

N60200.AR.001664  
NAS CECIL FIELD, FL  
5090.3a

CONFIRMATORY SAMPLING REPORT FOR BUILDING 825 TANK 825-OW BASE  
REALIGNMENT AND CLOSURE UNDERGROUND STORAGE TANK AND ABOVEGROUND  
STORAGE TANK GREY SITES REVISION 1 NAS CECIL FIELD FL  
2/1/1999  
HARDING LAWSON ASSOCIATES

**CONFIRMATORY SAMPLING REPORT**  
**BUILDING 825, TANK 825-OW**  
**BASE REALIGNMENT AND CLOSURE**  
**UNDERGROUND STORAGE TANK AND**  
**ABOVEGROUND STORAGE TANK GRAY SITES**  
**NAVAL AIR STATION CECIL FIELD**  
**JACKSONVILLE, FLORIDA**

**Unit Identification Code: N60200**

**Contract No.: N62467-89-D-0317/131**

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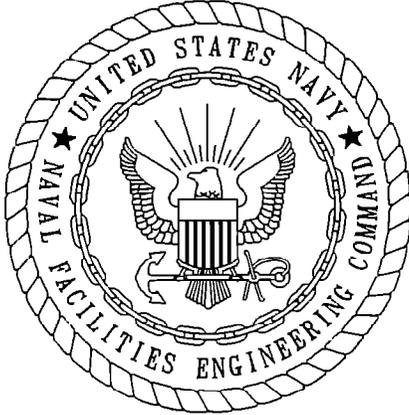
**Prepared for:**

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**Naval Facilities Engineering Command**  
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**February 1999**

**Revision 1.0**



CERTIFICATION OF TECHNICAL  
DATA CONFORMITY (MAY 1987)

The Contractor, Harding Lawson Associates, hereby certifies that, to the best of its knowledge and belief, the technical data delivered herewith under Contract No. N62467-89-D-0317/131 are complete and accurate and comply with all requirements of this contract.

DATE: February 18, 1999

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(DFAR 252.227-7036)

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Jacksonville, Florida

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GLOSSARY

ABB-ES      ABB Environmental Services, Inc.  
bls          below land surface  
HLA          Harding Lawson Associates  
mg/kg        milligrams per kilogram  
OVA          organic vapor analyzer  
UST          underground storage tank

## 1.0 INTRODUCTION

Harding Lawson Associates (HLA), under contract to the Southern Division, Naval Facilities Engineering Command, has completed the confirmatory sampling for Tank 825-OW at Naval Air Station Cecil Field in Jacksonville, Florida. This report summarizes the related field operations, results, conclusions, and recommendations of the confirmatory sampling.

Tank 825-OW is an underground storage tank (UST) located just north of an oil-water separator on the south side of Building 825 and east of Building 825LS. Building 825 is a hangar that houses four separate fighter squadrons, and Building 825LS is a lift station that receives wastewater from aircraft wash racks (ABB Environmental Services, Inc. [ABB-ES], 1994) (Figure 1). The UST has a 1,000-gallon capacity and is used to store used oil from the oil-water separator (ABB-ES, 1997). A Contamination Assessment Plan for the assessment of soil and groundwater at Tank 825-OW was prepared by HLA (then ABB-ES) in November 1996 (ABB-ES, 1996).

## 2.0 FIELD INVESTIGATION

The confirmatory sampling at Tank 825-OW was initiated in January 1997 and included

- the advancement of four soil borings to the water table, and
- the collection and analysis of one subsurface soil sample and one groundwater sample.

