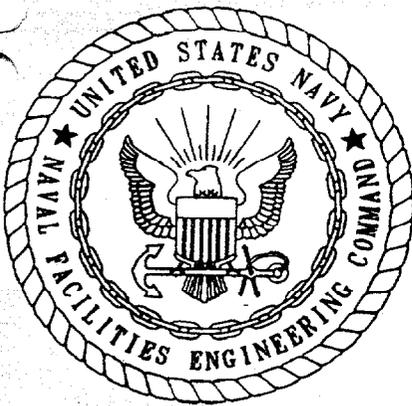


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FINAL BASE REALIGNMENT AND CLOSURE ENVIRONMENTAL SITE SCREENING
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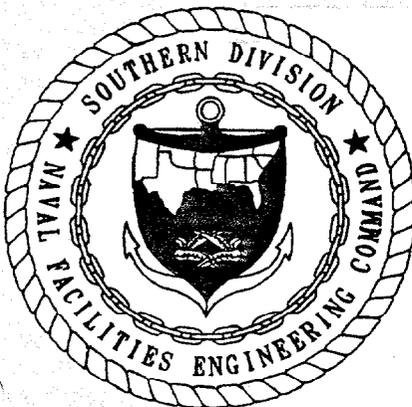


**BASE REALIGNMENT AND CLOSURE
ENVIRONMENTAL SITE SCREENING REPORT
STUDY AREA 36**

**NAVAL TRAINING CENTER
ORLANDO, FLORIDA**

**UNIT IDENTIFICATION CODE: N00207
CONTRACT NO.: N62467-89-D-0317/107**

JULY 1999



**SOUTHERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
NORTH CHARLESTON, SOUTH CAROLINA 29418**



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**BASE REALIGNMENT AND CLOSURE
ENVIRONMENTAL SITE SCREENING REPORT**

STUDY AREA 36

**NAVAL TRAINING CENTER
ORLANDO, FLORIDA**

Unit Identification Code: N65928

Contract No.: N62467-89-D-0317/107

Prepared by:

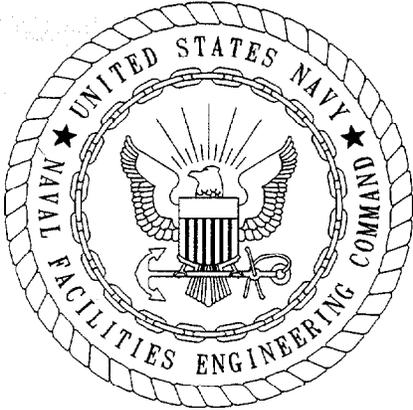
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July 1999



CERTIFICATION OF TECHNICAL
DATA CONFORMITY (MAY 1987)

The Contractor, Harding Lawson Associates, hereby certifies that, to the best of its knowledge and belief, the technical data delivered herewith under Contract No. N62467-89-D-0317/107 are complete and accurate and comply with all requirements of this contract.

DATE: July 27, 1999

NAME AND TITLE OF CERTIFYING OFFICIAL: John Kaiser
Task Order Manager

NAME AND TITLE OF CERTIFYING OFFICIAL: Richard Allen
Project Technical Lead

(DFAR 252.227-7036)

EXECUTIVE SUMMARY

Harding Lawson Associates (HLA), under contract to the Southern Division, Naval Facilities Engineering Command, has prepared this Site Screening Report for Study Area 36, located at the Naval Training Center, Orlando, Florida. This report was prepared under the Comprehensive Long-Term Environmental Action, Navy (CLEAN) Contract No. N62467-89-D-0317 as Contract Task Order No. 107.

The objective of the site screening investigation was to locate and identify any compounds that may be present at concentrations in excess of screening criteria. The investigation required several phases to complete. During the initial episode of screening, the surface soils at the site were found to have concentrations of several metals, total recoverable petroleum hydrocarbons (TRPH), and one polynuclear aromatic hydrocarbon in excess of State of Florida soil cleanup target levels (SCTLs). The investigation also demonstrated that the groundwater of the surficial aquifer had two volatile organic compounds in excess of State and Federal maximum contaminant levels. Accordingly, the Orlando Partnering Team (OPT) requested supplemental screening investigations designed to evaluate and characterize the tetrachloroethene (PCE) in groundwater.

The supplemental groundwater characterization field program involved the use of direct-push technology (DPT) to delineate the plume both vertically and horizontally. DPT studies were followed by installation of monitoring wells screened at appropriate depths to verify the findings of the DPT screening results. Three additional wells were installed after evaluation of groundwater sampling data to further delineate the trichloroethene (TCE) plume, in accordance with instructions from the OPT.

The overall results indicate that surface soils contain arsenic, barium, mercury, TRPH, and benzo(a)pyrene at concentrations exceeding the State of Florida's SCTLs. In addition, groundwater is present with concentrations of the metals antimony and aluminum, and the solvents TCE and PCE that exceed the State of Florida's groundwater cleanup target levels. HLA recommends that the soil be remediated by conducting soil removals accompanied by confirmation sampling to verify that a sufficient volume of soil has been removed at the locations where samples exceed SCTLs. HLA also recommends that the wells with antimony and aluminum exceedances be resampled to verify initial analytical findings. HLA further recommends that quarterly groundwater monitoring be conducted for a period of one year to determine if there are any trends in the reduction of concentrations of the solvents TCE and PCE. If not, then more active remedial measures (e.g., air sparging) may be appropriate to reduce contaminant mass.

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GLOSSARY

ABB-ES	ABB Environmental Services, Inc.
AFCEE	Air Force Center for Environmental Excellence
bls	below land surface
CLP	Contract Laboratory Program
CRDL	contract required detection limit
DCE	dichloroethene
DPT	direct-push technology
DQO	data quality objective
ft/ft	feet per foot
FDEP	Florida Department of Environmental Protection
GCTL	groundwater cleanup target level
HLA	Harding Lawson Associates
IDL	instrument detection limit
MCL	maximum contaminant level
μg/l	micrograms per liter
μg/kg	micrograms per kilogram
mg/kg	milligrams per kilogram
mg/l	milligrams per liter
msl	mean sea level
NTC	Naval Training Center
NTU	nephelometric turbidity units
OPT	Orlando Partnering Team
PCB	polychlorinated biphenyl
PCE	tetrachloroethene
RBC	risk-based concentration
SA	Study Area
SCTL	soil cleanup target level
SVOC	semivolatile organic compound
TAL	target analyte list
TCE	trichloroethene
TCL	target compound list
TMP	Tank Management Plan
TOC	total organic carbon
TRPH	total recoverable petroleum hydrocarbons
TSS	total suspended solids

GLOSSARY (Continued)

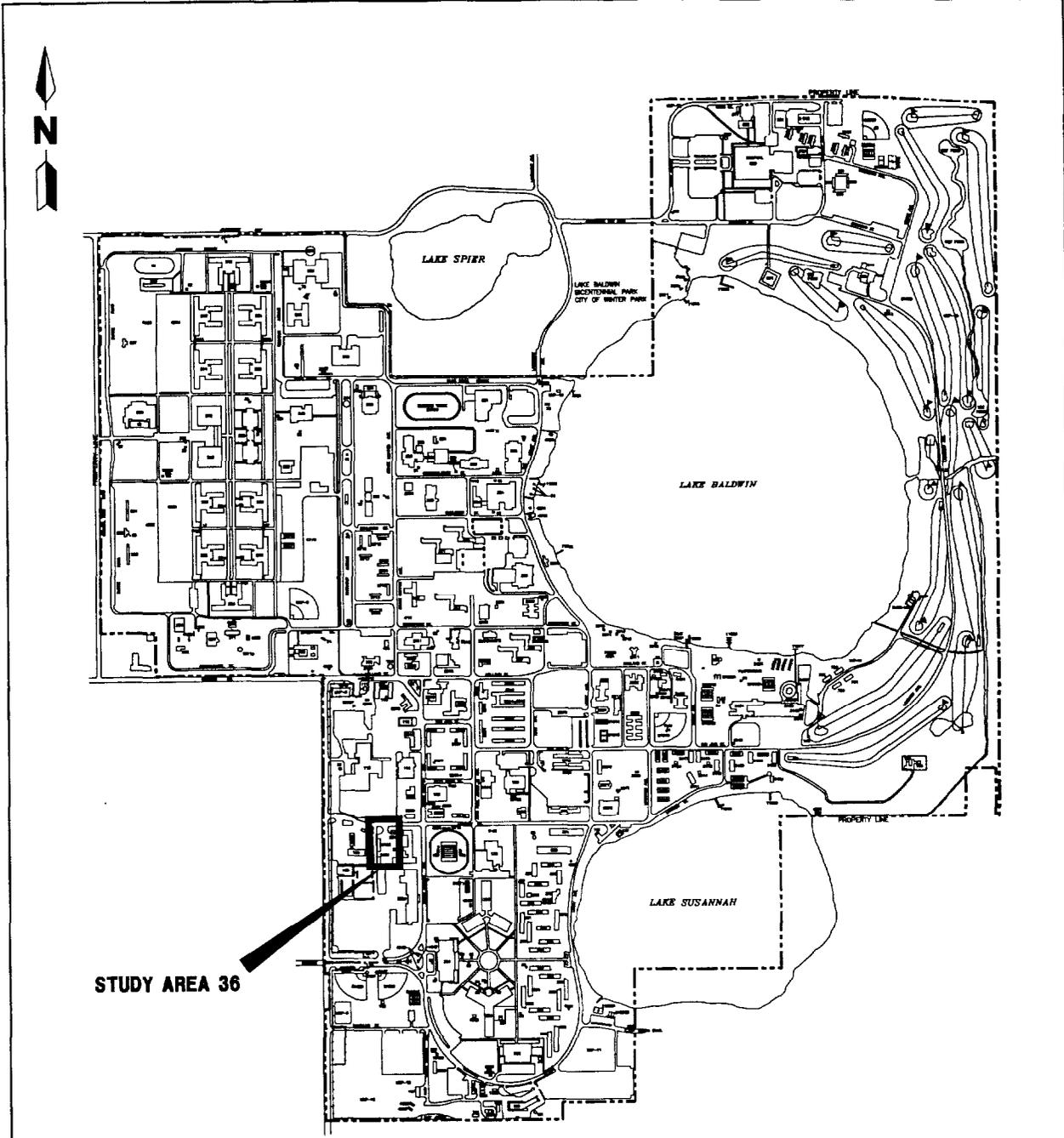
USEPA U.S. Environmental Protection Agency
VOC volatile organic compound

1.0 STUDY AREA 36, BUILDINGS 2121 AND 2122

1.1 INTRODUCTION. This report contains information gathered during site screening activities conducted at Study Area (SA) 36. Initial site screening investigations began on July 22, 1997, and were completed November 18, 1997. Proposed field activities were presented in the Site screening Plan (ABB Environmental Services, Inc. [ABB-ES], 1995). Additional screening activities were conducted in two phases, from March 31, 1998 to July 23, 1998 and from October 27, 1998 to December 11, 1998.

1.2 BACKGROUND AND CONDITIONS. SA 36 is located south of Langley Street and west of Grace Hopper Avenue on the Main Base, Naval Training Center (NTC), Orlando (Figure 1-1). The SA includes Building 2121, Building 2122, and the western half of the Public Works Yard. Building 2121 is a lumber storage facility. The areas of the yard south and east of Building 2121 are used to store a variety of materials. The area south of the building has a lime rock surface and is used to store bulky items including pipes, fire hydrants and bricks. The area to the east is paved with asphalt and used to store a variety of hazardous and non-hazardous materials prior to disposal. Materials observed in this area include waste oil drums, transformers and batteries.

Building 2122, built in 1952, is the Paint Shop. Paint and paint thinner were stored inside the building. A flammable materials storage cabinet was located at the north end of the building. The paved area north and east of the building was also used for storage, including stockpiles of sand and gravel used by the Public Works Department. A 55-gallon drum containing used motor oil was also observed north of the building during the environmental baseline survey (ABB-ES, 1994). Surface water runoff from the paved areas of the site is collected by drainage swales and storm drains along the western margin of the site. An unnamed road that connects a large parking lot south of the SA to Langley Road is the western boundary. Additional details can be found in the Site Screening Plan (ABB-ES, 1995).



**FIGURE 1-1
STUDY AREA LOCATION**



**BASE REALIGNMENT AND CLOSURE
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2.0 INITIAL SITE SCREENING INVESTIGATION SUMMARY

2.1 FIELD INVESTIGATION. The initial site screening investigation consisted of a passive soil gas survey and soil and groundwater sampling. The investigation was intended to evaluate the potential for release of contaminants to environmental media due to past site practices. Historical site activities and current site conditions were used to determine sampling locations. The site screening investigation focused on three areas of the site: the north storage area, north and east of Building 2122; the south storage area, south and east of Building 2121; and the drainage swales along the western margin of the site. The initial soil and groundwater sampling locations, along with the designated north and south storage areas and drainage swales are shown on Figure 2-1.

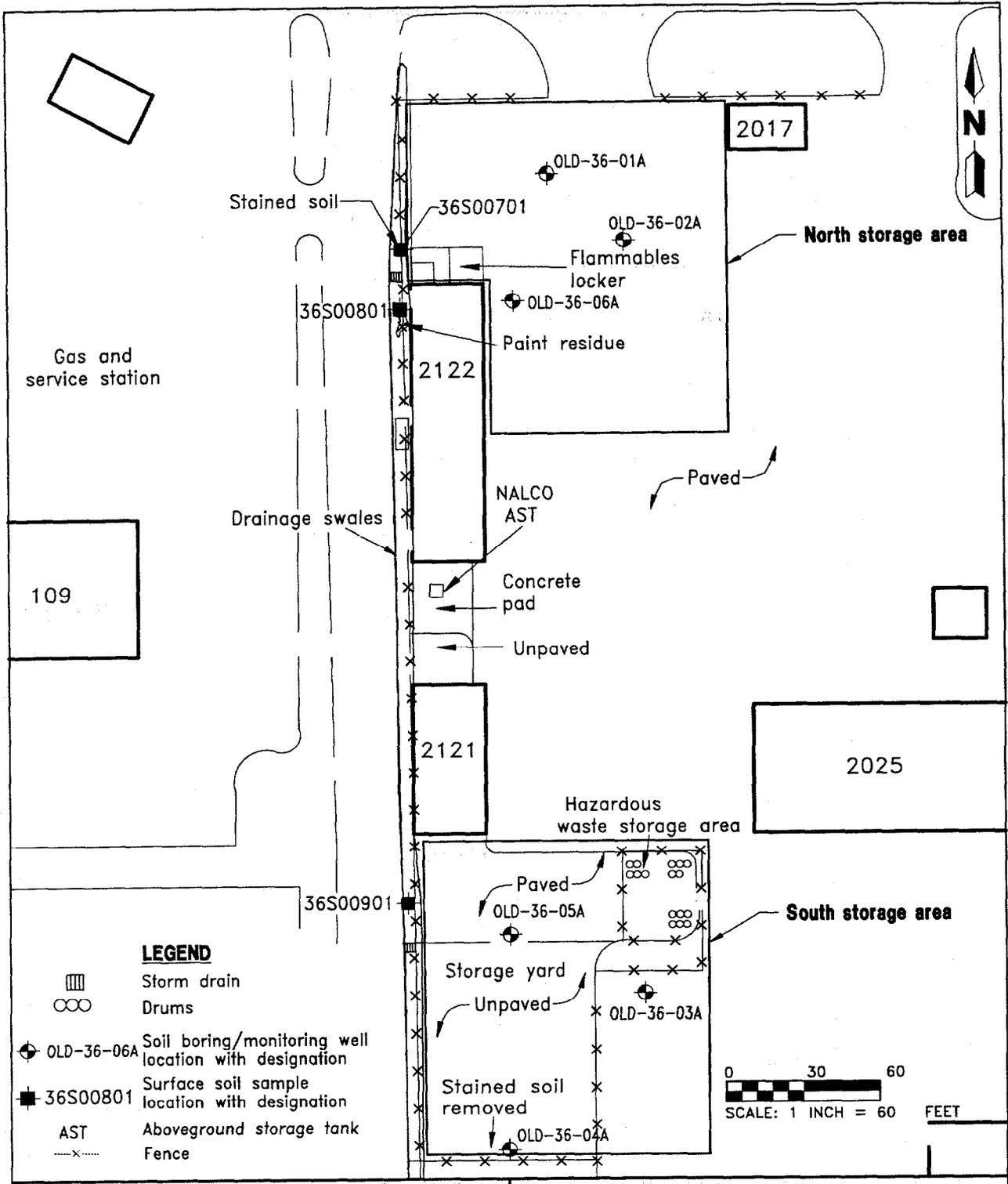
2.1.1 Passive Soil Gas Survey In order to rapidly identify areas where volatile organic compounds (VOCs) may have been released during current and past site operations, a passive soil gas survey was conducted in the western portion of the Public Works Yard. A sampling grid with nodes 50 feet apart was established over the SA (Figure 2-2). A passive soil gas sample collector was installed approximately 2 feet below land surface (bls) at each grid node. Nodes that would have been under buildings or in concrete were offset where necessary. When the sample collectors were retrieved, they were submitted to a laboratory for volatiles analysis.

2.1.2 Soil and Groundwater Sampling After the passive soil gas survey results were evaluated, surface soil, subsurface soil and groundwater samples (Figure 2-3) were collected from the site following the rationale presented in the site screening plan. Based on the passive soil gas sample results, two additional soil borings were advanced in the north storage area and completed as monitoring wells.

In the following discussions, the "A" designation for a monitoring well indicates that the well is screened in the shallowest portion of the surficial aquifer. "B" and "C" monitoring well designations, below, will refer to wells that have been completed in the intermediate portion of the surficial aquifer, and were screened just above ("B") or just below ("C") the cemented sand layer at a depth of approximately 20 feet bls. The "D" monitoring well designations refer to wells that have been screened at the base of the surficial aquifer, immediately above the first clay unit of the Hawthorn Formation.

2.1.2.1 Surface Soil Sampling Surface soil samples were collected at six monitoring well locations. Soil samples 36S00101, 36S00201 and 36S00601 were associated with well locations OLD-36-01A, OLD-36-02A and OLD-36-06A in the north storage area. Soil samples 36S00301, 36S00401 and 36S00501 were associated with well locations OLD-36-03A, OLD-36-04A and OLD-36-05A in or adjacent to the south storage area. Three additional soil samples, 36S00701, 36S00801, and 36S00901 were collected near the storm drains in the drainage swales adjacent to the road west of the SA. Soil borings were not advanced at these three locations. Surface soil samples were composited from the interval 0 to 2 feet bls.

The surface soil samples for each location were submitted to an approved laboratory for full suite Contract Laboratory Program (CLP) target analyte list (TAL) and target compound list (TCL) laboratory analysis, plus pesticides and polychlorinated biphenyl (PCBs), and total recoverable petroleum hydrocarbon



LEGEND

- Storm drain
- Drums
- OLD-36-06A Soil boring/monitoring well location with designation
- 36S00801 Surface soil sample location with designation
- AST Aboveground storage tank
- Fence

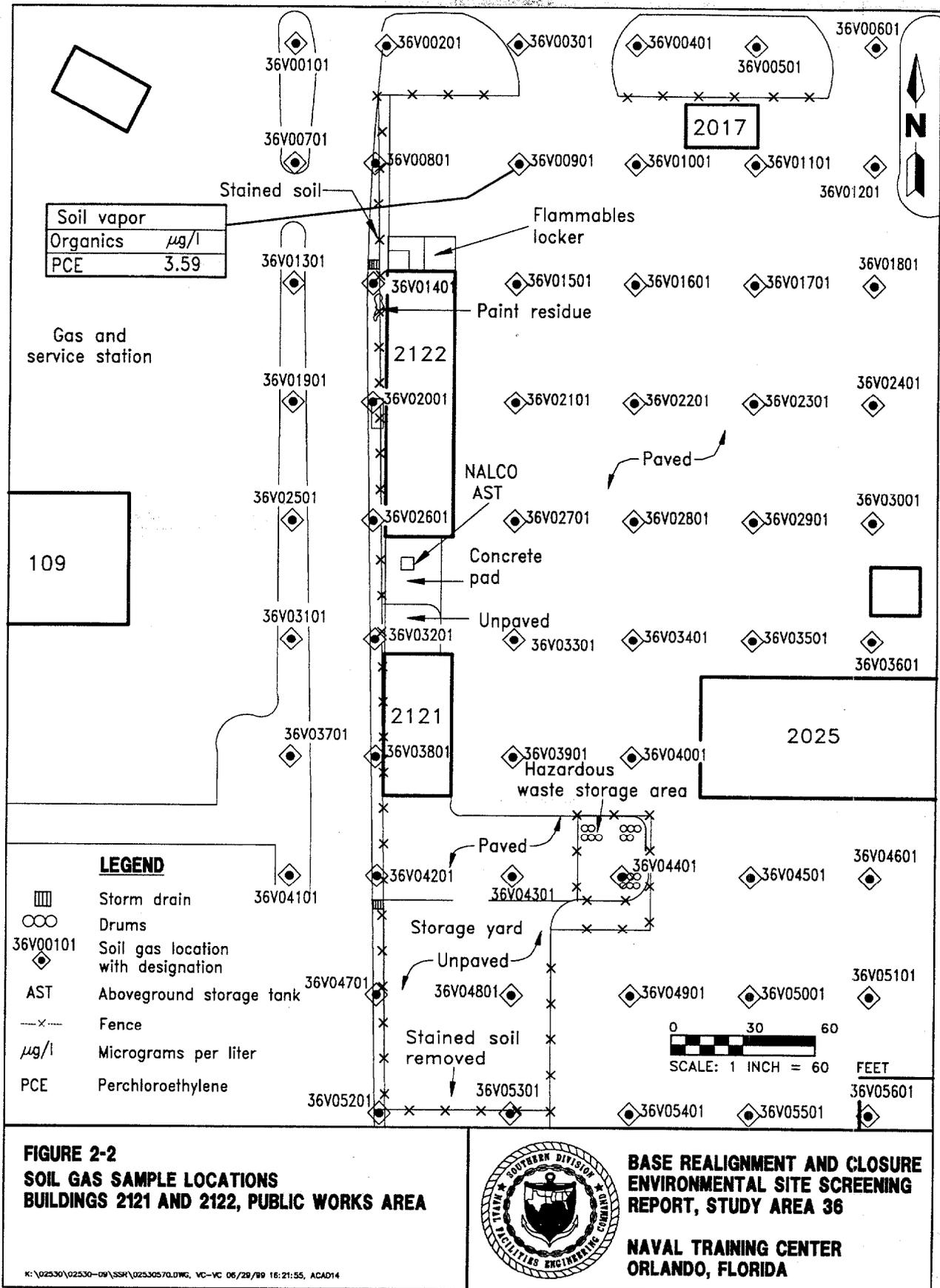
**FIGURE 2-1
SITE LOCATION PLAN MAP**



**BASE REALIGNMENT AND CLOSURE
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REPORT, STUDY AREA 36**

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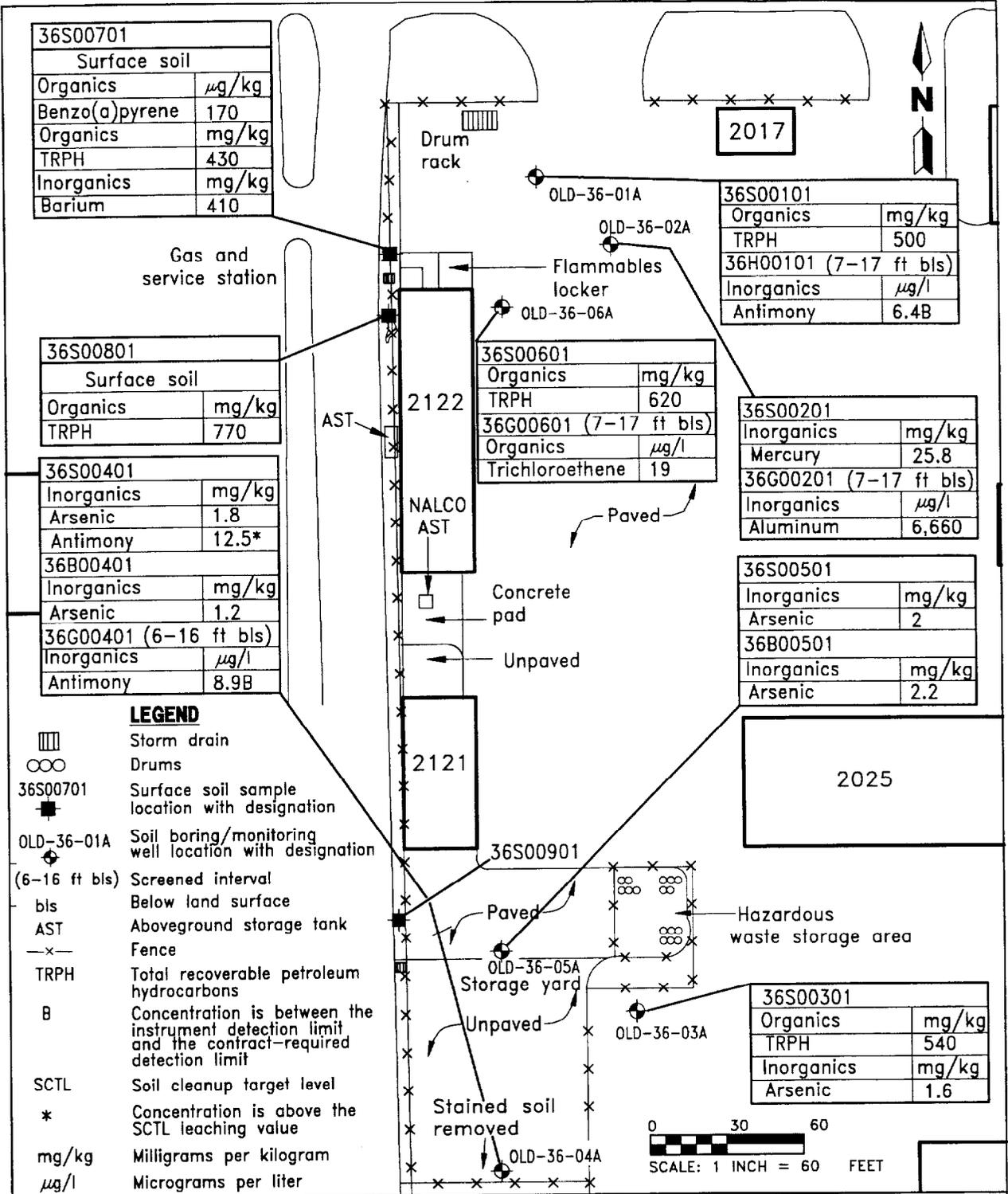


FIGURE 2-3
SURFACE SOIL, SOIL BORING,
AND MONITORING WELL LOCATIONS
BUILDINGS 2121 AND 2122, PUBLIC WORKS AREA



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(TRPH) analysis, in accordance with U.S. Environmental Protection Agency (USEPA) Level IV data quality objectives (DQOs).

2.1.2.2 Soil Boring Investigation and Subsurface Soil Sampling Six soil borings were advanced during the initial site investigation and completed as monitoring wells (Figure 2-3). At each boring location, subsurface soil samples were collected from 6 to 8 feet bls, the interval immediately above the groundwater table.

Three soil borings were located at the north end of the site. One subsurface soil sample, 36B00101 (same location as well OLD-36-01A), was collected at the passive soil gas sample location 36V00901, where tetrachloroethene (PCE) was detected during the passive soil gas survey. Another subsurface soil sample, 36B00601 (OLD-36-06A), was collected adjacent to the flammable materials storage cabinet at the north end of Building 2122. A third subsurface soil sample, 36B00201 (OLD-36-02A), was collected east of the other two borings in the presumed downgradient direction.

Three soil borings were located at the south end of the site. One subsurface soil sample, 36B00501 (OLD-36-05A), was collected in the storage yard, south of the edge of the asphalt pavement. Another subsurface soil sample, 36B00401 (OLD-36-04A), was collected at the south end of the storage yard. A third subsurface soil sample, 36B00301 (OLD-36-03A), was collected east of the storage yards in the presumed downgradient direction.

The subsurface soil samples for each location were submitted to an approved laboratory for full suite CLP TAL and TCL laboratory analysis, plus pesticides and PCBs, and TRPH analysis, in accordance with USEPA Level IV DQOs.

2.1.2.3 Groundwater Monitoring Well Installation and Sampling Six monitoring wells, OLD-36-01A through OLD-36-06A, were installed during the initial field investigation (Figure 2-3). The soil borings for the well installations north and east of Building 2122 were advanced to approximately 17 feet bls. The soil borings for the well installations south and east of Building 2121 were advanced to approximately 16 feet bls. The screened interval for each monitoring well bracketed the water table, which was encountered at 8 to 9 feet bls at the time of well installation.

A groundwater sample was collected from each well using low flow sampling techniques (ABB-ES, 1997). The groundwater samples were submitted to an approved laboratory for full suite CLP TAL and TCL laboratory analysis, plus pesticides and PCBs, total suspended solids (TSS), and TRPH, in accordance with USEPA Level IV DQOs. Filtered groundwater samples (0.45 micron filter size) were collected from each well for TAL metals analysis.

2.2 RESULTS OF INITIAL SCREENING. The results of the soil gas survey are discussed in Subsection 2.2.1, below. The analytical results for the soil gas survey are presented in Appendix A. The soil gas survey discussion will be followed by a discussion of the analytical results of the soil and groundwater sampling. The analytical results of the soil samples collected during the site screening investigation were evaluated by comparing the concentration of the various analytes detected to screening criteria, including basewide soil background screening levels, Florida Department of Environmental Protection (FDEP)

soil cleanup target levels (SCTLs), and USEPA Region III Risk-Based Concentrations (RBCs). The nature and location of exceedances of screening criteria are presented on Figure 2-3, and are discussed below.

Groundwater analytical data are compared to background screening values, FDEP groundwater cleanup target levels (GCTLs), Federal maximum contaminant levels (MCLs), and USEPA Region III RBCs for tap water.

Boring logs, monitoring well installation diagrams and groundwater sample field data are included in Appendix B. Analytical results for all media sampled at SA 36 are presented as Summary of Detections Tables in Appendix C. A complete set of analytical results is presented in Appendix D.

Exceedances of background or regulatory guidance concentrations (shaded on the positive hits tables) are displayed in chem-boxes near their respective explorations on Figure 2-3.

2.2.1 Passive Soil Gas Survey Results PCE was detected at one sample location in the north storage area. Soil vapor sample 36V00901 had a PCE concentration of 3.59 micrograms per liter ($\mu\text{g}/\ell$). No VOCs were detected in the other passive soil gas samples collected during this field investigation. The laboratory analytical results are presented in Appendix A.

2.2.2 Soil and Groundwater Sampling Results

2.2.2.1 Surface Soil Analytical Results Analysis of the surface soil collected at SA 36 detected VOCs, semivolatile organic compounds (SVOCs), pesticides, PCBs, and inorganics (Appendix C-1).

TRPH concentrations exceeded the FDEP residential SCTL of 350 milligrams per kilogram (mg/kg) in five surface soil samples collected from the site. Two of the samples, 36S00101 (500 mg/kg) and 36S00601 (620 mg/kg), were collected from beneath the pavement in the north storage area. Samples 36S00701 (430 mg/kg) and 36S00801 (770 mg/kg) were collected from the north and south sides of the grate in the drainage swale at the northwest corner of Building 2122. Sample 36S00301 (540 mg/kg) was collected from beneath the pavement east of the south storage area.

Arsenic concentrations exceeded the residential SCTL of 0.8 mg/kg and the background screening value of 1 mg/kg in three surface soil samples. The soil sample locations were in and around the south storage area. Sample 36S00301, collected to the east of the storage areas, had an arsenic concentration of 1.6 mg/kg. Samples 36S00401 and 36S00501 were collected from the limerock-paved part of the storage area and had arsenic concentrations of 1.8 and 2 mg/kg respectively.

Mercury was detected in sample 36S00201, collected in the north storage area, at a concentration of 25.8 mg/kg. This exceeds the residential SCTL of 3.7 mg/kg.

Barium was detected in sample 36S00701, collected from the north side of the storm drain in the northern part of the drainage swale, at a concentration of 410 mg/kg. The residential SCTL for barium is 105 mg/kg.

Benzo(a)pyrene was detected in sample 36S00701 at a concentration of 170 micrograms per kilogram ($\mu\text{g}/\text{kg}$). The sample was collected from the north side of the storm drain in the northern part of the drainage swale. The residential SCTL for benzo(a)pyrene is 100 $\mu\text{g}/\text{kg}$.

Antimony was detected in sample 36S00401 at a concentration of 12.5 mg/kg, exceeding the Florida leaching SCTL of 5 mg/kg. This sample was collected from the limerock-paved part of the south storage area.

2.2.2.2 Subsurface Soil Analytical Results Analysis of the subsurface soil collected at SA 36 detected SVOCs, and inorganics (Appendix C-2). Arsenic was detected in two samples at concentrations exceeding the residential SCTL of 0.8 mg/kg and the background screening value of 1.1 mg/kg. The samples were collected from 6 to 8 feet bls at locations in the south storage area. Sample 36B00401 had an arsenic concentration of 1.2 $\mu\text{g}/\text{kg}$ and sample 36B00501 had an arsenic concentration of 2.2 $\mu\text{g}/\text{kg}$. These arsenic concentrations are below the industrial SCTL of 3.7 mg/kg and the leaching SCTL of 29 mg/kg.

2.2.2.3 Groundwater Analytical Results Analysis of the groundwater samples collected at SA 36 detected VOCs, SVOCs, and inorganics (Appendix C-3).

Antimony was detected in two groundwater samples at concentrations above the GCTL of 6 $\mu\text{g}/\ell$. Sample 36H00101 (OLD-36-01A) had an antimony detection of 6.4 J $\mu\text{g}/\ell$, slightly above the GCTL. This sample is the filtered aliquot of 36G00101, which did not detect antimony. Duplicate samples 36G00101D and 36H00101D, had antimony concentrations of 5.2 J $\mu\text{g}/\ell$ and 3.8 J $\mu\text{g}/\ell$, respectively. Antimony was also detected in sample 36G00401 (OLD-36-04A) at a concentration of 8.9 J $\mu\text{g}/\ell$. The "J" qualifier indicates that the reported concentration is an estimated quantity, i.e., the detected concentrations were above the instrument detection limit (IDL) and below the contract required detection limit (CRDL).

Aluminum was detected in one groundwater sample at a concentration greater than the established background screening value of 4,067 $\mu\text{g}/\ell$. The aluminum concentration in sample 36G00201 (OLD-36-02A) was 6,660 $\mu\text{g}/\ell$. The filtered sample from the same well, 36H00201, had an aluminum concentration of 5,020 $\mu\text{g}/\ell$. The final turbidity of groundwater from the well after purging was greater than 200 nephelometric turbidity units (NTU) and the TSS of the sample was 13 (mg/ ℓ). The high turbidity has likely contributed to the elevated aluminum concentrations at this location.

Trichloroethene (TCE) was detected in sample 36G00601 (OLD-36-06A) at a concentration of 19 $\mu\text{g}/\ell$, versus a Federal MCL and Florida GCTL of 3 $\mu\text{g}/\ell$.

3.0 SHALLOW AND INTERMEDIATE SURFICIAL AQUIFER INVESTIGATION

The results of the initial site screening investigation indicated that the chlorinated solvents TCE and PCE were present in environmental media collected from the north storage area. The Orlando Partnering Team (OPT) approved additional investigation of the shallow surficial aquifer in this area. The investigation included direct-push technology (DPT) groundwater sampling, onsite volatiles analysis and the installation of additional monitoring wells.

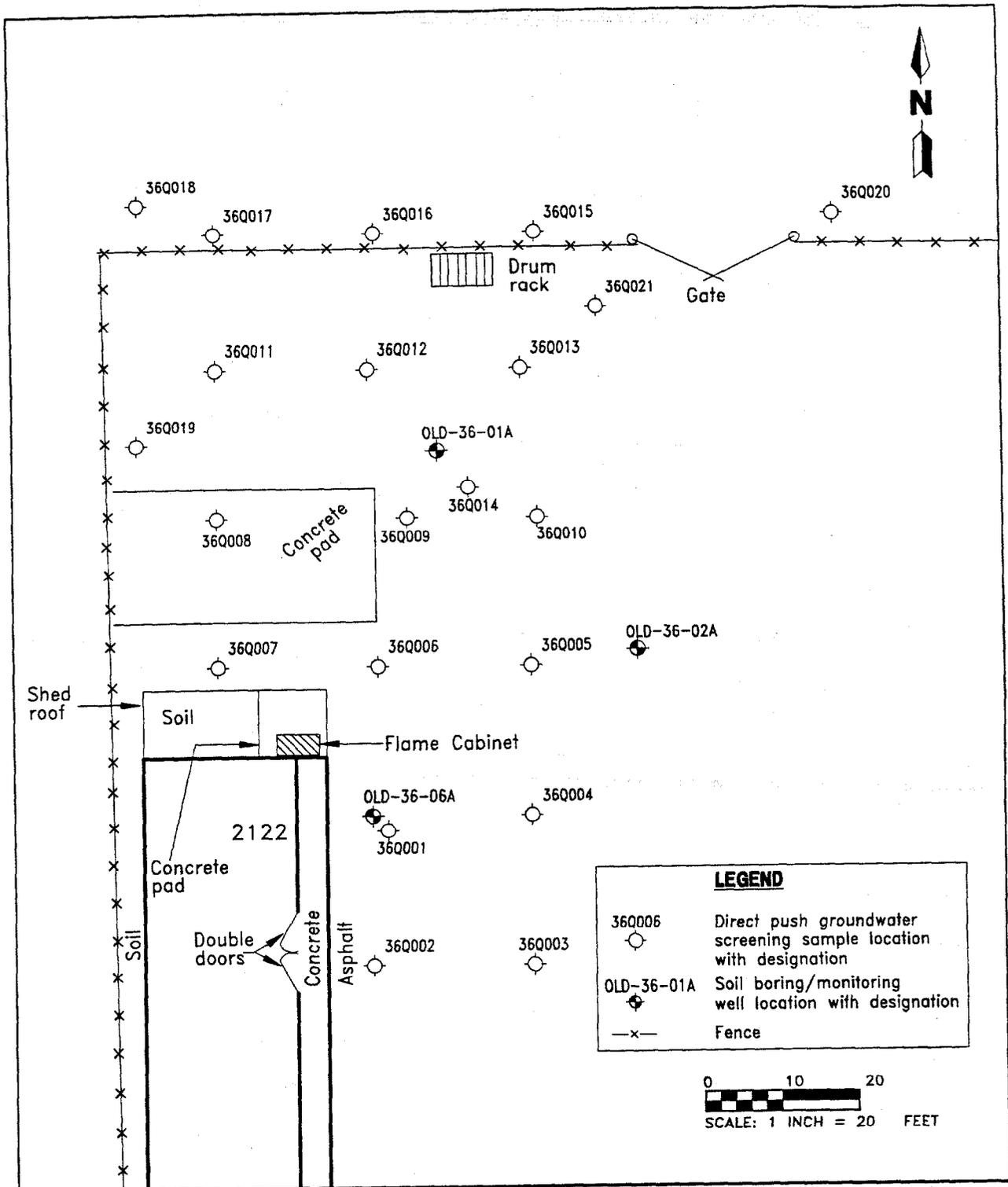
3.1 DPT INVESTIGATION. The DPT investigation was designed to delineate the distribution of chlorinated solvents in shallow groundwater at the site. DPT sampling methods were chosen to allow for rapid screening of the site. An onsite laboratory was used to provide quicker analytical turnaround times.

3.1.1 DPT Sampling Methodology A sampling grid was established around monitoring well OLD-36-06A, which had a TCE detection of 19 $\mu\text{g}/\ell$ during the initial site screening investigation. The sampling grid had a nominal 20 feet spacing between sampling nodes. Groundwater samples were collected using a DPT sampler with a screen four feet long. The sampler was pushed to the target depth and then retracted four feet to expose the screen. The planned sampling intervals were 6 to 10 feet, 15 to 19 feet, and 24 to 28 feet bls at each grid location. DPT samples were collected from one or more depth intervals at 21 locations in the north storage area (Figure 3-1). Sample location selection was determined from the results of the onsite laboratory analysis. Actual sample depth selection was based on laboratory results and lithologic conditions at each location.

3.1.2 DPT Sampling Results The DPT samples were analyzed for VOCs using a purge and trap gas chromatograph located in an onsite laboratory. Confirmation samples were sent to an offsite laboratory for TCL volatiles analysis as a quality control measure. A summary of significant findings from the onsite laboratory results is presented as Table 3-1. The complete onsite laboratory analytical results and confirmatory sample analytical results are presented in Appendix E.

Groundwater samples were collected from the interval 6 to 10 feet bls at 19 locations during the DPT investigation (Figure 3-2). This interval was selected for sampling since it bracketed the water table. Chlorinated solvents, TCE, PCE, cis-1,2-dichloroethene (cis-1,2-DCE), and trans-1,2-dichloroethene (trans-1,2-DCE) were detected in samples analyzed in the onsite laboratory. TCE was detected in 5 of the 19 samples at concentrations ranging from 0.5 to 46 $\mu\text{g}/\ell$. Two of the samples had TCE concentrations exceeding the GCTL of 3 $\mu\text{g}/\ell$. Sample 36Q00601 had a TCE concentration of 7 $\mu\text{g}/\ell$ and sample 36Q01401 had a TCE concentration of 46 $\mu\text{g}/\ell$. The detections of cis-1,2-DCE, trans-1,2-DCE, and PCE were at concentrations below the GCTLs.

DPT samples were collected from the interval 10 to 20 feet bls at 21 locations (Figure 3-3). The majority of the samples (19 of 21 locations) were collected from 15 to 19 feet bls. This interval was originally selected to allow a 5 ft vertical spacing between sample intervals. At most sampling locations, this depth coincided with a cemented sand layer that caused refusal of the DPT sampler. The cemented sand layer was encountered at a consistent depth across



**FIGURE 3-1
DIRECT PUSH GROUNDWATER
SCREENING SAMPLE LOCATIONS**



**BASE REALIGNMENT AND CLOSURE
ENVIRONMENTAL SITE SCREENING
REPORT, STUDY AREA 36**

**NAVAL TRAINING CENTER
ORLANDO, FLORIDA**

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**Table 3-1
Summary of Significant Detections,
Direct-Push Technology Groundwater Screening**

Base Realignment and Closure
Environmental Site Screening Report
Study Area 36
Naval Training Center
Orlando, Florida

Sample ID	Sampling Date	Depth b/s (ft)	1,1-DCE	cis-1,2-DCE	PCE	TCE
FDEP GCTL			7	70	3	3
36Q00101	3/31/98	6 to 10	U	U	U	2
36Q00102	3/31/98	15 to 18	U	U	U	7.5
36Q00103	3/31/98	24 to 28	U	U	U	65
36Q00201	3/31/98	6 to 10	U	U	U	U
36Q00202	3/31/98	15 to 19	U	U	U	U
36Q00203	3/31/98	21.5 to 25.5	U	U	U	U
36Q00301	3/31/98	6 to 10	U	U	U	U
36Q00302	3/31/98	15 to 19	U	U	U	U
36Q00303	3/31/98	21 to 25	U	U	U	U
36Q00401	3/31/98	6 to 10	U	U	U	U
36Q00402	3/31/98	15 to 19	U	U	U	1.4
36Q00402D	3/31/98	15 to 19	U	U	U	U
36Q00403	3/31/98	21 to 25	U	U	U	U
36Q00501	4/1/98	6 to 10	U	U	U	U
36Q00502	4/1/98	15 to 19	U	U	U	U
36Q00601	4/1/98	6 to 10	U	U	U	7.4
36Q00602	4/1/98	15 to 19	U	U	3.2	650
36Q00603	4/1/98	21 to 25	U	U	U	74 E
36Q00701	4/1/98	6 to 10	U	4.1	U	0.5
36Q00702	4/1/98	15 to 19	U	U	U	U
36Q00702D	4/1/98	15 to 19	U	U	U	U
36Q00801	4/1/98	6 to 10	U	U	U	U
36Q00802	4/1/98	15 to 19	U	U	U	U
36Q00901	4/1/98	6 to 10	U	1.3	U	1.5
36Q00902	4/1/98	11 to 13	U	12	U	43
36Q01001	4/2/98	6 to 10	U	1.3	U	U
36Q01002	4/2/98	15 to 19	6.3	U	U	U
36Q01101	4/2/98	6 to 10	U	U	U	U
36Q01102	4/2/98	15 to 19	U	5.8	U	28
36Q01201	4/2/98	6 to 10	U	U	U	U
36Q01202	4/2/98	15 to 19	U	1.9	3.2	20
36Q01301	4/2/98	6 to 10	U	U	U	U
36Q01302	4/2/98	15 to 19	10	U	U	U
See notes at end of table.						

Table 3-1 (Continued)
Summary of Significant Detections
Direct-Push Technology Groundwater Screening

Base Realignment and Closure
Environmental Site Screening Report
Study Area 36
Naval Training Center
Orlando, Florida

Sample ID	Sampling Date	Depth bls (ft)	1,1-DCE	cis-1,2-DCE	PCE	TCE
36Q01401	4/3/98	6 to 10	U	14	2.9	46 E
36Q01401D	4/3/98	6 to 10	U	7.5	2.2	36 E
36Q01402	4/3/98	15 to 19	U	5.2	U	32 E
36Q01501	4/8/98	6 to 10	U	U	U	U
36Q01502	4/8/98	15 to 19	U	U	U	4
36Q01601	4/8/98	6 to 10	U	U	U	U
36Q01601D	4/8/98	6 to 10	U	U	U	U
36Q01602	4/8/98	15 to 19	U	2.9	1.1	U
36Q01701	4/8/98	6 to 10	U	U	U	U
36Q01702	4/8/98	15 to 19	U	U	U	U
36Q01703	4/8/98	23 to 27	U	U	U	U
36Q01801	4/8/98	6 to 10	U	U	U	U
36Q01802	4/8/98	15 to 19	U	U	U	U
36Q01901	4/8/98	6 to 10	U	4.8	U	U
36Q01902	4/8/98	15 to 19	U	U	U	0.5
36Q02001	4/9/98	15 to 19	U	U	U	U
36Q02101	4/9/98	15 to 19	U	U	U	U

Notes: ID = identification. TCE = trichloroethene.
bls = below land surface. FDEP = Florida Department of Environmental Protection.
ft = feet. GCTL = groundwater cleanup target level.
DCE = dichloroethene. U = undetected.
PCE = tetrachloroethene. E = Reported concentration exceeds the highest calibration standard.

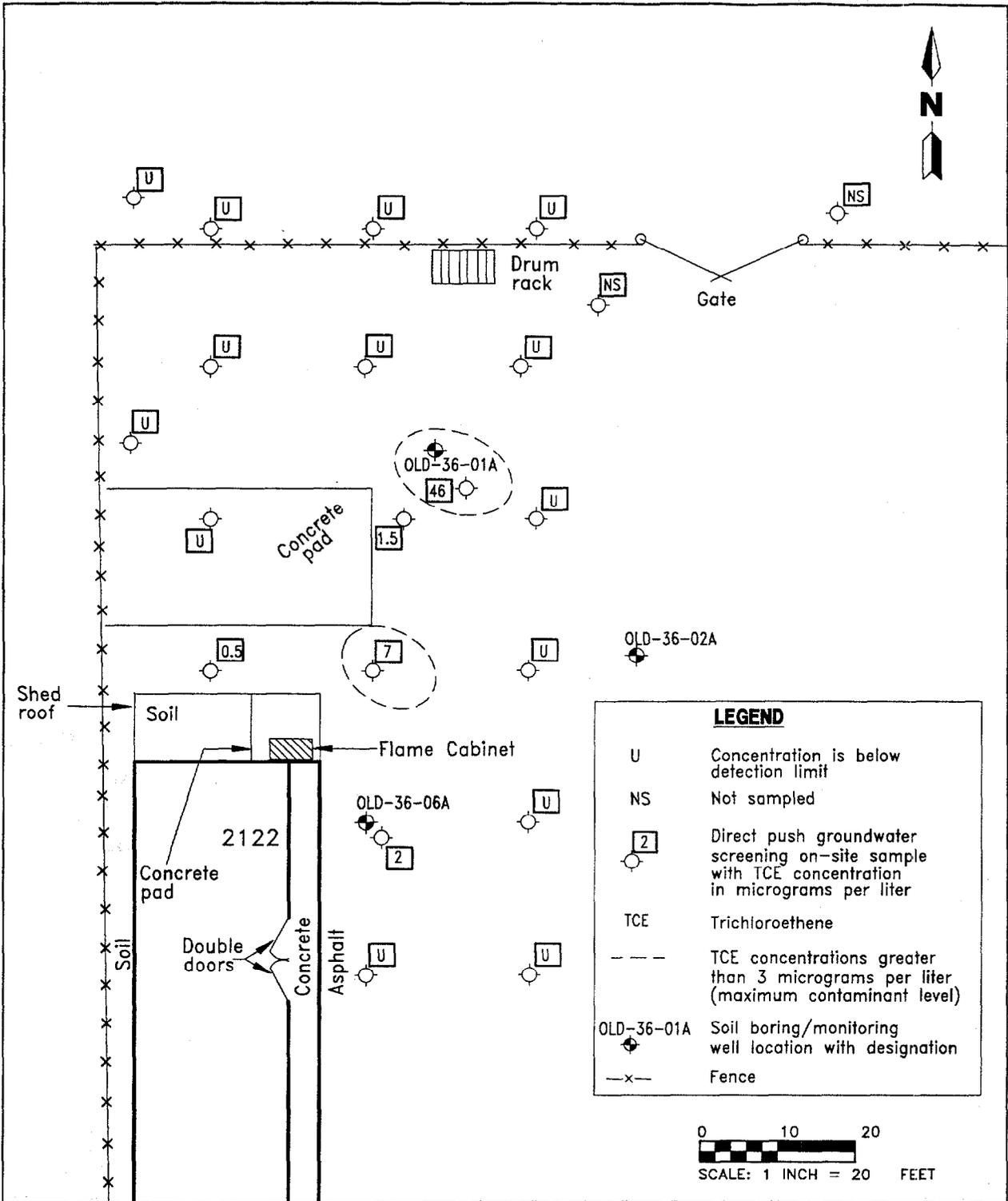


FIGURE 3-2
DIRECT PUSH GROUNDWATER SCREENING
ON-SITE LABORATORY TCE DETECTIONS
6 TO 10 FEET BELOW LAND SURFACE



BASE REALIGNMENT AND CLOSURE
ENVIRONMENTAL SITE SCREENING
REPORT, STUDY AREA 36

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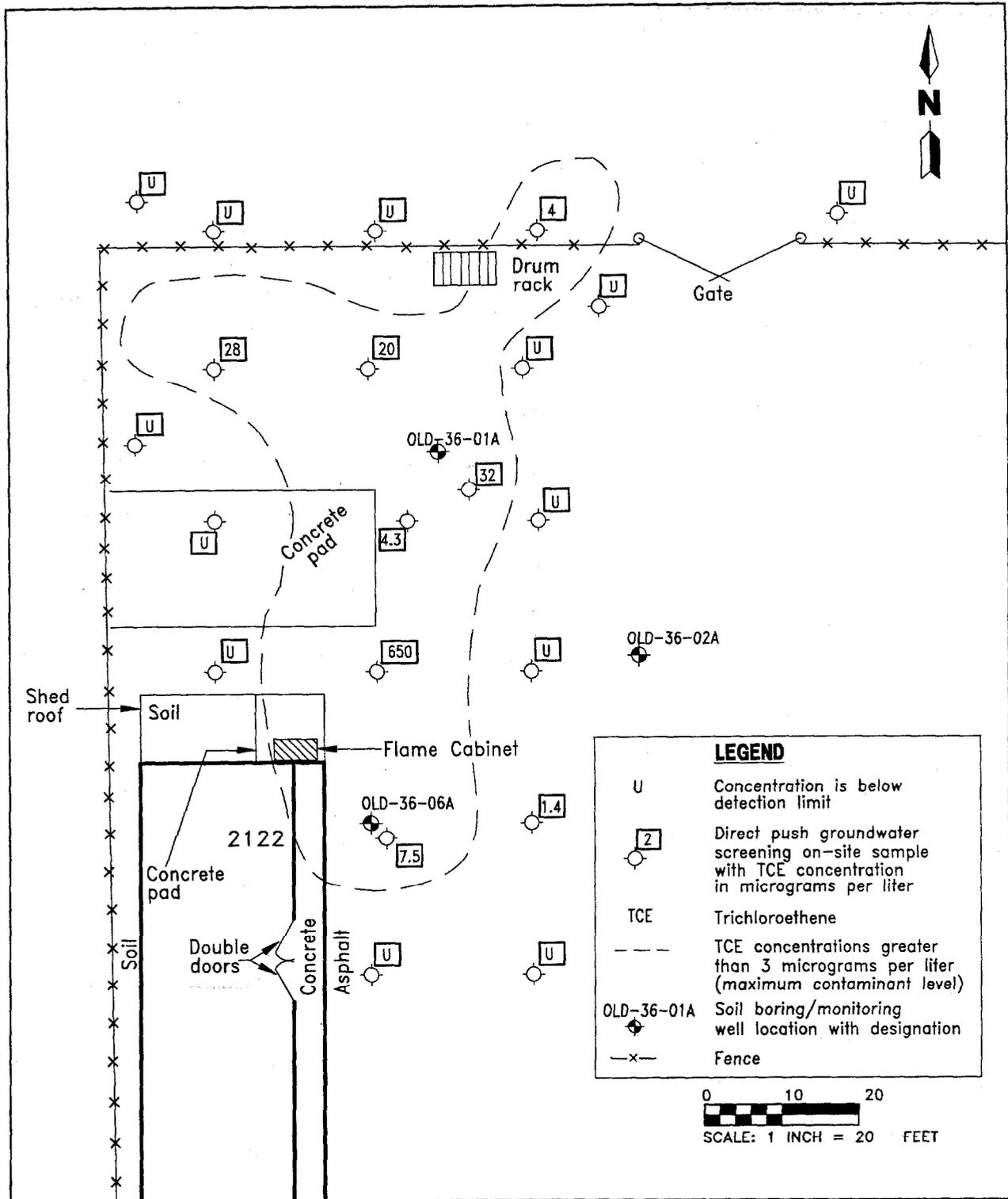


FIGURE 3-3
DIRECT PUSH GROUNDWATER SCREENING
ON-SITE LABORATORY TCE DETECTIONS
10 TO 20 FEET BELOW LAND SURFACE



BASE REALIGNMENT AND CLOSURE
ENVIRONMENTAL SITE SCREENING
REPORT, STUDY AREA 36

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the north storage area. TCE was detected in 9 of the 21 samples at concentrations ranging from 1.4 to 650 $\mu\text{g}/\ell$. At 7 of these locations, the TCE concentration exceeded the GCTL. PCE was detected in three of the samples collected between 10 and 20 feet bls. Two of the samples had PCE concentrations exceeding the GCTL of 3 $\mu\text{g}/\ell$. Samples 36Q00602 and 36Q01202 had PCE concentrations of 3.2 $\mu\text{g}/\ell$. 1,1-DCE was detected in two of the samples collected between 10 and 20 feet bls. Sample 36Q01302 had a 1,1-DCE concentration of 10 $\mu\text{g}/\ell$, exceeding the GCTL of 7 $\mu\text{g}/\ell$. Cis-1,2-DCE (5 samples) and benzene (1 sample) were detected at concentrations below their respective GCTLs in DPT samples collected from the 10 to 20 feet bls interval.

Due to the site lithology, samples could not be collected as planned from the 24 to 28 feet interval. At 6 of the 21 DPT locations where the cemented sand layer did not cause refusal above 20 feet bls, samples were collected in or below the hard layer (Figure 3-4). The four-foot sample intervals ranged from 21 to 28 feet bls. TCE was detected in 2 of the 6 samples collected deeper than 20 feet bls. Both of these detections, 65 $\mu\text{g}/\ell$ in 36Q00103 and 74 $\mu\text{g}/\ell$ in 36Q00603, were above the GCTL.

3.2 CONFIRMATION MONITORING WELLS. Five monitoring wells (OLD-36-07A, OLD-36-08B, OLD-36-09C, OLD-36-10B, and OLD-36-11C) were installed during the additional field investigation (Figure 3-5). Data from the DPT sampling event were used to determine monitoring well locations. Analytical and lithologic data were used to determine the screened interval for each of the monitoring wells. These wells were intended to verify the results of the DPT sampling event and allow for long term water quality monitoring at the site.

3.2.1 Groundwater Monitoring Well Installation and Sampling A cluster of three monitoring wells (OLD-36-07A, OLD-36-08B and OLD-36-09C) was located adjacent to the 36Q006 DPT sampling location (Figure 3-5). This location had the highest TCE concentration encountered during the DPT investigation (74 $\mu\text{g}/\ell$). The screened interval selected for each monitoring well was based on the site lithology. Well OLD-36-07A was screened from 15 to 20 feet bls, immediately above the cemented sand layer. The next deeper well, OLD-36-08B, was screened in the cemented sand and silt layer from 22.5 to 27.5 feet bls. The third well, OLD-36-09C, was screened from 30 to 35 feet bls, below the cemented sand and silt horizon. The monitoring well installation diagrams and soil boring logs are included in Appendix B.

Two other monitoring wells (OLD-36-10B and OLD-36-11C) were installed at the north end of the North Storage Area. This location for the monitoring wells was estimated to be downgradient of the previously described well cluster based on two lines of evidence: water level data and TCE concentrations.

Evaluation of static water levels measured on November 17, 1997 and January 13, 1998, from the existing shallow monitoring wells (OLD-36-01A, OLD-36-02A, and OLD-36-06A) indicated that local groundwater flow in the shallow surficial aquifer was to the northwest (Figure 3-5). The hydraulic gradient was calculated to be 0.004 to 0.005 feet per foot (ft/ft) at the time of these measurements. Static water level measurement data and gradient calculations are included in Appendix F.

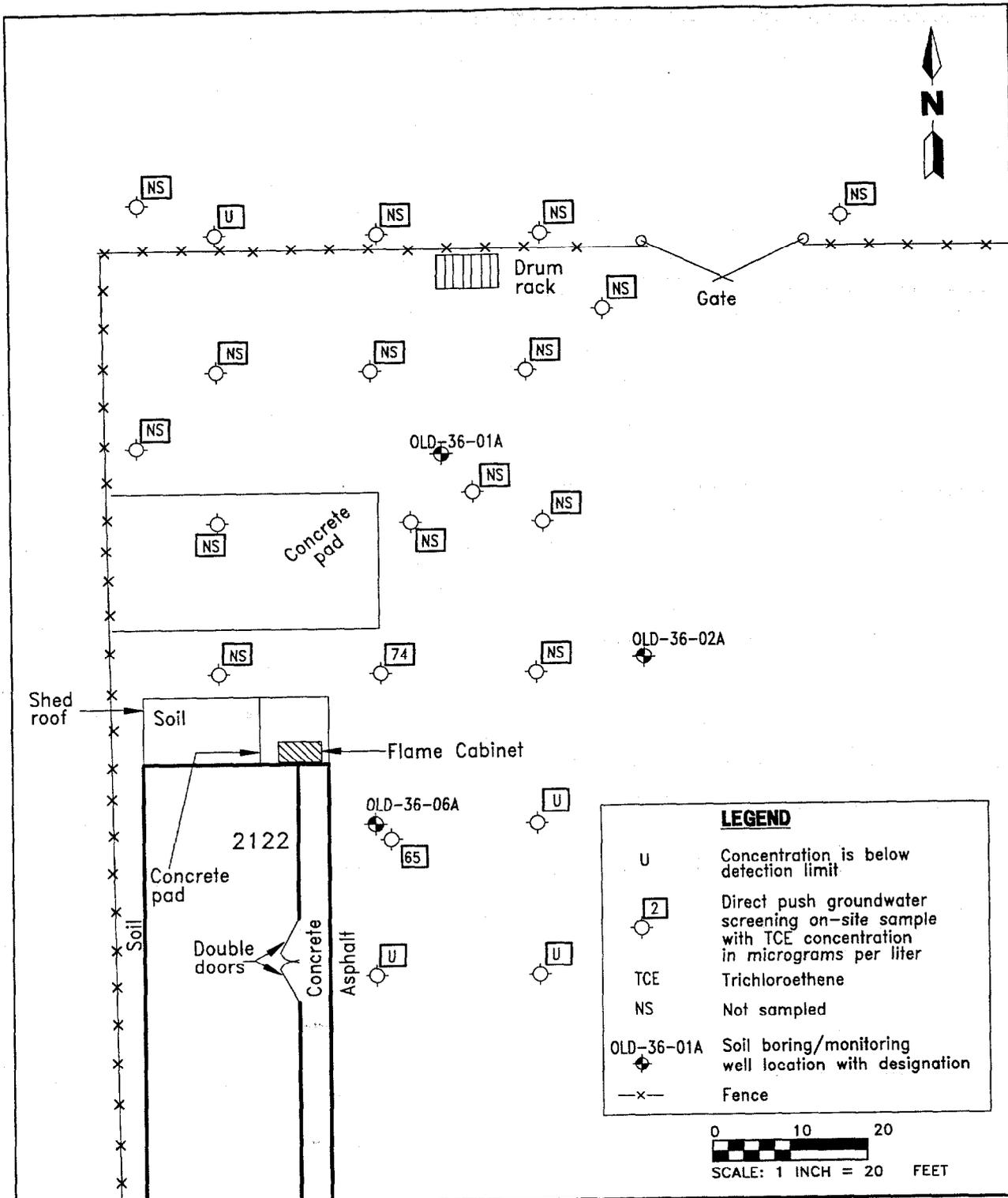


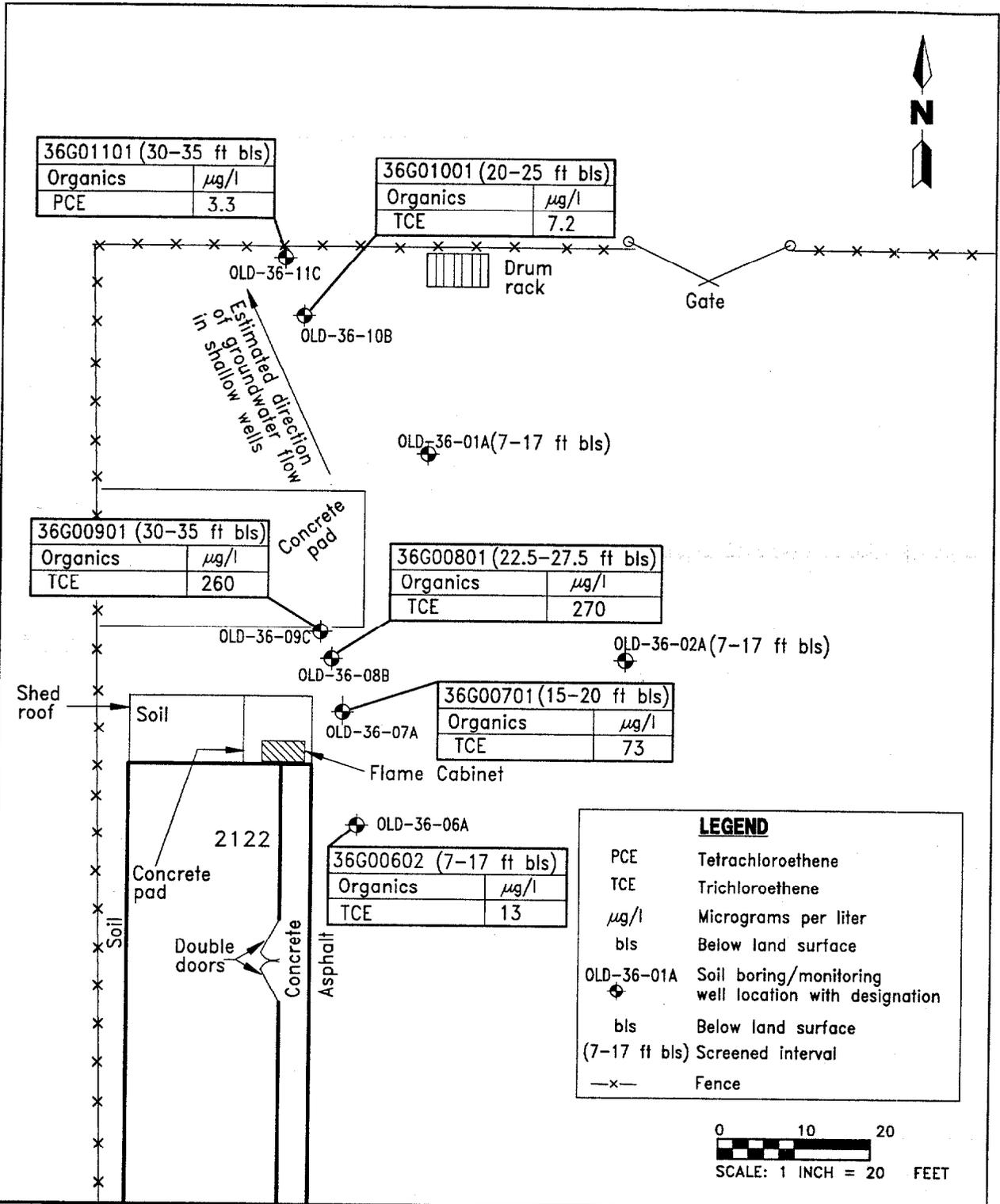
FIGURE 3-4
DIRECT PUSH GROUNDWATER SCREENING
ON-SITE LABORATORY TCE DETECTIONS
20 TO 30 FEET BELOW LAND SURFACE



BASE REALIGNMENT AND CLOSURE
ENVIRONMENTAL SITE SCREENING
REPORT, STUDY AREA 36

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**FIGURE 3-5
GROUNDWATER ORGANIC EXCEEDANCES
SECOND ROUND OF MONITORING
WELL SAMPLING (JUNE 1998)**



**BASE REALIGNMENT AND CLOSURE
ENVIRONMENTAL SITE SCREENING
REPORT, STUDY AREA 36**

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The distribution of positive TCE detections in the 10 to 20 feet bls interval was interpreted as an elongated plume extending north from the northeast corner of Building 2122 (Figure 3-3). The screened interval of OLD-36-10B (20-25 feet) corresponded to the lateral equivalent of the cemented sand layer, a silty sand and silt horizon. OLD-36-11C was screened from 30 to 35 feet bls, the same interval as OLD-36-09C. A well was not installed above the silty sand and silt horizon, since contaminants were not detected in the DPT samples in the vicinity (36Q016 and 36Q017).

