,2-DICHLOROPROPANE	0.5	U	U	
2-BUTANONE	2.5	U	U	
2-HEXANONE	2.5	U	U	
4-METHYL-2-PENTANONE	2.5	U	U	
ACETONE	5	U	U	
BENZENE	0.5	U	U	
BROMODICHLOROMETHANE	0.5	U	U	
BROMOFORM	0.5	U	U	
BROMOMETHANE	1	U	U	
CARBON DISULFIDE	1	U	U	
CARBON TETRACHLORIDE	0.5	U	U	
CHLOROBENZENE	0.5	U	U	
CHLORODIBROMOMETHANE	0.4	U	U	
CHLOROETHANE	1	U	U	
CHLOROFORM	0.5	U	U	
CHLOROMETHANE	1	U	U	
CIS-1,2-DICHLOROETHENE	0.5	U	U	
CIS-1,3-DICHLOROPROPENE	0.3	U	U	
ETHYLBENZENE	0.5	U	U	
METHYLENE CHLORIDE	1	U	U	
STYRENE	0.5	U	U	
TETRACHLOROETHENE	0.5	U	U	
TOLUENE	0.5	U	U	
TOTAL XYLENES	1	U	U	
TRANS-1,2-DICHLOROETHENE	0.5	U	U	
TRANS-1,3-DICHLOROPROPENE	0.3	U	U	

nsample	CEF-59-004-053-RI
samp_date	11/16/2004
lab_id	F28199-1
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Lab Qual	Val Qual	Qual Code
TRICHLOROETHENE	0.5	U	UJ	G
VINYL CHLORIDE	0.5	U	U	

nsample	CEF-59-004-073-RI
samp_date	11/16/2004
lab_id	F28199-4
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Lab Qual	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	0.5	U	U	
1,1,2,2-TETRACHLOROETHANE	0.3	U	U	
1,1,2-TRICHLOROETHANE	0.5	U	U	
1,1-DICHLOROETHANE	0.5	U	U	
1,1-DICHLOROETHENE	0.85	I	J	P
1,2-DICHLOROETHANE	0.5	U	U	
1,2-DICHLOROPROPANE	0.5	U	U	
2-BUTANONE	2.5	U	U	
2-HEXANONE	2.5	U	U	
4-METHYL-2-PENTANONE	2.5	U	U	
ACETONE	5	U	U	
BENZENE	0.5	U	U	
BROMODICHLOROMETHANE	0.5	U	U	
BROMOFORM	0.5	U	U	
BROMOMETHANE	1	U	U	
CARBON DISULFIDE	1	U	U	
CARBON TETRACHLORIDE	0.5	U	U	
CHLOROBENZENE	0.5	U	U	
CHLORODIBROMOMETHANE	0.4	U	U	
CHLOROETHANE	1	U	U	
CHLOROFORM	0.5	U	U	
CHLOROMETHANE	1	U	U	
CIS-1,2-DICHLOROETHENE	2.1			
CIS-1,3-DICHLOROPROPENE	0.3	U	U	
ETHYLBENZENE	0.5	U	U	
METHYLENE CHLORIDE	1	U	U	
STYRENE	0.5	U	U	
TETRACHLOROETHENE	0.5	U	U	
TOLUENE	0.5	U	U	
TOTAL XYLENES	1	U	U	
TRANS-1,2-DICHLOROETHENE	0.5	U	U	
TRANS-1,3-DICHLOROPROPENE	0.3	U	U	

PROJ_NO: 8925

SDG: F28199 MEDIA: WATER DATA FRACTION: OV

nsample	CEF-59-004-073-RI
samp_date	11/16/2004
lab_id	F28199-4
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Lab Qual	Val Qual	Qual Code
TRICHLOROETHENE	1670			
VINYL CHLORIDE	0.5	U	U	

nsample	CEF-59-004-112-RI
samp_date	11/16/2004
lab_id	F28199-3
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Lab Qual	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	0.5	U	U	
1,1,2,2-TETRACHLOROETHANE	0.3	U	U	
1,1,2-TRICHLOROETHANE	0.5	U	U	
1,1-DICHLOROETHANE	0.5	U	U	
1,1-DICHLOROETHENE	0.5	U	U	
1,2-DICHLOROETHANE	0.5	U	U	
1,2-DICHLOROPROPANE	0.5	U	U	
2-BUTANONE	2.5	U	U	
2-HEXANONE	2.5	U	U	
4-METHYL-2-PENTANONE	2.5	U	U	
ACETONE	5	U	U	
BENZENE	0.5	U	U	
BROMODICHLOROMETHANE	0.5	U	U	
BROMOFORM	0.5	U	U	
BROMOMETHANE	1	U	U	
CARBON DISULFIDE	1	U	U	
CARBON TETRACHLORIDE	0.5	U	U	
CHLOROBENZENE	0.5	U	U	
CHLORODIBROMOMETHANE	0.4	U	U	
CHLOROETHANE	1	U	U	
CHLOROFORM	0.5	U	U	
CHLOROMETHANE	1	U	U	
CIS-1,2-DICHLOROETHENE	1.1			
CIS-1,3-DICHLOROPROPENE	0.3	U	U	
ETHYLBENZENE	0.5	U	U	
METHYLENE CHLORIDE	1	U	U	
STYRENE	0.5	U	U	
TETRACHLOROETHENE	0.5	U	U	
TOLUENE	0.5	U	U	
TOTAL XYLENES	1	U	U	
TRANS-1,2-DICHLOROETHENE	0.5	U	U	
TRANS-1,3-DICHLOROPROPENE	0.3	U	U	

nsample	CEF-59-004-112-RI
samp_date	11/16/2004
lab_id	F28199-3
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Lab Qual	Val Qual	Qual Code
TRICHLOROETHENE	532			
VINYL CHLORIDE	0.5	U	U	

PROJ_NO: 8925

SDG: F28199 MEDIA: WATER DATA FRACTION: OV

nsample	CEF-59-DU01-RI
samp_date	11/16/2004
lab_id	F28199-6
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	CEF-59-004-053-RI

Parameter	Result	Lab Qual	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	0.5	U	U	
1,1,2,2-TETRACHLOROETHANE	0.3	U	U	
1,1,2-TRICHLOROETHANE	0.5	U	U	
1,1-DICHLOROETHANE	0.5	U	U	
1,1-DICHLOROETHENE	0.5	U	U	
1,2-DICHLOROETHANE	0.5	U	U	
1,2-DICHLOROPROPANE	0.5	U	U	
2-BUTANONE	2.5	U	U	
2-HEXANONE	2.5	U	U	
4-METHYL-2-PENTANONE	2.5	U	U	
ACETONE	5	U	U	
BENZENE	0.5	U	U	
BROMODICHLOROMETHANE	0.5	U	U	
BROMOFORM	0.5	U	U	
BROMOMETHANE	1	U	U	
CARBON DISULFIDE	1	U	U	
CARBON TETRACHLORIDE	0.5	U	U	
CHLOROBENZENE	0.5	U	U	
CHLORODIBROMOMETHANE	0.4	U	U	
CHLOROETHANE	1	U	U	
CHLOROFORM	0.5	U	U	
CHLOROMETHANE	1	U	U	
CIS-1,2-DICHLOROETHENE	1.2			
CIS-1,3-DICHLOROPROPENE	0.3	U	U	
ETHYLBENZENE	0.5	U	U	
METHYLENE CHLORIDE	1	U	U	
STYRENE	0.5	U	U	
TETRACHLOROETHENE	0.5	U	U	
TOLUENE	0.5	U	U	
TOTAL XYLENES	1	U	U	
TRANS-1,2-DICHLOROETHENE	0.5	U	U	
TRANS-1,3-DICHLOROPROPENE	0.3	U	U	

nsample	CEF-59-DU01-RI
samp_date	11/16/2004
lab_id	F28199-6
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	CEF-59-004-053-RI

Parameter	Result	Lab Qual	Val Qual	Qual Code
TRICHLOROETHENE	529		J	G
VINYL CHLORIDE	0.5	U	U	

PROJ_NO: 8925

SDG: F28199 MEDIA: WATER DATA FRACTION: OVG

nsample	CEF-59-004-053-RI
samp_date	11/16/2004
lab_id	F28199-1
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Lab Qual	Val Qual	Qual Code
ETHANE	0.60	U	U	
ETHENE	0.80	U	U	
METHANE	5.03		J	G

nsample	CEF-59-004-073-RI
samp_date	11/16/2004
lab_id	F28199-4
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Lab Qual	Val Qual	Qual Code
ETHANE	0.60	U	U	
ETHENE	0.80	U	U	
METHANE	5.15			

nsample	CEF-59-DU01-RI
samp_date	11/16/2004
lab_id	F28199-6
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	CEF-59-004-053-RI

Parameter	Result	Lab Qual	Val Qual	Qual Code
ETHANE	0.60	U	U	
ETHENE	0.80	U	U	
METHANE	7.02		J	G

PROJ_NO: 8925

SDG: F28199 MEDIA: WATER DATA FRACTION: MISCF

nsample	CEF-59-004-053-RI-F	nsample	CEF-59-004-073-RI-F	nsample	CEF-59-DU01-RI-F
samp_date	11/16/2004	samp_date	11/16/2004	samp_date	11/16/2004
lab_id	F28199-2	lab_id	F28199-5	lab_id	F28199-7
qc_type	NM	qc_type	NM	qc_type	NM
units	MG/L	units	MG/L	units	MG/L
Pct_Solids		Pct_Solids		Pct_Solids	
DUP_OF:		DUP_OF:		DUP_OF:	CEF-59-004-053-RI-F

Parameter	Result	Lab Qual	Val Qual	Qual Code
SULFIDE	1.0	U	U	

Parameter	Result	Lab Qual	Val Qual	Qual Code
SULFIDE	1.0	U	U	

Parameter	Result	Lab Qual	Val Qual	Qual Code
SULFIDE	1.0	U	U	

APPENDIX B
RESULTS AS REPORTED BY THE LABORATORY

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-004-053-RI-F		
Lab Sample ID:	F28199-2	**Date Sampled:**	11/16/04
Matrix:	AQ - Groundwater Filtered	**Date Received:**	11/17/04
		Percent Solids:	n/a
Project:	Site 59-CTO 359		

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Iron	5210	300	48	ug/l	1	11/30/04	11/30/04 SM	SW846 6010B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA4109
(2) Prep QC Batch: MP7461

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
I = Indicates a result >= MDL but < RL

000403

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-004-073-RI-F		
Lab Sample ID:	F28199-5	**Date Sampled:**	11/16/04
Matrix:	AQ - Groundwater Filtered	**Date Received:**	11/17/04
		Percent Solids:	n/a
Project:	Site 59-CTO 359		

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By		Method	Prep Method
Iron	3730	300	48	ug/l	1	11/30/04	11/30/04	SM	SW846 6010B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA4109
(2) Prep QC Batch: MP7461

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
I = Indicates a result >= MDL but < RL

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-DU01-RI-F		
Lab Sample ID:	F28199-7	**Date Sampled:**	11/16/04
Matrix:	AQ - Groundwater Filtered	**Date Received:**	11/17/04
		Percent Solids:	n/a
Project:	Site 59-CTO 359		

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By		Method	Prep Method
Iron	5150	300	48	ug/l	1	11/30/04	11/30/04	SM	SW846 6010B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA4109
(2) Prep QC Batch: MP7461

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
I = Indicates a result >= MDL but < RL

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-004-053-RI		
Lab Sample ID:	F28199-1	**Date Sampled:**	11/16/04
Matrix:	AQ - Ground Water	**Date Received:**	11/17/04
		Percent Solids:	n/a
Project:	Site 59-CTO 359		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3	18.0	5.0	2.5	mg/l	1	11/24/04	MCR	EPA 310.1
Chloride	8.1	2.0	1.0	mg/l	1	11/17/04 17:11	MP	EPA 300/SW846 9056
Nitrogen, Nitrate	0.050 U	0.10	0.050	mg/l	1	11/17/04 17:11	MP	EPA 300/SW846 9056
Nitrogen, Nitrite	0.050 U	0.10	0.050	mg/l	1	11/17/04 17:11	MP	EPA 300/SW846 9056
Phosphate, Ortho	0.047 I	0.10	0.020	mg/l	1	11/17/04 16:40	MP	EPA 365.3
Sulfate	13.2	2.0	1.0	mg/l	1	11/17/04 17:11	MP	EPA 300/SW846 9056
Total Organic Carbon	1.4	1.0	0.50	mg/l	1	12/03/04	LE	EPA 415.1

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
I = Indicates a result >= MDL but < RL

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-004-073-RI		
Lab Sample ID:	F28199-4	**Date Sampled:**	11/16/04
Matrix:	AQ - Ground Water	**Date Received:**	11/17/04
		Percent Solids:	n/a
Project:	Site 59-CTO 359		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3	8.0	5.0	2.5	mg/l	1	11/24/04	MCR	EPA 310.1
Chloride	8.4	2.0	1.0	mg/l	1	11/17/04 17:26	MP	EPA 300/SW846 9056
Nitrogen, Nitrate	0.050 U	0.10	0.050	mg/l	1	11/17/04 17:26	MP	EPA 300/SW846 9056
Nitrogen, Nitrite	0.050 U	0.10	0.050	mg/l	1	11/17/04 17:26	MP	EPA 300/SW846 9056
Phosphate, Ortho	0.21	0.10	0.020	mg/l	1	11/17/04 16:40	MP	EPA 365.3
Sulfate	12.3	2.0	1.0	mg/l	1	11/17/04 17:26	MP	EPA 300/SW846 9056
Total Organic Carbon	0.56 I	1.0	0.50	mg/l	1	12/03/04	LE	EPA 415.1

000567

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
I = Indicates a result >= MDL but < RL

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-DU01-RI		
Lab Sample ID:	F28199-6	**Date Sampled:**	11/16/04
Matrix:	AQ - Ground Water	**Date Received:**	11/17/04
		Percent Solids:	n/a
Project:	Site 59-CTO 359		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3	18.5	5.0	2.5	mg/l	1	11/24/04	MCR	EPA 310.1
Chloride	8.1	2.0	1.0	mg/l	1	11/17/04 17:40	MP	EPA 300/SW846 9056
Nitrogen, Nitrate	0.080 I	0.10	0.050	mg/l	1	11/17/04 17:40	MP	EPA 300/SW846 9056
Nitrogen, Nitrite	0.050 U	0.10	0.050	mg/l	1	11/17/04 17:40	MP	EPA 300/SW846 9056
Phosphate, Ortho	0.054 I	0.10	0.020	mg/l	1	11/17/04 16:40	MP	EPA 365.3
Sulfate	12.9	2.0	1.0	mg/l	1	11/17/04 17:40	MP	EPA 300/SW846 9056
Total Organic Carbon	1.9	1.0	0.50	mg/l	1	12/03/04	LE	EPA 415.1

000569

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
I = Indicates a result >= MDL but < RL

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-004-053-RI-F		
Lab Sample ID:	F28199-2	**Date Sampled:**	11/16/04
Matrix:	AQ - Groundwater Filtered	**Date Received:**	11/17/04
		Percent Solids:	n/a
Project:	Site 59-CTO 359		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Sulfide	1.0 U	1.0	1.0	mg/l	1	11/22/04	MP	EPA 376.1

000566

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
I = Indicates a result >= MDL but < RL

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-004-073-RI-F		
Lab Sample ID:	F28199-5	**Date Sampled:**	11/16/04
Matrix:	AQ - Groundwater Filtered	**Date Received:**	11/17/04
		Percent Solids:	n/a
Project:	Site 59-CTO 359		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Sulfide	1.0 U	1.0	1.0	mg/l	1	11/22/04	MP	EPA 376.1

000568

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
I = Indicates a result >= MDL but < RL

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-DU01-RI-F		
Lab Sample ID:	F28199-7	**Date Sampled:**	11/16/04
Matrix:	AQ - Groundwater Filtered	**Date Received:**	11/17/04
		Percent Solids:	n/a
Project:	Site 59-CTO 359		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Sulfide	1.0 U	1.0	1.0	mg/l	1	11/22/04	MP	EPA 376.1

000570

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
I = Indicates a result >= MDL but < RL

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-004-053-RI		
Lab Sample ID:	F28199-1	**Date Sampled:**	11/16/04
Matrix:	AQ - Ground Water	**Date Received:**	11/17/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	B025913.D	1	11/17/04	KW	n/a	n/a	VB1111
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	5.0 U	5.0	5.0	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	ug/l	
75-00-3	Chloroethane	1.0 U	1.0	1.0	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	ug/l	
75-15-0	Carbon disulfide	1.0 U	1.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	0.50 U	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	0.40 U	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
591-78-6	2-Hexanone	2.5 U	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	2.5 U	5.0	2.5	ug/l	
74-83-9	Methyl bromide	1.0 U	1.0	1.0	ug/l	
74-87-3	Methyl chloride	1.0 U	1.0	1.0	ug/l	
75-09-2	Methylene chloride	1.0 U	1.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	2.5 U	5.0	2.5	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.30 U	1.0	0.30	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	ug/l	

000035

U = Not detected MDL - Method Detection Limit I = Result > = MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF-59-004-053-RI		
Lab Sample ID:	F28199-1	**Date Sampled:**	11/16/04
Matrix:	AQ - Ground Water	**Date Received:**	11/17/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.0 U	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%		86-115%
17060-07-0	1,2-Dichloroethane-D4	114%		73-126%
2037-26-5	Toluene-D8	101%		86-112%
460-00-4	4-Bromofluorobenzene	105%		83-119%

000036

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-004-073-RI		
Lab Sample ID:	F28199-4	**Date Sampled:**	11/16/04
Matrix:	AQ - Ground Water	**Date Received:**	11/17/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N0001815.D	1	11/18/04	NJ	n/a	n/a	VN80
Run #2	M0001995.D	20	11/19/04	NJ	n/a	n/a	VM88

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	5.0 U	5.0	5.0	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	ug/l	
75-00-3	Chloroethane	1.0 U	1.0	1.0	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	ug/l	
75-15-0	Carbon disulfide	1.0 U	1.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	0.50 U	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	0.85	1.0	0.50	ug/l	I
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	0.40 U	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	2.1	1.0	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
591-78-6	2-Hexanone	2.5 U	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	2.5 U	5.0	2.5	ug/l	
74-83-9	Methyl bromide	1.0 U	1.0	1.0	ug/l	
74-87-3	Methyl chloride	1.0 U	1.0	1.0	ug/l	
75-09-2	Methylene chloride	1.0 U	1.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	2.5 U	5.0	2.5	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.30 U	1.0	0.30	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	ug/l	
79-01-6	Trichloroethylene	1670 [a]	20	10	ug/l	

U = Not detected MDL - Method Detection Limit I = Result > = MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

000048

Report of Analysis

Client Sample ID:	CEF-59-004-073-RI		
Lab Sample ID:	F28199-4	**Date Sampled:**	11/16/04
Matrix:	AQ - Ground Water	**Date Received:**	11/17/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.0 U	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%	92%	86-115%
17060-07-0	1,2-Dichloroethane-D4	105%	95%	73-126%
2037-26-5	Toluene-D8	94%	108%	86-112%
460-00-4	4-Bromofluorobenzene	93%	102%	83-119%

(a) Result is from Run# 2

000049

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-004-112-RI		
Lab Sample ID:	F28199-3	**Date Sampled:**	11/16/04
Matrix:	AQ - Ground Water	**Date Received:**	11/17/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N0001814.D	1	11/18/04	NJ	n/a	n/a	VN80
Run #2	M0001996.D	10	11/19/04	NJ	n/a	n/a	VM88

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	5.0 U	5.0	5.0	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	ug/l	
75-00-3	Chloroethane	1.0 U	1.0	1.0	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	ug/l	
75-15-0	Carbon disulfide	1.0 U	1.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	0.50 U	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	0.40 U	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	1.1	1.0	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
591-78-6	2-Hexanone	2.5 U	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	2.5 U	5.0	2.5	ug/l	
74-83-9	Methyl bromide	1.0 U	1.0	1.0	ug/l	
74-87-3	Methyl chloride	1.0 U	1.0	1.0	ug/l	
75-09-2	Methylene chloride	1.0 U	1.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	2.5 U	5.0	2.5	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.30 U	1.0	0.30	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	ug/l	
79-01-6	Trichloroethylene	532 [a]	10	5.0	ug/l	

000039

U = Not detected MDL - Method Detection Limit I = Result > = MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF-59-004-112-RI		
Lab Sample ID:	F28199-3	**Date Sampled:**	11/16/04
Matrix:	AQ - Ground Water	**Date Received:**	11/17/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.0 U	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%	92%	86-115%
17060-07-0	1,2-Dichloroethane-D4	105%	96%	73-126%
2037-26-5	Toluene-D8	93%	109%	86-112%
460-00-4	4-Bromofluorobenzene	94%	102%	83-119%

(a) Result is from Run# 2

000040

U = Not detected MDL - Method Detection Limit
RL = Reporting Limit
L = Indicates value exceeds calibration range

I = Result >= MDL but < RL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-DU01-RI		
Lab Sample ID:	F28199-6	**Date Sampled:**	11/16/04
Matrix:	AQ - Ground Water	**Date Received:**	11/17/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N0001816.D	1	11/18/04	NJ	n/a	n/a	VN80
Run #2	M0001997.D	10	11/19/04	NJ	n/a	n/a	VM88

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	5.0 U	5.0	5.0	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	ug/l	
75-00-3	Chloroethane	1.0 U	1.0	1.0	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	ug/l	
75-15-0	Carbon disulfide	1.0 U	1.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	0.50 U	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	0.40 U	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	1.2	1.0	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
591-78-6	2-Hexanone	2.5 U	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	2.5 U	5.0	2.5	ug/l	
74-83-9	Methyl bromide	1.0 U	1.0	1.0	ug/l	
74-87-3	Methyl chloride	1.0 U	1.0	1.0	ug/l	
75-09-2	Methylene chloride	1.0 U	1.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	2.5 U	5.0	2.5	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.30 U	1.0	0.30	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	ug/l	
79-01-6	Trichloroethylene	529 [a]	10	5.0	ug/l	

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

000057

Report of Analysis

Client Sample ID:	CEF-59-DU01-RI		
Lab Sample ID:	F28199-6	**Date Sampled:**	11/16/04
Matrix:	AQ - Ground Water	**Date Received:**	11/17/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.0 U	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%	93%	86-115%
17060-07-0	1,2-Dichloroethane-D4	106%	97%	73-126%
2037-26-5	Toluene-D8	93%	107%	86-112%
460-00-4	4-Bromofluorobenzene	93%	102%	83-119%

(a) Result is from Run# 2

000058

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-004-053-RI		
Lab Sample ID:	F28199-1	**Date Sampled:**	11/16/04
Matrix:	AQ - Ground Water	**Date Received:**	11/17/04
Method:	RSKSOP-147/175	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XY015843.D	1	11/19/04	CV	n/a	n/a	GXY528
Run #2							

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	5.03	0.50	0.30	ug/l	
74-84-0	Ethane	0.60 U	1.0	0.60	ug/l	
74-85-1	Ethene	0.80 U	1.0	0.80	ug/l	

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

000298

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-004-073-RI		
Lab Sample ID:	F28199-4	**Date Sampled:**	11/16/04
Matrix:	AQ - Ground Water	**Date Received:**	11/17/04
Method:	RSKSOP-147/175	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XY015812.D	1	11/18/04	CV	n/a	n/a	GXY527
Run #2							

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	5.15	0.50	0.30	ug/l	
74-84-0	Ethane	0.60 U	1.0	0.60	ug/l	
74-85-1	Ethene	0.80 U	1.0	0.80	ug/l	

U = Not detected MDL - Method Detection Limit
RL = Reporting Limit
L = Indicates value exceeds calibration range

I = Result >= MDL but < RL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

000202

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-DU01-RI		
Lab Sample ID:	F28199-6	**Date Sampled:**	11/16/04
Matrix:	AQ - Ground Water	**Date Received:**	11/17/04
Method:	RSKSOP-147/175	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XY015819.D	1	11/18/04	CV	n/a	n/a	GXY527
Run #2							

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	7.02	0.50	0.30	ug/l	
74-84-0	Ethane	0.60 U	1.0	0.60	ug/l	
74-85-1	Ethene	0.80 U	1.0	0.80	ug/l	

U = Not detected MDL - Method Detection Limit
RL = Reporting Limit
L = Indicates value exceeds calibration range

I = Result > = MDL but < RL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Results

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO:	**M. SPERANZA**	**DATE:**	**FEBRUARY 9, 2005**
FROM:	**ERIN M FAUST**	**COPIES:**	**DV FILE**

SUBJECT: **INORGANIC AND ORGANIC DATA VALIDATION - DISSOLVED IRON, MISCELLANEOUS PARAMETERS, VOCs AND DISSOLVED GASES**
CTO 359 NAS CECIL FIELD
SAMPLE DELIVERY GROUP (SDG): F28236

SAMPLES: 6/Groundwater

CEF-59-003-073-RI	CEF-59-005-033-RI	CEF-59-005-053-RI
CEF-59-005-073-RI	CEF-59-009-053-RI	CEF-59-DU02-RI

Overview

The sample set for CTO 359, NAS Cecil Field, SDG F28236 consists of six (6) groundwater environmental samples. One (1) field duplicate pair (CEF-59-DU02-RI / CEF-59-005-053-RI) is included within this SDG.

All samples were analyzed for target compound list (TCL) volatile organic compounds (VOCs). Samples CEF-59-DU02-RI and CEF-59-005-053-RI were also analyzed for dissolved gases (methane, ethane and ethene), alkalinity, chloride, nitrate, nitrite, orthophosphate, sulfate, total organic carbon (TOC) and dissolved iron and sulfide. The portions of the samples analyzed for dissolved iron and sulfide have the suffix "-F" appended to the sample names. The samples were collected by TetraTech NUS on November 17, 2004 and analyzed by Accutest Laboratories-Southeast. All analyses were conducted in accordance with Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria. VOC analyses were conducted using SW-846 method 8260B. Analyses for dissolved gases were conducted using the RSKSOP 147/175 method. Analyses for chloride, nitrate, nitrite and sulfate were conducted using SW-846 method 9056. Analyses for alkalinity, orthophosphate and dissolved sulfide were conducted using EPA methods 310.1, 365.3 and 376.1, respectively. Dissolved iron analyses were conducted using SW-846 method 6010B.

The data contained in this SDG were validated with regard to the following parameters:

* • Data Completeness
* • Holding Times
* • Initial and Continuing Calibration Results
• Laboratory Method and Field Quality Control Blank Results
* • Field Duplicate Results
* • Detection Limits

The symbol (*) indicates that all quality control criteria were met for this parameter. Problems affecting data quality are discussed below; documentation supporting these findings is presented in Appendix C. Qualified Analytical results are presented in Appendix A. Results as reported by the Laboratory are presented in Appendix B.

The text of this report is formulated to address only gross noncompliances resulting in the rejection of data

and the elimination of false positives.

Laboratory Blank Analyses

The following contaminant was detected in the laboratory method blanks at the following maximum concentration:

Analyte	Maximum Concentration	Action Level
Iron	33.7 µg/L	168.5 µg/L

An action level of 5X the maximum concentration was used to evaluate the sample data for blank contamination. Sample aliquot and dilution factors, if applicable, were taken into consideration when evaluating for blank contamination. No validation action was necessary because the reported results for iron were greater than the action level.

Comments

Positive results below the reporting limit (RL) were qualified as estimated, J, due to uncertainty near the detection limit.

A trip blank was not included with the samples in this SDG.

Executive Summary

Laboratory Performance Issues: No laboratory-related issued affected data quality.

Other Factors Affecting Data Quality: Positive results below the reporting limit were qualified due to uncertainty near the detection limit. A trip blank was not included with the samples in this SDG.

The data for these analyses were reviewed with reference to the EPA "National Functional Guidelines for Organic Data Validation" (October 1999), the "National Functional Guidelines for Inorganic Data Review" (July 2002), and the NFESC document entitled "Navy IRCDQM" (September 1999).

The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NFESC guidelines and the Quality Assurance Project Plan (QAPP)."

