PORT OF OAKLAND

February 15, 2002

FEB 21 2002

Mr. Barney Chan
Hazardous Materials Specialist
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, 2nd Floor
Alameda, CA 94502

RE: 4th Quarter 2001, Quarterly Groundwater Monitoring and Product Recovery Report for 2277-7th Street and Semi-Annual 2001 Groundwater Monitoring Report for 2225-7th Street, Oakland, CA

Dear Mr. Chan:

Please find enclosed the subject Port of Oakland (Port) groundwater monitoring and product recovery report for 2277-7th Street and 2225-7th in Oakland, California. This report is being submitted in accordance with Alameda County Health Care Services Agency (ACHCSA) requirements.

The next monitoring event will be performed during the first quarter of 2002, and will be in accordance with the aforementioned requirements. If you have any questions or comments regarding the results, please contact me at (510) 627-1134.

Sincerely,

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

Enclosure: noted

Cc (w encl.): Michele Heffes

Cc (w/o encl.): Jeff Jones
Luis Fraticelli (Harding ESE)
Trish Eliasson (Harding ESE)

Harding ESE
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February 8, 2002

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Mr. Jeff Rubin
Associate Environmental Scientist
Port of Oakland
530 Water Street
Oakland, California 94607

Fourth Quarter of 2001 Quarterly Groundwater Monitoring and Product Recovery Report
2277 Seventh Street
Oakland, California

Semi-Annual 2001 Groundwater Monitoring
2225 Seventh Street
Oakland, California

Dear Mr. Rubin:

Harding ESE, Inc. (Harding ESE), has prepared this report on behalf of the Port of Oakland for the groundwater monitoring and sampling programs at 2277 7th Street and 2225 7th Street in Oakland, California (Plate 1). This report summarizes the quarterly monitoring of six groundwater monitoring wells (MW-2, MW-4, MW-5, MW-6, MW-7, and MW-8A) at 2277 7th Street and the semi-annual monitoring of three groundwater monitoring wells (MW-1, MW-2, and MW-3) at 2225 7th. 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 during the fourth quarter of 2001. Monitoring well MW-3 at 2277 7th Street contains an active product skimmer that recovers separate-phase petroleum hydrocarbons from the groundwater surface; Harding ESE did not collect a groundwater sample from this well. Monitoring well MW-1 contains a passive product skimmer, and, therefore, Harding ESE did not collect a sample from this well either.

BACKGROUND

2277 7th Street

Monitoring wells were installed to assess groundwater quality following the removal of underground storage tanks (USTs) from the site in September 1993. The former USTs, located 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). On April 20, 2000, Harding ESE oversaw the

abandonment of monitoring well MW-8 located at the northern edge of the property. 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, needed to be removed. After the railroad construction was completed, the Port had a new well, MW-8A, installed in the same vicinity on October 2, 2001 by Innovative Technical Solutions, Inc.

2225 7th Street

Monitoring wells were installed 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 ESE used the following procedures during groundwater monitoring at the two sites. Prior to purging and sampling the monitoring wells, Harding ESE 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 ESE purged the wells using a PVC bailer. Conductivity, pH, and temperature were monitored periodically during purging. Harding ESE 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 ESE collected groundwater samples from the monitoring wells using Teflon disposable bailers and then transferred the groundwater into laboratory-provided containers. A duplicate sample was collected for quality assurance. 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 ESE conducted this quarter's groundwater monitoring at 2277 7th Street on December 5th and 12th, 2001. On December 5th only three wells were sampled due to inclement weather and equipment failure. Harding ESE finished the sampling event on December 12th, 2001. The depth to groundwater was measured on December 12, 2001 and on January 22, 2002 at all wells. Groundwater level measurements are summarized in Table 1 and product thickness measurements are summarized on Table 2. Harding ESE used the groundwater measurements from January 22, 2002 to calculate the groundwater gradient. The groundwater gradient direction is presented on Plate 3. Harding ESE did not use the groundwater measurements from MW-1 and MW-3 to develop the groundwater gradient because of the product

recovery equipment in the well. The groundwater measurement from MW-8A was also not used in the model because the elevation has not yet been measured.

2225 7th Street

Harding ESE also conducted this quarter's groundwater monitoring at 2225 7th Street on December 12, 2001. Depth to groundwater was measured on December 12, 2001 and January 22, 2002. Groundwater level measurements are summarized in Table 3. Groundwater elevations and the gradient direction are presented on Plate 3.

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).
- 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.

Harding ESE 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 both sites were conducted on December 12, 2001. The water level measurements from wells MW-6 at 2277 7th St. MW-2 at 2225 7th St. showed large variation from last quarter. Therefore, Harding ESE returned to the site to re-measure groundwater depths on January 22, 2002. The water levels are presented in Tables 1 and 3. The groundwater measurements from January 22, 2002 were used to create the groundwater contours. Harding ESE 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 groundwater flow direction observed during January 22, 2002 closely matched that observed during the second and third quarters of 2001.

2277 7th Street

Harding ESE monitored MW-8 from 1998 through its abandonment in April 2000. During this time, no groundwater samples were collected because the well contained a thick, viscous, tar-like petroleum product. The new well, MW-8A, was installed in October, 2001 near the location of abandoned well MW-8. Harding ESE sampled MW-8A for the first time in the fourth quarter 2001, and did not detect any separate-phase product.

Results of the December 12, 2001 groundwater sampling at 2277 7th Street are summarized below:

- Harding ESE 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 180 µg/L in MW-4, 53 µg/L in MW-6, 51 µg/L in MW-7, and 68 µg/L in MW-8A. TPHg was not detected in MW-2 or MW-5. Last quarter TPHg was detected in the sample from MW-6 at 120 µg/L.
- Benzene was reported at a concentration of 4.4 µg/L in MW-2, 61 µg/L in MW-4, and 27 µg/L in MW-6. Benzene was not detected in MW-5, MW-7, or MW-8A. Last quarter, benzene was detected in the samples from MW-4 at 620 µg/L and MW-6 at 29 µg/L.
- Toluene was not detected above the reporting limit in MW-2, MW-4, MW-5, MW-6, MW-7, or MW-8A. Last quarter, toluene was detected in MW-4 at 2.6 µg/L.
- Ethylbenzene was reported at a concentration of 1.3 µg/L in MW-6 and was not detected in MW-2, MW-4, MW-5, MW-7, or MW-8A. Ethylbenzene was detected at a concentration of 2.9 in MW-4 and 0.99 µg/L in MW-6 during the previous quarter.
- Total xylenes were not detected above the reporting limit in MW-2, MW-4, MW-5, MW-6, or MW-7 this quarter or last quarter. The newly installed well, MW-8A, did not contain a detectable amount of total xylenes this quarter.
- MTBE was reported at a concentration of 5.0 µg/L in MW-2, 3.8 µg/L in MW-4, and 98 and 96 µg/L in MW-7. Confirmation samples of MTBE detections by EPA Test Method 8260 were analyzed past the hold time and are not presented. Wells MW-5, MW-6, and MW-8A did not contain detectable amounts of MTBE this quarter. Last quarter, MTBE was detected in the confirmation samples of MW-7 at concentrations of 76 and 75 µg/ L.
- TPHd was reported at a concentration of 550 µg/l in MW-6, 52 µg/L in the MW-7 duplicate sample, and 720 µg/L in MW-8A. TPHd was not detected in MW-2, MW-4, MW-5, or the MW-7 original sample. The laboratory reported TPHd results both with and without silica gel cleanup. Only the sample results with silica gel cleanup are presented. During the previous quarter, TPHd was detected at 110 µg/L in MW-4, 560 µg/l in MW-6, and 51 µg/L in MW-7.

- TPHmo was not detected above the reporting limit in any of the wells sampled this quarter or last. The laboratory reported TPHmo results both with and without silica gel cleanup. Only the sample results with silica gel cleanup are presented.

2225 7th Street

Results of the December 12, 2001 groundwater sampling at 2225 7th Street are summarized below:

- MTBE was not reported above the detection limit in wells MW-1, MW-2, or MW-3.
- TPHg, benzene, toluene, ethylbenzene, and total xylenes were not detected above the reporting limit in MW-1, MW-2, or MW-3.
- TPHd was not detected in wells MW-1, MW-2, or MW-3. The laboratory reported TPHd results both with and without silica gel cleanup. Only the sample results with silica gel cleanup are presented.
- TPHmo was not detected in wells MW-1, MW-2, or MW-3. The laboratory reported TPHmo results both with and without silica gel cleanup. Only the sample results with silica gel cleanup are presented.

QUALITY ASSURANCE AND QUALITY CONTROL

A duplicate sample was collected from monitoring well MW-7 at 2277 7th Street on December 12, 2001 and submitted to the analytical laboratory to evaluate the precision of the analytical results. 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.

2277 7th St. MW-7 12/12/01

ANALYTE	X1	X2	X1-X2	(X1+X2)/2	RPD
MTBE	98	96	2	97	2%
B	<0.5	<0.5	--	--	--
T	<0.5	<0.5	--	--	--
E	<0.5	<0.5	--	--	--
X	<0.5	<0.5	--	--	--
TPHd	<50	52	--	--	200%
TPHg	51	64	13	58	23%

- The relative percent difference between the analytical results from MW-7 and its duplicate samples were considered within acceptable limits ranging from 10 to 23 percent. The RPD of 200% for TPHd

indicates that the original samples were reported as non-detect but the analyte was detected in the duplicate sample. This quarter, the detected value was only slightly over the reporting limit, indicating that the actual RPD is more than likely much lower than 200%.

- TPHd, TPHg, and BTEX were not detected in the 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 ESE 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 ESE 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 has reported to Harding ESE that Foss Environmental disposed of 1,000 gallons of non-hazardous wastewater to Seaport Environmental (Redwood City) on December 18, 2001. Table 2 presents a summary of the product thickness 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.

CLOSURE

We trust that this provides the information required at this time. If you have any questions, please contact Luis Fraticelli at (510) 451-1001.

Yours very truly,

HARDING ESE, INC.

Trish Eliasson
Staff Engineer

Luis A. Fraticelli, R.G.
Associate Geologist

REGISTERED GEOLOGIST
LUIS A. FRATICELLI
No. 6521
Exp. 9/03
STATE OF CALIFORNIA

TAE/LF:dmw/P:wpdata/54821/038043R

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, January 21, 2002
Plate 4 – Groundwater Sample Results, 2277 7th Street, December 5 & 12, 2001
Plate 5 – Groundwater Sample Results, 2225 7th Street, December 12, 2001

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	4/18/00	8.21	5.93
		5/22/00	8.17	5.97
		7/10/01	10.00	4.14
		12/12/01	NA	NA
MW-2	14.36	12/31/97	8.73	5.63
		4/13/98	7.72	6.64
		11/6/98	9.43	4.93
		3/19/99	8.21	6.15
		6/24/99	8.91	5.45
		9/28/99	9.42	4.94
		11/12/99	9.63	4.73
		2/11/00	8.54	5.82
		5/22/00	8.10	6.26
		9/6/00	8.79	5.57
		12/19/00	9.19	5.17
		2/21/01	7.99	6.37
		4/3/01	8.23	6.13
		7/10/01	8.70	5.66
		12/12/01	8.16	6.20
		1/22/02	7.64	6.72
MW-4	13.15	12/31/97	7.09	6.06
		4/13/98	7.71	5.44
		11/6/98	8.69	4.46
		3/19/99	8.00	5.15
		6/24/99	8.45	4.70
		9/28/99	8.73	4.42
		11/12/99	8.83	4.32
		2/11/00	7.71	5.44
		5/22/00	8.09	5.06
		9/6/00	8.32	4.83
		12/19/00	8.47	4.68
		2/21/01	7.51	5.64
		4/3/01	8.13	5.02
		7/10/01	8.12	5.03
		12/12/01	7.65	5.50
		1/22/02	7.60	5.55
MW-5	13.49	12/31/97	6.38	7.11
		4/13/98	5.56	7.93
		11/6/98	6.59	6.90
		3/19/99	6.20	7.29
		6/24/99	6.73	6.76
		9/28/99	6.91	6.58
		11/12/99	7.06	6.43
		2/11/00	7.00	6.49
		5/22/00	6.21	7.28
		9/6/00	6.56	6.93
		12/19/00	6.68	6.81
		2/21/01	6.08	7.41
		4/3/01	6.38	7.11
		7/10/01	6.58	6.91
		12/12/01	6.40	7.09
		1/22/02	6.10	7.39

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-6	14.00	6/24/99	8.61	5.39
		9/28/99	9.26	4.74
		11/12/99	8.01	5.99
		2/11/00	7.20	6.80
		5/22/00	7.13	6.87
		9/6/00	7.12	6.88
		12/19/00	7.57	6.43
		2/21/01	7.50	6.50
		4/3/01	6.88	7.12
		7/10/01	7.15	6.85
		12/12/01	9.50	4.50
		1/22/02	6.69	7.31
MW-7	14.35	12/31/97	8.88	5.47
		4/13/98	7.86	6.49
		11/6/98	9.55	4.80
		3/19/99	8.41	5.94
		6/24/99	9.08	5.27
		9/28/99	9.60	4.75
		11/12/99	9.77	4.58
		2/11/00	8.67	5.68
		5/22/00	8.43	5.92
		9/6/00	8.88	5.47
		12/19/00	9.21	5.14
		2/21/01	8.13	6.22
		4/3/01	8.45	5.90
		7/10/01	8.87	5.48
		12/12/01	8.39	5.96
		1/22/02	7.99	6.36
MW-8A	NA	12/12/01	7.20	NA
		1/22/02	7.20	NA

[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.
- Monitoring MW-8 was abandoned on April 20, 2000 in order to construct a railroad track associated with the Port of Oakland Vision 2000.

NA = Not available

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	12/31/97	-	-	-	0.2	passive skimmer
		1/29/98	-	-	-	0.2	passive skimmer
		3/2/98	-	-	-	0.018	passive skimmer
		5/11/98	-	-	-	0.02	passive skimmer
		6/15/98	-	-	-	0.2	passive skimmer
		11/6/98	9.34	10.3	0.96	1.2	passive skimmer
		1/7/99	-	-	-	0.2	passive skimmer
		2/11/99	-	-	-	0.2	passive skimmer
		3/12/99	-	-	-	0.2	passive skimmer
		3/19/99	NM	8.45	>0.01	0.07	passive skimmer
		4/14/99	-	-	-	0.2	passive skimmer
		5/11/99	-	-	-	0.2	passive skimmer
		6/24/99	8.88	9.63	0.8	0.2	passive skimmer
		7/15/99	--	--	--	0.2	passive skimmer
		7/16/99	--	--	--	0.2	passive skimmer
		8/27/99	--	--	--	0.2	passive skimmer
		9/28/99	--	--	0.65	0.2	passive skimmer
		10/5/99	--	--	--	0.2	passive skimmer
		11/12/99	9.38	10.27	0.89	0.2	passive skimmer
		12/21/99	--	--	--	0.2	passive skimmer
		1/26/00	--	--	--	0.2	passive skimmer
		1/28/00	9.22	9.24	0.02	--	passive skimmer
		2/11/00	--	7.00	0.00	0.2	passive skimmer
		3/1/00	--	7.45	0.00	0.0	passive skimmer
		3/21/00	NM	7.34	0.00	0.0	passive skimmer
		4/18/00	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
		9/21/00	8.71	9.26	0.55	0.0	passive skimmer
		10/11/00	--	--	--	0.0	passive skimmer
		11/30/00	--	--	--	0.0	passive skimmer
		12/19/00	9.5	9.89	0.39	0.0	passive skimmer
		2/22/01	8.3	8.4	0.13	0.0	passive skimmer
		4/3/01	8.3	8.55	0.25	0.0	passive skimmer
		4/23/01	--	--	--	0.0	passive skimmer
		5/11/01	--	--	--	0.0	passive skimmer
		5/30/01	8.5	8.9	0.40	0.0	passive skimmer
		6/14/01	--	--	--	0.0	passive skimmer
		7/10/01	8.8	10	1.20	0.0	passive skimmer
		12/12/01	NA	NA	NA	1.0	passive skimmer
MW-3	14.22	12/31/97	-	-	-	30	active skimmer
		1/29/98	-	-	-	10	active skimmer
		4/13/98	-	-	-	240	active skimmer
		5/11/98	-	-	-	1,545	active skimmer
		6/15/98	-	-	-	1,950	active skimmer
		11/6/98	8.84	9.94	1.1	500	active skimmer
		1/5/99	-	-	-	275[5]	active skimmer
		1/14/99	-	-	-	400[5]	active skimmer
		2/3/99	-	-	-	400[5]	active skimmer
		2/26/99	-	-	-	570[5]	active skimmer
		3/19/99	7.52	8.05	0.5	211	active skimmer
		6/16/99	-	-	-	310	active skimmer
		6/24/99	8.38	8.56	0.2	--	active skimmer
		7/14/99	--	--	--	50[5]	active skimmer
		9/28/99	--	--	0.2	--	active skimmer
		10/29/99	--	--	--	125[5]	active skimmer
		11/12/99	9.14	9.23	0.09	--	active skimmer
		1/28/00	--	--	--	135	active skimmer
		2/11/00	7.97	8.37	0.40	40	active skimmer
		3/1/00	6.59	7.24	0.65	0.0	active skimmer
		3/21/00	6.50	6.56	0.06	35	active skimmer
		4/18/00	--	--	--	--	active skimmer
		5/22/00	7.51	8.05	0.54	40	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		6/26/00	7.82	8.2	0.38	90	active skimmer
		7/25/00	7.90	8.92	1.02	20	active skimmer
		8/31/00	8.15	9.5	1.35	30	active skimmer
		9/6/00	8.21	9.42	1.21	--	active skimmer
		9/21/00	8.30	8.88	0.58	115	active skimmer
		10/11/00	--	--	--	170	active skimmer
		11/30/00	--	--	--	105	active skimmer
		12/19/00	8.60	9.65	1.05	10	active skimmer
		2/22/01	6.36	8.15	1.79	--	active skimmer
		4/3/01	7.48	8.88	1.40	--	active skimmer
		4/23/01	7.85	9.1	1.25	--	active skimmer
		5/11/01	--	--	--	--	active skimmer
		5/30/01	7.75	9.1	1.35	--	active skimmer
		6/14/01	--	--	--	--	active skimmer
		7/10/01	8.10	9.6	1.50	--	active skimmer
		12/12/01	NA	NA	NA	1,000 [5]	active skimmer
MW-6	14.00	13/31/97	-	-	-	0.0014	passive skimmer
		1/29/98	-	-	-	0.0014	passive skimmer
		3/2/98	-	-	-	0.0014	passive skimmer
		11/6/98	NM	9.62	>0.01	0.0	passive skimmer
		3/19/99	NM	7.37	>0.01	0.0	passive skimmer
MW-8 [1]	12.94	12/31/97	8.49	8.82	0.33	4.38	-
		11/6/98	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.

[5] Removal total is the volume of both product and wastewater removed from the treatment system by Foss Environmental Services Company, Inc.

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

Shaded areas indicate data from this reporting period.

