BASELINE
ENVIRONMENTAL CONSULTING

22 January 1997
S9171-C1

Ms. Diane Heinze
Port of Oakland
Environmental Department
530 Water Street
Oakland, California 94607

Subject: Quarterly Groundwater Monitoring Report, December 1996, Former Seabreeze Yacht Center, Inc. Site, 280 6th Avenue, Oakland, California

Dear Ms. Heinze:

This report documents the groundwater sampling activities performed on 11 December 1996 at the former Seabreeze Yacht Center, Inc. Site (Site), located in Oakland (Figure 1). The groundwater monitoring was conducted in accordance with the 7 June 1996 Port of Oakland (Port) proposal to the Alameda County Health Care Services Agency, Department of Environmental Health (County). The groundwater monitoring network includes monitoring wells PW-2, MW-SB2, MW-SB3, MW-SB4, and MW-SB5 (Figure 2).

FIELD ACTIVITIES, DECEMBER 1996

On 11 December 1996, the presence of free product was checked and water levels were measured in the monitoring network wells using a dual-interface probe. Water levels were measured and recorded to the nearest one-hundredth of a foot. The dual-interface probe was decontaminated after each use by washing in a trisodium phosphate (TSP) solution and rinsing with deionized water. A petroleum odor was identified in monitoring wells MW-SB3, MW-SB4, and MW-SB5. A sheen or free product was not observed in any of the wells.

On 11 December 1996, each monitoring well was purged of approximately three to four well casing volumes or pumped dry to within one foot from the bottom of casing. The wells were slowly purged using a peristaltic pump with new, disposable polyethylene tubing lowered inside the wells after water level measurements were obtained (the portion of tubing attached to the pump was of silicone; the remaining sections of the tubing were of polyethylene). Electrical conductivity, pH, dissolved oxygen, and temperature parameters of the purge water were monitored during purging until stable readings were observed (MW-SB3, MW-SB4, and MW-

SB5) or the well(s) were pumped dry to within one foot from the casing bottom (PW-2 and MW-SB2).

Groundwater samples were collected from monitoring wells PW-2 and MW-SB2 prior to being pumped dry; approximately one well casing volume from well PW-2 and 2.5 well casing volumes from MW-SB2 were removed prior to sampling. Groundwater samples were collected from the remaining monitoring wells (MW-SB3, MW-SB4, and MW-SB5) immediately after the wells were purged of at least three well casing volumes. Groundwater samples were collected using a peristaltic pump and new, disposable polyethylene tubing for each well. The groundwater samples were placed in sample bottles; the sample bottles were labeled and stored in a cooler containing blue ice.

The groundwater samples were submitted under chain-of-custody protocol to Pace Analytical of Petaluma and were analyzed for total lead, total copper, and total extractable hydrocarbons (TEH) as diesel, motor oil, and Bunker C. The samples were filtered by the laboratory then preserved before being analyzed for lead and copper. Prior to the TEH analysis, the samples were subjected to a silica gel cleanup (EPA Method 3630). The groundwater sampling forms, documenting sampling activities, are included in Attachment A and the chain-of-custody form is included in Attachment B.

One drum containing purge and decontamination water was generated from the December 1996 sampling activities. The drum was labeled and stored on-site for future off-site disposal.

ANALYTICAL RESULTS

The metals and TEH analytical results are summarized in Table 1 and the laboratory reports are presented in Attachment B. Lead was identified in the samples from monitoring wells PW-2, MW-SB2, MW-SB4, and MW-SB5 (up to 0.00855 mg/L); the sample from MW-SB3 did not contain lead above the laboratory reporting limit of 0.003 mg/L. The samples from monitoring wells MW-SB2 and MW-SB4 contained copper at 0.00354 mg/L and 0.00674 mg/L, respectively. None of the other samples contained copper above the laboratory reporting limit.

All the groundwater samples were reported to contain diesel at concentrations ranging from 0.081 mg/L (MW-SB5A, duplicate sample from MW-SB5) to 0.19 mg/L (MW-SB3). However, the corresponding laboratory method blank also contained reportable concentrations of diesel (0.063 mg/L). The laboratory indicated that the chromatographic patterns of all the samples matched that of the laboratory contaminant in the method blank. Therefore, the reported diesel concentrations from the samples represent false positive results for this sampling event. The samples from all the wells did not contain Bunker C or motor oil above the laboratory reporting limit.

GROUNDWATER FLOW DIRECTION

Recently collected and historic groundwater elevation data are summarized in Table 2. The groundwater elevation data collected on 11 December 1996 were used to develop groundwater

elevation contours (Figure 2). The general groundwater flow direction is toward the south to southeast.

The next quarterly monitoring event will be conducted in March 1997. Should you have any questions, or need further information, please contact us at your convenience.

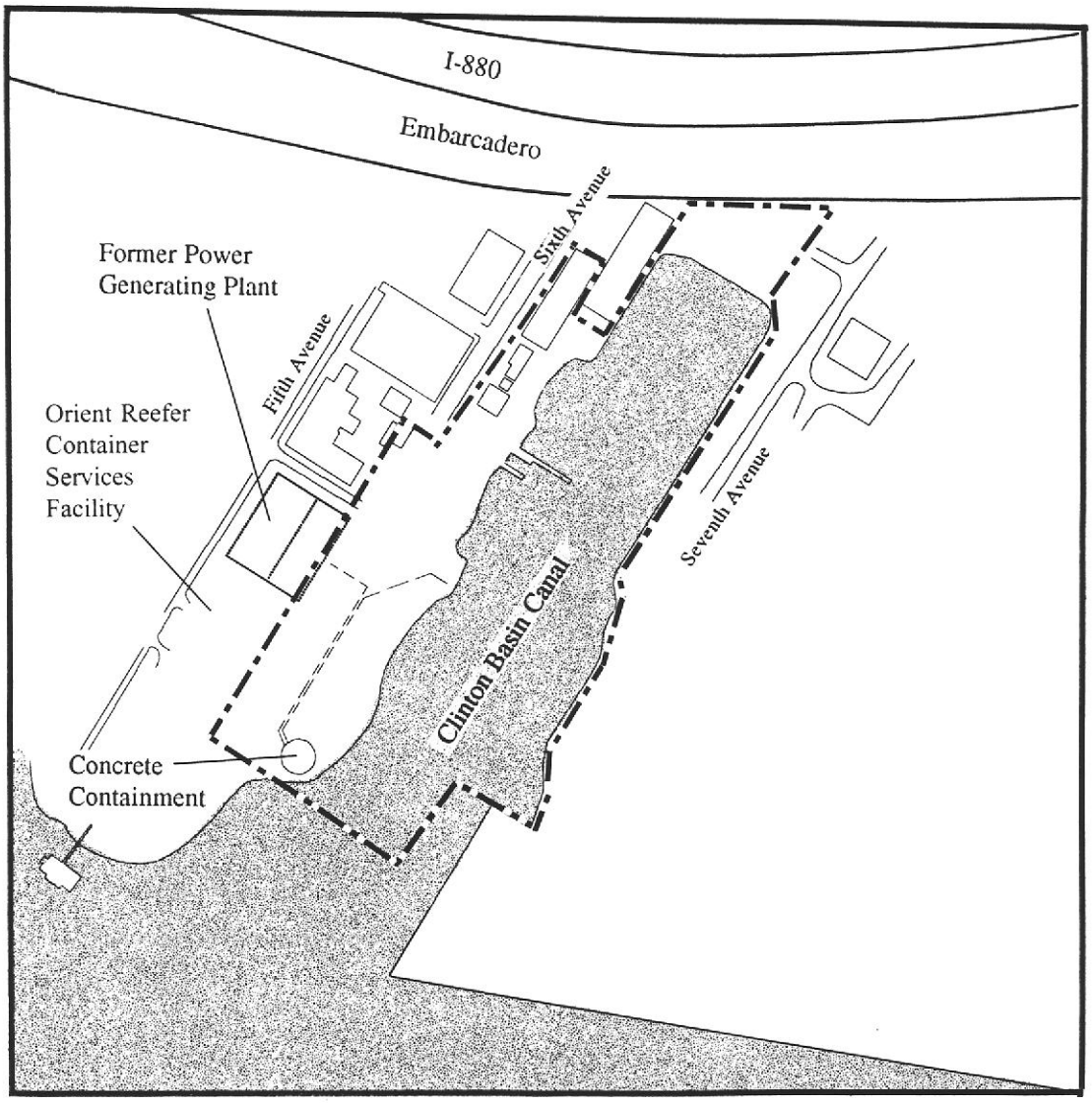
Sincerely,

Yane Nordhav
Principal
Reg. Geologist No. 4009

Rhodora Del Rosario
Civil Engineer

PROJECT AND REGIONAL LOCATION

Figure 1



Seabreeze Yacht Center
Oakland, California

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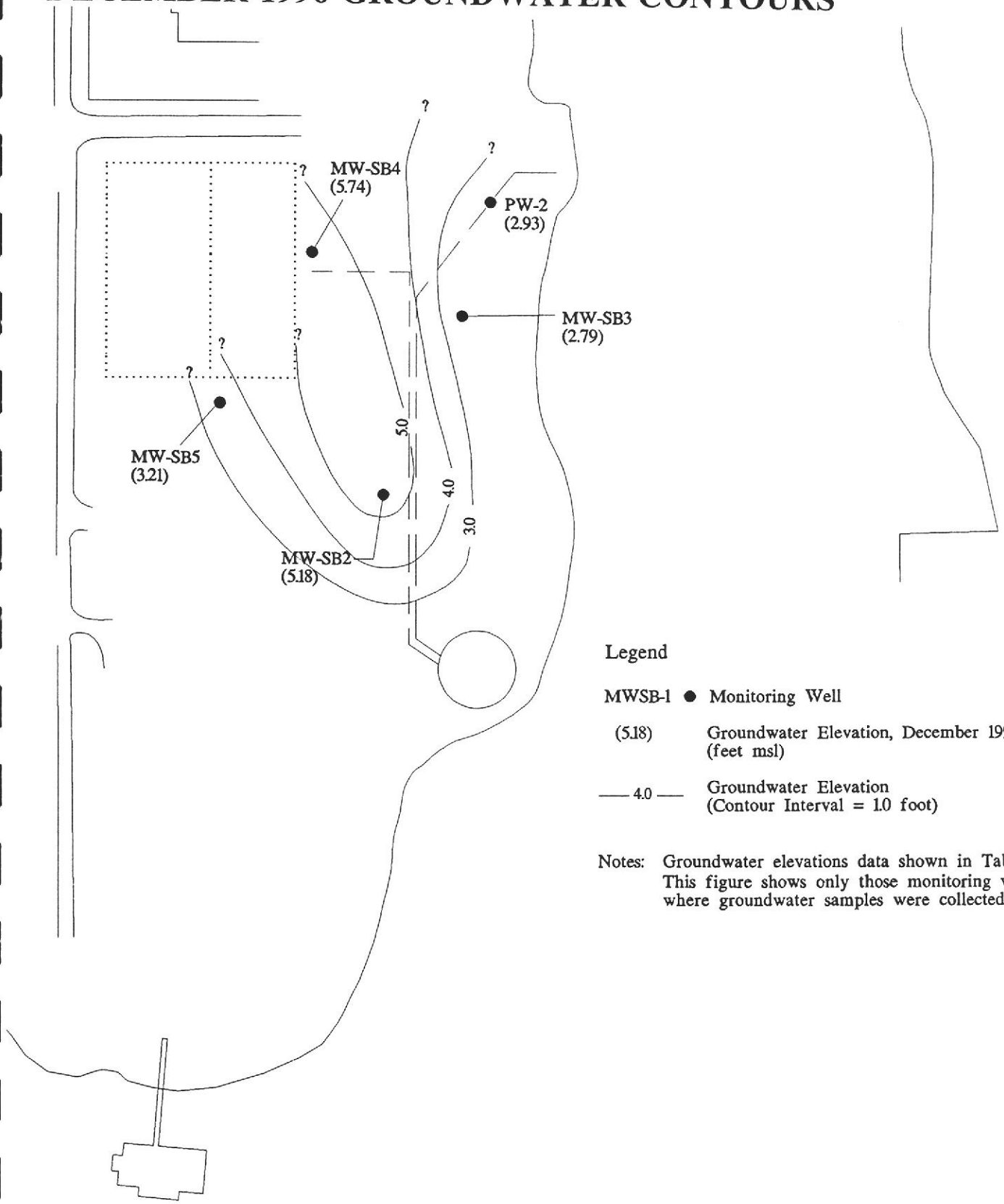
S9171-CO 8/18/95

