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First Quarter 2005
Groundwater Monitoring Report

Mash Petroleum Inc.

5725 Thornhill Drive
Oakland, California

February 4, 2005

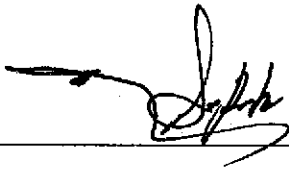
Project 2831

Prepared for
Mr. Mo Mashhoon
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Prepared by
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Certification

This report has been prepared by SOMA Environmental Engineering, Inc. on behalf of Mr. Mo Mashhoon, the property owner of 5725 Thornhill Drive, Oakland, California, to comply with the Alameda County Health Care Services Agency's and California Regional Water Quality Control Board's requirements for the First Quarter 2005 groundwater monitoring event.



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Principal Hydrogeologist



Alameda County
FEB 08 2005
Environmental Health

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1.0 INTRODUCTION

This report has been prepared by SOMA Environmental Engineering, Inc. (SOMA) on behalf of Mr. Mo Mashhoon, the property owner of 5725 Thornhill Drive, Oakland, California (the "Site"), as shown in Figure 1. The Site is currently an active ARCO station that is located in an area consisting primarily of commercial and residential land uses.

This report summarizes the results of the First Quarter 2005 groundwater monitoring event conducted at the Site on January 11, 2005. Included in this report are the results of the physical and chemical properties measured in the field for each groundwater sample. The physical and chemical properties consisted of measurements of pH, temperature, and electrical conductivity (EC). Also included in this report are the results of the laboratory analyses for each groundwater sample, which was analyzed for:

- Total petroleum hydrocarbons as gasoline (TPH-g),
- Benzene, toluene, ethylbenzene, total xylenes (collectively referred to as BTEX),
- Methyl tertiary Butyl Ether (MtBE),
- Total petroleum hydrocarbons as diesel (TPH-d),
- Total petroleum hydrocarbons as motor oil (TPH-mo),
- Gasoline oxygenates, which consisted of tert-Butyl-Alcohol (TBA), Di-Isopropyl Ether (DIPE), Ethyl tertiary Butyl Ether (ETBE), Methyl tert-Amyl Ether (TAME), Ethanol, and
- Lead scavengers, which consisted of 1,2 Dichloroethane (1,2-DCA) and 1,2-Dibromoethane (EDB).

The groundwater monitoring activities for this quarter were performed in accordance with the general guidelines of the California Regional Water Quality Control Board (CRWQCB) and the Alameda County Health Care Services Agency (ACHCSA).

Appendix A details the groundwater monitoring procedures used during the First Quarter 2005 monitoring event.

1.1 Previous Activities

In November 1998, Penn Environmental removed a 550-gallon steel underground waste oil tank (WOT) from the Site. Soil samples collected from the WOT excavation contained up to 1,100,000 µg/Kg of TPH-g, 2,700,000 µg/Kg of TPH-d, and 4,200,000 µg/Kg of TPH-Mo.

On February 4, 1999, Penn Environmental over-excavated the contaminated soil surrounding the former WOT. Aqua Science Engineers, Inc., (ASE) collected confirmation soil samples from two sidewalls of the excavation. The only compound detected in one of these two soil samples was MtBE at 40 µg/Kg.

In July 1999, ASE drilled borehole BH-A in the vicinity of the former WOT. On September 6, 2000, ASE drilled soil boreholes BH-B and BH-C. On October 23, 2000, ASE drilled soil boreholes BH-D and BH-E. ASE also collected water samples from Temescal Creek. No hydrocarbons were detected in the water sample collected from Temescal Creek. Figure 2 shows the locations of the borings.

On March 1 and 2, 2004, nine temporary well boreholes, HP-1 through HP-7, HP-9 and HP-10 were advanced by Gregg Drilling & Testing (Gregg). Due to the excessive traffic hazards and the disruption of local traffic flow posed by advancing HP-8 in the middle of the street, this borehole was not drilled. Groundwater samples were collected following the completion of each temporary well borehole. The locations of the boreholes are shown in Figure 2.

