



TETRA TECH NUS, INC.

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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 (CTO) Number 0192

Subject: Site Screening Letter Report
Petroleum Contaminated Area 221
Naval Air Station Jacksonville, Jacksonville, Florida

Dear Mr. Hansel:

Tetra Tech NUS, Inc. (TiNUS) is pleased to submit this Site Screening Letter Report for Petroleum Contaminated Area (PCA) 221. 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 general accordance with the Work Plan for Site Screening at Various Petroleum Sites dated August 2001.

Background Information

PCA 221 is the former location of an underground storage tank (UST) at the Officer's Quarters I located at Naval Air Station (NAS) Jacksonville (see Figure 1). The former UST was located behind the garage at the Officer's Quarters I (see Figure 2). The UST was used to supply fuel oil to the home's furnace. On June 10, 1999, the tank was removed and a tank closure assessment was completed. Some visible signs of petroleum stained soil were present surrounding the tank. Organic vapor analyzer (OVA) readings performed during the tank closure indicated evidence of soil contamination outside the tank. Soil analytical results during tank removal indicated polynuclear aromatic hydrocarbon (PAH) and total recoverable petroleum hydrocarbon (TRPH) constituents exceeded Florida Department of Environmental Protection (FDEP) soil cleanup target levels (SCTLs). The "excessively contaminated" soil was removed during the tank closure. Prior to back filling, a temporary well was installed 2 feet (ft) below the water table in the region of the highest OVA readings. Free product was reportedly observed on the surface of the water in the temporary monitoring well. No documentation regarding free product thickness measurements was available. Prior to sampling, the temporary well was pumped dry and allowed to recharge. Groundwater samples were collected and analyzed for volatile organic compounds (VOCs) using United States Environmental Protection Agency (USEPA) Method 8021, PAHs using USEPA Method 8310, and TRPH using Florida Petroleum Range Organics (FL-PRO). Groundwater samples analyzed for VOCs and PAHs exceeded the groundwater cleanup target levels (GCTLs) per Chapter 62-770, Florida Administrative Code (FAC).

SOUTHNAVFACENGCOM requested that TtNUS perform a limited site screening at PSC 22I to determine current site conditions. This effort was to include installing one permanent microwell to determine the presence of free product and the collection of one soil and one groundwater sample. The intent explained to TtNUS was to facilitate obtaining funds for sites requiring additional assessment and clean up.

The specific activities performed for this limited screening are detailed below.

Field Screening Activities

On December 18, 2001, TtNUS mobilized to PCA 22I (Officer's Quarters I) for field screening activities. The field screening activities consisted of soil and groundwater sampling during soil boring installation via Direct Push Technology (DPT). A monitoring well was also installed using the DPT rig to determine if free product was still present. During field screening activities, one soil boring, JAX-22I-SB-1, was installed at PCA 22I via hand-auger to a depth of 13 ft below land surface (bls). The location of PCA 22I with surrounding features, former tank location, and the location of the soil boring and monitoring well JAX-22-MW-01 is indicated on Figure 2.

Site Lithology

The site is underlain by a layer of gray to light brown fine sand from the surface to 4 ft bls. A yellow orange sandy clay begins at 4 ft bls and continues to a depth of 11 ft bls. During field activities, it was determined that a perched water table is located at the site approximately 5 ft bls. The water table was encountered at 10 ft bls.

Soil Vapor Analysis

The potential for petroleum impacted soil in the vadose zone was assessed through soil headspace analysis. OVA headspace analysis was conducted using a flame ionization detector (FID). The soil vapor analysis was performed according to the head space method prescribed in Chapter 62-770.200 (2), FAC. Soil samples were collected at 2-ft intervals to the perched water table, which was encountered at 5 ft bls. The results of the soil vapor screening, presented in Table 1, indicated no soil vapor readings were detected. All readings were below instrument detection limits.

Soil Sampling Results

One soil sample [JAX-22I-SB-1 (5)] was collected at 5 ft bls, or just above the perched water table. The soil sample was placed on ice; shipped to Accutest Laboratories in Orlando, Florida; and analyzed for VOCs by USEPA Method 8021B, PAHs by USEPA Method 8310, and TRPH by FL-PRO. One VOC analyzed (1,1-dichloroethene) was detected, but the concentration did not exceed Chapter 62-770, FAC, residential or leachability SCTLs. A summary of detected constituents is presented in Table 2. The complete set of analytical results is presented in Attachment A.