MONITORING WELL LOCATIONS AND DECEMBER 1996 GROUNDWATER CONTOURS

Figure 2



Legend

MWSB-1 ● Monitoring Well

(5.18) Groundwater Elevation, December 1996 (feet msl)

—— 4.0 —— Groundwater Elevation (Contour Interval = 1.0 foot)

Notes: Groundwater elevations data shown in Table 2. This figure shows only those monitoring wells where groundwater samples were collected.

0 100 Feet

Seabreeze Yacht Center
Sixth Avenue
Oakland, California

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TABLE 1
ANALYTICAL RESULTS
Seabreeze Yacht Center, Oakland, California
(mg/L)

Sample ID	Sample Date	Metals[1]		Total Extractable Hydrocarbons[2]		
		Lead	Copper	Diesel	Bunker C	Motor Oil
PW-2	2/2/95	**0.0043**	--	--	--	--
	3/6/95	--	--	**1.7**[3]	**4.4**[3]	**1.1**[3]
	7/1/96	<0.003	<0.01	<0.049[4]	<0.3[4]	--
	9/16/96	<0.003[10]	<0.005[11]	<0.05[4]	<0.5[4]	<0.25[4]
	12/11/96	**0.0101**[10]	<0.003[11]	**0.11**[4,13]	<0.5[4]	<0.25[4]
MW-SB2	4/9/91	<0.06[7]	<0.02[8]	--	--	--
	4/19/91	<0.07	**0.0481**	--	--	--
	1/10/94	<0.10[7]	<0.02[8]	--	--	--
	12/26/94	<0.0048[8]	**0.014**[8]	--	--	--
	3/6/95	--	--	**16.0**[3]/ **18.0**[3,5]	**28.0**[3]/ **33.0**[3,5]	**4.9**[3]/ <25.0[3,5]
	7/1/96	<0.003	**0.055**	<0.05[4]	<0.3[4]	--
	9/16/96[9]	<0.003[10]	<0.005[11]	<0.05[4]	<0.5[4]	<0.25[4]
	12/11/96	**0.00855**[10]	**0.00354**[11]	**0.16**[4,13]	<0.5[4]	<0.25[4]
MW-SB2A	7/1/96	<0.003	**0.065**	**0.17**[4,6]	<0.3[4]	--
	9/16/96	<0.003[10]	<0.005[11]	**0.17**[4]	<0.5[4]	<0.25[4]
MW-SB3	3/6/95	--	--	**4.5**[3]	**5.8**[3]	**1.5**[3]
	7/1/96	**0.0036**	<0.01	<0.049[4]	<0.3[4]	--
	9/16/96	<0.003[10]	<0.005[11]	<0.05[3,4]	<0.5[4]	**0.28**[3,4]
	12/11/96	<0.003[10]	<0.003[11]	**0.19**[4,13]	<0.5[4]	<0.25[4]
MW-SB4	3/3/95	--	--	**4.5**[3]	**3.0**[3]	**0.66**[3]
	7/1/96	**0.014**	**0.013**	<0.049[4]	<0.3[4]	--
	9/16/96	<0.003[10]	<0.005[11]	<0.05[4]	<0.5[4]	<0.25[4]
	12/11/96	**0.00465**[10]	**0.00674**[11]	**0.12**[4,13]	<0.5[4]	<0.25[4]
MW-SB5	3/6/95	--	--	**15.0**[3]/ **15.0**[3,5]	**34.0**[3]/ **31.0**[3,5]	**8.1**[3]/ **6.9**[3,5]
	7/1/96	**0.0031**	**0.012**	<0.049[4]	<0.3[4]	--
	9/16/96	<0.003[10]	<0.005[11]	**0.14**[3,4,12]	<0.5[4]	<0.25[4]
	12/11/96	**0.00344**[10]	<0.003[11]	**0.16**[4,13]	<0.5[4]	<0.25[4]
MW-SB5A	12/11/96	<0.003[10]	<0.003[11]	**0.081**[4,13]	<0.05[4]	<0.25[4]

Notes: <x.x = analyte not identified above laboratory reporting limit of x.x.
x.x = concentrations reported at or above laboratory reporting limit.
x.x/x.x = duplicate sample.
-- = no analysis performed.
MW-SB2A = duplicate sample of MW-SB2.
MW-SB5A = duplicate sample of MW-SB5.
Refer to Figure 2 for well locations.
Laboratory reports for the December 1996 sampling event are included in Attachment B.

Table 1, *continued*

[1] Analytical Method EPA 6010A, unless otherwise noted.
[2] Analytical Method California DOHS, LUFT Manual (EPA 8015M).
[3] Sample chromatogram does not resemble hydrocarbon standard.
[4] Samples were subjected to silica gel cleanup (EPA 3630) prior to analysis.
[5] Duplicate sample centrifuged prior to TEH analyses.
[6] Sample exhibited fuel pattern which did not resemble standard.
[7] Analyzed using EPA Method 7420.
[8] Analyzed using EPA Method 7210.
[9] Sample also analyzed for mercury, arsenic, cadmium, chromium, iron, nickel, silver, and zinc. All metals were reported below the corresponding laboratory reporting limits except for iron, which was identified at 0.13 mg/L.
[10] Analyzed using EPA method 7421. Sample filtered by the laboratory prior to analysis.
[11] Analyzed using EPA Method 7211. Sample filtered by the laboratory prior to analysis.
[12] Laboratory indicated that miscellaneous peaks were present in the diesel range.
[13] The laboratory indicated that the analyte was also found in the corresponding method blank at a concentration of 0.063 mg/L as well as in the sample, verifying laboratory contamination. The sample chromatographic pattern matched that of the laboratory contaminant reported in the method blank. Therefore, the reported concentration is a false positive concentration.

TABLE 2
GROUNDWATER ELEVATION DATA
Seabreeze Yacht Center, Oakland, California

Well	Date	Time	Surface Elevation (msl)	TOC Elevation (msl)	Depth to Groundwater (feet)	Groundwater Elevation (msl)
PW-2[1]	2/15/95[2]	--	5.56	6.57	4.60	1.97
	3/3/95	9:10			3.90	2.67
	6/28/96	7:37			3.83	2.74
	9/16/96	8:54			4.19	2.38
	12/11/96	10:10			3.64	2.93
MW-SB2[3]	4/19/91	11:09	6.2	7.18	5.38	1.8
	7/9/91	11:04			3.7	3.48
	1/10/94	12:31			3.08	4.1
	1/26/94	13:40			1.63	5.5
	11/14/94	7:30			4.8	2.38
		11:05			4.76	2.42
		14:14			4.73	2.45
	11/28/94	9:00			2.85	4.33
	3/3/95	8:50			2.84	4.34
	6/28/96	7:40			3.76	3.42
	9/16/96	9:01			4.30	2.88
	12/11/96	11:15			2.00	5.18
MW-SB3[3]	11/14/94	7:25	6.0	8.10	8.23	-0.13
		11:00			8.14	-0.04
		14:12			8.07	0.03
	11/28/94	8:53			6.32	1.78
	12/06/94	8:37			6.15	1.95
	3/3/95	8:40			6.78	1.32
	6/28/96	7:35			5.46	2.64
	9/16/96	8:55			5.78	2.32
	12/11/96	10:32			5.31	2.79
MW-SB4[4]	11/28/94	9:02	6.6	6.39	1.05	5.34
	3/3/95	8:35			0.90	5.49
	6/28/96	8:28			3.16	3.23
	9/16/96	8:52			2.85	3.54
	12/11/96	9:28			0.65	5.74
MW-SB5[4]	11/28/94	8:40	6.9	6.30	6.32	-0.02
	3/3/95	9:00			2.54	3.76
	6/28/96	8:45			2.43	3.87
	9/16/96	10:15			2.52	3.78
	12/11/96	14:12			3.09	3.21

Notes: 11/14/94: High tide 9:21; Low tide 15:50.
11/28/94: High tide 7:46.
2/15/95: High tide 5:14 and 18:03; Low tide 23:34.
3/3/95: High tide 13:14; Low tide 7:03.
6/28/96: High tide 11:41; Low tide 4:35.
9/16/96: High tide 2:57 and 14:57; Low tide 8:23 and 21:07.
12/11/96: High tide 11:47; Low tide 5:35 and 18:30.
-- = No data.
msl = Feet above mean sea level.

Table 2, *continued*

TOC = Top of casing.
Refer to Figure 2 for well locations.

[1] Well survey conducted by Bates & Bailey 2/8/95.
[2] Groundwater elevation measured by SOMA; all other elevations measured by BASELINE.
[3] Well survey conducted by Bates & Bailey 11/18/94.
[4] Well survey conducted by Bates & Bailey 11/28/94.

ATTACHMENT A

GROUNDWATER SAMPLING FORMS

GROUNDWATER SAMPLING

Project no.:	S9171-C1	Well no.:	PW-2	Date:	12/11/96
Project name:	Seabreeze Yacht Center	Depth of well from TOC (feet):	15		
Location:	260 6th Avenue	Well diameter (inch):	4		
	Oakland, CA	Screened interval from TOC (feet):	6.5-15.0		
Recorded by:	WKS/BB	TOC elevation (feet):	6.57		
Weather:	Cloudy	Water level from TOC (feet):	3.64	Time:	10:10
Precip in past		Product level from TOC (feet):	None	Time:	10:10
5 days (inch):	~2.0	Water level measurement:	Dual interface probe		

VOLUME OF WATER TO BE REMOVED BEFORE SAMPLING:

[(15 ft) - (3.64 ft)] × (0.166 ft)² × 3.14 × 7.48 =

Well depth Water level Well radius

7.4 gallons in one well volume
22.2 gallons in 3 well volumes
8.0 total gallons removed

CALIBRATION:

	Time	Temp (° C)	pH	EC (µmho/cm)
Calibration Standard:			7.00/4.01	1•000
Before Purging:	9:20	20.5	7.00/4.01	975
After Purging:	14:58	20.9	7.18/4.13	1•000

Note: DO meter was calibrated prior to purging.