During the Site's investigation activities, Gregg decommissioned the three existing on-site monitoring wells, MW-1, MW-2 and MW-3, under the supervision of SOMA. On March 12, 2004, Woodward Drilling installed three new monitoring wells: SOMA-1, SOMA-2 and SOMA-3. On March 19, 2004, licensed surveyors from Kier & Wright surveyed the casing elevations of the monitoring wells and water level elevations along Temescal Creek. Kier & Wright performed a horizontal and vertical survey on the wells in accordance with the requirements set forth by the State for the GeoTracker database. On April 7, 2004, Gregg developed the recently installed monitoring wells. Figure 2 shows the locations of the monitoring wells.

2.0 RESULTS

The following sections provide the results of the field measurements and laboratory analyses for the January 11, 2005 groundwater monitoring event.

2.1 Field Measurements

Table 1 presents the calculated groundwater elevations, as well as the depth to groundwater in each monitoring well. As shown in Table 1, the depth to groundwater ranged from 3.73 feet in SOMA-1 to 5.70 feet in SOMA-2. The corresponding groundwater elevations ranged from 567.47 feet in SOMA-3 to 572.74 feet in SOMA-1.

A contour map of the groundwater elevations for the First Quarter 2005 monitoring event is presented in Figure 3. As Figure 3 illustrates, groundwater flows southwesterly across the Site, with an average gradient of 0.068 feet/foot.

Since the previous monitoring event (Fourth Quarter 2004), the groundwater elevations increased in wells SOMA-1 and SOMA-2 and decreased in SOMA-3. The variations in the groundwater elevations can be attributed to seasonal climatological conditions, as well as the local recharge rates in each well.

The field notes in Appendix B show the detailed measurements of the physical and chemical parameters of the groundwater for each well during this monitoring event.

2.2 Laboratory Analyses

Table 1 presents the results of the laboratory analyses for hydrocarbons, BTEX, and MtBE for the groundwater samples collected during this monitoring event. Previous site investigation data is also shown in Table 1 to depict the Site's overall conditions for hydrocarbons and MtBE.

As shown in Table 1, during the First Quarter 2005 monitoring event, TPH-g was below the laboratory reporting limit in SOMA-1 and was detected at a maximum level southwest of the pump islands, in well SOMA-2.

Figure 4 displays the contour map of TPH-g concentrations in the groundwater as analyzed for the First Quarter 2005 monitoring event. TPH-g concentrations analyzed from previous hydropunch data are also included in Figure 4. This better illustrates the overall influence of the southwesterly groundwater flow direction from the UST cavity and pump islands to the off-site regions.

As shown in Table 1, TPH-d was detected in all of the groundwater samples collected during the First Quarter 2005 monitoring event. The highest TPH-d concentration detected in the First Quarter 2005 was southwest of the pump islands, in well SOMA-2. However, the TPH-d result in well SOMA-2 may have been misrepresentative due to lighter hydrocarbons that were present during the analytical testing. The diesel analytical result also did not match that of a standard diesel pattern. The laboratory designated these variations by using an "L" flag for the presence of lighter hydrocarbons and a "Y" flag for the variation in the diesel pattern. The laboratory report is included in Appendix C, refer to this appendix for further clarification.

Figure 5 displays the contour map of TPH-d concentrations in the groundwater as analyzed for the First Quarter 2005 monitoring event. TPH-d concentrations analyzed from previous hydropunch data are also included in Figure 5. This better illustrates the overall influence of the southwesterly groundwater flow direction from the UST cavity and pump islands to the off-site regions.

As shown in Table 1, during the First Quarter 2005 monitoring event, TPH-mo was below the laboratory reporting limit in SOMA-3 and was detected at a maximum level south of the UST cavity, in well SOMA-1.

Figure 6 displays the contour map of TPH-mo concentrations in the groundwater as analyzed for the First Quarter 2005 monitoring event. TPH-mo concentrations analyzed from previous hydropunch data are also included in Figure 6. This better illustrates the overall influence of the southwesterly groundwater flow direction from the UST cavity and pump islands to the off-site regions.

As shown in Table 1, during the First Quarter 2005 monitoring event, all BTEX analytes were below the laboratory reporting limit in wells SOMA-1 and SOMA-3. In well SOMA-2, only low BTEX analytes were detected, and toluene was below the laboratory reporting limit. Figure 7 displays the contour map of benzene concentrations in the groundwater as analyzed for the First Quarter 2005 monitoring event. This figure better illustrates that groundwater has been impacted to a lesser extent by benzene than by other hydrocarbons.

