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Document Tracking Number 02JAX0126

June 28, 2002

Project Number N2872

Commander, Southern Division
Naval Facilities Engineering Command
ATTN: Mr. Wayne Hansel (Code ES24)
2155 Eagle Drive
North Charleston, South Carolina 29406

Reference: CLEAN Contract Number N62467-94-D-0888
Contract Task Order Number (CTO) 0192

Subject: Site Screening Letter Report
Petroleum Contaminated Area 20
Naval Air Station Jacksonville, Jacksonville, Florida

Dear Mr. Hansel:

Tetra Tech NUS, Inc. (TtNUS) is pleased to submit this Site Screening Letter Report for Petroleum Contaminated Area (PCA) 20. This Site Screening Letter Report was prepared for the United States Navy (Navy) Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM) under Contract Task Order (CTO) 0192, for the Comprehensive Long-term Environmental Action Navy (CLEAN) Contract Number N62467-94-D0888. The objective of the Site Screening Letter Report is to document results of the field screening activities for soil and groundwater contamination. The field screening activities were performed in accordance with the Work Plan for Site Screening at Various Petroleum Sites dated August 2001.

Background Information

PCA 20 is the former location of one 500-gallon steel underground storage tank (UST) Number G669A. The general location of PCA 20, within the boundaries of Naval Air Station (NAS) Jacksonville, is indicated on Figure 1. The UST was located east of Building 110 and directly north of Building 669 (Figure 2). Tank G669A was reportedly used to store diesel fuel for the small emergency generator previously located inside building 669. On April 16, 1998 Bechtel Environmental, Inc. (Bechtel) removed the UST. During the removal of the tank, soil samples were collected for headspace analysis. Results of the soil vapor screening indicated excessively contaminated soil. After the tank was removed, Bechtel installed a 2-inch temporary monitoring well in the UST excavation. Bechtel collected a water sample from the temporary monitoring well, and the sample was analyzed for volatile organic compounds (VOCs) by United States Environmental Protection Agency (USEPA) Method 602 and polynuclear aromatic hydrocarbons (PAHs) by USEPA Method 610. Groundwater analytical results indicated the presence of dissolved VOCs at concentrations above current Chapter 62-770, Florida Administrative Code (FAC) Groundwater Cleanup Target Levels (GCTLs).

SOUTHNAVFACENGCOM contracted TtNUS to screen each PCA site for possible soil and groundwater contamination. To accomplish this, TtNUS was to install one soil boring near the center of the previous tank location. Figures showing the PCA Site Plans were obtained from the station and were used in the planning documents.

The activities completed by TtNUS and the results are detailed below.

Field Screening Activities

On December 20, 2001, TtNUS mobilized to PCA 20 (Building 669) for the field screening activities. Originally the field screening activities were to consist of soil and groundwater sample collection via direct-push technology (DPT). However, during utility clearance activities on December 11, 2001, it was observed that the temporary monitoring well installed by Bechtel in 1998 was still in place. Therefore, TtNUS sampled the temporary monitoring well as opposed to installing additional soil borings with DPT. The location of PCA 19 with surrounding features, former tank location, and the location of the monitoring well is indicated on Figure 2.

Site Lithology

As a result of the sampling of the existing monitoring well at the site, soil samples were not collected from the site for lithologic purposes.

Soil Vapor Analysis

Soil vapor analysis was not performed since no soil borings were advanced at the site.

Soil Sampling Results

Soil samples were not collected from the site since no soil borings were advanced at the site.

Groundwater Sampling Results

For groundwater sample collection, the monitoring well previously installed at the site (MW-1) was sampled (Figure 2). The monitoring well is a 2-inch polyvinyl chloride (PVC) screen with slot size of 0.010 inch and a point at the bottom. The total depth of the well is 9 feet (ft) below land surface (bls) and screened from 0 to 9 ft bls. During groundwater sampling activities, the groundwater table was located at approximately 4 ft bls. For groundwater sampling activities, Teflon[®] tubing was inserted to the middle of the well, and the tubing was connected to a peristaltic pump for low-flow purging and sampling. Three screen volumes were then pumped from the well and measured with a Horiba U-22 water quality meter. After the three well volumes were purged and groundwater turbidity, temperature, dissolved oxygen, and conductivity were stable, a groundwater sample was collected. One groundwater sample (JAX-20-MW-1) was collected. The groundwater sample was placed on ice; shipped to Accutest laboratories in Orlando, Florida; and analyzed for VOCs using USEPA Method 8021B, PAHs using USEPA Method 8310, total recoverable petroleum hydrocarbons (TRPH) using Florida Petroleum Range Organics (FL-PRO), and ethylene dibromide (EDB) using USEPA Method 504.1. The groundwater analytical results, presented in Table 1, indicate 1 VOC and 9 PAH constituents present in site groundwater. The concentrations of all constituents detected were below Florida Department of Environmental Protection (FDEP) GCTLs. The complete set of analytical results is presented in Attachment A.