NA - Not Available

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	1/15/93	5.21	8.51
		9/12/94	6.37	7.35
		11/30/94	5.76	7.96
		3/29/95	4.57	9.15
		5/25/95	5.14	8.58
		6/21/95	5.41	8.31
		6/23/95	5.44	8.28
		11/20/95	6.28	7.44
		12/27/95	5.86	7.86
		3/25/96	5.21	8.51
		6/26/96	5.58	8.14
		10/14/96	6.22	7.50
		3/19/97	5.48	8.24
		6/26/00	5.19	8.53
		9/6/00	5.62	8.10
		12/19/00	5.57	8.15
		4/3/01	5.03	8.69
		7/10/01	5.57	8.15
		12/12/01	5.60	8.12
		1/22/02	5.19	8.53
MW-2	13 8	1/15/93	6.21	7.59
		9/12/94	6.47	7.33
		11/30/94	6.34	7.46
		3/29/95	5.51	8.29
		5/25/95	5.60	8.20
		6/21/95	5.72	8.08
		6/23/95	5.72	8.08
		9/28/95	6.15	7.65
		11/20/95	6.42	7.38
		12/27/95	6.31	7.49
		3/25/96	5.74	8.06
		6/26/96	5.85	7.95
		10/14/96	6.36	7.44
		3/19/97	5.90	7.90
		6/26/00	5.37	8.43
		9/6/00	5.62	8.18
		12/19/00	5 81	7.99
		4/3/01	5.38	8.42
		7/10/01	5.80	8.00
		12/12/01	10.00	3.80
		1/22/02	5.45	8 35
MW-3	15.06	1/15/93	6 44	8.62
		9/12/94	7.35	7.71
		11/30/94	7.12	7.94
		3/29/95	6.31	8.75
		5/25/95	6.75	8.31
		6/21/95	6.87	8.19
		6/23/95	6.88	8.18
		9/28/95	7.28	7 78
		11/20/95	7.51	7.55
		12/27/95	7 20	7.86
		3/25/96	6.64	8.42
		6/26/96	6 98	8.08
		10/14/96	7.47	7.59
		3/19/97	6.99	8.07
		6/26/00	6.82	8.24
		9/6/00	6 82	8.24
		12/19/00	7.10	7.96
		4/3/01	6.66	8.40
		7/10/01	7.00	8.06
		12/12/01	7.04	8.02
		1/22/02	6.67	8.39

[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 [9]	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]
	02/21/01	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2.0
	07/10/01	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2.0
	12/05/01	<50	<50	<300	4.4	<0.5	<0.5	<0.5	5.0 [14]
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 [8]
	05/22/00	240	<50	<300	500	<2.5	<2.5	<2.5	17
	09/06/00	530 [3,5]	<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	<0.5 [10,12]
	02/21/01	450 [13]	<50	<300	120	<0.5	<0.5	<0.5	<0.5 [10]
	07/10/01	<250	110 [2,13]	<300	620	2.6	2.9	<2.5	<0.5 [8,10]
	12/05/01	180	<50	<300	61	<0.5	<0.5	<0.5	3.8 [14]
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	03/19/99	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2
(cont)	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
	02/21/01	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2
	07/10/01	<50	<50	<300	<0.5	<0.5	<0 5	<0.5	<2
	12/05/01	<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
	02/21/01	120 [13]	440	<300	21	<0.5	0.96	<0.5	<2
	07/10/01	120	560	<300	29	<0.5	0.99	<0 5	<2
	12/12/01	53	550	<300	27	<0.5	1.3	<0.5	<2.0
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 [4]	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]
	02/21/01	<50	<50	<300	<0 5	<0.5	<0 5	<0.5	66 [10]
Dup.	02/21/01	<50	<50	<300	<0.5	<0.5	<0.5	<0 5	60 [10]
	07/10/01	<50	51 [2]	<300	<0 5	<0 5	<0.5	<0.5	76 [10]
Dup.	07/10/01	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	75 [10]
	12/12/01	51	<50	<300	<0.5	<0.5	<0.5	<0.5	98 [14]
Dup.	12/12/01	64	52 [13,15]	<300	<0.5	<0.5	<0.5	<0.5	96 [14]
MW-8A	12/12/01	68	720 [11,15]	<300	<0.5	<0 5	<0.5	<0 5	<2.0

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 or 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.
13 Lighter hydrocarbons contributed to the quantitation
14 MTBE results from EPA Test Method 8021B.
15 Sample exhibits fuel pattern which does not resemble standard

- 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 Uribe 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	1/15/93	<50	<50	NA	<0.3	<0.3	<0.3	<0.3	NA
	9/12/94	<10 [1]	10,000	NA	0.5	<0.3	<0.3	<0.3	NA
	11/30/94	<10	2,800	NA	<0 3	<0.3	<0.3	<0.3	NA
	3/29/95	<50	<50	NA	<0.3	<0.3	<0.3	<0.3	NA
	6/21/95	<50	<50 [2]	NA	<0.3	<0.3	<0.3	<0.3	NA
	9/28/95	<50	<50	NA	<0.3	<0.3	<0.3	<0.3	NA
	12/27/95	<50	<50	<100	<0.3	<0.3	<0 3	<0.3	NA
	3/25/96	<50	<50	<100	<0.3	<0.3	<0.3	<0.3	NA
	6/26/96	<50	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0
	10/14/96	<50	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0
	3/19/97	<50	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0
	6/26/00	<50	<50	<300	<0.5	<0.5	<0 5	<0.5	<0.5 [5]
	12/19/00	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2
Dup	12/19/00	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2
	7/10/01	<50	<50	<300	<0 5	<0 5	<0.5	<0.5	<2
Dup.	7/10/01	<50	<50	310	<0.5	<0.5	<0.5	<0.5	<2
	12/12/01	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2
MW-2	1/15/93	<50	<50	NA	<0.3	<0.3	<0.3	<0 3	NA
	9/12/94	34 [1]	<50	NA	0.5	<0.3	<0.3	<0.3	NA
	11/30/94	<10	81	NA	0.9	<0.3	<0.3	<0.3	NA
	3/29/95	<50 [3]	75	NA	0.3	<0 3	<0 3	<0.3	NA
	6/21/95	<50 [3]	<50	NA	<0.3	<0.3	<0.3	<0.3	NA
	9/28/95	250 [1]	<50	NA	<0.3	<0.3	<0.3	<0.3	NA
	12/27/95	220 [1]	<50	<100	<0 3	<0 3	<0.3	<0.3	NA
	3/25/96	200 [1]	<50	<100	<0.3	<0.3	<0.3	<0.3	NA
	6/26/96	77 [4]	<50	NA	<0.5	<0 5	<0.5	<0.5	<5.0
	10/14/96	<50	<50	NA	<0.5	<0 5	<0.5	<0.5	<5.0
	3/19/97	150	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0
	6/26/00	<50	<50	<300	<0.5	<0 5	<0.5	<0.5	<0.5 [5]
	12/19/00	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2
	7/10/01	<50	<50	<300	<0 5	<0.5	<0.5	<0.5	<2
	12/12/01	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<2
MW-3	1/15/93	<50	<50	NA	<0.3	<0.3	<0.3	<0.3	NA
	9/12/94	<50	<50	NA	0.3	<0.3	<0.3	<0.3	NA
	11/30/94	110	150	NA	<0.3	<0.3	<0 3	<0.3	NA
	3/29/95	<50	<50	NA	<0 3	<0 3	<0.3	<0.3	NA
	6/21/95	<50 [3]	<50 [2]	NA	<0.3	<0.3	<0.3	<0.3	NA
	9/28/95	51 [1]	<50	NA	<0.3	<0.3	<0.3	<0.3	NA
	12/27/95	55 [1]	<50	<100	<0.3	<0.3	<0.3	<0 3	NA
	3/25/96	53	<50	<100	<0 3	<0 3	<0.3	<0.3	NA
	6/26/96	<50	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0
	10/14/96	<50	<50	NA	<0 5	<0.5	<0.5	<0.5	<5.0
	3/19/97	<50	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0
	6/26/00	<50	<50	<300	<0.5	<0 5	<0.5	<0.5	<0 5 [5]
	12/19/00	<50	50 [2]	<300	<0.5	<0.5	<0.5	<0.5	<2
	7/10/01	<50	<50	<300	<0.5	<0 5	<0.5	<0.5	<2
	12/12/01	<50	<50	<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 8021B but reported as ND<0.5 by *EPA Test Method 8260*

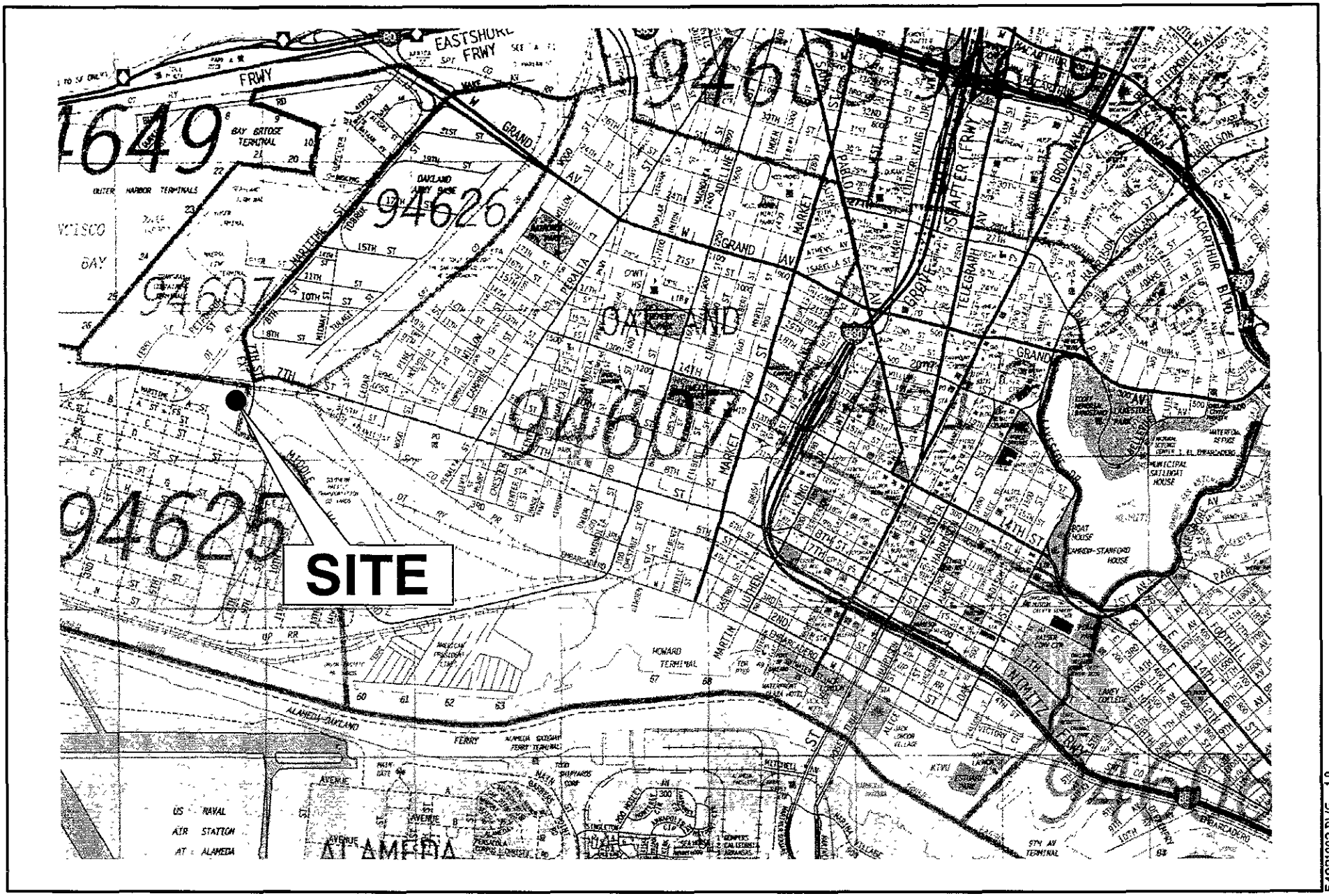
6 Heavier hydrocarbons contributed to the quantitation

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

Date	System Status	Comments
10/16/01	System not running.	Checked system fuses. All test OK. System is not running, will call for air compressor technician.
10/23/01	System not running.	Met Ingersoll-Rand air compressor technician at the site. He checked that the air compressor was receiving power and working properly.
10/30/01	System not running.	Adjust cycle timer on pump. Drained pump. Pump is receiving air but not cycling.
10/31/01	System not running.	Arrange Clean Environment Equipment (CEE) to repair bladder pump on active skimmer.
11/9/01	System running.	CEE came to site and swapped pumps in MW-6 active skimmer. CEE took pump for repair. System running on temporary pump
11/27/01	System running.	CEE reported that the pump from the active skimmer was plugged and repaired. Pump will be re-installed by CEE. System running on temporary pump.
12/5/01	System running	Collected 4th quarter GW samples from 3 wells only due to weather conditions.
12/12/01	System not running.	Finished collecting 4th quarter GW samples. System recovery tank is full, therefore the system is not running. Measured groundwater levels at all wells.
12/21/01	System not running.	Purge water from Berth 24 sampling is put in the system recovery tank. Recovery tank still full so system is not running.
1/18/02	System not running.	Tank full shut-off alarm is on and will not clear.
1/22/02	System running	Cleared clog from the tank full shut-off valve and system is now operating. Re-measured groundwater levels at all wells.

PLATES



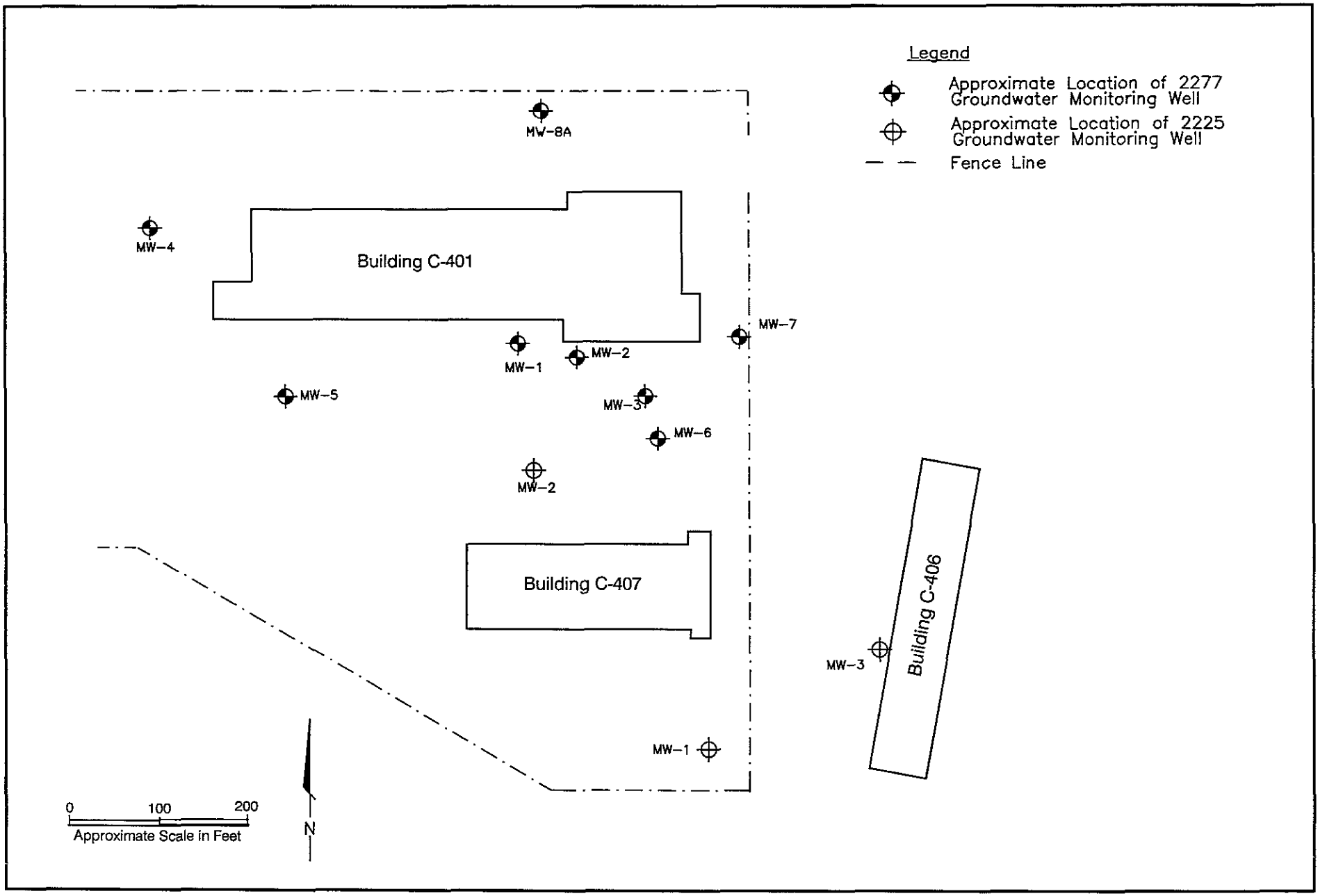
Harding ESE
A MACTEC COMPANY

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

PLATE
1

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
SS	54821.1		01/02	

54821003.DWG 1.0
20020124.1617



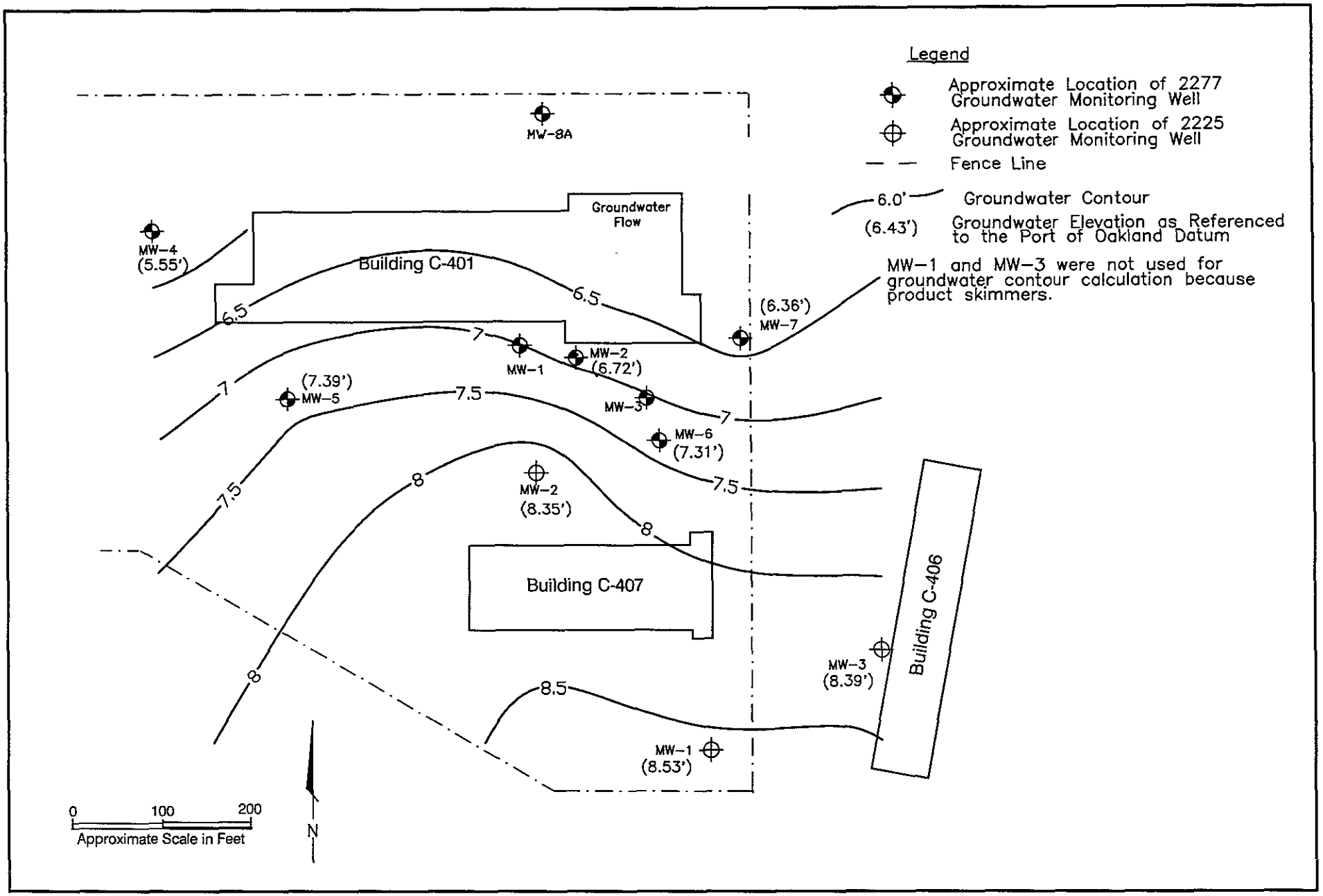
54821004.DWG 1.0
20020129.1351

Harding ESE
A MACTEC COMPANY

Site Plan
Quarterly Groundwater Monitoring Report
2227 and 2225 Seventh Street
Oakland, California 95607

PLATE
2

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
SS	54821.1		01/02	



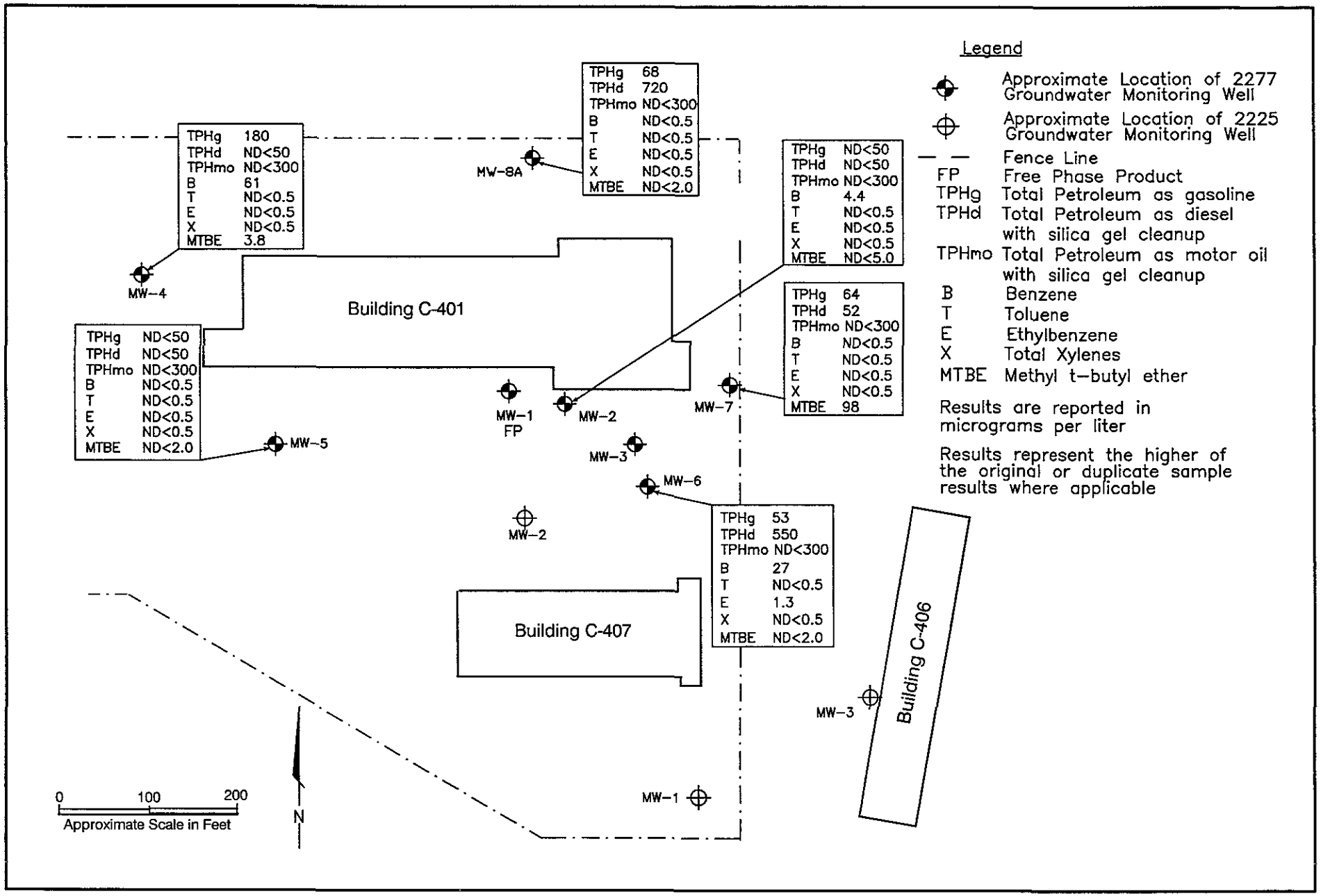
Harding ESE
A MACTEC COMPANY

Groundwater Elevations, December 12, 2001
Quarterly Groundwater Monitoring Report
2227 and 2225 Seventh Street
Oakland, California 95607