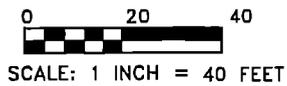
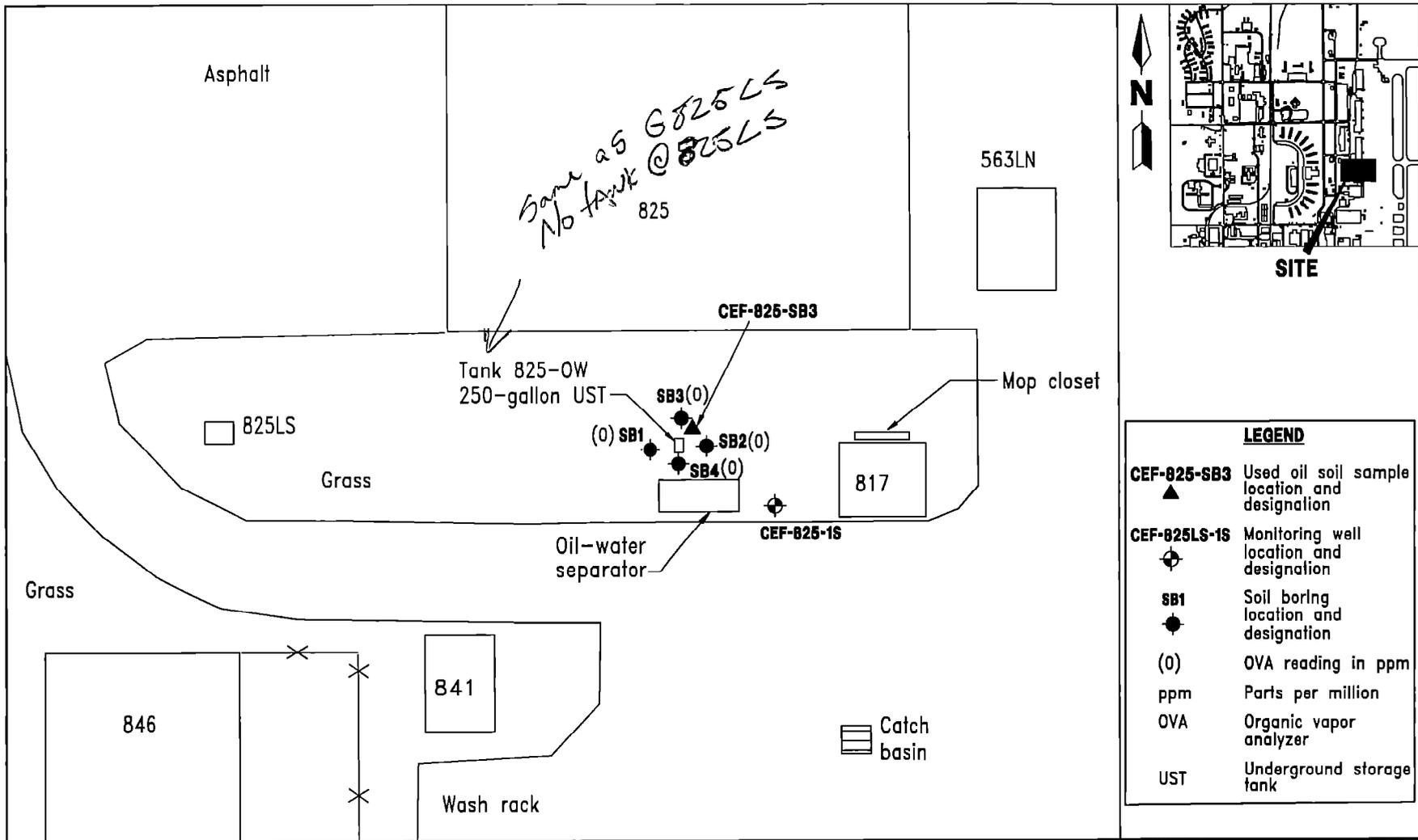
Soil samples were collected at depth intervals of 1 foot below land surface (bls) and every 2 feet thereafter to the water table. These samples were screened for hydrocarbon vapors with an organic vapor analyzer (OVA).

One subsurface soil sample (CEF-825-SB3) was collected at 5 feet bls at the location of soil boring SB3 and analyzed for the used oil group parameters.

One groundwater sample was collected on March 27, 1997, from a preexisting monitoring well CEF-825LS-1S located downgradient from the tank location and analyzed for the Kerosene Analytical Group parameters. A general site plan indicating the location of the soil borings and monitoring well CEF-825LS-1S is presented on Figure 1. The monitoring well installation detail is included in Appendix A.

## 3.0 SCREENING AND ANALYTICAL RESULTS

Excessively contaminated soil was not detected in soil samples collected from the unsaturated zone during the confirmatory sampling. The soil OVA data collected during the confirmatory sampling are summarized in Table 1 and presented on Figure 1.



