

January 30, 2001

42633.1

Mr. John Prall
Associate Environmental Scientist
Port of Oakland
530 Water Street
Oakland, California 94607

**4th Quarter of 2000 Quarterly Groundwater Monitoring
and Product Recovery Report**
2277 7th Street
Oakland, California

2nd Semi-Annual 2000 Groundwater Monitoring
2225 7th Street
Oakland, California

Dear Mr. Prall:

Harding ESE, Inc. (Harding), formerly Harding Lawson Associates, has prepared this report on behalf of the Port of Oakland for the groundwater monitoring programs at 2277 Seventh Street and 2225 Seventh Street in Oakland, California (Plate 1). This report summarizes the quarterly monitoring of five groundwater monitoring wells (MW-2, MW-4, MW-5, MW-6, and MW-7) at 2277 7th Street and the semi-annual monitoring of three groundwater monitoring wells (MW-1, MW-2, and MW-3) at 2225 7th Street. The locations of these wells are shown on Plates 2 through 5.

This report also summarizes the operation of the product recovery system at the 2277 7th Street site between October 1 and December 31, 2000. Monitoring well MW-3 at 2277 7th Street contains an active product skimmer that recovers separate-phase petroleum hydrocarbons from the groundwater surface; Harding did not collect a groundwater sample from this well. Monitoring well MW-1 contains a passive product skimmer, and, therefore, Harding did not collect a sample from this well either. On April 20, 2000, Harding oversaw the abandonment of monitoring well MW-8. Because of the Port's plans to construct a railroad track associated with the Port of Oakland Vision 2000 improvements in the immediate vicinity of the well, all surface structures, including the well, were removed.

BACKGROUND

2277 7th Street

Another consultant to the Port installed the monitoring wells to assess groundwater quality following the removal of underground storage tanks (USTs) from the site in September 1993. The former USTs, located

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on the south side of Building C-401, consisted of two 10,000-gallon gasoline tanks (CF-17 and CF-18), one 500-gallon oil tank (CF-19), and one 300-gallon waste oil tank (CF-20).

2225 7th Street

Another consultant to the Port installed the monitoring wells at the adjacent site to assess groundwater quality following the removal of underground storage tanks (USTs) from the site in 1989 and 1992. The former USTs consisted of seven diesel USTs and one bulk oil UST located on the east side of Building C-407 and one waste oil UST located north of Building C-407.

GROUNDWATER MONITORING

Harding used the following procedures during groundwater monitoring at the two sites. Prior to purging and sampling the monitoring wells, Harding measured the depth to groundwater below the top of the well casing with an electric water level indicator. After measuring the depth to water, Harding purged the wells using a PVC bailer. Conductivity, pH, and temperature were monitored periodically during purging. Harding collected the groundwater samples after removing a minimum of three well-casing volumes of water and when the conductivity, pH, and temperature measurements had stabilized. The depths to groundwater and field parameter measurements were recorded on Groundwater Sampling Forms included in Appendix A. The purge water was stored onsite in the treatment system's product recovery tank. The Port's waste disposal contractor, Foss Environmental Services Company, Inc. periodically off-hauls and disposes of the purge water along with the product in the tank.

Harding collected groundwater samples from the five monitoring wells using Teflon disposable bailers and then transferred the groundwater into laboratory-provided containers. A duplicate sample was collected at each site. Sample containers were labeled with the sample number, date and time of collection, and sampler's initials, then placed in an insulated cooler with ice. The samples were accompanied by a laboratory provided trip blank and delivered under chain-of-custody protocol to Curtis and Tompkins, Ltd., a California certified analytical laboratory.

2277 7th Street

Harding conducted this quarter's groundwater monitoring at 2277 7th Street on December 19, 2000. In addition to measuring depth to groundwater, Harding measured the depth to product in MW-1 and MW-3 to calculate product thickness. Groundwater level measurements are summarized in Table 1 and product thickness measurements are summarized on Table 2. Groundwater elevations and the gradient direction are presented on Plate 3. Harding did not use the groundwater level measurements from MW-3 to develop the groundwater gradient because of the product recovery equipment in the well.

2225 7th Street

Harding also conducted this quarter's groundwater monitoring at 2225 7th Street on December 19, 2000. Groundwater level measurements are summarized in Table 3. Groundwater elevations and the gradient direction are also presented on Plate 3.

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LABORATORY ANALYSIS GROUNDWATER SAMPLES

Curtis and Tompkins, Ltd. performed the chemical analyses of the groundwater samples using the following analytical methods:

- Total petroleum hydrocarbons as gasoline (TPHg) in accordance with EPA Method 8015 modified.
- Benzene, toluene, ethylbenzene, and xylenes (BTEX) and methyl t-butyl ether (MTBE) in accordance with EPA Method 8021B (note: detections of MTBE at the 2277 7th Street site were checked by analysis of the samples in accordance with EPA Test Method 8260. Due to a laboratory oversight the confirmation samples were analyzed past the holding time).
- TPH as diesel (TPHd) in accordance with EPA Method 8015 modified following a silica-gel cleanup procedure.
- TPH as motor oil (TPHmo) in accordance with EPA Method 8015 modified following a silica-gel cleanup procedure.

During both sample events, Harding included a trip blank, which accompanied the samples from time of collection until delivery to the analytical laboratory and was analyzed for BTEX and MTBE.

The laboratory results for 2277 7th Street are summarized in Table 4 and are shown on Plate 5 and those for 2225 7th Street are summarized in Table 5 and shown on Plate 6. Copies of the laboratory results and chain-of-custody forms are provided in Appendix B.

FINDINGS

During this monitoring event, the groundwater measurements at the two sites were conducted on the same day. The water levels are presented in Tables 1 and 3. Harding used the computer program Surfer to create the contours on Plate 3 using the Kriging method. According to these contours, the groundwater appears to be moving towards the north from Building C-407 toward Building C-401. The third quarter 2000 report was the first quarter to combine the groundwater elevations from the two sites and produce one set of contours. The groundwater flow direction observed during the fourth quarter closely matched that observed during the third quarter 2000. It is not known if the trend observed during these two monitoring events is unique, or is something that is present year round.

2277 7th Street

Results of the December 19, 2000 groundwater sampling at 2277 7th Street are summarized below:

- Harding found measurable product in MW-1 and MW-3 and therefore did not collect a groundwater sample from either well.
- TPHg was reported at a concentration of 200 micrograms per liter ($\mu\text{g/L}$) in MW-2, 960 and 1,200 $\mu\text{g/L}$ in MW-4, 130 $\mu\text{g/L}$ in MW-6, and 54 $\mu\text{g/L}$ in MW-7. TPHg was not detected in MW-5. Last

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quarter TPHg was detected in the sample from MW-4 at 530 µg/L, in MW-6 at 190 µg/L and in MW-7 at 50 µg/L.

- Benzene was reported at a concentration of 39 µg/L in MW-2, at 420 and 440 µg/L in MW-4, and at 24 µg/L in MW-6. Benzene was not detected in MW-5 or MW-7. Last quarter benzene was detected in the sample from MW-2 at 0.76 µg/L, MW-4 at 190 µg/L, in MW-6 at 26 µg/L.
- Toluene was reported at a concentration of 1.8 µg/L in MW-2. Toluene was not detected above the reporting limit in MW-4, MW-5, MW-6 and MW-7. Last quarter toluene was reported at a concentration of 0.93 µg/L in MW-4.
- Ethylbenzene was reported at a concentration of 1.6 µg/L in MW-6 and was not detected in MW-2, MW-4, MW-5, or MW-7. Ethylbenzene was detected at a concentration of 0.6 µg/L in MW-4 and 1.7 µg/L in MW-6 during the previous quarter.
- Total xylenes were detected above the reporting limit in only one well, MW-2, at a concentration of 2.6 µg/L. Last quarter, xylenes were detected at a concentration of 0.57 µg/L in MW-4.
- MTBE was reported at a concentration of 5.1 µg/L in MW-2, 18 and 19 µg/L in MW-4, and 50 µg/L in MW-7 and was not detected in MW-5 and MW-6. Confirmation samples of MTBE detections by EPA Test Method 8260 did not confirm the presence of MTBE in the samples from MW-2 and MW-4. It did confirm MTBE in the sample from MW-7 at a concentration of 47 µg/L. Due to a laboratory oversight the EPA 8260 confirmation was performed outside of the holding time.
- TPHd was reported at a concentration of 70 µg/l in MW-4, 620 µg/L in MW-6, and 51 µg/L in MW-7 and not detected in MW-2 and MW-5. During the previous quarter, TPHd was detected at 610 µg/L in MW-6.
- TPHmo was not detected above the reporting limit in any of the wells sampled this quarter or last.

2225 7th Street

Results of the December 19, 2000 groundwater sampling at 2225 7th Street are summarized below:

- MTBE was not reported above the detection limit in any of the groundwater samples.
- TPHg, TPHmo, benzene, toluene, ethylbenzene and total xylenes were not detected above the reporting limit in any of the wells sampled.
- TPHd was detected in the sample collected from well MW-3 at 50 µg/L, which is the reporting limit for this compound. The lab indicated that the sample contained a hydrocarbon that was not typical of diesel.

QUALITY ASSURANCE AND QUALITY CONTROL

A duplicate sample was collected from monitoring well MW-4 and from MW-1 (2225 7th Street) on December 19 and submitted to the analytical laboratory to evaluate the precision of the analytical results.

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Precision is an indication of the reproducibility of results and is assessed by calculating the relative percent difference (RPD) between the primary sample result (X1) and the duplicate sample result (X2), as follows:

$RPD = |X1 - X2| / \{(X1 + X2) / 2\} \times 100$. (For example: A low RPD indicates high precision; a RPD of 67 percent indicates the two results differ by a factor of two.)

As shown below, the RPD was calculated for chemical compounds detected above the reporting limit in either the duplicate or primary sample.

	ANALYTE	X1	X2	X1-X2	(X1+X2)/2	RPD
MW-4	MTBE	ND	ND	--	--	--
12/19/00	B	420	440	20	430	5%
	T	ND	ND	--	--	--
	E	ND	ND	--	--	--
	X	ND	ND	--	--	--
	TPHd	70	ND	--	--	200%
	TPHmo	ND	ND	--	--	--
	TPHg	960	1200	240	1080	22%

- The relative percent difference between the analytical results from MW-4 and the duplicate sample was considered within acceptable limits, ranging from zero to 22 percent, with the exception of TPHd which was detected in the primary sample and not the duplicate sample. Because the value detected was only slightly above the detection limit, this would not indicate an overall problem with the data quality.
- MTBE was not detected in either trip blank.
- BTEX was not detected in either trip blank.

PRODUCT RECOVERY SYSTEM AT 2277 7TH STREET

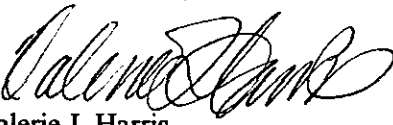
The product recovery system at 2277 7th Street consists of an air-actuated (active) product skimmer in MW-3. Since MW-1 contained no measurable product, the passive product skimmer was removed on May 22, 2000. However in the following months, product was measured in the well and skimmer was replaced. Harding completed product recovery at MW-6 and removed the passive skimmer on April 19, 1999. The product in MW-3 discharges to a product recovery tank, and Harding conducts monthly inspections of the treatment system. The Port's waste disposal contractor, Foss Environmental Services Company, Inc., removes product from the product recovery tank at various times throughout the quarter. The Port did not provide this information to Harding. Table 2 presents a summary of the product removal data. A summary of the activities during the past quarter associated with the operation and maintenance of the product recovery system is presented in Table 6.


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If you have any questions, please contact Stephen Osborne at (510) 628-3211.

Yours very truly,

HARDING ESE, INC.


Valerie J. Harris
Project Engineer


Stephen J. Osborne
Geotechnical Engineer



VJH/SJO/dmw/p:wpdata/42633/037918R

4 copies submitted

Attachments: Table 1 – Groundwater Elevations Data, 2277 7th Street
Table 2 – Summary of Product Removal and Product Thickness, 2277 7th Street
Table 3 – Groundwater Elevations Data, 2225 7th
Table 4 – Groundwater Sample Results, 2277 7th Street
Table 5 – Groundwater Sample Results, 2225 7th Street
Table 6 – Summary of Operation and Maintenance Activities
Plate 1 – Vicinity Map
Plate 2 – Site Plan
Plate 3 – Groundwater Elevations, 2277 and 2225 7th Street, December 19, 2000
Plate 4 – Groundwater Sample Results, 2277 7th Street, December 19, 2000
Plate 5 – Groundwater Sample Results, 2225 7th Street, December 19, 2000
Appendix A - Groundwater Sampling Forms
Appendix B - Laboratory Reports

TABLES

Table 1.
Groundwater Elevations Data, 2277 7th Street
Port of Oakland
2277 and 2225 7th Street, Oakland California

Well ID	Elevation Top of Casing (feet)	Date Of Monitoring	Depth to Water (feet)	Groundwater Elevation (feet)
MW-1	14.14	4/18/2000	8.21	5.93
		5/22/2000	8.17	5.97
MW-2	14.36	12/31/1997	8.73	5.63
		4/13/1998	7.72	6.64
		11/6/1998	9.43	4.93
		3/19/1999	8.21	6.15
		6/24/1999	8.91	5.45
		9/28/1999	9.42	4.94
		11/12/1999	9.63	4.73
		2/11/2000	8.54	5.82
		5/22/2000	8.10	6.26
		9/6/2000	8.79	5.57
		12/19/2000	9.19	5.17
MW-4	13.15	12/31/1997	7.09	6.06
		4/13/1998	7.71	5.44
		11/6/1998	8.69	4.46
		3/19/1999	8.00	5.15
		6/24/1999	8.45	4.70
		9/28/1999	8.73	4.42
		11/12/1999	8.83	4.32
		2/11/2000	7.71	5.44
		5/22/2000	8.09	5.06
		9/6/2000	8.32	4.83
		12/19/2000	8.47	4.68
MW-5	13.49	12/31/1997	6.38	7.11
		4/13/1998	5.56	7.93
		11/6/1998	6.59	6.90
		3/19/1999	6.20	7.29
		6/24/1999	6.73	6.76
		9/28/1999	6.91	6.58
		11/12/1999	7.06	6.43
		2/11/2000	7.00	6.49
		5/22/2000	6.21	7.28
		9/6/2000	6.56	6.93
		12/19/2000	6.68	6.81
MW-6	14.00	6/24/1999	8.61	5.39
		9/28/1999	9.26	4.74
		11/12/1999	8.01	5.99
		2/11/2000	7.20	6.80
		5/22/2000	7.13	6.87
		9/6/2000	7.12	6.88
MW-7	14.35	12/19/2000	7.57	6.43
		12/31/1997	8.88	5.47
		4/13/1998	7.86	6.49
		11/6/1998	9.55	4.80
		3/19/1999	8.41	5.94
		6/24/1999	9.08	5.27
		9/28/1999	9.60	4.75
		11/12/1999	9.77	4.58
		2/11/2000	8.67	5.68
		5/22/2000	8.43	5.92
		9/6/2000	8.88	5.47
12/19/2000	9.21	5.14		

¹ Elevation data relative to Port of Oakland datum; well surveys performed on September 12, 1996, and February 4, 1998, by PLS Surveys.

- Data prior to November 6, 1998 taken from *Groundwater Monitoring, Sampling and Product Removal System O&M Report* dated July 21, 1998, by Innovative Technical Solutions, Inc.

Table 2.
Product Removal and Product Thickness Data, 2277 7th Street
Port of Oakland
2277 and 2225 7th Street, Oakland California

Well ID	Elevation of Top of Casing ¹ (feet)	Date Of Monitoring	Depth to Free Product (feet)	Depth to Water (feet)	Product Thickness (feet)	Estimated Product Removed (gallons)	Product Removal Method ²
MW-1	14.14	12/31/1997	-	-	-	0.2	passive skimmer
		1/29/1998	-	-	-	0.2	passive skimmer
		3/2/1998	-	-	-	0.018	passive skimmer
		5/11/1998	-	-	-	0.02	passive skimmer
		6/15/1998	-	-	-	0.2	passive skimmer
		11/6/1998	9.34	10.3	0.96	1.2	passive skimmer
		1/7/1999	-	-	-	0.2	passive skimmer
		2/11/1999	-	-	-	0.2	passive skimmer
		3/12/1999	-	-	-	0.2	passive skimmer
		3/19/1999	NM	8.45	>0.01	0.07	passive skimmer
		4/14/1999	-	-	-	0.2	passive skimmer
		5/11/1999	-	-	-	0.2	passive skimmer
		6/24/1999	8.88	9.63	0.8	0.2	passive skimmer
		7/15/1999	--	--	--	0.2	passive skimmer
		7/16/1999	--	--	--	0.2	passive skimmer
		8/27/1999	--	--	--	0.2	passive skimmer
		9/28/1999	--	--	0.65	0.2	passive skimmer
		10/5/1999	--	--	--	0.2	passive skimmer
		11/12/1999	9.38	10.27	0.89	0.2	passive skimmer
		12/21/1999	--	--	--	0.2	passive skimmer
		1/26/2000	--	--	--	0.2	passive skimmer
		1/28/2000	9.22	9.24	0.02	--	passive skimmer
		2/11/2000	--	7.00	0.00	0.2	passive skimmer
		3/1/2000	--	7.45	0.00	0.0	passive skimmer
		3/21/2000	NM	7.34	0.00	0.0	passive skimmer
		4/18/2000	NM	8.21	0.00	0.0	passive skimmer
		5/22/2000 ³	NM	8.51	0.00	0.0	passive skimmer
		9/6/2000 ⁴	8.52	9.24	0.72	0.0	passive skimmer
9/21/2000	8.71	9.26	0.55	0.0	passive skimmer		
10/11/2000	--	--	--	0.0	passive skimmer		
11/30/2000	--	--	--	0.0	passive skimmer		
12/19/2000	9.5	9.89	0.39	0.0	passive skimmer		
MW-3	14.22	12/31/1997	-	-	-	30	active skimmer
		1/29/1998	-	-	-	10	active skimmer
		4/13/1998	-	-	-	240	active skimmer
		5/11/1998	-	-	-	1,545	active skimmer
		6/15/1998	-	-	-	1,950	active skimmer
		11/6/1998	8.84	9.94	1.1	500	active skimmer
		1/5/1999	-	-	-	275 ²	active skimmer
		1/14/1999	-	-	-	400 ²	active skimmer
		2/3/1999	-	-	-	400 ²	active skimmer
		2/26/1999	-	-	-	570 ²	active skimmer
		3/19/1999	7.52	8.05	0.5	211	active skimmer
		6/16/1999	-	-	-	310	active skimmer
		6/24/1999	8.38	8.56	0.2	--	active skimmer
		7/14/1999	--	--	--	50 ²	active skimmer
		9/28/1999	--	--	0.2	--	active skimmer
		10/29/1999	--	--	--	125 ²	active skimmer
		11/12/1999	9.14	9.23	0.09	--	active skimmer
		1/28/2000	--	--	--	135	active skimmer
		2/11/2000	7.97	8.37	0.40	40	active skimmer
		3/1/2000	6.59	7.24	0.65	0.0	active skimmer

Table 2.
Product Removal and Product Thickness Data, 2277 7th Street
Port of Oakland
2277 and 2225 7th Street, Oakland California

Well ID	Elevation of Top of Casing ¹ (feet)	Date Of Monitoring	Depth to Free Product (feet)	Depth to Water (feet)	Product Thickness (feet)	Estimated Product Removed (gallons)	Product Removal Method ²
MW-3		3/21/2000	6.50	6.56	0.06	35	active skimmer
		4/18/2000	--	--	--	--	active skimmer
		5/22/2000	7.51	8.05	0.54	40	active skimmer
		6/26/2000	7.82	8.2	0.38	90	active skimmer
		7/25/2000	7.90	8.92	1.02	20	active skimmer
		8/31/2000	8.15	9.5	1.35	30	active skimmer
		9/6/2000	8.21	9.42	1.21	--	active skimmer
		9/21/2000	8.30	8.88	0.58	115	active skimmer
		10/11/2000	--	--	--	170	active skimmer
		11/30/2000	--	--	--	105	active skimmer
	12/19/2000	8.60	9.65	1.05	10	active skimmer	
MW-6	14.00	13/31/97	-	-	-	0.0014	passive skimmer
		1/29/1998	-	-	-	0.0014	passive skimmer
		3/2/1998	-	-	-	0.0014	passive skimmer
		11/6/1998	NM	9.62	>0.01	0.0	passive skimmer
		3/19/1999	NM	7.37	>0.01	0.0	passive skimmer
MW-8 ³	12.94	12/31/1997	8.49	8.82	0.33	4.38	-
		11/6/1998	9.25	10.3	1.1	3.48	-

- Data prior to November 6, 1998 taken from *Groundwater Monitoring, Sampling and Product Removal System O&M Report* dated July 21, 1998, by Innovative Technical Solutions, Inc.

- Data prior to November 6, 1998 taken from *Groundwater Monitoring, Sampling and Product*

- Product removal volumes from 11/6/98 on represent total product removed during that reporting period.

¹ Free product in well is too viscous to allow product thickness or groundwater level measurements.

² Product removal totals for MW-3 are estimated from documentation of product removal from the treatment system performed by Performance Excavators, Inc.

³ The passive skimmer was removed from MW-1 on 5/22/00.

⁴ The passive skimmer replaced MW-1 on 9/6/00.

NM - Well checked for free product but was not able to detect a measurable amount in the well.

Shaded areas indicates data from this reporting period.

