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NSA PANAMA CITY
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FREE PRODUCT RECOVERY GROUNDWATER MONITORING LETTER REPORT BUILDING G300 CSS PANAMA CITY FL

9/30/2002

TETRA TECH

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TtNUS/TPA-02-012/4138-3.2

September 30, 2002

Project Number 4138

Ms. Tracie Vaught
Florida Dept. of Environmental Protection
Twin Towers Office Bldg.
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Reference: Clean Contract No. N62467-94-D0888
Contract Task Order No. 0214

Subject: Free Product Recovery/Groundwater Monitoring Report
Building G300
Coastal Systems Station Panama City
Panama City, Florida

Dear Ms. Vaught:

Tetra Tech NUS, Inc. is pleased to submit for your review and approval this report documenting free product recovery and groundwater monitoring at Building G300 (Deep Ocean Engineering Pressure Building) at Coastal Systems Station (CSS), Panama City, Florida. This report was prepared by Tetra Tech NUS (TtNUS) under the Comprehensive Long-term Environmental Action Navy (CLEAN III) Contract Number N62467-94-D-0888.

The objective of this investigation was to evaluate the effectiveness of routine free product recovery from monitoring well PCY-300-MW01 at Building G300 (Figure 1) using portable vacuum extraction equipment. The work included collecting a sample of the free product for laboratory analysis, gauging free product and water levels, free product recovery from PCY-300-MW01 using vacuum extraction techniques, and groundwater sampling. This report provides a summary of the findings from the investigation to date and makes recommendations for future actions at the site.

SITE HISTORY

On September 16, 1996, an accidental discharge of diesel fuel was detected near the vent lines of the 150-gallon day tank used to store fuel for an emergency generator in Building G300. The release was identified by an inspector from the FDEP who was at the facility to oversee the removal of the main 2,500-gallon underground storage tank (UST), which supplied diesel fuel to the day tank. The UST was removed and the product line distributing fuel to the day tank was cut, capped and abandoned in place where the line passed beneath existing structures.

An Interim Remedial Action (IRA) was initiated to remove contaminated soil near the vent line for the day tank. The IRA was discontinued after it became apparent that the volume of contaminated soil might have

been due to multiple releases from day tank overfills and a contamination assessment was conducted. The contamination assessment identified an area of contaminated subsurface soil adjacent to the

southwest corner of Building G300 that extended beneath the footer of the building. This area of soil contamination could not be removed without compromising the structural integrity of the building.

The groundwater quality data collected during the contamination assessment indicated that dissolved hydrocarbon concentrations had met the No Further Action criteria for constituents in the Kerosene Analytical Group. A Monitoring Only Plan (MOP) was recommended for site groundwater due to the soil contamination beneath the building. A Site Assessment Report (SAR) Addendum was completed for Site G300 that evaluated the potential for natural attenuation of the contaminants of concern (CoCs) identified at the site. The FDEP approved the MOP for Site G300 and groundwater results indicated that dissolved hydrocarbon concentrations were within the concentration levels predicted by the natural attenuation modeling.

During a scheduled groundwater sampling event in late 1999, free product was detected in PCY-300-MW01 and the MOP was discontinued. The appearance of free product was attributed to the mobilization of residual product from beneath Building G300 following a decrease in water table elevations due to drought conditions.

FREE PRODUCT RECOVERY EVALUATION

Following the appearance of free product in PCY-300-MW01, efforts were implemented to identify the type of free product present, the distribution of free product in site monitoring wells, and to evaluate the effectiveness of free product recovery using vacuum extraction methods.

Free Product Sampling. A sample of free product for laboratory analysis was collected from PCY-300-MW01 before free product recovery was initiated. The free product sample was collected with a disposable bailer and was analyzed for gasoline range organics (GRO), diesel range organics (DRO), and total recoverable petroleum hydrocarbons (TRPH). The analytical results from the free product were typical for a diesel type petroleum product. The laboratory analytical reports are included in Attachment A.

Water Level/Free Product Gauging. Weekly measurements were made of free product and static water levels in four monitoring wells, PCY-300-MW01, PCY-300-MW02, PCY-300-MW03, and PCY-300-MW04 (Figure 1). The results of the gauging events are summarized in Table 1. Measurements were not made from piezometers at the site, since inside diameter of the piezometer risers was too small to allow an interface probe to be inserted.

At the inception of free product recovery, the free product thickness in PCY-300-MW01 was 1.05 feet. Free product recovery from PCY-300-MW01 was conducted approximately every two weeks. Free product thickness measured in the weekly gauging events following free product recovery ranged from 0.06 to 0.46 feet. Free product thickness measured after two weeks of recharge ranged from 0.22 to 0.57 feet. Free product thickness measurements taken in mid-September, after approximately five months of free product recovery, were 0.03 to 0.04 feet. A round of water levels and free product gauging was conducted in March 2002, approximately 6 months after the last free product recovery event. At the time of this gauging event, the free product thickness in PCY-300-MW01 was 0.70 feet.

Extraction and Disposal. Free product recovery was conducted at PCY-300-MW01 on an alternating weekly schedule, based on free product thickness. The free product was recovered using a portable vacuum extraction system. Nine product recovery events were conducted at the site between late April and late August 2001. Approximately 600 to 700 gallons of liquid were recovered during each event. The

recovered waste was disposed of at a Navy-owned oil/water separator system used to treat petroleum waste for the base.

RESPONSE TO COMMENTS

The following responses address the comments presented by FDEP in the technical review letter dated February 25, 2000 (Attachment B), which was issued following the detection of free product in PCY-300-MW01.

1) *There was a large drop in the water table elevation in monitoring wells PCY-300-MW01 and PCY-300-MW03 and piezometer PZ-3. The abrupt drop apparently allowed product adjacent to or beneath building G300, the Deep Ocean Engineering Pressure Building, to migrate to monitoring well MW-01. The reason for the large decrease in water table elevation in those wells should be determined. One place to look would be historic and recent rainfall totals in the Panama City area.*

A summary of historic water level elevations is provided in Table 2. Data reported previously for PCY-300-MW01 did not correct for the effects of free product accumulation on the water table elevation, which lead to a lower reported elevation for the potentiometric surface in the well. Subsequent water level monitoring data (Table 1) indicate that range of groundwater elevations seen in PCY-300-MW03 in 1998 and 1999 were within the range of normal water table variation at the site (See response to Comment 3).

2) *Free product recovery efforts should continue and reports prepared documenting the amount of free product recovered and the level of effort being put forward toward free product recovery. A waste characterization on the free product should be conducted to determine what the product consists of and to determine if there are other contaminants in the product that may impact groundwater.*

Preliminary free product monitoring and recovery at PCY-300-MW01 began on April 23, 2001 and was continued on a biweekly basis until August 20, 2001. This report provides information regarding the free product recovery effort to date.

A sample of free product for waste characterization was collected from PCY-300-MW01 on May 23, 2001. The free product sample was submitted to an offsite laboratory for Gasoline and Diesel Range Organics GRO, DRO, and TRPH. Results from the waste characterization are consistent with diesel fuel or a similar petroleum product.

3) *Monitoring well PCY-300-MW03 was dry during the last sampling event. This well should be rechecked and if it remains dry or if an adequate groundwater sample cannot be taken from it, the well should be replaced.*

Monitoring well PCY-300-MW03 appears to have been obstructed by a floating mat of roots, which prevented the water level indicator probe from reaching groundwater. The obstruction was cleared out with the vacuum extraction rig and PCY-300-MW03 is serviceable.

4) *A complete round of groundwater samples from all wells on site should be collected and analyzed for the gasoline and kerosene analytical groups listed in Chapter 62-770, Florida Administrative Code. Depending on the results, either further assessment work may be required or a Remedial Action Plan prepared.*

In March 2002, groundwater samples were collected from PCY-300-MW02, PCY-300-MW03, and PCY-300-MW04. Monitoring well PCY-300-MW01 was not sampled due to the presence of free product. The groundwater samples were collected using the low-flow sampling method. The groundwater sampling data sheets are included in Attachment C. The groundwater samples were submitted to an offsite laboratory for analysis for Gasoline Analytical Group/Kerosene Analytical Group parameters (GAG/KAG).

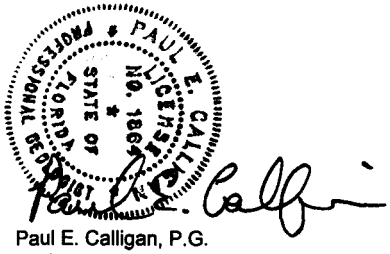
The laboratory analytical report is included in Attachment D. Concentrations of CoCs were below Groundwater Cleanup Target Levels in all the wells that were sampled. The analytical results for this sampling event are summarized in Table 3.