Groundwater samples were collected from three existing shallow wells (OLD-36-01A, OLD-36-02A and OLD-36-06A) and the five newly installed wells (OLD-36-07A through OLD-36-11C) using low flow sampling techniques. The groundwater samples were submitted to an offsite laboratory for VOC analysis in accordance with USEPA Level IV DQOs. A synoptic round of static water level measurements was taken on July 23, 1998. Static water level measurement data are included in Appendix F.

3.2.2 Groundwater Analytical Results Exceedances of background or regulatory guidance concentrations (shaded on the positive hits tables) are displayed in chem-boxes near their respective explorations on Figure 3-5.

TCE was detected at concentrations above the GCTL of 3 $\mu\text{g}/\ell$ in one of the existing monitoring wells and four of the newly installed wells. The TCE concentration in sample 36G00602 (from well OLD-36-06A) was 13 $\mu\text{g}/\ell$, slightly less than the 19 $\mu\text{g}/\ell$ detected during the initial site screening. The TCE concentrations were also above GCTLs in the well cluster (OLD-36-07A, OLD-36-08B, and OLD-36-09C) installed at the 36Q006 DPT sample location. Sample 36G00701 had a TCE concentration of 73 $\mu\text{g}/\ell$, sample 36G00801 had a TCE concentration of 270 $\mu\text{g}/\ell$, and sample 36G00901 had a TCE concentration of 260 $\mu\text{g}/\ell$. The TCE concentration in OLD-36-10B, 7.2 $\mu\text{g}/\ell$, also was above the GCTL.

PCE was detected at concentrations above the GCTL in one of the new monitoring wells. Sample 36G01101 had a PCE concentration of 3.3 $\mu\text{g}/\ell$.

3.2.3 Site Hydrogeology Analysis of the water level elevation data collected July 23, 1998 (Appendix F) indicates that the cemented sand layer may have a strong effect on the movement of groundwater at the site. The four monitoring wells screened above the cemented sand layer, OLD-36-01A, OLD-36-02A, OLD-36-06A, and OLD-36-07A, had static water level elevations ranging from 107.32 to 107.59 feet (mean sea level [msl]). The wells screened below the cemented sand layer, OLD-36-09C and OLD-36-11C, had static water level elevations of 103.43 ft and 103.52 feet (msl). These measurements indicate that there is a head difference of over three feet between wells screened above and below the cemented sand layer. These head differences produce a downward vertical gradient of approximately 0.4 ft/ft. The two monitoring wells screened within the cemented sand layer, OLD-36-08B and OLD-36-10B, had static water level elevations of 105.29 feet and 107.13 feet. These elevation values are intermediate between those observed in wells screened above and below the cemented sand layer.

Evaluation of groundwater flow direction based on the measurements taken on July 23, 1998, indicates that groundwater flow above the cemented sand layer was to the northwest, consistent with previous measurements (Subsection 3.2.1). The hydraulic gradient at the time of these measurements was 0.006 ft/ft. Since only two monitoring wells were completed below the cemented sand layer during this phase of the investigation, determining the groundwater flow direction and

gradient in the deeper wells was not possible. However, since the water level elevation in OLD-36-11C, at the north edge of the site, was higher than OLD-36-09C, approximately 50 feet to the south, groundwater flow below the cemented sand layer could not be to the northwest. Therefore, groundwater movement is apparently in different directions above and below the cemented sand layer at this SA. Static water level measurement data and gradient calculations are included in Appendix F.

4.0 DEEP SURFICIAL AQUIFER AND NATURAL ATTENUATION INVESTIGATION

The results of the additional site screening investigation of the shallow and intermediate surficial aquifer indicated that groundwater with TCE concentrations greater than the GCTL was present over an area of approximately 5,000 square feet in the North Storage Area (Figure 3-3). Groundwater sample data also indicated that TCE or PCE concentrations greater than the GCTL extended to a depth of at least 35 feet bls at two locations (Figure 3-5). Water level elevation data indicated that groundwater flow direction probably varied with depth bls. The OPT approved additional investigation of the deep surficial aquifer and evaluation of the potential for natural attenuation of groundwater contamination at the site. The sampling plan included additional monitoring wells and sampling of the new and existing wells for water quality parameters related to naturally occurring biodegradation of chlorinated solvents.

4.1 MONITORING WELL INSTALLATION AND GROUNDWATER SAMPLING. Three monitoring wells, OLD-36-12C through OLD-36-14D, were installed during the additional field investigation (Figure 4-1). Water level and analytical data from the previous groundwater sampling event were used to determine monitoring well locations. The wells were intended to allow evaluation of groundwater flow direction in the surficial aquifer below the cemented sand layer and water quality monitoring at the top of the Hawthorn. The monitoring well installation diagrams and soil boring logs are included in Appendix B.

4.1.1 Intermediate Well Installation One monitoring well, OLD-36-12C, was installed near the northwest corner of the site (Figure 4-1). This well was screened from 30 to 35 feet bls, the same interval as OLD-36-09C and OLD-36-11C. A relative top of casing elevation survey and static water level measurements were taken from these wells after OLD-36-12C was installed. This data was used to determine groundwater flow direction below the cemented sand layer (Figure 4-1) in order to select the locations for the second deep monitoring well. The field data indicated that groundwater flow beneath the cemented sand layer was roughly to the southeast.

4.1.2 Deep Well Installation Two deep monitoring wells, OLD-36-13D and OLD-36-14D were installed with screened intervals directly above the first clay unit in the Hawthorn Formation. One well, OLD-36-13D, was located adjacent to the OLD-36-07A/08B/09C cluster, the part of the site that historically has had the highest TCE concentrations. The first clay in the Hawthorn Formation was encountered at 66 feet bls at this location, and the well was screened from 61 to 66 feet. The second deep well, OLD-36-14D, was installed approximately 50 feet to the southeast of the well cluster. This was interpreted as the down gradient direction based on measurements collected from the intermediate wells (Subsection 4.1.1). The first clay in the Hawthorn Formation was encountered at 68 feet bls at this location, and the well was screened from 63 to 68 feet bls.

4.1.3 Groundwater Analytical Results Groundwater samples were collected from the eleven monitoring wells in the northern portion of the site using low flow sampling techniques. The groundwater samples were submitted to an offsite laboratory for VOC analysis in accordance with USEPA Level IV DQOs. Exceedances of background or regulatory guidance concentrations (shaded on the positive hits tables) are displayed in chem-boxes near their respective explorations on Figure

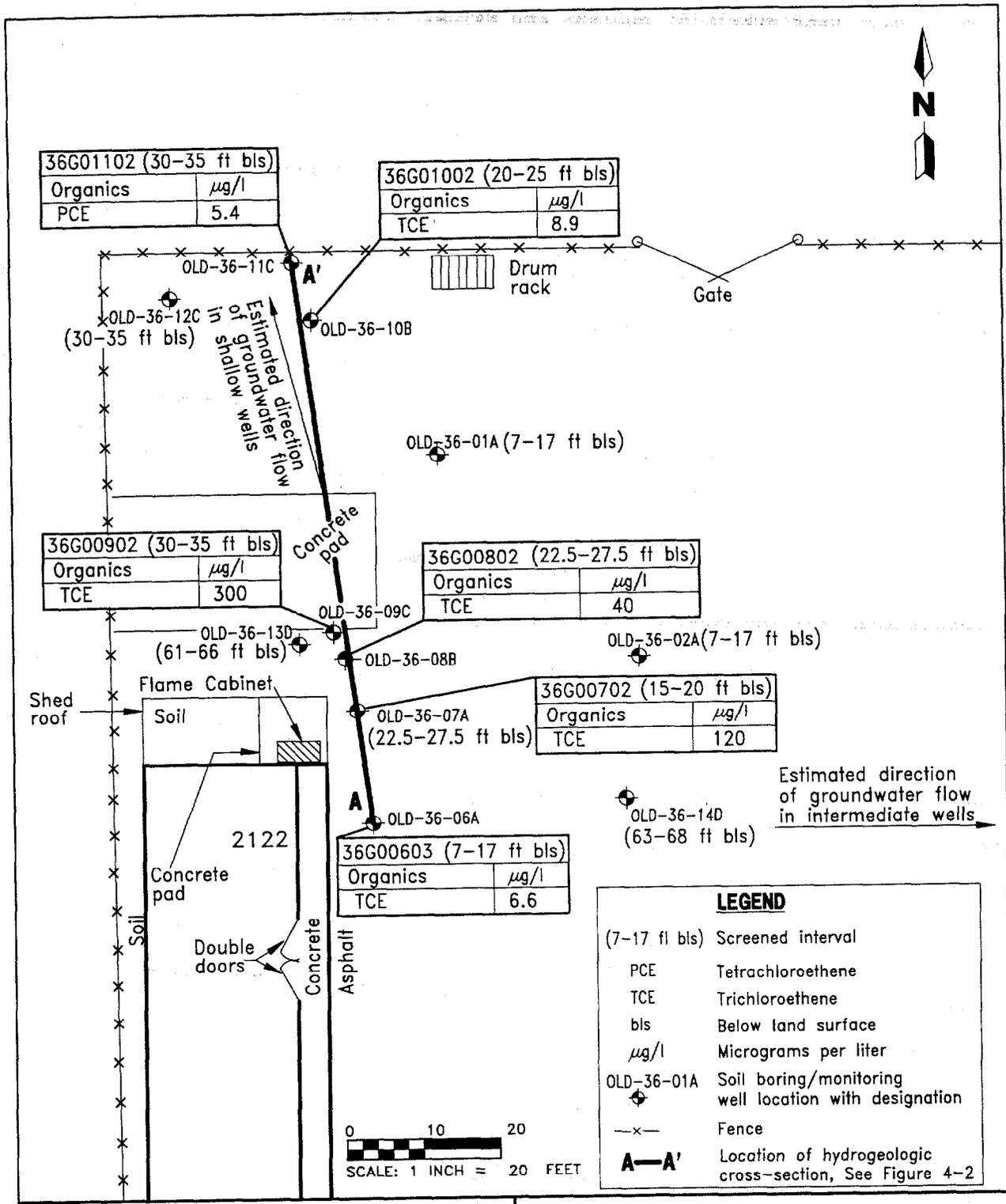


FIGURE 4-1
GROUNDWATER ORGANIC EXCEEDANCES
THIRD ROUND OF MONITORING
WELL SAMPLING (DECEMBER 1998)



BASE REALIGNMENT AND CLOSURE
ENVIRONMENTAL SITE SCREENING
REPORT, STUDY AREA 36

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4-1. A synoptic round of static water level measurements was taken on December 16, 1998. Static water level measurement data are included in Appendix F.

TCE was detected at concentrations above the GCTL of 3 $\mu\text{g}/\text{l}$ in five of the monitoring wells. The TCE concentration in sample 36G00603 (OLD-36-06A) was 6.6 $\mu\text{g}/\text{l}$, a decrease from the 13 $\mu\text{g}/\text{l}$ detected during the previous sampling event. The TCE concentrations were still above GCTLs in the three wells, OLD-36-07A, OLD-36-08B, and OLD-36-09C, installed at the 36Q006 DPT sample location. Sample 36G00702 had a TCE concentration of 120 $\mu\text{g}/\text{l}$, an increase from the 73 $\mu\text{g}/\text{l}$ previously detected. Sample 36G00802 had a TCE concentration of 40 $\mu\text{g}/\text{l}$, a significant decrease from the 270 $\mu\text{g}/\text{l}$ previously detected. Sample 36G00902 had a TCE concentration of 300 $\mu\text{g}/\text{l}$, which is similar to the 260 $\mu\text{g}/\text{l}$ detected during the previous sampling event. The TCE concentration in OLD-36-10B, 8.9 $\mu\text{g}/\text{l}$, was still above the GCTL, and slightly increased from the 7.2 $\mu\text{g}/\text{l}$ detection the first time the well was sampled.

PCE was still detected at concentrations above the GCTL of 3 $\mu\text{g}/\text{l}$ in one monitoring well. Sample 36G01102 had a PCE concentration of 5.4 $\mu\text{g}/\text{l}$, a slight increase above the 3.3 $\mu\text{g}/\text{l}$ detected in the first sampling event.

4.1.4 Site Hydrogeology Analysis of the water level elevation data collected December 16, 1998 (Appendix F), indicates that conditions were similar to those previously described (Subsection 3.2.3). The four monitoring wells screened above the cemented sand layer, OLD-36-01A, OLD-36-02A, OLD-36-06A, and OLD-36-07A, had static water level elevations ranging from 107.07 to 107.47 feet. The wells screened immediately below the cemented sand layer, OLD-36-09C, OLD-36-11C, and newly installed OLD-36-12C, had static water level elevations ranging from 103.06 ft and 104.14 feet. These measurements indicate that there is a head difference of three to four feet between wells screened above and immediately below the cemented sand layer. The downward vertical gradient at the OLD-36-07A/08B/09C cluster was approximately 0.42 ft/ft. The two monitoring wells screened within the cemented sand layer, OLD-36-08B and OLD-36-10B, had static water level elevations of 106.44 feet and 106.83 feet. These elevation values are closer to those observed in the wells screened above the cemented sand layer than noted previously. The two newly installed deep wells, OLD-36-13D and OLD-36-14D, had static water level elevations of 103.03 feet and 102.92 feet, which are similar to the elevations measured in wells OLD-36-09C and OLD-36-11C.

Evaluation of groundwater flow direction based on the measurements taken on December 16, 1998, indicates that groundwater flow above the cemented sand layer was to the northwest (Figure 4-1), consistent with previous measurements. The hydraulic gradient at the time of these measurements was 0.008 ft/ft. Elevations from the three wells screened immediately below the cemented sand layer, OLD-36-09C, OLD-36-11C, and OLD-36-12C, indicate a groundwater flow direction to the east, in the general direction of Lake Susannah (Figure 4-1). The hydraulic gradient calculated from the water level elevations in these three wells is approximately 0.04 ft/ft. The groundwater elevations measured from OLD-36-13D and OLD-36-14D, the two wells completed above the first Hawthorn Formation clay, and OLD-36-11C indicate a groundwater flow direction to the southeast. The hydraulic gradient calculated from the water level elevations in these three wells is approximately 0.003 ft/ft. Static water level measurement data and gradient calculations are included in Appendix F.

An interpretive hydrogeologic cross-section has been included as Figure 4-2. The location of the section (A-A') is indicated on Figure 4-1. The cross-section shows the relationship between water level elevation and subsurface stratigraphy interpreted from soil boring data collected from the monitoring wells. The cross-section also indicates the vertical distribution of TCE along the approximate axis of the plume.

4.2 NATURAL ATTENUATION ASSESSMENT. The natural attenuation assessment was designed to evaluate the potential for naturally-occurring microbial activity to decrease the concentrations of chlorinated hydrocarbons in groundwater at SA 36. The predominant naturally-occurring reaction to attenuate chlorinated hydrocarbons is reductive dechlorination. Field and laboratory data were collected to determine if indicators of natural attenuation by reductive dechlorination were present at the site. The onsite and offsite data from each well were used to score the probability of natural attenuation.

4.2.1 Parameters and Methodology The indicators used to judge the likelihood of biodegradation include aquifer parameters that can effect microbial productivity, presence of electron donors, redox conditions and depletion of electron acceptors, increase in metabolic and chemical byproducts of the reductive dechlorination reaction, and changes in VOC concentrations, including production of daughter products. The natural attenuation indicators were measured onsite with meters and colorimetric test kits, and offsite by a certified laboratory. Temperature, pH, and redox potential were measured onsite with meters. Colorimetric test kits were used to determine the dissolved oxygen, nitrate, sulfate, hydrogen sulfide, ferrous iron, total iron, chloride, carbon dioxide, and alkalinity concentrations for each sample. Since the colorimetric test results can be influenced by sample color, the turbidity of each sample was recorded, and where necessary, the samples were filtered with a 0.45 micron inline filter. Samples were submitted to an offsite laboratory for total organic carbon (TOC), dissolved gases (methane/ethane/ethene), and TCL volatiles analyses.

4.2.2 Scoring and Interpretation of Natural Attenuation Indicators Data from the site were evaluated using the Air Force Center for Environmental Excellence (AFCEE) natural attenuation protocol (Wiedemeier et al, 1997). The scoring system evaluates each of the indicator parameters to determine if conditions are suitable for reductive dechlorination to occur, and if evidence that reductive dechlorination has occurred is present. Points are awarded for suitable microbiological and geochemical conditions, an adequate supply of electron donors, depleted electron acceptors, increase in reaction byproducts relative to background conditions, and the presence of daughter products of the reductively dechlorinated source material. Natural attenuation assessment also evaluates spatial and temporal trends in the indicator parameters. Under normal circumstances, the greatest amount of biodegradation occurs at the center of the plume. In general, redox potentials are lower, depletion of electron acceptors is greatest, and concentrations of reaction byproducts are highest at the center of the plume. Over time, concentrations of released material and electron acceptors are expected to decrease, while concentrations of daughter products and metabolic byproducts are expected to increase.

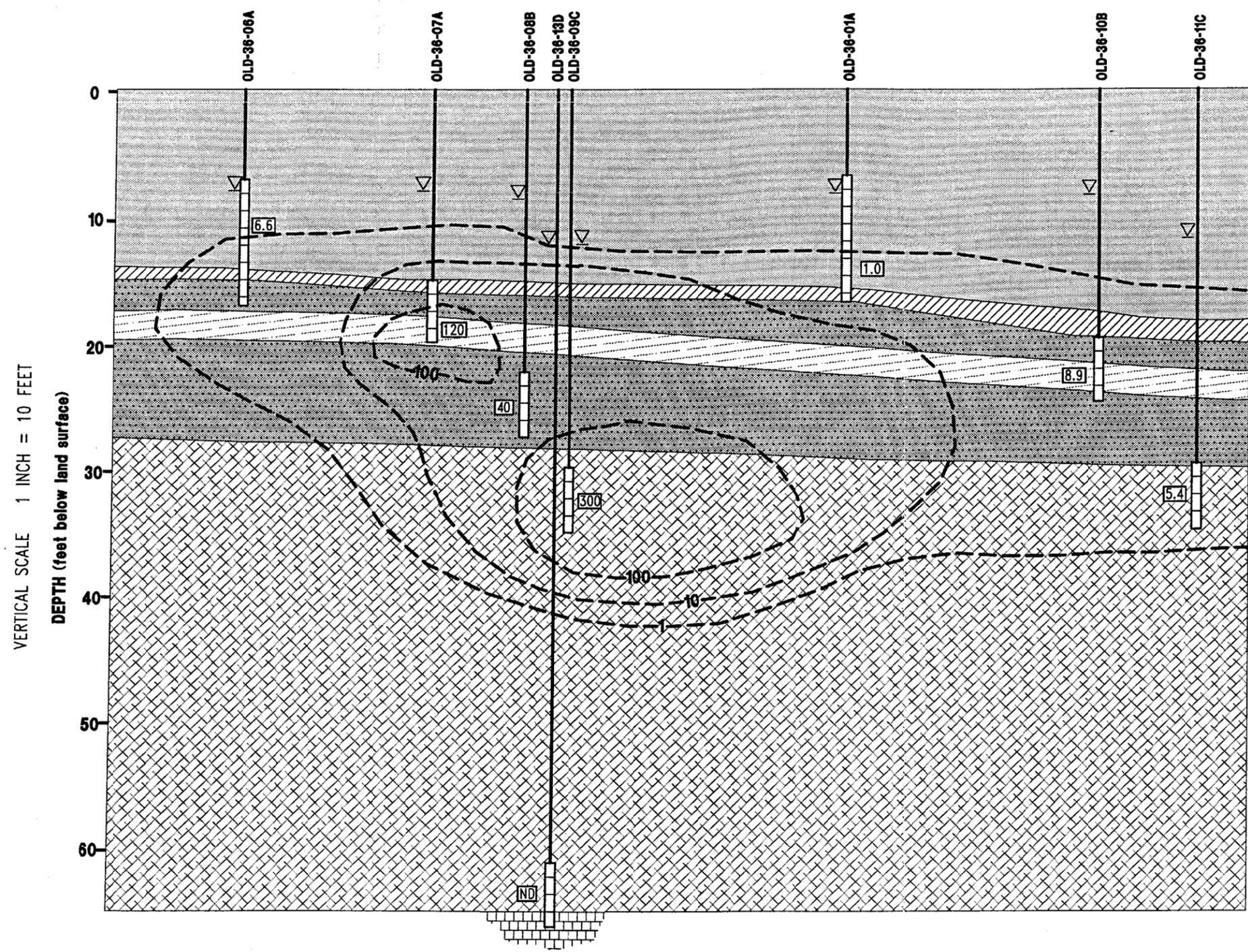
Scoring of the data collected from SA 36 indicated limited or inadequate evidence for natural biodegradation by reductive dechlorination. Some of the colorimetric tests showed interference due to sample turbidity or pH. In these cases, a

(SOUTH)

A

(NORTH)

A'



VERTICAL SCALE 1 INCH = 10 FEET

HORIZONTAL SCALE 1 INCH = 10 FEET

LEGEND

- TCE Trichloroethene
- ND Not detected
- 100-- TCE concentration contour ($\mu\text{g/l}$)
- 6.6 TCE concentration ($\mu\text{g/l}$)
- ▽ Static water level
- Gray fine SAND
- Cemented SAND
- Dark brown to black SAND
- Indurated SAND and SILT
- Tan fine SAND
- Hawthorn Formation (green clay)
- Monitoring well screen

FIGURE 4-2
INTERPRETIVE HYDROGEOLOGIC CROSS-SECTION
AND TCE PLUME CONCENTRATIONS



BASE REALIGNMENT AND CLOSURE
ENVIRONMENTAL SITE SCREENING
REPORT, STUDY AREA 36

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

00066012

measurement was not assigned to the parameter, and points were not scored. At most of the wells, pH, temperature and redox potential were at favorable levels. Low TOC concentrations and almost total lack of benzene, toluene, ethylbenzene, and xylenes constituents indicate a limited supply of electron donors. There was also little evidence of the depletion of the electron acceptors oxygen, nitrate, ferric iron, and sulfate, or of the accumulation of sulfide or ferrous iron due to the reaction of ferric iron and sulfate.

The concentration of the metabolic byproducts chloride and carbon dioxide, as well as changes in alkalinity are evaluated in reference to site background conditions. Monitoring well OLD-36-02A was selected to represent background values for wells screened above the cemented sand layer, since it is upgradient of the plume. Monitoring well OLD-36-12C is the background well for the deep and intermediate wells, since it was the most upgradient of the wells screened below the cemented sand. Concentrations of chloride and carbon dioxide were less than twice the background values in each of the wells. The two deep wells, OLD-36-13D and OLD-36-14D, did have alkalinity values greater than twice the background value for deep and intermediate wells. The other monitoring wells were below the two times background threshold for alkalinity.

One of the daughter products of the reductive dechlorination of TCE, cis-1,2-DCE, was detected in five of the monitoring wells sampled during the natural attenuation assessment. Concentrations of cis-1,2-DCE ranged from 1.8 $\mu\text{g}/\ell$ to 43 $\mu\text{g}/\ell$. Most of the locations with cis-1,2-DCE detections (wells OLD-36-01A, OLD-36-10B, OLD-36-11C and OLD-36-12C) are downgradient of the area of highest TCE detections. The highest concentration of DCE detected during the investigation was 43 $\mu\text{g}/\ell$, detected in the intermediate well OLD-36-09C. Detection of cis-1,2-DCE in deeper and downgradient wells may indicate that it is a breakdown product of TCE, rather than the material released at the site. Vinyl chloride, the daughter product of DCE dechlorination, has not been detected at the site. The concentrations of ethene, ethane, and methane detected in samples from the site were below the values considered significant in the AFCEE protocol.

Another factor in evaluating the probability of natural attenuation at a site is the change in contaminant concentration over time. The concentration of the material released should decrease while daughter product concentrations should increase. Comparison of analytical data from the July and December, 1998 sampling events shows that chlorinated solvent concentrations increased in four of the six monitoring wells with GCTL exceedances. The TCE concentration increased in OLD-36-07A from 73 to 120 $\mu\text{g}/\ell$; OLD-36-09C showed an increase from 260 to 300 $\mu\text{g}/\ell$; and the TCE concentration in OLD-36-10B increased from 7.2 to 8.9 $\mu\text{g}/\ell$. The PCE concentration in OLD-36-11C increased slightly from 3.3 to 5.4 $\mu\text{g}/\ell$. The TCE concentration did decrease in the upgradient shallow well OLD-36-06A, from 13 to 6.6 $\mu\text{g}/\ell$. The TCE concentration decrease in OLD-36-08B, from 270 to 40 $\mu\text{g}/\ell$, may be a sampling related artifact. There was little change in the concentrations of cis-1,2-DCE detected at the site over time, with the exception of the detection in OLD-36-09C during the latest round of sampling. Previously, cis-1,2-DCE was not detected in samples from this well.

5.0 STUDY AREA 36 - CONCLUSIONS AND RECOMMENDATIONS

Data collected during the site screening investigation indicate that releases due to past site practices have occurred at SA 36. The detections of contaminants for each media were screened against appropriate background or regulatory criteria. In order to evaluate suitability of the site for unrestricted transfer for re-use, positive detections in soil samples were screened against residential criteria. In the north storage area, organics and inorganics were detected at concentrations above residential screening criteria in surface soil and above groundwater screening criteria. In the south storage area, inorganics were detected at concentrations above residential screening criteria in surface soil and subsurface soil and above groundwater screening criteria. Organics were detected at concentrations above residential screening criteria in surface soil. In the drainage swales, organics and inorganics were detected at concentrations above residential screening criteria. The exceedances of screening criteria are discussed in the following sections.

5.1 NORTH STORAGE AREA. The screening investigation of the north storage area had three separate phases. Three surface soil samples and three subsurface soil samples were collected during the initial site screening investigation. Three monitoring wells were installed during the initial screening investigation. A total of 46 DPT groundwater samples were collected for onsite analysis during the second phase of the investigation. And finally, five additional monitoring wells were installed in the north storage area and were sampled along with three existing wells. Over the course of the site screening investigation, 11 monitoring wells were installed in the north storage area, and three separate groundwater sampling events were conducted.

5.1.1 Surface Soil There were exceedances in surface soil of screening criteria in the North Storage Area for the following compounds: TRPH and mercury.

5.1.1.1 TRPH Two surface soil samples collected from the north storage area (36S00101 and 36S00601) had TRPH concentrations above screening criteria. Sample 36S00101 had TRPH at 500 mg/kg and 36S00601 had TRPH at 620 mg/kg. The residential SCTL for TRPH is 350 mg/kg and the industrial SCTL is 2,500 mg/kg.

TRPH was detected at concentrations above the residential SCTL in five of the nine surface soil samples collected during the initial screening investigation. At the other sample locations, TRPH was detected at concentrations below the residential SCTL.

Harding Lawson Associates (HLA) concludes that TRPH detections in the north storage area are consistent with a site that has been paved with asphalt and used for vehicle parking for an extended period. Because the planned reuse for this parcel is residential, HLA recommends that the two surface soil locations be resampled to confirm the TRPH concentrations. If verified, HLA recommends that the TRPH be delineated by collecting additional samples. Any surface soil that has TRPH concentrations exceeding 350 mg/kg should be excavated and removed, unless a focused risk assessment can demonstrate that the TRPH concentrations present do not exceed Florida's risk target levels.

5.1.1.2 **Mercury** One surface soil sample, 36S00201, had a mercury detection of 25.8 mg/kg. This concentration is above the residential SCTL of 3.7 mg/kg and below the industrial SCTL of 28 mg/kg.

In addition to 36S00201, eight other surface soil samples were collected from the site during the initial site screening investigation. Of the eight other surface soil samples, three did not detect mercury, three had mercury concentrations below the established background screening concentration of 0.07 mg/kg, and the other two samples had mercury concentrations below the residential SCTL of 3.7 mg/kg.

HLA concludes that the concentration of mercury in surface soil sample 36S00201 is an anomalous hot spot and is not representative of mercury concentrations site-wide. Removal of the hot spot at 36S00201 should eliminate potential site re-use restrictions due to mercury exceedance of the residential SCTL. HLA recommends that surface soil be removed in the vicinity of sample 36S00201 to a depth of two feet and disposed of appropriately. Confirmation samples should be collected from the sides and floor of the excavation to ensure that surface soil with mercury concentrations above the residential SCTL has been removed.

5.1.2 Subsurface Soil There were no exceedances in subsurface soil of screening criteria in the North Storage Area.

5.1.3 Groundwater There were exceedances in groundwater of screening criteria in the North Storage Area for the following compounds: chlorinated solvents, aluminum and antimony.

5.1.3.1 Chlorinated Solvents The results of the site screening investigation indicate that TCE and/or PCE concentrations in groundwater exceeded the GCTL in an area of approximately 5,000 square feet in the North Storage Area. Chlorinated solvent detections exceeded screening criteria at a depth of 35 feet bls at two locations. The maximum TCE concentration detected in a monitoring well during the site screening investigation, 300 $\mu\text{g}/\ell$, was from one of the 35 foot wells. Samples from two monitoring wells screened directly above the first Hawthorn clay did not have any VOCs at concentrations above screening criteria.

Water level data indicate that a cemented sand layer approximately 20 feet bls has an influence on groundwater gradient and flow direction at the site. Wells screened above the cemented sand layer have static water level elevations from three to four feet higher than those in the wells screened below the cemented sand. The groundwater flow direction above the cemented sand layer is generally to the northwest, but below the cemented sand, groundwater flow is to the east, in the general direction of Lake Susannah.

HLA concludes that the detection of chlorinated solvents in the groundwater at the north storage area justifies an evaluation of remedial alternatives. HLA recommends conducting a focused feasibility study to select an appropriate remediation option, in light of information from Operable Unit 4 and other NTC Orlando sites with chlorinated solvent releases. The collection of hydraulic conductivity data from existing monitoring wells may provide data useful in the focused feasibility study. Based on data collected during the site screening investigation, natural biodegradation appears to have had limited effect on chlorinated solvent concentrations in the groundwater. HLA recommends that a temporary groundwater use restriction be put in place to protect human health and the environment until the selected remedial option is implemented.

5.1.3.2 **Aluminum** One groundwater sample, 36G00201, had an aluminum detection above screening criteria. The detected concentration of 6,660 $\mu\text{g}/\ell$ was greater than the established background screening value of 4,067 $\mu\text{g}/\ell$ and the GCTL of 200 $\mu\text{g}/\ell$. In this case, the GCTL is a secondary standard, based on taste or appearance of potable water, rather than acute or chronic health effects. The health-based USEPA Region III RBC for aluminum in water is 37,000 $\mu\text{g}/\ell$.

The aluminum concentration in this groundwater sample is probably artificially elevated due to suspended sediment. The turbidity of the unfiltered sample was greater than 200 NTUs and the TSS was 13 mg/ℓ . The corresponding filtered groundwater sample, 36H00201, had an aluminum concentration of 5,020 $\mu\text{g}/\ell$, a reduction of almost 25 percent.

HLA concludes that the concentration of aluminum in the groundwater at OLD-36-02A is not at a level that justifies the need for additional delineation or remediation. In all likelihood, the elevated aluminum concentration is due to suspended sediment in the sample. However, HLA recommends that well OLD-36-02A be resampled to confirm the aluminum concentration.

5.1.3.3 **Antimony** One filtered groundwater sample, 36H00101, had an antimony detection above screening criteria. The detected concentration of 6.4 J $\mu\text{g}/\ell$ was above the background screening value of 4.1 $\mu\text{g}/\ell$ and slightly above the GCTL of 6 $\mu\text{g}/\ell$. Antimony was not detected in 36G00101, which was unfiltered. In the field duplicate samples, 36G00101D and 36H00101D, antimony was detected at 5.2 J and 3.8 J $\mu\text{g}/\ell$, respectively. The "J" flags on the detections indicate that the reported concentration is an estimated quantity. The quantities are estimated because the detected concentrations were above the IDL and below the CRDL.

The antimony concentration in this groundwater sample may be artificially elevated due to suspended sediment. The turbidity of the unfiltered sample was 86.4 NTUs and the TSS was 6 mg/ℓ . The filtered groundwater turbidity was 23.5 NTU.

HLA concludes that the detection of antimony in the groundwater at OLD-36-01A is not at a concentration that justifies the need for additional delineation or remediation. The antimony concentration detected, 6.4 $\mu\text{g}/\ell$, minimally exceeds the GCTL of 6 $\mu\text{g}/\ell$. Three of the four groundwater samples collected from the well, including both unfiltered samples, had antimony concentrations below the GCTL. The anomalous antimony concentration in sample 36H00101 may be due to suspended sediment in the sample. HLA recommends that well OLD-36-01A be resampled to confirm the antimony concentration.

5.2 SOUTH STORAGE AREA. The screening investigation of the south storage area was part of the initial screening investigation. Three surface soil samples and three subsurface soil samples were collected during the initial site screening investigation. Three monitoring wells were installed in the south storage area, and they were sampled once.

5.2.1 Surface Soil There were exceedances in surface soil of screening criteria in the south storage area for the following compounds: arsenic, TRPH, and antimony.

5.2.1.1 Arsenic Three surface soil samples, 36S00301, 36S00401 and 36S00501, had arsenic concentrations above the residential screening criteria. Sample

36S00301 had an arsenic concentration of 1.6 mg/kg, 36S00401 had an arsenic concentration of 1.8 mg/kg, and 36S00501 had an arsenic concentration of 2 mg/kg. These concentrations are above the residential SCTL of 0.8 mg/kg and the established background screening concentration of 1.0 mg/kg, but all are below the industrial SCTL of 3.7 mg/kg.

Six other surface soil samples from other parts of the SA were submitted for metals analysis during the initial site screening investigation. Four of these samples did not detect arsenic, and the other two had arsenic concentrations of 1.0 mg/kg, the established background concentration. Since most of the south storage area was not asphalt-paved, it is likely that the arsenic may be related to pesticide application that occurred in this area of the site. Much of the remaining SA is paved.

HLA concludes that arsenic detections in the south storage area are consistent with a site where normal pesticide applications have occurred. HLA also concludes that the detections of arsenic in the surface and subsurface soil are not at concentrations that represent a hazard to site workers involved in demolition or excavation activities. Because the planned reuse for this parcel is residential, HLA recommends that the three surface soil locations be resampled to confirm the arsenic concentrations. If verified, HLA recommends that the arsenic be delineated by collecting additional samples. Any surface soil that has arsenic concentrations exceeding 1 mg/kg should be excavated and removed, unless a focused risk assessment can demonstrate that the arsenic concentrations present do not exceed Florida's risk target levels.

5.2.1.2 TRPH One surface soil sample collected from the south storage area, 36S00301, had a TRPH concentration above screening criteria. Sample 36S00301, collected from beneath the asphalt paved area, had a TRPH concentration of 540 mg/kg. The residential SCTL for TRPH is 350 mg/kg and the industrial SCTL is 2,500 mg/kg. The two surface soil samples collected from the limerock paved area, 36S00401 and 36S00501, had substantially lower TRPH concentrations.

TRPH was detected at concentrations above the residential SCTL in five of the nine surface soil samples collected during the initial screening investigation. At the other sample locations, TRPH was detected at concentrations below the residential SCTL.

HLA concludes that TRPH detections in the south storage area are consistent with a site that has historically been paved with asphalt and used for vehicle parking. HLA also concludes that the detection of TRPH in the surface soil is not at a concentration that represents a hazard to site workers involved in site demolition activities. Because the planned reuse for this parcel is residential, HLA recommends that the surface soil location be resampled to confirm the TRPH concentration. If verified, HLA recommends that the TRPH be delineated by collecting additional samples. Any surface soil that has TRPH concentrations exceeding 350 mg/kg should be excavated and removed, unless a focused risk assessment can demonstrate that the TRPH concentrations present do not exceed Florida's risk target levels.

5.2.1.3 Antimony Antimony was detected in sample 36S00401 at a concentration of 12.5 mg/kg, exceeding the Florida leaching SCTL of 5 mg/kg. This sample was collected from the limerock-paved part of the south storage area. The subsurface

soil sample at this location (36B00401), collected from 6 to 8 feet bls, had an antimony concentration of 2.3 mg/kg, which is also below the leaching SCTL.

Eight other surface soil samples were collected from the site during the initial site screening investigation. Of the eight other surface soil samples, four did not detect antimony, and four had antimony concentrations below the leaching SCTL of 5 mg/kg.

HLA concludes that the concentration of antimony in surface soil sample 36S00401 is an anomalous hot spot and is not representative of antimony concentrations site-wide. Removal of the hot spot at 36S00401 should eliminate any potential groundwater impact due to antimony exceedance of the leaching SCTL. HLA recommends that surface soil be removed from around the 36S00401 sample location to a depth of two feet and disposed of appropriately. Confirmation samples should be collected from the sides and floor of the excavation to ensure that surface soil with antimony concentrations above the leaching SCTL has been removed.

5.2.2 Subsurface Soil Arsenic was detected in two subsurface soil samples at concentrations above the residential SCTL and established background screening concentration. Sample 36B00401 had an arsenic concentration of 1.2 mg/kg, and 36B00501 had a concentration of 2.2 mg/kg. While these concentrations are above the residential screening criteria, they are below the industrial SCTL of 3.7 mg/kg and the leaching SCTL of 29 mg/kg.

These samples were both collected from the interval of 6 to 8 feet bls, and the concentrations of arsenic only marginally exceeded the residential SCTL. Nevertheless, because the planned reuse for this parcel is residential, HLA recommends that the two subsurface soil locations be resampled to confirm the arsenic concentrations. If verified, HLA recommends that the arsenic be delineated by collecting additional samples. Any subsurface soil that has arsenic concentrations exceeding 1 mg/kg should be excavated and removed, unless a focused risk assessment can demonstrate that the arsenic concentrations present do not exceed Florida's risk target levels.

5.2.3 Groundwater - Antimony One groundwater sample in the south storage area, 36G00401, had an antimony detection above screening criteria. The detected concentration of 8.9 $\mu\text{g}/\ell$ was above the background screening value of 4.1 $\mu\text{g}/\ell$ and the GCTL of 6 $\mu\text{g}/\ell$. The corresponding surface soil sample, 36S00401, had an antimony concentration of 12.5 mg/kg, which is below the direct exposure screening criteria, but exceeds the leaching SCTL of 5 mg/kg. The subsurface soil sample at this location (36B00401), collected from 6 to 8 feet bls, had an antimony concentration of 2.3 mg/kg, which is also below the leaching SCTL.

The antimony concentration in groundwater sample 36G00401 may be artificially elevated due to suspended sediment. The turbidity of the unfiltered sample was 19.6 NTUs. The filtered groundwater turbidity was 3.2 NTU, and the filtered groundwater sample, 36H00401, had an antimony concentration of 5.2 $\mu\text{g}/\ell$, a reduction of almost 40 percent.

HLA concludes that the detection of antimony in the groundwater at OLD-36-04A is not at a concentration that justifies the need for additional delineation or remediation. The antimony concentration detected, 8.9 $\mu\text{g}/\ell$, exceeds the GCTL of 6 $\mu\text{g}/\ell$. In all likelihood, the elevated antimony concentration is an artifact due to suspended sediment in the sample. HLA recommends that the antimony

concentration in the well OLD-36-04A be confirmed. However, well OLD-36-04A was abandoned in October 1998 along with two other monitoring wells in the south storage area, so another shallow well will need to be installed to accomplish this.

5.3 DRAINAGE SWALE. The screening investigation of the drainage swales along the western boundary of the site was part of the initial screening investigation. Three surface soil samples were collected during the initial site screening investigation.

5.3.1 Barium One surface soil sample, 36S00701, had a barium detection above screening values. The detected concentration of 410 mg/kg was above the residential SCTL of 105 mg/kg and below the industrial SCTL of 87,000 mg/kg.

In addition to 36S00701, eight other surface soil samples were collected from the site during the initial site screening investigation. Of the eight other surface soil samples, six had barium concentrations below the established background screening concentration of 8.7 mg/kg, and the other two samples had barium concentrations below the residential SCTL of 105 mg/kg.

HLA concludes that the concentration of barium in surface soil sample 36S00701 is an anomalous hot spot and is not representative of barium concentrations site-wide. Removal of the hot spot at 36S00701 will eliminate potential site re-use restrictions due to the barium exceedance of the residential SCTL. HLA recommends that surface soil be removed from around the 36S00701 sample location to a depth of two feet and disposed of appropriately. Confirmation samples should be collected from the sides of the excavation to ensure that surface soil with barium concentration above the residential SCTL has been removed.

5.3.2 Benzo(a)pyrene One surface soil sample, 36S00701, had a benzo(a)pyrene detection above screening values. The detected concentration of 170 $\mu\text{g}/\text{kg}$ was above both the residential SCTL of 100 $\mu\text{g}/\text{kg}$ and the residential RBC of 88 $\mu\text{g}/\text{kg}$ and below the industrial SCTL of 500 $\mu\text{g}/\text{kg}$.

In addition to 36S00701, eight other surface soil samples were collected from the site during the initial site screening investigation. Of the eight other surface soil samples, five did not detect benzo(a)pyrene, and the other three samples had benzo(a)pyrene concentrations below the residential SCTL of 100 $\mu\text{g}/\text{kg}$ and the residential RBC of 88 $\mu\text{g}/\text{kg}$.

HLA concludes that the concentration of benzo(a)pyrene in surface soil sample 36S00701 is an anomalous hot spot and is not representative of benzo(a)pyrene concentrations site-wide. Removal of the hot spot at 36S00701 will eliminate potential site re-use restrictions due to benzo(a)pyrene exceedance of the residential SCTL. HLA recommends that surface soil be removed from around the 36S00701 sample location to a depth of two feet and disposed of appropriately. Confirmation samples should be collected from the sides of the excavation to ensure that surface soil with benzo(a)pyrene concentration above the residential SCTL has been removed.

5.3.3 TRPH Two surface soil samples collected from the drainage swales, 36S00701 and 36S00801, had TRPH concentrations above screening criteria. Sample 36S00701

had a TRPH at 430 mg/kg, and 36S00801 had TRPH at 770 mg/kg. The residential SCTL for TRPH is 350 mg/kg and the industrial SCTL is 2,500 mg/kg.

TRPH was detected at concentrations above the residential SCTL in five of the nine surface soil samples collected during the initial screening investigation. At the other sample locations, TRPH was detected at concentrations below the residential SCTL.

HLA concludes that TRPH detections in the drainage swales are consistent with a site that has received runoff from areas paved with asphalt and which has historically been used for vehicle parking. HLA also concludes that the detection of TRPH in the surface soil is not at a concentration that represents a hazard to site workers involved in site demolition activities. Because the planned reuse for this parcel is residential, HLA recommends that the surface soil locations be resampled to confirm the TRPH concentrations. If verified, HLA recommends that the TRPH be delineated by collecting additional samples. Any surface soil that has TRPH concentrations exceeding 350 mg/kg should be excavated and removed, unless a focused risk assessment can demonstrate that the TRPH concentrations present do not exceed Florida's risk target levels.

5.4 SUMMARY OF RECOMMENDATIONS. Based on site conditions identified during the site screening investigation at SA 36, HLA has concluded that the following actions will be protective of human health and the environment:
Resampling of surface or subsurface soil to verify initial findings followed by delineation and remediation, if appropriate, is recommended for

- TRPH exceedances in surface soil at two locations in the north storage area and one location in the south storage area
- arsenic exceedances in surface soil at three locations and in subsurface soil at two locations, all located in the south storage area

Resampling of three monitoring wells for TAL metals is recommended due to:

- antimony concentration greater than the Florida GCTL in well OLD-36-01A in the north storage area
- aluminum concentration greater than the background screening concentration in well OLD-36-02A in the north storage area
- antimony concentration greater than the Florida GCTL in well OLD-36-04A in the south storage area

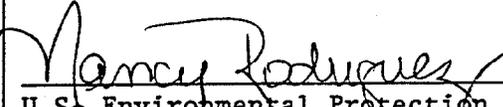
A limited soil removal is recommended at the following "hot spots":

- mercury exceedance in surface soil at one location in the north storage area
- antimony leaching SCTL exceedance in surface soil at one location in the south storage area
- barium and benzo(a)pyrene exceedances in surface soil at one location (colocated) in the drainage swales

The chlorinated solvent plume beneath the north storage area will require selection and implementation of a suitable remedial alternative. Remedial alternatives being considered for Operable Unit 4 may be appropriate, as the contaminants are similar, although they occur at significantly lower concentrations at SA 36.

HLA recommends that SA 36 be reclassified from 7/Gray to 6/Red.

The undersigned members of the OPT concur with the findings and recommendations of the preceding investigation.

<u>STUDY AREA 36</u>	
 _____ U.S. Environmental Protection Agency, Region IV	<u>7-21-99</u> Date
 _____ Florida Department of Environmental Protection	<u>7-21-99</u> Date
 _____ U.S. Department of the Navy	<u>7-21-99</u> Date

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APPENDIX A

SOIL GAS SURVEY LABORATORY DATA

Fixed Laboratory Services

Target Environmental Services, Inc.

Mobile Laboratory Services

Samples Collected: 8/21/97 - 8/28/97
 Samples Received: 8/25/97 - 9/3/97
 Samples Analyzed: 8/26/97 - 9/8/97
 Samples Reported: 9/8/97
 Project Identification: NTC, ORLANDO
 Target Job Code: ABT002
 Purchase Order:

Collected by: ABB-ES
 Received by: Guy Auld
 Analyzed by: Guy Auld
 Reported by: Guy Auld
 Report Revision: 0.0
 Method Deviations: none
 Sampling Method: Passive soil gas

Client: ABB-ES
 Client Address: 1080 Woodcock Road, Suite 100
 Orlando, FL 32803
 Client Contact: John Kaiser
 Client Phone: 407-895-8845
 Client Fax: 407-896-6150

USEPA Method 8260 Passive Soil Gas Sample Analysis Results (in ug/L)

Compound	MW ¹ (g/mole)	MDL ² (ug/L)	PQL ³ (ug/L)	LABDUP										
				35V-00101 (ug/L)	35V-00201 (ug/L)	35V-00801 (ug/L)	35V-00701 (ug/L)	35V-00901 (ug/L)	36V-00901 (ug/L)	36V-01001 (ug/L)	36V-01101 (ug/L)	36V-01201 (ug/L)	35V-04701 (ug/L)	
Dichlorodifluoromethane	120.91	0.688	10.0	ND	ND									
Chloromethane	50.49	0.559	10.0	ND	ND									
Vinyl Chloride	62.50	1.011	10.0	ND	ND									
Bromomethane	94.94	0.444	10.0	ND	ND									
Chloroethane	64.51	0.341	10.0	ND	ND									
Trichlorofluoromethane	138.38	0.334	10.0	ND	ND									
1,1-Dichloroethene	96.94	0.298	2.50	ND	ND									
Methylene Chloride	84.93	0.448	2.50	ND	ND									
trans-1,2-Dichloroethene	96.94	0.419	2.50	ND	ND									
1,1-Dichloroethane	98.96	0.488	2.50	ND	ND									
cis-1,2-Dichloroethene	96.94	0.455	2.50	ND	ND									
Chloroform	119.38	0.472	2.50	ND	ND									
1,1,1-Trichloroethane	133.40	0.465	2.50	ND	ND									
Carbon Tetrachloride	153.82	0.421	2.50	ND	ND									
Benzene	78.11	0.496	2.50	ND	ND									
1,2-Dichloroethane	98.96	0.639	2.50	ND	ND									
Trichloroethylene	131.39	0.135	2.50	ND	ND									
1,2-Dichloropropane	112.99	0.121	2.50	ND	ND									
Bromodichloromethane	163.83	0.161	2.50	ND	ND									
Dibromomethane	173.83	0.525	2.50	ND	ND									
cis-1,3-Dichloropropene	110.97	0.306	2.50	ND	ND									
Toluene	92.14	0.156	2.50	ND	ND									
trans-1,3-Dichloropropene	110.97	0.412	2.50	ND	ND									
1,1,2-Trichloroethane	133.40	0.551	2.50	ND	ND									
Tetrachloroethylene or PCE	165.83	0.231	2.50	ND	ND	ND	ND	ND	3.59	ND	ND	ND	ND	ND
Dibromochloromethane	208.28	0.264	2.50	ND	ND									
1,2-Dibromoethane	187.86	0.562	2.50	ND	ND									
Chlorobenzene	112.56	0.171	2.50	ND	ND									
1,1,1,2-Tetrachloroethane	167.85	0.117	2.50	ND	ND									
Ethylbenzene	106.17	0.308	2.50	ND	ND									
m&p-Xylene	106.17	0.473	5.00	ND	ND									
o-Xylene	106.17	0.227	2.50	ND	ND									
Styrene	104.15	0.181	2.50	ND	ND									
Isopropylbenzene	120.19	0.339	2.50	ND	ND									
Bromoform	252.73	0.338	2.50	ND	ND									
1,1,2,2-Tetrachloroethane	167.85	0.649	2.50	ND	ND									
1,2,3-Trichloropropane	147.43	0.451	2.50	ND	ND									
Bromobenzene	157.01	0.127	2.50	ND	ND									
tert-Butylbenzene	134.22	0.296	2.50	ND	ND									
sec-Butylbenzene	134.22	0.301	2.50	ND	ND									
1,3-Dichlorobenzene	147.00	0.084	2.50	ND	ND									
1,4-Dichlorobenzene	147.00	0.047	2.50	ND	ND									
1,2-Dichlorobenzene	147.00	0.164	2.50	ND	ND									
n-Butylbenzene	134.22	0.276	2.50	ND	ND									
1,2,4-Trichlorobenzene	181.45	0.406	2.50	ND	ND									
Hexachlorobutadiene	260.76	0.461	2.50	ND	ND									
Naphthalene	128.17	0.715	2.50	ND	ND									
1,2,3-Trichlorobenzene	181.45	0.573	2.50	ND	ND									

Sample Condition (S,U)/Dilution (PQL) 1 S S S S S S S S S S S S S

S: Satisfactory, U: Unsatisfactory

U: see sample narrative

Dilution: numerical dilution factor used to quantitate analyte concentrations within the range of the initial calibration curve

¹ MW: Molecular Weight

² MDL: Method detection limit according to EPA 40CFR Part 136 Appendix B

³ PQL: Practical quantitation limit using the initial calibration curve low point and dilution factors where applicable

SAMPLE NARRATIVE:

Quality Control Analyst: 

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Fixed Laboratory Services

Target Environmental Services, Inc.

Mobile Laboratory Services

Samples Collected: 8/21/97 - 8/28/97
 Samples Received: 8/25/97 - 9/3/97
 Samples Analyzed: 8/26/97 - 9/8/97
 Samples Reported: 9/8/97
 Project Identification: NTC, ORLANDO
 Target Job Code: ABT002
 Purchase Order:

Collected by: ABB-ES
 Received by: Guy Auld
 Analyzed by: Guy Auld
 Reported by: Guy Auld
 Report Revision: 0.0
 Method Deviations: none
 Sampling Method: Passive soil gas

Client: ABB-ES
 Client Address: 1080 Woodcock Road, Suite 100
 Orlando, FL 32803
 Client Contact: John Kaiser
 Client Phone: 407-895-8845
 Client Fax: 407-896-6150

USEPA Method 8260 Passive Soil Gas Sample Analysis Results (in ug/L)

Compound	MW ¹ (g/mole)	MDL ² (ug/L)	PQL ³ (ug/L)	36V- 04601 (ug/L)	36V- 05101 (ug/L)	36V- 05001 (ug/L)	36V- 04901 (ug/L)	36V- 05601 (ug/L)	36V- 05501 (ug/L)	36V- 05401 (ug/L)	36V- 05301 (ug/L)	36V- 05201 (ug/L)	36V- 04701 (ug/L)
Dichlorodifluoromethane	120.91	0.688	10.0	ND									
Chloromethane	50.49	0.559	10.0	ND									
Vinyl Chloride	62.50	1.011	10.0	ND									
Bromomethane	94.94	0.444	10.0	ND									
Chloroethane	64.51	0.341	10.0	ND									
Trichlorofluoromethane	138.38	0.334	10.0	ND									
1,1-Dichloroethene	96.94	0.298	2.50	ND									
Methylene Chloride	84.93	0.448	2.50	ND									
trans-1,2-Dichloroethene	96.94	0.419	2.50	ND									
1,1-Dichloroethane	98.96	0.488	2.50	ND									
cis-1,2-Dichloroethene	96.94	0.455	2.50	ND									
Chloroform	119.38	0.472	2.50	ND									
1,1,1-Trichloroethane	133.40	0.465	2.50	ND									
Carbon Tetrachloride	153.82	0.421	2.50	ND									
Benzene	78.11	0.496	2.50	ND									
1,2-Dichloroethane	98.96	0.639	2.50	ND									
Trichloroethylene	131.39	0.135	2.50	ND									
1,2-Dichloropropane	112.99	0.121	2.50	ND									
Bromodichloromethane	163.83	0.161	2.50	ND									
Dibromomethane	173.83	0.525	2.50	ND									
cis-1,3-Dichloropropene	110.97	0.306	2.50	ND									
Toluene	92.14	0.156	2.50	ND									
trans-1,3-Dichloropropene	110.97	0.412	2.50	ND									
1,1,2-Trichloroethane	133.40	0.551	2.50	ND									
Tetrachloroethylene or PCE	165.83	0.231	2.50	ND									
Dibromochloromethane	208.28	0.264	2.50	ND									
1,2-Dibromoethane	187.86	0.562	2.50	ND									
Chlorobenzene	112.56	0.171	2.50	ND									
1,1,1,2-Tetrachloroethane	167.85	0.117	2.50	ND									
Ethylbenzene	106.17	0.308	2.50	ND									
m&p-Xylene	106.17	0.473	5.00	ND									
o-Xylene	106.17	0.227	2.50	ND									
Styrene	104.15	0.181	2.50	ND									
Isopropylbenzene	120.19	0.339	2.50	ND									
Bromoform	252.73	0.338	2.50	ND									
1,1,2,2-Tetrachloroethane	167.85	0.649	2.50	ND									
1,2,3-Trichloropropane	147.43	0.451	2.50	ND									
Bromobenzene	157.01	0.127	2.50	ND									
tert-Butylbenzene	134.22	0.296	2.50	ND									
sec-Butylbenzene	134.22	0.301	2.50	ND									
1,3-Dichlorobenzene	147.00	0.084	2.50	ND									
1,4-Dichlorobenzene	147.00	0.047	2.50	ND									
1,2-Dichlorobenzene	147.00	0.164	2.50	ND									
n-Butylbenzene	134.22	0.276	2.50	ND									
1,2,4-Trichlorobenzene	181.45	0.406	2.50	ND									
Hexachlorobutadiene	260.76	0.461	2.50	ND									
Naphthalene	128.17	0.715	2.50	ND									
1,2,3-Trichlorobenzene	181.45	0.573	2.50	ND									

Sample Condition (S,U)/Dilution (PQL)

S: Satisfactory, U: Unsatisfactory

U: see sample narrative

Dilution: numerical dilution factor used to quantitate analyte concentrations within the range of the initial calibration curve

¹ MW: Molecular Weight

² MDL: Method detection limit according to EPA 40CFR Part 136 Appendix B

³ PQL: Practical quantitation limit using the initial calibration curve low point and dilution factors where applicable

SAMPLE NARRATIVE:

Quality Control Analyst:



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Fixed Laboratory Services

Target Environmental Services, Inc.

Mobile Laboratory Services

Samples Collected: 8/21/97 - 8/28/97
 Samples Received: 8/25/97 - 9/3/97
 Samples Analyzed: 8/26/97 - 9/8/97
 Samples Reported: 9/8/97
 Project Identification: NTC, ORLANDO
 Target Job Code: ABT002
 Purchase Order:

Collected by: ABB-ES
 Received by: Guy Auld
 Analyzed by: Guy Auld
 Reported by: Guy Auld
 Report Revision: 0.0
 Method Deviations: none
 Sampling Method: Passive soil gas

Client: ABB-ES
 Client Address: 1080 Woodcock Road, Suite 100
 Orlando, FL 32803
 Client Contact: John Kaiser
 Client Phone: 407-895-8845
 Client Fax: 407-896-6150

USEPA Method 8260 Passive Soil Gas Sample Analysis Results (in ug/L)

Compound	MW ¹ (g/mole)	MDL ² (ug/L)	PQL ³ (ug/L)	36V- 04201 (ug/L)	36V- 03801 (ug/L)	36V- 03701 (ug/L)	36V- 03201 (ug/L)	36V- 03201D (ug/L)	36V- 03101 (ug/L)	36V- 02601 (ug/L)	36V- 02501 (ug/L)	36V- 02001 (ug/L)	36V- 01901 (ug/L)
Dichlorodifluoromethane	120.91	0.688	10.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	50.49	0.559	10.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	62.50	1.011	10.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	94.94	0.444	10.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	64.51	0.341	10.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	138.38	0.334	10.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	96.94	0.298	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	84.93	0.448	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	96.94	0.419	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	98.96	0.488	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	96.94	0.455	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	119.38	0.472	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	133.40	0.465	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	153.82	0.421	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	78.11	0.496	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	98.96	0.639	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene	131.39	0.135	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	112.99	0.121	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	163.83	0.161	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromomethane	173.83	0.525	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	110.97	0.306	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	92.14	0.156	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	110.97	0.412	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	133.40	0.551	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
tetrachloroethylene or PCE	165.83	0.231	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
tribromochloromethane	208.28	0.264	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	187.86	0.562	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	112.56	0.171	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	167.85	0.117	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	106.17	0.308	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m&p-Xylene	106.17	0.473	5.00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
o-Xylene	106.17	0.227	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	104.15	0.181	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	120.19	0.339	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	252.73	0.338	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	167.85	0.649	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	147.43	0.451	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromobenzene	157.01	0.127	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
tert-Butylbenzene	134.22	0.296	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
sec-Butylbenzene	134.22	0.301	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	147.00	0.084	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	147.00	0.047	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	147.00	0.164	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Butylbenzene	134.22	0.276	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	181.45	0.406	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexachlorobutadiene	260.76	0.461	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	128.17	0.715	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichlorobenzene	181.45	0.573	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Sample Condition (S,U)/Dilution (PQL) 1 S S S S S S S S S S S S S

S: Satisfactory, U: Unsatisfactory

U: see sample narrative

Dilution: numerical dilution factor used to quantitate analyte concentrations within the range of the initial calibration curve

¹ MW: Molecular Weight

² MDL: Method detection limit according to EPA 40CFR Part 136 Appendix B

³ PQL: Practical quantitation limit using the initial calibration curve low point and dilution factors where applicable

SAMPLE NARRATIVE:

Quality Control Analyst: 

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Fixed Laboratory Services

Target Environmental Services, Inc.

