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NAS CECIL FIELD, FL
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SAMPLING AND ANALYSIS REPORT FOR TANK 285 NORTH FUEL FARM AREA NAS CECIL FIELD FL

9/1/2004

TETRA TECH NUS INC

Sampling and Analysis Report
for
Tank 285
North Fuel Farm Area

Naval Air Station Cecil Field
Jacksonville, Florida

Southern Division
Naval Facilities Engineering Command
Contract Number N62467-94-D-0888

Contract Task Order 0078

September 2004

SAMPLING AND ANALYSIS REPORT
FOR
TANK 285
NORTH FUEL FARM AREA

NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

COMPREHENSIVE LONG-TERM
ENVIRONMENTAL ACTION NAVY (CLEAN) CONTRACT

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

Submitted by:
Tetra Tech NUS, Inc.
661 Andersen Drive
Foster Plaza 7
Pittsburgh, Pennsylvania 15220

CONTRACT NUMBER N62467-94-D-0888
CONTRACT TASK ORDER 0078

SEPTEMBER 2004

PREPARED UNDER THE SUPERVISION OF:

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APPROVED FOR SUBMITTAL BY:

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NAVFAC

The professional opinions rendered in this decision document identified as Sampling and Analysis Report for Tank 285, North Fuel Farm Area, Naval Air Station Cecil Field, Jacksonville, Florida were developed in accordance with commonly accepted procedures consistent with applicable standards of practice. Decision documents are based on information obtained from others and under the supervision of the signing engineer. If conditions are determined to exist differently than those described in this document, then the undersigned professional engineer should be notified to evaluate the effects of any additional information on the project described in this report.

Robert F. Simcik, P.E.
Professional Engineering No. PE00061263

Date: 9/27/04

ROBERT FRANK SIMCIK
LICENSED
No. 00061263
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

CERTIFICATION OF TECHNICAL
DATA CONFORMITY

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

DATE: September 17, 2004

COMPANY CERTIFICATION AUTHORIZATION NUMBER: 7988
Tetra Tech NUS, Inc.
661 Andersen Drive
Pittsburgh, PA 15220

NAME AND TITLE OF CERTIFYING OFFICIAL: Mark Speranza, P.E.
Task Order Manager

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ACRONYMS

ABB-ES	ABB Environmental Services, Inc.
BCT	BRAC Cleanup Team
bgs	below ground surface
BRAC	Base Realignment and Closure
BTEX	Benzene, toluene, ethylbenzene, and xylenes
CH2M HILL	CH2M Hill Constructors, Inc.
CLEAN	Comprehensive Long-Term Environmental Action Navy
CTO	Contract Task Order
EBS	Environmental Baseline Survey
EDB	1,2-dibromoethane
EISOPQAM	Environmental Investigations Standard Operating Procedures and Quality Assurance Manual
FAC	Florida Administrative Code
FDEP	Florida Department of Environmental Protection
FL-PRO	Florida Petroleum Residual Organics
GCTL	Groundwater Cleanup Target Level
HLA	Harding Lawson Associates
HWSA	Hazardous and Solid Waste Amendment
IBDS	Inorganic Background Data Set
MTBE	Methyl tertiary-butyl ether
µg/kg	microgram per kilogram
µg/L	microgram per liter
NAS	Naval Air Station
NFF	North Fuel Farm
OVA	Organic vapor analyzer
PAH	Polynuclear aromatic hydrocarbon
PCB	Polychlorinated biphenyl
PVC	Polyvinyl chloride
SAR	Sampling and Analysis Report
SCTL	Soil Cleanup Target Level
SOP	Standard Operating Procedure
SOUTHNAVFACENGCOM	Southern Division, Naval Facilities Engineering Command
ST	Skim tank
SVOC	Semivolatile organic compound
TAL	Target Analyte List

TCL	Target Compound List
TCLP	Toxicity Characteristic Leaching Procedure
TRPH	Total recoverable petroleum hydrocarbon
TtNUS	Tetra Tech NUS, Inc.
U.S. EPA	United States Environmental Protection Agency
VOC	Volatile organic compound

1.0 INTRODUCTION

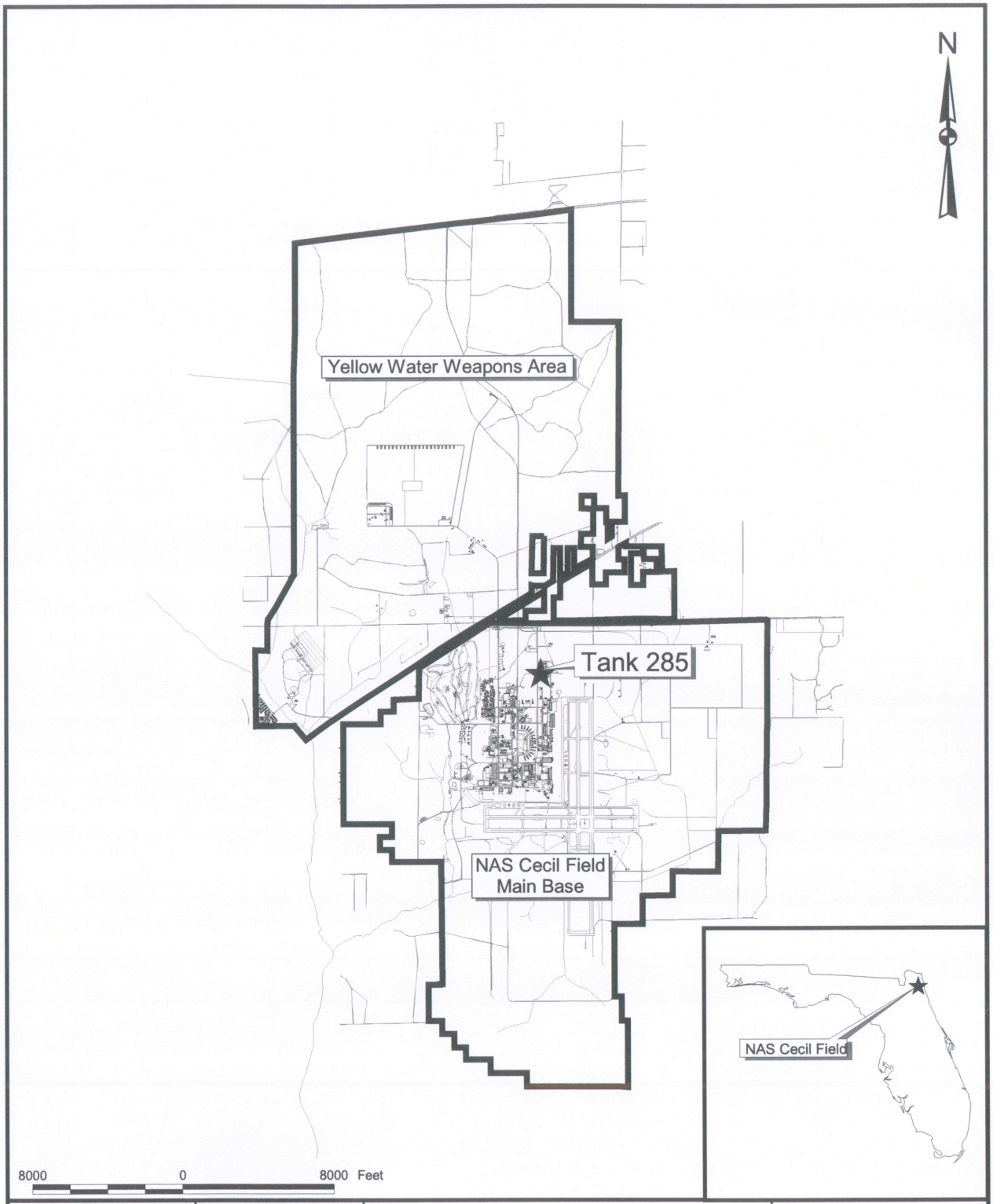
Tetra Tech NUS, Inc. (TtNUS), under contract to Naval Facilities Engineering Field Division South (NAVFACEFD SOUTH), has completed the Base Realignment and Closure (BRAC) Sampling and Analysis Program for Tank 285, North Fuel Farm Area at Naval Air Station (NAS) Cecil Field in Jacksonville, Florida. This program was conducted under the Comprehensive Long-Term Environmental Action Navy (CLEAN) III Program, Contract Number N62467-94-D-0888, Contract Task Order (CTO) 0078. This Sampling and Analysis Report (SAR) summarizes the related operations, results, conclusions, and recommendations of the field investigation and the associated in-place closure of Tank 285.

Building 285 (Tank 285) is located in the Main Base portion of NAS Cecil Field as shown on Figures 1-1 and 1-2. According to the BRAC Environmental Baseline Survey (EBS) Report, Building 285 was an administrative building at the North Fuel Farm (NFF) that monitored the storage and transfer of fuel at the fuel farm. Personnel associated with the building were also responsible for transferring fuel into the day tanks. Tank 285, located at the corner of Aviation Avenue (formerly A Avenue) and Loop Road on the northern side of Building 285, was a 5,500 gallon UST of cinderblock construction that measured 25 feet long by 30 feet wide [ABB Environmental Services, Inc. (ABB-ES), 1994].

Prior to the closure of the tank, it was not known if Tank 285 was a process, fuel, or septic tank. The demolition plan (Drawing No. 227-DD000-001, see Appendix A) in the Interim Remediation Work Plan for the NFF shows the tank connected to a 4-inch existing sanitary sewer line that runs to the north and discharges into the drainage ditch to Sal Taylor Creek. According to the drawing, this sanitary sewer line connects to a 4-inch storm drain. There is also a pipeline that connects to this sanitary sewer/storm drain from Building 70. This 4-inch sanitary sewer/storm drain and the pipeline from Building 70 were demolished as part of interim remedial activities at NFF (Bechtel Environmental, Inc., 1995; ABB-ES, 1996 and 1997).

During the Hazardous and Solid Waste Amendment (HSWA) Permit renewal process, it was decided that Tank 285 would be investigated as a process tank with soil and groundwater sampling and analysis to evaluate potential releases. Sampling was limited to the area surrounding the tank. A field investigation was performed at Tank 285 between February and June 2003 to evaluate soil and groundwater conditions to support closure of the tank. Analysis and inspection of the contents of Tank 285 during the closure activities confirmed that it was a septic tank rather than a process or fuel tank.

This SAR summarizes the related field operations, results, conclusions, and recommendations of the investigation conducted by TtNUS from April through October 2003 and the Tank 285 abandonment/closure activities completed by CH2M Hill Constructors, Inc. (CH2M Hill) between February and May 2004.



DRAWN BY MJJ	DATE 15Apr03	GENERAL LOCATION MAP TANK 285, NORTH FUEL FARM AREA NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NUMBER 0039
CHECKED BY	DATE		APPROVED BY DATE
COST/SCHEDULE-AREA			APPROVED BY DATE
SCALE AS NOTED			DRAWING NO. FIGURE 1-1 / REV 0

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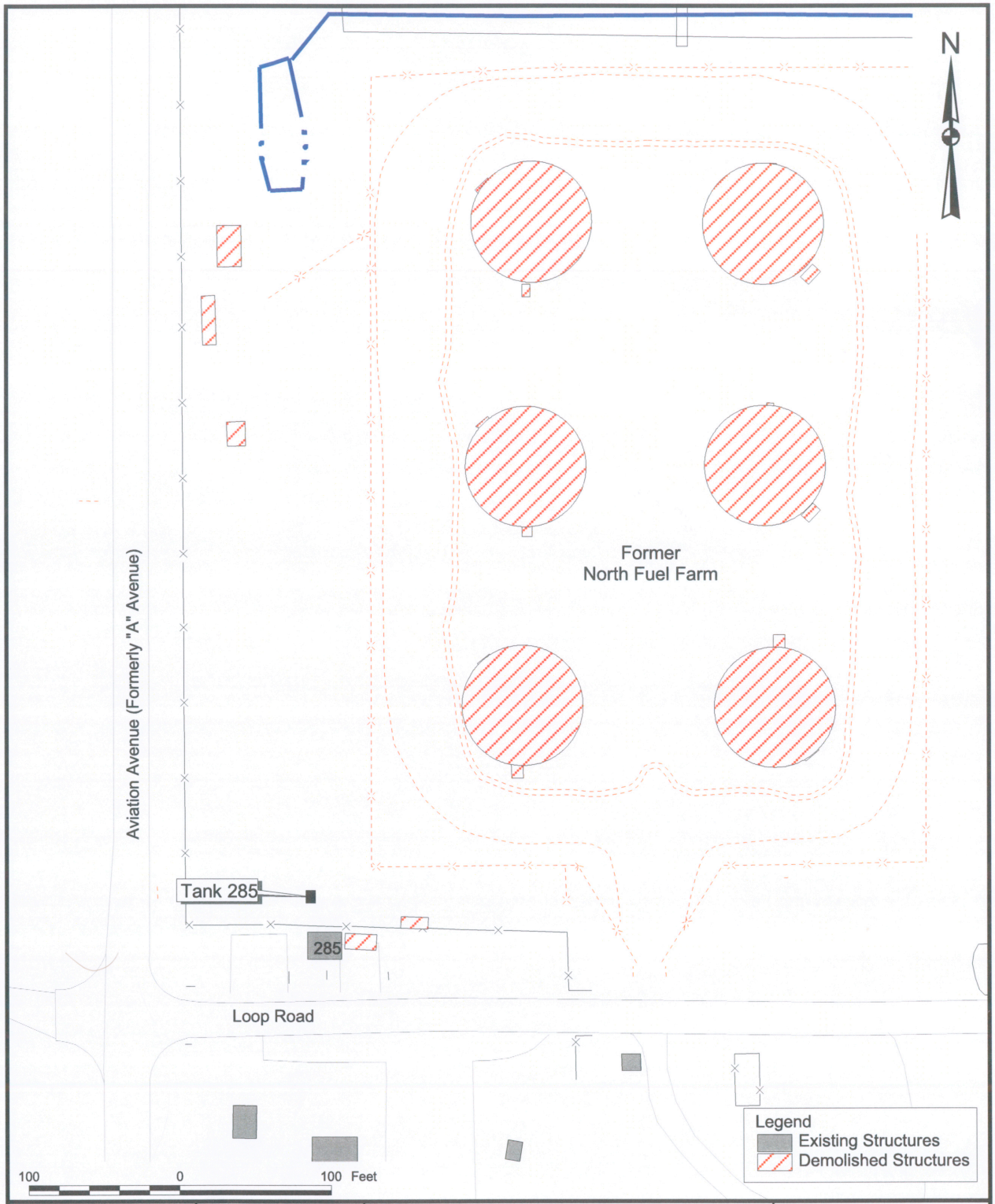

DRAWN BY MJJ	DATE 15Apr03	SITE LOCATION MAP TANK 285, NORTH FUEL FARM AREA NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NUMBER 0039
CHECKED BY	DATE		APPROVED BY DATE
COST/SCHEDULE-AREA			APPROVED BY DATE
SCALE AS NOTED			DRAWING NO. FIGURE 1-2 / REV 0

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2.0 FIELD INVESTIGATIONS

The field investigation at Tank 285, conducted in April 2003 three phases, evaluated the potential for soil and groundwater contamination in the vicinity of the tank.

The initial sampling event included the collection and analysis of four soil samples from soil borings and one groundwater sample from a temporary monitoring well. The soil borings were advanced by hand auguring on each side of the tank, and soil samples were collected at 1-foot intervals to the water table [approximately 4 to 5 feet below ground surface (bgs)]. These soil samples were screened for hydrocarbon vapors with an organic vapor analyzer (OVA), and the sample with the highest OVA reading from each boring was collected for analysis by a fixed-based laboratory. The soil samples (CEF-285-SS-001 through CEF-285-SS-004) were analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX), methyl tertiary-butyl ether (MTBE), polynuclear aromatic hydrocarbons (PAHs), and total recoverable petroleum hydrocarbons (TRPH) (TtNUS, 2003a).

Also during Phase I, a temporary well was installed in the boring with the highest OVA reading to collect a groundwater sample. The temporary well was constructed using a 1-inch-diameter, 10-foot, Schedule 40 polyvinyl chloride (PVC) well point and 20/30 sand. The groundwater sample was collected using low-flow purging and sampling techniques. The groundwater sample (CEF-285-GW-01) was analyzed for volatile organic compounds (VOCs), MTBE, PAHs, 1,2-dibromoethane (EDB), total (unfiltered) lead, and TRPH (TtNUS, 2003a).

Because the lead concentrations from the Phase I groundwater sample exceeded the Florida Department of Environmental Protection (FDEP) Groundwater Cleanup Target Level (GCTL) (FDEP, 1999), a Phase II field investigation was conducted in June 2003. The Phase II field investigation included collection of an additional groundwater sample from a permanent monitoring well (CEF-285-01S) installed at the temporary well location. The groundwater sample was collected using low-flow purging and sampling techniques and was analyzed for total (unfiltered) and dissolved (filtered) lead (TtNUS, 2003b).

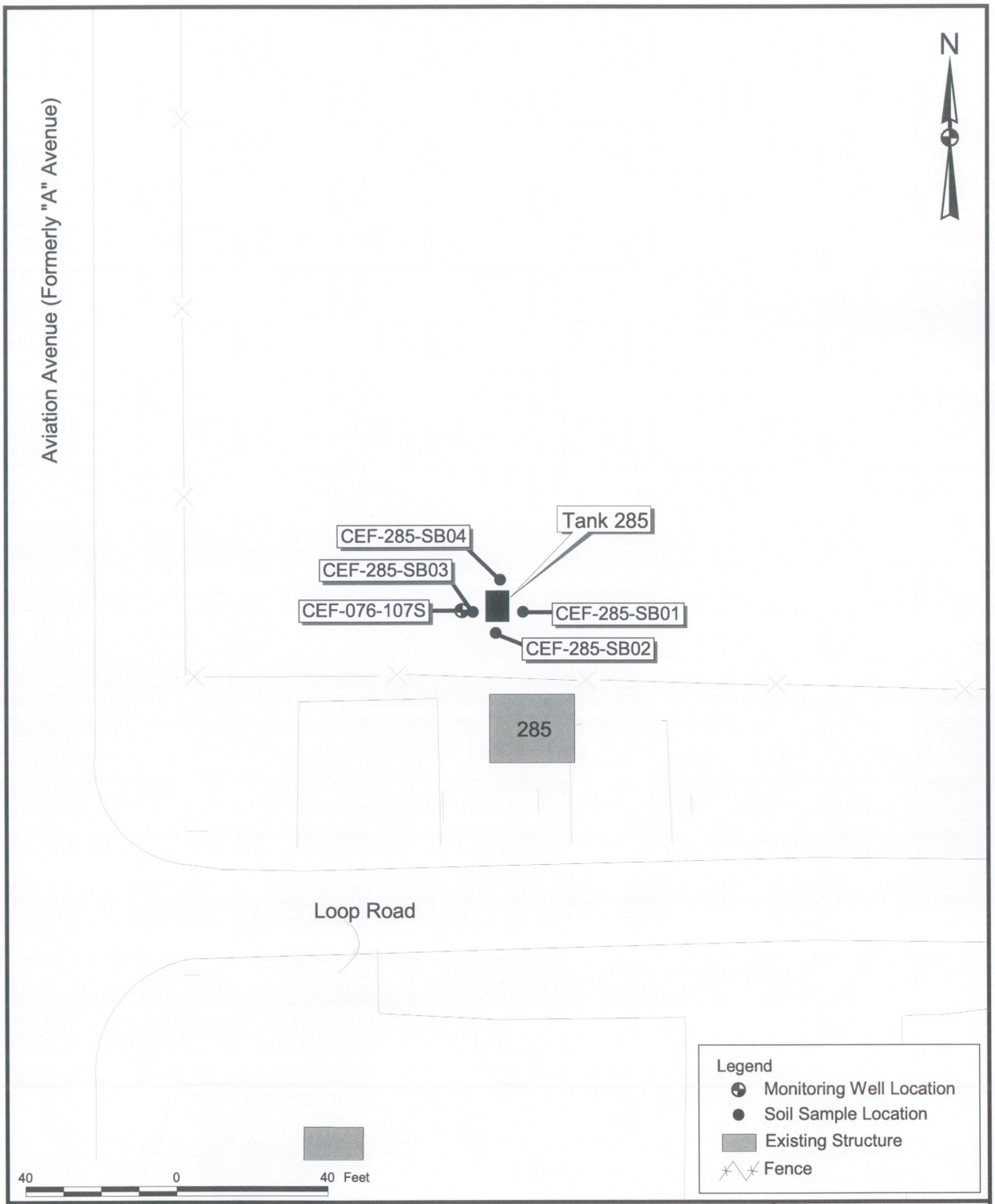
Because the methylene chloride concentration in one of the Phase I soil samples exceeded the FDEP Soil Cleanup Target Level (SCTL) (FDEP, 1999), a Phase III field investigation was conducted in October 2003. The Phase III field investigation included collection of an additional soil sample from the area of soil boring CEF-285-SB02 and analysis of the sample for methylene chloride.

The soil samples were collected as grab samples using plastic, disposable trowels. Sampling activities were performed in general agreement with the United States Environmental Protection Agency (U.S. EPA) Region IV Environmental Investigations Standard Operating Procedures and Quality Assurance Manual

(EISOPQAM) (U.S. EPA, 1996), FDEP Standard Operating Procedures (SOPs) FS2200 and FS3000 Florida Administrative Code (FAC) 62-160 (FDEP, 2002), the Remedial Investigation Report for Sites 36 and 37 (TtNUS, 1999), and current TtNUS SOPs. As agreed by the BRAC Cleanup Team (BCT), no rinsate or trip blanks were collected. In addition, field blanks were not collected because the sampling equipment was disposable. One duplicate soil sample and one duplicate groundwater sample were collected during the Phase I field activities, and a duplicate groundwater sample was collected during the Phase II field activities.

Soil samples were analyzed for BTEX, MTBE, or methylene chloride using U.S. EPA Method SW-846 5035/8260B, PAHs using U.S. EPA Method SW-846 8310, and TRPH using the Florida Petroleum Residual Organics (FL-PRO) method. Groundwater samples were analyzed for VOCs and MTBE using U.S. EPA Method SW-846 8260B, PAHs using U.S. EPA Method SW-846 8310, EDB using EPA Method 504.1, lead using U.S. EPA Method SW-846 6010B/7000A Series, and TRPH using the FL-PRO method. ACCUTEST Southeast, in Orlando, Florida, performed the analyses.

A site plan showing all sample locations is presented on Figure 2-1.



DRAWN BY MJJ	DATE 10Mar03	SAMPLE LOCATION MAP TANK 285, NORTH FUEL FARM AREA NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NUMBER 0039
CHECKED BY	DATE		APPROVED BY — DATE —
COST/SCHEDULE-AREA			APPROVED BY — DATE —
SCALE AS NOTED			DRAWING NO. FIGURE 2-1 / REV 0

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3.0 DATA EVALUATION AND IN-PLACE TANK CLOSURE

3.1 DATA EVALUATION

The concentrations detected in individual samples were compared to the FDEP criteria in FAC Chapter 62-777 (FDEP, 1999) and, for lead only, to the NAS Cecil Field site-specific Inorganic Background Data Set (IBDS) (HLA, 1998). The soil analytical results were compared to the more stringent of the FDEP residential SCTL for direct exposure or the leachability to groundwater criterion for each parameter. The groundwater analytical results were compared to FDEP GCTLs and the NAS Cecil Field Site-Specific IBDS (HLA, 1998). Table 3-1 presents the results of the soil analyses, and Table 3-2 presents the results of the groundwater analyses. Laboratory data sheets are provided in Appendix B.

PAHs were not detected in the soil samples from the site. Two VOCs and TRPH were detected in three soil samples collected at the Tank 285 site (see Table 3-1). Acetone and TRPH concentrations were less than FDEP SCTLs. Methylene chloride was detected in one soil sample (CEF-285-SS-002) at a concentration greater than its FDEP SCTL but was not detected when this location was resampled.