As shown in Table 1, during the First Quarter 2005 monitoring event, MtBE was detected in all of the groundwater samples collected during the First Quarter 2005 monitoring event. During the First Quarter 2005 monitoring event, MtBE was detected at a maximum level southwest of the pump islands, in well SOMA-2.

Figure 8 displays the contour map of MtBE concentrations in the groundwater using EPA Method 8260B. MtBE concentrations analyzed from previous hydropunch data are also included in Figure 8. This better illustrates the overall influence of the southwesterly groundwater flow direction from the UST cavity and pump islands to the off-site regions.

Table 2 presents the analytical results for gasoline oxygenates and lead scavengers. As shown in Table 2, with the exception of trace concentrations of TBA and TAME in SOMA-2, all gasoline oxygenate and lead scavenger constituents were below the laboratory reporting limit in the groundwater samples collected during the First Quarter 2005 monitoring event.

Appendix C contains the laboratory report and COC form from the First Quarter 2005 monitoring event.

3.0 CONCLUSIONS & RECOMMENDATIONS

The findings of the First Quarter 2005 groundwater monitoring event can be summarized as follows:

- The groundwater flow direction is southwesterly across the Site, at a gradient of approximately 0.068 feet/feet.
- In general, with the exception of TPH-mo, the most impacted well appears to be SOMA-2, which is the most downgradient well. The most impacted TPH-mo well was well SOMA-1, which is directly south of the UST cavity.
- Based on previous site investigations, both hydrocarbon and MtBE plumes have migrated southwesterly off-site with the flow of groundwater. SOMA recommends installing additional off-site groundwater monitoring wells in order to define the horizontal extent of the petroleum hydrocarbons.
- Due to the close proximity of Temescal Creek in relation to the Site, SOMA recommends the installation of additional off-site wells. This will further aid in determining the extent of the off-site contamination and degree of hydraulic connection between water-bearing zones and Temescal Creek.

4.0 REPORT LIMITATIONS

This report is the summary of work done by SOMA, including observations and descriptions of the Site's conditions. It includes the analytical results produced by Curtis and Tompkins, Ltd, in Berkeley, California for the current groundwater monitoring event. The number and location of the wells were selected to provide the required information, but may not be completely representative of the entire site's conditions. All conclusions and recommendations are based on the results of the laboratory analysis. Conclusions beyond those specifically stated in this document should not be inferred from this report.

SOMA warrants that the services provided were done in accordance with the generally accepted practices in the environmental engineering and consulting field at the time of this sampling.

Tables

Table 1
SOMA Historical Groundwater Elevation Data
& Analytical Results (Hydrocarbons, BTEX, & MtBE)
5725 Thornhill Drive, Oakland California