Erin M Faust

Tetra Tech NUS
Erin M. Faust
Environmental Scientist

Tetra Tech NUS
Joseph A. Samchuck
Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Support Documentation

APPENDIX A
QUALIFIED ANALYTICAL RESULTS

Data Validation Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (e.g. % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (e.g. base-line drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; e.g. chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is greater than sample activity

PROJ_NO: 8925

SDG: F28236 MEDIA: WATER DATA FRACTION: MF

nsample	CEF-59-005-053-RI-F	nsample	CEF-59-DU02-RI-F
samp_date	11/17/2004	samp_date	11/17/2004
lab_id	F28236-3	lab_id	F28236-8
qc_type	NM	qc_type	NM
units	UG/L	units	UG/L
Pct Solids		Pct Solids	
DUP_OF:		DUP_OF:	CEF-59-005-053-RI-F

Parameter	Result	Lab Qual	Val Qual	Qual Code
IRON	13200			

Parameter	Result	Lab Qual	Val Qual	Qual Code
IRON	13400			

PROJ_NO: 8925

SDG: F28236 MEDIA: WATER DATA FRACTION: MISC

nsample	CEF-59-005-053-RI	nsample	CEF-59-DU02-RI
samp_date	11/17/2004	samp_date	11/17/2004
lab_id	F28236-2	lab_id	F28236-7
qc_type	NM	qc_type	NM
Pct_Solids		Pct_Solids	
DUP_OF:		DUP_OF:	CEF-59-005-053-RI

Parameter	units	Result	Lab Qual	Val Qual	Qual Cod
ALKALINITY	MG/L	22.5			
CHLORIDE	MG/L	9.9			
NITRATE-N	MG/L	0.05	U	U	
NITRITE-N	MG/L	0.05	U	U	
ORTHOPHOSPHATE	MG/L	0.074	I	J	P
SULFATE	MG/L	7.0			
TOTAL ORGANIC CARBON	MG/L	1.4			

Parameter	units	Result	Lab Qual	Val Qual	Qual Cod
ALKALINITY	MG/L	25.0			
CHLORIDE	MG/L	9.8			
NITRATE-N	MG/L	0.05	U	U	
NITRITE-N	MG/L	0.05	U	U	
ORTHOPHOSPHATE	MG/L	0.15			
SULFATE	MG/L	7.4			
TOTAL ORGANIC CARBON	MG/L	1.4			

PROJ_NO: 8925

SDG: F28236 MEDIA: WATER DATA FRACTION: MISCF

nsample	CEF-59-005-053-RI-F	nsample	CEF-59-DU02-RI-F
samp_date	11/17/2004	samp_date	11/17/2004
lab_id	F28236-3	lab_id	F28236-8
qc_type	NM	qc_type	NM
units	MG/L	units	MG/L
Pct_Solids		Pct_Solids	
DUP_OF:		DUP_OF:	CEF-59-005-053-RI-F

Parameter	Result	Lab Qual	Val Qual	Qual Code
SULFIDE	1.0	U	U	

Parameter	Result	Lab Qual	Val Qual	Qual Code
SULFIDE	1.0	U	U	

PROJ_NO: 8925

SDG: F28236 MEDIA: WATER DATA FRACTION: OV

nsample	CEF-59-003-073-RI	nsample	CEF-59-003-073-RI	nsample	CEF-59-005-033-RI
samp_date	11/17/2004	samp_date	11/17/2004	samp_date	11/17/2004
lab_id	F28236-1	lab_id	F28236-1	lab_id	F28236-5
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/L	units	UG/L	units	UG/L
Pct_Solids		Pct_Solids		Pct_Solids	
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Lab Qual	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	0.5	U	U	
1,1,2,2-TETRACHLOROETHANE	0.3	U	U	
1,1,2-TRICHLOROETHANE	0.5	U	U	
1,1-DICHLOROETHANE	0.5	U	U	
1,1-DICHLOROETHENE	0.5	U	U	
1,2-DICHLOROETHANE	0.5	U	U	
1,2-DICHLOROPROPANE	0.5	U	U	
2-BUTANONE	2.5	U	U	
2-HEXANONE	2.5	U	U	
4-METHYL-2-PENTANONE	2.5	U	U	
ACETONE	5	U	U	
BENZENE	0.5	U	U	
BROMODICHLOROMETHANE	0.5	U	U	
BROMOFORM	0.5	U	U	
BROMOMETHANE	1	U	U	
CARBON DISULFIDE	1	U	U	
CARBON TETRACHLORIDE	0.5	U	U	
CHLOROBENZENE	0.5	U	U	
CHLORODIBROMOMETHANE	0.4	U	U	
CHLOROETHANE	1	U	U	
CHLOROFORM	0.5	U	U	
CHLOROMETHANE	1	U	U	
CIS-1,2-DICHLOROETHENE	6.1			
CIS-1,3-DICHLOROPROPENE	0.3	U	U	
ETHYLBENZENE	0.5	U	U	
METHYLENE CHLORIDE	1	U	U	
STYRENE	0.5	U	U	
TETRACHLOROETHENE	0.5	U	U	
TOLUENE	0.5	U	U	
TOTAL XYLENES	1	U	U	
TRANS-1,2-DICHLOROETHENE	0.5	U	U	
TRANS-1,3-DICHLOROPROPENE	0.3	U	U	

Parameter	Result	Lab Qual	Val Qual	Qual Code
TRICHLOROETHENE	1100			
VINYL CHLORIDE	0.5	U	U	

Parameter	Result	Lab Qual	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	0.5	U	U	
1,1,2,2-TETRACHLOROETHANE	0.3	U	U	
1,1,2-TRICHLOROETHANE	0.5	U	U	
1,1-DICHLOROETHANE	0.5	U	U	
1,1-DICHLOROETHENE	0.5	U	U	
1,2-DICHLOROETHANE	0.5	U	U	
1,2-DICHLOROPROPANE	0.5	U	U	
2-BUTANONE	2.5	U	U	
2-HEXANONE	2.5	U	U	
4-METHYL-2-PENTANONE	2.5	U	U	
ACETONE	5	U	U	
BENZENE	0.5	U	U	
BROMODICHLOROMETHANE	0.5	U	U	
BROMOFORM	0.5	U	U	
BROMOMETHANE	1	U	U	
CARBON DISULFIDE	1	U	U	
CARBON TETRACHLORIDE	0.5	U	U	
CHLOROBENZENE	0.5	U	U	
CHLORODIBROMOMETHANE	0.4	U	U	
CHLOROETHANE	1	U	U	
CHLOROFORM	0.5	U	U	
CHLOROMETHANE	1	U	U	
CIS-1,2-DICHLOROETHENE	0.5	U	U	
CIS-1,3-DICHLOROPROPENE	0.3	U	U	
ETHYLBENZENE	2			
METHYLENE CHLORIDE	1	U	U	
STYRENE	0.5	U	U	
TETRACHLOROETHENE	0.5	U	U	
TOLUENE	0.5	U	U	
TOTAL XYLENES	1	U	U	
TRANS-1,2-DICHLOROETHENE	0.5	U	U	
TRANS-1,3-DICHLOROPROPENE	0.3	U	U	

PROJ_NO: 8925

SDG: F28236 MEDIA: WATER DATA FRACTION: OV

nsample	CEF-59-005-033-RI
samp_date	11/17/2004
lab_id	F28236-5
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Lab Qual	Val Qual	Qual Code
TRICHLOROETHENE	0.5	U	U	
VINYL CHLORIDE	0.5	U	U	

nsample	CEF-59-005-053-RI
samp_date	11/17/2004
lab_id	F28236-2
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Lab Qual	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	0.5	U	U	
1,1,2,2-TETRACHLOROETHANE	0.3	U	U	
1,1,2-TRICHLOROETHANE	0.5	U	U	
1,1-DICHLOROETHANE	0.5	U	U	
1,1-DICHLOROETHENE	0.5	U	U	
1,2-DICHLOROETHANE	0.5	U	U	
1,2-DICHLOROPROPANE	0.5	U	U	
2-BUTANONE	2.5	U	U	
2-HEXANONE	2.5	U	U	
4-METHYL-2-PENTANONE	2.5	U	U	
ACETONE	5	U	U	
BENZENE	0.5	U	U	
BROMODICHLOROMETHANE	0.5	U	U	
BROMOFORM	0.5	U	U	
BROMOMETHANE	1	U	U	
CARBON DISULFIDE	1	U	U	
CARBON TETRACHLORIDE	0.5	U	U	
CHLOROBENZENE	0.5	U	U	
CHLORODIBROMOMETHANE	0.4	U	U	
CHLOROETHANE	1	U	U	
CHLOROFORM	0.5	U	U	
CHLOROMETHANE	1	U	U	
CIS-1,2-DICHLOROETHENE	0.64	I	J	P
CIS-1,3-DICHLOROPROPENE	0.3	U	U	
ETHYLBENZENE	0.5	U	U	
METHYLENE CHLORIDE	1	U	U	
STYRENE	0.5	U	U	
TETRACHLOROETHENE	0.5	U	U	
TOLUENE	0.5	U	U	
TOTAL XYLENES	1	U	U	
TRANS-1,2-DICHLOROETHENE	0.5	U	U	
TRANS-1,3-DICHLOROPROPENE	0.3	U	U	

nsample	CEF-59-005-053-RI
samp_date	11/17/2004
lab_id	F28236-2
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Lab Qual	Val Qual	Qual Code
TRICHLOROETHENE	165			
VINYL CHLORIDE	0.5	U	U	

PROJ_NO: 8925

SDG: F28236 MEDIA: WATER DATA FRACTION: OV

nsample	CEF-59-005-073-RI
samp_date	11/17/2004
lab_id	F28236-4
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Lab Qual	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	0.5	U	U	
1,1,2,2-TETRACHLOROETHANE	0.3	U	U	
1,1,2-TRICHLOROETHANE	0.5	U	U	
1,1-DICHLOROETHANE	0.5	U	U	
1,1-DICHLOROETHENE	0.5	U	U	
1,2-DICHLOROETHANE	0.5	U	U	
1,2-DICHLOROPROPANE	0.5	U	U	
2-BUTANONE	2.5	U	U	
2-HEXANONE	2.5	U	U	
4-METHYL-2-PENTANONE	2.5	U	U	
ACETONE	5	U	U	
BENZENE	0.5	U	U	
BROMODICHLOROMETHANE	0.5	U	U	
BROMOFORM	0.5	U	U	
BROMOMETHANE	1	U	U	
CARBON DISULFIDE	1	U	U	
CARBON TETRACHLORIDE	0.5	U	U	
CHLOROBENZENE	0.5	U	U	
CHLORODIBROMOMETHANE	0.4	U	U	
CHLOROETHANE	1	U	U	
CHLOROFORM	0.5	U	U	
CHLOROMETHANE	1	U	U	
CIS-1,2-DICHLOROETHENE	0.58	I	J	P
CIS-1,3-DICHLOROPROPENE	0.3	U	U	
ETHYLBENZENE	0.5	U	U	
METHYLENE CHLORIDE	1	U	U	
STYRENE	0.5	U	U	
TETRACHLOROETHENE	0.5	U	U	
TOLUENE	0.5	U	U	
TOTAL XYLENES	1	U	U	
TRANS-1,2-DICHLOROETHENE	0.5	U	U	
TRANS-1,3-DICHLOROPROPENE	0.3	U	U	

nsample	CEF-59-005-073-RI
samp_date	11/17/2004
lab_id	F28236-4
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Lab Qual	Val Qual	Qual Code
TRICHLOROETHENE	175			
VINYL CHLORIDE	0.5	U	U	

nsample	CEF-59-009-053-RI
samp_date	11/17/2004
lab_id	F28236-6
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Lab Qual	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	0.5	U	U	
1,1,2,2-TETRACHLOROETHANE	0.3	U	U	
1,1,2-TRICHLOROETHANE	0.5	U	U	
1,1-DICHLOROETHANE	0.5	U	U	
1,1-DICHLOROETHENE	0.5	U	U	
1,2-DICHLOROETHANE	0.5	U	U	
1,2-DICHLOROPROPANE	0.5	U	U	
2-BUTANONE	2.5	U	U	
2-HEXANONE	2.5	U	U	
4-METHYL-2-PENTANONE	2.5	U	U	
ACETONE	5	U	U	
BENZENE	0.5	U	U	
BROMODICHLOROMETHANE	0.5	U	U	
BROMOFORM	0.5	U	U	
BROMOMETHANE	1	U	U	
CARBON DISULFIDE	2.7			
CARBON TETRACHLORIDE	0.5	U	U	
CHLOROBENZENE	0.5	U	U	
CHLORODIBROMOMETHANE	0.4	U	U	
CHLOROETHANE	1	U	U	
CHLOROFORM	0.5	U	U	
CHLOROMETHANE	1	U	U	
CIS-1,2-DICHLOROETHENE	1.6			
CIS-1,3-DICHLOROPROPENE	0.3	U	U	
ETHYLBENZENE	0.5	U	U	
METHYLENE CHLORIDE	1	U	U	
STYRENE	0.5	U	U	
TETRACHLOROETHENE	0.5	U	U	
TOLUENE	0.5	U	U	
TOTAL XYLENES	1	U	U	
TRANS-1,2-DICHLOROETHENE	0.5	U	U	
TRANS-1,3-DICHLOROPROPENE	0.3	U	U	

PROJ_NO: 8925

SDG: F28236 MEDIA: WATER DATA FRACTION: OV

nsample	CEF-59-009-053-RI
samp_date	11/17/2004
lab_id	F28236-6
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Lab Qual	Val Qual	Qual Code
TRICHLOROETHENE	10.6			
VINYL CHLORIDE	0.5	U	U	

nsample	CEF-59-DU02-RI
samp_date	11/17/2004
lab_id	F28236-7
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	CEF-59-005-053-RI

Parameter	Result	Lab Qual	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	0.5	U	U	
1,1,2,2-TETRACHLOROETHANE	0.3	U	U	
1,1,2-TRICHLOROETHANE	0.5	U	U	
1,1-DICHLOROETHANE	0.5	U	U	
1,1-DICHLOROETHENE	0.5	U	U	
1,2-DICHLOROETHANE	0.5	U	U	
1,2-DICHLOROPROPANE	0.5	U	U	
2-BUTANONE	2.5	U	U	
2-HEXANONE	2.5	U	U	
4-METHYL-2-PENTANONE	2.5	U	U	
ACETONE	5	U	U	
BENZENE	0.5	U	U	
BROMODICHLOROMETHANE	0.5	U	U	
BROMOFORM	0.5	U	U	
BROMOMETHANE	1	U	U	
CARBON DISULFIDE	1	U	U	
CARBON TETRACHLORIDE	0.5	U	U	
CHLOROBENZENE	0.5	U	U	
CHLORODIBROMOMETHANE	0.4	U	U	
CHLOROETHANE	1	U	U	
CHLOROFORM	0.5	U	U	
CHLOROMETHANE	1	U	U	
CIS-1,2-DICHLOROETHENE	0.58	I	J	P
CIS-1,3-DICHLOROPROPENE	0.3	U	U	
ETHYLBENZENE	0.5	U	U	
METHYLENE CHLORIDE	1	U	U	
STYRENE	0.5	U	U	
TETRACHLOROETHENE	0.5	U	U	
TOLUENE	0.5	U	U	
TOTAL XYLENES	1	U	U	
TRANS-1,2-DICHLOROETHENE	0.5	U	U	
TRANS-1,3-DICHLOROPROPENE	0.3	U	U	

nsample	CEF-59-DU02-RI
samp_date	11/17/2004
lab_id	F28236-7
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	CEF-59-005-053-RI

Parameter	Result	Lab Qual	Val Qual	Qual Code
TRICHLOROETHENE	169			
VINYL CHLORIDE	0.5	U	U	

PROJ_NO: 8925

SDG: F28236 MEDIA: WATER DATA FRACTION: OVG

nsample	CEF-59-005-053-RI	nsample	CEF-59-DU02-RI
samp_date	11/17/2004	samp_date	11/17/2004
lab_id	F28236-2	lab_id	F28236-7
qc_type	NM	qc_type	NM
units	UG/L	units	UG/L
Pct_Solids		Pct_Solids	
DUP_OF:		DUP_OF:	CEF-59-005-053-RI

Parameter	Result	Lab Qual	Val Qual	Qual Code
ETHANE	0.43			
ETHENE	0.80	U	U	
METHANE	20.3			

Parameter	Result	Lab Qual	Val Qual	Qual Code
ETHANE	0.60	U	U	
ETHENE	0.80	U	U	
METHANE	19.8			

APPENDIX B
RESULTS AS REPORTED BY THE LABORATORY

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-005-053-RI-F		
Lab Sample ID:	F28236-3	**Date Sampled:**	11/17/04
Matrix:	AQ - Groundwater Filtered	**Date Received:**	11/18/04
		Percent Solids:	n/a
Project:	Site 59-CTO 359		

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Iron	13200	300	48	ug/l	1	11/23/04	11/24/04 SM	SW846 6010B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA4101
(2) Prep QC Batch: MP7444

000296

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
I = Indicates a result >= MDL but < RL

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-DU02-RI-F		
Lab Sample ID:	F28236-8	**Date Sampled:**	11/17/04
Matrix:	AQ - Groundwater Filtered	**Date Received:**	11/18/04
		Percent Solids:	n/a
Project:	Site 59-CTO 359		

Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Iron	13400	300	48	ug/l	1	11/23/04	11/24/04 SM	SW846 6010B [1]	SW846 3010A [2]

(1) Instrument QC Batch: MA4101
(2) Prep QC Batch: MP7444

000297

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
I = Indicates a result >= MDL but < RL

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-005-053-RI		
Lab Sample ID:	F28236-2	**Date Sampled:**	11/17/04
Matrix:	AQ - Ground Water	**Date Received:**	11/18/04
		Percent Solids:	n/a
Project:	Site 59-CTO 359		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3	22.5	5.0	2.5	mg/l	1	11/24/04	MCR	EPA 310.1
Chloride	9.9	2.0	1.0	mg/l	1	11/18/04 14:59	MP	EPA 300/SW846 9056
Nitrogen, Nitrate	0.050 U	0.10	0.050	mg/l	1	11/18/04 14:59	MP	EPA 300/SW846 9056
Nitrogen, Nitrite	0.050 U	0.10	0.050	mg/l	1	11/18/04 14:59	MP	EPA 300/SW846 9056
Phosphate, Ortho	0.074 I	0.10	0.020	mg/l	1	11/18/04 14:30	MP	EPA 365.3
Sulfate	7.0	2.0	1.0	mg/l	1	11/18/04 14:59	MP	EPA 300/SW846 9056
Total Organic Carbon	1.4	1.0	0.50	mg/l	1	12/03/04	LE	EPA 415.1

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
I = Indicates a result >= MDL but < RL

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-DU02-RI		
Lab Sample ID:	F28236-7	**Date Sampled:**	11/17/04
Matrix:	AQ - Ground Water	**Date Received:**	11/18/04
		Percent Solids:	n/a
Project:	Site 59-CTO 359		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3	25.0	5.0	2.5	mg/l	1	11/24/04	MCR	EPA 310.1
Chloride	9.8	2.0	1.0	mg/l	1	11/18/04 15:14	MP	EPA 300/SW846 9056
Nitrogen, Nitrate	0.050 U	0.10	0.050	mg/l	1	11/18/04 15:14	MP	EPA 300/SW846 9056
Nitrogen, Nitrite	0.050 U	0.10	0.050	mg/l	1	11/18/04 15:14	MP	EPA 300/SW846 9056
Phosphate, Ortho	0.15	0.10	0.020	mg/l	1	11/18/04 14:30	MP	EPA 365.3
Sulfate	7.4	2.0	1.0	mg/l	1	11/18/04 15:14	MP	EPA 300/SW846 9056
Total Organic Carbon	1.4	1.0	0.50	mg/l	1	12/03/04	LE	EPA 415.1

000459

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
I = Indicates a result >= MDL but < RL

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-005-053-RI-F		
Lab Sample ID:	F28236-3	**Date Sampled:**	11/17/04
Matrix:	AQ - Groundwater Filtered	**Date Received:**	11/18/04
		Percent Solids:	n/a
Project:	Site 59-CTO 359		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Sulfide	1.0 U	1.0	1.0	mg/l	1	11/22/04	MP	EPA 376.1

000458

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
I = Indicates a result >= MDL but < RL

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-DU02-RI-F		
Lab Sample ID:	F28236-8	**Date Sampled:**	11/17/04
Matrix:	AQ - Groundwater Filtered	**Date Received:**	11/18/04
		Percent Solids:	n/a
Project:	Site 59-CTO 359		

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Sulfide	1.0 U	1.0	1.0	mg/l	1	11/22/04	MP	EPA 376.1

000460

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
I = Indicates a result >= MDL but < RL

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-003-073-RI		
Lab Sample ID:	F28236-1	**Date Sampled:**	11/17/04
Matrix:	AQ - Ground Water	**Date Received:**	11/18/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0028052.D	1	11/30/04	KW	n/a	n/a	VC1188
Run #2	C0028074.D	20	12/01/04	KW	n/a	n/a	VC1189

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	5.0 U	5.0	5.0	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	ug/l	
75-00-3	Chloroethane	1.0 U	1.0	1.0	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	ug/l	
75-15-0	Carbon disulfide	1.0 U	1.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	0.50 U	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	0.40 U	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	6.1	1.0	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
591-78-6	2-Hexanone	2.5 U	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	2.5 U	5.0	2.5	ug/l	
74-83-9	Methyl bromide	1.0 U	1.0	1.0	ug/l	
74-87-3	Methyl chloride	1.0 U	1.0	1.0	ug/l	
75-09-2	Methylene chloride	1.0 U	1.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	2.5 U	5.0	2.5	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.30 U	1.0	0.30	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	ug/l	
79-01-6	Trichloroethylene	1100 [a]	20	10	ug/l	

000035

U = Not detected MDL - Method Detection Limit I = Result > = MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF-59-003-073-RI		
Lab Sample ID:	F28236-1	**Date Sampled:**	11/17/04
Matrix:	AQ - Ground Water	**Date Received:**	11/18/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.0 U	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%	97%	86-115%
17060-07-0	1,2-Dichloroethane-D4	97%	97%	73-126%
2037-26-5	Toluene-D8	88%	89%	86-112%
460-00-4	4-Bromofluorobenzene	97%	94%	83-119%

(a) Result is from Run# 2

000036

U = Not detected MDL - Method Detection Limit
RL = Reporting Limit
L = Indicates value exceeds calibration range

I = Result >= MDL but < RL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-005-033-RI		
Lab Sample ID:	F28236-5	**Date Sampled:**	11/17/04
Matrix:	AQ - Ground Water	**Date Received:**	11/18/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0028077.D	1	12/01/04	KW	n/a	n/a	VC1189
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	5.0 U	5.0	5.0	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	ug/l	
75-00-3	Chloroethane	1.0 U	1.0	1.0	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	ug/l	
75-15-0	Carbon disulfide	1.0 U	1.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	0.50 U	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	0.40 U	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	2.0	1.0	0.50	ug/l	
591-78-6	2-Hexanone	2.5 U	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	2.5 U	5.0	2.5	ug/l	
74-83-9	Methyl bromide	1.0 U	1.0	1.0	ug/l	
74-87-3	Methyl chloride	1.0 U	1.0	1.0	ug/l	
75-09-2	Methylene chloride	1.0 U	1.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	2.5 U	5.0	2.5	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.30 U	1.0	0.30	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	ug/l	

000065

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF-59-005-033-RI		
Lab Sample ID:	F28236-5	**Date Sampled:**	11/17/04
Matrix:	AQ - Ground Water	**Date Received:**	11/18/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.0 U	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		86-115%
17060-07-0	1,2-Dichloroethane-D4	96%		73-126%
2037-26-5	Toluene-D8	87%		86-112%
460-00-4	4-Bromofluorobenzene	91%		83-119%

000066

U = Not detected MDL - Method Detection Limit
RL = Reporting Limit
L = Indicates value exceeds calibration range

I = Result >= MDL but < RL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-005-053-RI		
Lab Sample ID:	F28236-2	**Date Sampled:**	11/17/04
Matrix:	AQ - Ground Water	**Date Received:**	11/18/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0028055.D	1	11/30/04	KW	n/a	n/a	VC1188
Run #2	C0028075.D	5	12/01/04	KW	n/a	n/a	VC1189

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	5.0 U	5.0	5.0	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	ug/l	
75-00-3	Chloroethane	1.0 U	1.0	1.0	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	ug/l	
75-15-0	Carbon disulfide	1.0 U	1.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	0.50 U	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	0.40 U	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.64	1.0	0.50	ug/l	I
10061-01-5	cis-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
591-78-6	2-Hexanone	2.5 U	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	2.5 U	5.0	2.5	ug/l	
74-83-9	Methyl bromide	1.0 U	1.0	1.0	ug/l	
74-87-3	Methyl chloride	1.0 U	1.0	1.0	ug/l	
75-09-2	Methylene chloride	1.0 U	1.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	2.5 U	5.0	2.5	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.30 U	1.0	0.30	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	ug/l	
79-01-6	Trichloroethylene	165 [a]	5.0	2.5	ug/l	

000046

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF-59-005-053-RI		
Lab Sample ID:	F28236-2	**Date Sampled:**	11/17/04
Matrix:	AQ - Ground Water	**Date Received:**	11/18/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.0 U	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%	98%	86-115%
17060-07-0	1,2-Dichloroethane-D4	97%	94%	73-126%
2037-26-5	Toluene-D8	90%	87%	86-112%
460-00-4	4-Bromofluorobenzene	97%	97%	83-119%

(a) Result is from Run# 2

000047

U = Not detected MDL - Method Detection Limit
RL = Reporting Limit
L = Indicates value exceeds calibration range

I = Result >= MDL but < RL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-005-073-RI		
Lab Sample ID:	F28236-4	**Date Sampled:**	11/17/04
Matrix:	AQ - Ground Water	**Date Received:**	11/18/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0028056.D	1	11/30/04	KW	n/a	n/a	VC1188
Run #2	C0028076.D	5	12/01/04	KW	n/a	n/a	VC1189

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	5.0 U	5.0	5.0	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	ug/l	
75-00-3	Chloroethane	1.0 U	1.0	1.0	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	ug/l	
75-15-0	Carbon disulfide	1.0 U	1.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	0.50 U	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	0.40 U	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.58	1.0	0.50	ug/l	I
10061-01-5	cis-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
591-78-6	2-Hexanone	2.5 U	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	2.5 U	5.0	2.5	ug/l	
74-83-9	Methyl bromide	1.0 U	1.0	1.0	ug/l	
74-87-3	Methyl chloride	1.0 U	1.0	1.0	ug/l	
75-09-2	Methylene chloride	1.0 U	1.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	2.5 U	5.0	2.5	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.30 U	1.0	0.30	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	ug/l	
79-01-6	Trichloroethylene	175 [a]	5.0	2.5	ug/l	

U = Not detected MDL - Method Detection Limit I = Result > = MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF-59-005-073-RI		
Lab Sample ID:	F28236-4	**Date Sampled:**	11/17/04
Matrix:	AQ - Ground Water	**Date Received:**	11/18/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.0 U	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%	99%	86-115%
17060-07-0	1,2-Dichloroethane-D4	97%	95%	73-126%
2037-26-5	Toluene-D8	87%	88%	86-112%
460-00-4	4-Bromofluorobenzene	98%	97%	83-119%

(a) Result is from Run# 2

000058

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-009-053-RI		
Lab Sample ID:	F28236-6	**Date Sampled:**	11/17/04
Matrix:	AQ - Ground Water	**Date Received:**	11/18/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0028058.D	1	11/30/04	KW	n/a	n/a	VC1188
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	5.0 U	5.0	5.0	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	ug/l	
75-00-3	Chloroethane	1.0 U	1.0	1.0	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	ug/l	
75-15-0	Carbon disulfide	2.7	1.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	0.50 U	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	0.40 U	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	1.6	1.0	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
591-78-6	2-Hexanone	2.5 U	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	2.5 U	5.0	2.5	ug/l	
74-83-9	Methyl bromide	1.0 U	1.0	1.0	ug/l	
74-87-3	Methyl chloride	1.0 U	1.0	1.0	ug/l	
75-09-2	Methylene chloride	1.0 U	1.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	2.5 U	5.0	2.5	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.30 U	1.0	0.30	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	ug/l	
79-01-6	Trichloroethylene	10.6	1.0	0.50	ug/l	

000073

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-009-053-RI		
Lab Sample ID:	F28236-6	**Date Sampled:**	11/17/04
Matrix:	AQ - Ground Water	**Date Received:**	11/18/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.0 U	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		86-115%
17060-07-0	1,2-Dichloroethane-D4	96%		73-126%
2037-26-5	Toluene-D8	88%		86-112%
460-00-4	4-Bromofluorobenzene	96%		83-119%

000074

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-DU02-RI		
Lab Sample ID:	F28236-7	**Date Sampled:**	11/17/04
Matrix:	AQ - Ground Water	**Date Received:**	11/18/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0028059.D	1	11/30/04	KW	n/a	n/a	VC1188
Run #2	C0028078.D	5	12/01/04	KW	n/a	n/a	VC1189

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	5.0 U	5.0	5.0	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	ug/l	
75-00-3	Chloroethane	1.0 U	1.0	1.0	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	ug/l	
75-15-0	Carbon disulfide	1.0 U	1.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	0.50 U	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	0.40 U	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.58	1.0	0.50	ug/l	I
10061-01-5	cis-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
591-78-6	2-Hexanone	2.5 U	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	2.5 U	5.0	2.5	ug/l	
74-83-9	Methyl bromide	1.0 U	1.0	1.0	ug/l	
74-87-3	Methyl chloride	1.0 U	1.0	1.0	ug/l	
75-09-2	Methylene chloride	1.0 U	1.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	2.5 U	5.0	2.5	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.30 U	1.0	0.30	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	ug/l	
79-01-6	Trichloroethylene	169 [a]	5.0	2.5	ug/l	

000080

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF-59-DU02-RI		
Lab Sample ID:	F28236-7	**Date Sampled:**	11/17/04
Matrix:	AQ - Ground Water	**Date Received:**	11/18/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.0 U	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%	99%	86-115%
17060-07-0	1,2-Dichloroethane-D4	96%	95%	73-126%
2037-26-5	Toluene-D8	89%	88%	86-112%
460-00-4	4-Bromofluorobenzene	97%	96%	83-119%

(a) Result is from Run# 2

000081

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-005-053-RI		
Lab Sample ID:	F28236-2	**Date Sampled:**	11/17/04
Matrix:	AQ - Ground Water	**Date Received:**	11/18/04
Method:	RSKSOP-147/175	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XY015844.D	1	11/19/04	CV	n/a	n/a	GXY528
Run #2							

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	20.3	0.50	0.30	ug/l	
74-84-0	Ethane	0.43	1.0	0.60	ug/l	
74-85-1	Ethene	0.80 U	1.0	0.80	ug/l	

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-DU02-RI		
Lab Sample ID:	F28236-7	**Date Sampled:**	11/17/04
Matrix:	AQ - Ground Water	**Date Received:**	11/18/04
Method:	RSKSOP-147/175	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XY015845.D	1	11/19/04	CV	n/a	n/a	GXY528
Run #2							

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	19.8	0.50	0.30	ug/l	
74-84-0	Ethane	0.60 U	1.0	0.60	ug/l	
74-85-1	Ethene	0.80 U	1.0	0.80	ug/l	

U = Not detected MDL - Method Detection Limit
RL = Reporting Limit
L = Indicates value exceeds calibration range

I = Result > = MDL but < RL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

000229

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO: **M. SPERANZA** **DATE: FEBRUARY 09, 2005**

FROM: **D. SCHLOER** **CC: DV FILE**

SUBJECT: **ORGANIC DATA VALIDATION – VOC/OVG/SVOC/PCB**
CTO 359, NAS CECIL FIELD
SDG: F28237

SAMPLES: 1/Aqueous/VOC/OVG/SVOC/PCB

CEF-59-002-028-RI

2/Aqueous/VOC/OVG

NG-12D-RI CEF-59-003-053-RI

4/Aqueous/VOC

CEF-59-006-104-RI CEF-59-015-028-RI CEF-59-DU03-RI
NG-12I-RI

Overview

The sample set for CTO 359; NAS Cecil Field; SDG F28237 consists of seven (7) groundwater environmental samples. As detailed above, the samples were analyzed for Volatile Organic Compounds (VOCs), Semivolatile Organic Compounds (SVOCs) and Polychlorinated Biphenyls (PCBs). Two samples were selected and analyzed for the dissolved gases (OVG): methane, ethane and ethene. One field duplicate pair was included in this SDG: CEF-59-006-104-RI and CEF-59-DU03-RI.

The samples were collected by Tetra Tech NUS on November 16th, 2004 and analyzed by Accutest Laboratories. All analyses were conducted in accordance with Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria using U.S. EPA Test Methods for Evaluating Solid Waste (SW-846) Method 8260B, 8270C, 8082, and the Robert S. Kerr Standard Operating Procedure RSK SOP – 147/175 analytical and reporting protocol.

The data contained in this SDG were validated with regard to the following parameters:

- Data completeness
- Holding times
- * Initial and continuing calibration
- * Blank results
- * Detection Limits

The symbol (*) indicates that all quality control criteria were met for this parameter. Problems affecting data quality are discussed below; documentation supporting these findings is presented in Appendix C. Qualified Analytical results are presented in Appendix A. Results as reported by the laboratory are presented in Appendix B.