CONCLUSIONS AND RECOMMENDATIONS

Based on the results of the free product assessment and the requirements of Chapter 62-770, F.A.C., a remedial action plan (RAP) should be implemented to address the free product at Building G300. During development of the RAP, a suitable long-term technology for free product recovery should be selected. The previous soil removal action has addressed the release of petroleum constituents to site soil. The current petroleum impact to site groundwater appears to be of limited areal extent, in the vicinity of PCY-300MW01. Therefore, groundwater sampling in existing site monitoring wells should be continued to monitor potential contaminant migration to areas downgradient of PCY-300-MW01.

If you have any questions regarding this report or require further information, please contact me at (813) 806-0202.

Sincerely,



Paul E. Calligan, P.G.
Task Order Manager
Florida License No. PG-0001864
Date: September 30, 2002

PC/wdo

Enclosures

c: Wayne Hansel, SOUTHDIV (CD Only)
Arturo McDonald, CSS (Hard Copy and CD)
Debbie Wroblewski (Cover Letter Only)
Mark Perry/File (Unbound)

TABLES

TABLE 1

STATIC WATER LEVEL AND FREE PRODUCT DATA
BUILDING G300
COASTAL SYSTEMS STATION
PANAMA CITY, FLORIDA

	PCY-300-MW01					PCY-300-MW02					PCY-300-MW03					PCY-300-MW04					
	TOC = 10.28		TD = 15 ft.			TOC = 10.00		TD = 15 ft.			TOC = 10.30		TD = 15 ft.			TOC = 8.91		TD = 15 ft.			
Date	Depth to Product	Depth to Water	Product Thickness	Adjusted Water Level	Ground Water Elevation	Depth to Product	Depth to Water	Product Thickness	Adjusted Water Level	Ground Water Elevation	Depth to Product	Depth to Water	Product Thickness	Adjusted Water Level	Ground Water Elevation	Depth to Product	Depth to Water	Product Thickness	Adjusted Water Level	Ground Water Elevation	Liquid Recovered
2001																					
23-Apr	8.81	9.86	1.05	9.02	1.26	Sheen	8.87	Sheen	8.87	1.13	ND	9.03	ND	9.03	1.27	ND	7.42	ND	7.42	1.49	600 gal.
30-Apr	9.02	9.36	0.34	9.09	1.19	8.98	8.99	0.01	8.98	1.02	9.15	9.16	0.01	9.15	1.15	7.50	7.51	0.01	7.50	1.41	
9-May	9.01	9.56	0.55	9.12	1.16	9.01	9.02	0.01	9.01	0.99	9.17	9.18	0.01	9.17	1.13	7.53	7.54	0.01	7.53	1.38	600 gal.
14-May	9.15	9.51	0.36	9.22	1.06	9.12	9.13	0.01	9.12	0.88	9.28	9.29	0.01	9.28	1.02	ND	7.69	ND	7.69	1.22	
21-May	9.01	9.55	0.54	9.12	1.16	9.13	9.14	0.01	9.13	0.87	9.33	9.34	0.01	9.33	0.97	7.73	7.74	0.01	7.73	1.18	600 gal.
28-May	8.71	9.28	0.57	8.82	1.46	9.20	9.21	0.01	9.20	0.80	9.37	9.38	0.01	9.37	0.93	7.79	7.80	0.01	7.79	1.12	700 gal.
4-Jun	9.25	9.55	0.30	9.31	0.97	9.18	9.19	0.01	9.18	0.82	9.38	9.39	0.01	9.38	0.92	7.80	7.81	0.01	7.80	1.11	
19-Jun	8.79	9.35	0.56	8.90	1.38	8.78	8.79	0.01	8.78	1.22	8.95	8.96	0.01	8.95	1.35	7.33	7.34	0.01	7.33	1.58	
25-Jun	8.22	8.75	0.53	8.33	1.95	8.41	8.42	0.01	8.41	1.59	8.60	8.61	0.01	8.60	1.70	ND	6.52	ND	6.52	2.39	700 gal.
2-Jul	8.75	8.81	0.06	8.76	1.52	8.56	8.57	0.01	8.56	1.44	8.69	8.70	0.01	8.69	1.61	ND	6.61	ND	6.61	2.30	
9-Jul	8.57	8.79	0.22	8.61	1.67	8.51	8.52	0.01	8.51	1.49	8.62	8.63	0.01	8.62	1.68	ND	6.55	ND	6.55	2.36	700 gal.
16-Jul	8.71	8.85	0.14	8.74	1.54	8.65	8.66	0.01	8.65	1.35	8.74	8.75	0.01	8.74	1.56	ND	6.65	ND	6.65	2.26	
23-Jul	8.39	8.81	0.42	8.47	1.81	8.54	8.55	0.01	8.54	1.46	8.67	8.68	0.01	8.67	1.63	ND	6.71	ND	6.71	2.20	650 gal.
30-Jul	7.23	7.45	0.22	7.27	3.01	6.95	6.96	0.01	6.95	3.05	7.22	7.23	0.01	7.22	3.08	ND	5.48	ND	5.48	3.43	
6-Aug	6.62	7.13	0.51	6.72	3.56	6.87	6.88	0.01	6.87	3.13	7.16	7.17	0.01	7.16	3.14	5.35	5.36	0.01	5.35	3.56	700 gal.
13-Aug	6.98	7.34	0.36	7.05	3.23	7.30	7.31	0.01	7.30	2.70	ND	7.61	ND	7.61	2.69	5.82	5.83	0.01	5.82	3.09	
20-Aug	7.73	8.20	0.47	7.82	2.46	7.83	7.84	0.01	7.83	2.17	ND	7.91	ND	7.91	2.39	7.62	7.63	0.01	7.62	1.29	650 gal.
27-Aug	7.84	8.30	0.46	7.93	2.35	7.90	7.91	0.01	7.90	2.10	ND	8.06	ND	8.06	2.24	6.35	6.36	0.01	6.35	2.56	
10-Sep	8.76	8.79	0.03	8.77	1.51	8.68	8.69	0.01	8.68	1.32	8.50	8.51	0.01	8.50	1.80	7.26	7.27	0.01	7.26	1.65	
24-Sep	8.16	8.20	0.04	8.17	2.11	8.15	8.16	0.01	8.15	1.85	8.28	8.29	0.01	8.28	2.02	6.64	6.65	0.01	6.64	2.27	
1-0ct	7.95	7.99	0.04	7.96	2.32	7.81	7.82	0.01	7.81	2.19	8.12	8.13	0.01	8.12	2.18	6.87	6.88	0.01	6.87	2.04	
8-Oct	7.81	7.87	0.06	7.82	2.46	7.64	7.65	0.01	7.64	2.36	7.99	8.00	0.01	7.99	2.31	6.57	6.58	0.01	6.57	2.34	
15-Oct	6.89	6.92	0.03	6.90	3.38	6.77	6.78	0.01	6.77	3.23	7.45	7.46	0.01	7.45	2.85	6.23	6.24	0.01	6.23	2.68	
29-Oct	7.47	7.53	0.06	7.48	2.80	7.01	7.02	0.01	7.01	2.99	7.15	7.16	0.01	7.15	3.15	6.43	6.44	0.01	6.43	2.48	
2002																					
6-Mar	8.82	9.52	0.70	8.96	1.32		9.89	9.89		0.11		9.01	9.01		1.29		7.36		7.36	1.55	

NOTES:

TOC Top of casing

TD Total depth, in feet below land surface

ND Not detected

Top of casing and groundwater elevations referenced to arbitrary datum (MW02 = 10.00 ft.)