Mobile Laboratory Services

Samples Collected: 8/21/97 - 8/28/97
 Samples Received: 8/25/97 - 9/3/97
 Samples Analyzed: 8/26/97 - 9/8/97
 Samples Reported: 9/8/97
 Project Identification: NTC, ORLANDO
 Target Job Code: ABT002
 Purchase Order:

Collected by: ABB-ES
 Received by: Guy Auld
 Analyzed by: Guy Auld
 Reported by: Guy Auld
 Report Revision: 0.0
 Method Deviations: none
 Sampling Method: Passive soil gas

Client: ABB-ES
 Client Address: 1080 Woodcock Road, Suite 100
 Orlando, FL 32803
 Client Contact: John Kaiser
 Client Phone: 407-895-8845
 Client Fax: 407-896-6150

USEPA Method 8260 Passive Soil Gas Sample Analysis Results (in ug/L)

Compound	MW ¹ (g/mole)	MDL ² (ug/L)	PQL ³ (ug/L)	36V- 01401 (ug/L)	36V- 01301 (ug/L)	36V- 00801 (ug/L)	36V- 00701 (ug/L)	36V- 00101 (ug/L)	36V- 00101D (ug/L)	36V- 00201 (ug/L)	36V- 00301 (ug/L)	36V- 00401 (ug/L)	36V- 00501 (ug/L)
Dichlorodifluoromethane	120.91	0.688	10.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	50.49	0.559	10.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	62.50	1.011	10.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	94.94	0.444	10.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	64.51	0.341	10.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	138.38	0.334	10.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	96.94	0.298	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	84.93	0.448	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	96.94	0.419	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	98.96	0.488	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	96.94	0.455	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	119.38	0.472	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	133.40	0.465	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	153.82	0.421	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	78.11	0.496	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	98.96	0.639	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene	131.39	0.135	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	112.99	0.121	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	163.83	0.161	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromomethane	173.83	0.525	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	110.97	0.306	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	92.14	0.156	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	110.97	0.412	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	133.40	0.551	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene or PCE	165.83	0.231	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	208.28	0.264	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	187.86	0.562	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	112.56	0.171	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	167.85	0.117	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	106.17	0.308	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m&p-Xylene	106.17	0.473	5.00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
o-Xylene	106.17	0.227	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	104.15	0.181	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	120.19	0.339	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	252.73	0.338	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	167.85	0.649	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	147.43	0.451	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromobenzene	157.01	0.127	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
tert-Butylbenzene	134.22	0.296	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
sec-Butylbenzene	134.22	0.301	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	147.00	0.084	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	147.00	0.047	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	147.00	0.164	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Butylbenzene	134.22	0.276	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	181.45	0.406	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexachlorobutadiene	260.76	0.461	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	128.17	0.715	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichlorobenzene	181.45	0.573	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Sample Condition (S,U)/Dilution (PQL)

S: Satisfactory, U: Unsatisfactory

U: see sample narrative

Dilution: numerical dilution factor used to quantitate analyte concentrations within the range of the initial calibration curve

¹ MW: Molecular Weight

² MDL: Method detection limit according to EPA 40CFR Part 136 Appendix B

³ PQL: Practical quantitation limit using the initial calibration curve low point and dilution factors where applicable

SAMPLE NARRATIVE:

Quality Control Analyst:



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Fixed Laboratory Services

Target Environmental Services, Inc.

Mobile Laboratory Services

Samples Collected: 8/21/97 - 8/28/97
 Samples Received: 8/25/97 - 9/3/97
 Samples Analyzed: 8/26/97 - 9/8/97
 Samples Reported: 9/8/97
 Project Identification: NTC, ORLANDO
 Target Job Code: ABT002
 Purchase Order:

Collected by: ABB-ES
 Received by: Guy Auld
 Analyzed by: Guy Auld
 Reported by: Guy Auld
 Report Revision: 0.0
 Method Deviations: none
 Sampling Method: Passive soil gas

Client: ABB-ES
 Client Address: 1080 Woodcock Road, Suite 100
 Orlando, FL 32803
 Client Contact: John Kaiser
 Client Phone: 407-895-8845
 Client Fax: 407-896-6150

USEPA Method 8260 Passive Soil Gas Sample Analysis Results (in ug/L)

Compound	MW ¹ (g/mole)	MDL ² (ug/L)	PQL ³ (ug/L)	LABDUP LABDUP										
				36V-04701 (ug/L)	36V-00501 (ug/L)	36V-00601 (ug/L)	30V-00301 (ug/L)	30V-00401 (ug/L)	30V-00501 (ug/L)	30V-00501D (ug/L)	30V-00601 (ug/L)	30V-00701 (ug/L)	30V-01601 (ug/L)	
Dichlorodifluoromethane	120.91	0.688	10.0	ND	ND	ND	ND	ND						
Chloromethane	50.49	0.559	10.0	ND	ND	ND	ND	ND						
Vinyl Chloride	62.50	1.011	10.0	ND	ND	ND	ND	ND						
Bromomethane	94.94	0.444	10.0	ND	ND	ND	ND	ND						
Chloroethane	64.51	0.341	10.0	ND	ND	ND	ND	ND						
Trichlorofluoromethane	138.38	0.334	10.0	ND	ND	ND	ND	ND						
1,1-Dichloroethene	96.94	0.298	2.50	ND	ND	ND	ND	ND						
Methylene Chloride	84.93	0.448	2.50	ND	ND	ND	ND	ND						
trans-1,2-Dichloroethene	96.94	0.419	2.50	ND	ND	ND	ND	ND						
1,1-Dichloroethane	98.96	0.488	2.50	ND	ND	ND	ND	ND						
cis-1,2-Dichloroethene	96.94	0.455	2.50	ND	ND	ND	ND	ND						
Chloroform	119.38	0.472	2.50	ND	ND	ND	ND	ND						
1,1,1-Trichloroethane	133.40	0.465	2.50	ND	ND	ND	ND	ND						
Carbon Tetrachloride	153.82	0.421	2.50	ND	ND	ND	ND	ND						
Benzene	78.11	0.496	2.50	ND	ND	ND	ND	ND						
1,2-Dichloroethane	98.96	0.639	2.50	ND	ND	ND	ND	ND						
Trichloroethylene	131.39	0.135	2.50	ND	ND	ND	ND	ND						
1,2-Dichloropropane	112.99	0.121	2.50	ND	ND	ND	ND	ND						
Bromodichloromethane	163.83	0.161	2.50	ND	ND	ND	ND	ND						
Dibromomethane	173.83	0.525	2.50	ND	ND	ND	ND	ND						
cis-1,3-Dichloropropene	110.97	0.306	2.50	ND	ND	ND	ND	ND						
Toluene	92.14	0.156	2.50	ND	ND	ND	ND	ND						
trans-1,3-Dichloropropene	110.97	0.412	2.50	ND	ND	ND	ND	ND						
1,1,2-Trichloroethane	133.40	0.551	2.50	ND	ND	ND	ND	ND						
Tetrachloroethylene or PCE	165.83	0.231	2.50	ND	ND	ND	ND	ND						
Dibromochloromethane	208.28	0.264	2.50	ND	ND	ND	ND	ND						
1,2-Dibromoethane	187.86	0.562	2.50	ND	ND	ND	ND	ND						
Chlorobenzene	112.56	0.171	2.50	ND	ND	ND	ND	ND						
1,1,1,2-Tetrachloroethane	167.85	0.117	2.50	ND	ND	ND	ND	ND						
Ethylbenzene	106.17	0.308	2.50	ND	ND	ND	ND	ND						
m&p-Xylene	106.17	0.473	5.00	ND	ND	ND	ND	ND						
o-Xylene	106.17	0.227	2.50	ND	ND	ND	ND	ND						
Styrene	104.15	0.181	2.50	ND	ND	ND	ND	ND						
Isopropylbenzene	120.19	0.339	2.50	ND	ND	ND	ND	ND						
Bromoform	252.73	0.338	2.50	ND	ND	ND	ND	ND						
1,1,2,2-Tetrachloroethane	167.85	0.649	2.50	ND	ND	ND	ND	ND						
1,2,3-Trichloropropane	147.43	0.451	2.50	ND	ND	ND	ND	ND						
Bromobenzene	157.01	0.127	2.50	ND	ND	ND	ND	ND						
tert-Butylbenzene	134.22	0.296	2.50	ND	ND	ND	ND	ND						
sec-Butylbenzene	134.22	0.301	2.50	ND	ND	ND	ND	ND						
1,3-Dichlorobenzene	147.00	0.084	2.50	ND	ND	ND	ND	ND						
1,4-Dichlorobenzene	147.00	0.047	2.50	ND	ND	ND	ND	ND						
1,2-Dichlorobenzene	147.00	0.164	2.50	ND	ND	ND	ND	ND						
n-Butylbenzene	134.22	0.276	2.50	ND	ND	ND	ND	ND						
1,2,4-Trichlorobenzene	181.45	0.406	2.50	ND	ND	ND	ND	ND						
Hexachlorobutadiene	260.76	0.461	2.50	ND	ND	ND	ND	ND						
Naphthalene	128.17	0.715	2.50	ND	ND	ND	ND	ND						
1,2,3-Trichlorobenzene	181.45	0.573	2.50	ND	ND	ND	ND	ND						

Sample Condition (S,U)/Dilution (PQL)

S: Satisfactory, U: Unsatisfactory

U: see sample narrative

Dilution: numerical dilution factor used to quantitate analyte concentrations within the range of the initial calibration curve

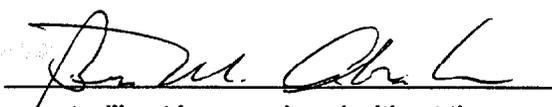
¹ MW: Molecular Weight

² MDL: Method detection limit according to EPA 40CFR Part 136 Appendix B

³ PQL: Practical quantitation limit using the initial calibration curve low point and dilution factors where applicable

SAMPLE NARRATIVE:

Quality Control Analyst:



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Fixed Laboratory Services

Target Environmental Services, Inc.

Mobile Laboratory Services

Samples Collected: 8/21/97 - 8/28/97
 Samples Received: 8/25/97 - 9/3/97
 Samples Analyzed: 8/26/97 - 9/8/97
 Samples Reported: 9/8/97
 Project Identification: NTC, ORLANDO
 Target Job Code: ABT002
 Purchase Order:

Collected by: ABB-ES
 Received by: Guy Auld
 Analyzed by: Guy Auld
 Reported by: Guy Auld
 Report Revision: 0.0
 Method Deviations: none
 Sampling Method: Passive soil gas

Client: ABB-ES
 Client Address: 1080 Woodcock Road, Suite 100
 Orlando, FL 32803
 Client Contact: John Kaiser
 Client Phone: 407-895-8845
 Client Fax: 407-896-6150

USEPA Method 8260 Passive Soil Gas Sample Analysis Results (in ug/L)

Compound	MW ¹ (g/mole)	MDL ² (ug/L)	PQL ³ (ug/L)	36V-	36V-	36V-	36V-	36V-	36V-	36V-	36V-	36V-	36V-
				01801D (ug/L)	02901 (ug/L)	02801 (ug/L)	03301 (ug/L)	03401 (ug/L)	03501 (ug/L)	03601 (ug/L)	04001 (ug/L)	03901 (ug/L)	04401 (ug/L)
Dichlorodifluoromethane	120.91	0.688	10.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	50.49	0.559	10.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	62.50	1.011	10.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	94.94	0.444	10.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	64.51	0.341	10.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	138.38	0.334	10.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	96.94	0.298	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	84.93	0.448	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	96.94	0.419	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	98.96	0.488	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	96.94	0.455	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	119.38	0.472	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	133.40	0.465	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	153.82	0.421	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	78.11	0.496	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	98.96	0.639	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene	131.39	0.135	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	112.99	0.121	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	163.83	0.161	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromomethane	173.83	0.525	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	110.97	0.306	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	92.14	0.156	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	110.97	0.412	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	133.40	0.551	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene or PCE	165.83	0.231	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	208.28	0.264	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	187.86	0.562	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	112.56	0.171	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	167.85	0.117	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	106.17	0.308	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m&p-Xylene	106.17	0.473	5.00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
o-Xylene	106.17	0.227	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	104.15	0.181	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	120.19	0.339	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	252.73	0.338	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	167.85	0.649	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	147.43	0.451	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromobenzene	157.01	0.127	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
tert-Butylbenzene	134.22	0.296	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
sec-Butylbenzene	134.22	0.301	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	147.00	0.084	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	147.00	0.047	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	147.00	0.164	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Butylbenzene	134.22	0.276	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	181.45	0.406	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexachlorobutadiene	260.76	0.461	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	128.17	0.715	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichlorobenzene	181.45	0.573	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Sample Condition (S,U)/Dilution (PQL) 1 S S S S S S S S S S S S S

S: Satisfactory, U: Unsatisfactory

U: see sample narrative

Dilution: numerical dilution factor used to quantitate analyte concentrations within the range of the initial calibration curve

¹ MW: Molecular Weight

² MDL: Method detection limit according to EPA 40CFR Part 136 Appendix B

³ PQL: Practical quantitation limit using the initial calibration curve low point and dilution factors where applicable

SAMPLE NARRATIVE:

Quality Control Analyst: 

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Fixed Laboratory Services

Target Environmental Services, Inc.

Mobile Laboratory Services

Samples Collected: 8/21/97 - 8/28/97
 Samples Received: 8/25/97 - 9/3/97
 Samples Analyzed: 8/26/97 - 9/8/97
 Samples Reported: 9/8/97
 Project Identification: NTC, ORLANDO
 Target Job Code: ABT002
 Purchase Order:

Collected by: ABB-ES
 Received by: Guy Auld
 Analyzed by: Guy Auld
 Reported by: Guy Auld
 Report Revision: 0.0
 Method Deviations: none
 Sampling Method: Passive soil gas

Client: ABB-ES
 Client Address: 1080 Woodcock Road, Suite 100
 Orlando, FL 32803
 Client Contact: John Kaiser
 Client Phone: 407-895-8845
 Client Fax: 407-896-6150

USEPA Method 8260 Passive Soil Gas Sample Analysis Results (in ug/L)

Compound	MW ¹ (g/mole)	MDL ² (ug/L)	PQL ³ (ug/L)	LABDUP										
				36V-01801 (ug/L)	36V-01701 (ug/L)	36V-01601 (ug/L)	36V-01501 (ug/L)	36V-01501 (ug/L)	36V-02101 (ug/L)	36V-02201 (ug/L)	36V-02301 (ug/L)	36V-02401 (ug/L)	36V-03001 (ug/L)	
Dichlorodifluoromethane	120.91	0.688	10.0	ND	ND									
Chloromethane	50.49	0.559	10.0	ND	ND									
Vinyl Chloride	62.50	1.011	10.0	ND	ND									
Bromomethane	94.94	0.444	10.0	ND	ND									
Chloroethane	64.51	0.341	10.0	ND	ND									
Trichlorofluoromethane	138.38	0.334	10.0	ND	ND									
1,1-Dichloroethene	96.94	0.298	2.50	ND	ND									
Methylene Chloride	84.93	0.448	2.50	ND	ND									
trans-1,2-Dichloroethene	96.94	0.419	2.50	ND	ND									
1,1-Dichloroethane	98.96	0.488	2.50	ND	ND									
cis-1,2-Dichloroethene	96.94	0.455	2.50	ND	ND									
Chloroform	119.38	0.472	2.50	ND	ND									
1,1,1-Trichloroethane	133.40	0.465	2.50	ND	ND									
Carbon Tetrachloride	153.82	0.421	2.50	ND	ND									
Benzene	78.11	0.496	2.50	ND	ND									
1,2-Dichloroethane	98.96	0.639	2.50	ND	ND									
Trichloroethylene	131.39	0.135	2.50	ND	ND									
1,2-Dichloropropane	112.99	0.121	2.50	ND	ND									
Bromodichloromethane	163.83	0.161	2.50	ND	ND									
Dibromomethane	173.83	0.525	2.50	ND	ND									
cis-1,3-Dichloropropene	110.97	0.306	2.50	ND	ND									
Toluene	92.14	0.156	2.50	ND	ND									
trans-1,3-Dichloropropene	110.97	0.412	2.50	ND	ND									
1,1,2-Trichloroethane	133.40	0.551	2.50	ND	ND									
Tetrachloroethylene or PCE	165.83	0.231	2.50	ND	ND									
Dibromochloromethane	208.28	0.264	2.50	ND	ND									
1,2-Dibromoethane	187.86	0.562	2.50	ND	ND									
Chlorobenzene	112.56	0.171	2.50	ND	ND									
1,1,1,2-Tetrachloroethane	167.85	0.117	2.50	ND	ND									
Ethylbenzene	106.17	0.308	2.50	ND	ND									
m&p-Xylene	106.17	0.473	5.00	ND	ND									
o-Xylene	106.17	0.227	2.50	ND	ND									
Styrene	104.15	0.181	2.50	ND	ND									
Isopropylbenzene	120.19	0.339	2.50	ND	ND									
Bromoform	252.73	0.338	2.50	ND	ND									
1,1,2,2-Tetrachloroethane	167.85	0.649	2.50	ND	ND									
1,2,3-Trichloropropane	147.43	0.451	2.50	ND	ND									
Bromobenzene	157.01	0.127	2.50	ND	ND									
tert-Butylbenzene	134.22	0.296	2.50	ND	ND									
sec-Butylbenzene	134.22	0.301	2.50	ND	ND									
1,3-Dichlorobenzene	147.00	0.084	2.50	ND	ND									
1,4-Dichlorobenzene	147.00	0.047	2.50	ND	ND									
1,2-Dichlorobenzene	147.00	0.164	2.50	ND	ND									
n-Butylbenzene	134.22	0.276	2.50	ND	ND									
1,2,4-Trichlorobenzene	181.45	0.406	2.50	ND	ND									
Hexachlorobutadiene	260.76	0.461	2.50	ND	ND									
Naphthalene	128.17	0.715	2.50	ND	ND									
1,2,3-Trichlorobenzene	181.45	0.573	2.50	ND	ND									

Sample Condition (S,U)/Dilution (PQL) 1 S S S S S S S S S S S S S

S: Satisfactory, U: Unsatisfactory

U: see sample narrative

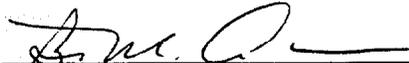
Dilution: numerical dilution factor used to quantitate analyte concentrations within the range of the initial calibration curve

¹ MW: Molecular Weight

² MDL: Method detection limit according to EPA 40CFR Part 136 Appendix B

³ PQL: Practical quantitation limit using the initial calibration curve low point and dilution factors where applicable

SAMPLE NARRATIVE:

Quality Control Analyst: 

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Fixed Laboratory Services

Target Environmental Services, Inc.

Mobile Laboratory Services

Samples Collected: 8/21/97 - 8/28/97
 Samples Received: 8/25/97 - 9/3/97
 Samples Analyzed: 8/26/97 - 9/8/97
 Samples Reported: 9/8/97
 Project Identification: NTC, ORLANDO
 Target Job Code: ABT002
 Purchase Order:

Collected by: ABB-ES
 Received by: Guy Auld
 Analyzed by: Guy Auld
 Reported by: Guy Auld
 Report Revision: 0.0
 Method Deviations: none
 Sampling Method: Passive soil gas

Client: ABB-ES
 Client Address: 1080 Woodcock Road, Suite 100
 Orlando, FL 32803
 Client Contact: John Kaiser
 Client Phone: 407-895-8845
 Client Fax: 407-896-6150

USEPA Method 8260 Passive Soil Gas Sample Analysis Results (in ug/L)

Compound	MW ¹ (g/mole)	MDL ² (ug/L)	PQL ³ (ug/L)	36V-	36V-	35V-	35V-	35V-	35V-	35V-	35V-	35V-	35V-
				04301 (ug/L)	04801 (ug/L)	06701 (ug/L)	06701D (ug/L)	01301 (ug/L)	02401 (ug/L)	03501 (ug/L)	04201 (ug/L)	03501D (ug/L)	04901 (ug/L)
Dichlorodifluoromethane	120.91	0.688	10.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	50.49	0.559	10.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	62.50	1.011	10.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	94.94	0.444	10.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	64.51	0.341	10.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	138.38	0.334	10.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	96.94	0.298	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	84.93	0.448	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	96.94	0.419	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	98.96	0.488	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	96.94	0.455	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	119.38	0.472	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	133.40	0.465	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	153.82	0.421	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	78.11	0.496	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	98.96	0.639	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene	131.39	0.135	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	112.99	0.121	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	163.83	0.161	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromomethane	173.83	0.525	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	110.97	0.306	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	92.14	0.156	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	110.97	0.412	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	133.40	0.551	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene or PCE	165.83	0.231	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	208.28	0.264	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	187.86	0.562	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	112.56	0.171	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	167.85	0.117	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	106.17	0.308	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m&p-Xylene	106.17	0.473	5.00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
o-Xylene	106.17	0.227	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	104.15	0.181	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	120.19	0.339	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	252.73	0.338	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	167.85	0.649	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	147.43	0.451	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromobenzene	157.01	0.127	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
tert-Butylbenzene	134.22	0.296	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
sec-Butylbenzene	134.22	0.301	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	147.00	0.084	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	147.00	0.047	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	147.00	0.164	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Butylbenzene	134.22	0.276	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	181.45	0.406	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexachlorobutadiene	260.76	0.461	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	128.17	0.715	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichlorobenzene	181.45	0.573	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Sample Condition (S,U)/Dilution (PQL) 1 S S S S S S S S S S S S S

S: Satisfactory, U: Unsatisfactory
 U: see sample narrative
 Dilution: numerical dilution factor used to quantitate analyte concentrations within the range of the initial calibration curve

¹ MW: Molecular Weight
² MDL: Method detection limit according to EPA 40CFR Part 136 Appendix B
³ PQL: Practical quantitation limit using the initial calibration curve low point and dilution factors where applicable

SAMPLE NARRATIVE:
 Quality Control Analyst: 

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APPENDIX B

**BORING LOGS, MONITORING WELL INSTALLATION DIAGRAMS,
AND GROUNDWATER SAMPLE FIELD DATA**

- Appendix B-1 Drilling Logs
- Appendix B-2 Well Installation Diagrams
- Appendix B-3 Groundwater Sample Field Data

APPENDIX B-1
DRILLING LOGS

SOIL BORING LOG

Client: <u>NAVY</u>			Project No. <u>02530.05</u>			Point of Interest:		
Contractor: <u>GPI</u>			Date Started: <u>10/8/97</u>			Boring No.: <u>OLD-36-01</u>		
Method: <u>Hollow Stem</u>			Casing Size:			Protection: <u>D</u>		
Ground Elev.:			Soil Drilled:			Completed: <u>10/8/97</u>		
Logged by: <u>J. Nash</u>			Checked by:			PI Meter: <u>Porta FID</u>		
Screen: <u>10 (ft.)</u>			Riser: <u>7 (ft.)</u>			Total Depth: <u>17 ft</u>		
Diam: <u>2 in (ID)</u>			Material: <u>PVC</u>			Below Ground: <input checked="" type="checkbox"/>		
Page <u>1</u>			of <u>1</u>					

DEPTH (FT)	SAMPLE NUMBER	SAMPLE DEPTH	CLP/SCREENING	RECOVERY	PH	SOIL/ROCK DESCRIPTION	SOIL CLASS	BLOWS 6-IN.	WELL DATA	LITHOLOGY	ELEVATION (FT.)
5						SAND, fine grained, brown, dry	SP				
					50%	- gray		3 5			
					55%	- brown		5 5			
					60%			3 4			
					100%	- dense		4 5			
10					100%	- wet		5 6			
					100%			7 7			
					100%			9 10			
					100%	- dk brown		23 34			
					100%			43 30			
					100%			50 7			
					100%			40 47			
					100%			50 7			
15											
20											

PROPORTIONS (-) AMOUNT (-) **ABBREVIATIONS**
 Trace (T) 0-10% f = fine gr = gray MS = Split Spoon
 Little (L) 10-20% m = medium bn = brown BW = Screened Auger
 Some (S) 20-35% c = coarse blk = black HP = Hydropunch
 and 35-50%

SOIL BORING LOG

Point of Interest:

Client: <i>NAVY</i>	Project No. <i>02530.05</i>	Spring No.: <i>OLD-36-02</i>
Contractor: <i>GPI</i>	Date Started: <i>10/8/97</i>	Protection: <i>D</i>
Method: <i>Hollow Stem</i>	Casing Size:	Completed: <i>10/8/97</i>
Ground Elev.:	Soil Drilled:	PI Meter: <i>Pacta FID</i>
Logged by: <i>J. Nash</i>	Checked by:	Total Depth: <i>17 ft</i>
Screen: <i>10 (ft.)</i>	Riser: <i>> (ft.)</i>	Below Ground: <input checked="" type="checkbox"/>
Diam: <i>2 in (ID)</i>	Material: <i>PVC</i>	Page <i>1</i> of: <i>1</i>

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE DEPTH	CLIP/SPLICING	RECOVERY	PH	SOIL/ROCK DESCRIPTION	SOIL CLASS	BLOWS 6-IN.	WELL DATA	LITHOLOGY	ELEVATION (FT.)
5				70%	6	SAND, fine grained, gray	SP	3 1/4			
				75%		- brown		4 1/4			
				100%				4 1/4			
10				100%		- dk brown, dense		4 1/4			
				85%				4 1/2			
				100%		- dk brown		5 1/2			
15								10 1/2			
								14 1/2			
								33 1/2			
								52 1/2			
								30 1/2			
								52 +			
20											

PROPORTIONS
 Trace (τ) 0-10%
 Little (ll) 10-20%
 Some (so) 20-35%
 and 35-50%

(-) AMOUNT (+)
 0-10%
 10-20%
 20-35%
 35-50%

ABBREVIATIONS
 f = fine gr = gray MS = Split Spoon
 m = medium bn = brown BW = Screened Auger
 c = coarse blk = black HP = Hydropunch

SOIL BORING LOG

Point of Interest:

Client: NAVY	Project No. 02530.05	Boring No.: OLD-36-03
Contractor: GPI	Date Started: 10/8/97	Protection: D
Method: Hollow Stem	Casing Size:	Completed: 10/8/97
Ground Elev.:	Soil Drilled:	PI Meter: Porta FID
Logged by: J. Nash	Checked by:	Total Depth: 16 ft
Screen: 10 (ft.)	Riser: 6 (ft.)	Material: PVC
Diam: 2 in (ID)	Page: 1	of: 1

DEPTH (FT)	SAMPLE NUMBER	SAMPLE DEPTH	CLIP SCREENING	RECOVERY	PID (ppm)	SOIL/ROCK DESCRIPTION	SOIL CLASS	BLOWS-IN.	WELL DATA	LITHOLOGY	ELEVATION (FT.)
5				90%	0	SAND, fine grained, gray	SP				
7.5				95%		- brown					
10				95%							
12.5				100%							
15				100%							
17.5				95%							
20											

PROPORTIONS	(-) AMOUNT (-)	ABBREVIATIONS
Trace (tr)	0-10%	f = fine gr = gray MS = Split Spoon
Little (ll)	10-20%	m = medium bn = brown BW = Screened Auger
Some (so)	20-35%	c = coarse blk = black HP = Hydropunch
and	35-50%	

SOIL BORING LOG

Point of Interest:

Client: NAVY	Project No. 02590.05	Boring No.: OLD-36-04
Contractor: GPI	Date Started: 10/8/97	Protection: D
Method: Hollow Stem	Casing Size:	Completed: 10/8/97
Ground Elev.:	Soil Drilled:	PI Meter: Porta FID
Logged by: J Nash	Checked by:	∇ Below Ground:
Screen: 10 (ft.)	Riser: 6 (ft.)	Diam: 2 in (ID)
	Material: PVC	Page 1 of 1

DEPTH (FT)	SAMPLE NUMBER	SAMPLE DEPTH	CLP/SCREENING	RECOVERY	PIID (ppm)	SOIL/ROCK DESCRIPTION	SOIL CLASS	BLOWS 6-IN.	WELL DATA	LITHOLOGY	ELEVATION (FT.)
5				85%		SAND, fine grained, gray	SP	314			
				90%				616			
				95%		- brown		218			
10				100%				217			
				100%				219			
				100%				10171			
				100%				415			
				100%				515			
				100%				615			
				100%				616			
				100%				10112			
				100%				10111			
15											
20											

PROPORTIONS	(-) AMOUNT (-)	ABBREVIATIONS
Trace (tr)	0-10%	f = fine gr = gray MS = Split Spoon
Little (ll)	10-20%	m = medium bn = brown BW = Screened Auger
Some (so)	20-35%	c = coarse blk = black HP = Hydropunch
and	35-50%	

SOIL BORING LOG

Client: NAVY			Project No. 02530 05			Point of Interest:		
Contractor: GPI			Date Started: 10/8/97			Spring No.: OLD-36-05		
Method: Hollow Stem			Casing Size:			Protection: D		
Ground Elev.:			Soil Drilled:			Completed: 10/8/97		
Logged by: J. Nash			Checked by:			PI Meter: Pos. Ta F10		
Screen: 10 (ft.)			Riser: 6 (ft.)			Total Depth: 16 ft		
			Diam: 2 in (ID)			Material: PVC		
						Page 1 of 1		

DEPTH (FT)	SAMPLE NUMBER	SAMPLE DEPTH	CLIP/SCHIEFFER	RECOVERY	PH	GR	SOIL/ROCK DESCRIPTION	SOIL CLASS	BLOWS-IN.	WELL DATA	LITHOLOGY	ELEVATION (FT.)
5					80%		SAND, fine grained, gray	SP	313			
					60%				314			
					100%		- brown		313			
10					100%				313			
					95%				414			
					100%				514			
15					95%				516			
					100%				517			
									1013			
									1018			
									21123			

PROPORTIONS (-) AMOUNT (+) **ABBREVIATIONS**
 Trace (T) 0-10% l = fine gr = gray MS = Split Spoon
 Little (l) 10-20% m = medium bn = brown BW = Screened Auger
 Some (so) 20-25% c = coarse blk = black HP = Hydropunch
 and 25-50%

SOIL BORING LOG

Point of Interest:

Client: NAVY	Project No. 02530.05	Boring No.: OLD-36-06
Contractor: GPI	Date Started: 10/8/97	Protection: D
Method: Hollow Stem	Casing Size:	Completed: 10/8/97
Ground Elev.:	Soil Drilled:	PI Meter: PiTa FID
Logged by: J. Nash	Checked by:	Total Depth: 17 ft
Screen: 10 (ft.)	Riser: 7 (ft.)	Diam: 2 in (ID)
	Material: PVC	Page 1 of 1

DEPTH (FT)	SAMPLE NUMBER	SAMPLE DEPTH	CLP/SCHREINIK	RECOVERY	PH	SOIL/ROCK DESCRIPTION	SOIL CLASS	BLOWS'-IN.	WELL DATA	LITHOLOGY	ELEVATION (FT.)
5				50%	7.1	SAND, fine grained, gray, dry	SP	313			
				50%		- brown		314			
				100%		- dk brown, wet		313			
10				95%		- dense		313			
				100%		- medium dense		314			
15				90%				415			
								212			
								14135			
								50150H			
								5017			
								419			
								918			

PROPORTIONS (-) AMOUNT (+)
 Trace (tr) 0-10%
 Little (ll) 10-20%
 Some (so) 20-35%
 and 35-50%

ABBREVIATIONS
 l = fine gr = gray MS = Split Spoon
 m = medium bn = brown BW = Screened Auger
 c = coarse blk = black HP = Hydropunch

SOIL BORING LOG

Point of Interest: SA 36
 Boring No.: OLD-36-07

Client: South Div.	Project No. 02530.05	Protection: D
Contractor: GPI	Date Started: 6-17-98	Completed: 6-17-98
Method: HSA	Casing Size: 6 1/4" ID	PI Meter: Porta-Fid
Ground Elev.: _____	Soil Drilled: 20'	Total Depth: 20'
Logged by: SD	Checked by: WAO	▽ Below Ground: 9'
Screen: 5 (ft.)	Riser: 15 (ft.)	Diam: 2 (ID)
Material: PVC	Page 1 of 1	

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE DEPTH	CLP/SCHIEFFNO	RECOVERY	PIID (ppm)	SOIL/ROCK DESCRIPTION	SOIL CLASS	BLOWS'-IN.	WELL DATA	LITHOLOGY	ELEVATION (FT.)
0						Fine sand, gray and tan/brown dry	SW	6 5 4 3 2 1			
5						Fine sand, tan to white moist	SW	1 2 3 4 5 6			
10						Fine sand, gray/brown wet, hard layer @ 10'	SM				
15						Sand, fine grained dark brown very hard @ 15' to 16', hard @ 18' & 20'	SM				
20						TD = 20'					

PROPORTIONS (-) AMOUNT (+) ABBREVIATIONS

Trace (tr) 0-10% l = fine gr = gray MS = Split Spoon
 Little (ll) 10-20% m = medium bn = brown BW = Screened Auger
 Some (so) 20-35% c = coarse blk = black HP = Hydropunch
 and 35-50%

SOIL BORING LOG

Point of Interest: SA 36
 Boring No.: OLD-36-08

Client: South Div.	Project No. 02530.05	Protection: D
Contractor: GPI	Date Started: 6-15/98	Completed: 6-17/98
Method: HSA/MUD	Casing Size: 6" Surface Casing	PI Meter: Porta-FID
Ground Elev.:	Soil Drilled: 27.5'	Total Depth: 27.5'
Logged by: SD	Checked by: WDO	Below Ground: <input checked="" type="checkbox"/>
Screen: 5 (ft.)	Riser: 22.5 (ft.)	Diam: 2 (ID)
	Material: PVC	Page 1 of 1

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE DEPTH	CL/PS/GREEN/NO	RECOVERY	PH (ppm)	SOIL/ROCK DESCRIPTION	SOIL CLASS	BLOWS-IN.	WELL DATA	LITHOLOGY	ELEVATION (FT.)
5						Fine sand, gray and tan/brown dry	Sw				
10						Fine sand, tan to white moist	Sw				
15						Fine sand, Gray/Brown wet, hard layer @ 10'	Sm				
20						Sand, Fine grained dark brown Very hard @ 15' to 16', hard @ 18' & 20'	Sm				
25											
						TD = 27.5'					

PROPORTIONS

Trace (T)	0-10%
Little (L)	10-20%
Some (S)	20-35%
and	35-50%

(-) AMOUNT (-)

ABBREVIATIONS

l = fine	gr = gray	MS = Split Spoon
m = medium	bn = brown	BW = Screened Auger
c = coarse	blk = black	HP = Hydropunch

SOIL BORING LOG

Point of Interest: SA 36

Boring No.: OLD-36-09

Client: South Div.

Project No. 02530.05

Protection: D

Contractor: GPI

Date Started: 6-15/98

Completed: 6-17/98

Method: HSA/MUD

Casing Size: 6" surface casing

PI Meter: Fort FID

Ground Elev.:

Soil Drilled: 35'

Total Depth: 35'

Logged by: SD

Checked by: WDO

Below Ground:

Screen: 5 (ft.)

Riser: 30 (ft.)

Diam: 2 (ID)

Material: PV

Page 1 of 1

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE DEPTH	CLP/SCH/EN/NO	RECOVERY	Mo (ppm)	SOIL/ROCK DESCRIPTION	SOIL CLASS	BLOWS-IN.	WELL DATA	LITHOLOGY	ELEVATION (FT.)
5						Fine sand, gray and tan/brown dry	Su				
10						Fine sand, tan to white moist	Su				
15						Fine sand, Gray/Brown wet, hard layer @ 10'	sm				
20						Sand, Fine grained dark brown Very hard @ 15' to 16', hard @ 18' & 20' same to 28.5', mud rotang to 35'	SM				
35						TD = 35'					

PROPORTIONS

(-) AMOUNT (-)

ABBREVIATIONS

Trace (tr) 0-10%
 Little (ll) 10-20%
 Some (so) 20-35%
 and 35-50%

l = fine gr = gray
 m = medium bn = brown
 c = coarse blk = black

MS = Split Spoon
 BW = Screened Auger
 HP = Hydropunch

SOIL BORING LOG

Point of Interest: SA36

Boring No.: OLD-36-10

Client: South Div.	Project No. 02530.05	Protection: D
Contractor: GPI	Date Started: 6-17/98	Completed: 6-17/98
Method: HSA	Casing Size: 6 1/4" ID	PI Meter: Porta-Fit
Ground Elev.:	Soil Drilled: 25'	Total Depth:
Logged by: SD	Checked by: WDO	Below Ground: ∇
Screen: 5 (ft.)	Riser: 20 (ft.)	Diam: 2" (ID)
Material: PVC	Page 1 of 1	

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE DEPTH	CL PYSCHENING	RECOVERY	PH (ppm)	SOIL/ROCK DESCRIPTION	SOIL CLASS	BLOWS-IN.	WELL DATA	LITHOLOGY	ELEVATION (FT.)
						Fine Sand, Gray and Tan	SM	PI 0 BT 210 IL E			
5						Fine Sand, white to light gray some silt	SM	3 14 3 13 4 13			
						Fine silty sand, dark brown	SP	5 14 4 14			
10						Fine Sand, black to dark brown well indurated to cemented	SM	5 15 6 10 14 18 15 21 23 23			
15						Fine sand, dark brown to black, some silt horizons cemented sand stringers 18-20'	SD	4 14 3 15 3 14 4 14 5 10 21 20 14 18 21 20			
20						Fine Sand dark brown to black	SP	23 25 25 24 2 14 24 23			
25						TD = 25'					

PROPORTIONS

Trace (tr)
Little (ll)
Some (so)
and

(-) AMOUNT (+)

0-10%
10-20%
20-35%
35-50%

ABBREVIATIONS

f = fine gr = gray MS = Split Spoon
 m = medium bn = brown BW = Screened Auger
 c = coarse blk = black HP = Hydropunch

SOIL BORING LOG

Point of Interest: SA36
 Boring No.: OLD-36-101

Client: South Div.	Project No. 02530.05	Protection: D
Contractor: GPI	Date Started: 6-18-98	Completed: 6-18-98
Method: HSA	Casing Size: 6 1/4" ID	PI Meter: Porta-Fit
Ground Elev.: _____	Soil Drilled: 35'	Total Depth: 35'
Logged by: S D WDO	Checked by: WDO	Below Ground:
Screen: 5 (ft.)	Riser: 25 (ft.)	Diam: 2 (ID)
Material: PVC	Page 1 of 1	

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE DEPTH	CLIP/SCREENING	RECOVERY	PH (ppm)	SOIL/ROCK DESCRIPTION	SOIL CLASS	BLOWS-IN.	WELL DATA	LITHOLOGY	ELEVATION (FT.)
5						Fine Sand, gray and Tan	SM	PI 0.15 HI 0.11E			
						Fine Sand, white to light gray some silt	SM	314 313 413			
						Fine silty sand, dark brown	SP	514 515			
						Fine Sand, black to dark brown well indurated to cemented	SM	515 610 14121 15121 2121			
						Fine Sand, dark brown to black, some silt horizontal cemented sand stringers 18-20'	SP	414 315 314 414 510 2120 14121 21120			
						Fine Sand dark brown to black	SP	12125 13141 7119 24123 14111 1018 16118 2020			
						Fine Sand, Brown, trace Clay	SC	13114 18120 719 10114 12118 23126			

PROPORTIONS

Trace (T) 0-10%
 Little (L) 10-25%
 Some (S) 25-35%
 and 35-50%

(-) AMOUNT (-)

0-10%
 10-25%
 25-35%
 35-50%

ABBREVIATIONS

l = fine gr = gray MS = Split Spoon
 m = medium bn = brown BW = Screened Auger
 c = coarse blk = black HP = Hydropunch

SOIL BORING LOG

Point of Interest: SA 36
 Boring No.: OLD-36-12

Client: South Div.	Project No. 02530.05	Protection: D
Contractor: GPI	Date Started: 10-27-98	Completed: 10-27-98
Method: HSA	Casing Size: 6 1/4" ID	PI Meter: Porta-Fit
Ground Elev.: _____	Soil Drilled: 35'	Total Depth: 35'
Logged by: WDO	Checked by: _____	Below Ground: <input checked="" type="checkbox"/>
Screen: 5 (ft.)	Riser: 25 (ft.)	Diam: 2 (ID)
Material: PVC	Page 1 of 1	

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE DEPTH	CLY/SCH/EN/NO	RECOVERY	PHI (ppm)	SOIL/ROCK DESCRIPTION	SOIL CLASS	BLOWS/8-IN.	WELL DATA	LITHOLOGY	ELEVATION (FT.)
0-5						Fine Sand, gray and tan	SM	1013T 1101LIF			
5-7						Fine Sand, white to light gray some silt	SM	314 313 413			
7-10						Fine silty sand, dark brown	SP	514 415 515			
10-18						Fine Sand, black to dark brown well indurated to cemented	SM	6110 1418 15121 16131 414			
18-20						Fine sand, dark brown to black, some silt horizons cemented sand stringers	SP	315 314 414 51101 21120 14118 211201			
20-25						Fine Sand dark brown to black	SP	42125 48141 7119 24123 14111 10181 16118 281201			
25-35						Fine sand, Brown, trace clay	SC	131141 181201 7191 101141 121181 231261			

PROPORTIONS (-) AMOUNT (+) ABBREVIATIONS

Trace (T) 0-10% l = fine gr = gray MS = Split Spoon
 Little (L) 10-20% m = medium bn = brown BW = Screened Auger
 Some (so) 20-35% c = coarse blk = black HP = Hydropunch
 and 35-50%

SOIL BORING LOG

Point of Interest: **SA36**

Boring No.: **OLD-36-13**

Client: South Div.	Project No: 02530.05	Protection: D
Contractor: GPI	Date Started: 10-27-98	Completed: 10-28-98
Method: MUD	Casing Size: 6"	PI Meter: Porta-FID
Ground Elev.: _____	Soil Drilled: 66'	Total Depth: 66'
Logged by: WDO	Checked by: _____	Below Ground: 11
Screen: 5 (ft.)	Riser: 61 (ft.)	Diam: 2 (ID)
	Material: PVC	Page 1 of: 2

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE DEPTH	CLP/SCH/EN/NO	RECOVERY	P ₁₁₀ (ppm)	SOIL/ROCK DESCRIPTION	SOIL CLASS	BLOWS/IN.	WELL DATA	LITHOLOGY	ELEVATION (FT.)	
5						See log for OLD-36-09 for lithology of this zone						
10												
15												
20												
25												
30												
35												
35	90	0					FINE SAND, TAN	SP	9 113			
									20 121			
									3 9			
40	50	0					Silt, grades to med. and fine sand, dark brown to brown. well rounded quartz grains, some chert w/ silt, clay lenses above 40'	ML	2 9			
									9 110			
	60	0							2 124			
									2 114			
	50	0					Fine and med. sand, well rounded, brown, shell fragments, some opalescent grains, less silt than above.	SM	14 116			
									10 3			
	50	0							13 114			
									5 9			
	60	0							12 12			
									11 11			
	60	0							12 12			
									9 114			
	40	0										

PROPORTIONS	(-) AMOUNT (-)	ABBREVIATIONS
Trace (T)	0-10%	l = fine gr = gray MS = Split Spoon
Little (L)	10-20%	m = medium bn = brown BW = Screened Auger
Some (S)	20-35%	c = coarse blk = black HP = Hydropunch
and	35-50%	

SOIL BORING LOG

Point of Interest: SA36
 Boring No.: OLD-36-13

Client: South Div.	Project No. 02530.05	Protection: D
Contractor: GPI	Date Started: 10-27/98	Completed: 10-28/98
Method: Mud	Casing Size: 6"	PI Meter: Porta-Fit
Ground Elev.:	Soil Drilled: 66'	Total Depth: 66'
Logged by: WDO	Checked by:	Below Ground: <input checked="" type="checkbox"/>
Screen: 5 (ft.)	Riser: 61 (ft.)	Diam: 2 (ID)
Material: PVC	Page 2	of: 2

DEPTH (FT)	SAMPLE NUMBER	SAMPLE DEPTH	CLIP/SCH/EN/NO	RECOVERY	W (%)	SOIL/ROCK DESCRIPTION	SOIL CLASS	BLOWS/IN.	WELL DATA	LITHOLOGY	ELEVATION (FT.)
						SEE ABOVE		12 1/16			
						Fine Sand, Tan, well sorted		5 1/4			
								10 1/16			
								8 1/10			
							SW	13 1/2			
								5 1/4			
								13 1/4			
								4 1/2			
								9 1/10			
								10 1/10			
						Fine and med. sand, green some silt, Coarser 65-66'		12 1/16			
							SM	6 1/8			
								8 1/10			
								6 1/8			
								7 1/4			
								8 1/16			
						Silty clay, green, Plastic	SC	6 1/5			
						BT-67'					

PROPORTIONS (-) AMOUNT (+) ABBREVIATIONS

Trace (tr)	0-10%	f = fine	gr = gray	MS = Split Spoon
Little (ll)	10-20%	m = medium	bn = brown	BW = Screened Auger
Some (so)	20-35%	c = coarse	blk = black	HP = Hydropunch
and	35-50%			

SOIL BORING LOG

Point of Interest: SA36

Boring No.: OLD-36-14

Client: South Div.	Project No. 02530.05	Protection: D
Contractor: South Div. ^{GP} South Div.	Date Started: 10-28/98	Completed: 10-28/98
Method: Mud	Casing Size: 6"	PI Meter: Porta FLID
Ground Elev.: _____	Soil Drilled: 7 1/2'	Total Depth: 68'
Logged by: WAO	Checked by: _____	Below Ground: 11'
Screen: 5 (ft.)	Riser: 63 (ft.)	Diam: 2 (ID)
Material: PVC	Page 1	of: 2

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE DEPTH	CLP/SCREENING	RECOVERY	PH (ppm)	SOIL/ROCK DESCRIPTION	SOIL CLASS	BLOWS-IN.	WELL DATA	LITHOLOGY	ELEVATION (FT.)	
5						See Boring Log for old-36-09 for details of this interval						
10												
15												
20												
25												
30												
35												
35	50	50	Ø				Fine Sand, Brown, some silt shell fragments		11 1/8 23 1/2 9 1/2			
40	70	70	Ø				Fine sand, Tan, well sorted		14 1/2 10 1/2 14 1/2			
40	60	60	Ø						8 1/8 11 1/2 7 1/8			
45	80	80	Ø				Sand, fine to med., Brown w/ shell fragments		10 1/2 6 1/8 12 1/2			
45	80	80	Ø						10 1/2 12 1/2			
45	90	90	Ø						10 1/2 12 1/2			
45	80	80	Ø				Fine sand, light orange		10 1/2 12 1/2			
45	50	50	Ø				see below		8 1/8			

PROPORTIONS

(-) AMOUNT (-)

ABBREVIATIONS

Trace (tr) 0-10%
 Little (l) 10-20%
 Some (so) 20-35%
 and 35-50%

l = fine gr = gray MS = Split Spoon
 m = medium bn = brown BW = Screened Auger
 c = coarse blk = black HP = Hydropunch

SOIL BORING LOG

Point of Interest: SA36
 Boring No.: OLD-36-14

Client: South Div	Project No. 02530.05	Protection: D
Contractor: C-P I	Date Started: 10-28/98	Completed: 10-28/98
Method: Mud	Casing Size: 6"	PI Meter: Porta-FLI
Ground Elev.:	Soil Drilled: 71'	Total Depth: 68'
Logged by: W.D.	Checked by:	Below Ground: (1)
Screen: 5 (ft.)	Riser: 63 (ft.)	Diam: 2 (ID)
	Material: PVC	Page 2 of: 2

DEPTH (FT.)	SAMPLE NUMBER	SAMPLE DEPTH	CLP/SCHIEP/NO	RECOVERY	PI (ppm)	SOIL/ROCK DESCRIPTION	SOIL CLASS	BLOWS-IN.	WELL DATA	LITHOLOGY	ELEVATION (FT.)
		60	Ø			Fine sand, Brown		9 1/2			
		80	Ø					9 1/8			
		20	Ø			Fine and Med. Sand, Tan		9 1/4			
		50	Ø					7 1/4			
		60	Ø			Sand, med. to coarse, well rounded, Brown, with shell fragments.		10 1/10			
		70	Ø					6 1/2			
		80	Ø			Sand, med. to coarse, quartz, green, small clay lens		7 1/2			
		80	Ø					4 1/6			
		80	Ø			clay, green, plastic		5 1/4			
		80	Ø			limestone, weathered, clayey, white		5 1/4			
								1 1/2			
						BT - 71'					

PROPORTIONS (-) AMOUNT (-) ABBREVIATIONS

Trace (T) 0-10% l = fine gr = gray MS = Split Spoon
 Little (L) 10-20% m = medium bn = brown BW = Screened Auger
 Some (S) 20-35% c = coarse blk = black HP = Hydropunch
 and 35-50%

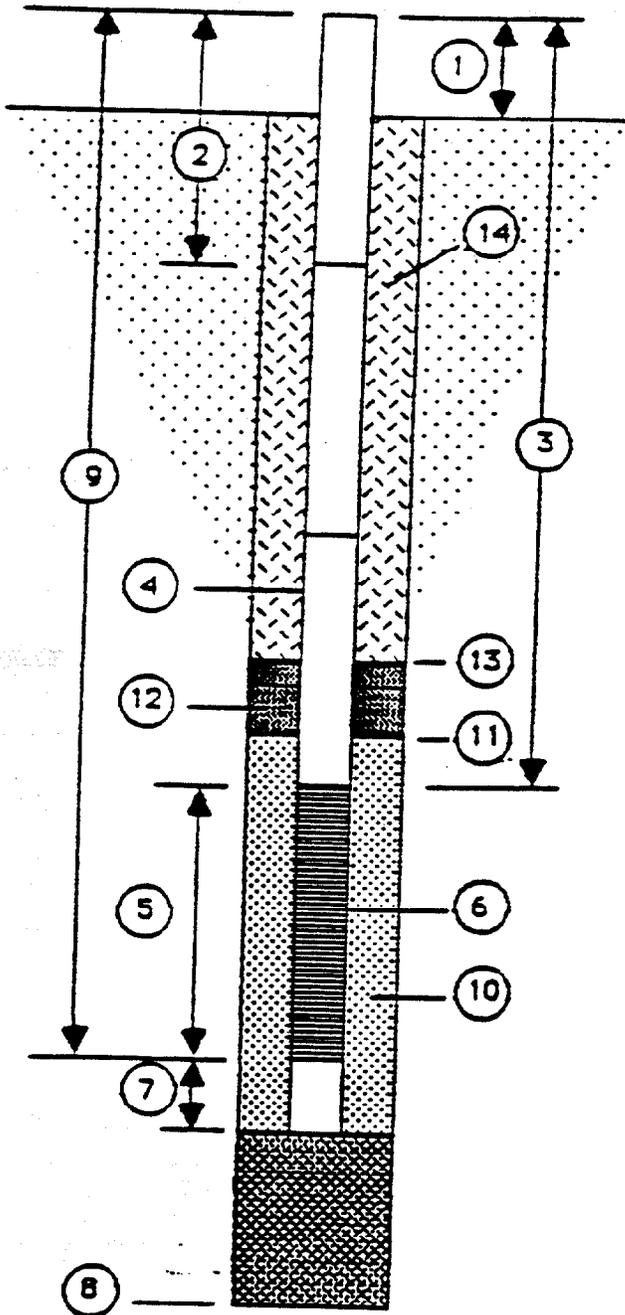
APPENDIX B-2

WELL INSTALLATION DIAGRAMS

WELL CONSTRUCTION DETAILS

WELL NUMBER OLD-36-01

DATE OF INSTALLATION 10-8/97



1. Height of Casing above ground FM

2. Depth to first Coupling 7'

Coupling Interval Depths 10'

3. Total Length of Blank Pipe 7'

4. Type of Blank Pipe 2" sched. 40 PVC

5. Length of Screen 10'

6. Type of Screen 2" sched. 40 PVC 0.010 s

7. Length of Sump 6"

8. Total Depth of Boring 18' Hole Diameter 10 1/4

9. Depth To Bottom of Screen 17'

10. Type of Screen Filter Silica sand

Quantity Used 500 lb Size 20/30 U/C

11. Depth To Top of Filter 5'

12. Type of Seal 30/65 fine sand

Quantity Used 50 lb

13. Depth To Top of Seal 3'

14. Type of Grout Neat cement

Grout Mixture NR

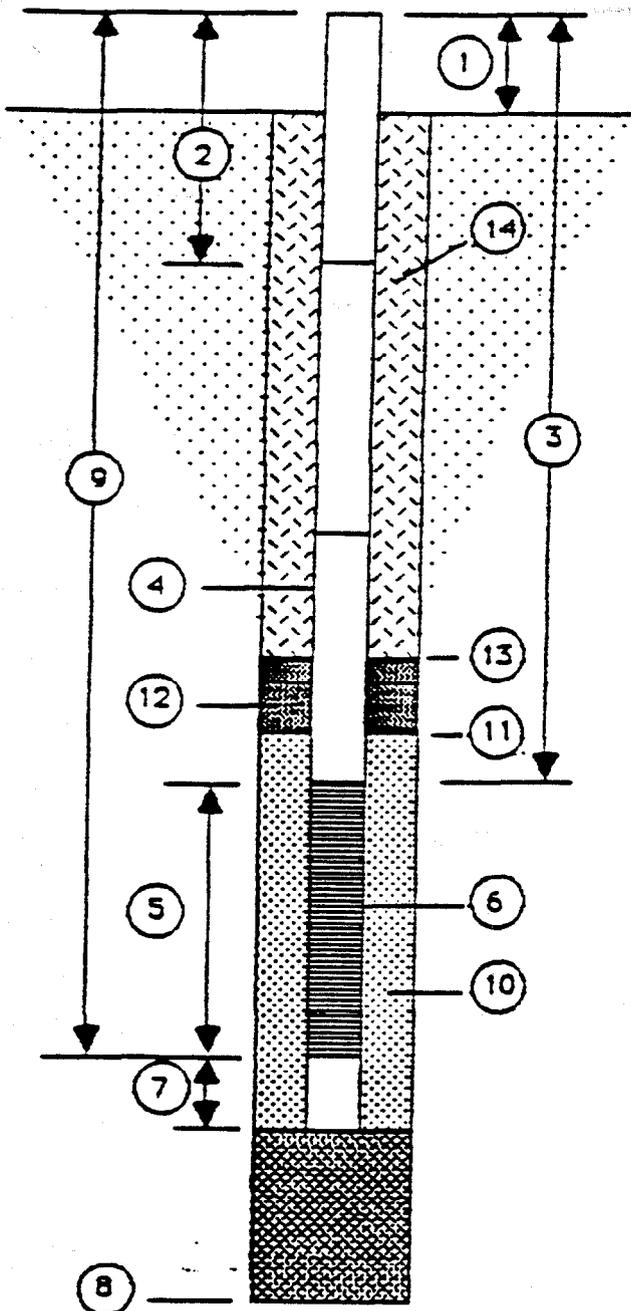
Method of Placement Pour

COMMENTS ON INSTALLATION:

WELL CONSTRUCTION DETAILS

WELL NUMBER OLD-36-02

DATE OF INSTALLATION 10-8/97



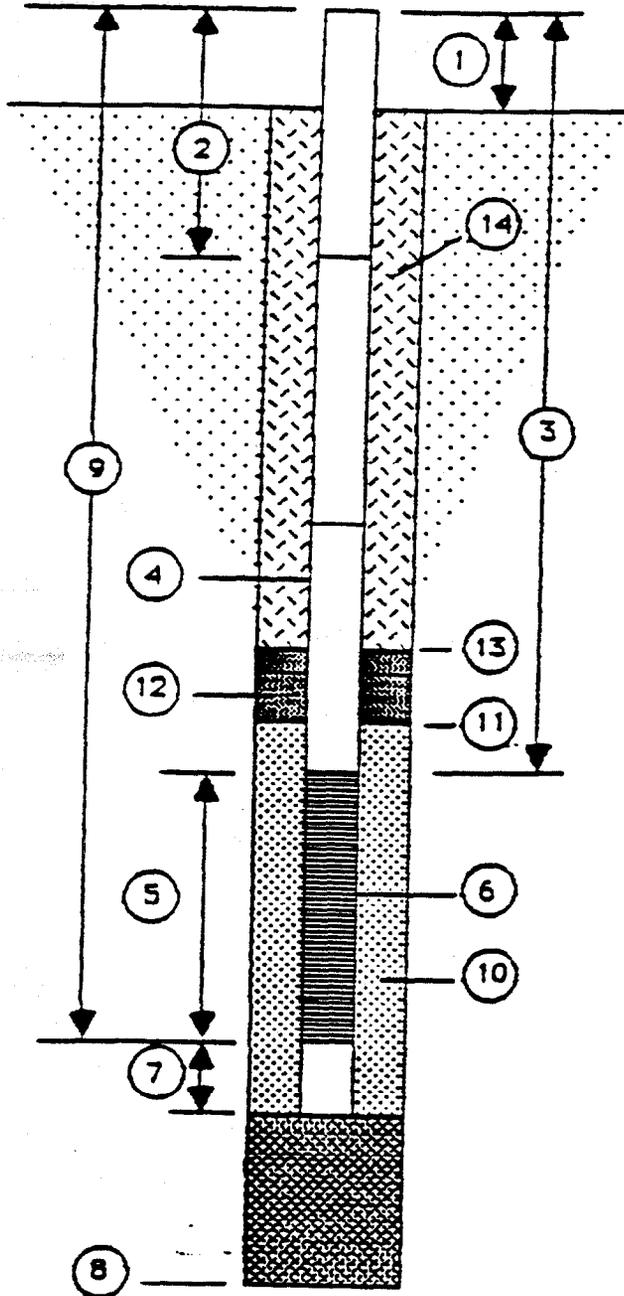
1. Height of Casing above ground FM
2. Depth to first Coupling 7'
Coupling Interval Depths 10'
3. Total Length of Blank Pipe 7'
4. Type of Blank Pipe 2" Sched 40 PVC
5. Length of Screen 10'
6. Type of Screen 2" Sched 40 PVC 0.0105 in
7. Length of Sump 6"
8. Total Depth of Boring 17' Hole Diameter 10 1/2"
9. Depth To Bottom of Screen 17'
10. Type of Screen Filter Silica Sand
Quantity Used 500 lb Size 20/30 U/C
11. Depth To Top of Filter 5'
45/60
12. Type of Seal 30/65 Sand
Quantity Used 50 lb
13. Depth To Top of Seal 3'
14. Type of Grout Neat cement
Grout Mixture NR
Method of Placement Pour

COMMENTS ON INSTALLATION:

WELL CONSTRUCTION DETAILS

WELL NUMBER OLD-36-03

DATE OF INSTALLATION 10-8/97



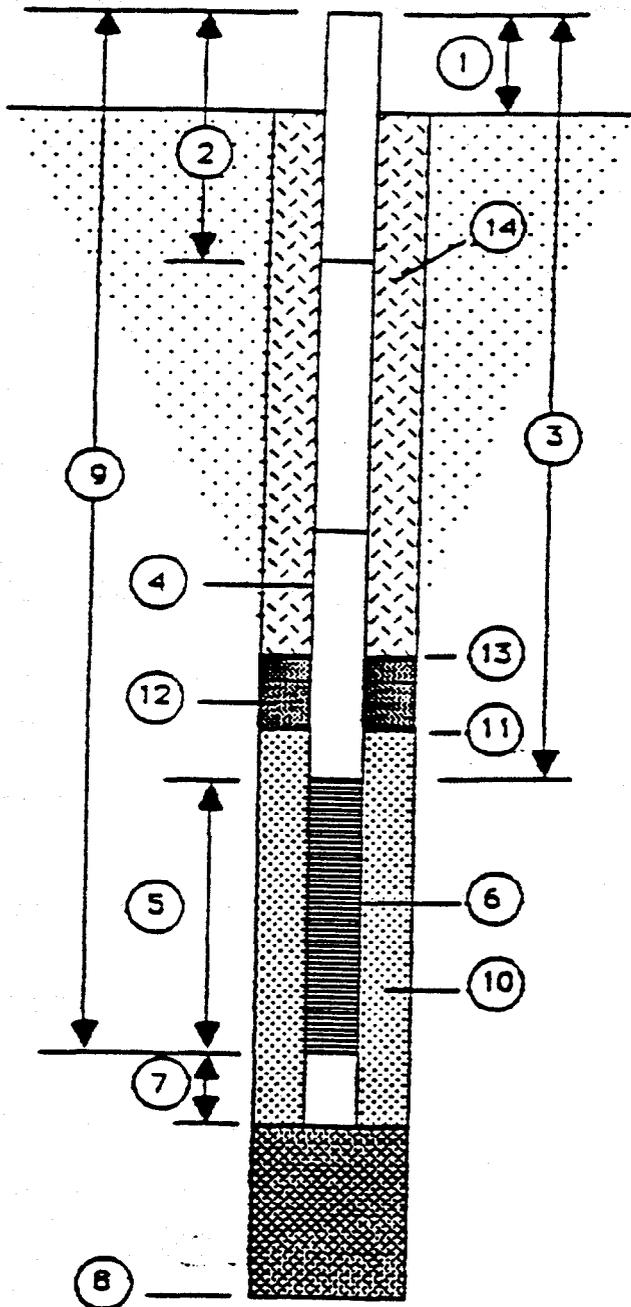
1. Height of Casing above ground FM
2. Depth to first Coupling 6'
Coupling Interval Depths 10'
3. Total Length of Blank Pipe 6'
4. Type of Blank Pipe 2" sched 40 PVC
5. Length of Screen 10'
6. Type of Screen 2" sched 40 PVC 0.010 s10
7. Length of Sump 6"
8. Total Depth of Boring 16' Hole Diameter 10 1/4"
9. Depth To Bottom of Screen 16'
10. Type of Screen Filter Silica Sand
Quantity Used 500 lb Size 20/30 U/C
11. Depth To Top of Filter 4'
12. Type of Seal 30/65 fine sand
Quantity Used 50 lb
13. Depth To Top of Seal 2'
14. Type of Grout Neat cement
Grout Mixture Ne
Method of Placement Pour

COMMENTS ON INSTALLATION:

WELL CONSTRUCTION DETAILS

WELL NUMBER OLD-36-04

DATE OF INSTALLATION 10-8/97



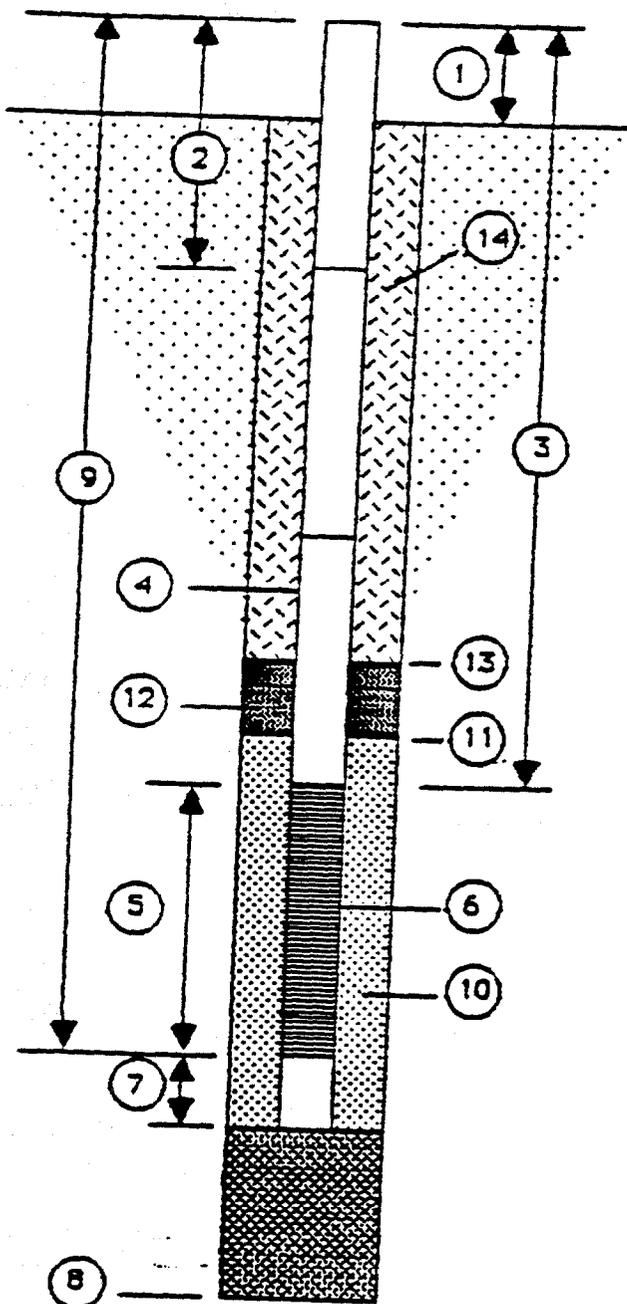
1. Height of Casing above ground FM
2. Depth to first Coupling 6'
Coupling Interval Depths 10'
3. Total Length of Blank Pipe 6'
4. Type of Blank Pipe 2" sched. 40 PVC
5. Length of Screen 10'
6. Type of Screen 2" sched, 40 PVC 0.01056
7. Length of Sump 6"
8. Total Depth of Boring 16' Hole Diameter 10 1/4"
9. Depth To Bottom of Screen 16'
10. Type of Screen Filter Silica sand
Quantity Used 450/6 Size 20/30 U/C
11. Depth To Top of Filter 4'
45/60
12. Type of Seal 50/65 fine sand
Quantity Used 30/6
13. Depth To Top of Seal 3'
14. Type of Grout Neat cement
Grout Mixture NK
Method of Placement Pour