VOA

Due to the presence of trichloroethylene at a concentration that exceeded the linear range of the instrument calibration, sample NG-12D-RI was analyzed at a 50X dilution factor. As noted on the sample result Form I, the laboratory reported the trichloroethylene result from the 50X dilution.

Sample NG-12I-RI was analyzed one day beyond the allowable 14-day holding time. Positive and nondetected results were qualified as estimated (J) and (UJ), respectively.

The laboratory prepared and analyzed a Matrix Spike/Matrix Spike Duplicate (MS/MSD) for sample CEF-59-003-053-RI. All spiked target compound recoveries and Relative Percent Differences (RPD) were acceptable.

OVG

No data quality issues were noted.

SVOC

2,6-Dinitrotoluene and hexachloroethane were recovered slightly below their respective quality control limits for the Laboratory Control Sample (LCS) analysis associated with extraction batch No. OP11894. No data validation action was taken based on these noncompliances.

The target SVOCs benzoic acid and benzyl alcohol were reported but not requested. These compounds were removed from the electronic database.

PCB

The sample preparation/extraction log provided in the data package was not relevant to the PCB sample reported in SDG F28237. The sample extraction date was acquired from the sample result Form I and used for the assessment of holding time compliance. This is noted as a data completeness issue.

The laboratory prepared and analyzed a MS/MSD for sample CEF-59-002-028-RI. All spiked target compound recoveries and Relative Percent Differences (RPD) were acceptable.

Additional Comments

Nondetected organic compounds were reported at the sample-specific method detection limit (MDLs); and, Positive results greater than the MDL but less than the sample Reporting Limit (RL) were qualified as estimated (J) due to uncertainty near the detection limit.

EXECUTIVE SUMMARY

Laboratory Performance Issues: The reanalysis of one sample occurred one day beyond holding time resulting in the qualification of analytical data as estimated. Three target VOCs failed %D criterion for several continuing calibration standards; however, no data were qualified on this basis as only a limited data review was performed. The wrong PCB extraction log was provided in the data package. The sample preparation/extraction date was acquired from the sample result Form I and used for the assessment for holding time compliance.

Other Factors Affecting Data Quality: Due to the presence of one target VOC, one sample was analyzed at a 50-fold dilution.

The data for these analyses were reviewed with reference to the EPA Functional Guidelines for Organic Data Validation (10/99) and the NFESC guidelines entitled "Navy IRCDQM" (September, 1999). The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NFESC guidelines and the Quality Assurance Project Plan (QAPP)."

Tetra Tech NUS

Douglas Schloer
Chemist/Data Validator

TetraTech NUS

Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Support Documentation

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

Data Validation Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (e.g. % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (e.g. base-line drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; e.g. chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is greater than sample activity

PROJ_NO: 8925

SDG: F28237 MEDIA: WATER DATA FRACTION: OV

nsample	CEF-59-002-028-RI
samp_date	11/16/2004
lab_id	F28237-4
qc_type	NM
units	UG/L
Pct_Solids	0.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	0.5	U	
1,1,2,2-TETRACHLOROETHANE	0.3	U	
1,1,2-TRICHLOROETHANE	0.5	U	
1,1-DICHLOROETHANE	0.5	U	
1,1-DICHLOROETHENE	0.5	U	
1,2-DICHLOROETHANE	0.5	U	
1,2-DICHLOROPROPANE	0.5	U	
2-BUTANONE	2.5	U	
2-HEXANONE	2.5	U	
4-METHYL-2-PENTANONE	2.5	U	
ACETONE	5	U	
BENZENE	0.5	U	
BROMODICHLOROMETHANE	0.5	U	
BROMOFORM	0.5	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	0.5	U	
CHLOROBENZENE	0.5	U	
CHLORODIBROMOMETHANE	0.4	U	
CHLOROETHANE	1	U	
CHLOROFORM	0.5	U	
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	0.5	U	
CIS-1,3-DICHLOROPROPENE	0.3	U	
ETHYLBENZENE	0.5	U	
METHYLENE CHLORIDE	1	U	
STYRENE	0.5	U	
TETRACHLOROETHENE	0.5	U	
TOLUENE	0.5	U	
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	0.5	U	
TRANS-1,3-DICHLOROPROPENE	0.3	U	

nsample	CEF-59-002-028-RI
samp_date	11/16/2004
lab_id	F28237-4
qc_type	NM
units	UG/L
Pct_Solids	0.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
TRICHLOROETHENE	12.1		
VINYL CHLORIDE	0.5	U	

nsample	CEF-59-003-053-RI
samp_date	11/16/2004
lab_id	F28237-7
qc_type	NM
units	UG/L
Pct_Solids	0.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	0.5	U	
1,1,2,2-TETRACHLOROETHANE	0.3	U	
1,1,2-TRICHLOROETHANE	0.5	U	
1,1-DICHLOROETHANE	0.5	U	
1,1-DICHLOROETHENE	0.5	U	
1,2-DICHLOROETHANE	0.5	U	
1,2-DICHLOROPROPANE	0.5	U	
2-BUTANONE	2.5	U	
2-HEXANONE	2.5	U	
4-METHYL-2-PENTANONE	2.5	U	
ACETONE	5	U	
BENZENE	0.5	U	
BROMODICHLOROMETHANE	0.5	U	
BROMOFORM	0.5	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	0.5	U	
CHLOROBENZENE	0.5	U	
CHLORODIBROMOMETHANE	0.4	U	
CHLOROETHANE	1	U	
CHLOROFORM	0.5	U	
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	1.1		
CIS-1,3-DICHLOROPROPENE	0.3	U	
ETHYLBENZENE	0.5	U	
METHYLENE CHLORIDE	1	U	
STYRENE	0.5	U	
TETRACHLOROETHENE	0.5	U	
TOLUENE	0.5	U	
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	0.5	U	
TRANS-1,3-DICHLOROPROPENE	0.3	U	

PROJ_NO: 8925

SDG: F28237 MEDIA: WATER DATA FRACTION: OV

nsample	CEF-59-003-053-RI
samp_date	11/16/2004
lab_id	F28237-7
qc_type	NM
units	UG/L
Pct_Solids	0.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
TRICHLOROETHENE	93.9		
VINYL CHLORIDE	0.5	U	

nsample	CEF-59-006-104-RI
samp_date	11/16/2004
lab_id	F28237-1
qc_type	NM
units	UG/L
Pct_Solids	0.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	0.5	U	
1,1,2,2-TETRACHLOROETHANE	0.3	U	
1,1,2-TRICHLOROETHANE	0.5	U	
1,1-DICHLOROETHANE	0.5	U	
1,1-DICHLOROETHENE	0.5	U	
1,2-DICHLOROETHANE	0.5	U	
1,2-DICHLOROPROPANE	0.5	U	
2-BUTANONE	2.5	U	
2-HEXANONE	2.5	U	
4-METHYL-2-PENTANONE	2.5	U	
ACETONE	5	U	
BENZENE	0.5	U	
BROMODICHLOROMETHANE	0.73	J	P
BROMOFORM	0.5	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	0.5	U	
CHLOROBENZENE	0.5	U	
CHLORODIBROMOMETHANE	0.4	U	
CHLOROETHANE	1	U	
CHLOROFORM	5.3		
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	0.5	U	
CIS-1,3-DICHLOROPROPENE	0.3	U	
ETHYLBENZENE	0.5	U	
METHYLENE CHLORIDE	1	U	
STYRENE	0.5	U	
TETRACHLOROETHENE	0.5	U	
TOLUENE	0.5	U	
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	0.5	U	
TRANS-1,3-DICHLOROPROPENE	0.3	U	

nsample	CEF-59-006-104-RI
samp_date	11/16/2004
lab_id	F28237-1
qc_type	NM
units	UG/L
Pct_Solids	0.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
TRICHLOROETHENE	0.5	U	
VINYL CHLORIDE	0.5	U	

PROJ_NO: 8925

SDG: F28237 MEDIA: WATER DATA FRACTION: OV

nsample	CEF-59-015-028-RI
samp_date	11/16/2004
lab_id	F28237-9
qc_type	NM
units	UG/L
Pct_Solids	100.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	0.5	U	
1,1,2,2-TETRACHLOROETHANE	0.3	U	
1,1,2-TRICHLOROETHANE	0.5	U	
1,1-DICHLOROETHANE	0.5	U	
1,1-DICHLOROETHENE	0.5	U	
1,2-DICHLOROETHANE	0.5	U	
1,2-DICHLOROPROPANE	0.5	U	
2-BUTANONE	2.5	U	
2-HEXANONE	2.5	U	
4-METHYL-2-PENTANONE	2.5	U	
ACETONE	5	U	
BENZENE	0.5	U	
BROMODICHLOROMETHANE	0.5	U	
BROMOFORM	0.5	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	0.5	U	
CHLOROBENZENE	0.5	U	
CHLORODIBROMOMETHANE	0.4	U	
CHLOROETHANE	1	U	
CHLOROFORM	0.5	U	
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	0.5	U	
CIS-1,3-DICHLOROPROPENE	0.3	U	
ETHYLBENZENE	0.5	U	
METHYLENE CHLORIDE	1	U	
STYRENE	0.5	U	
TETRACHLOROETHENE	0.5	U	
TOLUENE	0.5	U	
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	0.5	U	
TRANS-1,3-DICHLOROPROPENE	0.3	U	

nsample	CEF-59-015-028-RI
samp_date	11/16/2004
lab_id	F28237-9
qc_type	NM
units	UG/L
Pct_Solids	100.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
TRICHLOROETHENE	0.5	U	
VINYL CHLORIDE	0.5	U	

nsample	CEF-59-DU03-RI
samp_date	11/16/2004
lab_id	F28237-10
qc_type	NM
units	UG/L
Pct_Solids	0.0
DUP_OF:	CEF-59-006-104-RI

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	0.5	U	
1,1,2,2-TETRACHLOROETHANE	0.3	U	
1,1,2-TRICHLOROETHANE	0.5	U	
1,1-DICHLOROETHANE	0.5	U	
1,1-DICHLOROETHENE	0.5	U	
1,2-DICHLOROETHANE	0.5	U	
1,2-DICHLOROPROPANE	0.5	U	
2-BUTANONE	2.5	U	
2-HEXANONE	2.5	U	
4-METHYL-2-PENTANONE	2.5	U	
ACETONE	5	U	
BENZENE	0.5	U	
BROMODICHLOROMETHANE	0.77	J	P
BROMOFORM	0.5	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	0.5	U	
CHLOROBENZENE	0.5	U	
CHLORODIBROMOMETHANE	0.4	U	
CHLOROETHANE	1	U	
CHLOROFORM	5.4		
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	0.5	U	
CIS-1,3-DICHLOROPROPENE	0.3	U	
ETHYLBENZENE	0.5	U	
METHYLENE CHLORIDE	1	U	
STYRENE	0.5	U	
TETRACHLOROETHENE	0.5	U	
TOLUENE	0.5	U	
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	0.5	U	
TRANS-1,3-DICHLOROPROPENE	0.3	U	

PROJ_NO: 8925

SDG: F28237 MEDIA: WATER DATA FRACTION: OV

nsample	CEF-59-DU03-RI
samp_date	11/16/2004
lab_id	F28237-10
qc_type	NM
units	UG/L
Pct_Solids	0.0
DUP_OF:	CEF-59-006-104-RI

Parameter	Result	Val Qual	Qual Code
TRICHLOROETHENE	0.5	U	
VINYL CHLORIDE	0.5	U	

nsample	NG-12D-RI
samp_date	11/16/2004
lab_id	F28237-2
qc_type	NM
units	UG/L
Pct_Solids	0.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	0.5	U	
1,1,2,2-TETRACHLOROETHANE	0.3	U	
1,1,2-TRICHLOROETHANE	0.5	U	
1,1-DICHLOROETHANE	0.5	U	
1,1-DICHLOROETHENE	0.87	J	P
1,2-DICHLOROETHANE	0.5	U	
1,2-DICHLOROPROPANE	0.5	U	
2-BUTANONE	2.5	U	
2-HEXANONE	2.5	U	
4-METHYL-2-PENTANONE	2.5	U	
ACETONE	5	U	
BENZENE	0.5	U	
BROMODICHLOROMETHANE	0.5	U	
BROMOFORM	0.5	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	0.5	U	
CHLOROBENZENE	0.5	U	
CHLORODIBROMOMETHANE	0.4	U	
CHLOROETHANE	1	U	
CHLOROFORM	0.5	U	
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	3.8	J	P
CIS-1,3-DICHLOROPROPENE	0.3	U	
ETHYLBENZENE	0.5	U	
METHYLENE CHLORIDE	1	U	
STYRENE	0.5	U	
TETRACHLOROETHENE	0.5	U	
TOLUENE	0.5	U	
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	0.5	U	
TRANS-1,3-DICHLOROPROPENE	0.3	U	

nsample	NG-12D-RI
samp_date	11/16/2004
lab_id	F28237-2
qc_type	NM
units	UG/L
Pct_Solids	0.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
TRICHLOROETHENE	1810		
VINYL CHLORIDE	0.5	U	

PROJ_NO: 8925

SDG: F28237 MEDIA: WATER DATA FRACTION: OV

nsample	NG-12I-RI	nsample	NG-12I-RI
samp_date	11/16/2004	samp_date	11/16/2004
lab_id	F28237-6	lab_id	F28237-6
qc_type	NM	qc_type	NM
units	UG/L	units	UG/L
Pct_Solids	0.0	Pct_Solids	0.0
DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	0.5	UJ	H
1,1,2,2-TETRACHLOROETHANE	0.3	UJ	H
1,1,2-TRICHLOROETHANE	0.5	UJ	H
1,1-DICHLOROETHANE	0.5	UJ	H
1,1-DICHLOROETHENE	0.5	UJ	H
1,2-DICHLOROETHANE	0.5	UJ	H
1,2-DICHLOROPROPANE	0.5	UJ	H
2-BUTANONE	2.5	UJ	H
2-HEXANONE	2.5	UJ	H
4-METHYL-2-PENTANONE	2.5	UJ	H
ACETONE	5	UJ	H
BENZENE	0.5	UJ	H
BROMODICHLOROMETHANE	0.5	UJ	H
BROMOFORM	0.5	UJ	H
BROMOMETHANE	1	UJ	H
CARBON DISULFIDE	1	UJ	H
CARBON TETRACHLORIDE	0.5	UJ	H
CHLOROBENZENE	0.5	UJ	H
CHLORODIBROMOMETHANE	0.4	UJ	H
CHLOROETHANE	1	UJ	H
CHLOROFORM	0.5	UJ	H
CHLOROMETHANE	1	UJ	H
CIS-1,2-DICHLOROETHENE	1.2	J	H
CIS-1,3-DICHLOROPROPENE	0.3	UJ	H
ETHYLBENZENE	0.5	UJ	H
METHYLENE CHLORIDE	1	UJ	H
STYRENE	0.5	UJ	H
TETRACHLOROETHENE	0.5	UJ	H
TOLUENE	0.5	UJ	H
TOTAL XYLENES	1	UJ	H
TRANS-1,2-DICHLOROETHENE	0.5	UJ	H
TRANS-1,3-DICHLOROPROPENE	0.3	UJ	H

Parameter	Result	Val Qual	Qual Code
TRICHLOROETHENE	3.6	J	H
VINYL CHLORIDE	0.5	UJ	H

PROJ_NO: 8925

SDG: F28237 MEDIA: WATER DATA FRACTION: OVG

nsample	CEF-59-002-028-RI
samp_date	11/16/2004
lab_id	F28237-4
qc_type	NM
units	UG/L
Pct_Solids	0.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ETHANE	0.6	U	
ETHENE	0.8	U	
METHANE	4.77		

nsample	CEF-59-003-053-RI
samp_date	11/16/2004
lab_id	F28237-7
qc_type	NM
units	UG/L
Pct_Solids	0.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ETHANE	0.6	U	
ETHENE	0.8	U	
METHANE	2.71		

nsample	NG-12D-RI
samp_date	11/16/2004
lab_id	F28237-2
qc_type	NM
units	UG/L
Pct_Solids	0.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ETHANE	0.6	U	
ETHENE	0.8	U	
METHANE	110		

PROJ_NO: 8925

SDG: F28237 MEDIA: WATER DATA FRACTION: OS

nsample	CEF-59-002-028-RI	nsample	CEF-59-002-028-RI
samp_date	11/16/2004	samp_date	11/16/2004
lab_id	F28237-4	lab_id	F28237-4
qc_type	NM	qc_type	NM
units	UG/L	units	UG/L
Pct_Solids	0.0	Pct_Solids	0.0
DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,2,4-TRICHLOROBENZENE	1.1	U	
1,2-DICHLOROBENZENE	1.1	U	
1,3-DICHLOROBENZENE	1.1	U	
1,4-DICHLOROBENZENE	1.1	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	1.1	U	
2,4,5-TRICHLOROPHENOL	2.1	U	
2,4,6-TRICHLOROPHENOL	2.1	U	
2,4-DICHLOROPHENOL	2.1	U	
2,4-DIMETHYLPHENOL	2.1	U	
2,4-DINITROPHENOL	11	U	
2,4-DINITROTOLUENE	2.1	U	
2,6-DINITROTOLUENE	2.1	U	
2-CHLORONAPHTHALENE	1.1	U	
2-CHLOROPHENOL	2.1	U	
2-METHYLNAPHTHALENE	1.1	U	
2-METHYLPHENOL	2.1	U	
2-NITROANILINE	2.1	U	
2-NITROPHENOL	2.1	U	
3&4-METHYLPHENOL	2.1	U	
3,3'-DICHLOROBENZIDINE	5.3	U	
3-NITROANILINE	2.1	U	
4,6-DINITRO-2-METHYLPHENOL	5.3	U	
4-BROMOPHENYL PHENYL ETHER	1.1	U	
4-CHLORO-3-METHYLPHENOL	2.1	U	
4-CHLOROANILINE	3.2	U	
4-CHLOROPHENYL PHENYL ETHER	1.1	U	
4-NITROANILINE	2.1	U	
4-NITROPHENOL	11	U	
ACENAPHTHENE	1.1	U	
ACENAPHTHYLENE	1.1	U	
ANTHRACENE	1.1	U	
BENZO(A)ANTHRACENE	1.1	U	

Parameter	Result	Val Qual	Qual Code
BENZO(A)PYRENE	1.1	U	
BENZO(B)FLUORANTHENE	1.1	U	
BENZO(G,H,I)PERYLENE	2.1	U	
BENZO(K)FLUORANTHENE	1.1	U	
BIS(2-CHLOROETHOXY)METHANE	1.1	U	
BIS(2-CHLOROETHYL)ETHER	2.1	U	
BIS(2-ETHYLHEXYL)PHTHALATE	2.6	U	
BUTYL BENZYL PHTHALATE	2.1	U	
CARBAZOLE	1.1	U	
CHRYSENE	1.1	U	
DIBENZO(A,H)ANTHRACENE	2.1	U	
DIBENZOFURAN	1.1	U	
DIETHYL PHTHALATE	2.1	U	
DIMETHYL PHTHALATE	2.1	U	
DI-N-BUTYL PHTHALATE	2.1	U	
DI-N-OCTYL PHTHALATE	2.6	U	
FLUORANTHENE	1.1	U	
FLUORENE	1.1	U	
HEXACHLOROBENZENE	1.1	U	
HEXACHLOROBUTADIENE	2.1	U	
HEXACHLOROCYCLOPENTADIENE	2.1	U	
HEXACHLOROETHANE	2.1	U	
INDENO(1,2,3-CD)PYRENE	2.1	U	
ISOPHORONE	1.1	U	
NAPHTHALENE	1.1	U	
NITROBENZENE	1.1	U	
N-NITROSO-DI-N-PROPYLAMINE	2.1	U	
N-NITROSODIPHENYLAMINE	2.1	U	
PENTACHLOROPHENOL	11	U	
PHENANTHRENE	1.1	U	
PHENOL	2.1	U	
PYRENE	1.1	U	

PROJ_NO: 8925

SDG: F28237 MEDIA: WATER DATA FRACTION: PEST/PCB

nsample	CEF-59-002-028-RI
samp_date	11/16/2004
lab_id	F28237-4
qc_type	NM
units	UG/L
Pct_Solids	0.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	0.24	U	
AROCLOR-1221	0.38	U	
AROCLOR-1232	0.38	U	
AROCLOR-1242	0.24	U	
AROCLOR-1248	0.24	U	
AROCLOR-1254	0.24	U	
AROCLOR-1260	0.24	U	

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-002-028-RI		
Lab Sample ID:	F28237-4	**Date Sampled:**	11/16/04
Matrix:	AQ - Ground Water	**Date Received:**	11/18/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N0001973.D	1	11/30/04	NJ	n/a	n/a	VN87
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	5.0 U	5.0	5.0	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	ug/l	
75-00-3	Chloroethane	1.0 U	1.0	1.0	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	ug/l	
75-15-0	Carbon disulfide	1.0 U	1.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	0.50 U	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	0.40 U	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
591-78-6	2-Hexanone	2.5 U	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	2.5 U	5.0	2.5	ug/l	
74-83-9	Methyl bromide	1.0 U	1.0	1.0	ug/l	
74-87-3	Methyl chloride	1.0 U	1.0	1.0	ug/l	
75-09-2	Methylene chloride	1.0 U	1.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	2.5 U	5.0	2.5	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.30 U	1.0	0.30	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	ug/l	
79-01-6	Trichloroethylene	12.1	1.0	0.50	ug/l	

U = Not detected MDL - Method Detection Limit I = Result > = MDL but < RL J = Estimated Value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF-59-002-028-RI		
Lab Sample ID:	F28237-4	**Date Sampled:**	11/16/04
Matrix:	AQ - Ground Water	**Date Received:**	11/18/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.0 U	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		86-115%
17060-07-0	1,2-Dichloroethane-D4	98%		73-126%
2037-26-5	Toluene-D8	95%		86-112%
460-00-4	4-Bromofluorobenzene	92%		83-119%

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-003-053-RI		
Lab Sample ID:	F28237-7	**Date Sampled:**	11/16/04
Matrix:	AQ - Ground Water	**Date Received:**	11/18/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	B026058.D	1	11/29/04	RA	n/a	n/a	VB1116
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	5.0 U	5.0	5.0	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	ug/l	
75-00-3	Chloroethane	1.0 U	1.0	1.0	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	ug/l	
75-15-0	Carbon disulfide	1.0 U	1.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	0.50 U	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	0.40 U	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	1.1	1.0	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
591-78-6	2-Hexanone	2.5 U	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	2.5 U	5.0	2.5	ug/l	
74-83-9	Methyl bromide	1.0 U	1.0	1.0	ug/l	
74-87-3	Methyl chloride	1.0 U	1.0	1.0	ug/l	
75-09-2	Methylene chloride	1.0 U	1.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	2.5 U	5.0	2.5	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.30 U	1.0	0.30	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	ug/l	
79-01-6	Trichloroethylene	93.9	1.0	0.50	ug/l	

U = Not detected MDL - Method Detection Limit
RL = Reporting Limit
L = Indicates value exceeds calibration range

I = Result >= MDL but < RL J = Estimated Value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-003-053-RI		
Lab Sample ID:	F28237-7	**Date Sampled:**	11/16/04
Matrix:	AQ - Ground Water	**Date Received:**	11/18/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.0 U	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	92%		86-115%
17060-07-0	1,2-Dichloroethane-D4	90%		73-126%
2037-26-5	Toluene-D8	98%		86-112%
460-00-4	4-Bromofluorobenzene	106%		83-119%

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U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-006-104-RI		
Lab Sample ID:	F28237-1	**Date Sampled:**	11/16/04
Matrix:	AQ - Ground Water	**Date Received:**	11/18/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	B026061.D	1	11/29/04	RA	n/a	n/a	VB1116
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	5.0 U	5.0	5.0	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	0.73	1.0	0.50	ug/l	I
75-25-2	Bromoform	0.50 U	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	ug/l	
75-00-3	Chloroethane	1.0 U	1.0	1.0	ug/l	
67-66-3	Chloroform	5.3	1.0	0.50	ug/l	
75-15-0	Carbon disulfide	1.0 U	1.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	0.50 U	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	0.40 U	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
591-78-6	2-Hexanone	2.5 U	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	2.5 U	5.0	2.5	ug/l	
74-83-9	Methyl bromide	1.0 U	1.0	1.0	ug/l	
74-87-3	Methyl chloride	1.0 U	1.0	1.0	ug/l	
75-09-2	Methylene chloride	1.0 U	1.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	2.5 U	5.0	2.5	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.30 U	1.0	0.30	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	ug/l	

U = Not detected MDL - Method Detection Limit I = Result > = MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-006-104-RI		
Lab Sample ID:	F28237-1	**Date Sampled:**	11/16/04
Matrix:	AQ - Ground Water	**Date Received:**	11/18/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.0 U	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	94%		86-115%
17060-07-0	1,2-Dichloroethane-D4	93%		73-126%
2037-26-5	Toluene-D8	100%		86-112%
460-00-4	4-Bromofluorobenzene	107%		83-119%

U = Not detected MDL - Method Detection Limit
RL = Reporting Limit
L = Indicates value exceeds calibration range

I = Result >= MDL but < RL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-015-028-RI		
Lab Sample ID:	F28237-9	**Date Sampled:**	11/16/04
Matrix:	AQ - Ground Water	**Date Received:**	11/18/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	B026065.D	1	11/29/04	RA	n/a	n/a	VB1116
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	5.0 U	5.0	5.0	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	ug/l	
75-00-3	Chloroethane	1.0 U	1.0	1.0	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	ug/l	
75-15-0	Carbon disulfide	1.0 U	1.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	0.50 U	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	0.40 U	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
591-78-6	2-Hexanone	2.5 U	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	2.5 U	5.0	2.5	ug/l	
74-83-9	Methyl bromide	1.0 U	1.0	1.0	ug/l	
74-87-3	Methyl chloride	1.0 U	1.0	1.0	ug/l	
75-09-2	Methylene chloride	1.0 U	1.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	2.5 U	5.0	2.5	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.30 U	1.0	0.30	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	ug/l	

U = Not detected MDL - Method Detection Limit I = Result > = MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF-59-015-028-RI		
Lab Sample ID:	F28237-9	**Date Sampled:**	11/16/04
Matrix:	AQ - Ground Water	**Date Received:**	11/18/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.0 U	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		86-115%
17060-07-0	1,2-Dichloroethane-D4	105%		73-126%
2037-26-5	Toluene-D8	100%		86-112%
460-00-4	4-Bromofluorobenzene	113%		83-119%

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-DU03-RI		
Lab Sample ID:	F28237-10	**Date Sampled:**	11/16/04
Matrix:	AQ - Ground Water	**Date Received:**	11/18/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	B026066.D	1	11/30/04	RA	n/a	n/a	VB1116
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	5.0 U	5.0	5.0	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	0.77	1.0	0.50	ug/l	I
75-25-2	Bromoform	0.50 U	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	ug/l	
75-00-3	Chloroethane	1.0 U	1.0	1.0	ug/l	
67-66-3	Chloroform	5.4	1.0	0.50	ug/l	
75-15-0	Carbon disulfide	1.0 U	1.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	0.50 U	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	0.40 U	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
591-78-6	2-Hexanone	2.5 U	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	2.5 U	5.0	2.5	ug/l	
74-83-9	Methyl bromide	1.0 U	1.0	1.0	ug/l	
74-87-3	Methyl chloride	1.0 U	1.0	1.0	ug/l	
75-09-2	Methylene chloride	1.0 U	1.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	2.5 U	5.0	2.5	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.30 U	1.0	0.30	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	ug/l	

U = Not detected MDL - Method Detection Limit I = Result > = MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-DU03-RI		
Lab Sample ID:	F28237-10	**Date Sampled:**	11/16/04
Matrix:	AQ - Ground Water	**Date Received:**	11/18/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.0 U	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		86-115%
17060-07-0	1,2-Dichloroethane-D4	108%		73-126%
2037-26-5	Toluene-D8	100%		86-112%
460-00-4	4-Bromofluorobenzene	112%		83-119%

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	NG-12D-RI		
Lab Sample ID:	F28237-2	**Date Sampled:**	11/16/04
Matrix:	AQ - Ground Water	**Date Received:**	11/18/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	B026062.D	1	11/29/04	RA	n/a	n/a	VB1116
Run #2	M0002134.D	50	11/30/04	NJ	n/a	n/a	VM93

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	5.0 U	5.0	5.0	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	ug/l	
75-00-3	Chloroethane	1.0 U	1.0	1.0	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	ug/l	
75-15-0	Carbon disulfide	1.0 U	1.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	0.50 U	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	0.87	1.0	0.50	ug/l	I
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	0.40 U	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	3.8	1.0	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
591-78-6	2-Hexanone	2.5 U	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	2.5 U	5.0	2.5	ug/l	
74-83-9	Methyl bromide	1.0 U	1.0	1.0	ug/l	
74-87-3	Methyl chloride	1.0 U	1.0	1.0	ug/l	
75-09-2	Methylene chloride	1.0 U	1.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	2.5 U	5.0	2.5	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.30 U	1.0	0.30	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	ug/l	
79-01-6	Trichloroethylene	1810 [a]	50	25	ug/l	

000053

U = Not detected MDL - Method Detection Limit I = Result > = MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	NG-12D-RI		
Lab Sample ID:	F28237-2	**Date Sampled:**	11/16/04
Matrix:	AQ - Ground Water	**Date Received:**	11/18/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.0 U	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	94%	98%	86-115%
17060-07-0	1,2-Dichloroethane-D4	97%	104%	73-126%
2037-26-5	Toluene-D8	99%	94%	86-112%
460-00-4	4-Bromofluorobenzene	110%	95%	83-119%

(a) Result is from Run# 2

U = Not detected MDL - Method Detection Limit I = Result > = MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	NG-12I-RI		
Lab Sample ID:	F28237-6	**Date Sampled:**	11/16/04
Matrix:	AQ - Ground Water	**Date Received:**	11/18/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	N0001999.D	1	12/01/04	NJ	n/a	n/a	VN88
Run #2 [b]	N0001974.D	1	11/30/04	NJ	n/a	n/a	VN87

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	5.0 U	5.0	5.0	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	ug/l	
75-00-3	Chloroethane	1.0 U	1.0	1.0	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	ug/l	
75-15-0	Carbon disulfide	1.0 U	1.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	0.50 U	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	0.40 U	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	1.2	1.0	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
591-78-6	2-Hexanone	2.5 U	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	2.5 U	5.0	2.5	ug/l	
74-83-9	Methyl bromide	1.0 U	1.0	1.0	ug/l	
74-87-3	Methyl chloride	1.0 U	1.0	1.0	ug/l	
75-09-2	Methylene chloride	1.0 U	1.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	2.5 U	5.0	2.5	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.30 U	1.0	0.30	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	ug/l	
79-01-6	Trichloroethylene	3.6	1.0	0.50	ug/l	

U = Not detected MDL - Method Detection Limit I = Result > = MDL but < RL J = Estimated Value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	NG-12I-RI		
Lab Sample ID:	F28237-6	**Date Sampled:**	11/16/04
Matrix:	AQ - Ground Water	**Date Received:**	11/18/04
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.0 U	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%	102%	86-115%
17060-07-0	1,2-Dichloroethane-D4	97%	98%	73-126%
2037-26-5	Toluene-D8	97%	96%	86-112%
460-00-4	4-Bromofluorobenzene	96%	92%	83-119%

(a) Sample re-analyzed beyond hold time; reported results are considered minimum values.
(b) Confirmation run.