TABLE 2

HISTORICAL WATER LEVEL DATA
BUILDING G300
COSTAL SYSTEMS STATION
PANAMA CITY, FLORIDA

	PCY-300-MW01					PCY-300-MW02					PCY-300-MW03					PCY-300-MW04				
	TOC = 10.28		TD = 15 ft.			TOC = 10.00		TD = 15 ft.			TOC = 10.30		TD = 15 ft.			TOC = 8.91		TD = 15 ft.		
Date	Depth to Product	Depth to Water	Product Thickness	Adjusted Water Level	Ground Water Elevation	Depth to Product	Depth to Water	Product Thickness	Adjusted Water Level	Ground Water Elevation	Depth to Product	Depth to Water	Product Thickness	Adjusted Water Level	Ground Water Elevation	Depth to Product	Depth to Water	Product Thickness	Adjusted Water Level	Ground Water Elevation
23-Apr-97	ND	8.83	ND	8.83	1.45	ND	8.79	ND	8.79	1.21	ND	8.94	ND	8.94	1.36	ND	7.28	ND	7.28	1.63
24-Apr-97	ND	8.85	ND	8.85	1.43	ND	8.83	ND	8.83	1.17	ND	8.94	ND	8.94	1.36	ND	7.29	ND	7.29	1.62
9-Oct-98	ND	7.34	ND	7.34	2.94	ND	7.32	ND	7.32	2.68	ND	7.52	ND	7.52	2.78	ND	5.72	ND	5.72	3.19
8-Apr-99	ND	6.61	ND	6.61	3.67	ND	9.02	ND	9.02	0.98	ND	9.13	ND	9.13	1.17	ND	7.56	ND	7.56	1.35
7-Oct-99	6.87	9.50	2.63	7.40	2.88	ND	8.70	ND	8.70	1.30	ND	Dry at 8.5 feet				ND	7.32	ND	7.32	1.59

NOTES:

TOC Top of casing

TD Total depth, in feet below land surface

ND Not detected

NA Not available, MW03 had obstruction at 8.5 ft.

Top of casing and groundwater elevations referenced to arbitrary datum (MW02 = 10.00 ft.)

TABLE 3

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
ORGANICS AND LEAD
BUILDING G300 FREE PRODUCT ASSESSMENT REPORT
COASTAL SYSTEMS STATION PANAMA CITY
PANAMA CITY, FLORIDA
PAGE 1 OF 2

Sample ID	Date Collected	Benzene	Ethylbenzene	Toluene	Xylenes (total)	Chlorobenzene	1,4 Dichlorobenzene	MTBE	EDB	TRPH (mg/L)	Lead
GCTL	N/A	1	30	40	20	100	75	50	0.02	5	15
300GLM0201	3/6/2002	<1.0	<1.0	<1.0	<3.0	1.7	5.6	<1.0	<0.020	1.13	1.6B
300GLM0301	3/6/2002	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<1.0	<0.020	<0.25	<1.2
300GLM0401	3/6/2002	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<1.0	<0.020	0.385	<1.2

Values reported in micrograms per liter except where noted.

GCTL	Groundwater Cleanup Target Level as defined by Chapter 62-770, F.A.C.
J	Estimated quantity below the practical quantitation limit and above the method detection limit
TRPH	Total Recoverable Petroleum Hydrocarbons
MTBE	Methyl Tertbutyl Ether
EDB	Ethylene Dibromide

Shaded values are positive detections.

Values shown in bold are at concentrations exceeding GCTL.

TABLE 3

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
POLYNUCLEAR AROMATIC HYDROCARBONS
BUILDING G300 FREE PRODUCT ASSESSMENT REPORT
COASTAL SYSTEMS STATION PANAMA CITY
PANAMA CITY, FLORIDA

Sample ID	Date Collected	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(ghi)perylene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3)pyrene	Naphthalene	1-Methylnaphthalene	2-Methylnaphthalene	Phenanthrene	Pyrene
GCTL	N/A	20	210	2,100	0.2	0.2	0.2	210	0.5	4.8	0.2	280	280	0.2	20	20	20	120	210
300GLM0201	3/6/2002	<4.4	<4.4	<2.2	<0.22	<0.22	<0.22	<0.22	<0.22	<2.2	<0.22	<2.2	<2.2	<0.22	<2.2	<2.2	<2.2	<2.2	<2.2
300GLM0301	3/6/2002	<4.0	<4.0	<4.0	<0.40	<0.20	<0.20	<0.20	<0.2	<4.0	<0.20	<4.0	<2.0	<0.20	<2.0	<2.0	<2.0	<2.0	<4.0
300GLM0401	3/6/2002	<4.0	<4.0	<2.0	<0.20	<0.20	<0.20	<0.20	<0.20	<2.0	<0.20	<2.0	<2.0	<0.20	<2.0	<2.0	<2.0	<2.0	<2.0

Values reported in micrograms per liter.

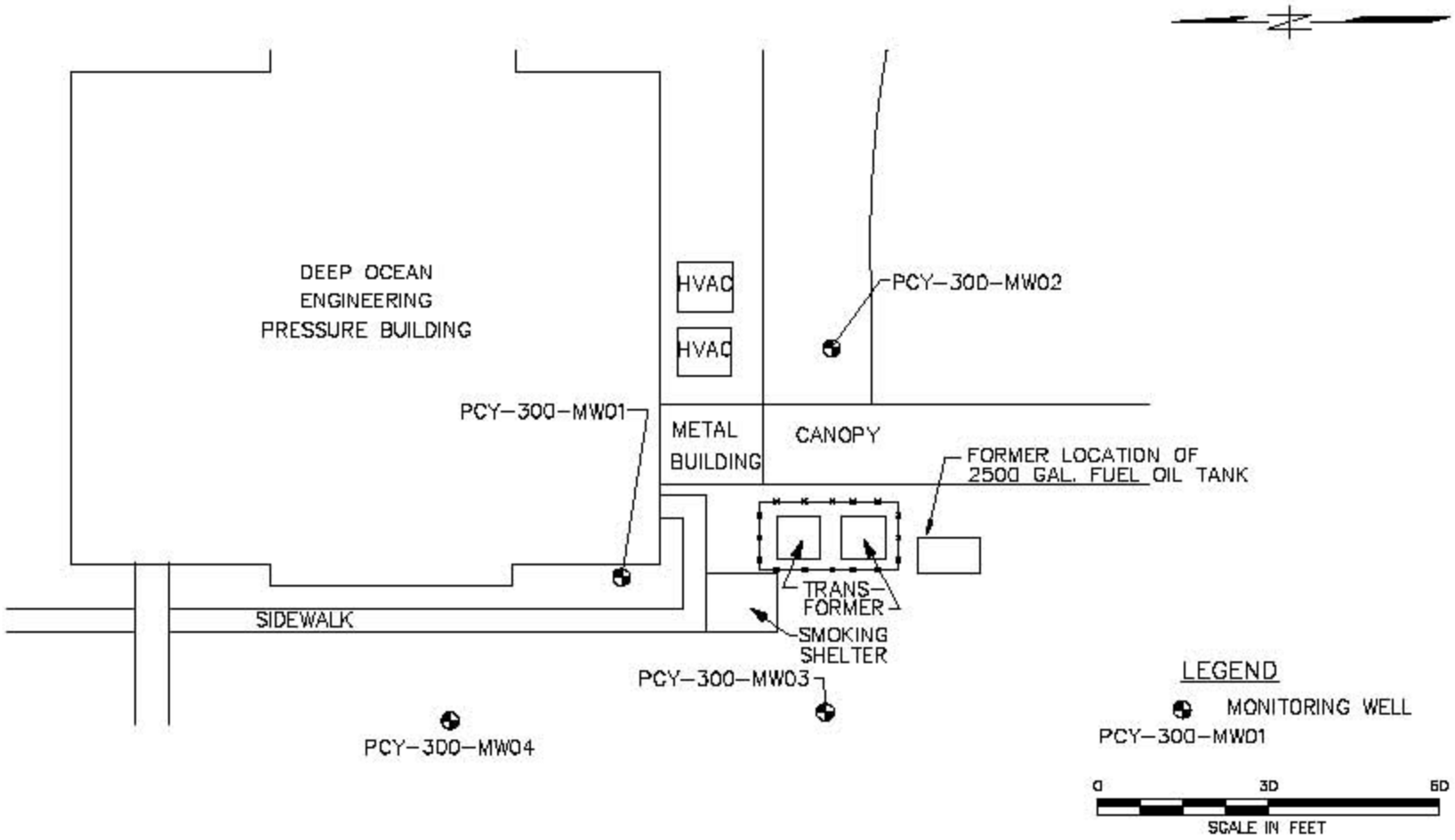
GCTL Groundwater Cleanup Target Level as defined by Chapter 62-770, F.A.C.

Shaded values are positive detections.

Values shown in bold are at concentrations exceeding GCTL.

