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NAS CECIL FIELD, FL
5090.3a

SITE ASSESSMENT REPORT FOR BUILDING 334 OIL-WATER SEPARATOR 334-OW BASE REALIGNMENT AND CLOSURE UNDERGROUND STORAGE TANK AND ABOVEGROUND STORAGE TANK GREY SITES REVISION 1 NAS CECIL FIELD FL

9/1/1999

HARDING LAWSON ASSOCIATES

SITE ASSESSMENT REPORT

BUILDING 334, OIL-WATER SEPARATOR 334-OW

BASE REALIGNMENT AND CLOSURE

UNDERGROUND STORAGE TANK AND ABOVEGROUND STORAGE TANK GREY SITES

NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA

Unit Identification Code: N60200

Contract No.: N62467-89-D-0317/149

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September 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-0317/149 are complete and accurate and comply with all requirements of this contract.

DATE: September 22, 1999

NAME AND TITLE OF CERTIFYING OFFICIAL: Rao Angara
Task Order Manager

NAME AND TITLE OF CERTIFYING OFFICIAL: Eric A. Blomberg, P.G.
Project Technical Lead

(DFAR 252.227-7036)

TABLE OF CONTENTS

Site Assessment Report
Building 334, Oil-water Separator 334-OW
Naval Air Station Cecil Field
Jacksonville, Florida

Chapter	Title	Page No.
1.0	INTRODUCTION	1
2.0	FIELD INVESTIGATION	1
3.0	SCREENING AND ANALYTICAL RESULTS	3
4.0	CONCLUSIONS AND RECOMMENDATIONS	3

REFERENCES

APPENDICES

Appendix A: Monitoring Well Installation Detail
Appendix B: Analytical Data

LIST OF FIGURES

Site Assessment Report
Building 334, Oil-water Separator 334-OW
Naval Air Station Cecil Field
Jacksonville, Florida

Figure	Title	Page No.
1	Oil-Water Separator 334-OW Soil Boring and Monitoring Well Locations	2

LIST OF TABLES

Table	Title	Page No.
1	Soil Screening Results	4
2	Summary of Subsurface Soil Analytical Detections	6
3	Summary of Groundwater Analytical Results	7

GLOSSARY

ABB-ES	ABB Environmental Services, Inc.
bls	below land surface
FDEP	Florida Department of Environmental Protection
OVA	organic vapor analyzer
SA	site assessment

1.0 INTRODUCTION

Harding Lawson Associates (HLA), under contract to the Southern Division, Naval Facilities Engineering Command, has completed the site assessment (SA) for oil-water separator 334-OW at Naval Air Station Cecil Field in Jacksonville, Florida. This report summarizes the related field operations, results, conclusions, and recommendations.

Oil-water separator 334-OW is located on the south side of Building 334, a jet engine test facility (ABB Environmental Services, Inc. [ABB-ES], 1994) (Figure 1). The installation date and capacity of the oil-water separator are unknown. A confirmatory sampling report was prepared in November 1997 and recommended that additional soil sampling be conducted at the site (ABB-ES, 1997).

A site assessment report (HLA, 1999) for oil-water separator 334-OW was submitted to FDEP in April 1999 and recommended that contaminated soil should be delineated and removed when the oil-water separator is removed. The petroleum subcommittee subsequently requested that the contaminated soil be delineated. This SA report includes the results of the soil contamination delineation.

2.0 FIELD INVESTIGATION

The SA for oil-water separator 334-OW was initiated in November, 1997 and included

- the advancement of six soil borings to the water table,
- collection and analysis of one groundwater and one subsurface soil samples, and
- collection and analysis of six subsurface soil samples to delineate the extent of contaminated soil above cleanup target levels.

Soil samples were collected from each boring 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 was collected on October 14, 1998 and analyzed for the Used Oil Group parameters. Sample CEF-334-SB1 was collected from 5 feet bls at the location of soil screening boring SB1 which had the highest OVA concentration (2,300 parts per million [ppm]).

Three subsurface soil samples, CEF-334-SB11, CEF-334-SB12, and CEF-334-SB13, were collected on February 3, 1999 and analyzed for the used oil soil group to delineate the extent of contaminated soil. The samples were collected just above the water table at 4 feet bls.