Groundwater Sampling Results

For groundwater sample collection, a groundwater sample was collected from 10 to 13 ft bls. The boring was advanced to 13 ft bls with DPT. The sample was collected using a detachable drive tip attached to a 24-inch long, retractable, stainless steel well screen encased in the lead probe tube. After the water sampler was advanced into the water-bearing zone, the probe was withdrawn 24 inches to allow the retractable screen to open to the formation. For groundwater recovery, Teflon[®] tubing was inserted into the DPT screen, and the tubing was connected to a peristaltic pump for low-flow purging and sampling. Several screen volumes were then pumped from the well in order to reduce the turbidity level and ensure a representative sample, based on visual observation. One groundwater sample [JAX-22I-GW (10-13)]

was collected from 10 to 13 ft bls. 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, TRPH using FL-PRO, and ethylene dibromide (EDB) using USEPA Method 504.1. The groundwater analytical results, presented in Table 3, indicated three petroleum constituents [1-methylnaphthalene, 2-methylanphthalene (PAH constituents) and TRPH] were in excess of groundwater cleanup target levels (GCTLs) per Chapter 62-770, FAC. The complete set of analytical results is presented in Attachment A.

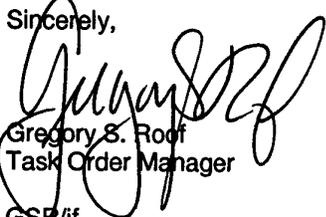
After the groundwater sample was collected from PCA 221, a permanent microwell was installed at the site. To determine if free product was present at the site, the microwell JAX-221-MW-1 was installed at the soil boring location JAX-221-SB-1 on December 18, 2001. The 3/4" micro well was screened from 2.5 to 7.5 ft bls, intersecting the perched water table. Twenty-four hours after the monitoring well was installed, TtNUS revisited the site on December 19, 2001 with a free product interface probe. Measurements of groundwater with the interface probe indicated that free product was not present in the perched water table.

Conclusions and Recommendations

Data obtained during the field screening at PCA 221 indicated no headspace readings greater than 50 parts per million (ppm). No soil petroleum constituents analyzed were detected above FDEP SCTLs. Results of the groundwater sample analysis indicate concentrations of petroleum constituents in excess of FDEP GCTLs. Free product was not detected at PCA 221.

As a result of the PCA 221 site screening, TtNUS recommends that a site assessment (SA) be conducted in accordance with Chapter 62-770, FAC for PCA Site 221, the Officer's Quarters I, NAS Jacksonville.

Sincerely,



Gregory S. Roof
Task Order Manager

GSR/jf

Enclosures (3)

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

TABLES

**TABLE 1
SOIL VAPOR MEASUREMENTS**

**PCA 221
NAVAL AIR STATION JACKSONVILLE
JACKSONVILLE, FLORIDA**

Soil Boring Number	Date of Measurement	Sample Depth (ft bls)	Headspace Readings (ppm)		
			Total Organic Reading	Carbon Filtered Reading	Net Reading
JAX-22I-SB1	12/18/2001	1	0	0	0
		3	0	0	0
		5	0	0	0

Notes:

Wet Soils encountered at approximately 5 ft bls.