Groundwater collected from a temporary well had a lead concentration greater that the FDEP GCTL (see Table 3-2). This sample had a turbidity of more than 999 Nephelometric turbidity units (NTUs). The concentrations of VOCs, MTBE, PAHs, EDB, and TRPH in this sample were less than FDEP GCTLs. The Phase II sampling event was conducted after the installation of a permanent monitoring well. The boring log for this well is included in Appendix C. The groundwater sample was analyzed for lead, and the total and dissolved (filtered) lead concentrations were less than FDEP GCTL (see Table 3-2).

The detected analytes were compared to risk-based screening values to assess the likelihood of adverse human health effects associated with potential exposure to soil and groundwater. The results of the sampling and analysis at the Tank 285 site did not indicate contamination in the soil or groundwater at concentrations that exceeded FDEP criteria.

3.2 IN-PLACE TANK CLOSURE

Tank 285 abandonment/closure activities were completed between February 12 and May 28, 2004. On February 12, 2004, the sediment in Tank 285 was sampled for disposal characterization and analyzed for Target Compound List (TCL) VOCs, semivolatile organic compounds (SVOCs), and pesticides/herbicides, Target Analyte List (TAL) metals, polychlorinated biphenyls (PCBs), TRPH, pH, corrosivity, total cyanide and total sulfide. Results indicated that lead would potentially exceed the toxicity leachate characteristic limit of 5 mg/L; therefore, an additional sediment sample was collected on March 31, 2004 and analyzed

for lead using the Toxicity Characteristic Leaching Procedure (TCLP). The results indicated that the TCLP lead concentration was less than the detection limit. The liquid in the Tank 285 sump was also sampled for disposal characterization and analyzed for TCL VOCs, SVOCs, and TCL pesticides/herbicides, TAL metals, PCBs, TRPH, pH, corrosivity, total cyanide, total sulfide, and ignitability. Based on the laboratory analytical results, both the solid and liquid wastes associated with Tank 285 were characterized as non-hazardous petroleum-contaminated for disposal purposes.

Abandonment/closure activities were completed on February 24, 2004. Included in these activities were the use of a backhoe to remove three 55-gallon drums of solids from Tank 285, utilization of a diaphragm pump to remove one 55-gallon drum of liquid material from Tank 285 and its associated sump, use of a pressure washer to decontaminate Tank 285, and use of a diaphragm pump to transfer decontamination water into one 55-gallon drum. The sump and sump pump were removed following decontamination, the sump was containerized in one 55-gallon drum, and the sump pump was disposed as construction debris. In addition, the inlet pipe to Tank 285 and the discharge pipe from the sump were cut and capped with PVC caps, and the concrete floor of Tank 285 was demolished with a backhoe to allow for proper drainage. Tank 285 and the hollowed-out sump area were backfilled and machine compacted to grade with certified clean fill. Finally, all personal protective equipment was containerized into one 55-gallon drum for disposal.

Environmental Remediation Services, Inc. transported the seven 55-gallon drums for disposal on May 28, 2004. Five of the drums contained solids and were disposed at Chesser Island Road Landfill, a Subtitle D solid waste disposal facility in Folkston, Georgia. The two drums containing liquids were disposed by Industrial Water Services on June 24, 2004.

Detailed information on the abandonment/closure activities including photographs, laboratory results, waste disposal profiles, and certificates of disposal are provided in the Abandon/Close-In Place Tank 285 Letter Report (CH2M Hill, 2004).

TABLE 3-1

SUMMARY OF POSITIVE DETECTIONS IN SOIL
TANK 285, NORTH FUEL FARM AREA
SAMPLING AND ANALYSIS REPORT
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

Analyte	Units	FDEP SCTL		CEF-285-SB-001	CEF-285-SB-002	CEF-285-SB-002a
		Residential Direct Exposure[1]	Leachability to Groundwater[2]			
ACETONE	ug/kg	780000	2800	**104**	**145**	NA
METHYLENE CHLORIDE	ug/kg	16000	20	14 U	**30.2**	14 U
TOTAL PETROLEUM HYDROCARBONS	mg/kg	340	340	10 U	9.6 U	NA

Analyte	Units	FDEP SCTL		CEF-285-SB-003		CEF-285-SB-004
		Residential Direct Exposure[1]	Leachability to Groundwater[2]	Sample	Duplicate	
ACETONE	ug/kg	780000	2800	**57.9 J**	74 U	**98.2**
METHYLENE CHLORIDE	ug/kg	16000	20	13 U	15 U	14 U
TOTAL PETROLEUM HYDROCARBONS	mg/kg	340	340	10 U	10 U	**10.7**

U = Not detected at associated detection limit.
NA = Not analyzed.
1 Florida Department of Environmental Protection (FDEP) Residential Soil Cleanup Target Level (SCTL), FAC Chapter 62-777 (FDEP, 1999).
2 FDEP Leachability to Groundwater SCTL, FAC Chapter 62-777 (FDEP, 1999).
Highlighted value indicates exceedance of regulatory criteria.
Bolded value indicates exceedance of method detection limit.

TABLE 3-2

SUMMARY OF POSITIVE DETECTIONS IN GROUNDWATER
TANK 285, NORTH FUEL FARM AREA
SAMPLING AND ANALYSIS REPORT
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

Analyte	Units	FDEP GCTL[1]	IBDS[2]	CEF-285-GW-01[3]	CEF-285-GW-DU01[3]	CEF-076-GW-N107S-01[4]
LEAD	ug/l	15	5.35	**41.6**	**53.8**	2.8 U
CHLOROFORM	ug/l	5.7	NC	**0.86 J**	**0.95 J**	NA

Analyte	Units	FDEP GCTL[1]	IBDS[2]	CEF-076-GW-DUP8-01[4]	CEF-076-GW-N107S-01F[4]	CEF-076-GW-DUP8-01F[4]
LEAD	ug/l	15	5.35	3 U	1.2 U	1.2 U
CHLOROFORM	ug/l	5.7	NC	NA	NA	NA

U = Not detected at associated detection limit.
J = Estimated value.
NA =Not analyzed.
NC = No criterion.
1 Florida Department of Environmental Protection (FDEP) Groundwater Cleanup Target Level (GCTL), FAC Chapter 62-777 (FDEP, 1999).
2 NAS Cecil Field Inorganic Background Data Set (HLA, 1998).
3 Temporary monitoring well.
4 Permanent monitoring well.
Highlighted value indicates exceedance of regulatory criterion.
Bolded value indicates exceedance method detection limit.

4.0 CONCLUSIONS AND RECOMMENDATIONS

Field investigations determined that no contamination was present in soil or groundwater at the Tank 285 site and that the site did not represent a risk to human health or the environment. Approved procedures were followed to properly abandon/close in place Tank 285, and all liquid and solid contents from the tank and its associated sump were properly disposed at certified waste disposal sites. The site was backfilled and compacted to grade with certified clean fill.

Based on these conclusions, the recommendation for the Tank 285 site is no further action.

REFERENCES

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TtNUS, 2003a. Phase I Sampling and Analysis Work Plan, Waste Oil Tank 285, North Fuel Farm, Naval Air Station Cecil Field, Jacksonville, Florida, March.

TtNUS, 2003b. Phase II Sampling and Analysis Work Plan, Waste Oil Tank 285, North Fuel Farm, Naval Air Station Cecil Field, Jacksonville, Florida, May.

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APPENDIX A

HISTORICAL DRAWINGS

INTERIM REMEDIATION WORK PLAN
SOIL AND FREE PRODUCT REMOVAL ACTIVITIES
AT NORTH FUEL FARM

FOR

NAVAL AIR STATION CECIL FIELD

JACKSONVILLE, FLORIDA

Prepared for

DEPARTMENT OF THE NAVY
SOUTHERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND

Under Contract No. N62467-93-D-0936

Prepared by

BECHTEL ENVIRONMENTAL, INC.
OAK RIDGE, TENNESSEE

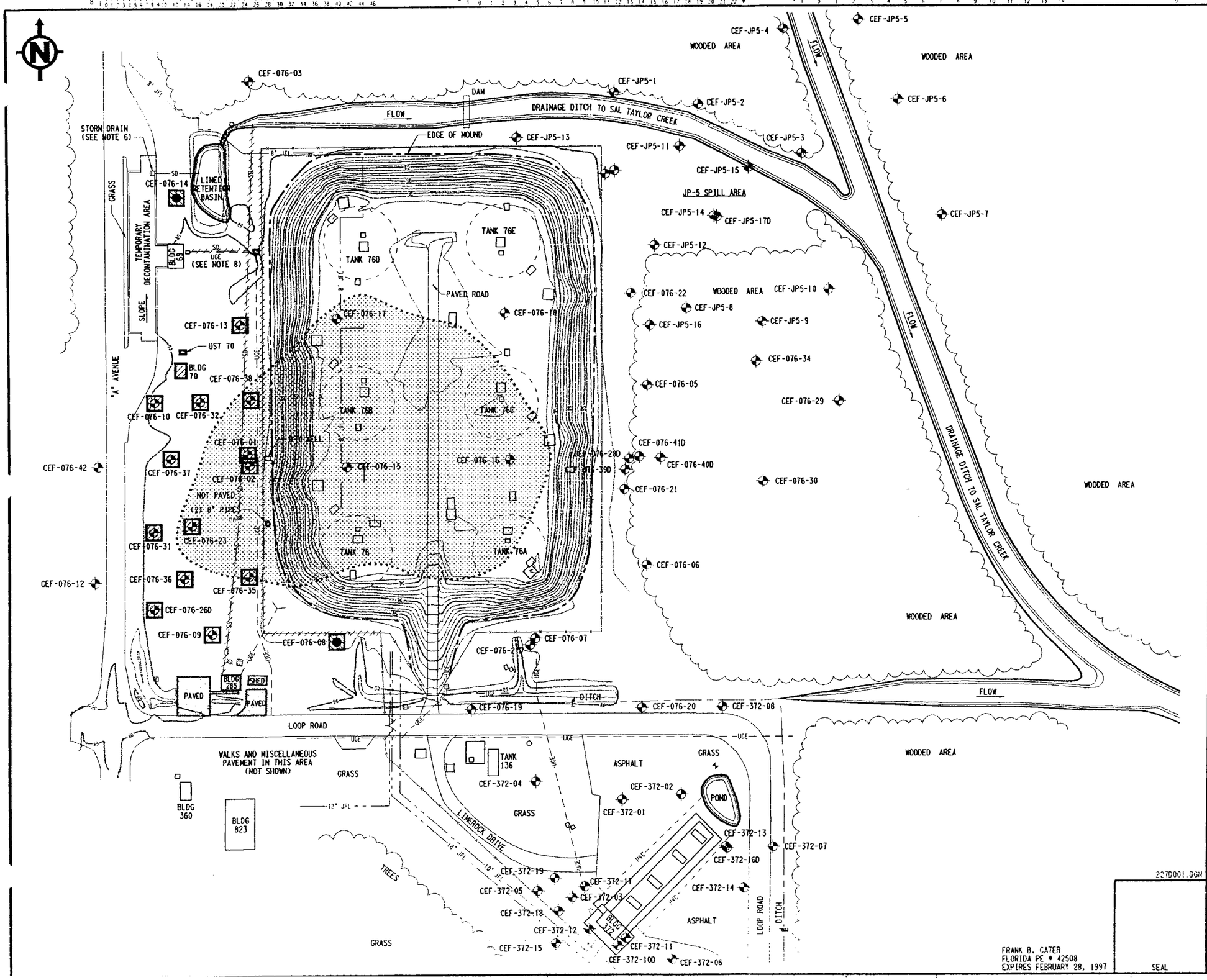
JULY 1995

Revision 0

Bechtel Job No. 22567

Prepared by:	Frank B Cater Project Engineer/Scientist	7-13-95 Date
Approved:	J. R. Manning Senior Project Scientist	7-14-95 Date
Approved:	V. H. Bauer by J.R. Manning Project Manager	7-14-95 Date
Approved:	Navy Contracting Officer	7-26-95 Date

PB0006



NOTES

1. DEMOLITION SHALL BE PERFORMED IN ACCORDANCE WITH TECHNICAL SPECIFICATION 22567-001-SP000-017, AND TECHNICAL SPECIFICATION 22567-001-SP000-005, UNLESS NOTED OTHERWISE.
2. MONITORING WELL ABANDONMENT SHALL BE PERFORMED IN ACCORDANCE WITH TECHNICAL SPECIFICATION 22567-001-SP000-022, UNLESS NOTED OTHERWISE. (SEE WORK PLAN)
3. ITEMS TO POTENTIALLY BE DEMOLISHED WILL BE DETERMINED BY BECHTEL BASED ON HEADSPACE READING DURING EXCAVATION.
4. SITE INFORMATION WAS PROVIDED TO BECHTEL BY THE NAVY.
5. SEE "INTERIM REMEDIATION WORK PLAN, SOIL AND FREE PRODUCT REMOVAL, NORTH FUEL FARM, NAS CECIL FIELD, JACKSONVILLE, FL" FOR SCOPE OF WORK.
6. IF EXISTING TRUCK STAND AREA IS USED AS DECONTAMINATION PAD, STORM DRAIN WILL BE RENDERED INOPERABLE DURING DECONTAMINATION ACTIVITIES.
7. COORDINATE ALL DEMOLITION WITH THE NAVY IN THE FIELD.
8. COORDINATE REMOVAL/REROUTE OF UGE WITH THE NAVY.

TECHNICAL SPECIFICATIONS

DEMOLITION OF STRUCTURES	22567-001-SP000-017
EXCAVATION OF CONTAMINATED SOIL AND MISCELLANEOUS DEMOLITION	22567-001-SP000-005
MONITORING WELL INSTALLATION AND ABANDONMENT	22567-001-SP000-022

REFERENCE DRAWINGS

EXCAVATION PLAN	227-DD000-002

LEGEND

- MONITORING WELL TO BE ABANDONED
- MONITORING WELL TO POTENTIALLY BE ABANDONED
- STRUCTURE OR AREA TO BE DEMOLISHED
- STRUCTURE OR AREA TO POTENTIALLY BE DEMOLISHED
- APPROXIMATE AREA OF FREE PRODUCT PLUME
- EXISTING FENCE
- PORTION OF FENCE TO BE REMOVED (FIELD COORDINATE)
- SD — EXISTING STORM DRAIN (4")
- SD — EXISTING STORM DRAIN (4") TO BE REMOVED
- SS — EXISTING SANITARY SEWER (4") TO BE REMOVED
- UGE — EXISTING UNDERGROUND ELECTRIC
- JFL — EXISTING JET FUEL LINE
- EXISTING TELEPHONE
- CB — EXISTING CATCH BASIN
- JP-5 STORAGE TANK (UNDERGROUND)
- POWER POLE
- ABOVE GROUND ELECTRIC TRANSFORMER

0 50 100 150
1"=50'

NO.	DATE	REVISIONS	BY	CHKR	DESIGN SUPV	ENGR	PROJ ENGR	MICRO FLMG
B	5/14/95	ISSUE FOR WORK PLAN	JED	RM	DL			
A	5/22/95	ISSUE FOR REVIEW	RLP	RTI	FBC	KK		

SCALE 1"=50'

BECHTEL ENVIRONMENTAL INC.
OAK RIDGE, TENNESSEE

DEPARTMENT OF THE NAVY
SOUTHERN DIVISION NAVAL FACILITIES ENGINEERING COMMAND
CHARLESTON, SOUTH CAROLINA

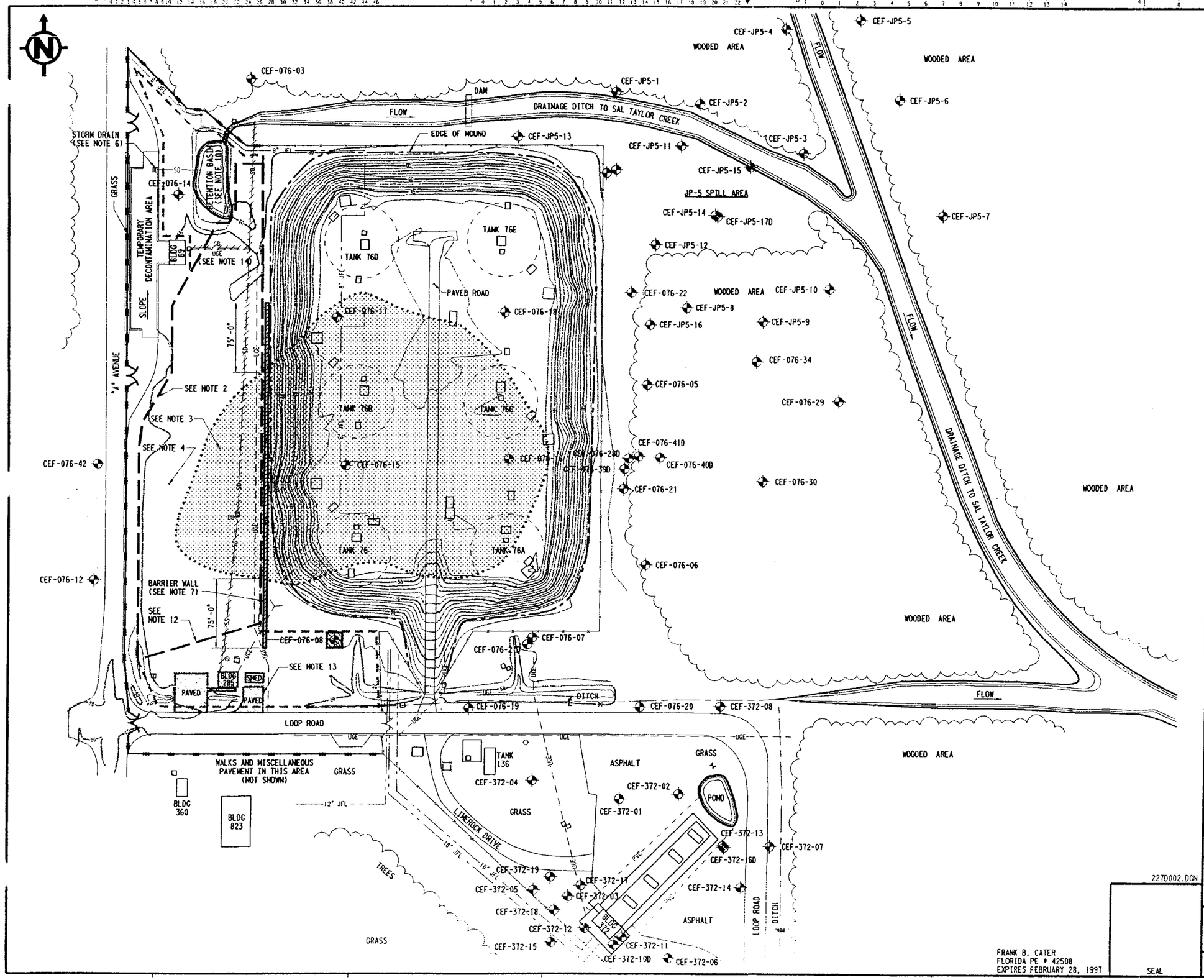
NAS CECIL FIELD
NORTH FUEL FARM
DEMOLITION PLAN

JOB NO.	DRAWING NO.	REV
22567	227-DD000-001	B

2270001.DGN

FRANK B. CATER
FLORIDA PE # 42508
EXPIRES FEBRUARY 28, 1997

SEAL



NOTES

1. EXCAVATION SHALL BE PERFORMED IN ACCORDANCE WITH TECHNICAL SPECIFICATION 22567-001-SP000-005, UNLESS NOTED OTHERWISE.
2. EXCAVATION ADJACENT TO EXISTING STRUCTURES SHALL BE 10' FROM THE FOOTPRINT OF THE BUILDING. EXCAVATION ADJACENT TO EXISTING ROAD SHALL BE NO CLOSER THAN 5' TO EDGE OF ROAD.
3. EXCAVATION WITHIN THE FREE PRODUCT PLUME AND OTHER AREAS WHERE FREE PRODUCT IS ENCOUNTERED, SHALL BE TO 5' DEPTH. USE SKIMMER PUMP TO RECOVER FREE PRODUCT.
4. EXCAVATION OUTSIDE THE FREE PRODUCT PLUME SHALL BE TO 1' BELOW TOP OF GROUNDWATER TABLE, IF HEADSPACE READINGS ARE GREATER THAN 50 PPM.
5. EXCAVATED MATERIAL WILL BE LOADED AND TRANSPORTED TO SITE 3 AS DIRECTED BY CECIL FIELD NAS PERSONNEL.
6. MAINTAIN MINIMUM 2v:1h SLOPE ON EXCAVATION SIDEWALL, EXCEPT AT BARRIER WALL.
7. INSTALL 80 MIL HDPE BARRIER WALL TO DEPTH OF 12' BELOW LAND SURFACE. REFER TO WORK PLAN FOR SPECIFIC DETAILS. EXACT LOCATION OF BARRIER WALL TO BE COORDINATED WITH THE NAVY IN THE FIELD.
8. SITE INFORMATION WAS PROVIDED TO BECHTEL BY THE NAVY.
9. IF EXISTING TRUCK STAND AREA IS USED AS DECONTAMINATION PAD, STORM DRAIN WILL BE RENDERED INOPERABLE DURING DECONTAMINATION ACTIVITIES.
10. EXCAVATION OF RETENTION AREA REQUIRES PRIOR APPROVAL OF NAVY. IF AREA IS EXCAVATED REBUILD TO MATCH EXISTING.
11. SEE "INTERIM REMEDIATION WORK PLAN SOIL AND FREE PRODUCT REMOVAL, NORTH FUEL FARM, NAS CECIL FIELD, JACKSONVILLE, FL" FOR ADDITIONAL INFORMATION.
12. ESTIMATED LIMIT, DETERMINE ACTUAL LIMIT IN FIELD BASED ON HEADSPACE LESS THAN 50 PPM.
13. EXCAVATION IN AREAS DENOTED AS POTENTIAL WILL BE COORDINATED AND APPROVED BY THE NAVY, PRIOR TO EXCAVATION IN THESE AREAS.
14. COORDINATE REMOVAL/REROUTE OF UGE WITH THE NAVY.