Three additional subsurface soil samples CEF-334-SB14, CEF-334-SB15, and CEF-334-SB16 were collected on August 12, 1999, and analyzed for TRPH to delineate the extent of TRPH contamination east of the oil-water separator.

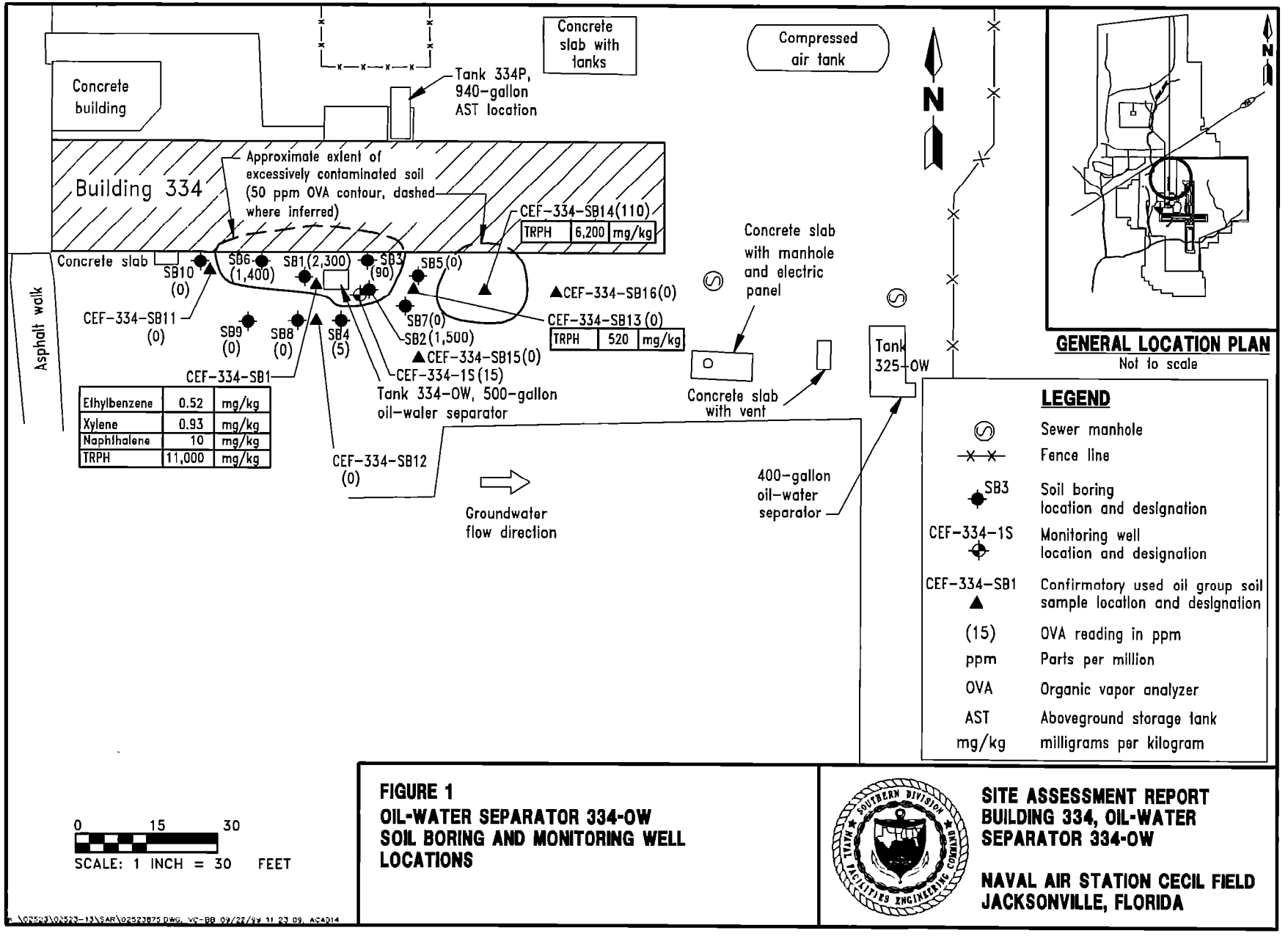


FIGURE 1
OIL-WATER SEPARATOR 334-OW SOIL BORING AND MONITORING WELL LOCATIONS

SITE ASSESSMENT REPORT BUILDING 334, OIL-WATER SEPARATOR 334-OW

NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA

One monitoring well, CEF-334-1S, was previously installed downgradient (east) of the oil-water separator during the confirmatory sampling of the site. The downgradient location was selected based on the groundwater flow direction (east) at the jet engine test cell site just to the north. The well was sampled in March 1997 for used oil group parameters and again in July 1999 (as part of the natural attenuation monitoring of the jet engine test cell site) for kerosene group parameters. A general site plan indicating the location of the soil borings and monitoring well is presented on Figure 1. The monitoring well installation detail is included in Appendix A.