PLATE
3

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
SS	54821.1		01/02	

54821005.DWG 1.0
20020129.1352



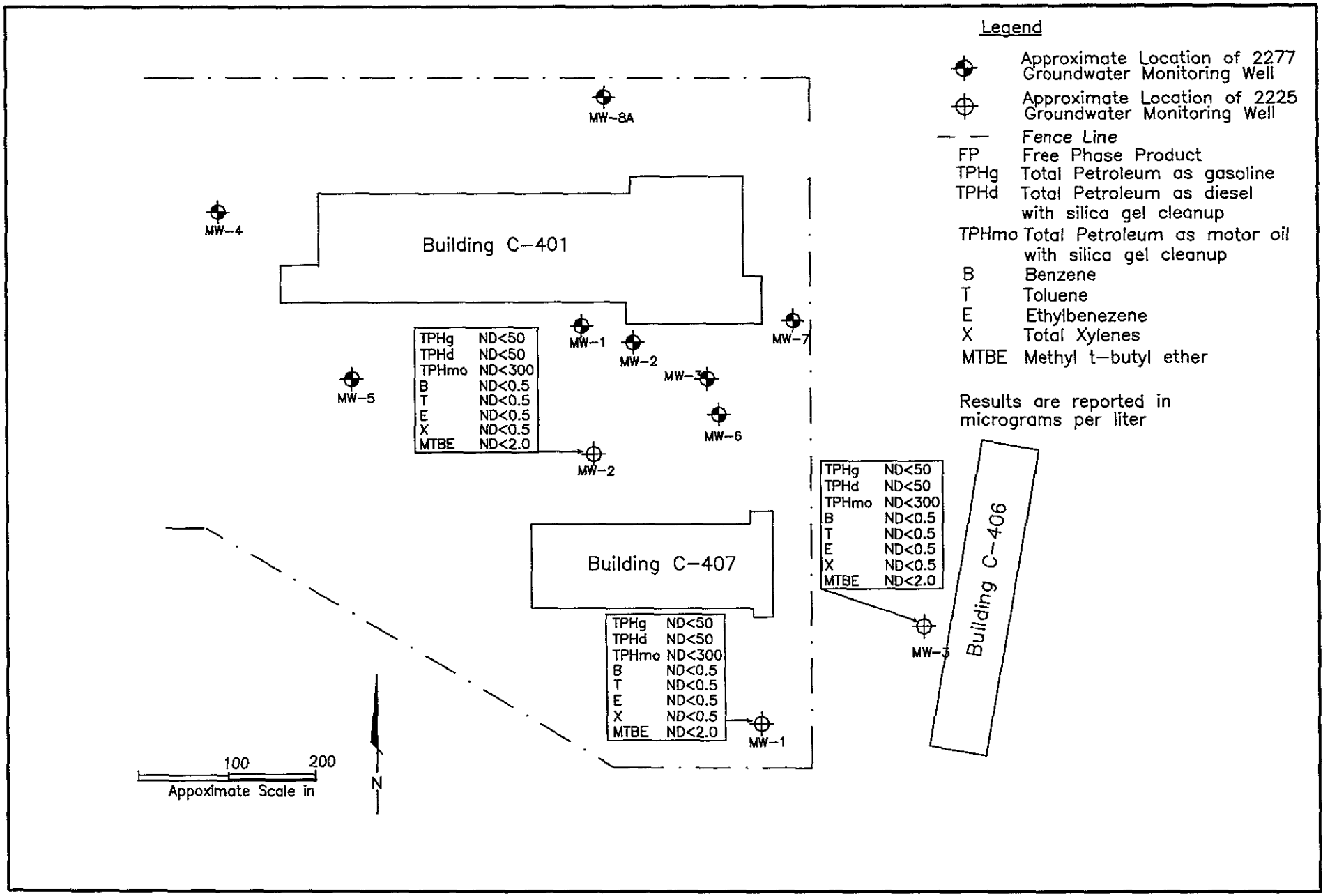
5482100G.DWG 1.0
20020207.1219

Harding ESE
A MACTEC COMPANY

Groundwater Sample Results, December 5 & 12, 2001
Quarterly Groundwater Monitoring Report
2227 and 2225 Seventh Street
Oakland, California 95607

PLATE
4

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
SS	54821.1		01/02	



54821007.DWG 1.0
20020207.1651

Harding ESE
A MACTEC COMPANY

Groundwater Sample Results, December 12, 2001
Semi-Annual Groundwater Monitoring Report
2227 and 2225 Seventh Street
Oakland, California 94607

PLATE
5

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
SS	54821.1		01/02	

APPENDIX A

GROUNDWATER SAMPLE FORMS

Harding ESE

A MACTEC COMPANY

GROUNDWATER SAMPLING FORM

Job Name: 2277 7th St.

Job Number: 54821.1

Recorded By: [signature] (Signature)

Well Number: MW-2

Well Type: [x] Monitor [ ] Extraction [ ] Other ___ [x] PVC [ ] St. Steel [ ] Other ___

Date: 12/5/2001

Sampled By: TAE / CAL (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): 8.4

No.of Well Volumes to be purged (# V): 3

PURGE METHOD

[x] Bailer - Type: disposable

[ ] Submersible - Type: ___

[ ] Other - Type: ___

PUMP INTAKE SETTING

[ ] Near Bottom [ ] Near Top

[ ] Other ___

Depth in feet (BTOC): ___

Screen Interval in feet (BTOC): from ___ to ___

PURGE VOLUME CALCULATION

(15.27 TD (feet) − 8.4 WL (Feet)) x 2 D (inches) ² x 3 #V x 0.0408 = 3.4 gals Calculated Purge Volume

PURGE TIME

Purge Start: ___

Purge Stop: ___

Elapsed: ___

PURGE RATE

GPM: ___

GPM: ___

PURGE VOLUME

Volume: 3.5 gallons

Field Parameter Measurement

Minutes	pH	Conductivity (µS)	Temp. [ ] °C [x] °F	Turbidity (NTU)
Initial	NA	2030	61.7	
1 GAL	↓	1993	64.7	
2		2040	64.0	
3	↓	2060	63.5	
Final		2090	64.3	
Meter S/N				

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

no odor, clear

Discharge Water Disposal: [ ] Sanitary Sewer [ ] Storm Sewer [x] Other 2277 System

WELL SAMPLING

[x] Bailer - Type: Disposable

Sample Time: 920

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MW-2	1 L Amber	TEPH	none	C&T	
	3 voas	TPHg, MTBE, BTEX	HCL	C&T	

QUALITY CONTROL SAMPLES

Duplicate Samples	
Original Sample No.	Dupl. Sample No.

Blank Samples	
Type	Sample No.

Other Samples	
Type	Sample No.

Harding ESE

A MACTEC COMPANY

GROUNDWATER SAMPLING FORM

Well Number: MW-4

Well Type: [x] Monitor [ ] Extraction [ ] Other ___
[x] PVC [ ] St. Steel [ ] Other ___

Job Name: 2277 7th St.

Job Number: 54821.1

Recorded By: [signature] (Signature)

Date: 12/5/2001

Sampled By: TAE / CAL (Initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches): 2
Total Depth of Casing (TD in ft BTOC): 18.84
Water Level Depth (WL in ft BTOC): 7.5
No.of Well Volumes to be purged (# V): 3

PURGE METHOD

[x] Bailer - Type: disposable
[ ] Submersible - Type:
[ ] Other - Type:

PUMP INTAKE SETTING

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

PURGE VOLUME CALCULATION

(18.84 - 7.5) x 2 ² x 3 x 0.0408 = 5.6 gals

TD (feet) | WL (Feet) | D (inches) | # V | Calculated Purge Volume

PURGE TIME

Purge Start:
Purge Stop:
Elapsed:

PURGE RATE

GPM:
GPM:

PURGE VOLUME

Volume: gallons

Field Parameter Measurement

Minutes	pH	Conductivity (µS)	Temp. [ ] °C [x] °F	Turbidity (NTU)
Initial		1427	76.5	
1		1699	62.5	
2		2140	64.5	
3		2140	63.8	
4		2020	64.2	
F		2100	63.5	
Meter S/N				

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

Discharge Water Disposal: [ ] Sanitary Sewer
[ ] Storm Sewer [x] Other 2277 System

WELL SAMPLING

Sample Time:

[x] Bailer - Type: Disposable

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MW-4	1 L Amber	TEPH	none	C&T	
	3 voas	TPHg, MTBE, BTEX	HCL	C&T	

QUALITY CONTROL SAMPLES

Duplicate Samples	
Original Sample No.	Dupl. Sample No.

Blank Samples	
Type	Sample No.

Other Samples	
Type	Sample No.

Harding ESE

A MACTEC COMPANY

GROUNDWATER SAMPLING FORM

Job Name: 2277 7th St.

Job Number: 54821.1

Recorded By: [signature] (Signature)

Well Number: MW-5

Well Type: [x] Monitor [ ] Extraction [ ] Other ___ [x] PVC [ ] St. Steel [ ] Other ___

Date: 12/5/2001

Sampled By: TAE / CAL (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): 6.45

No.of Well Volumes to be purged (# V): 3

PURGE METHOD

[x] Bailer - Type: disposable

[ ] Submersible - Type:

[ ] Other - Type:

PUMP INTAKE SETTING

[ ] Near Bottom [ ] Near Top

[ ] Other

Depth in feet (BTOC):

Screen Interval in feet (BTOC): from ___ to ___

PURGE VOLUME CALCULATION

(17.68 - 6.45) x 2 ² x 3 X 0.0408 = 5.5 gals

TD (feet) WL (Feet) D (inches) # V Calculated Purge Volume

PURGE TIME

Purge Start:

Purge Stop:

Elapsed:

PURGE RATE

GPM:

GPM:

PURGE VOLUME

Volume: 5.5 gallons

Field Parameter Measurement

Minutes	pH	Conductivity (µS)	Temp. [ ] °C [x] °F	Turbidity (NTU)
Initial	NA	1206	62.4	
1 GAL		1468	63.8	
2		1688	65.7	
3		1751	65.7	
4		1769	66.3	
FINAL		1660	65.3	
Meter S/N				

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

No odor, clear

Discharge Water Disposal: [ ] Sanitary Sewer [ ] Storm Sewer [x] Other 2277 System

WELL SAMPLING

[x] Bailer - Type: Disposable

Sample Time: 1000

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MW-5	1 L Amber	TEPH	none	C&T	
	3 voas	TPHg, MTBE, BTEX	HCL	C&T	

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Dupl. Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

Harding ESE

A MACTEC COMPANY

GROUNDWATER SAMPLING FORM

Job Name: 2277 7th St.

Job Number: 54821.1

Recorded By: _____ (Signature)

Well Number: MW-6

Well Type: [x] Monitor [ ] Extraction [ ] Other ___ [x] PVC [ ] St. Steel [ ] Other ___

Date: 12/5/2001

Sampled By: TAE / CAL (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): 9.5

No.of Well Volumes to be purged (# V): 3

PURGE VOLUME CALCULATION

(18.05 - 9.5) x 2 ² X 3 X 0.0408 = 4.2 gals

TD (feet) WL (Feet) D (inches) # V Calculated Purge Volume

PURGE METHOD

[x] Bailer - Type: disposable

[ ] Submersible - Type: _____

[ ] Other - Type: _____

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. [ ] °C [x] °F	Turbidity (NTU)
Initial	7.97	1805	62.0	
1 GAL	7.87	2130	60.5	
2	7.84	2230	62.4	
3	7.84	2220	61.9	
FINAL	7.94	2150	60.9	
Meter S/N				

PURGE TIME

Purge Start: _____

Purge Stop: _____

Elapsed: _____

PURGE RATE

GPM: _____

GPM: _____

PURGE VOLUME

Volume: _____ gallons

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

Strong petroleum odor, sheen

light grey

Discharge Water Disposal: [ ] Sanitary Sewer [ ] Storm Sewer [x] Other 2277 System

WELL SAMPLING

[x] Bailer - Type: Disposable

Sample Time: 1005

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MW-6	1 L Amber	TEPH	none	C&T	
	3 voas	TPHg, MTBE, BTEX	HCL	C&T	

QUALITY CONTROL SAMPLES

Duplicate Samples	
Original Sample No.	Dupl. Sample No.

Blank Samples	
Type	Sample No.

Other Samples	
Type	Sample No.

Harding ESE

A MACTEC COMPANY

GROUNDWATER SAMPLING FORM

Job Name: 2277 7th St.

Job Number: 54821.1

Recorded By: [signature] (Signature)

Well Number: MW-7

Well Type: [x] Monitor [ ] Extraction [ ] Other ___ [x] PVC [ ] St. Steel [ ] Other ___

Date: 12/12/2001

Sampled By: TAE / CAL (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): 8.39

No.of Well Volumes to be purged (# V): 3

PURGE METHOD

[x] Bailer - Type: disposable

[ ] Submersible - Type:

[ ] Other - Type:

PUMP INTAKE SETTING

[ ] Near Bottom [ ] Near Top

[ ] Other

Depth in feet (BTOC):

Screen Interval in feet (BTOC): from ___ to ___

PURGE VOLUME CALCULATION

(18.16 - 8.39) x 2 ² x 3 x 0.0408 = 4.8 gals

TD (feet) WL (Feet) D (inches) # V Calculated Purge Volume

Field Parameter Measurement

Minutes	pH	Conductivity (µS)	Temp. [ ] °C [x] °F	Turbidity (NTU)
Initial	8.11	1093	61.0	
1 GAL	7.87	1091	62.8	
2	7.89	1132	64.0	
3.5	7.86	1155	63.4	
FINAL	7.84	1189	64.0	
Meter S/N				

PURGE TIME

Purge Start: ___

Purge Stop: ___

Elapsed: ___

PURGE RATE

GPM: ___

GPM: ___

PURGE VOLUME

Volume: ___ gallons

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

slightly turbid grey petroleum odor

Discharge Water Disposal: [ ] Sanitary Sewer [ ] Storm Sewer [x] Other 2277 System

WELL SAMPLING

[x] Bailer - Type: Disposable

Sample Time: 1020

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MW-7	1 L Amber	TEPH	none	C&T	
	3 voas	TPHg, MTBE, BTEX	HCL	C&T	

QUALITY CONTROL SAMPLES

Duplicate Samples	
Original Sample No.	Dupl. Sample No.
MW-7 @ 1020	MW-7D @ 1025

Blank Samples	
Type	Sample No.

Other Samples	
Type	Sample No.

Harding ESE

A MACTEC COMPANY

GROUNDWATER SAMPLING FORM

Job Name: 2277 7th St.

Job Number: 54821.1

Recorded By: TAE (Signature)

Well Number: MW-8

Well Type: [x] Monitor [ ] Extraction [ ] Other ___ [x] PVC [ ] St. Steel [ ] Other ___

Date: 12/12/2001

Sampled By: TAE / CAL (initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches): 2

Total Depth of Casing (TD in ft BTOC): 20.75

Water Level Depth (WL in ft BTOC): 7.2

No.of Well Volumes to be purged (# V): 3

PURGE METHOD

[x] Bailer - Type: disposable

[ ] Submersible - Type:

[ ] Other - Type:

PUMP INTAKE SETTING

[ ] Near Bottom [ ] Near Top

[ ] Other

Depth in feet (BTOC):

Screen Interval in feet (BTOC): from ___ to ___

PURGE VOLUME CALCULATION

(20.75 TD (feet) − 7.2 WL (Feet)) × 2 D (inches)² × 3 # V × 0.0408 = 6.6 gals Calculated Purge Volume

PURGE TIME

Purge Start:

Purge Stop:

Elapsed:

PURGE RATE

GPM:

GPM:

PURGE VOLUME

Volume: ___ gallons

Field Parameter Measurement

Minutes	pH	Conductivity (µS)	Temp. [ ] °C [x] °F	Turbidity (NTU)
Initial	7.86	1859	62.7	
1 GAL	7.70	1699	62.6	
2	7.61	1647	63.5	
3	7.56	1656	63.6	
4	7.53	1642	62.7	
5	7.59	1639	63.3	
FINAL	7.60	1607	61.9	
Meter S/N				

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

turbid, brownish grey

petroleum odor

Discharge Water Disposal: [ ] Sanitary Sewer [ ] Storm Sewer [x] Other 2277 System

WELL SAMPLING

[x] Bailer - Type: Disposable

Sample Time: 0840

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
MW-8	1 L Amber	TEPH	none	C&T	
	3 voas	TPHg, MTBE, BTEX	HCL	C&T	

QUALITY CONTROL SAMPLES

Duplicate Samples	
Original Sample No.	Dupl. Sample No.

Blank Samples	
Type	Sample No.

Other Samples	
Type	Sample No.

Harding ESE

A MACTEC COMPANY

GROUNDWATER SAMPLING FORM

Job Name: 2225 7th St.

Job Number: 54821.1

Recorded By: (Signature)

Well Number: MW-1

Well Type: [x] Monitor [ ] Extraction [ ] Other ___ [x] PVC [ ] St. Steel [ ] Other ___

Date: 12/12/2001

Sampled By: TAE / CAL (initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches): 4

Total Depth of Casing (TD in ft BTOC): 14.9

Water Level Depth (WL in ft BTOC): 5.6

No.of Well Volumes to be purged (# V): 3

PURGE VOLUME CALCULATION

(14.9 - 5.6) X 4 ²X 3 X 0.0408 = 18 gals

TD (feet) WL (Feet) D (inches) #V Calculated Purge Volume

PURGE METHOD

[x] Bailer - Type: ~~disposable~~ PVC

[ ] Submersible - Type:

[ ] Other - Type:

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. [ ] °C [x] °F	Turbidity (NTU)
Initial	8.59	529	62.3	
4 GAL	8.45	570	63.7	
8	8.41	586	64.3	
12	8.37	600	63.7	
16	8.29	635	62.9	
FINAL	8.45	477	62.5	
Meter S/N				

PURGE TIME

Purge Start: ___

Purge Stop: ___

Elapsed: ___

PURGE RATE

GPM: ___

GPM: ___

PURGE VOLUME

Volume: ___ gallons

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

orange flecks. clear. no odor.

Discharge Water Disposal: [ ] Sanitary Sewer [ ] Storm Sewer [x] Other 2277 System

WELL SAMPLING

[x] Bailer - Type: Disposable

Sample Time: 1215

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
2225- 1	1 L Amber	TEPH	none	C&T	
	3 voas	TPHg, MTBE, BTEX	HCL	C&T	

QUALITY CONTROL SAMPLES

Duplicate Samples	
Original Sample No.	Dupl. Sample No.

Blank Samples	
Type	Sample No.

Other Samples	
Type	Sample No.

Harding ESE

A MACTEC COMPANY

GROUNDWATER SAMPLING FORM

Job Name: 2225 7th St.

Job Number: 54821.1

Recorded By: [signature] (Signature)

Well Number: MW-2

Well Type: [x] Monitor [ ] Extraction [ ] Other ___

[x] PVC [ ] St. Steel [ ] Other ___

Date: 12/8/2001

Sampled By: TAE / CAL (Initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches): 4

Total Depth of Casing (TD in ft BTOC): 14.6

Water Level Depth (WL in ft BTOC): 10

No.of Well Volumes to be purged (# V): 3

PURGE METHOD

[x] Bailer - Type: disposable PVC

[ ] Submersible - Type:

[ ] Other - Type:

PUMP INTAKE SETTING

[ ] Near Bottom [ ] Near Top

[ ] Other

Depth in feet (BTOC):

Screen Interval in feet (BTOC): from ___ to ___

PURGE VOLUME CALCULATION

(14.6 - 10) X 4² X 3 X 0.0408 = 9 gals

TD (feet) - WL (Feet) X D (inches)² X # V X 0.0408 = Calculated Purge Volume

PURGE TIME

Purge Start:

Purge Stop:

Elapsed:

PURGE RATE

GPM:

GPM:

PURGE VOLUME

Volume: ___ gallons

Field Parameter Measurement

Minutes	pH	Conductivity (µS)	Temp. [ ] °C [x] °F	Turbidity (NTU)
Initial	8.15	1622	60.6	
2 GAL	8.1	1685	63.7	
4	7.99	1753	64.2	
6	8.01	2370	62.7	
8	8.05	1798	62.9	
FINAL	8.07	1726	62.7	
Meter S/N				

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

Slightly grey, low turbidity strong bio odor in first 3 gal. then no odor

Discharge Water Disposal: [ ] Sanitary Sewer [ ] Storm Sewer [x] Other 2277 System

WELL SAMPLING

[x] Bailer - Type: Disposable

Sample Time: 1055

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
2225-2	1 L Amber	TEPH	none	C&T	
	3 voas	TPHg, MTBE, BTEX	HCL	C&T	

QUALITY CONTROL SAMPLES

Duplicate Samples	
Original Sample No.	Dupl. Sample No.

Blank Samples	
Type	Sample No.

Other Samples	
Type	Sample No.

Harding ESE

A MACTEC COMPANY

GROUNDWATER SAMPLING FORM

Job Name: 2225 7th St.