Table 3.
Groundwater Elevations Data, 2225 7th Street
Port of Oakland
2277 and 2225 7th Street, Oakland California

Well ID	Elevation Top of Casing (feet)	Date Of Monitoring	Depth to Water (feet)	Groundwater Elevation (feet)
MW-1	13.72	1/15/1993	5.21	8.51
		9/12/1994	6.37	7.35
		11/30/1994	5.76	7.96
		3/29/1995	4.57	9.15
		5/25/1995	5.14	8.58
		6/21/1995	5.41	8.31
		6/23/1995	5.44	8.28
		11/20/1995	6.28	7.44
		12/27/1995	5.86	7.86
		3/25/1996	5.21	8.51
		6/26/1996	5.58	8.14
		10/14/1996	6.22	7.50
		3/19/1997	5.48	8.24
		6/26/2000	5.19	8.53
9/6/2000	5.62	8.10		
12/19/2000	5.57	8.15		
MW-2	13.8	1/15/1993	6.21	7.59
		9/12/1994	6.47	7.33
		11/30/1994	6.34	7.46
		3/29/1995	5.51	8.29
		5/25/1995	5.60	8.20
		6/21/1995	5.72	8.08
		6/23/1995	5.72	8.08
		9/28/1995	6.15	7.65
		11/20/1995	6.42	7.38
		12/27/1995	6.31	7.49
		3/25/1996	5.74	8.06
		6/26/1996	5.85	7.95
		10/14/1996	6.36	7.44
		3/19/1997	5.90	7.90
6/26/2000	5.37	8.43		
9/6/2000	5.62	8.18		
12/19/2000	5.81	7.99		
MW-3	15.06	1/15/1993	6.44	8.62
		9/12/1994	7.35	7.71
		11/30/1994	7.12	7.94
		3/29/1995	6.31	8.75
		5/25/1995	6.75	8.31
		6/21/1995	6.87	8.19
		6/23/1995	6.88	8.18
		9/28/1995	7.28	7.78
		11/20/1995	7.51	7.55
		12/27/1995	7.20	7.86
		3/25/1996	6.64	8.42
		6/26/1996	6.98	8.08
		10/14/1996	7.47	7.59
		3/19/1997	6.99	8.07
6/26/2000	6.82	8.24		
9/6/2000	6.82	8.24		
12/19/2000	7.10	7.96		

¹ Elevation data relative to Port of Oakland datum; well surveys performed on December 6, 1994
- Data prior to June 26, 2000 taken from *First Quarter 1997 Groundwater Monitoring and Sampling report* dated May 6, 1999, by Fluor Daniel GTI.

Table 4.
Groundwater Sample Result, 2277 7th Street
Port of Oakland
2277 and 2225 7th Street, Oakland California

Monitoring Well ID	Date	TPHg (µg/l)	TPHd (µg/l)	TPHmo (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	Total Xylenes (µg/l)	MTBE (µg/l)
MW-1	05/22/00	3,600	41,000	<3,000	100	13 ⁸	2.9	2.05	3.2 ⁸
MW-2	05/27/94	87	470	NA	<0.5	<0.5	<0.5	<0.5	NA
	03/29/95	<50	110	1,400	<0.4	<0.3	<0.3	<0.4	NA
	09/06/95	<50	NA	NA	<0.4	<0.3	<0.3	<0.4	NA
	01/08/96	<50	<50	1200	<0.4	<0.3	<0.3	<0.4	NA
	04/04/96	<50	160	320	<0.5	<0.5	<0.5	<1.0	NA
	07/10/96	<50	120	1400	<0.4	<0.3	<0.3	<0.4	NA
	12/03/96	<50	230 ^{1,2}	<250	<0.5	<0.5	<0.5	<1.0	NA
	03/28/97	<50	714	<250	<0.5	<0.5	<0.5	<1.0	NA
	06/13/97	51	<50	<250	<0.5	<0.5	<0.5	<1.0	NA
	09/18/97	82	<50	<250	0.56	<0.5	<0.5	<1.0	NA
	12/31/97	<50	<47	<280	1.4	<0.5	<0.5	<1.0	NA
	04/13/98	<50	<50	<300	<0.5	<0.5	<0.5	<1.0	NA
	11/06/98	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2
	03/19/99	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2
	06/24/99	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2
	09/28/99	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2
	11/12/99	<50	120 ^{2,6}	<300	<0.5	<0.5	<0.5	<0.5	6.3 ^{8,9}
	02/11/00	<50	<50	<300	5.4	<0.5	<0.5	<0.5	<2
	05/22/00	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2
	09/06/00	<50	<50	<300	0.76 ⁸	<0.5	<0.5	<0.5	<0.5 ¹⁰
12/19/00	200 ^{3,11}	<50	<300	39	1.8	<0.5	2.6	<0.5 ^{10,12}	
MW-4	09/11/95	150	<200	500	23	<0.3	<0.3	<0.4	NA
	01/08/96	790	90	400	170	1.2	0.6	0.6	NA
	04/04/96	1,100	180	300	320	1.6	1.1	1.2	NA
	07/10/96	1,200	120	300	470	1.5	0.8	0.8	NA
	12/03/96	990	220 ^{1,2}	<250	350	3.3	1.3	1.3	NA
	03/28/97	440 ²	<50	<250	190	1.2	0.64	<1.0	NA
	06/13/97	1,300	92 ⁵	<250	500	5.5	3.4	2.8	NA
	09/18/97	1,300	150	<250	550	4.9	2.1	2.00	NA
	12/31/97	73 ^{1,2,3}	<47	<280	110 ¹	1.0 ¹	<0.5	<1.0	NA
	04/13/98	150 ^{2,3}	<50	<300	520	2.9	<2.5	<5.0	NA
	11/06/98	<50	<50	<300	250	1.7	<1	<1	<4
	03/19/99	81	<50	<300	250	<1	1.2	<1	<4
	06/24/99	190	<50	<300	360	1.4	2.2	1	24
	09/28/99	750 ^{3,5}	63 ^{3,5}	<300	280	1.5	<1	<1	<4
	11/12/99	330 ³	840 ²	<300	740	<2.5	<2.5	<2.5	42 ⁹
	02/11/00	200 ³	<50	<300	58	0.73	<0.5	<0.5	4.4 ⁴
	05/22/00	240	<50	<300	500	<2.5	<2.5	<2.5	17
	09/06/00	530 ^{2,3}	<50	<300	190	0.93	0.6	0.57	<0.5 ¹⁰
	12/19/00	960 ^{3,11}	70 ⁵	<300	420	<2.5	<2.5	<2.5	<0.5 ^{10,12}
	Dup.	12/19/00	1,200 ^{3,11}	<50	<300	440	<2.5	<2.5	<2.5
MW-5	09/11/95	90	<300	2,500	3.3	<0.3	<0.3	<0.4	NA
	04/04/96	<50	180	520	<0.5	<0.5	<0.5	<1.0	NA
	07/10/96	<50	120	1,500	<0.4	<0.3	<0.3	<0.4	NA
	12/03/96	<50	200 ^{1,2}	<250	<0.5	<0.5	<0.5	<1.0	NA
	03/28/97	<50	<50	<250	<0.5	<0.5	<0.5	<1.0	NA
	06/13/97	<50	<50	<250	<0.5	<0.5	<0.5	<1.0	NA
	09/18/97	<50	<50	<250	<0.5	<0.5	<0.5	<1.0	NA
	12/31/97	<50	<47	<280	<0.5	<0.5	<0.5	<1.0	NA
	04/13/98	<50	<47	<280	<0.5	<0.5	<0.5	<1.0	NA
11/06/98	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2	

Table 4.
Groundwater Sample Result, 2277 7th Street
Port of Oakland
2277 and 2225 7th Street, Oakland California

Monitoring Well ID	Date	TPHg (µg/l)	TPHd (µg/l)	TPHmo (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	Total Xylenes (µg/l)	MTBE (µg/l)
MW-5 (cont.)	03/19/99	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2
	06/24/99	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	3.1
	09/28/99	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2
	11/12/99	<50	110 ^{2,6}	<300	<0.5	<0.5	<0.5	<0.5	5.5 ⁹
	02/11/00	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2
	05/22/00	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2
	09/06/00	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2
	12/19/00	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2
MW-6	11/06/98	120	12,000	1,200	19	0.65	1.8	<0.5	<2
	03/19/99	170	3,800	580	21	0.86	1.5	2.9	<2
	06/24/99	120	1,700 ⁷	<300 ⁷	18	<0.5	1.0	<0.5	54
	09/28/99	130 ^{3,5}	820	<300	20	0.51	2.2	<0.5	<2
	11/12/99	150	11,000 ^{2,6}	3,000 ^{3,6}	27	<0.5	2.2	<0.5	13 ⁹
	02/11/00	270 ²	2,300	<300	23	0.51	2.7	<0.5	5.8
	05/22/00	350	3,000	<300	18	0.51	<0.5	<0.5	7.7
	09/06/00	190	610	<300	26	<0.5	1.7	<0.5	<0.5 ¹⁰
12/19/00	130 ^{3,11}	620	<300	24	<0.5	1.6	<0.5	<2	
MW-7	09/06/95	<50	<300	800	<0.4	<0.3	<0.3	<0.4	NA
	01/08/96	<50	410	110	<0.4	<0.3	<0.3	<0.4	NA
	04/04/96	<50	530	340	<0.5	<0.5	<0.5	<1.0	NA
	07/10/96	80	840	1,700	<0.4	<0.3	<0.3	<0.4	NA
	12/03/96	<50	280 ^{1,2}	<250	<0.5	<0.5	<0.5	<1.0	NA
	03/28/97	65 ⁶	94 ²	<250	<0.5	<0.5	<0.5	<1.0	NA
	06/13/97	<50	100	<250	<0.5	<0.5	<0.5	<1.0	NA
	09/18/97	<50	240	<250	<0.5	<0.5	<0.5	<1.0	NA
	12/31/97	<50	53 ^{2,3}	<280	<0.5	<0.5	<0.5	<1.0	NA
	04/13/98	<50	<48	<290	<0.5	<0.5	<0.5	<1.0	NA
	11/06/98	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2
	03/19/99	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	5.3
	06/24/99	73	<50	<300	<0.5	<0.5	<0.5	<0.5	12
	09/28/99	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	14
	11/12/99	<50	600 ^{2,6}	420 ³	<0.5	<0.5	<0.5	<0.5	15 ⁹
	02/11/00	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	51
	05/22/00	110	53 ²	<300	<0.5	<0.5	<0.5	<0.5	75
	09/06/00	50 ⁶	<50	<300	<0.5	<0.5	<0.5	<0.5	40 ¹⁰
12/19/00	54 ¹¹	51 ⁵	<300	<0.5	<0.5	<0.5	<0.5	47 ^{10,12}	

¹ Analyte found in the associated blank as well as in the sample.
² Hydrocarbons present do not match profile of laboratory standard.
³ Low-boiling-point/lighter hydrocarbons are present in the sample.
⁴ Chromatographic pattern matches known laboratory contaminant.
⁵ Hydrocarbons are present in the requested fuel quantification range, but do not resemble pattern of available fuel standard.
⁶ High-boiling-point/heavier hydrocarbons are present in sample.
⁷ Sample did not pass laboratory QA/QC and may be biased low
⁸ Presence of this compound confirmed by second column, however, the confirmation concentration differed from the reported result by more than a factor of two.
⁹ Trip blank contained MTBE at a concentration of 4.2 µg/l
¹⁰ MTBE detections confirmed by EPA Test Method 8260. 8260 results displayed.
¹¹ Sample exhibits unknown single peak or peaks
¹² EPA Method 8260 confirmation analyzed past holding time
- Data from December 1997 through April 1998 taken from *Groundwater Monitoring, Sampling and Product Removal System O&M Report* dated July 21, 1998, by Innovative Technical Solutions, Inc
- Data prior to December 1997 taken from *Groundwater Analytical Results, Quarterly Groundwater Monitoring Report Third Quarter 1997, Building C-401, 2277 7th Street, Oakland, CA*, dated October 24, 1997, by Unbe and Associate
NA Not Analyzed.

Table 5.
Groundwater Sample Results, 2225 7th Street
Port of Oakland
2277 and 2225 7th Street, Oakland California

Monitoring Well ID	Date	TPHg (µg/l)	TPHd (µg/l)	TPHmo (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	Total Xylenes (µg/l)	MTBE (µg/l)
MW-1	1/15/1993	<50	<50	NA	<0.3	<0.3	<0.3	<0.3	NA
	9/12/1994	<10 ¹	10,000	NA	0.5	<0.3	<0.3	<0.3	NA
	11/30/1994	<10	2,800	NA	<0.3	<0.3	<0.3	<0.3	NA
	3/29/1995	<50	<50	NA	<0.3	<0.3	<0.3	<0.3	NA
	6/21/1995	<50	<50 ²	NA	<0.3	<0.3	<0.3	<0.3	NA
	9/28/1995	<50	<50	NA	<0.3	<0.3	<0.3	<0.3	NA
	12/27/1995	<50	<50	<100	<0.3	<0.3	<0.3	<0.3	NA
	3/25/1996	<50	<50	<100	<0.3	<0.3	<0.3	<0.3	NA
	6/26/1996	<50	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0
	10/14/1996	<50	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0
	3/19/1997	<50	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0
	6/26/2000	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<0.5 ⁵
	12/19/2000	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2
Dup.	12/19/2000	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2
MW-2	1/15/1993	<50	<50	NA	<0.3	<0.3	<0.3	<0.3	NA
	9/12/1994	34 ¹	<50	NA	0.5	<0.3	<0.3	<0.3	NA
	11/30/1994	<10	81	NA	0.9	<0.3	<0.3	<0.3	NA
	3/29/1995	<50 ³	75	NA	0.3	<0.3	<0.3	<0.3	NA
	6/21/1995	<50 ³	<50	NA	<0.3	<0.3	<0.3	<0.3	NA
	9/28/1995	250 ¹	<50	NA	<0.3	<0.3	<0.3	<0.3	NA
	12/27/1995	220 ¹	<50	<100	<0.3	<0.3	<0.3	<0.3	NA
	3/25/1996	200 ¹	<50	<100	<0.3	<0.3	<0.3	<0.3	NA
	6/26/1996	77 ⁴	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0
	10/14/1996	<50	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0
	3/19/1997	150	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0
	6/26/2000	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<0.5 ⁵
	12/19/2000	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2
MW-3	1/15/1993	<50	<50	NA	<0.3	<0.3	<0.3	<0.3	NA
	9/12/1994	<50	<50	NA	0.3	<0.3	<0.3	<0.3	NA
	11/30/1994	110	150	NA	<0.3	<0.3	<0.3	<0.3	NA
	3/29/1995	<50	<50	NA	<0.3	<0.3	<0.3	<0.3	NA
	6/21/1995	<50 ³	<50 ²	NA	<0.3	<0.3	<0.3	<0.3	NA
	9/28/1995	51 ¹	<50	NA	<0.3	<0.3	<0.3	<0.3	NA
	12/27/1995	55 ¹	<50	<100	<0.3	<0.3	<0.3	<0.3	NA
	3/25/1996	53	<50	<100	<0.3	<0.3	<0.3	<0.3	NA
	6/26/1996	<50	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0
	10/14/1996	<50	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0
	3/19/1997	<50	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0
	6/26/2000	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<0.5 ⁵
	12/19/2000	<50	50 ²	<300	<0.5	<0.5	<0.5	<0.5	<2

NA Not Analyzed

¹ Hydrocarbon pattern is not characteristic of gasoline

² Hydrocarbon pattern present in sample is not characteristic of diesel

³ Uncategorized compound not included in the gasoline concentration

⁴ Product is not typical gasoline

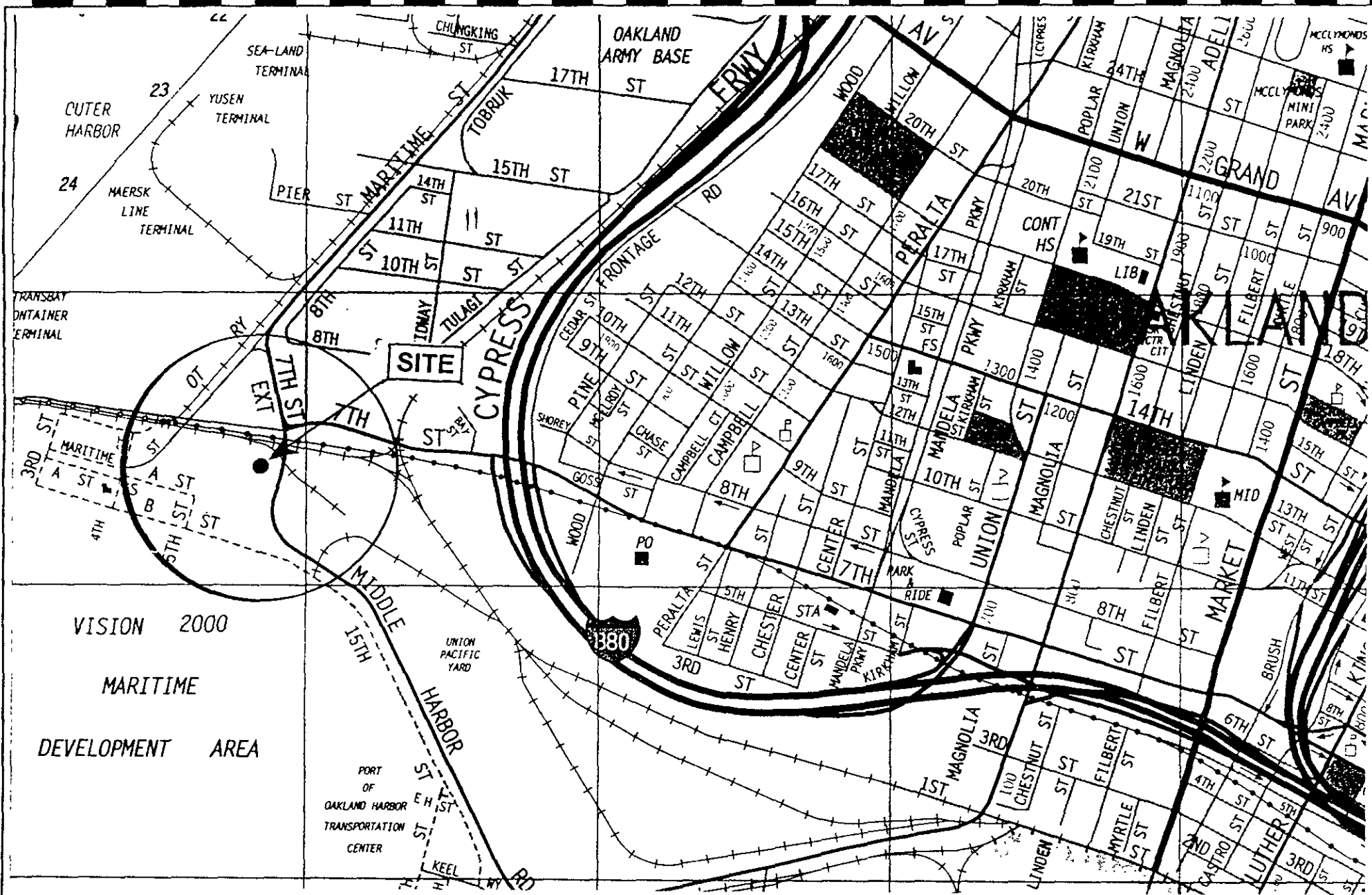
⁵ MTBE detected by EPA Test Method 821B but reported as ND<0.5 by EPA Test Method 8260

- Data prior to June 26, 2000 taken from *First Quarter 1997 Groundwater Monitoring and Sampling report* dated May 6, 1999, by Fluor Daniel G.T.

Table 6.
Summary of Operation and Maintenance Activities
Port of Oakland
2277 and 2225 7th Street, Oakland California

Date	System Status	Comments
10/11/2000	System Running	Check active skimmer in MW-3, performing well, check product in passive skimmer at MW-1, only a small film of product, lower passive skimmer 18 inches
11/30/2000	System Running	Check active skimmer in MW-3, performing well, check product in passive skimmer at MW-1, only a small film of product, lower passive skimmer 12 inches
12/19/2000	System does not seem to be running. Lower active skimmer. System begins running.	Measure product and water levels in MW-3 and MW-1. Check product in passive skimmer at MW-1, no product, lower skimmer 12 inches. Active skimmer does not seem to be running upon arrival, check power, lower active skimmer, system begins running.