FIELD MEASUREMENTS:

Time	Temp (° C)	pH	EC (µmho/cm)	DO (ppm)	Cumulative Gallons Removed	Appearance
12:02	18.5	6.60	14•000	0.70	2.0	Clear, with black particulate matter
12:21	18.5	6.45	27•000	0.70	6.0	Clear, with black particulate matter
12:32	19.0	6.81	28•000	0.70	7.5	Clear, with black particulate matter
12:37	SAMPLED WELL					
12:39	19.4	6.70	29•000	0.70	8.0	Clear, with black particulate matter
	WELL PUMPED DRY					

Water level after purging prior to sampling (feet):	--	Time:	--
Appearance of sample:	Clear, with black particulate matter	Time:	12:37
Duplicate/blank number:	None	Time:	--
Purge method:	Peristaltic pump		
Sampling equipment:	Peristaltic pump, polyethylene tubing	VOC attachment:	None
Sample containers:	One 1-liter amber glass, one 1-liter plastic		
Sample analyses:	TEPH, copper, lead	Laboratory:	Pace Analytical
Decontamination method:	TSP and water, DI water rinse	Rinsate disposal:	On-site drum (MW-SB2 to 5 & PW-2)

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GROUNDWATER SAMPLING

Project no.:	S9171-C1	Well no.:	MW-SB2	Date:	12/11/96
Project name:	Seabreeze Yacht Center	Depth of well from TOC (feet):	11.0		
Location:	260 6th Avenue	Well diameter (inch):	2		
	Oakland, CA	Screened interval from TOC (feet):	3-11		
Recorded by:	WKS/BB	TOC elevation (feet):	7.18		
Weather:	Cloudy	Water level from TOC (feet):	2.00	Time:	11:15
Precip in past		Product level from TOC (feet):	None	Time:	11:15
5 days (inch):	~2.0	Water level measurement:	Dual interface probe		

VOLUME OF WATER TO BE REMOVED BEFORE SAMPLING:

[(11.0 ft) - (2.00 ft)] × (0.083 ft)² × 3.14 × 7.48 =

Well depth Water level Well radius

1.5 gallons in one well volume
4.5 gallons in 3 well volumes
5.0 total gallons removed

CALIBRATION:

	Time	Temp (° C)	pH	EC (µmho/cm)
Calibration Standard:			7.00/4.01	1•000
Before Purging:	9:20	20.5	7.00/4.01	975
After Purging:	14:58	20.9	7.18/4.13	1•000

Note: DO meter was calibrated prior to purging.

FIELD MEASUREMENTS:

Time	Temp (° C)	pH	EC (µmho/cm)	DO (ppm)	Cumulative Gallons Removed	Appearance
13:03	16.6	6.33	11•000	0.50	0.5	Clear, with black particulates
13:06	16.1	6.44	7•000	0.50	1.0	Clear, with black particulates
13:13	15.9	6.55	7•000	0.45	2.0	Clear, with black particulates
13:15	16.4	6.57	12•000	0.50	3.0	Clear, with black particulates
13:20	17.2	6.61	14•500	0.50	4.0	Clear, with black particulates
13:24	SAMPLED WELL					
13:27	17.5	6.65	15•000	0.55	5.0	Clear, with black particulates
	WELL PUMPED DRY					

Water level after purging prior to sampling (feet):	--	Time:	--
Appearance of sample:	Clear, with black particulates	Time:	13:24
Duplicate/blank number:	None	Time:	--
Purge method:	Peristaltic pump		
Sampling equipment:	Peristaltic pump, polyethylene tubing	VOC attachment:	None
Sample containers:	One 1-liter amber glass, one 1-liter plastic		
Sample analyses:	TEPH, copper, lead	Laboratory:	Pace Analytical
Decontamination method:	TSP and water, DI water rinse	Rinsate disposal:	On-site drum (MW-SB2 to 5 & PW-2)

BASELINE · 5900 Hollis Street, Suite D · Emeryville, CA 94608 · (510) 420-8686 · Fax (510) 420-1707

GROUNDWATER SAMPLING

Project no.:	S9171-C1	Well no.:	MW-SB3	Date:	12/11/96
Project name:	Seabreeze Yacht Center	Depth of well from TOC (feet):	11.06		
Location:	280 6th Street	Well diameter (inch):	2		
	Oakland, CA	Screened interval from TOC (feet):	4.86-11.06		
Recorded by:	WKS/BB	TOC elevation (feet):	8.10		
Weather:	Cloudy	Water level from TOC (feet):	5.31	Time:	10:32
Precip in past		Product level from TOC (feet):	None	Time:	10:32
5 days (inch):	~2.0	Water level measurement:	Dual interface probe		

VOLUME OF WATER TO BE REMOVED BEFORE SAMPLING:

[(11.06 ft) - (5.31 ft)] × (0.083 ft)² × 3.14 × 7.48 =
Well depth Water level Well radius

0.93 gallons in one well volume
2.79 gallons in 3 well volumes
4.0 total gallons removed

CALIBRATION:

	Time	Temp (° C)	pH	EC (µmho/cm)
Calibration Standard:			7.00/4.01	1•000
Before Purging:	9:20	20.5	7.00/4.01	975
After Purging:	14:58	20.9	7.18/4.13	1•000

Note: DO meter was calibrated prior to purging.

FIELD MEASUREMENTS:

Time	Temp (° C)	pH	EC (µmho/cm)	DO (ppm)	Cumulative Gallons Removed	Appearance
11:10	19.0	6.32	21•000	0.76	1.0	Clear, with black particulates
11:20	18.5	6.34	18•500	0.50	2.2	Clear, with black particulates
11:25	19.0	6.50	20•500	0.50	2.5	Clear, with black particulates
11:31	19.5	6.59	22•000	0.50	3.0	Clear, with black particulates
11:33	SAMPLED WELL					
11:37	19.8	6.63	23•000	0.52	4.0	Clear, with black particulates

Water level after purging prior to sampling (feet):	--	Time:	--
Appearance of sample:	Clear to very slightly turbid with black particulates and petroleum odor	Time:	11:33
Duplicate/blank number:	None	Time:	--
Purge method:	Peristaltic pump		
Sampling equipment:	Peristaltic pump, polyethylene tubing	VOC attachment:	None
Sample containers:	One 1-liter amber glass, one 1-liter plastic		
Sample analyses:	TEPH, copper, lead	Laboratory:	Pace Analytical
Decontamination method:	TSP and water, DI water rinse	Rinsate disposal:	On-site drum (MW-SB2 to 5 & PW-2)

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GROUNDWATER SAMPLING

Project no.:	S9171-C1	Well no.:	MW-SB4	Date:	12/11/96
Project name:	Seabreeze Yacht Center	Depth of well from TOC (feet):	14.75		
Location:	260 6th Avenue	Well diameter (inch):	2		
	Oakland, CA	Screened interval from TOC (feet):	2.55-14.75		
Recorded by:	WKS/BB	TOC elevation (feet):	6.39		
Weather:	Cloudy	Water level from TOC (feet):	0.65	Time:	9:28
Precip in past		Product level from TOC (feet):	None	Time:	9:28
5 days (inch):	~2.0	Water level measurement:	Dual interface probe		

VOLUME OF WATER TO BE REMOVED BEFORE SAMPLING:

[(14.75 ft) - (0.65 ft)] × (0.083 ft)² × 3.14 × 7.48 =
Well depth Water level Well radius

2.3 gallons in one well volume
6.9 gallons in 3 well volumes
7.0 total gallons removed

CALIBRATION:

	Time	Temp (° C)	pH	EC (µmho/cm)
Calibration Standard:			7.00/4.01	1•000
Before Purging:	9:20	20.5	7.00/4.01	975
After Purging:	14:58	20.9	7.18/4.13	1•000

Note: DO meter was calibrated prior to purging.

FIELD MEASUREMENTS:

Time	Temp (° C)	pH	EC (µmho/cm)	DO (ppm)	Cumulative Gallons Removed	Appearance
10:05	17.8	7.00	5•000	0.50	0.75	Clear to very slightly turbid
10:15	16.4	6.89	1•400	0.26	3.0	Clear
10:25	16.4	7.00	1•400	0.26	4.5	Clear
10:38	16.4	6.86	1•450	0.27	7.0	Clear
10:42	SAMPLED WELL					

Water level after purging prior to sampling (feet):	--	Time:	--
Appearance of sample:	Clear to very slight turbid, petroleum odor	Time:	10:42
Duplicate/blank number:	None	Time:	--
Purge method:	Peristaltic pump		
Sampling equipment:	Peristaltic pump, polyethylene tubing	VOC attachment:	None
Sample containers:	One 1-liter amber glass, one 1-liter plastic		
Sample analyses:	TEPH, copper, lead	Laboratory:	Pace Analytical
Decontamination method:	TSP and water, DI water rinse	Rinsate disposal:	On-site drum (MW-SB2 to 5 & PW-2)

S9171D96.XLS (1/14/97)

GROUNDWATER SAMPLING

Project no.:	S9171-C1	Well no.:	MW-SB5	Date:	12/11/96
Project name:	Seabreeze Yacht Center	Depth of well from TOC (feet):	14.75		
Location:	260 6th Avenue	Well diameter (inch):	2		
	Oakland, CA	Screened interval from TOC (feet):	2.55-14.75		
Recorded by:	WKS/BB	TOC elevation (feet):	6.30		
Weather:	Cloudy	Water level from TOC (feet):	3.09	Time:	14:12
Precip in past		Product level from TOC (feet):	None	Time:	14:12
5 days (inch):	~2.0	Water level measurement:	Dual interface probe		

VOLUME OF WATER TO BE REMOVED BEFORE SAMPLING:

[(14.75 ft) - (3.09 ft)] × (0.083 ft)² × 3.14 × 7.48 =

Well depth Water level Well radius

1.9 gallons in one well volume
5.7 gallons in 3 well volumes
6.0 total gallons removed

CALIBRATION:

	Time	Temp (° C)	pH	EC (µmho/cm)
Calibration Standard:			7.00/4.01	1•000
Before Purging:	9:20	20.5	7.00/4.01	975
After Purging:	14:58	20.9	7.18/4.13	1•000

Note: DO meter was calibrated prior to purging.