FIGURES

AGAD: 7540CM22.dwg 11/20/01 HJB



DRAWN BY HJB DATE 11/20/01		MONITORING WELL LOCATIONS BUILDING G300 FREE PRODUCT RECOVERY EVALUATION COASTAL SYSTEMS STATION PANAMA CITY, FLORIDA	CONTRACT NO. 7540
CHECKED BY DATE			APPROVED BY DATE
COST/SCHED-AREA			APPROVED BY DATE
SCALE AS NOTED			DRAWING NO. FIGURE 1 REV. 0

FORM CADD NO. SDIV_AHJDWG - REV 0 - 1/20/98

ATTACHMENT A

CTO027-CSS PANAMA CITY

WATER DATA

AAL

SDG: 27705

SAMPLE NUMBER:	PC4-300-M01 FP ✓		
SAMPLE DATE:	04/23/01	/ /	/ /	/ /
LABORATORY ID:	AC12312			
QC_TYPE:	NORMAL			
% SOLIDS:	0.0 %	100.0 %	100.0 %	100.0 %
UNITS:	MG/L			
FIELD DUPLICATE OF:				

	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
GASOLINE RANGE ORGANICS	28000											

CTO027-CSS PANAMA CITY
SOIL DATA
AAL
SDG: 27705

SAMPLE NUMBER:	PC4-300-M01 FP		
SAMPLE DATE:	04/23/01	/ /	/ /	/ /
LABORATORY ID:	AC12312			
QC_TYPE:	NORMAL			
% SOLIDS:	100.0 %	100.0 %	100.0 %	100.0 %
UNITS:	MG/KG			
FIELD DUPLICATE OF:				

	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
DIESEL RANGE ORGANICS	620000 ✓											
TOTAL PETROLEUM HYDROCARBONS	870000 ✓											

27705

HOLDING TIME
05/29/01

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
MG/KG	PC4-300-M01 FP	AC12312	NORMAL	27705	DRO	04/23/01	05/03/01	05/09/01	10	6	16
MG/L	PC4-300-M01 FP	AC12312	NORMAL	27705	GRO	04/23/01	05/04/01	05/04/01	11	0	11
MG/KG	PC4-300-M01 FP	AC12312	NORMAL	27705	TPH	04/23/01	05/11/01	05/14/01	18	3	21

ACCURA ANALYTICAL LABORATORY, INC.
6017 Financial Drive, Norcross, Georgia, 30071, Phone (770) 449-8800

CASE NARRATIVE for Project Number: 27705
Client Project: PC4 G300 / N7540.0000, BK006A635
CTO Manager: Paul Calligan

The following items were noted concerning this project:

1. The following sample was received by Accura Analytical Laboratory on 04/25/01 at 0945:

Client I.D.	Laboratory I.D.
PC4-300-M01 FP	AC12312

2. The sample cooler temperature was noted to be 3^0C upon receipt.

3. The sample required dilution due to high analyte concentration and/or matrix interference, resulting in elevated detection limits:

   FL-PRO by Waste Dilution-FL-PRO GRO – SW-846-8015B – SW-846-8015B

   DRO by Waste Dilution – SW-846-8015B

4. The surrogates were diluted out for the sample; therefore no recoveries could be reported:

   FL-PRO by Waste Dilution-FL-PRO DRO by Waste Dilution – SW-846-8015B

5. The following surrogate was outside the method specified limit for the sample due to matrix interference as noted by "Z" qualifier:

   GRO – SW-846-8015B
   4-Bromofluorobenzene

6. One of the surrogates (Nonatriacontane/C39), associated with the FL-PRO analyses was outside the method specified limit for all Q.C. analyses performed for this project. The recoveries were within historical limits established in the laboratory; therefore the data was accepted.

7. The DRO hit for the sample could not be identified due to the sample was analyzed on a FLA-PRO column where no identification chromatography exists.

Quality Assurance Officer
Camden L. Robinson

ACCURA ANALYTICAL LABORATORY, INC.

6017 Financial Drive, Norcross, Georgia 30017, Phone (770)449-8800, FAX (770)449-5477
FL Certification # E87429 NC Certification # 483 SC Certification # 98015 USACE-MRD Approved

LABORATORY REPORT

Accura Sample ID #: AC12312 **Accura Project #:** 27705

Client: **Tetra Tech Nus -Tallahassee** Date Sampled: 4/23/01

Client Contact: PAUL CALLIGAN Date Received: 4/25/01

Client Project Number: N7540.0000, BK006A635 Date Reported: 5/16/01

Client Project Name: PC4 G300 Sample Matrix: LIQUID

Client Sample ID: **PC4-300-M01 FP**

ANALYSIS: FL-PRO by Waste Dilution Method Ref: FL-PRO

Date Ext/Dig/Prep: 5/11/01 Date Analyzed: 5/14/01 Result Units: mg/Kg

Analyte Name	Analytical Results	Qualifier	Reported Detection Limits
Petroleum Range Organics (PRO)	870000		420000

ANALYSIS: Gasoline Range Organics (GRO) Method Ref: 8015B

Date Ext/Dig/Prep: 5/4/01 Date Analyzed: 5/4/01 Result Units: mg/L

Analyte Name	Analytical Results	Qualifier	Reported Detection Limits
Gasoline Range Organics	28000		10000

ANALYSIS: TPH-DRO by Waste Dilution Method Ref: 8015B

Date Ext/Dig/Prep: 5/3/01 Date Analyzed: 5/9/01 Result Units: mg/Kg

Analyte Name	Analytical Results	Qualifier	Reported Detection Limits
Diesel Range Organics (DRO)	620000		60000

ANALYSIS: X DRO Sample Surrogates (Soil) Method Ref: 8015B

Date Ext/Dig/Prep: 5/3/01 Date Analyzed: 5/9/01 Result Units: %

Analyte Name	Analytical Results	Qualifier	Reported Detection Limits
o-Terphenyl (Range 62-137)	<RL	DO	

ANALYSIS: X GRO Sample Surrogates (Waters Method Ref: 8015B

Date Ext/Dig/Prep: 5/4/01 Date Analyzed: 5/4/01 Result Units: %

Analyte Name	Analytical Results	Qualifier	Reported Detection Limits
1,4-Difluorobenzene (Range 63-116)	81		
4-Bromofluorobenzene (Range 68-106)	109	Z	

ANALYSIS: X PRO Sample Surrogates (Waste Method Ref: FL-PRO

Date Ext/Dig/Prep: 5/11/01 Date Analyzed: 5/14/01 Result Units: %

Analyte Name	Analytical Results	Qualifier	Reported Detection Limits
C(39) (Range 60-118)	<RL	DO	
o-Terphenyl (Range 62-109)	<RL	DO	

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LABORATORY REPORT

Accura Sample ID #: AC12313 **Accura Project #:** 27705

Client: Tetra Tech Nus -Tallahassee Date Sampled: 4/25/01

Client Contact: PAUL CALLIGAN Date Received: 4/25/01

Client Project Number: N7540.0000. BK006A635 Date Reported: 5/21/01

Client Project Name: PC4 G300 Sample Matrix: LIQUID

Client Sample ID: **METHOD BLANK**

ANALYSIS: FL-PRO by Waste Dilution Method Ref: FL-PRO

Date Ext/Dig/Prep: 5/11/01 Date Analyzed: 5/14/01 Result Units: mg/Kg

Analyte Name	Analytical Results	Qualifier	Reported Detection Limits
Petroleum Range Organics (PRO)	<RL		8500

ANALYSIS: Gasoline Range Organics (GRO) Method Ref: 8015B

Date Ext/Dig/Prep: 5/4/01 Date Analyzed: 5/4/01 Result Units: mg/L

Analyte Name	Analytical Results	Qualifier	Reported Detection Limits
Gasoline Range Organics	<RL		1

ANALYSIS: TPH-DRO by Waste Dilution Method Ref: 8015B

Date Ext/Dig/Prep: 5/3/01 Date Analyzed: 5/9/01 Result Units: mg/Kg

Analyte Name	Analytical Results	Qualifier	Reported Detection Limits
Diesel Range Organics (DRO)	<RL		3000

ANALYSIS: X DRO QC Surrogates (Soil) Method Ref: 8015B

Date Ext/Dig/Prep: 5/3/01 Date Analyzed: 5/9/01 Result Units: %

Analyte Name	Analytical Results	Qualifier	Reported Detection Limits
o-Terphenyl (Range 77-125)	113		

ANALYSIS: X GRO QC Surrogates (Waters) Method Ref: 8015B

Date Ext/Dig/Prep: 5/4/01 Date Analyzed: 5/4/01 Result Units: %

Analyte Name	Analytical Results	Qualifier	Reported Detection Limits
1,4-Difluorobenzene (Range 78-104)	82		
4-Bromofluorobenzene (Range 76-103)	99		

ANALYSIS: X PRO QC Surrogates (Waste Dilu Method Ref: FL-PRO

Date Ext/Dig/Prep: 5/11/01 Date Analyzed: 5/14/01 Result Units: %

Analyte Name	Analytical Results	Qualifier	Reported Detection Limits
C(39) (Range 60-118)	23		
o-Terphenyl (Range 62-109)	106		

I Camden Robinson, as the designated Quality Assurance Officer, hereby attest that all electronic deliverables have been thoroughly reviewed and are in agreement with the associated hardcopy data. The enclosed electronic files have been reviewed for accuracy (including significant figures), completeness and format. The laboratory will be responsible for any labor time necessary to correct enclosed electronic deliverables that have been found to be in error. I can be reached at (770) 449-8800 if there are any questions or problems with the enclosed electronic deliverables.