**TABLE 2
CONFIRMATORY SOIL SAMPLING ANALYTICAL RESULTS**

**PCA 22I
NAVAL AIR STATION JACKSONVILLE
JACKSONVILLE, FLORIDA**

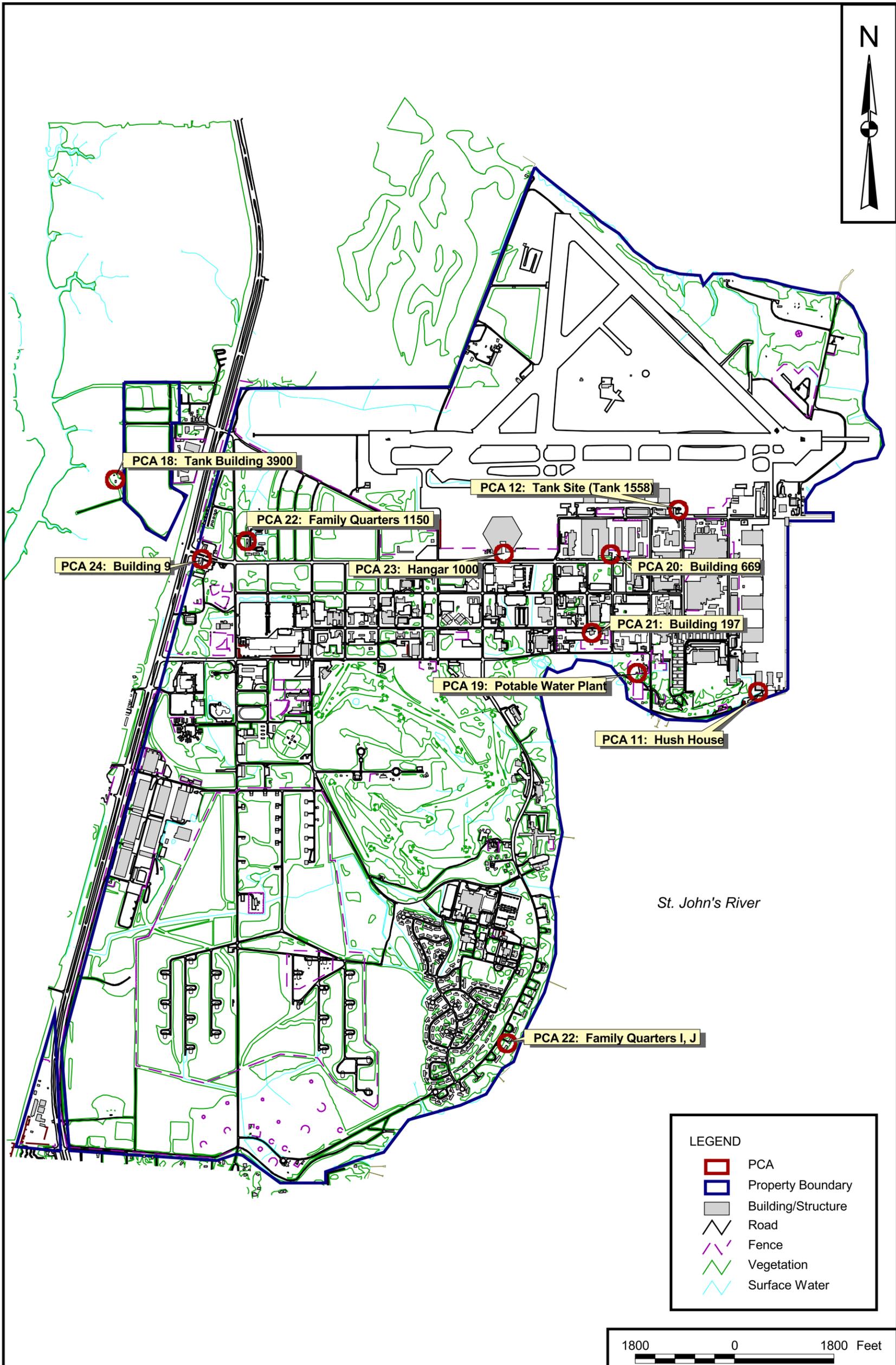
Compound	Direct Exposure Residential ¹	Leachability Based on Groundwater Criteria ¹	PCA 22I
			JAX-22I-SB-1(5)
			12/18/2001
Sample Depth		5 ft bls	
<u>VOCs (USEPA Method 8021B) (µg/kg)</u>			
1,1-Dichloroethene	90	60	6
Notes:			
¹ Chapter 62-770, FAC (April 30, 1999)			
µg/kg = micrograms per kilogram			

**TABLE 3
SUMMARY OF GROUNDWATER QUALITY**

**PCA 221
NAVAL AIR STATION JACKSONVILLE
JACKSONVILLE, FLORIDA**

Compound	FDEP Target Level ¹	JAX-22I-GW(10-13)
		12/19/01
<u>VOCs (USEPA Method 8021B) (µg/L)</u>		
Ethylbenzene	30	1.2
<u>PAHs (USEPA Method 8310) (µg/L)</u>		
1-Methylnaphthalene	20	30.2
2-Methylnaphthalene	20	35.7
Fluorene	280	4.3J
Naphthalene	20	6.4J
Phenanthrene	210	12.3
<u>FL-PRO (USEPA Method 8270) (mg/L)</u>		
TRPH	5	6.64
Notes: ¹ Chapter 62-770, FAC (August, 1999) J = estimated value U = below detection limit Bold values are above target levels. 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	



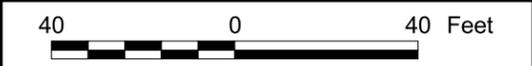
SITE LOCATION MAP
PETROLEUM CONTAMINATION ASSESSMENT
NAVAL AIR STATION
JACKSONVILLE, FLORIDA

