PORT OF OAKLAND

March 5, 1997

Mr. Barney Chan
Alameda County Health Care Services Agency
Environmental Protection Division
1131 Harbor Bay Parkway, #250
Alameda, CA 94502-6577

SUBJECT: QUARTERLY GROUNDWATER MONITORING REPORT - FORMER TANK NUMBERS MF-25 AND MF-26, METROPOLITAN OAKLAND INTERNATIONAL AIRPORT, UNITED AIRLINES HANGAR AREA - ECONOMY PARKING LOT SITE, 1100 AIRPORT DRIVE, OAKLAND, CALIFORNIA

Dear Mr. Chan:

Enclosed is a copy of the March 5, 1997 *Groundwater Monitoring and Sampling Report - Tanks MF-25 and MF-26, United Airlines Hangar - Economy Parking Lot Site, Metropolitan Oakland International Airport (MOIA)*, 1100 Airport Drive, Oakland, California. Monitoring activities were performed by Innovative Technical Solutions, Inc. (ITSI), one of the as-needed consultants retained by the Port of Oakland (Port).

Separate phase hydrocarbons were observed and thickness measured in two monitoring wells, MW-2 and MW-3. Groundwater samples were not collected from these two wells. Reported data are for the groundwater sample collected from MW-1.

Should you have any questions or need additional information, please contact me at 272-1118. Thank you for your on-going assistance and support on this project.

Sincerely,

Jeffrey L. Rubin, REA, CPSS
Associate Environmental Scientist
Environmental Health & Safety Compliance

Enclosure

cc: Rich Hiett, Regional Water Quality Control Board, San Francisco Bay Region (w enc)
Neil Werner - EH & SC (w/o enc)
Mark O'Brien - EH & SC (w/o enc)
Jeff Hess - ITSI (w/o enc)

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530 Water Street ■ Jack London Square ■ P.O. Box 2064 ■ Oakland, California 94604-2064
Telephone (510) 272-1100 ■ Fax (510) 272-1172 ■ TDD (510) 763-5703 ■ Cable address, PORTOFOAK, Oakland

INNOVATIVE TECHNICAL SOLUTIONS, Inc.

ITSI

February 28, 1997

Project No. 95-113.28

Mr. Jeff Rubin
Port of Oakland
530 Water Street
Oakland, California 94604

Groundwater Monitoring and Sampling Report
Tanks MF25 and MF26, United Airlines Hangar-Economy Parking Lot Site
Metropolitan Oakland International Airport (MOIA)
1100 Airport Drive
Oakland, California
(Work Order No. 028691)

Dear Mr. Rubin:

This Groundwater Monitoring and Sampling Report (Report) has been prepared by Innovative Technical Solutions, Inc. (ITSI) on behalf of the Port of Oakland for groundwater monitoring and sampling performed on January 22, 1997 at the United Airlines Hangar-Economy Parking Lot Site, located at 1100 Airport Drive at the Metropolitan Oakland International Airport (MOIA) in Oakland, California. A site location map is shown on Figure 1.

The scope of work included monitoring three groundwater monitoring wells, MW-1, MW-2, and MW-3, and sampling MW-1. The monitoring wells are located in the vicinity of two former underground storage tanks: a 500-gallon oil/solvent tank (MF-25) and a 3,000-gallon oil/solvent tank (MF-26), removed in March 1992.

SAMPLING OF MONITORING WELL(S)

Groundwater monitoring and sampling was performed on January 22, 1997. The monitoring wells were initially gauged for depth to water and checked for the presence of separate phase hydrocarbons. Separate phase hydrocarbons were observed in two monitoring wells, MW-2 and MW-3. Depth to water and product thickness measurements were recorded on Monitoring Well Purge and Sample Forms. Copies of the Monitoring Well Purge and Sample Forms are provided in Attachment A.

1330 Broadway, Suite 1625, Oakland, CA 94612 (510) 286-8888 (510) 286-8889 fax

After depth to water measurements were recorded, monitoring well MW-1, with no separate phase hydrocarbons, was purged using a clean disposable bailer. Approximately three casing volumes of water were removed, or until pH, conductivity, and temperature readings stabilized indicating formation water had entered the monitoring well. Field parameters were recorded on a Monitoring Well Purge and Sample Form.

A groundwater sample from monitoring well MW-1 was collected using the disposable bailer and placed into laboratory provided containers. The sample containers were properly labeled with the sample number, date and time of collection, and sampler's initials, and were placed on ice in an insulated cooler. Purge water was stored in a properly labeled drum onsite.

The above field activities were performed in accordance with the site-specific Health and Safety Plan for groundwater monitoring and sampling activities at the site.

GROUNDWATER LEVELS IN MONITORING WELLS

Depth to water results are summarized in Table 1. Groundwater elevations were calculated using the measured depth to water and survey elevations of top of casing, and are provided in Table 1. This survey used the Port of Oakland datum, which is 3.2 feet below mean sea level. Figure 2 shows the elevation contours and groundwater flow direction for the site. The groundwater flow direction is to the southwest, with a gradient of approximately 0.007 ft/ft.

LABORATORY ANALYSIS OF GROUNDWATER SAMPLE

The sample was sent under chain-of-custody procedures to Pace Analytical in Petaluma, the Port of Oakland contract laboratory, and analyzed according to the following schedule:

Monitoring Well ID	Analyses						
	TPHg[1]	BTEX[2]	TPHj[3]	TPHd[4]	TPHmo[5]	VOCs[6]	TDS[7]
MW-1	x	x	x	x	x	x	x
MW-2	x	x	x	x	x	x	x
MW-3	x	x	x	x	x	x	x

[1]TPH as gasoline by California LUFT Method.
[2]Benzene, toluene, ethylbenzene, and xylenes by California LUFT Method.
[3]TPH as jet fuel by Modified EPA Method 8015 with silica gel cleanup procedure.
[4]TPH as diesel by Modified EPA Method 8015 with silica gel cleanup procedure.
[5]TPH as motor oil by Modified EPA Method 8015 with silica gel cleanup procedure.
[6]VOCs by EPA Method 8010.
[7]Total dissolved solids by EPA Method 160.1.

Laboratory results for the groundwater sample are summarized in Tables 2 and 3, and shown in Figure 3. Copies of the laboratory results, chromatograms and chain-of-custody are provided in Attachment B.

FINDINGS

Results of the January 22, 1997 groundwater monitoring and sampling are summarized below:

- Separate phase hydrocarbons were observed in two monitoring wells, MW-2 and MW-3, at a thickness of 0.02 and 0.005 feet, respectively.
- TPHg, benzene, toluene, ethylbenzene and xylenes were reportedly not detected in monitoring well MW-1.
- TPHj and TPHmo were reportedly not detected in MW-1.
- TPHd was reported at a concentration of 220 µg/l in MW-1.
- 1,1-Dichloroethane, cis-1,2-dichloroethene and trichloroethene were reported in monitoring well MW-1 at concentrations of 3.9 µg/l, 8.4 µg/l and 1.7 µg/l, respectively.

Please give us a call if you have any questions or comments.

Sincerely,

Jim Schollard
Environmental Scientist

Jeffrey D. Hess, R.G.
Project Director

Attachments

TABLE 1

GROUNDWATER ELEVATIONS
TANKS MF25 AND MF26 (UNITED AIRLINES HANGAR-ECONOMY PARKING LOT SITE)
METROPOLITAN OAKLAND INTERNATIONAL AIRPORT (MOIA)
1100 AIRPORT DRIVE
OAKLAND, CALIFORNIA

Monitoring Well ID	Elevation of Top of Casing (feet)	Date of Monitoring	Measured Depth to Water (feet)	Product Thickness (feet)	Groundwater Elevation (feet)	Note
MW-1	6.91	5/15/92	3.10	-	3.81	1
		8/7/92	3.20	-	3.71	1
		11/24/92	4.04	-	2.87	1
		2/12/93	-	-	-	1
		3/11/93	2.09	-	4.82	1
		5/17/93	3.14	-	3.77	1
		8/3/93	3.15	-	3.76	1
		11/25/93	3.59	-	3.32	1
		3/24/94	3.21	-	3.70	1
		5/9/94	2.99	-	3.92	1
		8/29/94	3.34	-	3.57	1
		9/27/94	3.51	-	3.40	1
		4/25/95	2.38	-	4.53	1
		8/11/95	3.08	-	3.83	1
		11/3/95	3.52	-	3.39	1
		6/19/96	2.93	-	3.98	
		10/24/96	3.52	-	3.39	
		1/22/97	2.61	-	4.30	
MW-2	6.63	4/25/95	2.20	-	4.43	1
		8/11/95	3.11	-	3.84	1
		11/3/95	3.28	-	3.35	1
		6/19/96	2.53	0.05	4.14	2
		10/24/96	3.44	0.16	3.31	2
		1/22/97	2.45	0.02	4.20	2
MW-3	7.36	4/25/95	2.78	-	4.58	1
		8/11/95	3.62	-	4.02	1
		11/3/95	4.05	-	3.63	1
		6/19/96	3.17	0.01	4.20	2
		10/24/96	4.02	0.02	3.36	2
		1/22/97	2.86	0.005	4.5	2

1 Data from Table 1, Results of Groundwater Sampling Analysis for Petroleum Hydrocarbons, BTEX, and TDS, Port of Oakland, Oakland International Airport, United Airlines Hangar Area-Economy Parking Lot Site, dated February 21, 1996, by Alisto Engineering Group.