3.0 SCREENING AND ANALYTICAL RESULTS

Excessively contaminated soil (greater than 50 parts per million [ppm] on an OVA) was detected in five of the 16 soil borings advanced during confirmatory sampling and the SA. Soil boring SB1 had the highest OVA concentration (2,300 ppm) at a depth of 5 feet bls. The soil OVA data are summarized in Table 1 and presented on Figure 1.

Ethylbenzene, xylene, naphthalene, and total recoverable petroleum hydrocarbons were the only contaminants detected above Florida Department of Environmental Protection (FDEP) soil cleanup target levels in subsurface soil sample CEF-334-SB1. Exceedances of cleanup target levels in sample CEF-334-SB1 were delineated to the east, west and south. Subsurface soil analytical results are summarized in Table 2 and presented in Appendix A.

No contaminants were detected above FDEP groundwater cleanup target levels in the groundwater samples collected from monitoring well CEF-334-1S. A summary of the groundwater analytical results is presented in Table 3. The complete analytical data set is presented in Appendix B.

4.0 CONCLUSIONS AND RECOMMENDATIONS

Based on site assessment results at the Jet Engine Test Cell, groundwater flows to the east.

Data obtained during the confirmatory sampling of oil-water separator 334-OW indicated the presence of soil contamination at levels above cleanup target levels. The extent of soil contamination above cleanup target levels has been delineated. No contaminants were detected above cleanup target levels in groundwater sample CEF-334-1S.

It is recommended that no further action take place at the oil-water separator site until it is removed at which time contaminated soil should be removed.

Table 1
Soil Screening Results

Site Assessment Report
Building 334, Oil-water Separator 334-OW
Naval Air Station Cecil Field
Jacksonville, Florida

Location	OVA Concentration (ppm)			
	Depth (feet bls)	Unfiltered	Filtered	Actual
SB1	1	3	--	3
	3	0	--	0
	5	2,300	0	2,300
	7 (wet)	4,500	0	4,500
SB2	1	0	--	0
	3	0	--	0
	5	1,500	--	1,500
	7 (wet)	>5,000	--	>5,000
SB3	1	0	--	0
	3	18	--	18
	5	90	0	90
	7 (moist)	900	0	900
SB4	1	0	--	0
	3	0	--	0
	5	5	--	5
	7	0	--	0
CEF-334-1S	2	0	--	0
	4	0	--	0
	5	15	--	15
	7	60	--	60
	11	1,100	--	1,100
SB5	1	0	--	0
	3	0	--	0
	5 (refusal)	--	--	--
SB6	1	0	0	0
	3	0	0	0
	5 (moist)	1,500	100	1,400
	7 (wet)	>5,000	250	4,750
SB7	1	0	--	0
	3	0	0	0
	5 (moist)	0	--	0
	7 (wet)	0	--	0
SB8	1	0	--	0
	3	0	--	0
	5 (moist)	0	--	0
	7 (wet)	30	15	15

See notes at end of table.

Table 1 (Continued)
Soil Screening Results

Site Assessment Report
Building 334, Oil-water Separator 334-OW
Naval Air Station Cecil Field
Jacksonville, Florida

Location	OVA Concentration (ppm)			
	Depth (feet bls)	Unfiltered	Filtered	Actual
SB9	1	0	--	0
	3	0	--	0
	5	0	--	0
	7 (moist)	0	--	0
SB10	1	0	--	0
	3	0	--	0
	5	0	--	0
	7 (wet)	0	--	0
SB11	1	0	--	0
	3	0	--	0
	4	0	--	0
SB12	1	0	--	0
	3	0	--	0
	4	0	--	0
SB13	1	0	--	0
	3	0	--	0
	4.5	0	--	0
SB14	4	250	110	140
SB15	4	0	--	0
SB16	4	0	--	0

Notes: Soil samples were filtered with carbon to determine the methane concentration.