PLATES



Reference: 2000 Thomas Brothers Map



Harding ESE
A MACTEC COMPANY

DRAWN
vjh

PROJECT NUMBER
42633.1

Vicinity Map
Quarterly Groundwater Monitoring Report
2277 and 2225 Seventh Street
Oakland, California 94607

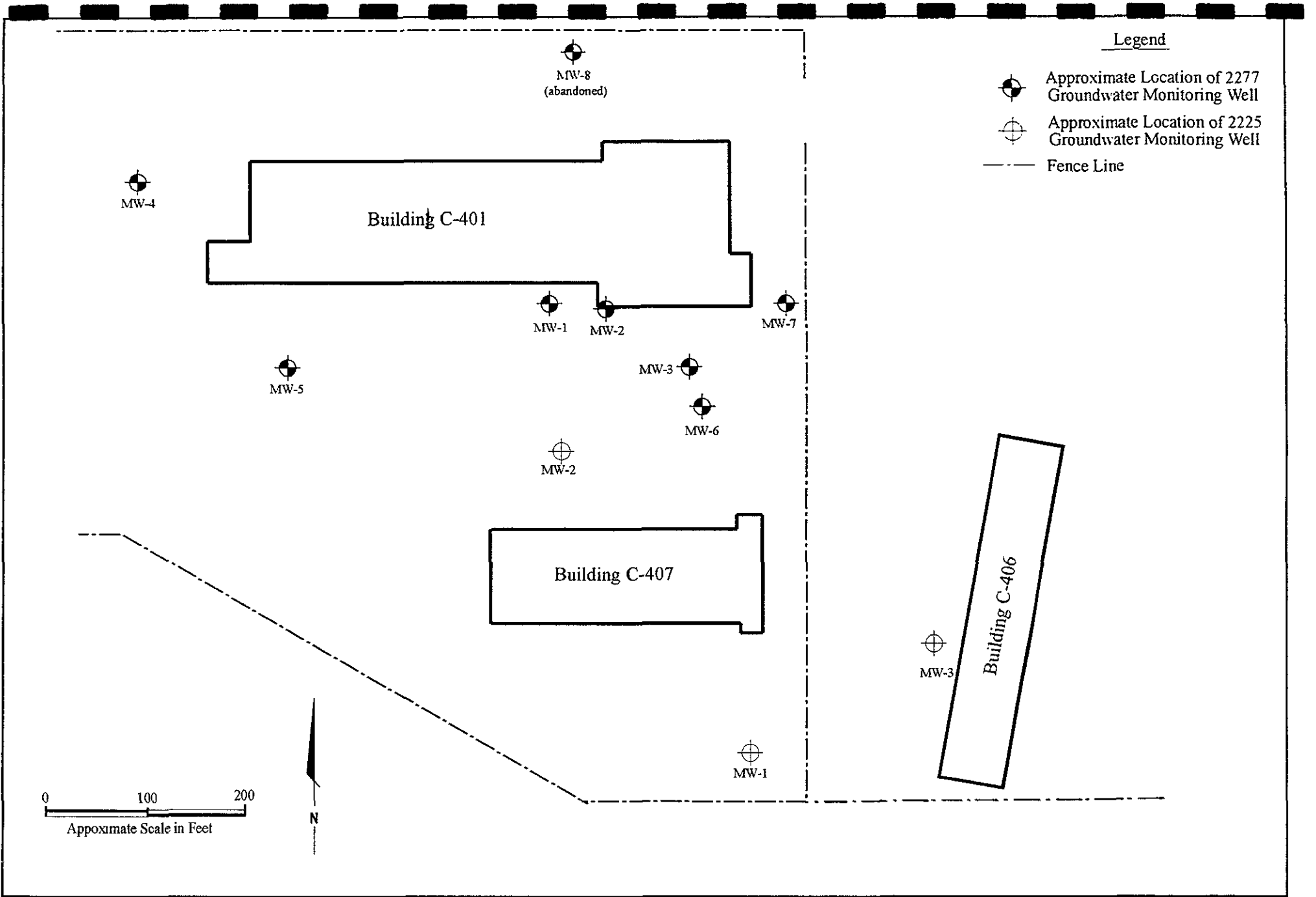
APPROVED

DATE
1/30/01




REVISED DATE

PLATE

1



Legend

-  Approximate Location of 2277 Groundwater Monitoring Well
-  Approximate Location of 2225 Groundwater Monitoring Well
-  Fence Line

MW-8
(abandoned)

MW-4

Building C-401

MW-1

MW-2

MW-7

MW-5

MW-3

MW-6

MW-2

Building C-407

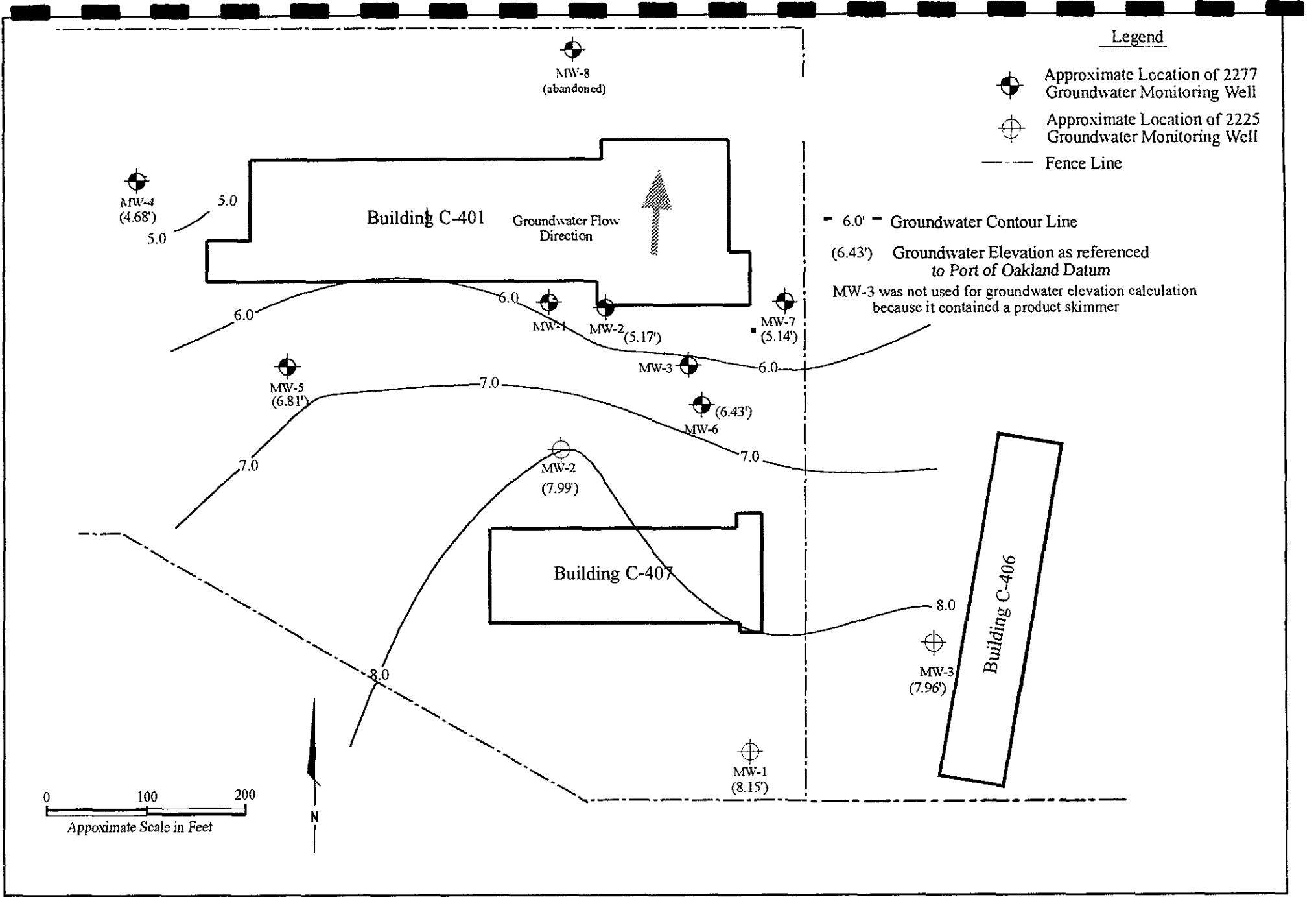
MW-3

Building C-406

MW-1

0 100 200
Approximate Scale in Feet





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vjh

PROJECT NUMBER
42633.1

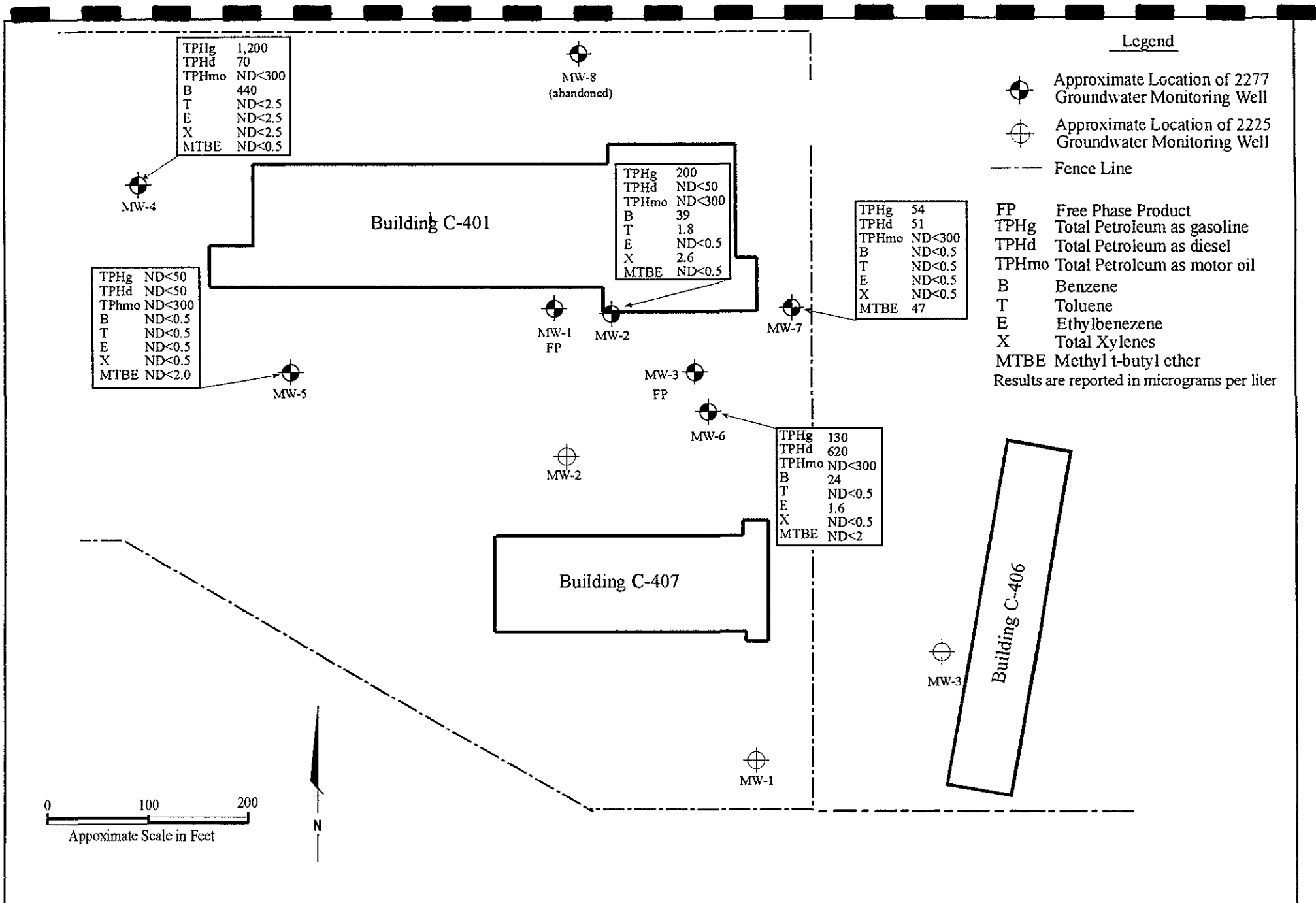
Groundwater Elevations, December 19, 2000
Quarterly Groundwater Monitoring Report
2277 and 2225 Seventh Street
Oakland, California 94607

APPROVED




DATE
1/30/01

REVISED DATE

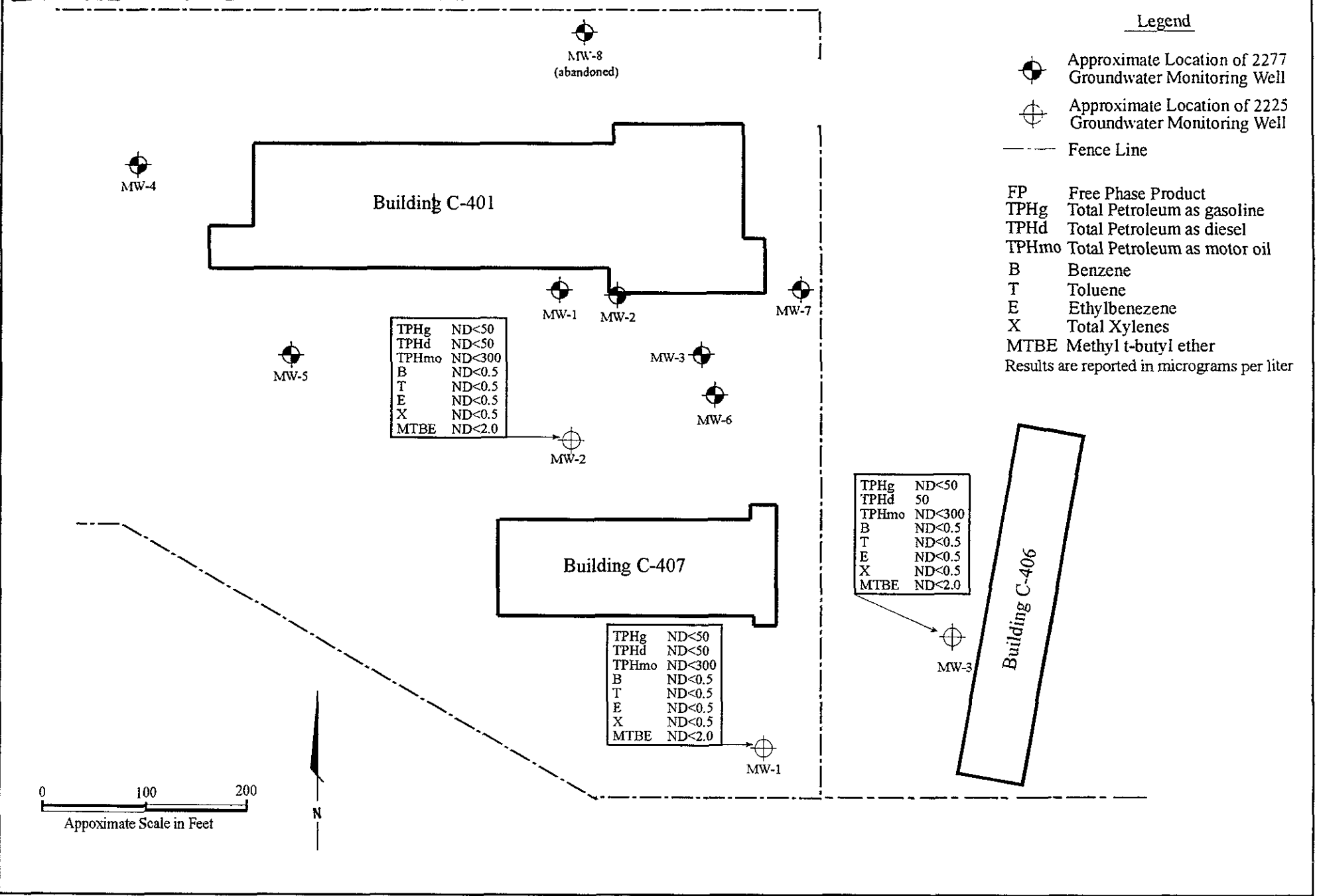
PLATE
3



Legend

-  Approximate Location of 2277 Groundwater Monitoring Well
-  Approximate Location of 2225 Groundwater Monitoring Well
-  Fence Line

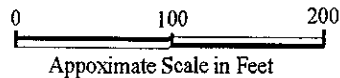
- FP Free Phase Product
 - TPHg Total Petroleum as gasoline
 - TPHd Total Petroleum as diesel
 - TPHmo Total Petroleum as motor oil
 - B Benzene
 - T Toluene
 - E Ethylbenzene
 - X Total Xylenes
 - MTBE Methyl t-butyl ether
- Results are reported in micrograms per liter



TPHg	ND<50
TPHd	ND<50
TPHmo	ND<300
B	ND<0.5
T	ND<0.5
E	ND<0.5
X	ND<0.5
MTBE	ND<2.0

TPHg	ND<50
TPHd	ND<50
TPHmo	ND<300
B	ND<0.5
T	ND<0.5
E	ND<0.5
X	ND<0.5
MTBE	ND<2.0

TPHg	ND<50
TPHd	50
TPHmo	ND<300
B	ND<0.5
T	ND<0.5
E	ND<0.5
X	ND<0.5
MTBE	ND<2.0



APPENDIX A
GROUNDWATER SAMPLE FORMS



Job Name: Port of Oakland - 2277 7th Street
 Job Number: 42633.2
 Recorded By: [Signature]
(Signature)

Well Number: MW-1
 Well Type: Monitor Extraction Other
 PVC St. Steel Other
 Date: 12/19/00
 Sampled By: VJH
(Initials)

WELL PURGING

PURGE VOLUME
 Casing Diameter (D in inches): 2
 Total Depth of Casing (TD in ft BTOC): 9.5 Ft to oil
 Water Level Depth (WL in ft BTOC): 9.89 Ft to H₂O
 No. of Well Volumes to be purged (# V): _____

PURGE METHOD
 Bailer - Type: pvc
 Submersible - Type: _____
 Other - Type: _____

PURGE VOLUME CALCULATION
 _____ X 2² X 3 X 0.0408 = _____ gals
TD (feet) WL (Feet) D (inches) # V Calculated Purge Volume

PUMP INTAKE SETTING
 Near Bottom Near Top
 Other
 Depth in feet (BTOC): _____
 Screen Interval in feet (BTOC): From _____ to _____

Field Parameter Measurement

Minutes	pH	Conductivity (μS)	Temp. <input type="checkbox"/> °C <input checked="" type="checkbox"/> °F	Turbidity (NTU)
Initial				
Meter S/N	9510	9510	9510	

PURGE TIME
 Purge Start: _____ GPM: _____
 Purge Stop: _____ GPM: _____
 Elapsed: _____

PURGE RATE
 Volume: _____ gallons
 Observations During Purging (Well Condition, Color, Odor): _____
 Discharge Water Disposal: Sanitary Sewer Storm Sewer Other onsite TS

WELL SAMPLING

Bailer - Type: disposable Sample Time: N/A

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MW-	1 LA	TPHd, TPHmo	none	C&T	silica gel cleanup
	4 VOAS	TPHg, BTEX, MTBE	HCl	C&T	

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Dupl. Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.
Trip	



Job Name: Port of Oakland - 2277 7th Street
 Job Number: 42633.2
 Recorded By: [Signature]
 (Signature)

Well Number: MW- 2
 Well Type: Monitor Extraction Other
 PVC St. Steel Other
 Date: 12/19/00
 Sampled By: VJH
 (initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches): 2
 Total Depth of Casing (TD in ft BTOC): 15.27
 Water Level Depth (WL in ft BTOC): 9.19
 No. of Well Volumes to be purged (# V): 3

PURGE METHOD

Bailer - Type: pre-disposable
 Submersible - Type: _____
 Other - Type: _____

PURGE VOLUME CALCULATION:

$(15.27 - 9.19) \times 2^2 \times 3 \times 0.0408 = 3$ gals
TD (feet) WL (Feet) D (inches) #V Calculated Purge Volume

PUMP INTAKE SETTING

Near Bottom Near Top
 Other _____
 Depth in feet (BTOC): _____
 Screen interval in feet (BTOC): from _____ to _____

Field Parameter Measurement

Minutes	pH	Conductivity (µS)	Temp.		Turbidity (NTU)
			<input type="checkbox"/> °C	<input checked="" type="checkbox"/> °F	
initial	6.65	2090	64.6		
1 GAL	6.46	1950	65.5		
2 GAL	6.50	1950	66.2		
3 GAL	6.50	2010	66.3		
Meter S/N	9510	9510	9510		

PURGE TIME

Purge Start: _____ GPM: _____
 Purge Stop: _____ GPM: _____
 Elapsed: _____

PURGE RATE

PURGE VOLUME

Volume: 3 gallons

Observations During Purging (Well Condition, Color, Odor):

clear, no odor initially, fuel odor @ end of purge

Discharge Water Disposal: Sanitary Sewer
 Storm Sewer Other onsite TS

WELL SAMPLING

Bailer - Type: disposable Sample Time: 1000

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MW	2/LA	TPHd, TPHmo	none	C&T	silica gel cleanup
227702	3/VOAS	TPHg, BTEX, MTBE	HCl	C&T	

QUALITY CONTROL SAMPLES

Duplicate Samples	
Original Sample No.	Dupl. Sample No.

Blank Samples	
Type	Sample No.

Other Samples	
Type	Sample No.
Trip	



Job Name: Port of Oakland - 2277 7th Street
 Job Number: 42633.2
 Recorded By: [Signature]
(Signature)

Well Number: MW- ~~6TE~~ 3
 Well Type: Monitor Extraction Other
 PVC St. Steel Other
 Date: 12/19/00
 Sampled By: VJH
(initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches): 2
 Total Depth of Casing (TD in ft BTOC): 18.05 8.6 Ft to oil
 Water Level Depth (WL in ft BTOC): 9.65 9.65 Ft to H₂O
 No. of Well Volumes to be purged (# V): _____

PURGE METHOD

Bailer - Type: pvc
 Submersible - Type: _____
 Other - Type: _____

PURGE VOLUME CALCULATION

18.05 () X 2² X 3 X 0.0408 = _____ gals
TD (feet) WL (Feet) D (inches) #V Calculated Purge Volume

PUMP INTAKE SETTING

Near Bottom Near Top
 Other _____
 Depth in feet (BTOC): _____
 Screen Interval in feet (BTOC): from _____ to _____

Field Parameter Measurement

Minutes	pH	Conductivity (µS)	Temp.	Turbidity (NTU)
			<input type="checkbox"/> °C <input checked="" type="checkbox"/> °F	
Initial				
Meter S/N	9510	9510	9510	

PURGE TIME

PURGE RATE

Purge Start _____ GPM: _____
 Purge Stop _____ GPM: _____
 Elapsed: _____

PURGE VOLUME

Volume: _____ gallons

Observations During Purging (Well Condition, Color, Odor):
lots of mud & H₂O in casing

Discharge Water Disposal. Sanitary Sewer
 Storm Sewer Other onsite TS

WELL SAMPLING

Bailer - Type: disposable Sample Time: N/A

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MW-	1 LA	TPHd, TPHmo	none	C&T	silica gel cleanup
	4 VOAS	TPHg, BTEX, MTBE	HCl	C&T	

QUALITY CONTROL SAMPLES

Duplicate Samples	
Original Sample No.	Dupl Sample No

Blank Samples	
Type	Sample No.

Other Samples	
Type	Sample No



Job Name: Port of Oakland - 2277 7th Street
 Job Number: 42633.2
 Recorded By: *V. Jones*
 (Signature)

Well Number: MW- 4
 Well Type: Monitor Extraction Other
 PVC St. Steel Other
 Date: 12/19/00
 Sampled By: VJH
 (initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches): 2
 Total Depth of Casing (TD in ft BTOC): 16.84
 Water Level Depth (WL in ft BTOC): 8.47
 No. of Well Volumes to be purged (# V):

PURGE METHOD

Bailer - Type: pvc
 Submersible - Type:
 Other - Type:

PURGE VOLUME CALCULATION

16.84 - 8.47 x 2² x 3 x 0.0408 = 5 gals
 TD (feet) WL (feet) D (inches) # V Calculated Purge Volume

PUMP INTAKE SETTING

Near Bottom Near Top
 Other
 Depth in feet (BTOC):
 Screen Interval in feet (BTOC): from to

Field Parameter Measurement

Minutes	pH	Conductivity (µS)	Temp.		Turbidity (NTU)
			<input type="checkbox"/> °C	<input checked="" type="checkbox"/> °F	
Initial	7.80	1180	63.0		
1.5	7.47	1320	65.0		
3	7.41	1300	65.4		
5	7.33	1340	66.2		
Meter S/N	9510	9510	9510		

PURGE TIME

PURGE RATE

Purge Start: GPM:
 Purge Stop: GPM:
 Elapsed:

PURGE VOLUME

Volume: gallons

Observations During Purging (Well Condition, Color, Odor):

Discharge Water Disposal: Sanitary Sewer
 Storm Sewer Other onsite TS

WELL SAMPLING

Bailer - Type: disposable Sample Time: 1245

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MW 227704	2 PLA 3 VOAS	TPHd, TPHmo TPHg, BTEX, MTBE	none HCl	C&T C&T	silica gel cleanup

QUALITY CONTROL SAMPLES

Duplicate Samples	
Original Sample No.	Dupl. Sample No.
227704	227704D @1255

Blank Samples	
Type	Sample No.