Job Number: 54821.1

Recorded By: _____ (Signature)

Well Number: MW-3

Well Type: [x] Monitor [ ] Extraction [ ] Other ___ [x] PVC [ ] St. Steel [ ] Other ___

Date: 12/~~5~~12/2001

Sampled By: TAE / CAL (Initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches): 4

Total Depth of Casing (TD in ft BTOC): 11.15

Water Level Depth (WL in ft BTOC): 7.04

No.of Well Volumes to be purged (# V): 3

PURGE VOLUME CALCULATION

(11.15 - 7.04) X 4 ² X 3 X 0.0408 = 8.05 gals

TD (feet) WL (Feet) D (inches) # V Calculated Purge Volume

PURGE METHOD

[x] Bailer - Type: disposable

[ ] Submersible - Type: _____

[ ] Other - Type: _____

PUMP INTAKE SETTING

[ ] Near Bottom [ ] Near Top

[ ] Other _____

Depth in feet (BTOC): _____

Screen Interval in feet (BTOC): from _____ to ___

Field Parameter Measurement

~~GAL~~ ~~Mmotoo~~	pH	Conductivity (µS)	Temp. [ ]°C [x]°F	Turbidity (NTU)
Initial	8.2	1034	65	
2	8.1	1222	67.1	
4	8.3	1258	67.3	
6	8.03	1258	66.1	
8	8.01	1255	65.1	
Meter S/N				

PURGE TIME

Purge Start: _____ GPM: _____

Purge Stop: _____ GPM: _____

Elapsed: _____

PURGE RATE

PURGE VOLUME

Volume: _____ gallons

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

Water relatively clear w/ black flakes

Discharge Water Disposal: [ ] Sanitary Sewer [ ] Storm Sewer [x] Other 2277 System

WELL SAMPLING

[x] Bailer - Type: Disposable

Sample Time: 1247

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
2225-3	1 L Amber	TEPH	none	C&T	
	3 voas	TPHg, MTBE, BTEX	HCL	C&T	

QUALITY CONTROL SAMPLES

Duplicate Samples	
Original Sample No.	Dupl. Sample No.

Blank Samples	
Type	Sample No.

Other Samples	
Type	Sample No.

APPENDIX B

LABORATORY REPORTS

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

ANALYTICAL REPORT

Prepared for:

Harding Lawson Associates
600 Grand Ave.
Suite 300
Oakland, CA 94610

Date: 28-JAN-02
Lab Job Number: 155872
Project ID: 54821.1
Location: 2277 7th 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

Curtis & Tompkins, Ltd.

Laboratory Number: 155872 **Receipt Date:** 12/06/01
Client: Harding Lawson Associates
Location: 2277 7th St
Project#: 54821.1

CASE NARRATIVE

This hardcopy data package contains sample and QC results for three water samples that were received on December 06, 2001.

TPH-Purgeable Hydrocarbons by EPA 8015B(M) and BTXE by EPA 8021B: No analytical problems were encountered.

TPH-Extractable Hydrocarbons by EPA 8015B(M): No analytical problems were encountered.

Purgeable Aromatics by EPA 8260B: Two samples were analyzed past the hold time to confirm MTBE results detected in the BTXE analysis by method 8021B as per the client request. No other analytical problems were encountered.

75812

Harding ESE
A MACTEC COMPANY
600 Grand Ave, Suite 300
Oakland, CA 94610
(510) 451-1001

CHAIN OF CUSTODY FORM

Seq. No.: № 10569
Lab: C&T

Samplers: Corey Lane, Trish Eliasson
Job Number: 54821.1
Name/Location: 2277 7th St.
Project Manager: Luis Fraticelli
Recorder: (Signature Required)

MATRIX			#CONTAINERS & PRESERV.					SAMPLE NUMBER		DATE				STATION DESCRIPTION	
Water	Soil	Air	Unpres	H_2SO_4	HNO_3	HCL		YR	SEQ	YR	MO	DAY	TIME		DEPTH
X								MW-2		01	12	05	0920		
X								MW-3		01	12	05	1000		
X								MW-4		01	12	05	1045		

Preservation Correct? ☐ Yes ☐ No ☐ N/A

Received ☑ On Ice ☑ Cold ☐ Ambient ☑ Intact

ANALYSIS REQUESTED							
Gasoline Range Organics 8015B	Diesel Range Organics 8015B	BTEX plus MTBE	CCR Title 22 Metals (17)	EPA 8021B	EPA 8260B	EPA 8270C	
X	X	X					
X	X	X					
X	X	X					

ADDITIONAL INFORMATION

SAMPLE NUMBER	
YR	SEQ

TURNAROUND TIME/REMARKS

Standard TAT

Silica gel cleanup for TPHd & TPHmo

MTBE confirmation by 8260

CHAIN OF CUSTODY RECORD

			Date/Time
Relinquished By: (signature)	(Print Name)	(Company)	Date/Time
Received By: (signature)	Trish Eliasson	Harding	12/6/01
Relinquished By: (signature)	(Print Name)	(Company)	Date/Time
Received By: (signature)	(Print Name)	(Company)	Date/Time
Relinquished By (signature)	(Print Name)	(Company)	Date/Time
Received By: (signature)	(Print Name)	(Company)	Date/Time
Received By: (signature)	(Print Name)	(Company)	Date/Time
Method of Shipment:			

Laboratory Copy *White* | Project Office Copy *Yellow* | Field or Office Copy *Pink*

002911

Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	155872	Location:	2277 7th st
Client:	Harding Lawson Associates	Prep:	EPA 5030B
Project#:	54821.1	Analysis:	8015B(M)
Matrix:	Water	Batch#:	68616
Units:	ug/L	Sampled:	12/05/01
Diln Fac:	1.000	Received:	12/06/01

Field ID: MW-2 Lab ID: 155872-001
Type: SAMPLE Analyzed: 12/10/01

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	104	59-135
Bromofluorobenzene (FID)	102	60-140

Field ID: MW-5 Lab ID: 155872-002
Type: SAMPLE Analyzed: 12/10/01

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	98	59-135
Bromofluorobenzene (FID)	98	60-140

Field ID: MW-4 Lab ID: 155872-003
Type: SAMPLE Analyzed: 12/10/01

Analyte	Result	RL
Gasoline C7-C12	180	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	103	59-135
Bromofluorobenzene (FID)	100	60-140

Type: BLANK Analyzed: 12/09/01
Lab ID: QC164672

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	93	59-135
Bromofluorobenzene (FID)	85	60-140

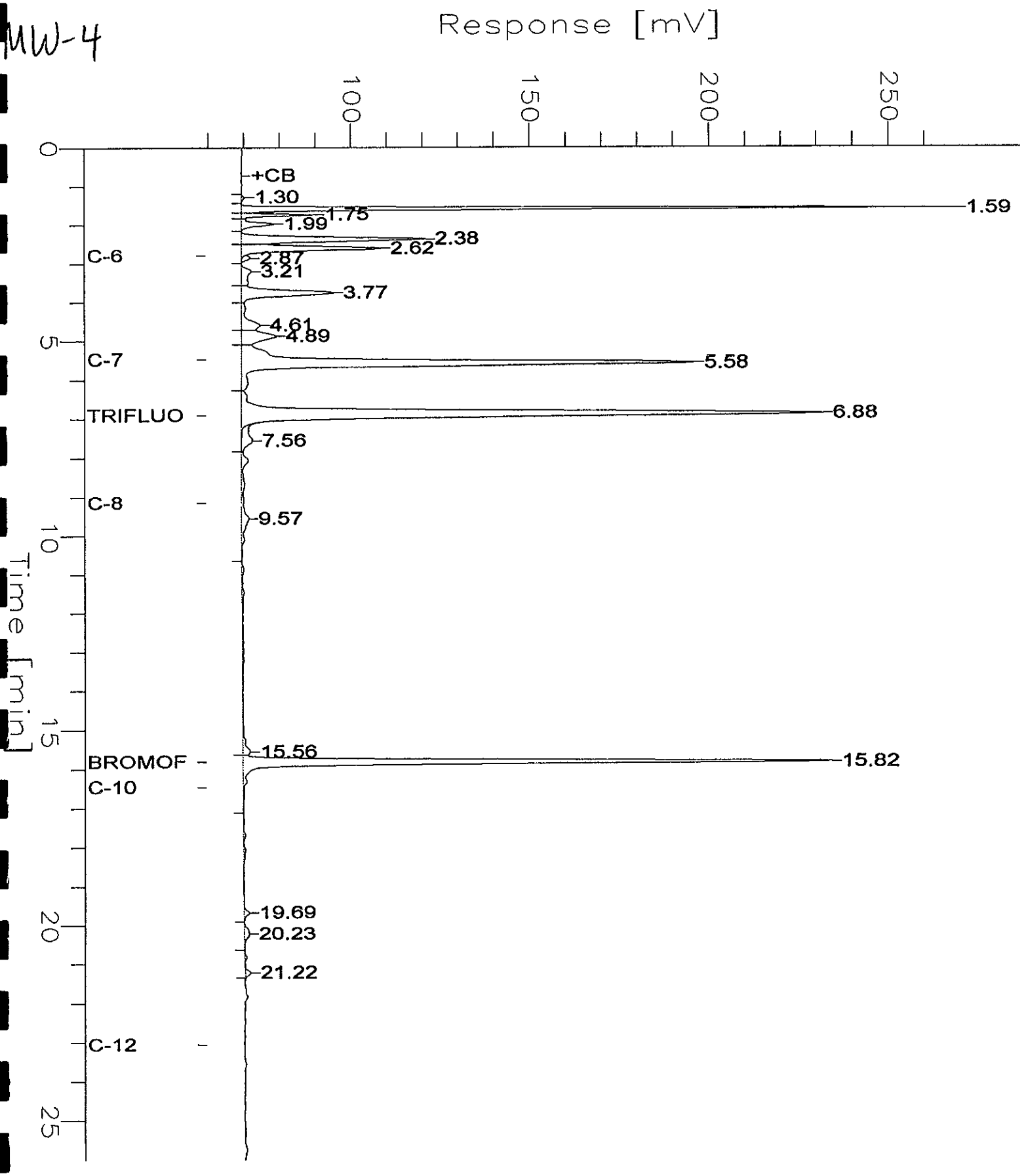
ND= Not Detected
RL= Reporting Limit

GC04 TVH 'J' Data File FID

Sample Name : 155872-003,68616,+MTBE
FileName : G:\GC04\DATA\343J018.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.00 min
Scale Factor: 1.0 Plot Offset: 59 mV

Sample #: B1 Page 1 of 1
Date : 12/10/01 02:09 AM
Time of Injection: 12/10/01 01:43 AM
Low Point : 59.23 mV High Point : 268.88 mV
Plot Scale: 209.7 mV

MW-4

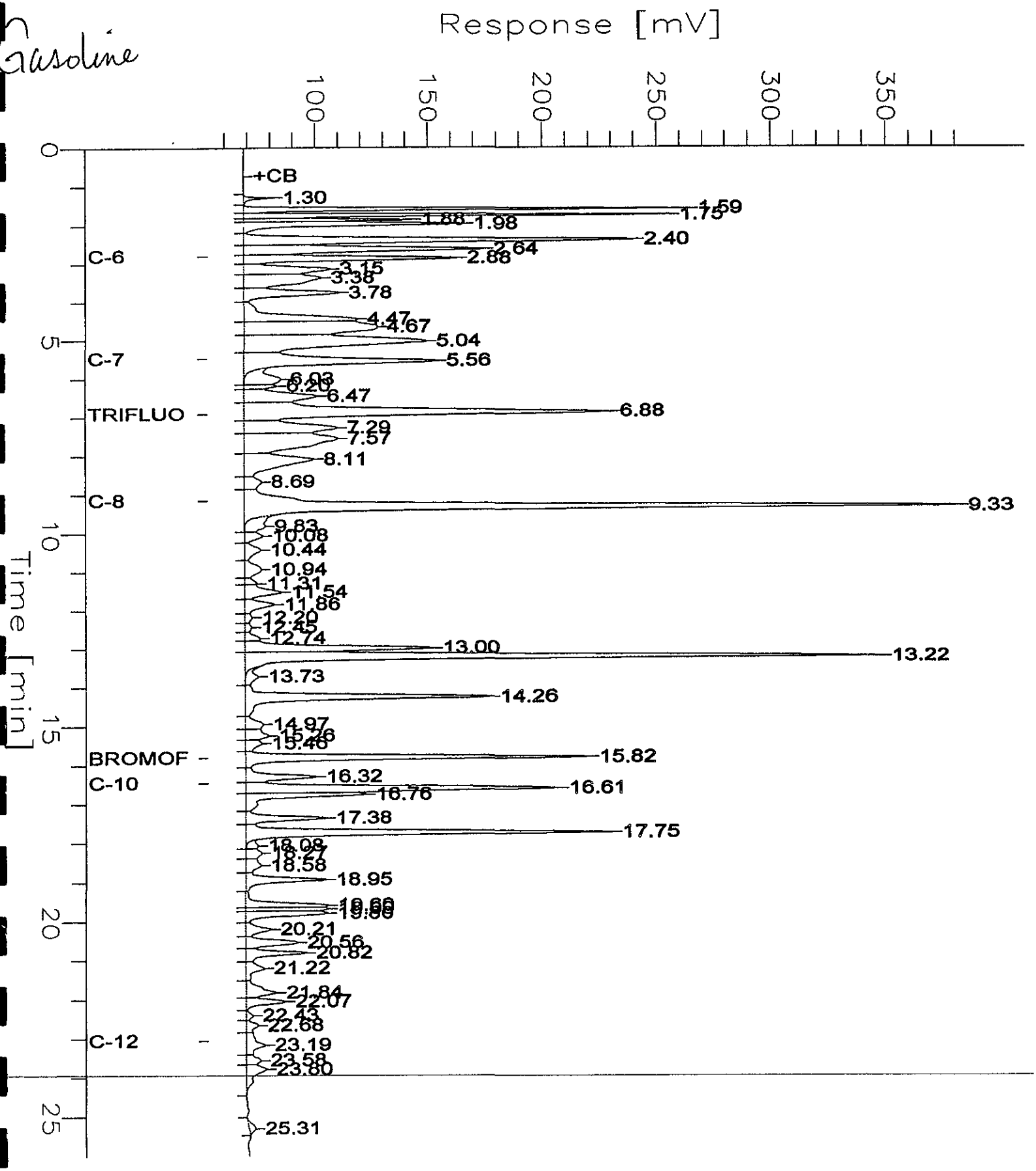


GC04 TVH 'J' Data File FID

Sample Name : CCV/LCS,QC164670,68616,01WS2177,5/5000
FileName : G:\GC04\DATA\343J002.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.00 min
Scale Factor: 1.0 Plot Offset: 53 mV

Sample #: Page 1 of 1
Date : 12/9/01 04:33 PM
Time of Injection: 12/9/01 04:06 PM
Low Point : 52.54 mV High Point : 382.19 mV
Plot Scale: 329.6 mV

Gasoline



Curtis & Tompkins, Ltd.

Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	155872	Location:	2277 7th st
Client:	Harding Lawson Associates	Prep:	EPA 5030B
Project#:	54821.1	Analysis:	EPA 8021B
Matrix:	Water	Batch#:	68616
Units:	ug/L	Sampled:	12/05/01
Diln Fac:	1.000	Received:	12/06/01

Field ID: MW-2 Lab ID: 155872-001
Type: SAMPLE Analyzed: 12/10/01

Analyte	Result	RL
MTBE	5.0	2.0
Benzene	4.4	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)	77	56-142
Bromofluorobenzene (PID)	74	55-149

Field ID: MW-5 Lab ID: 155872-002
Type: SAMPLE Analyzed: 12/10/01

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)	76	56-142
Bromofluorobenzene (PID)	74	55-149

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	155872	Location:	2277 7th st
Client:	Harding Lawson Associates	Prep:	EPA 5030B
Project#:	54821.1	Analysis:	EPA 8021B
Matrix:	Water	Batch#:	68616
Units:	ug/L	Sampled:	12/05/01
Diln Fac:	1.000	Received:	12/06/01

Field ID: MW-4 Lab ID: 155872-003
Type: SAMPLE Analyzed: 12/10/01

Analyte	Result	RL
MTBE	3.8	2.0
Benzene	61	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)	78	56-142
Bromofluorobenzene (PID)	75	55-149

Type: BLANK Analyzed: 12/09/01
Lab ID: QC164672

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)	73	56-142
Bromofluorobenzene (PID)	67	55-149

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	155872	Location:	2277 7th st
Client:	Harding Lawson Associates	Prep:	EPA 5030B
Project#:	54821.1	Analysis:	8015B(M)
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC164670	Batch#:	68616
Matrix:	Water	Analyzed:	12/09/01
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	2,000	1,974	99	73-121

Surrogate	%REC	Limits
Trifluorotoluene (FID)	112	59-135
Bromofluorobenzene (FID)	92	60-140

Curtis & Tompkins, Ltd.

Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	155872	Location:	2277 7th st
Client:	Harding Lawson Associates	Prep:	EPA 5030B
Project#:	54821.1	Analysis:	EPA 8021B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC164671	Batch#:	68616
Matrix:	Water	Analyzed:	12/09/01
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
MTBE	20.00	20.77	104	51-125
Benzene	20.00	18.04	90	67-117
Toluene	20.00	16.19	81	69-117
Ethylbenzene	20.00	17.74	89	68-124
m,p-Xylenes	40.00	35.56	89	70-125
o-Xylene	20.00	18.30	91	65-129

Surrogate	%REC	Limits
Trifluorotoluene (PID)	76	56-142
Bromofluorobenzene (PID)	69	55-149

Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	155872	Location:	2277 7th st
Client:	Harding Lawson Associates	Prep:	EPA 5030B
Project#:	54821.1	Analysis:	8015B(M)
Field ID:	ZZZZZZZZZZ	Batch#:	68616
MSS Lab ID:	155705-015	Sampled:	11/29/01
Matrix:	Water	Received:	11/30/01
Units:	ug/L	Analyzed:	12/10/01
Diln Fac:	1.000		

Type: MS Lab ID: QC164673

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	<33.00	2,000	1,842	92	65-131

Surrogate	%REC	Limits
Trifluorotoluene (FID)	113	59-135
Bromofluorobenzene (FID)	100	60-140

Type: MSD Lab ID: QC164674

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	1,884	94	65-131	2	20

Surrogate	%REC	Limits
Trifluorotoluene (FID)	114	59-135
Bromofluorobenzene (FID)	100	60-140

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	155872	Location:	2277 7th st
Client:	Harding Lawson Associates	Prep:	EPA 3520C
Project#:	54821.1	Analysis:	8015B(M)
Matrix:	Water	Sampled:	12/05/01
Units:	ug/L	Received:	12/06/01
Diln Fac:	1.000	Prepared:	12/19/01
Batch#:	68921	Analyzed:	12/21/01

Field ID: MW-2
Type: SAMPLE
Lab ID: 155872-001
Cleanup Method: EPA 3630C

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

Surrogate	%REC	Limits
Hexacosane	67	44-121

Field ID: MW-5
Type: SAMPLE
Lab ID: 155872-002
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-4
Type: SAMPLE
Lab ID: 155872-003
Cleanup Method: EPA 3630C

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

Surrogate	%REC	Limits
Hexacosane	68	44-121

Type: BLANK
Lab ID: QC165847
Cleanup Method: EPA 3630C

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

Surrogate	%REC	Limits
Hexacosane	77	44-121

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	155872	Location:	2277 7th st
Client:	Harding Lawson Associates	Prep:	EPA 3520C
Project#:	54821.1	Analysis:	8015B(M)
Matrix:	Water	Batch#:	68921
Units:	ug/L	Prepared:	12/19/01
Diln Fac:	1.000	Analyzed:	12/21/01

Type: BS Cleanup Method: EPA 3630C
Lab ID: QC165848

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	2,500	2,045	82	45-110

Surrogate	%REC	Limits
Hexacosane	84	44-121

Type: BSD Cleanup Method: EPA 3630C
Lab ID: QC165849

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	2,500	2,550	102	45-110	22	22

Surrogate	%REC	Limits
Hexacosane	105	44-121

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	155872	Location:	2277 7th st
Client:	Harding Lawson Associates	Prep:	EPA 5030B
Project#:	54821.1	Analysis:	EPA 8260B
Field ID:	MW-2	Batch#:	69153
Lab ID:	155872-001	Sampled:	12/05/01
Matrix:	Water	Received:	12/06/01
Units:	ug/L	Analyzed:	01/02/02
Diln Fac:	1.000		

Analyte	Result	RL
MTBE	ND b	0.5

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	92 b	78-123
Toluene-d8	98 b	80-110
Bromofluorobenzene	104 b	80-115

b= See narrative
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	155872	Location:	2277 7th st
Client:	Harding Lawson Associates	Prep:	EPA 5030B
Project#:	54821.1	Analysis:	EPA 8260B
Field ID:	MW-4	Batch#:	69153
Lab ID:	155872-003	Sampled:	12/05/01
Matrix:	Water	Received:	12/06/01
Units:	ug/L	Analyzed:	01/02/02
Diln Fac:	1.000		

Analyte	Result	RL
MTBE	ND b	0.5

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	92 b	78-123
Toluene-d8	99 b	80-110
Bromofluorobenzene	102 b	80-115

b= See narrative
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	155872	Location:	2277 7th st
Client:	Harding Lawson Associates	Prep:	EPA 5030B
Project#:	54821.1	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC166701	Batch#:	69153
Matrix:	Water	Analyzed:	01/02/02
Units:	ug/L		

Analyte	Result	RL
MTBE	ND	0.5

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	90	78-123
Toluene-d8	97	80-110
Bromofluorobenzene	106	80-115

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	155872	Location:	2277 7th st
Client:	Harding Lawson Associates	Prep:	EPA 5030B
Project#:	54821.1	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	69153
Units:	ug/L	Analyzed:	01/02/02
Diln Fac:	1.000		

Type: BS Lab ID: QC166699

Analyte	Spiked	Result	%REC	Limits
MTBE	50.00	54.87	110	65-135

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	90	78-123
Toluene-d8	100	80-110
Bromofluorobenzene	102	80-115

Type: BSD Lab ID: QC166700

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	50.00	55.42	111	65-135	1	20

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	89	78-123
Toluene-d8	100	80-110
Bromofluorobenzene	103	80-115

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

MEMO

Date: January 31, 2002

To: Luis Fraticelli, Harding ESE

From: Anna Pajarillo, Curtis & Tompkins, Ltd.