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



LEGEND

- Soil Boring Location
- 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	



SOIL BORING LOCATIONS
PCA 22 - FAMILY QUARTERS I
PETROLEUM CONTAMINATION ASSESSMENT
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

SOIL DATA

Accutest, NJ

SDG: F11846

SAMPLE NUMBER:

JAX-22AC-SB1(3)

JAX-22I-SB1(5)

JAX-22J-SB1(5)

SAMPLE DATE:

12/18/01

12/18/01

12/18/01

//

LABORATORY ID:

F11846-5

F11846-3

F11846-4

QC_TYPE:

NORMAL

NORMAL

NORMAL

% SOLIDS:

83.4 %

80.2 %

73.9 %

100.0 %

UNITS:

UG/KG

UG/KG

UG/KG

FIELD DUPLICATE OF:

	RESULT	QUAL	CODE									
VOLATILES												
1,1,1-TRICHLOROETHANE	6.3	U		6	U		7.1	U				
1,1,2,2-TETRACHLOROETHANE	6.3	U		6	U		7.1	U				
1,1,2-TRICHLOROETHANE	6.3	U		6	U		7.1	U				
1,1-DICHLOROETHANE	6.3	U		6	U		7.1	U				
1,1-DICHLOROETHENE	10.1			6			11.6					
1,2-DICHLOROBENZENE	6.3	U		6	U		7.1	U				
1,2-DICHLOROETHANE	6.3	U		6	U		7.1	U				
1,2-DICHLOROPROPANE	6.3	U		6	U		7.1	U				
1,3-DICHLOROBENZENE	6.3	U		6	U		7.1	U				
1,4-DICHLOROBENZENE	6.3	U		6	U		7.1	U				
2-CHLOROETHYL VINYL ETHER	13	U		12	U		14	U				
BENZENE	6.3	U		6	U		7.1	U				
BROMODICHLOROMETHANE	6.3	U		6	U		7.1	U				
BROMOFORM	6.3	U		6	U		7.1	U				
BROMOMETHANE	6.3	U		6	U		7.1	U				
CARBON TETRACHLORIDE	6.3	U		6	U		7.1	U				
CHLOROENZENE	6.3	U		6	U		7.1	U				
CHLORODIBROMOMETHANE	6.3	U		6	U		7.1	U				
CHLOROETHANE	6.3	U		6	U		7.1	U				
CHLOROFORM	6.3	U		6	U		7.1	U				
CHLOROMETHANE	6.3	U		6	U		7.1	U				
CIS-1,2-DICHLOROETHENE	6.3	U		6	U		7.1	U				
CIS-1,3-DICHLOROPROPENE	6.3	U		6	U		7.1	U				
DICHLORODIFLUOROMETHANE	6.3	U		6	U		7.1	U				
ETHYLBENZENE	6.3	U		6	U		7.1	U				
METHYL TERT-BUTYL ETHER	6.3	U		6	U		7.1	U				
METHYLENE CHLORIDE	13	U		12	U		14	U				
TETRACHLOROETHENE	6.3	U		6	U		7.1	U				
TOLUENE	6.3	U		6	U		7.1	U				
TOTAL XYLENES	19	U		18	U		21	U				
TRANS-1,2-DICHLOROETHENE	6.3	U		6	U		7.1	U				
TRANS-1,3-DICHLOROPROPENE	6.3	U		6	U		7.1	U				

CTO192-NAS JACKSONVILLE

SOIL DATA

Accutest, NJ

SDG: F11846

SAMPLE NUMBER:

JAX-22AC-SB1(3)

JAX-22I-SB1(5)

JAX-22J-SB1(5)

SAMPLE DATE:

12/18/01

12/18/01

12/18/01

//

LABORATORY ID:

F11846-5

F11846-3

F11846-4

QC_TYPE:

NORMAL

NORMAL

NORMAL

% SOLIDS:

83.4 %

80.2 %

73.9 %

100.0 %

UNITS:

UG/KG

UG/KG

UG/KG

FIELD DUPLICATE OF:

	RESULT	QUAL	CODE									
VOLATILES												
TRICHLOROETHENE	6.3	U		6	U		7.1	U				
TRICHLOROFLUOROMETHANE	6.3	U		6	U		7.1	U				
VINYL CHLORIDE	6.3	U		6	U		7.1	U				