Other Samples	
Type	Sample No.
Trip	



Job Name: Port of Oakland - 2277 7th Street
 Job Number: 42633.2
 Recorded By: [Signature]
 (Signature)

Well Number: MW- 5
 Well Type: Monitor Extraction Other
 PVC St. Steel Other
 Date: 12/19/00
 Sampled By: VJH
 (Initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches): 2
 Total Depth of Casing (TD in ft BTOC): 17.68
 Water Level Depth (WL in ft BTOC): 6.68
 No. of Well Volumes to be purged (# V): 3

PURGE METHOD

Bailer - Type: pvc
 Submersible - Type: _____
 Other - Type: _____

PURGE VOLUME CALCULATION

$(17.68 - 6.68) \times 2^2 \times 3 \times 0.0408 = 5.4$ gals
 TD (feet) WL (Feet) D (Inches) #V Calculated Purge Volume

PUMP INTAKE SETTING

Near Bottom Near Top
 Other _____
 Depth in feet (BTOC): _____
 Screen Interval in feet (BTOC): from _____ to _____

Field Parameter Measurement

Minutes	pH	Conductivity (µS)	Temp.		Turbidity (NTU)
			<input type="checkbox"/> °C	<input checked="" type="checkbox"/> °F	
Initial	7.64	1340	62.1		
2 GAL	7.32	1720	63.5		
4 GAL	7.27	1750	64.4		
6 GAL	7.25	1740	63.8		
Meter S/N	9510	9510	9510		

PURGE TIME

PURGE RATE

Purge Start: _____ GPM: _____
 Purge Stop: _____ GPM: _____
 Elapsed: _____

PURGE VOLUME

Volume: _____ gallons

Observations During Purging (Well Condition, Color, Odor):

brownish turbid no odor

Discharge Water Disposal: Sanitary Sewer
 Storm Sewer Other onsite TS

WELL SAMPLING

Bailer - Type: disposable

Sample Time: 1205

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MW 227705	2X LA 3X VOAS	TPHd, TPHmo TPHg, BTEX, MTBE	none HCl	C&T C&T	silica gel cleanup

QUALITY CONTROL SAMPLES

Duplicate Samples	
Original Sample No	Dupl. Sample No

Blank Samples	
Type	Sample No

Other Samples	
Type	Sample No
Trip	



Job Name: Port of Oakland - 2277 7th Street
 Job Number: 42633 2
 Recorded By: [Signature]
(Signature)

Well Number: MW- 216 6
 Well Type: Monitor Extraction Other
 PVC St. Steel Other
 Date: 12/19/00
 Sampled By: VJH
(initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches): 2
 Total Depth of Casing (TD in ft BTOC): 18.05
 Water Level Depth (WL in ft BTOC): 7.57
 No. of Well Volumes to be purged (# V): 3

PURGE METHOD

Bailer - Type: pvc
 Submersible - Type: _____
 Other - Type: _____

PURGE VOLUME CALCULATION

$(18.05 - 7.57) \times 2^2 \times 3 \times 0.0408 = 5.1$ gals
TD (feet) WL (feet) D (inches) #V Calculated Purge Volume

PUMP INTAKE SETTING

Near Bottom Near Top
 Other _____
 Depth in feet (BTOC): _____
 Screen Interval in feet (BTOC): from _____ to _____

Field Parameter Measurement

Minutes	pH	Conductivity (µS)	Temp.		Turbidity (NTU)
			<input type="checkbox"/> °C	<input checked="" type="checkbox"/> °F	
Initial	7.03	2050	66.3		
1 GAL	6.81	3290	67.3		
2.5 GAL	6.83	3390	67.8		
5 GAL	7.07	3240	63.6		
Meter S/N	9510	9510	9510		

PURGE TIME

Purge Start: _____ GPM: _____
 Purge Stop: _____ GPM: _____
 Elapsed: _____

PURGE RATE

PURGE VOLUME

Volume: _____ gallons

Observations During Purging (Well Condition, Color, Odor):

clear, fuel odor, rainbow
sheen, turns dark black
 Discharge Water Disposal: Sanitary Sewer
 Storm Sewer Other onsite TS

WELL SAMPLING

Bailer - Type: disposable Sample Time: 11:30

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MW 227706	2 ALA 3 AVOAS	TPHd, TPHmo TPHg, BTEX, MTBE	none HCl	C&T C&T	silica gel cleanup

QUALITY CONTROL SAMPLES

Duplicate Samples		Blank Samples		Other Samples	
Original Sample No	Dupl. Sample No	Type	Sample No	Type	Sample No
				Trip	



Job Name: Port of Oakland - 2277 7th Street
 Job Number: 42633 2
 Recorded By: *Valerie Jones* (Signature)

Well Number: MW- 7
 Well Type: Monitor Extraction Other
 PVC St. Steel Other
 Date: 12/19/00
 Sampled By: VJH (initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches): 2
 Total Depth of Casing (TD in ft BTOC): 18.16
 Water Level Depth (WL in ft BTOC): 9.21
 No. of Well Volumes to be purged (# V): _____

PURGE METHOD

Bailer - Type: pvc
 Submersible - Type: _____
 Other - Type: _____

PURGE VOLUME CALCULATION

$(18.16 - 9.21) \times 2^2 \times 3 \times 0.0408 = 4.4$ gals
 TD (feet) WL (Feet) D (inches) #V Calculated Purge Volume

PUMP INTAKE SETTING

Near Bottom Near Top
 Other _____
 Depth in feet (BTOC) _____
 Screen Interval in feet (BTOC): from _____ to _____

Field Parameter Measurement

Minutes	pH	Conductivity (µS)	Temp. <input type="checkbox"/> °C <input checked="" type="checkbox"/> °F	Turbidity (NTU)
Initial	7.86	1240	65.7	
1 GAL	7.68	1390	66.3	
3	7.55	1430	66.6	
FINAL	7.40	1450	66.9	
Meter S/N	9510	9510	9510	

PURGE TIME

Purge Start: _____ GPM: _____
 Purge Stop: _____ GPM: _____
 Elapsed: _____

PURGE RATE

PURGE VOLUME

Volume: _____ gallons

Observations During Purging (Well Condition, Color, Odor):

blackish, slight fuel odor

Discharge Water Disposal: Sanitary Sewer
 Storm Sewer Other onsite TS

WELL SAMPLING

Bailer - Type: disposable Sample Time: 1320

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MW	2/LA	TPHd, TPHmo	none	C&T	silica gel cleanup
227707	3/VOAS	TPHg, BTEX, MTBE	HCl	C&T	

QUALITY CONTROL SAMPLES

Duplicate Samples	
Original Sample No.	Dupl Sample No

Blank Samples	
Type	Sample No

Other Samples	
Type	Sample No
Trip	



Job Name: Port of Oakland -2225 7th Street
 Job Number: 42633.1
 Recorded By: [Signature]
 (Signature)

Well Number: MW-1
 Well Type: Monitor Extraction Other
 PVC St. Steel Other
 Date: 12/19/00
 Sampled By: VJH
 (Initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches): 4
 Total Depth of Casing (TD in ft BTOC): 14.90
 Water Level Depth (WL in ft BTOC): 5.57
 No. of Well Volumes to be purged (# V): 3

PURGE METHOD

Bailer - Type: pvc
 Submersible - Type: _____
 Other - Type: _____

PURGE VOLUME CALCULATION

$(14.90 - 5.57) \times 4^2 \times 3 \times 0.0408 = 18.3$ gals
 TD (feet) WL (Feet) D (inches) #V Calculated Purge Volume

PUMP INTAKE SETTING

Near Bottom Near Top
 Other _____
 Depth in feet (BTOC): _____
 Screen Interval in feet (BTOC): from _____ to _____

Field Parameter Measurement

Minutes	pH	Conductivity (µS)	Temp.		Turbidity (NTU)
			<input type="checkbox"/> °C	<input checked="" type="checkbox"/> °F	
Initial	8.36	639	61.6		
6 GAL	8.01	772	63.0		
12	7.87	745	62.4		
FINAL	7.78	743	61.7		
Meter S/N	9510	9510	9510		

PURGE TIME

Purge Start: _____ GPM: _____
 Purge Stop: _____ GPM: _____
 Elapsed: _____

PURGE RATE

PURGE VOLUME

Volume: _____ gallons

Observations During Purging (Well Condition, Color, Odor):

clear w/orange flecks, no odor initially
turns turbid orange/black

Discharge Water Disposal: Sanitary Sewer
 Storm Sewer Other 2277 7th Street

WELL SAMPLING

Bailer - Type: disposable Sample Time: 1440

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MW-1	1 LA	TPHd, TPHmo	none	C&T	silica gel cleanup
	4 VOAS	TPHg, BTEX, MTBE	HCl	C&T	Confirm MTBE by 8260

QUALITY CONTROL SAMPLES

Duplicate Samples	
Original Sample No.	Dupl. Sample No.
MW-1	MW-1D @ 1445

Blank Samples	
Type	Sample No.

Other Samples	
Type	Sample No.
Trip	



Job Name: Port of Oakland -2225 7th Street
 Job Number: 42833 1
 Recorded By: *Robert Sparks*
(Signature)

Well Number: MW- 2
 Well Type: Monitor Extraction Other
 PVC St. Steel Other
 Date: 12/19/00
 Sampled By: VJH
(Initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches): 4
 Total Depth of Casing (TD in ft BTOC): 14.60
 Water Level Depth (WL in ft BTOC): 5.81
 No. of Well Volumes to be purged (# V): 3

PURGE METHOD

Bailor - Type: pvc
 Submersible - Type: _____
 Other - Type: _____

PURGE VOLUME CALCULATION:

$(14.60 - 5.81) \times 4^2 \times 3 \times 0.0408 = 17.2$ gals
TD (feet) WL (Feet) D (inches) #V Calculated Purge Volume

PUMP INTAKE SETTING

Near Bottom Near Top
 Other _____
 Depth in feet (BTOC): _____
 Screen Interval in feet (BTOC): _____ from _____ to _____

Field Parameter Measurement

Minutes	pH	Conductivity (µS)	Temp.		Turbidity (NTU)
			<input type="checkbox"/> °C	<input checked="" type="checkbox"/> °F	
Initial	7.75	2090		64.3	
5 GAL	7.49	2440		64.9	
10	7.39	2530		63.9	
FINAL	7.33	2510		62.0	
Meter S/N	9510	9510		9510	

PURGE TIME

PURGE RATE

Purge Start: _____ GPM: _____
 Purge Stop: _____ GPM: _____
 Elapsed: _____

PURGE VOLUME

Volume: _____ gallons

Observations During Purging (Well Condition, Color, Odor):

Light grey color, sulfur odor

Discharge Water Disposal: Sanitary Sewer
 Storm Sewer Other 2277 7th Street

WELL SAMPLING

Bailor - Type: disposable

Sample Time: 1400

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MW- 2	2 / LA	TPHd, TPHmo	none	C&T	silica gel cleanup
	3 / AVOAS	TPHg, BTEX, MTBE	HCl	C&T	Confirm MTBE by 8260

QUALITY CONTROL SAMPLES

Duplicate Samples	
Original Sample No	Dupl. Sample No

Blank Samples	
Type	Sample No

Other Samples	
Type	Sample No
Trip	



Job Name: Port of Oakland -2225 7th Street
 Job Number: 42633.1
 Recorded By: *Valerie Harris*
 (Signature)

Well Number: MW- 3
 Well Type: Monitor Extraction Other
 PVC St. Steel Other
 Date: 12/19/00
 Sampled By: VJH
 (initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches): 4
 Total Depth of Casing (TD in ft BTOC): 11.5
 Water Level Depth (WL in ft BTOC): 7.10
 No. of Well Volumes to be purged (# V): 3

PURGE METHOD

Bailer - Type: pvc
 Submersible - Type: _____
 Other - Type: _____

PURGE VOLUME CALCULATION

$(11.5 - 7.10) \times 4^2 \times 3 \times 0.0408 = 8$ gals
 TD (feet) WL (feet) D (inches) #V Calculated Purge Volume

PUMP INTAKE SETTING

Near Bottom Near Top
 Other _____
 Depth in feet (BTOC): _____
 Screen Interval in feet (BTOC): from _____ to _____

Field Parameter Measurement

Minutes	pH	Conductivity (µS)	Temp.		Turbidity (NTU)
			<input type="checkbox"/> °C	<input checked="" type="checkbox"/> °F	
Initial	8.02	1460	60.1		
3	7.78	1490	60.7		
6	7.53	1570	61.2		
9	7.49	1560	61.4		
FINAL					
Meter S/N	9510	9510	9510		

PURGE TIME

PURGE RATE

Purge Start: _____ GPM: _____
 Purge Stop: _____ GPM: _____
 Elapsed: _____

PURGE VOLUME

Volume: _____ gallons

Observations During Purging (Well Condition, Color, Odor):

clear w/ black flecks, no odor

Discharge Water Disposal:

Sanitary Sewer
 Storm Sewer Other 2277 7th Street

WELL SAMPLING

Bailer - Type: disposable

Sample Time: 1515

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MW- 3	2 LA	TPHd, TPHmo	none	C&T	silica gel cleanup
	3 VOAS	TPHg, BTEX, MTBE	HCl	C&T	Confirm MTBE by 8260

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Dupl. Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

APPENDIX B
LABORATORY REPORT



Curtis & Tompkins, Ltd., Analytical Laboratories Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

RECEIVED
JAN 22 2001
HARDING LAWSON

A N A L Y T I C A L R E P O R T

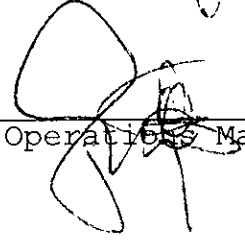
Prepared for:

Harding Lawson Associates
383 Fourth Street, Third Floor
Oakland, CA 94607

Date: 17-JAN-01
Lab Job Number: 149365
Project ID: 42633.2
Location: 2277 Seventh St.

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signatures. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis.

Reviewed by: 
Project Manager

Reviewed by: 
Operations Manager

This package may be reproduced only in its entirety.

RVI

Laboratory Number: **149365** Receipt Date: **12/20/00**
Client: **Harding Lawson Associates**
Project#: **42633.2**
Location: **2277 Seventh Street**

CASE NARRATIVE

This hardcopy data package contains sample and QC results for seven water samples that were received on December 20, 2000. All samples were received cold and intact.

MBTE confirmation by GC/MC was not performed within the recommended hold time due to an oversight by the laboratory. On January 15th, the client called and requested that MTBE confirmation be performed pasted hold.

TVH/BTXE: High Trifluorotoluene surrogate recoveries were observed in the matrix spike/matrix spike duplicates. This outlier is due to the surrogate coeluting with the gasoline range hydrocarbons. No other analytical problems were encountered.

Total Extractable Hydrocarbons: No analytical problems were encountered.

Purgeable Aromatics: The analysis of MTBE was performed past hold and is identified with "b" flags. Because the samples were analyzed past the recommended hold time, it is possible that the MTBE results are biased low. No other analytical problems were encountered.

149365

No 2647



Harding Lawson Associates
383 Fourth Street, Third Floor
Oakland, California 94607
(510) 451-1001 - Phone
(510) 451-3165 - Fax

CHAIN OF CUSTODY FORM

Lab: CIT

Samplers: VALERIE HARRIS

Job Number: 426772

Name/Location: 2377 SEVENTH STREET

Project Manager: VALERIE HARRIS

Recorder: *Valerie Harris*
(Signature Required)

ANALYSIS REQUESTED					
EPA 8010	EPA 8020	EPA 8260	EPA 8270	METALS	EPA 8015M/TPHG
					X X X
					X
					X X X
					X X X
					X X X
					X X X
					X X X

1
2
3
4
5
6
7

SOURCE CODE	MATRIX				# CONTAINERS & PRESERV.				SAMPLE NUMBER OR LAB NUMBER			DATE				
	Water	Sediment	Soil	Oil	Unpres.	H ₂ S	HNO ₃	HCL	Ice	Yr	Wk	Seq	Yr	Mo	Day	Time
	X				2			3		22	77	02	00	12	19	1000
	X							3		22	77	00	00	12	19	1045
	X				2			3		22	77	06	00	12	19	1130
	X				2			3		22	77	05	00	12	19	1205
	X				2			3		22	77	04	00	12	19	1245
	X				2			3		22	77	04D	00	12	19	1255
	X				2			3		22	77	07	00	12	19	1320

STATION DESCRIPTION/NOTES

Preservation Correct?
 Yes No N/A

Received On Ice
 Cold Ambient Intact

LAB NUMBER			DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS
Yr	Wk	Seq				
						Silica gel cleanup for TPH _d & TPH _o
						MTBE confirmation by 8260

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
<i>Valerie Harris</i>	<i>George Lumiere</i>	12/20/00 11:15 AM
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
DISPATCHED BY: (Signature)	DATE/TIME	RECEIVED FOR LAB BY: (Signature)
METHOD OF SHIPMENT		
SAMPLE CONDITION WHEN RECEIVED BY THE LABORATORY		
227702 & 227700 - All vials received w/ headspace		

Laboratory Copy White

Project File Copy Yellow

Field or Office Copy Pink

w/ cold

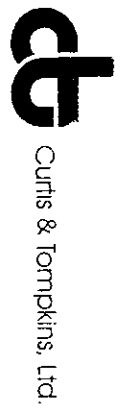
CURTIS & TOMPKINS, LTD. BERKELEY

LOGIN CHANGE FORM

Reason for change: * Client Request By: Anna Date/Time: 1/15/01 Initials: _____
Login Review * Data Review

Current Lab ID	Previous Lab ID	Client ID	Matrix	Add/Cancel	Analysis	Due date
149365-001		227702	Water	Add	MTBE by 5020	1/
-005		227704				
-006		227704D				17
-007		227707				

MTBE | High
 5.1 ppb | B2 39
 19 ppb | B2 420
 18 ppb | B2 440
 Supph ←





Gasoline by GC/FID CA LUFT

Lab #:	149365	Location:	2277 Seventh St.
Client:	Harding Lawson Associates	Prep:	EPA 5030
Project#:	42633.2	Analysis:	EPA 8015M
Matrix:	Water	Sampled:	12/19/00
Units:	ug/L	Received:	12/20/00
Diln Fac:	1.000		

Field ID:	227702	Batch#:	60554
Type:	SAMPLE	Analyzed:	01/02/01
Lab ID:	149365-001		

Analyte	Result	RL
Gasoline C7-C12	200 L Z	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	100	59-135
Bromofluorobenzene (FID)	87	60-140

Field ID:	227706	Batch#:	60491
Type:	SAMPLE	Analyzed:	12/29/00
Lab ID:	149365-003		

Analyte	Result	RL
Gasoline C7-C12	130 L Z	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	110	59-135
Bromofluorobenzene (FID)	110	60-140

Field ID:	227705	Batch#:	60491
Type:	SAMPLE	Analyzed:	12/29/00
Lab ID:	149365-004		

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	104	59-135
Bromofluorobenzene (FID)	106	60-140

L= Lighter hydrocarbons contributed to the quantitation

Z= Sample exhibits unknown single peak or peaks

ND= Not Detected

RL= Reporting Limit



Gasoline by GC/FID CA LUFT

Lab #:	149365	Location:	2277 Seventh St.
Client:	Harding Lawson Associates	Prep:	EPA 5030
Project#:	42633.2	Analysis:	EPA 8015M
Matrix:	Water	Sampled:	12/19/00
Units:	ug/L	Received:	12/20/00
Diln Fac:	1.000		

Field ID:	227704	Batch#:	60491
Type:	SAMPLE	Analyzed:	12/29/00
Lab ID:	149365-005		

Analyte	Result	RL
Gasoline C7-C12	960 L Z	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	121	59-135
Bromofluorobenzene (FID)	107	60-140

Field ID:	227704D	Batch#:	60491
Type:	SAMPLE	Analyzed:	12/29/00
Lab ID:	149365-006		

Analyte	Result	RL
Gasoline C7-C12	1,200 L Z	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	127	59-135
Bromofluorobenzene (FID)	108	60-140

Field ID:	227707	Batch#:	60504
Type:	SAMPLE	Analyzed:	12/29/00
Lab ID:	149365-007		

Analyte	Result	RL
Gasoline C7-C12	54 Z	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	101	59-135
Bromofluorobenzene (FID)	111	60-140

L= Lighter hydrocarbons contributed to the quantitation

Z= Sample exhibits unknown single peak or peaks

ND= Not Detected

RL= Reporting Limit

Gasoline by GC/FID CA LUFT

Lab #:	149365	Location:	2277 Seventh St.
Client:	Harding Lawson Associates	Prep:	EPA 5030
Project#:	42633.2	Analysis:	EPA 8015M
Matrix:	Water	Sampled:	12/19/00
Units:	ug/L	Received:	12/20/00
Diln Fac:	1.000		

Type:	BLANK	Batch#:	60491
Lab ID:	QC133745	Analyzed:	12/28/00

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	102	59-135
Bromofluorobenzene (FID)	108	60-140

Type:	BLANK	Batch#:	60504
Lab ID:	QC133797	Analyzed:	12/29/00

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	103	59-135
Bromofluorobenzene (FID)	105	60-140

Type:	BLANK	Batch#:	60554
Lab ID:	QC133988	Analyzed:	01/02/01

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	95	59-135
Bromofluorobenzene (FID)	95	60-140