RE: Revised Hardcopy Report for CT Login 156078

This memo is to note the revision Curtis & Tompkins has made to our report #156078. In this package you will find the revised hardcopy, which includes the TPH-Extractable data (EPA 8015B), as it was requested on the Chain-of-Custody. The original TPH-E results, reported by fax on January 2 and mailed January 23, did not have the motor oil range included, nor were the samples silica gel cleaned. Please accept my apologies for the error. I will make every effort to prevent this from happening again.

Should you have any questions, please contact me at 510.486.0925 ext.103 or at anna@ctberk.com.

Anna Pajarillo

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710. Phone (510) 486-0900

ANALYTICAL REPORT

Prepared for:

Harding Lawson Associates
600 Grand Ave.
Suite 300
Oakland, CA 94610

Date: 31-JAN-02
Lab Job Number: 156078
Project ID: 54821.1
Location: 2277 7th 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: _____ for JG
Operations Manager

Curtis & Tompkins, Ltd.

Laboratory Number: 156078 **Receipt Date:** 12/13/01
Client: Harding Lawson Associates
Location: 2277 7th St
Project#: 54821.1

CASE NARRATIVE

This hardcopy data package has been revised and reissued to include the silica gel cleaned diesel and motor oil results that were missing from the original hardcopy report that was mailed on January 23,2001.

This hardcopy data package contains sample and QC results for eight water samples that were received on December 13, 2001.

TPH-Purgeable Hydrocarbons by EPA 8015B(M) and BTXE by EPA 8021B: A high surrogate recovery was observed for trifluorotoluene in the gasoline analysis of sample 2225-2 (CT#156078-006). There were no reportable results in the sample. No other analytical problems were encountered.

TPH-Extractable Hydrocarbons by EPA 8015B(M): Because the original results were reported without silica gel clean-up, the results submitted in this hardcopy report has the pre- and post-silica gel results. No other analytical problems were encountered.

Purgeable Aromatics by EPA 8260B: Two samples were analyzed past the hold time to confirm MTBE results detected in the BTXE analysis by method 8021B as per the client request. No analytical problems were encountered.

156078

Harding ESE
A MACTEC Company
600 Grand Ave, Suite 300
Oakland, CA 94610
(510) 451-1001

CHAIN OF CUSTODY FORM

Seq. No.: № 10570

Lab: C&T

Samplers: Trish Eliasson, Corey Lane

Job Number: 54821

Name/Location: 2277 7th St.

Project Manager: Luis Fraticelli

Recorder: Trish Eliasson (Signature Required)

MATRIX				#CONTAINERS & PRESERV.				SAMPLE NUMBER		DATE				STATION DESCRIPTION	
Water	Soil	Air		Unpres	H_2SO_4	HNO_3	HCL	YR	SEQ	YR	MO	DAY	TIME		DEPTH
X				2			3	MW-8		01	12	12	0840		
X				2			3	MW-7		01	12	12	1020		
X				2			3	MW-7D		01	12	12	1025		
X							3	MW-TB		01	12	12	0935		
X				2			3	MW-6		01	12	12	1005		
X				2			3	~~MW-2~~ 2225-2		01	12	12	1055		
X				2			3	2225-1		01	12	12	1215		
X				2			3	2225-3		01	12	12	1247		

ANALYSIS REQUESTED

Gasoline Range Organics 8015B	Diesel Range Organics 8015B	BTEX plus MTBE	CCR Title 22 Metals (17)	EPA 8021B	EPA 8260B	EPA 8270C
X	X	X				
X	X	X				
X	X	X				
	X	X				
X	X	X				
X	X	X				
X	X	X				
X	X	X				

ADDITIONAL INFORMATION

SAMPLE NUMBER YR	SAMPLE NUMBER SEQ	TURNAROUND TIME/REMARKS
		Standard TAT
		Silica gel cleanup for TPHd & TPHmo
		MTBE confirmation by 8260

CHAIN OF CUSTODY RECORD

	(Print Name)	(Company)	Date/Time
Relinquished By (signature)	Trish Eliasson	Harding ESE	12/13/01
Received By: (signature)	Jerome Lumbre	C&T	12/13/01 11:5
Relinquished By. (signature)			
Received By. (signature)			
Relinquished By (signature)			
Received By (signature)			
Received By (signature)			

Method of Shipment:

Laboratory Copy (White) Project Office Copy (Yellow) Field or Office Copy (Pink)

00291 1

Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	156078	Location:	2277 7th st
Client:	Harding Lawson Associates	Prep:	EPA 5030B
Project#:	54821.1	Analysis:	8015B(M)
Matrix:	Water	Sampled:	12/12/01
Units:	ug/L	Received:	12/13/01
Diln Fac:	1.000	Analyzed:	12/19/01
Batch#:	68897		

Field ID: MW-8 Lab ID: 156078-001
Type: SAMPLE

Analyte	Result	RL
Gasoline C7-C12	68	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	110	59-135
Bromofluorobenzene (FID)	118	60-140

Field ID: MW-7 Lab ID: 156078-002
Type: SAMPLE

Analyte	Result	RL
Gasoline C7-C12	51	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	111	59-135
Bromofluorobenzene (FID)	128	60-140

Field ID: MW-7D Lab ID: 156078-003
Type: SAMPLE

Analyte	Result	RL
Gasoline C7-C12	64	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	111	59-135
Bromofluorobenzene (FID)	128	60-140

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

Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	156078	Location:	2277 7th st
Client:	Harding Lawson Associates	Prep:	EPA 5030B
Project#:	54821.1	Analysis:	8015B(M)
Matrix:	Water	Sampled:	12/12/01
Units:	ug/L	Received:	12/13/01
Diln Fac:	1.000	Analyzed:	12/19/01
Batch#:	68897		

Field ID: MW-TB Lab ID: 156078-004
Type: SAMPLE

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	113	59-135
Bromofluorobenzene (FID)	109	60-140

Field ID: MW-6 Lab ID: 156078-005
Type: SAMPLE

Analyte	Result	RL
Gasoline C7-C12	53	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	123	59-135
Bromofluorobenzene (FID)	115	60-140

Field ID: 2225-2 Lab ID: 156078-006
Type: SAMPLE

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	150 *	59-135
Bromofluorobenzene (FID)	105	60-140

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

Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	156078	Location:	2277 7th st
Client:	Harding Lawson Associates	Prep:	EPA 5030B
Project#:	54821.1	Analysis:	8015B(M)
Matrix:	Water	Sampled:	12/12/01
Units:	ug/L	Received:	12/13/01
Diln Fac:	1.000	Analyzed:	12/19/01
Batch#:	68897		

Field ID: 2225-1 Lab ID: 156078-007
Type: SAMPLE

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	108	59-135
Bromofluorobenzene (FID)	105	60-140

Field ID: 2225-3 Lab ID: 156078-008
Type: SAMPLE

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	112	59-135
Bromofluorobenzene (FID)	107	60-140

Type: BLANK Lab ID: QC165753

Analyte	Result	RL
Gasoline C7-C12	ND	50

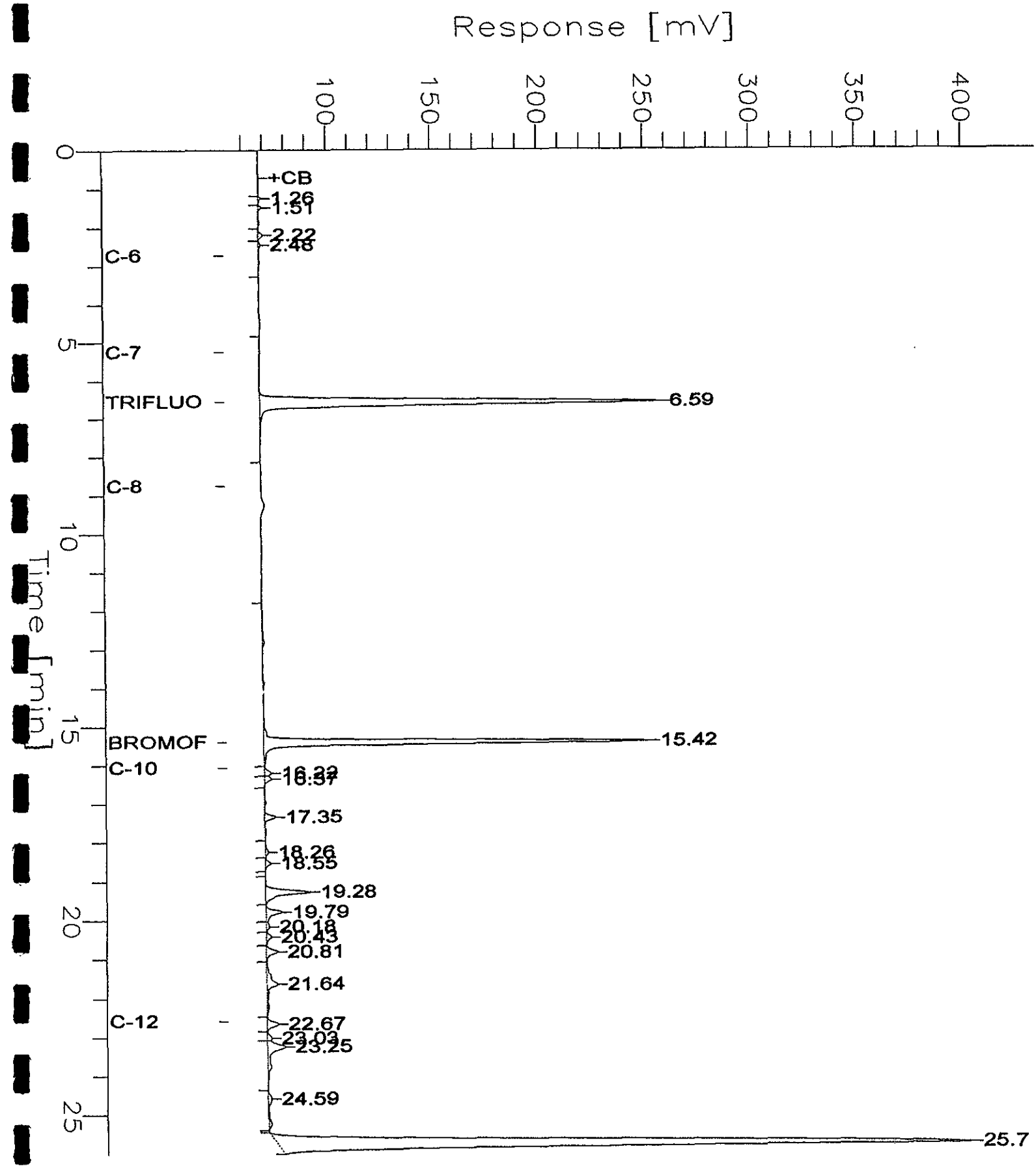
Surrogate	%REC	Limits
Trifluorotoluene (FID)	111	59-135
Bromofluorobenzene (FID)	107	60-140

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

GC04 TVH 'J' Data File FID

Sample Name : 156078-001,68897,+mtbe
FileName : G:\GC04\DATA\353J005.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.00 min
Scale Factor: 1.0 Plot Offset: 51 mV

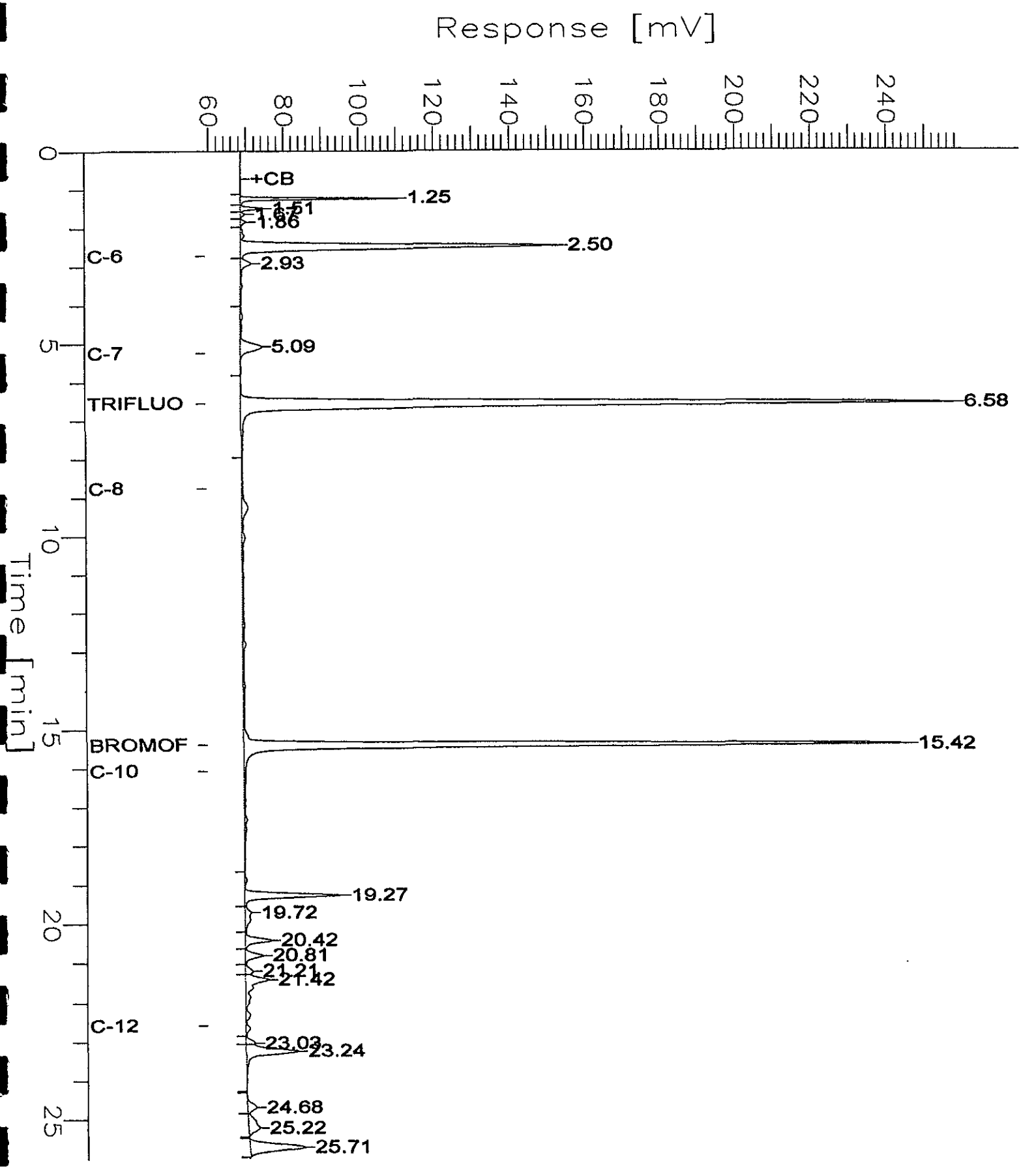
Sample #: a1 Page 1 of 1
Date : 12/19/01 04:51 PM
Time of Injection: 12/19/01 04:24 PM
Low Point : 51.11 mV High Point : 404.91 mV
Plot Scale: 353.8 mV



GC04 TVH 'J' Data File FID

Sample Name : 156078-002,68897,+mtbe
FileName : G:\GC04\DATA\353J006.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.00 min
Scale Factor: 1.0 Plot Offset: 59 mV

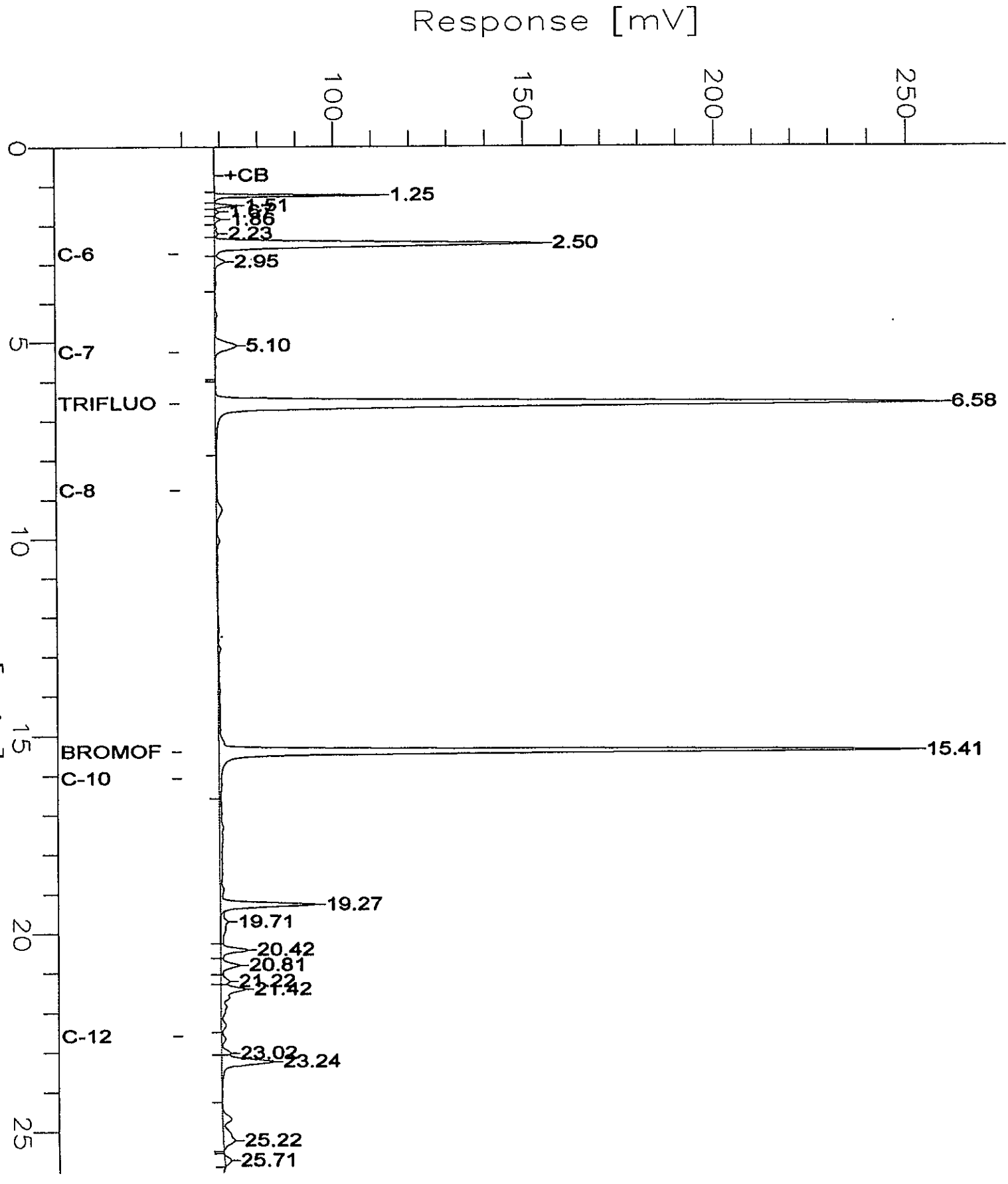
Sample #: a1 Page 1 of 1
Date : 12/19/01 05:26 PM
Time of Injection: 12/19/01 05:00 PM
Low Point : 58.97 mV High Point : 258.11 mV
Plot Scale: 199.1 mV



GC04 TVH 'J' Data File FID

Sample Name : 156078-003,68897,+mtbe
leName : G:\GC04\DATA\353J007.raw
thod : TVHBTXE
art Time : 0.00 min End Time : 26.00 min
Scale Factor: 1.0 Plot Offset: 59 mV

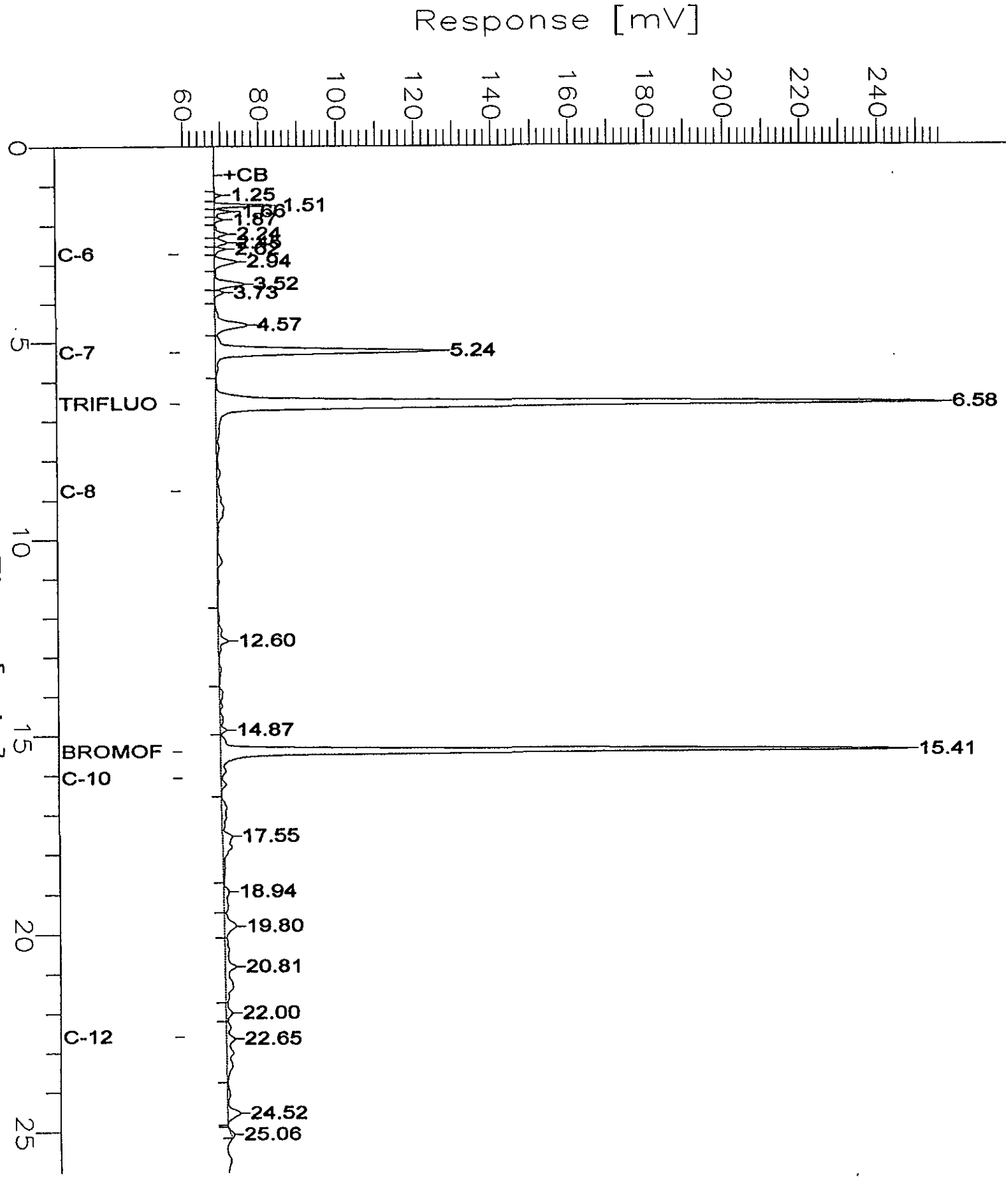
Sample #: a1 Page 1 of 1
Date : 12/19/01 06:02 PM
Time of Injection: 12/19/01 05:36 PM
Low Point : 58.87 mV High Point : 259.26 mV
Plot Scale: 200.4 mV