CTO192-NAS JACKSONVILLE
SOIL DATA
Accutest, NJ
SDG: F11846

SAMPLE NUMBER:	JAX-22AC-SB1(3)	JAX-22I-SB1(5)	JAX-22J-SB1(5)	
SAMPLE DATE:	12/18/01	12/18/01	12/18/01	//
LABORATORY ID:	F11846-5	F11846-3	F11846-4	
QC_TYPE:	NORMAL	NORMAL	NORMAL	
% SOLIDS:	83.4 %	80.2 %	73.9 %	100.0 %
UNITS:	UG/KG	UG/KG	UG/KG	
FIELD DUPLICATE OF:				

	RESULT	QUAL	CODE									
POLYNUCLEAR AROMATIC HYDROCARBONS												
1-METHYLNAPHTHALENE	400	U		410	U		450	U				
2-METHYLNAPHTHALENE	400	U		410	U		450	U				
ACENAPHTHENE	790	U		830	U		900	U				
ACENAPHTHYLENE	790	U		830	U		900	U				
ANTHRACENE	400	U		410	U		450	U				
BENZO(A)ANTHRACENE	400	U		410	U		450	U				
BENZO(A)PYRENE	79	U		83	U		90	U				
BENZO(B)FLUORANTHENE	79	U		83	U		90	U				
BENZO(G,H,I)PERYLENE	79	U		83	U		90	U				
BENZO(K)FLUORANTHENE	79	U		83	U		90	U				
CHRYSENE	400	U		410	U		450	U				
DIBENZO(A,H)ANTHRACENE	79	U		83	U		90	U				
FLUORANTHENE	400	U		410	U		450	U				
FLUORENE	400	U		410	U		450	U				
INDENO(1,2,3-CD)PYRENE	79	U		83	U		90	U				
NAPHTHALENE	400	U		410	U		450	U				
PHENANTHRENE	400	U		410	U		450	U				
PYRENE	400	U		410	U		450	U				

CTO192-NAS JACKSONVILLE

SOIL DATA

Accutest, NJ

SDG: F11846

SAMPLE NUMBER:

JAX-22AC-SB1(3)

JAX-22I-SB1(5)

JAX-22J-SB1(5)

SAMPLE DATE:

12/18/01

12/18/01

12/18/01

//

LABORATORY ID:

F11846-5

F11846-3

F11846-4

QC_TYPE:

NORMAL

NORMAL

NORMAL

% SOLIDS:

83.4 %

80.2 %

73.9 %

100.0 %

UNITS:

MG/KG

MG/KG

MG/KG

FIELD DUPLICATE OF:

	RESULT	QUAL	CODE									
PETROLEUM HYDROCARBONS												
TOTAL PETROLEUM HYDROCARBONS	16.3			10	U		11	U				

CTO192-NAS JACKSONVILLE
WATER DATA
Accutest, NJ
SDG: F11852

SAMPLE NUMBER: JAX-22I-GW(10-13)
 SAMPLE DATE: 12/19/01
 LABORATORY ID: F11852-2
 QC_TYPE: NORMAL
 % SOLIDS: 0.0 %
 UNITS: UG/L
 FIELD DUPLICATE OF:

//	//	//
100.0 %	100.0 %	100.0 %

	RESULT	QUAL	CODE									
VOLATILES												
1,1,1-TRICHLOROETHANE	1	U										
1,1,2,2-TETRACHLOROETHANE	1	U										
1,1,2-TRICHLOROETHANE	1	U										
1,1-DICHLOROETHANE	1	U										
1,1-DICHLOROETHENE	1	U										
1,2-DIBROMOETHANE	0.02	U										
1,2-DICHLOROBENZENE	1	U										
1,2-DICHLOROETHANE	1	U										
1,2-DICHLOROPROPANE	1	U										
1,3-DICHLOROBENZENE	1	U										
1,4-DICHLOROBENZENE	1	U										
2-CHLOROETHYL VINYL ETHER	1	U										
BENZENE	1	U										
BROMODICHLOROMETHANE	1	U										
BROMOFORM	1	U										
BROMOMETHANE	1	U										
CARBON TETRACHLORIDE	1	U										
CHLOROBENZENE	1	U										
CHLORODIBROMOMETHANE	1	U										
CHLOROETHANE	1	U										
CHLOROFORM	1	U										
CHLOROMETHANE	1	U										
CIS-1,2-DICHLOROETHENE	1	U										
CIS-1,3-DICHLOROPROPENE	1	U										
DICHLORODIFLUOROMETHANE	1	U										
ETHYLBENZENE	1.2											
METHYL TERT-BUTYL ETHER	1	U										
METHYLENE CHLORIDE	5	U										
TETRACHLOROETHENE	1	U										
TOLUENE	1	U										
TOTAL XYLENES	3	U										
TRANS-1,2-DICHLOROETHENE	1	U										