FIELD MEASUREMENTS:

Time	Temp (° C)	pH	EC (µmho/cm)	DO (ppm)	Cumulative Gallons Removed	Appearance
14:16	19.2	6.48	27•500	0.70	0.5	Light amber color
14:25	18.4	6.54	24•500	0.50	1.5	Light amber color
14:30	18.6	6.56	25•000	0.50	2.5	Light amber color
14:37	19.2	6.65	26•000	0.50	4.0	Light amber color
14:42	19.6	6.71	27•500	0.60	5.0	Light amber color
14:51	19.6	6.75	29•000	0.50	6.0	Light amber color
14:55 SAMPLED WELL						

Water level after purging prior to sampling (feet):	--	Time:	--
Appearance of sample:	Light amber color, petroleum odor	Time:	14:55
Duplicate/blank number:	MW-SB5A	Time:	14:13
Purge method:	Peristaltic pump		
Sampling equipment:	Peristaltic pump, polyethylene tubing	VOC attachment:	None
Sample containers:	One 1-liter amber glass, one 1-liter plastic		
Sample analyses:	TEPH, copper, lead	Laboratory:	Pace Analytical
Decontamination method:	TSP and water, DI water rinse	Rinsate disposal:	On-site drum (MW-SB2 to 5 & PW-2)

S9171D96.XLS (1/14/97)

ATTACHMENT B

LABORATORY REPORTS

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

Pace Analytical

December 30, 1996

Ms. Rhodora DelRosario
Baseline
5900 Hollis Street, Suite D
Emeryville, CA 94608

RE: PACE Project Number: 707268
Client Project ID: Port of OAK/Seabreeze Site

Dear Ms. DelRosario:

Enclosed are the results of analyses for sample(s) received on December 12, 1996. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Ron Chew
Project Manager

Enclosures

REPORT OF LABORATORY ANALYSIS

Pace Analytical

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

RECEIVED
JAN 1 1997
BASELINE

DATE: 12/30/96
PAGE: 1

Baseline
5900 Hollis Street, Suite D
Emeryville, CA 94608

PACE Project Number: 707268
Client Project ID: Port of OAK/Seabreeze Site

Attn: Ms. Rhodora DelRosario
Phone: (510)420-8686

PACE Sample No: 70825401 Date Collected: 12/11/96
Client Sample ID: PW-2 Date Received: 12/12/96

Parameters	Results	Units	PRL	Analyzed	Method	Analyst	CAS#	Footnotes
Metals								
Dissolved Lead, AAS Furnace								
Lead, Dissolved	10.1	ug/L	3	12/20/96	EPA 7421	BBF	7439-92-1	
Date Digested				12/19/96				
Dissolved Copper, AAS Furnace								
Copper, Dissolved	ND	ug/L	3	12/23/96	EPA 7211	BBF	7440-50-8	
Date Digested				12/19/96				
GC								
TPH in Water by 8015 Modified								
Diesel Fuel	0.11	mg/L	0.05	12/21/96	TPH by EPA 8015M	JMH	11-84-7...	1,2
Motor Oil	ND	mg/L	0.25	12/21/96	TPH by EPA 8015M	JMH		
Bunker C	ND	mg/L	0.5	12/21/96	TPH by EPA 8015M	JMH		
n-Pentacosane (S)	82	%		12/21/96	TPH by EPA 8015M	JMH	629-99-2	
Date Extracted				12/17/96				

REVISED REPORT
JAN 8 1997
PACE ANALYTICAL SERVICES, INC.
PETALUMA, CA

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: 707268
Client Project ID: Port of OAK/Seabreeze Site

PACE Sample No: 70825419 Date Collected: 12/11/96
Client Sample ID: MW-SB2 Date Received: 12/12/96

Parameters	Results	Units	PRL	Analyzed	Method	Analyst	CAS#	Footnotes
Metals								
Dissolved Lead, AAS Furnace								
Lead, Dissolved	8.55	ug/L	3	12/20/96	EPA 7421	BBF	7439-92-1	
Date Digested				12/19/96				
Dissolved Copper, AAS Furnace								
Copper, Dissolved	3.54	ug/L	3	12/27/96	EPA 7211	SMS	7440-50-8	
Date Digested				12/19/96				
TPH in Water by 8015 Modified								
Diesel Fuel	0.16	mg/L	0.05	12/21/96	TPH by EPA 8015M	JMH	11-84-7...	2,3
Motor Oil	ND	mg/L	0.25	12/21/96	TPH by EPA 8015M	JMH		
Bunker C	ND	mg/L	0.5	12/21/96	TPH by EPA 8015M	JMH		
n-Pentacosane (S)	80	%		12/21/96	TPH by EPA 8015M	JMH	629-99-2	
Date Extracted				12/17/96				

REVISED REPORT
JAN 8 1997
PACE ANALYTICAL SERVICES, INC.
PETALUMA, CA

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: 707268
Client Project ID: Port of OAK/Seabreeze Site

PACE Sample No: 70825435 Date Collected: 12/11/96
Client Sample ID: MW-SB3 Date Received: 12/12/96

Parameters	Results	Units	PRL	Analyzed	Method	Analyst	CAS#	Footnotes
Metals								
Dissolved Lead, AAS Furnace								
Lead, Dissolved	ND	ug/L	3	12/20/96	EPA 7421	BBF	7439-92-1	
Date Digested				12/19/96				
Dissolved Copper, AAS Furnace								
Copper, Dissolved	ND	ug/L	3	12/27/96	EPA 7211	SMS	7440-50-8	
Date Digested				12/19/96				
TPH in Water by 8015 Modified								
Diesel Fuel	0.19	mg/L	0.05	12/21/96	TPH by EPA 8015M	JMH	11-84-7...	2,4
Motor Oil	ND	mg/L	0.25	12/21/96	TPH by EPA 8015M	JMH		
Bunker C	ND	mg/L	0.5	12/21/96	TPH by EPA 8015M	JMH		
n-Pentacosane (S)	87	%		12/21/96	TPH by EPA 8015M	JMH	629-99-2	
Date Extracted				12/17/96				

REVISED REPORT
JAN 9 1997
PACE ANALYTICAL SERVICES, INC.
PETALUMA, CA

REPORT OF LABORATORY ANALYSIS

Pace Analytical

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

PACE Project Number: 707268
Client Project ID: Port of OAK/Seabreeze Site

PACE Sample No: 70825443 Date Collected: 12/11/96
Client Sample ID: MW-SB4 Date Received: 12/12/96

Parameters	Results	Units	PRL	Analyzed	Method	Analyst	CAS#	Footnotes
Metals								
Dissolved Lead, AAS Furnace								
Lead, Dissolved	4.65	ug/L	3	12/20/96	EPA 7421	BBF	7439-92-1	
Date Digested				12/19/96				
Dissolved Copper, AAS Furnace								
Copper, Dissolved	6.74	ug/L	3	12/27/96	EPA 7211	SMS	7440-50-8	
Date Digested				12/19/96				
TPH in Water by 8015 Modified								
Diesel Fuel	0.12	mg/L	0.05	12/21/96	TPH by EPA 8015M	JMH	11-84-7...	2,5
Motor Oil	ND	mg/L	0.25	12/21/96	TPH by EPA 8015M	JMH		
Bunker C	ND	mg/L	0.5	12/21/96	TPH by EPA 8015M	JMH		
n-Pentacosane (S)	90	%		12/21/96	TPH by EPA 8015M	JMH	629-99-2	
Date Extracted				12/17/96				

REVISED REPORT

JAN 3 1997

PACE ANALYTICAL SERVICES, INC.
PETALUMA, CA

REPORT OF LABORATORY ANALYSIS

Pace Analytical

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

PACE Project Number: 707268
Client Project ID: Port of OAK/Seabreeze Site

PACE Sample No: 70825500 Date Collected: 12/11/96
Client Sample ID: MW-SB5 Date Received: 12/12/96

Parameters	Results	Units	PRL	Analyzed	Method	Analyst	CAS#	Footnotes
Metals								
Dissolved Lead, AAS Furnace								
Lead, Dissolved	3.44	ug/L	3	12/20/96	EPA 7421	BBF	7439-92-1	
Date Digested				12/19/96				
Dissolved Copper, AAS Furnace								
Copper, Dissolved	ND	ug/L	3	12/27/96	EPA 7211	SMS	7440-50-8	
Date Digested				12/19/96				
C								
TPH in Water by 8015 Modified								
Diesel Fuel	0.16	mg/L	0.05	12/22/96	TPH by EPA 8015M	JMH	11-84-7...	2,6
Motor Oil	ND	mg/L	0.25	12/22/96	TPH by EPA 8015M	JMH		
Bunker C	ND	mg/L	0.5	12/22/96	TPH by EPA 8015M	JMH		
n-Pentacosane (S)	84	%		12/22/96	TPH by EPA 8015M	JMH	629-99-2	
Date Extracted				12/17/96				

REVISED REPORT

JAN 8 1997

PACE ANALYTICAL SERVICES, INC.
PETALUMA, CA

REPORT OF LABORATORY ANALYSIS

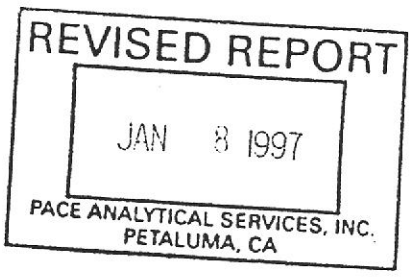
Pace Analytical Services, Inc.
1455 McDowell Blvd. North, Suite D
Petaluma, CA 94954
Tel: 707-792-1865
Fax: 707-792-0342

Pace Analytical

PACE Project Number: 707268
Client Project ID: Port of OAK/Seabreeze Site

PACE Sample No: 70825526 Date Collected: 12/11/96
Client Sample ID: MW-SB5A Date Received: 12/12/96

Parameters	Results	Units	PRL	Analyzed	Method	Analyst	CAS#	Footnotes
Metals								
Dissolved Lead, AAS Furnace								
Lead, Dissolved	ND	ug/L	3	12/20/96	EPA 7421	BBF	7439-92-1	
Date Digested				12/19/96				
Dissolved Copper, AAS Furnace								
Copper, Dissolved	ND	ug/L	3	12/27/96	EPA 7211	SMS	7440-50-8	
Date Digested				12/19/96				
TPH in Water by 8015 Modified								
Diesel Fuel	0.081	mg/L	0.05	12/22/96	TPH by EPA 8015M	JMH	11-84-7...	2,7
Motor Oil	ND	mg/L	0.25	12/22/96	TPH by EPA 8015M	JMH		
Bunker C	ND	mg/L	0.5	12/22/96	TPH by EPA 8015M	JMH		
n-Pentacosane (S)	73	%		12/22/96	TPH by EPA 8015M	JMH	629-99-2	
Date Extracted				12/17/96				



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: 707268
Client Project ID: Port of OAK/Seabreeze Site

PARAMETER FOOTNOTES

ND	Not Detected
NC	Not Calculable
PRL	PACE Reporting Limit
(S)	Surrogate
[1]	Chromatographic pattern matches known laboratory contaminant.
[2]	Analyte is found in the associated blank as well as in the sample.
[3]	Chromatographic pattern matches known laboratory contaminant.
[4]	Chromatographic pattern matches known laboratory contaminant.
[5]	Chromatographic pattern matches known laboratory contaminant.
[6]	Chromatographic pattern matches known laboratory contaminant.
[7]	Chromatographic pattern matches known laboratory contaminant.