2 Groundwater elevation calculated assuming a specific gravity of 0.75 for product.

TABLE 2

SUMMARY OF LABORATORY RESULTS
TANKS MF25 AND MF26 (UNITED AIRLINES HANGAR AREA-ECONOMY PARKING LOT SITE)
METROPOLITAN OAKLAND INTERNATIONAL AIRPORT (MOIA)
1100 AIRPORT DRIVE
OAKLAND, CALIFORNIA

Monitoring Well ID	Date of Sampling	TPHg (µg/l)	B (µg/l)	T (µg/l)	E (µg/l)	X (µg/l)	TPHj (µg/l)	TPHd (µg/l)	TPHmo (µg/l)	TOG (µg/l)	TDS (mg/l)	Note
MW-1	5/15/92	<50	<0.4	<0.3	<0.3	<0.4	-	-	-	<5,000	5,900	1
	8/7/92	<50	<0.4	<0.3	<0.3	<0.4	800	-	-	<5,000	-	1
	11/24/92	<50	<0.4	<0.3	<0.3	<0.4	<50	-	-	<5,000	-	1
	2/12/93	<50	<0.4	<0.3	<0.3	<0.4	-	-	-	<5,000	-	1
	5/17/93	<50	<0.4	<0.3	<0.3	<0.4	-	-	-	<5,000	4,100	1
	8/3/93	<50	<0.5	<0.5	<0.5	<0.5	-	5,200	-	<5,000	7,700	1
	11/25/93	70	<0.5	<0.5	<0.5	0.6	-	-	-	<5,000	3,790	1
	5/9/94	<50	<0.5	<0.5	<0.5	<0.5	-	-	-	<930	9,600	1
	8/29/94	<50	<0.5	<0.5	2.7	<0.5	-	-	-	<1,000	3,900	1
	4/25/95	<50	<5	<5	<5	<5	<50	1,400	610	-	4,000	1
	8/11/95	<50	<0.4	<0.3	<0.3	<0.4	<50	1,900	1,200	-	8,500	1
	11/3/95	<50	0.4	0.4	<0.3	<0.4	<50	4,200	1,800	-	6,600	1
	6/19/96	<50	0.99	<0.5	1.1	<1.0	<500	11,000	820	-	3,040	
	10/24/96	57	1.9	<0.5	<0.5	1.3	<500	<250	<250	-	3090	
	1/22/97	<50	<0.5	<0.5	<0.5	<1.0	<500	220[3]	<250	-	4240	
MW-2	4/25/95	5,200	340	570	110	580	13,000	<10,000	19,000	-	1,700	1
	8/11/95	5,500	320	680	110	510	7,900	<8,000	20,000	-	2,500	1
	11/3/95	3,800	200	400	27	360	11,000	<11,000	4,200	-	2,000	1
	6/19/96	-[2]	-[2]	-[2]	-[2]	-[2]	-[2]	-[2]	-[2]	-	-[2]	
	10/24/96	-[2]	-[2]	-[2]	-[2]	-[2]	-[2]	-[2]	-[2]	-	-[2]	
	1/22/97	-[2]	-[2]	-[2]	-[2]	-[2]	-[2]	-[2]	-[2]	-	-[2]	
MW-3	4/25/95	7,200	150	600	100	580	38,000	<40,000	31,000	-	5,600	1
	8/11/95	-[2]	-[2]	-[2]	-[2]	-[2]	-[2]	-[2]	-[2]	-	-[2]	1
	11/3/95	-[2]	-[2]	-[2]	-[2]	-[2]	-[2]	-[2]	-[2]	-	-[2]	1
	6/19/96	-[2]	-[2]	-[2]	-[2]	-[2]	-[2]	-[2]	-[2]	-	-[2]	
	10/24/96	-[2]	-[2]	-[2]	-[2]	-[2]	-[2]	-[2]	-[2]	-	-[2]	
	1/22/97	-[2]	-[2]	-[2]	-[2]	-[2]	-[2]	-[2]	-[2]	-	-[2]	

1 Data from Table 1, Results of Groundwater Sampling Analysis for Petroleum Hydrocarbons, BTEX, and TDS, Port of Oakland, Oakland International Airport, United Airlines Hangar Area-Economy Parking Lot Site, dated February 21, 1996, by Alisto Engineering Group.

2 Not sampled due to presence of free product in monitoring well.

3 Hydrocarbons present do not match profile of laboratory standard.

TABLE 3

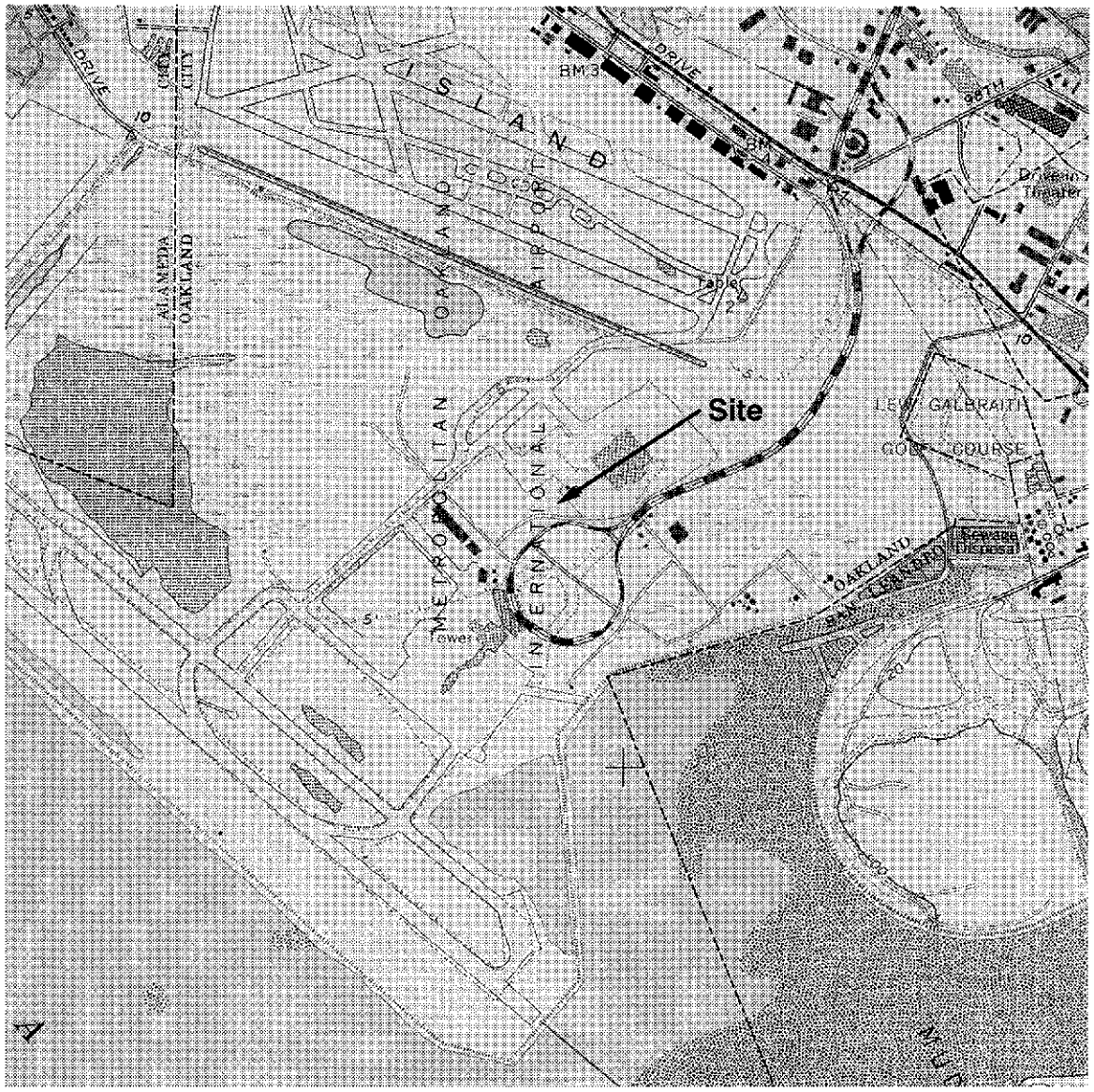
SUMMARY OF LABORATORY RESULTS FOR VOLATILE ORGANIC COMPOUNDS
TANKS MF25 AND MF26 (UNITED AIRLINES HANGAR AREA-ECONOMY PARKING LOT SITE)
METROPOLITAN OAKLAND INTERNATIONAL AIRPORT (MOIA)
1100 AIRPORT DRIVE
OAKLAND, CALIFORNIA