**FIGURE 1**  
**TANK 825-OW**  
**SOIL BORING AND MONITORING WELL**  
**LOCATIONS**



**CONFIRMATORY SAMPLING REPORT**  
**BUILDING 825, TANK 825-OW**

**NAVAL AIR STATION CECIL FIELD**  
**JACKSONVILLE, FLORIDA**

**Table 1  
Soil Screening Results**

Confirmatory Sampling Report  
Building 825, Tank 825-OW  
Naval Air Station Cecil Field  
Jacksonville, Florida

Location	OVA Concentration (ppm)			
	Depth (feet bls)	Unfiltered	Filtered	Actual
CEF-825LS-SB1	1	0	-	0
	3	0	-	0
	5	0	-	0
	7	0	-	0
	8.5 (wet)	0	-	0
CEF-825LS-SB2	1	0	-	0
	3	0	-	0
	5	0	-	0
	7 (moist)	0	-	0
CEF-825LS-SB3	1	0	-	0
	3	0	-	0
	5	0	-	0
	7 (moist)	0	-	0
CEF-825LS-SB4	1	0	-	0
	3	0	-	0
	5	0	-	0
	6 (refusal)	NC	-	NC

Notes: All soil samples were collected on January 16, 1997.  
Soil samples were filtered with carbon to determine the methane concentration.

OVA = organic vapor analyzer.

ppm = parts per million.

bls = below land surface.

- = filtered readings were not collected.

wet = soil sample was completely saturated when analyzed.

moist = soil sample was partially saturated when analyzed.

refusal = obstruction encountered at this point. No further sampling performed.

NC = sample not collected due to subsurface obstruction.

No contaminants were detected (with the exception of arsenic at 1.3 milligrams per kilogram [mg/kg]) in subsurface soil sample CEF-825-SB3 above soil cleanup target levels. The arsenic concentration, however, is below the Direct Exposure II value of 3.7 mg/kg. Subsurface soil analytical results are summarized in Table 2 and presented in Appendix A.

Contaminant concentrations in groundwater were below the groundwater cleanup target levels specified in Chapter 62-770 of the Florida Administrative Code. Groundwater data are summarized in Table 3 and the complete analytical data set is presented in Appendix B.

#### 4.0 CONCLUSIONS AND RECOMMENDATIONS

Data obtained during the confirmatory sampling at the Tank 825-OW site did not indicate the presence of contaminated soil. No contaminants were detected above cleanup target levels in subsurface soil (with the exception of arsenic at 1.3 mg/kg) and groundwater at the Tank 825-OW site. The arsenic concentration, however, is below the Direct Exposure II value of 3.7 mg/kg. Therefore, no further action is recommended for the Tank 825-OW site until tank removal and closure is performed.

**Table 2**  
**Summary of Subsurface Soil Analytical Detections**

Site Assessment Report  
Building 825, Tank 825-OW  
Naval Air Station Cecil Field  
Jacksonville, Florida

Compound	CEF-825-SB3 (5 feet bls: OVA = 0 ppm)	Soil Cleanup Target Levels <sup>1</sup>
<b><u>Volatile Organic Compounds (USEPA Method 8020) (mg/kg)</u></b>		
Tetrachloroethene	0.0056	NA
<b><u>Polynuclear Aromatic Hydrocarbons (USEPA Method 8310) (mg/kg)</u></b>		
Not detected		
<b><u>Total Recoverable Petroleum Hydrocarbons (FL-PRO) (mg/kg)</u></b>		
Not detected		
<b><u>Inorganic Analytes (mg/kg)</u></b>		
Arsenic	<b>1.8 J</b>	0.8/TCLP
Chromium	7	290/TCLP
Lead	15 J	500/TCLP
Mercury	0.02	3.7/TCLP

<sup>1</sup> Chapter 62-770, Florida Administrative Code for Direct Exposure I/Leachability, Table V.

Notes: Bold indicates exceedance of the cleanup target level.

bls = below land surface.  
OVA = organic vapor analyzer.  
ppm = parts per million.  
USEPA = U.S. Environmental Protection Agency.  
mg/kg = milligrams per kilogram.  
FL-PRO = Florida-Petroleum Residual Organics.  
J = estimated value.  
TCLP = toxicity characteristic leaching procedure.