OVA = organic vapor analyzer.
ppm = parts per million.
bls = below land surface.
refusal = subsurface obstruction encountered during boring advancement; no further samples collected at this location.
wet = soil sample was completely saturated when analyzed.
> = greater than.
moist = soil sample was partially saturated when analyzed.
-- = filtered readings were not collected.

Table 2
Summary of Subsurface Soil Analytical Detections

Site Assessment Report
Building 334, Oil-water Separator 334-OW
Naval Air Station Cecil Field
Jacksonville, Florida

Compound	CEF-334-SB1 (5 feet bls; OVA = 2,400 ppm)	CEF-334-SB11 (4 feet bls; OVA = 0 ppm)	CEF-334-SB12 (4 feet bls; OVA = 0 ppm)	CEF-334-SB13 (4 feet bls; OVA = 0 ppm)	CEF-334-SB14 (4 feet bls; OVA = 140 ppm)	CEF-334-SB15 (4 feet bls; OVA = 0 ppm)	CEF-334-SB16 (4 feet bls; OVA = 0 ppm)	Soil Cleanup Target Levels[1]
Volatile Organic Aromatics (USEPA Method 8020) (mg/kg)								
Ethylbenzene	**0.52**	ND	ND	ND	NS	NS	NS	240/0.4
Trichloroethene	ND	0.015	0.016	0.081	NS	NS	NS	NA
Xylenes	**0.93**	ND	ND	ND	NS	NS	NS	290/0.3
Polynuclear Aromatic Hydrocarbons (USEPA Method 8310) (mg/kg)								
Naphthalene	**10**	ND	ND	ND	NS	NS	NS	1,000/1
1-Methylnaphthalene	ND	ND	ND	0.34	NS	NS	NS	NA
2-Methylnaphthalene	26	ND	ND	ND	NS	NS	NS	NA
Total Recoverable Petroleum Hydrocarbons (TRPH) (FL-PRO) (mg/kg)								
TRPH	**11,000**	ND	19	**520**	6,200	ND	ND	350/340
Inorganic Analytes (mg/kg)								
Chromium	4.1	NS	NS	NS	NS	NS	NS	290/TCLP
Lead	4.9	NS	NS	NS	NS	NS	NS	500/TCLP

[1] Chapter 62-770, Florida Administrative Code: Direct Exposure I/Leachability, Table V.

Notes: Bold indicates concentration exceeds cleanup target level.

USEPA = U.S. Environmental Protection Agency.
mg/kg = milligrams per kilogram.
ND = not detected.
NA = not available.
FL-PRO = Florida-Petroleum Residual Organics.
NS = not sampled.
TCLP = toxicity characteristic leaching procedure.

Table 3
Summary of Groundwater Analytical Results

Site Assessment Report
Building 334, Oil-water Separator 334-OW
Naval Air Station Cecil Field
Jacksonville, Florida

Compound	CEF-334-1S		Groundwater Cleanup Target Levels[1]
	March 1997	July 1999	
Volatile Organic Aromatics (USEPA Method 601/602) (μg/ℓ)			
Ethylbenzene	15	ND	30
Xylenes	11	ND	20
Polynuclear Aromatic Hydrocarbons (USEPA Method 625) (μg/ℓ)			
Naphthalene	7.4	1.5	20
1-Methylnaphthalene	4.3	5.9	NA
2-Methylnaphthalene	3.4	1.1	NA
Fluorene	ND	0.11 J	280
Total Recoverable Petroleum Hydrocarbons (TRPH) (FL-PRO) (mg/ℓ)			
TRPH	1.1	0.38	5
Inorganic Analytes (μg/ℓ)			
	ND	NS	

[1] Chapter 62-770, Florida Administrative Code.

Notes: USEPA = U.S. Environmental Protection Agency.
μg/ℓ = micrograms per liter.
NA = not applicable.
FL-PRO = Florida Petroleum Residual Organics.
mg/ℓ = milligrams per liter.
ND = not detected.
NS = not sampled.

5.0 PROFESSIONAL REVIEW CERTIFICATION

The SA contained in this report was prepared using sound hydrogeologic principles and judgment. This assessment is based on the geologic investigation and associated information detailed in the text and appended to this report. If conditions are determined to exist that differ from those described, the undersigned geologist should be notified to evaluate the effects of any additional information on the assessment described in this report. This SA report was developed for the Building 334, Oil-Water Separator 334-OW site at NAS Cecil Field, Jacksonville, Florida, and should not be construed to apply to any other site.