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-002-028-RI		
Lab Sample ID:	F28237-4	**Date Sampled:**	11/16/04
Matrix:	AQ - Ground Water	**Date Received:**	11/18/04
Method:	RSKSOP-147/175	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XY015842.D	1	11/19/04	CV	n/a	n/a	GXY528
Run #2							

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	4.77	0.50	0.30	ug/l	
74-84-0	Ethane	0.60 U	1.0	0.60	ug/l	
74-85-1	Ethene	0.80 U	1.0	0.80	ug/l	

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-003-053-RI		
Lab Sample ID:	F28237-7	**Date Sampled:**	11/16/04
Matrix:	AQ - Ground Water	**Date Received:**	11/18/04
Method:	RSKSOP-147/175	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XY015840.D	1	11/19/04	CV	n/a	n/a	GXY528
Run #2							

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	2.71	0.50	0.30	ug/l	
74-84-0	Ethane	0.60 U	1.0	0.60	ug/l	
74-85-1	Ethene	0.80 U	1.0	0.80	ug/l	

U = Not detected MDL - Method Detection Limit I = Result > = MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	NG-12D-RI		
Lab Sample ID:	F28237-2	**Date Sampled:**	11/16/04
Matrix:	AQ - Ground Water	**Date Received:**	11/18/04
Method:	RSKSOP-147/175	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	XY015841.D	1	11/19/04	CV	n/a	n/a	GXY528
Run #2							

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	110	0.50	0.30	ug/l	
74-84-0	Ethane	0.60 U	1.0	0.60	ug/l	
74-85-1	Ethene	0.80 U	1.0	0.80	ug/l	

U = Not detected MDL - Method Detection Limit
RL = Reporting Limit
L = Indicates value exceeds calibration range

I = Result >= MDL but < RL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-002-028-RI		
Lab Sample ID:	F28237-4	**Date Sampled:**	11/16/04
Matrix:	AQ - Ground Water	**Date Received:**	11/18/04
Method:	SW846 8270C SW846 3510C	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L024343.D	1	11/22/04	ME	11/22/04	OP11894	SL1283
Run #2							

	Initial Volume	Final Volume
Run #1	950 ml	1.0 ml
Run #2		

ABN TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	16 U	26	16	ug/l	
95-57-8	2-Chlorophenol	2.1 U	5.3	2.1	ug/l	
59-50-7	4-Chloro-3-methyl phenol	2.1 U	5.3	2.1	ug/l	
120-83-2	2,4-Dichlorophenol	2.1 U	5.3	2.1	ug/l	
105-67-9	2,4-Dimethylphenol	2.1 U	5.3	2.1	ug/l	
51-28-5	2,4-Dinitrophenol	11 U	26	11	ug/l	
534-52-1	4,6-Dinitro-o-cresol	5.3 U	11	5.3	ug/l	
95-48-7	2-Methylphenol	2.1 U	5.3	2.1	ug/l	
	3&4-Methylphenol	2.1 U	5.3	2.1	ug/l	
88-75-5	2-Nitrophenol	2.1 U	5.3	2.1	ug/l	
100-02-7	4-Nitrophenol	11 U	26	11	ug/l	
87-86-5	Pentachlorophenol	11 U	26	11	ug/l	
108-95-2	Phenol	2.1 U	5.3	2.1	ug/l	
95-95-4	2,4,5-Trichlorophenol	2.1 U	5.3	2.1	ug/l	
88-06-2	2,4,6-Trichlorophenol	2.1 U	5.3	2.1	ug/l	
83-32-9	Acenaphthene	1.1 U	5.3	1.1	ug/l	
208-96-8	Acenaphthylene	1.1 U	5.3	1.1	ug/l	
120-12-7	Anthracene	1.1 U	5.3	1.1	ug/l	
56-55-3	Benzo(a)anthracene	1.1 U	5.3	1.1	ug/l	
50-32-8	Benzo(a)pyrene	1.1 U	5.3	1.1	ug/l	
205-99-2	Benzo(b)fluoranthene	1.1 U	5.3	1.1	ug/l	
191-24-2	Benzo(g,h,i)perylene	2.1 U	5.3	2.1	ug/l	
207-08-9	Benzo(k)fluoranthene	1.1 U	5.3	1.1	ug/l	
101-55-3	4-Bromophenyl phenyl ether	1.1 U	5.3	1.1	ug/l	
85-68-7	Butyl benzyl phthalate	2.1 U	5.3	2.1	ug/l	
100-51-6	Benzyl Alcohol	1.1 U	5.3	1.1	ug/l	
91-58-7	2-Chloronaphthalene	1.1 U	5.3	1.1	ug/l	
106-47-8	4-Chloroaniline	3.2 U	11	3.2	ug/l	
86-74-8	Carbazole	1.1 U	5.3	1.1	ug/l	
218-01-9	Chrysene	1.1 U	5.3	1.1	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	1.1 U	5.3	1.1	ug/l	
111-44-4	bis(2-Chloroethyl)ether	2.1 U	5.3	2.1	ug/l	

000355

U = Not detected MDL - Method Detection Limit I = Result > = MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF-59-002-028-RI		
Lab Sample ID:	F28237-4	**Date Sampled:**	11/16/04
Matrix:	AQ - Ground Water	**Date Received:**	11/18/04
Method:	SW846 8270C SW846 3510C	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

ABN TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
108-60-1	bis(2-Chloroisopropyl)ether	1.1 U	5.3	1.1	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	1.1 U	5.3	1.1	ug/l	
95-50-1	1,2-Dichlorobenzene	1.1 U	5.3	1.1	ug/l	
541-73-1	1,3-Dichlorobenzene	1.1 U	5.3	1.1	ug/l	
106-46-7	1,4-Dichlorobenzene	1.1 U	5.3	1.1	ug/l	
121-14-2	2,4-Dinitrotoluene	2.1 U	5.3	2.1	ug/l	
606-20-2	2,6-Dinitrotoluene	2.1 U	5.3	2.1	ug/l	
91-94-1	3,3'-Dichlorobenzidine	5.3 U	11	5.3	ug/l	
53-70-3	Dibenzo(a,h)anthracene	2.1 U	5.3	2.1	ug/l	
132-64-9	Dibenzofuran	1.1 U	5.3	1.1	ug/l	
84-74-2	Di-n-butyl phthalate	2.1 U	5.3	2.1	ug/l	
117-84-0	Di-n-octyl phthalate	2.6 U	5.3	2.6	ug/l	
84-66-2	Diethyl phthalate	2.1 U	5.3	2.1	ug/l	
131-11-3	Dimethyl phthalate	2.1 U	5.3	2.1	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	2.6 U	5.3	2.6	ug/l	
206-44-0	Fluoranthene	1.1 U	5.3	1.1	ug/l	
86-73-7	Fluorene	1.1 U	5.3	1.1	ug/l	
118-74-1	Hexachlorobenzene	1.1 U	5.3	1.1	ug/l	
87-68-3	Hexachlorobutadiene	2.1 U	5.3	2.1	ug/l	
77-47-4	Hexachlorocyclopentadiene	2.1 U	5.3	2.1	ug/l	
67-72-1	Hexachloroethane	2.1 U	5.3	2.1	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	2.1 U	5.3	2.1	ug/l	
78-59-1	Isophorone	1.1 U	5.3	1.1	ug/l	
91-57-6	2-Methylnaphthalene	1.1 U	5.3	1.1	ug/l	
88-74-4	2-Nitroaniline	2.1 U	5.3	2.1	ug/l	
99-09-2	3-Nitroaniline	2.1 U	5.3	2.1	ug/l	
100-01-6	4-Nitroaniline	2.1 U	5.3	2.1	ug/l	
91-20-3	Naphthalene	1.1 U	5.3	1.1	ug/l	
98-95-3	Nitrobenzene	1.1 U	5.3	1.1	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	2.1 U	5.3	2.1	ug/l	
86-30-6	N-Nitrosodiphenylamine	2.1 U	5.3	2.1	ug/l	
85-01-8	Phenanthrene	1.1 U	5.3	1.1	ug/l	
129-00-0	Pyrene	1.1 U	5.3	1.1	ug/l	
120-82-1	1,2,4-Trichlorobenzene	1.1 U	5.3	1.1	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	39%		19-90%
4165-62-2	Phenol-d5	25%		10-68%
118-79-6	2,4,6-Tribromophenol	82%		36-137%

000356

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF-59-002-028-RI		
Lab Sample ID:	F28237-4	**Date Sampled:**	11/16/04
Matrix:	AQ - Ground Water	**Date Received:**	11/18/04
Method:	SW846 8270C SW846 3510C	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

ABN TCL List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	69%		49-119%
321-60-8	2-Fluorobiphenyl	67%		45-118%
1718-51-0	Terphenyl-d14	78%		46-135%

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-002-028-RI		
Lab Sample ID:	F28237-4	**Date Sampled:**	11/16/04
Matrix:	AQ - Ground Water	**Date Received:**	11/18/04
Method:	SW846 8082 SW846 3510C	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	ST32185.D	1	11/30/04	SKW	11/23/04	OP11917	GST999
Run #2							

	Initial Volume	Final Volume
Run #1	1040 ml	10.0 ml
Run #2		

PCB List

CAS No.	Compound	Result	RL	MDL	Units	Q
12674-11-2	Aroclor 1016	0.24 U	0.48	0.24	ug/l	
11104-28-2	Aroclor 1221	0.38 U	0.48	0.38	ug/l	
11141-16-5	Aroclor 1232	0.38 U	0.48	0.38	ug/l	
53469-21-9	Aroclor 1242	0.24 U	0.48	0.24	ug/l	
12672-29-6	Aroclor 1248	0.24 U	0.48	0.24	ug/l	
11097-69-1	Aroclor 1254	0.24 U	0.48	0.24	ug/l	
11096-82-5	Aroclor 1260	0.24 U	0.48	0.24	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
877-09-8	Tetrachloro-m-xylene	79%		49-124%
2051-24-3	Decachlorobiphenyl	58%		26-137%

000538

U = Not detected MDL - Method Detection Limit I = Result > = MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO: **M. SPERANZA** **DATE: APRIL 26, 2005**

FROM: **D. SCHLOER** **CC: DV FILE**

SUBJECT: **ORGANIC DATA VALIDATION – VOC**
CTO 359, NAS CECIL FIELD
SDG: F29922

SAMPLES: 2/Aqueous/VOC

CEF-59-004-053-RIA CEF-59-004-112-RIA

Overview

The sample set for CTO 359; NAS Cecil Field; SDG F29922 consists of two (2) groundwater environmental samples. As detailed above, the samples were analyzed for Volatile Organic Compounds (VOCs). No field duplicate pair were included in this SDG.

The samples were collected by Tetra Tech NUS on February 17th, 2005 and analyzed by Accutest Laboratories. All analyses were conducted in accordance with Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria using U.S. EPA Test Methods for Evaluating Solid Waste (SW-846) Method 8260B analytical and reporting protocol.

The data contained in this SDG were validated with regard to the following parameters:

* • Data completeness
* • Holding times
* • Initial and continuing calibration
* • Blank results
* • Detection Limits

The symbol (*) indicates that all quality control criteria were met for this parameter. Problems affecting data quality are discussed below; documentation supporting these findings is presented in Appendix C. Qualified Analytical results are presented in Appendix A. Results as reported by the laboratory are presented in Appendix B.

VOA

Due to the presence of trichloroethylene at a concentration that exceeded the linear range of the instrument calibration, sample CEF-59-004-112RIA was re-analyzed at a 5X dilution factor. As noted on the sample result Form I, the laboratory reported the trichloroethylene result from the 5X dilution. Both sets of laboratory Form Is were not included in the hardcopy data package.

Additional Comments

Nondetected organic compounds were reported at the sample-specific method detection limit (MDL) and positive results greater than the MDL but less than the sample Reporting Limit (RL) were qualified as estimated (J) due to uncertainty near the detection limit. The laboratory originally reported these results with the Florida qualifier flag "I". The reviewer changed the "I" flags to (J) flags indicating that the result is considered an estimate.

EXECUTIVE SUMMARY

Laboratory Performance Issues: None.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to the EPA Functional Guidelines for Organic Data Validation (10/99) and the NFESC guidelines entitled "Navy IRCDQM" (September, 1999). The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NFESC guidelines and the Quality Assurance Project Plan (QAPP)."

Tetra Tech NUS

Douglas Schloer
Chemist/Data Validator

TetraTech NUS

Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Support Documentation

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

Data Validation Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (e.g. % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (e.g. base-line drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; e.g. chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is greater than sample activity

PROJ_NO: 8925

SDG: F29922 MEDIA: WATER DATA FRACTION: OV

nsample	CEF-59-004-053-RIA
samp_date	2/17/2005
lab_id	F29922-2
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	0.5	U	
1,1,2,2-TETRACHLOROETHANE	0.3	U	
1,1,2-TRICHLOROETHANE	0.5	U	
1,1-DICHLOROETHANE	0.5	U	
1,1-DICHLOROETHENE	0.5	U	
1,2-DICHLOROETHANE	0.5	U	
1,2-DICHLOROPROPANE	0.5	U	
2-BUTANONE	2.5	U	
2-HEXANONE	2.5	U	
4-METHYL-2-PENTANONE	2.5	U	
ACETONE	5	U	
BENZENE	0.5	U	
BROMODICHLOROMETHANE	0.5	U	
BROMOFORM	0.5	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	0.5	U	
CHLOROBENZENE	0.5	U	
CHLORODIBROMOMETHANE	0.4	U	
CHLOROETHANE	1	U	
CHLOROFORM	0.5	U	
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	0.5	U	
CIS-1,3-DICHLOROPROPENE	0.3	U	
ETHYLBENZENE	0.5	U	
METHYLENE CHLORIDE	1	U	
STYRENE	0.5	U	
TETRACHLOROETHENE	0.5	U	
TOLUENE	0.5	U	
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	0.5	U	
TRANS-1,3-DICHLOROPROPENE	0.3	U	

nsample	CEF-59-004-053-RIA
samp_date	2/17/2005
lab_id	F29922-2
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
TRICHLOROETHENE	0.5	U	
VINYL CHLORIDE	0.5	U	

nsample	CEF-59-004-112-RIA
samp_date	2/17/2005
lab_id	F29922-1
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	0.5	U	
1,1,2,2-TETRACHLOROETHANE	0.3	U	
1,1,2-TRICHLOROETHANE	0.5	U	
1,1-DICHLOROETHANE	0.5	U	
1,1-DICHLOROETHENE	0.5	U	
1,2-DICHLOROETHANE	0.5	U	
1,2-DICHLOROPROPANE	0.5	U	
2-BUTANONE	2.5	U	
2-HEXANONE	2.5	U	
4-METHYL-2-PENTANONE	2.5	U	
ACETONE	5	U	
BENZENE	0.5	U	
BROMODICHLOROMETHANE	0.5	U	
BROMOFORM	0.5	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	0.5	U	
CHLOROBENZENE	0.5	U	
CHLORODIBROMOMETHANE	0.4	U	
CHLOROETHANE	1	U	
CHLOROFORM	0.5	U	
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	0.62	J	P
CIS-1,3-DICHLOROPROPENE	0.3	U	
ETHYLBENZENE	0.5	U	
METHYLENE CHLORIDE	1	U	
STYRENE	0.5	U	
TETRACHLOROETHENE	0.5	U	
TOLUENE	0.5	U	
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	0.5	U	
TRANS-1,3-DICHLOROPROPENE	0.3	U	

PROJ_NO: 8925

SDG: F29922 MEDIA: WATER DATA FRACTION: OV

nsample	CEF-59-004-112-RIA
samp_date	2/17/2005
lab_id	F29922-1
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
TRICHLOROETHENE	373		
VINYL CHLORIDE	0.5	U	

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-004-053-RIA		
Lab Sample ID:	F29922-2	**Date Sampled:**	02/17/05
Matrix:	AQ - Ground Water	**Date Received:**	02/19/05
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M0003573.D	1	02/22/05	NJ	n/a	n/a	VM154
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	5.0 U	25	5.0	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	ug/l	
75-00-3	Chloroethane	1.0 U	2.0	1.0	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	ug/l	
75-15-0	Carbon disulfide	1.0 U	2.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	0.50 U	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	0.40 U	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
591-78-6	2-Hexanone	2.5 U	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	2.5 U	5.0	2.5	ug/l	
74-83-9	Methyl bromide	1.0 U	2.0	1.0	ug/l	
74-87-3	Methyl chloride	1.0 U	2.0	1.0	ug/l	
75-09-2	Methylene chloride	1.0 U	5.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	2.5 U	5.0	2.5	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.30 U	1.0	0.30	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	ug/l	

U = Not detected MDL - Method Detection Limit I = Result > = MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-004-053-RIA		
Lab Sample ID:	F29922-2	**Date Sampled:**	02/17/05
Matrix:	AQ - Ground Water	**Date Received:**	02/19/05
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.0 U	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		86-115%
17060-07-0	1,2-Dichloroethane-D4	101%		73-126%
2037-26-5	Toluene-D8	105%		86-112%
460-00-4	4-Bromofluorobenzene	98%		83-119%

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated Value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-004-112-RIA		
Lab Sample ID:	F29922-1	**Date Sampled:**	02/17/05
Matrix:	AQ - Ground Water	**Date Received:**	02/19/05
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	M0003572.D	1	02/22/05	NJ	n/a	n/a	VM154
Run #2	M0003580.D	5	02/23/05	NJ	n/a	n/a	VM156

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	5.0 U	25	5.0	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	ug/l	
75-00-3	Chloroethane	1.0 U	2.0	1.0	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	ug/l	
75-15-0	Carbon disulfide	1.0 U	2.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	0.50 U	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	0.40 U	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.62	1.0	0.50	ug/l	I
10061-01-5	cis-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
591-78-6	2-Hexanone	2.5 U	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	2.5 U	5.0	2.5	ug/l	
74-83-9	Methyl bromide	1.0 U	2.0	1.0	ug/l	
74-87-3	Methyl chloride	1.0 U	2.0	1.0	ug/l	
75-09-2	Methylene chloride	1.0 U	5.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	2.5 U	5.0	2.5	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.30 U	1.0	0.30	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	ug/l	
79-01-6	Trichloroethylene	373 [a]	5.0	2.5	ug/l	

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF-59-004-112-RIA		
Lab Sample ID:	F29922-1	**Date Sampled:**	02/17/05
Matrix:	AQ - Ground Water	**Date Received:**	02/19/05
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.0 U	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%	99%	86-115%
17060-07-0	1,2-Dichloroethane-D4	103%	102%	73-126%
2037-26-5	Toluene-D8	104%	103%	86-112%
460-00-4	4-Bromofluorobenzene	100%	101%	83-119%

(a) Result is from Run# 2

0051

U = Not detected MDL - Method Detection Limit I = Result > = MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO:	**M. SPERANZA**	**DATE:**	**MAY 11, 2005**
FROM:	**BERNARD F SPADA III**	**COPIES:**	**DV FILE**
SUBJECT:	**ORGANIC DATA VALIDATION- VOC CTO 359, NAS CECIL FIELD SDG F30086**		
SAMPLES:	2/Aqueous		
	CEF-59-017-028-RI	CEF-59-017-053-RI	

OVERVIEW

The sample set for CTO 359, NAS Cecil Field, SDG F30086 consists of two (2) environmental aqueous samples. All samples were analyzed for volatile organic compounds (VOC).

The samples were collected by TetraTech NUS on February 25, 2005 and analyzed by Accutest Laboratories. All analyses were conducted in accordance with Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria using SW-846 Method 8260B analytical and reporting protocols. The data contained in this SDG were validated with regard to the following parameters:

* • Data completeness
* • Holding times
* • Initial and continuing calibration
* • Laboratory method and field quality control blank results
* • Detection Limits

The symbol (*) indicates that all quality control criteria were met for this parameter. Problems affecting data quality are discussed below; documentation supporting these findings is presented in Appendix C. Qualified Analytical results are presented in Appendix A. Results as reported by the laboratory are presented in Appendix B.

Volatiles

Positive results below the reporting limit were qualified as estimated (J) due to uncertainty near the detection limit.

EXECUTIVE SUMMARY

Laboratory Performance Issues: Qualifications were made based on calibration non-compliances.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to the EPA Functional Guidelines for Organic Data Validation (10/99) and the NFESC guidelines (September, 1999). The text of this report has been formulated to address only those problem areas affecting data quality.

TO: M. SPERANZA – PAGE 2
DATE: MAY 11, 2005

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NFESC guidelines and the Quality Assurance Project Plan (QAPP)."

Tetra Tech NUS
Bernard F Spada III
Chemist/Data Validator

TetraTech NUS
Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:
1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Support Documentation

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

Data Validation Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (e.g. % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (e.g. base-line drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; e.g. chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is greater than sample activity

PROJ_NO: 8925

SDG: F30086 MEDIA: WATER DATA FRACTION: OV

nsample	CEF-59-017-028-RI
samp_date	2/25/2005
lab_id	F30086-1
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	0.5	U	
1,1,2,2-TETRACHLOROETHANE	0.3	U	
1,1,2-TRICHLOROETHANE	0.5	U	
1,1-DICHLOROETHANE	0.5	U	
1,1-DICHLOROETHENE	0.5	U	
1,2-DICHLOROETHANE	0.5	U	
1,2-DICHLOROPROPANE	0.5	U	
2-BUTANONE	2.5	U	
2-HEXANONE	2.5	U	
4-METHYL-2-PENTANONE	2.5	U	
ACETONE	6	J	P
BENZENE	0.5	U	
BROMODICHLOROMETHANE	0.5	U	
BROMOFORM	0.5	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	0.5	U	
CHLOROBENZENE	0.5	U	
CHLORODIBROMOMETHANE	0.4	U	
CHLOROETHANE	1	U	
CHLOROFORM	0.5	U	
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	0.5	U	
CIS-1,3-DICHLOROPROPENE	0.3	U	
ETHYLBENZENE	0.5	U	
METHYLENE CHLORIDE	1	U	
STYRENE	0.5	U	
TETRACHLOROETHENE	0.5	U	
TOLUENE	0.5	U	
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	0.5	U	
TRANS-1,3-DICHLOROPROPENE	0.3	U	

nsample	CEF-59-017-028-RI
samp_date	2/25/2005
lab_id	F30086-1
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
TRICHLOROETHENE	14.6		
VINYL CHLORIDE	0.5	U	

nsample	CEF-59-017-053-RI
samp_date	2/25/2005
lab_id	F30086-2
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	0.5	U	
1,1,2,2-TETRACHLOROETHANE	0.3	U	
1,1,2-TRICHLOROETHANE	0.5	U	
1,1-DICHLOROETHANE	0.5	U	
1,1-DICHLOROETHENE	0.5	U	
1,2-DICHLOROETHANE	0.5	U	
1,2-DICHLOROPROPANE	0.5	U	
2-BUTANONE	2.5	U	
2-HEXANONE	2.5	U	
4-METHYL-2-PENTANONE	2.5	U	
ACETONE	15	J	P
BENZENE	0.5	U	
BROMODICHLOROMETHANE	0.5	U	
BROMOFORM	0.5	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	0.5	U	
CHLOROBENZENE	0.5	U	
CHLORODIBROMOMETHANE	0.4	U	
CHLOROETHANE	1	U	
CHLOROFORM	0.5	U	
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	0.5	U	
CIS-1,3-DICHLOROPROPENE	0.3	U	
ETHYLBENZENE	0.5	U	
METHYLENE CHLORIDE	1	U	
STYRENE	0.5	U	
TETRACHLOROETHENE	0.5	U	
TOLUENE	0.5	U	
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	0.5	U	
TRANS-1,3-DICHLOROPROPENE	0.3	U	

PROJ_NO: 8925

SDG: F30086 MEDIA: WATER DATA FRACTION: OV

nsample	CEF-59-017-053-RI
samp_date	2/25/2005
lab_id	F30086-2
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
TRICHLOROETHENE	1.3		
VINYL CHLORIDE	0.5	U	

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-017-028-RI		
Lab Sample ID:	F30086-1	**Date Sampled:**	02/25/05
Matrix:	AQ - Ground Water	**Date Received:**	03/02/05
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0030596.D	1	03/02/05	KW	n/a	n/a	VC1259
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	6.0	25	5.0	ug/l	I
71-43-2	Benzene	0.50 U	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	ug/l	
75-00-3	Chloroethane	1.0 U	2.0	1.0	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	ug/l	
75-15-0	Carbon disulfide	1.0 U	2.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	0.50 U	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	0.40 U	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
591-78-6	2-Hexanone	2.5 U	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	2.5 U	5.0	2.5	ug/l	
74-83-9	Methyl bromide	1.0 U	2.0	1.0	ug/l	
74-87-3	Methyl chloride	1.0 U	2.0	1.0	ug/l	
75-09-2	Methylene chloride	1.0 U	5.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	2.5 U	5.0	2.5	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.30 U	1.0	0.30	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	ug/l	
79-01-6	Trichloroethylene	14.6	1.0	0.50	ug/l	

0011

U = Not detected MDL - Method Detection Limit
RL = Reporting Limit
L = Indicates value exceeds calibration range

I = Result > = MDL but < RL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-017-028-RI		
Lab Sample ID:	F30086-1	**Date Sampled:**	02/25/05
Matrix:	AQ - Ground Water	**Date Received:**	03/02/05
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.0 U	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		86-115%
17060-07-0	1,2-Dichloroethane-D4	97%		73-126%
2037-26-5	Toluene-D8	102%		86-112%
460-00-4	4-Bromofluorobenzene	106%		83-119%

0012

U = Not detected MDL - Method Detection Limit
RL = Reporting Limit
L = Indicates value exceeds calibration range

I = Result >= MDL but < RL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-017-053-RI		
Lab Sample ID:	F30086-2	**Date Sampled:**	02/25/05
Matrix:	AQ - Ground Water	**Date Received:**	03/02/05
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	C0030599.D	1	03/02/05	KW	n/a	n/a	VC1259
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	15.0	25	5.0	ug/l	I
71-43-2	Benzene	0.50 U	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	ug/l	
75-00-3	Chloroethane	1.0 U	2.0	1.0	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	ug/l	
75-15-0	Carbon disulfide	1.0 U	2.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	0.50 U	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	0.40 U	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
591-78-6	2-Hexanone	2.5 U	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	2.5 U	5.0	2.5	ug/l	
74-83-9	Methyl bromide	1.0 U	2.0	1.0	ug/l	
74-87-3	Methyl chloride	1.0 U	2.0	1.0	ug/l	
75-09-2	Methylene chloride	1.0 U	5.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	2.5 U	5.0	2.5	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.30 U	1.0	0.30	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	ug/l	
79-01-6	Trichloroethylene	1.3	1.0	0.50	ug/l	

0013

U = Not detected MDL - Method Detection Limit
RL = Reporting Limit
L = Indicates value exceeds calibration range

I = Result > = MDL but < RL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-017-053-RI		
Lab Sample ID:	F30086-2	**Date Sampled:**	02/25/05
Matrix:	AQ - Ground Water	**Date Received:**	03/02/05
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.0 U	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		86-115%
17060-07-0	1,2-Dichloroethane-D4	100%		73-126%
2037-26-5	Toluene-D8	100%		86-112%
460-00-4	4-Bromofluorobenzene	102%		83-119%

0014

U = Not detected MDL - Method Detection Limit
RL = Reporting Limit
L = Indicates value exceeds calibration range

I = Result >= MDL but < RL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO:	**M. SPERANZA**	**DATE:**	**SEPTEMBER 26, 2005**
FROM:	**ETHAN G. LEE**	**COPIES:**	**DV FILE**

SUBJECT: **ORGANIC DATA VALIDATION – VOA**
NAS CECIL FIELD – CTO 359
SAMPLE DELIVERY GROUP (SDG) – F32779

SAMPLES: 20/AQUEOUS/

CEF-59-004-033-RI	CEF-59-006-078-RI	CEF-59-007-053-RI
CEF-59-007-078-RI	CEF-59-012-053-RI	CEF-59-018-033
CEF-59-018-033-RI	CEF-59-018-053-RI	CEF-59-018-078-RI
CEF-59-018-105-RI	CEF-59-019-032-RI	CEF-59-019-051-RI
CEF-59-019-078-RI	CEF-59-019-106-RI	CEF-59-020-033-RI
CEF-59-020-053-RI	CEF-59-020-078-RI	CEF-59-020-099-RI
CEF-59-DU05-RI	CEF-59-DU06-RI	

Overview

The sample set for NAS Cecil Field, CTO 359, SDG F32779, consists of twenty (20) aqueous environmental samples. Two (2) field duplicate pairs (CEF-59-DU05-RI / CEF-59-004-033-RI; CEF-59-DU06-RI / CEF-59-006-078-RI) were included in this SDG.

The samples were analyzed for target compound list (TCL) volatile organic compounds (VOCs). The samples were collected by Tetra Tech NUS on June 20-22, 2005 and analyzed by Accutest Laboratories Southeast, Inc. in accordance with Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria. VOC analyses were conducted using SW-846 method 8260B.

These data were evaluated based on the following parameters:

* • Data Completeness
* • Holding Times
* • Initial/Continuing Calibrations
* • Laboratory Method/Preparation Blank Analyses
* • Field Duplicate Precision
• Detection Limits

* - All quality control criteria were met for this parameter.

Laboratory Blank Analyses

The following contaminant was detected in the laboratory method blank at the following maximum concentration:

Analyte	Maximum Concentration	Action Level
Methylene chloride[1]	5.9 ug/L	59 ug/L

[1] Maximum concentration present in method blank from batch VB1326.

An action level of 10X the maximum concentration was used to evaluate the sample data for blank contamination. Sample aliquot and dilution factors, if applicable, were taken into consideration when evaluating for blank contamination. No qualification action was required for methylene chloride because all results were nondetects. Acetone is a suspected laboratory contaminant despite absence in the method blanks, therefore positive results were qualified as estimated (J).

Detection Limits

Results for analytes that were between the reporting limit (RL) and the method detection limit (MDL) were qualified as estimated (J) due to uncertainty near the detection limit.