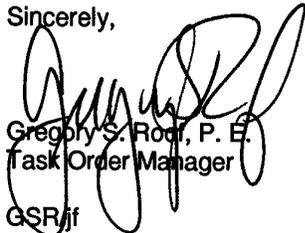
Conclusions and Recommendations

Data obtained during the field screening at PCA 20 indicated dissolved petroleum constituents present in PCA 20 groundwater, but at concentrations below FDEP GCTLs.

Mr. Wayne Hansel
Naval Facilities Engineering Command
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The PCA 20 site screening results could not confirm the presence of the groundwater contamination previously reported. TtNUS has had preliminary conversations with the FDEP regarding an appropriate action for this site. Based on that conversation and the lack of detectable groundwater contamination at the site during the screening, TtNUS recommends that this site be granted "no further action" status.

Sincerely,



Gregory S. Roof, P. E.
Task Order Manager

GSR/jf

Enclosures (3)

cc: Jorge Caspary, FDEP
Frank Sigona, NAS Jacksonville
D. Wroblewski, TtNUS (cover letter only)
M. Perry, TtNUS (unbound copy)
File – CTO 192

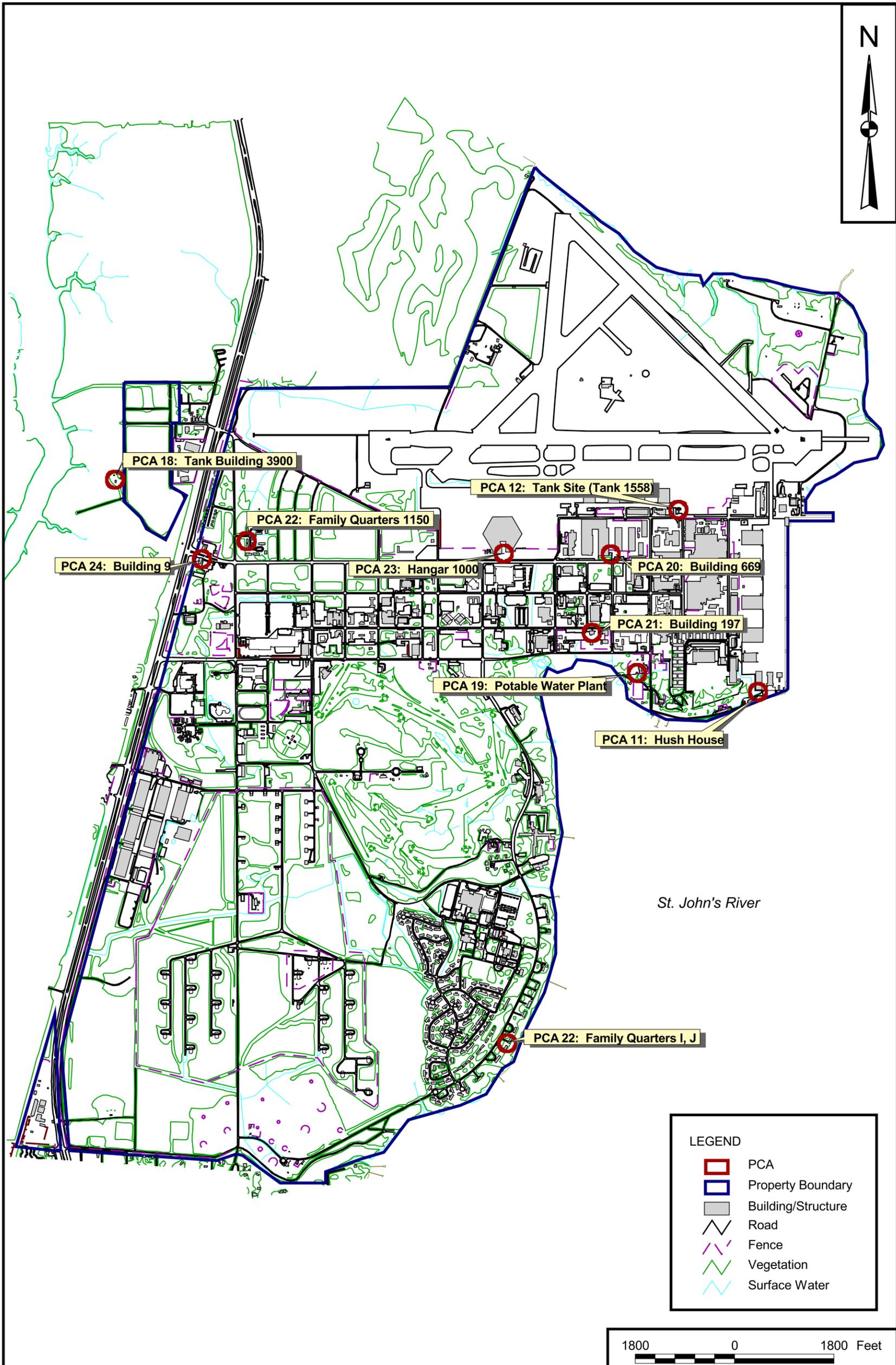
TABLES

**TABLE 1
SUMMARY OF GROUNDWATER QUALITY**

**PCA SITE 20
NAVAL AIR STATION JACKSONVILLE
JACKSONVILLE, FLORIDA**

Compound	FDEP Target Level ¹	PCA 20
		JAX-20-MW1
		12/20/01
<u>Volatile Organic Compounds (USEPA Method 8021B) (µg/L)</u>		
Ethylbenzene	30	7.2
<u>PAHs (USEPA Method 8310) (µg/L)</u>		
Naphthalene	20	3.6
1-Methylnaphthalene	20	3.7
2-Methylnaphthalene	20	2.9
Acenaphthene	20	3.7J
Anthracene	2100	1.4J
Fluoranthene	280	2.8
Fluorene	280	3.8
Phenanthrene	210	3.6
Pyrene	210	1.5J
<u>TRPH (Method FL-PRO) (mg/L)</u>		
TRPH	5	1.77
Notes:		
¹ Chapter 62-770, FAC (August, 1999)		
U = below method detection limit		
J = Estimated value less than the Laboratory's Practical Quantitation Level		
µg/L = micrograms per liter		
mg/L = milligrams per liter		

FIGURES



LEGEND

- PCA
- Property Boundary
- Building/Structure
- Road
- Fence
- Vegetation
- Surface Water