Monitoring Well ID	Date of Sampling	Acetone (µg/l)	2-Butanone (µg/l)	Chloroform (µg/l)	1,1-DCA (µg/l)	(cis/trans) 1,2-DCE (µg/l)	4-Methyl-2-Pentanone (µg/l)	1,1,1-TCA (µg/l)	TCE (µg/l)	PCE (µg/l)	Note
MW-1	11/24/92	ND	ND	ND	ND	ND	ND	ND	ND	ND	1
	2/12/93	ND	ND	ND	ND	ND	ND	ND	ND	ND	1
	5/17/93	ND	ND	ND	ND	ND	ND	ND	ND	ND	1
	8/3/93	ND	ND	ND	ND	ND	ND	ND	ND	ND	1
	11/25/93	ND	ND	ND	ND	6	ND	ND	ND	ND	1
	5/9/94	ND	ND	ND	ND	ND	ND	ND	ND	5.5	1
	9/27/94	ND	ND	ND	ND	ND	ND	ND	ND	ND	1
	4/25/95	<20	<20	<5	<5	<5	<20	-	-	<5	1
	8/11/95	-	-	<0.5	4.3	13	-	2	1.8	0.6	1
	11/3/95	-	-	<0.5	1.3	3.7/<0.4	-	0.6	0.5	<0.5	1
	6/19/96	-	-	<0.5	5.4	-/<0.5	-	<0.5	1.2	<0.5	
	10/24/96	-	-	<0.5	12	-/<1.0	-	<0.5	1.4	<0.5	
	1/22/97	-	-	<0.5	3.9	8.4/<1.0	-	<0.5	1.7	<0.5	
MW-2	4/25/95	<200	200	<50	50	<50	<200	-	-	<50	1
	8/11/95	-	-	5	79	26	-	20	4	9	1
	11/3/95	-	-	<0.5	73	24/<0.4	-	4.8	6.7	6.8	1
	6/19/96	[2]	[2]	[2]	[2]	[2]	[2]	[2]	[2]	[2]	
	10/24/96	[2]	[2]	[2]	[2]	[2]	[2]	[2]	[2]	[2]	
	1/22/97	[2]	[2]	[2]	[2]	[2]	[2]	[2]	[2]	[2]	
MW-3	4/25/95	300	300	-	30	<30	200	-	-	<30	1
	8/11/95	[2]	[2]	[2]	[2]	[2]	[2]	[2]	[2]	[2]	1
	11/3/95	[2]	[2]	[2]	[2]	[2]	[2]	[2]	[2]	[2]	1
	6/19/96	[2]	[2]	[2]	[2]	[2]	[2]	[2]	[2]	[2]	
	10/24/96	[2]	[2]	[2]	[2]	[2]	[2]	[2]	[2]	[2]	
	1/22/97	[2]	[2]	[2]	[2]	[2]	[2]	[2]	[2]	[2]	

1 Data from Table 1, Results of Groundwater Sampling Analysis for Petroleum Hydrocarbons, BTEX, and TDS, Port of Oakland, Oakland International Airport, United Airlines Hangar Area-Economy Parking Lot Site, dated February 21, 1996, by Alisto Engineering Group.

2 Not sampled due to presence of free product in monitoring well.

95-113.03/F.1-SiteLoc



0 1,000 Feet 2,000 Feet

Approximate Scale

FIGURE 1

SITE LOCATION

United Airlines Hangar-Economy Parking Lot Site
Oakland International Airport
1100 Airport Drive

PORT OF OAKLAND

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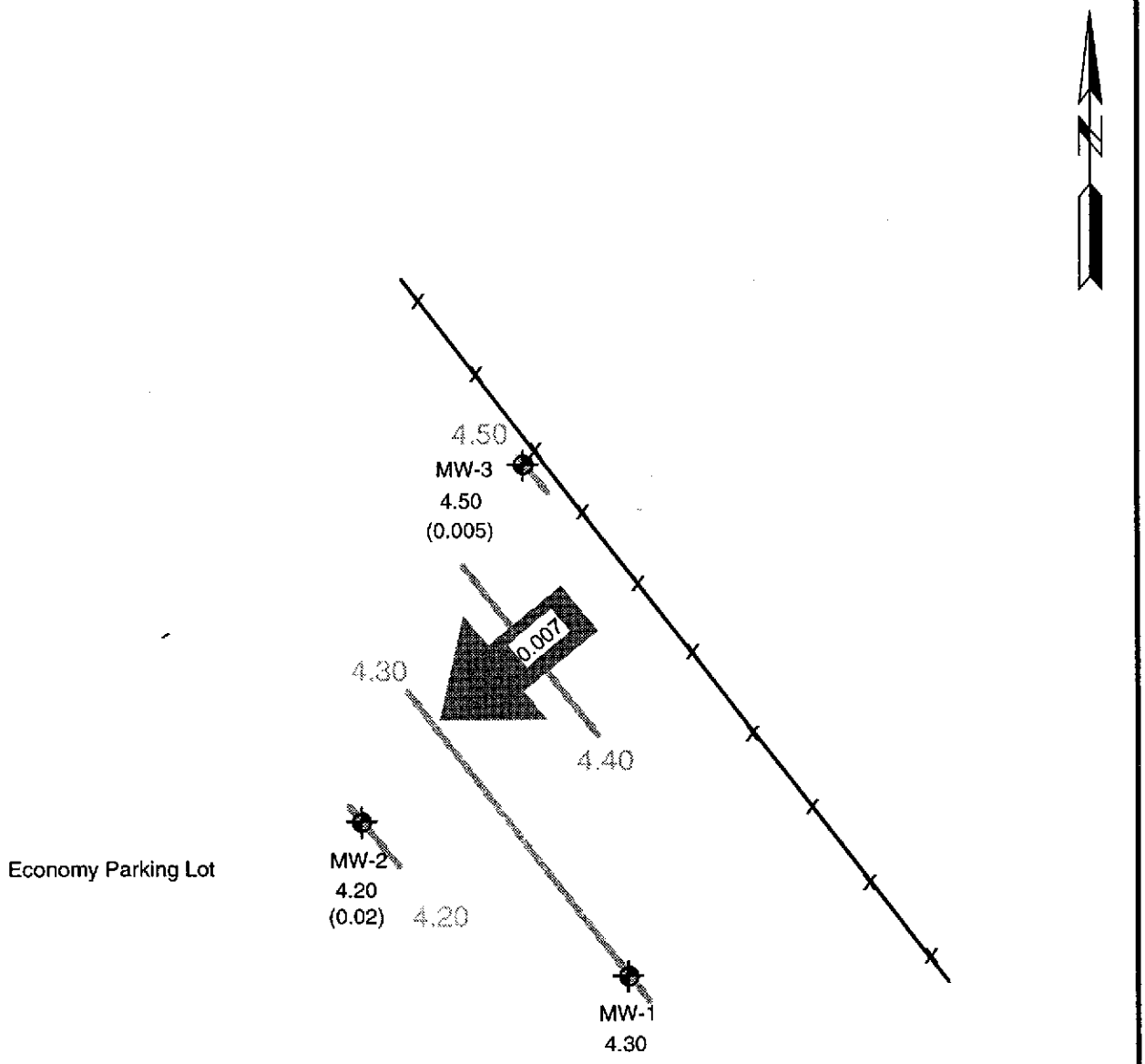
INNOVATIVE TECHNICAL SOLUTIONS, INC.

Source: San Leandro, California 7.5-minute U.S.G.S. Quadrangle, dated 1959, and photorevised 1980.

95-113.28/F-2-GWElev



0 20 Feet 40 Feet

Approximate Scale

Legend

Monitoring Well

4.50 Groundwater Elevation on 1/22/97

(0.02) Product Thickness on 1/22/97

Groundwater Elevation Contour Lines

Groundwater Flow Direction and Gradient

Source: Adapted from Figure 2, Potentiometric Groundwater Elevation Contour Map, November 3, 1995, Alisto Engineering Group.

FIGURE 2

GROUNDWATER ELEVATIONS AND FLOW DIRECTION FOR JANUARY 22, 1997

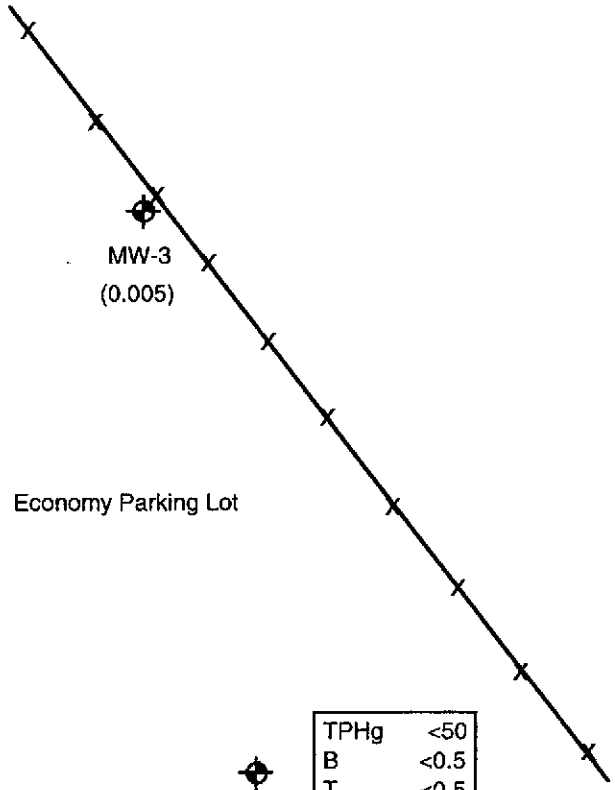
United Airlines Hangar-Economy Parking Lot Site
Oakland International Airport
1100 Airport Drive

PORT OF OAKLAND

ITSI

INNOVATIVE TECHNICAL SOLUTIONS, INC.

95-113.28/F.3-Conc



TPHg	<50
B	<0.5
T	<0.5
E	<0.5
X	<1.0
TPHj	<500
TPHd	220
TPHmo	<250
1,1-DCA	3.9
1,2-DCE	8.4
TCE	1.7

Legend

Monitoring Well

0.02 Product Thickness on 1/22/97

Groundwater Concentrations in µg/l on 1/22/97

TPHg	<50
B	<0.5
T	<0.5
E	<0.5
X	<1.0
TPHj	<500
TPHd	220
TPHmo	<250
1,1-DCA	3.9
1,2-DCE	8.4
TCE	1.7

TPHg - TPH as gasoline
B - Benzene
T - Toluene
E - Ethylbenzene
X - Total xylenes
TPHj - TPH as jet fuel
TPHd - TPH as diesel
TPHmo - TPH as motor oil
1,1-DCA - 1,1-Dichloroethane
1,2-DCE - cis-1,2-Dichloroethene
TCE - Trichloroethene

0 20 Feet 40 Feet

Approximate Scale

Source: Adapted from Figure 2, Potentiometric Groundwater Elevation Contour Map, November 3, 1995, Alisto Engineering Group.