COMMENTS ON INSTALLATION:

WELL CONSTRUCTION DETAILS

WELL NUMBER OLD-36-05

DATE OF INSTALLATION 10-8/97



1. Height of Casing above ground FM

2. Depth to first Coupling 6'

Coupling Interval Depths 10'

3. Total Length of Blank Pipe 6'

4. Type of Blank Pipe 2" Sched. 40 PVC

5. Length of Screen 10'

6. Type of Screen 2" Sched. 40 PVC 0.010 slot

7. Length of Sump 6"

8. Total Depth of Boring 16' Hole Diameter 10 1/4"

9. Depth To Bottom of Screen 16'

10. Type of Screen Filter Silica sand

Quantity Used 550 lb Size 20/30 U/C

11. Depth To Top of Filter 4'
45/60

12. Type of Seal 30/60 fine sand

Quantity Used 50 lb

13. Depth To Top of Seal 2'

14. Type of Grout Neat Cement

Grout Mixture NR

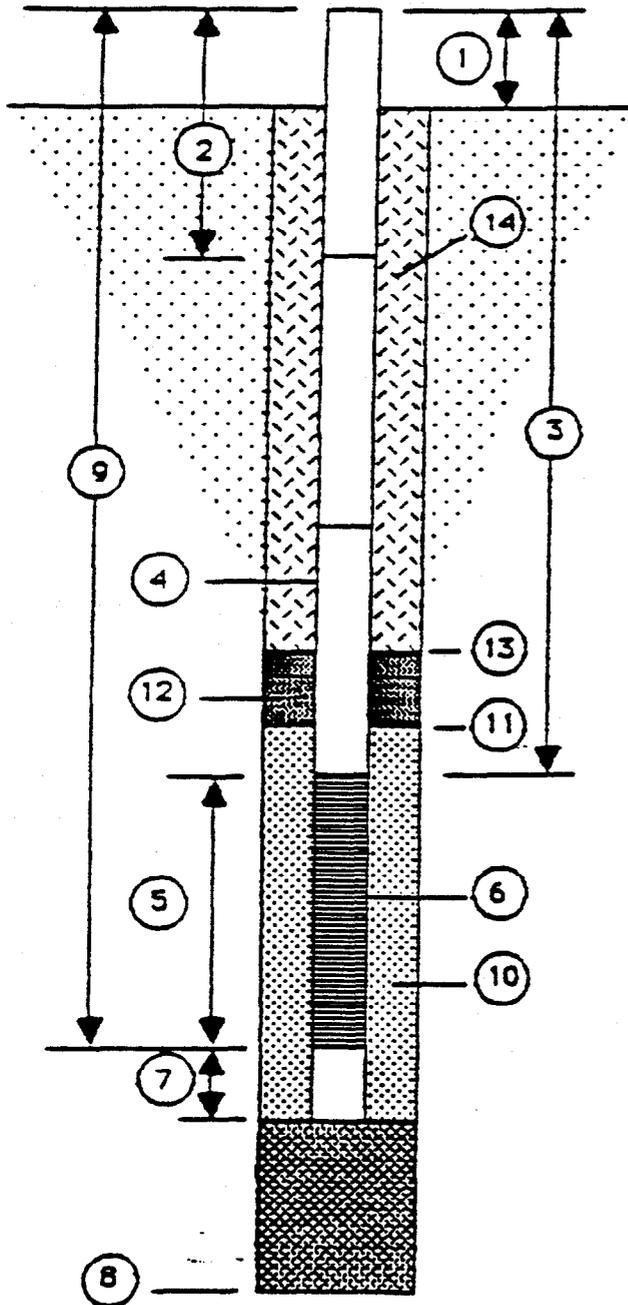
Method of Placement Pour

COMMENTS ON INSTALLATION:

WELL CONSTRUCTION DETAILS

WELL NUMBER OLD-36-06

DATE OF INSTALLATION 10-8/97



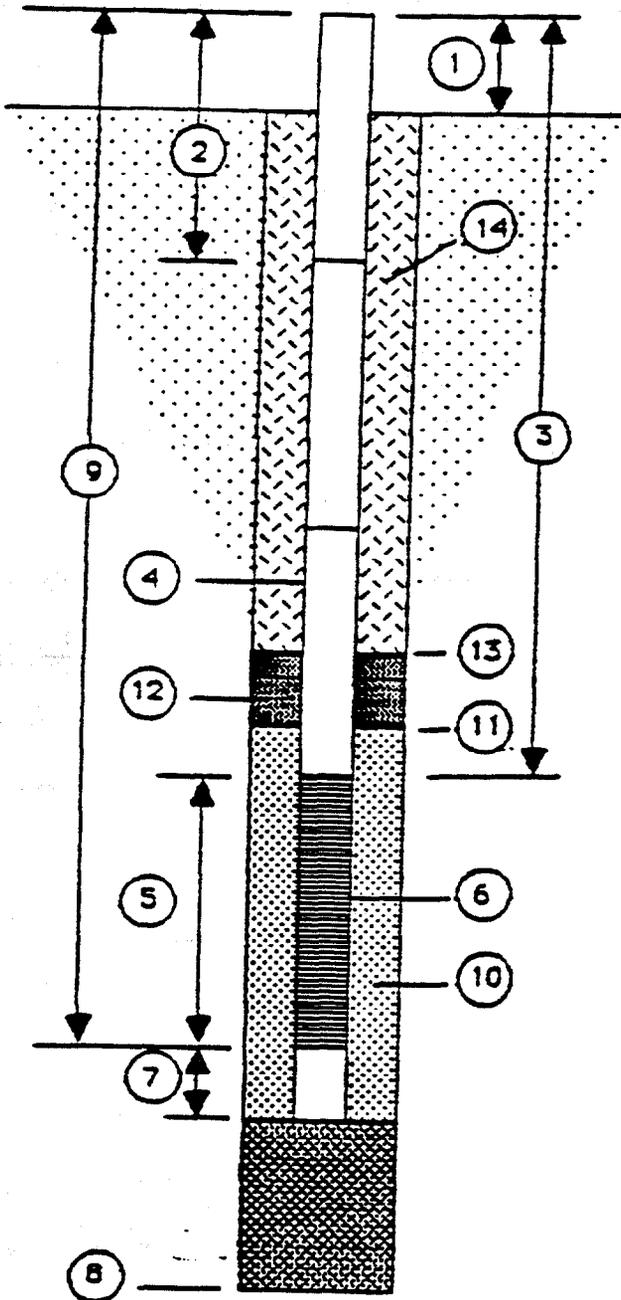
1. Height of Casing above ground FM
2. Depth to first Coupling 7'
Coupling Interval Depths 10'
3. Total Length of Blank Pipe 7'
4. Type of Blank Pipe 2" sched. 40 PVC
5. Length of Screen 10'
6. Type of Screen 2" sched 40 PVC 0.010 slt
7. Length of Sump 6"
8. Total Depth of Boring 17' Hole Diameter 10 1/4"
9. Depth To Bottom of Screen 17'
10. Type of Screen Filter Silica sand
Quantity Used 400/6 Size 20/30 U/C
11. Depth To Top of Filter 5'
12. Type of Seal 60/45 fine sand
Quantity Used NR
13. Depth To Top of Seal 3'
14. Type of Grout Neat cement
Grout Mixture NR
Method of Placement Pour

COMMENTS ON INSTALLATION:

WELL CONSTRUCTION DETAILS

WELL NUMBER 060-36-07

DATE OF INSTALLATION 6-17/98



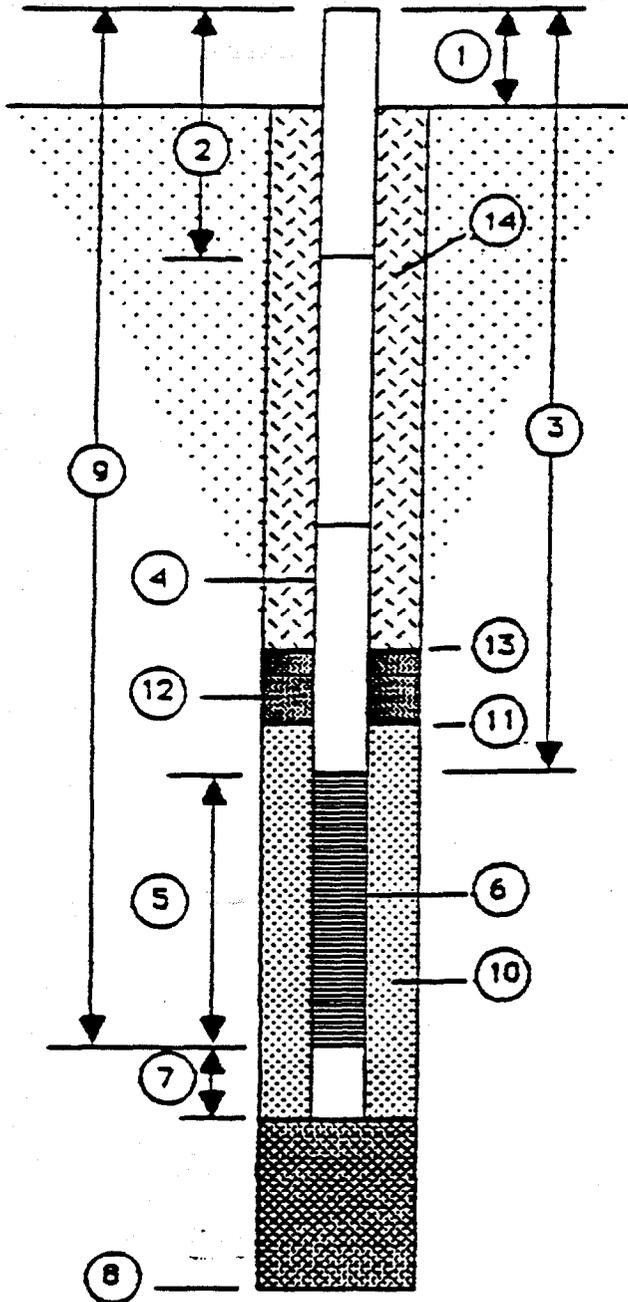
1. Height of Casing above ground FM
2. Depth to first Coupling 5'
Coupling Interval Depths 10'
3. Total Length of Blank Pipe 15'
4. Type of Blank Pipe 2" Sched. 40 PVC
5. Length of Screen 5'
6. Type of Screen 2" Sched. 40 PVC 0.01 slot
7. Length of Sump 6"
8. Total Depth of Boring 20' Hole Diameter 1 1/4
9. Depth To Bottom of Screen 20'
10. Type of Screen Filter Standard Sand
Quantity Used 250 lb Size 20/30 U/C
11. Depth To Top of Filter 13'
12. Type of Seal 30/65 Standard Sand
Quantity Used 65 lb
13. Depth To Top of Seal 11'
14. Type of Grout Neat Cement
Grout Mixture 100 lb Portland / 5 lb bent. / gal
Method of Placement Tremie

COMMENTS ON INSTALLATION:

WELL CONSTRUCTION DETAILS

WELL NUMBER OLD-36-08

DATE OF INSTALLATION 6-17/98



1. Height of Casing above ground F.M
2. Depth to first Coupling 2.5
Coupling Interval Depths 10
3. Total Length of Blank Pipe 22.5
4. Type of Blank Pipe 2" sched 40 PVC
5. Length of Screen 5'
6. Type of Screen 2" sched 40 PVC 0.010 slot
7. Length of Sump 6"
8. Total Depth of Boring 27.5 Hole Diameter 4"
9. Depth To Bottom of Screen 27.5
10. Type of Screen Filter Standard Sand
Quantity Used 150 lb Size 20/30 U/C
11. Depth To Top of Filter 21.0
12. Type of Seal Fine sand
Quantity Used 25 lb
13. Depth To Top of Seal 19'
14. Type of Grout Neat cement
Grout Mixture _____
Method of Placement from id

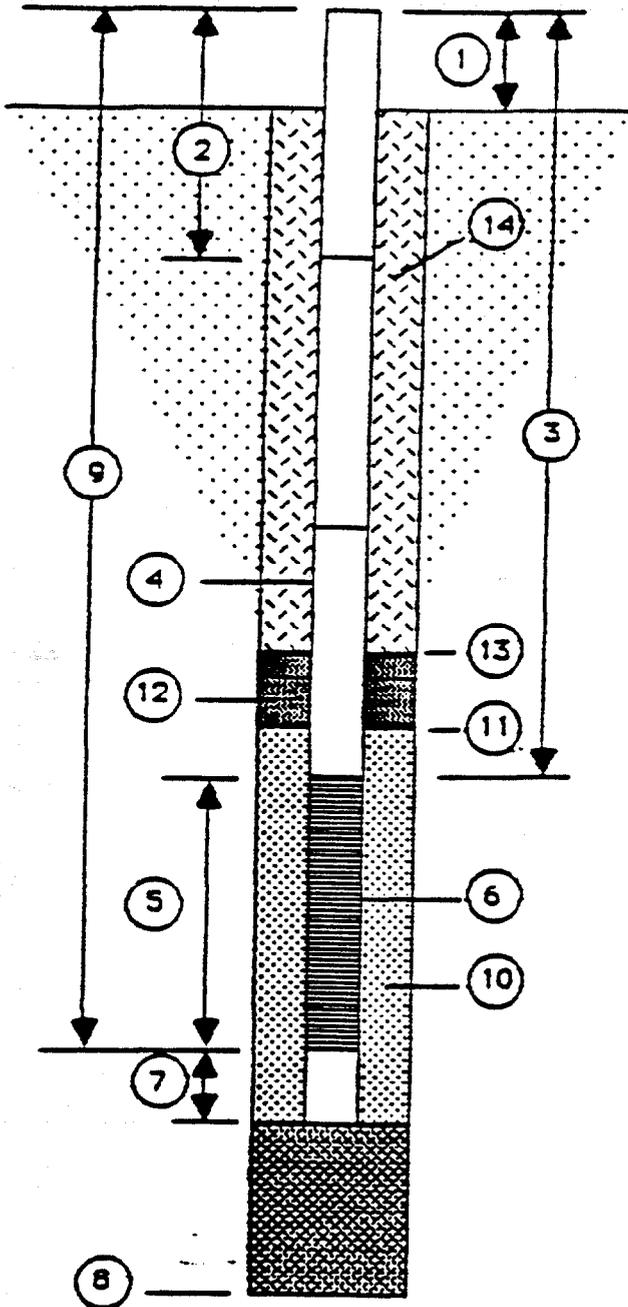
COMMENTS ON INSTALLATION:

6" surface casing installed in 12 1/4" H5A boring to 20 ft bgs. 4" drill out to 27.5 w/mud Rotary -

WELL CONSTRUCTION DETAILS

WELL NUMBER OLD-36-09

DATE OF INSTALLATION 6-17/98



1. Height of Casing above ground FM

2. Depth to first Coupling 10'

Coupling Interval Depths 10'

3. Total Length of Blank Pipe 30'

4. Type of Blank Pipe 2" Sched 40 PVC

5. Length of Screen 5'

6. Type of Screen 2" Sched. 40 PVC 0.010 s10

7. Length of Sump 6"

8. Total Depth of Boring 35' Hole Diameter 6"

9. Depth To Bottom of Screen 35'

10. Type of Screen Filter Standard sand

Quantity Used _____ Size 20/30 U/C

11. Depth To Top of Filter 28

12. Type of Seal 30/65 Standard sand

Quantity Used _____

13. Depth To Top of Seal 26'

14. Type of Grout Neat cement

Grout Mixture _____

Method of Placement Tremie

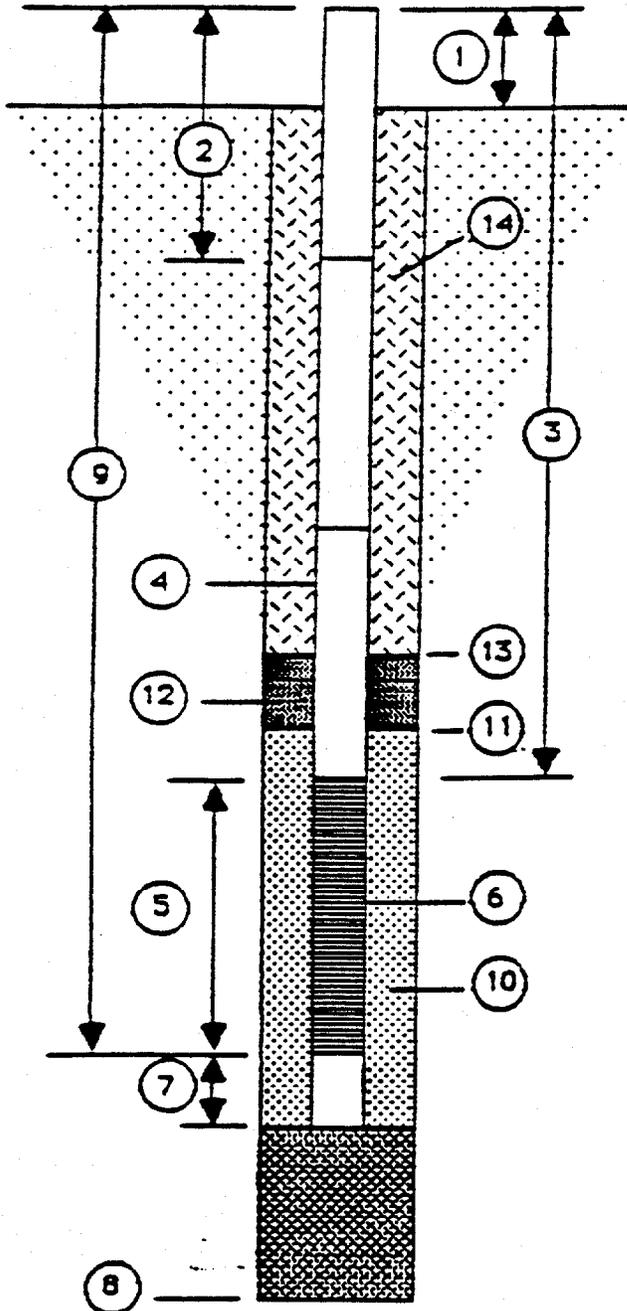
COMMENTS ON INSTALLATION:

6" Surface casing installed in 12 1/4" HSA bory to 28.5 ft. bgs - 4" Drill out to 35' w/mud rotary

WELL CONSTRUCTION DETAILS

WELL NUMBER OLD-36-10

DATE OF INSTALLATION 6-17/98



1. Height of Casing above ground FM

2. Depth to first Coupling 10'

Coupling Interval Depths 10'

3. Total Length of Blank Pipe 20'

4. Type of Blank Pipe 2" sched. 40 PVC

5. Length of Screen 5'

6. Type of Screen 2" sched 40 PVC 0.0105

7. Length of Sump 6"

8. Total Depth of Boring 25' Hole Diameter 10 1/4"

9. Depth To Bottom of Screen 25'

10. Type of Screen Filter Standard sand

Quantity Used 300 lb Size 20/30 U/c

11. Depth To Top of Filter 18'

12. Type of Seal 30/65 fine sand

Quantity Used 65 lb

13. Depth To Top of Seal 16'

14. Type of Grout Neat cement

Grout Mixture _____

Method of Placement Tremie

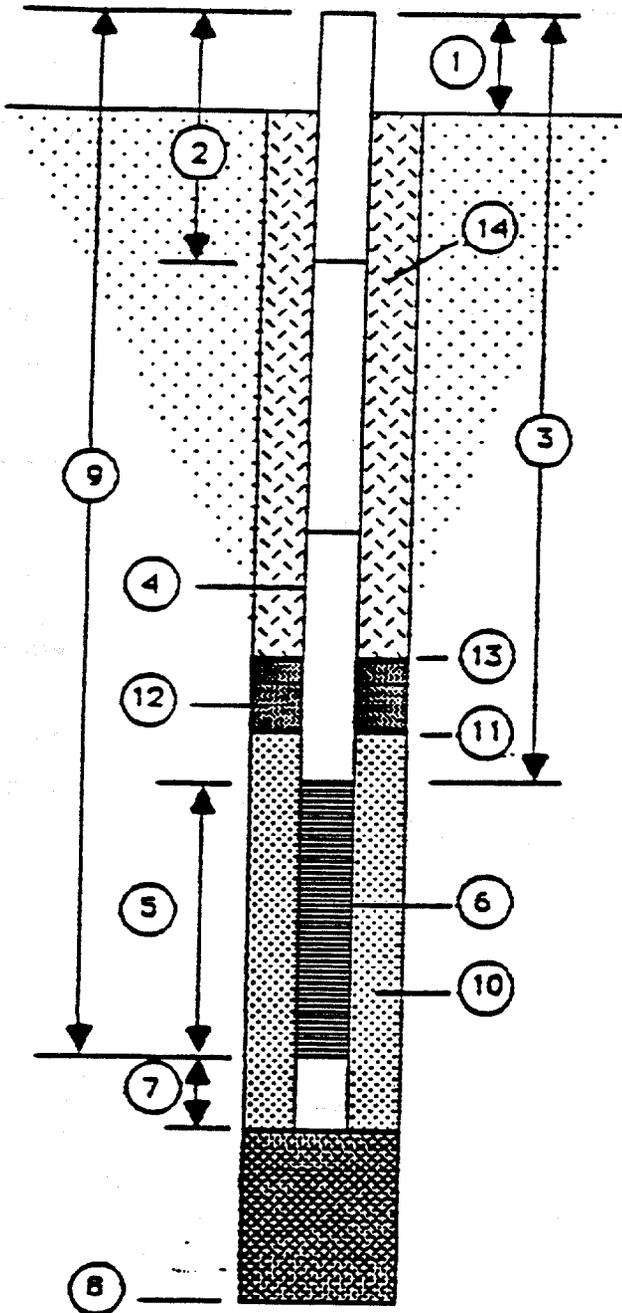
COMMENTS ON INSTALLATION:

DEPARTMENT OF THE NAVY
 SOUTHERN DIVISION
 NAVAL FACILITIES ENGINEERING COMMAND
 2155 EAGLE DR., P. O. BOX 10068
 CHARLESTON, S. C. 29411-0068

WELL CONSTRUCTION DETAILS

WELL NUMBER OLD-36-11

DATE OF INSTALLATION 6-18/98



1. Height of Casing above ground F M

2. Depth to first Coupling 10'

Coupling Interval Depths 10'

3. Total Length of Blank Pipe 30'

4. Type of Blank Pipe 2" sched. 40 PVC

5. Length of Screen 5'

6. Type of Screen 2" sched. 40 PVC

7. Length of Sump 6"

8. Total Depth of Boring 35' Hole Diameter 10 1/4"

9. Depth To Bottom of Screen 35'

10. Type of Screen Filter Standard Sand

Quantity Used _____ Size 20/30 U/C

11. Depth To Top of Filter 28'

12. Type of Seal 30/65 Standard sand

Quantity Used _____

13. Depth To Top of Seal 26'

14. Type of Grout Neat cement

Grout Mixture _____

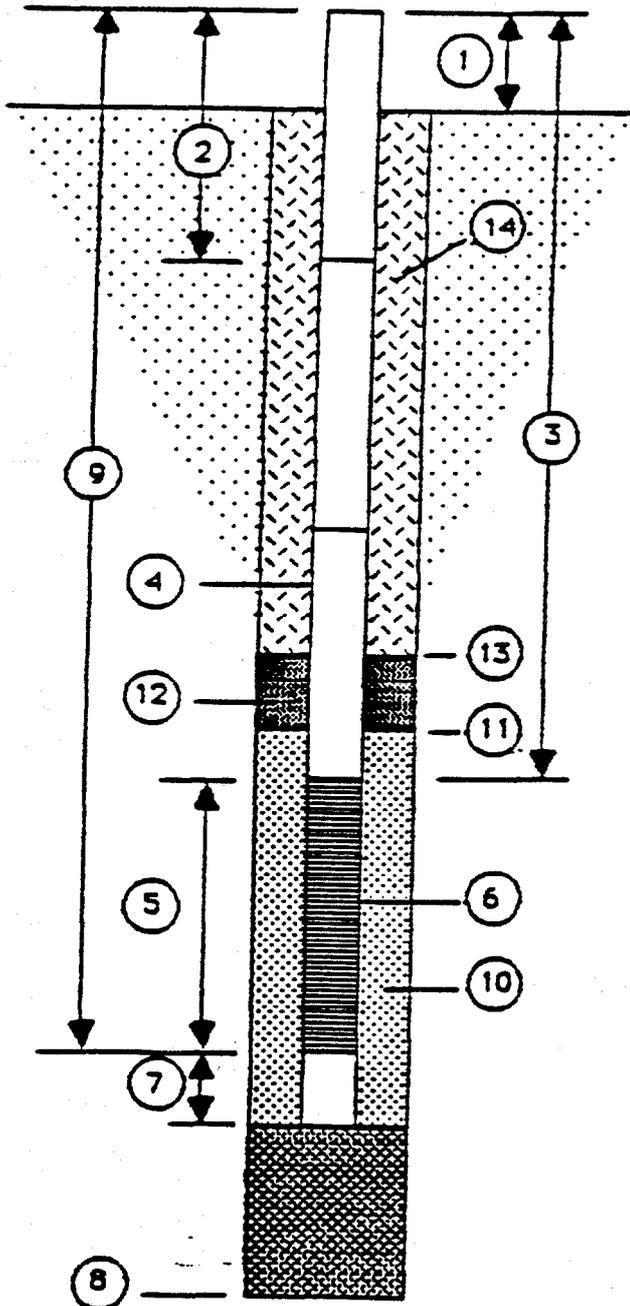
Method of Placement Tremie

COMMENTS ON INSTALLATION:

WELL CONSTRUCTION DETAILS

WELL NUMBER 04D-36-12

DATE OF INSTALLATION 10-27-98



1. Height of Casing above ground FM
 2. Depth to first Coupling 10'
 Coupling Interval Depths 10', 20', 30'

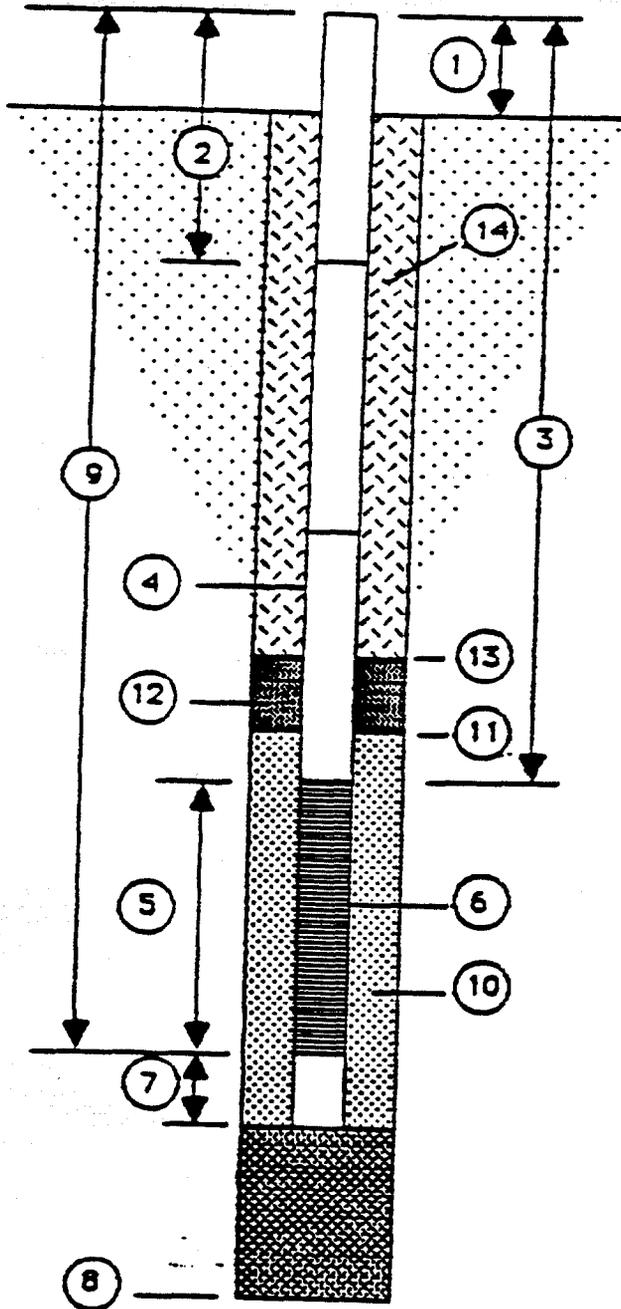
3. Total Length of Blank Pipe 30'
 4. Type of Blank Pipe 2" Sched 40 PVC
 5. Length of Screen 5'
 6. Type of Screen 2" Sched 40 PVC 0.010 S10
 7. Length of Sump 6"
 8. Total Depth of Boring 35' Hole Diameter 10"
 9. Depth To Bottom of Screen 35'
 10. Type of Screen Filter Silica Sand
 Quantity Used 250 lb Size 20/30 U/C
 11. Depth To Top of Filter 28'
 12. Type of Seal 30/65 SAND / Bentonite Pellet
 Quantity Used 50 lb / 25 lb
 13. Depth To Top of Seal 25'
 14. Type of Grout Neat Cement
 Grout Mixture 100 lb Portland / 10 lb bentonite
 Method of Placement Tremie

COMMENTS ON INSTALLATION:

WELL CONSTRUCTION DETAILS

WELL NUMBER OLD-36-13

DATE OF INSTALLATION 10-28/98



1. Height of Casing above ground FM

2. Depth to first Coupling 1'

Coupling Interval Depths 1', 11', 21', 31', 41'
51', 61'

3. Total Length of Blank Pipe 61'

4. Type of Blank Pipe 2" Sched 40 PVC

5. Length of Screen 5'

6. Type of Screen 2" Sched 40 PVC 0.010 slot

7. Length of Sump 6"

8. Total Depth of Boring 66' Hole Diameter 6"

9. Depth To Bottom of Screen 60'

10. Type of Screen Filter silica sand
 Quantity Used 150 lb Size 20/30 U/C

11. Depth To Top of Filter 59'

12. Type of Seal 30/65 sand/Bentonite
 Quantity Used 50 lb / 25 lb

13. Depth To Top of Seal 56'

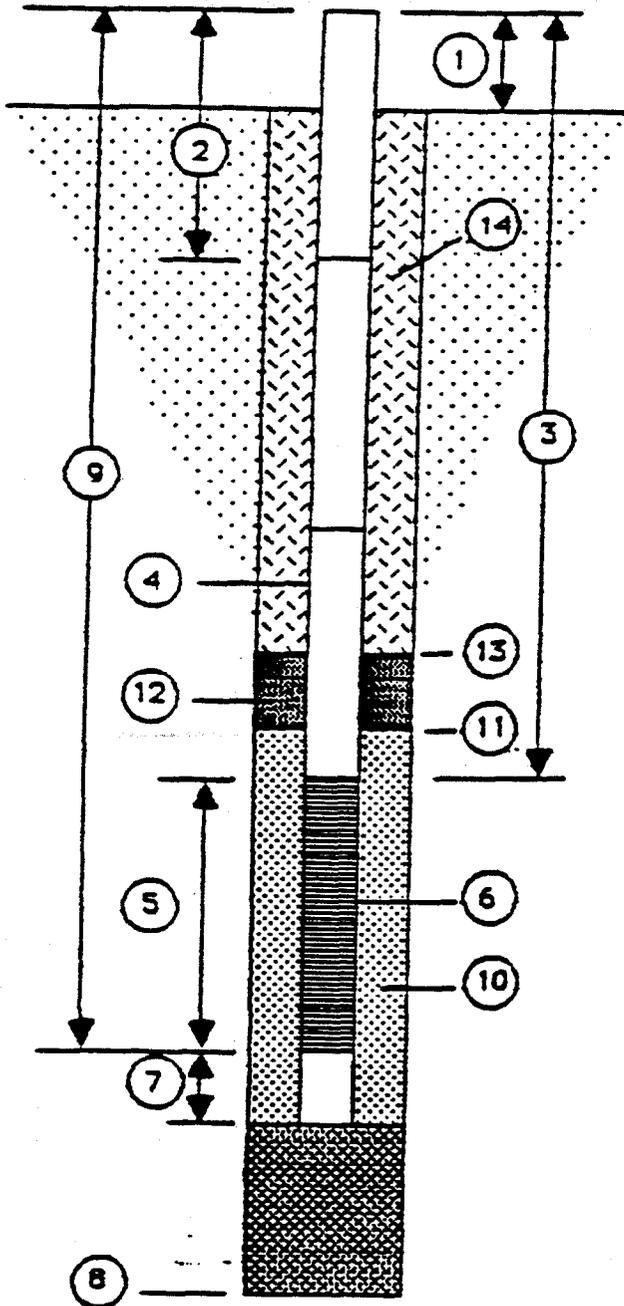
14. Type of Grout Neat Cement
 Grout Mixture _____
 Method of Placement Tremie.

COMMENTS ON INSTALLATION:

WELL CONSTRUCTION DETAILS

WELL NUMBER OLD-36-14

DATE OF INSTALLATION 10-28-68



1. Height of Casing above ground FM
2. Depth to first Coupling 3'
 Coupling Interval Depths 3', 13', 23', 33', 43', 53', 63'
3. Total Length of Blank Pipe 63'
4. Type of Blank Pipe 2" Sched 40 PVC
5. Length of Screen 5'
6. Type of Screen 2" Sched 40 PVC 0.010516
7. Length of Sump 6"
8. Total Depth of Boring 68' Hole Diameter 6"
9. Depth To Bottom of Screen 68'
10. Type of Screen Filter Silica Sand
 Quantity Used 150 lb Size 20/30 U/C
11. Depth To Top of Filter 61'
12. Type of Seal 30/65 sand/bentonite clay
 Quantity Used 50 lb / 25 lb
13. Depth To Top of Seal 59'
14. Type of Grout neat cement
 Grout Mixture _____
 Method of Placement Tremie

COMMENTS ON INSTALLATION:

APPENDIX B-3

GROUNDWATER SAMPLE FIELD DATA

GROUNDWATER SAMPLE FIELD DATA

Project: NTC ORLANDO
 Project Number: 02530.09
 Sample Location ID: OLD-36-01
 Time: Start: 0820 End: 0948

Point of Interest: SA36
 Date: 11-17/97
 Signature of Sampler: WDD

Water Level/Well Data

Well Depth 16.66 Ft. Measured Top of Well
 Hiasonal Top of Protective Casing

Well Riser Stick-up FM Ft. (from ground)

Protective Ft. Casing/Well Difference

Protective Ft. Casing

Depth to Water 8.01 Ft. Well Material: PVC SS

Well Locked?: Yes No

Well Dia. 2 inch 4 inch 6 inch

Water Level Equip. Used: Elect. Cond. Probe Float Activated Press. Transducer

Height of Water Column 18 Gal./R. (2 in.) 85 Gal./R. (4 in.) 1.5 Gal./R. (8 in.) Gal./R. (in.)

8.65 Ft. 1.32 Gal/Vol Total Gal Purged 6

Well Integrity: Prot. Casing Secure Concrete Collar Intact Other

Yes No

Equipment Documentation

Purging/Sampling Equipment Used :

Decontamination Fluids Used :

(/ if Used For)

Purging <input checked="" type="checkbox"/>	Sampling <input checked="" type="checkbox"/>	Penslabic Pump	Equipment ID _____
<input type="checkbox"/>	<input type="checkbox"/>	Submersible Pump	_____
<input type="checkbox"/>	<input type="checkbox"/>	Baler	_____
<input type="checkbox"/>	<input type="checkbox"/>	PVC/Silicon Tubing	_____
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Teflon/Silicon Tubing	_____
<input type="checkbox"/>	<input type="checkbox"/>	Airkit	_____
<input type="checkbox"/>	<input type="checkbox"/>	Hand Pump	_____
<input type="checkbox"/>	<input type="checkbox"/>	In-line Filter	_____
<input type="checkbox"/>	<input type="checkbox"/>	Press/Vac Filter	_____

(/ All That Apply at Location)

- Methanol (100%)
- 25% Methanol/75% ASTM Type II water
- Chlorinated Water
- Liquinox Solution
- Hexane
- HNO₃/D.I. Water Solution
- Potable Water
- None

Field Analysis Data

Ambient Air VOC ppm Well Mouth ppm Field Data Collected In-line In Container Turbid Clear Cloudy Colored Odor

Purge Data	1 Gal.	2 Gal.	3 Gal.	4.5 Gal.	6 Gal.
Temperature, Deg. C	24.0	24.0	24.0	24.0	24.0
pH, units	5.11	5.15	5.16	5.11	5.09
Specific Conductivity (umhos/cm. @ 25 Deg. C.)	110	110	110	112	108
Oxidation-Reduction, mv					
Dissolved Oxygen, ppm NTU	100.6	86.0	72.0	76.7	75.5

Sample Collection Requirements (/ if Required at this Location)

Analytical Parameter	/ if Field Filtered	Preservation Method	Volume Required	/ if Sample Collected	Sample Bottle IDs
VQA	<input type="checkbox"/>	HCL		<input type="checkbox"/>	/ / / /
SVQA	<input type="checkbox"/>	40C		<input type="checkbox"/>	/ / / /
Pea/PCB	<input type="checkbox"/>	40C		<input type="checkbox"/>	/ / / /
Inorganics	<input type="checkbox"/>	HNO ₃		<input type="checkbox"/>	/ / / /
Explosives	<input type="checkbox"/>	4°C		<input type="checkbox"/>	/ / / /
TPH	<input type="checkbox"/>	H ₂ SO ₄		<input type="checkbox"/>	/ / / /
TOC	<input type="checkbox"/>	H ₂ SO ₄		<input type="checkbox"/>	/ / / /
Nitrates	<input type="checkbox"/>	H ₂ SO ₄		<input type="checkbox"/>	/ / / /

Notes: _____

36G00101 = Full suite + TSS + TPH

36G00101D = Full suite + TSS

36H00101 = Filtered Metals

36H00101D = Filtered Metals

Filtered Turbidity = 23.5 NTU

Final Turbidity = 86.4 NTU

GROUNDWATER SAMPLE FIELD DATA

Project: NTC ORLANDO Point of Interest: SA 36
 Project Number: 02530.09 Date: 11-17/97
 Sample Location ID: OLD-36-02
 Time: Start: 1100 End: 1235 Signature of Sampler: WDO

Water Level/Well Data

Well Depth 16.88 ft. Measured Historical Top of Well Top of Protective Casing
 Well Riser Sock-up FM ft. (from ground) Protective ft. Casing/Well Difference
 Protective ft. Casing
 Depth to Water 8.05 ft. Well Material: PVC SS Well Locked?: Yes No Well Dia. 2 inch 4 inch 6 inch
 Water Level Equip. Used: Elect. Cond. Probe Float Activated Press. Transducer
 Height of Water Column 16 Gal./ft. (2 in.) 85 Gal./ft. (4 in.) 1.5 Gal./ft. (8 in.) Gal./ft. (in.) Total Gal Purged: 1.3 Gal/Vol
 Well Integrity: Prot. Casing Secure Concrete Casing Intact Other Yes No

Equipment Documentation

Purging/Sampling Equipment Used:
 (✓ if Used For)

Purging	Sampling	Equipment ID
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Peristaltic Pump
<input type="checkbox"/>	<input type="checkbox"/>	Submersible Pump
<input type="checkbox"/>	<input type="checkbox"/>	Baker
<input type="checkbox"/>	<input type="checkbox"/>	PVC/Silicon Tubing
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Teflon/Silicon Tubing
<input type="checkbox"/>	<input type="checkbox"/>	AirLit
<input type="checkbox"/>	<input type="checkbox"/>	Hand Pump
<input type="checkbox"/>	<input type="checkbox"/>	In-line Filter
<input type="checkbox"/>	<input type="checkbox"/>	Press/Vac Filter

Decontamination Fluids Used:
 (✓ All That Apply at Location)
 Methanol (100%)
 25% Methanol/75% ASTM Type II water
 Deionized Water
 Liquinox Solution
 Hexane
 HNO₃/DI Water Solution
 Potable Water
 None

Field Analysis Data

Ambient Air VOC ϕ ppm Well Mouth ϕ ppm Field Data Collected In-line In Container Sample Observations: Turbid Clear Cloudy
 Colored Odor

Purge Data	1/2 GAL	2.5 GAL	3.5 GAL	4.5 GAL	5 GAL
Temperature, Deg. C	26.0	27.0	27.0	26.5	26.5
pH, units	6.02	6.10	6.06	6.08	6.11
Specific Conductivity (umhos/cm. @ 25 Deg. C.)	200	218	222	224	230
Oxidation-Reduction, mv					
Dissolved Oxygen, ppm NTU	7200	7200	7200	7200	7200

Sample Collection Requirements (✓ if Required at this Location)

Analytical Parameter	✓ if Field Filtered	Preservation Method	Volume Required	✓ if Sample Collected	Sample Bottle IDs
VQA	<input type="checkbox"/>	HCL		<input type="checkbox"/>	
SVQA	<input type="checkbox"/>	40C		<input type="checkbox"/>	
Pest/PCB	<input type="checkbox"/>	40C		<input type="checkbox"/>	
Inorganics	<input type="checkbox"/>	HNO ₃		<input type="checkbox"/>	
Explosives	<input type="checkbox"/>	4°C		<input type="checkbox"/>	
TPH	<input type="checkbox"/>	H ₂ SO ₄		<input type="checkbox"/>	
TOC	<input type="checkbox"/>	H ₂ SO ₄		<input type="checkbox"/>	
Nitrate	<input type="checkbox"/>	H ₂ SO ₄		<input type="checkbox"/>	

Notes: 366-00201 = Full suite + TPH + TSS
364-00201 = Filtered metals

F: Hared Turb. = 163.4 NTU

Final Turbidity = 7200 NTU

GROUNDWATER SAMPLE FIELD DATA

Project: NTC ORLANDO Point of Interest: SA36
 Project Number: 02530.09 Date: 11-18/97
 Sample Location ID: OLD-36-03
 Time: Start: 11:50 End: 1:55 Signature of Sampler: [Signature]

Water Level/Well Data

Well Depth: 15.91 ft. Measured Historical Top of Well Top of Protective Casing
 Well Riser Stock-up: FM ft. (from ground) Protective ft. Casing/Well Difference
 Protective ft. Casing
 Depth to Water: 8.15 ft. Well Material: PVC SS Well Locked?: Yes No
 Well Dia: 2 inch 4 inch 6 inch Water Level Equip. Used: Elect. Cond. Probe Float Activated Press. Transducer
 Height of Water Column: 7.70 ft. X 18 Gal/R. (2 in.) 85 Gal/R. (4 in.) 15 Gal/R. (6 in.) Gal/R. (in.)
 [1.24 Gal/ft] Well Integrity: Yes No
 [7 Total Gal Purged] Prot. Casing Secure Concrete Collar Intact Other

Equipment Documentation

Purging/Sampling Equipment Used: Decontamination Fluids Used:

(✓ if Used For)	Purging	Sampling	Equipment ID	(✓ All That Apply at Location)
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	_____	<input type="checkbox"/> Methanol (100%)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	<input type="checkbox"/> 25% Methanol/75% ASTM Type II water
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	<input checked="" type="checkbox"/> Deionized Water
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	<input type="checkbox"/> Liquinox Solution
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	<input type="checkbox"/> Hexane
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	<input type="checkbox"/> HNO ₃ /D.I. Water Solution
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	<input type="checkbox"/> Potable Water
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	<input type="checkbox"/> None
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	_____
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____	_____

Field Analysis Data

Ambient Air VOC: 0 ppm Well Mouth: 0 ppm Field Data Collected: In-line In Container
 Sample Observations: Turbid Clear Cloudy
 Colored Oily

Purge Data	3 Gal	4 Gal	5 Gal	6 Gal	7 Gal
Temperature, Deg. C	<u>27.2</u>	<u>26.8</u>	<u>26.8</u>	<u>27.2</u>	<u>27.2</u>
pH, units	<u>6.79</u>	<u>6.77</u>	<u>6.78</u>	<u>6.79</u>	<u>6.90</u>
Specific Conductivity (umhos/cm. @ 25 Deg. C.)	<u>268</u>	<u>268</u>	<u>268</u>	<u>260</u>	<u>270</u>
Oxidation-Reduction, mv	<u>24.10</u>	<u>17.10</u>	<u>15.90</u>	<u>11.04</u>	<u>9.43</u>
Dissolved Oxygen, ppmPTU					

Sample Collection Requirements

Analytical Parameter	✓ if Field Filtered	Preservation Method	Volume Required	✓ if Sample Collected	Sample Bottle IDs
VOC	<input type="checkbox"/>	HCL	_____	<input type="checkbox"/>	____/____/____/____
SVOC	<input type="checkbox"/>	40C	_____	<input type="checkbox"/>	____/____/____/____
PAH/PCB	<input type="checkbox"/>	40C	_____	<input type="checkbox"/>	____/____/____/____
Inorganics	<input type="checkbox"/>	HNO ₃	_____	<input type="checkbox"/>	____/____/____/____
Explosives	<input type="checkbox"/>	4°C	_____	<input type="checkbox"/>	____/____/____/____
TPH	<input type="checkbox"/>	H ₂ SO ₄	_____	<input type="checkbox"/>	____/____/____/____
TOC	<input type="checkbox"/>	H ₂ SO ₄	_____	<input type="checkbox"/>	____/____/____/____
Nitrate	<input type="checkbox"/>	H ₂ SO ₄	_____	<input type="checkbox"/>	____/____/____/____

Notes: _____
 _____ 36G00301 = Full Suite + TPH + TSS
 _____ 36H00301 = Filtered Metals
 _____ Final Turbidity = 6.01 NTU
 Filtered Turbidity = 0.81 NTU

GROUNDWATER SAMPLE FIELD DATA

Project: NTC ORLANDO Point of Interest: SA36
 Project Number: 02530.09 Date: 11-18/97
 Sample Location ID: OLD-36-04
 Time: Start 0745 End: 0930 Signature of Sampler: RUDO

Water Level/Well Data

Well Depth 15.90 ft. Measured Top of Well Top of Protective Casing
 Well Riser Stick-up FM ft. (from ground) Protective ft. Casing/Well Difference
 Protective ft. Casing
 Depth to Water 8.48 ft. Well Material: PVC SS Well Locked?: Yes No Well Dia. 2 inch 4 inch 6 inch Water Level Equip. Used: Elec. Cond. Probe Float Activated Press. Transducer
 Height of Water Column 7.42 ft. 18 Gal/R. (2 in.) 85 Gal/R. (4 in.) 1.5 Gal/R. (6 in.) Gal/R. (in.) 1.2 Gal/vel 6 Total Gal Purged Well Integrity: Prot. Casing Secure Concrete Collar Intact Other Yes No

Equipment Documentation

Purging/Sampling Equipment Used :

Decontamination Fluids Used :

<p>(/ if Used For)</p> <table border="0"> <tr> <td>Purging</td> <td>Sampling</td> <td></td> <td>Equipment ID</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td>Peristaltic Pump</td> <td>_____</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>Submersible Pump</td> <td>_____</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>Baler</td> <td>_____</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>PVC/Silicon Tubing</td> <td>_____</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td>Teflon/Silicon Tubing</td> <td>_____</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>Air/It</td> <td>_____</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>Hand Pump</td> <td>_____</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>In-line Filter</td> <td>_____</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>Press/Vac Filter</td> <td>_____</td> </tr> </table>	Purging	Sampling		Equipment ID	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Peristaltic Pump	_____	<input type="checkbox"/>	<input type="checkbox"/>	Submersible Pump	_____	<input type="checkbox"/>	<input type="checkbox"/>	Baler	_____	<input type="checkbox"/>	<input type="checkbox"/>	PVC/Silicon Tubing	_____	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Teflon/Silicon Tubing	_____	<input type="checkbox"/>	<input type="checkbox"/>	Air/It	_____	<input type="checkbox"/>	<input type="checkbox"/>	Hand Pump	_____	<input type="checkbox"/>	<input type="checkbox"/>	In-line Filter	_____	<input type="checkbox"/>	<input type="checkbox"/>	Press/Vac Filter	_____	<p>(/ All That Apply at Location)</p> <table border="0"> <tr> <td><input type="checkbox"/></td> <td>Methanol (100%)</td> </tr> <tr> <td><input type="checkbox"/></td> <td>25% Methanol/75% ASTM Type II water</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>Deionized Water</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Liquor Solution</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Hexane</td> </tr> <tr> <td><input type="checkbox"/></td> <td>HNO₃/D.I. Water Solution</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Potable Water</td> </tr> <tr> <td><input type="checkbox"/></td> <td>None</td> </tr> </table>	<input type="checkbox"/>	Methanol (100%)	<input type="checkbox"/>	25% Methanol/75% ASTM Type II water	<input checked="" type="checkbox"/>	Deionized Water	<input type="checkbox"/>	Liquor Solution	<input type="checkbox"/>	Hexane	<input type="checkbox"/>	HNO ₃ /D.I. Water Solution	<input type="checkbox"/>	Potable Water	<input type="checkbox"/>	None
Purging	Sampling		Equipment ID																																																						
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Peristaltic Pump	_____																																																						
<input type="checkbox"/>	<input type="checkbox"/>	Submersible Pump	_____																																																						
<input type="checkbox"/>	<input type="checkbox"/>	Baler	_____																																																						
<input type="checkbox"/>	<input type="checkbox"/>	PVC/Silicon Tubing	_____																																																						
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Teflon/Silicon Tubing	_____																																																						
<input type="checkbox"/>	<input type="checkbox"/>	Air/It	_____																																																						
<input type="checkbox"/>	<input type="checkbox"/>	Hand Pump	_____																																																						
<input type="checkbox"/>	<input type="checkbox"/>	In-line Filter	_____																																																						
<input type="checkbox"/>	<input type="checkbox"/>	Press/Vac Filter	_____																																																						
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<input type="checkbox"/>	Potable Water																																																								
<input type="checkbox"/>	None																																																								

Field Analysis Data

Ambient Air VOC 0 ppm Well Mouth 0 ppm Field Data Collected In-line In Container Sample Observations: Turbid Clear Cloudy
 Colored Odor

Purge Data	2 Gal	3 Gal	4 Gal	5 Gal	6 Gal
Temperature, Deg. C	22.2	23.4	23.2	23.5	23.3
pH, units	6.69	6.65	6.73	6.80	6.83
Specific Conductivity (umho/cm. @ 25 Deg. C.)	110	110	108	108	110
Oxidation-Reduction, mv					
Dissolved-Oxygen, ppm NTU	36.4	27.7	23.1	22.5	19.6

Sample Collection Requirements (/ if Required at this Location)

Analytical Parameter	/ if Field Filtered	Preservation Method	Volume Required	/ if Sample Collected	Sample Bottle IDs
VOA	<input type="checkbox"/>	HCL	_____	<input type="checkbox"/>	_____ / _____ / _____
SVOA	<input type="checkbox"/>	60C	_____	<input type="checkbox"/>	_____ / _____ / _____
Pest/PCB	<input type="checkbox"/>	40C	_____	<input type="checkbox"/>	_____ / _____ / _____
Inorganics	<input type="checkbox"/>	HNO ₃	_____	<input type="checkbox"/>	_____ / _____ / _____
Explosives	<input type="checkbox"/>	4°C	_____	<input type="checkbox"/>	_____ / _____ / _____
TPH	<input type="checkbox"/>	H ₂ SO ₄	_____	<input type="checkbox"/>	_____ / _____ / _____
TOC	<input type="checkbox"/>	H ₂ SO ₄	_____	<input type="checkbox"/>	_____ / _____ / _____
Nitrate	<input type="checkbox"/>	H ₂ SO ₄	_____	<input type="checkbox"/>	_____ / _____ / _____

Notes: _____ 36G 00401 = Full Suite + TPH + TSS
 _____ 36H 00401 = Filtered Metals
 _____ Final Turbidity = 16.8 NTU
 Filtered Turbidity = 3.20 NTU

GROUNDWATER SAMPLE FIELD DATA

Project: NTC ORLANDO Point of Interest: SA 36
 Project Number: 02530.09 Date: 11-18/97
 Sample Location ID: OLD-36-05
 Time: Start 0940 End: 1120 Signature of Sampler: awdo

Water Level/Well Data

Well Depth 15.80 ft. Measured Historical Top of Well Top of Protective Casing
 Well Riser Sock-up FM ft. (from ground) Protective ft. Casing/Well Difference
 Protective ft. Casing
 Depth to Water 8.26 ft. Well Material: PVC SS Well Locked?: Yes No Well Dia. 2 inch 4 inch 6 inch
 Water Level Equip. Used: Elec. Cond. Probe Float Activated Press. Transducer
 Height of Water Column 18 Gal/P. (2 in.) 85 Gal/P. (4 in.) 15 Gal/P. (8 in.) Gal/P. (in.)
7.54 ft. 1.2 Gal/Vol Well Integrity: Yes No
 Prot. Casing Secure Concrete Collar Intact Other

Equipment Documentation

Purging/Sampling Equipment Used: Decontamination Fluids Used:

(<input checked="" type="checkbox"/> if Used For)		Equipment ID	(<input checked="" type="checkbox"/> All That Apply at Location)
<input checked="" type="checkbox"/> Purging	<input checked="" type="checkbox"/> Sampling	_____	<input type="checkbox"/> Methanol (100%)
<input type="checkbox"/>	<input type="checkbox"/>	_____	<input type="checkbox"/> 25% Methanol/75% ASTM Type II water
<input type="checkbox"/>	<input type="checkbox"/>	_____	<input checked="" type="checkbox"/> Deionized Water
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	_____	<input type="checkbox"/> Liquinox Solution
<input type="checkbox"/>	<input type="checkbox"/>	_____	<input type="checkbox"/> Hexane
<input type="checkbox"/>	<input type="checkbox"/>	_____	<input type="checkbox"/> HNO ₃ /D.I. Water Solution
<input type="checkbox"/>	<input type="checkbox"/>	_____	<input type="checkbox"/> Potable Water
<input type="checkbox"/>	<input type="checkbox"/>	_____	<input type="checkbox"/> None
<input type="checkbox"/>	<input type="checkbox"/>	_____	_____
<input type="checkbox"/>	<input type="checkbox"/>	_____	_____

Field Analysis Data

Ambient Air VOC ϕ ppm Well Mouth ϕ ppm Field Data Collected In-line In Container Sample Observations: Turbid Clear Cloudy
 Colored Oor

Purge Data	1 Gal	2 Gal	3 Gal	4 Gal	5 Gal
Temperature, Deg. C	24.7	25.2	25.1	25.3	25.2
pH, units	5.82	5.85	6.02	6.03	5.98
Specific Conductivity (umhos/cm. @ 25 Deg. C.)	90	90	90	90	90
Oxidation-Reduction, mv					
Dissolved Oxygen, ppm	125.2	105.7	91.3	87.7	88.0

Collection Requirements

Analytical Parameter	<input checked="" type="checkbox"/> Field Filtered	Preservation Method	Volume Required	<input checked="" type="checkbox"/> Sample Collected	Sample Bottle IDs
VOC	<input type="checkbox"/>	HQ	_____	<input type="checkbox"/>	_____
SVOC	<input type="checkbox"/>	40C	_____	<input type="checkbox"/>	_____
PAH/PCB	<input type="checkbox"/>	40C	_____	<input type="checkbox"/>	_____
Inorganics	<input type="checkbox"/>	HQ	_____	<input type="checkbox"/>	_____
Explosives	<input type="checkbox"/>	4C	_____	<input type="checkbox"/>	_____
TPH	<input type="checkbox"/>	H, SS	_____	<input type="checkbox"/>	_____
TOC	<input type="checkbox"/>	H, SS	_____	<input type="checkbox"/>	_____
Metals	<input type="checkbox"/>	H, SS	_____	<input type="checkbox"/>	_____

Notes: _____
 36600501 = Full suite + TPH + TSS
 36H00501 = Filtered Metals
 Filtered Turbidity = 11.19 NTU
 Final Turbidity = 71.6 NTU

GROUNDWATER SAMPLE FIELD DATA

Project: NTC ORLANDO Point of Interest: SA 36
 Project Number: 02530.09 Date: 11-17/97
 Sample Location ID: OLD-36-06
 Time: Start: 1250 End: 1440 Signature of Sampler: RWD

Water Level/Well Data

Well Depth 16.77 ft. Measured Horizontal Top of Well Top of Protective Casing
 Well Riser Sock-up FM ft. (from ground) Protective ft. Casing/Well Difference
 Protective ft. Casing
 Depth to Water 8.03 ft. Well Material: PVC SS Well Locked?: Yes No
 Well Dia. 2 inch 4 inch 6 inch
 Water Level Equip. Used: Elect. Cond. Probe Float Activated Press. Transducer
 Height of Water Column 18 Gal./ft. (2 in.) 25 Gal./ft. (4 in.) 1.5 Gal./ft. (6 in.) Gal./ft. (in.) 1.3 Gal/Vol
 Total Gal Purged _____
 Well Integrity: Prot. Casing Secure Concrete Collar Intact Other _____
 Yes No

Equipment Documentation

Purging/Sampling Equipment Used :

Decontamination Fluids Used :

(/ if Used For)

Purging	Sampling
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

Equipment ID

Peristaltic Pump	_____
Submersible Pump	_____
Baker	_____
PVC/Silicon Tubing	_____
Teflon/Silicon Tubing	_____
Airfit	_____
Hand Pump	_____
In-line Filter	_____
Press/Vac Filter	_____

(/ All That Apply at Location)

<input type="checkbox"/> Methanol (100%)
<input type="checkbox"/> 25% Methanol/75% ASTM Type II water
<input checked="" type="checkbox"/> Deionized Water
<input type="checkbox"/> Liquinox Solution
<input type="checkbox"/> Hexane
<input type="checkbox"/> HNO ₃ /D.I. Water Solution
<input type="checkbox"/> Potable Water
<input type="checkbox"/> None

Field Analysis Data

Ambient Air VOC 0 ppm Well Mouth 0 ppm Field Data Collected In-line In Container
 Sample Observations: Turbid Clear Cloudy
 Colored Oor

Purge Data	1	2	3	4	5
Temperature, Deg. C	26.0	26.5	26.5	26.0	26.0
pH, units	5.34	5.18	5.19	5.19	5.21
Specific Conductivity (umhos/cm. @ 25 Deg. C.)	162	155	150	149	150
Oxidation-Reduction, mv					
Dissolved Oxygen, ppm NTU	56.3	51.6	49.2	51.2	49.4

Sample Collection Requirements (/ if Required at this Location)

Analytical Parameter	/ if Field Filtered	Preservation Method	Volume Required	/ if Sample Collected	Sample Bottle IDs
VOA		HCL			/ / / / /
SVOA		40C			/ / / / /
Pea/PCB		40C			/ / / / /
Inorganics		HNO ₃			/ / / / /
Explosives		4C			/ / / / /
TPH		H ₂ SO ₄			/ / / / /
TOC		H ₂ SO ₄			/ / / / /
Nitrate		H ₂ SO ₄			/ / / / /

Notes: _____

36G00601 = Full suite + TPH + TSS

36H00601 = Filtered Metals

Final turbidity = 40.0 NTU

Filtered Turbidity = 2.40 NTU

GROUNDWATER SAMPLE FIELD DATA

Project: NTC ORLANDO Point of Interest: SA 36
 Project Number: 02530.05 Date: 7-17-98
 Sample Location ID: OLA-36-01
 Time: Start: 1405 End: 1503 Signature of Sampler: [Signature]

Water Level/Well Data

Well Depth 16.60 Ft. Measured Historical Top of Well Top of Protective Casing
 Well Riser Stick-up (from ground) Ft. Protective Ft. Casing/Well Difference
 Protective Ft. Casing
 Depth to Water 7.98 Ft. Well Material: PVC SS Well Locked?: Yes No
 Well Dia. 2 inch 4 inch 6 inch Water Level Equip. Used: Elect. Cond. Probe Float Activated Press. Transducer
 Height of Water Column 1.6 Gal/R. (2 in.) 8.5 Gal/R. (4 in.) 1.5 Gal/R. (6 in.) Gal/R. (in.)
8.62 Ft. 1.4 Gal/Vol 5 Total Gal Purged
 Well Integrity: Prot. Casing Secure Concrete Collar Intact Other Yes No

Equipment Documentation

Purging/Sampling Equipment Used: **Decontamination Fluids Used:**
 (✓ if Used For) (✓ All That Apply at Location)

Purging	Sampling			
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Peristaltic Pump		<input type="checkbox"/> Methanol (100%)
<input type="checkbox"/>	<input type="checkbox"/>	Submersible Pump		<input type="checkbox"/> 25% Methanol/75% ASTM Type II water
<input type="checkbox"/>	<input type="checkbox"/>	Baler		<input type="checkbox"/> Deionized Water
<input type="checkbox"/>	<input type="checkbox"/>	PVC/Silicon Tubing		<input type="checkbox"/> Liquinox Solution
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Teflon/Silicon Tubing		<input type="checkbox"/> Hexane
<input type="checkbox"/>	<input type="checkbox"/>	Airkit		<input type="checkbox"/> HNO ₃ 0.1. Water Solution
<input type="checkbox"/>	<input type="checkbox"/>	Hand Pump		<input type="checkbox"/> Potable Water
<input type="checkbox"/>	<input type="checkbox"/>	In-line Filter		<input checked="" type="checkbox"/> None
<input type="checkbox"/>	<input type="checkbox"/>	Press/Vac Filter		<input type="checkbox"/>

Field Analysis Data

Ambient Air VOC 0 ppm Well Mouth 0 ppm Field Data Collected In-line Turbid Clear Cloudy
 In Container Colored Odor
Sample Observations:

Purge Data	1 Gal	2 Gal	3 Gal	4 Gal	5 Gal
Temperature, Deg. C	29.0	29.0	29.0	29.0	29.0
pH, units	5.62	5.50	5.49	5.48	5.40
Specific Conductivity (umhos/cm. @ 25 Deg. C.)	132	129	135	125	124
Oxidation - Reduction, mv					
Dissolved Oxygen, ppm (F)	94.4	96.7	92.0	89.2	88.4