TECHNICAL SPECIFICATIONS

EXCAVATION OF CONTAMINATED SOIL AND MISCELLANEOUS DEMOLITION	22567-001-SP000-005

REFERENCE DRAWINGS

DEMOLITION PLAN	227-DD000-001

LEGEND

- MONITORING WELL TO POTENTIALLY BE ABANDONED
- STRUCTURE OR AREA TO POTENTIALLY BE DEMOLISHED
- APPROXIMATE AREA OF FREE PRODUCT PLUME
- EXISTING FENCE (COORDINATE WITH NAVY)
- FENCE TO BE INSTALLED (COORDINATE WITH NAVY)
- INITIAL EXCAVATION LIMITS
- POTENTIAL EXCAVATION LIMITS (SEE NOTE 13)
- SD — EXISTING STORM DRAIN (4")
- SD — EXISTING STORM DRAIN (4") TO BE REMOVED
- SS — EXISTING SANITARY SEWER (4") TO BE REMOVED
- UGE — EXISTING UNDERGROUND ELECTRIC
- JFL — EXISTING JET FUEL LINE
- CB — EXISTING CATCH BASIN
- JP-5 STORAGE TANK (UNDERGROUND)
- POWER POLE
- ABOVE GROUND ELECTRIC TRANSFORMER

0 50 100 150

1"=50'

NO.	DATE	REVISIONS	BY	CHKR	MEASUR SUPV	ENGR	PROJ ENGR	MICRO FILMD
B	7/14/95	ISSUE FOR WORK PLAN	JED	JRM	[illegible]	[illegible]		
A	5/22/95	ISSUE FOR REVIEW	RLP	RTJ	FBC	KK		

SCALE 1"=50"

BECHTEL ENVIRONMENTAL INC.
OAK RIDGE, TENNESSEE

DEPARTMENT OF THE NAVY
SOUTHERN DIVISION NAVAL FACILITIES ENGINEERING COMMAND
CHARLESTON, SOUTH CAROLINA

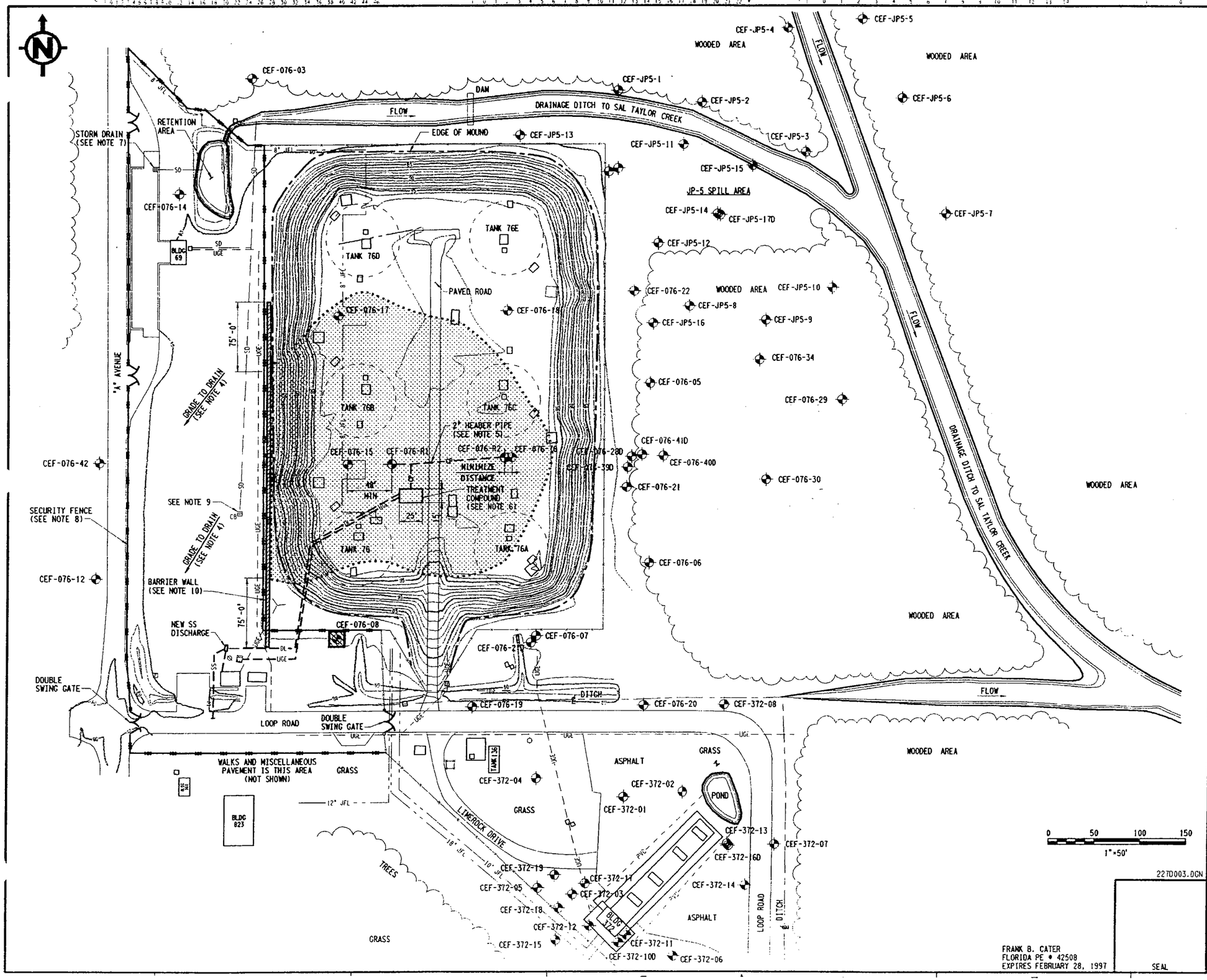
NAS CECIL FIELD
NORTH FUEL FARM
EXCAVATION PLAN - SOIL REMOVAL

JOB NO.	DRAWING NO.	REV
22567	227-DD000-002	B

227D002.DGN

FRANK B. CATER
FLORIDA PE # 42508
EXPIRES FEBRUARY 28, 1997

SEAL



FRANK B. CATER
FLORIDA PE # 42508
EXPIRES FEBRUARY 28, 1997

SEAL

NOTES

1. BACKFILL SHALL BE PERFORMED IN ACCORDANCE TECHNICAL SPECIFICATION 22567-001-SP000-006, UNLESS NOTED OTHERWISE.
2. SITE INFORMATION WAS PROVIDED TO BECHTEL BE THE NAVY.
3. BACKFILL SHALL BE COMPACTED TO 85% MAXIMUM DENSITY UNLESS OTHERWISE DIRECTED BY THE NAVY.
4. MATCH EXISTING GRADE IN BACKFILLED AREA. SLOPE TO DRAIN AS INDICATED.
5. TREATMENT SYSTEM PIPING WILL BE PLACED 18" BELOW GRADE, UNLESS ABOVE GROUND PIPING IS APPROVED BY NAS CECIL FIELD PERSONNEL.
6. FINAL TREATMENT COMPOUND LOCATION IS TO BE COORDINATED IN THE FIELD (SEE DRAWING 227-DD000-005 FOR COMPOUND LAYOUT). PROVIDE 6" 3000psi 6x6 6/6 WWF REINFORCED PAD WITH THICKENED EDGE FOOTER.
7. AT COMPLETION OF DECONTAMINATION ACTIVITIES, RESTORE STORM DRAIN.
8. FINAL SITE RESTORATION OF SECURITY FENCE SHALL BE COORDINATED WITH CECIL FIELD PERSONNEL. FENCING ALONG ROAD IS TO BE REMOVED, UNLESS DIRECTED OTHERWISE.
9. PROVIDE NEW CATCH BASIN AND STORM DRAIN TO MATCH EXISTING BASIN AND DRAIN REMOVED DURING EXCAVATION.
10. FINAL "STICK UP" OF BARRIER WALL TO BE FIELD COORDINATED WITH THE NAVY.
11. NEW RECOVERY WELL LOCATIONS ARE DEPENDENT UPON FIELD CONDITIONS. LOCATE NEW WELLS AS CLOSE TO EXISTING WELLS 15 AND 16 AS POSSIBLE.
12. PROVIDE 480v/60Hz/3 PHASE POWER TO COMPOUND AREA. POWER HOOK UP, CABLES, AND TRENCHING WILL BE IN ACCORDANCE WITH LOCAL CODES AND PROVIDED BY A LICENSED ELECTRICIAN.

TECHNICAL SPECIFICATIONS

UNCONTAMINATED EARTHWORK	22567-001-SP000-006

REFERENCE DRAWINGS

DEMOLITION PLAN	227-DD000-001
EXCAVATION PLAN	227-DD000-002

LEGEND

- NEW RECOVERY WELL
- EXISTING MONITORING WELL
- MONITORING WELL TO POTENTIALLY BE ABANDONED
- STRUCTURE OR AREA TO POTENTIALLY BE DEMOLISHED
- AREA OF FREE PRODUCT
- EXISTING FENCE
- FENCE TO BE INSTALLED
- CP — TREATMENT SYSTEM CONVEYANCE PIPE
- UGE — UNDERGROUND ELECTRIC LINE
- SD — 6" STORM DRAIN
- DL — TREATMENT SYSTEM DISCHARGE LINE
- SS — SANITARY SEWER LINE

NO.	DATE	REVISIONS	BY	CHKR	DESIGN ENGR	ENGR	PROJ ENGR	MICRO FLMD
B	7/14/95	ISSUED FOR WORK PLAN	KK	JRP	FBC	FBC		
A	5/27/95	ISSUE FOR REVIEW	RLP	KK	FBC	RLI		

SCALE 1"=50'

BECHTEL ENVIRONMENTAL INC.
OAK RIDGE, TENNESSEE

DEPARTMENT OF THE NAVY
SOUTHERN DIVISION NAVAL FACILITIES ENGINEERING COMMAND
CHARLESTON, SOUTH CAROLINA

NAS CECIL FIELD
NORTH FUEL FARM - SITE RESTORATION PLAN
AND BIO SLURPING REMEDIATION LAYOUT

JOB NO.	DRAWING NO.	REV
22567	227-DD000-003	B

CONTAMINATION ASSESSMENT REPORT ADDENDUM
NORTH FUEL FARM SITE

NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

Unit Identification Code: N60200

Contract No.: N62467-89-D-0317/090

Prepared by:

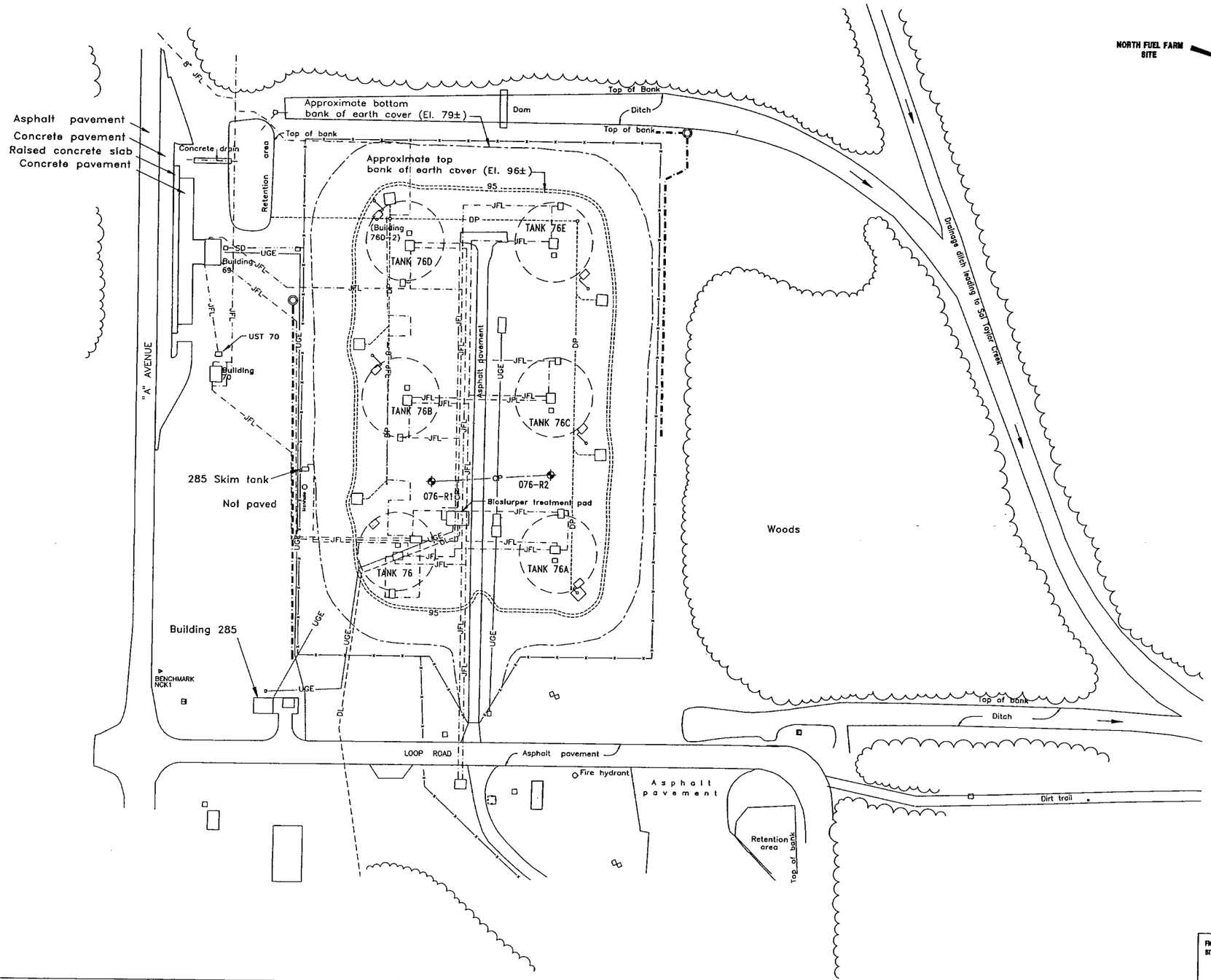
ABB Environmental Services, Inc.
2590 Executive Center Circle, East
Tallahassee, Florida 32301

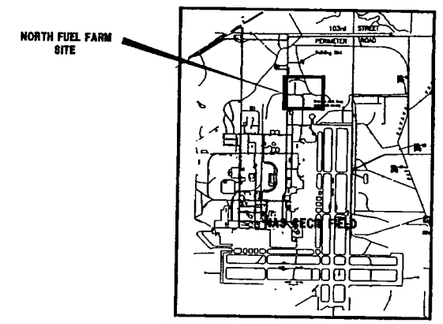
Prepared for:

Department of the Navy, Southern Division
Naval Facilities Engineering Command
2155 Eagle Drive
North Charleston, South Carolina 29418

Bryan Kizer, Code 1842, Engineer-in-Charge

April 1996





LEGEND

- Fence
- SD — Existing storm drain (4-inch)
- SS — Existing sanitary sewer (4-inch)
- JFL — Existing jet fuel line
- UGE — Existing underground electric
- CP — New treatment conveyance pipe
- DL — New treatment discharge line
- DP — Polyvinyl chloride drain pipe
- Recovery trench and sump
- Indicates flow direction in ditch
- 076-R1 — Recovery well designation

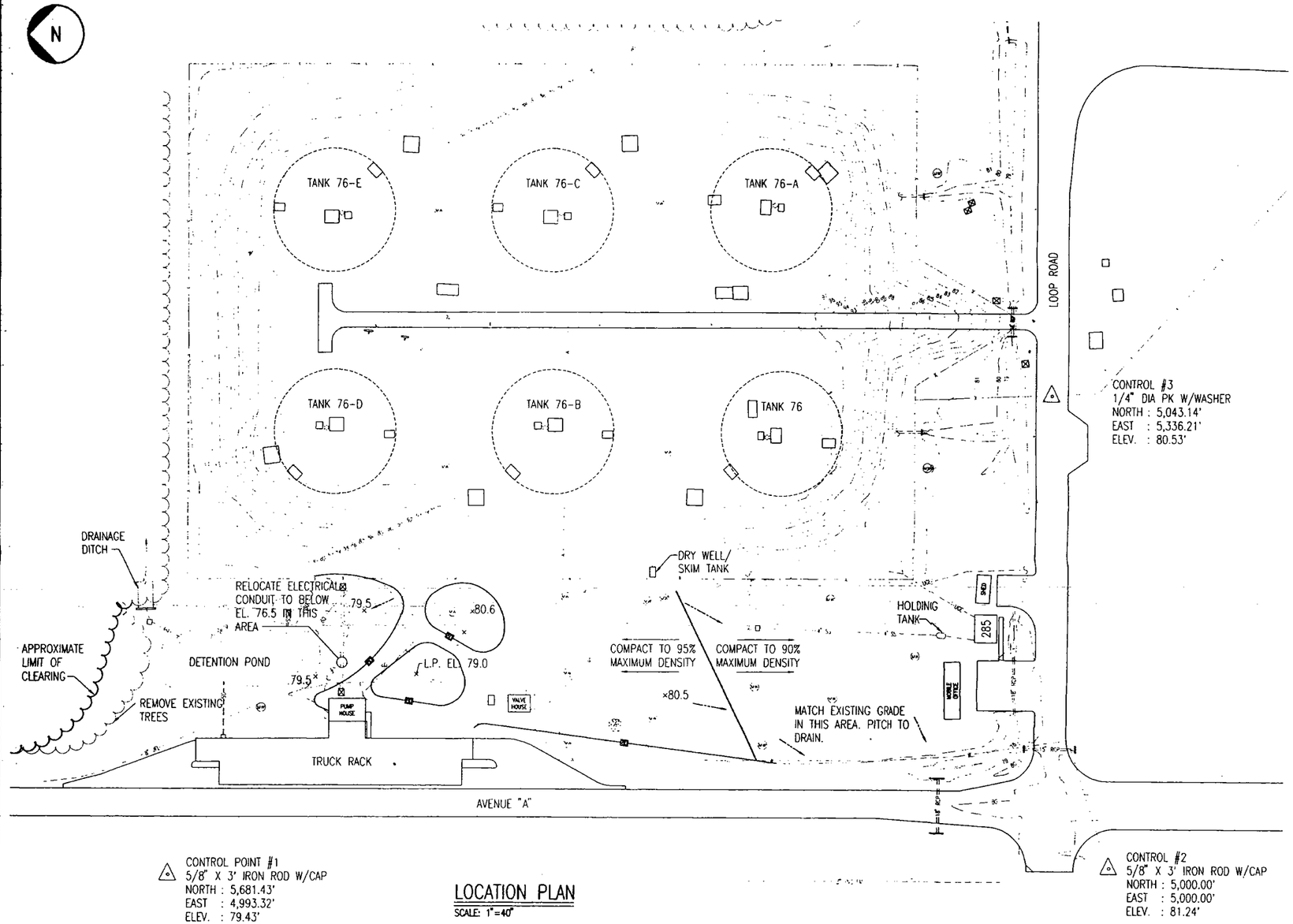
N

SCALE: 1 INCH = 50 FEET

FIGURE 1-1
SITE VICINITY MAP

CONTAMINANT ASSESSMENT REPORT ADDENDUM (REVISION 1)

NORTH FUEL FARM SITE
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA



LOCATION PLAN

SCALE: 1"=40'

GENERAL NOTES:

HORIZONTAL & VERTICAL CONTROL:

1. SURVEYING & MAPPING PERFORMED BY ENTERPRISE ENGINEERING, INC. IN NOVEMBER, 1994.
2. HORIZONTAL CONTROL IS BASED ON AN ARBITRARY COORDINATE SYSTEM ESTABLISHED BY ENTERPRISE ENGINEERING, AND DEFINED BY CONTROL POINTS 1, 2, & 3.
3. VERTICAL DATUM IS BASED ON BM #33 EL. 77.89 AS INDICATED ON P.W. DRAWING NO. SU-012.
4. UTILITIES ARE SHOWN IN THEIR APPROXIMATE LOCATION. CONTRACTOR MUST FIELD VERIFY LOCATION AND EXISTANCE OF ALL UTILITIES IN AREA TO BE EXCAVATED PRIOR TO ANY EXCAVATION.

WORK NOTES:

1. BACKFILL MATERIAL SHALL BE WELL GRADED GRANULAR SOIL CONFORMING TO FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (FDOT STANDARD SPEC. 1991 EDITION) SECTION 120-7 MATERIALS FOR EMBANKMENT. BACKFILL SHALL BE PLACED IN LAYERS NOT MORE THAN 12 INCHES COMPACTED THICKNESS. BACKFILL SHALL BE COMPACTED TO THE DENSITY SHOWN. MAXIMUM DENSITY OF MATERIAL SHALL BE DETERMINED BY ASTM D698.
2. FINISHED GRADES ARE TOP OF COMPACTED BACKFILL.
3. EXISTING STORM DRAIN AND LEACH FIELD SERVING BUILDING 285 SHALL BE REMOVED. CONTRACTOR SHALL PROVIDE AND INSTALL ALL NECESSARY PIPING AND APPURTENANCES TO CONNECT BUILDING 285 TO THE FACILITIES EXISTING SEWER SYSTEM.
4. EXISTING MONITORING WELLS SHALL BE ABANDONED IN PLACE.
5. CONTRACTOR SHALL PROVIDE APPROVED EROSION AND SEDIMENT CONTROL PLAN.

LEGEND:

- PROVIDE DRAINAGE PATH
- EXISTING FENCING
- EXISTING CONTOURS
- EXISTING SANITARY SEWER
- EXISTING SANITARY FORCED MAIN
- EXISTING JET FUEL PIPING
- EXISTING UNDERGROUND ELECTRIC
- EXISTING TREE LINE
- EXISTING CULVERTS
- EXISTING MONITORING WELLS
- EXISTING LIGHT POLES
- EXISTING POST INDICATOR VALVE
- EXISTING TREE
- EXISTING CATCH BASIN
- EXISTING ELECTRICAL PULL BOX

COORDINATE TABLE:

CONTROL POINTS:

POINT	NORTHING	EASTING	ELEVATION
CONTROL POINT #1	5,000.00	5,000.00	81.24'
CONTROL POINT #2	5,681.43	4,993.32	79.43'
CONTROL POINT #3	5,043.14	5,336.21	80.53'

PIPING POINTS: (SEE SHEET M-2)

POINT	NORTHING	EASTING
PITI-1	5,767.67	5,059.64
PRTI-2	5,703.84	5,136.70
TRTI-3	5,696.67	5,136.70
JFLE-4	5,696.67	5,152.70
JFLE-5	5,664.47	5,184.90

PIPING POINTS: (SEE SHEET M-2)

POINT	NORTHING	EASTING
JFLG-6	5,664.47	5,244.20
JFLE-7	5,664.47	5,314.28
JFLA-8	5,594.47	5,314.28
JFLE-9	5,594.47	5,289.28
JFLT-10	5,551.69	5,289.28
JFLT-11	5,515.10	5,289.28
JFLE-12	5,494.47	5,289.28
JFLA-13	5,484.47	5,309.28
JFLE-14	5,474.47	5,289.28
JFLT-15	5,393.81	5,289.28

PIPING POINTS: (SEE SHEET M-2)

POINT	NORTHING	EASTING
JFLT-16	5,357.30	5,289.28
JFLE-17	5,327.47	5,289.28
JFLA-18	5,317.47	5,309.28
JFLE-19	5,307.47	5,289.28
JFLT-20	5,258.09	5,289.28
JFLE-21	5,258.09	5,325.50

GRAPHIC SCALE

40 0 40 80

SCALE: 1"=40'

CHECK GRAPHIC SCALE BEFORE USING

REV.	DESCRIPTION	PREP BY	DATE	APPRV'D

ENTERPRISE ENGINEERING, INC. ANCHORAGE, AK. BRUNSWICK, MC

DEPARTMENT OF THE NAVY — NAVAL FACILITIES ENGINEERING COMMAND — SOUTHERN DIVISION CHARLESTON, S.C. — JACKSONVILLE, FLA.

NAS CECIL FIELD

PIPELINE RELOCATION COORDINATION & LAYOUT PLAN

RECORD DRAWING DATE

CONT. NO. N62467-

DRAWING SIZE: D

SPEC. NO. 08-

CONTRACT CONTR. NO. N62467-

TRAFFIC DRAWING NO.