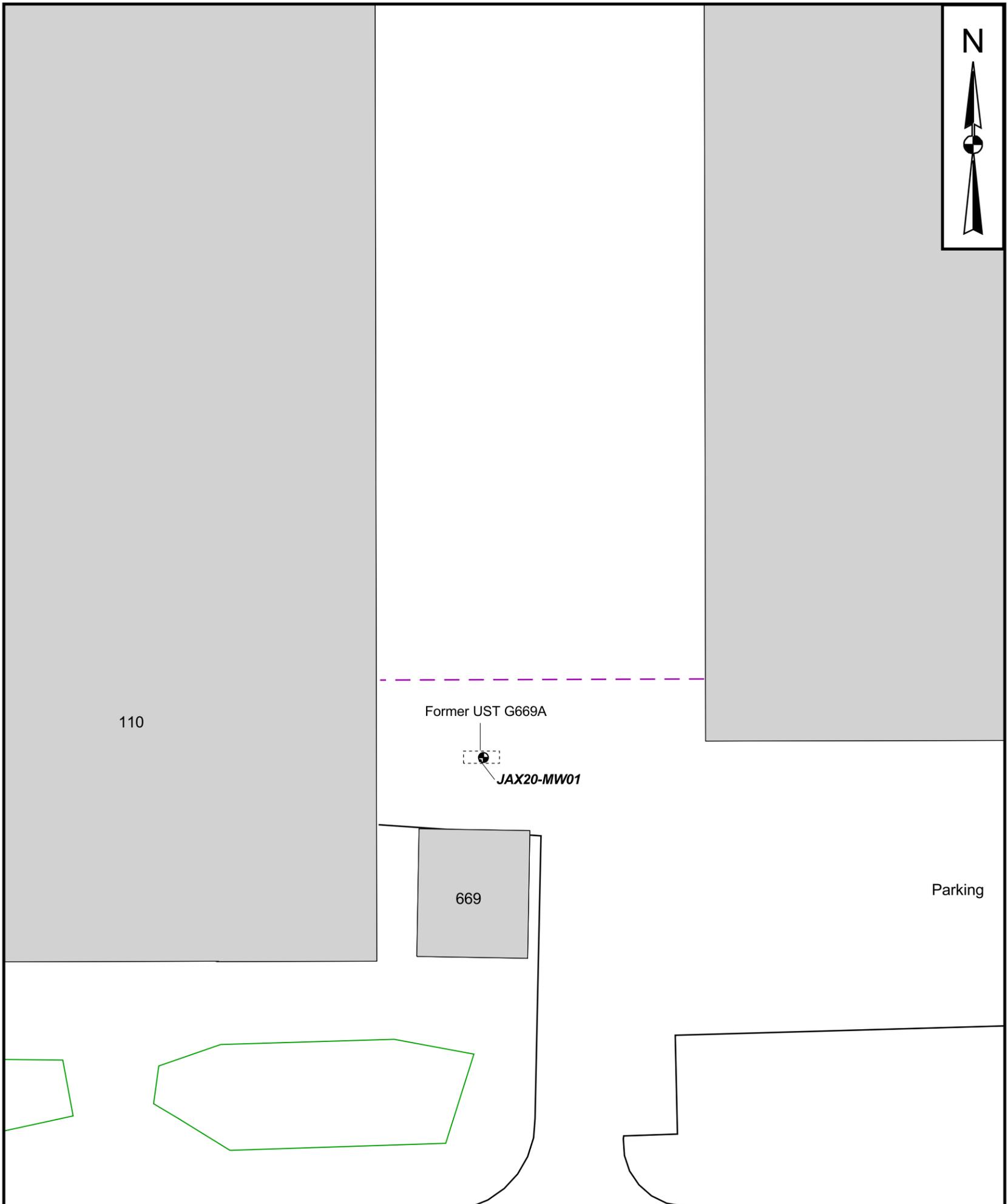


DRAWN BY J. LAMEY	DATE 5/14/02
CHECKED BY	DATE
COST/SCHEDULE-AREA	
SCALE AS NOTED	



SITE LOCATION MAP
PETROLEUM SITE SCREENING
NAVAL AIR STATION
JACKSONVILLE, FLORIDA

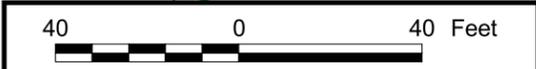
CONTRACT NUMBER	
APPROVED BY	DATE
APPROVED BY	DATE
DRAWING NO. FIGURE 1	REV 0



LEGEND

- Monitoring Well
- Property Boundary
- Building/Structure
- Road
- Fence
- Vegetation
- Surface Water

Yorktown Ave.



DRAWN BY J. LAMEY	DATE 5/15/02
CHECKED BY	DATE
COST/SCHEDULE-AREA	
SCALE AS NOTED	



PCA 20 - BUILDING 669
 PETROLEUM SITE SCREENING
 NAVAL AIR STATION
 JACKSONVILLE, FLORIDA

CONTRACT NUMBER 2872	
APPROVED BY	DATE
APPROVED BY	DATE
DRAWING NO. FIGURE 2	REV 0

**ATTACHMENT A
ANALYTICAL RESULTS**

CTO192-NAS JACKSONVILLE

WATER DATA

Accutest, NJ

SDG: F11878

SAMPLE NUMBER:

JAX-18-SB1-(3-8)

SAMPLE DATE:

12/20/01

LABORATORY ID:

F11878-1

QC_TYPE:

NORMAL

% SOLIDS:

0.0 %

UNITS:

UG/L

FIELD DUPLICATE OF:

JAX-20-MW1-01

12/20/01

F11878-3

NORMAL

0.0 %

UG/L

//

100.0 %

VOLATILES		JAX-18-SB1-(3-8)		JAX-20-MW1-01			
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT
1,1,1-TRICHLOROETHANE	1	U		1	U		
1,1,2-TETRACHLOROETHANE	1	U		1	U		
1,1,2-TRICHLOROETHANE	1	U		1	U		
1,1-DICHLOROETHANE	1	U		1	U		
1,1-DICHLOROETHENE	1	U		1	U		
1,2-DIBROMOETHANE	0.02	U		0.02	U		
1,2-DICHLOROETHENE	1	U		1	U		
1,2-DICHLOROETHANE	1	U		1	U		
1,2-DICHLOROPROPANE	1	U		1	U		
1,3-DICHLOROETHENE	1	U		1	U		
1,4-DICHLOROETHENE	1	U		1	U		
2-CHLOROETHYL VINYL ETHER	1	U		1	U		
BENZENE	1	U		1	U		
BROMODICHLOROMETHANE	1	U		1	U		
BROMOFORM	1	U		1	U		
BROMOMETHANE	1	U		1	U		
CARBON TETRACHLORIDE	1	U		1	U		
CHLOROETHANE	1	U		1	U		
CHLORODIBROMOMETHANE	1	U		1	U		
CHLOROETHANE	1	U		1	U		
CHLOROFORM	1	U		1	U		
CHLOROMETHANE	1	U		1	U		
CIS-1,2-DICHLOROETHENE	1	U		1	U		
CIS-1,3-DICHLOROPROPENE	1	U		1	U		
DICHLORODIFLUOROMETHANE	1	U		1	U		
ETHYLBENZENE	1	U		7.2	U		
METHYL TERT-BUTYL ETHER	1	U		1	U		
METHYLENE CHLORIDE	5	U		5	U		
TETRACHLOROETHENE	1	U		1	U		
TOLUENE	1	U		1	U		
TOTAL XYLENES	3	U		3	U		
TRANS-1,2-DICHLOROETHENE	1	U		1	U		

CTO192-NAS JACKSONVILLE

WATER DATA

Accutest, NJ

SDG: F11878

SAMPLE NUMBER:

SAMPLE DATE:

LABORATORY ID:

QC_TYPE:

% SOLIDS:

UNITS:

FIELD DUPLICATE OF:

JAX-18-SB1-(3-8)

12/20/01

F11878-1

NORMAL

0.0 %

UG/L

JAX-20-MW1-01

12/20/01

F11878-3

NORMAL

0.0 %

UG/L

//

100.0 %

//

100.0 %

	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES									
TRANS-1,3-DICHLOROPROPENE	1	U		1	U				
TRICHLOROETHENE	1	U		1	U				
TRICHLOROFLUOROMETHANE	1	U		1	U				
VINYL CHLORIDE	1	U		1	U				

CTO192-NAS JACKSONVILLE

WATER DATA

Accutest, NJ

SDG: F11878

SAMPLE NUMBER:

SAMPLE DATE:

LABORATORY ID:

QC_TYPE:

% SOLIDS:

UNITS:

FIELD DUPLICATE OF:

JAX-18-SB1-(3-8)

12/20/01

F11878-1

NORMAL

0.0 %

UG/L

JAX-20-MW1-01

12/20/01

F11878-3

NORMAL

0.0 %

UG/L

//

100.0 %

//

100.0 %

	JAX-18-SB1-(3-8)		JAX-20-MW1-01		//		//	
	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL
POLYNUCLEAR AROMATIC HYDROCARBONS								
1-METHYLNAPHTHALENE	8		3.7					
2-METHYLNAPHTHALENE	9.7		2.9					
ACENAPHTHENE	4.4	U	3.7	J				
ACENAPHTHYLENE	4.4	U	4.4	U				
ANTHRACENE	2.2	U	1.4	J				
BENZO(A)ANTHRACENE	0.22	U	0.22	U				
BENZO(A)PYRENE	0.22	U	0.22	U				
BENZO(B)FLUORANTHENE	0.22	U	0.22	U				
BENZO(G,H,I)PERYLENE	0.22	U	0.22	U				
BENZO(K)FLUORANTHENE	0.22	U	0.22	U				
CHRYSENE	2.2	U	2.2	U				
DIBENZO(A,H)ANTHRACENE	0.22	U	0.22	U				
FLUORANTHENE	2.2	U	2.8					
FLUORENE	2.2	U	3.8					
INDENO(1,2,3-CD)PYRENE	0.22	U	0.22	U				
NAPHTHALENE	2.4		3.6					
PHENANTHRENE	2.2	U	3.6					
PYRENE	2.2	U	1.5	J				