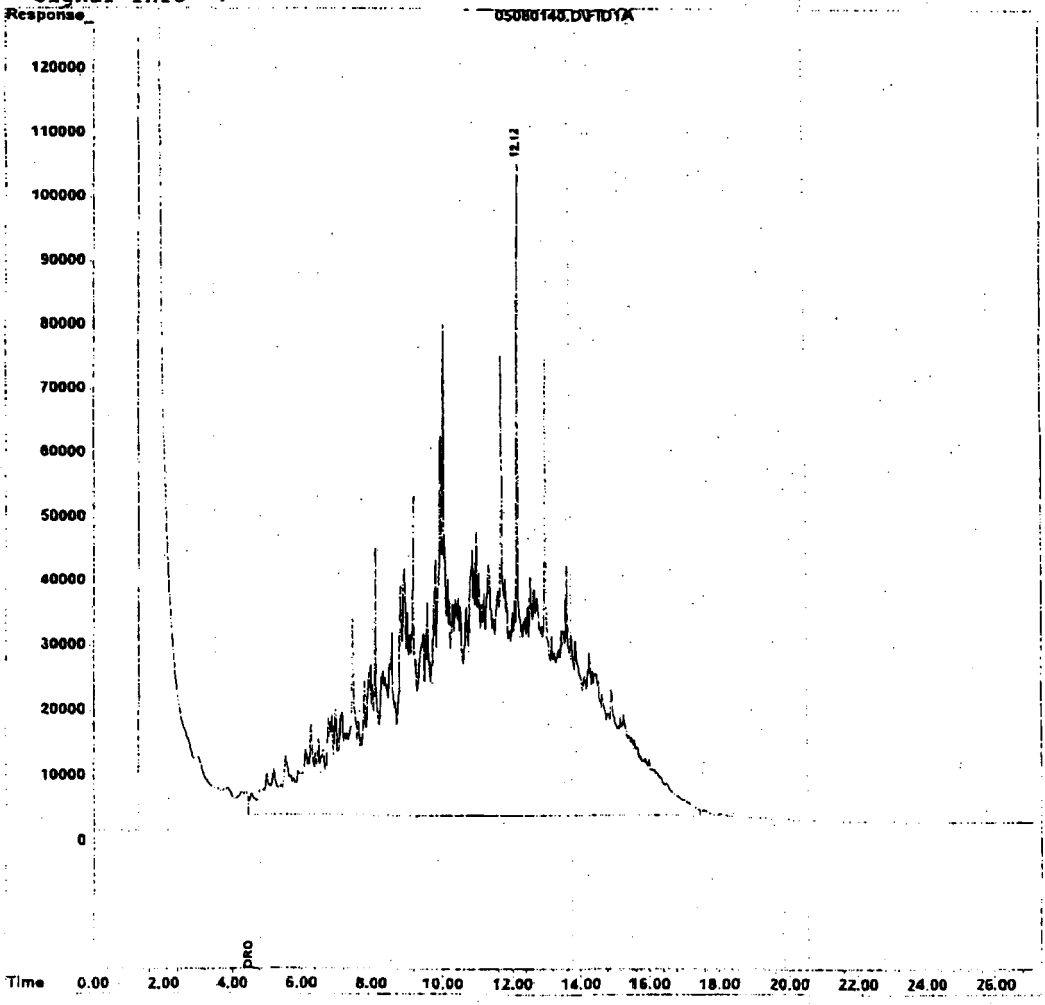
Signature: Camden C. Robinson Title: Q.C. Officer Date: 5/25/01

Quantitation Report

Data File : C:\HPCHEM\2\DATA\050801\05080140.D Vial: 40
Acq On : 9 May 2001 10:38 Operator: BP
Sample : 12312 20X Inst : DRO-B
Misc : Multiplr: 1.00
IntFile : events.e
Quant Time: May 9 11:07 2001 Quant Results File: DRO0508.RES

Quant Method : C:\HPCHEM\2\METHODS\DRO0508.M (Chemstation Integrator)
Title : DIESEL RANGE ORGANICS
Last Update : Wed May 09 09:08:34 2001
Response via : Multiple Level Calibration
DataAcq Meth : DRO0212.M

Volume Inj. :
Signal Phase :
Signal Info :

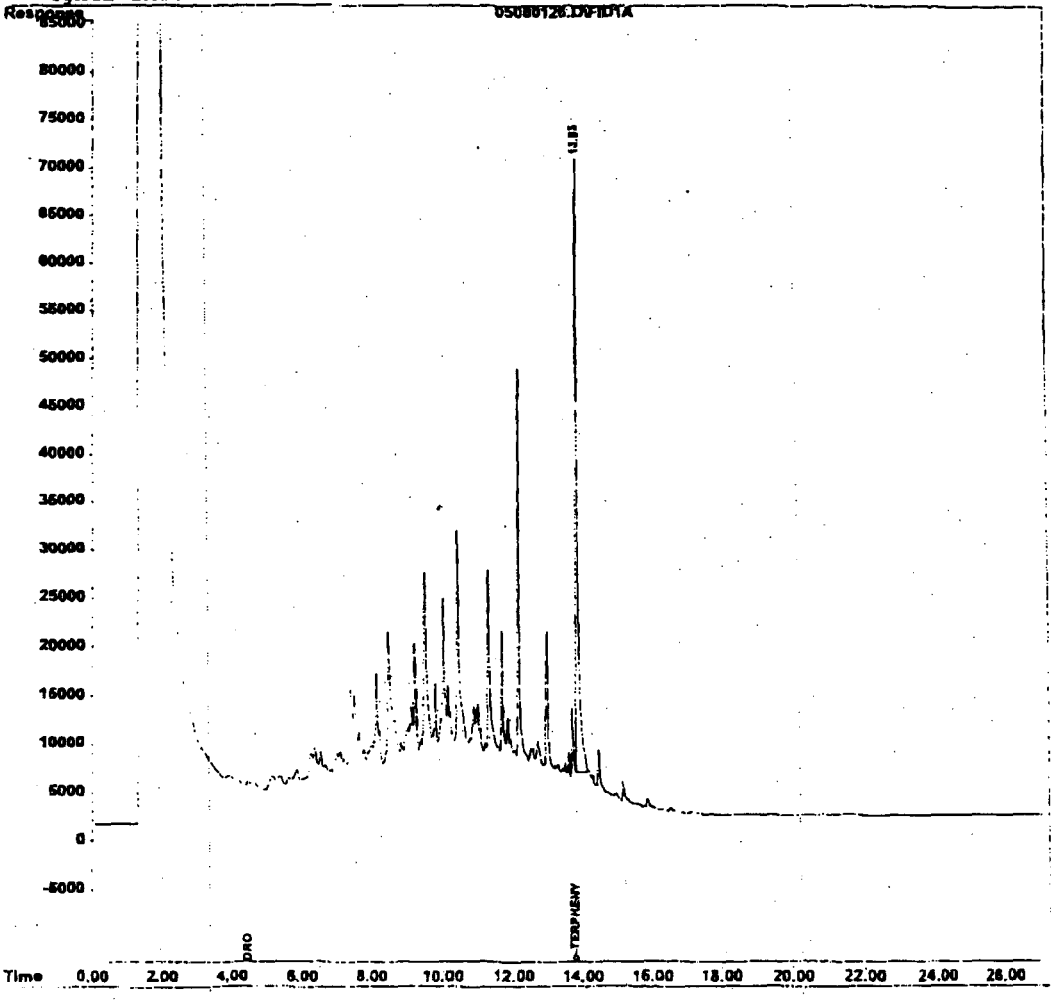


Quantitation Report

Data File : C:\HPCHEM\2\DATA\050801\05080126.D Vial: 26
Acq On : 9 May 2001 2:58 Operator: BP
Sample : 1000 PPM DRO CCV Inst : DRO-B
Misc : Multiplr: 1.00
IntFile : events.e
Quant Time: May 9 9:13 2001 Quant Results File: DRO0508.RES