FIGURE 3

CONCENTRATIONS OF PETROLEUM HYDROCARBONS AND VOCs IN GROUNDWATER ON JANUARY 22, 1997

United Airlines Hangar-Economy Parking Lot Site
Oakland International Airport
1100 Airport Drive

PORT OF OAKLAND

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INNOVATIVE TECHNICAL SOLUTIONS, INC.

ATTACHMENT A

COPIES OF MONITORING WELL PURGE AND SAMPLE FORMS

MONITORING WELL
PURGE AND SAMPLE FORM

PROJECT NAME: Port of Oakland - Economy Parking PROJECT NO.: 95-113.28

WELL NO.: MW-1 TESTED BY: J. Scholland DATE: 1/22/97

Measuring Point Description: notch, T.O.C.

Total Well Depth (ft.): 11.80

Water Level Measurement Method: Interface probe (kcck)

Purge Method: disposable bailer

Time Start Purge: 1307

Time End Purge: 1312

Static Water Level (ft.): 2.61

Sample Method: disposable bailer

Time Sampled: 1330

Sample Depth (ft.): ~ 3-11'

Field Filtering: N.A.

Field Preservation: H_2O Ice

Comments: water over top of casing/well cap (removed), collected QC-1 field duplicate sample @ 1345

Well Volume Calculation (fill in before purging)	Total Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	x	Multiplier for Casing Diameter (in) 2	4	6	=	Casing Volume (gal)
	11.80	-	2.61	=	9.19	x	0.16	0.64	1.44	=	1.47 (3 vols = 4.41)

Time	1307	1310	1312				
Volume Purged (gals)	1.5	1.5	1.5				
Cumulative Volume Purged (gals)	1.5	3.0	4.5				
Cumulative Number of Casing Volumes	1.02	2.04	3.08				
Purge Rate (gpm)	0.75	0.5	→				
Temperature (F°) or (C°)	67.9	65.9	65.7				
pH	7.26	6.82	6.64				
Specific Conductivity (µmhos/cm) X1000	6.88	5.68	6.02				
Dissolved Oxygen (mg/L)	NA	→	→				
Turbidity/Color (NTU)	clear	→	slt. cloudy/olive grey				
Odor	None	→	→				
Dewatered?	No	→	→				

CHECKED BY: [signature] DATE:

ITSI

MONITORING WELL
PURGE AND SAMPLE FORM

PROJECT NAME: Port of Oakland - Economy Parking PROJECT NO.: 95-113.28

WELL NO.: MW-2 TESTED BY: J. Scholland DATE: 1/22/97

Measuring Point Description: notch @ low pt. t.o.c Static Water Level (ft.): DTP = 2.43 DTW = 2.45

Total Well Depth (ft.): N.M. Sample Method: Not Sampled*

Water Level Measurement Method: Keck Interface probe Time Sampled: "

Purge Method: N.A Sample Depth (ft.): "

Time Start Purge: " Field Filtering: NA

Time End Purge: " Field Preservation: "

Comments: Petroleum odor upon measuring DTW, brown oily residue found on probe; well cap covered w/ bentonite (hydrated) & water (removed); attempted to collect product sample

Well Volume Calculation (fill in before purging)	Total Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	x	Multiplier for Casing Diameter (in)			=	Casing Volume (gal)
							2	4	6		
							0.16	0.64	1.44		

Time							
Volume Purged (gals)							
Cumulative Volume Purged (gals)							
Cumulative Number of Casing Volumes			N.A.				
Purge Rate (gpm)							
Temperature (F°) or (C°)							
pH							
Specific Conductivity (µmhos/cm)							
Dissolved Oxygen (mg/L)							
Turbidity/Color (NTU)							
Odor							
Dewatered?							

J. Scholland

CHECKED BY: _____ DATE: _____

* not enough volume to sample, only sheen remained after initial volume of product adhered to sample bailer → no purging or sampling due to presence of free product

ITSI

MONITORING WELL
PURGE AND SAMPLE FORM

PROJECT NAME: Port of Oakland - Economy Parking PROJECT NO.: 95-113.28

WELL NO.: MW-3 TESTED BY: J. Schilland DATE: 1/22/97

Measuring Point Description: notch T.O.C. Static Water Level (ft.): DTP = 2.850 DTW = 2.855

Total Well Depth (ft.): 11.01 Sample Method: Not Sampled *

Water Level Measurement Method: keck interface probe Time Sampled: "

Purge Method: N.A. Sample Depth (ft.): "

Time Start Purge: " Field Filtering: N.A.

Time End Purge: " Field Preservation: "

Comments: well cap covered w/ hydrated bentonite + water (removed); petroleum odor upon collecting DTW measurement, brown oily residue on probe → *not purged or sampled

Well Volume Calculation (fill in before purging)	Total Depth (ft)	-	Depth to Water (ft)	=	Water Column (ft)	x	Multiplier for Casing Diameter (in)			=	Casing Volume (gal)
							2	4	6		
	11.01						0.16	0.64	1.44		

Time							
Volume Purged (gals)							
Cumulative Volume Purged (gals)							
Cumulative Number of Casing Volumes							
Purge Rate (gpm)				N.A.			
Temperature (F°) or (C°)							
pH							
Specific Conductivity (µmhos/cm)							
Dissolved Oxygen (mg/L)							
Turbidity/Color (NTU)							
Odor							
Dewatered?							

J. Schilland

CHECKED BY: _____ DATE: _____

ITSI

ATTACHMENT B

COPIES OF LABORATORY REPORTS, CHROMATOGRAMS AND CHAIN-OF-CUSTODY FORM FOR GROUNDWATER SAMPLES

Pace Analytical Services, Inc.
1455 McDowell Blvd. North, Suite D
Petaluma, CA 94954
Tel: 707-792-1865
Fax: 707-792-0342

Pace Analytical

February 03, 1997

Mr. Jim Schollard
Innovative Technical Solutions
1330 Broadway, Suite 1625
Oakland, CA 94612

RE: Pace Project Number: 707540
Client Project ID: Economy Parking/Port of Oaklan

Dear Mr. Schollard:

Enclosed are the results of analyses for sample(s) received on January 23, 1997. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Ron Chew
Project Manager

CA ELAP Certificate Number 2059

Enclosures

REPORT OF LABORATORY ANALYSIS

Pace Analytical

Pace Analytical Services, Inc.
1455 McDowell Blvd. North, Suite D
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DATE: 02/03/97
PAGE: 1

Innovative Technical Solutions
1330 Broadway, Suite 1625
Oakland, CA 94612

Pace Project Number: 707540
Client Project ID: Economy Parking/Port of Oaklan

Attn: Mr. Jim Schollard
Phone: (510)286-8888

Pace Sample No: 70868740
Client Sample ID: MW-1

Date Collected: 01/22/97
Date Received: 01/23/97

Parameters	Results	Units	PRL	Analyzed	Method	Analyst	CAS#	Footnotes
Wet Chemistry								
Total Dissolved Solids								
Total Dissolved Solids	4240	mg/L	5	01/24/97	EPA 160.1	LMD		
GC -- Volatiles								
Volatile Halogenated Organics								
Chloromethane	ND	ug/L	0.8	01/28/97	EPA 8010	ADS	74-87-3	
Bromomethane	ND	ug/L	3	01/28/97	EPA 8010	ADS	74-83-9	
Vinyl Chloride	ND	ug/L	1.8	01/28/97	EPA 8010	ADS	75-01-4	
Chloroethane	ND	ug/L	5.2	01/28/97	EPA 8010	ADS	75-00-3	
Methylene Chloride	ND	ug/L	2.5	01/28/97	EPA 8010	ADS	75-09-2	
Trichlorofluoromethane	ND	ug/L	5	01/28/97	EPA 8010	ADS	75-69-4	
1,1-Dichloroethene	ND	ug/L	1.3	01/28/97	EPA 8010	ADS	75-35-4	
1,1-Dichloroethane	3.9	ug/L	0.7	01/28/97	EPA 8010	ADS	75-34-3	
trans-1,2-Dichloroethene	ND	ug/L	1	01/28/97	EPA 8010	ADS	156-60-5	
Chloroform	ND	ug/L	0.5	01/28/97	EPA 8010	ADS	67-66-3	
1,2-Dichloroethane	ND	ug/L	0.5	01/28/97	EPA 8010	ADS	107-06-2	
1,1,1-Trichloroethane	ND	ug/L	0.5	01/28/97	EPA 8010	ADS	71-55-6	
Carbon Tetrachloride	ND	ug/L	1.2	01/28/97	EPA 8010	ADS	56-23-5	
Bromodichloromethane	ND	ug/L	1	01/28/97	EPA 8010	ADS	75-27-4	
1,2-Dichloropropane	ND	ug/L	0.5	01/28/97	EPA 8010	ADS	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	3.4	01/28/97	EPA 8010	ADS	10061-01-5	
Trichloroethene	1.7	ug/L	1.2	01/28/97	EPA 8010	ADS	79-01-6	
Dibromochloromethane	ND	ug/L	0.9	01/28/97	EPA 8010	ADS	124-48-1	
1,1,2-Trichloroethane	ND	ug/L	0.5	01/28/97	EPA 8010	ADS	79-00-5	
trans-1,3-Dichloropropene	ND	ug/L	3.4	01/28/97	EPA 8010	ADS	10061-02-6	
Bromoform	ND	ug/L	2	01/28/97	EPA 8010	ADS	75-25-2	
Tetrachloroethene	ND	ug/L	0.5	01/28/97	EPA 8010	ADS	127-18-4	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.5	01/28/97	EPA 8010	ADS	79-34-5	
Chlorobenzene	ND	ug/L	0.7	01/28/97	EPA 8010	ADS	108-90-7	
2-Chloroethyl Vinyl Ether	ND	ug/L	5	01/28/97	EPA 8010	ADS	110-75-8	
1,2-Dichlorobenzene	ND	ug/L	1	01/28/97	EPA 8010	ADS	95-50-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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Tel: 707-792-1865
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Pace Analytical

