

N60200.AR.001543  
NAS CECIL FIELD, FL  
5090.3a

SITE ASSESSMENT REPORT FOR BUILDING 872 TANK G872LS BASE REALIGNMENT  
AND CLOSURE UNDERGROUND STORAGE TANK AND ABOVEGROUND STORAGE TANK  
GREY SITES REVISION 1 NAS CECIL FIELD FL  
11/1/1998  
HARDING LAWSON ASSOCIATES

**SITE ASSESSMENT REPORT**  
**BUILDING 872, TANK G872LS**  
**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-0317/090**

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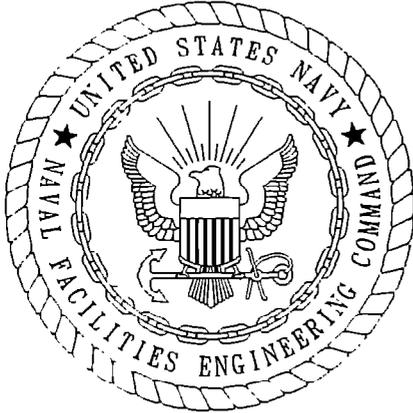
**Prepared for:**

**Department of the Navy, Southern Division**  
**Naval Facilities Engineering Command**  
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**November 1998**

**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-0317/090 are complete and accurate and comply with all requirements of this contract.

DATE: November 4, 1998

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)

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GLOSSARY

ABB-ES	ABB Environmental Services, Inc.
bls	below land surface
CSR	confirmatory sampling report
FDEP	Florida Department of Environmental Protection
HLA	Harding Lawson Associates
KAG	Kerosene Analytical Group
OVA	organic vapor analyzer
SA	site assessment
UST	underground storage tank

## 1.0 INTRODUCTION

Harding Lawson Associates (HLA), under contract to the Southern Division, Naval Facilities Engineering Command, has completed the Site Assessment (SA) for Tank G872LS at Naval Air Station Cecil Field in Jacksonville, Florida. This report summarizes the related field operations, results, conclusions, and recommendations of the SA.

Tank G872LS is an underground storage tank (UST) located at Building 872. Building 872 houses the emergency generator for the adjacent wastewater lift station in Building 802 (Figure 1). The UST, which was installed in 1981, has a 250-gallon capacity and is used to store diesel for the emergency generator. A contamination assessment plan for the assessment of soil and groundwater at Tank G872LS was prepared by HLA (then ABB Environmental Services, Inc. [ABB-ES]) in November 1996 (ABB-ES, 1996). Results of the contamination assessment are presented in the Confirmatory Sampling Report (CSR), which recommended that additional soil assessment be conducted to delineate the extent of excessively contaminated soil (ABB-ES, 1997).