CTO192-NAS JACKSONVILLE
WATER DATA
Accutest, NJ
SDG: F11852

SAMPLE NUMBER: JAX-22I-GW(10-13)
 SAMPLE DATE: 12/19/01
 LABORATORY ID: F11852-2
 QC_TYPE: NORMAL
 % SOLIDS: 0.0 %
 UNITS: UG/L
 FIELD DUPLICATE OF:

//	//	//
100.0 %	100.0 %	100.0 %

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

CTO192-NAS JACKSONVILLE

WATER DATA

Accutest, NJ

SDG: F11852

SAMPLE NUMBER:

JAX-22I-GW(10-13)

SAMPLE DATE:

12/19/01

LABORATORY ID:

F11852-2

QC_TYPE:

NORMAL

% SOLIDS:

0.0 %

UNITS:

UG/L

FIELD DUPLICATE OF:

//

//

//

100.0 %

100.0 %

100.0 %

	RESULT	QUAL	CODE									
POLYNUCLEAR AROMATIC HYDROCARBONS												
1-METHYLNAPHTHALENE	30.2											
2-METHYLNAPHTHALENE	35.7											
ACENAPHTHENE	17	U										
ACENAPHTHYLENE	17	U										
ANTHRACENE	8.6	U										
BENZO(A)ANTHRACENE	1.7	U										
BENZO(A)PYRENE	0.86	U										
BENZO(B)FLUORANTHENE	0.86	U										
BENZO(G,H,I)PERYLENE	0.86	U										
BENZO(K)FLUORANTHENE	0.86	U										
CHRYSENE	8.6	U										
DIBENZO(A,H)ANTHRACENE	0.86	U										
FLUORANTHENE	8.6	U										
FLUORENE	4.6	J	P									
INDENO(1,2,3-CD)PYRENE	0.86	U										
NAPHTHALENE	6.4	J	P									
PHENANTHRENE	12.3											
PYRENE	8.6	U										

CTO192-NAS JACKSONVILLE
WATER DATA
 Accutest, NJ
 SDG: F11852

SAMPLE NUMBER: JAX-22I-GW(10-13)
 SAMPLE DATE: 12/19/01
 LABORATORY ID: F11852-2
 QC_TYPE: NORMAL
 % SOLIDS: 0.0 %
 UNITS: MG/L
 FIELD DUPLICATE OF:

//	//	//
100.0 %	100.0 %	100.0 %

	RESULT	QUAL	CODE									
TOTAL PETROLEUM HYDROCARBONS	6.64											

Report of Analysis

Client Sample ID:	JAX-22I-SB1(5)	Date Sampled:	12/18/01
Lab Sample ID:	F11846-3	Date Received:	12/19/01
Matrix:	SO - Soil	Percent Solids:	80.2
Method:	SW846 8260B		
Project:	NAS JAX- N2872 KJ0050115		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	H014878.D	1	12/28/01	KW	n/a	n/a	VH477
Run #2							

VOA 8021 List

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	6.0	ug/kg	
75-27-4	Bromodichloromethane	ND	6.0	ug/kg	
75-25-2	Bromoform	ND	6.0	ug/kg	
108-90-7	Chlorobenzene	ND	6.0	ug/kg	
75-00-3	Chloroethane	ND	6.0	ug/kg	
67-66-3	Chloroform	ND	6.0	ug/kg	
110-75-8	2-Chloroethyl vinyl ether	ND	12	ug/kg	
56-23-5	Carbon tetrachloride	ND	6.0	ug/kg	
75-34-3	1,1-Dichloroethane	ND	6.0	ug/kg	
75-35-4	1,1-Dichloroethylene	6.0	6.0	ug/kg	
107-06-2	1,2-Dichloroethane	ND	6.0	ug/kg	
78-87-5	1,2-Dichloropropane	ND	6.0	ug/kg	
124-48-1	Dibromochloromethane	ND	6.0	ug/kg	
75-71-8	Dichlorodifluoromethane	ND	6.0	ug/kg	
156-59-2	cis-1,2-Dichloroethylene	ND	6.0	ug/kg	
10061-01-5	cis-1,3-Dichloropropene	ND	6.0	ug/kg	
541-73-1	m-Dichlorobenzene	ND	6.0	ug/kg	
95-50-1	o-Dichlorobenzene	ND	6.0	ug/kg	
106-46-7	p-Dichlorobenzene	ND	6.0	ug/kg	
156-60-5	trans-1,2-Dichloroethylene	ND	6.0	ug/kg	
10061-02-6	trans-1,3-Dichloropropene	ND	6.0	ug/kg	
100-41-4	Ethylbenzene	ND	6.0	ug/kg	
74-83-9	Methyl bromide	ND	6.0	ug/kg	
74-87-3	Methyl chloride	ND	6.0	ug/kg	
75-09-2	Methylene chloride	ND	12	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	6.0	ug/kg	
71-55-6	1,1,1-Trichloroethane	ND	6.0	ug/kg	
79-34-5	1,1,2,2-Tetrachloroethane	ND	6.0	ug/kg	
79-00-5	1,1,2-Trichloroethane	ND	6.0	ug/kg	
127-18-4	Tetrachloroethylene	ND	6.0	ug/kg	
108-88-3	Toluene	ND	6.0	ug/kg	
79-01-6	Trichloroethylene	ND	6.0	ug/kg	
75-69-4	Trichlorofluoromethane	ND	6.0	ug/kg	
75-01-4	Vinyl chloride	ND	6.0	ug/kg	
1330-20-7	Xylene (total)	ND	18	ug/kg	