L= Lighter hydrocarbons contributed to the quantitation

Z= Sample exhibits unknown single peak or peaks

ND= Not Detected

RL= Reporting Limit

GC07 TVH 'A' Data File RTX 502

Sample Name : MSS,149365-001,60554,TVH ONLY

Sample #: B1

Page 1 of 1

FileName : G:\GC07\DATA\002A004.raw

Date : 1/2/01 09:20 PM

Method : TVHBTXE

Time of Injection: 1/2/01 08:54 PM

Start Time : 0.00 min

End Time : 26.00 min

Low Point : 4.31 mV

High Point : 380.99 mV

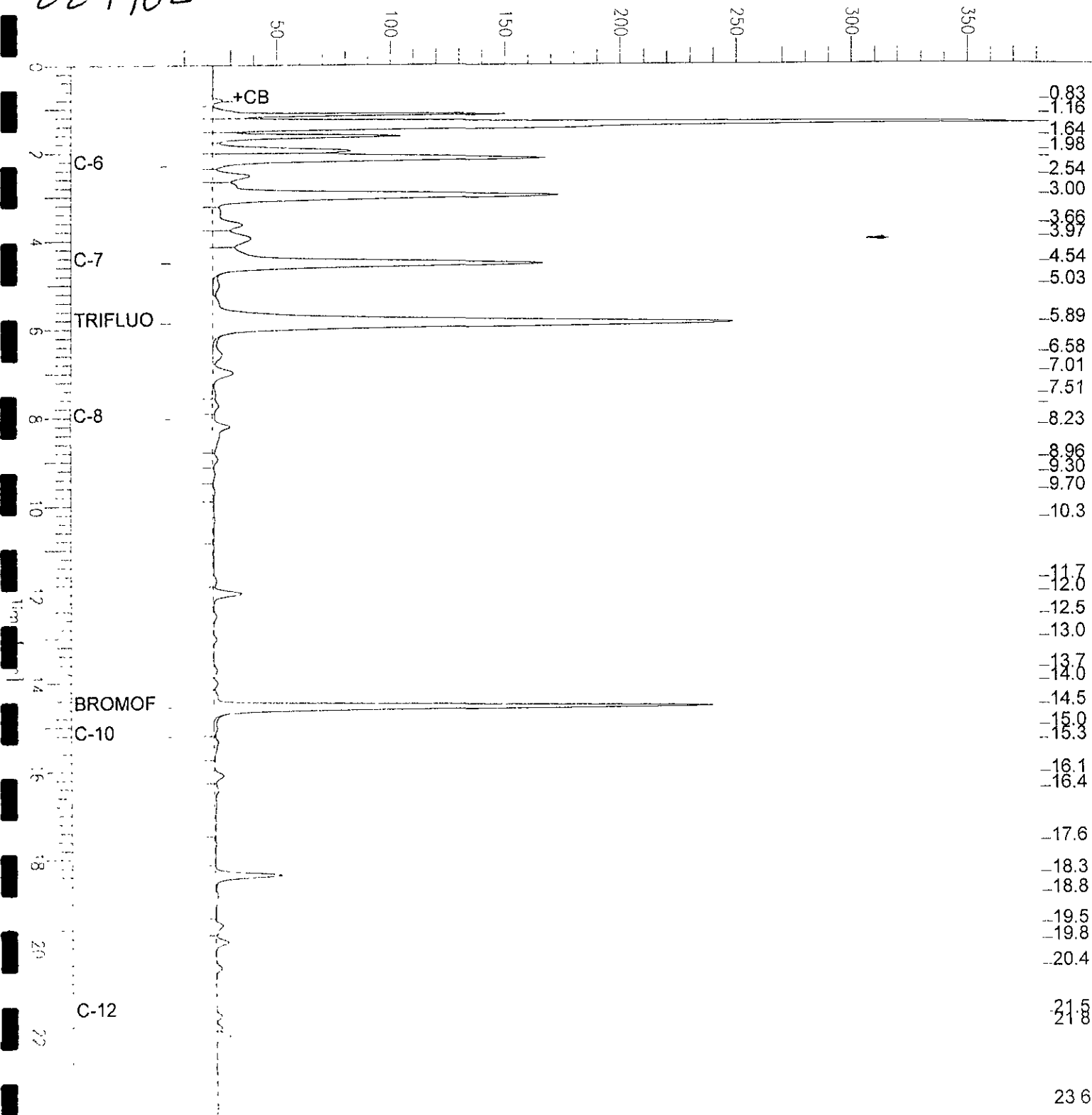
Scale Factor: 1.0

Plot Offset: 4 mV

Plot Scale: 376.7 mV

227702

Response [mV]



GC04 TVH 'J' Data File FID

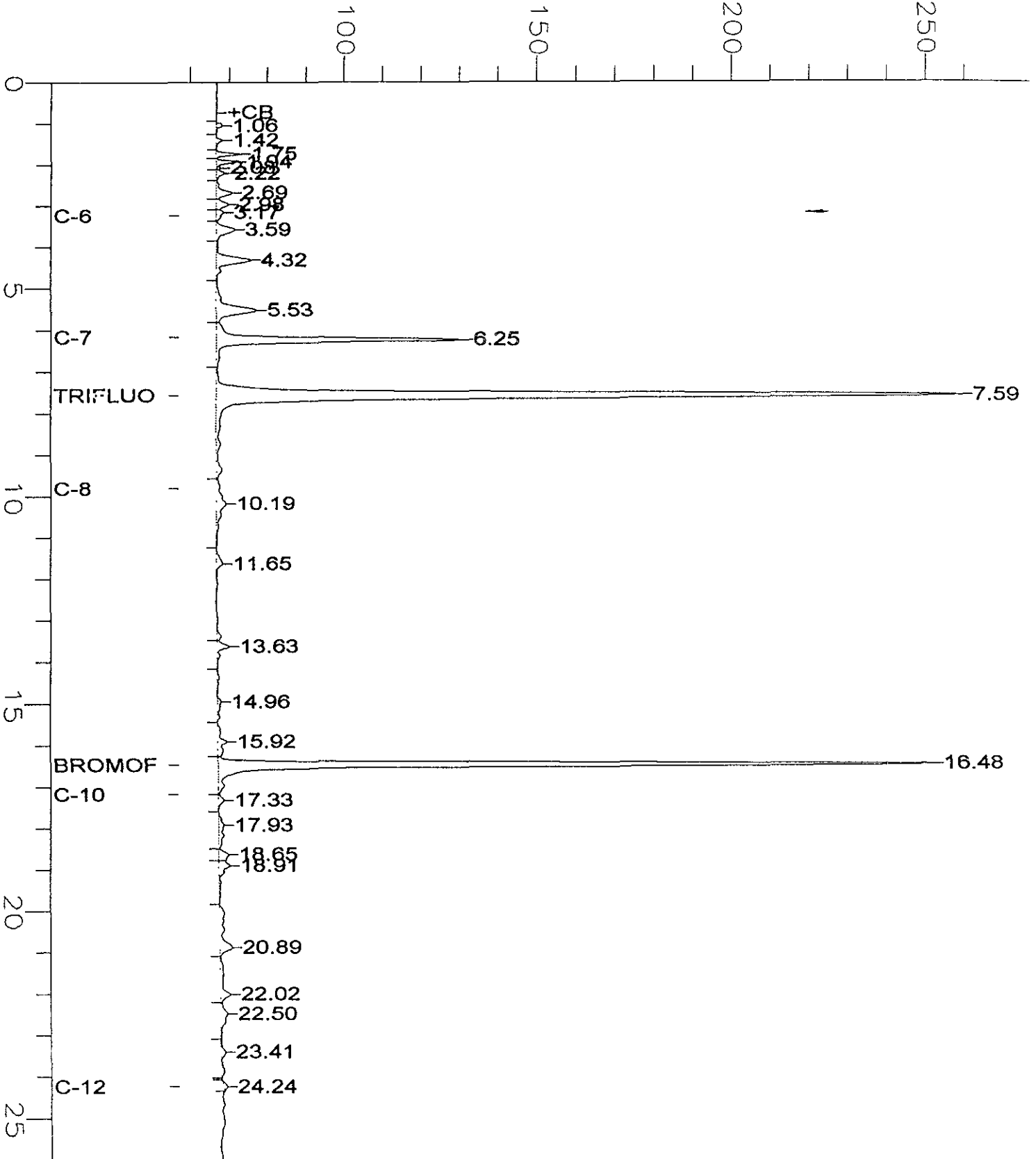
Sample Name : 149365-003,60491,+mtbe
File Name : G:\GC04\DATA\363J031.raw
Method : TVHBTXE
Start Time : 0.00 min
Scale Factor : 1.0

End Time : 26.00 min
Plot Offset : 57 mV

Sample #: a1
Date : 12/29/00 09:18 AM
Time of Injection: 12/29/00 08:52 AM
Low Point : 57.05 mV
Plot Scale: 203.0 mV
High Point : 260.08 mV

227706

Response [mV]



GC04 TVH 'J' Data File FID

Sample Name : 149365-005,60491,+mte
File Name : G:\GC04\DATA\363J033.raw
Method : TVHBTXE
Start Time : 0.00 min
Scale Factor : 1.0

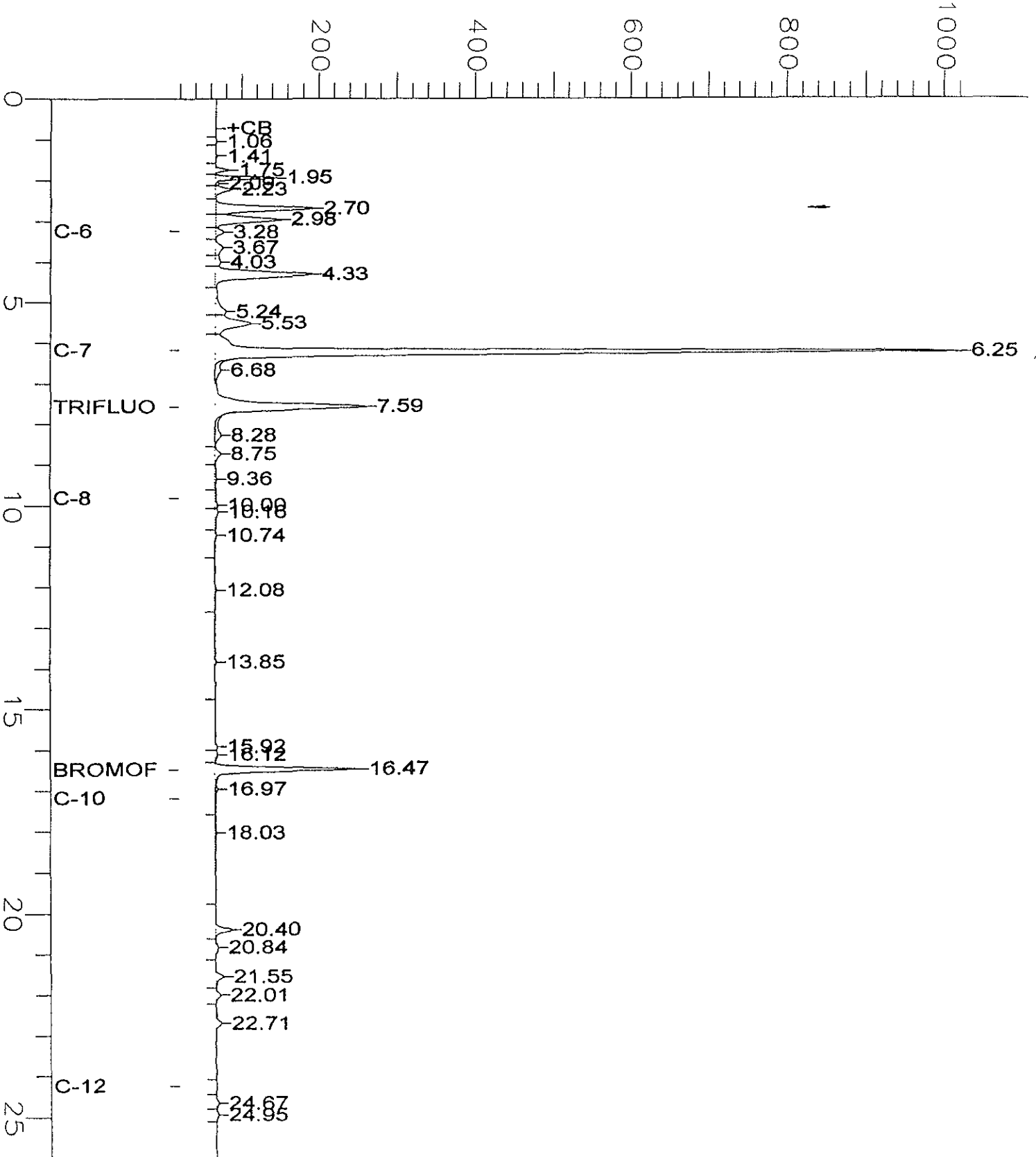
End Time : 26.00 min
Plot Offset : 18 mV

Sample #: a1
Date : 12/29/00 10:26 AM
Time of Injection: 12/29/00 10:00 AM
Low Point : 18.10 mV
High Point : 1022.44 mV
Plot Scale: 1004.3 mV

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227704

Response [mV]



GC04 TVH 'J' Data File FID

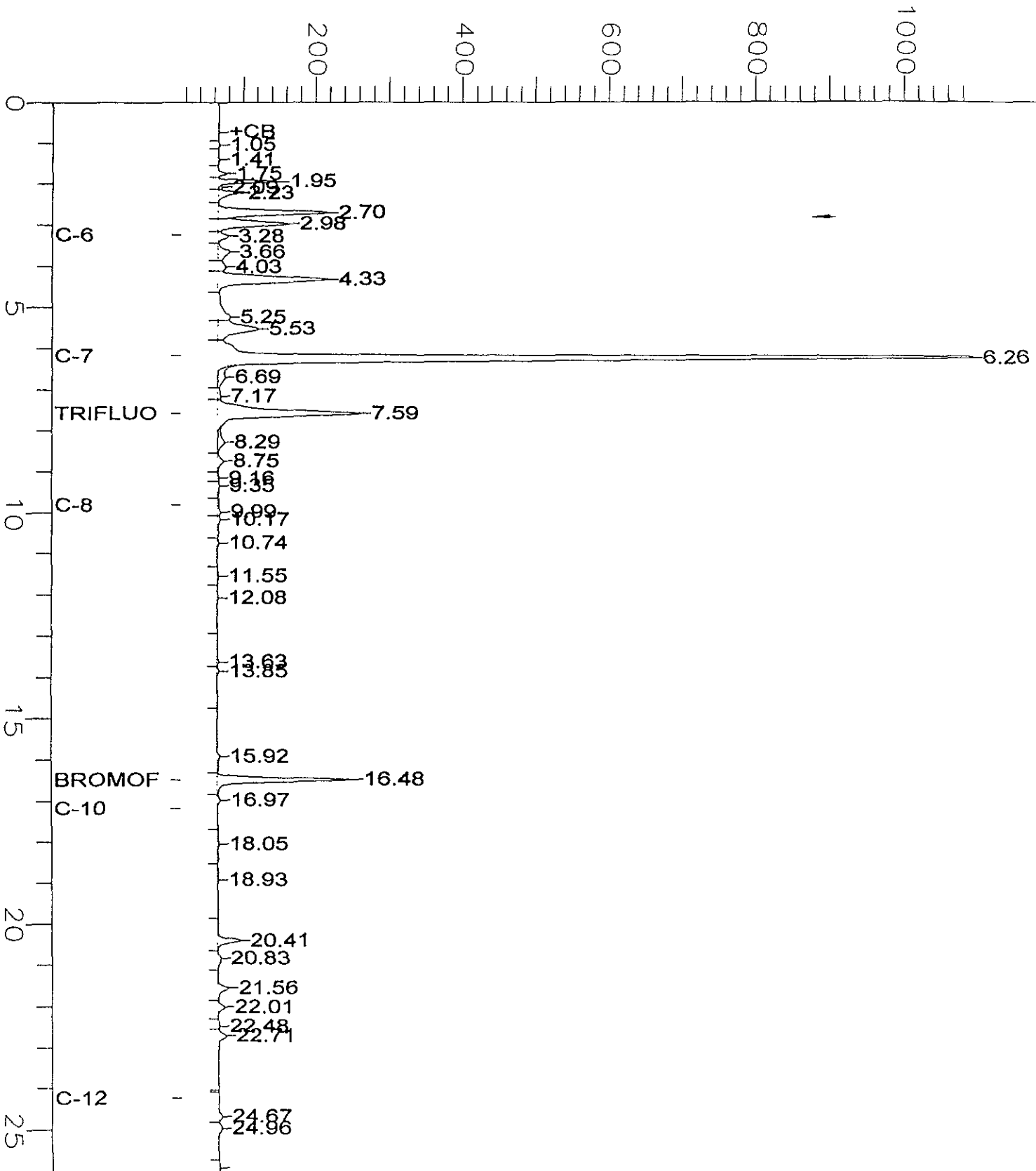
Sample Name : 149365-006,60491,+mtbe
FileName : G:\GC04\DATA\363J034.raw
Method : TVHBTXE
Start Time : 0.00 min
Scale Factor : 1.0

End Time : 26.00 min
Plot Offset : 14 mV

Sample #: a1
Date : 12/29/00 11:00 AM
Time of Injection: 12/29/00 10:34 AM
Low Point : 13.91 mV
High Point : 1094.35 mV
Plot Scale: 1080.4 mV

Response [mV]

227704D



GC04 TVH 'J' Data File FID

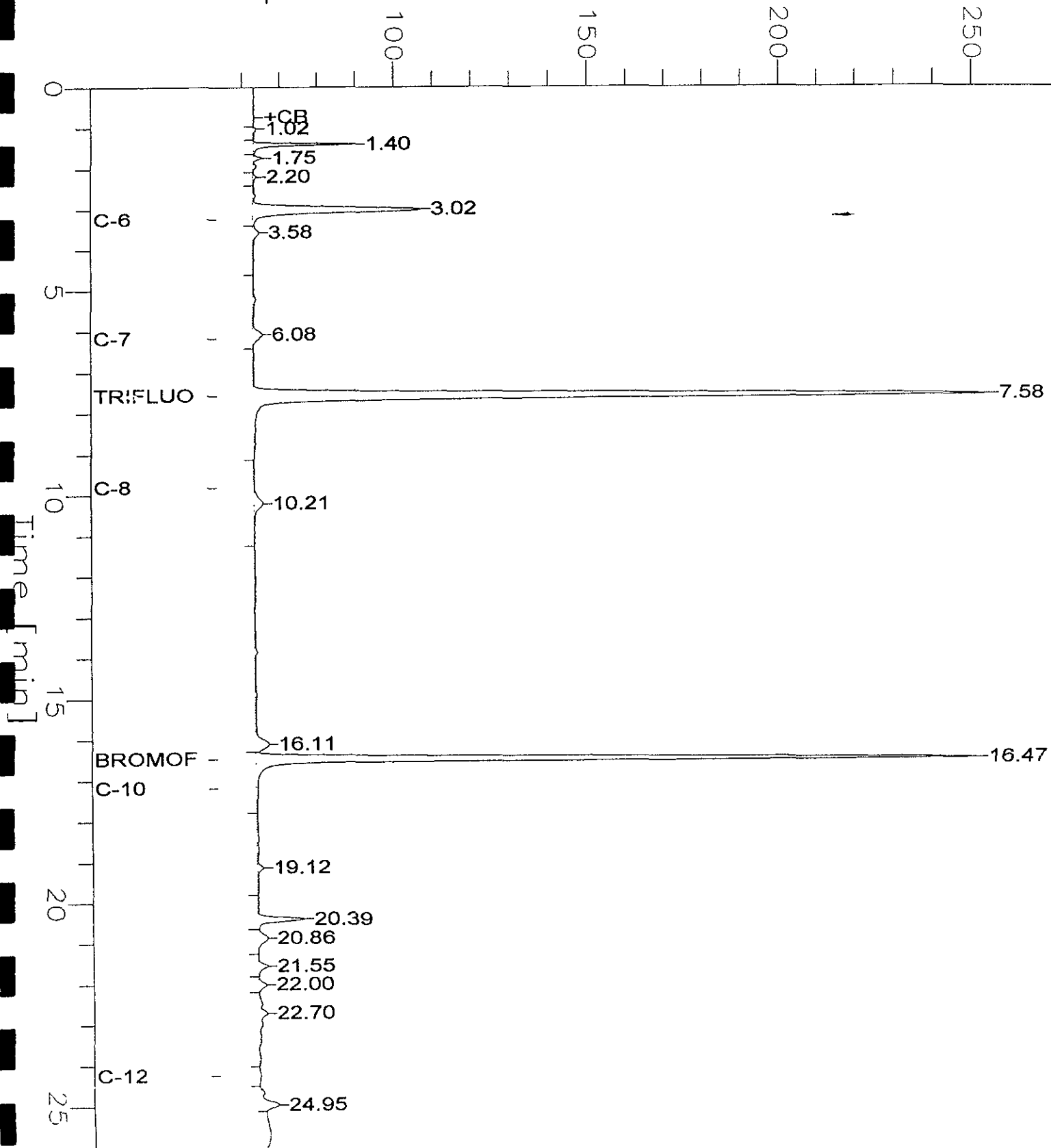
Sample Name : 149365-007,60504
FileName : G:\GC04\DATA\364J009.raw
Method : TVHBTXE
Start Time : 0.00 min
Scale Factor: 1.0

End Time : 26.00 min
Plot Offset: 53 mV

Sample #: A1
Date : 12/29/00 08:01 PM
Time of Injection: 12/29/00 07:35 PM
Low Point : 53.40 mV
Plot Scale: 201.2 mV
High Point : 254.61 mV

227707

Response [mV]



GC04 TVH 'J' Data File FID

Sample Name : ccv/lcs,qc133746,60491,00ws0244,5/5000

Sample #: gas

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FileName : g:\gc04\data\363j003.raw

Date : 12/29/00 01:48 PM

Method : TVHBTXE

Time of Injection: 12/28/00 04:13 PM

Start Time : 0.00 min

End Time : 26.00 min

Low Point : 44.90 mV

High Point : 405.71 mV

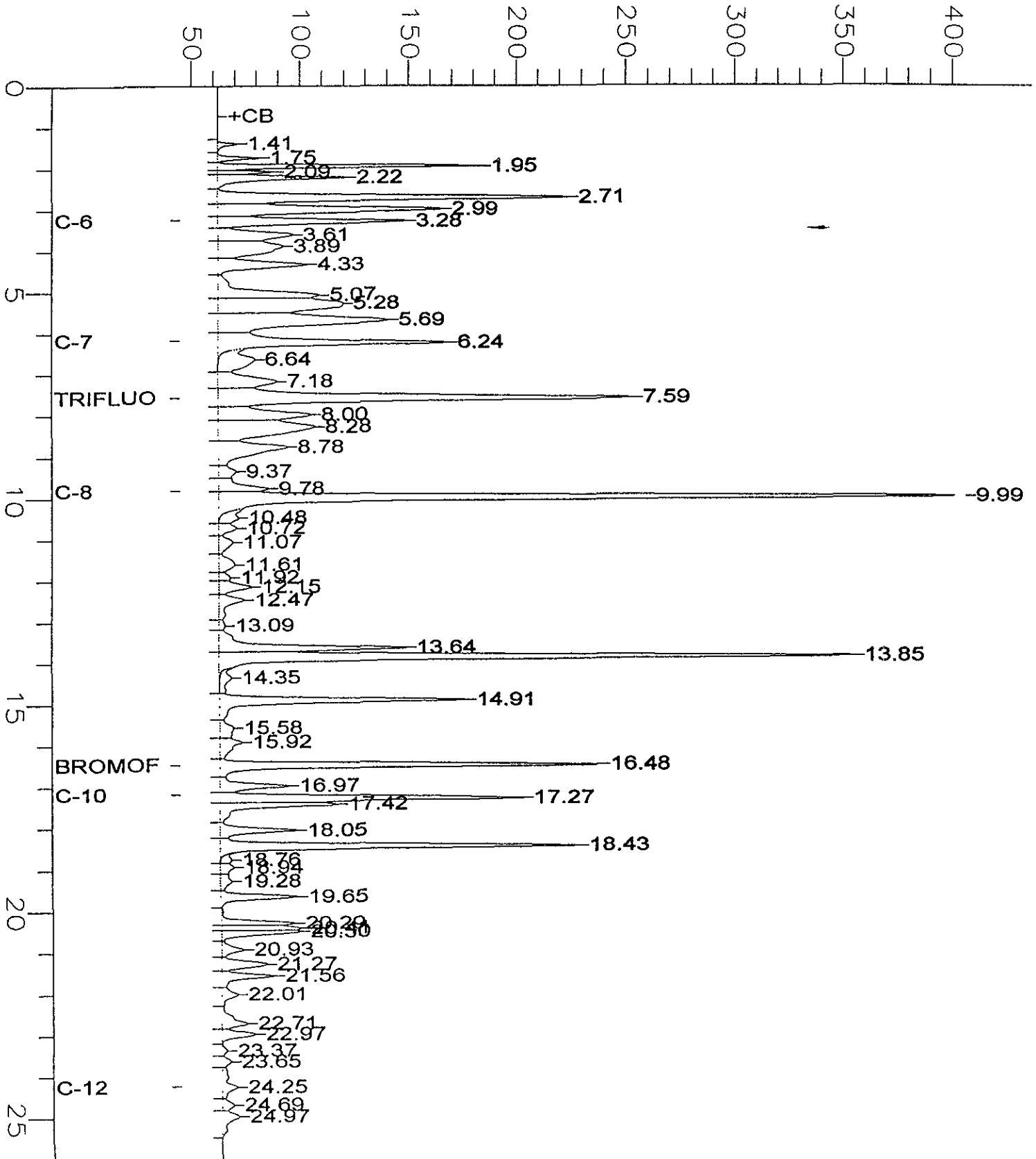
Scale Factor: 1.0

Plot Offset: 45 mV

Plot Scale: 360.8 mV

Gasoline

Response [mV]