Quant Method : C:\HPCHEM\2\METHODS\DRO0508.M (Chemstation Integrator)
Title : DIESEL RANGE ORGANICS
Last Update : Wed May 09 09:08:34 2001
Response via : Multiple Level Calibration
DataAcq Meth : DRO0212.M

Volume Inj. :
Signal Phase :
Signal Info :

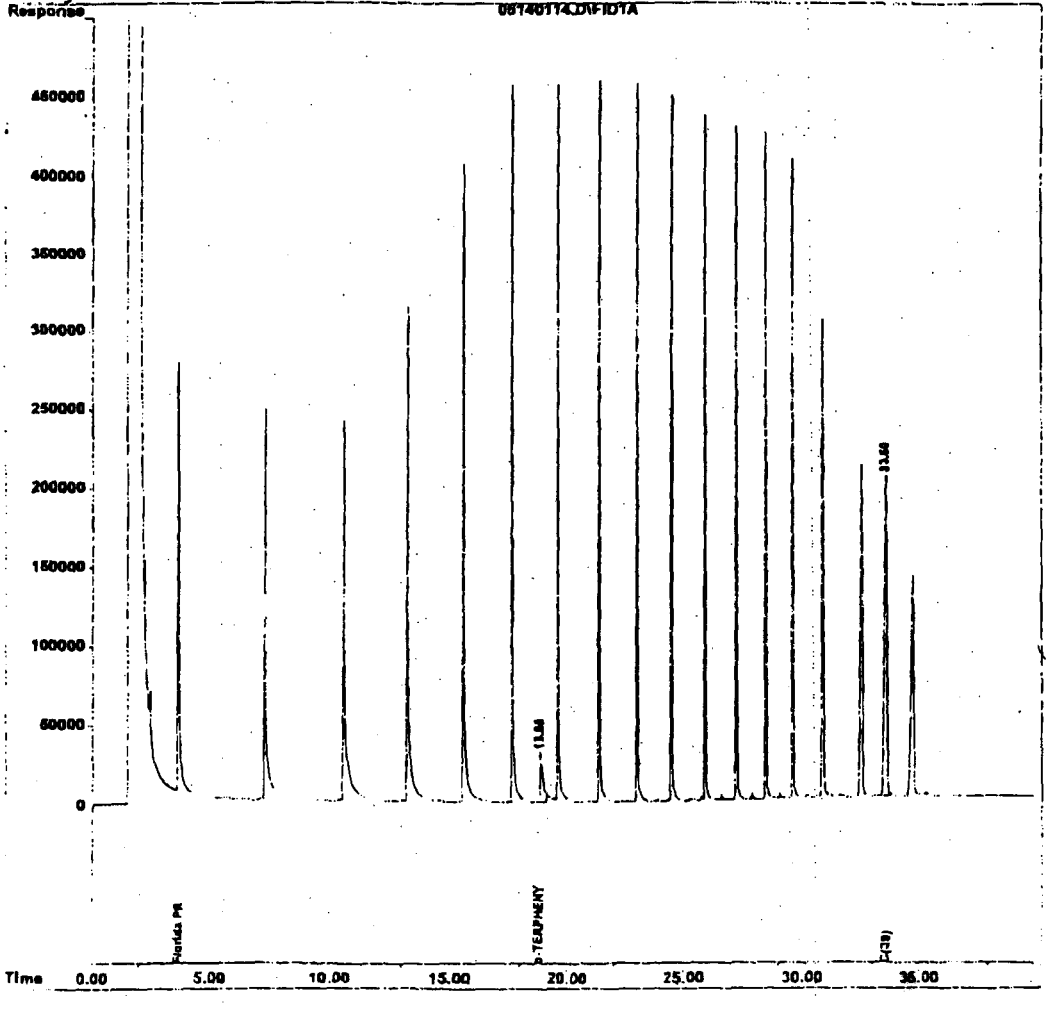


Quantitation Report

Data File : C:\HPCHEM\2\DATA\051401A\05140114.D Vial: 14
Acq On : 15 May 2001 1:06 Operator: BP
Sample : 4250 PPM PRO CCV Inst : DRO-B
Misc : Multiplr: 1.00
IntFile : events.e
Quant Time: May 15 7:05 2001 Quant Results File: PRO0322.RES

Quant Method : C:\HPCHEM\2\METHODS\PRO0322.M (Chemstation Integrator)
Title : FLORIDA PRO BY GC; INST. #2
Last Update : Tue Jan 02 11:40:23 2001
Response via : Multiple Level Calibration
DataAcq Meth : PRO0322.M

Volume Inj. :
Signal Phase :
Signal Info :



29881

ACCURA ANALYTICAL LABORATORY, INC.

Environmental Analytical Services

CHAIN OF CUSTODY

6017 Financial Drive, Norcross, GA 30071
Phone # (770) 449-8800 Fax # (770) 449-5477

Company Name: Tetra Tech NUS

Billing address:

Address: 1401 Oven Park Dr, Suite 102, Tall.

Client P.O. #

Report Sent to: (Client Contact): Paul Calligan

Contact Phone # (850) 385-9899 Fax #

Project Name: PCY G300

Project Number: N7540.0000, BK006A635

Laboratory Use Only

Received: [illegible]

QC Batch: [illegible]

Page 1 OF 1

Init Temp: ME 3°C

Sample Condition:

AAL Lab Project # 27705

Samplers: (signature) Will D. Olson

Samplers: (printed) William D. Olson

ANALYSIS: DRO/GRO, FL-PRO

Sample ID #	Sample Date / Time	Comp	Grab	Matrix	Preserved	Sample Location:	No. of Containers	DRO/GRO	FL-PRO								Remarks	Accura Sample ID No. AAL
PCY-300-M01 FP	8/23/01 11:00		X	P			4										Petroleum Product	12812

Relinquished By:	Date / Time	Received By:	Date / Time	Special Requirements Or Remarks:
Will D. Olson	8/24/01 10:00	FedEx	~~8/25/01 1030~~	Free Product Sample
Relinquished By:	**Date / Time**	**Received By:**	**Date / Time**	**Turnaround Time Requested:**
FedEx	8/25/01 945	[signature]	8/25/01 945	30 ~~4~~ day or Person

Matrix Guide: (S = Soil) (W = Water) (L = Liquid) (C = Cartridge) (SL = Sludge) (A = Air Sample) (P = Product) (M = Misc...)

TRK# 7926 6050 9774

ATTACHMENT B

Jeb Bush
Governor

Departme
Environmental

Twin Towers Buil
2600 Blair Stone
Tallahassee, Florida 32

Post-it™ brand fax transmittal memo 7671 | # of pages ▸ 2

To Ryl Calligan	From D. Stair
Co. TTNUS - Tall	Co. TTNUS - OR
Dept.	Phone 865-220-4767
Fax #	Fax #

IS this yours ?

February 25, 2000

Mr. Nick Ugolini
Code 184 (PVC)
Southern Division
Naval Facilities Engineering Command
P.O. Box 190010
North Charleston, South Carolina 29419-0068

RE: Year 1 Annual Groundwater Sampling Report, Site G300, CSS Panama City, Florida

Dear Mr. Ugolini:

I have reviewed the first year annual groundwater sampling report for Site G300, Coastal Systems Station, Panama City, dated November 30, 1999 (received December 1, 1999), prepared and submitted by Tetra Tech NUS, Inc. The monitoring program should be discontinued because of free product detected in monitoring well PCY-300-MW01. I have the following comments that should be addressed in further work to be conducted at this site:

(1) There was a large drop in the water table elevation in monitoring wells PCY-300-MW01 and PCY-300-MW03 and piezometer PZ-3. The abrupt drop apparently allowed product adjacent to or beneath building G300, the Deep Ocean Engineering Pressure Building, to migrate to monitoring well MW-01. The reason for the large decrease in water table elevation in those wells should be determined. One place to look into would be historic and recent rainfall totals in the Panama City area.