Eric A. Blomberg
Professional Geologist
P.G. No. 0001695

9-23-99
Date

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. 1997. *Confirmatory Sampling Report, Building 334, Tank 334-OW, Naval Air Station Cecil Field, Jacksonville, Florida.* Prepared for SOUTHNAVFACENGCOM, North Charleston, South Carolina (November).

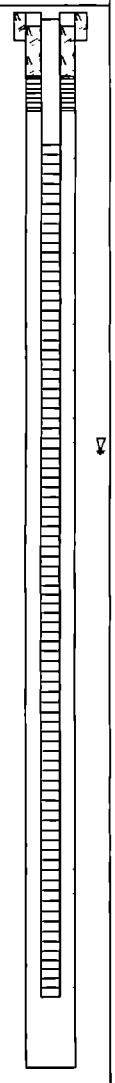
Harding Lawson Associates. 1999. *Site Assessment Report, Building 334, Oil-Water Separator 334-OW, Naval Air Station Cecil Field, Jacksonville, Florida.* Prepared for SOUTHNAVFACENGCOM, North Charleston, South Carolina (April).

APPENDIX A

MONITORING WELL INSTALLATION DETAIL

TITLE: NAS Cecil Field	LOG of WELL: CEF-334-1S	BORING NO. CEF-334-1S
CLIENT: SOUTHDIVNAVFACENGCOM		PROJECT NO: 8542-03
CONTRACTOR: GEOTEK	DATE STARTED: 2-14-97	COMPLTD: 2-17-97
METHOD: 6.25" HSA	CASE SIZE: 2"	SCREEN INT.: 4-14	PROTECTION LEVEL: D
TOC ELEV.: FEET.	MONITOR INST.: FID	TOT DPTH: 15 FEET.	DPTH TO ▽ 6.32 FEET.
LOGGED BY: J Tarr	WELL DEVELOPMENT DATE: 2-19-97	SITE: Building 334

DEPTH FT.	LABORATORY SAMPLE ID.	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
				0	SILTY SAND: Brown to grey, fine grain, poorly graded, no petroleum odor.		SM	posthole	
				0	CLAYEY SAND: Light grey to orange-brown, fine grain, no petroleum odor.			posthole	
5			80%	15	CLAYEY SAND: Light grey to orange-brown, fine grain with silt, no petroleum odor.			3,5,4,7	
			50%	60	SILTY SAND: Light grey, fine grain with trace of clay, no petroleum odor.			10,10,10,9	
10			100%	1,100	SILTY SAND: Dark grey to black, fine grain with silt, saturated, moderate to strong petroleum odor.		SP	6,9,12,20	
15									
20									