## 2.0 FIELD INVESTIGATION

The SA for Tank G872LS was initiated in October 1997 and included

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

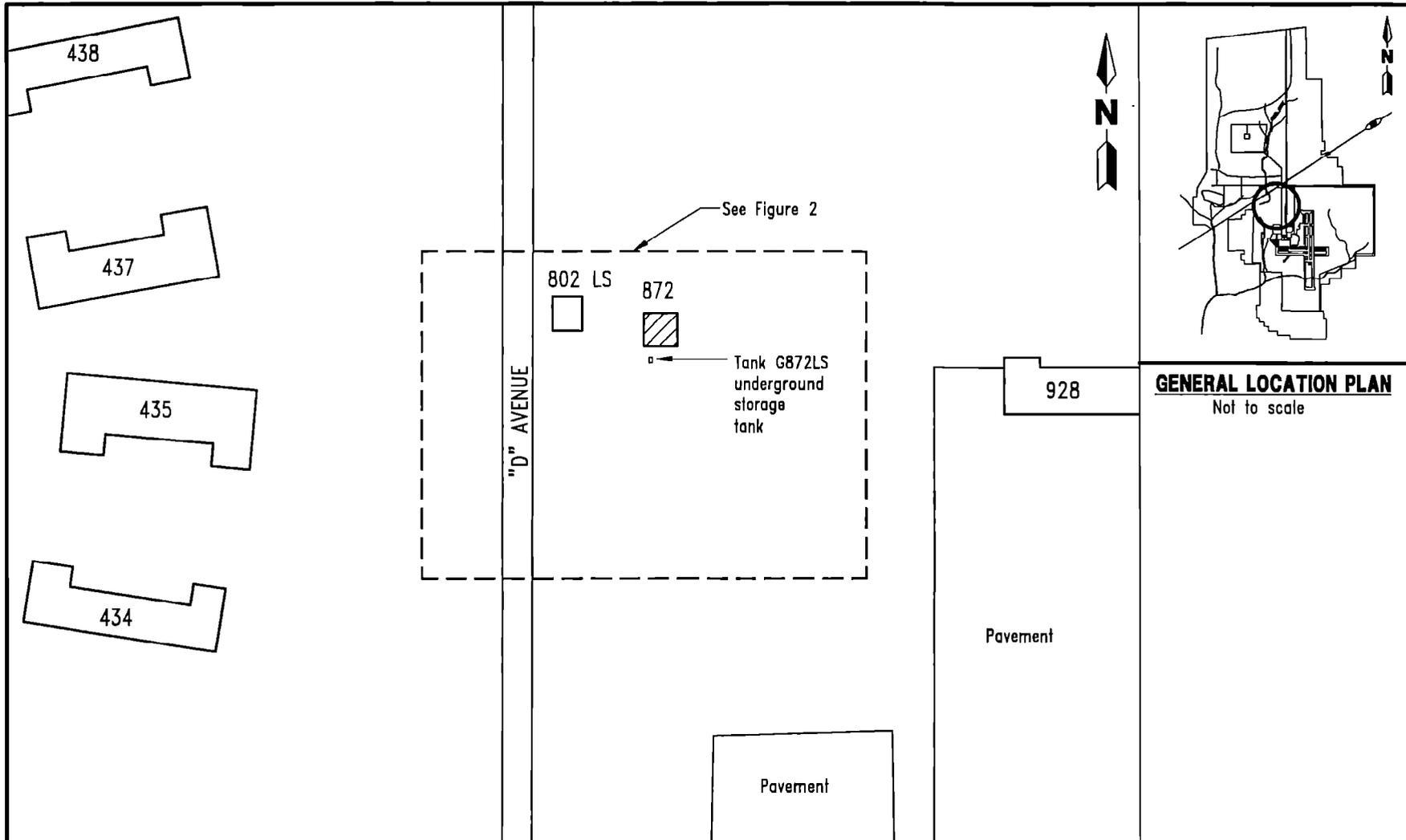
Soil samples were collected from each boring at depth intervals of 1 foot below land surface (bls) and every 2 feet thereafter to the water table. These samples were screened for hydrocarbon vapors with an organic vapor analyzer (OVA). One subsurface soil sample was collected on May 5, 1998, at the location with the highest OVA reading and analyzed for the Kerosene Analytical Group (KAG) parameters. Sample CEF-872-SB3 was collected from 3 to 4 feet bls. A general site plan indicating the location of the soil borings is presented on Figure 2.

Monitoring well CEF-872-1S was installed during the confirmatory sampling. Monitoring well construction detail is presented in Appendix A.

## 3.0 SCREENING AND ANALYTICAL RESULTS

Groundwater flow direction at the Tank G872LS site is to the south-southeast based on the groundwater flow direction identified for the base family housing, which is located just west of the site across "D" Avenue.

Excessively contaminated soil (greater than 50 parts per million on an OVA) was not detected in the soil borings advanced during the SA. The extent of excessively contaminated soil is presented on Figure 2. The soil OVA data are summarized in Table 1.