(2) Free product recovery efforts should continue and reports prepared documenting the amount of free product recovered and the level of effort being put forward toward free product recovery. A waste characterization on the free product should be conducted to determine what the product consists of and to determine if there are other contaminants in the product that may impact groundwater.

(3) Monitoring well PCY-300-MW03 was dry during the last sampling event. This well should be rechecked and if it remains dry or if an adequate groundwater sample cannot be taken from it, the well should be replaced.

(4) A complete round of groundwater samples from all wells on site should be collected and analyzed for the gasoline and kerosene analytical groups listed in Chapter 62-770, Florida Administrative Code. Depending upon the results, either further assessment work may be required or a Remedial Action Plan prepared.

If I can be of any further assistance with this matter, please contact me at (850) 488-3693.

Sincerely,

David P. Grabka
Remedial Project Manager

cc: Arturo McDonald, Naval CSS Panama City
Gerald Goode, Tetra Tech NUS
Liz Wilde, USEPA Region IV
Tom Lubozinski, FDEP Northwest District

TJB B JJC JJC ESN ESN

ATTACHMENT C

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: PC4 - G300
Project No.: N413B

Sample ID No.: 300GLM0201
Sample Location: MW-02
Sampled By: WDO/JB
C.O.C. No.:

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA:

Date: 3/6/02	Color (Visual)	pH (S.U.)	S.C. (mS/cm)	Temp. (°C)	Turbidity (NTU)	DO (mg/l)	Salinity (%)	Other
Time: 1148								
Method: Low Flow	Clear	5.74	.353	21.3	0	0.22	0.01	—

PURGE DATA:

Date: 3/6/02	Volume	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Method: Low Flow	INIT	5.69	.364	20.8	-10	1.59	0.01	—
Monitor Reading (ppm): NA	1ST	5.70	.352	21.1	-10	0.26	0.01	—
Well Casing Diameter & Material	2nd	5.80	.347	21.2	-10	0.24	0.01	—
Type: 2" PVC	3rd	5.74	.353	21.3	-10	0.22	0.01	—
Total Well Depth (TD): 15'								
Static Water Level (WL): 9.89								
One Casing Volume (gal/L): .81								
Start Purge (hrs): 11:20								
End Purge (hrs): 1148								
Total Purge Time (min): 28min								
Total Vol. Purged (gal/L): ~2.5								

WD 15.0 − 9.89 = 5.11
5.11 × .1 = .51
.51 × .5 = .25
.25 × .2 = .05
.51 + .25 + .05 = .81

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
8260-BTEX/MTBE/PPL VOH	HCL	3x 40ml	
8310-PAHs + methylnaph	4°C	2x 1l amber	
FL-PRO	H_2SO_4	2x 1l amber	
504.1-EDB	4°C	3x 40ml	
6010 - Lead	HNO_3	500 ml Poly	

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Page ___ of ___

Project Site Name: PC4 - G300
Project No.: N4138

Sample ID No.: 300GLM0301
Sample Location: MW-03
Sampled By: WDO/JB
C.O.C. No.:

[ ] Domestic Well Data
[x] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Type of Sample:
[x] Low Concentration
[ ] High Concentration

SAMPLING DATA:

Date: 3/6/02	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Time: 1240	(Visual)	(S.U.)	(mS/cm)	(°C)	(NTU)	(mg/l)	(%)	
Method: Low Flow	clear	5.73	.124	20.7	0	0.41	0.00	—

PURGE DATA:

Date: 3/6/02	Volume	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Method: Low Flow	Initial	5.16	.176	20.7	-10	2.70	0.00	—
Monitor Reading (ppm): NR	Initial	5.51	.133	20.9	-10	0.67	0.00	—
Well Casing Diameter & Material	1	5.61	.127	20.8	-10	0.64	0.00	—
Type: 2" PVC	2	5.62	.125	20.7	-10	0.45	0.00	—
Total Well Depth (TD): 15'	3	5.73	.124	20.7	-10	0.41	0.00	—
Static Water Level (WL): 9.01								
One Casing Volume(gal/L): .95								
Start Purge (hrs): 1220								
End Purge (hrs): 1240								
Total Purge Time (min): 20 min								
Total Vol. Purged (gal/L): 2.8 gal								

5.91
.16
5.75
5.91
9466

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
8260 - BTEX/MTBE/PPL-VOA	HCL	3x40 ml	
8310 - PAHs + methyl naph.	4°C	2x1l amber	
FL-PRO	H_2SO_4	2x1l amber	
504.1 - EDB	4°C	3x40 ml	
6010 - Lead	HNO_3	500 ml Poly	

OBSERVATIONS / NOTES:

light sheen on purge water

Circle if Applicable:
MS/MSD
Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: PCY-G300
Project No.: N413B

Sample ID No.: 300GLM0401
Sample Location: MW-04
Sampled By: WDO/IB
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[ ] High Concentration

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

SAMPLING DATA:

	Color (Visual)	pH (S.U.)	S.C. (mS/cm)	Temp. (°C)	Turbidity (NTU)	DO (mg/l)	Salinity (%)	Other
Date: 3/6/02								
Time: 1335								
Method: Low Flow								

PURGE DATA:

	Volume	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Date: 3/6/02								
Method: Low Flow	Initial	5.77	.243	20.0	-10	1.29	0.00	
Monitor Reading (ppm): NR	1st	5.92	.222	20.4	-10	1.01	0.00	
Well Casing Diameter & Material	2nd	5.94	.216	20.4	-10	0.33	0.00	
Type: 2" PVC	3rd	5.91	[illegible]	20.5	-10	0.44	0.00	
Total Well Depth (TD): 15'			.217					
Static Water Level (WL): 7.56								
One Casing Volume(gal/L): 1.25								
Start Purge (hrs): 1310								
End Purge (hrs): 1335								
Total Purge Time (min):								
Total Vol. Purged (gal/L):								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
8260-BTEX/MTBE/PPL-VOH	HCL	3X40 ml	
8310-PAHs + methyl naph.	4°C	2X1l amber	
FL-PRO	H_2SO_4	2x1l amber	
504.1-EDB	4°C	3X40 ml	
6010-Lead	HNO_3	500ml poly	

OBSERVATIONS / NOTES:

Circle if Applicable:
MS/MSD
Duplicate ID No.:

Signature(s):

ATTACHMENT D

PROJ_NO: 4138

SDG: F12522 MEDIA: WATER DATA FRACTION: PAH

nsample	300GLM0201
samp_date	3/6/2002
lab_id	F12522-1
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	ValQual	QualCode
1-METHYLNAPHTHALENE	2.2	U	
2-METHYLNAPHTHALENE	2.2	U	
ACENAPHTHENE	4.4	U	
ACENAPHTHYLENE	4.4	U	
ANTHRACENE	2.2	U	
BENZO(A)ANTHRACENE	0.22	U	
BENZO(A)PYRENE	0.22	U	
BENZO(B)FLUORANTHENE	0.22	U	
BENZO(G,H,I)PERYLENE	0.22	U	
BENZO(K)FLUORANTHENE	0.22	U	
CHRYSENE	2.2	U	
DIBENZO(A,H)ANTHRACENE	0.22	U	
FLUORANTHENE	2.2	U	
FLUORENE	2.2	U	
INDENO(1,2,3-CD)PYRENE	0.22	U	
NAPHTHALENE	2.2	U	
PHENANTHRENE	2.2	U	
PYRENE	2.2	U	

nsample	300GLM0301
samp_date	3/6/2002
lab_id	F12522-2
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	ValQual	QualCode
1-METHYLNAPHTHALENE	2	U	
2-METHYLNAPHTHALENE	2	U	
ACENAPHTHENE	4	U	
ACENAPHTHYLENE	4	U	
ANTHRACENE	4	U	
BENZO(A)ANTHRACENE	0.4	U	
BENZO(A)PYRENE	0.2	U	
BENZO(B)FLUORANTHENE	0.2	U	
BENZO(G,H,I)PERYLENE	0.2	U	
BENZO(K)FLUORANTHENE	0.2	U	
CHRYSENE	4	U	
DIBENZO(A,H)ANTHRACENE	0.2	U	
FLUORANTHENE	4	U	
FLUORENE	2	U	
INDENO(1,2,3-CD)PYRENE	0.2	U	
NAPHTHALENE	2	U	
PHENANTHRENE	2	U	
PYRENE	4	U	

nsample	300GLM0401
samp_date	3/6/2002
lab_id	F12522-3
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	ValQual	QualCode
1-METHYLNAPHTHALENE	2	U	
2-METHYLNAPHTHALENE	2	U	
ACENAPHTHENE	4	U	
ACENAPHTHYLENE	4	U	
ANTHRACENE	2	U	
BENZO(A)ANTHRACENE	0.2	U	
BENZO(A)PYRENE	0.2	U	
BENZO(B)FLUORANTHENE	0.2	U	
BENZO(G,H,I)PERYLENE	0.2	U	
BENZO(K)FLUORANTHENE	0.2	U	
CHRYSENE	2	U	
DIBENZO(A,H)ANTHRACENE	0.2	U	
FLUORANTHENE	2	U	
FLUORENE	2	U	
INDENO(1,2,3-CD)PYRENE	0.2	U	
NAPHTHALENE	2	U	
PHENANTHRENE	2	U	
PYRENE	2	U	