APPENDIX B

ANALYTICAL DATA

NAS CECIL FIELD -- OIL/WATER SEPARATOR 334-OW
SUBSURFACE SOIL -- VOLATILES AND TPH -- REPORT REQUEST NO. 10966

Lab Sample Number:	JR36669			JR52726			JR52725			JR52724		
Site	UST GREY			UST GREY			UST GREY			UST GREY		
Locator	CEF-334-SB1			CEF-334-SB11			CEF-334-SB12			CEF-334-SB13		
Collect Date:	14-OCT-98			03-FEB-99			03-FEB-99			03-FEB-99		
	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL
EPA METHOD 8260 (VOLATILES)												
Chloromethane	120	U ug/kg	120	6	U ug/kg	6	6	U ug/kg	6	6	U ug/kg	6
Vinyl chloride	120	U ug/kg	120	6	U ug/kg	6	6	U ug/kg	6	6	U ug/kg	6
Bromomethane	120	U ug/kg	120	11	U ug/kg	11	11	U ug/kg	11	12	U ug/kg	12
Chloroethane	120	U ug/kg	120	11	U ug/kg	11	11	U ug/kg	11	12	U ug/kg	12
1,2-Dichloroethane	120	U ug/kg	120	6	U ug/kg	6	6	U ug/kg	6	6	U ug/kg	6
Acetone	2900	U ug/kg	2900	290	U ug/kg	290	280	U ug/kg	280	300	U ug/kg	300
Methylene chloride	120	U ug/kg	120	29	U ug/kg	29	28	U ug/kg	28	30	U ug/kg	30
trans-1,2-dichloroethene	120	U ug/kg	120	6	U ug/kg	6	6	U ug/kg	6	6	U ug/kg	6
1,1-Dichloroethane	120	U ug/kg	120	6	U ug/kg	6	6	U ug/kg	6	6	U ug/kg	6
cis-1,2-dichloroethene	120	U ug/kg	120	6	U ug/kg	6	6	U ug/kg	6	6	U ug/kg	6
2-Butanone	1200	U ug/kg	1200	120	U ug/kg	120	110	U ug/kg	110	120	U ug/kg	120
Chloroform	120	U ug/kg	120	6	U ug/kg	6	6	U ug/kg	6	6	U ug/kg	6
1,1,1-Trichloroethane	120	U ug/kg	120	6	U ug/kg	6	6	U ug/kg	6	6	U ug/kg	6
Carbon tetrachloride	120	U ug/kg	120	6	U ug/kg	6	6	U ug/kg	6	6	U ug/kg	6
Benzene	120	U ug/kg	120	6	U ug/kg	6	6	U ug/kg	6	6	U ug/kg	6
1,2-Dichloropropane	120	U ug/kg	120	6	U ug/kg	6	6	U ug/kg	6	6	U ug/kg	6
Trichloroethene	120	U ug/kg	120	15	ug/kg	6	16	ug/kg	6	81	ug/kg	6
Bromodichloromethane	120	U ug/kg	120	6	U ug/kg	6	6	U ug/kg	6	6	U ug/kg	6
cis-1,3-Dichloropropene	120	U ug/kg	120	6	U ug/kg	6	6	U ug/kg	6	6	U ug/kg	6
4-Methyl-2-Pentanone	1200	U ug/kg	1200	120	U ug/kg	120	110	U ug/kg	110	120	U ug/kg	120
Toluene	120	U ug/kg	120	6	U ug/kg	6	6	U ug/kg	6	6	U ug/kg	6
trans-1,3-Dichloropropene	120	U ug/kg	120	6	U ug/kg	6	6	U ug/kg	6	6	U ug/kg	6
1,1,2-Trichloroethane	120	U ug/kg	120	6	U ug/kg	6	6	U ug/kg	6	6	U ug/kg	6
Tetrachloroethene	120	U ug/kg	120	17	U ug/kg	17	17	U ug/kg	17	18	U ug/kg	18
2-Hexanone	590	U ug/kg	590	120	U ug/kg	120	110	U ug/kg	110	120	U ug/kg	120
Dibromochloromethane	120	U ug/kg	120	6	U ug/kg	6	6	U ug/kg	6	6	U ug/kg	6
Chlorobenzene	120	U ug/kg	120	6	U ug/kg	6	6	U ug/kg	6	6	U ug/kg	6
Ethylbenzene	520	ug/kg	120	6	U ug/kg	6	6	U ug/kg	6	6	U ug/kg	6
m,p-Xylene	930	ug/kg	120	11	U ug/kg	11	11	U ug/kg	11	12	U ug/kg	12
o-Xylene	120	U ug/kg	120	6	U ug/kg	6	6	U ug/kg	6	6	U ug/kg	6
Styrene	120	U ug/kg	120	6	U ug/kg	6	6	U ug/kg	6	6	U ug/kg	6
Bromoform	120	U ug/kg	120	6	U ug/kg	6	6	U ug/kg	6	6	U ug/kg	6
1,1,2,2-Tetrachloroethane	120	U ug/kg	120	6	U ug/kg	6	6	U ug/kg	6	6	U ug/kg	6
1,1-Dichloroethene	120	U ug/kg	120	6	U ug/kg	6	6	U ug/kg	6	6	U ug/kg	6
1,1,1-Trichloroethane	120	U ug/kg	120	6	U ug/kg	6	6	U ug/kg	6	6	U ug/kg	6
1,1-Dichloroethane	120	U ug/kg	120	6	U ug/kg	6	6	U ug/kg	6	6	U ug/kg	6
Bromoform	120	U ug/kg	120	6	U ug/kg	6	6	U ug/kg	6	6	U ug/kg	6
1,1,2,2-Tetrachloroethane	120	U ug/kg	120	6	U ug/kg	6	6	U ug/kg	6	6	U ug/kg	6
Bromomethane	120	U ug/kg	120	11	U ug/kg	11	11	U ug/kg	11	12	U ug/kg	12
FLA PRO												
TPH C8-C40	11000	mg/kg	78	7.6	U mg/kg	7.6	19	mg/kg	7.5	520	mg/kg	7.8