**Table 3  
Summary of Groundwater Analytical Detections**

Site Assessment Report  
Building 825, Tank 825-OW  
Naval Air Station Cecil Field  
Jacksonville, Florida

Compound	Monitoring Well CEF-825-1S	Groundwater Cleanup Target Levels <sup>1</sup>
<b><u>Volatile Organic Compounds (USEPA Method 601/602) (µg/l)</u></b>		
No compounds detected		
<b><u>Polynuclear Aromatic Hydrocarbons (USEPA Method 610) (µg/l)</u></b>		
Naphthalene	2.2 J	20
<b><u>Total Recoverable Petroleum Hydrocarbons (FL-PRO) (µg/l)</u></b>		
No compounds detected		
<b><u>Inorganic Analytes (µg/l)</u></b>		
Barium	14.5 J	2,000
Chromium	2.1 J	100
<sup>1</sup> Chapter 62-770, Florida Administrative Code.  Notes: USEPA = U.S. Environmental Protection Agency. µg/l = micrograms per liter.		

## REFERENCES

ABB Environmental Services, Inc. (ABB-ES). 1994. *Base Realignment and Closure Environmental Baseline Survey Report, Naval Air Station Cecil Field, Jacksonville, Florida*. Prepared for Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM), North Charleston, South Carolina (November).

ABB-ES. 1996. *Contamination Assessment Plan, Naval Air Station Cecil Field, Jacksonville, Florida*. Prepared for SOUTHNAVFACENGCOM, North Charleston, South Carolina (November).

ABB-ES. 1997. *Base Realignment and Closure Tank Management Plan, Naval Air Station Cecil Field, Jacksonville, Florida*. Prepared for SOUTHNAVFACENGCOM, North Charleston, South Carolina (January).

**APPENDIX A**  
**MONITORING WELL INSTALLATION DETAIL**

TITLE: NAS Cecil Field BRAC		LOG of WELL: CEF-825LS-1S	BORING NO. CEF-825LS-1S
CLIENT: SOUTH DIV NAVFACENCOM		PROJECT NO: 08520-85	
CONTRACTOR: Alliance Environmental, Inc.		DATE STARTED: 12-13-95	COMPLTD: 12-13-95
METHOD: Auger	CASE SIZE: 2 in.	SCREEN INT.: 8 - 18 ft.	PROTECTION LEVEL: 0
TOC ELEV.: FEET.	MONITOR INST.: PID	TOT DPTH: 19.0 FEET.	DPTH TO $\nabla$ 9.5 FEET.
LOGGED BY: R. Holloway	WELL DEVELOPMENT DATE:		SITE: 25 - 825LS Lift Station

DEPTH FT.	LABORATORY SAMPLE ID.	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
5.1					SILTY SAND (SM): 100%, brown, quartz, fine- to very fine-grained, subrounded to subangular, well sorted.		SM	posthole	
0.7							posthole		
7.2							1,1,2		
13							1,1,1		
44							1,1,1		
10									
15									
20									
25									
30									

**APPENDIX B**  
**GROUNDWATER ANALYTICAL DATA**

NAS CECIL FIELD -- OIL/WATER SEPARATOR B250W  
GROUNDWATER -- ANALYTICAL DATA -- REPORT REQUEST NO. 10701

Lab Sample Number: C32GQ  
Site: CECILBRAC2  
Locator: 25G00101  
Collect Date: 20-FEB-96

VALUE QUAL UNITS DL

CLP VOLATILES 90-SOW

Chloromethane	2 U	ug/l	2
Bromomethane	2 U	ug/l	2
Vinyl chloride	2 U	ug/l	2
Chloroethane	2 U	ug/l	2
Methylene chloride	1 U	ug/l	1
Acetone	11	ug/l	2
Carbon disulfide	1 U	ug/l	1
1,1-Dichloroethene	1 U	ug/l	1
1,1-Dichloroethane	1 U	ug/l	1
1,2-Dichloroethene (total)	1 U	ug/l	1
Chloroform	1 U	ug/l	1
1,2-Dichloroethane	1 U	ug/l	1
2-Butanone	2 U	ug/l	2
1,1,1-Trichloroethane	1 U	ug/l	1
Carbon tetrachloride	1 U	ug/l	1
Bromodichloromethane	1 U	ug/l	1
1,2-Dichloropropane	1 U	ug/l	1
cis-1,3-Dichloropropene	1 U	ug/l	1
Trichloroethene	1 U	ug/l	1
Dibromochloromethane	1 U	ug/l	1
1,1,2-Trichloroethane	1 U	ug/l	1
Benzene	1 U	ug/l	1
trans-1,3-Dichloropropene	1 U	ug/l	1
Bromoform	1 U	ug/l	1
4-Methyl-2-pentanone	2 U	ug/l	2
2-Hexanone	2 U	ug/l	2
Tetrachloroethene	1 U	ug/l	1
Toluene	1 U	ug/l	1
1,1,2,2-Tetrachloroethane	1 U	ug/l	1
Chlorobenzene	1 U	ug/l	1
Ethylbenzene	1 U	ug/l	1
Styrene	1 U	ug/l	1
Xylenes (total)	1 U	ug/l	1