Sample Collection Requirements

Analytical Parameter	✓ if Field Filtered	Preservation Method	Volume Required	✓ if Sample Collected	Sample Bottle IDs
VOA	<input type="checkbox"/>	HCL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SVOA	<input type="checkbox"/>	40C	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pest/PCB	<input type="checkbox"/>	40C	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Inorganics	<input type="checkbox"/>	HNO ₃	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Explosives	<input type="checkbox"/>	4C	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TPH	<input type="checkbox"/>	H ₂ SO ₄	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOC	<input type="checkbox"/>	H ₂ SO ₄	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nitrate	<input type="checkbox"/>	H ₂ SO ₄	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Notes: 36G-00102 3x 40ml w/HCL
VOC 524.2

GROUNDWATER SAMPLE FIELD DATA

Project: NTC ORLANDO
 Project Number: 02530.05
 Sample Location ID: OLD-36-06
 Time: Start: 1005 End: 1113

Point of Interest: 5A36
 Date: 6-30-98
 Signature of Sampler: [Signature]

Water Level/Well Data

Well Depth 16.70 R. Measured Historical Top of Well Top of Protective Casing
 Well Riser Stick-up — R. (from ground) Protective — R. Casing/Well Difference
 Protective — R. Casing
 Depth to Water 7.86 R. Well Material: PVC SS Well Locked?: Yes No
 Well Dia. 2 inch 4 inch 6 inch
 Water Level Equip. Used: Elect. Cond. Probe Float Activated Press. Transducer
 Height of Water Column 8.84 R. 16 Gal/R. (2 in.) 65 Gal/R. (4 in.) 15 Gal/R. (6 in.) Gal/R. (in.)
 [1.4 Gal/Vol] 5 Total Gal Purged
 Well Integrity: Prot. Casing Secure Concrete Collar Intact Other

Equipment Documentation

Purging/Sampling Equipment Used: Decontamination Fluids Used:

(/ if Used For)			
Purging	Sampling	Equipment ID	(/ All That Apply at Location)
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Penstatic Pump	<input type="checkbox"/> Methanol (100%)
<input type="checkbox"/>	<input type="checkbox"/>	Submersible Pump	<input type="checkbox"/> 25% Methanol/75% ASTM Type II water
<input type="checkbox"/>	<input type="checkbox"/>	Bailer	<input type="checkbox"/> Deionized Water
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	PVC/Silicon Tubing	<input type="checkbox"/> Liquinox Solution
<input type="checkbox"/>	<input type="checkbox"/>	Teflon/Silicon Tubing	<input type="checkbox"/> Hexane
<input type="checkbox"/>	<input type="checkbox"/>	Airfit	<input type="checkbox"/> HNO ₃ 0.1. Water Solution
<input type="checkbox"/>	<input type="checkbox"/>	Hand Pump	<input type="checkbox"/> Potable Water
<input type="checkbox"/>	<input type="checkbox"/>	In-line Filter	<input checked="" type="checkbox"/> None
<input type="checkbox"/>	<input type="checkbox"/>	Press/Vac Filter	

Field Analysis Data

Ambient Air VOC — ppm Well Mouth — ppm Field Data Collected In-line In Container Sample Observations: Turbid Clear Cloudy
 Colored Odor

Purge Data	1	2	3	4	5
	Gal	Gal	Gal	Gal	Gal
Temperature, Deg. C	29.0	29.0	27.0	28.0	28.0
pH, units	4.94	5.20	5.18	5.20	5.14
Specific Conductivity	208	180	182	180	180
(ammonium @ 25-Deg.-C.) NH ₄	72.6	54.8	56.0	48.9	45.0
Oxidation-Reduction, mv					
Dissolved Oxygen, ppm					

Sample Collection Requirements (/ if Required at this Location)

Analytical Parameter	/ if Field Filtered	Preservation Method	Volume Required	/ if Sample Collected	Sample Bottle IDs
VOC		HCL			/ / / / /
SVOC		40C			/ / / / /
Pest/PCB		40C			/ / / / /
Inorganics		HNO ₃			/ / / / /
Explosives		4°C			/ / / / /
TPH		H ₂ SO ₄			/ / / / /
TOC		H ₂ SO ₄			/ / / / /
Nitrate		H ₂ SO ₄			/ / / / /

Notes: 36600602
3x 40 ml w/ HCL = VOC 524.2

GROUNDWATER SAMPLE FIELD DATA

Project: NTC ORLANDO Point of Interest: SA 36
 Project Number: 02530.05 Date: 6-30-98
 Sample Location ID: 060-36-07
 Time: Start: 1128 End: 1316 Signature of Sampler: Will P. Olson

Water Level/Well Data

Well Depth 20.15 ft. Measured Top of Well Top of Protective Casing
 Historical Casing
 Well Riser Stick-up ft. (from ground) Protective ft. Casing/Well Difference
 Protective ft. Casing
 Depth to Water 7.83 ft. Well Material: PVC Yes Well Locked?: Yes No Well Dia. 2 inch 4 inch 6 inch Water Level Equip. Used:
 Elect. Cond. Probe Float Activated Press. Transducer
 Height of Water Column 12.32 ft. 16 Gal/R. (2 in.) 65 Gal/R. (4 in.) 1.5 Gal/R. (6 in.) Gal/R. (in.) Gal/Vol
 [02 Gal/Vol Total Gal Purged] Well Integrity: Prot. Casing Secure Concrete Collar Intact Other Yes No

Equipment Documentation

Purging/Sampling Equipment Used:
 Pumping Sampling
 Peristaltic Pump Submersible Pump Bailor PVC/Silicon Tubing Teflon/Silicon Tubing Airlift Hand Pump In-line Filter Press/Vac Filter
 Equipment ID: _____
Decontamination Fluids Used:
 Methanol (100%) 25% Methanol/75% ASTM Type II water Deionized Water Liquinox Solution Hexane HNO₃ 0.1. Water Solution Potable Water None

Field Analysis Data

Ambient Air VOC ppm Well Mouth ppm Field Data Collected In-line In Container Sample Observations: Turbid Clear Cloudy
 Colored Odor
Purge Data @ INIT Gal. @ 3.5 Gal. @ 4.5 Gal. @ 5.5 Gal. @ 6 Gal.
 Temperature, Deg. C: 30.0 29.0 26.0 26.0 26.0
 pH, units: 5.46 5.47 5.46 5.49 5.54
 Specific Conductivity: 140 140 138 140 140
 (umhos/cm. @ 25 Deg. C) 33.8 143.6 134.4 145.7 159.8
 Oxidation-Reduction, mv: _____
 Dissolved Oxygen, ppm: _____

Sample Collection Requirements

Analytical Parameter	<input checked="" type="checkbox"/> Field Filtered	Preservation Method	Volume Required	<input checked="" type="checkbox"/> Sample Collected	Sample Bottle IDs
VCA	<input type="checkbox"/>	HCL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SVCA	<input type="checkbox"/>	40C	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pest/PCB	<input type="checkbox"/>	40C	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Inorganics	<input type="checkbox"/>	HNO ₃	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Explosives	<input type="checkbox"/>	4°C	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TPH	<input type="checkbox"/>	H ₂ SO ₄	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOC	<input type="checkbox"/>	H ₂ SO ₄	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nitrate	<input type="checkbox"/>	H ₂ SO ₄	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Notes:	<u>36 G 00701 3x 40 ml w/HCL</u> <u>36 G 00701 D 3x 40 ml w/HCL</u> <u>524.2 - VOC</u>				

GROUNDWATER SAMPLE FIELD DATA

Project: NTC ORLANDO
 Project Number: 02530.05
 Sample Location ID: GLD-36-10
 Time: Start: 1215 End: 1350

Point of Interest: SA 36
 Date: 7-1/98

Signature of Sampler: [Signature]

Water Level/Well Data

Well Depth: 24.90 Ft. Measured Historical
 Top of Well Top of Protective Casing
 Well Riser Stick-up: Ft. (from ground)
 Protective Casing/Well Difference: Ft.
 Protective Casing: Ft.
 Depth to Water: 6.24 Ft.
 Well Material: PVC SS
 Well Locked?: Yes No
 Well Dia.: 2 inch 4 inch 8 inch
 Water Level Equip. Used: Elect. Cond. Probe Float Activated Press. Transducer
 Height of Water Column: 16.66 Ft. 1.8 Gal/R. (2 in.) 8.5 Gal/R. (4 in.) 1.5 Gal/R. (8 in.) Gal/R. (in.)
 [2.7 Gal/Vol]
8 1/2 Total Gal Purged
 Well Integrity: Yes No
 Prot. Casing Secure:
 Concrete Collar Intact:
 Other:

Equipment Documentation

Purging/Sampling Equipment Used:

(<input checked="" type="checkbox"/> if Used For)		Equipment ID
<input checked="" type="checkbox"/> Pumping	<input checked="" type="checkbox"/> Sampling	
<input type="checkbox"/>	<input type="checkbox"/>	Peristaltic Pump
<input type="checkbox"/>	<input type="checkbox"/>	Submersible Pump
<input type="checkbox"/>	<input type="checkbox"/>	Boiler
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	PVC/Silicon Tubing
<input type="checkbox"/>	<input type="checkbox"/>	Teflon/Silicon Tubing
<input type="checkbox"/>	<input type="checkbox"/>	Airlift
<input type="checkbox"/>	<input type="checkbox"/>	Hand Pump
<input type="checkbox"/>	<input type="checkbox"/>	In-line Filter
<input type="checkbox"/>	<input type="checkbox"/>	Press/Vac Filter

Decontamination Fluids Used:

(All That Apply at Location)

- Methanol (100%)
- 25% Methanol/75% ASTM Type II water
- Deionized Water
- Liquinox Solution
- Hexane
- HNO₃/D.I. Water Solution
- Potable Water
- None

Field Analysis Data

Ambient Air VOC: ppm Well Mouth: ppm Field Data Collected: In-line In Container
 Sample Observations: Turbid Clear Cloudy
 Colored Odor

Purge Data	@ 1 in. Gal.	@ 4 Gal.	@ 7 Gal.	@ 8 Gal.	@ 8 1/2 Gal.
Temperature, Deg. C	29.0	28.5	28.5	27.5	27.5
pH, units	6.40	6.44	6.07	6.00	6.01
Specific Conductivity	166	230	180	182	166
(unfiltered @ 25 Deg. C) μ S/cm	7200	7200	7200	7200	7200
Oxidation-Reduction, mv					
Dissolved Oxygen, ppm					

Sample Collection Requirements
 (if Required at this Location)

Analytical Parameter	<input checked="" type="checkbox"/> if Field Filtered	Preservation Method	Volume Required	<input checked="" type="checkbox"/> if Sample Collected	Sample Bottle IDs
VOC	<input type="checkbox"/>	HCL		<input type="checkbox"/>	
SVOC	<input type="checkbox"/>	40C		<input type="checkbox"/>	
Pest/PCB	<input type="checkbox"/>	40C		<input type="checkbox"/>	
Inorganics	<input type="checkbox"/>	HNO ₃		<input type="checkbox"/>	
Explosives	<input type="checkbox"/>	4°C		<input type="checkbox"/>	
TPH	<input type="checkbox"/>	H ₂ SO ₄		<input type="checkbox"/>	
TOC	<input type="checkbox"/>	H ₂ SO ₄		<input type="checkbox"/>	
Nitrate	<input type="checkbox"/>	H ₂ SO ₄		<input type="checkbox"/>	
Notes:	<p>366.01001 3x 40ml w/HCL 524.2 - VOC 2 w/small bubbles</p>				

GROUNDWATER SAMPLE FIELD DATA

Project: NTC ORLANDO Point of Interest: SA 36
 Project Number: 02530.05 Date: 12-4/98
 Sample Location ID: OLD-36-02
 Time: Start: 0820 End: 1005 Signature of Sampler: WDO

Water Level/Well Data

Well Depth 16.78 ft. Measured Top of Well Top of Protective Casing
 Well Riser Sock-up (from ground) FM ft. Protective Casing Well Difference ft.
 Protective Casing ft.
 Depth to Water 7.66 ft. Well Material: PVC Well Locked?: Yes No Well Dia. 2 inch 4 inch 6 inch Water Level Equip. Used: Elect. Cond. Probe Float Activated Press. Transducer
 Height of Water Column 18 Gal./R. (2 in.) 85 Gal./R. (4 in.) 13 Gal./R. (6 in.) Gal./R. (in.) 1.45 Gal/Vol Well Integrity: Prot. Casing Secure Concrete Collar Intact Other Yes No
9.12 ft. 4.5 Total Gal Purged

Equipment Documentation

Purging/Sampling Equipment Used:
 Purging Sampling
 Peristaltic Pump Equipment ID _____
 Submersible Pump _____
 Baler _____
 PVC/Silicon Tubing _____
 Teflon/Silicon Tubing _____
 Airtight _____
 Hand Pump _____
 In-line Filter _____
 Press/Vac Filter _____

Decontamination Fluids Used:
 Methanol (100%)
 25% Methanol/75% ASTM Type II water
 Deionized Water
 Liquinox Solution
 Hexane
 HNO₃ / D.I. Water Solution
 Potable Water
 None

Field Analysis Data

Ambient Air VOC NR ppm Well Mouth NR ppm Field Data Collected In-line In Container Sample Observations: Turbid Clear Cloudy
 Colored Ooer

Purge Data	Gal @	INIT	Gal @	1.5	Gal @	3	Gal @	4.5	Gal @
Temperature, Deg. C		27.7		28.1		28.0		28.1	
pH, units		4.89		4.77		4.79		4.77	
Specific Conductivity (umhos/cm. @ 25 Deg. C.)		72		70		75		62	
Oxidation-Reduction, mv		-228.0		-94.7		-87.1		-91.3	
Dissolved Oxygen, ppm NTU		87.2		7200		7300		7200	

Sample Collection Requirements
(/ if Required at this Location)

Analytical Parameter	/ if Field Filtered	Preservation Method	Volume Required	/ if Sample Collected	Sample Bottle IDs
VOC		HCL			/ / / / /
SVOC		40C			/ / / / /
pest/PCB		40C			/ / / / /
Inorganics		HNO ₃			/ / / / /
Explosives		PC			/ / / / /
TPH		H ₂ SO ₄			/ / / / /
TOC		H ₂ SO ₄			/ / / / /
Nitrates		H ₂ SO ₄			/ / / / /

Notes: _____

36600203 VOC/Diss. Gases/TOC
 Filtered Turbidity = 9.22 NTU

GROUNDWATER SAMPLE FIELD DATA

Project: NTC ORLANDO Point of Interest: SA 36
 Project Number: 02530.05 Date: 12-3/98
 Sample Location ID: OLD-36-07
 Time: Start: 1105 End: 1255 Signature of Sampler: WDO

Water Level/Well Data

Well Depth 20.10 R. Measured Top of Well Top of Protective Casing
 Well Riser Sock-up FM R. (from ground) Protective Casing/Well Difference
 Protective Casing
 Depth to Water 7.48 R. Well Material: PVC SS Well Locked?: Yes No
 Well Dia. 2 inch 4 inch 6 inch Water Level Equip. Used: Elect. Cond. Probe Float Activated Press. Transducer
 Height of Water Column 12.62 R. X 18 GVA. (2 in.) 85 GVA. (4 in.) 15 GVA. (8 in.) GVA. (in.) [2 Gal/Vol 8 Total Gal Purged
 Well Integrity: Prot. Casing Secure Concrete Collar Intact Other Yes No

Equipment Documentation

Purging/Sampling Equipment Used:
 Purging Sampling
 Peristaltic Pump Submersible Pump Baker PVC/Silicon Tubing Teflon/Silicon Tubing Airlift Hand Pump In-line Filter Press/Vac Filter
 Equipment ID: _____
Decontamination Fluids Used:
 Methanol (100%) 25% Methanol/75% ASTM Type II water Deionized Water Liquinox Solution Hexane HNO₃/DI Water Solution Potable Water None

Field Analysis Data

Ambient Air VOC NR ppm Well Mouth NR ppm Field Data Collected In-line In Container Tured Colored Clear Cloudy
 Colored Odor
 Sample Observations:

Purge Data	①	INIT Gal	②	Gal	④	Gal	⑥	Gal	⑧	Gal
Temperature, Deg. C		27.2		27.4		27.5		27.8		27.4
pH, units		5.16		5.07		5.28		5.25		5.20
Specific Conductivity (umhos/cm, @ 25 Deg. C.)		128		125		124		128		121
Oxidation-Reduction, mv				176.4		90.4		87.3		55.6
Dissolved-Oxygen, ppm NTU		53.4		183.0		7200		146.7		158.7

Sample Collection Requirements
(If Required at this Location)

Analytical Parameter	<input type="checkbox"/> Field Filtered	Preservation Method	Volume Required	<input type="checkbox"/> Sample Collected	Sample Bottle IDs
VOA	<input type="checkbox"/>	HCL		<input type="checkbox"/>	/ / / /
SVOA	<input type="checkbox"/>	40C		<input type="checkbox"/>	/ / / /
Pres/PCS	<input type="checkbox"/>	40C		<input type="checkbox"/>	/ / / /
Inorganics	<input type="checkbox"/>	HNO ₃		<input type="checkbox"/>	/ / / /
Explosives	<input type="checkbox"/>	4C		<input type="checkbox"/>	/ / / /
TPH	<input type="checkbox"/>	H ₂ SO ₄		<input type="checkbox"/>	/ / / /
TOC	<input type="checkbox"/>	H ₂ SO ₄		<input type="checkbox"/>	/ / / /
Nitrate	<input type="checkbox"/>	H ₂ SO ₄		<input type="checkbox"/>	/ / / /

Notes: _____ 36600702 VOC / Dissgases / TOC
 _____ Filtered Turb = 14.69 NTU

GROUNDWATER SAMPLE FIELD DATA

Project: NTC ORLANDO Point of Interest: SA 36
 Project Number: 02530.05 Date: 12-3/98
 Sample Location ID: OLD-36-08
 Time: Start: 1310 End: 1550 Signature of Sampler: WJD

Water Level/Well Data

Well Depth 27.32 ft. Measured Historical Top of Well Top of Protective Casing
 Well Riser Sock-up FM ft. (from ground) Protective ft. Casing/Well Difference
 Protective ft. Casing
 Depth to Water 7.84 ft. Well Material: PVC SS Well Locked?: Yes No Well Dia. 2 inch 4 inch 6 inch
 Water Level Equip. Used: Elect. Cond. Probe Float Activated Press. Transducer
 Height of Water Column 1.6 Gal./ft. (2 in.) 8.5 Gal./ft. (4 in.) 1.5 Gal./ft. (8 in.) Gal./ft. (in.) [3 Gal/Vol 10.5 Total Gal Purged] Well Integrity: Prot. Casing Secure Concrete Collar Intact Other Yes No

Equipment Documentation

Purging/Sampling Equipment Used: Decontamination Fluids Used:

	(✓ if Used For)			(✓ All That Apply at Location)
Purging	Sampling	Equipment ID		
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Pneumatic Pump	<input type="checkbox"/>	<input type="checkbox"/> Methanol (100%)
<input type="checkbox"/>	<input type="checkbox"/>	Submersible Pump	<input type="checkbox"/>	<input type="checkbox"/> 25% Methanol/75% ASTM Type II water
<input type="checkbox"/>	<input type="checkbox"/>	Baker	<input type="checkbox"/>	<input checked="" type="checkbox"/> Deionized Water
<input type="checkbox"/>	<input type="checkbox"/>	PVC/Silicon Tubing	<input type="checkbox"/>	<input type="checkbox"/> Liquinox Solution
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Teflon/Silicon Tubing	<input type="checkbox"/>	<input type="checkbox"/> Hexane
<input type="checkbox"/>	<input type="checkbox"/>	AirSt	<input type="checkbox"/>	<input type="checkbox"/> HNO ₃ /DI Water Solution
<input type="checkbox"/>	<input type="checkbox"/>	Hand Pump	<input type="checkbox"/>	<input type="checkbox"/> Potable Water
<input type="checkbox"/>	<input type="checkbox"/>	In-line Filter	<input type="checkbox"/>	<input type="checkbox"/> None
<input type="checkbox"/>	<input type="checkbox"/>	Press/Vac Filter	<input type="checkbox"/>	<input type="checkbox"/>

Field Analysis Data

Ambient Air VOC NR ppm Well Mouth NR ppm Field Data Collected In-line In Container Turbid Clear Cloudy
 Colored Ooer

Purge Data	3 Gal	6 Gal	9 Gal	10 Gal	10.5 Gal
Temperature, Deg. C	27.4	27.5	27.3	27.3	27.1
pH, units	5.19	5.48	5.72	5.71	5.72
Specific Conductivity (umhos/cm. @ 25 Deg. C.)	85	90	100	98	98
Oxidation-Reduction, mv	-48.6	-105.1	-115.8	-108.5	-106.0
Observed Oxygen, ppm NTU	22.2	161.6	189.4	183.2	176.5

Sample Collection Requirements (✓ if Required at this Location)

Analytical Parameter	✓ if Field Filtered	Preservation Method	Volume Required	✓ if Sample Collected	Sample Bottle IDs
VQA	<input type="checkbox"/>	HCL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SVQA	<input type="checkbox"/>	60C	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pest/PCB	<input type="checkbox"/>	40C	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Inorganics	<input type="checkbox"/>	HNO ₃	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Explosives	<input type="checkbox"/>	4°C	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TPH	<input type="checkbox"/>	H ₂ SO ₄	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOC	<input type="checkbox"/>	H ₂ SO ₄	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nitrates	<input type="checkbox"/>	H ₂ SO ₄	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Notes: 36G-0080L VOC / Diss. Gases / TOC
Filtered Turbidity = 3.78 NTU

GROUNDWATER SAMPLE FIELD DATA

Project: NTC ORLANDO Point of Interest: SA36
 Project Number: 02530.05 Date: 12-3/90
 Sample Location ID: OLD-36-09
 Time: Start: 1410 End: 1805 Signature of Sampler: WDO

Water Level/Well Data

Well Depth 35.15 ft. Measured Horizontal Top of Well Top of Protective Casing
 Well Riser Stick-up FM ft. (from ground) Protective ft. Casing/Well Difference
 Protective ft. Casing
 Depth to Water 11.05 ft. Well Material: PVC SS Well Locked?: Yes No Well Dia. 2 inch 4 inch 6 inch Water Level Equip. Used: Elect. Cond. Probe Float Activated Press. Transducer
 Height of Water Column 24.10 ft. 18 G.W.P. (2 in.) 85 G.W.P. (4 in.) 1.5 G.W.P. (8 in.) G.W.P. (in.) 3.85 Gal/Vol Total Gal Purged 16 Well Integrity: Prot. Casing Secure Concrete Collar Intact Other Yes No

Equipment Documentation

Purging/Sampling Equipment Used:

Decontamination Fluids Used:

(/ if Used For)			Equipment ID	(/ All That Apply at Location)
Purging	Sampling			Methanol (100%)
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Percutaneous Pump	_____	25% Methanol/75% ASTM Type II water
<input type="checkbox"/>	<input type="checkbox"/>	Submersible Pump	_____	<input checked="" type="checkbox"/> Deionized Water
<input type="checkbox"/>	<input type="checkbox"/>	Bailer	_____	_____ Liqueur Solution
<input type="checkbox"/>	<input type="checkbox"/>	PVC/Silicon Tubing	_____	_____ Hexane
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Teflon/Silicon Tubing	_____	_____ HNO ₃ /D.I. Water Solution
<input type="checkbox"/>	<input type="checkbox"/>	AirLit	_____	_____ Potable Water
<input type="checkbox"/>	<input type="checkbox"/>	Hand Pumps	_____	_____ None
<input type="checkbox"/>	<input type="checkbox"/>	In-line Filter	_____	
<input type="checkbox"/>	<input type="checkbox"/>	Press/Vac Filter	_____	

Field Analysis Data

Ambient Air VOC NR ppm Well Mouth NR ppm Field Data Collected In-line Turbid Clear Cloudy
 In Container Colored Ocor

Purge Data	4 Gal	10 Gal	14 Gal	15 Gal	16 Gal
Temperature, Deg. C	<u>27.2</u>	<u>27.3</u>	<u>26.8</u>	<u>26.3</u>	<u>26.3</u>
pH, units	<u>11.16</u>	<u>10.52</u>	<u>10.17</u>	<u>10.11</u>	<u>10.10</u>
Specific Conductivity (umhos/cm. @ 25 Deg. C.)	<u>1,100</u>	<u>465</u>	<u>350</u>	<u>360</u>	<u>350</u>
Oxidation-Reduction, mv	<u>-335.0</u>	<u>-259.1</u>	<u>-324.4</u>	<u>-327.9</u>	<u>-410.1</u>
Observed Oxygen, ppm NTU	<u>153.9</u>	<u>98.7</u>	<u>69.6</u>	<u>67.0</u>	<u>61.5</u>

Sample Collection Requirements
(/ if Required at this Location)

Analytical Parameter	/ if Field Filtered	Preservation Method	Volume Required	/ if Sample Collected	Sample Bottle IDs
VOC	<input type="checkbox"/>	HCL	_____	<input type="checkbox"/>	_____
SVOC	<input type="checkbox"/>	40C	_____	<input type="checkbox"/>	_____
PAH/PCS	<input type="checkbox"/>	40C	_____	<input type="checkbox"/>	_____
Inorganics	<input type="checkbox"/>	HNO ₃	_____	<input type="checkbox"/>	_____
Explosives	<input type="checkbox"/>	4°C	_____	<input type="checkbox"/>	_____
TPH	<input type="checkbox"/>	H ₂ SO ₄	_____	<input type="checkbox"/>	_____
TOC	<input type="checkbox"/>	H ₂ SO ₄	_____	<input type="checkbox"/>	_____
Nitrite	<input type="checkbox"/>	H ₂ SO ₄	_____	<input type="checkbox"/>	_____

Notes: 36 G-00902 VOC/Diss. Gases/TOC
Filtered Turbidity = 1.49 NTU

GROUNDWATER SAMPLE FIELD DATA

Project: NTC ORLANDO Point of Interest: SA 36
 Project Number: 02530.05 Date: 12-4-98
 Sample Location ID: OLD-36-10
 Time: Start: 1445 End: 1715 Signature of Sampler: MJD

Water Level/Well Data

Well Depth: 24.82 ft. Measured Historical Top of Well Top of Protective Casing
 Well Riser Sock-up: FM ft. (from ground) Protective ft. Casing/Well Difference
 Protective ft. Casing
 Depth to Water: 7.93 ft. Well Material: PVC SS Well Locked?: Yes No
 Well Dia.: 2 inch 4 inch 6 inch Water Level Equip. Used:
 Elect. Cond. Probe Float Activated Press. Transducer
 Height of Water Column: 16.89 ft. 16.89 ft. 1.6 Gal/P. (2 in.) .85 Gal/P. (4 in.) 1.5 Gal/P. (6 in.) Gal/P. (in.)
 [2.7 Gal Vol.] Well Integrity: Yes No
 Prot. Casing Secure Concrete Collar Intact Other _____

Equipment Documentation

Purging/Sampling Equipment Used: **Decontamination Fluids Used:**

<input checked="" type="checkbox"/> Purging	<input checked="" type="checkbox"/> Sampling	Penetratic Pump	Equipment ID	<input type="checkbox"/> Methanol (100%)
<input type="checkbox"/>	<input type="checkbox"/>	Submersible Pump	_____	<input type="checkbox"/> 25% Methanol/75% ASTM Type II water
<input type="checkbox"/>	<input type="checkbox"/>	Baker	_____	<input checked="" type="checkbox"/> Deionized Water
<input type="checkbox"/>	<input type="checkbox"/>	PVC/Silicon Tubing	_____	<input type="checkbox"/> Liquinox Solution
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Teflon/Silicon Tubing	_____	<input type="checkbox"/> Hexane
<input type="checkbox"/>	<input type="checkbox"/>	AirIt	_____	<input type="checkbox"/> HNO ₃ /DI Water Solution
<input type="checkbox"/>	<input type="checkbox"/>	Hand Pump	_____	<input type="checkbox"/> Rotable Water
<input type="checkbox"/>	<input type="checkbox"/>	In-line Filter	_____	<input type="checkbox"/> None
<input type="checkbox"/>	<input type="checkbox"/>	Press/Vac Filter	_____	_____

Field Analysis Data

Ambient Air VOC: NR ppm Well Mouth: NR ppm Field Data Collected: In-line In Container Turb Clear Cloudy
 Colored Odor

Purge Data	3 Gal	6 Gal	8 Gal	9 Gal	10 Gal
Temperature, Deg. C	<u>27.7</u>	<u>27.8</u>	<u>27.3</u>	<u>27.3</u>	<u>27.1</u>
pH, units	<u>5.98</u>	<u>6.18</u>	<u>5.98</u>	<u>6.02</u>	<u>6.07</u>
Specific Conductivity (umhos/cm. @ 25 Deg. C.)	<u>100</u>	<u>110</u>	<u>108</u>	<u>111</u>	<u>115</u>
Oxidation-Reduction, mv	<u>-102.1</u>	<u>-113.4</u>	<u>-130.6</u>	<u>-126.6</u>	<u>-128.9</u>
Dissolved Oxygen, ppm NTU	<u>7200</u>	<u>7200</u>	<u>7200</u>	<u>7200</u>	<u>7200</u>

Sample Collection Requirements
(/ is Required at this Location)

Analytical Parameter	/ if Field Filtered	Preservation Method	Volume Required	/ if Sample Collected	Sample Bottle IDs
VQA	_____	MCL	_____	_____	_____ / _____ / _____ / _____
SVQA	_____	40C	_____	_____	_____ / _____ / _____ / _____
Pea/PCB	_____	40C	_____	_____	_____ / _____ / _____ / _____
Inorganics	_____	H ₂ O ₂	_____	_____	_____ / _____ / _____ / _____
Explosives	_____	4C	_____	_____	_____ / _____ / _____ / _____
TPH	_____	M, SB	_____	_____	_____ / _____ / _____ / _____
TOC	_____	M, SB	_____	_____	_____ / _____ / _____ / _____
Nitrates	_____	M, SB	_____	_____	_____ / _____ / _____ / _____

Notes: _____

 36601002 VOC/Diss Gases/TOC
 Filtered Turbidity = > 200 NTU

GROUNDWATER SAMPLE FIELD DATA

Project: NTC ORLANDO
 Project Number: 02530.05
 Sample Location ID: OLD-36-11
 Time: Start: 1020 End: 1305

Point of Interest: SA 36
 Date: 12-4-98
 Signature of Sampler: [Signature]

Water Level/Well Data

Well Depth 33.93 ft. Measured Historical Top of Well Top of Protective Casing
 Well Riser Sock-up (from ground) FM ft. Protective Casing/Well Difference ft.
 Protective Casing ft.
 Depth to Water 11.35 ft. Well Material PVC SS Well Locked?: Yes No Well Dia. 2 inch 4 inch 6 inch Water Level Equip. Used: Elect. Cond. Probe Float Activated Press. Transducer
 Height of Water Column 1.5 Gal./ft. (2 in.) 1.5 Gal./ft. (4 in.) 1.5 Gal./ft. (6 in.) Gal./ft. (in.) 3.6 Gal/ft Total Gal Purged 11 Well Integrity: Prot. Casing Secure Concrete Collar Intact Other Yes No

Equipment Documentation

Purging/Sampling Equipment Used:

Decontamination Fluids Used:

(/ if Used For)	Equipment ID
<input checked="" type="checkbox"/> Purging <input checked="" type="checkbox"/> Sampling	Penetratic Pump
<input type="checkbox"/>	Submersible Pump
<input type="checkbox"/>	Bailer
<input checked="" type="checkbox"/>	PVC/Silicon Tubing
<input checked="" type="checkbox"/>	Teflon/Silicon Tubing
<input type="checkbox"/>	AirKit
<input type="checkbox"/>	Hand Pump
<input type="checkbox"/>	In-line Filter
<input type="checkbox"/>	Press/Vac Filter

(/ All That Apply at Location)

- Methanol (100%)
- 25% Methanol/75% ASTM Type II water
- Deionized Water
- Liquinox Solution
- Hexane
- HNO₃/D.I. Water Solution
- Potable Water
- None

Field Analysis Data

Ambient Air VOC NR ppm Well Mouth NR ppm Field Data Collected In-line In Container Turbid Clear Cloudy
 Colored Ooey

Purge Data	1 NTU Gal	3.5 Gal	7 Gal	10.5 Gal	11 Gal
Temperature, Deg. C	27.8	27.2	27.1	27.6	27.5
pH, units	5.28	5.91	6.00	6.12	6.10
Specific Conductivity (umho/cm. @ 25 Deg. C.)	70	102	110	115	112
Oxidation - Reduction, mv	-27.1	-121.2	-123.8	-123.2	-121.5
Dissolved Oxygen, ppm (LTU)	7.45	68.7	120.1	108.4	98.7

Sample Collection Requirements

(/ if Required at this Location)

Analytical Parameter	/ if Field Filtered	Preservation Method	Volume Required	/ if Sample Collected	Sample Bottle IDs
VOA	<input type="checkbox"/>	HCL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SVOC	<input type="checkbox"/>	40C	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pest/PCB	<input type="checkbox"/>	40C	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Inorganics	<input type="checkbox"/>	HNO ₃	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Explosives	<input type="checkbox"/>	4C	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TPH	<input type="checkbox"/>	H ₂ SO ₄	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOC	<input type="checkbox"/>	H ₂ SO ₄	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nitrate	<input type="checkbox"/>	H ₂ SO ₄	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Notes: _____

36 G 01102 VOC/DISS. Gases/TOC
 Filtered Turbidity = 3.58 NTU

GROUNDWATER SAMPLE FIELD DATA

Project: NTC ORLANDO
 Project Number: 02530.05
 Sample Location ID: OLD-36-13
 Time: Start 0837 End: 1400

Point of Interest: SA36
 Date: 12-3/98
 Signature of Sampler: WDO

Water Level/Well Data

Well Depth 66.35 ft Measured Historical Top of Well Top of Protective Casing

Well Riser Stock-up FM ft. Protective Casing/Well Difference _____ ft. Protective Casing _____ ft.

Depth to Water 11.44 ft Well Material: PVC SS Well Locked?: Yes No

Well Dia. 2 inch 4 inch 6 inch

Water Level Equip. Used: Elect. Cond. Probe Float Activated Press. Transducer

Height of Water Column 54.91 ft 18 Gal/R. (2 in.) 85 Gal/R. (4 in.) 1.5 Gal/R. (6 in.) _____ Gal/R. (____ in.)

8.8 Gal/Vol 30 Total Gal Purged

Well Integrity: Prot. Casing Secure Concrete Casing Intact Other _____

Yes No

Equipment Documentation

Purging/Sampling Equipment Used:

Decontamination Fluids Used:

(<input checked="" type="checkbox"/> if Used For)		Equipment ID
Purging	Sampling	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Pneumatic Pump _____
<input type="checkbox"/>	<input type="checkbox"/>	Submersible Pump _____
<input type="checkbox"/>	<input type="checkbox"/>	Baler _____
<input type="checkbox"/>	<input type="checkbox"/>	PVC/Silicon Tubing _____
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Teflon/Silicon Tubing _____
<input type="checkbox"/>	<input type="checkbox"/>	Airline _____
<input type="checkbox"/>	<input type="checkbox"/>	Hand Pump _____
<input type="checkbox"/>	<input type="checkbox"/>	In-line Filter _____
<input type="checkbox"/>	<input type="checkbox"/>	Press/Vac Filter _____

(All That Apply at Location)

Methanol (100%)
 25% Methanol/75% ASTM Type II water
 Deionized Water
 Liquinox Solution
 Hexane
 HNO₃/D.I. Water Solution
 Potable Water
 None

Field Analysis Data

Ambient Air VOC NR ppm Well Mouth NR ppm Field Data Collected In-line In Container

Sample Observations: Turb Clear Cloudy
 Colored Ocor

Purge Data	① INIT Gal	② 15 Gal	③ 28 Gal	④ 29 Gal	⑤ 30 Gal
Temperature, Deg. C	<u>26.0</u>	<u>27.3</u>	<u>26.9</u>	<u>26.9</u>	<u>26.8</u>
pH, units	<u>6.66</u>	<u>5.82</u>	<u>5.72</u>	<u>5.62</u>	<u>5.58</u>
Specific Conductivity	<u>320</u>	<u>220</u>	<u>200</u>	<u>200</u>	<u>200</u>
(unheated, @ 25 Deg. C.)					
Oxidation-Reduction, +/ - mv	<u>—</u>	<u>—</u>	<u>-61.2</u>	<u>-57.7</u>	<u>-48.8</u>
Dissolved Oxygen, ppm NTU	<u>67.0</u>	<u>19.62</u>	<u>4.34</u>	<u>10.68</u>	<u>9.10</u>

Sample Collection Requirements

Analytical Parameter	<input type="checkbox"/> if Field Filtered	Preservation Method	Volume Required	<input type="checkbox"/> if Sample Collected	Sample Bottle IDs
VOC	<input type="checkbox"/>	MCL	_____	<input type="checkbox"/>	_____ / _____ / _____ / _____
SVOC	<input type="checkbox"/>	40C	_____	<input type="checkbox"/>	_____ / _____ / _____ / _____
Peas/PCB	<input type="checkbox"/>	40C	_____	<input type="checkbox"/>	_____ / _____ / _____ / _____
Inorganics	<input type="checkbox"/>	H ₂ O, 4C	_____	<input type="checkbox"/>	_____ / _____ / _____ / _____
Explosives	<input type="checkbox"/>	M ₃ B	_____	<input type="checkbox"/>	_____ / _____ / _____ / _____
TPH	<input type="checkbox"/>	M ₃ B	_____	<input type="checkbox"/>	_____ / _____ / _____ / _____
TOC	<input type="checkbox"/>	M ₃ B	_____	<input type="checkbox"/>	_____ / _____ / _____ / _____
Nitrates	<input type="checkbox"/>	M ₃ B	_____	<input type="checkbox"/>	_____ / _____ / _____ / _____
Notes:	_____ <u>36601301</u> <u>VOC/Diss. Gases/TOC</u>				

GROUNDWATER SAMPLE FIELD DATA

Project: NTC ORLANDO Point of Interest: SA30
 Project Number: 02530.05 Date: 12-4/98
 Sample Location ID: OLD-36-14
 Time: Start: 0820 End: 1425 Signature of Sampler: [Signature]

Water Level/Well Data

Well Depth 68.65 ft. Measured Historical Top of Well Top of Protective Casing
 Well Riser Stack-up FM ft. (from ground) Protective ft. Casing/Well Difference
 Protective ft. Casing
 Depth to Water 12.03 ft. Well Material: PVC SS Well Locked?: Yes No
 Well Dia. 2 inch 4 inch 6 inch Water Level Equip. Used: Elev. Cond. Probe Float Activated Press. Transducer
 Height of Water Column 18 Gal/R. (2 in.) 85 Gal/R. (4 in.) 1.5 Gal/R. (8 in.) Gal/R. (in.)
56.62 ft. 9 Gal/ft. Total Gal Purged: 31.5
 Well Integrity: Prot. Casing Secure Yes No
 Concrete Collar Intact Other

Equipment Documentation

Purging/Sampling Equipment Used:

Decontamination Fluids Used:

(<input checked="" type="checkbox"/> if Used For)		Equipment ID
<input checked="" type="checkbox"/> Purging	<input checked="" type="checkbox"/> Sampling	
<input type="checkbox"/>	<input type="checkbox"/>	Peristaltic Pump
<input type="checkbox"/>	<input type="checkbox"/>	Submersible Pump
<input type="checkbox"/>	<input type="checkbox"/>	Baller
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	PVC/Silicon Tubing
<input type="checkbox"/>	<input type="checkbox"/>	Teflon/Silicon Tubing
<input type="checkbox"/>	<input type="checkbox"/>	Air/Water
<input type="checkbox"/>	<input type="checkbox"/>	Hand Pump
<input type="checkbox"/>	<input type="checkbox"/>	In-line Filter
<input type="checkbox"/>	<input type="checkbox"/>	Press/Vac Filter

(All That Apply at Location)

- Methanol (100%)
- 25% Methanol/75% ASTM Type II water
- Deionized Water
- Liquor Solution
- Hexane
- HNO₃ 0.1 Water Solution
- Potable Water
- None

Field Analysis Data

Ambient Air VOC NR ppm Well Mouth NR ppm Field Data Collected In-line In Container
 Sample Observations: Turbid Clear Cloudy
 Colored Odor

Purge Data	10 Gal	20 Gal	30 Gal	31 Gal	31.5 Gal
Temperature, Deg. C	28.1	27.8	28.2	28.5	27.7
pH, units	6.82	6.61	6.56	6.50	6.61
Specific Conductivity (umhos/cm. @ 25 Deg. C.)	900	550	445	438	435
Oxidation-Reduction, mv	-2.1	-8.6	-33.3	-27.6	-40.4
Dissolved Oxygen, ppm NTU	7200	7200	7200	7200	7200

Sample Collection Requirements

(if Required at this Location)

Analytical Parameter	<input checked="" type="checkbox"/> Field Filtered	Preservation Method	Volume Required	<input checked="" type="checkbox"/> Sample Collected	Sample Bottle IDs
VOA	<input type="checkbox"/>	HCl		<input type="checkbox"/>	/ / / /
SVOA	<input type="checkbox"/>	60C		<input type="checkbox"/>	/ / / /
Pest/PCB	<input type="checkbox"/>	60C		<input type="checkbox"/>	/ / / /
Inorganics	<input type="checkbox"/>	HNO ₃		<input type="checkbox"/>	/ / / /
Explosives	<input type="checkbox"/>	PC		<input type="checkbox"/>	/ / / /
TPH	<input type="checkbox"/>	H ₂ SO ₄		<input type="checkbox"/>	/ / / /
TOC	<input type="checkbox"/>	H ₂ SO ₄		<input type="checkbox"/>	/ / / /
Nitrate	<input type="checkbox"/>	H ₂ SO ₄		<input type="checkbox"/>	/ / / /

Notes: _____

366-01461 = VOC / Diss. Gases / TOC

Filtered Turbidity = 7200 NTU

APPENDIX C

**SUMMARY OF POSITIVE DETECTIONS TABLES
(CLP LABORATORY)**

- Table C-1 Summary of Positive Detections in Surface Soil
- Table C-2 Summary of Positive Detections in Subsurface Soil
- Table C-3 Summary of Positive Detections in Groundwater

TABLE C-1

SUMMARY OF POSITIVE DETECTIONS IN SURFACE SOIL

Appendix C

Table C-1. Summary of Positive Detections in Surface Soil Analytical Results, Initial Screening Study Area 36

Naval Training Center, Orlando
Orlando, FL

Sample ID	Background	SCTL	RBC for Residential Soil	RBC for Industrial Soil	36S00101	36S00201	36S00301	36S00401	36S00501
Sampling Date					30-Oct-97	30-Oct-97	30-Oct-97	30-Oct-97	30-Oct-97
Volatile Organics, ug/kg									
Tetrachloroethene		10,000	12,000	c	110,000	c			
Semivolatile Organics, ug/kg									
Acenaphthylene		1,100,000	2,300,000	n	61,000,000	n	24	J	
Anthracene		19,000,000	23000000	n	610000000	n	11	J	
Benzo(a)anthracene		1,400	880	c	7,800	c	17	J	9
Benzo(a)pyrene		100	88	c	780	c	40	J	13
Benzo(b)fluoranthene		1,400	880	c	7,800	c	12	J	16
Benzo(g,h,i)perylene		2,300,000	2300000	n	61,000,000	n	35	J	5
Benzo(k)fluoranthene		15,000	8,800	c	78,000	c	26	J	15
bis(2-Ethylhexyl)phthalate		75,000	46,000	c	410,000	c			
Butylbenzylphthalate		220,000	16000000	n	410,000,000	n			50
Chrysene		140,000	88,000	c	780,000	c	38	J	17
Dibenz(a,h)anthracene		100	88	c	780	c	12	J	
Fluoranthene		2,800,000	3,100,000	n	82,000,000	n	6	J	19
Indeno(1,2,3-cd)pyrene		1,500	880	c	7,800	c	34	J	10
Phenanthrene		1,900,000	2,300,000	n	61,000,000	n	9	J	13
Pyrene		2,200,000	2,300,000	n	61,000,000	n	14	J	25
Pesticides/PCBs, ug/kg									
4,4'-DDD		4,500	2,700	c	24,000	c	3.4	J	1.7
4,4'-DDE		3,200	1,900	c	17,000	c	10		2.8
4,4'-DDT		3,200	1,900	c	17,000	c	0.48	J	0.72
alpha-Chlordane		3,000	490	c	4,400	c	0.46	J	0.07
Aroclor-1260		600	ND		ND				
beta-BHC		600	350	c	3,200	c		0.2	J
delta-BHC		22,000	350	c	3,200	c			0.22
Dieldrin		70	40	c	360	c	0.48	J	0.09
Endrin		21,000	23,000	n	610,000	n			
Endrin ketone		ND	ND		ND			1.4	J
gamma-BHC (Lindane)		700	490	c	4,400	c			0.13
gamma-Chlordane		3,000	490	c	4,400	c	0.86	J	0.24
Heptachlor epoxide		100	70	c	630	c			0.33

Appendix C

Table C-1. Summary of Positive Detections in Surface Soil Analytical Results, Initial Screening Study Area 36

Naval Training Center, Orlando
Orlando, FL

Sample ID	Background	SCTL	RBC for Residential Soil	RBC for Industrial Soil	36S00101	36S00201	36S00301	36S00401	36S00501
Sampling Date					30-Oct-97	30-Oct-97	30-Oct-97	30-Oct-97	30-Oct-97
Methoxychlor		380,000	390,000 n	10,000,000 n		1.7 J	3.2 J		
Inorganics, mg/kg									
Aluminum	2088	72,000	78,000 n	1,000,000 n	576 J	100 J	741 J	591 J	590 J
Antimony	ND	26	31 n	820 n			12.5		
Arsenic	1.0	0.8	0.43 /23 c/n	3.8 c/610 c/n		1 J	1.6 J	1.8 J	2 J
Barium	8.7	105	5,500 n	140,000 n				7.4 J	5.1 J
Beryllium	ND	120	0.15 c	1 c				0.19 J	
Cadmium	0.98	75	39 n	1,000 n					
Calcium	25295	ND	1000000	1000000	105000	90300	60700	34900	29500
Chromium	5	290	390 n	10,000 n	2.6	2.5	2.8	5.4	2.4
Cobalt	ND	4,700	4,700 n	120,000 n	0.22 J	0.29 J		1.5 J	0.86 J
Copper	4.1	105	270,000 n	1,000,000 n					
Iron	712	23,000	23,000 n	610,000 n	129 J		237 J	862 J	135 J
Lead	14.5	500	400	400	1.5 J		4.2 J	29.2 J	2 J
Magnesium	328	ND	460,468	460,468					1180
Manganese	8.1	1,600	1,800 n	47,000 n	15.2	8.7	14.4	8.7	5.2
Mercury	0.07	3.7	23 n	610 n		25.8	0.05 J		0.02 J
Nickel	4.4	1500	1,600 n	41,000 n					
Selenium	1.1	390	390 n	10,000 n	0.84 J		0.96 J	1 J	
Silver	ND	390	390 n	10,000 n				0.94 J	0.95 J
Thallium	2	ND	ND	ND			1.6 J	0.99 J	
Vanadium	3.1	15	550 n	14,000 n	2.3 J	1.8 J	4.7 J	1.1 J	0.9 J
Zinc	17.2	23,000	23,000 n	610,000 n				156 J	
General Chemistry									
TRPH	ND	350	ND	ND	500	260	540	13	10

Appendix C

Table C-1. Summary of Positive Detections in Surface Soil Analytical Results, Initial Screening
Study Area 36

Naval Training Center, Orlando
Orlando, FL

Sample ID	Background	SCTL	RBC for Residential Soil	RBC for Industrial Soil	36S00601	36S00701	36S00701D	36S00801	36S00901
Sampling Date					30-Oct-97	10-Nov-97	10-Nov-97	10-Nov-97	10-Nov-97
Volatile Organics, ug/kg									
Tetrachloroethene		10,000	12,000 c	110,000 c				3 J	
Semivolatile Organics, ug/kg									
Acenaphthylene		1,100,000	2,300,000 n	61,000,000 n				7 J	
Anthracene		19,000,000	23000000 n	610000000 n		15 J		8 J	
Benzo(a)anthracene		1,400	880 c	7,800 c		120 J	88 J	32 J	
Benzo(a)pyrene		100	88 c	780 c		170 J	140 J	60 J	
Benzo(b)fluoranthene		1,400	880 c	7,800 c		240 J	190 J	65 J	
Benzo(g,h,i)perylene		2,300,000	2300000 n	61,000,000 n		82 J			
Benzo(k)fluoranthene		15,000	8,800 c	78,000 c		170 J	150 J	56 J	
bis(2-Ethylhexyl)phthalate		75,000	46,000 c	410,000 c	66 J		390		
Butylbenzylphthalate		220,000	16000000 n	410,000,000 n					
Chrysene		140,000	88,000 c	780,000 c		230 J	180 J	64 J	
Dibenz(a,h)anthracene		100	88 c	780 c					
Fluoranthene		2,800,000	3,100,000 n	82,000,000 n	6 J	350 J	190 J	62 J	
Indeno(1,2,3-cd)pyrene		1,500	880 c	7,800 c		130 J	82 J	48 J	
Phenanthrene		1,900,000	2,300,000 n	61,000,000 n	7 J	120 J	54 J	27 J	
Pyrene		2,200,000	2,300,000 n	61,000,000 n	7 J	240 J	150 J	55 J	
Pesticides/PCBs, ug/kg									
4,4'-DDD		4,500	2,700 c	24,000 c	15	1 J	1.3 J	6 J	0.35 J
4,4'-DDE		3,200	1,900 c	17,000 c	9.7	5.5 J	5.6	4.2	8.3
4,4'-DDT		3,200	1,900 c	17,000 c		12 J	13 J	15 J	12 J
alpha-Chlordane		3,000	490 c	4,400 c	1.7 J	11	11	13	2 J
Aroclor-1260		600	ND	ND		85	67	97	29 J
beta-BHC		600	350 c	3,200 c		1.4 J	2.5 J	0.54 J	0.91 J
delta-BHC		22,000	350 c	3,200 c	0.15 J				
Dieldrin		70	40 c	360 c			1.3 J	7.4 J	
Endrin		21,000	23,000 n	610,000 n					0.53 J
Endrin ketone		ND	ND	ND	1.5 J				
gamma-BHC (Lindane)		700	490 c	4,400 c		0.72 J	1.2 J	0.27 J	
gamma-Chlordane		3,000	490 c	4,400 c	2.5	12	12	16	2.4 J
Heptachlor epoxide		100	70 c	630 c		0.3 J	0.46 J	1.2 J	

Appendix C

Table C-1. Summary of Positive Detections in Surface Soil Analytical Results, Initial Screening Study Area 36

Naval Training Center, Orlando
Orlando, FL

Sample ID	Background	SCTL	RBC for Residential Soil	RBC for Industrial Soil	36S00601	36S00701	36S00701D	36S00801	36S00901
Sampling Date					30-Oct-97	10-Nov-97	10-Nov-97	10-Nov-97	10-Nov-97
Methoxychlor		380,000	390,000 n	10,000,000 n	7.9 J		6.8 J	9.3 J	5.6 J
Inorganics, mg/kg									
Aluminum	2088	72,000	78,000 n	1,000,000 n	489 J	1560	1880	3270	732
Antimony	ND	26	31 n	820 n				1 J	
Arsenic	1.0	0.8	0.43 /23 c/n	3.8 c/610 c/n					
Barium	8.7	105	5,500 n	140,000 n	13.1 J	410	499	38.3 J	
Beryllium	ND	120	0.15 c	1 c		0.19 J	0.25 J	0.17 J	
Cadmium	0.98	75	39 n	1,000 n		1.9	1.9	0.35 J	0.19 J
Calcium	25295	ND	1000000	1000000	69700	49200	41300	22200	
Chromium	5	290	390 n	10,000 n	2.1 J	15.5 J	27 J	8.5	2.9
Cobalt	ND	4,700	4,700 n	120,000 n		1.1 J	1 J		
Copper	4.1	105	270,000 n	1,000,000 n		21.6	22		
Iron	712	23,000	23,000 n	610,000 n	156 J	1130	1240	327	386
Lead	14.5	500	400	400	11.9 J	188	259	51.1	49.1
Magnesium	328	ND	460,468	460,468		983 J	1290		
Manganese	8.1	1,600	1,800 n	47,000 n	11.8	60.1	68.5	33.2	8.9
Mercury	0.07	3.7	23 n	610 n	0.04 J	0.23 J	1.9 J	0.14	
Nickel	4.4	1500	1,600 n	41,000 n		3.7 J	4.1 J	1.4 J	1.2 J
Selenium	1.1	390	390 n	10,000 n					
Silver	ND	390	390 n	10,000 n					
Thallium	2	ND	ND	ND					
Vanadium	3.1	15	550 n	14,000 n	1 J	5.6 J	6.4 J	2.1 J	1.1 J
Zinc	17.2	23,000	23,000 n	610,000 n		224	217	85.1	
General Chemistry									
TRPH	ND	350	ND	ND	520	430		770	55

Appendix C
Table C-1. Notes for Summary of Positive Detections in
Surface Soil Analytical Results, Initial Screening
Study Area 36

Naval Training Center, Orlando
Orlando, FL

NOTES:

The background screening value is twice the average of detected concentrations for inorganic analytes.

SCTL = Florida Department of Environmental Protection, Soil Cleanup Target Levels, Chapter 62-785 FAC, April 30, 1998.

Values indicated are for direct exposure scenario. Value for chromium is for chromium (IV).

Value for mercury is for inorganic mercury.

RBC = Risk-Based Concentration Table, USEPA Region III, May 1996, R.L. Smith. RBC for chromium is based on chromium VI. RBC for lead is not available; value is Interim Guidance on Establishing Soil Lead Cleanup Levels at Superfund Sites (OSWER directive 9355-4-12). For essential nutrients (calcium, magnesium, sodium, potassium) screening values were derived based on recommended daily allowances.

RBC for benzo(g,h,i)perylene and phenanthrene are not available, value is based on pyrene.

n = noncarcinogenic pathway

c = carcinogenic pathway

mg/kg = milligrams per kilogram.

ND = Not determined.

ug/kg = micrograms per kilogram.

bls = below land surface

PCB = polychlorinated biphenyl.

OSWER = Office of Solid Waste and Emergency Response.

USEPA = U.S. Environmental Protection Agency.

DDD = Dichlorodiphenyldichloroethane

DDE = Dichlorodiphenyldichloroethene

DDT = Dichlorodiphenyltrichloroethane

D = Indicates value was determined during a diluted reanalysis.

J = Reported concentration is an estimated quantity.

All inorganics results expressed in milligrams per kilogram (mg/kg) soil dry weight; organics in micrograms per kilogram (ug/kg) soil dry weight.

Bold/shaded values indicate exceedance of regulatory guidance and background.

TABLE C-2
SUMMARY OF POSITIVE DETECTIONS IN SUBSURFACE SOIL

Appendix C

Table C-2. Summary of Positive Detections in Subsurface Soil Analytical Results, Initial Screening
Study Area 36

Naval Training Center, Orlando
Orlando, FL

Sample ID	Background Screening	SCTL Leaching	RBC for Residential Soil	RBC for Industrial Soil	36B00101	36B00201	36B00301	36B00401	36B00501	36B00601
Sampling Date					30-Oct-97	30-Oct-97	30-Oct-97	30-Oct-97	30-Oct-97	30-Oct-97
Semivolatile Organics, ug/kg										
Acenaphthene		4,000	2,300,000 n	61,000,000 n				15 J		
Fluorene		87,000	3,100,000 n	82,000,000 n				14 J		
Phenanthrene		120,000	2,300,000 n	61,000,000 n				20 J		
Pesticides/PCBs, ug/kg										
4,4'-DDD		200	2,700 c	24,000 c	1.8 J					
4,4'-DDE		300	1,900 c	17,000 c	4.4 J					
alpha-Chlordane		4,100	490 c	4,400 c	0.22 J					
beta-BHC		2	350 c	3,200 c	0.09 J					
Dieldrin		5	40 c	360 c	0.4 J			0.08 J		
Endrin ketone		ND	ND	ND	0.72 J		0.43 J	0.6 J	1.1 J	0.59 J
gamma-BHC (Lindane)		10	490 c	4,400 c	0.07 J					
gamma-Chlordane		4,100	490 c	4,400 c	0.5 J					0.32 J
Inorganics, mg/kg										
Aluminum	2,119	NC	78,000 n	1,000,000 n	520 J	251 J	103 J	76.9 J	561 J	674 J
Arsenic	1.1	29	0.43 /23 c/n	3.8 c/610 c/n	1 J		0.86 J	1.2 J	2.2 J	
Cadmium	ND	8	39 n	10,000 n		0.32 J				
Calcium	115	ND	1000000	1000000	2540					
Chromium	4	38	390 n	10,000 n	1.8 J	1.2 J	1.4 J	1.6 J	3.1	2.3
Cobalt	2	NC	4,700 n	120,000 n	0.46 J	0.34 J	0.37 J	0.7 J	1.1 J	0.41 J
Lead	3.9	NC	400	400						3.2 J
Mercury	ND	2.1	23 n	610 n		0.05				0.03 J
Selenium	1.3	5	390 n	10,000 n	0.6 J	0.62 J		0.98 J	0.85 J	
Silver	ND	34	390 n	10,000 n				1 J	1.3 J	
Thallium		NC							1.4 J	
Vanadium	3.4	ND	550 n	14,000 n	0.38 J				0.93 J	
General Chemistry										
TRPH	ND	ND	ND	ND	160	18				38

Appendix C
Table C-2. Summary of Positive Detections in Subsurface Soil Analytical Results, Initial Screening
Study Area 36

Naval Training Center, Orlando
Orlando, FL

NOTES:

The background screening value is twice the average of detected concentrations for inorganic analytes.

SCTL = Florida Department of Environmental Protection, Soil Cleanup Target Levels, Chapter 62-785 FAC, April 30, 1998.

For detected analytes and compounds in subsurface soils, SCTLs are not applicable (NAs) because there are no associated exceedances of Florida groundwater guidance concentrations in site groundwater.

RBC = Risk-Based Concentration Table, USEPA Region III, March 1997, R.L. Smith. RBC for chromium is based on chromium VI. RBC for lead is not available, value is Interim Guidance on Establishing Soil Lead Cleanup Levels at Superfund Sites (OSWER directive 9355-4-12). For essential nutrients (calcium, potassium, sodium, magnesium) screening values were derived based on recommended daily allowances (RDAs).

n = noncarcinogenic pathway

c = carcinogenic pathway

NA = Not applicable (for SCTLs) or not analyzed.

ND = Not determined.

NC = Not calculated, site specific value

mg/kg = milligrams per kilogram.

ug/kg = micrograms per kilogram.

OSWER = Office of Solid Waste and Emergency Response.

USEPA = U.S. Environmental Protection Agency.

J = Reported concentration is an estimated quantity.

All inorganics results expressed in milligrams per kilogram (mg/kg) soil dry weight; organics in micrograms per kilogram (ug/kg) soil dry weight.