Pace Project Number: 707540
Client Project ID: Economy Parking/Port of Oaklan

Pace Sample No: 70868740 Date Collected: 01/22/97
Client Sample ID: MW-1 Date Received: 01/23/97

Parameters	Results	Units	PRL	Analyzed	Method	Analyst	CAS#	Footnotes
1,3-Dichlorobenzene	ND	ug/L	1	01/28/97	EPA 8010	ADS	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1	01/28/97	EPA 8010	ADS	106-46-7	
cis-1,2-Dichloroethene	8.4	ug/L	0.5	01/28/97	EPA 8010	ADS	156-59-2	
Bromochloromethane (S)	103	%		01/28/97	EPA 8010	ADS	74-97-5	
1,4-Dichlorobutane (S)	100	%		01/28/97	EPA 8010	ADS	110-56-5	
GAS/BTEX, Water								
Gasoline	ND	ug/L	50	01/28/97	EPA 8015M/8020M	ADS		
Benzene	ND	ug/L	0.5	01/28/97	EPA 8015M/8020M	ADS	71-43-2	
Toluene	ND	ug/L	0.5	01/28/97	EPA 8015M/8020M	ADS	108-88-3	
Ethylbenzene	ND	ug/L	0.5	01/28/97	EPA 8015M/8020M	ADS	100-41-4	
Xylene (Total)	ND	ug/L	1	01/28/97	EPA 8015M/8020M	ADS	1330-20-7	
a,a,a-Trifluorotoluene (S)	96	%		01/28/97	EPA 8015M/8020M	ADS	2164-17-2	
4-Bromofluorobenzene (S)	97	%		01/28/97	EPA 8015M/8020M	ADS	460-00-4	
GC -- Semi-VOA								
TPH by 8015M w/ silica gel								
Diesel Fuel	0.22	mg/L	0.05	01/30/97	EPA 8015M w/ SG	AMH	11-84-7	1
Motor Oil	ND	mg/L	0.25	01/30/97	EPA 8015M w/ SG	AMH		
JP4	ND	mg/L	0.5	01/30/97	EPA 8015M w/ SG	AMH		
n-Pentacosane (S)	61	%		01/30/97	EPA 8015M w/ SG	AMH	629-99-2	
Date Extracted				01/28/97				

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Pace Analytical

Pace Project Number: 707540
Client Project ID: Economy Parking/Port of Oaklan

Pace Sample No: 70868757 Date Collected: 01/22/97
Client Sample ID: QC-1 Date Received: 01/23/97

Parameters	Results	Units	PRL	Analyzed	Method	Analyst	CAS#	Footnotes
GC -- Volatiles								
Volatile Halogenated Organics								
Chloromethane	ND	ug/L	0.8	01/28/97	EPA 8010	ADS	74-87-3	
Bromomethane	ND	ug/L	3	01/28/97	EPA 8010	ADS	74-83-9	
Vinyl Chloride	ND	ug/L	1.8	01/28/97	EPA 8010	ADS	75-01-4	
Chloroethane	ND	ug/L	5.2	01/28/97	EPA 8010	ADS	75-00-3	
Methylene Chloride	ND	ug/L	2.5	01/28/97	EPA 8010	ADS	75-09-2	
Trichlorofluoromethane	ND	ug/L	5	01/28/97	EPA 8010	ADS	75-69-4	
1,1-Dichloroethene	ND	ug/L	1.3	01/28/97	EPA 8010	ADS	75-35-4	
1,1-Dichloroethane	3.8	ug/L	0.7	01/28/97	EPA 8010	ADS	75-34-3	
trans-1,2-Dichloroethene	ND	ug/L	1	01/28/97	EPA 8010	ADS	156-60-5	
Chloroform	ND	ug/L	0.5	01/28/97	EPA 8010	ADS	67-66-3	
1,2-Dichloroethane	ND	ug/L	0.5	01/28/97	EPA 8010	ADS	107-06-2	
1,1,1-Trichloroethane	ND	ug/L	0.5	01/28/97	EPA 8010	ADS	71-55-6	
Carbon Tetrachloride	ND	ug/L	1.2	01/28/97	EPA 8010	ADS	56-23-5	
Bromodichloromethane	ND	ug/L	1	01/28/97	EPA 8010	ADS	75-27-4	
1,2-Dichloropropane	ND	ug/L	0.5	01/28/97	EPA 8010	ADS	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	3.4	01/28/97	EPA 8010	ADS	10061-01-5	
Trichloroethene	1.6	ug/L	1.2	01/28/97	EPA 8010	ADS	79-01-6	
Dibromochloromethane	ND	ug/L	0.9	01/28/97	EPA 8010	ADS	124-48-1	
1,1,2-Trichloroethane	ND	ug/L	0.5	01/28/97	EPA 8010	ADS	79-00-5	
trans-1,3-Dichloropropene	ND	ug/L	3.4	01/28/97	EPA 8010	ADS	10061-02-6	
Bromoform	ND	ug/L	2	01/28/97	EPA 8010	ADS	75-25-2	
Tetrachloroethene	ND	ug/L	0.5	01/28/97	EPA 8010	ADS	127-18-4	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.5	01/28/97	EPA 8010	ADS	79-34-5	
Chlorobenzene	ND	ug/L	0.7	01/28/97	EPA 8010	ADS	108-90-7	
2-Chloroethyl Vinyl Ether	ND	ug/L	5	01/28/97	EPA 8010	ADS	110-75-8	
1,2-Dichlorobenzene	ND	ug/L	1	01/28/97	EPA 8010	ADS	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1	01/28/97	EPA 8010	ADS	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1	01/28/97	EPA 8010	ADS	106-46-7	
cis-1,2-Dichloroethene	8.3	ug/L	0.5	01/28/97	EPA 8010	ADS	156-59-2	
Bromochloromethane (S)	97	%		01/28/97	EPA 8010	ADS	74-97-5	
1,4-Dichlorobutane (S)	93	%		01/28/97	EPA 8010	ADS	110-56-5	
GAS/BTEX, Water								
Gasoline	ND	ug/L	50	01/28/97	EPA 8015M/8020M	ADS		
Benzene	ND	ug/L	0.5	01/28/97	EPA 8015M/8020M	ADS	71-43-2	
Toluene	ND	ug/L	0.5	01/28/97	EPA 8015M/8020M	ADS	108-88-3	
Ethylbenzene	ND	ug/L	0.5	01/28/97	EPA 8015M/8020M	ADS	100-41-4	
Xylene (Total)	ND	ug/L	1	01/28/97	EPA 8015M/8020M	ADS	1330-20-7	
a,a,a-Trifluorotoluene (S)	95	%		01/28/97	EPA 8015M/8020M	ADS	2164-17-2	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1455 McDowell Blvd. North, Suite D
Petaluma, CA 94954
Tel: 707-792-1865
Fax: 707-792-0342

Pace Analytical

Pace Project Number: 707540
Client Project ID: Economy Parking/Port of Oaklan

Pace Sample No: 70868757 Date Collected: 01/22/97
Client Sample ID: QC-1 Date Received: 01/23/97

Parameters	Results	Units	PRL	Analyzed	Method	Analyst	CAS#	Footnotes
4-Bromofluorobenzene (S)	97	%		01/28/97	EPA 8015M/8020M	ADS	460-00-4	

REPORT OF LABORATORY ANALYSIS

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Pace Analytical

Pace Project Number: 707540
Client Project ID: Economy Parking/Port of Oaklan

PARAMETER FOOTNOTES

ND	Not Detected
NC	Not Calculable
PRL	Pace Reporting Limit
(S)	Surrogate
[1]	Hydrocarbons present do not match profile of laboratory standard.