SHEET OF

C-1

REMEDIAL ACTION PLAN
NORTH FUEL FARM SITE

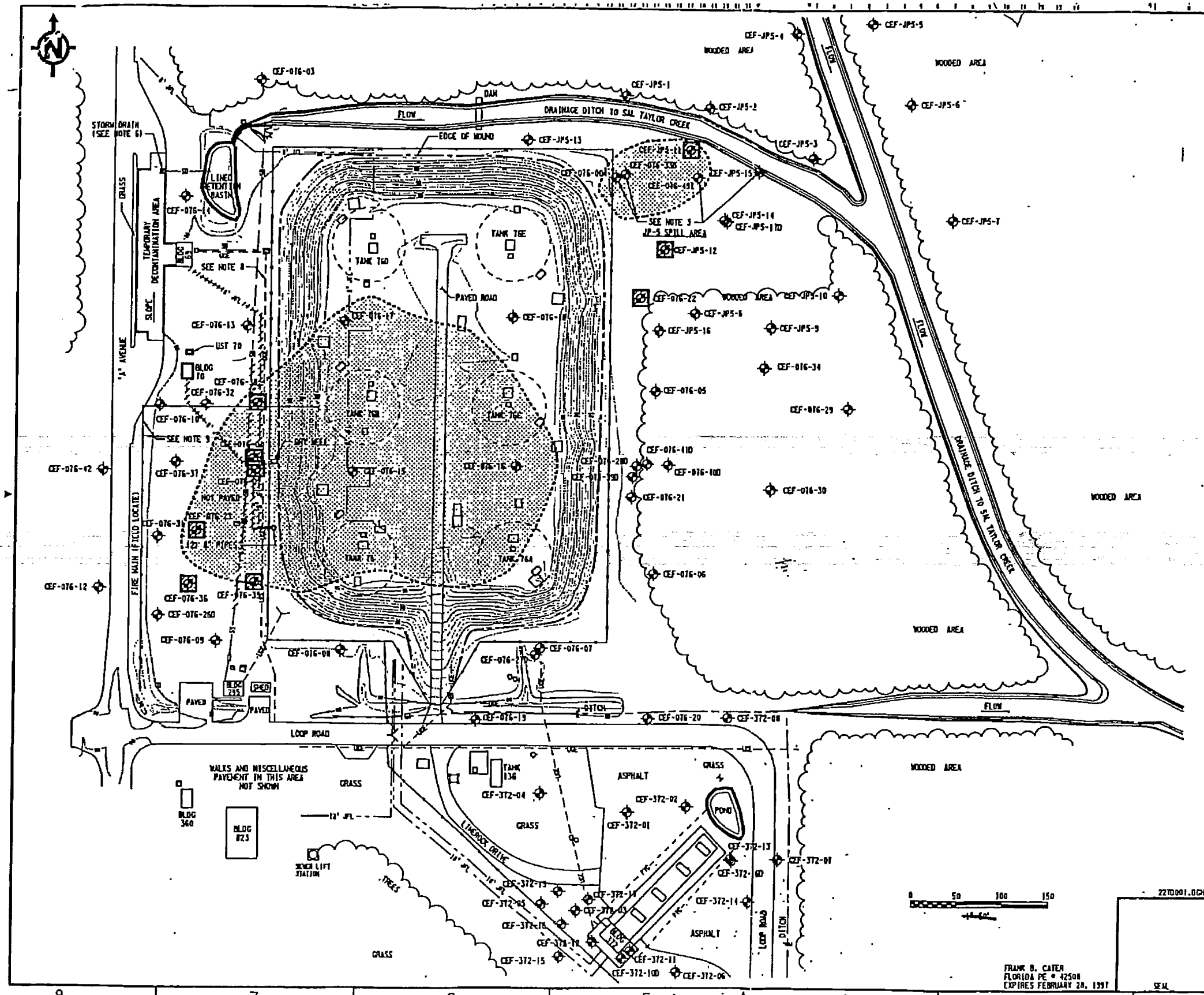
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

UNIT IDENTIFICATION CODE: N60200
CONTRACT NO.: N62467-89-D-0317/124

JANUARY 1997

SOUTHERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
NORTH CHARLESTON, SOUTH CAROLINA
29419-9010

PRINTED ON RECYCLED PAPER



NOTES

1. DEMOLITION SHALL BE PERFORMED IN ACCORDANCE WITH TECHNICAL SPECIFICATION 22567-001-SP000-017, AND TECHNICAL SPECIFICATION 22567-001-SP000-005, UNLESS NOTED OTHERWISE.
2. MONITORING WELL ABANDONMENT SHALL BE PERFORMED IN ACCORDANCE WITH TECHNICAL SPECIFICATION 22567-001-SP000-022, UNLESS NOTED OTHERWISE. (SEE WORK PLAN)
3. MONITORING WELLS THAT ARE INDICATED TO REMAIN, BUT FALL WITHIN LIMITS OF EXCAVATION WILL BE PROTECTED FROM DAMAGE. DO NOT EXCAVATE WITHIN 5 FEET IN ANY DIRECTION OF NOTED MONITORING WELLS.
4. SITE INFORMATION WAS PROVIDED TO BECHTEL BY THE NAVY.
5. SEE "INTERIM REMEDIATION WORK PLAN, SOIL AND FREE PRODUCT REMOVAL, NORTH FUEL FARM, NAS CECIL FIELD, JACKSONVILLE, FL" FOR ADDITIONAL INFORMATION. SEE ALSO MEETING MINUTES AND SCOPE REVISION DOCUMENT BASED ON AUGUST MEETING.
6. IF EXISTING TRUCK STAND AREA IS USED AS DECONTAMINATION PAD, STORM DRAIN WILL BE RENDERED INOPERABLE DURING DECONTAMINATION ACTIVITIES.
7. COORDINATE ALL DEMOLITION WITH THE NAVY IN THE FIELD.
8. COORDINATE REMOVAL/REROUTE OF UGE WITH THE NAVY IF REQUIRED FOR THIS LINE.
9. COORDINATE ANY RE-ROUTE OR SERVICE INTERRUPTION WITH ROICC AND FIRE DEPARTMENT.

TECHNICAL SPECIFICATIONS

DEMOLITION OF STRUCTURES	22567-001-SP000-017
EXCAVATION OF CONTAMINATED SOIL AND MISCELLANEOUS DEMOLITION	22567-001-SP000-005
MONITORING WELL INSTALLATION AND ABANDONMENT	22567-001-SP000-022

REFERENCE DRAWINGS

EXCAVATION PLAN	227-00000-002

LEGEND

- MONITORING WELL TO BE ABANDONED
- EXISTING MONITORING WELL
- STRUCTURE TO BE DEMOLISHED
- APPROXIMATE AREA OF FREE PRODUCT PLUME
- EXISTING FENCE
- EXISTING STORM DRAIN (4")
- EXISTING STORM DRAIN (4") TO BE REMOVED
- EXISTING SANITARY SEWER (4") TO BE REMOVED
- EXISTING UNDERGROUND ELECTRIC
- EXISTING UNDERGROUND FIRE MAIN (WATER)
- EXISTING JET FUEL LINE
- EXISTING JET FUEL LINE TO BE REMOVED
- EXISTING TELEPHONE
- EXISTING CATCH BASIN
- JP-5 STORAGE TANK (UNDERGROUND)
- POWER POLE
- ABOVE GROUND ELECTRIC TRANSFORMER

NO.	DATE	REVISIONS	BY	DWN	DSGN	CHKD	APPD
2	11/7/96	REVISED SCOPE PER NAVY DIRECTION	JCB	MEH	JBM	FBC	FBC
1	7/31/96	ISSUED FOR CONSTRUCTION	JCB	RTJ	FBC	FBC	JBM

SCALE 1"=50'

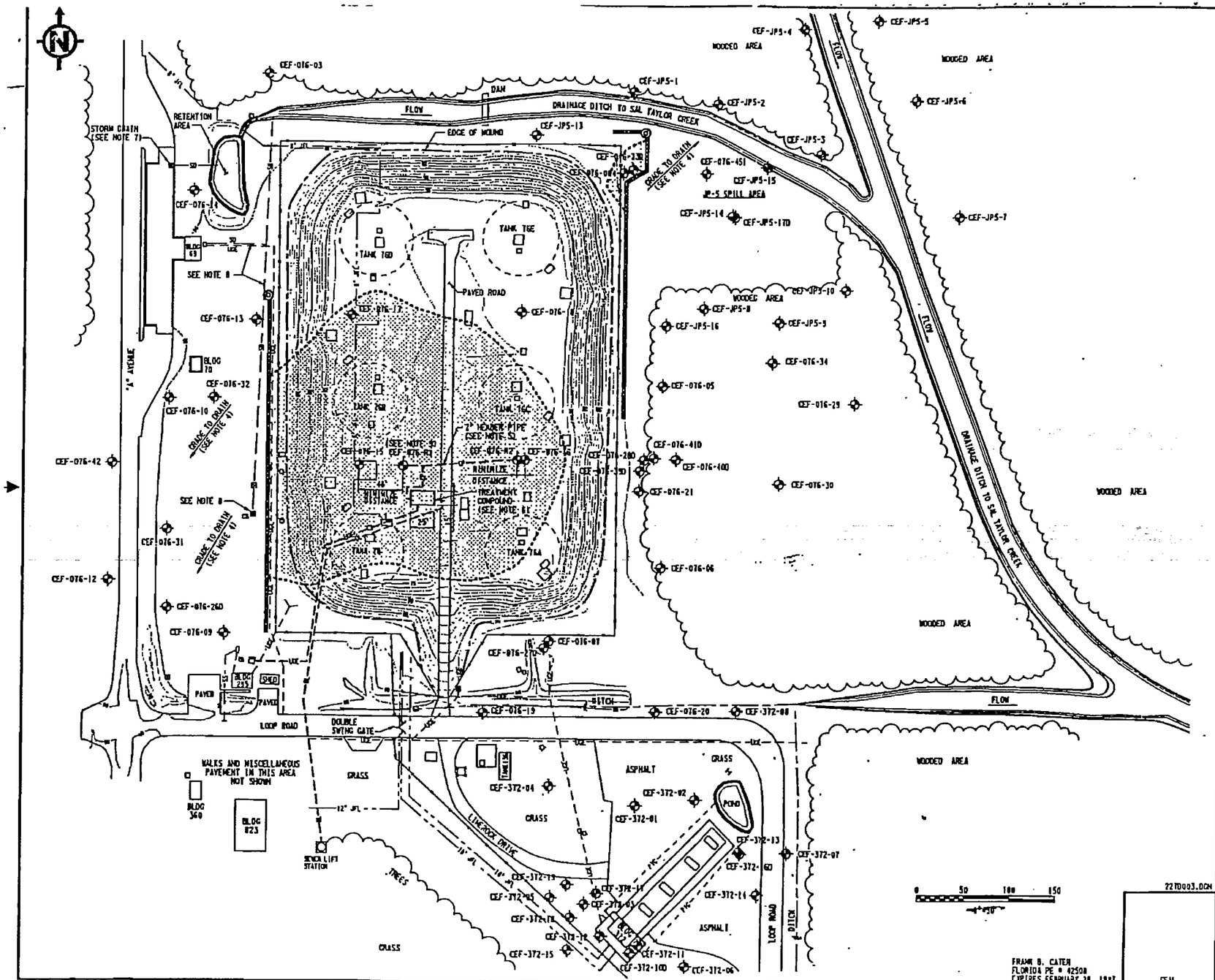
BECHTEL ENVIRONMENTAL INC.
OAK RIDGE, TENNESSEE

DEPARTMENT OF THE NAVY
SOUTHERN DIVISION NAVAL FACILITIES ENGINEERING COMMAND
CHARLESTON, SOUTH CAROLINA

NAS CECIL FIELD
NORTH FUEL FARM
DEMOLITION PLAN

JOB NO.	DRAWING NO.	REV
22567	227-DD000-001	1

22 X 34



NOTES

1. BACKFILL SHALL BE PERFORMED IN ACCORDANCE TECHNICAL SPECIFICATION 22567-001-SP000-006, UNLESS NOTED OTHERWISE.
2. SITE INFORMATION WAS PROVIDED TO BECHTEL BY THE NAVY.
3. BACKFILL SHALL BE COMPACTED TO 85% MAXIMUM DENSITY UNLESS OTHERWISE DIRECTED BY THE NAVY.
4. MATCH EXISTING GRADE IN BACKFILLED AREA. SLOPE TO DRAIN AS INDICATED.
5. TREATMENT SYSTEM PIPING WILL BE PLACED 18" BELOW GRADE, UNLESS ABOVE GROUND PIPING IS APPROVED BY NAS CECIL FIELD PERSONNEL.
6. FINAL TREATMENT COMPOUND LOCATION IS TO BE COORDINATED IN THE FIELD (SEE DRAWING 227-00000-005 FOR COMPOUND LAYOUT). PROVIDE 6" 3000psi 6x6 6/6 WWF REINFORCED PAD WITH THICKENED EDGE FOOTER.
7. AT COMPLETION OF DECONTAMINATION ACTIVITIES, RESTORE STORM DRAIN.
8. PROVIDE NEW CATCH BASIN AND STORM DRAIN TO MATCH EXISTING BASIN AND DRAIN REMOVED DURING EXCAVATION, IF DIRECTED BY THE NAVY.
9. NEW RECOVERY WELL LOCATIONS ARE DEPENDENT UPON FIELD CONDITIONS. LOCATE NEW WELLS AS CLOSE TO EXISTING WELLS 15 AND 16 AS POSSIBLE.
10. PROVIDE 480V/60Hz/3 PHASE POWER TO COMPOUND AREA. POWER HOOK UP, CABLES, AND TRENCHING WILL BE IN ACCORDANCE WITH LOCAL CODES AND PROVIDED BY A LICENSED ELECTRICIAN.

TECHNICAL SPECIFICATIONS

UNCONTAMINATED EARTHWORK	22567-001-SP000-00

REFERENCE DRAWINGS

DEMOLITION PLAN	227-00000-001
EXCAVATION PLAN	227-00000-002

LEGEND

- EXISTING MONITORING WELL
- NEW RECOVERY WELL
- NEW 3'-0" DIAMETER SUMP
- NEW RECOVERY TRENCH
- APPROXIMATE AREA OF FREE PRODUCT PLUME
- EXISTING FENCE
- EXISTING STORM DRAIN (4")
- EXISTING SANITARY SEWER (4")
- EXISTING JET FUEL LINE
- EXISTING UNDERGROUND ELECTRIC
- NEW UNDERGROUND ELECTRIC
- NEW TREATMENT SYSTEM CONVEYANCE PIPE
- NEW TREATMENT SYSTEM DISCHARGE LINE
- EXISTING CATCH BASIN
- JP-5 STORAGE TANK (UNDERGROUND)
- ABOVE GROUND ELECTRIC TRANSFORMER

NO.	DATE	REVISIONS	BY	CHKD		CHKD		
1	11/7/97	REVISED SCOPE PER NAVY DIRECTION	JCB	RDH	JBM	FBC	FBC	
0	7/31/97	ISSUED FOR CONSTRUCTION	GLL	RTJ	FBC	FBC	JBM	

SCALE 1"=50'

BECHTEL ENVIRONMENTAL INC.
OAK RIDGE, TENNESSEE

DEPARTMENT OF THE NAVY
SOUTHERN DIVISION NAVAL FACILITIES ENGINEERING COMMAND
CHARLESTON, SOUTH CAROLINA

NAS CECIL FIELD
NORTH FUEL FARM - SITE RESTORATION PLAN
AND BIO SLURPING REMEDIATION LAYOUT

JOB NO.	DRAWING NO.	REV
22567	227-DD000-003	1

22 X 34

APPENDIX B

LABORATORY ANALYTICAL DATA

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO:	**M. SPERANZA**	**DATE:**	**JULY 28, 2003**
FROM:	**BERNARD F SPADA III**	**COPIES:**	**DV FILE**

SUBJECT: **ORGANIC DATA VALIDATION- VOC/PAH/TPH**
CTO 078, NAS CECIL FIELD
SDG F17331

SAMPLES: 2/Aqueous

CEF-285-GW-01 CEF-285-GW-DU01

5/Soil

CEF-285-SS-001-3 CEF-285-SS-002-3 CEF-285-SS-003-3
CEF-285-SS-004-1.5 CEF-285-SS-DU01

OVERVIEW

The sample set for CTO 078, NAS Cecil Field, SDG F17331 consists of four (4) environmental soil samples, one (1) environmental aqueous sample, and two (2) field duplicates. All samples were analyzed for volatile organic compounds (VOC), polynuclear aromatic hydrocarbons (PAH) and total petroleum hydrocarbons (TPH). The aqueous samples were also analyzed for ethylene dibromide (EDB). The field duplicate pairs included with this SDG are CEF-285-GW-DU01 / CEF-285-GW-01 and CEF-285-SS-DU01 / CEF-285-SS-003-3.

The samples were collected by TetraTech NUS on April 10, 2003 and analyzed by Accutest Laboratories. All analyses were conducted in accordance with Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria using SW-846 Methods 8260B and 8310, EPA Method 504.1, and Florida PRO analytical and reporting protocols. The data contained in this SDG were validated with regard to the following parameters:

* • Data completeness
* • Holding times
* • Initial and continuing calibration
* • Laboratory method and field quality control blank results
* • Field Duplicate Precision
* • Detection Limits

The symbol (*) indicates that all quality control criteria were met for this parameter. Problems affecting data quality are discussed below; documentation supporting these findings is presented in Appendix C. Qualified Analytical results are presented in Appendix A.

VOC

The soil continuing calibrations performed on April 14 and 16 exceeded the 25% difference quality control criteria for methylene chloride. No qualifications were made on this basis because all results for methylene chloride were non-detected.

The aqueous continuing calibration performed on April 17 at 10:24 exceeded the 25% difference quality control criteria for dichlorodifluoromethane, chloromethane, and bromomethane. No qualifications were made on this basis because the results for the aforementioned compounds were non-detected.

The MS/MSD of sample F17336-1 exceeded the percent recovery quality control criteria for acetone and methylene chloride and was below the percent recovery quality control criteria for MTBE. No qualifications were made on this basis because the un-spiked sample was not included in this SDG.

The results for acetone in the field duplicate pair CEF-285-SS-DU01 and CEF-285-SS-003-3 exceeded the 50% relative percent difference quality control criteria. No qualifications were made on this basis because the results were <2X the reporting limit.

Acetone and methylene chloride are suspected laboratory contaminants. Positive results are qualified as estimated (J).

PAH

All samples had a final extract volume of 5mL. This accounts for the elevated reporting limits for all non-detected compounds.

The laboratory reported results to the MDL. All positive results below the reporting limit but > the MDL were qualified as estimated (J) due to uncertainty near the detection limit.

Additional Comments

The laboratory reported to the MDL and not the RL. All positive results below the RL were qualified as estimated (J).

EXECUTIVE SUMMARY

Laboratory Performance Issues: None.

Other Factors Affecting Data Quality: Qualifications were made based on field duplicate imprecision.

The data for these analyses were reviewed with reference to the EPA Functional Guidelines for Organic Data Validation (10/99) and the NFESC guidelines (September, 1999). The text of this report has been formulated to address only those problem areas affecting data quality.

TO: M. SPERANZA – PAGE 3
DATE: JULY 28, 2003

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NFESC guidelines and the Quality Assurance Project Plan (QAPP)."

Tetra Tech NUS
Bernard F Spada III
Chemist/Data Validator

TetraTech NUS
Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Support Documentation

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-285-GW-01		
Lab Sample ID:	F17331-6	**Date Sampled:**	04/10/03
Matrix:	AQ - Ground Water	**Date Received:**	04/11/03
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	NAS Cecil Field-CTO 78		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	B015207.D	1	04/17/03	KW	n/a	n/a	VB670
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	5.0	ug/l	
71-43-2	Benzene	ND	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.50	ug/l	
75-25-2	Bromoform	ND	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.50	ug/l	
75-00-3	Chloroethane	ND	1.0	1.0	ug/l	
67-66-3	Chloroform	0.86	1.0	0.50	ug/l	J
75-15-0	Carbon disulfide	ND	5.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.50	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.70	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	5.0	2.5	ug/l	
74-83-9	Methyl bromide	ND	1.0	1.0	ug/l	
74-87-3	Methyl chloride	ND	1.0	1.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	ND	5.0	2.5	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.50	ug/l	
100-42-5	Styrene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.50	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	

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ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-285-GW-01		
Lab Sample ID:	F17331-6	**Date Sampled:**	04/10/03
Matrix:	AQ - Ground Water	**Date Received:**	04/11/03
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	NAS Cecil Field-CTO 78		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	1.0	0.50	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	ND	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		86-115%
17060-07-0	1,2-Dichloroethane-D4	104%		78-125%
2037-26-5	Toluene-D8	104%		87-113%
460-00-4	4-Bromofluorobenzene	107%		84-117%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-285-GW-DU01		
Lab Sample ID:	F17331-7	**Date Sampled:**	04/10/03
Matrix:	AQ - Ground Water	**Date Received:**	04/11/03
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	NAS Cecil Field-CTO 78		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	B015210.D	1	04/17/03	KW	n/a	n/a	VB670
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	5.0	ug/l	
71-43-2	Benzene	ND	1.0	0.50	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.50	ug/l	
75-25-2	Bromoform	ND	1.0	0.50	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.50	ug/l	
75-00-3	Chloroethane	ND	1.0	1.0	ug/l	
67-66-3	Chloroform	0.95	1.0	0.50	ug/l	J
75-15-0	Carbon disulfide	ND	5.0	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.50	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.50	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	0.50	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.50	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	0.50	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.40	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	0.50	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	0.50	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	0.50	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.70	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.5	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	5.0	2.5	ug/l	
74-83-9	Methyl bromide	ND	1.0	1.0	ug/l	
74-87-3	Methyl chloride	ND	1.0	1.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	1.0	ug/l	
78-93-3	Methyl ethyl ketone	ND	5.0	2.5	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.50	ug/l	
100-42-5	Styrene	ND	1.0	0.50	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.50	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.50	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.50	ug/l	
127-18-4	Tetrachloroethylene	ND	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-285-GW-DU01		
Lab Sample ID:	F17331-7	**Date Sampled:**	04/10/03
Matrix:	AQ - Ground Water	**Date Received:**	04/11/03
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	NAS Cecil Field-CTO 78		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	1.0	0.50	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.50	ug/l	
1330-20-7	Xylene (total)	ND	3.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	104%		86-115%
17060-07-0	1,2-Dichloroethane-D4	107%		78-125%
2037-26-5	Toluene-D8	102%		87-113%
460-00-4	4-Bromofluorobenzene	109%		84-117%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-285-GW-01		
Lab Sample ID:	F17331-6	**Date Sampled:**	04/10/03
Matrix:	AQ - Ground Water	**Date Received:**	04/11/03
Method:	EPA 504.1 EPA 504	**Percent Solids:**	n/a
Project:	NAS Cecil Field-CTO 78		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	ST19558.D	1	04/15/03	SM	04/15/03	OP7340	GST697
Run #2							

	Initial Volume	Final Volume
Run #1	37.6 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.019	0.0093	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	99%		60-140%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-285-GW-DU01		
Lab Sample ID:	F17331-7	**Date Sampled:**	04/10/03
Matrix:	AQ - Ground Water	**Date Received:**	04/11/03
Method:	EPA 504.1 EPA 504	**Percent Solids:**	n/a
Project:	NAS Cecil Field-CTO 78		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	ST19561.D	1	04/15/03	SM	04/15/03	OP7340	GST697
Run #2							

	Initial Volume	Final Volume
Run #1	38.9 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.018	0.0090	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	99%		60-140%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-285-SS-001-3		
Lab Sample ID:	F17331-1	**Date Sampled:**	04/10/03
Matrix:	SO - Soil	**Date Received:**	04/11/03
Method:	SW846 8260B	**Percent Solids:**	82.8
Project:	NAS Cecil Field-CTO 78		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	K012413.D	1	04/14/03	NAF	n/a	n/a	VK512
Run #2							

	Initial Weight
Run #1	4.29 g
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	104	70	35	ug/kg	
71-43-2	Benzene	ND	7.0	2.8	ug/kg	
75-27-4	Bromodichloromethane	ND	7.0	2.8	ug/kg	
75-25-2	Bromoform	ND	7.0	2.8	ug/kg	
108-90-7	Chlorobenzene	ND	7.0	2.8	ug/kg	
75-00-3	Chloroethane	ND	7.0	4.2	ug/kg	
67-66-3	Chloroform	ND	7.0	2.8	ug/kg	
75-15-0	Carbon disulfide	ND	7.0	2.8	ug/kg	
56-23-5	Carbon tetrachloride	ND	7.0	2.8	ug/kg	
75-34-3	1,1-Dichloroethane	ND	7.0	2.8	ug/kg	
75-35-4	1,1-Dichloroethylene	ND	7.0	2.8	ug/kg	
107-06-2	1,2-Dichloroethane	ND	7.0	2.8	ug/kg	
78-87-5	1,2-Dichloropropane	ND	7.0	2.8	ug/kg	
124-48-1	Dibromochloromethane	ND	7.0	2.8	ug/kg	
156-59-2	cis-1,2-Dichloroethylene	ND	7.0	2.8	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	7.0	2.8	ug/kg	
156-60-5	trans-1,2-Dichloroethylene	ND	7.0	2.8	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	7.0	2.8	ug/kg	
100-41-4	Ethylbenzene	ND	7.0	2.8	ug/kg	
591-78-6	2-Hexanone	ND	35	14	ug/kg	
108-10-1	4-Methyl-2-pentanone	ND	35	14	ug/kg	
74-83-9	Methyl bromide	ND	7.0	2.8	ug/kg	
74-87-3	Methyl chloride	ND	7.0	2.8	ug/kg	
75-09-2	Methylene chloride	ND	14	7.0	ug/kg	
78-93-3	Methyl ethyl ketone	ND	35	14	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	7.0	2.8	ug/kg	
100-42-5	Styrene	ND	7.0	2.8	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	7.0	2.8	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	7.0	2.8	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	7.0	2.8	ug/kg	
127-18-4	Tetrachloroethylene	ND	7.0	2.8	ug/kg	
108-88-3	Toluene	ND	7.0	2.8	ug/kg	