0 50 100  
SCALE: 1 INCH = 100 FEET

**FIGURE 1**  
**TANK G872LS**  
**STANDBY GENERATOR BUILDING**



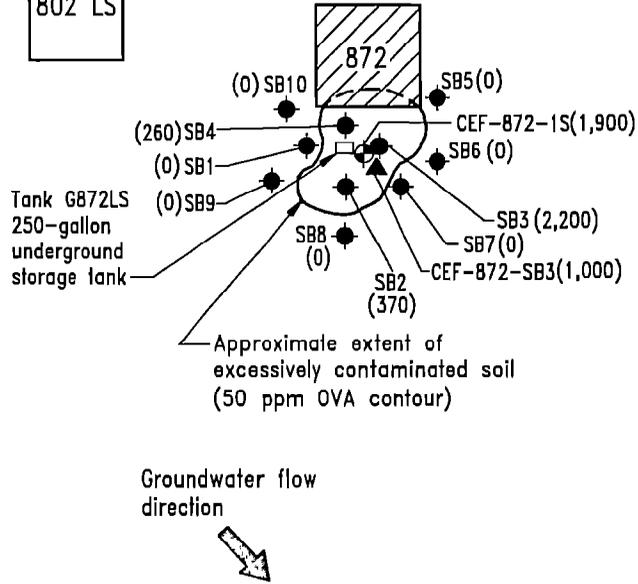
**SITE ASSESSMENT REPORT**  
**BUILDING 872, TANK G872LS**

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

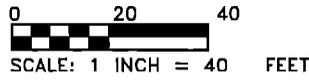


"D" AVENUE

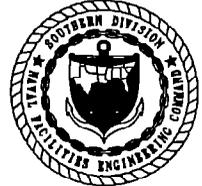
802 LS



<b>LEGEND</b>	
	CEF-872-1S Monitoring well location and designation
	SB2 Soil boring location and designation
(370)	OVA reading in ppm
	CEF-872-SB3 Confirmatory KAG soil sample location and designation
ppm	Parts per million
KAG	Kerosene Analytical Group
OVA	Organic vapor analyzer



**FIGURE 2  
TANK G872LS  
SOIL BORING AND MONITORING WELL  
LOCATIONS**



**SITE ASSESSMENT REPORT  
BUILDING 872, TANK G872LS**

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

**Table 1  
Soil Screening Results**

Site Assessment Report  
Building 872, Tank G872LS  
Naval Air Station Cecil Field  
Jacksonville, Florida

Location	OVA Concentration (ppm)			
	Depth (feet bls)	Unfiltered	Filtered	Actual
SB1	1	0	--	0
	3	0	--	0
	3.5 (wet)	0	--	0
SB2	1	0	--	0
	3	370	0	370
	3.5 (wet)	800	0	800
SB3	1	0	--	0
	3	2,200	0	2,200
	3.5	2,000	0	2,000
SB4	1	0	--	0
	3	260	0	260
	3.5 (wet)	100	0	100
CEF-872-1S	1	900	0	900
	3	1,900	0	1,900
	5 (wet)	300	0	300
	11 (wet)	0	--	0
SB5	1	0	--	0
	3	0	--	0
	3.5 (wet)	0	--	0
SB6	1	0	--	0
	3	0	--	0
	4 (wet)	0	--	0
SB7	1	0	--	0
	3	0	--	0
	4 (wet)	0	--	0
SB8	1	0	--	0
	3	0	--	0
	4 (wet)	0	--	0

See notes at end of table.

**Table 1 (Continued)  
Soil Screening Results**

Site Assessment Report  
Building 872, Tank G872LS  
Naval Air Station Cecil Field  
Jacksonville, Florida

Location	OVA Concentration (ppm)			
	Depth (feet bls)	Unfiltered	Filtered	Actual
SB8	1	0	--	0
	3	0	--	0
	4 (wet)	0	--	0
SB9	1	0	--	0
	3	2	0	2
	3.5 (wet)	0	--	0
SB10	1	0	--	0
	3	0	--	0
	3.5 (wet)	0	--	0

Notes: Soil samples were collected on January 13, 1997, and October 13, 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.

No contaminants were detected above Florida Department of Environmental Protection (FDEP) soil cleanup target levels in the subsurface soil sample collected for KAG analysis. Subsurface soil analytical results are summarized in Table 2 and presented in Appendix A.

No contaminants were detected above FDEP cleanup target levels. Groundwater analytical data are presented in Table 3 and in Appendix B.

#### 4.0 CONCLUSIONS AND RECOMMENDATIONS

Data obtained during the SA at the Tank G872LS site provided an adequate assessment of the horizontal and vertical extent of excessively contaminated soil.

No contaminants were detected above FDEP soil cleanup target levels in the subsurface soil sample collected for KAG analysis.

No contaminants were detected above the regulatory standard specified in Chapter 62-770, Florida Administrative Code, in the groundwater sample collected from monitoring well CEF-872-1S.

It is recommended that no further action take place at the Tank G872LS site until the tank is removed.