Notes

The surrogate 1,2-dichloroethane had percent recoveries (%Rs) above the quality control (QC) limits in samples CEF-59-012-053-RI, CEF-59-020-033-RI, and CEF-59-DU06-RI. These samples were re-analyzed and the surrogate %Rs were again above the QC limits. Because the other three surrogates were compliant, no qualification action was required. The results from the initial analyses were reported for these samples.

Sample CEF-59-019-106-RI was re-analyzed for chloromethane. The chloromethane result from the re-analysis is reported for this sample.

The initial calibration analyzed on 6/27/05 contained a percent relative standard deviation (%RSD) >30% for chlorobenzene. No qualification action was required on this basis.

The continuing calibration standards analyzed on 7/1/05 and 7/2/05 contained %Ds >25% for chloromethane, bromomethane, and chloroethane. No qualification action was required on this basis.

The continuing calibration standard analyzed on 7/6/05 contained a %D >25% for carbon disulfide. No qualification action was required on this basis.

The continuing calibration analyzed on 7/2/05 on instrument GCMSC contained a %D >25% for acetone. No qualification action was required on this basis.

Executive Summary

Laboratory Performance: No laboratory quality control issues were noted for this SDG.

Other Factors Affecting Data Quality: Several analytes were qualified due to uncertainty near the detection limit.

The data for these analyses were reviewed with reference to the EPA Functional Guidelines for Organic Data Validation (Oct. 1999) and the NFESC guidelines IRCDQM (Sept. 1999).

The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Tetra Tech NUS
Ethan G. Lee
Environmental Scientist

Tetra Tech NUS
Joseph A. Samchuck
Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

Data Validation Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (e.g. % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (e.g. base-line drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; e.g. chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is greater than sample activity

PROJ_NO: 8925

SDG: F32779 MEDIA: WATER DATA FRACTION: OV

nsample	CEF-59-004-033-RI
samp_date	6/21/2005
lab_id	F32779-7
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	0.5	U	
1,1,2,2-TETRACHLOROETHANE	0.3	U	
1,1,2-TRICHLOROETHANE	0.5	U	
1,1-DICHLOROETHANE	0.5	U	
1,1-DICHLOROETHENE	0.5	U	
1,2-DICHLOROETHANE	0.5	U	
1,2-DICHLOROPROPANE	0.5	U	
2-BUTANONE	2.5	U	
2-HEXANONE	2.5	U	
4-METHYL-2-PENTANONE	2.5	U	
ACETONE	5	U	
BENZENE	0.5	U	
BROMODICHLOROMETHANE	0.5	U	
BROMOFORM	0.5	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	0.5	U	
CHLOROBENZENE	0.5	U	
CHLORODIBROMOMETHANE	0.4	U	
CHLOROETHANE	1	U	
CHLOROFORM	0.5	U	
CHLOROMETHANE	1.4	J	P
CIS-1,2-DICHLOROETHENE	0.5	U	
CIS-1,3-DICHLOROPROPENE	0.3	U	
ETHYLBENZENE	0.5	U	
METHYLENE CHLORIDE	1	U	
STYRENE	0.5	U	
TETRACHLOROETHENE	0.5	U	
TOLUENE	0.71	J	P
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	0.5	U	
TRANS-1,3-DICHLOROPROPENE	0.3	U	

nsample	CEF-59-004-033-RI
samp_date	6/21/2005
lab_id	F32779-7
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
TRICHLOROETHENE	29		
VINYL CHLORIDE	0.5	U	

nsample	CEF-59-006-078-RI
samp_date	6/21/2005
lab_id	F32779-13
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	0.5	U	
1,1,2,2-TETRACHLOROETHANE	0.3	U	
1,1,2-TRICHLOROETHANE	0.5	U	
1,1-DICHLOROETHANE	0.5	U	
1,1-DICHLOROETHENE	0.5	U	
1,2-DICHLOROETHANE	0.5	U	
1,2-DICHLOROPROPANE	0.5	U	
2-BUTANONE	2.5	U	
2-HEXANONE	2.5	U	
4-METHYL-2-PENTANONE	2.5	U	
ACETONE	5	U	
BENZENE	0.5	U	
BROMODICHLOROMETHANE	0.5	U	
BROMOFORM	0.5	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	0.5	U	
CHLOROBENZENE	0.5	U	
CHLORODIBROMOMETHANE	0.4	U	
CHLOROETHANE	1	U	
CHLOROFORM	2		
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	0.5	U	
CIS-1,3-DICHLOROPROPENE	0.3	U	
ETHYLBENZENE	0.5	U	
METHYLENE CHLORIDE	1	U	
STYRENE	0.5	U	
TETRACHLOROETHENE	0.5	U	
TOLUENE	1.3		
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	0.5	U	
TRANS-1,3-DICHLOROPROPENE	0.3	U	

PROJ_NO: 8925

SDG: F32779 MEDIA: WATER DATA FRACTION: OV

nsample	CEF-59-006-078-RI
samp_date	6/21/2005
lab_id	F32779-13
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
TRICHLOROETHENE	0.5	U	
VINYL CHLORIDE	0.5	U	

nsample	CEF-59-007-053-RI
samp_date	6/20/2005
lab_id	F32779-2
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	0.5	U	
1,1,2,2-TETRACHLOROETHANE	0.3	U	
1,1,2-TRICHLOROETHANE	0.5	U	
1,1-DICHLOROETHANE	0.5	U	
1,1-DICHLOROETHENE	0.5	U	
1,2-DICHLOROETHANE	0.5	U	
1,2-DICHLOROPROPANE	0.5	U	
2-BUTANONE	2.5	U	
2-HEXANONE	2.5	U	
4-METHYL-2-PENTANONE	2.5	U	
ACETONE	5	U	
BENZENE	0.5	U	
BROMODICHLOROMETHANE	0.5	U	
BROMOFORM	0.5	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	0.5	U	
CHLOROBENZENE	0.5	U	
CHLORODIBROMOMETHANE	0.4	U	
CHLOROETHANE	1	U	
CHLOROFORM	0.5	U	
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	0.5	U	
CIS-1,3-DICHLOROPROPENE	0.3	U	
ETHYLBENZENE	0.5	U	
METHYLENE CHLORIDE	1	U	
STYRENE	0.5	U	
TETRACHLOROETHENE	0.5	U	
TOLUENE	1.3		
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	0.5	U	
TRANS-1,3-DICHLOROPROPENE	0.3	U	

nsample	CEF-59-007-053-RI
samp_date	6/20/2005
lab_id	F32779-2
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
TRICHLOROETHENE	0.5	U	
VINYL CHLORIDE	0.5	U	

PROJ_NO: 8925

SDG: F32779 MEDIA: WATER DATA FRACTION: OV

nsample	CEF-59-007-078-RI
samp_date	6/20/2005
lab_id	F32779-1
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	0.5	U	
1,1,2,2-TETRACHLOROETHANE	0.3	U	
1,1,2-TRICHLOROETHANE	0.5	U	
1,1-DICHLOROETHANE	0.5	U	
1,1-DICHLOROETHENE	0.5	U	
1,2-DICHLOROETHANE	0.5	U	
1,2-DICHLOROPROPANE	0.5	U	
2-BUTANONE	2.5	U	
2-HEXANONE	2.5	U	
4-METHYL-2-PENTANONE	2.5	U	
ACETONE	5	U	
BENZENE	0.5	U	
BROMODICHLOROMETHANE	0.5	U	
BROMOFORM	0.5	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	0.5	U	
CHLOROBENZENE	0.5	U	
CHLORODIBROMOMETHANE	0.4	U	
CHLOROETHANE	1	U	
CHLOROFORM	1.4		
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	0.5	U	
CIS-1,3-DICHLOROPROPENE	0.3	U	
ETHYLBENZENE	0.5	U	
METHYLENE CHLORIDE	1	U	
STYRENE	0.5	U	
TETRACHLOROETHENE	0.5	U	
TOLUENE	0.5	U	
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	0.5	U	
TRANS-1,3-DICHLOROPROPENE	0.3	U	

nsample	CEF-59-007-078-RI
samp_date	6/20/2005
lab_id	F32779-1
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
TRICHLOROETHENE	0.5	U	
VINYL CHLORIDE	0.5	U	

nsample	CEF-59-012-053-RI
samp_date	6/21/2005
lab_id	F32779-11
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	0.5	U	
1,1,2,2-TETRACHLOROETHANE	0.3	U	
1,1,2-TRICHLOROETHANE	0.5	U	
1,1-DICHLOROETHANE	0.5	U	
1,1-DICHLOROETHENE	0.5	U	
1,2-DICHLOROETHANE	0.5	U	
1,2-DICHLOROPROPANE	0.5	U	
2-BUTANONE	2.5	U	
2-HEXANONE	2.5	U	
4-METHYL-2-PENTANONE	2.5	U	
ACETONE	5	U	
BENZENE	0.5	U	
BROMODICHLOROMETHANE	0.5	U	
BROMOFORM	0.5	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	0.5	U	
CHLOROBENZENE	0.5	U	
CHLORODIBROMOMETHANE	0.4	U	
CHLOROETHANE	1	U	
CHLOROFORM	0.5	U	
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	0.5	U	
CIS-1,3-DICHLOROPROPENE	0.3	U	
ETHYLBENZENE	0.5	U	
METHYLENE CHLORIDE	1	U	
STYRENE	0.5	U	
TETRACHLOROETHENE	0.5	U	
TOLUENE	0.93	J	P
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	0.5	U	
TRANS-1,3-DICHLOROPROPENE	0.3	U	

PROJ_NO: 8925

SDG: F32779 MEDIA: WATER DATA FRACTION: OV

nsample	CEF-59-012-053-RI
samp_date	6/21/2005
lab_id	F32779-11
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
TRICHLOROETHENE	0.5	U	
VINYL CHLORIDE	0.5	U	

nsample	CEF-59-018-033
samp_date	6/22/2005
lab_id	F32779-17
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	0.5	U	
1,1,2,2-TETRACHLOROETHANE	0.3	U	
1,1,2-TRICHLOROETHANE	0.5	U	
1,1-DICHLOROETHANE	0.5	U	
1,1-DICHLOROETHENE	0.5	U	
1,2-DICHLOROETHANE	0.5	U	
1,2-DICHLOROPROPANE	0.5	U	
2-BUTANONE	2.5	U	
2-HEXANONE	2.5	U	
4-METHYL-2-PENTANONE	2.5	U	
ACETONE	12.5	J	AP
BENZENE	0.5	U	
BROMODICHLOROMETHANE	0.5	U	
BROMOFORM	0.5	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	0.5	U	
CHLOROBENZENE	0.5	U	
CHLORODIBROMOMETHANE	0.4	U	
CHLOROETHANE	1	U	
CHLOROFORM	0.5	U	
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	0.56	J	P
CIS-1,3-DICHLOROPROPENE	0.3	U	
ETHYLBENZENE	0.5	U	
METHYLENE CHLORIDE	1	U	
STYRENE	0.5	U	
TETRACHLOROETHENE	0.5	U	
TOLUENE	0.74	J	P
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	0.5	U	
TRANS-1,3-DICHLOROPROPENE	0.3	U	

nsample	CEF-59-018-033
samp_date	6/22/2005
lab_id	F32779-17
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
TRICHLOROETHENE	1.4		
VINYL CHLORIDE	0.5	U	

PROJ_NO: 8925

SDG: F32779 MEDIA: WATER DATA FRACTION: OV

nsample	CEF-59-018-033-RI
samp_date	6/22/2005
lab_id	F32779-16
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	0.5	U	
1,1,2,2-TETRACHLOROETHANE	0.3	U	
1,1,2-TRICHLOROETHANE	0.5	U	
1,1-DICHLOROETHANE	0.5	U	
1,1-DICHLOROETHENE	0.5	U	
1,2-DICHLOROETHANE	0.5	U	
1,2-DICHLOROPROPANE	0.5	U	
2-BUTANONE	2.5	U	
2-HEXANONE	2.5	U	
4-METHYL-2-PENTANONE	2.5	U	
ACETONE	5	U	
BENZENE	0.5	U	
BROMODICHLOROMETHANE	0.5	U	
BROMOFORM	0.5	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	0.5	U	
CHLOROBENZENE	0.5	U	
CHLORODIBROMOMETHANE	0.4	U	
CHLOROETHANE	1	U	
CHLOROFORM	0.5	U	
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	0.53	J	P
CIS-1,3-DICHLOROPROPENE	0.3	U	
ETHYLBENZENE	0.5	U	
METHYLENE CHLORIDE	1	U	
STYRENE	0.5	U	
TETRACHLOROETHENE	0.5	U	
TOLUENE	0.92	J	P
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	0.5	U	
TRANS-1,3-DICHLOROPROPENE	0.3	U	

nsample	CEF-59-018-033-RI
samp_date	6/22/2005
lab_id	F32779-16
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
TRICHLOROETHENE	1.4		
VINYL CHLORIDE	0.5	U	

nsample	CEF-59-018-053-RI
samp_date	6/22/2005
lab_id	F32779-18
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	0.5	U	
1,1,2,2-TETRACHLOROETHANE	0.3	U	
1,1,2-TRICHLOROETHANE	0.5	U	
1,1-DICHLOROETHANE	0.5	U	
1,1-DICHLOROETHENE	0.5	U	
1,2-DICHLOROETHANE	0.5	U	
1,2-DICHLOROPROPANE	0.5	U	
2-BUTANONE	2.5	U	
2-HEXANONE	2.5	U	
4-METHYL-2-PENTANONE	2.5	U	
ACETONE	9.4	J	AP
BENZENE	0.5	U	
BROMODICHLOROMETHANE	0.5	U	
BROMOFORM	0.5	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	0.5	U	
CHLOROBENZENE	0.5	U	
CHLORODIBROMOMETHANE	0.4	U	
CHLOROETHANE	1	U	
CHLOROFORM	0.5	U	
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	0.59	J	P
CIS-1,3-DICHLOROPROPENE	0.3	U	
ETHYLBENZENE	0.5	U	
METHYLENE CHLORIDE	1	U	
STYRENE	0.5	U	
TETRACHLOROETHENE	0.5	U	
TOLUENE	1.1		
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	0.5	U	
TRANS-1,3-DICHLOROPROPENE	0.3	U	

PROJ_NO: 8925

SDG: F32779 MEDIA: WATER DATA FRACTION: OV

nsample	CEF-59-018-053-RI
samp_date	6/22/2005
lab_id	F32779-18
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
TRICHLOROETHENE	30.8		
VINYL CHLORIDE	0.5	U	

nsample	CEF-59-018-078-RI
samp_date	6/22/2005
lab_id	F32779-19
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	0.5	U	
1,1,2,2-TETRACHLOROETHANE	0.3	U	
1,1,2-TRICHLOROETHANE	0.5	U	
1,1-DICHLOROETHANE	0.5	U	
1,1-DICHLOROETHENE	0.5	U	
1,2-DICHLOROETHANE	0.5	U	
1,2-DICHLOROPROPANE	0.5	U	
2-BUTANONE	2.5	U	
2-HEXANONE	2.5	U	
4-METHYL-2-PENTANONE	2.5	U	
ACETONE	5	U	
BENZENE	0.5	U	
BROMODICHLOROMETHANE	0.5	U	
BROMOFORM	0.5	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	0.5	U	
CHLOROBENZENE	0.5	U	
CHLORODIBROMOMETHANE	0.4	U	
CHLOROETHANE	1	U	
CHLOROFORM	2.4		
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	0.5	U	
CIS-1,3-DICHLOROPROPENE	0.3	U	
ETHYLBENZENE	0.5	U	
METHYLENE CHLORIDE	1	U	
STYRENE	0.5	U	
TETRACHLOROETHENE	0.5	U	
TOLUENE	1.5		
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	0.5	U	
TRANS-1,3-DICHLOROPROPENE	0.3	U	

nsample	CEF-59-018-078-RI
samp_date	6/22/2005
lab_id	F32779-19
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
TRICHLOROETHENE	0.5	U	
VINYL CHLORIDE	0.5	U	

PROJ_NO: 8925

SDG: F32779 MEDIA: WATER DATA FRACTION: OV

nsample	CEF-59-018-105-RI
samp_date	6/22/2005
lab_id	F32779-20
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	0.5	U	
1,1,2,2-TETRACHLOROETHANE	0.3	U	
1,1,2-TRICHLOROETHANE	0.5	U	
1,1-DICHLOROETHANE	0.5	U	
1,1-DICHLOROETHENE	0.5	U	
1,2-DICHLOROETHANE	0.5	U	
1,2-DICHLOROPROPANE	0.5	U	
2-BUTANONE	2.5	U	
2-HEXANONE	2.5	U	
4-METHYL-2-PENTANONE	2.5	U	
ACETONE	7.8	J	AP
BENZENE	0.5	U	
BROMODICHLOROMETHANE	0.5	U	
BROMOFORM	0.5	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	0.5	U	
CHLOROBENZENE	0.5	U	
CHLORODIBROMOMETHANE	0.4	U	
CHLOROETHANE	1	U	
CHLOROFORM	2.7		
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	0.5	U	
CIS-1,3-DICHLOROPROPENE	0.3	U	
ETHYLBENZENE	0.5	U	
METHYLENE CHLORIDE	1	U	
STYRENE	0.5	U	
TETRACHLOROETHENE	0.5	U	
TOLUENE	1.5		
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	0.5	U	
TRANS-1,3-DICHLOROPROPENE	0.3	U	

nsample	CEF-59-018-105-RI
samp_date	6/22/2005
lab_id	F32779-20
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
TRICHLOROETHENE	0.5	U	
VINYL CHLORIDE	0.5	U	

nsample	CEF-59-019-032-RI
samp_date	6/20/2005
lab_id	F32779-3
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	0.5	U	
1,1,2,2-TETRACHLOROETHANE	0.3	U	
1,1,2-TRICHLOROETHANE	0.5	U	
1,1-DICHLOROETHANE	0.5	U	
1,1-DICHLOROETHENE	0.5	U	
1,2-DICHLOROETHANE	0.5	U	
1,2-DICHLOROPROPANE	0.5	U	
2-BUTANONE	2.5	U	
2-HEXANONE	2.5	U	
4-METHYL-2-PENTANONE	2.5	U	
ACETONE	5	U	
BENZENE	0.5	U	
BROMODICHLOROMETHANE	0.5	U	
BROMOFORM	0.5	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	0.5	U	
CHLOROBENZENE	0.5	U	
CHLORODIBROMOMETHANE	0.4	U	
CHLOROETHANE	1	U	
CHLOROFORM	0.5	U	
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	0.5	U	
CIS-1,3-DICHLOROPROPENE	0.3	U	
ETHYLBENZENE	0.5	U	
METHYLENE CHLORIDE	1	U	
STYRENE	0.5	U	
TETRACHLOROETHENE	0.5	U	
TOLUENE	0.5	U	
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	0.5	U	
TRANS-1,3-DICHLOROPROPENE	0.3	U	

PROJ_NO: 8925

SDG: F32779 MEDIA: WATER DATA FRACTION: OV

nsample	CEF-59-019-032-RI
samp_date	6/20/2005
lab_id	F32779-3
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
TRICHLOROETHENE	0.5	U	
VINYL CHLORIDE	0.5	U	

nsample	CEF-59-019-051-RI
samp_date	6/20/2005
lab_id	F32779-4
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	0.5	U	
1,1,2,2-TETRACHLOROETHANE	0.3	U	
1,1,2-TRICHLOROETHANE	0.5	U	
1,1-DICHLOROETHANE	0.5	U	
1,1-DICHLOROETHENE	0.5	U	
1,2-DICHLOROETHANE	0.5	U	
1,2-DICHLOROPROPANE	0.5	U	
2-BUTANONE	2.5	U	
2-HEXANONE	2.5	U	
4-METHYL-2-PENTANONE	2.5	U	
ACETONE	5	U	
BENZENE	0.5	U	
BROMODICHLOROMETHANE	0.5	U	
BROMOFORM	0.5	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	0.5	U	
CHLOROBENZENE	0.5	U	
CHLORODIBROMOMETHANE	0.4	U	
CHLOROETHANE	1	U	
CHLOROFORM	0.5	U	
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	0.5	U	
CIS-1,3-DICHLOROPROPENE	0.3	U	
ETHYLBENZENE	0.5	U	
METHYLENE CHLORIDE	1	U	
STYRENE	0.5	U	
TETRACHLOROETHENE	0.5	U	
TOLUENE	0.5	U	
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	0.5	U	
TRANS-1,3-DICHLOROPROPENE	0.3	U	

nsample	CEF-59-019-051-RI
samp_date	6/20/2005
lab_id	F32779-4
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
TRICHLOROETHENE	0.5	U	
VINYL CHLORIDE	0.5	U	

PROJ_NO: 8925

SDG: F32779 MEDIA: WATER DATA FRACTION: OV

nsample	CEF-59-019-078-RI
samp_date	6/20/2005
lab_id	F32779-5
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	0.5	U	
1,1,2,2-TETRACHLOROETHANE	0.3	U	
1,1,2-TRICHLOROETHANE	0.5	U	
1,1-DICHLOROETHANE	0.5	U	
1,1-DICHLOROETHENE	0.5	U	
1,2-DICHLOROETHANE	0.5	U	
1,2-DICHLOROPROPANE	0.5	U	
2-BUTANONE	2.5	U	
2-HEXANONE	2.5	U	
4-METHYL-2-PENTANONE	2.5	U	
ACETONE	5	U	
BENZENE	0.5	U	
BROMODICHLOROMETHANE	0.5	U	
BROMOFORM	0.5	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	0.5	U	
CHLOROBENZENE	0.5	U	
CHLORODIBROMOMETHANE	0.4	U	
CHLOROETHANE	1	U	
CHLOROFORM	1.8		
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	0.5	U	
CIS-1,3-DICHLOROPROPENE	0.3	U	
ETHYLBENZENE	0.5	U	
METHYLENE CHLORIDE	1	U	
STYRENE	0.5	U	
TETRACHLOROETHENE	0.5	U	
TOLUENE	1.3		
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	0.5	U	
TRANS-1,3-DICHLOROPROPENE	0.3	U	

nsample	CEF-59-019-078-RI
samp_date	6/20/2005
lab_id	F32779-5
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
TRICHLOROETHENE	0.5	U	
VINYL CHLORIDE	0.5	U	

nsample	CEF-59-019-106-RI
samp_date	6/20/2005
lab_id	F32779-6
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	0.5	U	
1,1,2,2-TETRACHLOROETHANE	0.3	U	
1,1,2-TRICHLOROETHANE	0.5	U	
1,1-DICHLOROETHANE	0.5	U	
1,1-DICHLOROETHENE	0.5	U	
1,2-DICHLOROETHANE	0.5	U	
1,2-DICHLOROPROPANE	0.5	U	
2-BUTANONE	2.5	U	
2-HEXANONE	2.5	U	
4-METHYL-2-PENTANONE	2.5	U	
ACETONE	5	U	
BENZENE	0.5	U	
BROMODICHLOROMETHANE	0.5	U	
BROMOFORM	0.5	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	0.5	U	
CHLOROBENZENE	0.5	U	
CHLORODIBROMOMETHANE	0.4	U	
CHLOROETHANE	1	U	
CHLOROFORM	0.5	U	
CHLOROMETHANE	1.3	J	P
CIS-1,2-DICHLOROETHENE	0.5	U	
CIS-1,3-DICHLOROPROPENE	0.3	U	
ETHYLBENZENE	0.5	U	
METHYLENE CHLORIDE	1	U	
STYRENE	0.5	U	
TETRACHLOROETHENE	0.5	U	
TOLUENE	2.3		
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	0.5	U	
TRANS-1,3-DICHLOROPROPENE	0.3	U	

PROJ_NO: 8925

SDG: F32779 MEDIA: WATER DATA FRACTION: OV

nsample	CEF-59-019-106-RI
samp_date	6/20/2005
lab_id	F32779-6
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
TRICHLOROETHENE	0.5	U	
VINYL CHLORIDE	0.5	U	

nsample	CEF-59-020-033-RI
samp_date	6/21/2005
lab_id	F32779-12
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	0.5	U	
1,1,2,2-TETRACHLOROETHANE	0.3	U	
1,1,2-TRICHLOROETHANE	0.5	U	
1,1-DICHLOROETHANE	0.5	U	
1,1-DICHLOROETHENE	0.5	U	
1,2-DICHLOROETHANE	0.5	U	
1,2-DICHLOROPROPANE	0.5	U	
2-BUTANONE	2.5	U	
2-HEXANONE	2.5	U	
4-METHYL-2-PENTANONE	2.5	U	
ACETONE	16.9	J	AP
BENZENE	0.5	U	
BROMODICHLOROMETHANE	0.5	U	
BROMOFORM	0.5	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	0.5	U	
CHLOROBENZENE	0.5	U	
CHLORODIBROMOMETHANE	0.4	U	
CHLOROETHANE	1	U	
CHLOROFORM	0.5	U	
CHLOROMETHANE	2.2		
CIS-1,2-DICHLOROETHENE	0.5	U	
CIS-1,3-DICHLOROPROPENE	0.3	U	
ETHYLBENZENE	0.5	U	
METHYLENE CHLORIDE	1	U	
STYRENE	0.5	U	
TETRACHLOROETHENE	0.5	U	
TOLUENE	0.91	J	P
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	0.5	U	
TRANS-1,3-DICHLOROPROPENE	0.3	U	

nsample	CEF-59-020-033-RI
samp_date	6/21/2005
lab_id	F32779-12
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
TRICHLOROETHENE	0.5	U	
VINYL CHLORIDE	0.5	U	

PROJ_NO: 8925

SDG: F32779 MEDIA: WATER DATA FRACTION: OV

nsample	CEF-59-020-053-RI
samp_date	6/21/2005
lab_id	F32779-8
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	0.5	U	
1,1,2,2-TETRACHLOROETHANE	0.3	U	
1,1,2-TRICHLOROETHANE	0.5	U	
1,1-DICHLOROETHANE	0.5	U	
1,1-DICHLOROETHENE	0.5	U	
1,2-DICHLOROETHANE	0.5	U	
1,2-DICHLOROPROPANE	0.5	U	
2-BUTANONE	2.5	U	
2-HEXANONE	2.5	U	
4-METHYL-2-PENTANONE	2.5	U	
ACETONE	5	U	
BENZENE	0.5	U	
BROMODICHLOROMETHANE	0.5	U	
BROMOFORM	0.5	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	0.5	U	
CHLOROBENZENE	0.5	U	
CHLORODIBROMOMETHANE	0.4	U	
CHLOROETHANE	1	U	
CHLOROFORM	0.5	U	
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	0.5	U	
CIS-1,3-DICHLOROPROPENE	0.3	U	
ETHYLBENZENE	0.5	U	
METHYLENE CHLORIDE	1	U	
STYRENE	0.5	U	
TETRACHLOROETHENE	0.5	U	
TOLUENE	0.94	J	P
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	0.5	U	
TRANS-1,3-DICHLOROPROPENE	0.3	U	

nsample	CEF-59-020-053-RI
samp_date	6/21/2005
lab_id	F32779-8
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
TRICHLOROETHENE	0.5	U	
VINYL CHLORIDE	0.5	U	

nsample	CEF-59-020-078-RI
samp_date	6/21/2005
lab_id	F32779-9
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	0.5	U	
1,1,2,2-TETRACHLOROETHANE	0.3	U	
1,1,2-TRICHLOROETHANE	0.5	U	
1,1-DICHLOROETHANE	0.5	U	
1,1-DICHLOROETHENE	0.5	U	
1,2-DICHLOROETHANE	0.5	U	
1,2-DICHLOROPROPANE	0.5	U	
2-BUTANONE	2.5	U	
2-HEXANONE	2.5	U	
4-METHYL-2-PENTANONE	2.5	U	
ACETONE	5	U	
BENZENE	0.5	U	
BROMODICHLOROMETHANE	0.74	J	P
BROMOFORM	0.5	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	0.5	U	
CHLOROBENZENE	0.5	U	
CHLORODIBROMOMETHANE	0.4	U	
CHLOROETHANE	1	U	
CHLOROFORM	4.5		
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	0.5	U	
CIS-1,3-DICHLOROPROPENE	0.3	U	
ETHYLBENZENE	0.5	U	
METHYLENE CHLORIDE	1	U	
STYRENE	0.5	U	
TETRACHLOROETHENE	0.5	U	
TOLUENE	1		
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	0.5	U	
TRANS-1,3-DICHLOROPROPENE	0.3	U	

PROJ_NO: 8925

SDG: F32779 MEDIA: WATER DATA FRACTION: OV

nsample	CEF-59-020-078-RI
samp_date	6/21/2005
lab_id	F32779-9
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
TRICHLOROETHENE	0.5	U	
VINYL CHLORIDE	0.5	U	

nsample	CEF-59-020-099-RI
samp_date	6/21/2005
lab_id	F32779-10
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	0.5	U	
1,1,2,2-TETRACHLOROETHANE	0.3	U	
1,1,2-TRICHLOROETHANE	0.5	U	
1,1-DICHLOROETHANE	0.5	U	
1,1-DICHLOROETHENE	0.5	U	
1,2-DICHLOROETHANE	0.5	U	
1,2-DICHLOROPROPANE	0.5	U	
2-BUTANONE	2.5	U	
2-HEXANONE	2.5	U	
4-METHYL-2-PENTANONE	2.5	U	
ACETONE	5	U	
BENZENE	0.5	U	
BROMODICHLOROMETHANE	0.5	U	
BROMOFORM	0.5	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	0.5	U	
CHLOROBENZENE	0.5	U	
CHLORODIBROMOMETHANE	0.4	U	
CHLOROETHANE	1	U	
CHLOROFORM	0.5	U	
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	0.5	U	
CIS-1,3-DICHLOROPROPENE	0.3	U	
ETHYLBENZENE	0.5	U	
METHYLENE CHLORIDE	1	U	
STYRENE	0.5	U	
TETRACHLOROETHENE	0.5	U	
TOLUENE	1.2		
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	0.5	U	
TRANS-1,3-DICHLOROPROPENE	0.3	U	

nsample	CEF-59-020-099-RI
samp_date	6/21/2005
lab_id	F32779-10
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
TRICHLOROETHENE	0.5	U	
VINYL CHLORIDE	0.5	U	

PROJ_NO: 8925

SDG: F32779 MEDIA: WATER DATA FRACTION: OV

nsample	CEF-59-DU05-RI
samp_date	6/21/2005
lab_id	F32779-14
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	CEF-59-004-033-RI