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-22I-SB1(5)	Date Sampled:	12/18/01
Lab Sample ID:	F11846-3	Date Received:	12/19/01
Matrix:	SO - Soil	Percent Solids:	80.2
Method:	SW846 8260B		
Project:	NAS JAX- N2872 KJ0050115		

VOA 8021 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		75-125%
2037-26-5	Toluene-D8	101%		75-125%
460-00-4	4-Bromofluorobenzene	104%		72-137%
17060-07-0	1,2-Dichloroethane-D4	102%		68-125%

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-22I-SB1(5)	Date Sampled: 12/18/01
Lab Sample ID: F11846-3	Date Received: 12/19/01
Matrix: SO - Soil	Percent Solids: 80.2
Method: EPA 8310 SW846 3550B	
Project: NAS JAX- N2872 KJ0050115	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EE006893.D	1	01/02/02	MRE	12/28/01	OP4455	GEE313
Run #2							

Polynuclear Aromatic Hydrocarbons

CAS No.	Compound	Result	RL	Units	Q
83-32-9	Acenaphthene	ND	830	ug/kg	
208-96-8	Acenaphthylene	ND	830	ug/kg	
120-12-7	Anthracene	ND	410	ug/kg	
56-55-3	Benzo(a)anthracene	ND	410	ug/kg	
50-32-8	Benzo(a)pyrene	ND	83	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	83	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	83	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	83	ug/kg	
218-01-9	Chrysene	ND	410	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	83	ug/kg	
206-44-0	Fluoranthene	ND	410	ug/kg	
86-73-7	Fluorene	ND	410	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	83	ug/kg	
91-20-3	Naphthalene	ND	410	ug/kg	
90-12-0	1-Methylnaphthalene	ND	410	ug/kg	
91-57-6	2-Methylnaphthalene	ND	410	ug/kg	
85-01-8	Phenanthrene	ND	410	ug/kg	
129-00-0	Pyrene	ND	410	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	90%		37-158%
92-94-4	p-Terphenyl	100%		59-149%

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-221-SB1(5)	Date Sampled:	12/18/01
Lab Sample ID:	F11846-3	Date Received:	12/19/01
Matrix:	SO - Soil	Percent Solids:	80.2
Method:	FLORIDA-PRO SW846 3550B		
Project:	NAS JAX- N2872 KJ0050115		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP19099.D	1	12/31/01	ME	12/31/01	OP4463	GOP711
Run #2							

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

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	96%		66-130%

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

Report of Analysis

Client Sample ID:	JAX-22I-GW(10-13)	Date Sampled:	12/19/01
Lab Sample ID:	F11852-2	Date Received:	12/20/01
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 504.1 EPA 504		
Project:	NAS JAX- N2872 KJ0050115		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	DD04365.D	1	12/21/01	SKW	12/21/01	OP4425	GDD161
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-22I-GW(10-13)	Date Sampled:	12/19/01
Lab Sample ID:	F11852-2	Date Received:	12/20/01
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8021B		
Project:	NAS JAX- N2872 KJ0050115		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	QR008030.D	1	12/31/01	RA	n/a	n/a	GQR343
Run #2							