Monitoring Well	Date	Top of Casing Elevation (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)	TPH-g (µg/L)	TPH-d (µg/L)	TPH-mo (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-Benzene (µg/L)	Total Xylenes (µg/L)	MtBE B260B (µg/L)
SOMA-1	Apr-04	576.47	5.75	570.72	63	<50	<300	<0.5	<0.5	<0.5	<0.5	7.7
	Jul-04	576.47	6.21	570.26	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	9.1
	Oct-04	576.47	5.76	570.71	<50	<1.0	<1.0	<0.5	<0.5	<0.5	<1.0	6.4
	Jan-05	576.47	3.73	572.74	<50	200 HY	900	<0.5	<0.5	<0.5	<0.5	4.7
SOMA-2	Apr-04	575.50	7.40	568.10	1,900	690 LY	<300	<0.5	<0.5	5.2	9.9	1,900
	Jul-04	575.50	7.92	567.58	1,500	710 LY	<300	8.9 C	<0.5	1.5 C	2.9 C	740
	Oct-04	575.50	7.62	567.88	955	790 LY	<1.0	<2.5	<2.5	<2.5	<5	785
	Jan-05	575.50	5.70	569.80	3,700	2100 LY	380	3.7	<2.0	3.5	102	310
SOMA-3	Apr-04	575.92	7.14	568.78	190	120 Y	<300	<0.5	<0.5	<0.5	<0.5	5.1
	Jul-04	575.92	7.95	567.97	130	120 LY	<300	<0.5	<0.5	<0.5	<0.5	9.1
	Oct-04	575.92	7.60	568.32	57	280 LY	<1.0	<0.5	<0.5	<0.5	<2	11.3
	Jan-05	572.92	5.45	567.47	140	210 Y	<300	<0.5	<0.5	<0.5	<0.5	5.8
Previous Site Investigation												
BH-A	Jul-99	NM	NM	NM	1,700	10,000	4,700	NA	NA	NA	NA	NA
BH-B	Sep-00	NM	NM	NM	12,000	11,000	11,000	NA	NA	NA	NA	4,300
BH-C	Sep-00	NM	NM	NM	7,300	25,000	620	NA	NA	NA	NA	5,300
BH-D	Sep-00	NM	NM	NM	13,000	110,000	18,000	NA	NA	NA	NA	16,000
BH-E	Sep-00	NM	NM	NM	NA	NA	NA	NA	NA	NA	NA	730
HP-1	Mar-04	NM	NM	NM	4,200	5,900	11,000	NI	NI	NI	NI	11
HP-2	Mar-04	NM	NM	NM	360	10,000	58,000	NI	NI	NI	NI	20
HP-3	Mar-04	NM	NM	NM	<50	3,500	3,500	NI	NI	NI	NI	<0.5
HP-4	Mar-04	NM	NM	NM	<50	740	6,300	NI	NI	NI	NI	<0.5
HP-5	Mar-04	NM	NM	NM	6,700	3,600	650	NI	NI	NI	NI	33
HP-6	Mar-04	NM	NM	NM	250	370	730	NI	NI	NI	NI	8
HP-7	Mar-04	NM	NM	NM	<50	1,600	1,400	NI	NI	NI	NI	<0.5
HP-9	Mar-04	NM	NM	NM	<50	160	1,700	NI	NI	NI	NI	440
HP-10	Mar-04	NM	NM	NM	9,700	21,000	5,700	NI	NI	NI	NI	1,100

Notes:

- <: not detected at or above laboratory reporting limits.
- C: Presence confirmed, but RPD between columns exceeds 40%.
- H: Heavier hydrocarbons contributed to the quantitation.
- L: Lighter hydrocarbons contributed to the quantitation.
- NA: Not Analyzed or Data Not Available
- NI: Not Inputted, only lab data for hydrocarbons and MtBE is shown in this table.
- Y: Sample exhibits chromatographic pattern which did not resemble standard.

The Second Quarter 2004 was the first time SOMA monitored the site.
 Boring BH-A was drilled by Aqua Science Engineers (ASE) in July 1999, Borings BH-B & BH-C, and BH-D & BH-E drilled by ASE in September 2000 and October 2000, respectively.
 Hydropunches HP-1 to HP-7, HP-9, HP-10 drilled by SOMA in March 2004.
 The boring and hydropunch data is shown in this table to further illustrate the overall site conditions.

Table 2
Groundwater Analytical Results
Gasoline Oxygenates & Lead Scavengers
5725 Thornhill Drive, Oakland California

Monitoring Well	Date	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	1,2-DCA (µg/L)	EDB (µg/L)	Ethanol (µg/L)
SOMA-1	Apr-04	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<1000
	Jul-04	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<1000
	Oct-04	<2.5	<0.5	<0.5	<2	<0.5	<0.5	<1.0
	Jan-05	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<1,000
SOMA-2	Apr-04	<100	<5.0	<5.0	19.0	<5.0	<5.0	<10000
	Jul-04	<33	<1.7	<1.7	9.8	<1.7	<1.7	<3300
	Oct-04	36.3	<2.5	<2.5	12.85	<0.5	<0.5	<1.0
	Jan-05	67	<2.0	<2.0	6.7	<2.0	<2.0	<4,000
SOMA-3	Apr-04	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<1000
	Jul-04	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<1000
	Oct-04	<2.5	<0.5	<0.5	<2	<0.5	<0.5	<1.0
	Jan-05	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<1,000

Notes:

<: Not detected above the laboratory reporting limit.

The Second Quarter 2004 was the first time SOMA monitored the site.