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-285-SS-001-3		
Lab Sample ID:	F17331-1	**Date Sampled:**	04/10/03
Matrix:	SO - Soil	**Date Received:**	04/11/03
Method:	SW846 8260B	**Percent Solids:**	82.8
Project:	NAS Cecil Field-CTO 78		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	7.0	2.8	ug/kg	
75-01-4	Vinyl chloride	ND	7.0	2.8	ug/kg	
1330-20-7	Xylene (total)	ND	21	5.6	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		70-130%
2037-26-5	Toluene-D8	101%		79-121%
460-00-4	4-Bromofluorobenzene	100%		77-133%
17060-07-0	1,2-Dichloroethane-D4	93%		72-133%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-285-SS-002-3		
Lab Sample ID:	F17331-2	**Date Sampled:**	04/10/03
Matrix:	SO - Soil	**Date Received:**	04/11/03
Method:	SW846 8260B	**Percent Solids:**	81.6
Project:	NAS Cecil Field-CTO 78		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	K012453.D	1	04/16/03	NAF	n/a	n/a	VK514
Run #2							

	Initial Weight
Run #1	6.10 g
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	145	50	25	ug/kg	
71-43-2	Benzene	ND	5.0	2.0	ug/kg	
75-27-4	Bromodichloromethane	ND	5.0	2.0	ug/kg	
75-25-2	Bromoform	ND	5.0	2.0	ug/kg	
108-90-7	Chlorobenzene	ND	5.0	2.0	ug/kg	
75-00-3	Chloroethane	ND	5.0	3.0	ug/kg	
67-66-3	Chloroform	ND	5.0	2.0	ug/kg	
75-15-0	Carbon disulfide	ND	5.0	2.0	ug/kg	
56-23-5	Carbon tetrachloride	ND	5.0	2.0	ug/kg	
75-34-3	1,1-Dichloroethane	ND	5.0	2.0	ug/kg	
75-35-4	1,1-Dichloroethylene	ND	5.0	2.0	ug/kg	
107-06-2	1,2-Dichloroethane	ND	5.0	2.0	ug/kg	
78-87-5	1,2-Dichloropropane	ND	5.0	2.0	ug/kg	
124-48-1	Dibromochloromethane	ND	5.0	2.0	ug/kg	
156-59-2	cis-1,2-Dichloroethylene	ND	5.0	2.0	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	5.0	2.0	ug/kg	
156-60-5	trans-1,2-Dichloroethylene	ND	5.0	2.0	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	5.0	2.0	ug/kg	
100-41-4	Ethylbenzene	ND	5.0	2.0	ug/kg	
591-78-6	2-Hexanone	ND	25	10	ug/kg	
108-10-1	4-Methyl-2-pentanone	ND	25	10	ug/kg	
74-83-9	Methyl bromide	ND	5.0	2.0	ug/kg	
74-87-3	Methyl chloride	ND	5.0	2.0	ug/kg	
75-09-2	Methylene chloride [b]	30.2	10	5.0	ug/kg	
78-93-3	Methyl ethyl ketone	ND	25	10	ug/kg	
1634-04-4	**Methyl Tert Butyl Ether**	ND	5.0	2.0	ug/kg	
100-42-5	Styrene	ND	5.0	2.0	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	5.0	2.0	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	5.0	2.0	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	5.0	2.0	ug/kg	
127-18-4	Tetrachloroethylene	ND	5.0	2.0	ug/kg	
108-88-3	Toluene	ND	5.0	2.0	ug/kg	

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF-285-SS-002-3		
Lab Sample ID:	F17331-2	**Date Sampled:**	04/10/03
Matrix:	SO - Soil	**Date Received:**	04/11/03
Method:	SW846 8260B	**Percent Solids:**	81.6
Project:	NAS Cecil Field-CTO 78		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	5.0	2.0	ug/kg	
75-01-4	Vinyl chloride	ND	5.0	2.0	ug/kg	
1330-20-7	Xylene (total)	ND	15	4.0	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		70-130%
2037-26-5	Toluene-D8	104%		79-121%
460-00-4	4-Bromofluorobenzene	120%		77-133%
17060-07-0	1,2-Dichloroethane-D4	98%		72-133%

(a) Sample introduction performed using method 5030A.
(b) Suspected laboratory contaminant.

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-285-SS-003-3		
Lab Sample ID:	F17331-3	**Date Sampled:**	04/10/03
Matrix:	SO - Soil	**Date Received:**	04/11/03
Method:	SW846 8260B	**Percent Solids:**	82.1
Project:	NAS Cecil Field-CTO 78		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	K012425.D	1	04/15/03	NAF	n/a	n/a	VK513
Run #2							

	Initial Weight
Run #1	4.79 g
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	57.9	64	32	ug/kg	J
71-43-2	Benzene	ND	6.4	2.5	ug/kg	
75-27-4	Bromodichloromethane	ND	6.4	2.5	ug/kg	
75-25-2	Bromoform	ND	6.4	2.5	ug/kg	
108-90-7	Chlorobenzene	ND	6.4	2.5	ug/kg	
75-00-3	Chloroethane	ND	6.4	3.8	ug/kg	
67-66-3	Chloroform	ND	6.4	2.5	ug/kg	
75-15-0	Carbon disulfide	ND	6.4	2.5	ug/kg	
56-23-5	Carbon tetrachloride	ND	6.4	2.5	ug/kg	
75-34-3	1,1-Dichloroethane	ND	6.4	2.5	ug/kg	
75-35-4	1,1-Dichloroethylene	ND	6.4	2.5	ug/kg	
107-06-2	1,2-Dichloroethane	ND	6.4	2.5	ug/kg	
78-87-5	1,2-Dichloropropane	ND	6.4	2.5	ug/kg	
124-48-1	Dibromochloromethane	ND	6.4	2.5	ug/kg	
156-59-2	cis-1,2-Dichloroethylene	ND	6.4	2.5	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	6.4	2.5	ug/kg	
156-60-5	trans-1,2-Dichloroethylene	ND	6.4	2.5	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	6.4	2.5	ug/kg	
100-41-4	Ethylbenzene	ND	6.4	2.5	ug/kg	
591-78-6	2-Hexanone	ND	32	13	ug/kg	
108-10-1	4-Methyl-2-pentanone	ND	32	13	ug/kg	
74-83-9	Methyl bromide	ND	6.4	2.5	ug/kg	
74-87-3	Methyl chloride	ND	6.4	2.5	ug/kg	
75-09-2	Methylene chloride	ND	13	6.4	ug/kg	
78-93-3	Methyl ethyl ketone	ND	32	13	ug/kg	
1634-04-4	**Methyl Tert Butyl Ether**	ND	6.4	2.5	ug/kg	
100-42-5	Styrene	ND	6.4	2.5	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	6.4	2.5	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	6.4	2.5	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	6.4	2.5	ug/kg	
127-18-4	Tetrachloroethylene	ND	6.4	2.5	ug/kg	
108-88-3	Toluene	ND	6.4	2.5	ug/kg	

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-285-SS-003-3		
Lab Sample ID:	F17331-3	**Date Sampled:**	04/10/03
Matrix:	SO - Soil	**Date Received:**	04/11/03
Method:	SW846 8260B	**Percent Solids:**	82.1
Project:	NAS Cecil Field-CTO 78		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	6.4	2.5	ug/kg	
75-01-4	Vinyl chloride	ND	6.4	2.5	ug/kg	
1330-20-7	Xylene (total)	ND	19	5.1	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		70-130%
2037-26-5	Toluene-D8	102%		79-121%
460-00-4	4-Bromofluorobenzene	105%		77-133%
17060-07-0	1,2-Dichloroethane-D4	95%		72-133%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-285-SS-004-1.5		
Lab Sample ID:	F17331-4	**Date Sampled:**	04/10/03
Matrix:	SO - Soil	**Date Received:**	04/11/03
Method:	SW846 8260B	**Percent Solids:**	83.6
Project:	NAS Cecil Field-CTO 78		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	K012410.D	1	04/14/03	NAF	n/a	n/a	VK512
Run #2							

	Initial Weight
Run #1	4.41 g
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	98.2	68	34	ug/kg	
71-43-2	Benzene	ND	6.8	2.7	ug/kg	
75-27-4	Bromodichloromethane	ND	6.8	2.7	ug/kg	
75-25-2	Bromoform	ND	6.8	2.7	ug/kg	
108-90-7	Chlorobenzene	ND	6.8	2.7	ug/kg	
75-00-3	Chloroethane	ND	6.8	4.1	ug/kg	
67-66-3	Chloroform	ND	6.8	2.7	ug/kg	
75-15-0	Carbon disulfide	ND	6.8	2.7	ug/kg	
56-23-5	Carbon tetrachloride	ND	6.8	2.7	ug/kg	
75-34-3	1,1-Dichloroethane	ND	6.8	2.7	ug/kg	
75-35-4	1,1-Dichloroethylene	ND	6.8	2.7	ug/kg	
107-06-2	1,2-Dichloroethane	ND	6.8	2.7	ug/kg	
78-87-5	1,2-Dichloropropane	ND	6.8	2.7	ug/kg	
124-48-1	Dibromochloromethane	ND	6.8	2.7	ug/kg	
156-59-2	cis-1,2-Dichloroethylene	ND	6.8	2.7	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	6.8	2.7	ug/kg	
156-60-5	trans-1,2-Dichloroethylene	ND	6.8	2.7	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	6.8	2.7	ug/kg	
100-41-4	Ethylbenzene	ND	6.8	2.7	ug/kg	
591-78-6	2-Hexanone	ND	34	14	ug/kg	
108-10-1	4-Methyl-2-pentanone	ND	34	14	ug/kg	
74-83-9	Methyl bromide	ND	6.8	2.7	ug/kg	
74-87-3	Methyl chloride	ND	6.8	2.7	ug/kg	
75-09-2	Methylene chloride	ND	14	6.8	ug/kg	
78-93-3	Methyl ethyl ketone	ND	34	14	ug/kg	
1634-04-4	**Methyl Tert Butyl Ether**	ND	6.8	2.7	ug/kg	
100-42-5	Styrene	ND	6.8	2.7	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	6.8	2.7	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	6.8	2.7	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	6.8	2.7	ug/kg	
127-18-4	Tetrachloroethylene	ND	6.8	2.7	ug/kg	
108-88-3	Toluene	ND	6.8	2.7	ug/kg	

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-285-SS-004-1.5		
Lab Sample ID:	F17331-4	**Date Sampled:**	04/10/03
Matrix:	SO - Soil	**Date Received:**	04/11/03
Method:	SW846 8260B	**Percent Solids:**	83.6
Project:	NAS Cecil Field-CTO 78		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	6.8	2.7	ug/kg	
75-01-4	Vinyl chloride	ND	6.8	2.7	ug/kg	
1330-20-7	Xylene (total)	ND	20	5.4	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	96%		70-130%
2037-26-5	Toluene-D8	106%		79-121%
460-00-4	4-Bromofluorobenzene	111%		77-133%
17060-07-0	1,2-Dichloroethane-D4	93%		72-133%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-285-SS-DU01		
Lab Sample ID:	F17331-5	**Date Sampled:**	04/10/03
Matrix:	SO - Soil	**Date Received:**	04/11/03
Method:	SW846 8260B	**Percent Solids:**	83.3
Project:	NAS Cecil Field-CTO 78		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	K012416.D	1	04/14/03	NAF	n/a	n/a	VK512
Run #2							

	Initial Weight
Run #1	4.06 g
Run #2	

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	74	37	ug/kg	
71-43-2	Benzene	ND	7.4	3.0	ug/kg	
75-27-4	Bromodichloromethane	ND	7.4	3.0	ug/kg	
75-25-2	Bromoform	ND	7.4	3.0	ug/kg	
108-90-7	Chlorobenzene	ND	7.4	3.0	ug/kg	
75-00-3	Chloroethane	ND	7.4	4.4	ug/kg	
67-66-3	Chloroform	ND	7.4	3.0	ug/kg	
75-15-0	Carbon disulfide	ND	7.4	3.0	ug/kg	
56-23-5	Carbon tetrachloride	ND	7.4	3.0	ug/kg	
75-34-3	1,1-Dichloroethane	ND	7.4	3.0	ug/kg	
75-35-4	1,1-Dichloroethylene	ND	7.4	3.0	ug/kg	
107-06-2	1,2-Dichloroethane	ND	7.4	3.0	ug/kg	
78-87-5	1,2-Dichloropropane	ND	7.4	3.0	ug/kg	
124-48-1	Dibromochloromethane	ND	7.4	3.0	ug/kg	
156-59-2	cis-1,2-Dichloroethylene	ND	7.4	3.0	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	7.4	3.0	ug/kg	
156-60-5	trans-1,2-Dichloroethylene	ND	7.4	3.0	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	7.4	3.0	ug/kg	
100-41-4	Ethylbenzene	ND	7.4	3.0	ug/kg	
591-78-6	2-Hexanone	ND	37	15	ug/kg	
108-10-1	4-Methyl-2-pentanone	ND	37	15	ug/kg	
74-83-9	Methyl bromide	ND	7.4	3.0	ug/kg	
74-87-3	Methyl chloride	ND	7.4	3.0	ug/kg	
75-09-2	Methylene chloride	ND	15	7.4	ug/kg	
78-93-3	Methyl ethyl ketone	ND	37	15	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	7.4	3.0	ug/kg	
100-42-5	Styrene	ND	7.4	3.0	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	7.4	3.0	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	7.4	3.0	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	7.4	3.0	ug/kg	
127-18-4	Tetrachloroethylene	ND	7.4	3.0	ug/kg	
108-88-3	Toluene	ND	7.4	3.0	ug/kg	

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-285-SS-DU01		
Lab Sample ID:	F17331-5	**Date Sampled:**	04/10/03
Matrix:	SO - Soil	**Date Received:**	04/11/03
Method:	SW846 8260B	**Percent Solids:**	83.3
Project:	NAS Cecil Field-CTO 78		

VOA TCL List

CAS No.	Compound	Result	RL	MDL	Units	Q
79-01-6	Trichloroethylene	ND	7.4	3.0	ug/kg	
75-01-4	Vinyl chloride	ND	7.4	3.0	ug/kg	
1330-20-7	Xylene (total)	ND	22	5.9	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		70-130%
2037-26-5	Toluene-D8	104%		79-121%
460-00-4	4-Bromofluorobenzene	107%		77-133%
17060-07-0	1,2-Dichloroethane-D4	98%		72-133%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-285-GW-01		
Lab Sample ID:	F17331-6	**Date Sampled:**	04/10/03
Matrix:	AQ - Ground Water	**Date Received:**	04/11/03
Method:	EPA 8310 SW846 3510C	**Percent Solids:**	n/a
Project:	NAS Cecil Field-CTO 78		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EE014532.D	1	04/16/03	SKW	04/15/03	OP7341	GEE628
Run #2							

	Initial Volume	Final Volume
Run #1	990 ml	1.0 ml
Run #2		

Polynuclear Aromatic Hydrocarbons

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	4.0	1.0	ug/l	
208-96-8	Acenaphthylene	ND	4.0	1.0	ug/l	
120-12-7	Anthracene	ND	2.0	1.0	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.20	0.10	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.20	0.10	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.20	0.10	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.20	0.10	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.20	0.10	ug/l	
218-01-9	Chrysene	ND	2.0	1.0	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.20	0.10	ug/l	
206-44-0	Fluoranthene	ND	2.0	0.51	ug/l	
86-73-7	Fluorene	ND	2.0	1.0	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.20	0.10	ug/l	
91-20-3	Naphthalene	ND	2.0	0.51	ug/l	
90-12-0	1-Methylnaphthalene	ND	2.0	0.51	ug/l	
91-57-6	2-Methylnaphthalene	ND	2.0	0.51	ug/l	
85-01-8	Phenanthrene	ND	2.0	1.0	ug/l	
129-00-0	Pyrene	ND	2.0	0.51	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	71%		32-142%
92-94-4	p-Terphenyl	64%		30-128%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-285-GW-DU01		
Lab Sample ID:	F17331-7	**Date Sampled:**	04/10/03
Matrix:	AQ - Ground Water	**Date Received:**	04/11/03
Method:	EPA 8310 SW846 3510C	**Percent Solids:**	n/a
Project:	NAS Cecil Field-CTO 78		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EE014535.D	1	04/16/03	SKW	04/15/03	OP7341	GEE628
Run #2							

	Initial Volume	Final Volume
Run #1	950 ml	1.0 ml
Run #2		

Polynuclear Aromatic Hydrocarbons

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	4.2	1.1	ug/l	
208-96-8	Acenaphthylene	ND	4.2	1.1	ug/l	
120-12-7	Anthracene	ND	2.1	1.1	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.21	0.11	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.21	0.11	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.21	0.11	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.21	0.11	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.21	0.11	ug/l	
218-01-9	Chrysene	ND	2.1	1.1	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.21	0.11	ug/l	
206-44-0	Fluoranthene	ND	2.1	0.53	ug/l	
86-73-7	Fluorene	ND	2.1	1.1	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.21	0.11	ug/l	
91-20-3	Naphthalene	ND	2.1	0.53	ug/l	
90-12-0	1-Methylnaphthalene	ND	2.1	0.53	ug/l	
91-57-6	2-Methylnaphthalene	ND	2.1	0.53	ug/l	
85-01-8	Phenanthrene	ND	2.1	1.1	ug/l	
129-00-0	Pyrene	ND	2.1	0.53	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	74%		32-142%
92-94-4	p-Terphenyl	68%		30-128%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

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Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-285-SS-001-3		
Lab Sample ID:	F17331-1	**Date Sampled:**	04/10/03
Matrix:	SO - Soil	**Date Received:**	04/11/03
Method:	EPA 8310 SW846 3550B	**Percent Solids:**	82.8
Project:	NAS Cecil Field-CTO 78		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA015303.D	1	04/15/03	SKW	04/14/03	OP7333	GAA730
Run #2							

	Initial Weight	Final Volume
Run #1	30.7 g	5.0 ml
Run #2		

Polynuclear Aromatic Hydrocarbons

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	790	200	ug/kg	
208-96-8	Acenaphthylene	ND	790	200	ug/kg	
120-12-7	Anthracene	ND	390	200	ug/kg	
56-55-3	Benzo(a)anthracene	ND	390	98	ug/kg	
50-32-8	Benzo(a)pyrene	ND	79	20	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	79	20	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	79	20	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	79	20	ug/kg	
218-01-9	Chrysene	ND	390	98	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	79	20	ug/kg	
206-44-0	Fluoranthene	ND	390	98	ug/kg	
86-73-7	Fluorene	ND	390	200	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	79	20	ug/kg	
91-20-3	Naphthalene	ND	390	98	ug/kg	
90-12-0	1-Methylnaphthalene	ND	390	98	ug/kg	
91-57-6	2-Methylnaphthalene	ND	390	98	ug/kg	
85-01-8	Phenanthrene	ND	390	200	ug/kg	
129-00-0	Pyrene	ND	390	98	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	85%		38-139%
92-94-4	p-Terphenyl	94%		46-149%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-285-SS-002-3		
Lab Sample ID:	F17331-2	**Date Sampled:**	04/10/03
Matrix:	SO - Soil	**Date Received:**	04/11/03
Method:	EPA 8310 SW846 3550B	**Percent Solids:**	81.6
Project:	NAS Cecil Field-CTO 78		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA015304.D	1	04/15/03	SKW	04/14/03	OP7333	GAA730
Run #2							

	Initial Weight	Final Volume
Run #1	30.8 g	5.0 ml
Run #2		

Polynuclear Aromatic Hydrocarbons

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	800	200	ug/kg	
208-96-8	Acenaphthylene	ND	800	200	ug/kg	
120-12-7	Anthracene	ND	400	200	ug/kg	
56-55-3	Benzo(a)anthracene	ND	400	99	ug/kg	
50-32-8	Benzo(a)pyrene	ND	80	20	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	80	20	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	80	20	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	80	20	ug/kg	
218-01-9	Chrysene	ND	400	99	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	80	20	ug/kg	
206-44-0	Fluoranthene	ND	400	99	ug/kg	
86-73-7	Fluorene	ND	400	200	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	80	20	ug/kg	
91-20-3	Naphthalene	ND	400	99	ug/kg	
90-12-0	1-Methylnaphthalene	ND	400	99	ug/kg	
91-57-6	2-Methylnaphthalene	ND	400	99	ug/kg	
85-01-8	Phenanthrene	ND	400	200	ug/kg	
129-00-0	Pyrene	ND	400	99	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	85%		38-139%
92-94-4	p-Terphenyl	94%		46-149%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-285-SS-003-3		
Lab Sample ID:	F17331-3	**Date Sampled:**	04/10/03
Matrix:	SO - Soil	**Date Received:**	04/11/03
Method:	EPA 8310 SW846 3550B	**Percent Solids:**	82.1
Project:	NAS Cecil Field-CTO 78		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA015305.D	1	04/15/03	SKW	04/14/03	OP7333	GAA730
Run #2							

	Initial Weight	Final Volume
Run #1	30.2 g	5.0 ml
Run #2		

Polynuclear Aromatic Hydrocarbons

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	810	200	ug/kg	
208-96-8	Acenaphthylene	ND	810	200	ug/kg	
120-12-7	Anthracene	ND	400	200	ug/kg	
56-55-3	Benzo(a)anthracene	ND	400	100	ug/kg	
50-32-8	Benzo(a)pyrene	ND	81	20	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	81	20	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	81	20	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	81	20	ug/kg	
218-01-9	Chrysene	ND	400	100	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	81	20	ug/kg	
206-44-0	Fluoranthene	ND	400	100	ug/kg	
86-73-7	Fluorene	ND	400	200	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	81	20	ug/kg	
91-20-3	Naphthalene	ND	400	100	ug/kg	
90-12-0	1-Methylnaphthalene	ND	400	100	ug/kg	
91-57-6	2-Methylnaphthalene	ND	400	100	ug/kg	
85-01-8	Phenanthrene	ND	400	200	ug/kg	
129-00-0	Pyrene	ND	400	100	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	97%		38-139%
92-94-4	p-Terphenyl	106%		46-149%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-285-SS-004-1.5		
Lab Sample ID:	F17331-4	**Date Sampled:**	04/10/03
Matrix:	SO - Soil	**Date Received:**	04/11/03
Method:	EPA 8310 SW846 3550B	**Percent Solids:**	83.6
Project:	NAS Cecil Field-CTO 78		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA015306.D	1	04/15/03	SKW	04/14/03	OP7333	GAA730
Run #2							

	Initial Weight	Final Volume
Run #1	30.1 g	5.0 ml
Run #2		

Polynuclear Aromatic Hydrocarbons

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	790	200	ug/kg	
208-96-8	Acenaphthylene	ND	790	200	ug/kg	
120-12-7	Anthracene	ND	400	200	ug/kg	
56-55-3	Benzo(a)anthracene	ND	400	99	ug/kg	
50-32-8	Benzo(a)pyrene	ND	79	20	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	79	20	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	79	20	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	79	20	ug/kg	
218-01-9	Chrysene	ND	400	99	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	79	20	ug/kg	
206-44-0	Fluoranthene	ND	400	99	ug/kg	
86-73-7	Fluorene	ND	400	200	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	79	20	ug/kg	
91-20-3	Naphthalene	ND	400	99	ug/kg	
90-12-0	1-Methylnaphthalene	ND	400	99	ug/kg	
91-57-6	2-Methylnaphthalene	ND	400	99	ug/kg	
85-01-8	Phenanthrene	ND	400	200	ug/kg	
129-00-0	Pyrene	ND	400	99	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	87%		38-139%
92-94-4	p-Terphenyl	95%		46-149%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-285-SS-DU01		
Lab Sample ID:	F17331-5	**Date Sampled:**	04/10/03
Matrix:	SO - Soil	**Date Received:**	04/11/03
Method:	EPA 8310 SW846 3550B	**Percent Solids:**	83.3
Project:	NAS Cecil Field-CTO 78		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA015310.D	1	04/15/03	SKW	04/14/03	OP7333	GAA730
Run #2							