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

DATE: 12/30/96
PAGE: 8

Baseline
5900 Hollis Street, Suite D
meryville, CA 94608

PACE Project Number: 707268
Client Project ID: Port of OAK/Seabreeze Site

ttn: Ms. Rhodora DelRosario
hone: (510)420-8686

QC Batch ID: 19958
QC Batch Method: EPA 3520
Date of Batch: 12/17/96
Analysis Method: TPH by EPA 8015M
Analysis Description: TPH in Water by 8015 Modified
ssociated PACE Samples: 70825401 70825419 70825435 70825443 70825500 70825526

ETHOD BLANK: 70827712
ssociated PACE Samples: 70825401 70825419 70825435 70825443 70825500 70825526

arameter	Units	Method Blank Result	PRL	Footnotes
Diesel Fuel	mg/L	0.063	0.05	1
Motor Oil	mg/L	ND	0.25	
unker C	mg/L	ND	0.5	
-Pentacosane (S)	%	74		

ABORATORY CONTROL SAMPLE & LCSD: 70827720 70827738

arameter	Units	Spike Conc.	LCS Result	Spike % Rec	LCSD Result	Spike Dup % Rec	RPD	Footnotes
Diesel Fuel	mg/L	1.0	0.6715	67.2	0.7096	71.0	5	
-Pentacosane (S)				88.0		76.7		

REPORT OF LABORATORY ANALYSIS

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Tel: 707-792-1865
Fax: 707-792-0342

Pace Analytical

QUALITY CONTROL DATA

DATE: 12/30/96
PAGE: 9

Baseline
5900 Hollis Street, Suite D
Emeryville, CA 94608

PACE Project Number: 707268
Client Project ID: Port of OAK/Seabreeze Site

Attn: Ms. Rhodora DelRosario
Phone: (510)420-8686

QC Batch ID: 20059
QC Batch Method: EPA 3020
Date of Batch: 12/19/96
Analysis Method: EPA 7421
Analysis Description: Dissolved Lead, AAS Furnace
Associated PACE Samples: 70825401 70825419 70825435 70825443 70825500 70825526

METHOD BLANK: 70831722
Associated PACE Samples: 70825401 70825419 70825435 70825443 70825500 70825526

Parameter	Units	Method Blank Result	PRL	Footnotes
Lead, Dissolved	ug/L	ND	3	
Copper, Dissolved	ug/L	ND	3	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 70831730 70831748

Parameter	Units	70825401	Spike Conc.	Matrix Spike Result	Spike % Rec	Matrix Sp. Dup. Result	Spike Dup % Rec	RPD	Footnotes
Lead, Dissolved	ug/L	10.12	40	35.55	63.6	36.47	65.9	4	2
Copper, Dissolved	ug/L	2.810	20	15.83	65.1	16.16	66.8	3	

LABORATORY CONTROL SAMPLE & LCSD: 70831755 70831763

Parameter	Units	Spike Conc.	LCS Result	Spike % Rec	LCSD Result	Spike Dup % Rec	RPD	Footnotes
Lead, Dissolved	ug/L	40	39.83	99.6	40.48	101	1	
Copper, Dissolved	ug/L	20	21.25	106	19.73	98.7	7	

REVISED REPORT
JAN 8 1997
PACE ANALYTICAL SERVICES, INC.
PETALUMA, CA

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: 707268
Client Project ID: Port of OAK/Seabreeze Site

QUALITY CONTROL DATA PARAMETER FOOTNOTES

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

ND	Not Detected
NC	Not Calculable
L	PACE Reporting Limit
D	Relative Percent Difference
)	Surrogate
[1]	Chromatographic pattern matches known laboratory contaminant.
[2]	The spike recovery was outside acceptance limits for the MS and /or MSD due to matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data is acceptable.

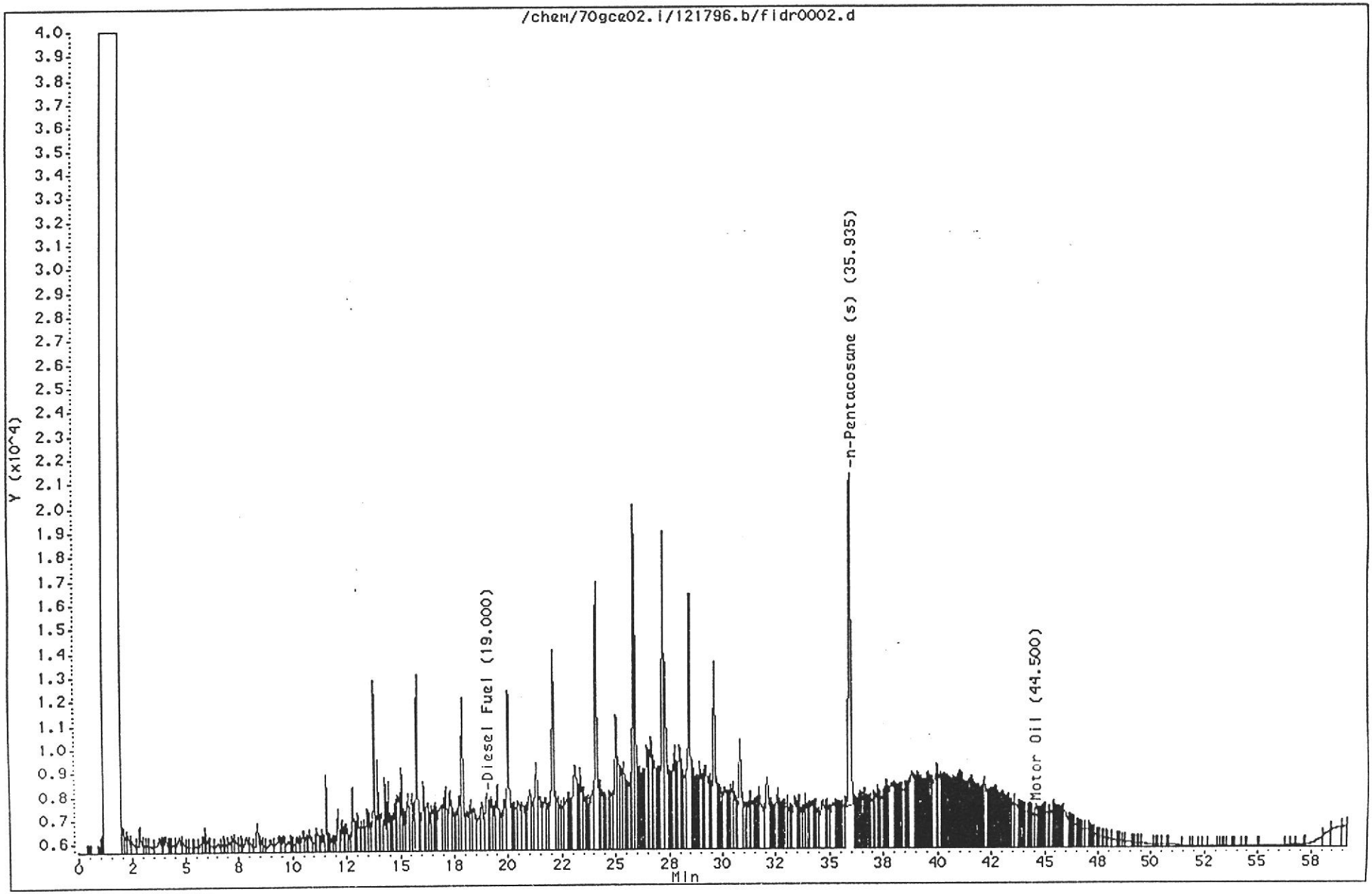
REPORT OF LABORATORY ANALYSIS

Data File: /chem/70gce02.i/121796.b/fidr0002.d
Date : 17-DEC-1996 15:42
Client ID:
Sample Info: CCAL-DIESEL/MO

Column phase: J&W DB-1

Instrument: 70gce02.i
Misc Info: 90D,,,,,2,5,,,,dmof.sub,dmor.sub
Operator: JMH
Column diameter: 0.53

90

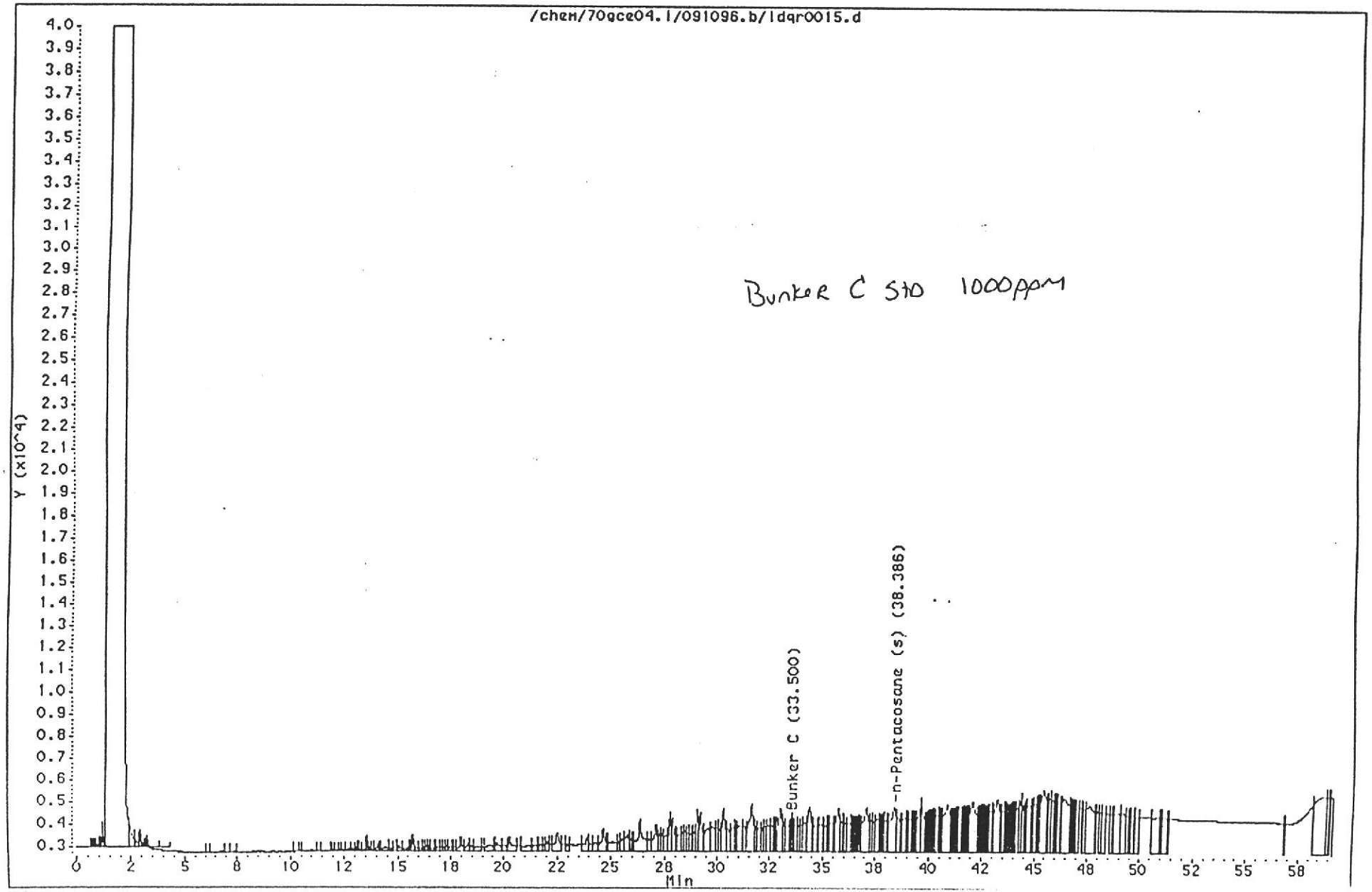


Data File: /chem/70gce04.i/091096.b/idqr0015.d
Date : 11-SEP-1996 04:10
Client ID:
Sample Info: CCAL BUNKER C