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 334-OW
SUBSURFACE SOIL -- SEMIVOLATILES -- REPORT REQUEST NO. 10967

Lab Sample Number:	JR36669				JR52726				JR52725				JR52724			
Site	UST GREY				UST GREY				UST GREY				UST GREY			
Locator	CEF-334-SB1				CEF-334-SB11				CEF-334-SB12				CEF-334-SB13			
Collect Date:	14-OCT-98				03-FEB-99				03-FEB-99				03-FEB-99			
	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL	VALUE	QUAL	UNITS	DL
METHOD 8310																
Naphthalene	10000		ug/kg	3900	19	U	ug/kg	19	19	U	ug/kg	19	200	U	ug/kg	200
Acenaphthylene	3900	U	ug/kg	3900	38	U	ug/kg	38	38	U	ug/kg	38	400	U	ug/kg	400
1-Methylnaphthalene	-				19	U	ug/kg	19	19	U	ug/kg	19	340		ug/kg	200
2-Methylnaphthalene	26000		ug/kg	3900	19	U	ug/kg	19	19	U	ug/kg	19	200	U	ug/kg	200
Acenaphthene	3900	U	ug/kg	3900	19	U	ug/kg	19	19	U	ug/kg	19	200	U	ug/kg	200
Fluorene	3900	U	ug/kg	3900	3.8	U	ug/kg	3.8	3.8	U	ug/kg	3.8	40	U	ug/kg	40
Phenanthrene	3900	U	ug/kg	3900	1.9	U	ug/kg	1.9	1.9	U	ug/kg	1.9	20	U	ug/kg	20
Anthracene	3900	U	ug/kg	3900	2	U	ug/kg	2	2	U	ug/kg	2	20	U	ug/kg	20
Fluoranthene	3900	U	ug/kg	3900	3.8	U	ug/kg	3.8	3.8	U	ug/kg	3.8	40	U	ug/kg	40
Pyrene	3900	U	ug/kg	3900	1.9	U	ug/kg	1.9	1.9	U	ug/kg	1.9	20	U	ug/kg	20
Benzo (a) anthracene	3900	U	ug/kg	3900	1.9	U	ug/kg	1.9	1.9	U	ug/kg	1.9	20	U	ug/kg	20
Benzo (b) fluoranthene	3900	U	ug/kg	3900	3	U	ug/kg	3	3	U	ug/kg	3	39	U	ug/kg	39
Benzo (k) fluoranthene	3900	U	ug/kg	3900	2	U	ug/kg	2	2	U	ug/kg	2	20	U	ug/kg	20
Chrysene	3900	U	ug/kg	3900	1.9	U	ug/kg	1.9	1.9	U	ug/kg	1.9	20	U	ug/kg	20
Benzo (a) pyrene	3900	U	ug/kg	3900	2	U	ug/kg	2	2	U	ug/kg	2	20	U	ug/kg	20
Dibenzo (a,h) anthracene	3900	U	ug/kg	3900	3.8	U	ug/kg	3.8	3.8	U	ug/kg	3.8	40	U	ug/kg	40
Benzo (g,h,i) perylene	3900	U	ug/kg	3900	3.8	U	ug/kg	3.8	3.8	U	ug/kg	3.8	40	U	ug/kg	40
Indeno (1,2,3-cd) pyrene	3900	U	ug/kg	3900	1.9	U	ug/kg	1.9	1.9	U	ug/kg	1.9	20	U	ug/kg	20

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 334-OW
SUBSURFACE SOIL -- INORGANICS -- REPORT REQUEST NO. 10968

Lab Sample Number:	JR36669			
Site	UST GREY			
Locator	CEF-334-SB1			
Collect Date:	14-OCT-98			
	VALUE	QUAL	UNITS	DL
RCRA 8				
Arsenic	.6	U	mg/kg	.6
Barium	24	U	mg/kg	24
Cadmium	1	U	mg/kg	1
Chromium	4.1		mg/kg	1
Lead	4.9		mg/kg	1
Mercury	.01	U	mg/kg	.01
Selenium	2	U	mg/kg	2
Silver	2	U	mg/kg	2