Gasoline Oxygenates:

TBA: tertiary butyl alcohol

DIPE: Di-Isopropyl ether

ETBE: Ethyl tertiary butyl ether

TAME: Methyl tertiary amyl ether

Ethanol

Lead Scavengers:

1,2-Dichloroethane

EDB: 1,2-Dibromoethane

Figures



approximate scale in feet

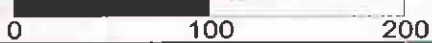
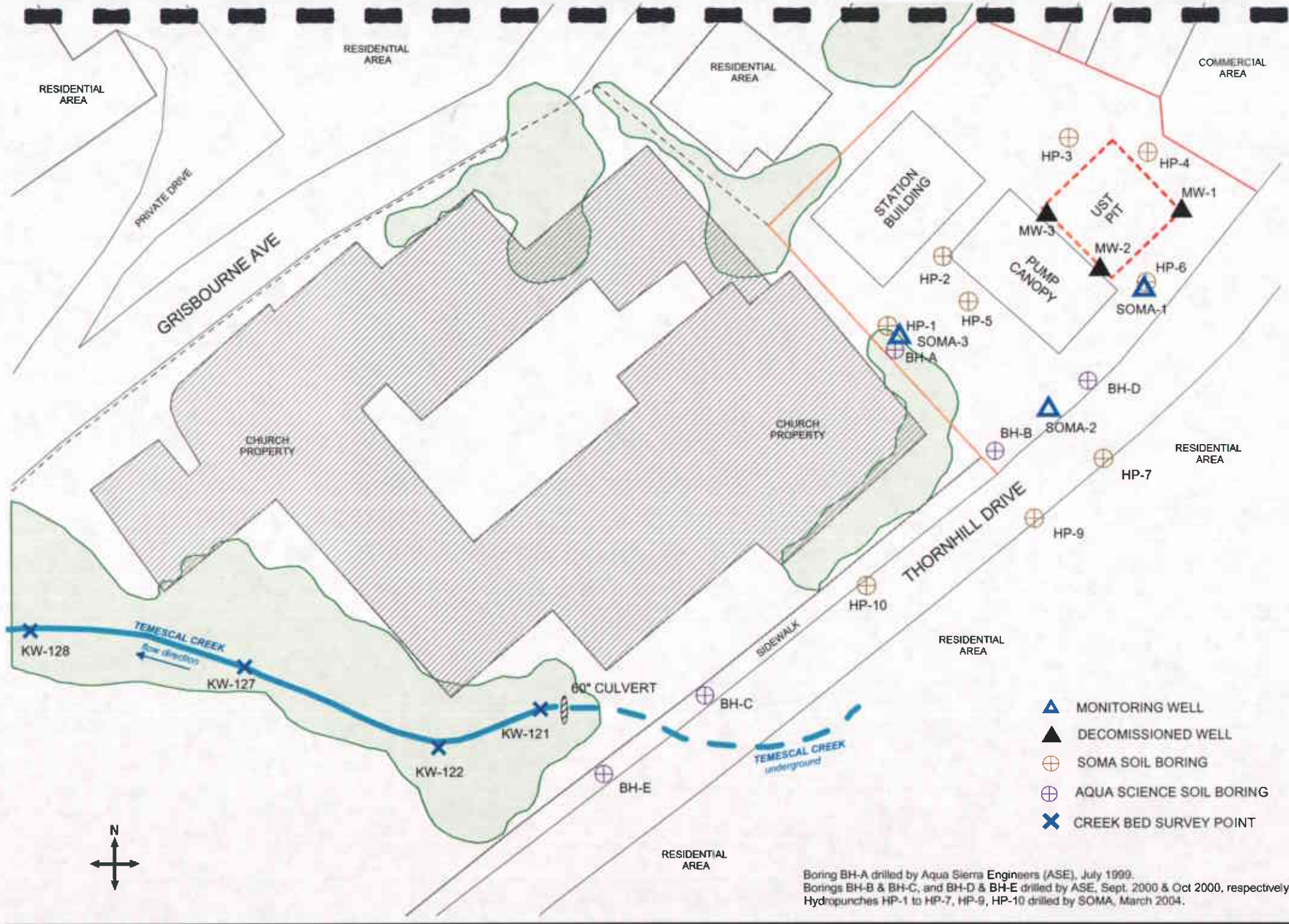


Figure 1: Site vicinity map.





Boring BH-A drilled by Aqua Sierra Engineers (ASE), July 1990.
 Borings BH-B & BH-C, and BH-D & BH-E drilled by ASE, Sept. 2000 & Oct 2000, respectively.
 Hydropunches HP-1 to HP-7, HP-9, HP-10 drilled by SOMA, March 2004.