Gasoline by GC/FID CA LUFT

Lab #:	149365	Location:	2277 Seventh St.
Client:	Harding Lawson Associates	Prep:	EPA 5030
Project#:	42633.2	Analysis:	EPA 8015M
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC133746	Batch#:	60491
Matrix:	Water	Analyzed:	12/28/00
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	2,000	2,049	102	73-121
Surrogate	%REC	Limits		
Trifluorotoluene (FID)	112	59-135		
Bromofluorobenzene (FID)	101	60-140		



Gasoline by GC/FID CA LUFT

Lab #:	149365	Location:	2277 Seventh St.
Client:	Harding Lawson Associates	Prep:	EPA 5030
Project#:	42633.2	Analysis:	EPA 8015M
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC133798	Batch#:	60504
Matrix:	Water	Analyzed:	12/29/00
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	2,000	2,157	108	73-121

Surrogate	%REC	Limits
Trifluorotoluene (FID)	113	59-135
Bromofluorobenzene (FID)	102	60-140



Gasoline by GC/FID CA LUFT

Lab #:	149365	Location:	2277 Seventh St.
Client:	Harding Lawson Associates	Prep:	EPA 5030
Project#:	42633.2	Analysis:	EPA 8015M
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC133989	Batch#:	60554
Matrix:	Water	Analyzed:	01/02/01
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	2,000	2,139	107	73-121

Surrogate	%REC	Limits
Trifluorotoluene (FID)	117	59-135
Bromofluorobenzene (FID)	99	60-140



Gasoline by GC/FID CA LUFT

Lab #:	149365	Location:	2277 Seventh St.
Client:	Harding Lawson Associates	Prep:	EPA 5030
Project#:	42633.2	Analysis:	EPA 8015M
Field ID:	ZZZZZZZZZZ	Batch#:	60504
MSS Lab ID:	149366-001	Sampled:	12/19/00
Matrix:	Water	Received:	12/20/00
Units:	ug/L	Analyzed:	12/29/00
Diln Fac:	1.000		

Type: MS Lab ID: QC133799

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	<21.00	2,000	2,063	103	65-131

Surrogate	%REC	Limits
Trifluorotoluene (FID)	221 *	>LR 59-135
Bromofluorobenzene (FID)	109	60-140

Type: MSD Lab ID: QC133800

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	2,058	103	65-131	0	20

Surrogate	%REC	Limits
Trifluorotoluene (FID)	220 *	>LR 59-135
Bromofluorobenzene (FID)	107	60-140

*= Value outside of QC limits; see narrative

>LR= Response exceeds instrument's linear range

RPD= Relative Percent Difference

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Gasoline by GC/FID CA LUFT

Lab #:	149365	Location:	2277 Seventh St.
Client:	Harding Lawson Associates	Prep:	EPA 5030
Project#:	42633.2	Analysis:	EPA 8015M
Field ID:	227702	Batch#:	60554
MSS Lab ID:	149365-001	Sampled:	12/19/00
Matrix:	Water	Received:	12/20/00
Units:	ug/L	Analyzed:	01/02/01
Diln Fac:	1.000		

Type: MS Lab ID: QC133990

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	196.8	2,000	2,442	112	65-131

Surrogate	%REC	Limits
Trifluorotoluene (FID)	137 *	59-135
Bromofluorobenzene (FID)	107	60-140

Type: MSD Lab ID: QC133991

Analyte	Spiked	Result	%REC	Limits	RPD	Ldm
Gasoline C7-C12	2,000	2,429	112	65-131	1	20

Surrogate	%REC	Limits
Trifluorotoluene (FID)	140 *	59-135
Bromofluorobenzene (FID)	110	60-140

*= Value outside of QC limits; see narrative

RPD= Relative Percent Difference



Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	149365	Location:	2277 Seventh St.
Client:	Harding Lawson Associates	Prep:	EPA 5030
Project#:	42633.2	Analysis:	EPA 8021B
Matrix:	Water	Sampled:	12/19/00
Units:	ug/L	Received:	12/20/00

Field ID:	227702	Diln Fac:	1.000
Type:	SAMPLE	Batch#:	60544
Lab ID:	149365-001	Analyzed:	01/02/01

Analyte	Result	RL
MTBE	5.1	2.0
Benzene	39	0.50
Toluene	1.8	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	2.6	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Trifluorotoluene (PID)	112	56-142
Bromofluorobenzene (PID)	114	55-149

Field ID:	227700	Diln Fac:	1.000
Type:	SAMPLE	Batch#:	60491
Lab ID:	149365-002	Analyzed:	12/29/00

Analyte	Result	RL
MTBE	ND	2.0
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Trifluorotoluene (PID)	110	56-142
Bromofluorobenzene (PID)	106	55-149

Field ID:	227706	Diln Fac:	1.000
Type:	SAMPLE	Batch#:	60491
Lab ID:	149365-003	Analyzed:	12/29/00

Analyte	Result	RL
MTBE	ND	2.0
Benzene	24	0.50
Toluene	ND	0.50
Ethylbenzene	1.6	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Trifluorotoluene (PID)	117	56-142
Bromofluorobenzene (PID)	114	55-149



Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	149365	Location:	2277 Seventh St.
Client:	Harding Lawson Associates	Prep:	EPA 5030
Project#:	42633.2	Analysis:	EPA 8021B
Matrix:	Water	Sampled:	12/19/00
Units:	ug/L	Received:	12/20/00

Field ID:	227705	Diln Fac:	1.000
Type:	SAMPLE	Batch#:	60491
Lab ID:	149365-004	Analyzed:	12/29/00

Analyte	Result	RL
MTBE	ND	2.0
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Trifluorotoluene (PID)	114	56-142
Bromofluorobenzene (PID)	116	55-149

Field ID:	227704	Diln Fac:	5.000
Type:	SAMPLE	Batch#:	60524
Lab ID:	149365-005	Analyzed:	12/30/00

Analyte	Result	RL
MTBE	19	10
Benzene	420	2.5
Toluene	ND	2.5
Ethylbenzene	ND	2.5
m,p-Xylenes	ND	2.5
o-Xylene	ND	2.5

Surrogate	%REC	Limits
Trifluorotoluene (PID)	118	56-142
Bromofluorobenzene (PID)	116	55-149

Field ID:	227704D	Diln Fac:	5.000
Type:	SAMPLE	Batch#:	60524
Lab ID:	149365-006	Analyzed:	12/30/00

Analyte	Result	RL
MTBE	18	10
Benzene	440	2.5
Toluene	ND	2.5
Ethylbenzene	ND	2.5
m,p-Xylenes	ND	2.5
o-Xylene	ND	2.5

Surrogate	%REC	Limits
Trifluorotoluene (PID)	121	56-142
Bromofluorobenzene (PID)	117	55-149



Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	149365	Location:	2277 Seventh St.
Client:	Harding Lawson Associates	Prep:	EPA 5030
Project#:	42633.2	Analysis:	EPA 8021B
Matrix:	Water	Sampled:	12/19/00
Units:	ug/L	Received:	12/20/00

Field ID:	227707	Diln Fac:	1.000
Type:	SAMPLE	Batch#:	60504
Lab ID:	149365-007	Analyzed:	12/29/00

Analyte	Result	RL
MTBE	50	2.0
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Trifluorotoluene (PID)	114	56-142
Bromofluorobenzene (PID)	115	55-149

Type:	BLANK	Batch#:	60491
Lab ID:	QC133745	Analyzed:	12/28/00
Diln Fac:	1.000		

Analyte	Result	RL
MTBE	ND	2.0
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Trifluorotoluene (PID)	108	56-142
Bromofluorobenzene (PID)	108	55-149

Type:	BLANK	Batch#:	60504
Lab ID:	QC133797	Analyzed:	12/29/00
Diln Fac:	1.000		

Analyte	Result	RL
MTBE	ND	2.0
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Trifluorotoluene (PID)	110	56-142
Bromofluorobenzene (PID)	108	55-149



Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	149365	Location:	2277 Seventh St.
Client:	Harding Lawson Associates	Prep:	EPA 5030
Project#:	42633.2	Analysis:	EPA 8021B
Matrix:	Water	Sampled:	12/19/00
Units:	ug/L	Received:	12/20/00

Type:	BLANK	Batch#:	60524
Lab ID:	QC133880	Analyzed:	12/30/00
Diln Fac:	1.000		

Analyte	Result	RL
MTBE	ND	2.0
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Trifluorotoluene (PID)	110	56-142
Bromofluorobenzene (PID)	110	55-149

Type:	BLANK	Batch#:	60544
Lab ID:	QC133955	Analyzed:	01/02/01
Diln Fac:	1.000		

Analyte	Result	RL
MTBE	ND	2.0
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Trifluorotoluene (PID)	113	56-142
Bromofluorobenzene (PID)	114	55-149



Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	149365	Location:	2277 Seventh St.
Client:	Harding Lawson Associates	Prep:	EPA 5030
Project#:	42633.2	Analysis:	EPA 8021B
Matrix:	Water	Batch#:	60491
Units:	ug/L	Analyzed:	12/28/00
Diln Fac:	1.000		

Type: BS Lab ID: QC133749

Analyte	Spiked	Result	%REC	Limits
MTBE	20.00	19.41	97	51-125
Benzene	20.00	20.68	103	67-117
Toluene	20.00	20.31	102	69-117
Ethylbenzene	20.00	20.74	104	68-124
m,p-Xylenes	40.00	41.36	103	70-125
o-Xylene	20.00	20.33	102	65-129

Surrogate	%REC	Limits
Trifluorotoluene (PID)	110	56-142
Bromofluorobenzene (PID)	110	55-149

Type: BSD Lab ID: QC133750

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	20.00	20.10	101	51-125	4	20
Benzene	20.00	20.88	104	67-117	1	20
Toluene	20.00	20.16	101	69-117	1	20
Ethylbenzene	20.00	20.64	103	68-124	0	20
m,p-Xylenes	40.00	42.00	105	70-125	2	20
o-Xylene	20.00	20.60	103	65-129	1	20

Surrogate	%REC	Limits
Trifluorotoluene (PID)	112	56-142
Bromofluorobenzene (PID)	113	55-149

RPD= Relative Percent Difference



Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	149365	Location:	2277 Seventh St.
Client:	Harding Lawson Associates	Prep:	EPA 5030
Project#:	42633.2	Analysis:	EPA 8021B
Matrix:	Water	Batch#:	60504
Units:	ug/L	Analyzed:	12/29/00
Diln Fac:	1.000		

Type: BS Lab ID: QC133801

Analyte	Spiked	Result	%REC	Limits
MTBE	20.00	17.05	85	51-125
Benzene	20.00	21.14	106	67-117
Toluene	20.00	20.38	102	69-117
Ethylbenzene	20.00	21.37	107	68-124
m,p-Xylenes	40.00	43.30	108	70-125
o-Xylene	20.00	20.81	104	65-129

Surrogate	%REC	Limits
Trifluorotoluene (PID)	109	56-142
Bromofluorobenzene (PID)	108	55-149

Type: BSD Lab ID: QC133802

Analyte	Spiked	Result	%REC	Limits	RED	Lim
MTBE	20.00	17.44	87	51-125	2	20
Benzene	20.00	21.52	108	67-117	2	20
Toluene	20.00	20.60	103	69-117	1	20
Ethylbenzene	20.00	21.63	108	68-124	1	20
m,p-Xylenes	40.00	43.03	108	70-125	1	20
o-Xylene	20.00	21.08	105	65-129	1	20

Surrogate	%REC	Limits
Trifluorotoluene (PID)	109	56-142
Bromofluorobenzene (PID)	108	55-149

Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	149365	Location:	2277 Seventh St.
Client:	Harding Lawson Associates	Prep:	EPA 5030
Project#:	42633.2	Analysis:	EPA 8021B
Matrix:	Water	Batch#:	60524
Units:	ug/L	Analyzed:	12/30/00
Diln Fac:	1.000		

Type: BS Lab ID: QC133881

Analyte	Spiked	Result	%REC	Limits
MTBE	20.00	19.60	98	51-125
Benzene	20.00	19.93	100	67-117
Toluene	20.00	19.11	96	69-117
Ethylbenzene	20.00	20.64	103	68-124
m,p-Xylenes	40.00	42.77	107	70-125
o-Xylene	20.00	20.47	102	65-129

Surrogate	%REC	Limits
Trifluorotoluene (PID)	114	56-142
Bromofluorobenzene (PID)	114	55-149

Type: BSD Lab ID: QC133882

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	20.00	19.73	99	51-125	1	20
Benzene	20.00	20.31	102	67-117	2	20
Toluene	20.00	19.06	95	69-117	0	20
Ethylbenzene	20.00	20.75	104	68-124	1	20
m,p-Xylenes	40.00	43.42	109	70-125	2	20
o-Xylene	20.00	20.70	103	65-129	1	20

Surrogate	%REC	Limits
Trifluorotoluene (PID)	110	56-142
Bromofluorobenzene (PID)	110	55-149



Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	149365	Location:	2277 Seventh St.
Client:	Harding Lawson Associates	Prep:	EPA 5030
Project#:	42633.2	Analysis:	EPA 8021B
Matrix:	Water	Batch#:	60544
Units:	ug/L	Analyzed:	01/02/01
Diln Fac:	1.000		

Type: BS Lab ID: QC133957

Analyte	Spiked	Result	%REC	Limits
MTBE	20.00	18.02	90	51-125
Benzene	20.00	20.02	100	67-117
Toluene	20.00	20.12	101	69-117
Ethylbenzene	20.00	19.87	99	68-124
m,p-Xylenes	40.00	42.44	106	70-125
o-Xylene	20.00	20.19	101	65-129

Surrogate	%REC	Limits
Trifluorotoluene (PID)	112	56-142
Bromofluorobenzene (PID)	113	55-149

Type: BSD Lab ID: QC133958

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	20.00	17.94	90	51-125	0	20
Benzene	20.00	20.28	101	67-117	1	20
Toluene	20.00	20.13	101	69-117	0	20
Ethylbenzene	20.00	20.12	101	68-124	1	20
m,p-Xylenes	40.00	42.98	107	70-125	1	20
o-Xylene	20.00	20.66	103	65-129	2	20

Surrogate	%REC	Limits
Trifluorotoluene (PID)	112	56-142
Bromofluorobenzene (PID)	116	55-149

RPD= Relative Percent Difference



Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	149365	Location:	2277 Seventh St.
Client:	Harding Lawson Associates	Prep:	EPA 5030
Project#:	42633.2	Analysis:	EPA 8021B
Field ID:	ZZZZZZZZZZ	Batch#:	60491
MSS Lab ID:	149311-001	Sampled:	12/18/00
Matrix:	Water	Received:	12/19/00
Units:	ug/L	Analyzed:	12/28/00
Diln Fac:	1.000		

Type: MS Lab ID: QC133747

Analyte	MSS Result	Spiked	Result	%REC	Limits
MTBE	ND	20.00	21.35	107	33-131
Benzene	<0.1200	20.00	21.94	110	65-123
Toluene	<0.2500	20.00	22.01	110	73-122
Ethylbenzene	<0.05600	20.00	21.77	109	59-137
m,p-Xylenes	<0.1400	40.00	45.00	112	68-132
o-Xylene	<0.1500	20.00	21.92	110	61-140

Surrogate	%REC	Limits
Trifluorotoluene (PID)	112	56-142
Bromofluorobenzene (PID)	114	55-149

Type: MSD Lab ID: QC133748

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	20.00	22.37	112	33-131	5	20
Benzene	20.00	22.00	110	65-123	0	20
Toluene	20.00	22.72	114	73-122	3	20
Ethylbenzene	20.00	22.03	110	59-137	1	20
m,p-Xylenes	40.00	44.94	112	68-132	0	20
o-Xylene	20.00	22.04	110	61-140	1	20

Surrogate	%REC	Limits
Trifluorotoluene (PID)	114	56-142
Bromofluorobenzene (PID)	116	55-149

ND= Not Detected

RPD= Relative Percent Difference

Total Extractable Hydrocarbons

Lab #:	149365	Location:	2277 Seventh St.
Client:	Harding Lawson Associates	Prep:	EPA 3520
Project#:	42633.2	Analysis:	EPA 8015M
Matrix:	Water	Sampled:	12/19/00
Units:	ug/L	Received:	12/20/00
Diln Fac:	1.000	Prepared:	12/28/00
Batch#:	60493	Analyzed:	01/03/01

Field ID:	227702	Lab ID:	149365-001
Type:	SAMPLE	Cleanup Method:	EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	50
Motor Oil C24-C36	ND	300

Surrogate	%REC	Limits
Hexacosane	100	44-121

Field ID:	227706	Lab ID:	149365-003
Type:	SAMPLE	Cleanup Method:	EPA 3630C

Analyte	Result	RL
Diesel C10-C24	620	50
Motor Oil C24-C36	ND	300

Surrogate	%REC	Limits
Hexacosane	99	44-121

Field ID:	227705	Lab ID:	149365-004
Type:	SAMPLE	Cleanup Method:	EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	50
Motor Oil C24-C36	ND	300

Surrogate	%REC	Limits
Hexacosane	80	44-121

Field ID:	227704	Lab ID:	149365-005
Type:	SAMPLE	Cleanup Method:	EPA 3630C

Analyte	Result	RL
Diesel C10-C24	70 Y	50
Motor Oil C24-C36	ND	300

Surrogate	%REC	Limits
Hexacosane	87	44-121

Y= Sample exhibits fuel pattern which does not resemble standard
 ND= Not Detected
 RL= Reporting Limit
 Page 1 of 2



Total Extractable Hydrocarbons

Lab #:	149365	Location:	2277 Seventh St.
Client:	Harding Lawson Associates	Prep:	EPA 3520
Project#:	42633.2	Analysis:	EPA 8015M
Matrix:	Water	Sampled:	12/19/00
Units:	ug/L	Received:	12/20/00
Diln Fac:	1.000	Prepared:	12/28/00
Batch#:	60493	Analyzed:	01/03/01

Field ID:	227704D	Lab ID:	149365-006
Type:	SAMPLE	Cleanup Method:	EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	50
Motor Oil C24-C36	ND	300
Surrogate	%REC	Limits
Hexacosane	76	44-121

Field ID:	227707	Lab ID:	149365-007
Type:	SAMPLE	Cleanup Method:	EPA 3630C

Analyte	Result	RL
Diesel C10-C24	51 Y	50
Motor Oil C24-C36	ND	300
Surrogate	%REC	Limits
Hexacosane	74	44-121

Type:	BLANK	Cleanup Method:	EPA 3630C
Lab ID:	QC133754		

Analyte	Result	RL
Diesel C10-C24	ND	50
Motor Oil C24-C36	ND	300
Surrogate	%REC	Limits
Hexacosane	69	44-121

Y= Sample exhibits fuel pattern which does not resemble standard
 ND= Not Detected
 RL= Reporting Limit
 Page 2 of 2