CLP SEMIVOLATILES 90-SOW

Phenol	10 U	ug/l	10
bis(2-Chloroethyl) ether	10 U	ug/l	10
2-Chlorophenol	10 U	ug/l	10
1,3-Dichlorobenzene	10 U	ug/l	10
1,4-Dichlorobenzene	10 U	ug/l	10
1,2-Dichlorobenzene	10 U	ug/l	10
2-Methylphenol	10 U	ug/l	10
2,2-oxybis(1-Chloropropane)	10 U	ug/l	10
4-Methylphenol	10 U	ug/l	10
N-Nitroso-di-n-propylamine	10 U	ug/l	10
Hexachloroethane	10 U	ug/l	10
Nitrobenzene	10 U	ug/l	10
Isophorone	10 U	ug/l	10
2-Nitrophenol	10 U	ug/l	10
2,4-Dimethylphenol	10 U	ug/l	10

NAS CECIL FIELD -- OIL/WATER SEPARATOR B250W  
GROUNDWATER -- ANALYTICAL DATA -- REPORT REQUEST NO. 10701

Lab Sample Number: C32GQ  
Site: CECILBRAC2  
Locator: 25G00101  
Collect Date: 20-FEB-96

VALUE QUAL UNITS DL

bis(2-Chloroethoxy) methane	10 U	ug/l	10
2,4-Dichlorophenol	10 U	ug/l	10
1,2,4-Trichlorobenzene	10 U	ug/l	10
Naphthalene	2.2 J	ug/l	10
4-Chloroaniline	10 U	ug/l	10
Hexachlorobutadiene	10 U	ug/l	10
4-Chloro-3-methylphenol	10 U	ug/l	10
2-Methylnaphthalene	10 U	ug/l	10
Hexachlorocyclopentadiene	10 U	ug/l	10
2,4,6-Trichlorophenol	10 U	ug/l	10
2,4,5-Trichlorophenol	25 U	ug/l	25
2-Chloronaphthalene	10 U	ug/l	10
2-Nitroaniline	25 U	ug/l	25
Dimethylphthalate	10 U	ug/l	10
Acenaphthylene	10 U	ug/l	10
2,6-Dinitrotoluene	10 U	ug/l	10
3-Nitroaniline	25 U	ug/l	25
Acenaphthene	10 U	ug/l	10
2,4-Dinitrophenol	25 U	ug/l	25
4-Nitrophenol	25 U	ug/l	25
Dibenzofuran	10 U	ug/l	10
2,4-Dinitrotoluene	10 U	ug/l	10
Diethylphthalate	10 U	ug/l	10
4-Chlorophenyl-phenylether	10 U	ug/l	10
Fluorene	10 U	ug/l	10
4-Nitroaniline	25 U	ug/l	25
4,6-Dinitro-2-methylphenol	25 U	ug/l	25
N-Nitrosodiphenylamine	10 U	ug/l	10
4-Bromophenyl-phenylether	10 U	ug/l	10
Hexachlorobenzene	10 U	ug/l	10
Pentachlorophenol	25 U	ug/l	25
Phenanthrene	10 U	ug/l	10
Anthracene	10 U	ug/l	10
Carbazole	10 U	ug/l	10
Di-n-butylphthalate	10 U	ug/l	10
Fluoranthene	10 U	ug/l	10
Pyrene	10 U	ug/l	10
Butylbenzylphthalate	10 U	ug/l	10
3,3-Dichlorobenzidine	10 U	ug/l	10
Benzo (a) anthracene	10 U	ug/l	10
Chrysene	10 U	ug/l	10
bis(2-Ethylhexyl) phthalate	10 U	ug/l	10
Di-n-octylphthalate	10 U	ug/l	10
Benzo (b) fluoranthene	10 U	ug/l	10
Benzo (k) fluoranthene	10 U	ug/l	10
Benzo (a) pyrene	10 U	ug/l	10
Indeno (1,2,3-cd) pyrene	10 U	ug/l	10
Dibenzo (a,h) anthracene	10 U	ug/l	10
Benzo (g,h,i) perylene	10 U	ug/l	10