	Initial Weight	Final Volume
Run #1	30.8 g	5.0 ml
Run #2		

Polynuclear Aromatic Hydrocarbons

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	780	190	ug/kg	
208-96-8	Acenaphthylene	ND	780	190	ug/kg	
120-12-7	Anthracene	ND	390	190	ug/kg	
56-55-3	Benzo(a)anthracene	ND	390	97	ug/kg	
50-32-8	Benzo(a)pyrene	ND	78	19	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	78	19	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	78	19	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	78	19	ug/kg	
218-01-9	Chrysene	ND	390	97	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	78	19	ug/kg	
206-44-0	Fluoranthene	ND	390	97	ug/kg	
86-73-7	Fluorene	ND	390	190	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	78	19	ug/kg	
91-20-3	Naphthalene	ND	390	97	ug/kg	
90-12-0	1-Methylnaphthalene	ND	390	97	ug/kg	
91-57-6	2-Methylnaphthalene	ND	390	97	ug/kg	
85-01-8	Phenanthrene	ND	390	190	ug/kg	
129-00-0	Pyrene	ND	390	97	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	82%		38-139%
92-94-4	p-Terphenyl	91%		46-149%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-285-GW-01		
Lab Sample ID:	F17331-6	**Date Sampled:**	04/10/03
Matrix:	AQ - Ground Water	**Date Received:**	04/11/03
Method:	FLORIDA-PRO SW846 3510C	**Percent Solids:**	n/a
Project:	NAS Cecil Field-CTO 78		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP28703.D	1	04/22/03	SM	04/17/03	OP7361	GOP973
Run #2							

	Initial Volume	Final Volume
Run #1	940 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C8-C40)	ND	0.27	0.18	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	59%		51-125%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-285-GW-DU01		
Lab Sample ID:	F17331-7	**Date Sampled:**	04/10/03
Matrix:	AQ - Ground Water	**Date Received:**	04/11/03
Method:	FLORIDA-PRO SW846 3510C	**Percent Solids:**	n/a
Project:	NAS Cecil Field-CTO 78		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP28706.D	1	04/22/03	SM	04/17/03	OP7361	GOP973
Run #2							

	Initial Volume	Final Volume
Run #1	960 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C8-C40)	ND	0.26	0.18	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	52%		51-125%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-285-SS-001-3		
Lab Sample ID:	F17331-1	**Date Sampled:**	04/10/03
Matrix:	SO - Soil	**Date Received:**	04/11/03
Method:	FLORIDA-PRO SW846 3550B	**Percent Solids:**	82.8
Project:	NAS Cecil Field-CTO 78		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP28490.D	1	04/14/03	SM	04/12/03	OP7327	GOP968
Run #2							

	Initial Weight	Final Volume
Run #1	29.1 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C8-C40)	ND	10	7.1	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	96%		57-127%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-285-SS-002-3		
Lab Sample ID:	F17331-2	**Date Sampled:**	04/10/03
Matrix:	SO - Soil	**Date Received:**	04/11/03
Method:	FLORIDA-PRO SW846 3550B	**Percent Solids:**	81.6
Project:	NAS Cecil Field-CTO 78		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP28491.D	1	04/14/03	SM	04/12/03	OP7327	GOP968
Run #2							

	Initial Weight	Final Volume
Run #1	31.9 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C8-C40)	ND	9.6	6.5	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	97%		57-127%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-285-SS-003-3		
Lab Sample ID:	F17331-3	**Date Sampled:**	04/10/03
Matrix:	SO - Soil	**Date Received:**	04/11/03
Method:	FLORIDA-PRO SW846 3550B	**Percent Solids:**	82.1
Project:	NAS Cecil Field-CTO 78		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP28492.D	1	04/14/03	SM	04/12/03	OP7327	GOP968
Run #2							

	Initial Weight	Final Volume
Run #1	29.7 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C8-C40)	ND	10	7.0	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	95%		57-127%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-285-SS-004-1.5		
Lab Sample ID:	F17331-4	**Date Sampled:**	04/10/03
Matrix:	SO - Soil	**Date Received:**	04/11/03
Method:	FLORIDA-PRO SW846 3550B	**Percent Solids:**	83.6
Project:	NAS Cecil Field-CTO 78		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP28494.D	1	04/14/03	SM	04/12/03	OP7327	GOP968
Run #2							

	Initial Weight	Final Volume
Run #1	29.9 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C8-C40)	10.7	10	6.8	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	89%		57-127%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-285-SS-DU01		
Lab Sample ID:	F17331-5	**Date Sampled:**	04/10/03
Matrix:	SO - Soil	**Date Received:**	04/11/03
Method:	FLORIDA-PRO SW846 3550B	**Percent Solids:**	83.3
Project:	NAS Cecil Field-CTO 78		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP28497.D	1	04/14/03	SM	04/12/03	OP7327	GOP968
Run #2							

	Initial Weight	Final Volume
Run #1	29.2 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH (C8-C40)	ND	10	7.0	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	97%		57-127%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO:	**M. SPERANZA**	**DATE:**	**MAY 15, 2003**
FROM:	**ETHAN G. LEE**	**COPIES:**	**DV FILE**

SUBJECT: **INORGANIC DATA VALIDATION – LEAD**
NAS CECIL FIELD – CTO 078
SAMPLE DELIVERY GROUP (SDG) – F17331

SAMPLES: 2/AQUEOUS/

CEF-285-GW-01 CEF-285-GW-DU01

Overview

The sample set for NAS Cecil Field, CTO 078, SDG F17331, consists of two (2) aqueous environmental samples. One (1) field duplicate pair (CEF-285-GW-DU01 / CEF-285-GW-01) is included in this SDG.

Both samples were analyzed for lead. The samples were collected by Tetra Tech NUS April 10, 2003 and analyzed by Accutest Laboratories Southeast, Inc. Lead analyses were conducted using SW846 method 6010B.

Lead analyses were conducted using Inductively Coupled Plasma (ICP) methodology.

These data were evaluated based on the following parameters:

* • Data Completeness
* • Holding Times
* • Calibration Recoveries
* • Laboratory Blank Analyses
* • Field Duplicate Results
* • Detection Limits

* - All quality control criteria were met for this parameter.

Laboratory Blank Analyses

The following contaminant was present in the laboratory method/preparation blanks at the following maximum concentration:

Analyte	Maximum Concentration	Action Level
Lead	2.7 ug/L	13.5 ug/L

An action level of 5X the maximum concentration was used to evaluate the sample data for blank contamination. Sample aliquot and dilution factors, if applicable, were taken into consideration when evaluating for blank contamination. Lead was not qualified because the sample values were greater than the action level.

Executive Summary

Laboratory Performance: No quality control issues were noted for this SDG.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Inorganic Review", July 2002 and the NFESC document entitled "Navy IRCDQM" (September 1999).

The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Tetra Tech NUS
Ethan G. Lee
Environmental Scientist

Tetra Tech NUS
Joseph A. Samchuck
Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-285-GW-01		
Lab Sample ID:	F17331-6	**Date Sampled:**	04/10/03
Matrix:	AQ - Ground Water	**Date Received:**	04/11/03
		Percent Solids:	n/a
Project:	NAS Cecil Field-CTO 78		

Metals Analysis

Analyte	Result	RL	IDL	Units	DF	Prep	Analyzed By		Method	Prep Method
Lead	41.6	5.0	1.2	ug/l	1	04/14/03	04/16/03	DM	SW846 6010B	SW846 3010A

RL = Reporting Limit
IDL = Instrument Detection Limit

U = Indicates a result < IDL
B = Indicates a result >= IDL but < RL

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-285-GW-DU01		
Lab Sample ID:	F17331-7	**Date Sampled:**	04/10/03
Matrix:	AQ - Ground Water	**Date Received:**	04/11/03
		Percent Solids:	n/a
Project:	NAS Cecil Field-CTO 78		

Metals Analysis

Analyte	Result	RL	IDL	Units	DF	Prep	Analyzed By		Method	Prep Method
Lead	53.8	5.0	1.2	ug/l	1	04/14/03	04/16/03	DM	SW846 6010B	SW846 3010A

RL = Reporting Limit
IDL = Instrument Detection Limit

U = Indicates a result < IDL
B = Indicates a result >= IDL

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO:	**M. SPERANZA**	**DATE:**	**JULY 30, 2003**
FROM:	**JACQUELINE J. RASPANTI**	**COPIES:**	**DV FILE**

SUBJECT: **INORGANIC DATA VALIDATION – LEAD**
CTO- 078 NAS CECIL FIELD
SAMPLE DELIVERY GROUP (SDG) – F18057

SAMPLES: 3/Aqueous/

CEF-076-GW-DUP8-01 CEF-076-GW-MD5-01 CEF-076-GW-N107S-01

Overview

The sample set for CTO 078, NAS Cecil Field, SDG F18057, consists of three (3) aqueous environmental samples. One (1) field duplicate pair (CEF-076-GW-DUP8-01 / CEF-076-GW-N107S-01) is included within this SDG.

All samples were analyzed for total and dissolved lead. Samples analyzed for dissolved lead are appended with a suffix of –F. The samples were collected by Tetra Tech NUS on June 2, 2003 and analyzed by Accutest Laboratories Southeast, Inc. under Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria. Metals analyses were conducted using SW 846 method 6010B.

Metals analyses were conducted using Inductively Coupled Plasma (ICP) methodologies.

These data were evaluated based on the following parameters:

* • Data Completeness
* • Holding Times
* • Calibration Results
• Laboratory Blank Analyses
* • Field Duplicate Results
* • Detection Limits

* - All quality control criteria were met for this parameter.

Laboratory Blank Analyses

The following contaminant was detected in the laboratory method/preparation blanks at the following maximum concentration:

Analyte	Maximum Concentration	Action Level
Lead	2.4 µg/L	12 µg/L

An action level of 5X the maximum concentration was used to evaluate the sample data for blank contamination. Sample aliquot and dilution factors, if applicable, were taken into consideration when evaluating for blank contamination. Positive results less than the action level reported for lead were qualified as non-detected, (U) as a result of laboratory blank contamination.

Notes

Sample CEF-076-GW-MD5-01 was incorrectly reported by the laboratory as CEF-076-GW-MDS-01. The data reviewer corrected the database and Form 1's.

Executive Summary

Laboratory Performance: Lead was present in the laboratory method/preparation blanks.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Inorganic Data Review", July 2002 and the NFESC document entitled "Navy IRCDQM" (September 1999).

The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Jacqueline J. Raspanti

Tetra Tech NUS
Jacqueline J. Raspanti
Environmental Scientist

Tetra Tech NUS
Joseph A. Samchuck
Quality Assurance Officer

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-076-GW-DUP8-01		
Lab Sample ID:	F18057-3	**Date Sampled:**	06/02/03
Matrix:	AQ - Ground Water	**Date Received:**	06/05/03
		Percent Solids:	n/a
Project:	NAS Cecil Field-CTO 78		

Metals Analysis

Analyte	Result	RL	IDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Lead	3.0 B	5.0	1.2	ug/l	1	06/13/03	06/16/03	DM	SW846 6010B	SW846 3010A

RL = Reporting Limit
IDL = Instrument Detection Limit

U = Indicates a result < IDL
B = Indicates a result >= IDL but < RL

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-076-GW-MD~~8~~5-01		
Lab Sample ID:	F18057-5	**Date Sampled:**	06/02/03
Matrix:	AQ - Ground Water	**Date Received:**	06/05/03
		Percent Solids:	n/a
Project:	NAS Cecil Field-CTO 78		

Metals Analysis

Analyte	Result	RL	IDL	Units	DF	Prep	Analyzed By		Method	Prep Method
Lead	2.8 B	5.0	1.2	ug/l	1	06/13/03	06/16/03	DM	SW846 6010B	SW846 3010A

RL = Reporting Limit
IDL = Instrument Detection Limit

U = Indicates a result < IDL
B = Indicates a result >= IDL but < RL

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-076-GW-N107S-01		
Lab Sample ID:	F18057-1	**Date Sampled:**	06/02/03
Matrix:	AQ - Ground Water	**Date Received:**	06/05/03
		Percent Solids:	n/a
Project:	NAS Cecil Field-CTO 78		

Metals Analysis

Analyte	Result	RL	IDL	Units	DF	Prep	Analyzed By		Method	Prep Method
Lead	2.8 B	5.0	1.2	ug/l	1	06/13/03	06/16/03	DM	SW846 6010B	SW846 3010A

RL = Reporting Limit
IDL = Instrument Detection Limit

U = Indicates a result < IDL
B = Indicates a result >= IDL but < RL

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-076-GW-DUP8-01F		
Lab Sample ID:	F18057-4	**Date Sampled:**	06/02/03
Matrix:	AQ - Groundwater Filtered	**Date Received:**	06/05/03
		Percent Solids:	n/a
Project:	NAS Cecil Field-CTO 78		

Metals Analysis

Analyte	Result	RL	IDL	Units	DF	Prep	Analyzed By		Method	Prep Method
Lead	1.2 U	5.0	1.2	ug/l	1	06/13/03	06/16/03	DM	SW846 6010B	SW846 3010A

RL = Reporting Limit
IDL = Instrument Detection Limit

U = Indicates a result < IDL
B = Indicates a result >= IDL but < RL

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-076-GW-MD~~8~~5-01F		
Lab Sample ID:	F18057-6	**Date Sampled:**	06/02/03
Matrix:	AQ - Groundwater Filtered	**Date Received:**	06/05/03
		Percent Solids:	n/a
Project:	NAS Cecil Field-CTO 78		

Metals Analysis

Analyte	Result	RL	IDL	Units	DF	Prep	Analyzed By		Method	Prep Method
Lead	1.2 U	5.0	1.2	ug/l	1	06/13/03	06/16/03	DM	SW846 6010B	SW846 3010A

RL = Reporting Limit
IDL = Instrument Detection Limit

U = Indicates a result < IDL
B = Indicates a result >= IDL but < RL

Accutest Laboratories

Report of Analysis

Client Sample ID:	CEF-076-GW-N107S-01F		
Lab Sample ID:	F18057-2	**Date Sampled:**	06/02/03
Matrix:	AQ - Groundwater Filtered	**Date Received:**	06/05/03
		Percent Solids:	n/a
Project:	NAS Cecil Field-CTO 78		

Metals Analysis

Analyte	Result	RL	IDL	Units	DF	Prep	Analyzed By		Method	Prep Method
Lead	1.2 U	5.0	1.2	ug/l	1	06/13/03	06/16/03	DM	SW846 6010B	SW846 3010A

RL = Reporting Limit
IDL = Instrument Detection Limit

U = Indicates a result < IDL
B = Indicates a result >= IDL but < RL

Sample Summary

Tetra Tech, NUS

Job No: F20079

NAS Cecil Field-CTO 78
Project No: N0039-WR379

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
F20079-1	10/14/03	16:30	MD	10/15/03	SO	Soil	CEF-285-SS-002A-03

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Report of Analysis

Client Sample ID:	CEF-285-SS-002A-03		
Lab Sample ID:	F20079-1	Date Sampled:	10/14/03
Matrix:	SO - Soil	Date Received:	10/15/03
Method:	SW846 8260B	Percent Solids:	84.1
Project:	NAS Cecil Field-CTO 78		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	K014698.D	1	10/20/03	JG	n/a	n/a	VK630
Run #2							

	Initial Weight
Run #1	4.32 g
Run #2	

VOA Halogenated List

CAS No.	Compound	Result	RL	MDL	Units	Q
75-09-2	Methylene chloride	ND	14	6.9	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	91%		70-130%
2037-26-5	Toluene-D8	105%		79-121%
460-00-4	4-Bromofluorobenzene	114%		77-133%
17060-07-0	1,2-Dichloroethane-D4	78%		72-133%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Soil Results

		Client ID Depth			CEF-285-SS-001-3 2'-3'	CEF-285-SS-002-3 2'-3'	CEF-285-SS-003-3 2'-3'	CEF-285-SS-004-1.5 1.5'-2.5'	CEF-285-SS-DU01	CEF-285-SS-002a-3 2'-3'
CAS		Collected	SCTL	LEACH	10-Apr-03	10-Apr-03	10-Apr-03	10-Apr-03	10-Apr-03	14-Oct-03
90-12-0	ug/kg	1-METHYLNAPHTHALENE	68000	2200	390 U	400 U	400 U	400 U	390 U	
91-57-6	ug/kg	2-METHYLNAPHTHALENE	83000	6100	390 U	400 U	400 U	400 U	390 U	
83-32-9	ug/kg	ACENAPHTHENE	1900000	2100	790 U	800 U	810 U	790 U	780 U	
208-96-8	ug/kg	ACENAPHTHYLENE	1100000	27000	790 U	800 U	810 U	790 U	780 U	
120-12-7	ug/kg	ANTHRACENE	18000000	2500000	390 U	400 U	400 U	400 U	390 U	
56-55-3	ug/kg	BENZO(A)ANTHRACENE	1400	3200	390 U	400 U	400 U	400 U	390 U	
50-32-8	ug/kg	BENZO(A)PYRENE	100	8000	79 U	80 U	81 U	79 U	78 U	
205-99-2	ug/kg	BENZO(B)FLUORANTHENE	1400	10000	79 U	80 U	81 U	79 U	78 U	
191-24-2	ug/kg	BENZO(G,H,I)PERYLENE	2300000	32000000	79 U	80 U	81 U	79 U	78 U	
207-08-9	ug/kg	BENZO(K)FLUORANTHENE	15000	25000	79 U	80 U	81 U	79 U	78 U	
218-01-9	ug/kg	CHRYSENE	140000	77000	390 U	400 U	400 U	400 U	390 U	
53-70-3	ug/kg	DIBENZO(A,H)ANTHRACENE	100	30000	79 U	80 U	81 U	79 U	78 U	
206-44-0	ug/kg	FLUORANTHENE	2900000	1200000	390 U	400 U	400 U	400 U	390 U	
86-73-7	ug/kg	FLUORENE	2200000	160000	390 U	400 U	400 U	400 U	390 U	
193-39-5	ug/kg	INDENO(1,2,3-CD)PYRENE	1500	28000	79 U	80 U	81 U	79 U	78 U	
91-20-3	ug/kg	NAPHTHALENE	40000	1700	390 U	400 U	400 U	400 U	390 U	
85-01-8	ug/kg	PHENANTHRENE	2000000	250000	390 U	400 U	400 U	400 U	390 U	
129-00-0	ug/kg	PYRENE	2200000	880000	390 U	400 U	400 U	400 U	390 U	
71-55-6	ug/kg	1,1,1-TRICHLOROETHANE	400000	1900	7 U	5 U	6.4 U	6.8 U	7.4 U	
79-34-5	ug/kg	1,1,2,2-TETRACHLOROETHANE	700	2	7 U	5 U	6.4 U	6.8 U	7.4 U	
79-00-5	ug/kg	1,1,2-TRICHLOROETHANE	1300	30	7 U	5 U	6.4 U	6.8 U	7.4 U	
75-34-3	ug/kg	1,1-DICHLOROETHANE	290000	400	7 U	5 U	6.4 U	6.8 U	7.4 U	
75-35-4	ug/kg	1,1-DICHLOROETHENE	90	60	7 U	5 U	6.4 U	6.8 U	7.4 U	
107-06-2	ug/kg	1,2-DICHLOROETHANE	500	10	7 U	5 U	6.4 U	6.8 U	7.4 U	
78-87-5	ug/kg	1,2-DICHLOROPROPANE	600	30	7 U	5 U	6.4 U	6.8 U	7.4 U	
78-93-3	ug/kg	2-BUTANONE	3100000	17000	35 U	25 U	32 U	34 U	37 U	
591-78-6	ug/kg	2-HEXANONE	5100	1400	35 U	25 U	32 U	34 U	37 U	
108-10-1	ug/kg	4-METHYL-2-PENTANONE	220000	2600	35 U	25 U	32 U	34 U	37 U	
67-64-1	ug/kg	ACETONE	780000	2800	**104**	**145**	**57.9 J**	**98.2**	74 U	
71-43-2	ug/kg	BENZENE	1100	7	7 U	5 U	6.4 U	6.8 U	7.4 U	
75-27-4	ug/kg	BROMODICHLOROMETHANE	1400	4	7 U	5 U	6.4 U	6.8 U	7.4 U	
75-25-2	ug/kg	BROMOFORM	48000	30	7 U	5 U	6.4 U	6.8 U	7.4 U	
74-83-9	ug/kg	BROMOMETHANE	2200	50	7 U	5 U	6.4 U	6.8 U	7.4 U	
75-15-0	ug/kg	CARBON DISULFIDE	200000	5600	7 U	5 U	6.4 U	6.8 U	7.4 U	
56-23-5	ug/kg	CARBON TETRACHLORIDE	400	40	7 U	5 U	6.4 U	6.8 U	7.4 U	
108-90-7	ug/kg	CHLOROBENZENE	30000	1300	7 U	5 U	6.4 U	6.8 U	7.4 U	
124-48-1	ug/kg	CHLORODIBROMOMETHANE	1400	3	7 U	5 U	6.4 U	6.8 U	7.4 U	
75-00-3	ug/kg	CHLOROETHANE	2900	60	7 U	5 U	6.4 U	6.8 U	7.4 U	
67-66-3	ug/kg	CHLOROFORM	400	30	7 U	5 U	6.4 U	6.8 U	7.4 U	
74-87-3	ug/kg	CHLOROMETHANE	1700	10	7 U	5 U	6.4 U	6.8 U	7.4 U	
156-59-2	ug/kg	CIS-1,2-DICHLOROETHENE	19000	400	7 U	5 U	6.4 U	6.8 U	7.4 U	
10061-01-5	ug/kg	CIS-1,3-DICHLOROPROPENE	NA	NA	7 U	5 U	6.4 U	6.8 U	7.4 U	
100-41-4	ug/kg	ETHYLBENZENE	1100000	600	7 U	5 U	6.4 U	6.8 U	7.4 U	
1634-04-4	ug/kg	METHYL TERT-BUTYL ETHER	3200000	200	7 U	5 U	6.4 U	6.8 U	7.4 U	
75-09-2	ug/kg	METHYLENE CHLORIDE	16000	20	14 U	**30.2**	13 U	14 U	15 U	14 U
100-42-5	ug/kg	STYRENE	2700000	3600	7 U	5 U	6.4 U	6.8 U	7.4 U	
127-18-4	ug/kg	TETRACHLOROETHENE	8900	30	7 U	5 U	6.4 U	6.8 U	7.4 U	
108-88-3	ug/kg	TOLUENE	380000	500	7 U	5 U	6.4 U	6.8 U	7.4 U	
1330-20-7	ug/kg	TOTAL XYLENES	5900000	200	21 U	15 U	19 U	20 U	22 U	
156-60-5	ug/kg	TRANS-1,2-DICHLOROETHENE	31000	700	7 U	5 U	6.4 U	6.8 U	7.4 U	
10061-02-6	ug/kg	TRANS-1,3-DICHLOROPROPENE	NA	NA	7 U	5 U	6.4 U	6.8 U	7.4 U	
79-01-6	ug/kg	TRICHLOROETHENE	6000	30	7 U	5 U	6.4 U	6.8 U	7.4 U	
75-01-4	ug/kg	VINYL CHLORIDE	30	7	7 U	5 U	6.4 U	6.8 U	7.4 U	
TTNUS001	mg/kg	TOTAL PETROLEUM HYDROCARBONS	340	340	10 U	9.6 U	10 U	**10.7**	10 U	