Chromatogram

Sample Name : 149365-005sg,60493

Sample #: 60493

Page 1 of 1

FileName : G:\GC15\CHB\002B026.RAW

Date : 01/04/2001 08:34 AM

Method : BTEH362.MTH

Time of Injection: 01/03/2001 01:21 PM

Start Time : 0.01 min

End Time : 31.91 min

Low Point : -16.16 mV

High Point : 521.14 mV

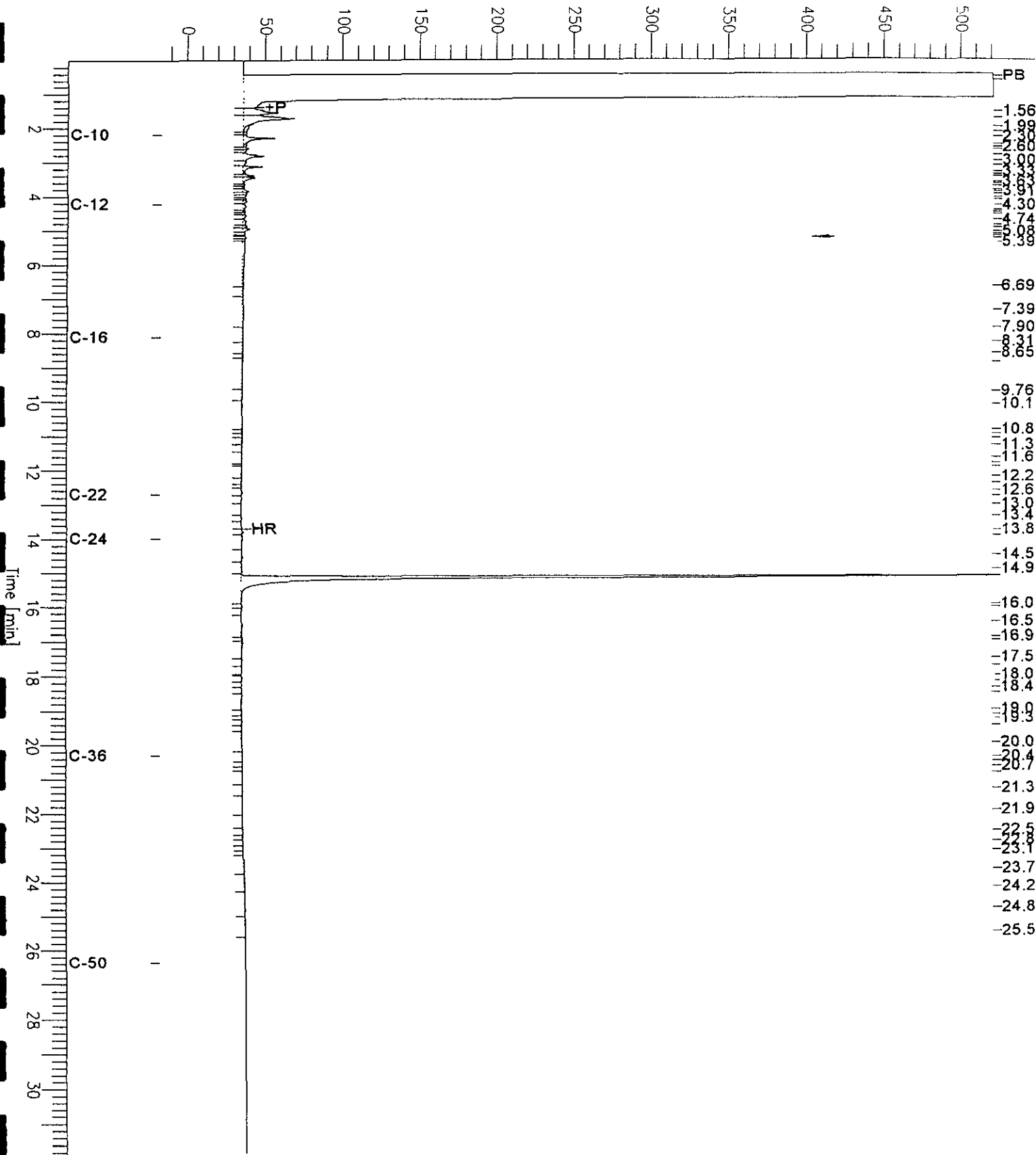
Scale Factor: 0.0

Plot Offset: -16 mV

Plot Scale: 537.3 mV

227704

Response [mV]



Chromatogram

Sample Name : 149365-007sq,60493

Sample #: 60493

Page 1 of 1

FileName : G:\GC15\CHB\002B028.RAW

Date : 01/04/2001 08:36 AM

Method : BTEH362.MTH

Time of Injection: 01/03/2001 02:46 PM

Start Time : 0.01 min

End Time : 31.91 min

Low Point : -16.96 mV

High Point : 459.60 mV

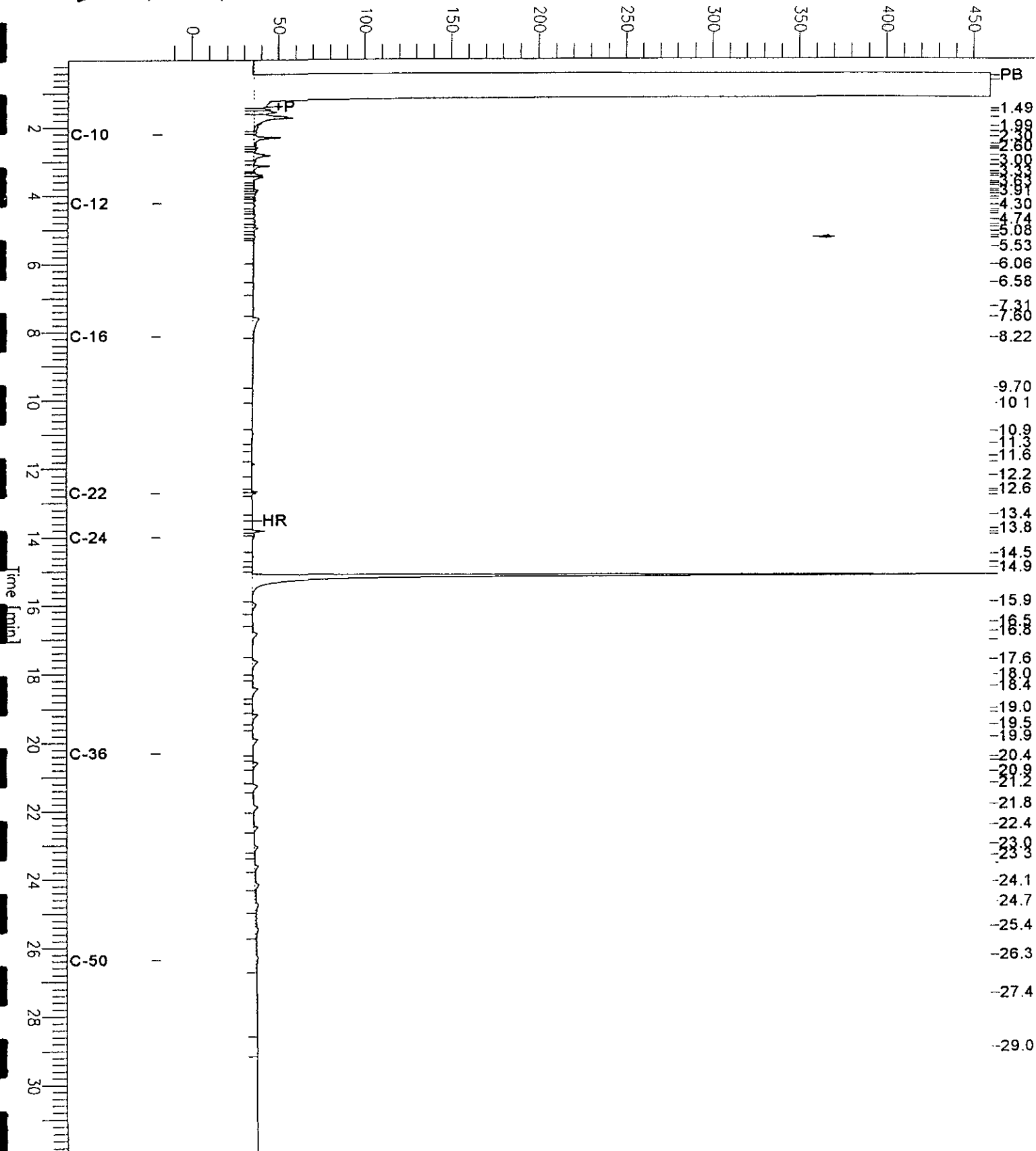
Scale Factor: 0.0

Plot Offset: -17 mV

Plot Scale: 476.6 mV

227707

Response [mV]



Chromatogram

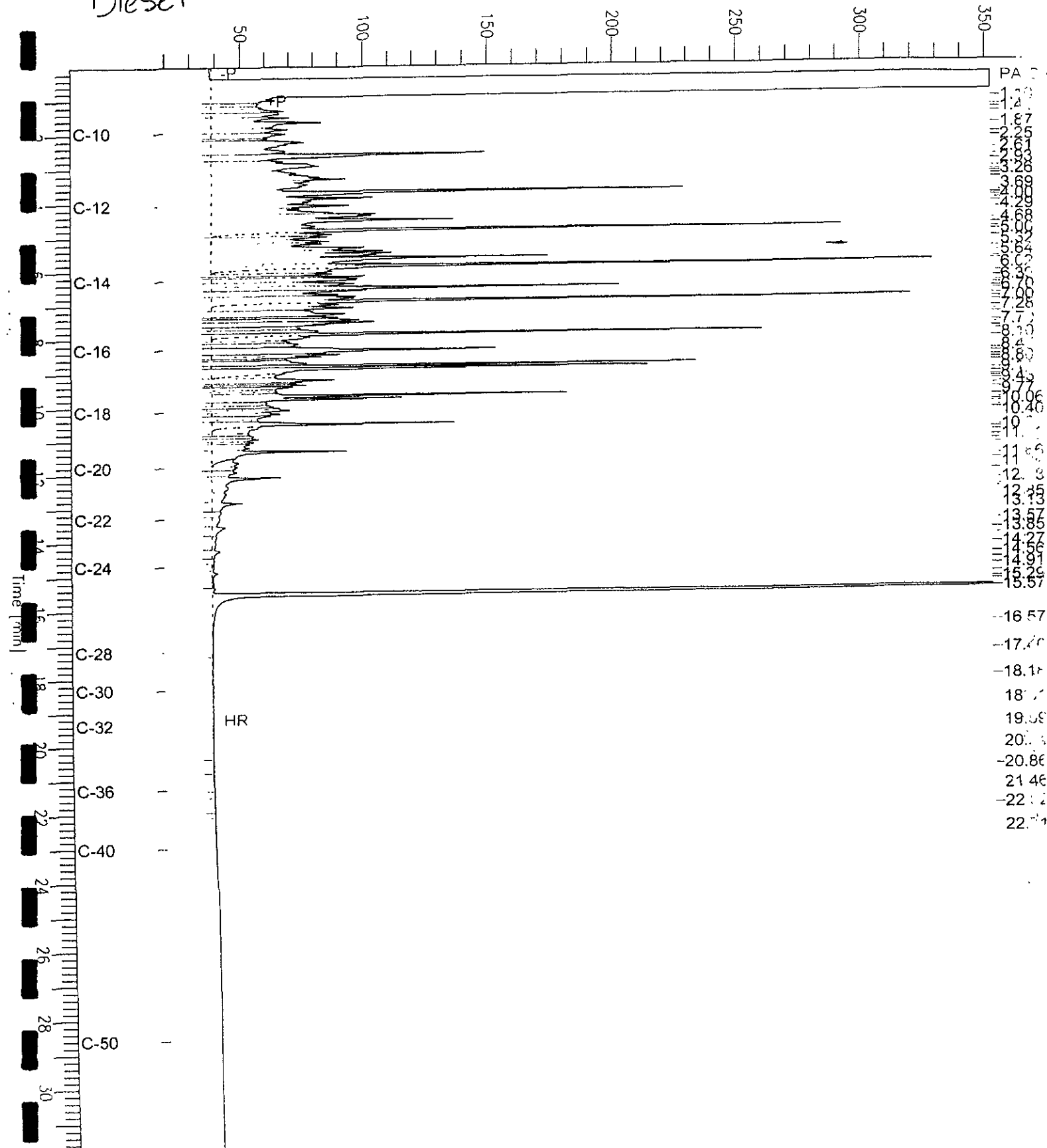
Sample Name : ccv,00ws0263,dsl
File Name : G:\GC13\CHB\364B008.RAW
Method : BTEH343.MTH
Start Time : 0.01 min
Scale Factor : 0.0

End Time : 31.91 min
Plot Offset : 20 mV

Sample #: 500mg/L
Date : 01/02/2001 11:59 AM
Time of Injection: 12/30/2000 01:11 AM
Low Point : 19.73 mV
High Point : 352.01 mV
Plot Scale: 332.3 mV

Diesel

Response [mV]



Chromatogram

Sample Name : ccv,00ws0267,mo

Sample #: 500mg/L

FileName : G:\GC13\CHB\364B009.RAW

Date : 01/02/2001 11:59 AM

Method : BTEH343.MTH

Time of Injection: 12/30/2000 01:50 AM

Start Time : 0.01 min

End Time : 31.91 min

Low Point : 32.77 mV

High Point : 145.16 mV

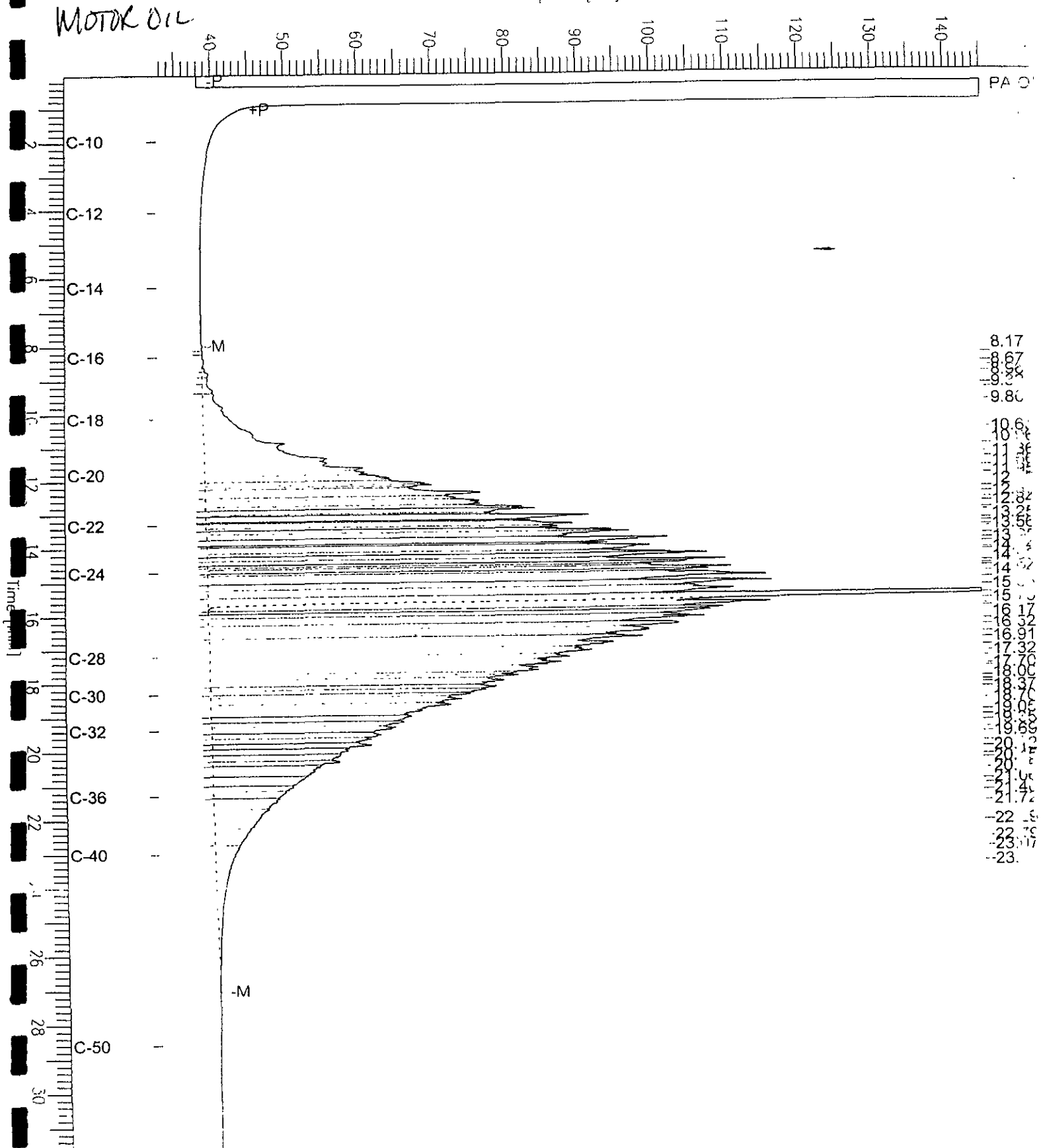
Scale Factor: 0.0

Plot Offset: 33 mV

Plot Scale: 112.4 mV

Response [mV]

MOTOR OIL



Retention Time (min)
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30.60
30.70
30.80
30.90
31.00

Total Extractable Hydrocarbons

Lab #:	149365	Location:	2277 Seventh St.
Client:	Harding Lawson Associates	Prep:	EPA 3520
Project#:	42633.2	Analysis:	EPA 8015M
Matrix:	Water	Batch#:	60493
Units:	ug/L	Prepared:	12/28/00
Diln Fac:	1.000	Analyzed:	01/03/01

Type: BS Cleanup Method: EPA 3630C
 Lab ID: QC133755

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	2,339	1,521	65	45-110

Surrogate	%REC	Limits
Hexacosane	62	44-121

Type: BSD Cleanup Method: EPA 3630C
 Lab ID: QC133756

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	2,339	1,570	67	45-110	3	22

Surrogate	%REC	Limits
Hexacosane	81	44-121



Purgeable Aromatics by GC/MS

Lab #:	149365	Location:	2277 Seventh St.
Client:	Harding Lawson Associates	Prep:	EPA 5030
Project#:	42633.2	Analysis:	EPA 8260B
Field ID:	227702	Batch#:	60781
Lab ID:	149365-001	Sampled:	12/19/00
Matrix:	Water	Received:	12/20/00
Units:	ug/L	Analyzed:	01/16/01
Diln Fac:	1.000		

Analyte	Result	RL
MTBE	ND b	0.5

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	116 b	78-123
Toluene-d8	106 b	80-110
Bromofluorobenzene	110 b	80-115



Purgeable Aromatics by GC/MS

Lab #:	149365	Location:	2277 Seventh St.
Client:	Harding Lawson Associates	Prep:	EPA 5030
Project#:	42633.2	Analysis:	EPA 8260B
Field ID:	227704	Batch#:	60781
Lab ID:	149365-005	Sampled:	12/19/00
Matrix:	Water	Received:	12/20/00
Units:	ug/L	Analyzed:	01/16/01
Diin Fac:	1.000		

Analyte	Result	RL
MTBE	ND b	0.5

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	112 b	78-123
Toluene-d8	104 b	80-110
Bromofluorobenzene	115 b	80-115

b= See narrative

ND= Not Detected

RL= Reporting Limit



Purgeable Aromatics by GC/MS

Lab #:	149365	Location:	2277 Seventh St.
Client:	Harding Lawson Associates	Prep:	EPA 5030
Project#:	42633.2	Analysis:	EPA 8260B
Field ID:	227704D	Batch#:	60781
Lab ID:	149365-006	Sampled:	12/19/00
Matrix:	Water	Received:	12/20/00
Units:	ug/L	Analyzed:	01/16/01
Diln Fac:	1.000		

Analyte	Result	RL
MTBE	ND b	0.5

Surrogate	REC	Limits
1,2-Dichloroethane-d4	112 b	78-123
Toluene-d8	104 b	80-110
Bromofluorobenzene	115 b	80-115



Purgeable Aromatics by GC/MS

Lab #:	149365	Location:	2277 Seventh St.
Client:	Harding Lawson Associates	Prep:	EPA 5030
Project#:	42633.2	Analysis:	EPA 8260B
Field ID:	227707	Batch#:	60781
Lab ID:	149365-007	Sampled:	12/19/00
Matrix:	Water	Received:	12/20/00
Units:	ug/L	Analyzed:	01/16/01
Diln Fac:	1.000		

Analyte	Result	RL
MTBE	47 b	0.5

Surrogate	REC	Limits
1,2-Dichloroethane-d4	113 b	78-123
Toluene-d8	104 b	80-110
Bromofluorobenzene	115 b	80-115

**Purgeable Aromatics by GC/MS**

Lab #:	149365	Location:	2277 Seventh St.
Client:	Harding Lawson Associates	Prep:	EPA 5030
Project#:	42633.2	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC134823	Batch#:	60781
Matrix:	Water	Analyzed:	01/15/01
Units:	ug/L		

Analyte	Result	RL
MTBE	ND	0.5

Surrogate	REC	Limits
1,2-Dichloroethane-d4	113	78-123
Toluene-d8	104	80-110
Bromofluorobenzene	110	80-115

ND= Not Detected

RL= Reporting Limit

Page 1 of 1

**Purgeable Aromatics by GC/MS**

Lab #:	149365	Location:	2277 Seventh St.
Client:	Harding Lawson Associates	Prep:	EPA 5030
Project#:	42633.2	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	60781
Units:	ug/L	Analyzed:	01/15/01
Diln Fac:	1.000		

Type: BS Lab ID: QC134821

Analyte	Spiked	Result	%REC	Limits
MTBE	50.00	40.84	82	50-150

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	108	78-123
Toluene-d8	103	80-110
Bromofluorobenzene	108	80-115

Type: BSD Lab ID: QC134822

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	50.00	41.42	83	50-150	1	20

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	107	78-123
Toluene-d8	103	80-110
Bromofluorobenzene	108	80-115



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JAN - 9 2001

HARDING LAWSON

ANALYTICAL REPORT

Prepared for:

Harding Lawson Associates
383 Fourth Street
Third Floor
Oakland, CA 94607


Date: 05-JAN-01
Lab Job Number: 149366
Project ID: 42633.1
Location: N/A

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signatures. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis.

Reviewed by:


Project Manager

Reviewed by:


Operations Manager

This package may be reproduced only in its entirety.

Laboratory Number: **149366** Receipt Date: **12/20/00**
Client: **Harding Lawson Associates**
Project#: **42633.1**
Location: **2225 Seventh Street**

CASE NARRATIVE

This hardcopy data package contains sample and QC results for five water samples that were received on December 20, 2000. All samples were received cold and intact.

TVH/BTXE: High Trifluorotoluene surrogate recoveries were observed in sample **MW-2** and in the matrix spike/matrix spike duplicate. This outlier does not affect the quality of the data, as no gasoline was observed in the sample. No other analytical problems were encountered.

Total Extractable Hydrocarbons: No analytical problems were encountered.