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

Site Assessment Report  
Building 872, Tank G872LS  
Naval Air Station Cecil Field  
Jacksonville, Florida

Compound	CEF-872-SB3 (3 to 4 feet bls; OVA = 2,200 ppm)	Soil Cleanup Target Levels <sup>1</sup>
<b><u>Volatile Organic Aromatics (USEPA Method 8020) (mg/kg)</u></b>		
No compounds detected		
<b><u>Polynuclear Aromatic Hydrocarbons (USEPA Method 8310) (mg/kg)</u></b>		
Dibenz(a,h)anthracene	0.0059	0.1/14
<b><u>Total Recoverable Petroleum Hydrocarbons (FL-PRO) (mg/kg)</u></b>		
Not detected		
<sup>1</sup> Chapter 62-770, Florida Administrative Code: Direct Exposure, Table I; Leachability, Table V.  Notes: Soil sample was collected on May 5, 1998.  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.		

**Table 3**  
**Summary of Groundwater Analytical Detections**

Site Assessment Report  
 Building 872, Tank G872LS  
 Naval Air Station Cecil Field  
 Jacksonville, Florida

Compound	Monitoring Well CEF-872-1S	Groundwater Cleanup Target Levels <sup>1</sup>
<b><u>Volatile Organic Aromatics (USEPA Method 601/602) (<math>\mu\text{g}/\ell</math>)</u></b>		
Methylene chloride	4.9	NA
<b><u>Polynuclear Aromatic Hydrocarbons (USEPA Method 610) (<math>\mu\text{g}/\ell</math>)</u></b>		
No compounds detected		
<b><u>Total Recoverable Petroleum Hydrocarbons (FL-PRO) (<math>\mu\text{g}/\ell</math>)</u></b>		
Not detected		
<sup>1</sup> Chapter 62-770, Florida Administrative Code.  Notes: Groundwater samples were collected on August 7, 1997.  USEPA = U.S. Environmental Protection Agency. $\mu\text{g}/\ell$ = micrograms per liter. NA = not applicable. FL-PRO = Florida-Petroleum Residual Organics.		

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 SAR was developed for the Tank G872LS site at Naval Air Station Cecil Field, Jacksonville, Florida, and should not be construed to apply to any other site.



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

11-23-98

Date

REFERENCE

ABB Environmental Services, Inc. (ABB-ES). 1996. *Contamination Assessment Plan, Naval Air Station Cecil Field, Jacksonville, Florida*. Prepared for Southern Division, Naval Facilities Engineering Command, North Charleston, South Carolina (November).

ABB-ES. 1997. *Confirmatory Sampling Report, Building 872, Tank G872LS, Base Realignment and Closure, Underground Storage Tank and Aboveground Storage Tank Grey Sites, Naval Air Station Cecil Field, Jacksonville, Florida*. Prepared for SOUTHNAVFACENCOM, North Charleston, South Carolina (December).

**APPENDIX A**  
**MONITORING WELL CONSTRUCTION DETAIL**

TITLE: NAS Cecil Field		LOG of WELL: CEF-872-1S	BORING NO. CEF-872-1s
CLIENT: SOUTHDIRNAVFACENCOM			PROJECT NO: 8542-03
CONTRACTOR: GEOTEK		DATE STARTED: 3-3-97	COMPLTD: 3-3-97
METHOD: 6.25" HSA	CASE SIZE: 2"	SCREEN INT.: 2-12	PROTECTION LEVEL: D
TOC ELEV.: FEET.	MONITOR INST.: FID	TOT DPTH: 13 FEET.	DPTH TO $\nabla$ 3.41 FEET.
LOGGED BY: J Koch	WELL DEVELOPMENT DATE: 3-4-97		SITE: Building 872

DEPTH F.T.	LABORATORY SAMPLE ID.	SAMPLE	RECOVERY	HEADSPACE (ppm)	SOIL/ROCK DESCRIPTION AND COMMENTS	LITHOLOGIC SYMBOL	SOIL CLASS	BLOWS/6-IN	WELL DATA
9.00					SILTY SAND: Light grey to brown, fine grained, no petroleum odor.		SM	posthole	
1.900				SILTY SAND: Medium grey to brown, fine grained, no petroleum odor.	SM		posthole		
5.300		100%		SILTY SAND: Light grey to brown, fine grained, no petroleum odor.	SM		1,1,1		
0		100%		SAND: Light grey, fine grained, no petroleum odor.		SP			