Groundwater Results

	Units	Parameter	GCTL	IBDS	CEF-285-GW-01 10-Apr-03	CEF-285-GW-DU01 10-Apr-03	CEF-076-GW-N107S-01 2-Jun-03	CEF-076-GW-DUP8-01 2-Jun-03	CEF-076-GW-N107S-01F 2-Jun-03	CEF-076-GW-DUP8-01F 2-Jun-03
7439-92-1	ug/l	LEAD	15	5.35	**41.6**	**53.8**	**2.8 B**	**3 B**	1.2 U	1.2 U
90-12-0	ug/l	1-METHYLNAPHTHALENE	20		2 U	2.1 U	NA			
91-57-6	ug/l	2-METHYLNAPHTHALENE	20		2 U	2.1 U	NA			
83-32-9	ug/l	ACENAPHTHENE	20		4 U	4.2 U	NA			
208-96-8	ug/l	ACENAPHTHYLENE	210		4 U	4.2 U	NA			
120-12-7	ug/l	ANTHRACENE	2100		2 U	2.1 U	NA			
56-55-3	ug/l	BENZO(A)ANTHRACENE	0.2		0.2 U	0.21 U	NA			
50-32-8	ug/l	BENZO(A)PYRENE	0.2		0.2 U	0.21 U	NA			
205-99-2	ug/l	BENZO(B)FLUORANTHENE	0.2		0.2 U	0.21 U	NA			
191-24-2	ug/l	BENZO(G,H,I)PERYLENE	210		0.2 U	0.21 U	NA			
207-08-9	ug/l	BENZO(K)FLUORANTHENE	0.5		0.2 U	0.21 U	NA			
218-01-9	ug/l	CHRYSENE	4.8		2 U	2.1 U	NA			
53-70-3	ug/l	DIBENZO(A,H)ANTHRACENE	0.2		0.2 U	0.21 U	NA			
206-44-0	ug/l	FLUORANTHENE	280		2 U	2.1 U	NA			
86-73-7	ug/l	FLUORENE	280		2 U	2.1 U	NA			
193-39-5	ug/l	INDENO(1,2,3-CD)PYRENE	0.2		0.2 U	0.21 U	NA			
91-20-3	ug/l	NAPHTHALENE	20		2 U	2.1 U	NA			
85-01-8	ug/l	PHENANTHRENE	210		2 U	2.1 U	NA			
129-00-0	ug/l	PYRENE	210		2 U	2.1 U	NA			
71-55-6	ug/l	1,1,1-TRICHLOROETHANE	200		1 U	1 U	NA			
79-34-5	ug/l	1,1,2,2-TETRACHLOROETHANE	0.2		1 U	1 U	NA			
79-00-5	ug/l	1,1,2-TRICHLOROETHANE	5		1 U	1 U	NA			
75-34-3	ug/l	1,1-DICHLOROETHANE	70		1 U	1 U	NA			
75-35-4	ug/l	1,1-DICHLOROETHENE	7		1 U	1 U	NA			
106-93-4	ug/l	1,2-DIBROMOETHANE	0.02		0.019 U	0.018 U	NA			
107-06-2	ug/l	1,2-DICHLOROETHANE	3		1 U	1 U	NA			
78-87-5	ug/l	1,2-DICHLOROPROPANE	5		1 U	1 U	NA			
78-93-3	ug/l	2-BUTANONE	4200		5 U	5 U	NA			
591-78-6	ug/l	2-HEXANONE	280		5 U	5 U	NA			
108-10-1	ug/l	4-METHYL-2-PENTANONE	560		5 U	5 U	NA			
67-64-1	ug/l	ACETONE	700		5 U	5 U	NA			
71-43-2	ug/l	BENZENE	1		1 U	1 U	NA			
75-27-4	ug/l	BROMODICHLOROMETHANE	0.6		1 U	1 U	NA			
75-25-2	ug/l	BROMOFORM	4.4		1 U	1 U	NA			
74-83-9	ug/l	BROMOMETHANE	9.8		1 U	1 U	NA			
75-15-0	ug/l	CARBON DISULFIDE	700		5 U	5 U	NA			
56-23-5	ug/l	CARBON TETRACHLORIDE	3		1 U	1 U	NA			
108-90-7	ug/l	CHLOROBENZENE	100		1 U	1 U	NA			
124-48-1	ug/l	CHLORODIBROMOMETHANE	0.4		1 U	1 U	NA			
75-00-3	ug/l	CHLOROETHANE	12		1 U	1 U	NA			
67-66-3	ug/l	CHLOROFORM	5.7		**0.86 J**	**0.95 J**	NA			
74-87-3	ug/l	CHLOROMETHANE	2.7		1 U	1 U	NA			
156-59-2	ug/l	CIS-1,2-DICHLOROETHENE	70		1 U	1 U	NA			
10061-01-5	ug/l	CIS-1,3-DICHLOROPROPENE	NA		1 U	1 U	NA			
100-41-4	ug/l	ETHYLBENZENE	30		1 U	1 U	NA			
1634-04-4	ug/l	METHYL TERT-BUTYL ETHER	50		1 U	1 U	NA			
75-09-2	ug/l	METHYLENE CHLORIDE	5		5 U	5 U	NA			
100-42-5	ug/l	STYRENE	100		1 U	1 U	NA			
127-18-4	ug/l	TETRACHLOROETHENE	3		1 U	1 U	NA			
108-88-3	ug/l	TOLUENE	40		1 U	1 U	NA			
1330-20-7	ug/l	TOTAL XYLENES	20		3 U	3 U	NA			
156-60-5	ug/l	TRANS-1,2-DICHLOROETHENE	100		1 U	1 U	NA			
10061-02-6	ug/l	TRANS-1,3-DICHLOROPROPENE	NA		1 U	1 U	NA			
79-01-6	ug/l	TRICHLOROETHENE	3		1 U	1 U	NA			
75-01-4	ug/l	VINYL CHLORIDE	1		1 U	1 U	NA			
TTNUS001	mg/l	TOTAL PETROLEUM HYDROCARBONS	5		0.27 U	0.26 U	NA			

APPENDIX C

FIELD LOG SHEETS

Tetra Tech NUS, Inc.

DOCUMENTATION OF FIELD CALIBRATION

PROJECT NAME : NAS CECIL FIELD

SITE NAME: Tank 285

PROJECT No.: N0039

INSTRUMENT NAME/MODEL: see below

MANUFACTURER: see below

SERIAL NUMBER: see below

Date of Calibration	Instrument Name and Model	Instrument I.D. Number	Person Performing Calibration	Instrument Settings		Instrument Readings		Calibration Standard (Lot No.)	Remarks and Comments
				Pre-calibration	Post-calibration	Pre-calibration	Post-calibration		
4/10/03	HORIBA	9022054	PL	—	—	3.94	4.00	3303	Exp 9-11-04
4/10/03	MICRO FID	03409	PL	—	—	NA	100.0	76291A	METHANE

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: NAS Cecil Field Tank 285
Project No.: N0039DS005G120

[ ] Surface Soil
[X] Subsurface Soil @ 3'
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CEF-285-SS-001-3
Sample Location: CEF-285-SB01
Sampled By: MD / PL
C.O.C. No.: 2267 / 2268

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 4/10/03 Time: 1120 Method: SS Hand Auger Monitor Reading (ppm): 0.0	3'	gray	silty fine sand, damp USCS = SM

COMPOSITE SAMPLE DATA:

Date: 4/10/03	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method: SS HA	0939	1'	black	silty fine sand, dry, w/roots USCS = SM
	0940	2'	gray	silty fine sand, dry USCS = SM
Monitor Readings (Range in ppm): 0.0	0943	3'	gray	silty fine sand, damp USCS = SM
	0945	4'	dk. gray	silty fine sand, moist USCS = SM
	0946 MD	4.5'	—	▽ = water table

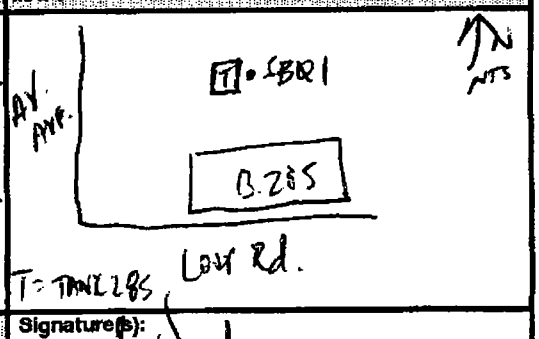
SAMPLE COLLECTION INFORMATION:

	Analysis	Container Requirements	Collected	LAB
BTEX and MTBE	SW 846 5035/8260B	2 VOC vials w/ water	✓	accutest
BTEX and MTBE	SW 846 5035/8260B	1 VOC vial w/ methanol	✓	accutest
PAHs	SW 846 8310	1-4oz. Jar	✓	accutest
TRPH	FL-PRO	1-4oz. Jar	✓	accutest

OBSERVATIONS / NOTES:

Depth (ft bls)	Unfilter (ppm)	Filtered (ppm)	Net (ppm)
1	0.0	—	0.0
2	0.0	—	0.0
3	0.0	—	0.0
4	0.0	—	0.0

MAP:



Check if Applicable:

ID No.: [ ] MSMSD [ ] DUPLICATE

None

Signature(s): M. W. Dill

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: NAS Cecil Field Tank 285
Project No.: N0039DS005G120

[ ] Surface Soil
[X] Subsurface Soil @ 3'
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CEF-285-SS-002-3
Sample Location: CEF-285-SB02
Sampled By: MD / PL
C.O.C. No.: 2267 / 2268

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 4/10/03 Time: 1132 Method: SS Hand Auger Monitor Reading (ppm): 0.0	3'	dk. Brown	Silty fine Sand, damp USCS-SM

COMPOSITE SAMPLE DATA:

Date: 4/10/03	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method: SS. H.A.	0952	1'	black	silty fine Sand, roots, dry SM
	0954	2'	gray	silty fine Sand, dry, SM
	0955	3'	dk. brown	silty fine Sand, damp, SM
Monitor Readings (Range in ppm): 0.0	0957	4'	dk. brown	silty fine Sand, moist, SM
	0958	4.5'	—	▽

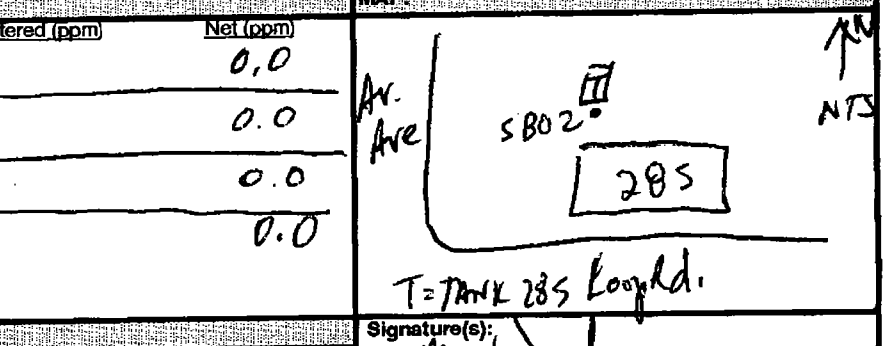
SAMPLE COLLECTION INFORMATION:

	Analysis	Container Requirements	Collected	LAB
BTEX and MTBE	SW 846 5035/8260B	2 VOC vials w/ water	✓	accutest
BTEX and MTBE	SW 846 5035/8260B	1 VOC vial w/ methanol	✓	accutest
PAHs	SW 846 8310	1-4oz. Jar	✓	accutest
TRPH	FL-PRO	1-4oz. Jar	✓	accutest

OBSERVATIONS / NOTES:

Depth (ft bls)	Unfilter (ppm)	Filtered (ppm)	Net (ppm)
1	0.0		0.0
2	0.0		0.0
3	0.0		0.0
4	0.0		0.0

MAP:



Check if Applicable:

ID No.: [ ] MSMSD [ ] DUPLICATE

None

Signature(s): M. W. Dale

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: NAS Cecil Field Tank 285
Project No.: N0039DS005G120

[ ] Surface Soil
[X] Subsurface Soil @ 3'
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CEF-285-SS-003-3
Sample Location: CEF-285-SB03
Sampled By: MD / PL
C.O.C. No.: 2267 / 2268

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 4/10/03 Time: 1145 Method: SS Hand Auger Monitor Reading (ppm): 0.0	3'	dark Brown	silty fine sand, damp USCS = SM

COMPOSITE SAMPLE DATA:

Date: 4/10/03	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method: S.S.H.A.	1006	1'	black	silty fine sd., roots, dry SM
	1008	2'	gray	silty fine sd., dry SM
	1009	3'	dk. brown	silty fine sd., damp SM
Monitor Readings (Range in ppm): 0.0	1011	4'	dk. brown	silty fine sd., moist SM

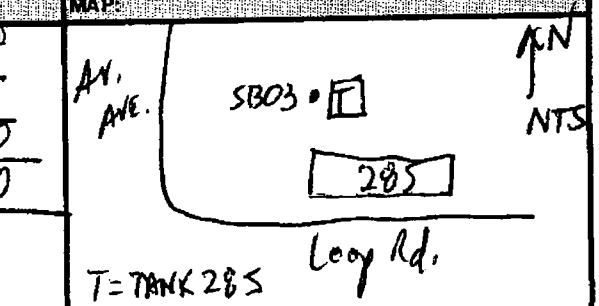
SAMPLE COLLECTION INFORMATION:

	Analysis	Container Requirements	Collected	LAB
BTEX and MTBE	SW 846 5035/8260B	2 VOC vials w/ water	✓	accutest
BTEX and MTBE	SW 846 5035/8260B	1 VOC vial w/ methanol	✓	accutest
PAHs	SW 846 8310	1-4oz. Jar	✓	accutest
TRPH	FL-PRO	1-4oz. Jar	✓	accutest

OBSERVATIONS / NOTES:

Depth (ft bls)	Unfilter (ppm)	Filtered (ppm)	Net (ppm)
1	0.0	–	0.0
2	0.0	–	0.0
3	0.0	–	0.0
4	0.0	–	0.0

MAP:



Check If Applicable:

ID No.: [ ] MSMSD [X] DUPLICATE

CEF-285-SS-DUP01

Signature(s): M. W. [illegible]

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: NAS Cecil Field Tank 285
Project No.: N0039DS005G120

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CEF-285-SS-004-1.5
Sample Location: CEF-285-SB04
Sampled By: MD / PL
C.O.C. No.: 2267 / 2268

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 4/10/03 Time: 1210 Method: SS Hand Auger Monitor Reading (ppm): 0.0	1.5'	dark gray	silty fine sand, damp (USCS= SM occassional 0.5" pebbles

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
4/10/03	1020	1'	dk. brown	silty fine sd. roots, dry SM
Method: S.S. H.A.	1028	2'	dk. gray	silty fine sd., dry, SM
	1035	3'		▽
Monitor Readings (Range in ppm): 0.0				

SAMPLE COLLECTION INFORMATION:

	Analysis	Container Requirements	Collected	LAB
BTEX and MTBE	SW 846 5035/8260B	2 VOC vials w/ water	✓	accutest
BTEX and MTBE	SW 846 5035/8260B	1 VOC vial w/ methanol	✓	accutest
PAHs	SW 846 8310	1-4oz. Jar	✓	accutest
TRPH	FL-PRO	1-4oz. Jar	✓	accutest

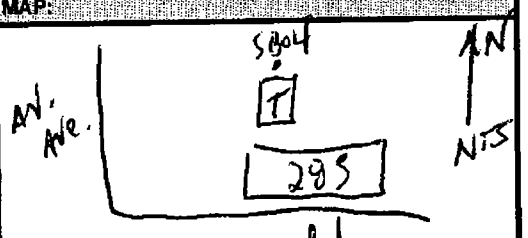
OBSERVATIONS / NOTES:

Depth (ft bls)	Unfilter (ppm)	Filtered (ppm)	Net (ppm)
1			
2			
3	NC		
4	NC		

Hit ½" gravel & silty sd. at 3' in this borehole.

NC = Not collected

MAP:



T = TANK 285 Loop Rd.

Check if Applicable:

ID No.: [X] MSMSD [ ] DUPLICATE

CEF-285-SS-004-1.5

Signature(s): M. W. Dale

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: Tank 285, NAS Cecil Field
Project No.: N0039DS005G120

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[X] QA Sample Type: Dup / MSMSD

Sample ID No.: CEF-285-GW-01
Sample Location: CEF-285-SB-03
Sampled By: MD / PL
C.O.C. No.: 2267 / 2268
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA

	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	Salinity %	~~Other~~ ORP mV
Date: 4/10/03								
Time: 1400								
Method: Low Flow Peristaltic	dk brn	6.15	0.104	18.96	>999	3.89	—	187

PURGE DATA

	Time	pH	S.C.	Temp (°C)	Turbidity	DO	Salinity	ORP
Date: 4/10/03								
Method: Low Flow Peristaltic								
Monitor Reading (ppm): 0.0								
Well Casing Diameter: 1 inch								
Well Casing Material: Sch. 40 PVC								
Total Well Depth (TD): 8' (2' stickup)								
Static Water Level (WL): 5.76								
One Casing Volume(gal): 1.0								
Start Purge (hrs): 1255								
End Purge (hrs): 1330								
Total Purge Time (min): 35								
Total Vol. Purged (gal): 5.5								

7.96
8.06
-3.76
4.24 ft of H_2O

See Low Flow Purge Sheet for data.

SAMPLE COLLECTION INFORMATION

Analysis		Preservative	Container Requirements	Collected
SW846 8260B	VOCs, MTBE	4C/HCL	3-40 ml vials	✓
SW846 8310	PAHs	4C	2-1 liter ambers	✓
TRPH	FL-PRO	4C/H2SO4	2-1liter ambers	✓
SW846 6010B	Total Lead	4C/HNO3	1-250 ml plastic	✓
EDB	EPA 504.1	4C	3-40 ml vials	✓

OBSERVATIONS / NOTES

Circle if Applicable:
MS/MSD

Duplicate ID No.: CEF-285-GW-DUP01

Signature(s): M. W. Dale

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NASCF, Tank 285
PROJECT NUMBER: N0039DS005G120

WELL ID.: CEF-285-GW-01
DATE: 4/10/03

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
1255	5.76	~300	0	–	–	–	–	–	–	start
1300	5.68	300	1.5	6.10	0.105	>999	5.98	19.11	184	dark brown
1305	5.66	300	3.0	6.14	0.104	>999	5.05	18.96	185	
1315	5.40	100	4.0	6.13	0.103	>999	4.62	19.33	187	
1320	5.35	100	4.5	6.15	0.104	>999	4.32	19.39	186	
1325	5.33	100	5.0	6.14	0.104	>999	4.27	19.32	186	
1330		100	5.5	6.15	0.104	>999	5.89	18.86	187	dark brown

SIGNATURE(S): M.W. Dale

PAGE 2 **OF** 2

TTNUS JACKSONVILLE Fax:9042810070 Apr 10 2003 20:01 P.08

NAS CECIL FIELD TANK 285 N0039 CTO 78

0800 F250 is loaded with rental equipment from PINE ENV. (1 FID, 1 pump, and 1 U-22 horiba). Also, a water level indicator from the office. NOTE: Merv Dale picked up MONOFLEX well screen & riser from Atlantic Drilling Supply this A.M. at 7A.M.

PLAN OF DAY

① Conduct PHASE I Sampling & Analysis Work Plan for TANK 285 AT NAS CECIL FIELD (work plan dtd 3/13/03).

② Survey several wells + take levels at Bldg. 826, VAPORBOX for CTO 248.

③ Check on hag waste at B.373.

④ Pick up regulator for BP Wells from Airgas on West 5th St. (CTO 248).

WEATX: A.M. Showers, Precip ~30%, Lo 48°F, Hi 64°F, winds W at 15 to 25 mph.

PPE: per CTO 168 HASP for North Fuel Farm, it is level D.

Site Note: This tank is totally within the North Fuel Farm and it is covered by that HASP dated April 2001.

0825 Merv + Pete stop at Chevron for 7 bags of ice (off 103rd ST).

0828 Back on Bond. to NASCF.

0841 At NASCF. MD held H&S brief with Pete. We both signed work permits 285-1 thru 285-3 for multimedia sampling, decon & IDW. See also Fig B-2 of HASP is signed.

0900 PL calibrate FID (serial # 3409) and U-22 horiba (serial #0902054). See calibration sheet.

0930 Truck fully loaded for screening/sampling. Leave for site.

0933 on site. (No utility locate markings. MD complete HS-1.0 and declare site clear for hand auger.

0935 Decon station set up per EDEP SOP ~~SA-7.1~~ MD. PL decon stainless steel hand auger w/ 3" bucket.
MD set up sample station on concrete pad south of tank.

0937 FID Air monitoring: Background = 0.0 ppm, BZ = 0.0 ppm

0939 Start on SB01 per workplan. See soil/sed log sheet for details. BZ = 0.0 ppm, Borehole = 0.0 ppm.

0947 Hit water table (∇) at 4.5' bls in SB01.

0954 Start on SB02 per work plan. See soil/sed log sheet for details. BZ = 0.0 ppm, BH = 0.0 ppm.

0958 Hit ∇ @ ~~4.5~~ MD 4.5' bls in SB02.

1006 Start on SB03 per work plan. See soil/sed log sheet for details. BZ = 0.0 ppm, BH = 0.0 ppm

M.W. Dale

p.12

NAS CECIL FIELD TANK 285 NAVY U.S. NAVY

1012 Hit ∇ in SB03 at 4.5' b/s.
1015 FID quit, MD working on it.
1018 FID working again.
1020 Start sampling (screening) SB04 per workplan. See soil/log sheet for details. BZ = 0.0 ppm, BH = 0.0 ppm
1035 Encounter ∇ @ 3' b/s. Note: per work plan we are collecting soils at every 1' interval after 1st ∇ encountered.
1050 Screening results are 0.0 ppm unaltered for all samples out of SB01-SB04.
M.O. decontaminating mason jars per ~~SOP SA 7.1~~ FOED SOP
1102 Pete has labeled all jars for soils. We are sampling for VOCs PAHs & TRPH. We will continue to use the stainless steel hand auger to sample from, and decon between samples per FOED SOP ~~SA 7.1~~ MD
1120 MD collect CEF-285-SS-001-3 from SB01 at 3' b/s. Depth chosen based on estimated top of cap. fringe being about 1.5' above ∇. Placing samples on ice after collection. (3 vials, 2 4oz. amber jars per sample).
1132 MD collect CEF-285-SS-002-3 from SB02 at 3' b/s. Same reason for depth as SB01's sample.
1145 MD collect CEF-285-SS-003-3 from SB03 at 3' b/s. Same reason for depth as SB01's sample. Also collected duplicate sample (1 vol.) here - Label CEF-285-SS-DU01 with time on bottles of 0000.
1210 MD collect CEF-285-SS-004-1.5 from SB04 at 1.5' b/s. Same reason - collect sample @ about 1.5' above ∇ to be at or near top of capillary fringe. Also collected 2X volume for MS/MSD.
1212 Soil samples on ice. MD decides to set up groundwater temp. well point at SB03 since there were no OVA-FID soil hits. This decision based on recent groundwater flow data for shallow wells at North Fuel Farm that show flow to the southwest in the area of TANK 285.
1214 Pete begin hand auger to 8' b/s to give us sufficient water in well column.
1240 Pete at 8' b/s and hole is staying open. MD inserting clean (plastic wrapped) 1" Sch. 40 PVC well screen with 0.010" slotts in hole with small 1.5" gray well pt.
1242 MD measures 2' of stickup on 10' screen. So we're at 8' b/s.
1245 MD measures DTW at 5.76' btoc.
1255 Start purge using Geopump II (Pump #1741), PE tubing & silicon pumphead tubing. U-22 (# 0922054) in line w/ flow cell.

M.W. Lyle

NAS CECIL FIELD TANK285 N0037 U.S. NAVY

1255 (cont'd) See groundwater flow sheet & low flow purge sheet for details on sampling.

1400 Sampling well IAW FDEP SOP. Purged 5 vols. due to high turbidity. Sample I.D. CEF-285-GW-01. Also collected duplicate here. Label dup CEF-285-GW-DU01 and put time of 0000 on labels. Also collect 2X vol for Lab MS/MSD and label it same as sample.

1455 MD decontaminated U-22 and W.L.I. Also putting samples on ice.

1515 Sampling complete. Secure area but leave temp well to come back & check for free product.

1519 ~~Back at office~~ Leave site for B.373.

1521 At B.373 get old drum & put ~3 gallons of purge H_2O and 5 gals of decon water in a 55-gal drum.

DRUM #	DATE	CONTENT	SOURCE	AMT (GALL)
285-1	4-10-03	Purge & Decon H_2O	GW-01 and SB01-SB04	8

1530 DRUM secure inside B.373 and we leave for B.1.

1534 At B.1, unload buckets, coolers, gloves and begin packing samples per SOP SA 6.1 in base wide generic workplan.

1600 We have 3 coolers to ship and I put COC's 2267 & 2268 (white copy only) in one cooler. All 3 are sealed under custody seals.

1602 We rec'd a pax - Solinst(?) oil/water interface probe.

1604 With coolers loaded, depart for Site Tank 285 to check the well.

1612 Merv checking well and no free product detected.

1613 Merv pulls temp well & cut into 4 pieces for disposal. Also backfilling all holes with excess soil.

1619 Site secure - leave for B.1.

1623 At B.1 to dump trash in dumpster. Note: our side of B.1 is secure & locked. Depart for main office.

1702 Arrive @ office. Unload office equipment. Prepare rental equipment to ship back.

1730 Merv taking 4 pax for Pine Env. & 3 coolers for Accutest to Fedex.

Airbills (Pine): 8371 1005 6186/6197/6201/6212.
(eq. inc. U-22, F10, Geopump & oil/water probe.).