PROJ_NO: 4138

SDG: F12522 MEDIA: WATER DATA FRACTION: OV

nsample	300GLM0201
samp_date	3/6/2002
lab_id	F12522-1
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	ValQual	QualCode
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	5.6		
BENZENE	1	U	
BROMODICHLOROMETHANE	1	U	
BROMOFORM	1	U	
BROMOMETHANE	1	U	
CARBON TETRACHLORIDE	1	U	
CHLOROBENZENE	1.7		
CHLORODIBROMOMETHANE	1	U	
CHLOROETHANE	1	U	
CHLOROFORM	1	U	
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	1	U	
CIS-1,3-DICHLOROPROPENE	1	U	
DICHLORODIFLUOROMETHAN	1	U	
ETHYLBENZENE	1	U	
METHYL TERT-BUTYL ETHER	1	U	
METHYLENE CHLORIDE	5	U	
TETRACHLOROETHENE	1	U	
TOLUENE	1	U	
TOTAL XYLENES	3	U	

nsample	300GLM0201
samp_date	3/6/2002
lab_id	F12522-1
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	ValQual	QualCode
TRANS-1,2-DICHLOROETHENE	1	U	
TRANS-1,3-DICHLOROPROPEN	1	U	
TRICHLOROETHENE	1	U	
TRICHLOROFLUOROMETHANE	1	U	
VINYL CHLORIDE	1	U	

nsample	300GLM0301
samp_date	3/6/2002
lab_id	F12522-2
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	ValQual	QualCode
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	
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	
DICHLORODIFLUOROMETHAN	1	U	
ETHYLBENZENE	1	U	
METHYL TERT-BUTYL ETHER	1	U	
METHYLENE CHLORIDE	5	U	
TETRACHLOROETHENE	1	U	
TOLUENE	1	U	
TOTAL XYLENES	3	U	

PROJ_NO: 4138

SDG: F12522 MEDIA: WATER DATA FRACTION: OV

nsample	300GLM0301
samp_date	3/6/2002
lab_id	F12522-2
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	ValQual	QualCode
TRANS-1,2-DICHLOROETHENE	1	U	
TRANS-1,3-DICHLOROPROPEN	1	U	
TRICHLOROETHENE	1	U	
TRICHLOROFLUOROMETHANE	1	U	
VINYL CHLORIDE	1	U	

nsample	300GLM0401
samp_date	3/6/2002
lab_id	F12522-3
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	ValQual	QualCode
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	
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	
DICHLORODIFLUOROMETHAN	1	U	
ETHYLBENZENE	1	U	
METHYL TERT-BUTYL ETHER	1	U	
METHYLENE CHLORIDE	5	U	
TETRACHLOROETHENE	1	U	
TOLUENE	1	U	
TOTAL XYLENES	3	U	

nsample	300GLM0401
samp_date	3/6/2002
lab_id	F12522-3
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	ValQual	QualCode
TRANS-1,2-DICHLOROETHENE	1	U	
TRANS-1,3-DICHLOROPROPEN	1	U	
TRICHLOROETHENE	1	U	
TRICHLOROFLUOROMETHANE	1	U	
VINYL CHLORIDE	1	U	

PROJ_NO: 4138

SDG: F12522 MEDIA: WATER DATA FRACTION: OV

nsample	300R030602
samp_date	3/6/2002
lab_id	F12522-4
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	ValQual	QualCode
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	
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	
DICHLORODIFLUOROMETHAN	1	U	
ETHYLBENZENE	1	U	
METHYL TERT-BUTYL ETHER	1	U	
METHYLENE CHLORIDE	5	U	
TETRACHLOROETHENE	1	U	
TOLUENE	1	U	
TOTAL XYLENES	3	U	

nsample	300R030602
samp_date	3/6/2002
lab_id	F12522-4
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	ValQual	QualCode
TRANS-1,2-DICHLOROETHENE	1	U	
TRANS-1,3-DICHLOROPROPEN	1	U	
TRICHLOROETHENE	1	U	
TRICHLOROFLUOROMETHANE	1	U	
VINYL CHLORIDE	1	U	

nsample	300T030602
samp_date	3/6/2002
lab_id	F12522-5
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	ValQual	QualCode
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-DICHLOROBENZENE	1	U	
1,2-DICHLOROETHANE	1	U	
1,2-DICHLOROPROPANE	1	U	
1,3-DICHLOROBENZENE	1	U	
1,4-DICHLOROBENZENE	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	
DICHLORODIFLUOROMETHAN	1	U	
ETHYLBENZENE	1	U	
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	

PROJ_NO: 4138

SDG: F12522 MEDIA: WATER DATA FRACTION: OV

nsample	300T030602
samp_date	3/6/2002
lab_id	F12522-5
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	ValQual	QualCode
TRANS-1,3-DICHLOROPROPEN	1	U	
TRICHLOROETHENE	1	U	
TRICHLOROFLUOROMETHANE	1	U	
VINYL CHLORIDE	1	U	

PROJ_NO: 4138

SDG: F12522 MEDIA: WATER DATA FRACTION: PET

nsample	300GLM0201
samp_date	3/6/2002
lab_id	F12522-1
qc_type	NM
units	MG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	ValQual	QualCode
TOTAL PETROLEUM HYDROCA	1.13		

nsample	300GLM0301
samp_date	3/6/2002
lab_id	F12522-2
qc_type	NM
units	MG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	ValQual	QualCode
TOTAL PETROLEUM HYDROCA	0.25	U	

nsample	300GLM0401
samp_date	3/6/2002
lab_id	F12522-3
qc_type	NM
units	MG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	ValQual	QualCode
TOTAL PETROLEUM HYDROCA	0.385		

PROJ_NO: 4138

SDG: F12522 MEDIA: WATER DATA FRACTION: PET

nsample	300R030602
samp_date	3/6/2002
lab_id	F12522-4
qc_type	NM
units	MG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	ValQual	QualCode
TOTAL PETROLEUM HYDROCA	0.25	U	

PROJ_NO: 4138

SDG: F12522 MEDIA: WATER DATA FRACTION: PET

nsample	300GLM0201
samp_date	3/6/2002
lab_id	F12522-1
qc_type	NM
units	MG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	ValQual	QualCode
TOTAL PETROLEUM HYDROCA	1.13		

nsample	300GLM0301
samp_date	3/6/2002
lab_id	F12522-2
qc_type	NM
units	MG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	ValQual	QualCode
TOTAL PETROLEUM HYDROCA	0.25	U	

nsample	300GLM0401
samp_date	3/6/2002
lab_id	F12522-3
qc_type	NM
units	MG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	ValQual	QualCode
TOTAL PETROLEUM HYDROCA	0.385		

PROJ_NO: 4138

SDG: F12522 MEDIA: WATER DATA FRACTION: PET

nsample	300R030602
samp_date	3/6/2002
lab_id	F12522-4
qc_type	NM
units	MG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	ValQual	QualCode
TOTAL PETROLEUM HYDROCA	0.25	U	

PROJ_NO: 4138

SDG: F12522 MEDIA: WATER DATA FRACTION: M

nsample	300GLM0201
samp_date	3/6/2002
lab_id	F12522-1
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	ValQual	QualCode
LEAD	1.6	U	A

nsample	300GLM0301
samp_date	3/6/2002
lab_id	F12522-2
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	ValQual	QualCode
LEAD	1.2	U	

nsample	300GLM0401
samp_date	3/6/2002
lab_id	F12522-3
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	ValQual	QualCode
LEAD	1.2	U	

PROJ_NO: 4138

SDG: F12522 MEDIA: WATER DATA FRACTION: M

nsample	300R030602
samp_date	3/6/2002
lab_id	F12522-4
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	ValQual	QualCode
LEAD	1.4	U	A