Figure 2: Site map showing locations of monitoring wells, soil borings, creekbed survey points, decommissioned UST backfill wells, and previously drilled soil borings.

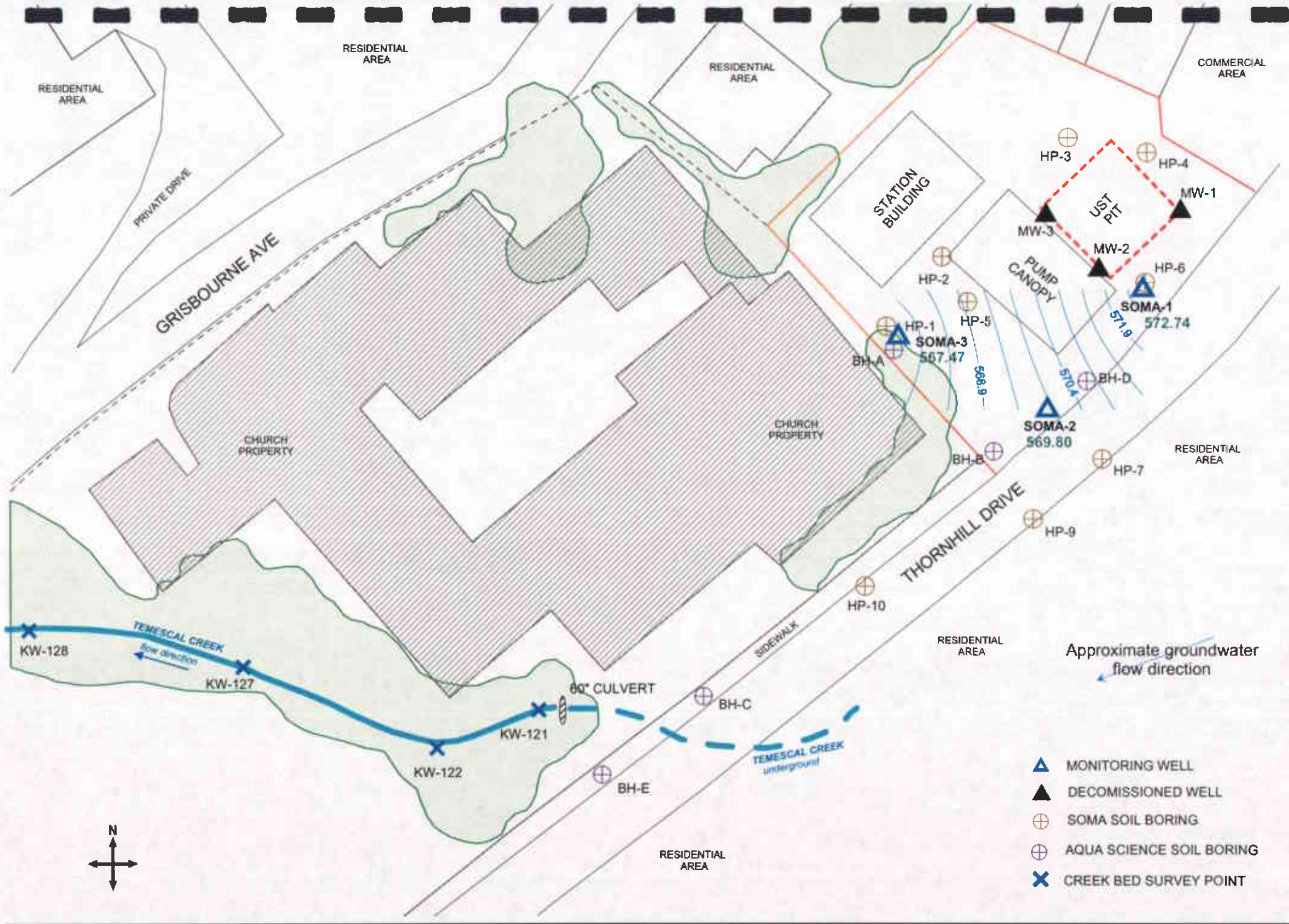


Figure 3: Groundwater elevation contour map in feet. January 2005.