Airbills (Accutest): 8371 1005 6153/6164/6175.

1745 Pax shipped.

M.W. Dale

TETRA TECH NUS, INC. CHAIN OF CUSTODY | NUMBER 2267 F17331 | PAGE 1 OF 2

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
N0039, CTO 78	TANK 285 CECIL FIELD	MARK SPERANZA	412 921 8916	ACCUTEST SUE BELL
SAMPLERS (SIGNATURE)		FIELD OPERATIONS LEADER	PHONE NUMBER	ADDRESS
Melvin W. Dale		MERV DALE	904 636 6125	4405 Vineland Rd. G15
		CARRIER/WAYBILL NUMBER		CITY, STATE
		Fedex 8371 1005 6153/6164/6175		ORLANDO, FL 32811

STANDARD TAT ☐
RUSH TAT ☒
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☒ 14 day

	DATE YEAR 2003	TIME	SAMPLE ID	LOCATION ID CEF-285-	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	BTEX/MTBE SW846 5035/8260B	BTEX/MTBE SW846 5035/8260B	PAHs SW846 8260B	TRPH FL-PRO	VOCs & MTBE SW846 8260B	PAHs SW846 8310	EDB EPA 504.1	COMMENTS
									CONTAINER TYPE PLASTIC (P) or GLASS (G)	G	G	G	G	G	G	G	
									PRESERVATIVE USED	H_2O	CH_3OH	None	None	HCl	None	None	
1	4/10	1120	CEF-285-SS-001-3	SB01	2	3	SO	G	5	2	1	1	1				Cool to 4°C
2	4/10	1132	CEF-285-SS-002-3	~~SB02~~ SB02 MD	2	3	SO	G	5	2	1	1	1				
			MD														WORK Release
3	4/10	1145	CEF-285-SS-003-3	SB03	2	3	SO	G	5	2	1	1	1				N0039-WR309
4	4/10	1210	CEF-285-SS-004-1.5	SB04	0.5	1.5	SO	G	15	6	3	3	3 *				See recent Mod.
5	4/10	0000	CEF-285-SS-DUP01	—	—	—	SO	G	5	2	1	1	1				to WORK release
	~~4/10~~		MD														for list of
6	4/10	1400	CEF-285-GW-01				GW	G	24				* MD	39	26	39	analytes.
7	4/10	0000	CEF-285-GW-DUP01				GW	G	8					3	2	3	
																	* Use extra
																	volume for MS/MSD

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY Melvin W. Dale	4/10/03	1630	1. RECEIVED BY Fedex		
2. RELINQUISHED BY Fed ex	4/11/03	9:15	2. RECEIVED BY [illegible]		
3. RELINQUISHED BY			3. RECEIVED BY		

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY) 4/02R

F17331

TETRA TECH NUS, INC. CHAIN OF CUSTODY | NUMBER 2268 | PAGE 2 OF 2

PROJECT NO: N0039, CT078	FACILITY: TANK 285, NASCF	PROJECT MANAGER: MARK SPERANZA	PHONE NUMBER: 412 921 8916	LABORATORY NAME AND CONTACT: ACCUTEST Sue Ball
SAMPLERS (SIGNATURE): Marvin W. Dale		FIELD OPERATIONS LEADER: MERV DAVE	PHONE NUMBER: 904 636 6125	ADDRESS: 4405 Vineland Rd #15
		CARRIER/WAYBILL NUMBER: Fedex 8371 1005 6153/6164/6175		CITY, STATE: ORLANDO, FL 32811

STANDARD TAT ☐
RUSH TAT ☒
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☒ 14 day

CONTAINER TYPE PLASTIC (P) or GLASS (G): P G
PRESERVATIVE USED: HNO3 H2SO4

	DATE YEAR 2003	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAP (G) COMP (C)	No. OF CONTAINERS	TOTAL LEAD	PCB 8082	6010B/7000A	TRPH	FL-PRO						COMMENTS
6	4/10	1400	CEF-285-GW-01				GW	G	9	3✓	6	*								Cool to 4°C
7	4/10	0000	CEF-285-GW-DUP01				GW	G	3	1✓	2									
																				Work Release N0039-WR309
																				See recent modification to work release for list of analytes.
																				* Use extra volume for MS/MSD.

1. RELINQUISHED BY: M.W. Dale	DATE: 4/10/03	TIME: 1630	1. RECEIVED BY: Fedex	DATE	TIME
2. RELINQUISHED BY: Fedex	DATE: 4/11/03	TIME: 9:15	2. RECEIVED BY: [illegible]	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY) 4/02R

Tetra Tech NUS, Inc.

DOCUMENTATION OF FIELD CALIBRATION

PROJECT NAME : NAS CECIL FIELD

SITE NAME: North Fuel Farm

PROJECT No.: N0039

INSTRUMENT NAME/MODEL:

MANUFACTURER:

SERIAL NUMBER:

Date of Calibration	Instrument Name and Model	Instrument I.D. Number	Person Performing Calibration	Instrument Settings		Instrument Readings		Calibration Standard (Lot No.)	Remarks and Comments
				Pre-calibration	Post-calibration	Pre-calibration	Post-calibration		
6/2/03	MICRO FID	000[illegible]44	PC		[illegible] PC	[illegible] PC	[illegible]	109-36-27173	EXP 02/05
						89.3	99.8		
	YSI 556	02F0324AC	PC		COND-1.409	1.523	1.409	2140-22	EXP 5/22/04
					PH-4.0	3.58	4.00	30150G	EXP 1/22/05
					PH-10.0	10.92	10.00	3071-16	NA
					ORP-240	288.9	240.0	6052	EXP 6/05
	LAMOTTE				NTU-1.0	1.11	1.00	NA	NA
					NTU-10.0	9.04	10.00	NA	NA

BORING LOG

Tetra Tech NUS, Inc.

Page ___ of ___

PROJECT NAME: NAS CECIL FIELD/BLDG 285
PROJECT NUMBER: N3996
DRILLING COMPANY: Prosonic
DRILLING RIG: ~~Rotasonic~~ GEOPROBE 6610DT

BORING NO.: CEF-076- MW 107S
DATE: 5.15.03
GEOLOGIST: ~~Mervin Dale~~ L. KNIGHT
DRILLER: ~~Dan Mitchell~~ A. PETERSON

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
							SAND: fine; pale						
							gray; NATIVE MATERIAL						
				2.5			~~SAND: fine; dk brown~~						
							~~and yellow brown~~						
				4.0									
							SAND: w/trace						
							silt and clay; fine						
							& v. fine. yellow-						
							brown & dk brown.						
							gray. SATURATED						
							~6 - bls						
				14			~~EOB = 14' bls~~						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 3.1

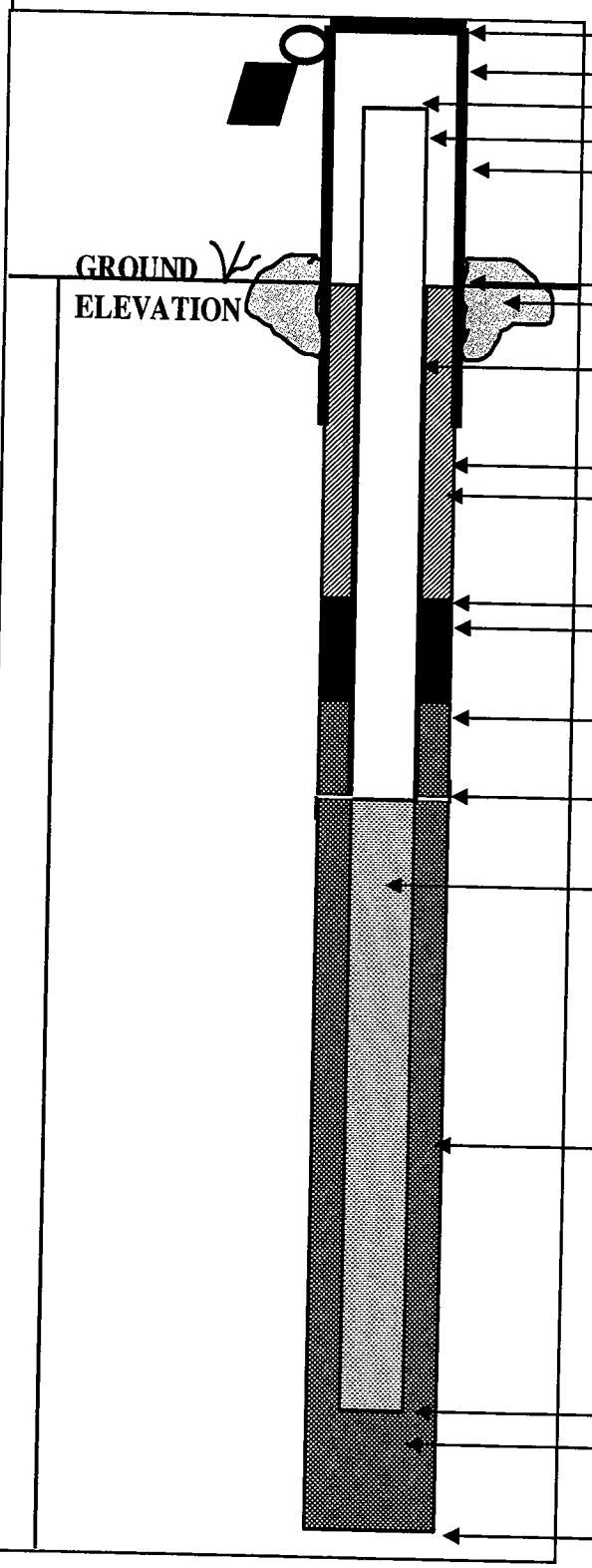
Remarks:

Converted to Well: Yes ✓ No x Well I.D. #: CEF. 076. MW 107S

Tetra Tech NUS, Inc. **OVERBURDEN MONITORING WELL SHEET**

BORING NO.: CEF-076-MW107S

PROJECT:	BLDG 285 / CEF	DRILLING Co.:	PROSONIC	BORING No.:	CEF-076-MW107S
PROJECT No.:	0039	DRILLER:	A. PETERSON	DATE COMPLETED:	5-15-03
SITE:	NORTH FUEL FARM (BLDG 285)	DRILLING METHOD:	HSA	NORTHING:	
GEOLOGIST:	L. KNIGHT	DEV. METHOD:		EASTING:	



ELEVATION OF TOP OF SURFACE CASING:

STICK -UP TOP OF SURFACE CASING: 3.0'

ELEVATION OF TOP OF RISER PIPE:

RISER STICK-UP ABOVE GROUND SURFACE: 2.5'

I.D. OF SURFACE CASING: 4"

TYPE OF SURFACE CASING: STEEL

GROUND ELEVATION:

TYPE OF SURFACE SEAL: QUIKRETE

RISER PIPE I.D.: 2"

TYPE OF RISER PIPE: SCH 40 PVC

BOREHOLE DIAMETER: 8"

TYPE OF SEAL: TYPE I PORTLAND CEMENT

ELEVATION / DEPTH OF SEAL: 11.0

TYPE OF SEAL: 30/65 FINE SAND

ELEVATION / DEPTH TOP OF FILTER PACK: 12.5

ELEVATION / DEPTH TOP OF SCREEN: 14.0

TYPE OF SCREEN: SCH 40 PVC

SLOT SIZE X LENGTH: .010 X 10'

I.D. OF SCREEN: 2"

TYPE OF FILTER PACK: 20/30 Silica Sand

ELEVATION / DEPTH BOTTOM OF SCREEN: 14.0

ELEVATION / DEPTH BOTTOM OF FILTER PACK: 14.0

TYPE OF BACKFILL BELOW WELL:

ELEVATION / DEPTH OF BOREHOLE: 14.0

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-076-MW 107S
Site Name: NORTH FUEL FARM
Date Installed: 5.15.03
Project Name: SARA INVESTIGATION

Site Geologist: MERVIN DALE
Drilling Company: PROSONIC
Driller: ADAM PETERSON
Project Number: N3996

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	2" x 10' Sch. 40 Flush-threaded	MONOFLEX, LARGO FL	NO
Well Screen	2" x 5' Sch. 40, 0.010" slots flush threaded	MONOFLEX LARGO FL	NO
End Cap	6" POINT-Flush-threaded SCH 40 PVC	MONOFLEX LARGO, FL	
Drilling Fluid	None		—
Drilling Fluid Additives	None		—
Backfill Material	None		—
Annular Filter Pack	20-30 GRADE SAND	STANDARD SAND, JAX, FL	NO
~~Bentonite~~ Seal, Fine Sand	30-65 GRADE SAND	STANDARD SAND, JAX, FL	NO
Annular Grout	PORTLAND CEMENT, Type I	TARMAC AMERICA, Inc. Medley, FL	NO
Surface Cement			
Protective Casing			
Paint	None		
Rod Lubricant	None		
Compressor Oil	None		

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Louis Knight

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: North Fuel Farm, Cecil Field
Project No.: ~~3998.JG0050325~~ 0039D50 05G120

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: CEF-076-GW-N 1075-01 (F)
Sample Location: CEF-076- 1075
Sampled By: D CEVERETTE
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA

	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	ORP	Other
Date: 6/2/03								
Time: 1825								
Method: Low Flow Peristaltic	Lt. Brown	5.53	1.20	24.25	41.1	0.46	209.6	

PURGE DATA

	Time	pH	S.C.	Temp (°C)	Turbidity	DO		ORP
Date: 6/2/03								
Method: Low Flow Peristaltic								
Monitor Reading (ppm): 0								
Well Casing Diameter: 2 In.								
Well Casing Material: PVC								
Total Well Depth (TD): 17.30	See Low Flow Purge Sheet							
Static Water Level (WL): 7.30								
One Screen Volume(gal) 6.2								
Start Purge (hrs): 1500								
End Purge (hrs): 1820								
Total Purge Time (min): 200								
Total Vol. Purged (gal) 31.0								

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
Select VOCs SW846 8260B	HCl	3-40ml vials	NO
#VOHs+1,2 dichloroethane+BTEX+MTBE			
PAHs SW846 8310	None	2 - 1 liter glass ambers	NO
#Include 1- and 2-methylnaphthalene			
TRPH FL-PRO	H2SO4	2 - 1 liter glass ambers	NO
EDB 504	None	3-40 ml vials	NO
Total Lead SW846 6010B	HNO3	1 - 500 ml HDPE bottle	✓
Filtered Lead SW846 6010B	HNO3	1-500ml HDPE bottle	✓

OBSERVATIONS / NOTES

PLACE "F" AS suffix on Label I.D. of filtered sample.
Filtered with 1-micron filter.

Circle if Applicable:

MS/MSD ✓

Duplicate ID No.: CEF-076-GW-DUP8-01

Signature(s):

CEF-076-GW-MDS-01

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: North Fuel Farm SARA Investigation
PROJECT NUMBER: N3996JG0050325

WELL ID.: CEF-076- 1075
DATE: 6/2/03

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	Cum.Vol. (liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
1500	7.30	300	–	–	–	–	–	–	–	START PURGE
1505	7.51	300	1.5	5.94	0.137	27.4	2.70	24.84	153.6	
1515	7.53	300	4.5	5.64	0.123	89.6	1.55	24.16	163.4	
1525	7.53	300	7.5	5.63	0.124	147.0	1.52	23.92	165.8	
1535	7.53	300	10.5	5.59	0.119	217.0	1.41	24.24	169.0	
1545	7.50	200	12.5	5.60	0.122	218.0	1.28	24.38	170.8	
1555	7.50	200	14.5	5.59	0.121	182.0	0.98	24.43	173.1	
1605	7.50	200	16.5	5.59	0.120	168.0	0.85	24.50	172.9	
1615	7.50	200	18.5	5.57	0.120	143.0	0.79	24.80	175.0	
1625	7.47	100	19.5	5.57	0.120	128.3	0.82	25.36	175.7	
1635	7.47	100	20.5	5.56	0.120	117.0	0.86	25.67	175.9	
1645	7.47	100	21.5	5.56	0.119	99.0	0.74	25.62	176.7	
1655	7.47	100	22.5	5.55	0.118	[illegible]	0.61	25.51	178.1	
1705	7.47	100	23.5	5.56	0.118	80.7	0.56	25.37	180.2	
1715	7.47	100	24.5	5.56	0.119	74.3	0.55	25.18	183.6	
1725	7.47	100	25.5	5.55	0.119	67.2	0.58	24.91	187.3	
1735	7.47	100	26.5	5.54	0.119	58.4	0.57	24.72	191.7	
1745	7.47	100	27.5	5.54	0.119	53.2	0.53	24.55	196.1	
1755	7.47	100	28.5	5.54	0.121	48.2	0.53	24.36	199.7	
1805	7.47	100	29.5	5.53	0.120	44.6	0.49	24.28	203.5	
1815	7.47	100	30.5	5.54	0.120	42.3	0.46	24.27	207.1	
1820	7.47	100	31.0	5.53	0.120	41.1	0.46	24.25	209.6	END PURGE
	SAMPLE TIME		1825							

SIGNATURE(S): [signature]

TETRA TECH NUS, INC. CHAIN OF CUSTODY | NUMBER 2313 | PAGE 1 OF 1

PROJECT NO: N0039, CT078	FACILITY: ~~North Fuel~~ TANK 285, NASCF	PROJECT MANAGER MARK SPERANZA	PHONE NUMBER 412 921 8916	LABORATORY NAME AND CONTACT: ACCUTEST Sue Bell
SAMPLERS (SIGNATURE) [signature]		FIELD OPERATIONS LEADER MERV DALE	PHONE NUMBER 904 636 6125	ADDRESS 4405 Vineland Rd. C-15
		CARRIER/WAYBILL NUMBER ~~Lab courier~~ Fedex 8371 1005 5488		CITY, STATE ORLANDO, FL 32811

STANDARD TAT ☐
RUSH TAT ☒
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☒ 14 day

CONTAINER TYPE PLASTIC (P) or GLASS (G): P P
PRESERVATIVE USED: HNO_3 HNO_3

	DATE YEAR 2003	TIME	SAMPLE ID F18057	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAP (G) COMP (C)	No. OF CONTAINERS	TOTAL LEAD SW846 6010B	DISSOLVED LEAD SW846 6010B *							COMMENTS
1	6/02	1825	CEF-076-GW-N107S-01				GW	G	1	1								Cool to 4°C
2	6/02	1825	CEF-076-GW-N107S-01F				GW	G	1		1							
3	6/02	0000	CEF-076-GW-DUAP-01				GW	G	1	1	1							NORK Release
4	6/02	0000	CEF-076-GW-DUPP-01F				GW	G	1		1							N0039-WR309
5	6/02	1825	CEF-076-GW-MD5-01				GW	G	1	1								Mod 3.
6	6/02	1825	CEF-076-GW-MD5-01F				GW	G	1		1							
																		* Filtered in field

1. RELINQUISHED BY [signature]	DATE 6/4/03	TIME 1600	1. RECEIVED BY Fedex	DATE	TIME
2. RELINQUISHED BY FED EX	DATE	TIME	2. RECEIVED BY FED EX	DATE 6/5/03	TIME 0900
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS 2.0, 1.8, 2.4

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY) 4/02R

10/14/03 ANK 285$1 USN- CTO 18 N0039

1405 M. Dale leaving NASJAX in F150 (w. pgr) for Cecil Field to conduct Phase III Sampling Plan (see plan dated 10/2/03).
WEATHER NOTE: SUNNY TO PTLY CLDY, 82°F, light breeze from North. We've had rain the past 2-3 days.

1430 Stop for lunch (take out).

1500 Arrive at Cecil. Load bottleware for SW846 5035/8260B soil sampling. Also hand auger (stainless steel) & decon kit & cooler.

1600 ON SITE via flightline. Note that Aviation Ave. is under construction there is no new construction on this side of the North Fuel Farm fence and thus no known active utilities to be concerned with.

1618- DECON of hand auger IAW FDEP SOPs complete. Stake SB02 re-located in same place as expected. PPE - Level D with nitrile gloves.

Boring Log

Depth (ft. bls)	soil color	soil type	USCS	remarks
0-1	black	silty fine sand	SM	dry
1-2	gray	silty fine sand	SM	damp
2-2.5	gray	silty fine sand	SM	moist @ 2'
2.5-3	dk. brown	silty fine sand	SM	moist

1630 Sample from 2.5-3' bls for CEF-285-SS-002a-03 @ SB02 (South side of tank). Total 6-H_2O preserved 40ml vials + 3-CH_3OH preserved vials. 1/3 of sample, 2/3 for 4 MSMSD per work plan. Same I.D. for all bottles.

1638 SS hand auger decontaminated, samples on ice, depart site.

1650 Back at office, unload equipment, fill out chain of custody #2350 for this sample + complete soil sample log sheet.

1730 Depart office.

1820 Back @ main office. Use fedex airbill 8427 1834 5530.

MWD

M.W. Dale

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: NAS Cecil Field Tank 285ST
Project No.: N0039, CTO 78

MD ~~[x]~~ Surface Soil
[X] Subsurface Soil (2-3' bls)
[ ] Sediment
[] Other:
[ ] QA Sample Type:

Sample ID No.: CEF-285-SS-002a-03
Sample Location: CEF-285-SB02
Sampled By: MD
C.O.C. No.: 2350

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 10/14/03 Time: 1630 Method: ~~Disposable Trowel~~ SS HA Monitor Reading (ppm): —	2-3	MD ~~dk.~~ gray (2-2.5') dk. brn (2.5-3')	silty fine sand, moist

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

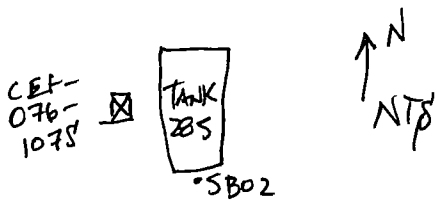
SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	LAB
SW846 8260B *	CH_3OH 1 - 40 ml vial	yes	Accutest
SW846 8260B *	H_2O 2 - 40 ml vials	yes	Accutest
			accutest

OBSERVATIONS / NOTES:

see logbook # 1440
* analyze for methylene chloride only

MAP:



Check if Applicable:

ID No.: [X] MSMSD [ ] DUPLICATE

CEF-285-SS-002a-03

Signature(s): M. W. Dale

TETRA TECH NUS, INC. CHAIN OF CUSTODY | NUMBER 2350 | PAGE 1 OF 1

PROJECT NO: N0039 CT078	FACILITY: TANK 285 ST	PROJECT MANAGER: MARK SPERANZA	PHONE NUMBER: 412 921 8916	LABORATORY NAME AND CONTACT: ACCUTEST Sue Bell
SAMPLERS (SIGNATURE): Marvin W. Dale		FIELD OPERATIONS LEADER: MARV DALE	PHONE NUMBER: 904 636 6125	ADDRESS: 4405 Vineland Rd. C-15
		CARRIER/WAYBILL NUMBER: Fedex 8427 1834 5530		CITY, STATE: ORLANDO, FL 32811

STANDARD TAT ☒
RUSH TAT ☐ ☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2003	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAP (G) COMP (C)	No. OF CONTAINERS	TYPE OF ANALYSIS: SW846 8260B *	SW846 8260B *							COMMENTS
								CONTAINER TYPE PLASTIC (P) or GLASS (G)	G	G							
								PRESERVATIVE USED	CH_3OH	H_2O							
10/14	1630	CEF.285.SS-002a.03	SB02	2	3	SO	G	9	3	6	**						Cool to 4°C
																	work release N0039-WR379 Mod 1
																	* Analyze for METHYLENE Chloride only use a detection limit of 10 µg/Kg (micrograms per Kilogram).
																	** use extra for MS/MSD.

1. RELINQUISHED BY: Marvin W. Dale	DATE 10/14/03	TIME 1900	1. RECEIVED BY: Fedex	DATE	TIME
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY) 4/02R

TTNUS JACKSONVILLE Fax:9042810070 Oct 15 2003 10:34 P.04