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NAS CECIL FIELD -- OIL/WATER SEPARATOR 334-OW
GROUNDWATER -- ANALYTICAL DATA -- REPORT NO. 9489

Lab Sample Number:	B7C2601400
Site	BRACGREY
Locator	CEF3341S
Collect Date:	25-MAR-97

	VALUE	QUAL	UNITS	DL
BRACGREY ANALYTICAL PARAMETERS				
1,1,1-Trichloroethane	1	U	ug/l	1
1,1,2,2-Tetrachloroethane	1	U	ug/l	1
1,1,2-Trichloroethane	1	U	ug/l	1
1,1-Dichloroethane	1	U	ug/l	1
1,1-Dichloroethene	1	U	ug/l	1
1,2-Dichlorobenzene	10	U	ug/l	10
1,3-Dichlorobenzene	10	U	ug/l	10
1,4-Dichlorobenzene	10	U	ug/l	10
1,2-Dichloroethane	1	U	ug/l	1
1,2-Dichloropropane	1	U	ug/l	1
1-Methylnaphthalene	4.3		ug/l	2
2-Methylnaphthalene	3.4		ug/l	2
Acenaphthene	10	U	ug/l	10
Acenaphthylene	2	U	ug/l	2
Anthracene	2	U	ug/l	2
Benzene	1	U	ug/l	1
Benzo (a) anthracene	.1	U	ug/l	.1
Benzo (a) pyrene	10	U	ug/l	10
Benzo (b) fluoranthene	.1	U	ug/l	.1
Benzo (g,h,i) perylene	10	U	ug/l	10
Benzo (k) fluoranthene	10	U	ug/l	10
Bromodichloromethane	1	U	ug/l	1
Bromoform	1	U	ug/l	1
Bromomethane	1	U	ug/l	1
Carbon tetrachloride	1	U	ug/l	1
Chlorobenzene	1	U	ug/l	1
Chloroethane	1	U	ug/l	1
Chloromethane	1	U	ug/l	1
Chloroform	1	U	ug/l	1
Chloromethane	1	U	ug/l	1
Chrysene	.1	U	ug/l	.1
Dibenzo (a,h) anthracene	.2	U	ug/l	.2
Dibromochloromethane	1	U	ug/l	1
Dichlorodifluoromethane	1	U	ug/l	1
Ethylbenzene	15		ug/l	1
Ethylene dibromide	.02	U	ug/l	.02
Fluoranthene	.2	U	ug/l	.2
Fluorene	2	U	ug/l	2
Indeno (1,2,3-cd) pyrene	.1	U	ug/l	.1
Lead	5	U	ug/l	5
Methyl tert-butyl ether	1	U	ug/l	1
Methylene chloride	1	U	ug/l	1
Naphthalene	7.4		ug/l	2
Phenanthrene	2	U	ug/l	2
Pyrene	.2	U	ug/l	.2
Tetrachloroethene	1	U	ug/l	1
Toluene	1	U	ug/l	1
Total petroleum hydrocarbons	1.1		mg/l	.5
Trichloroethene	1	U	ug/l	1
Trichlorofluoromethane	1	U	ug/l	1

NAS CECIL FIELD -- OIL/WATER SEPARATOR 334-OW
GROUNDWATER -- ANALYTICAL DATA -- REPORT NO. 9489

Lab Sample Number:	B7C2601400
Site	BRACGREY
Locator	CEF3341S
Collect Date:	25-MAR-97

	VALUE	QUAL	UNITS	DL
Vinyl chloride	1	U	ug/l	1
Xylenes (total)	11		ug/l	
cis-1,3-Dichloropropene	1	U	ug/l	1
trans-1,2-Dichloroethene	1	U	ug/l	1
trans-1,3-Dichloropropene	1	U	ug/l	1

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NAS CECIL FIELD -- OIL/WATER SEPARATOR 334-OW
GROUNDWATER -- INORGANICS -- REPORT NO. 10969

Lab Sample Number:	B7C2601400			
Site	BRACGREY			
Locator	CEF3341S			
Collect Date:	25-MAR-97			
	VALUE	QUAL	UNITS	DL
Arsenic-DISS	300	U	ug/l	300
Cadmium-DISS	5	U	ug/l	5
Chromium-DISS	50	U	ug/l	50
Lead-DISS	5	U	ug/l	5

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