TABLE C-3

SUMMARY OF POSITIVE DETECTIONS IN GROUNDWATER

Appendix C

Table C-3A. Summary of Positive Detections in Groundwater Analytical Results, Initial Screening
Study Area 36

Naval Training Center, Orlando
Orlando, FL

Sample ID	Background Screening	FDEPGCTL	FEDMCL	RBC for Tap Water	36G00101	36H00101	36G00101D	36H00101D	36G00201
Sampling Date					17-Nov-97	17-Nov-97	17-Nov-97	17-Nov-97	17-Nov-97
Volatile Organics, ug/L									
cis-1,2-Dichloroethene		70 p/st	70	61 n	5		4		
Tetrachloroethene		3 p/c	5	1.1 c	0.4 J		0.4 J		
Trichloroethene		3 p/c	5	1.6 c	1		0.8 J		
Pesticides/PCBs, ug/L									
beta-BHC		0.02 c	ND	0.037 c					0.0072 J
gamma-BHC (Lindane)		0.2 p	0.2	0.052 c			0.004 J		
Inorganics, ug/L									
Aluminum	4,067	200 s	ND	37,000 n	1530	665	1480	715	6660
Antimony	4.1	6 p/st	6	15 n		6.4 J	5.2 J	3.8 J	3.8 J
Barium	31.4	2,000 p/st	2,000	2,600 n					25.7 J
Calcium	36,830	ND	ND	1,000,000	8560	8000	8130	8190	44000
Chromium	7.8	100 p	100	ND	3.3 J		3.6 J		11.6
Cobalt	ND	420	ND	2,200 n			1.1 J		2.4 J
Copper	5.4	1,000 s/st	1,300	1,500 n	2.6 J				7.3 J
Iron	1,227	300 s	ND	11,000 n	211	149	211	160	909
Lead	4	15 p/st	15	15					6.1
Magnesium	4,560	ND	ND	118,807	2310 J	2200 J	2230 J	2220 J	2110 J
Mercury	ND	2 p	2	11 n					0.21
Nickel	ND	100 p/st	100	730 n	2.6 J				3 J
Potassium	5,400	ND	ND	297,016	1800 J	1760 J	1790 J	1850 J	1340 J
Sodium	18,222	160,000 p	ND	396,022	5930 J	6410 J	5920 J	6630 J	4600 J
Vanadium	20.6	49 mc/st	ND	260 n	3.3 J	2.3 J	2.7 J	2.2 J	11.1 J
Zinc	4	5,000 s/st	ND	11,000 n	12.5 J				13.7 J
General Chemistry, mg/L									
Suspended Solids	ND	ND	ND	ND	6		6		13

Appendix C

Table C-3A. Summary of Positive Detections in Groundwater Analytical Results, Initial Screening
Study Area 36

Naval Training Center, Orlando
Orlando, FL

Sample ID	Background Screening	FDEPGCTL	FEDMCL	RBC for Tap Water	36H00201	36G00301	36H00301	36G00401	36H00401
Sampling Date					17-Nov-97	18-Nov-97	18-Nov-97	18-Nov-97	18-Nov-97
Volatile Organics, ug/L									
cis-1,2-Dichloroethene		70 p/st	70	61 n					
Tetrachloroethene		3 p/c	5	1.1 c					
Trichloroethene		3 p/c	5	1.6 c					
Pesticides/PCBs, ug/L									
beta-BHC		0.02 c	ND	0.037 c					
gamma-BHC (Lindane)		0.2 p	0.2	0.052 c					
Inorganics, ug/L									
Aluminum	4,067	200 s	ND	37,000 n	5020	71.1 J	38.3 J	375	457
Antimony	4.1	6 p/st	6	15 n	3.6 J	6 J	4.3 J	6.3 J	5.2 J
Barium	31.4	2,000 p/st	2,000	2,600 n					
Calcium	36,830	ND	ND	1,000,000	41600	43300	41900	18400	16900
Chromium	7.8	100 p	100	ND	8.4 J				
Cobalt	ND	420	ND	2,200 n	1.3 J				
Copper	5.4	1,000 s/st	1,300	1,500 n	5.6 J				
Iron	1,227	300 s	ND	11,000 n	723				
Lead	4	15 p/st	15	15	4.6				
Magnesium	4,560	ND	ND	118,807	2060 J	781 J	764 J	382 J	338 J
Mercury	ND	2 p	2	11 n					
Nickel	ND	100 p/st	100	730 n					
Potassium	5,400	ND	ND	297,016	1320 J	424 J	413 J	644 J	588 J
Sodium	18,222	160,000 p	ND	396,022	4640 J	1510 J	1480 J	1280 J	1080 J
Vanadium	20.6	49 mc/st	ND	260 n	7.5 J	5.7 J	5.4 J	5.7 J	6 J
Zinc	4	5,000 s/st	ND	11,000 n				20.5	
General Chemistry, mg/L									
Suspended Solids	ND	ND	ND	ND					

Appendix C

Table C-3A. Summary of Positive Detections in Groundwater Analytical Results, Initial Screening
Study Area 36

Naval Training Center, Orlando
Orlando, FL

Sample ID	Background Screening	FDEPGCTL	FEDMCL	RBC for Tap Water	36G00501	36H00501	36G00601	36H00601
Sampling Date					18-Nov-97	18-Nov-97	17-Nov-97	17-Nov-97
Volatile Organics, ug/L								
cis-1,2-Dichloroethene		70 p/st	70	61 n				
Tetrachloroethene		3 p/c	5	1.1 c				
Trichloroethene		3 p/c	5	1.6 c			19 D	
Pesticides/PCBs, ug/L								
beta-BHC		0.02 c	ND	0.037 c				
gamma-BHC (Lindane)		0.2 p	0.2	0.052 c	0.0036 J			
Inorganics, ug/L								
Aluminum	4,067	200 s	ND	37,000 n	1390	192 J	813	274
Antimony	4.1	6 p/st	6	15 n			4.3 J	5.7 J
Barium	31.4	2,000 p/st	2,000	2,600 n				
Calcium	36,830	ND	ND	1,000,000	12300	11300	12800	12300
Chromium	7.8	100 p	100	ND	3.2 J			
Cobalt	ND	420	ND	2,200 n	1 J			
Copper	5.4	1,000 s/st	1,300	1,500 n	3.2 J			2.5 J
Iron	1,227	300 s	ND	11,000 n	131	44.4 J	402	343
Lead	4	15 p/st	15	15				
Magnesium	4,560	ND	ND	118,807	706 J	647 J	2780 J	2760 J
Mercury	ND	2 p	2	11 n	0.11 J			
Nickel	ND	100 p/st	100	730 n				
Potassium	5,400	ND	ND	297,016	610 J	563 J	2570 J	2430 J
Sodium	18,222	160,000 p	ND	396,022	2640 J	2190 J	6470 J	6160 J
Vanadium	20.6	49 mc/st	ND	260 n	4.5 J		2.9 J	
Zinc	4	5,000 s/st	ND	11,000 n				
General Chemistry, mg/L								
Suspended Solids	ND	ND	ND	ND	11			

Appendix C
 Table C-3B. Summary of Detections in Groundwater Analytical Results
 Supplemental Sampling I
 Study Area 36

Naval Training Center, Orlando
 Orlando, FL

Sample ID	FDEPGCTL	FEDMCL	RBC for Tap Water	36G00102	36G00202	36G00602	36G00701	36G00701 D	36G00801	36G00901	36G01001	36G01101
				7/1/98	6/30/98	6/30/98	6/30/98	6/30/98	6/30/98	7/1/98	7/1/98	7/1/98
Sampling Date												
Volatile Organics, ug/L												0.42 J
1,2,4-Trimethylbenzene	10 o	10	12 n									1.6
1,2-Dichlorobenzene	600 p/st	600	64 n									0.13 J
1,3,5-Trimethylbenzene	10 o	10	12 n								0.1 J	
Benzene	1 p/c	1	0.36 c								7.8	1.3
cis-1,2-Dichloroethene	70 p/st	70	61 n	3.4								0.12 J
sec-Butylbenzene	ND	ND	61 n			0.33 J					0.3 J	3.3
Tetrachloroethene	3 p/c	5	1.1 c	0.32 J								0.82
Trichloroethene	3 p/c	5	1.6 c	0.65	0.22 J	13	73	57	270	260	7.2	

Appendix C

Table C-3C. Summary of Detections in Groundwater Analytical Results
Supplemental Sampling II
Study Area 36

Naval Training Center, Orlando
Orlando, FL

Sample ID	FDEPGCTL	FEDMCL	RBC for Tap Water	36G00103	36G00203	36G00603	36G00702	36G00802	36G00902	36G01002	36G01102	36G01
Sampling Date				12/3/98	12/4/98	12/3/98	12/3/98	12/3/98	12/3/98	12/4/98	12/4/98	12/4/98
Volatile Organics, ug/L												
1,2,4-Trimethylbenzene	10 o	10	12 n								0.93 J	
Benzene	1 p/c	1	0.36 c							0.47 J		
Chloroform	5.7 c	6	0.15 c									
cis-1,2-Dichloroethene	70 p/st	70	61 n	3.2					43	9.4	2.8	1.8
Methylene chloride	5 p/c	5	4.1 c	1.6 J	1.6 J	2 J	1.5 J	1.7 J	2.2 J	1.8 J	1.6 J	1.4
o-Dichlorobenzene	600 p/c	600	64 c								0.91 J	
Tetrachloroethene	3 p/c	5	1.1 c								5.4	
Trichloroethene	3 p/c	5	1.6 c	1 J		6.6	120	40	300	8.9	0.96 J	2.7
Light Gases/Volatiles, ug/L												
Methane	ND	ND	ND	11	31	1.5	4.2	150 D	27	21	5.6	22
Ethane	ND	ND	ND						1.5			
Ethene	ND	ND	ND						1.8			
General Chemistry, mg/L												
Total Organic Carbon	ND	ND	ND	7	4	5	3	4	15	18	10	6

Appendix C
 Table C-3C. Summary of Detections in Groundwater Analytical Results
 Supplemental Sampling II
 Study Area 36

Naval Training Center, Orlando
 Orlando, FL

Sample ID	FDEPGCTL	FEDMCL	RBC for Tap Water	01	36G01201	36G01301	36G01401
Sampling Date				8	12/4/98	12/3/98	12/4/98
Volatile Organics, ug/L							
1,2,4-Trimethylbenzene	10 o	10	12 n				
Benzene	1 p/c	1	0.36 c				
Chloroform	5.7 c	6	0.15 c			1.5 J	2.1 J
cis-1,2-Dichloroethene	70 p/st	70	61 n	J	1.9 J		
Methylene chloride	5 p/c	5	4.1 c	J	1.8 J	1.8 J	1.6 J
o-Dichlorobenzene	600 p/c	600	64 c				
Tetrachloroethene	3 p/c	5	1.1 c				
Trichloroethene	3 p/c	5	1.6 c	J	2.9 J		
Light Gases/Volatiles, ug/L							
Methane	ND	ND	ND		21	77 D	61
Ethane	ND	ND	ND			0.83	
Ethene	ND	ND	ND			0.94	
General Chemistry, mg/L							
Total Organic Carbon	ND	ND	ND		6	3	17

Appendix C
Table C-3. Notes for Summary of Positive Detections in
Groundwater Analytical Results, Initial Screening, Supplemental Sampling I and II
Study Area 36

Naval Training Center, Orlando
Orlando, FL

NOTES:

Groundwater background screening value is twice the average of detected concentrations for inorganic analytes.

FDEPGCTL = Florida Department of Environmental Protection, Groundwater Cleanup Target Levels, Chapter 62-785 FAC, April 30, 1998.

FEDMCL = Federal Maximum Contaminant Levels, Primary Drinking Water Regulations and Health Advisories, February 1996.

RBC = Risk-Based Concentration Table, USEPA Region III, March 1997, R.L. Smith.

For essential nutrients (calcium, magnesium, potassium, and sodium) screening values were derived based on recommended daily allowances.

s = secondary groundwater standard.

st = systemic toxicant.

mc = based on minimum criteria

p = primary standard.

o = organoleptic.

n = noncarcinogenic effects.

c = carcinogen (GCTLs) or carcinogenic effects (RBCs).

NA = Not analyzed.

ND = Not determined.

USEPA = U.S. Environmental Protection Agency.

FEDMCL = Federal Maximum Contaminant Levels, Primary Drinking Water Regulations and Health Advisories, February 1996.

B = Reported concentration is between the instrument detection limit (IDL) and the contract required detection limit (CRDL).

The "B" qualifier typically changes to "J" (estimated concentration) upon data validation.

H = Filtered sample (0.45 micron in-line filter).

J = Reported concentration is an estimated quantity.

ug/l = micrograms per liter.

mg/l = milligrams per liter.

Bold/shaded numbers indicate exceedance of groundwater guidance and background.

Blank space indicates analyte/compound was not detected at the reporting limit.

APPENDIX D

SUMMARY OF ANALYTICAL RESULTS (CLP LABORATORY)

- Table D-1 Summary of Surface Soil Analytical Results
- Table D-2 Summary of Subsurface Soil Analytical Results
- Table D-3 Summary of Groundwater Analytical Results

TABLE D-1

SUMMARY OF SURFACE SOIL ANALYTICAL RESULTS

Appendix D
Table D-1. Summary of Surface Soil Analytical Results, Initial Screening
Study Area 36

Naval Training Center, Orlando
Orlando, FL

Sample ID	36S00101	36S00201	36S00301	36S00401	36S00501	36S00601	36S00701	36S00701D	36S00801	36S00901
Lab ID	S776201*1	S776201*3	S776201*11	S776201*7	S776201*9	S776201*5	S776391*1	S776391*15	S776391*2	S776391*3
Sampling Date	10/30/97	10/30/97	10/30/97	10/30/97	10/30/97	10/30/97	11/10/97	11/10/97	11/10/97	11/10/97
Volatile organics, ug/kg										
1,1,1-Trichloroethane	11 U	10 U	10 U	10 U	10 U	11 U	10 U	11 U	11 U	10 U
1,1,2,2-Tetrachloroethane	11 U	10 U	10 U	10 U	10 U	11 U	10 U	11 U	11 U	10 U
1,1,2-Trichloroethane	11 U	10 U	10 U	10 U	10 U	11 U	10 U	11 U	11 U	10 U
1,1-Dichloroethane	11 U	10 U	10 U	10 U	10 U	11 U	10 U	11 U	11 U	10 U
1,1-Dichloroethene	11 U	10 U	10 U	10 U	10 U	11 U	10 U	11 U	11 U	10 U
1,2-Dichloroethane	11 U	10 U	10 U	10 U	10 U	11 U	10 U	11 U	11 U	10 U
1,2-Dichloroethene (total)	11 U	10 U	10 U	10 U	10 U	11 U	10 U	11 U	11 U	10 U
1,2-Dichloropropane	11 U	10 U	10 U	10 U	10 U	11 U	10 U	11 U	11 U	10 U
2-Butanone	11 UJ	10 UJ	10 UJ	10 UJ	10 UJ	11 UJ	10 UJ	11 U	11 U	10 U
2-Hexanone	11 U	10 U	10 U	10 U	10 U	11 U	10 U	11 U	11 U	10 U
4-Methyl-2-pentanone	11 U	10 U	10 U	10 U	10 U	11 U	10 U	11 U	11 U	10 U
Acetone	11 U	10 UJ	10 U	10 U	10 U	11 U	10 U	11 UJ	11 UJ	10 U
Benzene	11 U	10 U	10 U	10 U	10 U	11 U	10 U	11 U	11 U	10 U
Bromodichloromethane	11 U	10 U	10 U	10 U	10 U	11 U	10 U	11 U	11 U	10 U
Bromoform	11 U	10 U	10 U	10 U	10 U	11 U	10 U	11 U	11 U	10 U
Bromomethane	11 U	10 U	10 U	10 U	10 U	11 U	10 U	11 U	11 U	10 U
Carbon disulfide	11 U	10 U	10 U	10 U	10 U	11 U	10 U	11 U	11 U	10 U
Carbon tetrachloride	11 U	10 U	10 U	10 U	10 U	11 U	10 U	11 U	11 U	10 U
Chlorobenzene	11 U	10 U	10 U	10 U	10 U	11 U	10 U	11 U	11 U	10 U
Chloroethane	11 U	10 U	10 U	10 U	10 U	11 U	10 U	11 U	11 U	10 U
Chloroform	11 U	10 U	10 U	10 U	10 U	11 U	10 U	11 U	11 U	10 U
Chloromethane	11 U	10 U	10 U	10 U	10 U	11 U	10 U	11 U	11 U	10 U
cis-1,3-Dichloropropene	11 U	10 U	10 U	10 U	10 U	11 U	10 U	11 U	11 U	10 U
Dibromochloromethane	11 U	10 U	10 U	10 U	10 U	11 U	10 U	11 U	11 U	10 U
Ethylbenzene	11 U	10 U	10 U	10 U	10 U	11 U	10 U	11 U	11 U	10 U
Methylene chloride	11 U	10 U	10 U	10 U	10 U	11 U	10 U	11 U	11 U	10 U
Styrene	11 U	10 U	10 U	10 U	10 U	11 U	10 U	11 U	11 U	10 U
Tetrachloroethene	11 U	10 U	10 U	10 U	10 U	11 U	10 U	11 U	3 J	10 U
Toluene	11 U	10 U	10 U	10 U	10 U	11 U	10 U	11 U	11 U	10 U
trans-1,3-Dichloropropene	11 U	10 U	10 U	10 U	10 U	11 U	10 U	11 U	11 U	10 U
Trichloroethene	11 U	10 U	10 U	10 U	10 U	11 U	10 U	11 U	11 U	10 U
Vinyl chloride	11 U	10 U	10 U	10 U	10 U	11 U	10 U	11 U	11 U	10 U
Xylene (total)	11 U	10 U	10 U	10 U	10 U	11 U	10 U	11 U	11 U	10 U
Semivolatile organics, ug/kg										
1,2,4-Trichlorobenzene	350 U	340 U	340 U	340 U	350 U	350 U	350 U	350 U	360 U	340 U
1,2-Dichlorobenzene	350 U	340 U	340 U	340 U	350 U	350 U	350 U	350 U	360 U	340 U
1,3-Dichlorobenzene	350 U	340 U	340 U	340 U	350 U	350 U	350 U	350 U	360 U	340 U
1,4-Dichlorobenzene	350 U	340 U	340 U	340 U	350 U	350 U	350 U	350 U	360 U	340 U
2,2'-oxybis(1-Chloropropane)	350 U	340 U	340 U	340 U	350 U	350 U	350 U	350 UJ	360 U	340 U

Appendix D
 Table D-1. Summary of Surface Soil Analytical Results, Initial Screening
 Study Area 36

Naval Training Center, Orlando
 Orlando, FL

Sample ID	36S00101	36S00201	36S00301	36S00401	36S00501	36S00601	36S00701	36S00701D	36S00801	36S00901
Lab ID	S776201*1	S776201*3	S776201*11	S776201*7	S776201*9	S776201*5	S776391*1	S776391*15	S776391*2	S776391*3
Sampling Date	10/30/97	10/30/97	10/30/97	10/30/97	10/30/97	10/30/97	11/10/97	11/10/97	11/10/97	11/10/97
2,4,5-Trichlorophenol	880 U	860 U	860 U	860 U	870 U	880 U	870 U	880 U	900 U	860 U
2,4,6-Trichlorophenol	350 U	340 U	340 U	340 U	350 U	350 U	350 U	350 U	360 U	340 U
2,4-Dichlorophenol	350 U	340 U	340 U	340 U	350 U	350 U	350 U	350 U	360 U	340 U
2,4-Dimethylphenol	350 U	340 U	340 U	340 U	350 U	350 U	350 U	350 U	360 U	340 U
2,4-Dinitrophenol	880 U	860 U	860 U	860 U	870 U	880 U	870 U	880 U	900 U	860 U
2,4-Dinitrotoluene	350 U	340 U	340 U	340 U	350 U	350 U	350 U	350 U	360 U	340 U
2,6-Dinitrotoluene	350 U	340 U	340 U	340 U	350 U	350 U	350 U	350 U	360 U	340 U
2-Chloronaphthalene	350 U	340 U	340 U	340 U	350 U	350 U	350 U	350 U	360 U	340 U
2-Chlorophenol	350 U	340 U	340 U	340 U	350 U	350 U	350 U	350 U	360 U	340 U
2-Methylnaphthalene	350 U	340 U	340 U	340 U	350 U	350 U	350 U	350 U	360 U	340 U
2-Methylphenol	350 U	340 U	340 U	340 U	350 U	350 U	350 U	350 U	360 U	340 U
2-Nitroaniline	880 U	860 U	860 U	860 U	870 U	880 U	870 U	880 U	900 U	860 U
2-Nitrophenol	350 U	340 U	340 U	340 U	350 U	350 U	350 U	350 U	360 U	340 U
3,3'-Dichlorobenzidine	350 UJ	340 UJ	340 U	340 UJ	350 U	350 UJ	350 U	350 U	360 U	340 U
3-Methylphenol/4-Methylphenol	350 U	340 U	340 U	340 U	350 U	350 U	350 U	350 U	360 U	340 U
3-Nitroaniline	880 UJ	860 UJ	860 U	860 UJ	870 U	880 UJ	870 U	880 U	900 U	860 U
4,6-Dinitro-2-methylphenol	880 U	860 U	860 U	860 U	870 U	880 U	870 U	880 U	900 U	860 U
4-Bromophenyl-phenylether	350 U	340 U	340 U	340 U	350 U	350 U	350 U	350 U	360 U	340 U
4-Chloro-3-methylphenol	350 U	340 U	340 U	340 U	350 U	350 U	350 U	350 U	360 U	340 U
4-Chloroaniline	350 UJ	340 UJ	340 UJ	340 UJ	350 UJ	350 UJ	350 U	350 U	360 U	340 U
4-Chlorophenyl-phenylether	350 U	340 U	340 U	340 U	350 U	350 U	350 U	350 U	360 U	340 U
4-Nitroaniline	880 U	860 U	860 U	860 U	870 U	880 U	870 U	880 U	900 U	860 UJ
4-Nitrophenol	880 U	860 U	860 U	860 U	870 U	880 U	870 U	880 UJ	900 U	860 UJ
Acenaphthene	350 U	340 U	340 U	340 U	350 U	350 U	350 U	350 U	7 J	340 U
Acenaphthylene	350 U	24 J	340 U	340 U	350 U	350 U	350 U	350 U	8 J	340 U
Anthracene	350 U	11 J	340 U	340 U	350 U	350 U	15 J	350 UJ	8 J	340 U
Benzo(a)anthracene	350 U	17 J	340 U	340 U	9 J	350 U	120 J	88 J	32 J	340 U
Benzo(a)pyrene	350 U	40 J	340 U	340 U	13 J	350 U	170 J	140 J	60 J	340 U
Benzo(b)fluoranthene	12 J	40 J	340 U	340 U	16 J	350 U	240 J	190 J	65 J	340 U
Benzo(g,h,i)perylene	350 U	35 J	340 U	340 U	5 J	350 U	82 J	350 UJ	360 UJ	340 U
Benzo(k)fluoranthene	350 U	26 J	340 U	340 U	15 J	350 U	170 J	150 J	56 J	340 U
bis(2-Chloroethoxy)methane	350 U	340 U	340 U	340 U	350 U	350 U	350 U	350 U	360 U	340 U
bis(2-Chloroethyl)ether	350 U	340 U	340 U	340 U	350 U	350 U	350 U	350 U	360 U	340 U
bis(2-Ethylhexyl)phthalate	350 U	340 U	340 U	340 U	350 U	66 J	350 U	390	360 U	340 UJ
Butylbenzylphthalate	350 U	340 U	340 U	340 U	50 J	350 U	350 U	350 UJ	360 U	340 U
Carbazole	350 U	340 U	340 U	340 U	350 U	350 U	350 U	350 U	360 U	340 U
Chrysene	350 U	38 J	340 U	340 U	17 J	350 U	230 J	180 J	64 J	340 U
Di-n-butylphthalate	350 U	340 U	340 U	340 U	350 U	350 U	350 U	350 U	360 U	340 U
Di-n-octylphthalate	350 U	340 U	340 U	340 U	350 U	350 U	350 U	350 U	360 U	340 UJ
Dibenz(a,h)anthracene	350 U	12 J	340 U	340 U	350 U	350 U	350 U	350 U	360 U	340 U

Appendix D
Table D-1. Summary of Surface Soil Analytical Results, Initial Screening
Study Area 36

Naval Training Center, Orlando
Orlando, FL

Sample ID	36S00101	36S00201	36S00301	36S00401	36S00501	36S00601	36S00701	36S00701D	36S00801	36S00901
Lab ID	S776201*1	S776201*3	S776201*11	S776201*7	S776201*9	S776201*5	S776391*1	S776391*15	S776391*2	S776391*3
Sampling Date	10/30/97	10/30/97	10/30/97	10/30/97	10/30/97	10/30/97	11/10/97	11/10/97	11/10/97	11/10/97
Dibenzofuran	350 U	340 U	340 U	340 U	350 U	350 U	350 U	350 U	360 U	340 U
Diethylphthalate	350 U	340 U	340 U	340 U	350 U	350 U	350 U	350 UJ	360 U	340 UJ
Dimethylphthalate	350 U	340 U	340 U	340 U	350 U	350 U	350 U	350 U	360 U	340 U
Fluoranthene	6 J	19 J	12 J	5 J	23 J	6 J	350 J	190 J	62 J	340 U
Fluorene	350 U	340 U	340 U	340 U	350 U	350 U	350 U	350 U	360 U	340 U
Hexachlorobenzene	350 U	340 U	340 U	340 U	350 U	350 U	350 U	350 U	360 U	340 U
Hexachlorobutadiene	350 U	340 U	340 U	340 U	350 U	350 U	350 U	350 UJ	360 U	340 U
Hexachlorocyclopentadiene	350 U	340 U	340 U	340 U	350 U	350 U	350 U	350 U	360 U	340 U
Hexachloroethane	350 U	340 U	340 U	340 U	350 U	350 U	350 U	350 U	360 U	340 U
Indeno(1,2,3-cd)pyrene	350 U	34 J	340 U	340 U	10 J	350 U	130 J	82 J	48 J	340 U
Isophorone	350 U	340 U	340 U	340 U	350 U	350 U	350 U	350 U	360 U	340 U
N-Nitroso-di-n-propylamine	350 U	340 U	340 U	340 U	350 U	350 U	350 U	350 U	360 U	340 U
N-Nitrosodiphenylamine	350 U	340 U	340 U	340 U	350 U	350 U	350 U	350 U	360 U	340 U
Naphthalene	350 U	340 U	340 U	340 U	350 U	350 U	350 U	350 U	360 U	340 U
Nitrobenzene	350 U	340 U	340 U	340 U	350 U	350 U	350 U	350 UJ	360 U	340 U
Pentachlorophenol	880 U	860 U	860 U	860 U	870 U	880 U	870 U	880 U	900 U	860 U
Phenanthrene	350 U	9 J	13 J	340 U	8 J	7 J	120 J	54 J	27 J	340 U
Phenol	350 U	340 U	340 U	340 U	350 U	350 U	350 U	350 U	360 U	340 U
Pyrene	14 J	25 J	21 J	340 U	21 J	7 J	240 J	150 J	55 J	340 U
Pesticides/PCBs, ug/kg										
4,4'-DDD	3.4 J	3.4 U	3.4 U	1.7 J	3.5 U	15	1 J	1.3 J	6 J	0.35 J
4,4'-DDE	10	2.8 J	0.62 J	8.3	1.1 J	9.7	5.5 J	5.6	4.2	8.3
4,4'-DDT	0.48 J	0.72 J	0.44 J	22	1.9 J	3.5 U	12 J	13 J	15 J	12 J
Aldrin	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
alpha-BHC	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
alpha-Chlordane	0.46 J	0.07 J	1.8 U	0.25 J	1.8 U	1.7 J	11	11	13	2 J
Aroclor-1016	35 U	34 U	34 U	34 U	35 U	35 U	35 U	35 U	36 U	34 U
Aroclor-1221	71 U	70 U	70 U	70 U	70 U	71 U	70 U	71 U	73 U	70 U
Aroclor-1232	35 U	34 U	34 U	34 U	35 U	35 U	35 U	35 U	36 U	34 U
Aroclor-1242	35 U	34 U	34 U	34 U	35 U	35 U	35 U	35 U	36 U	34 U
Aroclor-1248	35 U	34 U	34 U	34 U	35 U	35 U	35 U	35 U	36 U	34 U
Aroclor-1254	35 U	34 U	34 U	34 U	35 U	35 U	35 U	35 U	36 U	34 U
Aroclor-1260	35 U	34 U	34 U	34 U	35 U	35 U	85	67	97	29 J
beta-BHC	1.8 U	1.8 U	0.2 J	1.8 U	1.8 U	1.8 U	1.4 J	2.5 J	0.54 J	0.91 J
delta-BHC	1.8 U	1.8 U	1.8 U	0.22 J	0.16 J	0.15 J	1.8 UJ	1.8 UJ	1.8 U	1.8 U
Dieldrin	3.5 U	0.48 J	0.09 J	3.4 U	3.5 U	3.5 U	3.5 UJ	1.3 J	7.4 J	3.4 U
Endosulfan I	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
Endosulfan II	3.5 U	3.4 U	3.4 U	3.4 U	3.5 U	3.5 U	3.5 U	3.5 U	3.6 U	3.4 U
Endosulfan sulfate	3.5 U	3.4 U	3.4 U	3.4 U	3.5 U	3.5 U	3.5 U	3.5 U	3.6 U	3.4 U
Endrin	3.5 U	3.4 U	3.4 U	3.4 U	3.5 U	3.5 U	3.5 U	3.5 U	3.6 U	0.53 J

Appendix D
Table D-1. Summary of Surface Soil Analytical Results, Initial Screening
Study Area 36

Naval Training Center, Orlando
Orlando, FL

Sample ID	36S00101	36S00201	36S00301	36S00401	36S00501	36S00601	36S00701	36S00701D	36S00801	36S00901
Lab ID	S776201*1	S776201*3	S776201*11	S776201*7	S776201*9	S776201*5	S776391*1	S776391*15	S776391*2	S776391*3
Sampling Date	10/30/97	10/30/97	10/30/97	10/30/97	10/30/97	10/30/97	11/10/97	11/10/97	11/10/97	11/10/97
Endrin aldehyde	3.5 U	3.4 U	3.4 U	3.4 U	3.5 U	3.5 U	3.5 U	3.5 U	3.6 U	3.4 U
Endrin ketone	3.5 U	3.4 U	1.4 J	3.4 U	0.78 J	1.5 J	3.5 U	3.5 U	3.6 U	3.4 U
gamma-BHC (Lindane)	1.8 U	1.8 U	1.8 U	0.13 J	1.8 U	1.8 U	0.72 J	1.2 J	0.27 J	1.8 U
gamma-Chlordane	0.86 J	0.24 J	0.33 J	0.3 J	1.8 U	2.5 U	12	12	16	2.4 J
Heptachlor	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
Heptachlor epoxide	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	0.3 J	0.46 J	1.2 J	1.8 U
Methoxychlor	18 U	1.7 J	3.2 J	18 U	18 U	7.8 J	18 UJ	6.8 J	9.3 J	5.6 J
Toxaphene	180 U	180 U	180 U	180 U	180 U	180 U	180 U	180 U	180 U	180 U
Inorganics, mg/kg										
Aluminum	576 J	100 J	741 J	591 J	590 J	489 J	1560	1880	3270	732
Antimony	0.84 UJ	0.69 UJ	0.69 U	12.5	2.4 U	0.9 U	0.69 U	0.7 U	0.72 U	0.69 U
Arsenic	0.77 UJ	1 J	1.6 J	1.8 J	2 J	0.77 U	0.76 U	0.77 U	1 J	0.75 U
Barium	3.2 UJ	1.3 UJ	3.1 UJ	7.4 J	5.1 J	13.1 J	410	499	38.3 J	5.5 U
Beryllium	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.19 J	0.25 J	0.17 J	0.04 U
Cadmium	0.13 U	0.12 U	0.12 U	0.19 J	0.13 U	0.13 U	1.9	1.9	0.35 J	0.19 J
Calcium	105000	90300	60700	34900	29500	69700	49200	41300	22200	4990 U
Chromium	2.6	2.5	2.8	5.4	2.4	2.1 J	15.5 J	27 J	8.5	2.9
Cobalt	0.22 J	0.29 J	0.61 U	1.5 J	0.86 J	0.21 U	1.1 J	1 J	0.22 U	0.21 U
Copper	0.47 U	0.46 U	0.46 U	0.91 U	1 U	0.65 U	21.6	22	6 U	5.9 U
Iron	129 J	101 UJ	237 J	862 J	135 J	156 J	1130	1240	327	386
Lead	1.5 J	0.89 UJ	4.2 J	29.2 J	2 J	11.9 J	188	259	51.1	49.1
Magnesium	655 U	539 U	499 U	246 U	1180	409 U	983 J	1290	359 U	72.6 U
Manganese	15.2	8.7	14.4	8.7	5.2	11.8	60.1	68.5	33.2	8.9
Mercury	0.03 U	25.8	0.05 J	0.03 U	0.02 J	0.04 J	0.23 J	1.9 J	0.14	0.02 U
Nickel	0.49 U	0.48 U	0.48 U	0.51 U	0.48 U	0.49 U	3.7 J	4.1 J	1.4 J	1.2 J
Potassium	78.2 U	28.2 U	19.1 U	11.2 U	11.4 U	33.5 U	86.4 UJ	160 UJ	38.2 U	16.4 U
Selenium	0.84 J	0.54 UJ	0.96 J	1 J	0.55 U	0.55 U	0.55 U	0.55 U	0.57 U	0.54 U
Silver	0.64 U	0.62 U	0.62 U	0.94 J	0.95 J	0.64 U	0.63 U	0.64 U	0.65 U	0.62 U
Sodium	65.8 UJ	71.8 UJ	51 UJ	53.9 UJ	52.2 UJ	52.2 UJ	42.1 UJ	55.2 UJ	23.6 UJ	13 UJ
Thallium	1 UJ	0.98 UJ	1.6 J	0.99 J	0.99 U	1 U	0.99 U	1 U	1 U	0.98 U
Vanadium	2.3 J	1.8 J	4.7 J	1.1 J	0.9 J	1 J	5.6 J	6.4 J	2.1 J	1.1 J
Zinc	2.2 UJ	1.3 UJ	4.3 UJ	156 J	4.1 UJ	6.3 UJ	224	217	85.1	60.1 U
General Chemistry, mg/kg										
TRPH	500	260	540	13	10	620	430	NA	770	55

TABLE D-2

SUMMARY OF SUBSURFACE SOIL ANALYTICAL RESULTS

Appendix D
 Table D-2. Summary of Subsurface Soil Analytical Results, Initial Screening
 Study Area 36

Naval Training Center, Orlando
 Orlando, FL

Sample ID	36B00101	36B00201	36B00301	36B00401	36B00501	36B00601
Lab ID	S776201*2	S776201*4	S776201*12	S776201*8	S776201*10	S776201*6
Sampling Date	30-Oct-97	30-Oct-97	30-Oct-97	30-Oct-97	30-Oct-97	30-Oct-97
Volatile organics, ug/kg						
1,1,1-Trichloroethane	10 U	11 U	11 U	11 U	11 U	11 U
1,1,2,2-Tetrachloroethane	10 U	11 U	11 U	11 U	11 U	11 U
1,1,2-Trichloroethane	10 U	11 U	11 U	11 U	11 U	11 U
1,1-Dichloroethane	10 U	11 U	11 U	11 U	11 U	11 U
1,1-Dichloroethene	10 U	11 U	11 U	11 U	11 U	11 U
1,2-Dichloroethane	10 U	11 U	11 U	11 U	11 U	11 U
1,2-Dichloroethene (total)	10 U	11 U	11 U	11 U	11 U	11 U
1,2-Dichloropropane	10 U	11 U	11 U	11 U	11 U	11 U
2-Butanone	10 UJ	11 UJ	11 UJ	11 UJ	11 UJ	11 UJ
2-Hexanone	10 U	11 U	11 U	11 U	11 U	11 U
4-Methyl-2-pentanone	10 U	11 U	11 U	11 U	11 U	11 U
Acetone	10 U	11 U	11 U	11 U	11 U	11 U
Benzene	10 U	11 U	11 U	11 U	11 U	11 U
Bromodichloromethane	10 U	11 U	11 U	11 U	11 U	11 U
Bromoform	10 U	11 U	11 U	11 U	11 U	11 U
Bromomethane	10 U	11 U	11 U	11 U	11 U	11 U
Carbon disulfide	10 U	11 U	11 U	11 U	11 U	11 U
Carbon tetrachloride	10 U	11 U	11 U	11 U	11 U	11 U
Chlorobenzene	10 U	11 U	11 U	11 U	11 U	11 U
Chloroethane	10 U	11 U	11 U	11 U	11 U	11 U
Chloroform	10 U	11 U	11 U	11 U	11 U	11 U
Chloromethane	10 U	11 U	11 U	11 U	11 U	11 U
cis-1,3-Dichloropropene	10 U	11 U	11 U	11 U	11 U	11 U
Dibromochloromethane	10 U	11 U	11 U	11 U	11 U	11 U
Ethylbenzene	10 U	11 U	11 U	11 U	11 U	11 U
Methylene chloride	10 U	11 U	11 U	11 U	11 U	11 U
Styrene	10 U	11 U	11 U	11 U	11 U	11 U
Tetrachloroethene	10 U	11 U	11 U	11 U	11 U	11 U
Toluene	10 U	11 U	11 U	11 U	11 U	11 U
trans-1,3-Dichloropropene	10 U	11 U	11 U	11 U	11 U	11 U
Trichloroethene	10 U	11 U	11 U	11 U	11 U	11 U
Vinyl chloride	10 U	11 U	11 U	11 U	11 U	11 U
Xylene (total)	10 U	11 U	11 U	11 U	11 U	11 U

Appendix D
 Table D-2. Summary of Subsurface Soil Analytical Results, Initial Screening
 Study Area 36

Naval Training Center, Orlando
 Orlando, FL

Sample ID	36B00101	36B00201	36B00301	36B00401	36B00501	36B00601
Lab ID	S776201*2	S776201*4	S776201*12	S776201*8	S776201*10	S776201*6
Sampling Date	30-Oct-97	30-Oct-97	30-Oct-97	30-Oct-97	30-Oct-97	30-Oct-97
Semivolatile organics, ug/kg						
1,2,4-Trichlorobenzene	350 U	360 U	360 U	350 U	360 U	360 U
1,2-Dichlorobenzene	350 U	360 U	360 U	350 U	360 U	360 U
1,3-Dichlorobenzene	350 U	360 U	360 U	350 U	360 U	360 U
1,4-Dichlorobenzene	350 U	360 U	360 U	350 U	360 U	360 U
2,2'-oxybis(1-Chloropropane)	350 U	360 U	360 U	350 U	360 U	360 U
2,4,5-Trichlorophenol	870 U	900 U	910 U	880 U	910 U	900 U
2,4,6-Trichlorophenol	350 U	360 U	360 U	350 U	360 U	360 U
2,4-Dichlorophenol	350 U	360 U	360 U	350 U	360 U	360 U
2,4-Dimethylphenol	350 U	360 U	360 U	350 U	360 U	360 U
2,4-Dinitrophenol	870 U	900 U	910 U	880 U	910 U	900 U
2,4-Dinitrotoluene	350 U	360 U	360 U	350 U	360 U	360 U
2,6-Dinitrotoluene	350 U	360 U	360 U	350 U	360 U	360 U
2-Chloronaphthalene	350 U	360 U	360 U	350 U	360 U	360 U
2-Chlorophenol	350 U	360 U	360 U	350 U	360 U	360 U
2-Methylnaphthalene	350 U	360 U	360 U	350 U	360 U	360 U
2-Methylphenol	350 U	360 U	360 U	350 U	360 U	360 U
2-Nitroaniline	870 U	900 U	910 U	880 U	910 U	900 U
2-Nitrophenol	350 U	360 U	360 U	350 U	360 U	360 U
3,3'-Dichlorobenzidine	350 UJ	360 UJ	360 U	350 UJ	360 U	360 UJ
3-Methylphenol/4-Methylphenol	350 U	360 U	360 U	350 U	360 U	360 U
3-Nitroaniline	870 UJ	900 UJ	910 U	880 UJ	910 U	900 UJ
4,6-Dinitro-2-methylphenol	870 U	900 U	910 U	880 U	910 U	900 U
4-Bromophenyl-phenylether	350 U	360 U	360 U	350 U	360 U	360 U
4-Chloro-3-methylphenol	350 U	360 U	360 U	350 U	360 U	360 U
4-Chloroaniline	350 UJ	360 UJ	360 UJ	350 UJ	360 UJ	360 UJ
4-Chlorophenyl-phenylether	350 U	360 U	360 U	350 U	360 U	360 U
4-Nitroaniline	870 U	900 U	910 U	880 U	910 U	900 U
4-Nitrophenol	870 U	900 U	910 U	880 U	910 U	900 U
Acenaphthene	350 U	360 U	360 U	15 J	360 U	360 U
Acenaphthylene	350 U	360 U	360 U	350 U	360 U	360 U
Anthracene	350 U	360 U	360 U	350 U	360 U	360 U
Benzo(a)anthracene	350 U	360 U	360 U	350 U	360 U	360 U
Benzo(a)pyrene	350 U	360 U	360 U	350 U	360 U	360 U

Appendix D
 Table D-2. Summary of Subsurface Soil Analytical Results, Initial Screening
 Study Area 36

Naval Training Center, Orlando
 Orlando, FL

Sample ID	36B00101	36B00201	36B00301	36B00401	36B00501	36B00601
Lab ID	S776201*2	S776201*4	S776201*12	S776201*8	S776201*10	S776201*6
Sampling Date	30-Oct-97	30-Oct-97	30-Oct-97	30-Oct-97	30-Oct-97	30-Oct-97
Benzo(b)fluoranthene	350 U	360 U	360 U	350 U	360 U	360 U
Benzo(g,h,i)perylene	350 U	360 U	360 U	350 U	360 U	360 U
Benzo(k)fluoranthene	350 U	360 U	360 U	350 U	360 U	360 U
bis(2-Chloroethoxy)methane	350 U	360 U	360 U	350 U	360 U	360 U
bis(2-Chloroethyl)ether	350 U	360 U	360 U	350 U	360 U	360 U
bis(2-Ethylhexyl)phthalate	350 U	360 U	360 U	350 U	360 U	360 U
Butylbenzylphthalate	350 U	360 U	360 U	350 U	360 U	360 U
Carbazole	350 U	360 U	360 U	350 U	360 U	360 U
Chrysene	350 U	360 U	360 U	350 U	360 U	360 U
Di-n-butylphthalate	350 U	360 U	360 U	350 U	360 U	360 U
Di-n-octylphthalate	350 U	360 U	360 U	350 U	360 U	360 U
Dibenz(a,h)anthracene	350 U	360 U	360 U	350 U	360 U	360 U
Dibenzofuran	350 U	360 U	360 U	350 U	360 U	360 U
Diethylphthalate	350 U	360 U	360 U	350 U	360 U	360 U
Dimethylphthalate	350 U	360 U	360 U	350 U	360 U	360 U
Fluoranthene	350 U	360 U	360 U	350 U	360 U	360 U
Fluorene	350 U	360 U	360 U	14 J	360 U	360 U
Hexachlorobenzene	350 U	360 U	360 U	350 U	360 U	360 U
Hexachlorobutadiene	350 U	360 U	360 U	350 U	360 U	360 U
Hexachlorocyclopentadiene	350 U	360 U	360 U	350 U	360 U	360 U
Hexachloroethane	350 U	360 U	360 U	350 U	360 U	360 U
Indeno(1,2,3-cd)pyrene	350 U	360 U	360 U	350 U	360 U	360 U
Isophorone	350 U	360 U	360 U	350 U	360 U	360 U
N-Nitroso-di-n-propylamine	350 U	360 U	360 U	350 U	360 U	360 U
N-Nitrosodiphenylamine	350 U	360 U	360 U	350 U	360 U	360 U
Naphthalene	350 U	360 U	360 U	350 U	360 U	360 U
Nitrobenzene	350 U	360 U	360 U	350 U	360 U	360 U
Pentachlorophenol	870 U	900 U	910 U	880 U	910 U	900 U
Phenanthrene	350 U	360 U	360 U	20 J	360 U	360 U
Phenol	350 U	360 U	360 U	350 U	360 U	360 U
Pyrene	350 U	360 U	360 U	350 U	360 U	360 U
Pesticides/PCBs, ug/kg						
4,4'-DDD	1.8 J	3.6 U	3.6 UJ	3.5 U	3.6 U	3.6 U
4,4'-DDE	4.4 J	3.6 U	3.6 UJ	3.5 U	3.6 U	3.6 U

Appendix D
Table D-2. Summary of Subsurface Soil Analytical Results, Initial Screening
Study Area 36

Naval Training Center, Orlando
Orlando, FL

Sample ID	36B00101	36B00201	36B00301	36B00401	36B00501	36B00601
Lab ID	S776201*2	S776201*4	S776201*12	S776201*8	S776201*10	S776201*6
Sampling Date	30-Oct-97	30-Oct-97	30-Oct-97	30-Oct-97	30-Oct-97	30-Oct-97
4,4'-DDT	3.5 U	3.6 U	3.6 UJ	3.5 U	3.6 U	3.6 U
Aldrin	1.8 U	1.8 U	1.9 UJ	1.8 U	1.9 U	1.8 U
alpha-BHC	1.8 U	1.8 U	1.9 UJ	1.8 U	1.9 U	1.8 U
alpha-Chlordane	0.22 J	1.8 U	1.9 UJ	1.8 U	1.9 U	1.8 U
Aroclor-1016	35 U	36 U	36 UJ	35 U	36 U	36 U
Aroclor-1221	70 U	73 U	74 UJ	71 U	74 U	73 U
Aroclor-1232	35 U	36 U	36 UJ	35 U	36 U	36 U
Aroclor-1242	35 U	36 U	36 UJ	35 U	36 U	36 U
Aroclor-1248	35 U	36 U	36 UJ	35 U	36 U	36 U
Aroclor-1254	35 U	36 U	36 UJ	35 U	36 U	36 U
Aroclor-1260	35 U	36 U	36 UJ	35 U	36 U	36 U
beta-BHC	0.09 J	1.8 U	1.9 UJ	1.8 U	1.9 U	1.8 U
delta-BHC	1.8 U	1.8 U	1.9 UJ	1.8 U	1.9 U	1.8 U
Dieldrin	0.4 J	3.6 U	3.6 UJ	0.08 J	3.6 U	3.6 U
Endosulfan I	1.8 U	1.8 U	1.9 UJ	1.8 U	1.9 U	1.8 U
Endosulfan II	3.5 U	3.6 U	3.6 UJ	3.5 U	3.6 U	3.6 U
Endosulfan sulfate	3.5 U	3.6 U	3.6 UJ	3.5 U	3.6 U	3.6 U
Endrin	3.5 U	3.6 U	3.6 UJ	3.5 U	3.6 U	3.6 U
Endrin aldehyde	3.5 U	3.6 U	3.6 UJ	3.5 U	3.6 U	3.6 U
Endrin ketone	0.72 J	3.6 U	0.43 J	0.6 J	1.1 J	0.59 J
gamma-BHC (Lindane)	0.07 J	1.8 U	1.9 UJ	1.8 U	1.9 U	1.8 U
gamma-Chlordane	0.5 J	1.8 UJ	1.9 UJ	1.8 U	1.9 U	0.32 J
Heptachlor	1.8 U	1.8 U	1.9 UJ	1.8 U	1.9 U	1.8 U
Heptachlor epoxide	1.8 U	1.8 U	1.9 UJ	1.8 U	1.9 U	1.8 U
Methoxychlor	18 U	18 UJ	19 UJ	18 U	19 U	18 U
Toxaphene	180 U	180 U	190 UJ	180 U	190 U	180 U
Inorganics, mg/kg						
Aluminum	520 J	251 J	103 J	76.9 J	561 J	674 J
Antimony	3.2 U	1 U	0.73 U	2.3 U	2.7 U	0.72 U
Arsenic	1 J	0.78 U	0.86 J	1.2 J	2.2 J	0.78 U
Barium	0.75 UJ	0.21 UJ	0.43 UJ	0.32 UJ	0.6 UJ	0.46 UJ
Beryllium	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U
Cadmium	0.13 U	0.32 J	0.13 U	0.13 U	0.13 U	0.13 U
Calcium	2540	125 U	54.8 U	30.2 U	202 U	1060 U

Appendix D
 Table D-2. Summary of Subsurface Soil Analytical Results, Initial Screening
 Study Area 36

Naval Training Center, Orlando
 Orlando, FL

Sample ID	36B00101	36B00201	36B00301	36B00401	36B00501	36B00601
Lab ID	S776201*2	S776201*4	S776201*12	S776201*8	S776201*10	S776201*6
Sampling Date	30-Oct-97	30-Oct-97	30-Oct-97	30-Oct-97	30-Oct-97	30-Oct-97
Chromium	1.8 J	1.2 J	1.4 J	1.6 J	3.1	2.3
Cobalt	0.46 J	0.34 J	0.37 J	0.7 J	1.1 J	0.41 J
Copper	0.46 U	0.48 U	0.48 U	0.47 U	1.1 U	0.48 U
Iron	35.4 UJ	16.2 UJ	20 UJ	10.9 UJ	36 UJ	18.8 UJ
Lead	0.8 UJ	0.87 UJ	0.41 UJ	0.26 U	0.5 UJ	3.2 J
Magnesium	66.2 U	4 U	3.8 U	5.6 U	10 U	12.2 U
Manganese	1.5 U	0.24 U	0.37 U	0.25 U	0.42 U	0.24 U
Mercury	0.03 U	0.05	0.02 U	0.03 U	0.02 U	0.03 J
Nickel	0.48 U	0.5 U	0.51 U	0.49 U	0.99 U	0.5 U
Potassium	17.5 U	18.1 U	11.9 U	11.5 U	11.9 U	11.7 U
Selenium	0.6 J	0.62 J	0.57 U	0.98 J	0.85 J	0.57 U
Silver	0.63 U	0.65 U	0.66 U	1 J	1.3 J	0.65 U
Sodium	33.8 UJ	43.3 UJ	37.8 UJ	31.9 UJ	38 UJ	59 UJ
Thallium	0.99 U	1 U	1 U	1 U	1.4 J	1 U
Vanadium	0.38 J	0.37 U	0.37 U	0.36 U	0.93 J	0.37 U
Zinc	0.4 UJ	0.39 UJ	0.33 UJ	0.52 UJ	0.48 UJ	0.72 UJ
General Chemistry, mg/kg						
TRPH	160	18	10 U	10 U	10 U	38

TABLE D-3

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS

Appendix D

Table D-3A. Summary of Groundwater Analytical Results, Initial Screening
Study Area 36

Naval Training Center, Orlando
Orlando, FL

Sample ID	36G00101	36G00101D	36G00201	36G00301	36G00401	36G00501	36G00601		36H00101	36H00101D
Lab ID	S776519*1	S776519*4	S776519*2	S776562*3	S776562*1	S776562*2	S776519*3	S776519*3*DL	S776519*5	S776519*6
Sampling Date	17-Nov-97	17-Nov-97	17-Nov-97	18-Nov-97	18-Nov-97	18-Nov-97	17-Nov-97	17-Nov-97	17-Nov-97	17-Nov-97
Volatile organics, ug/L										
1,1,1-Trichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 UR	NA	NA
1,1,2,2-Tetrachloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 UR	NA	NA
1,1,2-Trichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 UR	NA	NA
1,1-Dichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 UR	NA	NA
1,1-Dichloroethene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 UR	NA	NA
1,2,4-Trichlorobenzene	1 UJ	2 UR	NA	NA						
1,2-Dibromo-3-chloropropane	1 UJ	2 UR	NA	NA						
1,2-Dibromoethane (EDB)	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 UR	NA	NA
1,2-Dichlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 UR	NA	NA
1,2-Dichloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 UR	NA	NA
1,2-Dichloropropane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 UR	NA	NA
1,3-Dichlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 UR	NA	NA
1,4-Dichlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 UR	NA	NA
2-Butanone	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U	10 UR	NA	NA
2-Hexanone	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 UR	NA	NA
4-Methyl-2-pentanone	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 UR	NA	NA
Acetone	5 UR	10 UR	NA	NA						
Benzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 UR	NA	NA
Bromochloromethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 UR	NA	NA
Bromodichloromethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 UR	NA	NA
Bromoform	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 UR	NA	NA
Bromomethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 UR	NA	NA
Carbon disulfide	1 UJ	1 U	1 UJ	1 U	1 U	1 U	1 UJ	2 UR	NA	NA
Carbon tetrachloride	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 UR	NA	NA
Chlorobenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 UR	NA	NA
Chloroethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 UR	NA	NA
Chloroform	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 UR	NA	NA
Chloromethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 UR	NA	NA
cis-1,2-Dichloroethene	5	4	1 U	1 U	1 U	1 U	1 U	2 UR	NA	NA
cis-1,3-Dichloropropene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 UR	NA	NA
Dibromochloromethane	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 UR	NA	NA
Ethylbenzene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 UR	NA	NA
Methylene chloride	2 U	2 U	2 U	2 U	2 U	2 U	2 U	4 UR	NA	NA

Appendix D
 Table D-3A. Summary of Groundwater Analytical Results, Initial Screening
 Study Area 36

Naval Training Center, Orlando
 Orlando, FL

Sample ID	36G00101	36G00101D	36G00201	36G00301	36G00401	36G00501	36G00601		36H00101	36H00101D	
	Lab ID	S776519*1	S776519*4	S776519*2	S776562*3	S776562*1	S776562*2	S776519*3	S776519*3*DL	S776519*5	S776519*6
Sampling Date	17-Nov-97	17-Nov-97	17-Nov-97	18-Nov-97	18-Nov-97	18-Nov-97	18-Nov-97	17-Nov-97	17-Nov-97	17-Nov-97	17-Nov-97
Styrene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 UR	NA	NA
Tetrachloroethene	0.4 J	0.4 J	1 U	1 U	1 U	1 U	1 U	1 U	2 UR	NA	NA
Toluene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 UR	NA	NA
trans-1,2-Dichloroethylene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 UR	NA	NA
trans-1,3-Dichloropropene	1 U	1 U	1 U	1 U	1 U	1 U	1 U	27 ER	19 D	NA	NA
Trichloroethene	1	0.8 J	1 U	1 U	1 U	1 U	1 U	1 U	2 UR	NA	NA
Vinyl chloride	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 UR	NA	NA
Xylene (total)	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 UR	NA	NA
Semivolatile organics, ug/L											
2,2'-oxybis(1-Chloropropane)	10 U	NA	NA	NA							
2,4,5-Trichlorophenol	25 U	NA	NA	NA							
2,4,6-Trichlorophenol	10 U	NA	NA	NA							
2,4-Dichlorophenol	10 U	NA	NA	NA							
2,4-Dimethylphenol	10 U	NA	NA	NA							
2,4-Dinitrophenol	25 UJ	NA	NA	NA							
2,4-Dinitrotoluene	10 U	NA	NA	NA							
2,6-Dinitrotoluene	10 U	NA	NA	NA							
2-Chloronaphthalene	10 U	NA	NA	NA							
2-Chlorophenol	10 U	NA	NA	NA							
2-Methylnaphthalene	10 U	NA	NA	NA							
2-Methylphenol	10 U	NA	NA	NA							
2-Nitroaniline	25 U	NA	NA	NA							
2-Nitrophenol	10 U	NA	NA	NA							
3,3'-Dichlorobenzidine	10 U	NA	NA	NA							
3-Methylphenol/4-Methylphenol	10 U	NA	NA	NA							
3-Nitroaniline	25 U	NA	NA	NA							
4,6-Dinitro-2-methylphenol	25 U	NA	NA	NA							
4-Bromophenyl-phenylether	10 U	NA	NA	NA							
4-Chloro-3-methylphenol	10 U	NA	NA	NA							
4-Chloroaniline	10 U	NA	NA	NA							
4-Chlorophenyl-phenylether	10 U	NA	NA	NA							
4-Nitroaniline	25 U	NA	NA	NA							
4-Nitrophenol	25 U	NA	NA	NA							
Acenaphthene	10 U	NA	NA	NA							

Appendix D
Table D-3A. Summary of Groundwater Analytical Results, Initial Screening
Study Area 36

Naval Training Center, Orlando
Orlando, FL

Sample ID	36G00101	36G00101D	36G00201	36G00301	36G00401	36G00501	36G00601		36H00101	36H00101D
Lab ID	S776519*1	S776519*4	S776519*2	S776562*3	S776562*1	S776562*2	S776519*3	S776519*3*DL	S776519*5	S776519*6
Sampling Date	17-Nov-97	17-Nov-97	17-Nov-97	18-Nov-97	18-Nov-97	18-Nov-97	17-Nov-97	17-Nov-97	17-Nov-97	17-Nov-97
Acenaphthylene	10 U	NA	NA	NA						
Anthracene	10 U	NA	NA	NA						
Benzo(a)anthracene	10 U	NA	NA	NA						
Benzo(a)pyrene	10 U	NA	NA	NA						
Benzo(b)fluoranthene	10 U	NA	NA	NA						
Benzo(g,h,i)perylene	10 UJ	NA	NA	NA						
Benzo(k)fluoranthene	10 U	NA	NA	NA						
bis(2-Chloroethoxy)methane	10 U	NA	NA	NA						
bis(2-Chloroethyl)ether	10 U	NA	NA	NA						
bis(2-Ethylhexyl)phthalate	10 U	NA	NA	NA						
Butylbenzylphthalate	10 U	NA	NA	NA						
Carbazole	10 U	NA	NA	NA						
Chrysene	10 U	NA	NA	NA						
Di-n-butylphthalate	10 U	NA	NA	NA						
Di-n-octylphthalate	10 UJ	NA	NA	NA						
Dibenz(a,h)anthracene	10 UJ	NA	NA	NA						
Dibenzofuran	10 U	NA	NA	NA						
Diethylphthalate	10 U	NA	NA	NA						
Dimethylphthalate	10 U	NA	NA	NA						
Fluoranthene	10 U	NA	NA	NA						
Fluorene	10 U	NA	NA	NA						
Hexachlorobenzene	10 U	NA	NA	NA						
Hexachlorobutadiene	10 U	NA	NA	NA						
Hexachlorocyclopentadiene	10 U	NA	NA	NA						
Hexachloroethane	10 U	NA	NA	NA						
Indeno(1,2,3-cd)pyrene	10 UJ	NA	NA	NA						
Isophorone	10 U	NA	NA	NA						
N-Nitroso-di-n-propylamine	10 U	NA	NA	NA						
N-Nitrosodiphenylamine	10 U	NA	NA	NA						
Naphthalene	10 U	NA	NA	NA						
Nitrobenzene	10 U	NA	NA	NA						
Pentachlorophenol	25 U	NA	NA	NA						
Phenanthrene	10 U	NA	NA	NA						
Phenol	10 U	NA	NA	NA						

Appendix D
 Table D-3A. Summary of Groundwater Analytical Results, Initial Screening
 Study Area 36

Naval Training Center, Orlando
 Orlando, FL

Sample ID	36G00101	36G00101D	36G00201	36G00301	36G00401	36G00501	36G00601		36H00101	36H00101D	
	Lab ID	S776519*1	S776519*4	S776519*2	S776562*3	S776562*1	S776562*2	S776519*3	S776519*3*DL	S776519*5	S776519*6
Sampling Date	17-Nov-97	17-Nov-97	17-Nov-97	18-Nov-97	18-Nov-97	18-Nov-97	18-Nov-97	17-Nov-97	17-Nov-97	17-Nov-97	17-Nov-97
Pyrene	10 U	NA	NA	NA							
Pesticides/PCBs, ug/L											
4,4'-DDD	0.1 UJ	0.1 UJ	0.1 UJ	0.1 U	0.1 U	0.1 UJ	0.1 UJ	0.1 U	NA	NA	NA
4,4'-DDE	0.1 UJ	0.1 UJ	0.1 UJ	0.1 U	0.1 U	0.1 UJ	0.1 UJ	0.1 U	NA	NA	NA
4,4'-DDT	0.1 UJ	0.1 UJ	0.1 UJ	0.1 U	0.1 U	0.1 UJ	0.1 UJ	0.1 U	NA	NA	NA
Aldrin	0.05 UJ	0.05 UJ	0.05 UJ	0.05 U	0.05 U	0.05 UJ	0.05 UJ	0.05 U	NA	NA	NA
alpha-BHC	0.05 UJ	0.05 UJ	0.05 UJ	0.05 U	0.05 U	0.05 UJ	0.05 UJ	0.05 U	NA	NA	NA
alpha-Chlordane	0.05 UJ	0.05 UJ	0.05 UJ	0.05 U	0.05 U	0.05 UJ	0.05 UJ	0.05 U	NA	NA	NA
Aroclor-1016	1 UJ	1 UJ	1 UJ	1 U	1 U	1 UJ	1 UJ	1 U	NA	NA	NA
Aroclor-1221	2 UJ	2 UJ	2 UJ	2 U	2 U	2 UJ	2 UJ	2 U	NA	NA	NA
Aroclor-1232	1 UJ	1 UJ	1 UJ	1 U	1 U	1 UJ	1 UJ	1 U	NA	NA	NA
Aroclor-1242	1 UJ	1 UJ	1 UJ	1 U	1 U	1 UJ	1 UJ	1 U	NA	NA	NA
Aroclor-1248	1 UJ	1 UJ	1 UJ	1 U	1 U	1 UJ	1 UJ	1 U	NA	NA	NA
Aroclor-1254	1 UJ	1 UJ	1 UJ	1 U	1 U	1 UJ	1 UJ	1 U	NA	NA	NA
Aroclor-1260	1 UJ	1 UJ	1 UJ	1 U	1 U	1 UJ	1 UJ	1 U	NA	NA	NA
beta-BHC	0.05 UJ	0.05 UJ	0.0072 J	0.05 U	0.05 U	0.05 UJ	0.05 UJ	0.05 U	NA	NA	NA
delta-BHC	0.05 UJ	0.05 UJ	0.05 UJ	0.05 U	0.05 U	0.05 UJ	0.05 UJ	0.05 U	NA	NA	NA
Dieldrin	0.1 UJ	0.1 UJ	0.1 UJ	0.1 U	0.1 U	0.1 UJ	0.1 UJ	0.1 U	NA	NA	NA
Endosulfan I	0.05 UJ	0.05 UJ	0.05 UJ	0.05 U	0.05 U	0.05 UJ	0.05 UJ	0.05 U	NA	NA	NA
Endosulfan II	0.1 UJ	0.1 UJ	0.1 UJ	0.1 U	0.1 U	0.1 UJ	0.1 UJ	0.1 U	NA	NA	NA
Endosulfan sulfate	0.1 UJ	0.1 UJ	0.1 UJ	0.1 U	0.1 U	0.1 UJ	0.1 UJ	0.1 U	NA	NA	NA
Endrin	0.1 UJ	0.1 UJ	0.1 UJ	0.1 U	0.1 U	0.1 UJ	0.1 UJ	0.1 U	NA	NA	NA
Endrin aldehyde	0.1 UJ	0.1 UJ	0.1 UJ	0.1 U	0.1 U	0.1 UJ	0.1 UJ	0.1 U	NA	NA	NA
Endrin ketone	0.1 UJ	0.1 UJ	0.1 UJ	0.1 U	0.1 U	0.1 UJ	0.1 UJ	0.1 U	NA	NA	NA
gamma-BHC (Lindane)	0.05 UJ	0.004 J	0.05 UJ	0.05 U	0.05 U	0.05 U	0.0036 J	0.05 U	NA	NA	NA
gamma-Chlordane	0.05 UJ	0.05 UJ	0.05 UJ	0.05 U	0.05 U	0.05 UJ	0.05 UJ	0.05 U	NA	NA	NA
Heptachlor	0.05 UJ	0.05 UJ	0.05 UJ	0.05 U	0.05 U	0.05 UJ	0.05 UJ	0.05 U	NA	NA	NA
Heptachlor epoxide	0.05 UJ	0.05 UJ	0.05 UJ	0.05 U	0.05 U	0.05 UJ	0.05 UJ	0.5 U	NA	NA	NA
Methoxychlor	0.5 UJ	0.5 UJ	0.5 UJ	0.5 U	0.5 U	0.5 UJ	0.5 UJ	5 U	NA	NA	NA
Toxaphene	5 UJ	5 UJ	5 UJ	5 U	5 U	5 UJ	5 UJ	5 U	NA	NA	NA
Inorganics, ug/L											
Aluminum	1530	1480	6660	71.1 J	375	1390	813	813	NA	665	715
Antimony	3.3 UJ	5.2 J	3.8 J	6 J	8.9 J	3.3 U	4.3 J	4.3 J	NA	6.4 J	3.8 J
Arsenic	3.6 U	NA	3.6 U	3.6 U							

Appendix D
 Table D-3A. Summary of Groundwater Analytical Results, Initial Screening
 Study Area 36

Naval Training Center, Orlando
 Orlando, FL

Sample ID	36G00101	36G00101D	36G00201	36G00301	36G00401	36G00501	36G00601		36H00101	36H00101D
Lab ID	S776519*1	S776519*4	S776519*2	S776562*3	S776562*1	S776562*2	S776519*3	S776519*3*DL	S776519*5	S776519*6
Sampling Date	17-Nov-97	17-Nov-97	17-Nov-97	18-Nov-97	18-Nov-97	18-Nov-97	17-Nov-97	17-Nov-97	17-Nov-97	17-Nov-97
Barium	7.1 U	6.8 U	25.7 J	16.6 U	4.6 U	7.2 U	14 U	NA	5.9 U	5.9 U
Beryllium	0.2 U	0.2 U	0.25 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	0.2 U	0.2 U
Cadmium	0.6 U	NA	0.6 U	0.6 U						
Calcium	8560	8130	44000	43300	18400	12300	12800	NA	8000	8190
Chromium	3.3 J	3.6 J	11.6	2 U	2 U	3.2 J	2 U	NA	2 U	2 U
Cobalt	1 UJ	1.1 J	2.4 J	1 U	1 U	1 J	1 U	NA	1 U	1 U
Copper	2.6 J	2.2 UJ	7.3 J	2.2 U	2.2 U	3.2 J	2.2 U	NA	2.2 U	2.2 U
Iron	211	211	909	35.3 U	35.3 U	131	402	NA	149	160
Lead	1.2 U	1.2 U	6.1	1.2 U	1.2 U	1.2 U	1.2 U	NA	1.2 U	1.2 U
Magnesium	2310 J	2230 J	2110 J	781 J	382 J	706 J	2780 J	NA	2200 J	2220 J
Manganese	2.9 U	2.4 U	6.8 U	0.4 U	1.1 U	0.85 U	3.8 U	NA	2.3 U	2.5 U
Mercury	0.1 U	0.1 U	0.21	0.1 U	0.1 U	0.11 J	0.1 U	NA	0.1 U	0.1 U
Nickel	2.6 J	2.3 UJ	3 J	2.3 U	2.3 U	2.3 U	2.3 U	NA	2.3 U	2.3 U
Potassium	1800 J	1790 J	1340 J	424 J	644 J	610 J	2570 J	NA	1760 J	1850 J
Selenium	2.6 U	3.1 U	2.6 U	NA	2.6 U	2.6 U				
Silver	3 U	3 U	3 U	3 U	3 U	3 U	3 U	NA	3 U	3 U
Sodium	5930 J	5920 J	4600 J	1510 J	1280 J	2640 J	6470 J	NA	6410 J	6630 J
Thallium	4.7 U	NA	4.7 U	4.7 U						
Vanadium	3.3 J	2.7 J	11.1 J	5.7 J	5.7 J	4.5 J	2.9 J	NA	2.3 J	2.2 J
Zinc	12.5 J	2.9 UJ	13.7 J	2.3 U	20.5	3.3 U	4.7 U	NA	5.7 UJ	8.7 UJ
General Chemistry, mg/L										
Suspended Solids	6	6	13	5 U	5 U	11	5 U	NA	NA	NA
TRPH	1 U	NA	1 U	1 U	1 U	1 U	1 U	NA	NA	NA