CTO192-NAS JACKSONVILLE

WATER DATA

Accutest, NJ

SDG: F11878

SAMPLE NUMBER:

SAMPLE DATE:

LABORATORY ID:

QC_TYPE:

% SOLIDS:

UNITS:

FIELD DUPLICATE OF:

JAX-18-SB1-(3-6)
12/20/01
F11878-1
NORMAL
0.0 %
MG/L

JAX-20-MW1-01
12/20/01
F11878-3
NORMAL
0.0 %
MG/L

//

//

100.0 %

100.0 %

RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
0.463			1.77					
TOTAL PETROLEUM HYDROCARBONS								

Report of Analysis

Client Sample ID: JAX-20-MW1-01 Lab Sample ID: F11878-3 Matrix: AQ - Ground Water Method: EPA 504.1 EPA 504 Project: NAS JAX- N2872-100101 CTO#0192	Date Sampled: 12/20/01 Date Received: 12/21/01 Percent Solids: n/a
---	--

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	DD04420.D	1	12/26/01	NJ	12/26/01	OP4442	GDD163
Run #2							

CAS No.	Compound	Result	RL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	ug/l	

ND = Not detected
 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:	JAX-20-MW1-01	Date Sampled:	12/20/01
Lab Sample ID:	F11878-3	Date Received:	12/21/01
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8021B		
Project:	NAS JAX- N2872-100101 CTO#0192		

Run #1 ^a	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #2	QR008038.D	1	12/31/01	RA	n/a	n/a	GQR343

VOA 8021 List

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
74-83-9	Bromomethane	ND	1.0	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
75-00-3	Chloroethane	ND	1.0	ug/l	
110-75-8	2-Chloroethylvinyl ether	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
74-87-3	Chloromethane	ND	1.0	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	1.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	7.2	1.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethene	ND	1.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	3.0	ug/l	

ND = Not detected

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:	JAX-20-MW1-01	Date Sampled:	12/20/01
Lab Sample ID:	F11878-3	Date Received:	12/21/01
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 8310 SW846 3510C		
Project:	NAS JAX- N2872-100101 CTO#0192		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	AA009867.D	1	12/31/01	MRE	12/24/01	OP4434	GAA437
Run #2							

Polynuclear Aromatic Hydrocarbons

CAS No.	Compound	Result	RL	Units	Q
83-32-9	Acenaphthene	3.7	4.4	ug/l	J
208-96-8	Acenaphthylene	ND	4.4	ug/l	
120-12-7	Anthracene	1.4	2.2	ug/l	J
56-55-3	Benzo(a)anthracene	ND	0.22	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.22	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.22	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.22	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.22	ug/l	
218-01-9	Chrysene	ND	2.2	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.22	ug/l	
206-44-0	Fluoranthene	2.8	2.2	ug/l	
86-73-7	Fluorene	3.8	2.2	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.22	ug/l	
91-20-3	Naphthalene	3.6	2.2	ug/l	
90-12-0	1-Methylnaphthalene	3.7	2.2	ug/l	
91-57-6	2-Methylnaphthalene	2.9	2.2	ug/l	
85-01-8	Phenanthrene	3.6	2.2	ug/l	
129-00-0	Pyrene	1.5	2.2	ug/l	J
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits	
84-15-1	o-Terphenyl	104%		33-141%	
92-94-4	p-Terphenyl	89%		31-122%	

(a) Confirmed by GC/MS

ND = Not detected
 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:	JAX-20-MW1-01	Date Sampled:	12/20/01
Lab Sample ID:	F11878-3	Date Received:	12/21/01
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	FLORIDA-PRO SW846 3510C		
Project:	NAS JAX- N2872-100101 CTO#0192		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP19086.D	2	12/29/01	ME	12/27/01	OP4448	GOP710
Run #2							

CAS No.	Compound	Result	RL	Units	Q
	TPH (C8-C40)	1.77	0.60	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	92%		55-130%

ND = Not detected
 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