REPORT OF LABORATORY ANALYSIS

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Pace Analytical

QUALITY CONTROL DATA

Innovative Technical Solutions
1330 Broadway, Suite 1625
Oakland, CA 94612

Pace Project Number: 707540
Client Project ID: Economy Parking/Port of Oaklan

Attn: Mr. Jim Schollard
Phone: (510)286-8888

QC Batch ID: 21032
Analysis Method: EPA 8010
QC Batch Method: EPA 8010
Analysis Description: Volatile Halogenated Organics
Associated Pace Samples: 70868740 70868757

METHOD BLANK: 70871660
Associated Pace Samples: 70868740 70868757

Parameter	Units	Method Blank Result	PRL	Footnotes
Chloromethane	ug/L	ND	0.8	
Bromomethane	ug/L	ND	3	
Vinyl Chloride	ug/L	ND	1.8	
Chloroethane	ug/L	ND	5.2	
Methylene Chloride	ug/L	ND	2.5	
Trichlorofluoromethane	ug/L	ND	5	
1,1-Dichloroethene	ug/L	ND	1.3	
1,1-Dichloroethane	ug/L	ND	0.7	
trans-1,2-Dichloroethene	ug/L	ND	1	
Chloroform	ug/L	ND	0.5	
1,2-Dichloroethane	ug/L	ND	0.5	
1,1,1-Trichloroethane	ug/L	ND	0.5	
Carbon Tetrachloride	ug/L	ND	1.2	
Bromodichloromethane	ug/L	ND	1	
1,2-Dichloropropane	ug/L	ND	0.5	
cis-1,3-Dichloropropene	ug/L	ND	3.4	
Trichloroethene	ug/L	ND	1.2	
Dibromochloromethane	ug/L	ND	0.9	
1,1,2-Trichloroethane	ug/L	ND	0.5	
trans-1,3-Dichloropropene	ug/L	ND	3.4	
Bromoform	ug/L	ND	2	
Tetrachloroethene	ug/L	ND	0.5	
1,1,2,2-Tetrachloroethane	ug/L	ND	0.5	
Chlorobenzene	ug/L	ND	0.7	
2-Chloroethyl Vinyl Ether	ug/L	ND	5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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Pace Analytical

QUALITY CONTROL DATA

Pace Project Number: 707540
Client Project ID: Economy Parking/Port of Oaklan

METHOD BLANK: 70871660
Associated Pace Samples:
70868740 70868757

Parameter	Units	Method Blank Result	PRL	Footnotes
1,2-Dichlorobenzene	ug/L	ND	1	
1,3-Dichlorobenzene	ug/L	ND	1	
1,4-Dichlorobenzene	ug/L	ND	1	
cis-1,2-Dichloroethene	ug/L	ND	0.5	
Bromochloromethane (S)	%	103		
1,4-Dichlorobutane (S)	%	102		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 70870548 70870555

Parameter	Units	70868757	Spike Conc.	Matrix Spike Result	Spike % Rec	Matrix Sp. Dup. Result	Spike Dup % Rec	RPD	Footnotes
Chloromethane	ug/L	0	20	15.89	79.5	15.94	79.7	0	
Bromomethane	ug/L	0	20	21.16	106	19.25	96.3	9	
Vinyl Chloride	ug/L	0.4657	20	15.90	77.2	15.74	76.4	1	
Chloroethane	ug/L	0	20	20.03	100	20.76	104	4	
Methylene Chloride	ug/L	0.2439	20	19.08	94.2	18.76	92.6	2	
Trichlorofluoromethane	ug/L	0.1227	20	18.66	92.7	18.69	92.8	0	
1,1-Dichloroethene	ug/L	0	20	19.17	95.9	18.77	93.9	2	
1,1-Dichloroethane	ug/L	3.828	20	22.06	91.2	21.92	90.5	1	
trans-1,2-Dichloroethene	ug/L	0	20	19.07	95.4	18.67	93.4	2	
Chloroform	ug/L	0	20	19.73	98.7	19.50	97.5	1	
1,2-Dichloroethane	ug/L	0	20	20.78	104	20.58	103	1	
1,1,1-Trichloroethane	ug/L	0	20	20.38	102	20.10	100	1	
Carbon Tetrachloride	ug/L	0	20	19.46	97.3	19.13	95.7	2	
Bromodichloromethane	ug/L	0	20	20.37	102	19.89	99.5	2	
1,2-Dichloropropane	ug/L	0	20	19.71	98.6	19.40	97.0	2	
cis-1,3-Dichloropropene	ug/L	0	20	19.66	98.3	19.38	96.9	1	
Trichloroethene	ug/L	1.609	20	21.08	97.4	20.72	95.6	2	
Dibromochloromethane	ug/L	0	20	20.45	102	20.20	101	1	
1,1,2-Trichloroethane	ug/L	0	20	19.54	97.7	19.44	97.2	1	
trans-1,3-Dichloropropene	ug/L	0	20	19.80	99.0	19.62	98.1	1	
Bromoform	ug/L	0	20	20.48	102	20.40	102	0	
Tetrachloroethene	ug/L	0.2001	20	19.42	96.1	18.93	93.6	3	
1,1,2,2-Tetrachloroethane	ug/L	0	20	21.91	110	21.84	109	0	
Chlorobenzene	ug/L	0	20	20.47	102	19.82	99.1	3	
1,2-Dichlorobenzene	ug/L	0	20	21.19	106	20.50	102	3	

REPORT OF LABORATORY ANALYSIS

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Pace Analytical

QUALITY CONTROL DATA

Pace Project Number: 707540
Client Project ID: Economy Parking/Port of Oaklan

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 70870548 70870555

Parameter	Units	70868757	Spike Conc.	Matrix Spike Result	Spike % Rec	Matrix Sp. Dup. Result	Spike Dup % Rec	RPD	Footnotes
1,3-Dichlorobenzene	ug/L	0	20	21.48	107	20.42	102	5	
1,4-Dichlorobenzene	ug/L	0	20	21.04	105	20.48	102	3	
cis-1,2-Dichloroethene	ug/L	8.276	20	24.44	80.8	24.46	80.9	0	
Bromochloromethane (S)					96		97		
1,4-Dichlorobutane (S)					93		96		

LABORATORY CONTROL SAMPLE & LCSD: 70868716 70868724

Parameter	Units	Spike Conc.	LCS Result	Spike % Rec	LCSD Result	Spike Dup % Rec	RPD	Footnotes
Chloromethane	ug/L	20	16.20	81.0	16.22	81.1	0	
Bromomethane	ug/L	20	23.54	118	22.17	111	6	
Vinyl Chloride	ug/L	20	14.92	74.6	15.82	79.1	6	
Chloroethane	ug/L	20	19.23	96.2	20.64	103	7	
Methylene Chloride	ug/L	20	18.10	90.5	18.65	93.3	3	
Trichlorofluoromethane	ug/L	20	18.66	93.3	18.99	95.0	2	
1,1-Dichloroethene	ug/L	20	18.35	91.8	18.68	93.4	2	
1,1-Dichloroethane	ug/L	20	19.05	95.3	19.26	96.3	1	
trans-1,2-Dichloroethene	ug/L	20	18.33	91.7	18.49	92.5	1	
Chloroform	ug/L	20	18.98	94.9	19.16	95.8	1	
1,2-Dichloroethane	ug/L	20	20.28	101	20.75	104	3	
1,1,1-Trichloroethane	ug/L	20	18.95	94.8	19.33	96.7	2	
Carbon Tetrachloride	ug/L	20	18.80	94.0	19.15	95.8	2	
Bromodichloromethane	ug/L	20	20.25	101	19.90	99.5	1	
1,2-Dichloropropane	ug/L	20	18.95	94.8	19.30	96.5	2	
cis-1,3-Dichloropropene	ug/L	20	18.88	94.4	19.21	96.1	2	
Trichloroethene	ug/L	20	19.82	99.1	20.17	101	2	
Dibromochloromethane	ug/L	20	19.94	99.7	20.24	101	1	
1,1,2-Trichloroethane	ug/L	20	18.95	94.8	18.98	94.9	0	
trans-1,3-Dichloropropene	ug/L	20	19.42	97.1	19.44	97.2	0	
Bromoform	ug/L	20	19.88	99.4	20.39	102	3	
Tetrachloroethene	ug/L	20	18.60	93.0	18.66	93.3	0	
1,1,2,2-Tetrachloroethane	ug/L	20	20.63	103	21.03	105	2	
Chlorobenzene	ug/L	20	19.67	98.4	19.49	97.5	1	
1,2-Dichlorobenzene	ug/L	20	21.42	107	20.05	100	7	
1,3-Dichlorobenzene	ug/L	20	21.32	107	20.44	102	5	
1,4-Dichlorobenzene	ug/L	20	21.38	107	20.48	102	5	
cis-1,2-Dichloroethene	ug/L	20	19.13	95.7	19.34	96.7	1	
Bromochloromethane (S)				100		97		
1,4-Dichlorobutane (S)				96		94		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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Pace Analytical

QUALITY CONTROL DATA

Innovative Technical Solutions
1330 Broadway, Suite 1625
Oakland, CA 94612

Pace Project Number: 707540
Client Project ID: Economy Parking/Port of Oaklan

Attn: Mr. Jim Schollard
Phone: (510)286-8888

QC Batch ID: 21045
Analysis Method: EPA 160.1
QC Batch Method: EPA 160.1
Analysis Description: Total Dissolved Solids
Associated Pace Samples: 70868740

METHOD BLANK: 70869268
Associated Pace Samples:
70868740

Parameter	Units	Method Blank Result	PRL	Footnotes
Total Dissolved Solids	mg/L	ND	5	

SAMPLE DUPLICATE: 70871645

Parameter	Units	70866306	Dup. Result	RPD	Footnotes
Total Dissolved Solids	mg/L	798.0	813.0	2	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1455 McDowell Blvd. North, Suite D
Petaluma, CA 94954
Tel: 707-792-1865
Fax: 707-792-0342

Pace Analytical

QUALITY CONTROL DATA

Innovative Technical Solutions
1330 Broadway, Suite 1625
Oakland, CA 94612

Pace Project Number: 707540
Client Project ID: Economy Parking/Port of Oaklan

Attn: Mr. Jim Schollard
Phone: (510)286-8888

QC Batch ID: 21101
Analysis Method: EPA 8015M w/ SG
Associated Pace Samples: 70868740

QC Batch Method: EPA 3520
Analysis Description: TPH by 8015M w/ silica gel

METHOD BLANK: 70871470
Associated Pace Samples:
70868740

Parameter	Units	Method Blank Result	PRL	Footnotes
Diesel Fuel	mg/L	ND	0.05	
Motor Oil	mg/L	ND	0.25	
JP4	mg/L	ND	0.5	
n-Pentacosane (S)	%	74		