CLP PESTICIDES/PCBS 90-SOW  
alpha-BHC

.05 U ug/l .05

NAS CECIL FIELD -- OIL/WATER SEPARATOR B250W  
GROUNDWATER -- ANALYTICAL DATA -- REPORT REQUEST NO. 10701

Lab Sample Number: C32GQ  
Site: CECILBRAC2  
Locator: 25G00101  
Collect Date: 20-FEB-96

	VALUE	QUAL UNITS	DL
beta-BHC	.05 U	ug/l	.05
delta-BHC	.05 U	ug/l	.05
gamma-BHC (Lindane)	.05 U	ug/l	.05
Heptachlor	.05 U	ug/l	.05
Aldrin	.05 U	ug/l	.05
Heptachlor epoxide	.008 J	ug/l	.05
Endosulfan I	.05 U	ug/l	.05
Dieldrin	.1 U	ug/l	.1
4,4-DDE	.1 U	ug/l	.1
Endrin	.1 U	ug/l	.1
Endosulfan II	.1 U	ug/l	.1
4,4-DDD	.1 U	ug/l	.1
Endosulfan sulfate	.1 U	ug/l	.1
4,4-DDT	.1 U	ug/l	.1
Methoxychlor	.5 U	ug/l	.5
Endrin ketone	.006 J	ug/l	.1
Endrin aldehyde	.1 U	ug/l	.1
alpha-Chlordane	.05 U	ug/l	.05
gamma-Chlordane	.05 U	ug/l	.05
Toxaphene	5 U	ug/l	5
Aroclor-1016	1 U	ug/l	1
Aroclor-1221	2 U	ug/l	2
Aroclor-1232	1 U	ug/l	1
Aroclor-1242	1 U	ug/l	1
Aroclor-1248	1 U	ug/l	1
Aroclor-1254	1 U	ug/l	1
Aroclor-1260	1 U	ug/l	1
CLP METALS AND CYANIDE			
Aluminum	322 J	ug/l	40
Antimony	2 U	ug/l	12
Arsenic	3 U	ug/l	2
Barium	14.5 J	ug/l	40
Beryllium	1 U	ug/l	1
Cadmium	1 U	ug/l	1
Calcium	119000	ug/l	1000
Chromium	2.1 J	ug/l	2
Cobalt	2 U	ug/l	10
Copper	2 U	ug/l	5
Iron	2460 J	ug/l	20
Lead	2 U	ug/l	.6
Magnesium	817 J	ug/l	1000
Manganese	152	ug/l	3
Mercury	.2 U	ug/l	.1
Nickel	2 U	ug/l	8
Potassium	10100	ug/l	1000
Selenium	3 U	ug/l	1
Silver	1 U	ug/l	2
Sodium	4160 J	ug/l	1000
Thallium	4 U	ug/l	2
Vanadium	5.8 J	ug/l	10
Zinc	7.5 J	ug/l	4

NAS CECIL FIELD -- OIL/WATER SEPARATOR B250W  
GROUNDWATER -- ANALYTICAL DATA -- REPORT REQUEST NO. 10701

Lab Sample Number: C32GQ  
Site CECILBRAC2  
Locator 25G00101  
Collect Date: 20-FEB-96

VALUE QUAL UNITS DL

Cyanide 3.2 J ug/l .5

U = NOT DETECTED J = ESTIMATED VALUE  
UJ = REPORTED QUANTITATION LIMIT IS QUALIFIED AS ESTIMATED  
R = RESULT IS REJECTED AND UNUSABLE

NAS CECIL FIELD -- OIL/WATER SEPARATOR 8250W  
GROUNDWATER -- ANALYTICAL DATA -- REPORT REQUEST NO. 10702

Lab Sample Number: A682101100  
Site CECILBRAC2  
Locator 25G00101  
Collect Date: 20-FEB-96

VALUE	QUAL	UNITS	DL
-------	------	-------	----

TPH			
Total petroleum hydrocarbons	.5 U	mg/l	.5

U = NOT DETECTED J = ESTIMATED VALUE  
UJ = REPORTED QUANTITATION LIMIT IS QUALIFIED AS ESTIMATED  
R = RESULT IS REJECTED AND UNUSABLE