GC04 TVH 'J' Data File FID

Sample Name : 156078-005,68897,+mtbe
FileName : G:\GC04\DATA\353J009.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.00 min
Scale Factor: 1.0 Plot Offset: 59 mV

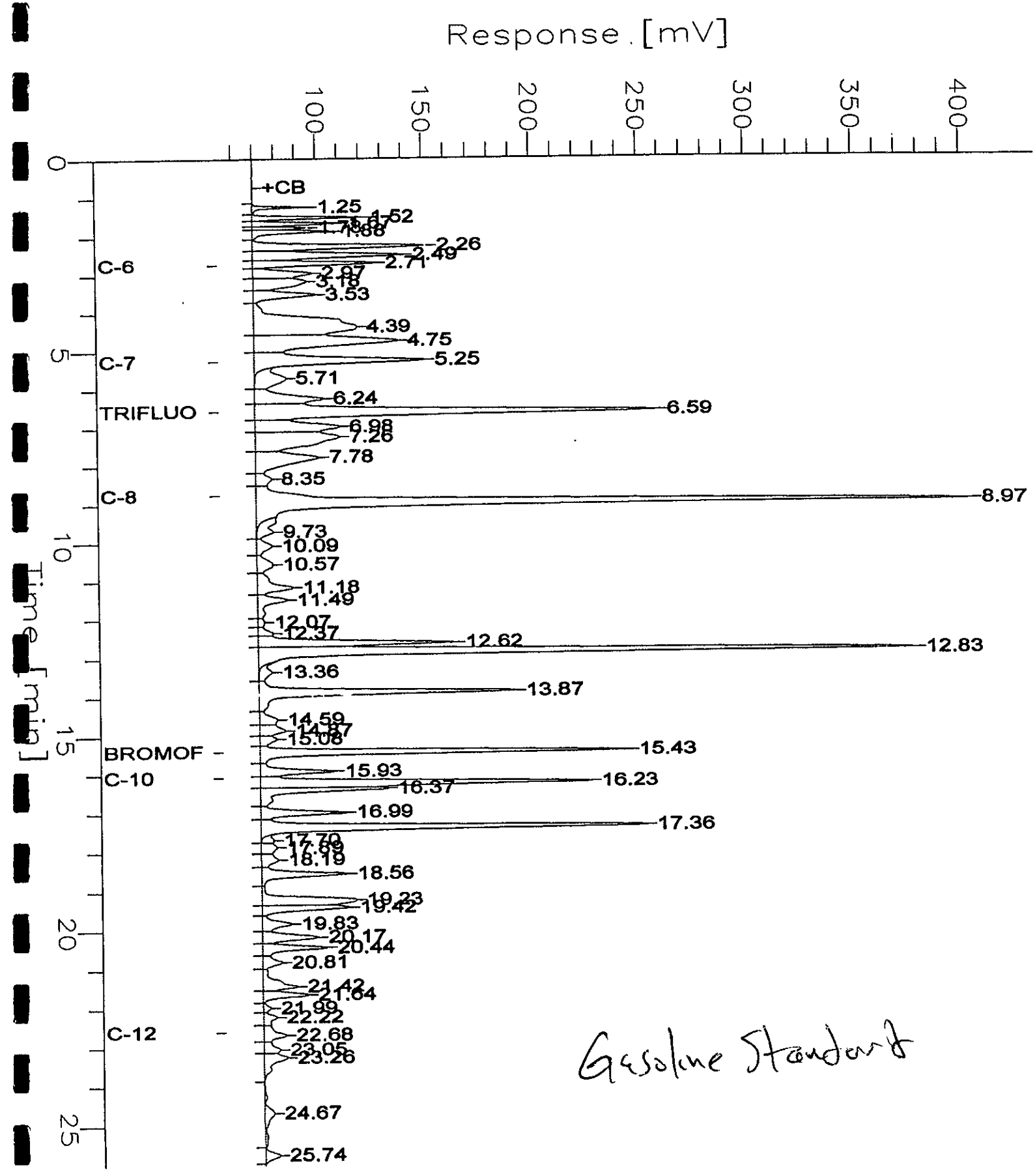
Sample #: a1 Page 1 of 1
Date : 12/19/01 07:14 PM
Time of Injection: 12/19/01 06:47 PM
Low Point : 58.79 mV High Point : 256.76 mV
Plot Scale: 198.0 mV



GC04 TVH 'J' Data File FID

Sample Name : CCV/LCS,QC165754,68897,01WS2177,5/5000
FileName : G:\GC04\DATA\353J002.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.00 min
Scale Factor: 1.0 Plot Offset: 53 mV

Sample #:
Date : 12/19/01 12:00 PM
Time of Injection: 12/19/01 11:34 AM
Low Point : 53.18 mV High Point : 404.88 mV
Plot Scale: 351.7 mV



Gasoline Standard

Curtis & Tompkins, Ltd.

Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	156078	Location:	2277 7th st
Client:	Harding Lawson Associates	Prep:	EPA 5030B
Project#:	54821.1	Analysis:	EPA 8021B
Matrix:	Water	Batch#:	68897
Units:	ug/L	Sampled:	12/12/01
Diln Fac:	1.000	Received:	12/13/01

Field ID: MW-8 Lab ID: 156078-001
Type: SAMPLE Analyzed: 12/19/01

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)	75	56-142
Bromofluorobenzene (PID)	78	55-149

Field ID: MW-7 Lab ID: 156078-002
Type: SAMPLE Analyzed: 12/19/01

Analyte	Result	RL
MTBE	98	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)	81	56-142
Bromofluorobenzene (PID)	78	55-149

Field ID: MW-7D Lab ID: 156078-003
Type: SAMPLE Analyzed: 12/20/01

Analyte	Result	RL
MTBE	96	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)	80	56-142
Bromofluorobenzene (PID)	81	55-149

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	156078	Location:	2277 7th st
Client:	Harding Lawson Associates	Prep:	EPA 5030B
Project#:	54821.1	Analysis:	EPA 8021B
Matrix:	Water	Batch#:	68897
Units:	ug/L	Sampled:	12/12/01
Diln Fac:	1.000	Received:	12/13/01

Field ID:	MW-TB	Lab ID:	156078-004
Type:	SAMPLE	Analyzed:	12/19/01

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)	80	56-142
Bromofluorobenzene (PID)	80	55-149

Field ID:	MW-6	Lab ID:	156078-005
Type:	SAMPLE	Analyzed:	12/19/01

Analyte	Result	RL
MTBE	ND	2.0
Benzene	27	0.50
Toluene	ND	0.50
Ethylbenzene	1.3	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Trifluorotoluene (PID)	81	56-142
Bromofluorobenzene (PID)	80	55-149

Field ID:	2225-2	Lab ID:	156078-006
Type:	SAMPLE	Analyzed:	12/19/01

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)	80	56-142
Bromofluorobenzene (PID)	78	55-149

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	156078	Location:	2277 7th st
Client:	Harding Lawson Associates	Prep:	EPA 5030B
Project#:	54821.1	Analysis:	EPA 8021B
Matrix:	Water	Batch#:	68897
Units:	ug/L	Sampled:	12/12/01
Diln Fac:	1.000	Received:	12/13/01

Field ID: 2225-1 Lab ID: 156078-007
Type: SAMPLE Analyzed: 12/19/01

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)	79	56-142
Bromofluorobenzene (PID)	79	55-149

Field ID: 2225-3 Lab ID: 156078-008
Type: SAMPLE Analyzed: 12/19/01

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)	81	56-142
Bromofluorobenzene (PID)	80	55-149

Type: BLANK Analyzed: 12/19/01
Lab ID: QC165753

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)	76	56-142
Bromofluorobenzene (PID)	75	55-149

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	156078	Location:	2277 7th st
Client:	Harding Lawson Associates	Prep:	EPA 5030B
Project#:	54821.1	Analysis:	8015B(M)
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC165754	Batch#:	68897
Matrix:	Water	Analyzed:	12/19/01
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	2,000	2,038	102	73-121

Surrogate	%REC	Limits
Trifluorotoluene (FID)	122	59-135
Bromofluorobenzene (FID)	107	60-140

Curtis & Tompkins, Ltd.

Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	156078	Location:	2277 7th st
Client:	Harding Lawson Associates	Prep:	EPA 5030B
Project#:	54821.1	Analysis:	EPA 8021B
Type:	BS	Diln Fac:	1.000
Lab ID:	QC165755	Batch#:	68897
Matrix:	Water	Analyzed:	12/19/01
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
MTBE	20.00	20.65	103	51-125
Benzene	20.00	18.28	91	67-117
Toluene	20.00	17.08	85	69-117
Ethylbenzene	20.00	18.74	94	68-124
m,p-Xylenes	40.00	38.39	96	70-125
o-Xylene	20.00	19.94	100	65-129

Surrogate	%REC	Limits
Trifluorotoluene (PID)	80	56-142
Bromofluorobenzene (PID)	79	55-149

Curtis & Tompkins, Ltd.

Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	156078	Location:	2277 7th st
Client:	Harding Lawson Associates	Prep:	EPA 5030B
Project#:	54821.1	Analysis:	EPA 8021B
Type:	BSD	Diln Fac:	1.000
Lab ID:	QC165811	Batch#:	68897
Matrix:	Water	Analyzed:	12/20/01
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	20.00	18.88	94	51-125	9	20
Benzene	20.00	17.18	86	67-117	6	20
Toluene	20.00	16.19	81	69-117	5	20
Ethylbenzene	20.00	18.03	90	68-124	4	20
m,p-Xylenes	40.00	35.92	90	70-125	7	20
o-Xylene	20.00	19.21	96	65-129	4	20

Surrogate	%REC	Limits
Trifluorotoluene (PID)	79	56-142
Bromofluorobenzene (PID)	81	55-149

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	156078	Location:	2277 7th st
Client:	Harding Lawson Associates	Prep:	EPA 5030B
Project#:	54821.1	Analysis:	8015B(M)
Field ID:	ZZZZZZZZZZ	Batch#:	68897
MSS Lab ID:	156016-001	Sampled:	12/13/01
Matrix:	Water	Received:	12/13/01
Units:	ug/L	Analyzed:	12/20/01
Diln Fac:	1.000		

Type: MS Lab ID: QC165805

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	<33.00	2,000	1,984	99	65-131

Surrogate	%REC	Limits
Trifluorotoluene (FID)	127	59-135
Bromofluorobenzene (FID)	115	60-140

Type: MSD Lab ID: QC165806

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	1,908	95	65-131	4	20

Surrogate	%REC	Limits
Trifluorotoluene (FID)	125	59-135
Bromofluorobenzene (FID)	113	60-140

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	156078	Location:	2277 7th st
Client:	Harding Lawson Associates	Prep:	EPA 5030B
Project#:	54821.1	Analysis:	8015B(M)
Field ID:	ZZZZZZZZZZ	Batch#:	68897
MSS Lab ID:	156027-001	Sampled:	12/14/01
Matrix:	Water	Received:	12/14/01
Units:	ug/L	Analyzed:	12/20/01
Diln Fac:	1.000		

Type: MS Lab ID: QC165807

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	<33.00	2,000	1,906	95	65-131

Surrogate	%REC	Limits
Trifluorotoluene (FID)	125	59-135
Bromofluorobenzene (FID)	113	60-140

Type: MSD Lab ID: QC165808

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	1,984	99	65-131	4	20

Surrogate	%REC	Limits
Trifluorotoluene (FID)	127	59-135
Bromofluorobenzene (FID)	114	60-140

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	156078	Location:	2277 7th st
Client:	Harding Lawson Associates	Prep:	EPA 5030B
Project#:	54821.1	Analysis:	8015B(M)
Field ID:	ZZZZZZZZZZ	Batch#:	68897
MSS Lab ID:	156087-001	Sampled:	12/18/01
Matrix:	Water	Received:	12/18/01
Units:	ug/L	Analyzed:	12/19/01
Diln Fac:	1.000		

Type: MS Lab ID: QC165809

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	<33.00	2,000	1,983	99	65-131

Surrogate	%REC	Limits
Trifluorotoluene (FID)	126	59-135
Bromofluorobenzene (FID)	113	60-140

Type: MSD Lab ID: QC165810

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	1,997	100	65-131	1	20

Surrogate	%REC	Limits
Trifluorotoluene (FID)	127	59-135
Bromofluorobenzene (FID)	113	60-140

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	156078	Location:	2277 7th st
Client:	Harding Lawson Associates	Prep:	EPA 3520C
Project#:	54821.1	Analysis:	8015B(M)
Matrix:	Water	Sampled:	12/12/01
Units:	ug/L	Received:	12/13/01
Diln Fac:	1.000	Prepared:	12/26/01
Batch#:	69036		

Field ID:	MW-8	Lab ID:	156078-001
Type:	SAMPLE	Cleanup Method:	EPA 3630C

Analyte	Result	RL	Analyzed
Diesel C10-C24	1,600 Z	50	12/27/01
Diesel C10-C24 (SGCU)	720 Y Z	50	01/30/02
Motor Oil C24-C36	ND	300	12/27/01
Motor Oil C24-C36 (SGCU)	ND	300	01/30/02

Surrogate	%REC	Limits	Analyzed
Hexacosane	71	44-121	01/30/02

Field ID:	MW-7	Lab ID:	156078-002
Type:	SAMPLE	Cleanup Method:	EPA 3630C

Analyte	Result	RL	Analyzed
Diesel C10-C24	1,800	50	12/27/01
Diesel C10-C24 (SGCU)	ND	50	01/30/02
Motor Oil C24-C36	ND	300	12/27/01
Motor Oil C24-C36 (SGCU)	ND	300	01/30/02

Surrogate	%REC	Limits	Analyzed
Hexacosane	69	44-121	01/30/02

Field ID:	MW-7D	Lab ID:	156078-003
Type:	SAMPLE	Cleanup Method:	EPA 3630C

Analyte	Result	RL	Analyzed
Diesel C10-C24	2,100	50	12/27/01
Diesel C10-C24 (SGCU)	52 L Y	50	01/30/02
Motor Oil C24-C36	ND	300	12/27/01
Motor Oil C24-C36 (SGCU)	ND	300	01/30/02

Surrogate	%REC	Limits	Analyzed
Hexacosane	79	44-121	01/30/02

H= Heavier hydrocarbons contributed to the quantitation
L= Lighter hydrocarbons contributed to the quantitation
Y= Sample exhibits fuel pattern which does not resemble standard
Z= Sample exhibits unknown single peak or peaks
ND= Not Detected
RL= Reporting Limit
SGCU= Silica gel cleanup

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	156078	Location:	2277 7th st
Client:	Harding Lawson Associates	Prep:	EPA 3520C
Project#:	54821.1	Analysis:	8015B(M)
Matrix:	Water	Sampled:	12/12/01
Units:	ug/L	Received:	12/13/01
Diln Fac:	1.000	Prepared:	12/26/01
Batch#:	69036		

Field ID: MW-6 Lab ID: 156078-005
Type: SAMPLE Cleanup Method: EPA 3630C

Analyte	Result	RL	Analyzed
Diesel C10-C24	12,000 H Y	50	12/27/01
Diesel C10-C24 (SGCU)	550	50	01/30/02
Motor Oil C24-C36	1,400 L Y	300	12/27/01
Motor Oil C24-C36 (SGCU)	ND	300	01/30/02

Surrogate	%REC	Limits	Analyzed
Hexacosane	71	44-121	01/30/02

Field ID: 2225-2 Lab ID: 156078-006
Type: SAMPLE Cleanup Method: EPA 3630C

Analyte	Result	RL	Analyzed
Diesel C10-C24	240 H Y	50	12/27/01
Diesel C10-C24 (SGCU)	ND	50	01/30/02
Motor Oil C24-C36	ND	300	12/27/01
Motor Oil C24-C36 (SGCU)	ND	300	01/30/02

Surrogate	%REC	Limits	Analyzed
Hexacosane	86	44-121	01/30/02

Field ID: 2225-1 Lab ID: 156078-007
Type: SAMPLE Cleanup Method: EPA 3630C

Analyte	Result	RL	Analyzed
Diesel C10-C24	120 H Y	50	12/27/01
Diesel C10-C24 (SGCU)	ND	50	01/30/02
Motor Oil C24-C36	ND	300	12/27/01
Motor Oil C24-C36 (SGCU)	ND	300	01/30/02

Surrogate	%REC	Limits	Analyzed
Hexacosane	69	44-121	01/30/02

H= Heavier hydrocarbons contributed to the quantitation
L= Lighter hydrocarbons contributed to the quantitation
Y= Sample exhibits fuel pattern which does not resemble standard
Z= Sample exhibits unknown single peak or peaks
ND= Not Detected
RL= Reporting Limit
SGCU= Silica gel cleanup

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	156078	Location:	2277 7th st
Client:	Harding Lawson Associates	Prep:	EPA 3520C
Project#:	54821.1	Analysis:	8015B(M)
Matrix:	Water	Sampled:	12/12/01
Units:	ug/L	Received:	12/13/01
Diln Fac:	1.000	Prepared:	12/26/01
Batch#:	69036		

Field ID: 2225-3 Lab ID: 156078-008
Type: SAMPLE Cleanup Method: EPA 3630C

Analyte	Result	RL	Analyzed
Diesel C10-C24	470 H Y	50	12/27/01
Diesel C10-C24 (SGCU)	ND	50	01/30/02
Motor Oil C24-C36	ND	300	12/27/01
Motor Oil C24-C36 (SGCU)	ND	300	01/30/02

Surrogate	%REC	Limits	Analyzed
Hexacosane	95	44-121	01/30/02

Type: BLANK Cleanup Method: EPA 3630C
Lab ID: QC166275

Analyte	Result	RL	Analyzed
Diesel C10-C24	ND	50	12/28/01
Diesel C10-C24 (SGCU)	ND	50	01/23/02
Motor Oil C24-C36	ND	300	12/28/01
Motor Oil C24-C36 (SGCU)	ND	300	01/23/02

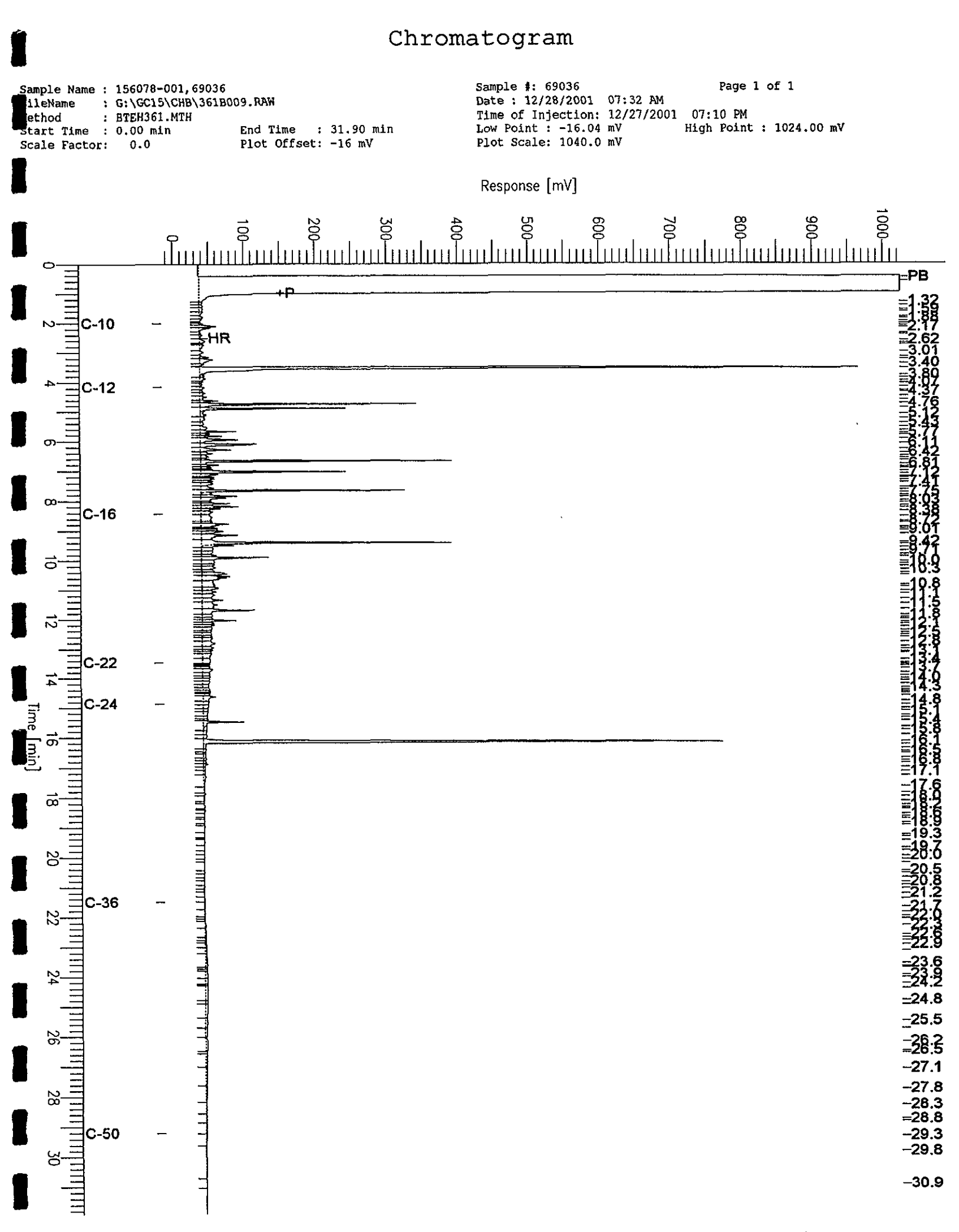
Surrogate	%REC	Limits	Analyzed
Hexacosane	70	44-121	01/23/02