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	0.5	U	
1,1,2,2-TETRACHLOROETHANE	0.3	U	
1,1,2-TRICHLOROETHANE	0.5	U	
1,1-DICHLOROETHANE	0.5	U	
1,1-DICHLOROETHENE	0.5	U	
1,2-DICHLOROETHANE	0.5	U	
1,2-DICHLOROPROPANE	0.5	U	
2-BUTANONE	2.5	U	
2-HEXANONE	2.5	U	
4-METHYL-2-PENTANONE	2.5	U	
ACETONE	5	U	
BENZENE	0.5	U	
BROMODICHLOROMETHANE	0.5	U	
BROMOFORM	0.5	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	0.5	U	
CHLOROBENZENE	0.5	U	
CHLORODIBROMOMETHANE	0.4	U	
CHLOROETHANE	1	U	
CHLOROFORM	0.5	U	
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	0.5	U	
CIS-1,3-DICHLOROPROPENE	0.3	U	
ETHYLBENZENE	0.5	U	
METHYLENE CHLORIDE	1	U	
STYRENE	0.5	U	
TETRACHLOROETHENE	0.5	U	
TOLUENE	0.7	J	P
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	0.5	U	
TRANS-1,3-DICHLOROPROPENE	0.3	U	

nsample	CEF-59-DU05-RI
samp_date	6/21/2005
lab_id	F32779-14
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	CEF-59-004-033-RI

Parameter	Result	Val Qual	Qual Code
TRICHLOROETHENE	28.1		
VINYL CHLORIDE	0.5	U	

nsample	CEF-59-DU06-RI
samp_date	6/21/2005
lab_id	F32779-15
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	CEF-59-006-078-RI

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	0.5	U	
1,1,2,2-TETRACHLOROETHANE	0.3	U	
1,1,2-TRICHLOROETHANE	0.5	U	
1,1-DICHLOROETHANE	0.5	U	
1,1-DICHLOROETHENE	0.5	U	
1,2-DICHLOROETHANE	0.5	U	
1,2-DICHLOROPROPANE	0.5	U	
2-BUTANONE	2.5	U	
2-HEXANONE	2.5	U	
4-METHYL-2-PENTANONE	2.5	U	
ACETONE	5	U	
BENZENE	0.5	U	
BROMODICHLOROMETHANE	0.5	U	
BROMOFORM	0.5	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	0.5	U	
CHLOROBENZENE	0.5	U	
CHLORODIBROMOMETHANE	0.4	U	
CHLOROETHANE	1	U	
CHLOROFORM	1.7		
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	0.5	U	
CIS-1,3-DICHLOROPROPENE	0.3	U	
ETHYLBENZENE	0.5	U	
METHYLENE CHLORIDE	1	U	
STYRENE	0.5	U	
TETRACHLOROETHENE	0.5	U	
TOLUENE	0.97	J	P
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	0.5	U	
TRANS-1,3-DICHLOROPROPENE	0.3	U	

PROJ_NO: 8925

SDG: F32779 MEDIA: WATER DATA FRACTION: OV

nsample	CEF-59-DU06-RI
samp_date	6/21/2005
lab_id	F32779-15
qc_type	NM
units	UG/L
Pct_Solids	
DUP_OF:	CEF-59-006-078-RI

Parameter	Result	Val Qual	Qual Code
TRICHLOROETHENE	0.5	U	
VINYL CHLORIDE	0.5	U	

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-004-033-RI		
Lab Sample ID:	F32779-7	**Date Sampled:**	06/21/05
Matrix:	AQ - Ground Water	**Date Received:**	06/23/05
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	B031328.D	1	07/01/05	KW	n/a	n/a	VB1322
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	5.0 U	25	5.0	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	ug/l	
75-00-3	Chloroethane	1.0 U	2.0	1.0	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	ug/l	
75-15-0	Carbon disulfide	1.0 U	2.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	0.50 U	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	0.40 U	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
591-78-6	2-Hexanone	2.5 U	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	2.5 U	5.0	2.5	ug/l	
74-83-9	Methyl bromide	1.0 U	2.0	1.0	ug/l	
74-87-3	Methyl chloride	1.4	2.0	1.0	ug/l	I
75-09-2	Methylene chloride	1.0 U	5.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	2.5 U	5.0	2.5	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.30 U	1.0	0.30	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	ug/l	
108-88-3	Toluene	0.71	1.0	0.50	ug/l	I
79-01-6	Trichloroethylene	29.0	1.0	0.50	ug/l	

00026

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-004-033-RI		
Lab Sample ID:	F32779-7	**Date Sampled:**	06/21/05
Matrix:	AQ - Ground Water	**Date Received:**	06/23/05
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.0 U	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	112%		86-115%
17060-07-0	1,2-Dichloroethane-D4	124%		73-126%
2037-26-5	Toluene-D8	98%		86-112%
460-00-4	4-Bromofluorobenzene	110%		83-119%

00027

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-006-078-RI		
Lab Sample ID:	F32779-13	**Date Sampled:**	06/21/05
Matrix:	AQ - Ground Water	**Date Received:**	06/23/05
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	B031334.D	1	07/01/05	KW	n/a	n/a	VB1322
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	5.0 U	25	5.0	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	ug/l	
75-00-3	Chloroethane	1.0 U	2.0	1.0	ug/l	
67-66-3	Chloroform	2.0	1.0	0.50	ug/l	
75-15-0	Carbon disulfide	1.0 U	2.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	0.50 U	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	0.40 U	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
591-78-6	2-Hexanone	2.5 U	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	2.5 U	5.0	2.5	ug/l	
74-83-9	Methyl bromide	1.0 U	2.0	1.0	ug/l	
74-87-3	Methyl chloride	1.0 U	2.0	1.0	ug/l	
75-09-2	Methylene chloride	1.0 U	5.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	2.5 U	5.0	2.5	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.30 U	1.0	0.30	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	ug/l	
108-88-3	Toluene	1.3	1.0	0.50	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	ug/l	

00038

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF-59-006-078-RI		
Lab Sample ID:	F32779-13	**Date Sampled:**	06/21/05
Matrix:	AQ - Ground Water	**Date Received:**	06/23/05
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.0 U	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	111%		86-115%
17060-07-0	1,2-Dichloroethane-D4	126%		73-126%
2037-26-5	Toluene-D8	98%		86-112%
460-00-4	4-Bromofluorobenzene	109%		83-119%

00039

U = Not detected MDL - Method Detection Limit I = Result > = MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-007-053-RI		
Lab Sample ID:	F32779-2	**Date Sampled:**	06/20/05
Matrix:	AQ - Ground Water	**Date Received:**	06/23/05
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	B031323.D	1	07/01/05	KW	n/a	n/a	VB1322
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	5.0 U	25	5.0	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	ug/l	
75-00-3	Chloroethane	1.0 U	2.0	1.0	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	ug/l	
75-15-0	Carbon disulfide	1.0 U	2.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	0.50 U	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	0.40 U	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
591-78-6	2-Hexanone	2.5 U	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	2.5 U	5.0	2.5	ug/l	
74-83-9	Methyl bromide	1.0 U	2.0	1.0	ug/l	
74-87-3	Methyl chloride	1.0 U	2.0	1.0	ug/l	
75-09-2	Methylene chloride	1.0 U	5.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	2.5 U	5.0	2.5	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.30 U	1.0	0.30	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	ug/l	
108-88-3	Toluene	1.3	1.0	0.50	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	ug/l	

U = Not detected MDL - Method Detection Limit I = Result > = MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-007-053-RI		
Lab Sample ID:	F32779-2	**Date Sampled:**	06/20/05
Matrix:	AQ - Ground Water	**Date Received:**	06/23/05
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.0 U	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	109%		86-115%
17060-07-0	1,2-Dichloroethane-D4	123%		73-126%
2037-26-5	Toluene-D8	98%		86-112%
460-00-4	4-Bromofluorobenzene	108%		83-119%

(a) Sample was not preserved to a pH < 2; reported results are considered minimum values.

00017

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-007-078-RI		
Lab Sample ID:	F32779-1	**Date Sampled:**	06/20/05
Matrix:	AQ - Ground Water	**Date Received:**	06/23/05
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	B031322.D	1	07/01/05	KW	n/a	n/a	VB1322
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	5.0 U	25	5.0	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	ug/l	
75-00-3	Chloroethane	1.0 U	2.0	1.0	ug/l	
67-66-3	Chloroform	1.4	1.0	0.50	ug/l	
75-15-0	Carbon disulfide	1.0 U	2.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	0.50 U	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	0.40 U	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
591-78-6	2-Hexanone	2.5 U	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	2.5 U	5.0	2.5	ug/l	
74-83-9	Methyl bromide	1.0 U	2.0	1.0	ug/l	
74-87-3	Methyl chloride	1.0 U	2.0	1.0	ug/l	
75-09-2	Methylene chloride	1.0 U	5.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	2.5 U	5.0	2.5	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.30 U	1.0	0.30	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	ug/l	

U = Not detected MDL - Method Detection Limit
RL = Reporting Limit
L = Indicates value exceeds calibration range

I = Result > = MDL but < RL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

0014

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-007-078-RI		
Lab Sample ID:	F32779-1	**Date Sampled:**	06/20/05
Matrix:	AQ - Ground Water	**Date Received:**	06/23/05
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.0 U	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	110%		86-115%
17060-07-0	1,2-Dichloroethane-D4	123%		73-126%
2037-26-5	Toluene-D8	97%		86-112%
460-00-4	4-Bromofluorobenzene	107%		83-119%

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

00015

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-012-053-RI		
Lab Sample ID:	F32779-11	**Date Sampled:**	06/21/05
Matrix:	AQ - Ground Water	**Date Received:**	06/23/05
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	B031332.D	1	07/01/05	KW	n/a	n/a	VB1322
Run #2	B031350.D	1	07/02/05	KW	n/a	n/a	VB1323

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	5.0 U	25	5.0	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	ug/l	
75-00-3	Chloroethane	1.0 U	2.0	1.0	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	ug/l	
75-15-0	Carbon disulfide	1.0 U	2.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	0.50 U	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	0.40 U	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
591-78-6	2-Hexanone	2.5 U	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	2.5 U	5.0	2.5	ug/l	
74-83-9	Methyl bromide	1.0 U	2.0	1.0	ug/l	
74-87-3	Methyl chloride	1.0 U	2.0	1.0	ug/l	
75-09-2	Methylene chloride	1.0 U	5.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	2.5 U	5.0	2.5	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.30 U	1.0	0.30	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	ug/l	
108-88-3	Toluene	0.93	1.0	0.50	ug/l	I
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	ug/l	

00034

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF-59-012-053-RI		
Lab Sample ID:	F32779-11	**Date Sampled:**	06/21/05
Matrix:	AQ - Ground Water	**Date Received:**	06/23/05
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.0 U	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	113%	113%	86-115%
17060-07-0	1,2-Dichloroethane-D4	128%	130%	73-126%
2037-26-5	Toluene-D8	98%	97%	86-112%
460-00-4	4-Bromofluorobenzene	110%	110%	83-119%

(a) Confirmed by reanalysis.

00035

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-018-033		
Lab Sample ID:	F32779-17	**Date Sampled:**	06/22/05
Matrix:	AQ - Ground Water	**Date Received:**	06/23/05
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	B031342.D	1	07/02/05	KW	n/a	n/a	VB1323
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	12.5	25	5.0	ug/l	I
71-43-2	Benzene	0.50 U	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	ug/l	
75-00-3	Chloroethane	1.0 U	2.0	1.0	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	ug/l	
75-15-0	Carbon disulfide	1.0 U	2.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	0.50 U	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	0.40 U	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.56	1.0	0.50	ug/l	I
10061-01-5	cis-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
591-78-6	2-Hexanone	2.5 U	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	2.5 U	5.0	2.5	ug/l	
74-83-9	Methyl bromide	1.0 U	2.0	1.0	ug/l	
74-87-3	Methyl chloride	1.0 U	2.0	1.0	ug/l	
75-09-2	Methylene chloride	1.0 U	5.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	2.5 U	5.0	2.5	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.30 U	1.0	0.30	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	ug/l	
108-88-3	Toluene	0.74	1.0	0.50	ug/l	I
79-01-6	Trichloroethylene	1.4	1.0	0.50	ug/l	

00046

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF-59-018-033		
Lab Sample ID:	F32779-17	**Date Sampled:**	06/22/05
Matrix:	AQ - Ground Water	**Date Received:**	06/23/05
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.0 U	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	112%		86-115%
17060-07-0	1,2-Dichloroethane-D4	126%		73-126%
2037-26-5	Toluene-D8	97%		86-112%
460-00-4	4-Bromofluorobenzene	108%		83-119%

00047

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-018-033-RI		
Lab Sample ID:	F32779-16	**Date Sampled:**	06/22/05
Matrix:	AQ - Ground Water	**Date Received:**	06/23/05
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	B031341.D	1	07/02/05	KW	n/a	n/a	VB1323
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	5.0 U	25	5.0	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	ug/l	
75-00-3	Chloroethane	1.0 U	2.0	1.0	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	ug/l	
75-15-0	Carbon disulfide	1.0 U	2.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	0.50 U	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	0.40 U	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.53	1.0	0.50	ug/l	I
10061-01-5	cis-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
591-78-6	2-Hexanone	2.5 U	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	2.5 U	5.0	2.5	ug/l	
74-83-9	Methyl bromide	1.0 U	2.0	1.0	ug/l	
74-87-3	Methyl chloride	1.0 U	2.0	1.0	ug/l	
75-09-2	Methylene chloride	1.0 U	5.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	2.5 U	5.0	2.5	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.30 U	1.0	0.30	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	ug/l	
108-88-3	Toluene	0.92	1.0	0.50	ug/l	I
79-01-6	Trichloroethylene	1.4	1.0	0.50	ug/l	

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF-59-018-033-RI		
Lab Sample ID:	F32779-16	**Date Sampled:**	06/22/05
Matrix:	AQ - Ground Water	**Date Received:**	06/23/05
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.0 U	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	110%		86-115%
17060-07-0	1,2-Dichloroethane-D4	116%		73-126%
2037-26-5	Toluene-D8	98%		86-112%
460-00-4	4-Bromofluorobenzene	109%		83-119%

00045

U = Not detected MDL - Method Detection Limit I = Result > = MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-018-053-RI		
Lab Sample ID:	F32779-18	**Date Sampled:**	06/22/05
Matrix:	AQ - Ground Water	**Date Received:**	06/23/05
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	B031343.D	1	07/02/05	KW	n/a	n/a	VB1323
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	9.4	25	5.0	ug/l	I
71-43-2	Benzene	0.50 U	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	ug/l	
75-00-3	Chloroethane	1.0 U	2.0	1.0	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	ug/l	
75-15-0	Carbon disulfide	1.0 U	2.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	0.50 U	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	0.40 U	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.59	1.0	0.50	ug/l	I
10061-01-5	cis-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
591-78-6	2-Hexanone	2.5 U	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	2.5 U	5.0	2.5	ug/l	
74-83-9	Methyl bromide	1.0 U	2.0	1.0	ug/l	
74-87-3	Methyl chloride	1.0 U	2.0	1.0	ug/l	
75-09-2	Methylene chloride	1.0 U	5.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	2.5 U	5.0	2.5	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.30 U	1.0	0.30	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	ug/l	
108-88-3	Toluene	1.1	1.0	0.50	ug/l	
79-01-6	Trichloroethylene	30.8	1.0	0.50	ug/l	

00048

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF-59-018-053-RI		
Lab Sample ID:	F32779-18	**Date Sampled:**	06/22/05
Matrix:	AQ - Ground Water	**Date Received:**	06/23/05
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.0 U	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	113%		86-115%
17060-07-0	1,2-Dichloroethane-D4	125%		73-126%
2037-26-5	Toluene-D8	96%		86-112%
460-00-4	4-Bromofluorobenzene	109%		83-119%

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-018-078-RI		
Lab Sample ID:	F32779-19	**Date Sampled:**	06/22/05
Matrix:	AQ - Ground Water	**Date Received:**	06/23/05
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	B031388.D	1	07/03/05	RAW	n/a	n/a	VB1324
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	5.0 U	25	5.0	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	ug/l	
75-00-3	Chloroethane	1.0 U	2.0	1.0	ug/l	
67-66-3	Chloroform	2.4	1.0	0.50	ug/l	
75-15-0	Carbon disulfide	1.0 U	2.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	0.50 U	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	0.40 U	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
591-78-6	2-Hexanone	2.5 U	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	2.5 U	5.0	2.5	ug/l	
74-83-9	Methyl bromide	1.0 U	2.0	1.0	ug/l	
74-87-3	Methyl chloride	1.0 U	2.0	1.0	ug/l	
75-09-2	Methylene chloride	1.0 U	5.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	2.5 U	5.0	2.5	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.30 U	1.0	0.30	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	ug/l	
108-88-3	Toluene	1.5	1.0	0.50	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	ug/l	

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-018-078-RI		
Lab Sample ID:	F32779-19	**Date Sampled:**	06/22/05
Matrix:	AQ - Ground Water	**Date Received:**	06/23/05
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.0 U	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		86-115%
17060-07-0	1,2-Dichloroethane-D4	100%		73-126%
2037-26-5	Toluene-D8	98%		86-112%
460-00-4	4-Bromofluorobenzene	102%		83-119%

00051

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-018-105-RI		
Lab Sample ID:	F32779-20	**Date Sampled:**	06/22/05
Matrix:	AQ - Ground Water	**Date Received:**	06/23/05
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	B031435.D	1	07/06/05	JG	n/a	n/a	VB1326
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone [a]	7.8	25	5.0	ug/l	I
71-43-2	Benzene	0.50 U	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	ug/l	
75-00-3	Chloroethane	1.0 U	2.0	1.0	ug/l	
67-66-3	Chloroform	2.7	1.0	0.50	ug/l	
75-15-0	Carbon disulfide	1.0 U	2.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	0.50 U	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	0.40 U	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
591-78-6	2-Hexanone	2.5 U	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	2.5 U	5.0	2.5	ug/l	
74-83-9	Methyl bromide	1.0 U	2.0	1.0	ug/l	
74-87-3	Methyl chloride	1.0 U	2.0	1.0	ug/l	
75-09-2	Methylene chloride	1.0 U	5.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	2.5 U	5.0	2.5	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.30 U	1.0	0.30	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	ug/l	
108-88-3	Toluene	1.5	1.0	0.50	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	ug/l	

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF-59-018-105-RI		
Lab Sample ID:	F32779-20	**Date Sampled:**	06/22/05
Matrix:	AQ - Ground Water	**Date Received:**	06/23/05
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.0 U	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	108%		86-115%
17060-07-0	1,2-Dichloroethane-D4	112%		73-126%
2037-26-5	Toluene-D8	97%		86-112%
460-00-4	4-Bromofluorobenzene	103%		83-119%

(a) Associated BS recovery outside control limits.

00053

U = Not detected MDL - Method Detection Limit I = Result > = MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-019-032-RI		
Lab Sample ID:	F32779-3	**Date Sampled:**	06/20/05
Matrix:	AQ - Ground Water	**Date Received:**	06/23/05
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	B031324.D	1	07/01/05	KW	n/a	n/a	VB1322
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	5.0 U	25	5.0	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	ug/l	
75-00-3	Chloroethane	1.0 U	2.0	1.0	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	ug/l	
75-15-0	Carbon disulfide	1.0 U	2.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	0.50 U	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	0.40 U	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
591-78-6	2-Hexanone	2.5 U	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	2.5 U	5.0	2.5	ug/l	
74-83-9	Methyl bromide	1.0 U	2.0	1.0	ug/l	
74-87-3	Methyl chloride	1.0 U	2.0	1.0	ug/l	
75-09-2	Methylene chloride	1.0 U	5.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	2.5 U	5.0	2.5	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.30 U	1.0	0.30	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	ug/l	

00018

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-019-032-RI		
Lab Sample ID:	F32779-3	**Date Sampled:**	06/20/05
Matrix:	AQ - Ground Water	**Date Received:**	06/23/05
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.0 U	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	111%		86-115%
17060-07-0	1,2-Dichloroethane-D4	122%		73-126%
2037-26-5	Toluene-D8	97%		86-112%
460-00-4	4-Bromofluorobenzene	108%		83-119%

00019

U = Not detected MDL - Method Detection Limit I = Result > = MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-019-051-R1		
Lab Sample ID:	F32779-4	**Date Sampled:**	06/20/05
Matrix:	AQ - Ground Water	**Date Received:**	06/23/05
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	B031325.D	1	07/01/05	KW	n/a	n/a	VB1322
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	5.0 U	25	5.0	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	ug/l	
75-00-3	Chloroethane	1.0 U	2.0	1.0	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	ug/l	
75-15-0	Carbon disulfide	1.0 U	2.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	0.50 U	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	0.40 U	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
591-78-6	2-Hexanone	2.5 U	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	2.5 U	5.0	2.5	ug/l	
74-83-9	Methyl bromide	1.0 U	2.0	1.0	ug/l	
74-87-3	Methyl chloride	1.0 U	2.0	1.0	ug/l	
75-09-2	Methylene chloride	1.0 U	5.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	2.5 U	5.0	2.5	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.30 U	1.0	0.30	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	ug/l	
108-88-3	Toluene	0.50 U	1.0	0.50	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	ug/l	

00020

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF-59-019-051-RI		
Lab Sample ID:	F32779-4	**Date Sampled:**	06/20/05
Matrix:	AQ - Ground Water	**Date Received:**	06/23/05
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.0 U	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	111%		86-115%
17060-07-0	1,2-Dichloroethane-D4	124%		73-126%
2037-26-5	Toluene-D8	97%		86-112%
460-00-4	4-Bromofluorobenzene	108%		83-119%

00021

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-019-078-RI		
Lab Sample ID:	F32779-5	**Date Sampled:**	06/20/05
Matrix:	AQ - Ground Water	**Date Received:**	06/23/05
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	B031326.D	1	07/01/05	KW	n/a	n/a	VB1322
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	5.0 U	25	5.0	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	ug/l	
75-00-3	Chloroethane	1.0 U	2.0	1.0	ug/l	
67-66-3	Chloroform	1.8	1.0	0.50	ug/l	
75-15-0	Carbon disulfide	1.0 U	2.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	0.50 U	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	0.40 U	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
591-78-6	2-Hexanone	2.5 U	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	2.5 U	5.0	2.5	ug/l	
74-83-9	Methyl bromide	1.0 U	2.0	1.0	ug/l	
74-87-3	Methyl chloride	1.0 U	2.0	1.0	ug/l	
75-09-2	Methylene chloride	1.0 U	5.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	2.5 U	5.0	2.5	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.30 U	1.0	0.30	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	ug/l	
108-88-3	Toluene	1.3	1.0	0.50	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	ug/l	

00022

U = Not detected MDL - Method Detection Limit I = Result > = MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-019-078-RI		
Lab Sample ID:	F32779-5	**Date Sampled:**	06/20/05
Matrix:	AQ - Ground Water	**Date Received:**	06/23/05
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.0 U	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	111%		86-115%
17060-07-0	1,2-Dichloroethane-D4	126%		73-126%
2037-26-5	Toluene-D8	98%		86-112%
460-00-4	4-Bromofluorobenzene	108%		83-119%

00023

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-019-106-RI		
Lab Sample ID:	F32779-6	**Date Sampled:**	06/20/05
Matrix:	AQ - Ground Water	**Date Received:**	06/23/05
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	B031327.D	1	07/01/05	KW	n/a	n/a	VB1322
Run #2	C0033574.D	1	07/02/05	KW	n/a	n/a	VC1366

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	5.0 U	25	5.0	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	ug/l	
75-00-3	Chloroethane	1.0 U	2.0	1.0	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	ug/l	
75-15-0	Carbon disulfide	1.0 U	2.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	0.50 U	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	0.40 U	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
591-78-6	2-Hexanone	2.5 U	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	2.5 U	5.0	2.5	ug/l	
74-83-9	Methyl bromide	1.0 U	2.0	1.0	ug/l	
74-87-3	Methyl chloride	1.3 [a]	2.0	1.0	ug/l	I
75-09-2	Methylene chloride	1.0 U	5.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	2.5 U	5.0	2.5	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.30 U	1.0	0.30	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	ug/l	
108-88-3	Toluene	2.3	1.0	0.50	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	ug/l	

00024

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF-59-019-106-RI		
Lab Sample ID:	F32779-6	**Date Sampled:**	06/20/05
Matrix:	AQ - Ground Water	**Date Received:**	06/23/05
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.0 U	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	111%	106%	86-115%
17060-07-0	1,2-Dichloroethane-D4	124%	97%	73-126%
2037-26-5	Toluene-D8	98%	96%	86-112%
460-00-4	4-Bromofluorobenzene	107%	95%	83-119%

(a) Result is from Run# 2

00025

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-020-033-RI		
Lab Sample ID:	F32779-12	**Date Sampled:**	06/21/05
Matrix:	AQ - Ground Water	**Date Received:**	06/23/05
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	B031333.D	1	07/01/05	KW	n/a	n/a	VB1322
Run #2	B031351.D	1	07/02/05	KW	n/a	n/a	VB1323

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	16.9	25	5.0	ug/l	I
71-43-2	Benzene	0.50 U	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	ug/l	
75-00-3	Chloroethane	1.0 U	2.0	1.0	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	ug/l	
75-15-0	Carbon disulfide	1.0 U	2.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	0.50 U	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	0.40 U	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
591-78-6	2-Hexanone	2.5 U	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	2.5 U	5.0	2.5	ug/l	
74-83-9	Methyl bromide	1.0 U	2.0	1.0	ug/l	
74-87-3	Methyl chloride	2.2	2.0	1.0	ug/l	
75-09-2	Methylene chloride	1.0 U	5.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	2.5 U	5.0	2.5	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.30 U	1.0	0.30	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	ug/l	
108-88-3	Toluene	0.91	1.0	0.50	ug/l	I
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	ug/l	

00036

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF-59-020-033-RI		
Lab Sample ID:	F32779-12	**Date Sampled:**	06/21/05
Matrix:	AQ - Ground Water	**Date Received:**	06/23/05
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.0 U	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	113%	115%	86-115%
17060-07-0	1,2-Dichloroethane-D4	127%	130%	73-126%
2037-26-5	Toluene-D8	97%	97%	86-112%
460-00-4	4-Bromofluorobenzene	109%	110%	83-119%

(a) Confirmed by reanalysis.

00037

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-020-053-R1		
Lab Sample ID:	F32779-8	**Date Sampled:**	06/21/05
Matrix:	AQ - Ground Water	**Date Received:**	06/23/05
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	B031329.D	1	07/01/05	KW	n/a	n/a	VB1322
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	5.0 U	25	5.0	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	ug/l	
75-00-3	Chloroethane	1.0 U	2.0	1.0	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	ug/l	
75-15-0	Carbon disulfide	1.0 U	2.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	0.50 U	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	0.40 U	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
591-78-6	2-Hexanone	2.5 U	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	2.5 U	5.0	2.5	ug/l	
74-83-9	Methyl bromide	1.0 U	2.0	1.0	ug/l	
74-87-3	Methyl chloride	1.0 U	2.0	1.0	ug/l	
75-09-2	Methylene chloride	1.0 U	5.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	2.5 U	5.0	2.5	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.30 U	1.0	0.30	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	ug/l	
108-88-3	Toluene	0.94	1.0	0.50	ug/l	I
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	ug/l	

00028

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-020-053-RI		
Lab Sample ID:	F32779-8	**Date Sampled:**	06/21/05
Matrix:	AQ - Ground Water	**Date Received:**	06/23/05
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.0 U	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	113%		86-115%
17060-07-0	1,2-Dichloroethane-D4	126%		73-126%
2037-26-5	Toluene-D8	99%		86-112%
460-00-4	4-Bromofluorobenzene	109%		83-119%

00029

U = Not detected MDL - Method Detection Limit I = Result > = MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-020-078-RI		
Lab Sample ID:	F32779-9	**Date Sampled:**	06/21/05
Matrix:	AQ - Ground Water	**Date Received:**	06/23/05
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	B031330.D	1	07/01/05	KW	n/a	n/a	VB1322
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	5.0 U	25	5.0	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	0.74	1.0	0.50	ug/l	I
75-25-2	Bromoform	0.50 U	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	ug/l	
75-00-3	Chloroethane	1.0 U	2.0	1.0	ug/l	
67-66-3	Chloroform	4.5	1.0	0.50	ug/l	
75-15-0	Carbon disulfide	1.0 U	2.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	0.50 U	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	0.40 U	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
591-78-6	2-Hexanone	2.5 U	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	2.5 U	5.0	2.5	ug/l	
74-83-9	Methyl bromide	1.0 U	2.0	1.0	ug/l	
74-87-3	Methyl chloride	1.0 U	2.0	1.0	ug/l	
75-09-2	Methylene chloride	1.0 U	5.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	2.5 U	5.0	2.5	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.30 U	1.0	0.30	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	ug/l	
108-88-3	Toluene	1.0	1.0	0.50	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	ug/l	

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-020-078-RI		
Lab Sample ID:	F32779-9	**Date Sampled:**	06/21/05
Matrix:	AQ - Ground Water	**Date Received:**	06/23/05
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.0 U	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	112%		86-115%
17060-07-0	1,2-Dichloroethane-D4	126%		73-126%
2037-26-5	Toluene-D8	98%		86-112%
460-00-4	4-Bromofluorobenzene	110%		83-119%

00031

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-020-099-RI		
Lab Sample ID:	F32779-10	**Date Sampled:**	06/21/05
Matrix:	AQ - Ground Water	**Date Received:**	06/23/05
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	B031331.D	1	07/01/05	KW	n/a	n/a	VB1322
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	5.0 U	25	5.0	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	ug/l	
75-00-3	Chloroethane	1.0 U	2.0	1.0	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	ug/l	
75-15-0	Carbon disulfide	1.0 U	2.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	0.50 U	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	0.40 U	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
591-78-6	2-Hexanone	2.5 U	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	2.5 U	5.0	2.5	ug/l	
74-83-9	Methyl bromide	1.0 U	2.0	1.0	ug/l	
74-87-3	Methyl chloride	1.0 U	2.0	1.0	ug/l	
75-09-2	Methylene chloride	1.0 U	5.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	2.5 U	5.0	2.5	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.30 U	1.0	0.30	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	ug/l	
108-88-3	Toluene	1.2	1.0	0.50	ug/l	
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	ug/l	

00032

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF-59-020-099-RI		
Lab Sample ID:	F32779-10	**Date Sampled:**	06/21/05
Matrix:	AQ - Ground Water	**Date Received:**	06/23/05
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.0 U	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	112%		86-115%
17060-07-0	1,2-Dichloroethane-D4	125%		73-126%
2037-26-5	Toluene-D8	97%		86-112%
460-00-4	4-Bromofluorobenzene	109%		83-119%

00033

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-DU05-RI		
Lab Sample ID:	F32779-14	**Date Sampled:**	06/21/05
Matrix:	AQ - Ground Water	**Date Received:**	06/23/05
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	B031335.D	1	07/01/05	KW	n/a	n/a	VB1322
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	5.0 U	25	5.0	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	ug/l	
75-00-3	Chloroethane	1.0 U	2.0	1.0	ug/l	
67-66-3	Chloroform	0.50 U	1.0	0.50	ug/l	
75-15-0	Carbon disulfide	1.0 U	2.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	0.50 U	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	0.40 U	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
591-78-6	2-Hexanone	2.5 U	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	2.5 U	5.0	2.5	ug/l	
74-83-9	Methyl bromide	1.0 U	2.0	1.0	ug/l	
74-87-3	Methyl chloride	1.0 U	2.0	1.0	ug/l	
75-09-2	Methylene chloride	1.0 U	5.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	2.5 U	5.0	2.5	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.30 U	1.0	0.30	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	ug/l	
108-88-3	Toluene	0.70	1.0	0.50	ug/l	I
79-01-6	Trichloroethylene	28.1	1.0	0.50	ug/l	

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF-59-DU05-RI		
Lab Sample ID:	F32779-14	**Date Sampled:**	06/21/05
Matrix:	AQ - Ground Water	**Date Received:**	06/23/05
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.0 U	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	112%		86-115%
17060-07-0	1,2-Dichloroethane-D4	126%		73-126%
2037-26-5	Toluene-D8	98%		86-112%
460-00-4	4-Bromofluorobenzene	109%		83-119%

00041

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-DU06-RI		
Lab Sample ID:	F32779-15	**Date Sampled:**	06/21/05
Matrix:	AQ - Ground Water	**Date Received:**	06/23/05
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	B031336.D	1	07/01/05	KW	n/a	n/a	VB1322
Run #2	B031353.D	1	07/02/05	KW	n/a	n/a	VB1323

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	5.0 U	25	5.0	ug/l	
71-43-2	Benzene	0.50 U	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	0.50 U	1.0	0.50	ug/l	
75-25-2	Bromoform	0.50 U	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	0.50 U	1.0	0.50	ug/l	
75-00-3	Chloroethane	1.0 U	2.0	1.0	ug/l	
67-66-3	Chloroform	1.7	1.0	0.50	ug/l	
75-15-0	Carbon disulfide	1.0 U	2.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	0.50 U	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	0.50 U	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	0.50 U	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	0.50 U	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	0.40 U	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
156-60-5	trans-1,2-Dichloroethylene	0.50 U	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	0.30 U	1.0	0.30	ug/l	
100-41-4	Ethylbenzene	0.50 U	1.0	0.50	ug/l	
591-78-6	2-Hexanone	2.5 U	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	2.5 U	5.0	2.5	ug/l	
74-83-9	Methyl bromide	1.0 U	2.0	1.0	ug/l	
74-87-3	Methyl chloride	1.0 U	2.0	1.0	ug/l	
75-09-2	Methylene chloride	1.0 U	5.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	2.5 U	5.0	2.5	ug/l	
100-42-5	Styrene	0.50 U	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	0.50 U	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	0.30 U	1.0	0.30	ug/l	
79-00-5	1,1,2-Trichloroethane	0.50 U	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	0.50 U	1.0	0.50	ug/l	
108-88-3	Toluene	0.97	1.0	0.50	ug/l	I
79-01-6	Trichloroethylene	0.50 U	1.0	0.50	ug/l	

00042

U = Not detected MDL - Method Detection Limit I = Result >= MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-59-DU06-RI		
Lab Sample ID:	F32779-15	**Date Sampled:**	06/21/05
Matrix:	AQ - Ground Water	**Date Received:**	06/23/05
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Site 59-CTO 359		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-01-4	Vinyl chloride	0.50 U	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	1.0 U	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	112%	115%	86-115%
17060-07-0	1,2-Dichloroethane-D4	127%	132%	73-126%
2037-26-5	Toluene-D8	98%	98%	86-112%
460-00-4	4-Bromofluorobenzene	109%	110%	83-119%

(a) Confirmed by reanalysis.