LABORATORY CONTROL SAMPLE & LCSD: 70871488 70871496

Parameter	Units	Spike Conc.	LCS Result	Spike % Rec	LCSD Result	Spike Dup % Rec	RPD	Footnotes
Diesel Fuel	mg/L	1.0	0.6326	63.3	0.6602	66.0	4	
n-Pentacosane (S)				74		77		

REPORT OF LABORATORY ANALYSIS

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Pace Project Number: 707540
Client Project ID: Economy Parking/Port of Oaklan

Attn: Mr. Jim Schollard
Phone: (510)286-8888

QC Batch ID: 21105
Analysis Method: EPA 8015M/8020M
Associated Pace Samples: 70868740 70868757

QC Batch Method: EPA 8015M/8020M
Analysis Description: GAS/BTEX, Water

METHOD BLANK: 70871546
Associated Pace Samples:
70868740 70868757

Parameter	Units	Method Blank Result	PRL	Footnotes
Gasoline	ug/L	ND	50	
Benzene	ug/L	ND	0.5	
Toluene	ug/L	ND	0.5	
Ethylbenzene	ug/L	ND	0.5	
Xylene (Total)	ug/L	ND	1	
a,a,a-Trifluorotoluene (S)	%	88		
4-Bromofluorobenzene (S)	%	91		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 70871579 70871587

Parameter	Units	70865902	Spike Conc.	Matrix Spike Result	Spike % Rec	Matrix Sp. Dup. Result	Spike Dup % Rec	RPD	Footnotes
Benzene	ug/L	0.2116	100	104.0	104	103.7	104	0	
Toluene	ug/L	0.4204	100	102.0	102	101.8	101	0	
Ethylbenzene	ug/L	0.3466	100	98.75	98.4	97.63	97.3	1	
Xylene (Total)	ug/L	0.9961	300	303.9	101	296.4	98.5	3	
a,a,a-Trifluorotoluene (S)					98		102		
4-Bromofluorobenzene (S)					101		101		

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QUALITY CONTROL DATA

Pace Project Number: 707540
Client Project ID: Economy Parking/Port of Oaklan

LABORATORY CONTROL SAMPLE & LCSD: 70871553 70871561

Parameter	Units	Spike Conc.	LCS Result	Spike % Rec	LCSD Result	Spike Dup % Rec	RPD	Footnotes
Benzene	ug/L	100	91.11	91.1	100.4	100	9	
Toluene	ug/L	100	89.68	89.7	99.36	99.4	10	
Ethylbenzene	ug/L	100	86.10	86.1	94.59	94.6	9	
Xylene (Total)	ug/L	300	263.6	87.9	287.5	95.8	9	
a,a,a-Trifluorotoluene (S)				86		97		
4-Bromofluorobenzene (S)				85		96		

REPORT OF LABORATORY ANALYSIS

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Pace Project Number: 707540
Client Project ID: Economy Parking/Port of Oaklan

QUALITY CONTROL DATA PARAMETER FOOTNOTES

Consistent with EPA guidelines unrounded concentrations are displayed and have been used to calculate % Rec and RPD values.

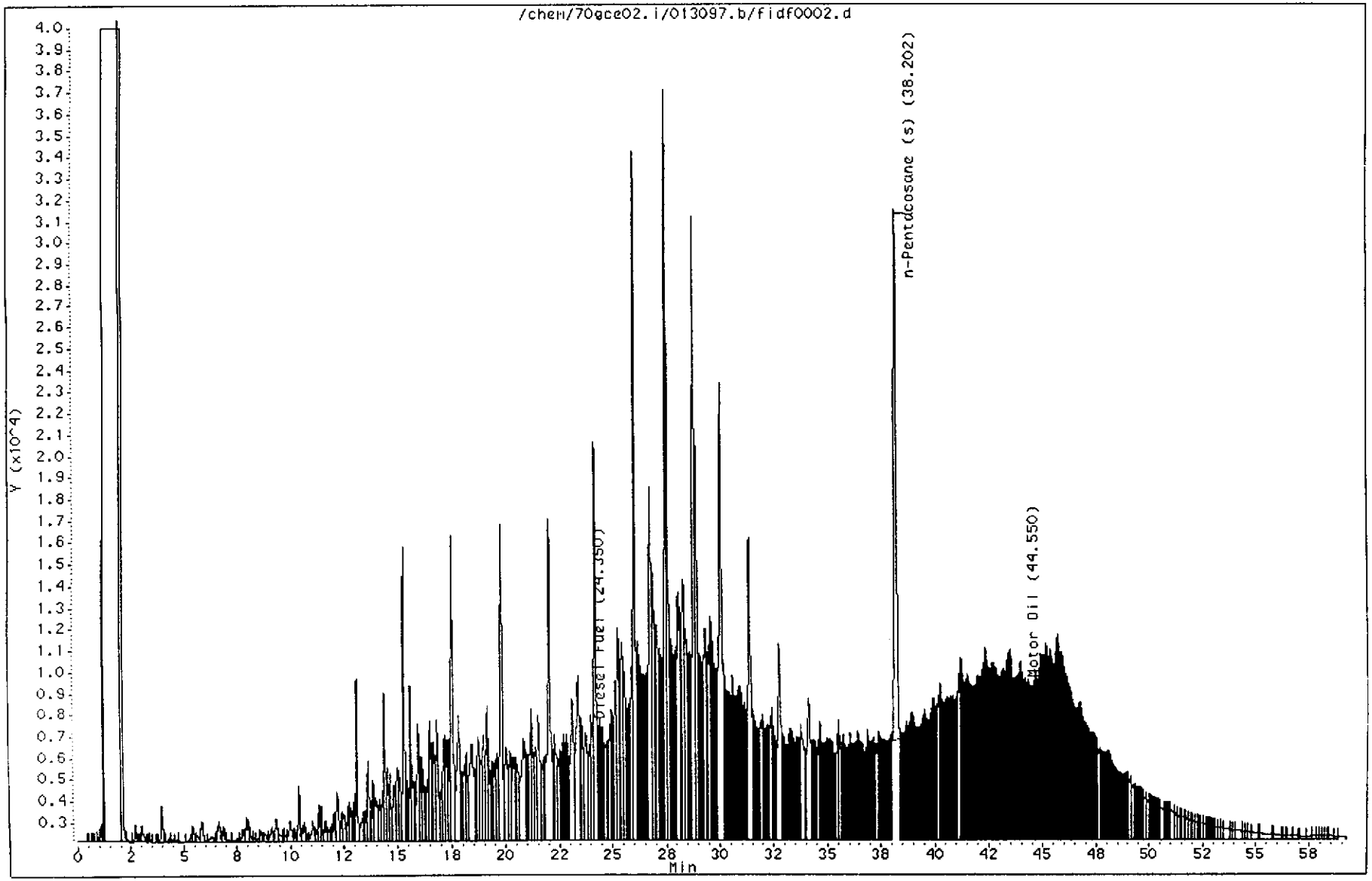
ND	Not Detected
NC	Not Calculable
PRL	Pace Reporting Limit
RPD	Relative Percent Difference
(S)	Surrogate

REPORT OF LABORATORY ANALYSIS

Data File: /chem/70gce02.i/013097.b/fidf0002.d
Date : 30-JAN-1997 14:48
Client ID:
Sample Info: CCAL-DIESEL/MO