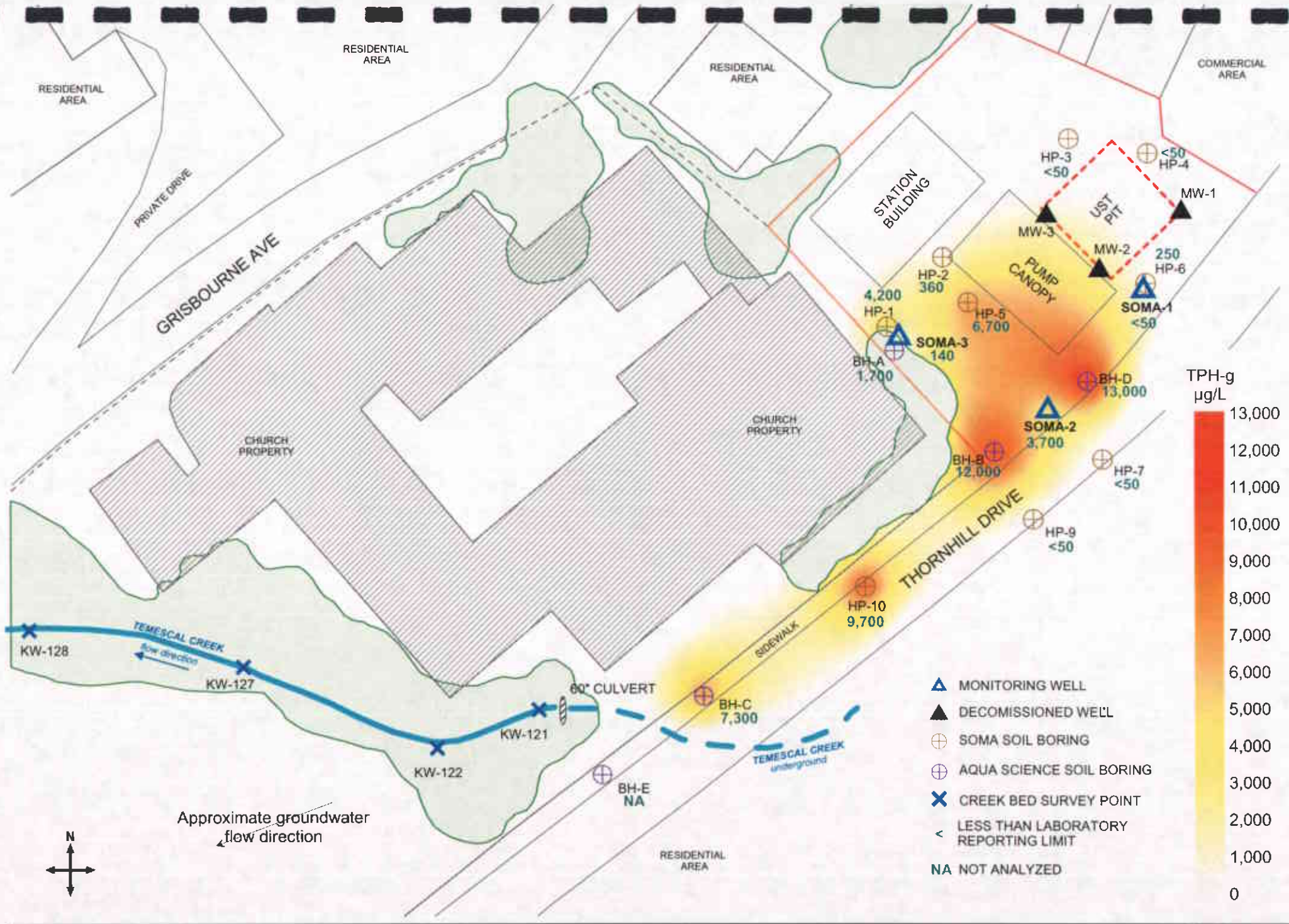
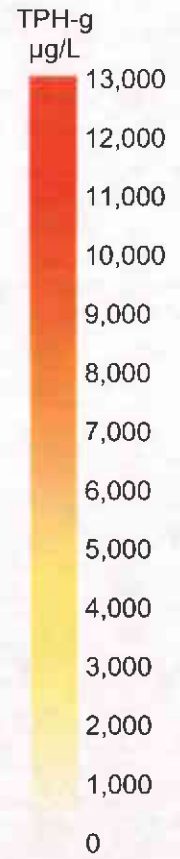
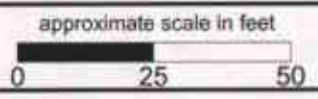


Figure 4: Contour map of TPH-g concentrations in groundwater. January 2005.