U = Not detected MDL - Method Detection Limit I = Result > = MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

APPENDIX E

GEOTECHNICAL SAMPLE ANALYSES

GEOTECHNICAL SAMPLE DATA
OPERABLE UNIT 9, SITE 59
NAVAL AIR STATION CECIL FIELD

	CEF-59-SB-	001-030	001-080	002-117	009-050		009-080	014-050	014-115
	Depth (feet below ground surface)	30	80	117	50		80	50	115
Test	Date	10/18/04	10/18/04	10/19/04	10/13/04	10/14/04	10/14/04	10/15/04	10/05/04
ASTM D422	Fines (%)	0	0	0.4	0		15.9	0.6	0.7
ASTM D422	Gravel (%)	0	0	0	0		0	0	0
ASTM D422	Sand (%)	100	100	99.6	100		84.1	99.4	99.3
ASTM D2937-94 M	Bulk Density (Dry Basis) (g/ml)	1.5		1.5		1.4			
ASTM D2974-87	Fractional Organic Carbon (%)	0.06	0.18	0.64	0.22		0.84	0.66	0.25
EPA 160.3 M	Moisture (%)	15.9	23.5	20.5	15.6	23.1	20.7	18.5	21
SW846 9045	pH	6.8	6.1	7.5	5.7		4.6	4.4	7.8
EPA 160.3 M	Solids (%)	84.1	76.5	79.5	84.4	76.9	79.3	81.5	79
ASTM 1429	Specific Gravity	2		2.1		1.9			

APPENDIX F

SUPPLEMENTAL SOIL ASSESSMENT LETTER REPORT
BUILDING 815 WASH RACK AREA

TETRA TECH NUS, INC.
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Document Tracking Number 05JAX0061

August 24, 2005

Project Number N9945

Mr. David Grabka
Remedial Project Manager
Technical Review/Federal Facilities
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Reference: CLEAN III Contract Number N62467-94-D-0888
Contract Task Order Number 0361

Subject: Supplemental Soil Assessment Letter Report
Building 815 Wash Rack Area
Naval Air Station Cecil Field
Jacksonville, Florida

Dear Mr. Grabka:

Tetra Tech NUS, Inc. (TtNUS) is pleased to submit this letter regarding the supplemental soil assessment conducted for the referenced Contract Task Order (CTO) for the subject site. This letter report has been prepared for the United States Navy, Southern Division Naval Facilities Engineering Command (NAVFAC EFD SOUTH) under the Comprehensive Long-term Environmental Action Navy (CLEAN) III Contract Number N62467-94-D-0888. Figure 1 indicates the general location of the site at Naval Air Station (NAS) Cecil Field.

Natural attenuation monitoring has been conducted at the site since January 2001. The last semi-annual groundwater monitoring report indicated that concentrations of contaminants of concern (COCs) were not decreasing and recommended that the monitoring be discontinued. Further, preparation of a remedial action plan (RAP) was recommended. The Florida Department of Environmental Protection (FDEP) issued a response on February 5, 2004. A copy of that response is provided in Attachment A that shows agreement with discontinuing the groundwater monitoring while conducting a soil assessment prior to preparation of a RAP.

FIELD OPERATIONS

Pursuant to Attachment A, TtNUS mobilized to the site on January 3, 2005, to collect soil samples from under the concrete. Field operations were performed in general accordance with the Base-wide Generic Work Plan Volumes I and II (TtNUS, 1998). The samples were collected at the locations shown on Figure 2. The site is covered by a concrete cover approximately 11 inches thick; therefore, the proposed locations were pre-cored on December 28, 2004. Approximate depth to water was established from monitoring well CEF-815-1S at 5.5 feet (ft) below land surface (bls). Since the deepest interval above the water table and capillary fringe appeared to be at the 3 to 4 ft bls interval, samples from each location were collected at this interval. Following collection, the soil samples were placed on ice and shipped under chain of custody to Accutest Laboratories in Orlando, Florida for analysis. The samples were analyzed for the Gasoline/Kerosene Analytical Group list on Table B of Chapter 62-770, Florida

Administrative Code (FAC), which consists of benzene, toluene, ethylbenzene, total xylenes (BTEX) and methyl-tert-butyl ether (MTBE) using United States Environmental Protection Agency (USEPA) Method SW846 8260B; polynuclear aromatic hydrocarbons (PAHs) using USEPA Method SW846 8310; and total recoverable petroleum hydrocarbons (TRPH) using the Florida Petroleum Range Organics method.

RESULTS

The analytical results for this event are summarized in Table 1, and the laboratory report is provided as Attachment B. The results indicate the soil cleanup target level (SCTL) for TRPH was not exceeded where that analyte was detected (i.e., locations CEF815-B01 and CEF815-B05) (see Figure 2). The other COCs (BTEX, MTBE, and PAHs) were not detected and the reporting limits were below SCTLs.

CONCLUSIONS AND RECOMMENDATIONS

TtNUS recommends that a RAP be prepared for this site. Since it has been over a year since the last groundwater sampling was conducted at the site, TtNUS recommends that one groundwater sampling event be conducted to provide current groundwater analytical data for the RAP. The sampling event should include the same monitoring wells and analyses included in the monitoring program. As discussed during the February 2005 NAS Cecil Field Partnering meeting, the Base Closure Team has agreed to transfer this site from the Underground Storage Tank Program to the Installation Restoration (IR) program so that site remediation can be conducted concurrently with Site 59. Therefore, the RAP will be prepared under the IR program.

If you have any questions with regard to this submittal, please contact me at (813) 806-0202.

Sincerely,

Paul E. Calligan, P. G.
Task Order Manager

PC/mwd

Attachments (5)

pc: G. Magwood, NAVFAC EFD SOUTH
D. Brittain, USEPA
M. Perry, TtNUS (Unbound
D. Humbert, TtNUS (Cover Letter Only)
CTO 0361 Project File

TABLES

TABLE 1
SUMMARY OF FIXED-BASE ANALYTICAL DATA IN SOIL

SUPPLEMENTAL SOIL ASSESSMENT LETTER REPORT
BUILDING 815 WASH RACK AREA
NAS CECIL FIELD
JACKSONVILLE, FLORIDA

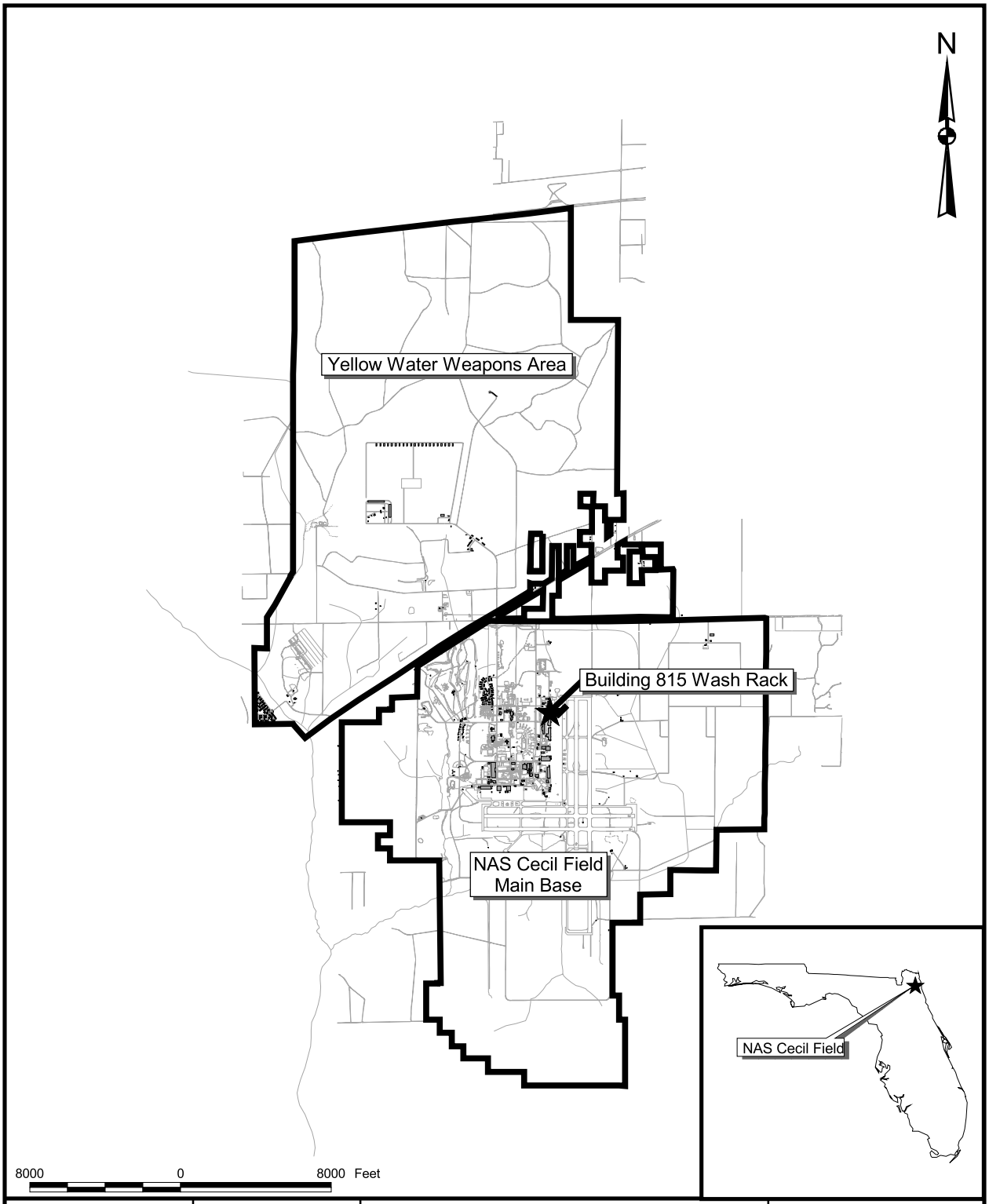
Direct Exposure Residential Criteria	Leachability to Groundwater Criteria	Sample Location	CEF815-B01	CEF815-B02	CEF815-B03	CEF815-B04
		Sample ID	**815SLB0104**	**815SLB0204**	**815SLB0304**	**815SLB0404**
		Sample Date	1/3/05	1/3/05	1/3/05	1/3/05
		Depth Interval (ft bls)	2 to 4	2 to 4	2 to 4	2 to 4
NA	NA	**Volatile Organic Compounds (µg/kg)**	ND	ND	ND	ND
NA	NA	**PAHs (µg/kg)**	ND	ND	ND	ND
340	340	**TRPH (mg/kg)**	6.93 J	6.5 U	6.7 U	6.7 U

Direct Exposure Residential Criteria	Leachability to Groundwater Criteria	Sample Location	CEF815-B05	CEF815-B06	CEF815-B07	CEF815-B08
		Sample ID	**815SLB0504**	**815SLB0604**	**815SLB0704**	**815SLB0804**
		Sample Date	1/3/05	1/3/05	1/3/05	1/3/05
		Depth Interval (ft bls)	2 to 4	2 to 4	2 to 4	2 to 4
NA	NA	**Volatile Organic Compounds (µg/kg)**	ND	ND	ND	ND
NA	NA	**PAHs (µg/kg)**	ND	ND	ND	ND
340	340	**TRPH (mg/kg)**	11.7	7.3 U	6.7 U	6.6 U

Notes:
Direct Exposure Residential Criteria based on Chapter 62-777, FAC.
Leachability to Groundwater Criteria based on Chapter 62-777, FAC.
µg/kg = micrograms per kilogram
mg/kg = milligrams per kilogram

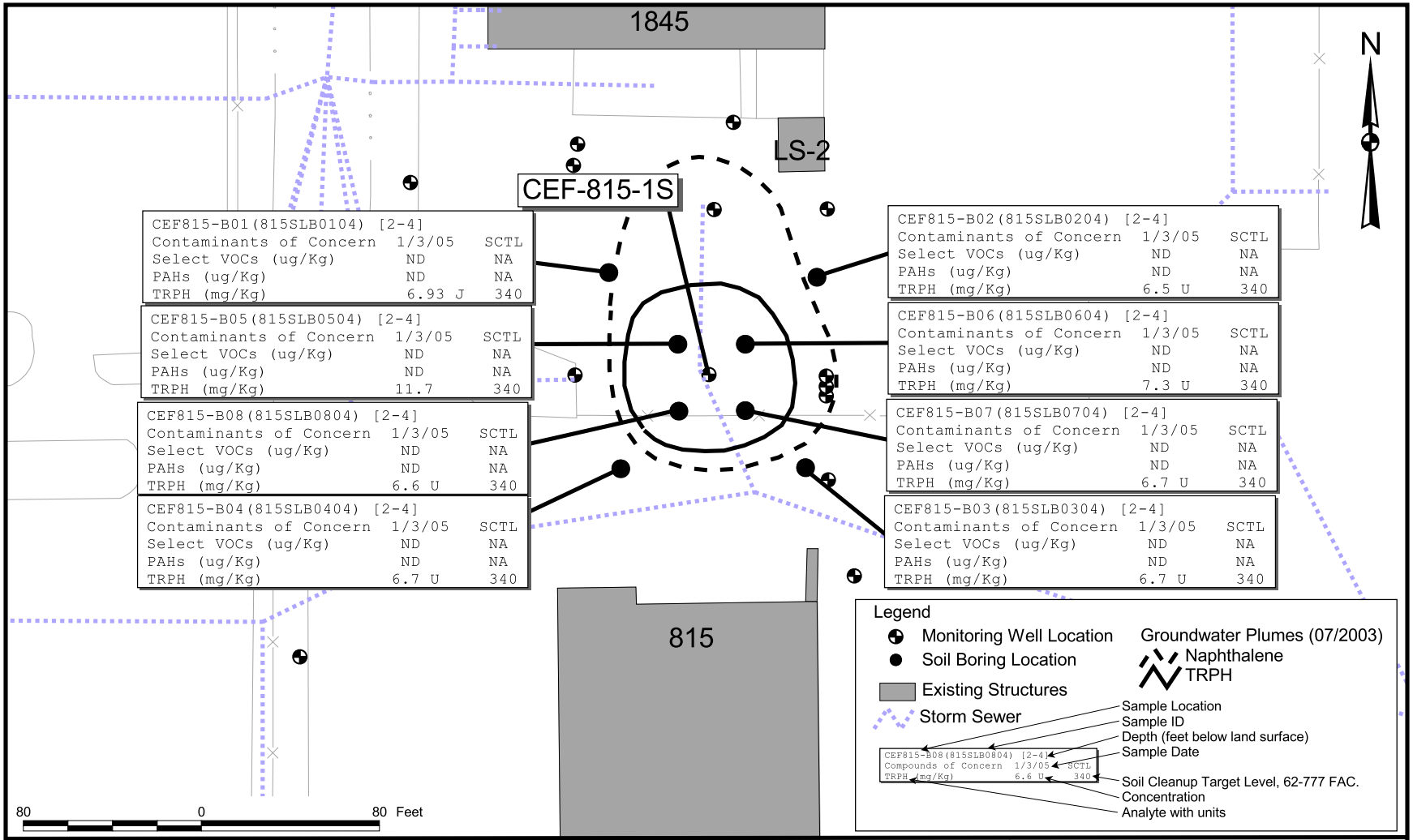
U = not detected
J = estimated
ND = none detected
NA = not applicable

FIGURES



DRAWN BY MJJ	DATE 17Sept04	GENERAL LOCATION MAP BUILDING 815, WASH RACK SUPPLEMENTAL SOIL ASSESSMENT NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NUMBER 9945
CHECKED BY	DATE		APPROVED BY DATE
COST/SCHEDULE-AREA			APPROVED BY DATE
SCALE AS NOTED			DRAWING NO. FIGURE 1 / REV 0

P:\GIS\NAS_CecilField\Bldg0815_20050208.apr 08Feb05 MJJ Layout01



DRAWN BY	DATE
MJJ	08Feb05
CHECKED BY	DATE
COST/SCHEDULE-AREA	
SCALE	AS NOTED

NAVFAC

SOIL SAMPLE LOCATIONS AND ANALYTICAL DATA
BUILDING 815, WASH RACK
SUPPLEMENTAL SOIL ASSESSMENT
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

CONTRACT NUMBER	
9945	
APPROVED BY	DATE
APPROVED BY	DATE
DRAWING NO. FIGURE 2	REV 0

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ATTACHMENT A

FDEP LETTER DATED FEBRUARY 5, 2004

Department of
Environmental Protection

Jeb Bush
Governor

Twin Towers Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

David B. Struhs
Secretary

February 5, 2004

Commanding Officer
Attn: Mr. Gabe Magwood
Code ES24 (UST RPM)
Southern Division
Naval Facilities Engineering Command
P.O. Box 190010
North Charleston, South Carolina 29419-9010

RE: Groundwater Monitoring Report, 2nd Semi-Annual, 3rd Year (July 2003), Building 815 Wash Rack Area, Naval Air Station Cecil Field, Jacksonville, Florida

Dear Mr. Magwood:

I have completed my review of the Groundwater Monitoring Report, 2nd Semi-Annual, 3rd Year (July 2003), Building 815 Wash Rack Area, Naval Air Station Cecil Field, dated January 12, 2004 (received January 13, 2004), prepared and submitted by Tetra Tech NUS, Inc. As naphthalene concentrations in source well CEF-815-1S have exceeded action levels specified in the August 31, 2000 Natural Attenuation Monitoring Plan Approval Order in five of the last nine monitoring events and that none of the annual milestone cleanup objectives for naphthalene have been met for this well, I concur that the monitoring program be discontinued. However, prior to a Remedial Action Plan being prepared for this site, I recommend that additional assessment be conducted in the vicinity of source well CEF-815-1S to determine whether there may be a continuing source that potentially could be addressed with a source removal rather than an engineered remediation system. I recommend this based on the complete lack of soil analytical data in the August 2000 Site Assessment Report. Apparently, the groundwater contamination detected at that time was attributed to the wash rack and it was further concluded that there was no continuing source for the groundwater contamination that was detected even though soil assessment was apparently not conducted. If this investigation does not identify a source that can be easily addressed with a source removal, I would then concur that a Remedial Action Plan should be prepared.

If I can be of any further assistance with this matter, please contact me at (850) 245-8997.

Sincerely,

David P. Grabka, P.G.
Remedial Project Manager

_____
date

cc: Mike Fitzsimmons, FDEP Northeast District
Debbie Vaughn-Wright, USEPA Region 4
Paul Calligan, Tetra Tech NUS, Tampa

JJC _____ ESN _____

ATTACHMENT B

SOIL ANALYTICAL REPORT

Southeast ACCUTEST Laboratories

03/30/05

Technical Report for

Tetra Tech NUS

NAS Cecil Field-CTO #361

N9945/PO 1000892

Accutest Job Number: F29049

Sampling Date: 01/03/05

Report to:

Tetra Tech, NUS

dalem@ttnus.com

ATTN: Merv Dale

Total number of pages in report: 34

ACCREDITED IN ACCORDANCE WITH nelac

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

Harry Behzadi, Ph.D.
Laboratory Director

Certifications: FL (DOH E83510), NC (573), NJ (FL002), MA (FL946), IA (366), LA (03051), KS (E-10327), SC, AK

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.

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Sample Summary

Tetra Tech NUS

Job No: F29049

NAS Cecil Field-CTO #361
Project No: N9945/PO 1000892

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
F29049-1	01/03/05	11:03 SB	01/04/05	SO	Soil	815SLB0104
F29049-2	01/03/05	11:35 SB	01/04/05	SO	Soil	815SLB0204
F29049-3	01/03/05	11:59 SB	01/04/05	SO	Soil	815SLB0304
F29049-4	01/03/05	12:17 SB	01/04/05	SO	Soil	815SLB0404
F29049-5	01/03/05	13:55 SB	01/04/05	SO	Soil	815SLB0504
F29049-6	01/03/05	14:12 SB	01/04/05	SO	Soil	815SLB0604
F29049-7	01/03/05	14:26 SB	01/04/05	SO	Soil	815SLB0704
F29049-8	01/03/05	14:41 SB	01/04/05	SO	Soil	815SLB0804
F29049-9	01/03/05	00:00 SB	01/04/05	SO	Soil	815SLB0504D

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Tetra Tech NUS **Job No:** F29049

Site: NTC Orlando- CTO #361 **Report Date:** 1/13/2005 3:09:27 PM

9 Samples were collected on 01/03/2005 and were received at Accutest on 01/04/2005 properly preserved, at 0.6 Deg. C and intact. These Samples received an Accutest job number of F29049. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GCMS by Method SW846 8260B

Matrix: SO **Batch ID:** VH1081

All samples were analyzed within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

Samples F29046-9MS, F29046-9MSD were used as the QC samples indicated.

Matrix: SO **Batch ID:** VH1082

All samples were analyzed within the recommended method holding time.

Samples F29049-7MS, F29049-7MSD were used as the QC samples indicated.

All method blanks for this batch meet method specific criteria.

Matrix Spike Duplicate Recovery for Methyl Tert Butyl Ether is outside control limits. Probable cause: matrix interference.

Extractables by GC by Method FLORIDA-PRO

Matrix: SO **Batch ID:** OP12197

All samples were extracted within the recommended method holding time.

All samples were analyzed within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

Samples F29049-4MS, F29049-4MSD were used as the QC samples indicated.

Extractables by GC by Method SW846 8310

Matrix: SO **Batch ID:** OP12199

All samples were extracted within the recommended method holding time.

All samples were analyzed within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

Samples F29049-8MS, F29049-8MSD were used as the QC samples indicated.

Wet Chemistry by Method EPA 160.3 M

Matrix: SO **Batch ID:** GN16532

Sample F29049-8DUP was used as the QC sample for Solids, Percent.

Accutest Laboratories Southeast (ALSE) certifies that this report meets the project requirements for analytical data produced for the samples as received at ALSE and as stated on the COC. ALSE certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the ALSE Quality Manual except as noted above. This report is to be used in its entirety. ALSE is not responsible for any assumptions of data quality if partial data packages are used.

Narrative prepared by:

Date: January 13, 2005

Ellen Pampel, Inorganic QA (signature on file)

Thursday, January 13, 2005

Report of Analysis

Client Sample ID:	815SLB0104		
Lab Sample ID:	F29049-1	Date Sampled:	01/03/05
Matrix:	SO - Soil	Date Received:	01/04/05
Method:	SW846 8260B	Percent Solids:	84.4
Project:	NAS Cecil Field-CTO #361		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	H028645.D	1	01/04/05	NAF	n/a	n/a	VH1081
Run #2							

	Initial Weight
Run #1	3.97 g
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	3.0 U	7.5	3.0	ug/kg	
108-88-3	Toluene	3.0 U	7.5	3.0	ug/kg	
100-41-4	Ethylbenzene	3.0 U	7.5	3.0	ug/kg	
1330-20-7	Xylene (total)	6.7 U	22	6.7	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	3.0 U	7.5	3.0	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		78-123%
2037-26-5	Toluene-D8	97%		71-137%
460-00-4	4-Bromofluorobenzene	99%		61-157%
17060-07-0	1,2-Dichloroethane-D4	98%		74-125%

U = Not detected MDL - Method Detection Limit I = Result > = MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	815SLB0104		
Lab Sample ID:	F29049-1	Date Sampled:	01/03/05
Matrix:	SO - Soil	Date Received:	01/04/05
Method:	SW846 8310 SW846 3550B	Percent Solids:	84.4
Project:	NAS Cecil Field-CTO #361		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA024944.D	1	01/05/05	MRE	01/05/05	OP12199	GAA1168
Run #2							

	Initial Weight	Final Volume
Run #1	30.5 g	5.0 ml
Run #2		

Polynuclear Aromatic Hydrocarbons

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	190 U	780	190	ug/kg	
208-96-8	Acenaphthylene	190 U	780	190	ug/kg	
120-12-7	Anthracene	190 U	390	190	ug/kg	
56-55-3	Benzo(a)anthracene	97 U	390	97	ug/kg	
50-32-8	Benzo(a)pyrene	19 U	78	19	ug/kg	
205-99-2	Benzo(b)fluoranthene	19 U	78	19	ug/kg	
191-24-2	Benzo(g,h,i)perylene	19 U	78	19	ug/kg	
207 08 9	Benzo(k)fluoranthene	19 U	78	19	ug/kg	
218-01-9	Chrysene	97 U	390	97	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	19 U	78	19	ug/kg	
206-44-0	Fluoranthene	97 U	390	97	ug/kg	
86-73-7	Fluorene	190 U	390	190	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	19 U	78	19	ug/kg	
91-20-3	Naphthalene	97 U	390	97	ug/kg	
90 12 0	1-Methylnaphthalene	97 U	390	97	ug/kg	
91-57-6	2-Methylnaphthalene	97 U	390	97	ug/kg	
85-01-8	Phenanthrene	190 U	390	190	ug/kg	
129-00-0	Pyrene	97 U	390	97	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84 15 1	o Terphenyl	94%		49 124%
92-94-4	p-Terphenyl	100%		56-141%

U = Not detected MDL - Method Detection Limit I = Result > = MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L – Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	815SLB0104		
Lab Sample ID:	F29049-1	Date Sampled:	01/03/05
Matrix:	SO - Soil	Date Received:	01/04/05
Method:	FLORIDA-PRO SW846 3550B	Percent Solids:	84.4
Project:	NAS Cecil Field-CTO #361		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP45628.D	1	01/05/05	AA	01/04/05	OP12197	GOP1366
Run #2							

	Initial Weight	Final Volume
Run #1	30.2 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C8-C40)	6.93	9.8	6.7	mg/kg	I

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	68%		59-121%

U = Not detected MDL - Method Detection Limit
RL = Reporting Limit
L = Indicates value exceeds calibration range
I = Result > = MDL but < RL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	815SLB0204		
Lab Sample ID:	F29049-2	Date Sampled:	01/03/05
Matrix:	SO - Soil	Date Received:	01/04/05
Method:	SW846 8260B	Percent Solids:	84.6
Project:	NAS Cecil Field CTO #361		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	H028646.D	1	01/04/05	NAF	n/a	n/a	VH1081
Run #2							

	Initial Weight
Run #1	4.28 g
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	2.8 U	6.9	2.8	ug/kg	
108-88-3	Toluene	2.8 U	6.9	2.8	ug/kg	
100-41-4	Ethylbenzene	2.8 U	6.9	2.8	ug/kg	
1330-20-7	Xylene (total)	6.2 U	21	6.2	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	2.8 U	6.9	2.8	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		78-123%
2037-26-5	Toluene-D8	99%		71-137%
460-00-4	4-Bromofluorobenzene	102%		61-157%
17060-07-0	1,2-Dichloroethane-D4	97%		74-125%

U = Not detected MDL - Method Detection Limit
RL = Reporting Limit
L = Indicates value exceeds calibration range

I = Result > = MDL but < RL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	815SLB0204		
Lab Sample ID:	F29049-2	Date Sampled:	01/03/05
Matrix:	SO - Soil	Date Received:	01/04/05
Method:	SW846 8310 SW846 3550B	Percent Solids:	84.6
Project:	NAS Cecil Field CTO #361		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA024945.D	1	01/05/05	MRE	01/05/05	OP12199	GAA1168
Run #2							