H= Heavier hydrocarbons contributed to the quantitation
L= Lighter hydrocarbons contributed to the quantitation
Y= Sample exhibits fuel pattern which does not resemble standard
Z= Sample exhibits unknown single peak or peaks
ND= Not Detected
RL= Reporting Limit
SGCU= Silica gel cleanup

Chromatogram

Sample Name : 156078-001,69036
FileName : G:\GC15\CHB\361B009.RAW
Method : BTEH361.MTH
Start Time : 0.00 min End Time : 31.90 min
Scale Factor: 0.0 Plot Offset: -16 mV

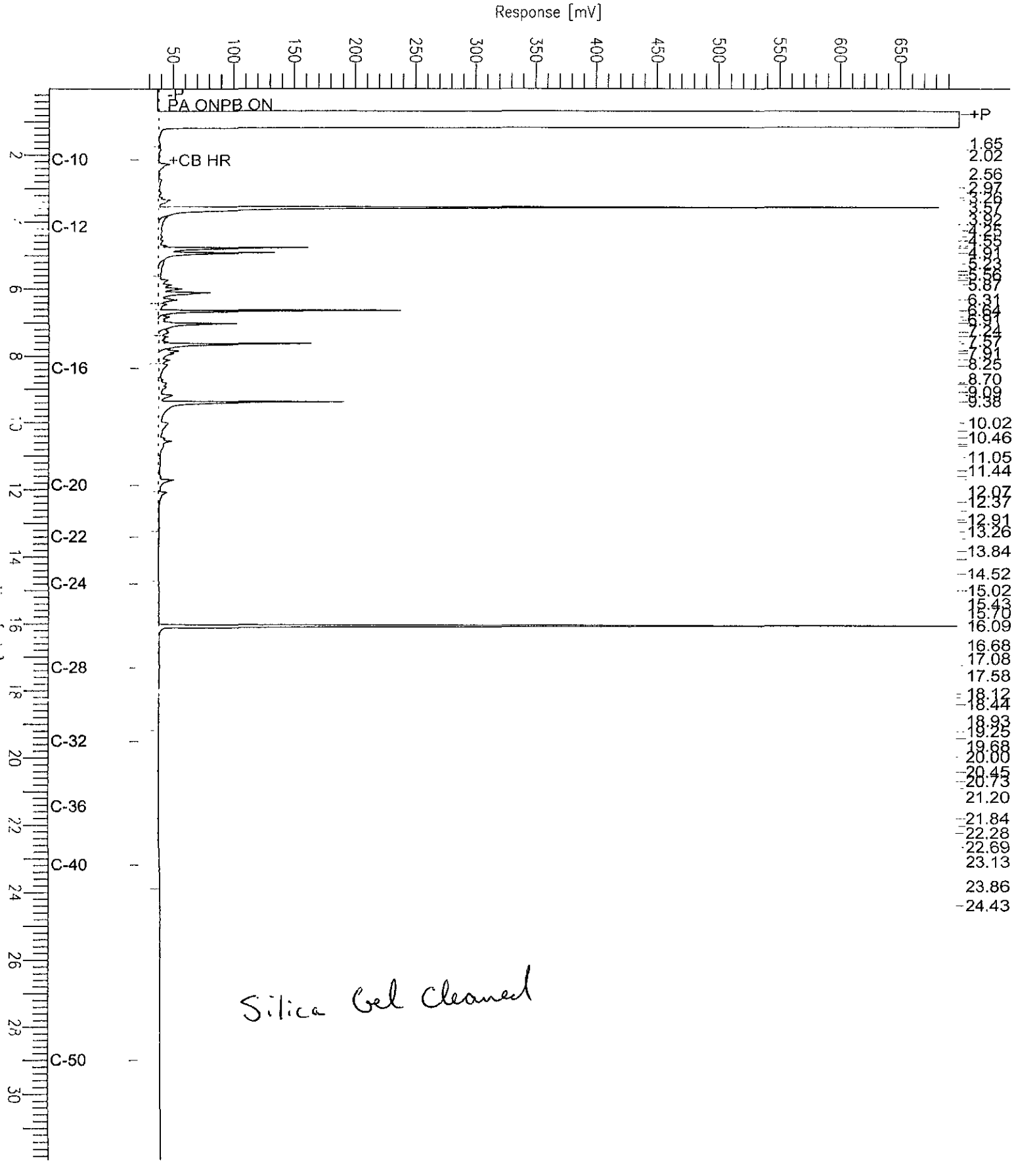
Sample #: 69036 Page 1 of 1
Date : 12/28/2001 07:32 AM
Time of Injection: 12/27/2001 07:10 PM
Low Point : -16.04 mV High Point : 1024.00 mV
Plot Scale: 1040.0 mV



Chromatogram

Sample Name : 156078-001sg,69036
FileName : G:\GC13\CHB\030B004.RAW
Method : BTEH028.MTH
Start Time : 0.01 min End Time : 31.91 min
Scale Factor: 0.0 Plot Offset: 22 mV

Sample #: 69036 Page 1 of 1
Date : 1/30/02 02:01 PM
Time of Injection: 1/30/02 12:09 PM
Low Point : 22.17 mV High Point : 698.82 mV
Plot Scale: 676.6 mV

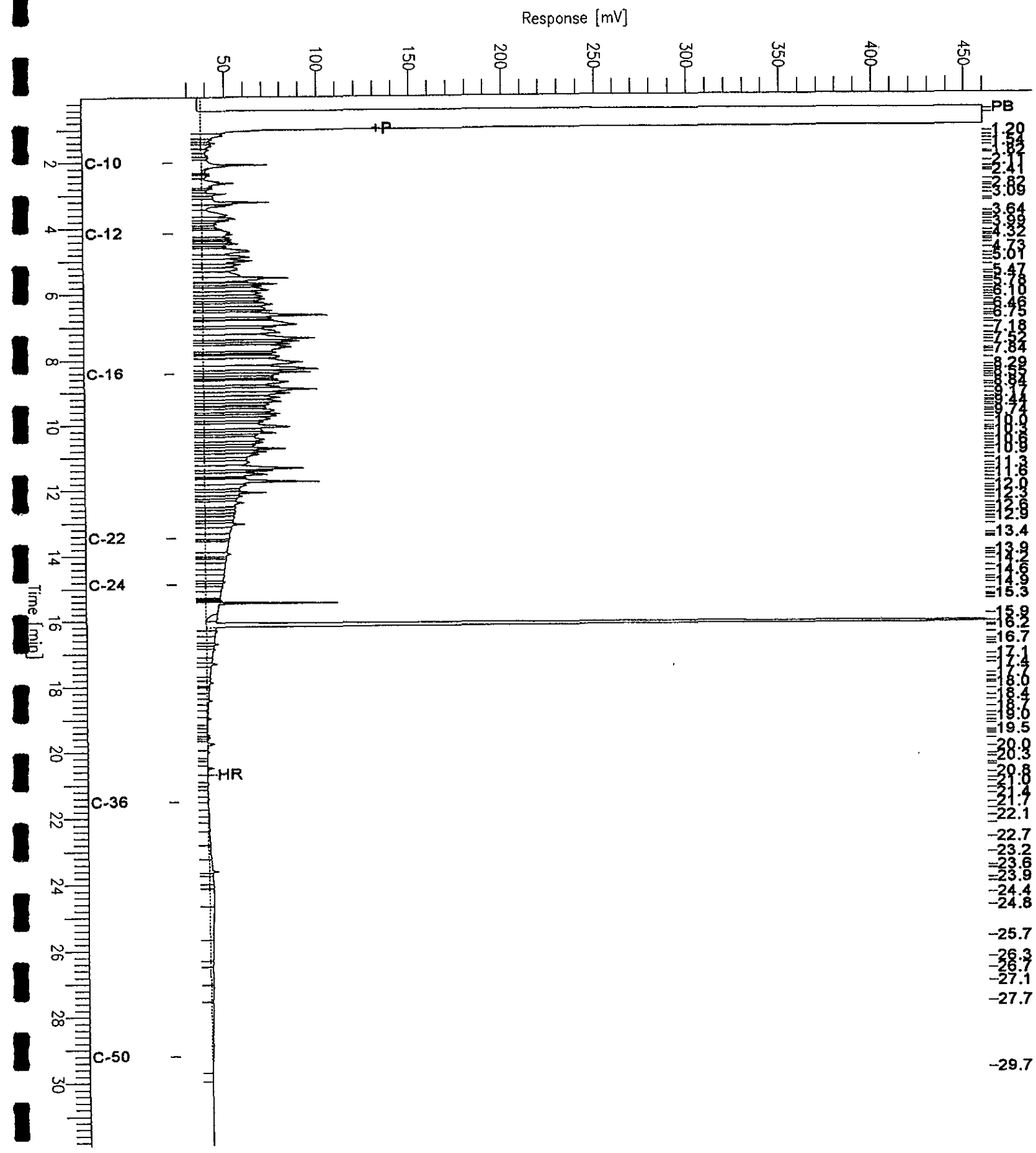


Silica Gel Cleaned

Chromatogram

Sample Name : 156078-002,69036
FileName : G:\GC15\CHB\361B010.RAW
Method : BTEH361.MTH
Start Time : 0.01 min End Time : 31.91 min
Scale Factor: 0.0 Plot Offset: 22 mV

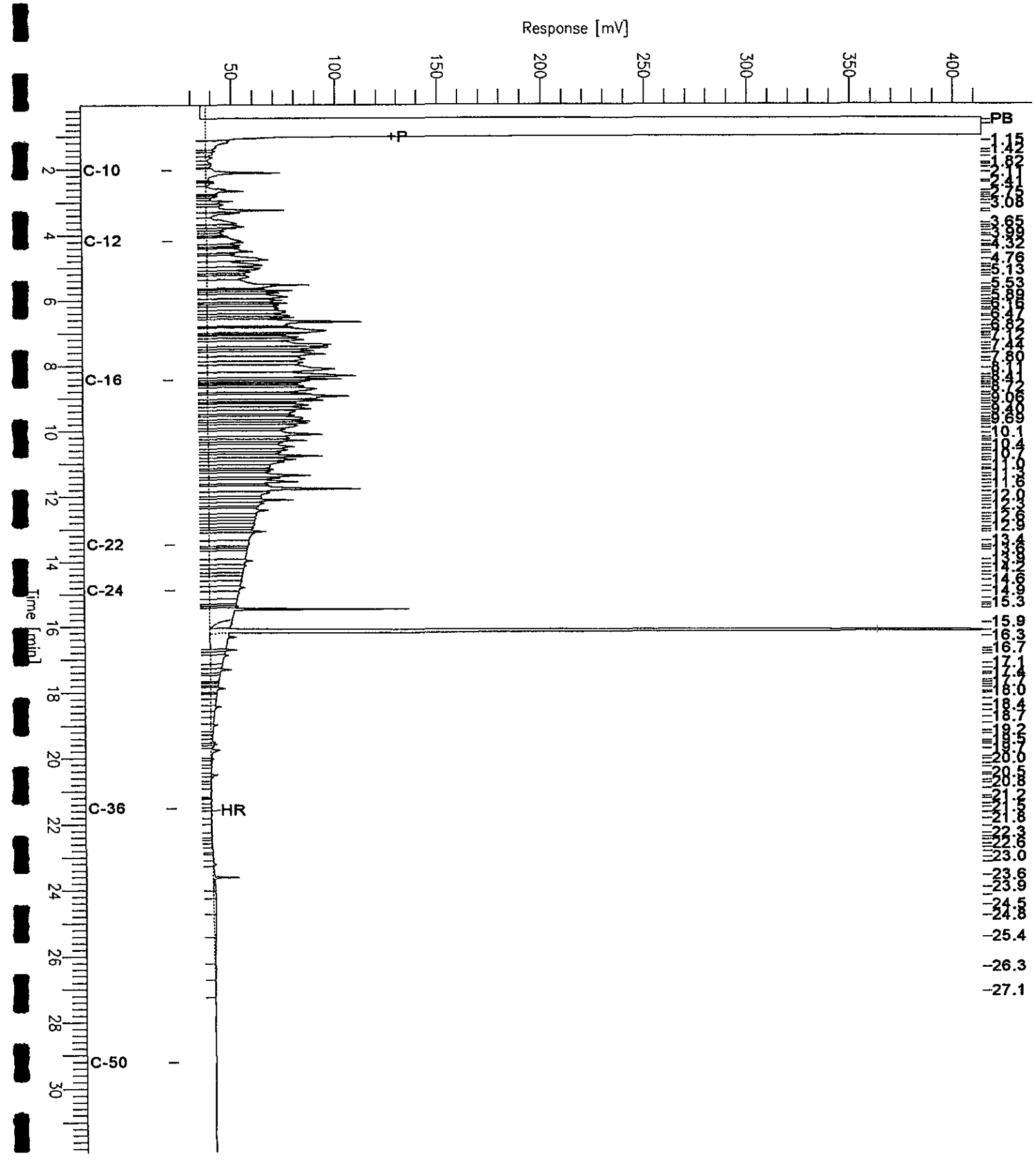
Sample #: 69036 Page 1 of 1
Date : 12/28/2001 07:32 AM
Time of Injection: 12/27/2001 07:50 PM
Low Point : 21.83 mV High Point : 460.15 mV
Plot Scale: 438.3 mV



Chromatogram

Sample Name : 156078-003,69036
FileName : G:\GC15\CHB\361B011.RAW
Method : BTEH361.MTH
Start Time : 0.01 min End Time : 31.91 min
Scale Factor: 0.0 Plot Offset: 21 mV

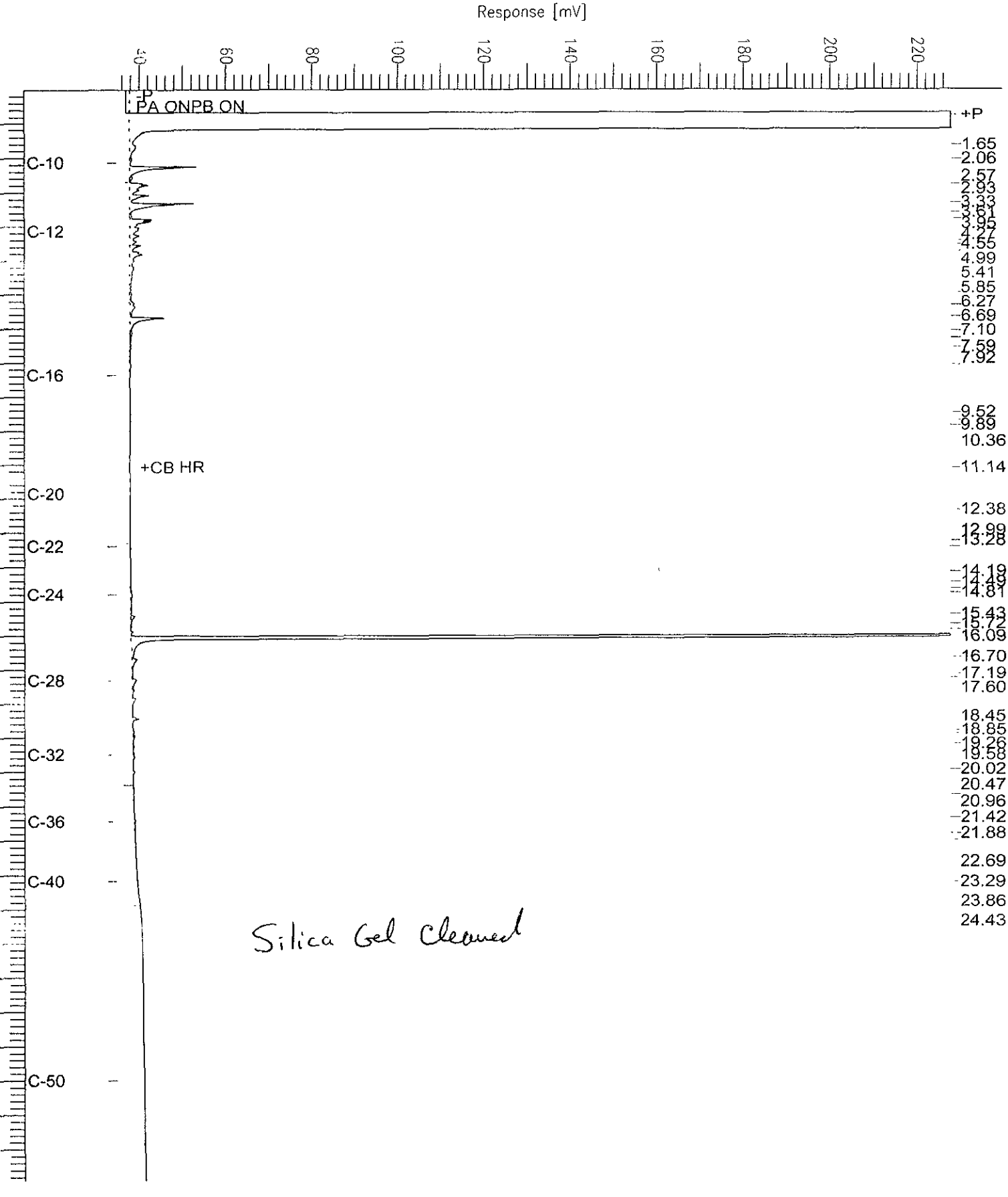
Sample #: 69036 Page 1 of 1
Date : 12/28/2001 07:33 AM
Time of Injection: 12/27/2001 08:31 PM
Low Point : 21.07 mV High Point : 413.88 mV
Plot Scale: 392.8 mV



Chromatogram

Sample Name : 156078-003sg,69036
FileName : G:\GC13\CHB\030B006.RAW
Method : BTEH028.MTH
Start Time : 0.01 min End Time : 31.91 min
Scale Factor: 0.0 Plot Offset: 35 mV

Sample #: 69036 Page 1 of 1
Date : 1/30/02 02:02 PM
Time of Injection: 1/30/02 01:26 PM
Low Point : 34.75 mV High Point : 227.84 mV
Plot Scale: 193.1 mV

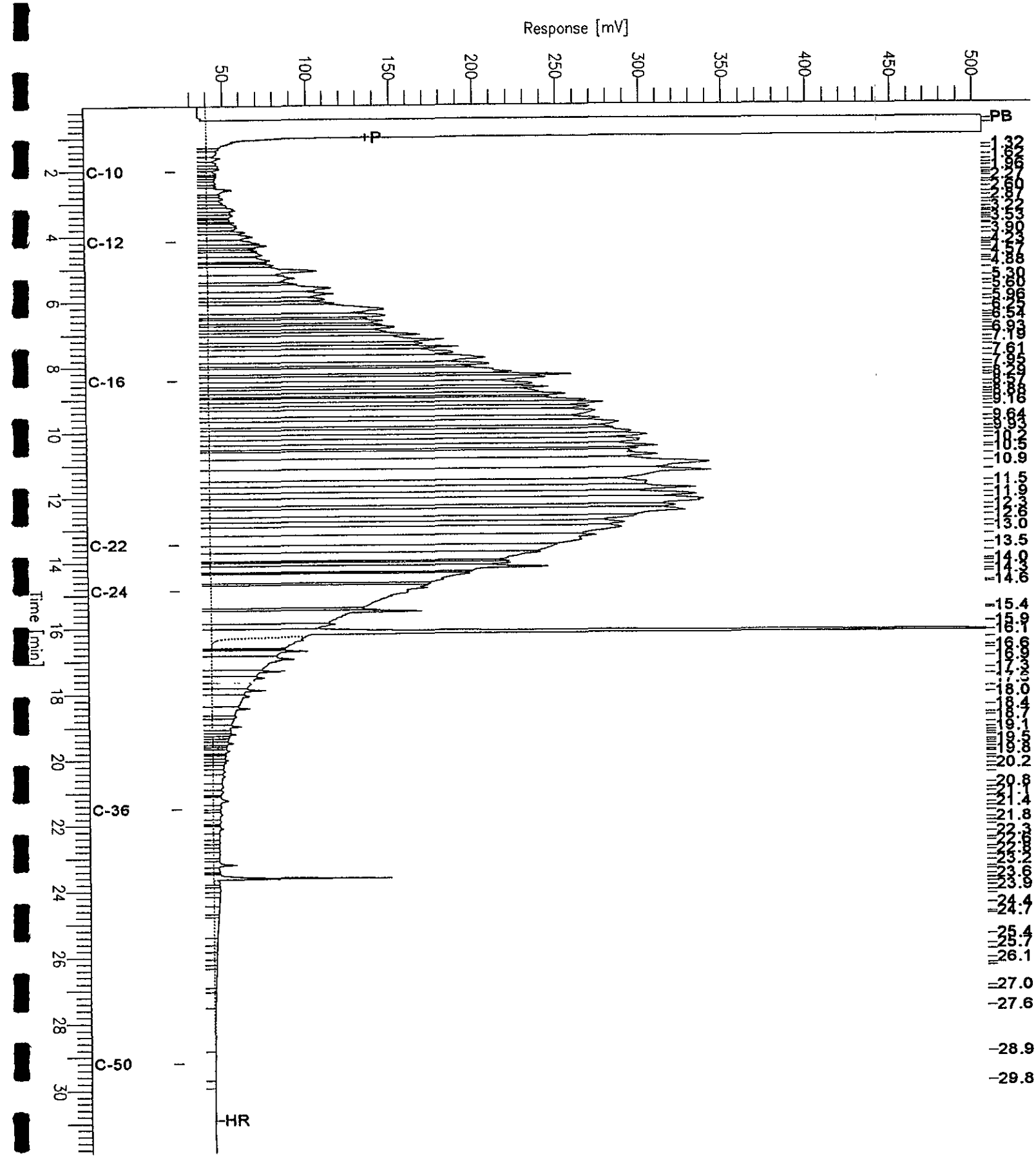


Silica Gel Cleaned

Chromatogram

Sample Name : 156078-005,69036
FileName : G:\GC15\CHB\361B012.RAW
Method : BTEH361.MTH
Start Time : 0.01 min End Time : 31.91 min
Scale Factor: 0.0 Plot Offset: 21 mV