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	1.2	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-221-GW(10-13)	Date Sampled:	12/19/01
Lab Sample ID:	F11852-2	Date Received:	12/20/01
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8021B		
Project:	NAS JAX- N2872 KJ0050115		

VOA 8021 List

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
75-29-6	2-Chloropropane	82%		56-125%
352-33-0	1-Chloro-4-fluorobenzene	105%		80-120%
352-33-0	1-Chloro-4-fluorobenzene	102%		80-120%
98-08-8	aaa-Trifluorotoluene	109%		70-127%

(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-22I-GW(10-13)	Date Sampled:	12/19/01
Lab Sample ID:	F11852-2	Date Received:	12/20/01
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	EPA 8310 SW846 3510C		
Project:	NAS JAX- N2872 KJ0050115		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	AA009877.D	4	01/01/02	MRE	12/24/01	OP4434	GAA438
Run #2							

Polynuclear Aromatic Hydrocarbons

CAS No.	Compound	Result	RL	Units	Q
83-32-9	Acenaphthene	ND	17	ug/l	
208-96-8	Acenaphthylene	ND	17	ug/l	
120-12-7	Anthracene	ND	8.6	ug/l	
56-55-3	Benzo(a)anthracene ^b	ND	1.7	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.86	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.86	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.86	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.86	ug/l	
218-01-9	Chrysene	ND	8.6	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.86	ug/l	
206-44-0	Fluoranthene	ND	8.6	ug/l	
86-73-7	Fluorene	4.6	8.6	ug/l	J
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.86	ug/l	
91-20-3	Naphthalene	6.4	8.6	ug/l	J
90-12-0	1-Methylnaphthalene	30.2	8.6	ug/l	
91-57-6	2-Methylnaphthalene	35.7	8.6	ug/l	
85-01-8	Phenanthrene	12.3	8.6	ug/l	
129-00-0	Pyrene	ND	8.6	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	294% ^c		33-141%
92-94-4	p-Terphenyl	113%		31-122%

(a) All hits confirmed by spectral match using a diode array detector.

(b) Elevated reporting limits due to matrix interference.

(c) Outside control limits due to matrix interference.

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 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	JAX-22I-GW(10-13)	Date Sampled:	12/19/01
Lab Sample ID:	F11852-2	Date Received:	12/20/01
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	FLORIDA-PRO SW846 3510C		
Project:	NAS JAX- N2872 KJ0050115		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP19022.D	4	12/27/01	ME	12/26/01	OP4438	GOP709
Run #2							

CAS No.	Compound	Result	RL	Units	Q
	TPH (C8-C40)	6.64	1.1	mg/l	

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

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 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, INC.

CHAIN OF CUSTODY

NUMBER 121801-2

511896

PAGE 1 OF 1

PROJECT NO: N-19-2-150050115 | VARIOUS PCAS
 SAMPERS (SIGNATURE) [Signature]
 PROJECT MANAGER AND PHONE NUMBER: GREG ROOF 904 / 281-0400
 FIELD OPERATIONS LEADER AND PHONE NUMBER: JOE Ferranti
 LABORATORY NAME AND CONTACT: ACCUTEST
 ADDRESS: 4408 Vinland Ln C-15
 CITY, STATE: Orlando, FL 32811

CARRIERWAYBILL NUMBER: Fed Ex 8311 6072 7119
 CONTAINER TYPE: PLASTIC (P) or GLASS (G)
 PRESERVATIVE USED: HCl

DATE	TIME	YEAR	SAMPLE ID	MATRIX	GRAB (G) COMP (C)	NO. OF CONTAINERS	TYPE OF ANALYSIS	COMMENTS
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1	12/18	1420	JAX-22J-GW(9-14)	GW	G	10	TRPH (FL PFO) (601)	TRPH / PHL
2	1615		JAX-22AC-GW(4-6)	GW	G	10	TRPH (FL PFO) (601)	TRPH / PHL
3	1040		JAX-22I-SBI(5)	SOIL	G	4	EDB	3 1
4	1350		JAX-22J-SBI(5)	SOIL	G	4	TRPH (FL PFO) (601)	3 1
5	1540		JAX-22AC-SBI(3)	SOIL	G	4	VOCs (G021 B)	3 1

DATE	TIME	1. RECEIVED BY	DATE	TIME
12-18-01	1830	Fed Ex ASD	12/19/01	10:00

1. RELINQUISHED BY [Signature]
 2. RELINQUISHED BY [Signature]
 3. RELINQUISHED BY [Signature]
 COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY) 3.2
 FORM NO. TINUS-001 3/99