	Initial Weight	Final Volume
Run #1	30.2 g	5.0 ml
Run #2		

Polynuclear Aromatic Hydrocarbons

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	200 U	780	200	ug/kg	
208-96-8	Acenaphthylene	200 U	780	200	ug/kg	
120-12-7	Anthracene	200 U	390	200	ug/kg	
56-55-3	Benzo(a)anthracene	98 U	390	98	ug/kg	
50-32-8	Benzo(a)pyrene	20 U	78	20	ug/kg	
205-99-2	Benzo(b)fluoranthene	20 U	78	20	ug/kg	
191-24-2	Benzo(g,h,i)perylene	20 U	78	20	ug/kg	
207-08-9	Benzo(k)fluoranthene	20 U	78	20	ug/kg	
218-01-9	Chrysene	98 U	390	98	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	20 U	78	20	ug/kg	
206-44-0	Fluoranthene	98 U	390	98	ug/kg	
86-73-7	Fluorene	200 U	390	200	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	20 U	78	20	ug/kg	
91-20-3	Naphthalene	98 U	390	98	ug/kg	
90-12-0	1-Methylnaphthalene	98 U	390	98	ug/kg	
91-57-6	2-Methylnaphthalene	98 U	390	98	ug/kg	
85-01-8	Phenanthrene	200 U	390	200	ug/kg	
129-00-0	Pyrene	98 U	390	98	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	98%		49-124%
92-94-4	p-Terphenyl	102%		56-141%

U = Not detected MDL - Method Detection Limit
RL = Reporting Limit
L = Indicates value exceeds calibration range
I = Result > = MDL but < RL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	815SLB0204		
Lab Sample ID:	F29049-2	Date Sampled:	01/03/05
Matrix:	SO - Soil	Date Received:	01/04/05
Method:	FLORIDA-PRO SW846 3550B	Percent Solids:	84.6
Project:	NAS Cecil Field-CTO #361		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP45630.D	1	01/05/05	AA	01/04/05	OP12197	GOP1366
Run #2							

	Initial Weight	Final Volume
Run #1	30.7 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C8-C40)	6.5 U	9.6	6.5	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	74%		59-121%

U = Not detected MDL - Method Detection Limit
RL = Reporting Limit
L = Indicates value exceeds calibration range

I = Result > = MDL but < RL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	815SLB0304		
Lab Sample ID:	F29049-3	Date Sampled:	01/03/05
Matrix:	SO - Soil	Date Received:	01/04/05
Method:	SW846 8260B	Percent Solids:	83.0
Project:	NAS Cecil Field-CTO #361		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	H028647.D	1	01/04/05	NAF	n/a	n/a	VH1081
Run #2							

	Initial Weight
Run #1	3.84 g
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	3.1 U	7.8	3.1	ug/kg	
108-88-3	Toluene	3.1 U	7.8	3.1	ug/kg	
100-41-4	Ethylbenzene	3.1 U	7.8	3.1	ug/kg	
1330-20-7	Xylene (total)	7.1 U	24	7.1	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	3.1 U	7.8	3.1	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		78-123%
2037-26-5	Toluene-D8	99%		71-137%
460-00-4	4-Bromofluorobenzene	99%		61-157%
17060-07-0	1,2-Dichloroethane-D4	101%		74-125%

U = Not detected MDL - Method Detection Limit I = Result > = MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	815SLB0304		
Lab Sample ID:	F29049-3	Date Sampled:	01/03/05
Matrix:	SO - Soil	Date Received:	01/04/05
Method:	SW846 8310 SW846 3550B	Percent Solids:	83.0
Project:	NAS Cecil Field CTO #361		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA024946.D	1	01/05/05	MRE	01/05/05	OP12199	GAA1168
Run #2							

	Initial Weight	Final Volume
Run #1	30.0 g	5.0 ml
Run #2		

Polynuclear Aromatic Hydrocarbons

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	200 U	800	200	ug/kg	
208-96-8	Acenaphthylene	200 U	800	200	ug/kg	
120-12-7	Anthracene	200 U	400	200	ug/kg	
56-55-3	Benzo(a)anthracene	100 U	400	100	ug/kg	
50-32-8	Benzo(a)pyrene	20 U	80	20	ug/kg	
205-99-2	Benzo(b)fluoranthene	20 U	80	20	ug/kg	
191-24-2	Benzo(g,h,i)perylene	20 U	80	20	ug/kg	
207-08-9	Benzo(k)fluoranthene	20 U	80	20	ug/kg	
218-01-9	Chrysene	100 U	400	100	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	20 U	80	20	ug/kg	
206-44-0	Fluoranthene	100 U	400	100	ug/kg	
86-73-7	Fluorene	200 U	400	200	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	20 U	80	20	ug/kg	
91-20-3	Naphthalene	100 U	400	100	ug/kg	
90-12-0	1-Methylnaphthalene	100 U	400	100	ug/kg	
91-57-6	2-Methylnaphthalene	100 U	400	100	ug/kg	
85-01-8	Phenanthrene	200 U	400	200	ug/kg	
129-00-0	Pyrene	100 U	400	100	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	94%		49-124%
92-94-4	p-Terphenyl	99%		56-141%

U = Not detected MDL - Method Detection Limit
RL = Reporting Limit
L = Indicates value exceeds calibration range
I = Result > = MDL but < RL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	815SLB0304		
Lab Sample ID:	F29049-3	Date Sampled:	01/03/05
Matrix:	SO - Soil	Date Received:	01/04/05
Method:	FLORIDA-PRO SW846 3550B	Percent Solids:	83.0
Project:	NAS Cecil Field-CTO #361		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP45631.D	1	01/05/05	AA	01/04/05	OP12197	GOP1366
Run #2							

	Initial Weight	Final Volume
Run #1	30.6 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C8-C40)	6.7 U	9.8	6.7	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	80%		59-121%

U = Not detected MDL - Method Detection Limit
RL = Reporting Limit
L = Indicates value exceeds calibration range
I = Result > = MDL but < RL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	815SLB0404		
Lab Sample ID:	F29049-4	Date Sampled:	01/03/05
Matrix:	SO - Soil	Date Received:	01/04/05
Method:	SW846 8260B	Percent Solids:	81.9
Project:	NAS Cecil Field-CTO #361		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	H028648.D	1	01/04/05	NAF	n/a	n/a	VH1081
Run #2							

	Initial Weight
Run #1	4.14 g
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	2.9 U	7.4	2.9	ug/kg	
108-88-3	Toluene	2.9 U	7.4	2.9	ug/kg	
100-41-4	Ethylbenzene	2.9 U	7.4	2.9	ug/kg	
1330-20-7	Xylene (total)	6.6 U	22	6.6	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	2.9 U	7.4	2.9	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		78-123%
2037-26-5	Toluene-D8	99%		71-137%
460-00-4	4-Bromofluorobenzene	100%		61-157%
17060-07-0	1,2-Dichloroethane-D4	97%		74-125%

U = Not detected MDL - Method Detection Limit I = Result > = MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	815SLB0404		
Lab Sample ID:	F29049-4	Date Sampled:	01/03/05
Matrix:	SO - Soil	Date Received:	01/04/05
Method:	SW846 8310 SW846 3550B	Percent Solids:	81.9
Project:	NAS Cecil Field-CTO #361		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA024947.D	1	01/05/05	MRE	01/05/05	OP12199	GAA1168
Run #2							

	Initial Weight	Final Volume
Run #1	30.1 g	5.0 ml
Run #2		

Polynuclear Aromatic Hydrocarbons

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	200 U	810	200	ug/kg	
208-96-8	Acenaphthylene	200 U	810	200	ug/kg	
120-12-7	Anthracene	200 U	410	200	ug/kg	
56-55-3	Benzo(a)anthracene	100 U	410	100	ug/kg	
50-32-8	Benzo(a)pyrene	20 U	81	20	ug/kg	
205-99-2	Benzo(b)fluoranthene	20 U	81	20	ug/kg	
191-24-2	Benzo(g,h,i)perylene	20 U	81	20	ug/kg	
207-08-9	Benzo(k)fluoranthene	20 U	81	20	ug/kg	
218-01-9	Chrysene	100 U	410	100	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	20 U	81	20	ug/kg	
206-44-0	Fluoranthene	100 U	410	100	ug/kg	
86-73-7	Fluorene	200 U	410	200	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	20 U	81	20	ug/kg	
91-20-3	Naphthalene	100 U	410	100	ug/kg	
90-12-0	1-Methylnaphthalene	100 U	410	100	ug/kg	
91-57-6	2-Methylnaphthalene	100 U	410	100	ug/kg	
85-01-8	Phenanthrene	200 U	410	200	ug/kg	
129-00-0	Pyrene	100 U	410	100	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	86%		49-124%
92-94-4	p-Terphenyl	97%		56-141%

U = Not detected MDL - Method Detection Limit I = Result > = MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	815SLB0404		
Lab Sample ID:	F29049-4	Date Sampled:	01/03/05
Matrix:	SO - Soil	Date Received:	01/04/05
Method:	FLORIDA-PRO SW846 3550B	Percent Solids:	81.9
Project:	NAS Cecil Field-CTO #361		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP45632.D	1	01/05/05	AA	01/04/05	OP12197	GOP1366
Run #2							

	Initial Weight	Final Volume
Run #1	30.8 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C8-C40)	6.7 U	9.9	6.7	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	83%		59-121%

U = Not detected MDL - Method Detection Limit
RL = Reporting Limit
L = Indicates value exceeds calibration range
I = Result > = MDL but < RL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	815SLB0504		
Lab Sample ID:	F29049-5	Date Sampled:	01/03/05
Matrix:	SO - Soil	Date Received:	01/04/05
Method:	SW846 8260B	Percent Solids:	85.9
Project:	NAS Cecil Field CTO #361		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	H028662.D	1	01/06/05	NAF	n/a	n/a	VH1082
Run #2							

	Initial Weight
Run #1	4.51 g
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	2.6 U	6.5	2.6	ug/kg	
108-88-3	Toluene	2.6 U	6.5	2.6	ug/kg	
100-41-4	Ethylbenzene	2.6 U	6.5	2.6	ug/kg	
1330-20-7	Xylene (total)	5.8 U	19	5.8	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	2.6 U	6.5	2.6	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		78-123%
2037-26-5	Toluene-D8	96%		71-137%
460-00-4	4-Bromofluorobenzene	99%		61-157%
17060-07-0	1,2-Dichloroethane-D4	99%		74-125%

U = Not detected MDL - Method Detection Limit I = Result > = MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	815SLB0504		
Lab Sample ID:	F29049-5	Date Sampled:	01/03/05
Matrix:	SO - Soil	Date Received:	01/04/05
Method:	SW846 8310 SW846 3550B	Percent Solids:	85.9
Project:	NAS Cecil Field-CTO #361		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA024949.D	1	01/05/05	MRE	01/05/05	OP12199	GAA1168
Run #2							

	Initial Weight	Final Volume
Run #1	30.6 g	5.0 ml
Run #2		

Polynuclear Aromatic Hydrocarbons

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	190 U	760	190	ug/kg	
208-96-8	Acenaphthylene	190 U	760	190	ug/kg	
120-12-7	Anthracene	190 U	380	190	ug/kg	
56-55-3	Benzo(a)anthracene	95 U	380	95	ug/kg	
50-32-8	Benzo(a)pyrene	19 U	76	19	ug/kg	
205-99-2	Benzo(b)fluoranthene	19 U	76	19	ug/kg	
191-24-2	Benzo(g,h,i)perylene	19 U	76	19	ug/kg	
207-08-9	Benzo(k)fluoranthene	19 U	76	19	ug/kg	
218-01-9	Chrysene	95 U	380	95	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	19 U	76	19	ug/kg	
206-44-0	Fluoranthene	95 U	380	95	ug/kg	
86-73-7	Fluorene	190 U	380	190	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	19 U	76	19	ug/kg	
91-20-3	Naphthalene	95 U	380	95	ug/kg	
90-12-0	1-Methylnaphthalene	95 U	380	95	ug/kg	
91-57-6	2-Methylnaphthalene	95 U	380	95	ug/kg	
85-01-8	Phenanthrene	190 U	380	190	ug/kg	
129-00-0	Pyrene	95 U	380	95	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	115%		49-124%
92-94-4	p-Terphenyl	100%		56-141%

U = Not detected MDL - Method Detection Limit I = Result > = MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	815SLB0504		
Lab Sample ID:	F29049-5	Date Sampled:	01/03/05
Matrix:	SO - Soil	Date Received:	01/04/05
Method:	FLORIDA-PRO SW846 3550B	Percent Solids:	85.9
Project:	NAS Cecil Field-CTO #361		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP45635.D	1	01/05/05	AA	01/04/05	OP12197	GOP1366
Run #2							

	Initial Weight	Final Volume
Run #1	30.6 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C8-C40)	11.7	9.5	6.5	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	79%		59-121%

U = Not detected MDL - Method Detection Limit
RL = Reporting Limit
L = Indicates value exceeds calibration range
I = Result > = MDL but < RL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	815SLB0604		
Lab Sample ID:	F29049-6	Date Sampled:	01/03/05
Matrix:	SO - Soil	Date Received:	01/04/05
Method:	SW846 8260B	Percent Solids:	77.3
Project:	NAS Cecil Field-CTO #361		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	H028651.D	1	01/04/05	NAF	n/a	n/a	VH1081
Run #2							

	Initial Weight
Run #1	3.77 g
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	3.4 U	8.6	3.4	ug/kg	
108-88-3	Toluene	3.4 U	8.6	3.4	ug/kg	
100-41-4	Ethylbenzene	3.4 U	8.6	3.4	ug/kg	
1330-20-7	Xylene (total)	7.7 U	26	7.7	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	3.4 U	8.6	3.4	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		78-123%
2037-26-5	Toluene-D8	99%		71-137%
460-00-4	4-Bromofluorobenzene	98%		61-157%
17060-07-0	1,2-Dichloroethane-D4	99%		74-125%

U = Not detected MDL - Method Detection Limit I = Result > = MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L – Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	815SLB0604		
Lab Sample ID:	F29049-6	Date Sampled:	01/03/05
Matrix:	SO - Soil	Date Received:	01/04/05
Method:	SW846 8310 SW846 3550B	Percent Solids:	77.3
Project:	NAS Cecil Field-CTO #361		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA024950.D	1	01/05/05	MRE	01/05/05	OP12199	GAA1168
Run #2							

	Initial Weight	Final Volume
Run #1	30.2 g	5.0 ml
Run #2		

Polynuclear Aromatic Hydrocarbons

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	210 U	860	210	ug/kg	
208-96-8	Acenaphthylene	210 U	860	210	ug/kg	
120-12-7	Anthracene	210 U	430	210	ug/kg	
56-55-3	Benzo(a)anthracene	110 U	430	110	ug/kg	
50-32-8	Benzo(a)pyrene	21 U	86	21	ug/kg	
205-99-2	Benzo(b)fluoranthene	21 U	86	21	ug/kg	
191-24-2	Benzo(g,h,i)perylene	21 U	86	21	ug/kg	
207-08-9	Benzo(k)fluoranthene	21 U	86	21	ug/kg	
218-01-9	Chrysene	110 U	430	110	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	21 U	86	21	ug/kg	
206-44-0	Fluoranthene	110 U	430	110	ug/kg	
86-73-7	Fluorene	210 U	430	210	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	21 U	86	21	ug/kg	
91-20-3	Naphthalene	110 U	430	110	ug/kg	
90-12-0	1-Methylnaphthalene	110 U	430	110	ug/kg	
91-57-6	2-Methylnaphthalene	110 U	430	110	ug/kg	
85-01-8	Phenanthrene	210 U	430	210	ug/kg	
129-00-0	Pyrene	110 U	430	110	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	92%		40-124%
92-94-4	p-Terphenyl	98%		56-141%

U = Not detected MDL - Method Detection Limit
RL = Reporting Limit
L = Indicates value exceeds calibration range
I = Result > = MDL but < RL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	815SLB0604		
Lab Sample ID:	F29049-6	Date Sampled:	01/03/05
Matrix:	SO - Soil	Date Received:	01/04/05
Method:	FLORIDA-PRO SW846 3550B	Percent Solids:	77.3
Project:	NAS Cecil Field CTO #361		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP45636.D	1	01/05/05	AA	01/04/05	OP12197	GOP1366
Run #2							

	Initial Weight	Final Volume
Run #1	30.0 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C8-C40)	7.3 U	11	7.3	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	82%		59-121%

U = Not detected MDL - Method Detection Limit
RL = Reporting Limit
L = Indicates value exceeds calibration range

I = Result > = MDL but < RL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	815SLB0704		
Lab Sample ID:	F29049-7	Date Sampled:	01/03/05
Matrix:	SO - Soil	Date Received:	01/04/05
Method:	SW846 8260B	Percent Solids:	82.9
Project:	NAS Cecil Field CTO #361		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	H028661.D	1	01/06/05	NAF	n/a	n/a	VH1082
Run #2							

	Initial Weight
Run #1	3.99 g
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	3.0 U	7.6	3.0	ug/kg	
108-88-3	Toluene	3.0 U	7.6	3.0	ug/kg	
100-41-4	Ethylbenzene	3.0 U	7.6	3.0	ug/kg	
1330-20-7	Xylene (total)	6.8 U	23	6.8	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	3.0 U	7.6	3.0	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		78-123%
2037-26-5	Toluene-D8	96%		71-137%
460-00-4	4-Bromofluorobenzene	97%		61-157%
17060-07-0	1,2-Dichloroethane-D4	99%		74-125%

U = Not detected MDL - Method Detection Limit I = Result > = MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	815SLB0704		
Lab Sample ID:	F29049-7	Date Sampled:	01/03/05
Matrix:	SO - Soil	Date Received:	01/04/05
Method:	SW846 8310 SW846 3550B	Percent Solids:	82.9
Project:	NAS Cecil Field-CTO #361		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA024951.D	1	01/05/05	MRE	01/05/05	OP12199	GAA1168
Run #2							

	Initial Weight	Final Volume
Run #1	30.6 g	5.0 ml
Run #2		

Polynuclear Aromatic Hydrocarbons

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	200 U	790	200	ug/kg	
208-96-8	Acenaphthylene	200 U	790	200	ug/kg	
120-12-7	Anthracene	200 U	390	200	ug/kg	
56-55-3	Benzo(a)anthracene	99 U	390	99	ug/kg	
50-32-8	Benzo(a)pyrene	20 U	79	20	ug/kg	
205-99-2	Benzo(b)fluoranthene	20 U	79	20	ug/kg	
191-24-2	Benzo(g,h,i)perylene	20 U	79	20	ug/kg	
207-08-9	Benzo(k)fluoranthene	20 U	79	20	ug/kg	
218-01-9	Chrysene	99 U	390	99	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	20 U	79	20	ug/kg	
206-44-0	Fluoranthene	99 U	390	99	ug/kg	
86-73-7	Fluorene	200 U	390	200	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	20 U	79	20	ug/kg	
91-20-3	Naphthalene	99 U	390	99	ug/kg	
90-12-0	1-Methylnaphthalene	99 U	390	99	ug/kg	
91-57-6	2-Methylnaphthalene	99 U	390	99	ug/kg	
85-01-8	Phenanthrene	200 U	390	200	ug/kg	
129-00-0	Pyrene	99 U	390	99	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	78%		49-124%
92-94-4	p-Terphenyl	94%		56-141%

U = Not detected MDL - Method Detection Limit I = Result > = MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	815SLB0704		
Lab Sample ID:	F29049-7	Date Sampled:	01/03/05
Matrix:	SO - Soil	Date Received:	01/04/05
Method:	FLORIDA-PRO SW846 3550B	Percent Solids:	82.9
Project:	NAS Cecil Field-CTO #361		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP45637.D	1	01/05/05	AA	01/04/05	OP12197	GOP1366
Run #2							

	Initial Weight	Final Volume
Run #1	30.8 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C8-C40)	6.7 U	9.8	6.7	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	81%		59-121%

U = Not detected MDL - Method Detection Limit
RL = Reporting Limit
L = Indicates value exceeds calibration range

I = Result > = MDL but < RL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	815SLB0804		
Lab Sample ID:	F29049-8	Date Sampled:	01/03/05
Matrix:	SO - Soil	Date Received:	01/04/05
Method:	SW846 8260B	Percent Solids:	85.8
Project:	NAS Cecil Field-CTO #361		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	H028653.D	1	01/04/05	NAF	n/a	n/a	VH1081
Run #2							

	Initial Weight
Run #1	4.27 g
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	2.7 U	6.8	2.7	ug/kg	
108-88-3	Toluene	2.7 U	6.8	2.7	ug/kg	
100-41-4	Ethylbenzene	2.7 U	6.8	2.7	ug/kg	
1330-20-7	Xylene (total)	6.1 U	20	6.1	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	2.7 U	6.8	2.7	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		78-123%
2037-26-5	Toluene-D8	99%		71-137%
460-00-4	4-Bromofluorobenzene	100%		61-157%
17060-07-0	1,2-Dichloroethane-D4	101%		74-125%

U = Not detected MDL - Method Detection Limit I = Result > = MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	815SLB0804		
Lab Sample ID:	F29049-8	Date Sampled:	01/03/05
Matrix:	SO - Soil	Date Received:	01/04/05
Method:	SW846 8310 SW846 3550B	Percent Solids:	85.8
Project:	NAS Cecil Field-CTO #361		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA024952.D	1	01/05/05	MRE	01/05/05	OP12199	GAA1168
Run #2							

	Initial Weight	Final Volume
Run #1	30.7 g	5.0 ml
Run #2		

Polynuclear Aromatic Hydrocarbons

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	190 U	760	190	ug/kg	
208-96-8	Acenaphthylene	190 U	760	190	ug/kg	
120-12-7	Anthracene	190 U	380	190	ug/kg	
56-55-3	Benzo(a)anthracene	95 U	380	95	ug/kg	
50-32-8	Benzo(a)pyrene	19 U	76	19	ug/kg	
205-99-2	Benzo(b)fluoranthene	19 U	76	19	ug/kg	
191-24-2	Benzo(g,h,i)perylene	19 U	76	19	ug/kg	
207-08-9	Benzo(k)fluoranthene	19 U	76	19	ug/kg	
218-01-9	Chrysene	95 U	380	95	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	19 U	76	19	ug/kg	
206-44-0	Fluoranthene	95 U	380	95	ug/kg	
86-73-7	Fluorene	190 U	380	190	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	19 U	76	19	ug/kg	
91-20-3	Naphthalene	95 U	380	95	ug/kg	
90-12-0	1-Methylnaphthalene	95 U	380	95	ug/kg	
91-57-6	2-Methylnaphthalene	95 U	380	95	ug/kg	
85-01-8	Phenanthrene	190 U	380	190	ug/kg	
129-00-0	Pyrene	95 U	380	95	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	89%		49-124%
92-94-4	p-Terphenyl	95%		56-141%

U = Not detected MDL - Method Detection Limit
RL = Reporting Limit
L = Indicates value exceeds calibration range
I = Result > = MDL but < RL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	815SLB0804		
Lab Sample ID:	F29049-8	Date Sampled:	01/03/05
Matrix:	SO - Soil	Date Received:	01/04/05
Method:	FLORIDA-PRO SW846 3550B	Percent Solids:	85.8
Project:	NAS Cecil Field-CTO #361		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP45638.D	1	01/05/05	AA	01/04/05	OP12197	GOP1366
Run #2							

	Initial Weight	Final Volume
Run #1	30.2 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C8-C40)	6.6 U	9.6	6.6	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	66%		59-121%

U = Not detected MDL - Method Detection Limit
RL = Reporting Limit
L = Indicates value exceeds calibration range

I = Result > = MDL but < RL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	815SLB0504D		
Lab Sample ID:	F29049-9	Date Sampled:	01/03/05
Matrix:	SO - Soil	Date Received:	01/04/05
Method:	SW846 8260B	Percent Solids:	85.3
Project:	NAS Cecil Field CTO #361		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	H028663.D	1	01/06/05	NAF	n/a	n/a	VH1082
Run #2							

	Initial Weight
Run #1	4.74 g
Run #2	

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	2.5 U	6.2	2.5	ug/kg	
108-88-3	Toluene	2.5 U	6.2	2.5	ug/kg	
100-41-4	Ethylbenzene	2.5 U	6.2	2.5	ug/kg	
1330-20-7	Xylene (total)	5.6 U	19	5.6	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	2.5 U	6.2	2.5	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%		78-123%
2037-26-5	Toluene-D8	97%		71-137%
460-00-4	4-Bromofluorobenzene	99%		61-157%
17060-07-0	1,2-Dichloroethane-D4	100%		74-125%

U = Not detected MDL - Method Detection Limit I = Result > = MDL but < RL J = Estimated value
RL = Reporting Limit V = Indicates analyte found in associated method blank
L = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	815SLB0504D		
Lab Sample ID:	F29049-9	Date Sampled:	01/03/05
Matrix:	SO - Soil	Date Received:	01/04/05
Method:	SW846 8310 SW846 3550B	Percent Solids:	85.3
Project:	NAS Cecil Field-CTO #361		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA024955.D	1	01/05/05	MRE	01/05/05	OP12199	GAA1168
Run #2							

	Initial Weight	Final Volume
Run #1	30.3 g	5.0 ml
Run #2		

Polynuclear Aromatic Hydrocarbons

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	190 U	770	190	ug/kg	
208-96-8	Acenaphthylene	190 U	770	190	ug/kg	
120-12-7	Anthracene	190 U	390	190	ug/kg	
56-55-3	Benzo(a)anthracene	97 U	390	97	ug/kg	
50-32-8	Benzo(a)pyrene	19 U	77	19	ug/kg	
205-99-2	Benzo(b)fluoranthene	19 U	77	19	ug/kg	
191-24-2	Benzo(g,h,i)perylene	19 U	77	19	ug/kg	
207-08-9	Benzo(k)fluoranthene	19 U	77	19	ug/kg	
218-01-9	Chrysene	97 U	390	97	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	19 U	77	19	ug/kg	
206-44-0	Fluoranthene	97 U	390	97	ug/kg	
86-73-7	Fluorene	190 U	390	190	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	19 U	77	19	ug/kg	
91-20-3	Naphthalene	97 U	390	97	ug/kg	
90-12-0	1-Methylnaphthalene	97 U	390	97	ug/kg	
91-57-6	2-Methylnaphthalene	97 U	390	97	ug/kg	
85-01-8	Phenanthrene	190 U	390	190	ug/kg	
129-00-0	Pyrene	97 U	390	97	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	111%		49-124%
92-94-4	p-Terphenyl	98%		56-141%

U = Not detected MDL - Method Detection Limit
RL = Reporting Limit
L = Indicates value exceeds calibration range
I = Result > = MDL but < RL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	815SLB0504D		
Lab Sample ID:	F29049-9	Date Sampled:	01/03/05
Matrix:	SO - Soil	Date Received:	01/04/05
Method:	FLORIDA-PRO SW846 3550B	Percent Solids:	85.3
Project:	NAS Cecil Field-CTO #361		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP45639.D	1	01/05/05	AA	01/04/05	OP12197	GOP1366
Run #2							

	Initial Weight	Final Volume
Run #1	30.0 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C8-C40)	7.34	9.8	6.6	mg/kg	I

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	64%		59-121%

U = Not detected MDL - Method Detection Limit
RL = Reporting Limit
L = Indicates value exceeds calibration range

I = Result > = MDL but < RL J = Estimated value
V = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

TETRA TECH NUS, INC. CHAIN OF CUSTODY NUMBER FL1077 815-010305 PAGE 1 OF 1

PROJECT NO: N9945 CTO361 | FACILITY: 815 WASH RACK

SAMPLERS (SIGNATURE): Steve A. Pollard

PROJECT MANAGER: PAUL CALLIGAN
FIELD OPERATIONS LEADER: P. LEVERETTE
CARRIER/WAYBILL NUMBER: Fedex 8427 1834 9373

PHONE NUMBER: 812 896 0202
PHONE NUMBER: (904) 636-6125

LABORATORY NAME AND CONTACT: ACCUTEST / HEATHER WADDELL
ADDRESS: 4405 VineLand Rd., Ste C-15
CITY, STATE: ORLANDO, FL

STANDARD TAT ☐ RUSH TAT ☐ ☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

CONTAINER TYPE: PLASTIC (P) or GLASS (G): G G G G
PRESERVATIVE USED: H2O CHAN None None

DATE YEAR 2005	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, EQ)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	TYPE OF ANALYSIS: 8260B	8260B	8310	FL-PRO	COMMENTS
1/3	1103	815SLB01G4				SO	G	5	2	1	1	1	Cool to 4°C
	1135	815SLB02G4						4			1	*	
	1159	815SLB03G4						5			1	1	
	1219	815SLB04G4						4			1	*	
	1355	815SLB05G4						4			1	*	
	1412	815SLB06G4						5			1	1	
	1426	815SLB07G4						4			1	*	
	1441	815SLB08G4						5			1	1	
	1100	815SLB05MD						4			1	*	
									1 COOLER				*FL-PROs ARE COMBINED WITH 8310s. WWK rel. 1000892

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY	1/5/05	1700	1. RECEIVED BY Fedex		
2. RELINQUISHED BY FX			2. RECEIVED BY	1/4/05	9:00
3. RELINQUISHED BY			3. RECEIVED BY		

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY) 4/02R

06 FORM NO. TINUS-001

F29049: Chain of Custody
Page 1 of 2

ACCUTEST LABORATORIES SOUTHEAST SAMPLE RECEIPT CONFIRMATION

Accutest's Job Number: F29049

Client: Tetra Tech Project: N9945, CTO 361

Date Received: 1/4/05 Time Received: 09:00

# of Coolers Received: 1 Cooler Temperatures: 0.6

Delivery Method: (FedEx) UPS Accutest Courier Greyhound Delivery Other

Air Bill Number:

Cooler Custody Seals Intact ?	(Yes)	No
Chain of Custody Provided ?	(Yes)	No
COC Match Bottle Label ID's ?	(Yes)	No
Sample Labels Present on all bottles ?	(Yes)	No
All Analyses Marked On COC ?	(Yes)	No
Are All Bottles Intact ?	(Yes)	No
Samples Preserved Correctly ?	(Yes)	No
Correct Number of Containers Used ?	(Yes)	No
Sufficient Sample Volume ?	(Yes)	No
Trip Blank Provided ?	Yes	(No)
Trip Blank on COC ?	Yes	(No)
Trip Blank Intact ?	Yes	No (N/A)
Trip Blank Matrix ?	Soil	Water (N/A)
Number of Encores ?	Ø	
Number of Soil Field Kits ?	9	

Summary of Comments:

Signature: [signature] Date: 1/4/05

Review Signature:

ASBD 12/30/01

F29049: Chain of Custody
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