Column phase: J&W DB-1

Instrument: 70gce04.i

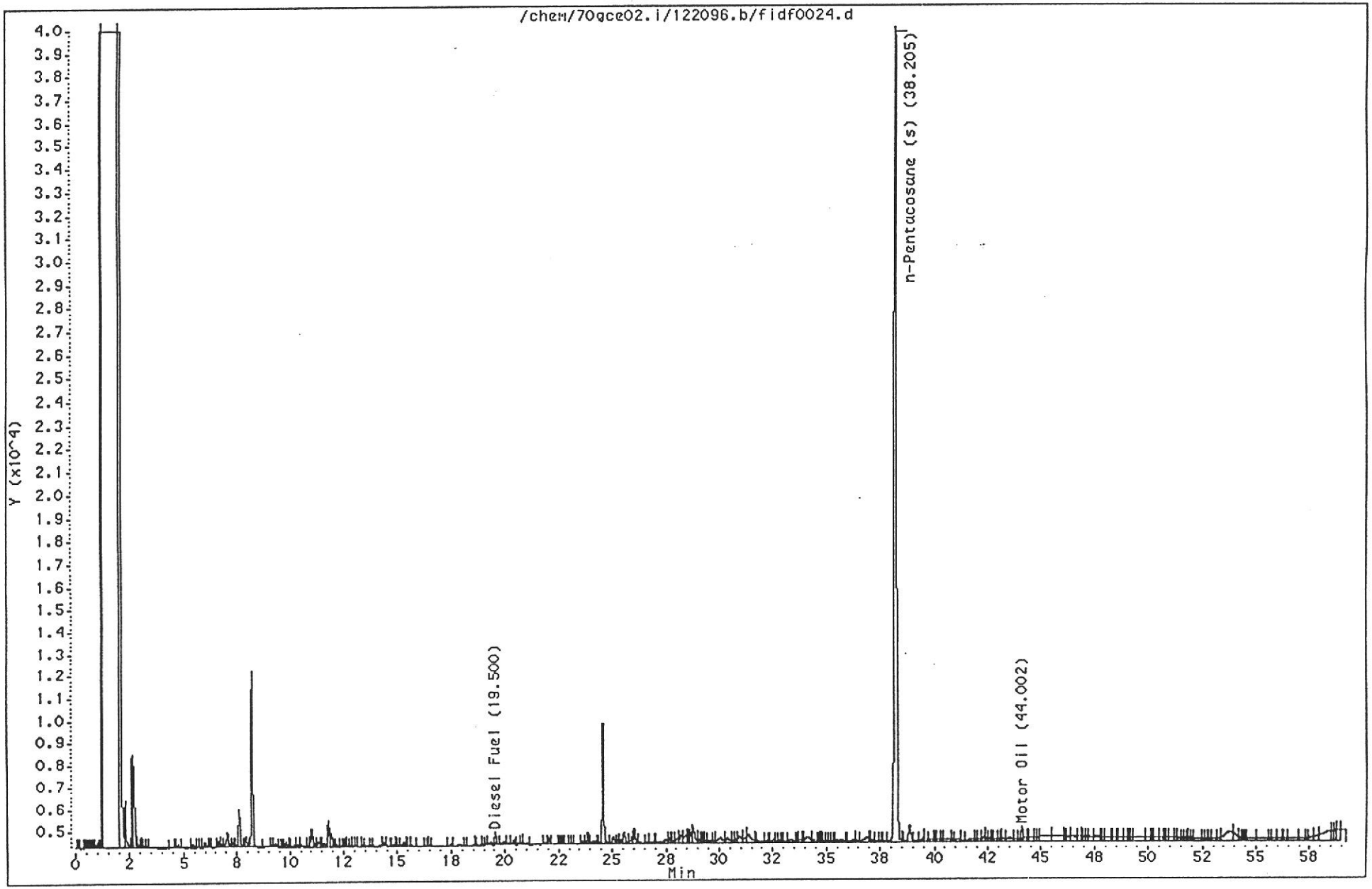
Operator: DLL
Column diameter: 0.53



Data File: /chem/70gce02.i/122096.b/fidf0024.d
Date : 21-DEC-96 17:02
Client ID:
Sample Info: BLANK-water
Volume Injected (uL): 1.0
Column phase: RESTEK XTI-5

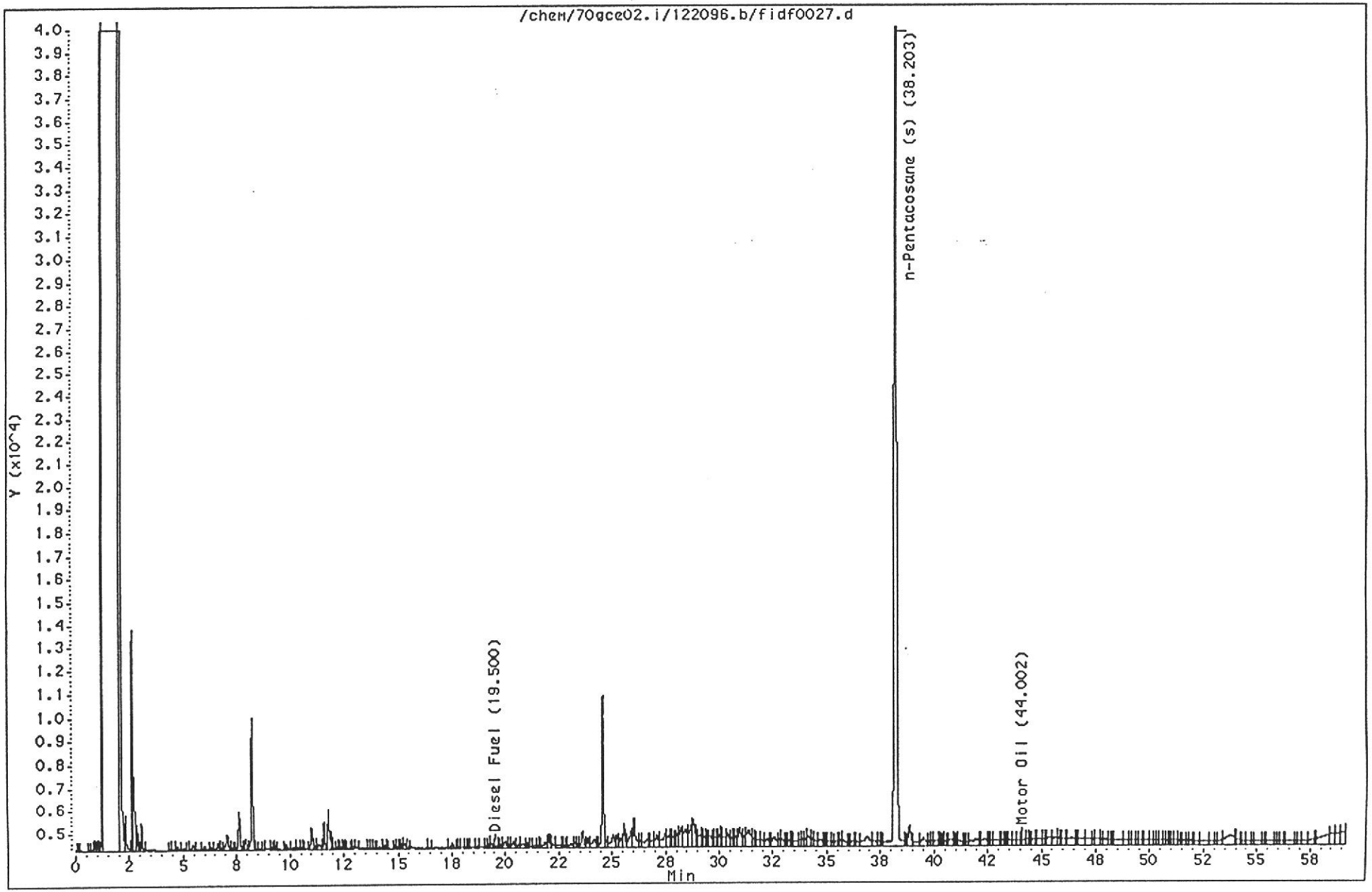
Instrument: 70gce02.i
Misc Info: 70827712,,1,19958,1,3,,BLANK,,,dmof.sub,dmor.sub
Operator: JMH
Column diameter: 0.53