Appendix D
 Table D-3A. Summary of Groundwater Analytical Results, Initial Screening
 Study Area 36

Naval Training Center, Orlando
 Orlando, FL

Sample ID	36H00201	36H00301	36H00401	36H00501	36H00601
Lab ID	S776519*7	S776562*6	S776562*4	S776562*5	S776519*8
Sampling Date	17-Nov-97	18-Nov-97	18-Nov-97	18-Nov-97	17-Nov-97
Volatile organics, ug/L					
1,1,1-Trichloroethane	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	NA	NA	NA	NA	NA
1,1-Dichloroethane	NA	NA	NA	NA	NA
1,1-Dichloroethene	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	NA	NA	NA	NA	NA
1,2-Dibromoethane (EDB)	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	NA	NA	NA	NA	NA
1,2-Dichloroethane	NA	NA	NA	NA	NA
1,2-Dichloropropane	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	NA	NA	NA	NA	NA
2-Butanone	NA	NA	NA	NA	NA
2-Hexanone	NA	NA	NA	NA	NA
4-Methyl-2-pentanone	NA	NA	NA	NA	NA
Acetone	NA	NA	NA	NA	NA
Benzene	NA	NA	NA	NA	NA
Bromochloromethane	NA	NA	NA	NA	NA
Bromodichloromethane	NA	NA	NA	NA	NA
Bromoform	NA	NA	NA	NA	NA
Bromomethane	NA	NA	NA	NA	NA
Carbon disulfide	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	NA	NA	NA	NA
Chlorobenzene	NA	NA	NA	NA	NA
Chloroethane	NA	NA	NA	NA	NA
Chloroform	NA	NA	NA	NA	NA
Chloromethane	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	NA	NA	NA	NA	NA
Dibromochloromethane	NA	NA	NA	NA	NA
Ethylbenzene	NA	NA	NA	NA	NA
Methylene chloride	NA	NA	NA	NA	NA

Appendix D

Table D-3A. Summary of Groundwater Analytical Results, Initial Screening
Study Area 36Naval Training Center, Orlando
Orlando, FL

Sample ID	36H00201	36H00301	36H00401	36H00501	36H00601
Lab ID	S776519*7	S776562*6	S776562*4	S776562*5	S776519*8
Sampling Date	17-Nov-97	18-Nov-97	18-Nov-97	18-Nov-97	17-Nov-97
Styrene	NA	NA	NA	NA	NA
Tetrachloroethene	NA	NA	NA	NA	NA
Toluene	NA	NA	NA	NA	NA
trans-1,2-Dichloroethylene	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	NA	NA	NA	NA	NA
Trichloroethene	NA	NA	NA	NA	NA
Vinyl chloride	NA	NA	NA	NA	NA
Xylene (total)	NA	NA	NA	NA	NA
Semivolatile organics, ug/L					
2,2'-oxybis(1-Chloropropane)	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	NA	NA	NA	NA	NA
2,4,6-Trichlorophenol	NA	NA	NA	NA	NA
2,4-Dichlorophenol	NA	NA	NA	NA	NA
2,4-Dimethylphenol	NA	NA	NA	NA	NA
2,4-Dinitrophenol	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	NA	NA	NA	NA	NA
2-Chloronaphthalene	NA	NA	NA	NA	NA
2-Chlorophenol	NA	NA	NA	NA	NA
2-Methylnaphthalene	NA	NA	NA	NA	NA
2-Methylphenol	NA	NA	NA	NA	NA
2-Nitroaniline	NA	NA	NA	NA	NA
2-Nitrophenol	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine	NA	NA	NA	NA	NA
3-Methylphenol/4-Methylphenol	NA	NA	NA	NA	NA
3-Nitroaniline	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	NA	NA	NA	NA	NA
4-Bromophenyl-phenylether	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	NA	NA	NA	NA	NA
4-Chloroaniline	NA	NA	NA	NA	NA
4-Chlorophenyl-phenylether	NA	NA	NA	NA	NA
4-Nitroaniline	NA	NA	NA	NA	NA
4-Nitrophenol	NA	NA	NA	NA	NA
Acenaphthene	NA	NA	NA	NA	NA

Appendix D
 Table D-3A. Summary of Groundwater Analytical Results, Initial Screening
 Study Area 36

Naval Training Center, Orlando
 Orlando, FL

Sample ID	36H00201	36H00301	36H00401	36H00501	36H00601
Lab ID	S776519*7	S776562*6	S776562*4	S776562*5	S776519*8
Sampling Date	17-Nov-97	18-Nov-97	18-Nov-97	18-Nov-97	17-Nov-97
Acenaphthylene	NA	NA	NA	NA	NA
Anthracene	NA	NA	NA	NA	NA
Benzo(a)anthracene	NA	NA	NA	NA	NA
Benzo(a)pyrene	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	NA	NA	NA	NA	NA
bis(2-Chloroethoxy)methane	NA	NA	NA	NA	NA
bis(2-Chloroethyl)ether	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	NA	NA	NA	NA	NA
Butylbenzylphthalate	NA	NA	NA	NA	NA
Carbazole	NA	NA	NA	NA	NA
Chrysene	NA	NA	NA	NA	NA
Di-n-butylphthalate	NA	NA	NA	NA	NA
Di-n-octylphthalate	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	NA	NA	NA	NA	NA
Dibenzofuran	NA	NA	NA	NA	NA
Diethylphthalate	NA	NA	NA	NA	NA
Dimethylphthalate	NA	NA	NA	NA	NA
Fluoranthene	NA	NA	NA	NA	NA
Fluorene	NA	NA	NA	NA	NA
Hexachlorobenzene	NA	NA	NA	NA	NA
Hexachlorobutadiene	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	NA	NA	NA	NA	NA
Hexachloroethane	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	NA	NA	NA	NA	NA
Isophorone	NA	NA	NA	NA	NA
N-Nitroso-di-n-propylamine	NA	NA	NA	NA	NA
N-Nitrosodiphenylamine	NA	NA	NA	NA	NA
Naphthalene	NA	NA	NA	NA	NA
Nitrobenzene	NA	NA	NA	NA	NA
Pentachlorophenol	NA	NA	NA	NA	NA
Phenanthrene	NA	NA	NA	NA	NA
Phenol	NA	NA	NA	NA	NA

Appendix D
 Table D-3A. Summary of Groundwater Analytical Results, Initial Screening
 Study Area 36

Naval Training Center, Orlando
 Orlando, FL

Sample ID	36H00201	36H00301	36H00401	36H00501	36H00601
Lab ID	S776519*7	S776562*6	S776562*4	S776562*5	S776519*8
Sampling Date	17-Nov-97	18-Nov-97	18-Nov-97	18-Nov-97	17-Nov-97
Pyrene	NA	NA	NA	NA	NA
Pesticides/PCBs, ug/L					
4,4'-DDD	NA	NA	NA	NA	NA
4,4'-DDE	NA	NA	NA	NA	NA
4,4'-DDT	NA	NA	NA	NA	NA
Aldrin	NA	NA	NA	NA	NA
alpha-BHC	NA	NA	NA	NA	NA
alpha-Chlordane	NA	NA	NA	NA	NA
Aroclor-1016	NA	NA	NA	NA	NA
Aroclor-1221	NA	NA	NA	NA	NA
Aroclor-1232	NA	NA	NA	NA	NA
Aroclor-1242	NA	NA	NA	NA	NA
Aroclor-1248	NA	NA	NA	NA	NA
Aroclor-1254	NA	NA	NA	NA	NA
Aroclor-1260	NA	NA	NA	NA	NA
beta-BHC	NA	NA	NA	NA	NA
delta-BHC	NA	NA	NA	NA	NA
Dieldrin	NA	NA	NA	NA	NA
Endosulfan I	NA	NA	NA	NA	NA
Endosulfan II	NA	NA	NA	NA	NA
Endosulfan sulfate	NA	NA	NA	NA	NA
Endrin	NA	NA	NA	NA	NA
Endrin aldehyde	NA	NA	NA	NA	NA
Endrin ketone	NA	NA	NA	NA	NA
gamma-BHC (Lindane)	NA	NA	NA	NA	NA
gamma-Chlordane	NA	NA	NA	NA	NA
Heptachlor	NA	NA	NA	NA	NA
Heptachlor epoxide	NA	NA	NA	NA	NA
Methoxychlor	NA	NA	NA	NA	NA
Toxaphene	NA	NA	NA	NA	NA
Inorganics, ug/L					
Aluminum	5020	38.3 J	457	192 J	274
Antimony	3.6 J	4.3 J	5.2 J	3.3 U	5.7 J
Arsenic	3.6 U				

Appendix D
 Table D-3A. Summary of Groundwater Analytical Results, Initial Screening
 Study Area 36

Naval Training Center, Orlando
 Orlando, FL

Sample ID	36H00201	36H00301	36H00401	36H00501	36H00601
Lab ID	S776519*7	S776562*6	S776562*4	S776562*5	S776519*8
Sampling Date	17-Nov-97	18-Nov-97	18-Nov-97	18-Nov-97	17-Nov-97
Barium	20.7 U	15.9 U	6 U	4.4 U	12.9 U
Beryllium	0.25 U	0.2 U	0.2 U	0.2 U	0.2 U
Cadmium	0.6 U				
Calcium	41600	41900	16900	11300	12300
Chromium	8.4 J	2 U	2 U	2 U	2 U
Cobalt	1.3 J	1 U	1 U	1 U	1 U
Copper	5.6 J	2.2 U	2.2 U	2.2 U	2.5 J
Iron	723	35.3 U	35.3 U	44.4 J	343
Lead	4.6	1.2 U	1.2 U	1.2 U	1.2 U
Magnesium	2060 J	764 J	338 J	647 J	2760 J
Manganese	6.2 U	0.4 U	0.4 U	0.52 U	3.7 U
Mercury	0.1 U				
Nickel	2.3 U				
Potassium	1320 J	413 J	588 J	563 J	2430 J
Selenium	4.3 U	2.6 U	2.6 U	2.6 U	3.6 U
Silver	3 U	3 U	3 U	3 U	3 U
Sodium	4640 J	1480 J	1080 J	2190 J	6160 J
Thallium	4.7 U				
Vanadium	7.5 J	5.4 J	6 J	1.7 U	1.7 U
Zinc	3.3 U	2 U	5.8 U	3.8 U	5.9 U
General Chemistry, mg/L					
Suspended Solids	NA	NA	NA	NA	NA
TRPH	NA	NA	NA	NA	NA

Appendix D
 Table D-3B. Summary of Groundwater Analytical Results, Supplemental Sampling I
 Study Area 36

Naval Training Center, Orlando
 Orlando, FL

Sample ID	36G00102	36G00202	36G00602	36G00701	36G00701 D	36G00801	36G00901
Lab ID	C8G020185011	C8G020185003	C8G020185004	C8G020185005	C8G020185006	C8G020185007	C8G020185008
Sampling Date	1-Jul-98	30-Jun-98	30-Jun-98	30-Jun-98	30-Jun-98	30-Jun-98	1-Jul-98
Volatile organics, ug/L							
1,1,1,2-Tetrachloroethane	0.5 U	0.5 U	0.5 U	1 U	1 U	5 U	5 U
1,1,1-Trichloroethane	0.5 U	0.5 U	0.5 U	1 U	1 U	5 U	5 U
1,1,2,2-Tetrachloroethane	0.5 U	0.5 U	0.5 U	1 U	1 U	5 U	5 U
1,1,2-Trichloroethane	0.5 U	0.5 U	0.5 U	1 U	1 U	5 U	5 U
1,1-Dichloroethane	0.5 U	0.5 U	0.5 U	1 U	1 U	5 U	5 U
1,1-Dichloroethene	0.5 U	0.5 U	0.5 U	1 U	1 U	5 U	5 U
1,1-Dichloropropene	0.5 U	0.5 U	0.5 U	1 U	1 U	5 U	5 U
1,2,3-Trichlorobenzene	0.5 U	0.5 U	0.5 U	1 U	1 U	5 U	5 U
1,2,3-Trichloropropane	0.5 U	0.5 U	0.5 U	1 U	1 U	5 U	5 U
1,2,4-Trichlorobenzene	0.5 U	0.5 U	0.5 U	1 U	1 U	5 U	5 U
1,2,4-Trimethylbenzene	0.5 U	0.5 U	0.5 U	1 U	1 U	5 U	5 U
1,2-Dibromo-3-chloropropane	0.6 U	0.6 U	0.6 U	1.2 U	1.2 U	6 U	6 U
1,2-Dibromoethane	0.5 U	0.5 U	0.5 U	1 U	1 U	5 U	5 U
1,2-Dichlorobenzene	0.5 U	0.5 U	0.5 U	1 U	1 U	5 U	5 U
1,2-Dichloroethane	0.5 U	0.5 U	0.5 U	1 U	1 U	5 U	5 U
1,2-Dichloropropane	0.5 U	0.5 U	0.5 U	1 U	1 U	5 U	5 U
1,3,5-Trimethylbenzene	0.5 U	0.5 U	0.5 U	1 U	1 U	5 U	5 U
1,3-Dichlorobenzene	0.5 U	0.5 U	0.5 U	1 U	1 U	5 U	5 U
1,3-Dichloropropane	0.5 U	0.5 U	0.5 U	1 U	1 U	5 U	5 U
1,4-Dichlorobenzene	0.5 U	0.5 U	0.5 U	1 U	1 U	5 U	5 U
2,2-Dichloropropane	0.5 U	0.5 U	0.5 U	1 U	1 U	5 U	5 U
2-Chlorotoluene	0.5 U	0.5 U	0.5 U	1 U	1 U	5 U	5 U
4-Chlorotoluene	0.5 U	0.5 U	0.5 U	1 U	1 U	5 U	5 U
Benzene	0.5 U	0.5 U	0.5 U	1 U	1 U	5 U	5 U
Bromobenzene	0.5 U	0.5 U	0.5 U	1 U	1 U	5 U	5 U
Bromochloromethane	0.5 U	0.5 U	0.5 U	1 U	1 U	5 U	5 U
Bromodichloromethane	0.5 U	0.5 U	0.5 U	1 U	1 U	5 U	5 U
Bromoform	0.5 U	0.5 U	0.5 U	1 U	1 U	5 U	5 U
Bromomethane	0.5 U	0.5 U	0.5 U	1 U	1 U	5 U	5 U
Carbon tetrachloride	0.5 U	0.5 U	0.5 U	1 U	1 U	5 U	5 U
Chlorobenzene	0.5 U	0.5 U	0.5 U	1 U	1 U	5 U	5 U
Chlorodibromomethane	0.5 U	0.5 U	0.5 U	1 U	1 U	5 U	5 U
Chloroethane	0.5 U	0.5 U	0.5 U	1 U	1 U	5 U	5 U

Appendix D
 Table D-3B. Summary of Groundwater Analytical Results, Supplemental Sampling I
 Study Area 36

Naval Training Center, Orlando
 Orlando, FL

Sample ID	36G00102	36G00202	36G00602	36G00701	36G00701 D	36G00801	36G00901
Lab ID	C8G020185011	C8G020185003	C8G020185004	C8G020185005	C8G020185006	C8G020185007	C8G020185008
Sampling Date	1-Jul-98	30-Jun-98	30-Jun-98	30-Jun-98	30-Jun-98	30-Jun-98	1-Jul-98
Chloroform	0.5 U	0.5 U	0.5 U	1 U	1 U	5 U	5 U
Chloromethane	0.5 U	0.5 U	0.5 U	1 U	1 U	5 U	5 U
cis-1,2-Dichloroethene	3.4	0.5 U	0.5 U	1 U	1 U	5 U	5 U
cis-1,3-Dichloropropene	0.5 U	0.5 U	0.5 U	1 U	1 U	5 U	5 U
Dibromomethane	0.5 U	0.5 U	0.5 U	1 U	1 U	5 U	5 U
Dichlorodifluoromethane	0.5 U	0.5 U	0.5 U	1 U	1 U	5 U	5 U
Ethylbenzene	0.5 U	0.5 U	0.5 U	1 U	1 U	5 U	5 U
Hexachlorobutadiene	0.5 U	0.5 U	0.5 U	1 U	1 U	5 U	5 U
Isopropylbenzene	0.5 U	0.5 U	0.5 U	1 U	1 U	5 U	5 U
m-Xylene & p-Xylene	1 U	1 U	1 U	2 U	2 U	10 U	10 U
Methylene chloride	0.5 U	0.5 U	0.5 U	1 U	1 U	5 U	5 U
n-Butylbenzene	0.5 U	0.5 U	0.1 U	1 U	1 U	5 U	5 U
n-Propylbenzene	0.5 U	0.5 U	0.5 U	1 U	1 U	5 U	5 U
Naphthalene	0.5 U	0.5 U	0.5 U	1 U	1 U	5 U	5 U
o-Xylene	0.5 U	0.5 U	0.5 U	1 U	1 U	5 U	5 U
p-Isopropyltoluene	0.5 U	0.5 U	0.5 U	1 U	1 U	5 U	5 U
sec-Butylbenzene	0.5 U	0.5 U	0.5 U	1 U	1 U	5 U	5 U
Styrene	0.5 U	0.5 U	0.5 U	1 U	1 U	5 U	5 U
tert-Butylbenzene	0.5 U	0.5 U	0.5 U	1 U	1 U	5 U	5 U
Tetrachloroethene	0.32 J	0.5 U	0.33 J	1 U	1 U	5 U	5 U
Toluene	0.5 U	0.5 U	0.5 U	1 U	1 U	5 U	5 U
trans-1,2-Dichloroethene	0.5 U	0.5 U	0.5 U	1 U	1 U	5 U	5 U
trans-1,3-Dichloropropene	0.5 U	0.5 U	0.5 U	1 U	1 U	5 U	5 U
Trichloroethene	0.65	0.22 J	13	73	57	270	260
Trichlorofluoromethane	0.5 U	0.5 U	0.5 U	1 U	1 U	5 U	5 U
Vinyl chloride	0.5 U	0.5 U	0.5 U	1 U	1 U	5 U	5 U

Appendix D
 Table D-3B. Summary of Groundwater Analytical Results, Supplemental Sampling I
 Study Area 36

Naval Training Center, Orlando
 Orlando, FL

Sample ID	36G01001	36G01101
Lab ID	C8G020185010	C8G020185009
Sampling Date	1-Jul-98	1-Jul-98
Volatile organics, ug/L		
1,1,1,2-Tetrachloroethane	0.5 U	0.5 U
1,1,1-Trichloroethane	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	0.5 U	0.5 U
1,1,2-Trichloroethane	0.5 U	0.5 U
1,1-Dichloroethane	0.5 U	0.5 U
1,1-Dichloroethene	0.5 U	0.5 U
1,1-Dichloropropene	0.5 U	0.5 U
1,2,3-Trichlorobenzene	0.5 U	0.5 U
1,2,3-Trichloropropane	0.5 U	0.5 U
1,2,4-Trichlorobenzene	0.5 U	0.5 U
1,2,4-Trimethylbenzene	0.5 U	0.42 J
1,2-Dibromo-3-chloropropane	0.6 U	0.6 U
1,2-Dibromoethane	0.5 U	0.5 U
1,2-Dichlorobenzene	0.5 U	1.6
1,2-Dichloroethane	0.5 U	0.5 U
1,2-Dichloropropane	0.5 U	0.5 U
1,3,5-Trimethylbenzene	0.5 U	0.13 J
1,3-Dichlorobenzene	0.5 U	0.5 U
1,3-Dichloropropane	0.5 U	0.5 U
1,4-Dichlorobenzene	0.5 U	0.5 U
2,2-Dichloropropane	0.5 U	0.5 U
2-Chlorotoluene	0.5 U	0.5 U
4-Chlorotoluene	0.5 U	0.5 U
Benzene	0.1 J	0.5 U
Bromobenzene	0.5 U	0.5 U
Bromochloromethane	0.5 U	0.5 U
Bromodichloromethane	0.5 U	0.5 U
Bromoform	0.5 U	0.5 U
Bromomethane	0.5 U	0.5 U
Carbon tetrachloride	0.5 U	0.5 U
Chlorobenzene	0.5 U	0.5 U
Chlorodibromomethane	0.5 U	0.5 U
Chloroethane	0.5 U	0.5 U

Appendix D
 Table D-3B. Summary of Groundwater Analytical Results, Supplemental Sampling I
 Study Area 36

Naval Training Center, Orlando
 Orlando, FL

Sample ID	36G01001	36G01101
Lab ID	C8G020185010	C8G020185009
Sampling Date	1-Jul-98	1-Jul-98
Chloroform	0.5 U	0.51 U
Chloromethane	0.5 U	0.5 U
cis-1,2-Dichloroethene	7.8	1.3
cis-1,3-Dichloropropene	0.5 U	0.5 U
Dibromomethane	0.5 U	0.5 U
Dichlorodifluoromethane	0.5 U	0.5 U
Ethylbenzene	0.5 U	0.5 U
Hexachlorobutadiene	0.5 U	0.5 U
Isopropylbenzene	0.5 U	0.5 U
m-Xylene & p-Xylene	1 U	1 U
Methylene chloride	0.5 U	0.5 U
n-Butylbenzene	0.5 U	0.5 U
n-Propylbenzene	0.5 U	0.5 U
Naphthalene	0.5 U	0.77 U
o-Xylene	0.5 U	0.5 U
p-Isopropyltoluene	0.5 U	0.5 U
sec-Butylbenzene	0.5 U	0.12 J
Styrene	0.5 U	0.5 U
tert-Butylbenzene	0.5 U	0.5 U
Tetrachloroethene	0.3 J	3.3
Toluene	0.5 U	0.5 U
trans-1,2-Dichloroethene	0.5 U	0.5 U
trans-1,3-Dichloropropene	0.5 U	0.5 U
Trichloroethene	7.2	0.82
Trichlorofluoromethane	0.5 U	0.5 U
Vinyl chloride	0.5 U	0.5 U

Appendix D
Table D-3C. Summary of Groundwater Analytical Results, Supplemental Sampling II
Study Area 36

Naval Training Center, Orlando
Orlando, FL

Sample ID	36G00103	36G00203	36G00603	36G00702	36G00802	36G00902	36G01002	36G01102
Lab ID	A8L070125006	A8L070125008	A8L070125001	A8L070125003	A8L070125005	A8L070125007	A8L070125013	A8L070125009
Sampling Date	3-Dec-98	4-Dec-98	3-Dec-98	3-Dec-98	3-Dec-98	3-Dec-98	4-Dec-98	4-Dec-98
Volatile organics, ug/L								
1,1,1,2-Tetrachloroethane	5 U	5 U	5 U	5 U	5 U	12 U	5 U	5 U
1,1,1-Trichloroethane	5 U	5 U	5 U	5 U	5 U	12 U	5 U	5 U
1,1,2,2-Tetrachloroethane	5 U	5 U	5 U	5 U	5 U	12 U	5 U	5 U
1,1,2-Trichloroethane	5 U	5 U	5 U	5 U	5 U	12 U	5 U	5 U
1,1-Dichloroethane	5 U	5 U	5 U	5 U	5 U	12 U	5 U	5 U
1,1-Dichloroethene	5 U	5 U	5 U	5 U	5 U	12 U	5 U	5 U
1,1-Dichloropropene	5 U	5 U	5 U	5 U	5 U	12 U	5 U	5 U
1,2,3-Trichlorobenzene	5 U	5 U	5 U	5 U	5 U	12 U	5 U	5 U
1,2,3-Trichloropropane	5 U	5 U	5 U	5 U	5 U	12 U	5 U	5 U
1,2,4-Trichlorobenzene	5 U	5 U	5 U	5 U	5 U	12 U	5 U	5 U
1,2,4-Trimethylbenzene	5 U	5 U	5 U	5 U	5 U	12 U	5 U	0.93 J
1,2-Dibromo-3-chloropropane	10 U	25 U	10 U	10 U				
1,2-Dibromoethane (EDB)	5 U	5 U	5 U	5 U	5 U	12 U	5 U	5 U
1,2-Dichloroethane	5 U	5 U	5 U	5 U	5 U	12 U	5 U	5 U
1,2-Dichloropropane	5 U	5 U	5 U	5 U	5 U	12 U	5 U	5 U
1,3,5-Trimethylbenzene	5 U	5 U	5 U	5 U	5 U	12 U	5 U	5 U
1,3-Dichloropropane	5 U	5 U	5 U	5 U	5 U	12 U	5 U	5 U
2,2-Dichloropropane	5 U	5 U	5 U	5 U	5 U	12 U	5 U	5 U
2-Chlorotoluene	5 U	5 U	5 U	5 U	5 U	12 U	5 U	5 U
4-Chlorotoluene	5 U	5 U	5 U	5 U	5 U	12 U	5 U	5 U
Benzene	5 U	5 U	5 U	5 U	5 U	12 U	0.47 J	5 U
Bromobenzene	5 U	5 U	5 U	5 U	5 U	12 U	5 U	5 U
Bromochloromethane	5 U	5 U	5 U	5 U	5 U	12 U	5 U	5 U
Bromodichloromethane	5 U	5 U	5 U	5 U	5 U	12 U	5 U	5 U
Bromoform	5 U	5 U	5 U	5 U	5 U	12 U	5 U	5 U
Bromomethane	10 U	25 U	10 U	10 U				
Carbon tetrachloride	5 U	5 U	5 U	5 U	5 U	12 U	5 U	5 U
Chlorobenzene	5 U	5 U	5 U	5 U	5 U	12 U	5 U	5 U
Chlorodibromomethane	5 U	5 U	5 U	5 U	5 U	12 U	5 U	5 U
Chloroethane	10 U	25 U	10 U	10 U				
Chloroform	5 U	5 U	5 U	5 U	5 U	12 U	5 U	5 U
Chloromethane	10 U	25 U	10 U	10 U				
cis-1,2-Dichloroethene	3.2	2.5 U	2.5 U	2.5 U	2.5 U	43	9.4	2.8

Appendix D
 Table D-3C. Summary of Groundwater Analytical Results, Supplemental Sampling II
 Study Area 36

Naval Training Center, Orlando
 Orlando, FL

Sample ID	36G00103	36G00203	36G00603	36G00702	36G00802	36G00902	36G01002	36G01102
Lab ID	A8L070125006	A8L070125008	A8L070125001	A8L070125003	A8L070125005	A8L070125007	A8L070125013	A8L070125009
Sampling Date	3-Dec-98	4-Dec-98	3-Dec-98	3-Dec-98	3-Dec-98	3-Dec-98	4-Dec-98	4-Dec-98
cis-1,3-Dichloropropene	5 U	5 U	5 U	5 U	5 U	12 U	5 U	5 U
Dibromomethane	5 U	5 U	5 U	5 U	5 U	12 U	5 U	5 U
Dichlorodifluoromethane	10 U	25 U	10 U	10 U				
Ethylbenzene	5 U	5 U	5 U	5 U	5 U	12 U	5 U	5 U
Hexachlorobutadiene	5 U	5 U	5 U	5 U	5 U	12 U	5 U	5 U
Isopropylbenzene	5 U	5 U	5 U	5 U	5 U	12 U	5 U	5 U
m-Dichlorobenzene	5 U	5 U	5 U	5 U	5 U	12 U	5 U	5 U
m-Xylene & p-Xylene	2.5 U	6.2 U	2.5 U	2.5 U				
Methylene chloride	1.6 J	1.6 J	2 J	1.5 J	1.7 J	2.2 J	1.8 J	1.6 J
n-Butylbenzene	5 U	5 U	5 U	5 U	5 U	12 U	5 U	5 U
n-Propylbenzene	5 U	5 U	5 U	5 U	5 U	12 U	5 U	5 U
Naphthalene	5 U	5 U	5 U	5 U	5 U	12 U	5 U	0.91 J
o-Dichlorobenzene	5 U	5 U	5 U	5 U	5 U	12 U	5 U	5 U
o-Xylene	2.5 U	6.2 U	2.5 U	2.5 U				
p-Dichlorobenzene	5 U	5 U	5 U	5 U	5 U	12 U	5 U	5 U
p-Isopropyltoluene	5 U	5 U	5 U	5 U	5 U	12 U	5 U	5 U
sec-Butylbenzene	5 U	5 U	5 U	5 U	5 U	12 U	5 U	5 U
Styrene	5 U	5 U	5 U	5 U	5 U	12 U	5 U	5 U
tert-Butylbenzene	5 U	5 U	5 U	5 U	5 U	12 U	5 U	5.4
Tetrachloroethene	5 U	5 U	5 U	5 U	5 U	12 U	5 U	5 U
Toluene	5 U	5 U	5 U	5 U	5 U	12 U	5 U	5 U
trans-1,2-Dichloroethene	2.5 U	6.2 U	2.5 U	2.5 U				
trans-1,3-Dichloropropene	5 U	5 U	5 U	5 U	5 U	12 U	5 U	5 U
Trichloroethene	1.2 J	5 U	6.6	120	40	300	8.9	0.96 J
Trichlorofluoromethane	10 U	25 U	10 U	10 U				
Vinyl chloride	10 U	25 U	10 U	10 U				
Methane	11	31	1.5	4.2	150 D	27	21	5.6
Ethane	0.5 U	1.5	0.5 U	0.5 U				
Ethene	0.5 U	1.8	0.5 U	0.5 U				
Total Organic Carbon	7	4	5	3	4	15	18	10

Appendix D
 Table D-3C. Summary of Groundwater Analytical Results, Supplemental Sampling II
 Study Area 36

Naval Training Center, Orlando
 Orlando, FL

Sample ID	36G01201	36G01201D	36G01301	36G01401
Lab ID	A8L070125011	A8L070125012	A8L070125004	A8L070125010
Sampling Date	12/4/98	12/4/98	12/3/98	12/4/98
Volatile organics, ug/L				
1,1,1,2-Tetrachloroethane	5 U	5 U	5 U	5 U
1,1,1-Trichloroethane	5 U	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane	5 U	5 U	5 U	5 U
1,1,2-Trichloroethane	5 U	5 U	5 U	5 U
1,1-Dichloroethane	5 U	5 U	5 U	5 U
1,1-Dichloroethene	5 U	5 U	5 U	5 U
1,1-Dichloropropene	5 U	5 U	5 U	5 U
1,2,3-Trichlorobenzene	5 U	5 U	5 U	5 U
1,2,3-Trichloropropane	5 U	5 U	5 U	5 U
1,2,4-Trichlorobenzene	5 U	5 U	5 U	5 U
1,2,4-Trimethylbenzene	5 U	5 U	5 U	5 U
1,2-Dibromo-3-chloropropane	10 U	10 U	10 U	10 U
1,2-Dibromoethane (EDB)	5 U	5 U	5 U	5 U
1,2-Dichloroethane	5 U	5 U	5 U	5 U
1,2-Dichloropropane	5 U	5 U	5 U	5 U
1,3,5-Trimethylbenzene	5 U	5 U	5 U	5 U
1,3-Dichloropropane	5 U	5 U	5 U	5 U
2,2-Dichloropropane	5 U	5 U	5 U	5 U
2-Chlorotoluene	5 U	5 U	5 U	5 U
4-Chlorotoluene	5 U	5 U	5 U	5 U
Benzene	5 U	5 U	5 U	5 U
Bromobenzene	5 U	5 U	5 U	5 U
Bromochloromethane	5 U	5 U	5 U	5 U
Bromodichloromethane	5 U	5 U	5 U	5 U
Bromoform	5 U	5 U	5 U	5 U
Bromomethane	10 U	10 U	10 U	10 U
Carbon tetrachloride	5 U	5 U	5 U	5 U
Chlorobenzene	5 U	5 U	5 U	5 U
Chlorodibromomethane	5 U	5 U	5 U	5 U
Chloroethane	10 U	10 U	10 U	10 U
Chloroform	5 U	5 U	1.5 J	2.1 J
Chloromethane	10 U	10 U	10 U	10 U
cis-1,2-Dichloroethene	1.8 J	1.9 J	2.5 U	2.5 U

Appendix D
 Table D-3C. Summary of Groundwater Analytical Results, Supplemental Sampling II
 Study Area 36

Naval Training Center, Orlando
 Orlando, FL

Sample ID	36G01201	36G01201D	36G01301	36G01401
Lab ID	A8L070125011	A8L070125012	A8L070125004	A8L070125010
Sampling Date	12/4/98	12/4/98	12/3/98	12/4/98
cis-1,3-Dichloropropene	5 U	5 U	5 U	5 U
Dibromomethane	5 U	5 U	5 U	5 U
Dichlorodifluoromethane	10 U	10 U	10 U	10 U
Ethylbenzene	5 U	5 U	5 U	5 U
Hexachlorobutadiene	5 U	5 U	5 U	5 U
Isopropylbenzene	5 U	5 U	5 U	5 U
m-Dichlorobenzene	5 U	5 U	5 U	5 U
m-Xylene & p-Xylene	2.5 U	2.5 U	2.5 U	2.5 U
Methylene chloride	1.4 J	1.8 J	1.8 J	1.6 J
n-Butylbenzene	5 U	5 U	5 U	5 U
n-Propylbenzene	5 U	5 U	5 U	5 U
Naphthalene	5 U	5 U	5 U	5 U
o-Dichlorobenzene	5 U	5 U	5 U	5 U
o-Xylene	2.5 U	2.5 U	2.5 U	2.5 U
p-Dichlorobenzene	5 U	5 U	5 U	5 U
p-Isopropyltoluene	5 U	5 U	5 U	5 U
sec-Butylbenzene	5 U	5 U	5 U	5 U
Styrene	5 U	5 U	5 U	5 U
tert-Butylbenzene	5 U	5 U	5 U	5 U
Tetrachloroethene	5 U	5 U	5 U	5 U
Toluene	5 U	5 U	5 U	5 U
trans-1,2-Dichloroethene	2.5 U	2.5 U	2.5 U	2.5 U
trans-1,3-Dichloropropene	5 U	5 U	5 U	5 U
Trichloroethene	2.7 J	2.9 J	5 U	5 U
Trichlorofluoromethane	10 U	10 U	10 U	10 U
Vinyl chloride	10 U	10 U	10 U	10 U
Methane	22	21	77 D	61
Ethane	0.5 U	0.5 U	0.83	0.5 U
Ethene	0.5 U	0.5 U	0.94	0.5 U
Total Organic Carbon	6	6	3	17

Notes for Summary of Analytical Results Tables
Study Area 36

Naval Training Center, Orlando
Orlando Florida

NA = Identified parameter not analyzed.

Sample ID = Sample Identifier

Lab ID = Laboratory identifier

Units:

mg/kg milligram per kilogram

ug/kg microgram per kilogram

mg/L milligram per liter

ug/L microgram per liter

The following standard analytical data qualifiers have the following definitions:

- U The analyte/compound was analyzed for but was not detected above the reported sample quantitation limit. The number preceding the U qualifier is the reported sample quantitation limit.
- J The analyte/compound was positively identified and the associated numerical value is an estimated concentration of the analyte/compound in the sample.
- UJ The analyte/compound was not detected above the reported sample quantitation limit. The reported quantitation limit, however, is approximate and may or may not represent the actual limit of quantitation necessary to accurately measure the analyte/compound in the sample.
- R The sample results are rejected during data validation because of serious deficiencies in meeting quality control criteria.
- D Reported concentration is from a dilution or reanalysis of the sample.

APPENDIX E

SUMMARY OF DIRECT PUSH GROUNDWATER SAMPLE ANALYSIS

- Table E-1 Analytical Results – Onsite Laboratory
- Table E-2 Summary of Positive Detections – Confirmation Samples
- Table E-3 Analytical Results – Confirmation Samples

TABLE E-1
ANALYTICAL RESULTS - ONSITE LABORATORY

Appendix E

Table E-1. Summary of Positive Detections in Groundwater Analytical Results
Supplemental Site Screening, Study Area 36

BRAC Environmental Site Screening Report
Naval Training Center, Orlando
Orlando, FL

Sample ID	FDEP GCTL	FEDMCL	RBC for Tap Water	OOR08200	36Q00101	36Q00102	36Q00103	36Q00201	36Q00202	36Q00203	36Q00301	36Q00302	36Q00303	36Q00401	36Q00402
Sampling Date				31-Mar-98											
Depth bls (ft)				---	6-10	15-18	24-28	6-10	15-19	21.5-25.5	6-10	15-19	21-25	6-10	15-19
Volatile Organics, ug/L															
1,1-Dichloroethene	7		0.044	U	U	U	U	U	U	U	U	U	U	U	U
Benzene	1	5	0.36 c	U	U	U	U	U	U	U	U	U	U	U	U
cis-1,2-Dichloroethene	70	70	61 n	U	U	U	U	U	U	U	U	U	U	U	U
Ethylbenzene	30	700	1300 n	U	U	U	U	U	U	U	U	U	U	U	U
m/p-Xylene	20	10,000	1400 n	U	U	U	U	U	U	U	U	U	U	U	U
o-Xylene	20	10,000	1400 n	U	U	U	U	U	U	U	U	U	U	U	U
Tetrachloroethene	3	5	1.1 c	U	U	U	U	U	U	U	U	U	U	U	U
Toluene	40	1,000	750 n	U	U	U	U	U	U	U	U	U	U	U	U
trans-1,2-Dichloroethene	100	100	120 n	U	U	U	U	U	U	U	U	U	U	U	U
Trichloroethene	3	5	1.6 c	U	2.0	7.5	85	U	U	U	U	U	U	U	1.4
Vinyl Chloride	1	2	0.019 c	U	U	U	U	U	U	U	U	U	U	U	U

Appendix E
 Table E-1. Summary of Positive Detections in Groundwater Analytical Results
 Supplemental Site Screening, Study Area 36

BRAC Environmental Site Screening Report
 Naval Training Center, Orlando
 Orlando, FL

Sample ID	FDEP GCTL	FEDMCL	RBC for Tap Water	36Q00402D	36Q00403	36Q00501	36Q00502	36Q00601	36Q00602	36Q00603	36Q00701	36Q00702	36Q00702D	36Q00801
Sampling Date				31-Mar-98	31-Mar-98	1-Apr-98	1-Apr-98							
Depth b/s (ft)				15-19	21-25	6-10	15-19	6-10	15-19	21-25	6-10	15-19	15-19	6-10
Volatile Organics, ug/L														
1,1-Dichloroethene	7		0.044	U	U	U	U	U	U	U	U	U	U	U
Benzene	1	5	0.36 c	U	U	U	U	U	U	U	U	U	U	U
cis-1,2-Dichloroethene	70	70	61 n	U	U	U	U	U	U	U	4.1	U	U	U
Ethylbenzene	30	700	1300 n	U	U	U	U	U	U	U	U	U	U	U
m/p-Xylene	20	10,000	1400 n	U	U	U	U	U	U	U	U	U	U	U
o-Xylene	20	10,000	1400 n	U	U	U	U	U	U	U	U	U	U	U
Tetrachloroethene	3	5	1.1 c	U	U	U	U	U	3.2	U	U	U	U	U
Toluene	40	1,000	750 n	U	U	U	U	U	U	U	U	U	U	U
trans-1,2-Dichloroethene	100	100	120 n	U	U	U	U	U	U	U	U	U	U	U
Trichloroethene	3	5	1.6 c	U	U	U	U	7	650	74E	0.5	U	U	U
Vinyl Chloride	1	2	0.019 c	U	U	U	U	U	U	U	U	U	U	U

Appendix E

Table E-1. Summary of Positive Detections in Groundwater Analytical Results
Supplemental Site Screening, Study Area 36

BRAC Environmental Site Screening Report
Naval Training Center, Orlando
Orlando, FL

Sample ID	FDEP GCTL	FEDMCL	RBC for Tap Water	36Q00802	36Q00901	36Q00902	36Q01001	36Q01002	36Q01101	36Q01102	36Q01201	36Q01202	36Q01301	36Q01302	36Q01401
Sampling Date				1-Apr-98	1-Apr-98	1-Apr-98	2-Apr-98	3-Apr-98							
Depth bis (ft)				15-19	6-10	11-13	6-10	15-19	6-10	15-19	6-10	15-19	6-10	15-19	6-10
Volatile Organics, ug/L															
1,1-Dichloroethene	7		0.044	U	U	U	U	6.3	U	U	U	U	U	10	U
Benzene	1	5	0.36	c	U	U	U	U	U	U	U	0.5	U	U	U
cis-1,2-Dichloroethene	70	70	61	n	U	1.3	12	1.3	U	U	5.8	U	1.9	U	14
Ethylbenzene	30	700	1300	n	U	U	U	U	U	U	U	U	U	U	U
m/p-Xylene	20	10,000	1400	n	U	U	U	U	U	U	U	U	U	U	U
o-Xylene	20	10,000	1400	n	U	U	U	U	U	U	U	U	U	U	U
Tetrachloroethene	3	5	1.1	c	U	U	U	U	U	U	U	3.2	U	U	2.9
Toluene	40	1,000	750	n	U	U	U	U	U	U	U	U	U	U	U
trans-1,2-Dichloroethene	100	100	120	n	U	U	U	U	U	U	U	U	U	U	4.2
Trichloroethene	3	5	1.6	c	U	1.5	43	U	U	U	28	U	20	U	45 E
Vinyl Chloride	1	2	0.019	c	U	U	U	U	U	U	U	U	U	U	U

Appendix E
 Table E-1. Summary of Positive Detections in Groundwater Analytical Results
 Supplemental Site Screening, Study Area 36

BRAC Environmental Site Screening Report
 Naval Training Center, Orlando
 Orlando, FL

Sample ID	FDEP GCTL	FEDMCL	RBC for Tap Water	36Q01401D	36Q01402	36Q01501	36Q01502	36Q01601	36Q01601D	36Q01602	36Q01701	36Q01702	36Q01703	36Q01801
Sampling Date				3-Apr-98	3-Apr-98	8-Apr-98	8-Apr-98	8-Apr-98	8-Apr-98	8-Apr-98	8-Apr-98	8-Apr-98	8-Apr-98	8-Apr-98
Depth bls (ft)				6-10	15-19	6-10	15-19	6-10	6-10	15-19	6-10	15-19	23-27	6-10
Volatiles Organics, ug/L														
1,1-Dichloroethene	7		0.044	U	U	U	U	U	U	U	U	U	U	U
Benzene	1	5	0.36 c	U	U	U	U	U	U	U	U	U	U	U
cis-1,2-Dichloroethene	70	70	61 n	7.5	5.2	U	U	U	U	2.9	U	U	U	U
Ethylbenzene	30	700	1300 n	U	U	U	U	U	U	U	U	U	U	U
m/p-Xylene	20	10,000	1400 n	U	U	U	U	U	U	U	U	U	U	U
o-Xylene	20	10,000	1400 n	U	U	U	U	U	U	U	U	U	U	U
Tetrachloroethene	3	5	1.1 c	2.2	U	U	U	U	U	1.1	U	U	U	U
Toluene	40	1,000	750 n	U	U	U	U	U	U	U	U	U	U	U
trans-1,2-Dichloroethene	100	100	120 n	1.1	U	U	U	U	U	U	U	U	U	U
Trichloroethene	3	5	1.6 c	36 E	32 E	U	4.0	U	U	U	U	U	U	U
Vinyl Chloride	1	2	0.019 c	U	U	U	U	U	U	U	U	U	U	U

Appendix E

Table E-1. Summary of Positive Detections in Groundwater Analytical Results
Supplemental Site Screening, Study Area 36

BRAC Environmental Site Screening Report
Naval Training Center, Orlando
Orlando, FL

Sample ID	FDEP GCTL	FEDMCL	RBC for Tap Water	36Q01802	36Q01901	36Q01902	36Q02001	36Q02101
Sampling Date				8-Apr-98	8-Apr-98	8-Apr-98	9-Apr-98	9-Apr-98
Depth bls (ft)				15-19	6-10	15-19	15-19	15-19
Volatile Organics, ug/L								
1,1-Dichloroethene	7		0.044	U	U	U	U	U
Benzene	1	5	0.36 c	U	U	U	U	U
cis-1,2-Dichloroethene	70	70	61 n	U	4.8	U	U	U
Ethylbenzene	30	700	1300 n	U	U	U	U	U
m/p-Xylene	20	10,000	1400 n	U	U	U	U	U
o-Xylene	20	10,000	1400 n	U	U	U	U	U
Tetrachloroethene	3	5	1.1 c	U	U	U	U	U
Toluene	40	1,000	750 n	U	U	U	U	U
trans-1,2-Dichloroethene	100	100	120 n	U	U	U	U	U
Trichloroethene	3	5	1.6 c	U	U	0.5	U	U
Vinyl Chloride	1	2	0.019 c	U	U	U	U	U

TABLE E-2

SUMMARY OF POSITIVE DETECTIONS – CONFIRMATION SAMPLES

Appendix E

Table E-2. Summary of Detections in DPT Groundwater Analytical Results
Confirmation Samples
Study Area 36

Naval Training Center, Orlando
Orlando, FL

Sample ID	36Q00103	36Q00602	36Q00902
Sampling Date	3/31/98	4/1/98	4/1/98
Volatile organics, ug/L			
Benzene			0.99 J
Chloroform			0.68 J
cis-1,2-Dichloroethene			16
Naphthalene		32 B	
trans-1,2-Dichloroethene			0.86 J
Trichloroethene	77	640	52
NOTES:			
Units in micrograms per liter (ug/L)			
J = Reported concentration is an estimated quantity.			
B = Compound is also detected in an associated method blank.			

TABLE E-3

ANALYTICAL RESULTS - CONFIRMATION SAMPLES

Appendix E

Table E-3. Summary of DPT Groundwater Analytical Results
Confirmation Samples
Study Area 36

Naval Training Center, Orlando
Orlando, FL

Sample ID	36Q00103	36Q00602	36Q00902	36Q01302
Lab ID	A8D070152001	A8D070152002	A8D070152003	A8D070152004
Sampling Date	3/31/98	4/1/98	4/1/98	4/2/98
Volatiles organics, ug/L				
1,1,1,2-Tetrachloroethane	5 U	25 U	5 U	5 U
1,1,1-Trichloroethane	5 U	25 U	5 U	5 U
1,1,2,2-Tetrachloroethane	5 U	25 U	5 U	5 U
1,1,2-Trichloroethane	5 U	25 U	5 U	5 U
1,1-Dichloroethane	5 U	25 U	5 U	5 U
1,1-Dichloroethene	5 U	25 U	5 U	5 U
1,1-Dichloropropene	5 U	25 U	5 U	5 U
1,2,3-Trichlorobenzene	5 U	25 U	5 U	5 U
1,2,3-Trichloropropane	5 U	25 U	5 U	5 U
1,2,4-Trichlorobenzene	5 U	25 U	5 U	5 U
1,2,4-Trimethylbenzene	5 U	25 U	5 U	5 U
1,2-Dibromo-3-chloropropane	10 U	50 U	10 U	10 U
1,2-Dibromoethane (EDB)	5 U	25 U	5 U	5 U
1,2-Dichloroethane	5 U	25 U	5 U	5 U
1,2-Dichloropropane	5 U	25 U	5 U	5 U
1,3,5-Trimethylbenzene	5 U	25 U	5 U	5 U
1,3-Dichloropropane	5 U	25 U	5 U	5 U
2,2-Dichloropropane	5 U	25 U	5 U	5 U
2-Chlorotoluene	5 U	25 U	5 U	5 U
4-Chlorotoluene	5 U	25 U	5 U	5 U
Benzene	5 U	25 U	0.99 J	5 U
Bromobenzene	5 U	25 U	5 U	5 U
Bromochloromethane	5 U	25 U	5 U	5 U
Bromodichloromethane	5 U	25 U	5 U	5 U
Bromoform	5 U	25 U	5 U	5 U
Bromomethane	10 U	50 U	10 U	10 U
Carbon tetrachloride	5 U	25 U	5 U	5 U
Chlorobenzene	5 U	25 U	5 U	5 U
Chlorodibromomethane	5 U	25 U	5 U	5 U
Chloroethane	10 U	50 U	10 U	10 U
Chloroform	5 U	25 U	0.68 J	5 U

Appendix E
 Table E-3. Summary of DPT Groundwater Analytical Results
 Confirmation Samples
 Study Area 36

Naval Training Center, Orlando
 Orlando, FL

Sample ID	36Q00103	36Q00602	36Q00902	36Q01302
Lab ID	A8D070152001	A8D070152002	A8D070152003	A8D070152004
Sampling Date	3/31/98	4/1/98	4/1/98	4/2/98
Volatile organics, ug/L				
Chloromethane	10 U	50 U	10 U	10 U
cis-1,2-Dichloroethene	2.5 U	12 U	16	2.5 U
cis-1,3-Dichloropropene	5 U	25 U	5 U	5 U
Dibromomethane	5 U	25 U	5 U	5 U
Dichlorodifluoromethane	10 U	50 U	10 U	10 U
Ethylbenzene	5 U	25 U	5 U	5 U
Hexachlorobutadiene	5 U	25 U	5 U	5 U
Isopropylbenzene	5 U	25 U	5 U	5 U
m-Dichlorobenzene	5 U	25 U	5 U	5 U
m-Xylene & p-Xylene	2.5 U	12 U	2.5 U	2.5 U
Methylene chloride	5 U	25 U	5 U	5 U
n-Butylbenzene	5 U	25 U	5 U	5 U
n-Propylbenzene	5 U	25 U	5 U	5 U
Naphthalene	5 U	32 B	5 U	5 U
o-Dichlorobenzene	5 U	25 U	5 U	5 U
o-Xylene	2.5 U	12 U	2.5 U	2.5 U
p-Dichlorobenzene	5 U	25 U	5 U	5 U
p-Isopropyltoluene	5 U	25 U	5 U	5 U
sec-Butylbenzene	5 U	25 U	5 U	5 U
Styrene	5 U	25 U	5 U	5 U
tert-Butylbenzene	5 U	25 U	5 U	5 U
Tetrachloroethene	5 U	25 U	5 U	5 U
Toluene	5 U	25 U	5 U	5 U
trans-1,2-Dichloroethene	2.5 U	12 U	0.86 J	2.5 U
trans-1,3-Dichloropropene	5 U	25 U	5 U	5 U
Trichloroethene	77	640	52	5 U
Trichlorofluoromethane	10 U	50 U	10 U	10 U
Vinyl chloride	10 U	50 U	10 U	10 U

Notes for Summary of Analytical Results Tables
Study Area 36

Naval Training Center, Orlando
Orlando Florida

NA = Identified parameter not analyzed.

Sample ID = Sample Identifier

Lab ID = Laboratory identifier

Units:

mg/kg milligram per kilogram

ug/kg microgram per kilogram

mg/L milligram per liter

ug/L microgram per liter

The following standard analytical data qualifiers have the following definitions:

- U The analyte/compound was analyzed for but was not detected above the reported sample quantitation limit. The number preceding the U qualifier is the reported sample quantitation limit.
- J The analyte/compound was positively identified and the associated numerical value is an estimated concentration of the analyte/compound in the sample.
- UJ The analyte/compound was not detected above the reported sample quantitation limit. The reported quantitation limit, however, is approximate and may or may not represent the actual limit of quantitation necessary to accurately measure the analyte/compound in the sample.
- R The sample results are rejected during data validation because of serious deficiencies in meeting quality control criteria.
- D Reported concentration is from a dilution or reanalysis of the sample.

APPENDIX F

GROUNDWATER ELEVATION DATA AND FLOW DIRECTION CALCULATIONS

Appendix F

Table F-1. Static Water Level Measurements and Groundwater Elevations
Study Area 36

Naval Training Center, Orlando
Orlando, FL

Well ID	SCREEN INTERVAL	TOC ELEV	11/17/97		1/13/98		SWL	GWE	DATE	7/23/98		12/16/98	
			SWL	GWE	SWL	GWE				SWL	GWE	SWL	GWE
OLD-36-01	7-17	114.91	8.01	106.90	6.85	108.06	7.98	106.93	7/1/98	7.59	107.32	7.84	107.07
OLD-36-02	7-17	115.18	8.05	107.13	6.98	108.20	7.90	107.28	6/30/98	7.59	107.59	7.82	107.36
OLD-36-06	7-17	115.08	8.03	107.05	6.86	108.22	7.86	107.22	6/30/98	7.53	107.55	7.61	107.47
OLD-36-07	15-20	114.87					7.83	107.04	6/30/98	7.53	107.34	7.60	107.27
OLD-36-08	22.5-27.5	114.73					10.56	104.17	6/30/98	9.44	105.29	8.29	106.44
OLD-36-09	30-35	114.78					12.16	102.62	7/1/98	11.35	103.43	11.72	103.06
OLD-36-10	20-25	114.93					8.24	106.69	7/1/98	7.80	107.13	8.10	106.83
OLD-36-11	30-35	114.77					12.12	102.65	7/1/98	11.25	103.52	11.60	103.17
OLD-36-12	30-35	115.50										11.36	104.14
OLD-36-13	61-66	114.75										11.72	103.03
OLD-36-14	63-68	115.23										12.31	102.92

NOTES:
 TOC = Top of casing
 SWL = Static water level measured from TOC
 GWE = Groundwater elevation referenced to mean sea level



Harding Lawson Associates

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and
Environmental Services

SHEET 1 OF 1

JOB NO. 02530.09

DATE _____

COMPUTED BY WDO

CHECKED BY _____

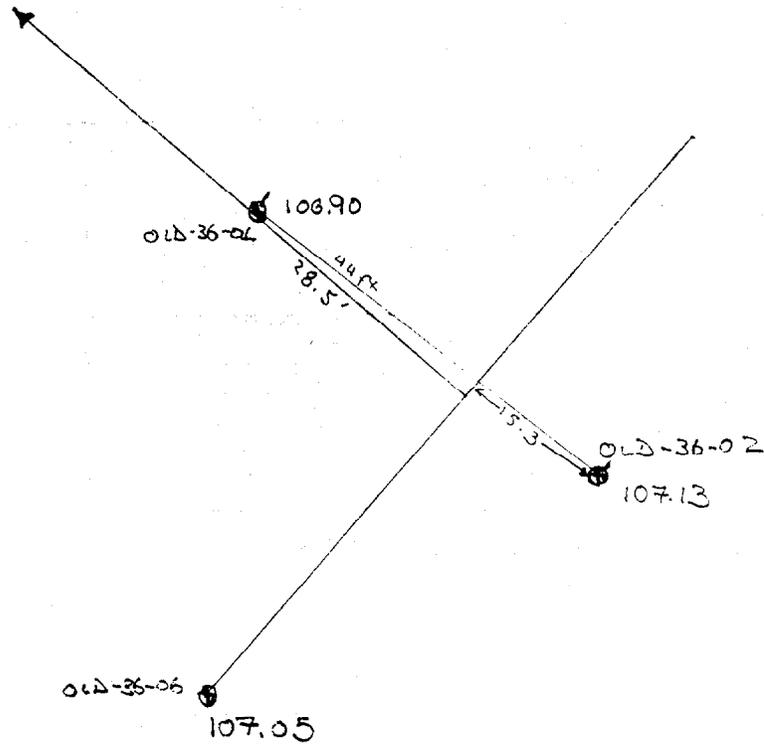
PROJECT NTL ORLANDO SA 36

SUBJECT Flow 11-17/97

N ↑ 1" = 20'

$$\frac{(107.13 - 107.05)}{x} = \frac{(107.13 - 106.90)}{44 \text{ ft}}$$

$$x = 15.3'$$



$$\frac{(107.05 - 106.90)}{28.5'} = 0.005 \text{ ft/ft}$$



PROJECT NTC ORLANDO SA36

COMPUTED BY WDO

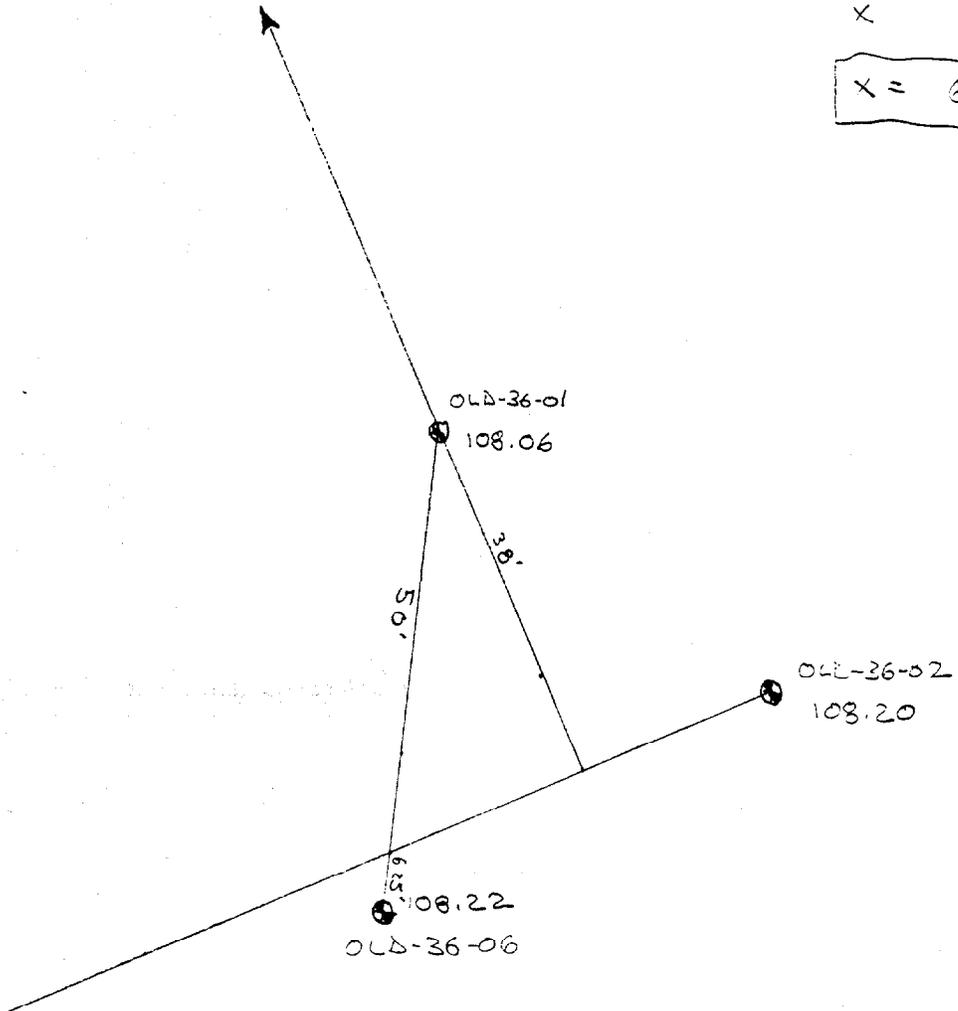
SUBJECT GW FLOW 1-13/98

CHECKED BY _____

↑ 1" = 20'

$$\frac{(108.22 - 108.06)}{x} = \frac{(108.22 - 108.06)}{50}$$

$$x = 6.25$$



$$\frac{(108.20 - 108.06)}{38'} = 0.004 \text{ f+/ft}$$



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SHEET 1 OF 1

JOB NO. 02530-09

DATE _____

COMPUTED BY WDO

CHECKED BY _____

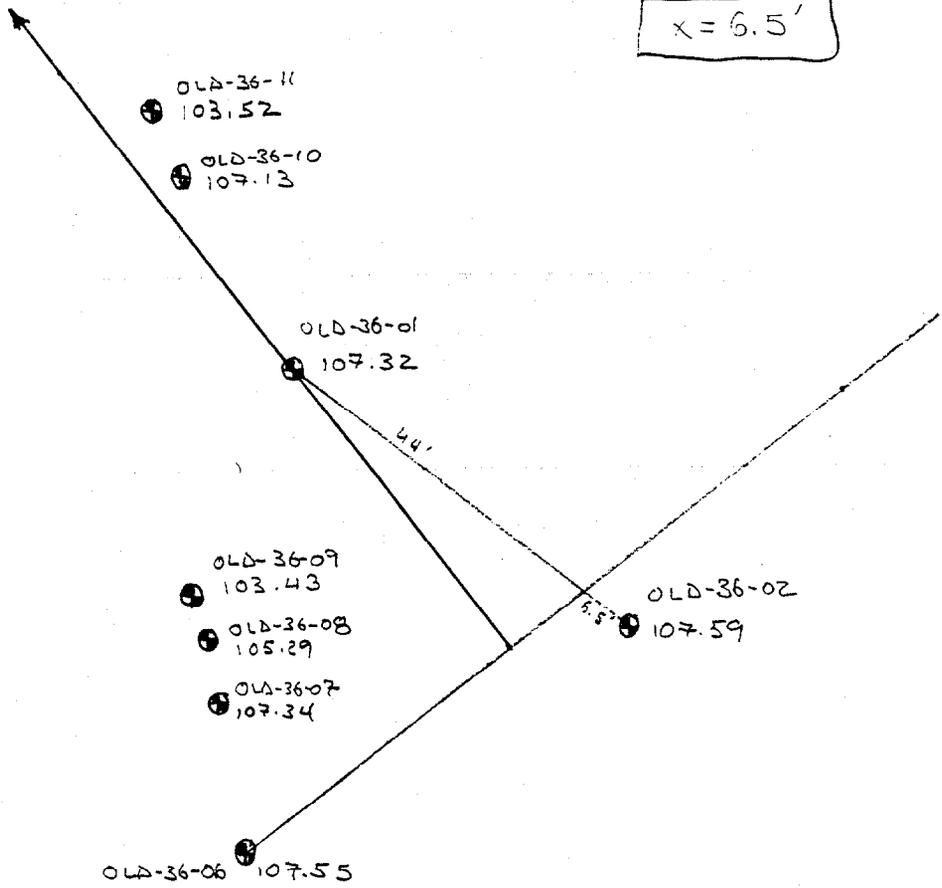
PROJECT NTC ORLANDO SA 36

SUBJECT GW FLOW 7-23/98

N ↑ 1" =

$$\frac{(107.59 - 107.55)}{x} = \frac{(107.59 - 107.32)}{44}$$

$$x = 6.5'$$



$$\frac{(107.55 - 107.32)}{37'} = 0.006 \text{ ft/ft}$$



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Environmental Services

SHEET 1 OF 1

JOB NO. 02530.09

DATE _____

COMPUTED BY WDO

CHECKED BY _____

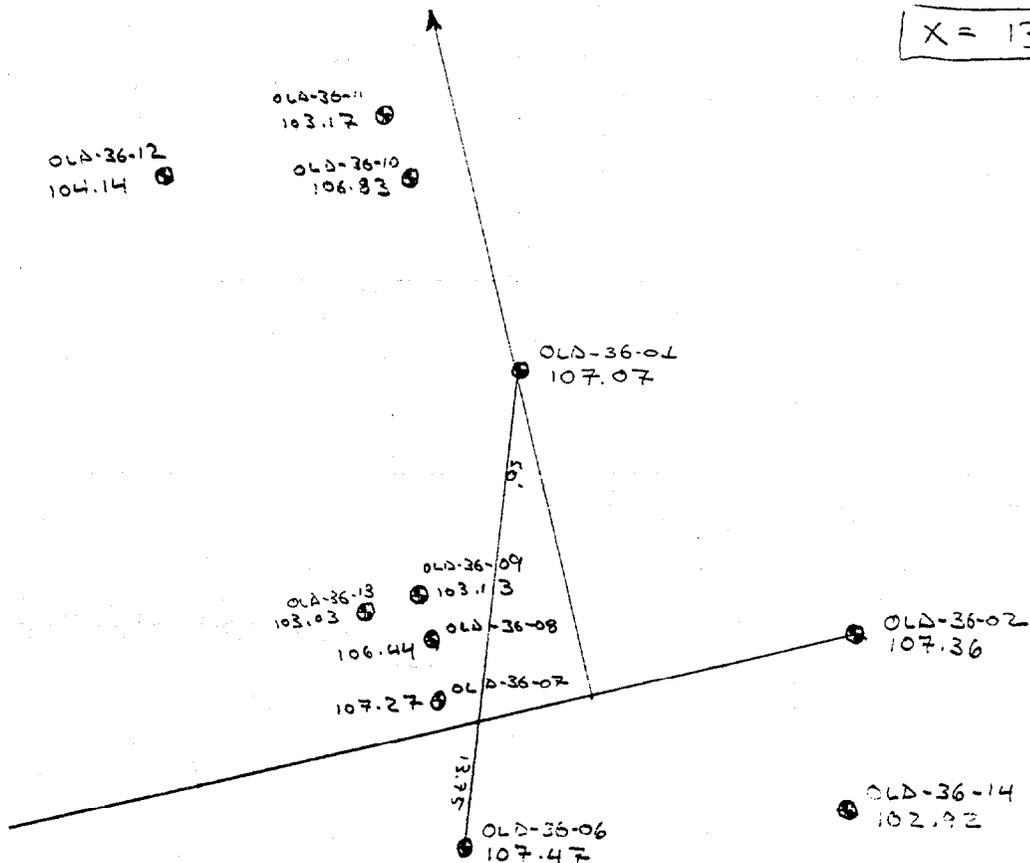
PROJECT NTC ORLANDO SA 36

SUBJECT GW FLOW 12-15-93

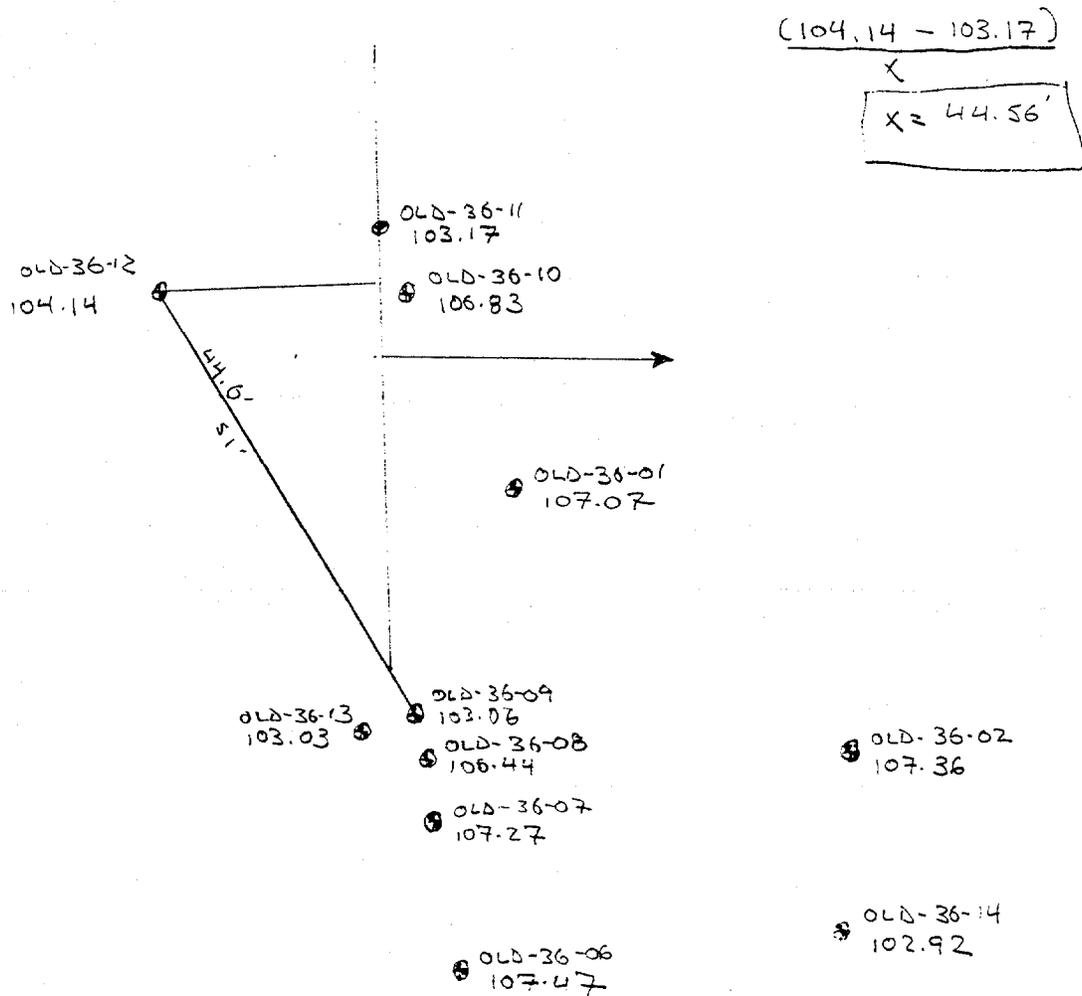
N ↑ 1" =

$$\frac{(107.47 - 107.36)}{X} = \frac{(107.42 - 107.07)}{50'}$$

$$X = 13.75$$



$$\frac{(107.36 - 107.57)}{35} = 0.008 \text{ f+ / f-}$$



$$\frac{(104.14 - 103.17)}{X} = \frac{(104.14 - 103.06)}{51'}$$

$$X = 44.56'$$

$$\frac{(104.14 - 103.17)}{22'} = 0.04 \text{ ft/ft}$$



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Engineering
and
Environmental Services