Harding Lawson Associates
 383 Fourth Street, Third Floor
 Oakland, California 94607
 (510) 451-1001 - Phone
 (510) 451-3165 - Fax

CHAIN OF CUSTODY FORM

No 2664

Lab: C&T

Samplers: VALERIE HARRIS

Job Number: A20331
 Name/Location: 2225 SEVENTH STREET
 Project Manager: VALERIE HARRIS

Recorder: *[Signature]*
(Signature Required)

SOURCE CODE	MATRIX				# CONTAINERS & PRESERV.				SAMPLE NUMBER OR LAB NUMBER			DATE						
	Water	Sediment	Soil	OI	Unpres	H ₂ O	HNO ₃	HCL	Ice	Yr	Wk	Seq	Yr	Mo	Day	Time		
	X				3								0	0	2	19	14	00
	X				2								0	0	2	19	14	40
	X				2								0	0	2	19	14	45
	X												0	0	2	19	14	50
	X				2								0	0	2	19	15	15

STATION DESCRIPTION/NOTES

ANALYSIS REQUESTED					
EPA 8010	EPA 8020	EPA 8260	EPA 8270	METALS	EPA 8015M/TPHG
					X
					X
					X
					X
					X
					X
					X

LAB NUMBER			DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS
Yr	Wk	Seq				
						STANDARD TAT
						SILICA GEL CLEAN UP FOR TPH _d , TPH _{mo}
						MTBE CONFIRMATION BY 8200

CHAIN OF CUSTODY RECORD		
RELINQUISHED BY (Signature)	RECEIVED BY (Signature)	DATE/TIME
<i>[Signature]</i>	<i>George Fumbré</i>	12/30/00 11:15 am
RELINQUISHED BY (Signature)	RECEIVED BY (Signature)	DATE/TIME
RELINQUISHED BY (Signature)	RECEIVED BY (Signature)	DATE/TIME
DISPATCHED BY (Signature)	DATE/TIME	RECEIVED FOR LAB BY (Signature)
METHOD OF SHIPMENT		
SAMPLE CONDITION WHEN RECEIVED BY THE LABORATORY		



Gasoline by GC/FID CA LUFT

Lab #:	149366	Prep:	EPA 5030
Client:	Harding Lawson Associates	Analysis:	EPA 8015M
Project#:	42633.1		
Matrix:	Water	Batch#:	60504
Units:	ug/L	Sampled:	12/19/00
Diln Fac:	1.000	Received:	12/20/00

Field ID:	MW-2	Lab ID:	149366-001
Type:	SAMPLE	Analyzed:	12/29/00

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	207 *	59-135
Bromofluorobenzene (FID)	104	60-140

Field ID:	MW-1	Lab ID:	149366-002
Type:	SAMPLE	Analyzed:	12/29/00

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	100	59-135
Bromofluorobenzene (FID)	104	60-140

Field ID:	MW-1D	Lab ID:	149366-003
Type:	SAMPLE	Analyzed:	12/30/00

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	102	59-135
Bromofluorobenzene (FID)	111	60-140

*= Value outside of QC limits; see narrative

ND= Not Detected

RL= Reporting Limit



Gasoline by GC/FID CA LUFT

Lab #:	149366	Prep:	EPA 5030
Client:	Harding Lawson Associates	Analysis:	EPA 8015M
Project#:	42633.1		
Matrix:	Water	Batch#:	60504
Units:	ug/L	Sampled:	12/19/00
Diln Fac:	1.000	Received:	12/20/00

Field ID:	MW-3	Lab ID:	149366-005
Type:	SAMPLE	Analyzed:	12/30/00

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	100	59-135
Bromofluorobenzene (FID)	116	60-140

Type:	BLANK	Analyzed:	12/29/00
Lab ID:	QC133797		

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	103	59-135
Bromofluorobenzene (FID)	105	60-140

*= Value outside of QC limits; see narrative
 ND= Not Detected
 RL= Reporting Limit
 Page 2 of 2



Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	149366	Prep:	EPA 5030
Client:	Harding Lawson Associates	Analysis:	EPA 8021B
Project#:	42633.1		
Matrix:	Water	Batch#:	60504
Units:	ug/L	Sampled:	12/19/00
Diln Fac:	1.000	Received:	12/20/00

Field ID:	MW-2	Lab ID:	149366-001
Type:	SAMPLE	Analyzed:	12/29/00

Analyte	Result	RL
MTBE	ND	2.0
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Trifluorotoluene (PID)	111	56-142
Bromofluorobenzene (PID)	113	55-149

Field ID:	MW-1	Lab ID:	149366-002
Type:	SAMPLE	Analyzed:	12/29/00

Analyte	Result	RL
MTBE	ND	2.0
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Trifluorotoluene (PID)	113	56-142
Bromofluorobenzene (PID)	113	55-149

Field ID:	MW-1D	Lab ID:	149366-003
Type:	SAMPLE	Analyzed:	12/30/00

Analyte	Result	RL
MTBE	ND	2.0
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Trifluorotoluene (PID)	113	56-142
Bromofluorobenzene (PID)	112	55-149



Benzene, Toluene, Ethylbenzene, Xylenes

Lab #: 149366 Prep: EPA 5030
 Client: Harding Lawson Associates Analysis: EPA 8021B
 Project#: 42633.1
 Matrix: Water Batch#: 60504
 Units: ug/L Sampled: 12/19/00
 Diln Fac: 1.000 Received: 12/20/00

Field ID: TB2225 Lab ID: 149366-004
 Type: SAMPLE Analyzed: 12/30/00

Analyte	Result	RL
MTBE	ND	2.0
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Trifluorotoluene (PID)	112	56-142
Bromofluorobenzene (PID)	114	55-149

Field ID: MW-3 Lab ID: 149366-005
 Type: SAMPLE Analyzed: 12/30/00

Analyte	Result	RL
MTBE	ND	2.0
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Trifluorotoluene (PID)	110	56-142
Bromofluorobenzene (PID)	110	55-149

Type: BLANK Analyzed: 12/29/00
 Lab ID: QC133797

Analyte	Result	RL
MTBE	ND	2.0
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Trifluorotoluene (PID)	110	56-142
Bromofluorobenzene (PID)	108	55-149



Gasoline by GC/FID CA LUFT

Lab #:	149366	Prep:	EPA 5030
Client:	Harding Lawson Associates	Analysis:	EPA 8015M
Project#:	42633.1		
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC133798	Batch#:	60504
Matrix:	Water	Analyzed:	12/29/00
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	2,000	2,157	108	73-121

Surrogate	%REC	Limits
Trifluorotoluene (FID)	113	59-135
Bromofluorobenzene (FID)	102	60-140



Benzene, Toluene, Ethylbenzene, Xylenes

Lab #: 149366 Prep: EPA 5030
 Client: Harding Lawson Associates Analysis: EPA 8021B
 Project#: 42633.1
 Matrix: Water Batch#: 60504
 Units: ug/L Analyzed: 12/29/00
 Diln Fac: 1.000

Type: BS Lab ID: QC133801

Analyte	Spiked	Result	%REC	Limits
MTBE	20.00	17.05	85	51-125
Benzene	20.00	21.14	106	67-117
Toluene	20.00	20.38	102	69-117
Ethylbenzene	20.00	21.37	107	68-124
m,p-Xylenes	40.00	43.30	108	70-125
o-Xylene	20.00	20.81	104	65-129

Surrogate	%REC	Limits
Trifluorotoluene (PID)	109	56-142
Bromofluorobenzene (PID)	108	55-149

Type: BSD Lab ID: QC133802

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	20.00	17.44	87	51-125	2	20
Benzene	20.00	21.52	108	67-117	2	20
Toluene	20.00	20.60	103	69-117	1	20
Ethylbenzene	20.00	21.63	108	68-124	1	20
m,p-Xylenes	40.00	43.03	108	70-125	1	20
o-Xylene	20.00	21.08	105	65-129	1	20

Surrogate	%REC	Limits
Trifluorotoluene (PID)	109	56-142
Bromofluorobenzene (PID)	108	55-149



Gasoline by GC/FID CA LUFT

Lab #:	149366	Prep:	EPA 5030
Client:	Harding Lawson Associates	Analysis:	EPA 8015M
Project#:	42633.1		
Field ID:	MW-2	Batch#:	60504
MSS Lab ID:	149366-001	Sampled:	12/19/00
Matrix:	Water	Received:	12/20/00
Units:	ug/L	Analyzed:	12/29/00
Diln Fac:	1.000		

Type: MS Lab ID: QC133799

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	<21.00	2,000	2,063	103	65-131
Surrogate	%REC	Limits			
Trifluorotoluene (FID)	221 *	>LR	59-135		
Bromofluorobenzene (FID)	109	60-140			

Type: MSD Lab ID: QC133800

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	2,058	103	65-131	0	20
Surrogate	%REC	Limits				
Trifluorotoluene (FID)	220 *	>LR	59-135			
Bromofluorobenzene (FID)	107	60-140				

*= Value outside of QC limits; see narrative

>LR= Response exceeds instrument's linear range

RPD= Relative Percent Difference



Total Extractable Hydrocarbons

Lab #:	149366	Prep:	EPA 3520
Client:	Harding Lawson Associates	Analysis:	EPA 8015M
Project#:	42633.1		
Matrix:	Water	Sampled:	12/19/00
Units:	ug/L	Received:	12/20/00
Diln Fac:	1.000	Prepared:	12/28/00
Batch#:	60493	Analyzed:	01/03/01

Field ID:	MW-2	Lab ID:	149366-001
Type:	SAMPLE	Cleanup Method:	EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	50
Motor Oil C24-C36	ND	300
Surrogate	%REC	Limits
Hexacosane	89	44-121

Field ID:	MW-1	Lab ID:	149366-002
Type:	SAMPLE	Cleanup Method:	EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	50
Motor Oil C24-C36	ND	300
Surrogate	%REC	Limits
Hexacosane	72	44-121

Field ID:	MW-1D	Lab ID:	149366-003
Type:	SAMPLE	Cleanup Method:	EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	50
Motor Oil C24-C36	ND	300
Surrogate	%REC	Limits
Hexacosane	75	44-121

Y= Sample exhibits fuel pattern which does not resemble standard

ND= Not Detected

RL= Reporting Limit

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Chromatogram

Sample Name : 149366-005sg,60493

Sample #: 60493

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FileName : G:\GC15\CHB\002B029.RAW

Date : 01/04/2001 08:38 AM

Method : BTEH362.MTH

Time of Injection: 01/03/2001 03:28 PM

Start Time : 0.01 min

End Time : 31.91 min

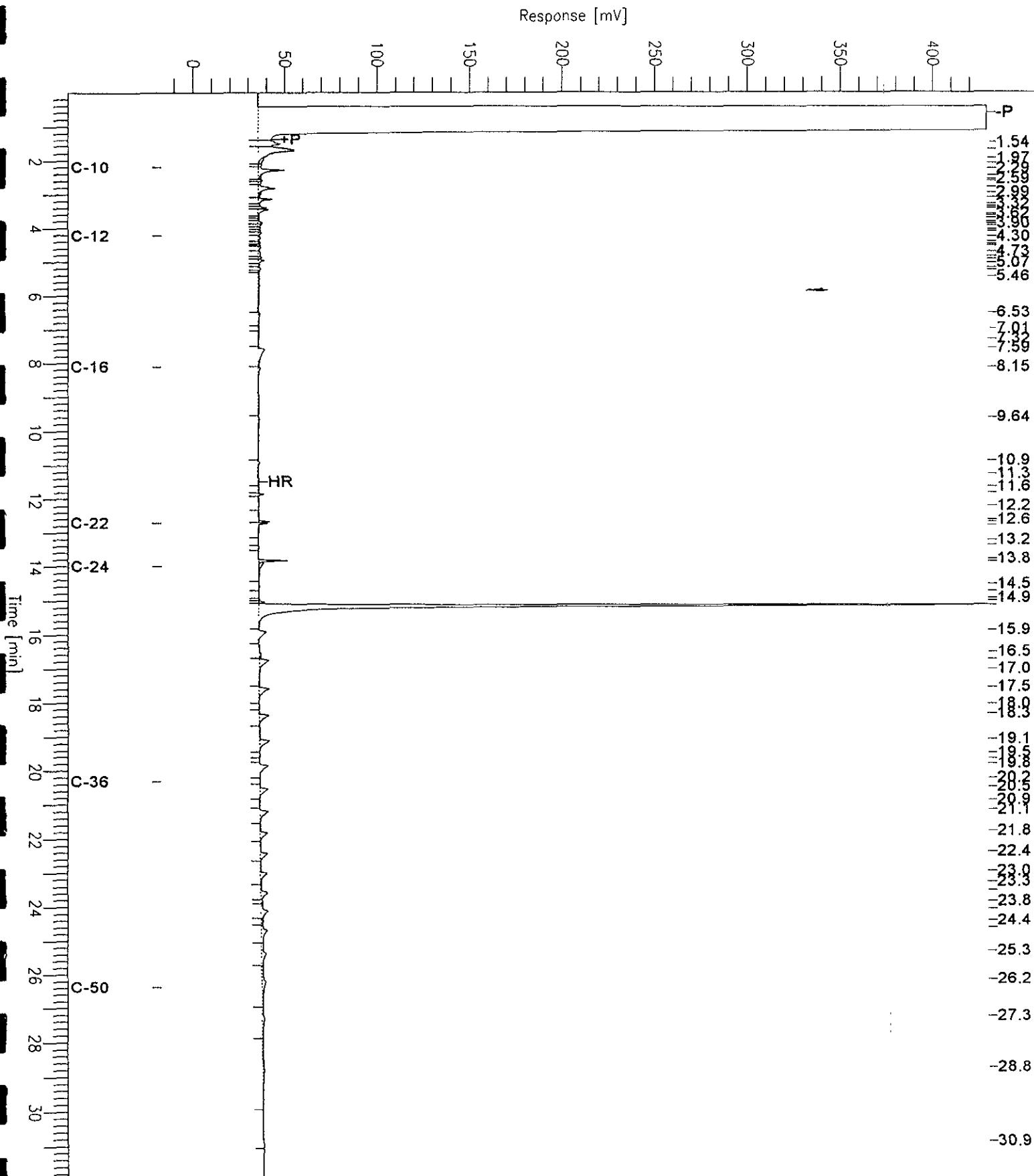
Low Point : -16.79 mV

High Point : 429.24 mV

Scale Factor: 0.0

Plot Offset: -17 mV

Plot Scale: 446.0 mV

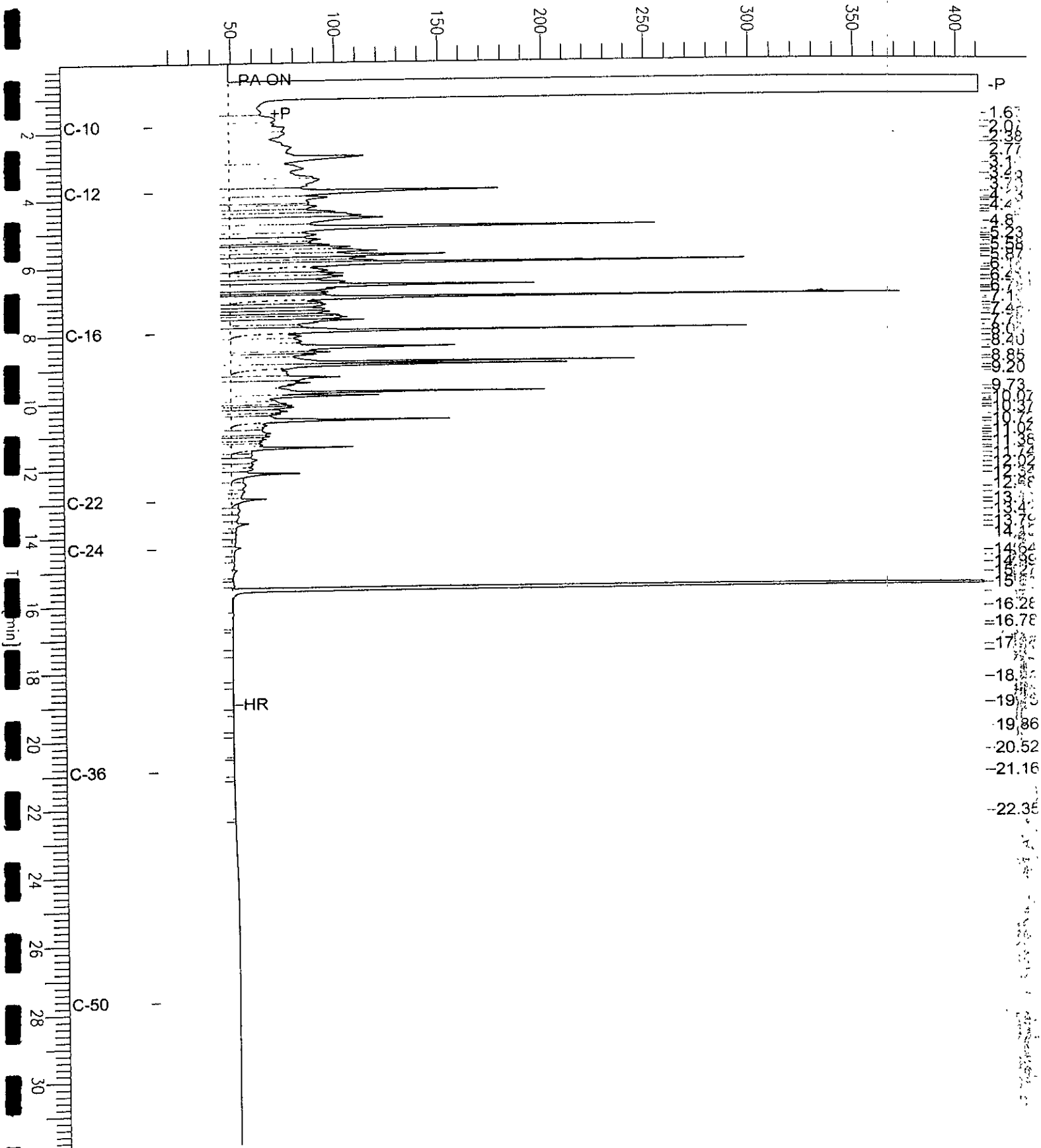


Sample Name : ccv,00ws0033,ds1
FileName : G:\GC11\CHA\362A002.RAW
Method :
Start Time : 0.01 min
Scale Factor : 0.0

End Time : 31.91 min
Plot Offset : 12 mV

Sample #: 500mg/L
Date : 12/29/00 02:49 PM
Time of Injection: 12/27/00 11:05 AM
Low Point : 12.04 mV
Plot Scale: 399.0 mV

Response [mV]

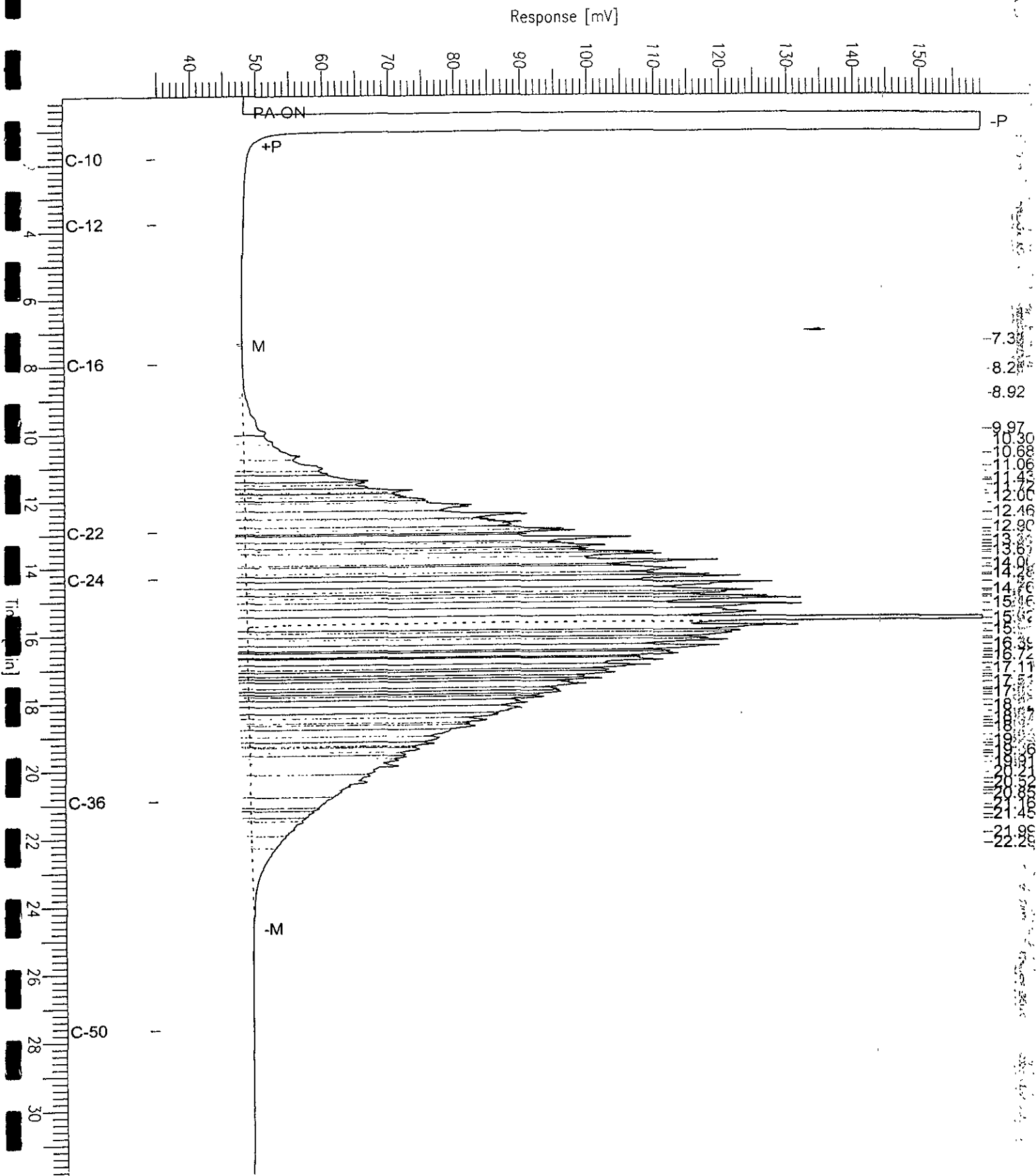


16.68
16.78
16.88
16.98
17.08
17.18
17.28
17.38
17.48
17.58
17.68
17.78
17.88
17.98
18.08
18.18
18.28
18.38
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19.48
19.58
19.68
19.78
19.88
19.98
20.08
20.18
20.28
20.38
20.48
20.58
20.68
20.78
20.88
20.98
21.08
21.16
21.26
21.36
21.46
21.56
21.66
21.76
21.86
21.96
22.06
22.16
22.26
22.35

Sample Name : ccv,00ws0138.mo
FileName : G:\GC11\CHA\362A003.RAW
Method :
Start Time : 0.01 min
Scale Factor : 0.0

End Time : 31.91 min
Plot Offset : 35 mV

Sample #: 500mg/L
Date : 12/29/00 02:49 PM
Time of Injection: 12/27/00 11:45 AM
Low Point : 34.89 mV
Plot Scale: 124.1 mV
High Point : 159.01 mV





Total Extractable Hydrocarbons

Lab #:	149366	Prep:	EPA 3520
Client:	Harding Lawson Associates	Analysis:	EPA 8015M
Project#:	42633.1		
Matrix:	Water	Batch#:	60493
Units:	ug/L	Prepared:	12/28/00
Diln Fac:	1.000	Analyzed:	01/03/01

Type: BS Cleanup Method: EPA 3630C
 Lab ID: QC133755

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	2,339	1,521	65	45-110

Surrogate	%REC	Limits
Hexacosane	62	44-121

Type: BSD Cleanup Method: EPA 3630C
 Lab ID: QC133756

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	2,339	1,570	67	45-110	3	22

Surrogate	%REC	Limits
Hexacosane	81	44-121