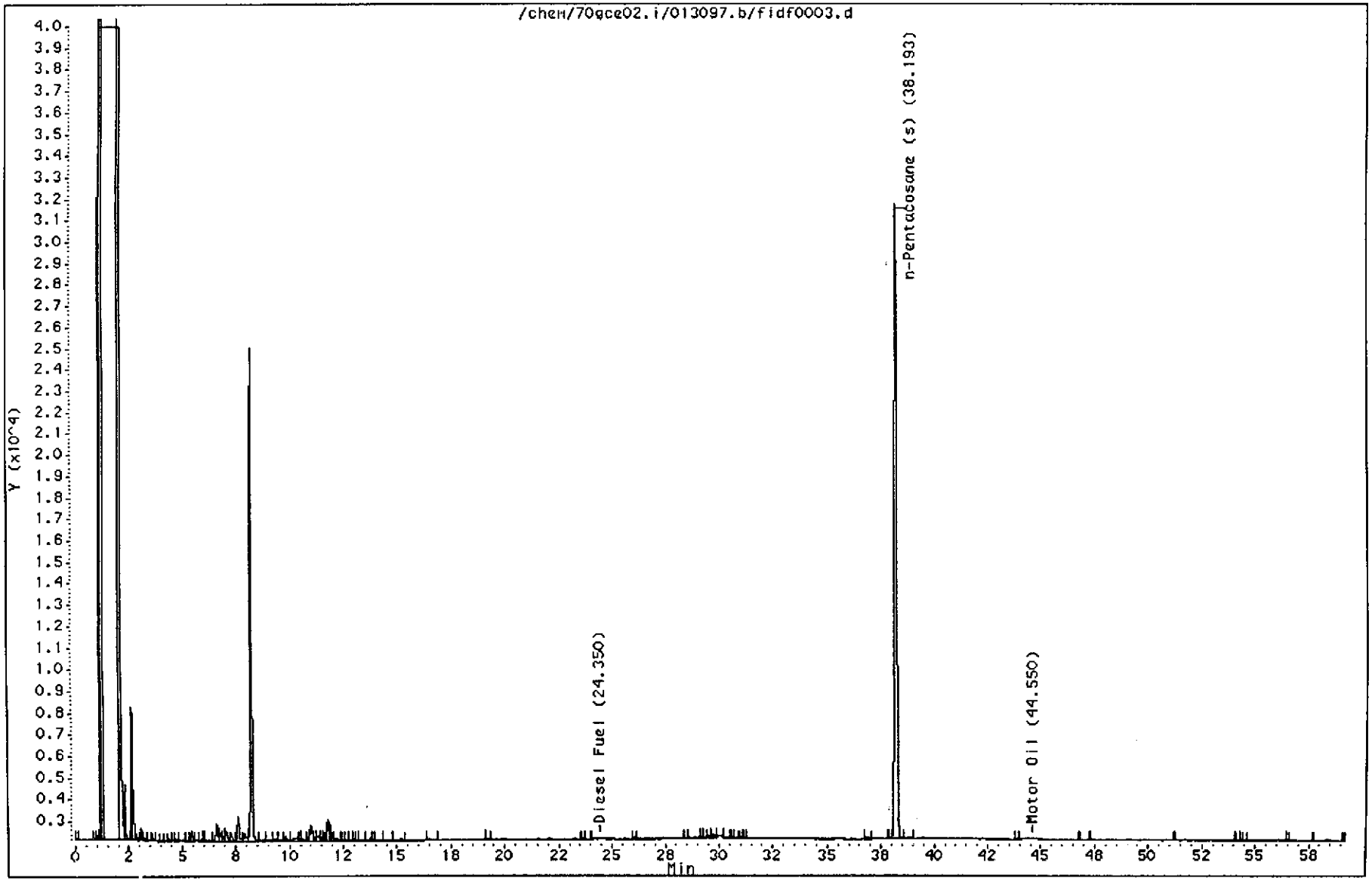
Column phase: RESTEK XTI-5

Instrument: 70gce02.i
Misc Info: 90C,,,,,2,6,CCAL,,,dmof.sub,dmor.sub
Operator: AMH
Column diameter: 0.53



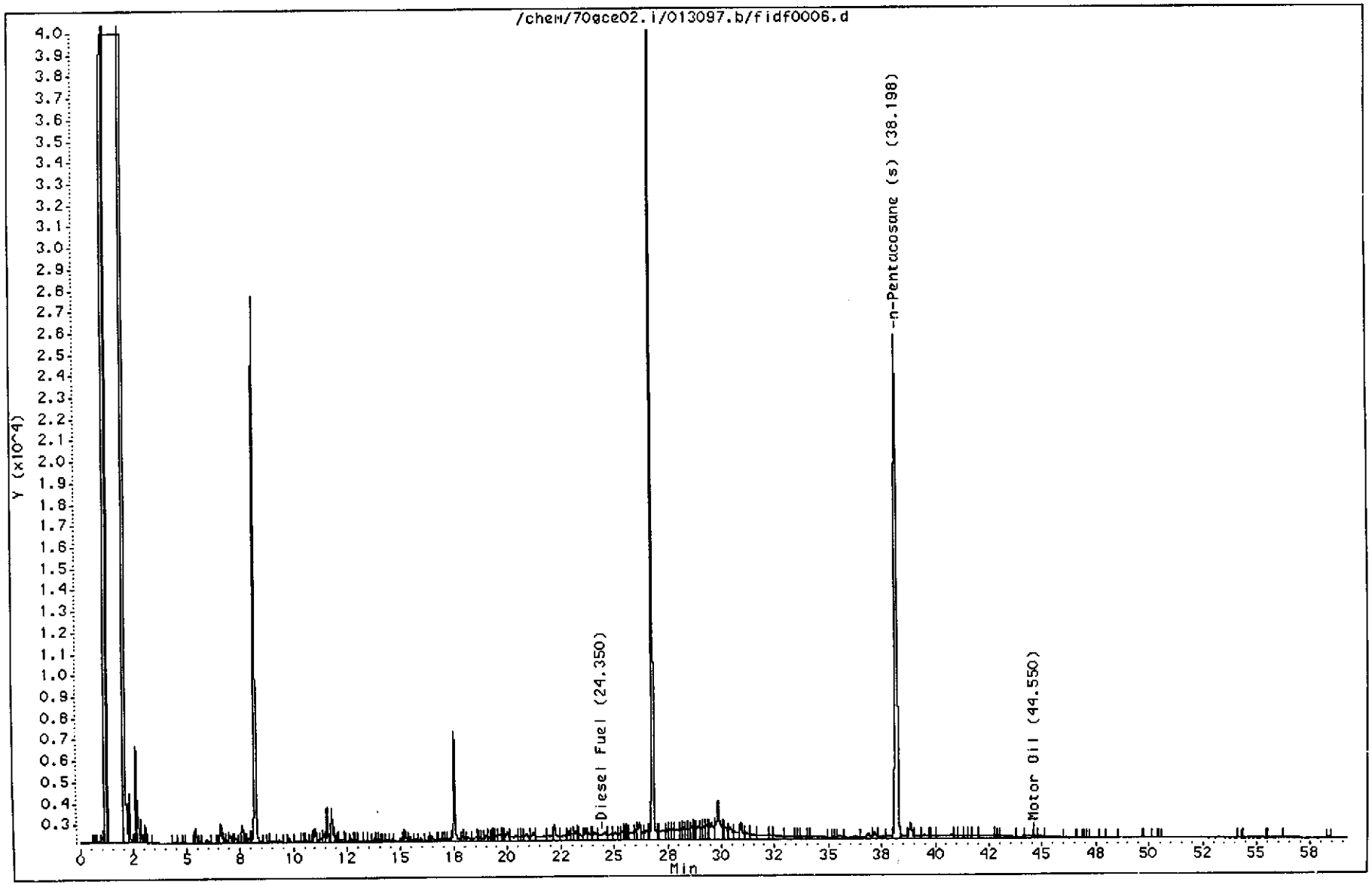
Data File: /chem/70gce02.i/013097.b/fidf0003.d
Date : 30-JAN-1997 15:55
Client ID: BLANK From QC Batch
Sample Info: BLANK-water
Volume Injected (uL): 1.0
Column phase: RESTEK XTI-5

Instrument: 70gce02.i
Misc Info: 70871470,,1,21101,1,3,,BLANK,,,dmof.sub,dmor.sub
Operator: AMH
Column diameter: 0.53



Data File: /chem/70gce02.i/013097.b/fidf0006.d
Date : 30-JAN-1997 19:16
Client ID: MW-1
Sample Info: SAMPLE-water
Volume Injected (uL): 1.0
Column phase: RESTEK XTI-5

Instrument: 70gce02.i
Misc Info: 70868740,,1,21101,1,0,,SAMPL,,,dmof.sub,dmor.sub
Operator: AMH
Column diameter: 0.53



INNOVATIVE TECHNICAL SOLUTIONS, Inc.

ITSI
2855 Mitchell Drive, Suite 118
Walnut Creek, California 94598
(510) 256-8898 (Tel), (510) 256-8998 (Fax)

CHAIN OF CUSTODY

707540

PROJECT NAME: Port of Oakland - Economy Parking Lot
PROJECT NUMBER: 95-113.28
SITE LOCATION: MOIA, Oakland CA
Work order #2869

DATE: 1/22/97
PAGE: 1 of 1

SAMPLE I.D.	SAMPLE DEPTH	DATE	TIME	NUMBER OF CONTAINERS	TYPE OF CONTAINERS	SAMPLE MATRIX	ANALYSIS: TPH as Gas/BTEX - 8015/8020	TPH as Diesel - 8015	TPH as Diesel - 8015 (w/ Silica Gel Cleanup)	TEPH - 8015	TEPH-8015 m (gas, mo) (w/ Silica Gel Cleanup)	TRPH - 418.1	Oil and Grease - 5520	Purgeable Halocarbons - 601/8010	VOCs - 624/ 8240	SVOCs - 625/8270	LUFT Metals (Cd, Cr, Ni, Pb, Zn)	CAM 17 Metals	TDS (160.1)
MW-1		1/22/97	1330	5	VOAs	W	X							X					
↓		↓	↓	2	1 L As	W					X								
				1	250 mL	W													X
QC-1	↓	↓	—	5	VOAs	W	X							X					
TOTAL NUMBER OF CONTAINERS				13	TOTAL TESTS		2				1			2					1

Pace Analytical
Petaluma, CA

SPECIAL INSTRUCTIONS/COMMENTS
70868740
70868757

COOLER CUSTODY SEALS INTACT ☐ NOT INTACT ☐
COOLER TEMPERATURE 4° °C
kw

SAMPLED BY: Jim Scholland
SIGNATURE: Jim Scholland

SPECIAL INSTRUCTIONS/COMMENTS: Standard 2 wk. T.A.T.

RELINQUISHED BY: Jim Scholland (Printed Name) (Signature)
ITSI 1/23/97 @ 1331 (Company, Date and Time)

RECEIVED BY: TMAIWARIS (Printed Name) TMAIWARIS (Signature)
PASI 1-23-97 1331 (Company, Date and Time)

RELINQUISHED BY: TMAIWARIS (Printed Name) (Signature)
PASI 1-23-97 1331 (Company, Date and Time)

RECEIVED BY: Gail Herrmann (Printed Name) (Signature)
PASI 1/23/97 1545 (Company, Date and Time)

RELINQUISHED BY: TMAIWARIS (Printed Name) (Signature)
1-23-97 343 (Company, Date and Time)

RECEIVED BY: (Printed Name) (Signature)
(Company, Date and Time)

SEND RESULTS TO: Jim Scholland @ ITSI, 1330 Broadway, Suite 1625, Oakland CA 94612