SHEET 1 OF 1

JOB NO. 02530.09

DATE _____

PROJECT JTC ORLAND SA 36

COMPUTED BY WDO

SUBJECT GW FLOW (DEEP) 12-16'93

CHECKED BY _____

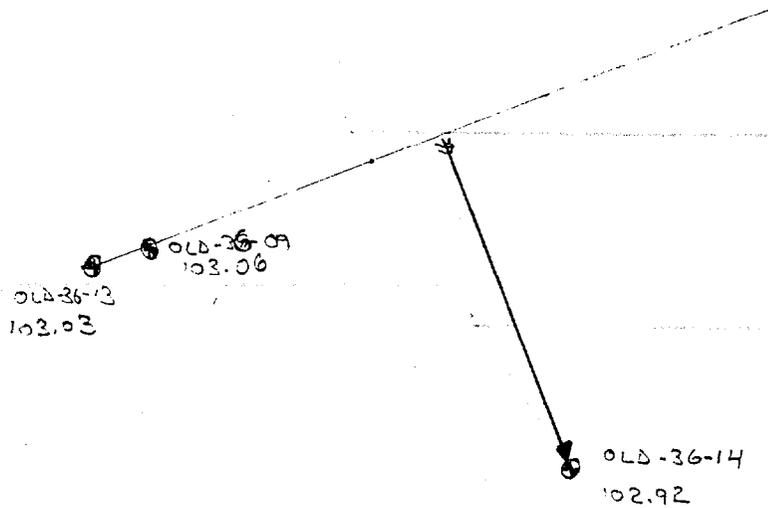
$$\frac{(103.17 - 103.03)}{X} = \frac{(103.17 - 102.92)}{86'}$$

$$X = 43'$$

104.14

OLD-36-11
103.17

OLD-36-12



$$\frac{103.03 - 102.92}{37'} = 0.003 \text{ ft/ft}$$

APPENDIX G

NATURAL ATTENUATION EVALUATION DATA

Table G-1 Field Data Sheets

Table G-2 AFCEE Protocol Scoring Sheets

TABLE G-1
FIELD DATA SHEETS

NATURAL ATTENUATION PARAMETERS

SAMPLE I.D. 366 00 L03 SAMPLER WAD/CJA
 DATE 12-3/98 TIME 1650

FIELD TESTS

PARAMETER	METHOD	READING	RANGE	REMARKS
Dissolved Oxygen	(DR 850)	<u>3.1</u> mg/l	0-15 mg/l	
	(Titration)	<u>NA</u> mg/l	H/L	
Ferrous Iron	(DR 850)	<u>0.00</u> mg/l	0-3 mg/l	"Limit" warning not showing.
Total Iron	(Colorimetric)	<u>0.2</u> mg/l	0-5 mg/l	
Sulfate	(DR 850)	<u>18</u> mg/l	0-70 mg/l	
Hydrogen Sulfide	(Hach Kit)	<u>0.0</u> mg/l	0-5 mg/l	
Nitrate	(DR 850)	<u>3.1</u> mg/l	0-30 mg/l	
Chloride (Chlorinated compounds only)	(Colorimetric)	<u>15</u> mg/l	H/L	
Alkalinity (PHTH)	(Colorimetric)	<u>0</u> mg/l	H/L	
Alkalinity (Total)		<u>14.6</u> mg/l	H/L	
Carbon Dioxide	(Colorimetric)	<u>60</u> mg/l	H/M/E	

FIELD METERS

PARAMETER	READING
pH	<u>5.49</u>
ORP	<u>30.5</u> mV
Temp.	<u>27.6</u> C
Cond.	<u>128</u> µmhos/cm
Turbidity	<u>34.2</u> NTU
Filtered? Y/N	<u>Y 1.92</u>
Filter size	<u>0.45</u> µm

LAB TESTS

ANALYTE	CONCENTRATION
TOC	_____
Methane	_____ µg/l
Ethane	_____ µg/l
Ethene	_____ µg/l

NATURAL ATTENUATION PARAMETERS

SAMPLE I.D. 36B00203

SAMPLER WDO/CJP

DATE 12.4/98

TIME 0930

FIELD TESTS

PARAMETER	METHOD	READING	RANGE	REMARKS
Dissolved Oxygen	(DR 850)	<u>4.3</u> mg/l	0-15 mg/l	
	(Titration)	<u>NA</u> mg/l	H/L	
Ferrous Iron	(DR 850)	<u>0.39</u> mg/l	0-3 mg/l	
Total Iron	(Colorimetric)	<u>0.50</u> mg/l	0-5 mg/l	
Sulfate	(DR 850)	<u>4</u> mg/l	0-70 mg/l	
Hydrogen Sulfide	(Hach Kit)	<u>5</u> mg/l	0-5 mg/l	
Nitrate	(DR 850)	<u>1.1</u> mg/l	0-30 mg/l	
Chloride (Chlorinated compounds only)	(Colorimetric)	<u>15</u> mg/l	H/C	
Alkalinity (PHTH)	(Colorimetric)	<u>∅</u> mg/l	H/C	
Alkalinity (Total)		<u>20.4</u> mg/l	H/C	
Carbon Dioxide	(Colorimetric)	<u>65</u> mg/l	H/M/L	

FIELD METERS

PARAMETER	READING
pH	<u>4.77</u>
ORP	<u>-91.3</u> mV
Temp.	<u>28.1</u> C
Cond.	<u>62</u> µmhos/cm
Turbidity	<u>7200</u> NTU
Filtered? Y/N	<u>Y 9.22NTU</u>
Filter size	<u>0.45</u> µm

LAB TESTS

ANALYTE	CONCENTRATION
TOC	_____
Methane	_____ µg/l
Ethane	_____ µg/l
Ethene	_____ µg/l

NATURAL ATTENUATION PARAMETERS

SAMPLE I.D. 36 G 00603 SAMPLER WDO /CJP
 DATE 12-31-98 TIME 1010

FIELD TESTS

PARAMETER	METHOD	READING	RANGE	REMARKS
Dissolved Oxygen	(DR 850)	<u>4.1</u> mg/l	0-15 mg/l	
	(Titration)	<u>NA</u> mg/l	H/L	
Ferrous Iron	(DR 850)	<u>0.03</u> mg/l	0-3 mg/l	
Total Iron	(Colorimetric)	<u>0.5</u> mg/l	0-5 mg/l	
Sulfate	(DR 850)	30 <u>30</u> mg/l	0-70 mg/l	
Hydrogen Sulfide	(Hach Kit)	<u><0.1</u> mg/l	0-5 mg/l	
Nitrate	(DR 850)	<u>2.8</u> mg/l	0-30 mg/l	
Chloride (Chlorinated compounds only)	(Colorimetric)	<u>20</u> mg/l	H/L	
Alkalinity (PHTH)	(Colorimetric)	<u>0</u> mg/l	H/L	
Alkalinity (Total)		<u>6.8</u> mg/l	H/L	
Carbon Dioxide	(Colorimetric)	<u>45</u> mg/l	H/M/L	

FIELD METERS

PARAMETER	READING
pH	<u>5.30</u>
ORP	<u>190.5</u> mV
Temp.	<u>26.8</u> C
Cond.	<u>150</u> µmhos/cm
Turbidity	<u>152.6</u> NTU
Filtered? Y/N	<u>Y</u> <u>2.25</u>
Filter size	<u>0.45</u> µm

LAB TESTS

ANALYTE	CONCENTRATION
TOC	_____
Methane	_____ µg/l
Ethane	_____ µg/l
Ethene	_____ µg/l

NATURAL ATTENUATION PARAMETERS

SAMPLE I.D. 36600702

SAMPLER WDO / CJP

DATE 12-3-98

TIME 1215

FIELD TESTS

PARAMETER	METHOD	READING	RANGE	REMARKS
Dissolved Oxygen	(DR 850)	<u>2.0</u> ^{3.0} mg/l	0-15 mg/l	
	(Titration)	<u>NA</u> mg/l	H/L	
Ferrous Iron	(DR 850)	<u>0.16</u> mg/l	0-3 mg/l	
Total Iron	(Colorimetric)	<u>0.25</u> mg/l	0-5 mg/l	
Sulfate	(DR 850)	<u>24</u> mg/l	0-70 mg/l	
Hydrogen Sulfide	(Hach Kit)	<u>0-0.1</u> mg/l	0-5 mg/l	
Nitrate	(DR 850)	<u>0.5</u> mg/l	0-30 mg/l	
Chloride (Chlorinated compounds only)	(Colorimetric)	<u>20</u> mg/l	(H/L)	
Alkalinity (PHTH)	(Colorimetric)	<u>0</u> mg/l	(H/L)	
Alkalinity (Total)		<u>14</u> mg/l	(H/L)	
Carbon Dioxide	(Colorimetric)	<u>55</u> mg/l	(H/ML)	

FIELD METERS

PARAMETER	READING
pH	<u>5.30</u>
ORP	<u>55.6</u> mV
Temp.	<u>27.4</u> C
Cond.	<u>121</u> µmhos/cm
Turbidity	<u>158.7</u> NTU
Filtered? Y/N	<u>Y 14.69 NTU</u>
Filter size	<u>0.45</u> µm

LAB TESTS

ANALYTE	CONCENTRATION
TOC	_____
Methane	_____ µg/l
Ethane	_____ µg/l
Ethene	_____ µg/l

NATURAL ATTENUATION PARAMETERS

SAMPLE I.D. 366-00902 SAMPLER WDO/CSP
 DATE 12-31-98 TIME 1505

FIELD TESTS

PARAMETER	METHOD	READING	RANGE	REMARKS
Dissolved Oxygen	(DR 850)	<u>0.0</u> mg/l	0-15 mg/l	Turbidity may be impacting Reading. The reading is not flashing "limit!"
	(Titration)	<u>NA</u> mg/l	H/L	
Ferrous Iron	(DR 850)	<u>0.75</u> mg/l	0-3 mg/l	
Total Iron	(Colorimetric)	<u>1.1</u> mg/l	0-5 mg/l	
Sulfate	(DR 850)	<u>12</u> mg/l	0-70 mg/l	
Hydrogen Sulfide	(Hach Kit)	<u>0.7</u> mg/l	0-5 mg/l	
Nitrate	(DR 850)	_____ mg/l	0-30 mg/l	Turbidity too high, over limit
Chloride (Chlorinated compounds only)	(Colorimetric)	<u>15</u> mg/l	H/L	
Alkalinity (PHTH)	(Colorimetric)	<u>∅</u> mg/l	H/L	
Alkalinity (Total)		<u>18</u> mg/l	H/L	
Carbon Dioxide	(Colorimetric)	<u>50</u> mg/l	H/M/L	

FIELD METERS

PARAMETER	READING
pH	<u>5.72</u>
ORP	<u>-106.0</u> mV
Temp.	<u>27.1</u> C
Cond.	<u>98</u> µmhos/cm
Turbidity	<u>176.5</u> NTU
Filtered? Y/N	<u>Y - 3.78 in T, increased after, tried 3 filters</u>
Filter size	<u>0.45</u> µm

LAB TESTS

ANALYTE	CONCENTRATION
TOC	_____
Methane	_____ µg/l
Ethane	_____ µg/l
Ethene	_____ µg/l

NATURAL ATTENUATION PARAMETERS

SAMPLE I.D. 36G00902

SAMPLER WDO / CJP

DATE 12-3/98

TIME 1730

FIELD TESTS

PARAMETER	METHOD	READING	RANGE	REMARKS
Dissolved Oxygen	(DR 850)	<u>5.5</u> mg/l	0-15 mg/l	
	(Titration)	<u>—</u> mg/l	H/L	
Ferrous Iron	(DR 850)	<u>0.16</u> mg/l	0-3 mg/l	
Total Iron	(Colorimetric)	<u>0.35</u> mg/l	0-5 mg/l	
Sulfate	(DR 850)	<u>—</u> mg/l	0-70 mg/l	"Limit"
Hydrogen Sulfide	(Hach Kit)	<u>5+</u> mg/l	0-5 mg/l	
Nitrate	(DR 850)	<u>0.0</u> mg/l	0-30 mg/l	"Limit" alarm not showing.
Chloride (Chlorinated compounds only)	(Colorimetric)	<u>20</u> mg/l	H/L	
Alkalinity (PHTH)	(Colorimetric)	<u>51</u> mg/l	H/L	
Alkalinity (Total)		<u>85</u> mg/l	H/L	
Carbon Dioxide	(Colorimetric)	<u>NR</u> mg/l	H/M/L	pH interference

FIELD METERS

PARAMETER	READING
pH	<u>10.10</u>
ORP	<u>-410.1</u> mV
Temp.	<u>26.3</u> C
Cond.	<u>356</u> µmhos/cm
Turbidity	<u>01.5</u> NTU
Filtered? Y/N	<u>Y 1.49</u>
Filter size	<u>0.45</u> µm

LAB TESTS

ANALYTE	CONCENTRATION
TOC	<u> </u>
Methane	<u> </u> µg/l
Ethane	<u> </u> µg/l
Ethene	<u> </u> µg/l

NATURAL ATTENUATION PARAMETERS

SAMPLE I.D. 36601002

SAMPLER W40/CJP

DATE 12-4-98

TIME 1637

FIELD TESTS

PARAMETER	METHOD	READING	RANGE	REMARKS
Dissolved Oxygen	(DR 850) (Titration)	<u>0.0</u> mg/l	0-15 mg/l	"Limit"
		_____ mg/l	H/L	
Ferrous Iron	(DR 850)	<u>1.64</u> mg/l	0-3 mg/l	
Total Iron	(Colorimetric)	<u>0.7</u> mg/l	0-5 mg/l	note NTUs
Sulfate	(DR 850)	<u>0</u> mg/l	0-70 mg/l	"Limit"
Hydrogen Sulfide	(Hach Kit)	<u>5+</u> mg/l	0-5 mg/l	
Nitrate	(DR 850)	<u>35</u> mg/l	0-30 mg/l	"Limit"
Chloride (Chlorinated compounds only)	(Colorimetric)	<u>15</u> mg/l		H ₂ O NTU's
Alkalinity (PHTH)	(Colorimetric)	<u>NR</u> mg/l	H/L	
Alkalinity (Total)		<u>NR</u> mg/l	H/L	
Carbon Dioxide	(Colorimetric)	<u>50</u> mg/l		H/ML Turbidity interference

FIELD METERS

PARAMETER	READING
pH	<u>6.07</u>
ORP	<u>-128.9</u> mV
Temp.	<u>27.1</u> C
Cond.	<u>115</u> µmhos/cm
Turbidity	<u>>200</u> NTU
Filtered? Y/N	<u>Y</u> <u>7200</u> NTU
Filter size	<u>0.45</u> µm

LAB TESTS

ANALYTE	CONCENTRATION
TOC	_____
Methane	_____ µg/l
Ethane	_____ µg/l
Ethene	_____ µg/l

NATURAL ATTENUATION PARAMETERS

SAMPLE I.D. 36501102

SAMPLER WDO/CJP

DATE 12-4/98

TIME 1225

FIELD TESTS

PARAMETER	METHOD	READING	RANGE	REMARKS
Dissolved Oxygen	(DR 850)	<u>5.1</u> mg/l	0-15 mg/l	
	(Titration)	<u>NA</u> mg/l	H/L	
Ferrous Iron	(DR 850)	<u>0.30</u> mg/l	0-3 mg/l	
Total Iron	(Colorimetric)	<u>0.55</u> mg/l	0-5 mg/l	
Sulfate	(DR 850)	<u>13</u> mg/l	0-70 mg/l	
Hydrogen Sulfide	(Hach Kit)	<u>2.0</u> mg/l	0-5 mg/l	
Nitrate	(DR 850)	<u>0.3</u> mg/l	0-30 mg/l	
Chloride (Chlorinated compounds only)	(Colorimetric)	<u>15</u> mg/l	H/L	
Alkalinity (PHTH)	(Colorimetric)	<u>0</u> mg/l	H/L	
Alkalinity (Total)		<u>27</u> mg/l	H/L	
Carbon Dioxide	(Colorimetric)	<u>25</u> mg/l	H/M/L	

FIELD METERS

PARAMETER	READING
pH	<u>6.10</u>
ORP	<u>-121.5</u> mV
Temp.	<u>27.5</u> C
Cond.	<u>112</u> µmhos/cm
Turbidity	<u>98.7</u> NTU
Filtered? Y/N	<u>Y 3.58 NTU</u>
Filter size	<u>0.45</u> µm

LAB TESTS

ANALYTE	CONCENTRATION
TOC	_____
Methane	_____ µg/l
Ethane	_____ µg/l
Ethene	_____ µg/l

NATURAL ATTENUATION PARAMETERS

SAMPLE I.D. 36G0120L

SAMPLER W20 / C3A

DATE 12-4/98

TIME 1905

FIELD TESTS

PARAMETER	METHOD	READING	RANGE	REMARKS
Dissolved Oxygen	(DR 850)	<u>2.9</u> mg/l	0-15 mg/l	
	(Titration)	<u>NA</u> mg/l	H/L	
Ferrous Iron	(DR 850)	<u>0.10</u> mg/l	0-3 mg/l	
Total Iron	(Colorimetric)	<u>0.4</u> mg/l	0-5 mg/l	
Sulfate	(DR 850)	<u>20</u> mg/l	0-70 mg/l	
Hydrogen Sulfide	(Hach Kit)	<u>0.5</u> mg/l	0-5 mg/l	
Nitrate	(DR 850)	<u>0.4</u> mg/l	0-30 mg/l	
Chloride (Chlorinated compounds only)	(Colorimetric)	<u>20</u> mg/l	H/L	
Alkalinity (PHTH)	(Colorimetric)	<u>∅</u> mg/l	H/L	
Alkalinity (Total)		<u>27</u> mg/l	H/L	
Carbon Dioxide	(Colorimetric)	<u>40</u> mg/l	H/M/L	

FIELD METERS

PARAMETER	READING
pH	<u>5.48</u>
ORP	<u>-90.4</u> mV
Temp.	<u>27.2</u> C
Cond.	<u>135</u> µmhos/cm
Turbidity	<u>119.6</u> NTU
Filtered? Y/N	<u>Y 1.98 NTU</u>
Filter size	<u>0.45</u> µm

LAB TESTS

ANALYTE	CONCENTRATION
TOC	_____
Methane	_____ µg/l
Ethane	_____ µg/l
Ethene	_____ µg/l

NATURAL ATTENUATION PARAMETERS

SAMPLE I.D. 365 500702 ^{G-130L} SAMPLER WAC/LJP
 DATE 12-3/98 TIME 1325

FIELD TESTS

PARAMETER	METHOD	READING	RANGE	REMARKS
Dissolved Oxygen	(DR 850)	<u>6.6</u> mg/l	0-15 mg/l	Ran twice, same
	(Titration)	<u>NA</u> mg/l	H/L	
Ferrous Iron	(DR 850)	<u>1.36</u> mg/l	0-3 mg/l	
Total Iron	(Colorimetric)	<u>1.5</u> mg/l	0-5 mg/l	
Sulfate	(DR 850)	<u>13</u> mg/l	0-70 mg/l	
Hydrogen Sulfide	(Hach Kit)	<u>0.3 - 0.5</u> mg/l	0-5 mg/l	
Nitrate	(DR 850)	<u>1.3</u> mg/l	0-30 mg/l	
Chloride (Chlorinated compounds only)	(Colorimetric)	<u>35</u> mg/l	H/L	
Alkalinity (PHTH)	(Colorimetric)	<u>∅</u> mg/l	H/L	
Alkalinity (Total)		<u>54.4</u> mg/l	H/L	
Carbon Dioxide	(Colorimetric)	<u>45</u> mg/l	H/M/L	

18
2.5 X
54
25/1360
125
110

FIELD METERS

PARAMETER	READING
pH	<u>5.58</u>
ORP	<u>-45.8</u> mV
Temp.	<u>26.8</u> C
Cond.	<u>200</u> μmhos/cm
Turbidity	<u>9.10</u> NTU
Filtered? Y/N	<u>N</u>
Filter size	<u>NA</u> μm

LAB TESTS

ANALYTE	CONCENTRATION
TOC	_____
Methane	_____ μg/l
Ethane	_____ μg/l
Ethene	_____ μg/l

NATURAL ATTENUATION PARAMETERS

SAMPLE I.D. 36G 0140L

SAMPLER WAO/CJP

DATE 12-4-98

TIME 1400

FIELD TESTS

PARAMETER	METHOD	READING	RANGE	REMARKS
Dissolved Oxygen	(DR 850)	<u>5.1</u> mg/l	0-15 mg/l	
	(Titration)	<u>NA</u> mg/l	H/L	
Ferrous Iron	(DR 850)	<u>1.19</u> mg/l	0-3 mg/l	
Total Iron	(Colorimetric)	<u>0.4</u> mg/l	0-5 mg/l	note NIOS
Sulfate	(DR 850)	<u>ϕ</u> mg/l	0-70 mg/l	"Limit" Flashing
Hydrogen Sulfide	(Hach Kit)	<u>0.2</u> mg/l	0-5 mg/l	
Nitrate	(DR 850)	<u>1.5</u> mg/l	0-30 mg/l	
Chloride (Chlorinated compounds only)	(Colorimetric)	<u>25</u> mg/l	Ⓟ/L	
Alkalinity (PHTH)	(Colorimetric)	<u>ϕ</u> mg/l	Ⓟ/L	
Alkalinity (Total)		<u>60</u> mg/l	Ⓟ/L	
Carbon Dioxide	(Colorimetric)	<u>30</u> mg/l	Ⓟ/ML	

FIELD METERS

PARAMETER	READING
pH	<u>6.61</u>
ORP	<u>-40.4</u> mV
Temp.	<u>27.7</u> C
Cond.	<u>435</u> μmhos/cm
Turbidity	<u>7200</u> NTU
Filtered? Y/N	<u>Y 7200 NTU</u>
Filter size	<u>0.45</u> μm

LAB TESTS

ANALYTE	CONCENTRATION
TOC	_____
Methane	_____ μg/l
Ethane	_____ μg/l
Ethene	_____ μg/l

TABLE G-2

AFCEE PROTOCOL SCORING SHEETS

NATURAL ATTENUATION SCORING

SAMPLE I.D. 36600103

DATE 12-3-98

MEASUREMENTS

PARAMETER	MEASURED VALUE	COMPARISON VALUE		POINTS	
				POSSIBLE	SCORED
Oxygen	<u>3.1</u> mg/l	< 0.5mg/l	YN	3	0
Nitrate	<u>3.1</u> mg/l	< 1 mg/l	YN	2	0
Iron II	<u>0.0</u> mg/l	> 1 mg/l	YN	3	0
Sulfate	<u>18</u> mg/l	< 20 mg/l	YN	2	2
Sulfide	<u>0</u> mg/l	> 1 mg/l	YN	3	0
Methane	<u>11</u> µg/l	< 500 µg/l	YN	0	0
		> 500 µg/l	YN	3	0
ORP	<u>30.5</u> mv	< 50 mV	YN	1	1
		< -100 mV	YN	2	0
pH	<u>5.49</u>	5 < pH < 9	YN	0	0
		5 > pH > 9	YN	-2	0
TOC	<u>7</u> mg/l	> 20 mg/l	YN	2	0
Temp.	<u>27.6</u> C	> 20 deg. C	YN	1	1
Carbon Dioxide	<u>60</u> mg/l	2X Background	YN	1	0
(Background)	<u>65</u> mg/l				
Alkalinity	<u>14.6</u> mg/l	2X Background	YN	1	0
(Background)	<u>20.4</u> mg/l				
Chloride	<u>15</u> mg/l	2X Background	YN	2	0
(Background)	<u>15</u> mg/l				
Hydrogen	<u>NA</u> nM	> 1 nM	YN	3	0
		< 1 nM	YN	0	0
Volatile Fatty Acids	<u>NA</u> mg/l	> 0.1 mg/l	YN	2	0
BTEX	<u>---</u> µg/l	> 100 µg/l	YN	2	0
PCE	<u>---</u> µg/l	Source Material	YN	0	0
TCE	<u>+</u> µg/l	Source Material	YN	0	0
		Daughter Product	YN	2	0
DCE	<u>3.2</u> µg/l	Source Material	YN	0	0
		Daughter Product	YN	2	2
Vinyl Chloride	<u>---</u> µg/l	Source Material	YN	0	0
		Daughter Product	YN	2	0
Ethane/Ethene	<u>---</u> µg/l	> 10 µg/l	YN	2	0
		> 100 µg/l	YN	3	0
Chloroethane	<u>---</u> µg/l	Daughter Product	YN	2	0
1,1-Dichloroethene	<u>---</u> µg/l	Daughter Product	YN	2	0
Total Points					<u>6</u>

SCORING CRITERIA

0 to 5 = Inadequate evidence

6 to 14 = Limited evidence

15 to 20 = Adequate evidence

> 20 = Strong evidence

NATURAL ATTENUATION SCORING

SAMPLE I.D. 36G-00203

DATE 12-4/98

MEASUREMENTS

PARAMETER	MEASURED VALUE	COMPARISON VALUE		POINTS	
				POSSIBLE	SCORED
Oxygen	<u>4.3</u> mg/l	< 0.5mg/l	Y(N)	3	
Nitrate	<u>1.1</u> mg/l	< 1 mg/l	Y(N)	2	
Iron II	<u>0.39</u> mg/l	> 1 mg/l	Y(N)	3	
Sulfate	<u>4</u> mg/l	< 20 mg/l	Y(N)	2	<u>2</u>
Sulfide	<u>5</u> mg/l	> 1 mg/l	Y(N)	3	<u>3</u>
Methane	<u>31</u> µg/l	< 500 µg/l	Y(N)	0	
		> 500 µg/l	Y(N)	3	
ORP	<u>-91.3</u> mv	< 50 mV	Y(N)	1	<u>L</u>
		< -100 mV	Y(N)	2	
pH	<u>4.77</u>	5 < pH < 9	Y(N)	0	
		5 > pH > 9	Y(N)	-2	<u>-2</u>
TOC	<u>4</u> mg/l	> 20 mg/l	Y(N)	2	
Temp.	<u>28.1</u> C	> 20 deg. C	Y(N)	1	<u>L</u>
Carbon Dioxide	<u>65</u> mg/l	2X Background	Y(N)	1	
(Background)	<u>—</u> mg/l				
Alkalinity	<u>20.4</u> mg/l	2X Background	Y(N)	1	
(Background)	<u>—</u> mg/l				
Chloride	<u>15</u> mg/l	2X Background	Y(N)	2	
(Background)	<u>—</u> mg/l				
Hydrogen	<u>NA</u> nM	> 1 nM	Y(N)	3	
		< 1 nM	Y(N)	0	
Volatile Fatty Acids	<u>NA</u> mg/l	> 0.1 mg/l	Y(N)	2	
BTEX	<u>—</u> µg/l	> 100 µg/l	Y(N)	2	
PCE	<u>—</u> µg/l	Source Material	Y(N)	0	
TCE	<u>—</u> µg/l	Source Material	Y(N)	0	
		Daughter Product	Y(N)	2	
DCE	<u>—</u> µg/l	Source Material	Y(N)	0	
		Daughter Product	Y(N)	2	
Vinyl Chloride	<u>—</u> µg/l	Source Material	Y(N)	0	
		Daughter Product	Y(N)	2	
Ethane/Ethene	<u>—</u> µg/l	> 10 µg/l	Y(N)	2	
		> 100 µg/l	Y(N)	3	
Chloroethane	<u>—</u> µg/l	Daughter Product	Y(N)	2	
1,1-Dichloroethene	<u>—</u> µg/l	Daughter Product	Y(N)	2	
Total Points					<u>5</u>

SCORING CRITERIA

0 to 5 = Inadequate evidence

6 to 14 = Limited evidence

15 to 20 = Adequate evidence

> 20 = Strong evidence

NATURAL ATTENUATION SCORING

SAMPLE I.D. 36G-00603

DATE 12-3/98

MEASUREMENTS

PARAMETER	MEASURED VALUE	COMPARISON VALUE		POINTS	
				POSSIBLE	SCORED
Oxygen	<u>4.1</u> mg/l	< 0.5mg/l	Y(N)	3	
Nitrate	<u>2.8</u> mg/l	< 1 mg/l	Y(N)	2	
Iron II	<u>0.03</u> mg/l	> 1 mg/l	Y(N)	3	
Sulfate	<u>30</u> mg/l	< 20 mg/l	Y(N)	2	
Sulfide	<u>0.2</u> mg/l	> 1 mg/l	Y(N)	3	
Methane	<u>1.5</u> µg/l	< 500 µg/l	Y(N)	0	
		> 500 µg/l	Y(N)	3	
ORP	<u>190.5</u> mv	< 50 mV	Y(N)	1	
		< -100 mV	Y(N)	2	
pH	<u>5.30</u>	5 < pH < 9	Y(N)	0	
		5 > pH > 9	Y(N)	-2	
TOC	<u>5</u> mg/l	> 20 mg/l	Y(N)	2	
Temp.	<u>26.8</u> C	> 20 deg. C	Y(N)	1	<u>L</u>
Carbon Dioxide	<u>45</u> mg/l	2X Background	Y(N)	1	
(Background)	<u>65</u> mg/l				
Alkalinity	<u>6.8</u> mg/l	2X Background	Y(N)	1	
(Background)	<u>20.4</u> mg/l				
Chloride	<u>20</u> mg/l	2X Background	Y(N)	2	
(Background)	<u>15</u> mg/l				
Hydrogen	<u>NA</u> nM	> 1 nM	Y(N)	3	
		< 1 nM	Y(N)	0	
Volatile Fatty Acids	<u>NA</u> mg/l	> 0.1 mg/l	Y(N)	2	
BTEX	<u>—</u> µg/l	> 100 µg/l	Y(N)	2	
PCE	<u>—</u> µg/l	Source Material	Y(N)	0	
TCE	<u>6.6</u> µg/l	Source Material	Y(N)	0	
		Daughter Product	Y(N)	2	
DCE	<u>—</u> µg/l	Source Material	Y(N)	0	
		Daughter Product	Y(N)	2	
Vinyl Chloride	<u>—</u> µg/l	Source Material	Y(N)	0	
		Daughter Product	Y(N)	2	
Ethane/Ethene	<u>—</u> µg/l	> 10 µg/l	Y(N)	2	
		> 100 µg/l	Y(N)	3	
Chloroethane	<u>—</u> µg/l	Daughter Product	Y(N)	2	
1,1-Dichloroethene	<u>—</u> µg/l	Daughter Product	Y(N)	2	
Total Points					<u>L</u>

SCORING CRITERIA

0 to 5 = Inadequate evidence

6 to 14 = Limited evidence

15 to 20 = Adequate evidence

> 20 = Strong evidence

NATURAL ATTENUATION SCORING

SAMPLE I.D. 36 G-00702

DATE 1215

MEASUREMENTS

PARAMETER	MEASURED VALUE	COMPARISON VALUE		POINTS	
				POSSIBLE	SCORED
Oxygen	<u>3.0</u> mg/l	< 0.5mg/l	Y(N)	3	
Nitrate	<u>0.5</u> mg/l	< 1 mg/l	(Y)N	2	<u>2</u>
Iron II	<u>0.16</u> mg/l	> 1 mg/l	Y(N)	3	
Sulfate	<u>24</u> mg/l	< 20 mg/l	Y(N)	2	
Sulfide	<u>0.1</u> mg/l	> 1 mg/l	Y(N)	3	
Methane	<u>4.2</u> µg/l	< 500 µg/l	(Y)N	0	
		> 500 µg/l	Y(N)	3	
ORP	<u>55.6</u> mv	< 50 mV	Y(N)	1	
		< -100 mV	Y(N)	2	
pH	<u>5.30</u>	5 < pH < 9	(Y)N	0	
		5 > pH > 9	Y(N)	-2	
TOC	<u>3</u> mg/l	> 20 mg/l	Y(N)	2	
Temp.	<u>27.4</u> C	> 20 deg. C	(Y)N	1	<u>L</u>
Carbon Dioxide	<u>55</u> mg/l	2X Background	Y(N)	1	
(Background)	<u>65</u> mg/l				
Alkalinity	<u>14</u> mg/l	2X Background	Y(N)	1	
(Background)	<u>20.4</u> mg/l				
Chloride	<u>20</u> mg/l	2X Background	Y(N)	2	
(Background)	<u>15</u> mg/l				
Hydrogen	<u> </u> nM	> 1 nM	Y(N)	3	
		< 1 nM	Y(N)	0	
Volatile Fatty Acids	<u> </u> mg/l	> 0.1 mg/l	Y(N)	2	
BTEX	<u> </u> µg/l	> 100 µg/l	Y(N)	2	
PCE	<u> </u> µg/l	Source Material	Y(N)	0	
TCE	<u>120</u> µg/l	Source Material	(Y)N	0	
		Daughter Product	Y(N)	2	
DCE	<u> </u> µg/l	Source Material	Y(N)	0	
		Daughter Product	Y(N)	2	
Vinyl Chloride	<u> </u> µg/l	Source Material	Y(N)	0	
		Daughter Product	Y(N)	2	
Ethane/Ethene	<u> </u> µg/l	> 10 µg/l	Y(N)	2	
		> 100 µg/l	Y(N)	3	
Chloroethane	<u> </u> µg/l	Daughter Product	Y(N)	2	
1,1-Dichloroethene	<u> </u> µg/l	Daughter Product	Y(N)	2	
				Total Points	<u>3</u>

SCORING CRITERIA

0 to 5 = Inadequate evidence

6 to 14 = Limited evidence

15 to 20 = Adequate evidence

> 20 = Strong evidence

NATURAL ATTENUATION SCORING

SAMPLE I.D. 366 00802

DATE 12-3/98

MEASUREMENTS

PARAMETER	MEASURED VALUE	COMPARISON VALUE		POINTS	
				POSSIBLE	SCORED
Oxygen	<u>0</u> mg/l	< 0.5mg/l	<input checked="" type="radio"/> Y <input checked="" type="radio"/> N	3	<u>3</u>
Nitrate	<u>---</u> mg/l	< 1 mg/l	<input checked="" type="radio"/> Y <input checked="" type="radio"/> N	2	
Iron II	<u>0.75</u> mg/l	> 1 mg/l	<input checked="" type="radio"/> Y <input checked="" type="radio"/> N	3	
Sulfate	<u>12</u> mg/l	< 20 mg/l	<input checked="" type="radio"/> Y <input checked="" type="radio"/> N	2	<u>2</u>
Sulfide	<u>0.7</u> mg/l	> 1 mg/l	<input checked="" type="radio"/> Y <input checked="" type="radio"/> N	3	
Methane	<u>150</u> µg/l	< 500 µg/l	<input checked="" type="radio"/> Y <input checked="" type="radio"/> N	0	
		> 500 µg/l	<input checked="" type="radio"/> Y <input checked="" type="radio"/> N	3	
ORP	<u>-106.0</u> mv	< 50 mV	<input checked="" type="radio"/> Y <input checked="" type="radio"/> N	1	
		< -100 mV	<input checked="" type="radio"/> Y <input checked="" type="radio"/> N	2	<u>2</u>
pH	<u>5.72</u>	5 < pH < 9	<input checked="" type="radio"/> Y <input checked="" type="radio"/> N	0	
		5 > pH > 9	<input checked="" type="radio"/> Y <input checked="" type="radio"/> N	-2	
TOC	<u>4</u> mg/l	> 20 mg/l	<input checked="" type="radio"/> Y <input checked="" type="radio"/> N	2	
Temp.	<u>27.1</u> C	> 20 deg. C	<input checked="" type="radio"/> Y <input checked="" type="radio"/> N	1	<u>1</u>
Carbon Dioxide	<u>50</u> mg/l	2X Background	<input checked="" type="radio"/> Y <input checked="" type="radio"/> N	1	
(Background)	<u>65</u> mg/l				
Alkalinity	<u>18</u> mg/l	2X Background	<input checked="" type="radio"/> Y <input checked="" type="radio"/> N	1	
(Background)	<u>20.4</u> mg/l				
Chloride	<u>15</u> mg/l	2X Background	<input checked="" type="radio"/> Y <input checked="" type="radio"/> N	2	
(Background)	<u>15</u> mg/l				
Hydrogen	<u>---</u> nM	> 1 nM	<input checked="" type="radio"/> Y <input checked="" type="radio"/> N	3	
		< 1 nM	<input checked="" type="radio"/> Y <input checked="" type="radio"/> N	0	
Volatile Fatty Acids	<u>---</u> mg/l	> 0.1 mg/l	<input checked="" type="radio"/> Y <input checked="" type="radio"/> N	2	
BTEX	<u>---</u> µg/l	> 100 µg/l	<input checked="" type="radio"/> Y <input checked="" type="radio"/> N	2	
PCE	<u>---</u> µg/l	Source Material	<input checked="" type="radio"/> Y <input checked="" type="radio"/> N	0	
TCE	<u>40</u> µg/l	Source Material	<input checked="" type="radio"/> Y <input checked="" type="radio"/> N	0	
		Daughter Product	<input checked="" type="radio"/> Y <input checked="" type="radio"/> N	2	
DCE	<u>---</u> µg/l	Source Material	<input checked="" type="radio"/> Y <input checked="" type="radio"/> N	0	
		Daughter Product	<input checked="" type="radio"/> Y <input checked="" type="radio"/> N	2	
Vinyl Chloride	<u>1</u> µg/l	Source Material	<input checked="" type="radio"/> Y <input checked="" type="radio"/> N	0	
		Daughter Product	<input checked="" type="radio"/> Y <input checked="" type="radio"/> N	2	
Ethane/Ethene	<u>---</u> µg/l	> 10 µg/l	<input checked="" type="radio"/> Y <input checked="" type="radio"/> N	2	
		> 100 µg/l	<input checked="" type="radio"/> Y <input checked="" type="radio"/> N	3	
Chloroethane	<u>---</u> µg/l	Daughter Product	<input checked="" type="radio"/> Y <input checked="" type="radio"/> N	2	
1,1-Dichloroethene	<u>---</u> µg/l	Daughter Product	<input checked="" type="radio"/> Y <input checked="" type="radio"/> N	2	
Total Points					<u>8</u>

SCORING CRITERIA

0 to 5 = Inadequate evidence

6 to 14 = Limited evidence

15 to 20 = Adequate evidence

> 20 = Strong evidence

NATURAL ATTENUATION SCORING

SAMPLE I.D. 36 G-00902

DATE 12-3/99

MEASUREMENTS

PARAMETER	MEASURED VALUE	COMPARISON VALUE		POINTS	
				POSSIBLE	SCORED
Oxygen	<u>5.5</u> mg/l	< 0.5mg/l	Y/N	3	
Nitrate	<u>"L"</u> mg/l	< 1 mg/l	Y/N	2	<u>1</u>
Iron II	<u>0.16</u> mg/l	> 1 mg/l	Y/N	3	
Sulfate	<u>"L"</u> mg/l	< 20 mg/l	Y/N	2	<u>1</u>
Sulfide	<u>5+</u> mg/l	> 1 mg/l	Y/N	3	<u>3</u>
Methane	<u>2.7</u> µg/l	< 500 µg/l	Y/N	0	
		> 500 µg/l	Y/N	3	
ORP	<u>-410.1</u> mv	< 50 mV	Y/N	1	
		< -100 mV	Y/N	2	<u>2</u>
pH	<u>10.10</u>	5 < pH < 9	Y/N	0	
		5 > pH > 9	Y/N	-2	<u>-2</u>
TOC	<u>15</u> mg/l	> 20 mg/l	Y/N	2	
Temp.	<u>26.3</u> C	> 20 deg. C	Y/N	1	<u>1</u>
Carbon Dioxide	<u>NR</u> mg/l	2X Background	Y/N	1	
(Background)	<u>40</u> mg/l				
Alkalinity	<u>85</u> mg/l	2X Background	Y/N	1	
(Background)	<u>27</u> mg/l				
Chloride	<u>20</u> mg/l	2X Background	Y/N	2	
(Background)	<u>20</u> mg/l				
Hydrogen	<u>1</u> nM	> 1 nM	Y/N	3	
		< 1 nM	Y/N	0	
Volatile Fatty Acids	<u>1</u> mg/l	> 0.1 mg/l	Y/N	2	
BTEX	<u>11</u> µg/l	> 100 µg/l	Y/N	2	
PCE	<u>1</u> µg/l	Source Material	Y/N	0	
TCE	<u>300</u> µg/l	Source Material	Y/N	0	
		Daughter Product	Y/N	2	
DCE	<u>43</u> µg/l	Source Material	Y/N	0	
		Daughter Product	Y/N	2	<u>2</u>
Vinyl Chloride	<u>1</u> µg/l	Source Material	Y/N	0	
		Daughter Product	Y/N	2	
Ethane/Ethene	<u>1.5/1.8</u> µg/l	> 10 µg/l	Y/N	2	
		> 100 µg/l	Y/N	3	
Chloroethane	<u>1</u> µg/l	Daughter Product	Y/N	2	
1,1-Dichloroethene	<u>1</u> µg/l	Daughter Product	Y/N	2	
				Total Points	<u>6</u>

SCORING CRITERIA

0 to 5 = Inadequate evidence

6 to 14 = Limited evidence

15 to 20 = Adequate evidence

> 20 = Strong evidence

pH interference w/ tests

NATURAL ATTENUATION SCORING

SAMPLE I.D. 36G-01002

DATE 12-4-98

MEASUREMENTS

PARAMETER	MEASURED VALUE	COMPARISON VALUE		POINTS	
				POSSIBLE	SCORED
Oxygen	<u>0 "L"</u> mg/l	< 0.5mg/l	<input checked="" type="radio"/> Y <input type="radio"/> N	3	<u>—</u>
Nitrate	<u>35 "L"</u> mg/l	< 1 mg/l	<input type="radio"/> Y <input checked="" type="radio"/> N	2	<u>—</u>
Iron II	<u>1.64</u> mg/l	> 1 mg/l	<input checked="" type="radio"/> Y <input type="radio"/> N	3	<u>3</u>
Sulfate	<u>0 "L"</u> mg/l	< 20 mg/l	<input checked="" type="radio"/> Y <input type="radio"/> N	2	<u>—</u>
Sulfide	<u>5 +</u> mg/l	> 1 mg/l	<input checked="" type="radio"/> Y <input type="radio"/> N	3	<u>3</u>
Methane	<u>21</u> µg/l	< 500 µg/l	<input checked="" type="radio"/> Y <input type="radio"/> N	0	
		> 500 µg/l	<input type="radio"/> Y <input checked="" type="radio"/> N	3	
ORP	<u>-128.9</u> mv	< 50 mV	<input checked="" type="radio"/> Y <input type="radio"/> N	1	
		< -100 mV	<input type="radio"/> Y <input checked="" type="radio"/> N	2	<u>2</u>
pH	<u>6.07</u>	5 < pH < 9	<input checked="" type="radio"/> Y <input type="radio"/> N	0	
		5 > pH > 9	<input type="radio"/> Y <input checked="" type="radio"/> N	-2	
TOC	<u>18</u> mg/l	> 20 mg/l	<input type="radio"/> Y <input checked="" type="radio"/> N	2	
Temp.	<u>27.1</u> C	> 20 deg. C	<input checked="" type="radio"/> Y <input type="radio"/> N	1	<u>1</u>
Carbon Dioxide	<u>50 ?</u> mg/l	2X Background	<input type="radio"/> Y <input checked="" type="radio"/> N	1	
(Background)	<u>65</u> mg/l				
Alkalinity	<u>NR</u> mg/l	2X Background	<input type="radio"/> Y <input checked="" type="radio"/> N	1	
(Background)	<u>—</u> mg/l				
Chloride	<u>15</u> mg/l	2X Background	<input type="radio"/> Y <input checked="" type="radio"/> N	2	
(Background)	<u>15</u> mg/l				
Hydrogen	<u>—</u> nM	> 1 nM	<input type="radio"/> Y <input checked="" type="radio"/> N	3	
		< 1 nM	<input type="radio"/> Y <input checked="" type="radio"/> N	0	
Volatile Fatty Acids	<u>—</u> mg/l	> 0.1 mg/l	<input type="radio"/> Y <input checked="" type="radio"/> N	2	
BTEX	<u>0.47</u> µg/l	> 100 µg/l	<input type="radio"/> Y <input checked="" type="radio"/> N	2	
PCE	<u>—</u> µg/l	Source Material	<input type="radio"/> Y <input checked="" type="radio"/> N	0	
TCE	<u>8.9</u> µg/l	Source Material	<input checked="" type="radio"/> Y <input type="radio"/> N	0	
		Daughter Product	<input type="radio"/> Y <input checked="" type="radio"/> N	2	
DCE	<u>9.4</u> µg/l	Source Material	<input type="radio"/> Y <input checked="" type="radio"/> N	0	
		Daughter Product	<input checked="" type="radio"/> Y <input type="radio"/> N	2	<u>2</u>
Vinyl Chloride	<u>—</u> µg/l	Source Material	<input type="radio"/> Y <input checked="" type="radio"/> N	0	
		Daughter Product	<input type="radio"/> Y <input checked="" type="radio"/> N	2	
Ethane/Ethene	<u>—</u> µg/l	> 10 µg/l	<input type="radio"/> Y <input checked="" type="radio"/> N	2	
		> 100 µg/l	<input type="radio"/> Y <input checked="" type="radio"/> N	3	
Chloroethane	<u>—</u> µg/l	Daughter Product	<input type="radio"/> Y <input checked="" type="radio"/> N	2	
1,1-Dichloroethene	<u>—</u> µg/l	Daughter Product	<input type="radio"/> Y <input checked="" type="radio"/> N	2	

Total Points

11/16

SCORING CRITERIA

0 to 5 = Inadequate evidence

6 to 14 = Limited evidence

15 to 20 = Adequate evidence

> 20 = Strong evidence

Turbidity interference

NATURAL ATTENUATION SCORING

SAMPLE I.D. 36 G-01102

DATE 12-4/98

MEASUREMENTS

PARAMETER	MEASURED VALUE	COMPARISON VALUE		POINTS	
				POSSIBLE	SCORED
Oxygen	<u>5.1</u> mg/l	< 0.5mg/l	Y/N	3	
Nitrate	<u>0.3</u> mg/l	< 1 mg/l	Y/N	2	<u>2</u>
Iron II	<u>0.30</u> mg/l	> 1 mg/l	Y/N	3	
Sulfate	<u>13</u> mg/l	< 20 mg/l	Y/N	2	<u>2</u>
Sulfide	<u>2</u> mg/l	> 1 mg/l	Y/N	3	<u>3</u>
Methane	<u>5.6</u> µg/l	< 500 µg/l	Y/N	0	
		> 500 µg/l	Y/N	3	
ORP	<u>-121.5</u> mv	< 50 mV	Y/N	1	
		< -100 mV	Y/N	2	<u>2</u>
pH	<u>6.10</u>	5 < pH < 9	Y/N	0	
		5 > pH > 9	Y/N	-2	
TOC	<u>10</u> mg/l	> 20 mg/l	Y/N	2	
Temp.	<u>27.5</u> C	> 20 deg. C	Y/N	1	<u>1</u>
Carbon Dioxide	<u>25</u> mg/l	2X Background	Y/N	1	
(Background)	<u>40</u> mg/l				
Alkalinity	<u>27</u> mg/l	2X Background	Y/N	1	
(Background)	<u>27</u> mg/l				
Chloride	<u>15</u> mg/l	2X Background	Y/N	2	
(Background)	<u>20</u> mg/l				
Hydrogen	<u>—</u> nM	> 1 nM	Y/N	3	
		< 1 nM	Y/N	0	
Volatile Fatty Acids	<u>—</u> mg/l	> 0.1 mg/l	Y/N	2	
BTEX	<u>—</u> µg/l	> 100 µg/l	Y/N	2	
PCE	5.4 <u>0.96</u> µg/l	Source Material	Y/N	0	
TCE	<u>0.96</u> µg/l	Source Material	Y/N	0	
		Daughter Product	Y/N	2	<u>2</u>
DCE	<u>2.8</u> µg/l	Source Material	Y/N	0	
		Daughter Product	Y/N	2	<u>2</u>
Vinyl Chloride	<u>—</u> µg/l	Source Material	Y/N	0	
		Daughter Product	Y/N	2	
Ethane/Ethene	<u>—</u> µg/l	> 10 µg/l	Y/N	2	
		> 100 µg/l	Y/N	3	
Chloroethane	<u>—</u> µg/l	Daughter Product	Y/N	2	
1,1-Dichloroethene	<u>—</u> µg/l	Daughter Product	Y/N	2	
Total Points					<u>14</u>

SCORING CRITERIA

- 0 to 5 = Inadequate evidence
- 6 to 14 = Limited evidence
- 15 to 20 = Adequate evidence
- > 20 = Strong evidence

NATURAL ATTENUATION SCORING

SAMPLE I.D. 36 G-01401

DATE 12-4-98

MEASUREMENTS

PARAMETER	MEASURED VALUE	COMPARISON VALUE		POINTS	
				POSSIBLE	SCORED
Oxygen	<u>5.1</u> mg/l	< 0.5mg/l	Y N	3	
Nitrate	<u>1.5</u> mg/l	< 1 mg/l	Y N	2	
Iron II	<u>1.19</u> mg/l	> 1 mg/l	Y N	3	3
Sulfate	<u>"L"</u> mg/l	< 20 mg/l	Y N	2	
Sulfide	<u>0.1</u> mg/l	> 1 mg/l	Y N	3	
Methane	<u>61</u> µg/l	< 500 µg/l	Y N	0	
		> 500 µg/l	Y N	3	
ORP	<u>-40.4</u> mv	< 50 mV	Y N	1	1
		< -100 mV	Y N	2	
pH	<u>6.61</u>	5 < pH < 9	Y N	0	
		5 > pH > 9	Y N	-2	
TOC	<u>17</u> mg/l	> 20 mg/l	Y N	2	
Temp.	<u>27.7</u> C	> 20 deg. C	Y N	1	1
Carbon Dioxide	<u>30</u> mg/l	2X Background	Y N	1	
(Background)	<u>40</u> mg/l				
Alkalinity	<u>68</u> mg/l	2X Background	Y N	1	1
(Background)	<u>27</u> mg/l				
Chloride	<u>25</u> mg/l	2X Background	Y N	2	
(Background)	<u>20</u> mg/l				
Hydrogen	<u>1</u> nM	> 1 nM	Y N	3	
		< 1 nM	Y N	0	
Volatile Fatty Acids	<u>1</u> mg/l	> 0.1 mg/l	Y N	2	
BTEX	<u>1</u> µg/l	> 100 µg/l	Y N	2	
PCE	<u>1</u> µg/l	Source Material	Y N	0	
TCE	<u>1</u> µg/l	Source Material	Y N	0	
		Daughter Product	Y N	2	
DCE	<u>1</u> µg/l	Source Material	Y N	0	
		Daughter Product	Y N	2	
Vinyl Chloride	<u>1</u> µg/l	Source Material	Y N	0	
		Daughter Product	Y N	2	
Ethane/Ethene	<u>1</u> µg/l	> 10 µg/l	Y N	2	
		> 100 µg/l	Y N	3	
Chloroethane	<u>1</u> µg/l	Daughter Product	Y N	2	
1,1-Dichloroethene	<u>1</u> µg/l	Daughter Product	Y N	2	
Total Points					6

SCORING CRITERIA

0 to 5 = Inadequate evidence

Not in plume

6 to 14 = Limited evidence

15 to 20 = Adequate evidence

> 20 = Strong evidence

NATURAL ATTENUATION SCORING

SAMPLE I.D. 36G01201

DATE 12-4/98

MEASUREMENTS

PARAMETER	MEASURED VALUE	COMPARISON VALUE		POINTS	
				POSSIBLE	SCORED
Oxygen	<u>2.9</u> mg/l	< 0.5mg/l	Y/N	3	
Nitrate	<u>0.4</u> mg/l	< 1 mg/l	Y/N	2	2
Iron II	<u>0.10</u> mg/l	> 1 mg/l	Y/N	3	
Sulfate	<u>2.0</u> mg/l	< 20 mg/l	Y/N	2	
Sulfide	<u>0.5</u> mg/l	> 1 mg/l	Y/N	3	
Methane	<u>22</u> µg/l	< 500 µg/l	Y/N	0	
		> 500 µg/l	Y/N	3	
ORP	<u>-90.4</u> mv	< 50 mV	Y/N	1	L
		< -100 mV	Y/N	2	
pH	<u>5.48</u>	5 < pH < 9	Y/N	0	
		5 > pH > 9	Y/N	-2	
TOC	<u>6</u> mg/l	> 20 mg/l	Y/N	2	
Temp.	<u>27.2</u> C	> 20 deg. C	Y/N	1	L
Carbon Dioxide	<u>40</u> mg/l	2X Background	Y/N	1	-
(Background)	<u>-</u> mg/l				
Alkalinity	<u>27</u> mg/l	2X Background	Y/N	1	
(Background)	<u>-</u> mg/l				
Chloride	<u>20</u> mg/l	2X Background	Y/N	2	
(Background)	<u>-</u> mg/l				
Hydrogen	<u>-</u> nM	> 1 nM	Y/N	3	
		< 1 nM	Y/N	0	
Volatile Fatty Acids	<u>-</u> mg/l	> 0.1 mg/l	Y/N	2	
BTEX	<u>-</u> µg/l	> 100 µg/l	Y/N	2	
PCE	<u>-</u> µg/l	Source Material	Y/N	0	
TCE	<u>2.7</u> µg/l	Source Material	Y/N	0	
		Daughter Product	Y/N	2	
DCE	<u>1.8</u> µg/l	Source Material	Y/N	0	
		Daughter Product	Y/N	2	2
Vinyl Chloride	<u>-</u> µg/l	Source Material	Y/N	0	
		Daughter Product	Y/N	2	
Ethane/Ethene	<u>-</u> µg/l	> 10 µg/l	Y/N	2	
		> 100 µg/l	Y/N	3	
Chloroethane	<u>-</u> µg/l	Daughter Product	Y/N	2	
1,1-Dichloroethene	<u>-</u> µg/l	Daughter Product	Y/N	2	
Total Points					6

SCORING CRITERIA

0 to 5 = Inadequate evidence

6 to 14 = Limited evidence

15 to 20 = Adequate evidence

> 20 = Strong evidence

NATURAL ATTENUATION SCORING

SAMPLE I.D. 36 G 01301

DATE 12-3/98

MEASUREMENTS

PARAMETER	MEASURED VALUE	COMPARISON VALUE		POINTS	
				POSSIBLE	SCORED
Oxygen	<u>6.6</u> mg/l	< 0.5mg/l	Y/N	3	
Nitrate	<u>1.3</u> mg/l	< 1 mg/l	Y/N	2	
Iron II	<u>1.36</u> mg/l	> 1 mg/l	Y/N	3	<u>3</u>
Sulfate	<u>13</u> mg/l	< 20 mg/l	Y/N	2	<u>2</u>
Sulfide	<u>0.5</u> mg/l	> 1 mg/l	Y/N	3	
Methane	<u>77</u> µg/l	< 500 µg/l	Y/N	0	
		> 500 µg/l	Y/N	3	
ORP	<u>-45.8</u> mv	< 50 mV	Y/N	1	<u>L</u>
		< -100 mV	Y/N	2	
pH	<u>5.58</u>	5 < pH < 9	Y/N	0	
		5 > pH > 9	Y/N	-2	
TOC	<u>3</u> mg/l	> 20 mg/l	Y/N	2	
Temp.	<u>26.8</u> C	> 20 deg. C	Y/N	1	<u>L</u>
Carbon Dioxide (Background)	<u>45</u> mg/l	2X Background	Y/N	1	
	<u>40</u> mg/l				
Alkalinity (Background)	<u>54.4</u> mg/l	2X Background	Y/N	1	<u>L</u>
	<u>27</u> mg/l				
Chloride (Background)	<u>35</u> mg/l	2X Background	Y/N	2	
	<u>20</u> mg/l				
Hydrogen	<u>—</u> nM	> 1 nM	Y/N	3	
		< 1 nM	Y/N	0	
Volatile Fatty Acids	<u>—</u> mg/l	> 0.1 mg/l	Y/N	2	
BTEX	<u>—</u> µg/l	> 100 µg/l	Y/N	2	
PCE	<u>—</u> µg/l	Source Material	Y/N	0	
TCE	<u>—</u> µg/l	Source Material	Y/N	0	
		Daughter Product	Y/N	2	
DCE	<u>—</u> µg/l	Source Material	Y/N	0	
		Daughter Product	Y/N	2	
Vinyl Chloride	<u>—</u> µg/l	Source Material	Y/N	0	
		Daughter Product	Y/N	2	
Ethane/Ethene	<u>0.83 / 0.94</u> µg/l	> 10 µg/l	Y/N	2	
		> 100 µg/l	Y/N	3	
Chloroethane	<u>—</u> µg/l	Daughter Product	Y/N	2	
1,1-Dichloroethene	<u>—</u> µg/l	Daughter Product	Y/N	2	
Total Points					<u>8</u>

SCORING CRITERIA

0 to 5 = Inadequate evidence

6 to 14 = Limited evidence

15 to 20 = Adequate evidence

> 20 = Strong evidence

not in plume