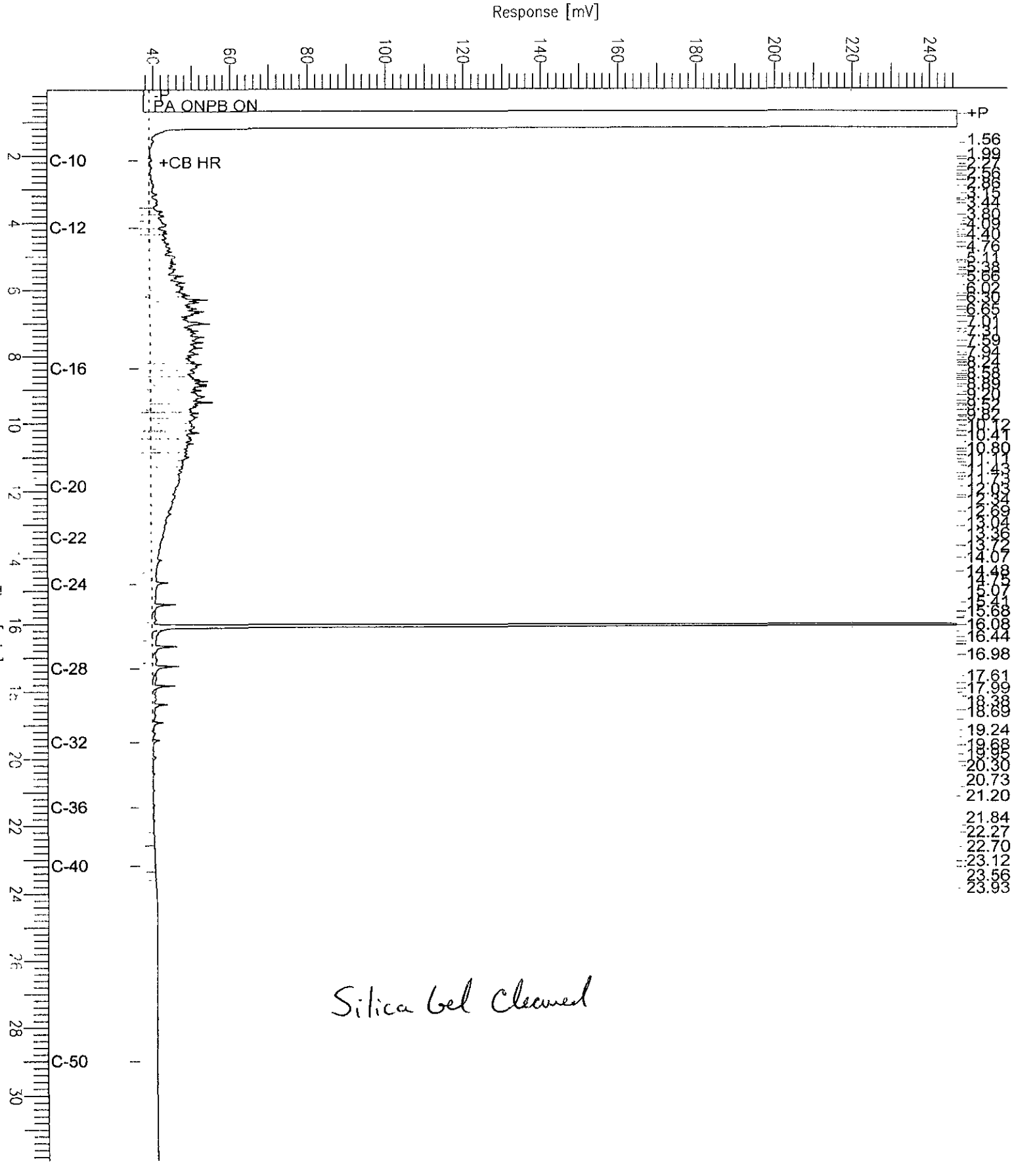
Sample #: 69036 Page 1 of 1
Date : 12/28/2001 07:34 AM
Time of Injection: 12/27/2001 09:12 PM
Low Point : 21.25 mV High Point : 505.48 mV
Plot Scale: 484.2 mV



Chromatogram

Sample Name : 156078-005sg,69036
FileName : G:\GC13\CHB\030B007.RAW
Method : BTEH028.MTH
Start Time : 0.01 min End Time : 31.91 min
Scale Factor: 0.0 Plot Offset: 36 mV

Sample #: 69036 Page 1 of 1
Date : 1/30/02 02:59 PM
Time of Injection: 1/30/02 02:05 PM
Low Point : 36.25 mV High Point : 247.12 mV
Plot Scale: 210.9 mV

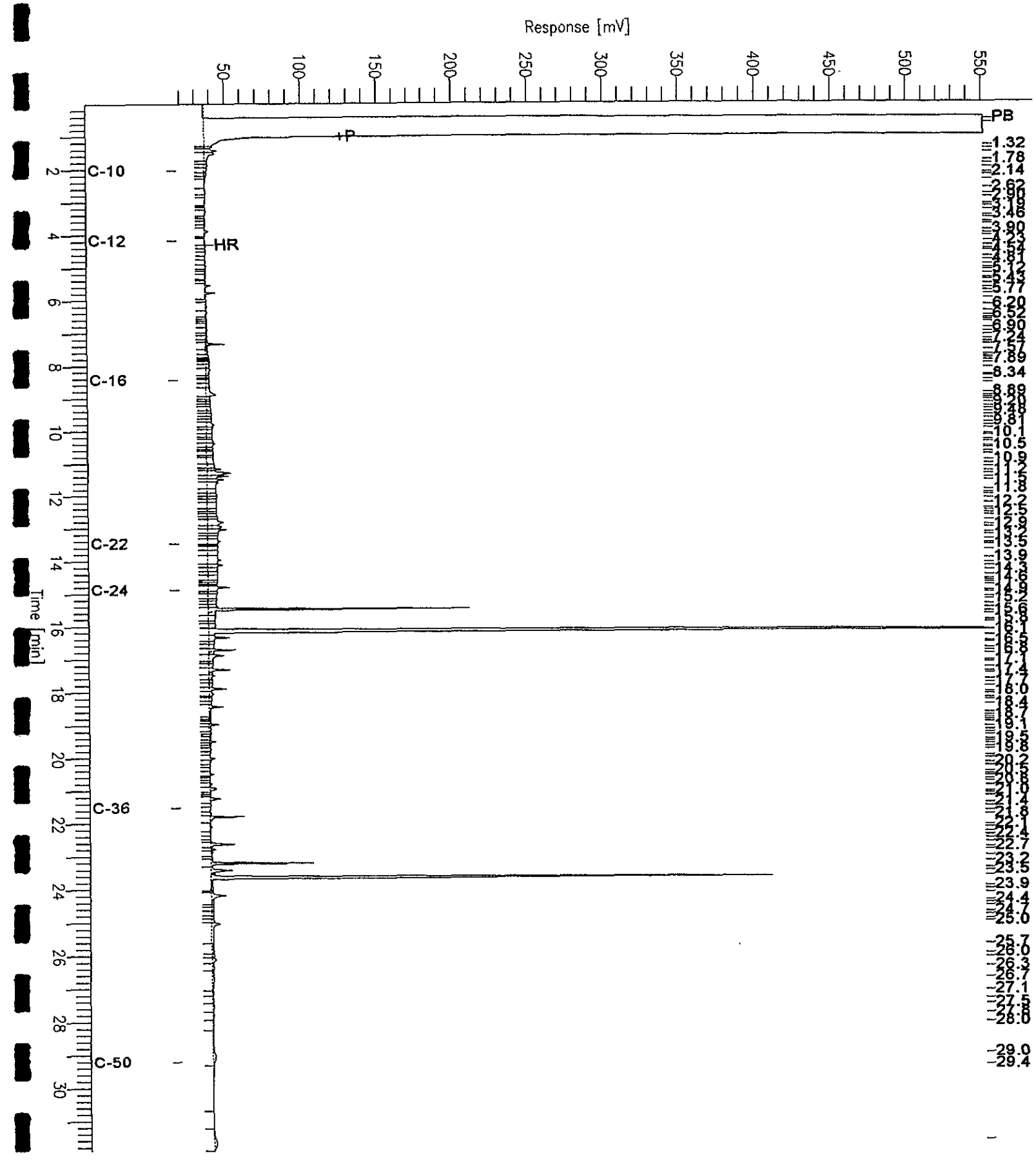


Silica Gel Cleaned

Chromatogram

Sample Name : 156078-006,69036
FileName : G:\GC15\CHB\361B013.RAW
Method : BTEH361.MTH
Start Time : 0.01 min End Time : 31.91 min
Scale Factor: 0.0 Plot Offset: 18 mV

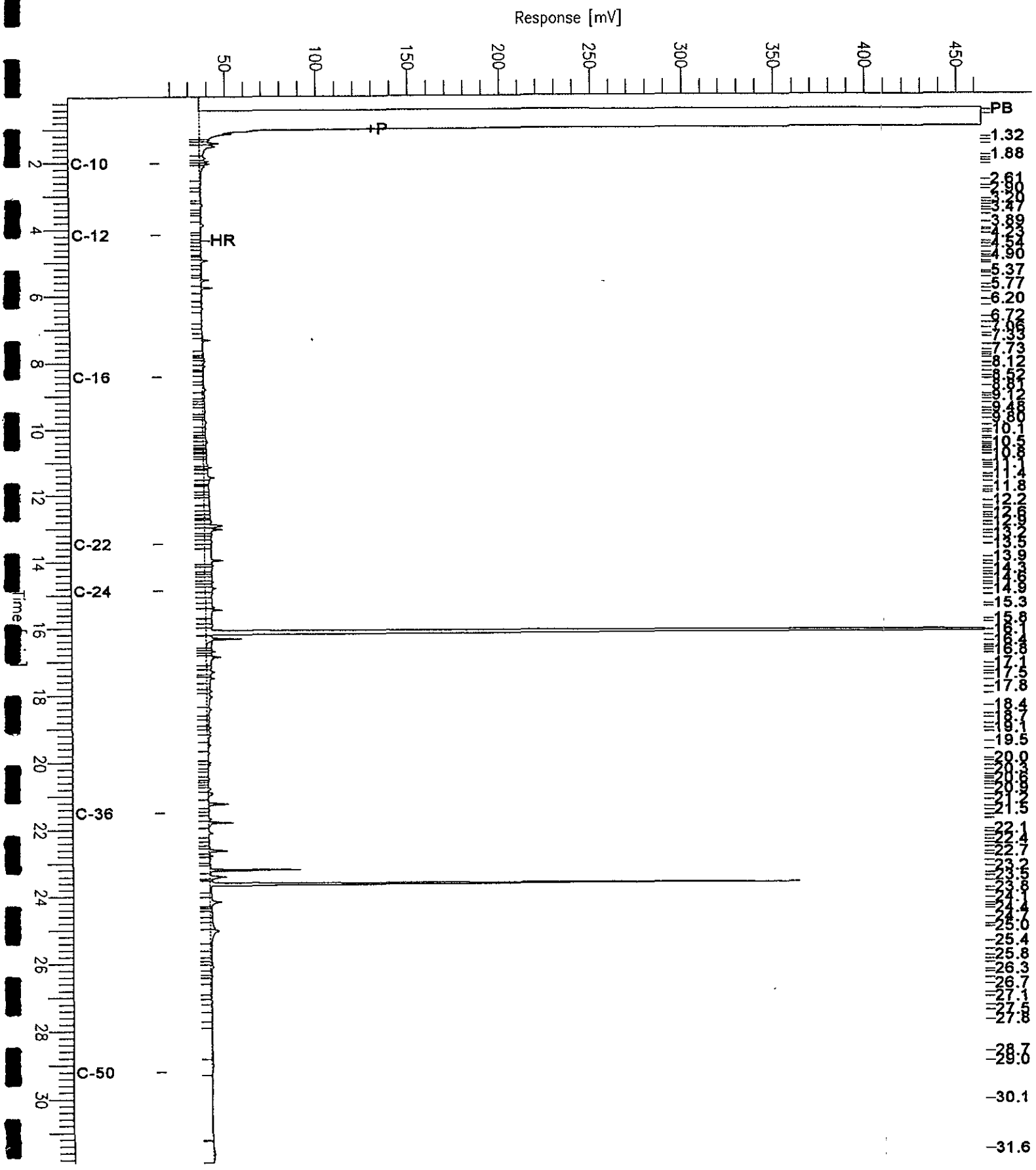
Sample #: 69036 Page 1 of 1
Date : 12/28/2001 07:35 AM
Time of Injection: 12/27/2001 09:52 PM
Low Point : 18.16 mV High Point : 551.53 mV
Plot Scale: 533.4 mV



Chromatogram

Sample Name : 156078-007,69036
FileName : G:\GC15\CHB\361B014.RAW
Method : BTEH361.MTH
Start Time : 0.01 min End Time : 31.91 min
Scale Factor: 0.0 Plot Offset: 14 mV

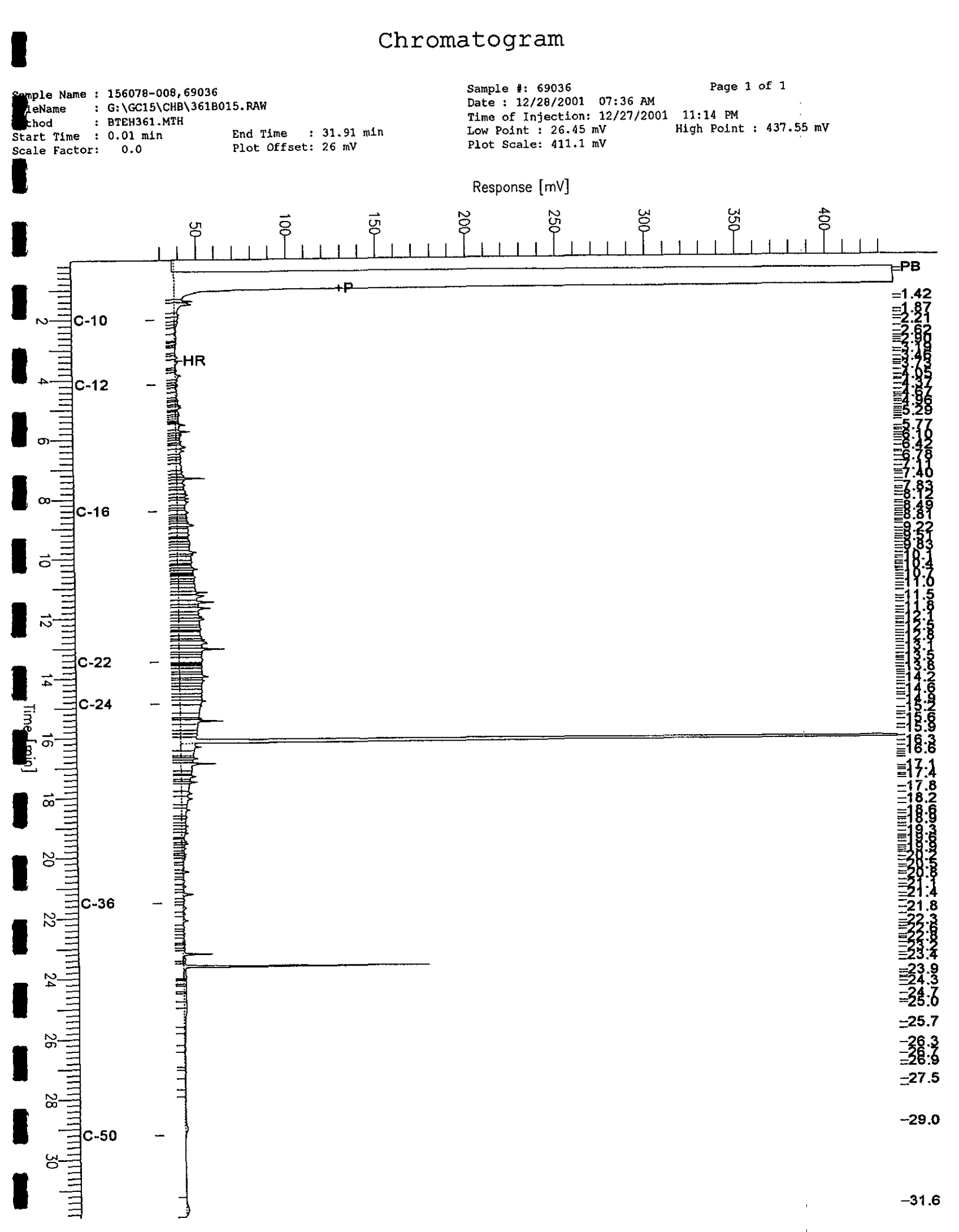
Sample #: 69036 Page 1 of 1
Date : 12/28/2001 07:36 AM
Time of Injection: 12/27/2001 10:33 PM
Low Point : 14.27 mV High Point : 463.88 mV
Plot Scale: 449.6 mV



Chromatogram

Sample Name : 156078-008,69036
FileName : G:\GC15\CHB\361B015.RAW
Method : BTEH361.MTH
Start Time : 0.01 min End Time : 31.91 min
Scale Factor: 0.0 Plot Offset: 26 mV

Sample #: 69036 Page 1 of 1
Date : 12/28/2001 07:36 AM
Time of Injection: 12/27/2001 11:14 PM
Low Point : 26.45 mV High Point : 437.55 mV
Plot Scale: 411.1 mV



Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	156078	Location:	2277 7th st
Client:	Harding Lawson Associates	Prep:	EPA 3520C
Project#:	54821.1	Analysis:	8015B(M)
Matrix:	Water	Batch#:	69036
Units:	ug/L	Prepared:	12/26/01
Diln Fac:	1.000		

Type: BS
Lab ID: QC166276
Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits	Analyzed
Diesel C10-C24	2,500	2,109	84	45-110	12/28/01
Diesel C10-C24 (SGCU)	2,500	1,865	75	45-110	01/23/02

Surrogate	%REC	Limits	Analyzed
Hexacosane	76	44-121	01/23/02

Type: BSD
Lab ID: QC166277
Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits	RPD	Lim	Analyzed
Diesel C10-C24	2,500	2,071	83	45-110	2	22	12/28/01
Diesel C10-C24 (SGCU)	2,500	1,754	70	45-110	6	22	01/23/02

Surrogate	%REC	Limits	Analyzed
Hexacosane	73	44-121	01/23/02

RPD= Relative Percent Difference
SGCU= Silica gel cleanup

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	156078	Location:	2277 7th st
Client:	Harding Lawson Associates	Prep:	EPA 5030B
Project#:	54821.1	Analysis:	EPA 8260B
Field ID:	MW-7	Batch#:	69181
Lab ID:	156078-002	Sampled:	12/12/01
Matrix:	Water	Received:	12/13/01
Units:	ug/L	Analyzed:	01/03/02
Diln Fac:	1.000		

Analyte	Result	RL
MTBE	110 b	0.5

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	94 b	78-123
Toluene-d8	97 b	80-110
Bromofluorobenzene	101 b	80-115

b= See narrative
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	156078	Location:	2277 7th st
Client:	Harding Lawson Associates	Prep:	EPA 5030B
Project#:	54821.1	Analysis:	EPA 8260B
Field ID:	MW-7D	Batch#:	69181
Lab ID:	156078-003	Sampled:	12/12/01
Matrix:	Water	Received:	12/13/01
Units:	ug/L	Analyzed:	01/03/02
Diln Fac:	1.000		

Analyte	Result	RL
MTBE	100 b	0.5

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	94 b	78-123
Toluene-d8	98 b	80-110
Bromofluorobenzene	103 b	80-115

b= See narrative
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	156078	Location:	2277 7th st
Client:	Harding Lawson Associates	Prep:	EPA 5030B
Project#:	54821.1	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC166793	Batch#:	69181
Matrix:	Water	Analyzed:	01/03/02
Units:	ug/L		

Analyte	Result	RL
MTBE	ND	0.5

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	92	78-123
Toluene-d8	97	80-110
Bromofluorobenzene	105	80-115

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	156078	Location:	2277 7th st
Client:	Harding Lawson Associates	Prep:	EPA 5030B
Project#:	54821.1	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	69181
Units:	ug/L	Analyzed:	01/03/02
Diln Fac:	1.000		

Type: BS Lab ID: QC166791

Analyte	Spiked	Result	%REC	Limits
MTBE	50.00	53.78	108	65-135

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	90	78-123
Toluene-d8	99	80-110
Bromofluorobenzene	103	80-115

Type: BSD Lab ID: QC166792

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	50.00	52.65	105	65-135	2	20

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	90	78-123
Toluene-d8	100	80-110
Bromofluorobenzene	101	80-115

RPD= Relative Percent Difference