Method Blank



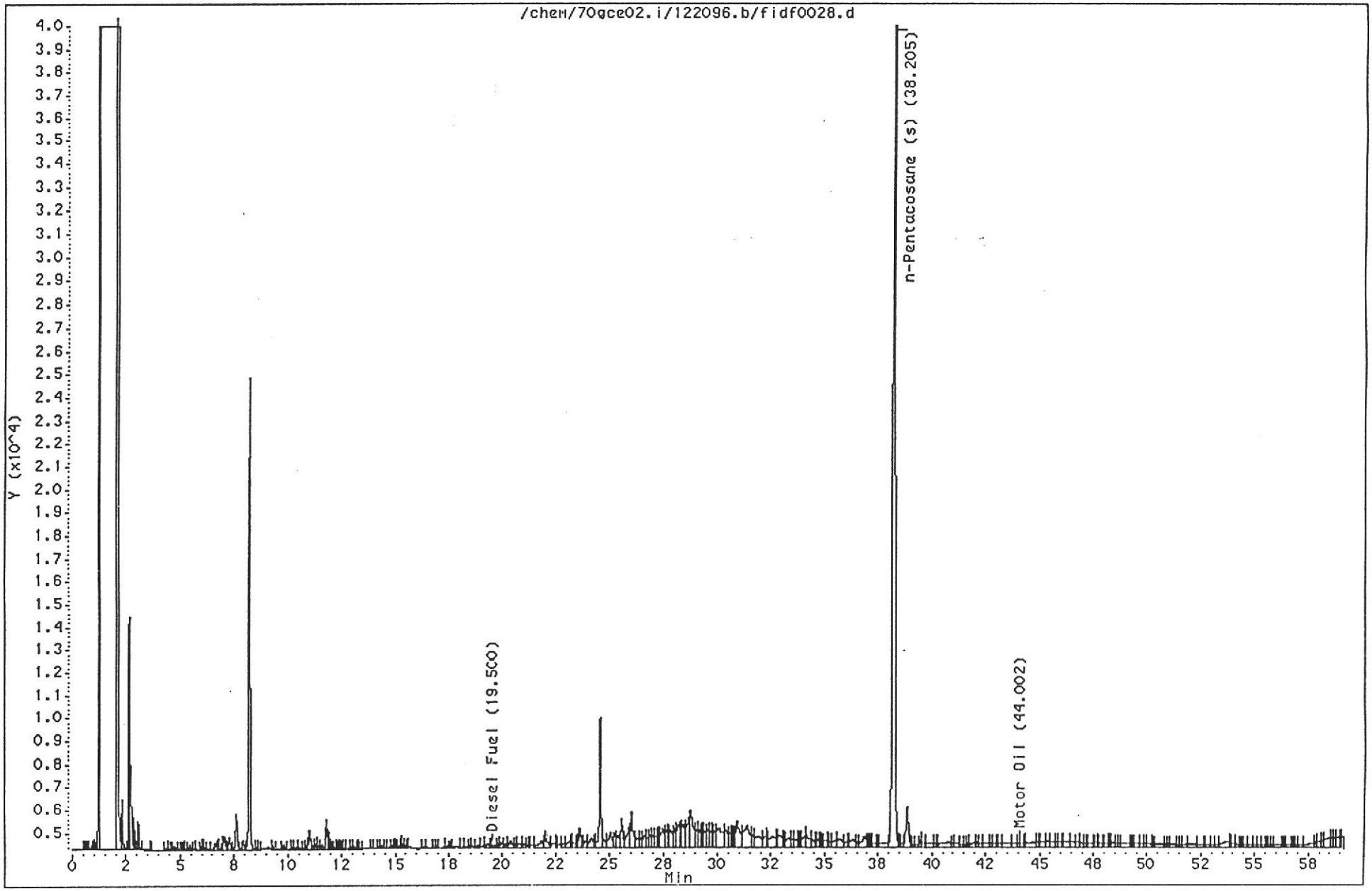
Data File: /chem/70gce02.i/122096.b/fidf0027.d
Date : 21-DEC-96 20:22
Client ID:
Sample Info: SAMPLE-water
Volume Injected (uL): 1.0
Column phase: RESTEK XTI-5

Instrument: 70gce02.i
Misc Info: 70825401,,1,19958,1,0,,,,,dmof.sub,dmor.sub
Operator: JMH
Column diameter: 0.53 PW-2



Data File: /chem/70gce02.i/122096.b/fidf0028.d
Date : 21-DEC-96 21:29
Client ID:
Sample Info: SAMPLE-water
Volume Injected (uL): 1.0
Column phase: RESTEK XTI-5

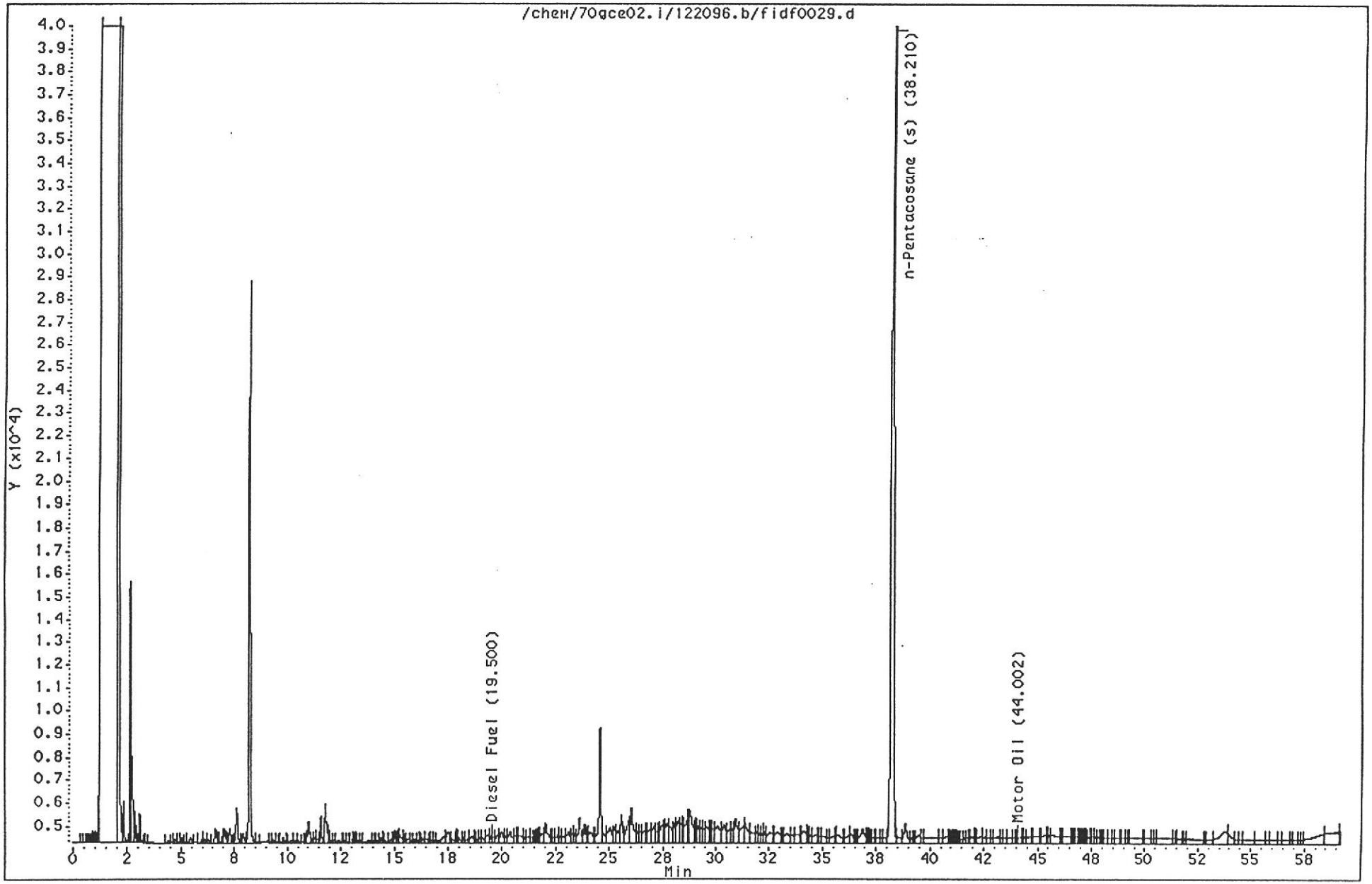
Instrument: 70gce02.i
Misc Info: 70825419,,1,19958,1,0,,,,,dmof.sub,dmor.sub
Operator: JMH
Column diameter: 0.53



Data File: /chem/70gce02.i/122096.b/fidf0029.d
Date : 21-DEC-96 22:36
Client ID:
Sample Info: SAMPLE-water
Volume Injected (uL): 1.0
Column phase: RESTEK XTI-5

Instrument: 70gce02.i
Misc Info: 70825435,,1,19958,1,0,,,,,dmof.sub,dmor.sub
Operator: JMH
Column diameter: 0.53

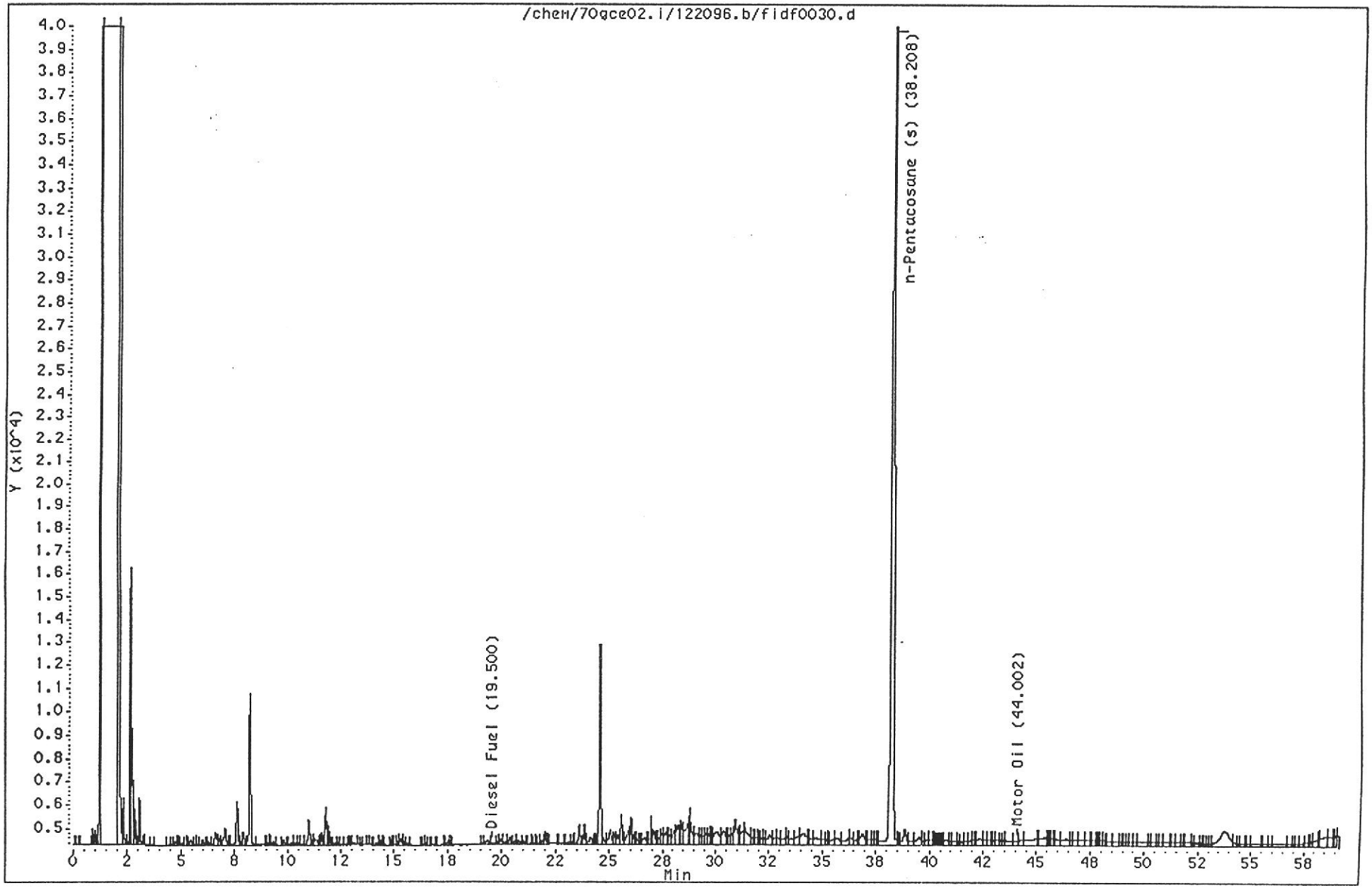
NW SB3



Data File: /chem/70gce02.i/122096.b/fidf0030.d
Date : 21-DEC-96 23:43
Client ID:
Sample Info: SAMPLE-water
Volume Injected (uL): 1.0
Column phase: RESTEK XTI-5