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

NAS CECIL FIELD -- TANK G872LS  
 SOIL DATA -- KEROSENE ANALYTICAL GROUP -- REPORT REQ NO. 9962

Lab Sample Number: A8E0601710  
 Site: UST GREY  
 Locator: CEF-872-SB3  
 Collect Date: 05-MAY-98

VALUE QUAL UNITS DL

UST GREY

Benzene	1.2 U	ug/kg	1.2
Ethylbenzene	1.2 U	ug/kg	1.2
Toluene	1.2 U	ug/kg	1.2
Xylenes (total)	1.2 U	ug/kg	1.2
Acenaphthene	240 U	ug/kg	240
Acenaphthylene	240 U	ug/kg	240
Anthracene	240 U	ug/kg	240
Benzo (a) anthracene	5.9 U	ug/kg	5.9
Benzo (a) pyrene	5.9 U	ug/kg	5.9
Benzo (b) fluoranthene	5.9 U	ug/kg	5.9
Benzo (g,h,i) perylene	5.9 U	ug/kg	5.9
Benzo (k) fluoranthene	5.9 U	ug/kg	5.9
Chrysene	24 U	ug/kg	24
Dibenzo (a,h) anthracene	5.9 U	ug/kg	5.9
Fluoranthene	5.9 U	ug/kg	5.9
Fluorene	240 U	ug/kg	240
Indeno (1,2,3-cd) pyrene	5.9 U	ug/kg	5.9
Naphthalene	240 U	ug/kg	240
Phenanthrene	240 U	ug/kg	240
Pyrene	5.9 U	ug/kg	5.9

FLA PRO

TPH C8-C40	12 U	mg/kg	12
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U = NOT DETECTED J = ESTIMATED VALUE  
 UJ = REPORTED QUANTITATION LIMIT IS QUALIFIED AS ESTIMATED  
 R = RESULT IS REJECTED AND UNUSABLE

NAS CECIL FIELD -- TANK G872LS  
 UST GREY ANALYTICAL PARAMETERS -- REPORT NO. 9500

Lab Sample Number:	B7C2801180	B7C2801180
Site	BRACGREY	BRACGREY
Locator	CEF8721S	CEF8721S
Collect Date:	27-MAR-97	27-MAR-97
VALUE	QUAL UNITS	DL

BRACGREY ANALYTICAL PARAMETERS

	VALUE	QUAL UNITS	DL	VALUE	QUAL UNITS	DL
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	1 U	ug/l	1	-		
1,3-Dichlorobenzene	1 U	ug/l	1	-		
1,4-Dichlorobenzene	1 U	ug/l	1	-		
1,2-Dichloroethane	1 U	ug/l	1	-		
1,2-Dichloropropane	1 U	ug/l	1	-		
1-Methylnaphthalene	2 U	ug/l	2	-		
2-Methylnaphthalene	2 U	ug/l	2	-		
Acenaphthene	2 U	ug/l	2	-		
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	.1 U	ug/l	.1	-		
Benzo (b) fluoranthene	.1 U	ug/l	.1	-		
Benzo (g,h,i) perylene	.2 U	ug/l	.2	-		
Benzo (k) fluoranthene	.15 U	ug/l	.15	-		
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	-		
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	1 U	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	4.9 U	ug/l	1	-		
Naphthalene	2 U	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	.5 U	mg/l	.5	-		
Trichloroethene	1 U	ug/l	1	-		
Trichlorofluoromethane	1 U	ug/l	1	-		
Vinyl chloride	1 U	ug/l	1	-		

NAS CECIL FIELD -- TANK G872LS  
 UST GREY ANALYTICAL PARAMETERS -- REPORT NO. 9500

Lab Sample Number:	B7C2801180		B7C2801180	
Site	BRACGREY		BRACGREY	
Locator	CEF8721S		CEF8721S	
Collect Date:	27-MAR-97		27-MAR-97	
	VALUE	QUAL UNITS	DL	VALUE
		QUAL UNITS	DL	VALUE
		QUAL UNITS	DL	VALUE

Xylenes (total)	1 U	ug/l	1	-
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	-
Lead-DISS	-			5 U ug/l 5

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