Instrument: 70gce02.i
Misc Info: 70825443,,1,19958,1,0,,,,,dmof.sub,dmor.sub
Operator: JMH
Column diameter: 0.53

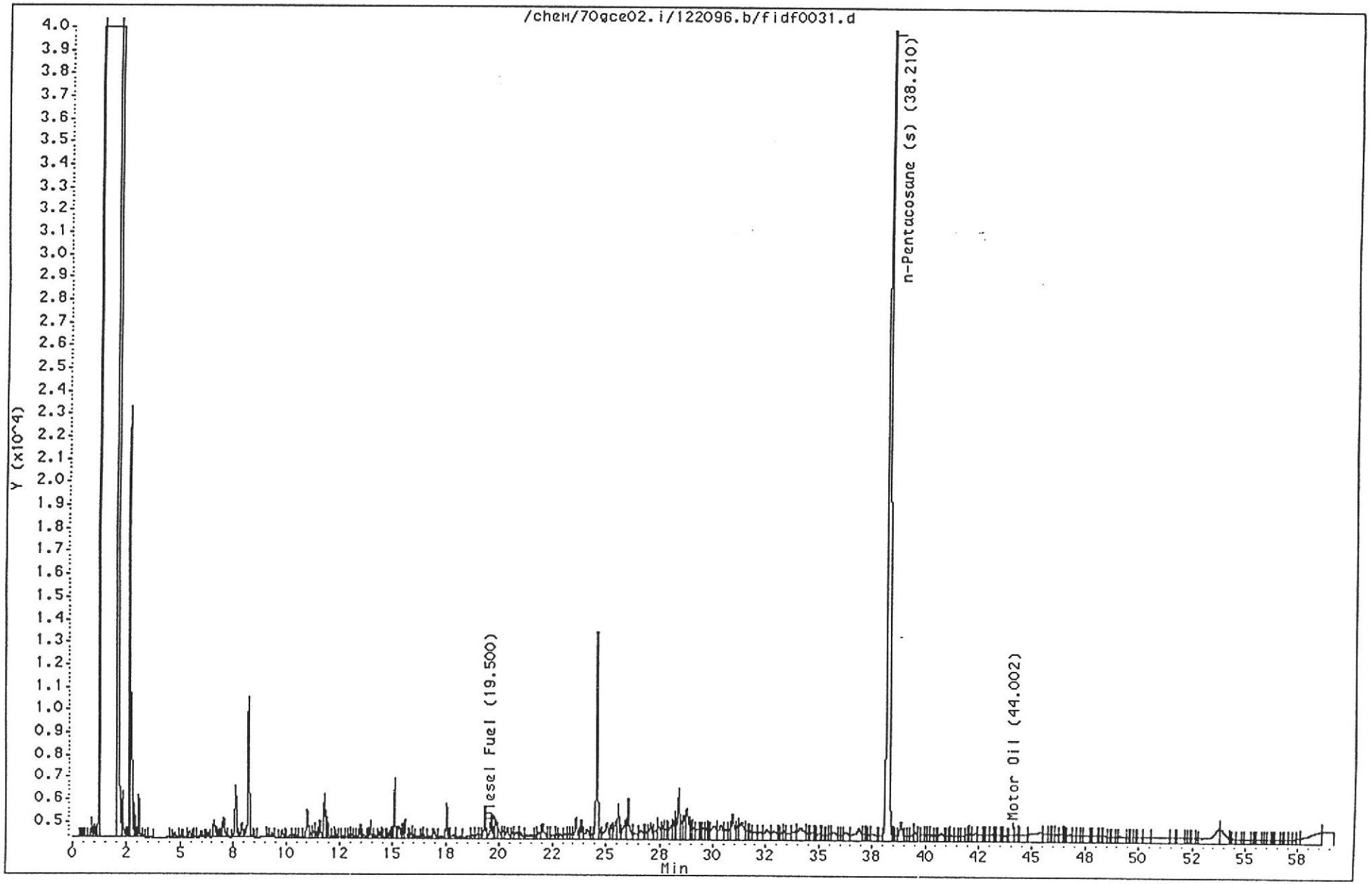
MW - SB9



Data File: /chem/70gce02.i/122096.b/fidf0031.d
Date : 22-DEC-96 00:50
Client ID:
Sample Info: SAMPLE-water
Volume Injected (uL): 1.0
Column phase: RESTEK XTI-5

Instrument: 70gce02.i
Misc Info: 70825500,,1,19958,1,0,,,,,dmof.sub,dmor.sub
Operator: JMH
Column diameter: 0.53

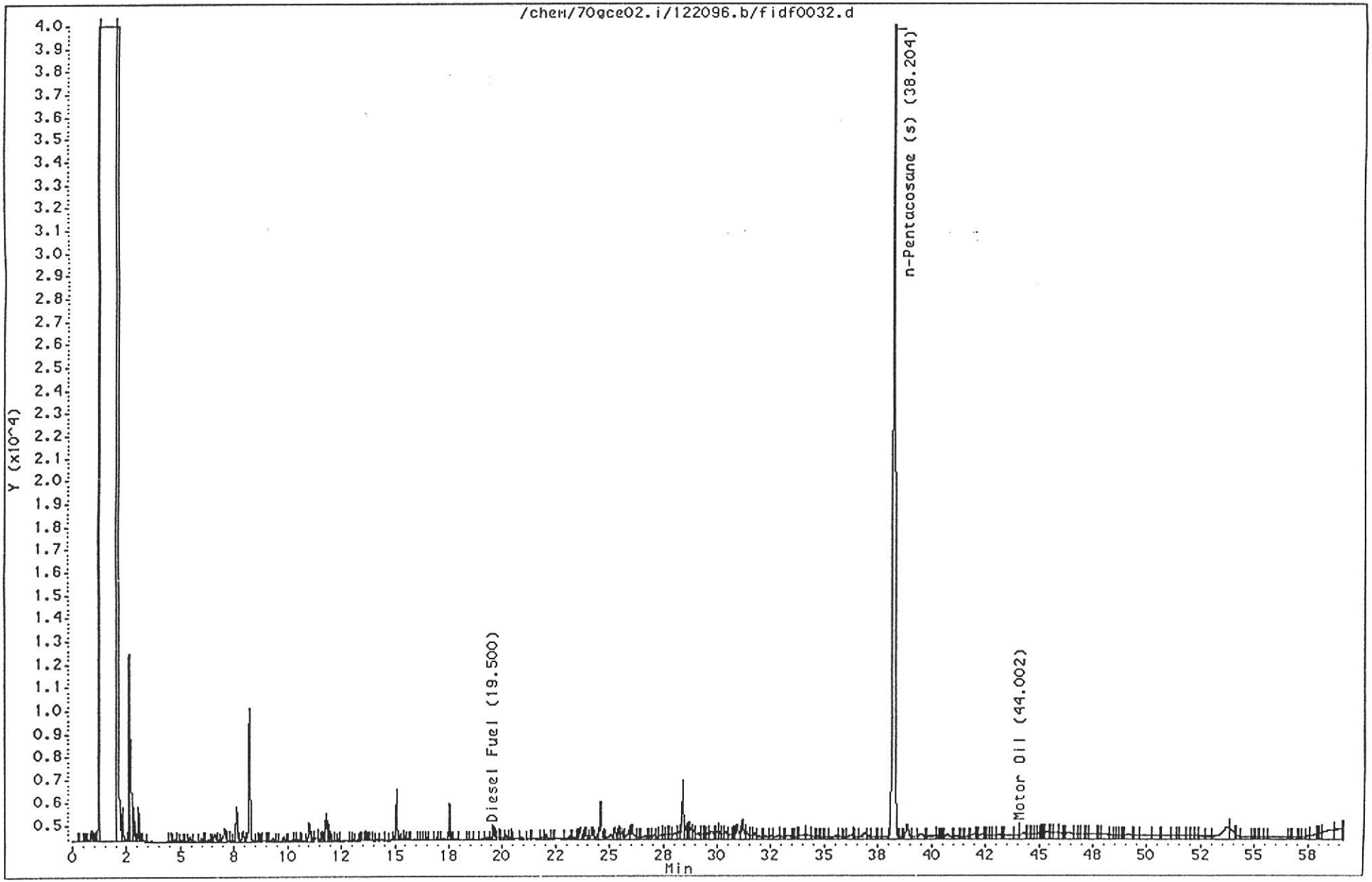
MW-SB7



Data File: /chem/70gce02.i/122096.b/fidf0032.d
Date : 22-DEC-96 01:57
Client ID:
Sample Info: SAMPLE-water
Volume Injected (uL): 1.0
Column phase: RESTEK XTI-5

Instrument: 70gce02.i
Misc Info: 70825526,,1,19958,1,0,,,,,dmof.sub,dmor.sub
Operator: JMH
Column diameter: 0.53

MW-SB1A



BASELINE
5900 Hollis Street, Suite D
Emeryville, CA 94608
(510) 420-8686

CHAIN OF CUSTODY RECORD

707268

Turn-around Time: Standard 2 week
Lab: PACE
BASELINE Contact Person: Rhodora Del Rosario

Project No.	Project Name and Location
59171-C1	Seabreeze, 280 6th Ave, Oakland

Samplers: (Signature)

Sample ID No. Station	Date	Time	Media	Depth	No. of Containers	TEH	(TPH with BTX&E)	Oil & Grease	Motor Oil	PNAs	Title 22 Metals	Total Lead	Pb & Cu *	TEPH (diesel, motor oil, Bunker C ** w/silica gel cleanup				Remarks/ Composite	Detection Limits
						Analysis													
PW-2	12/11/96	12:37	Water	—	2								X	X		70	825	401	
MW-SB2		13:24		—	2								X	X		70	825	419	3 µg/L for Cu
MW-SB3		11:33		—	2								X	X		70	825	435	and
MW-SB4		10:42		—	2								X	X		70	825	443	5 µg/L for Pb
MW-SB5		14:55		—	2								X	X		70	825	500	
MW-SB5A		14:13		—	2								X	X		70	825	526	
COOLER CUSTODY SEALS INTACT ☐ NOT INTACT ☐																			
COOLER TEMPERATURE		2 C°	°C																
		R B																	

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Conditions of Samples Upon Arrival at Laboratory:
	12/11/96 / 4:20p		12/11/96 / 4:20 PM	
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Remarks:
	12/12/96 / 10:40AM	T.MAINARIS	12/12/96 1045	* filter samples prior to Pb & Cu analyses (samples are unpreserved)
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	** perform a silica gel cleanup on samples prior to TEPH analyses.
T.MAINARIS	12/12/96 1345		12/12/96 1345	