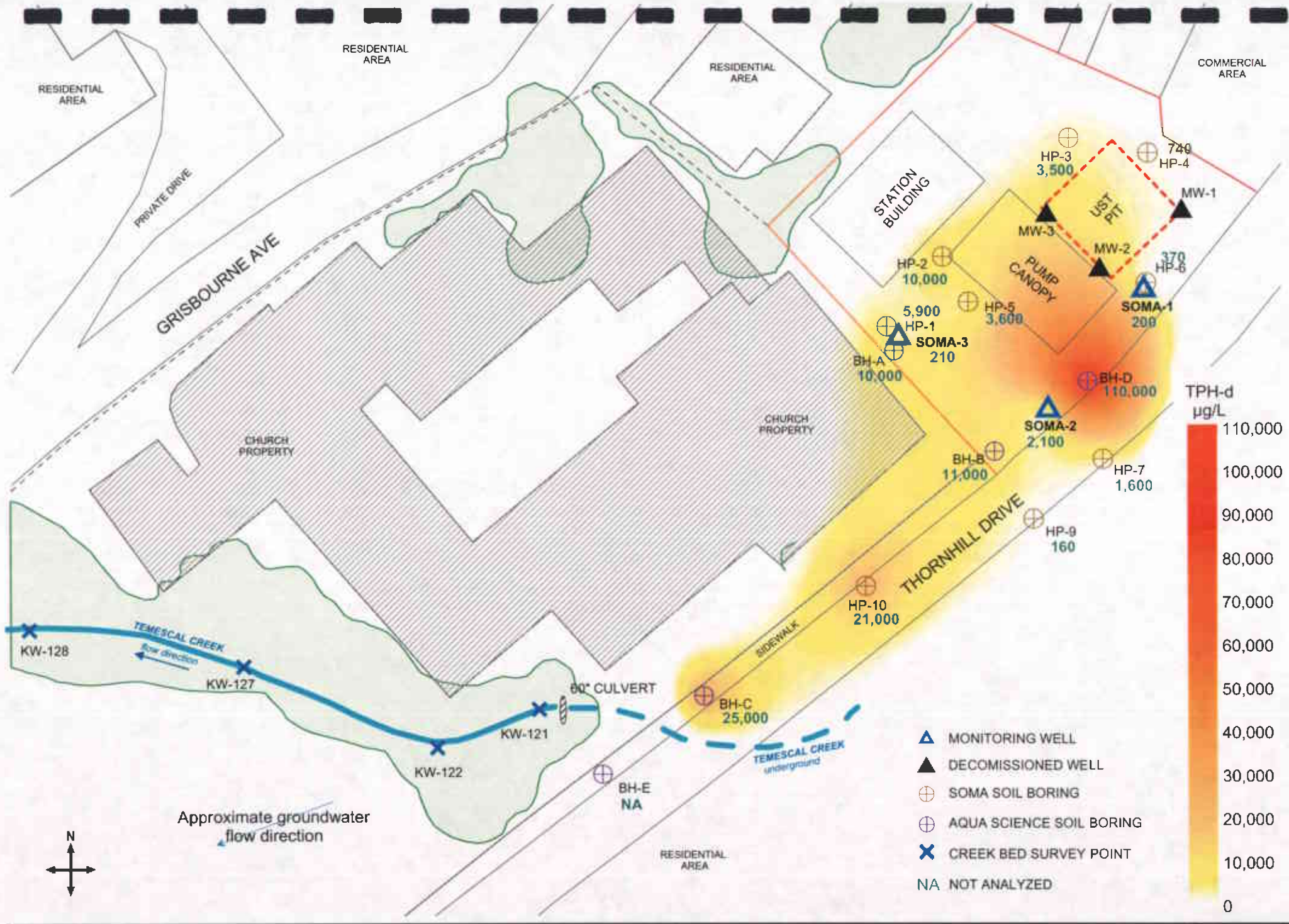


Figure 5: Contour map of TPH-d concentrations in groundwater. January 2005.

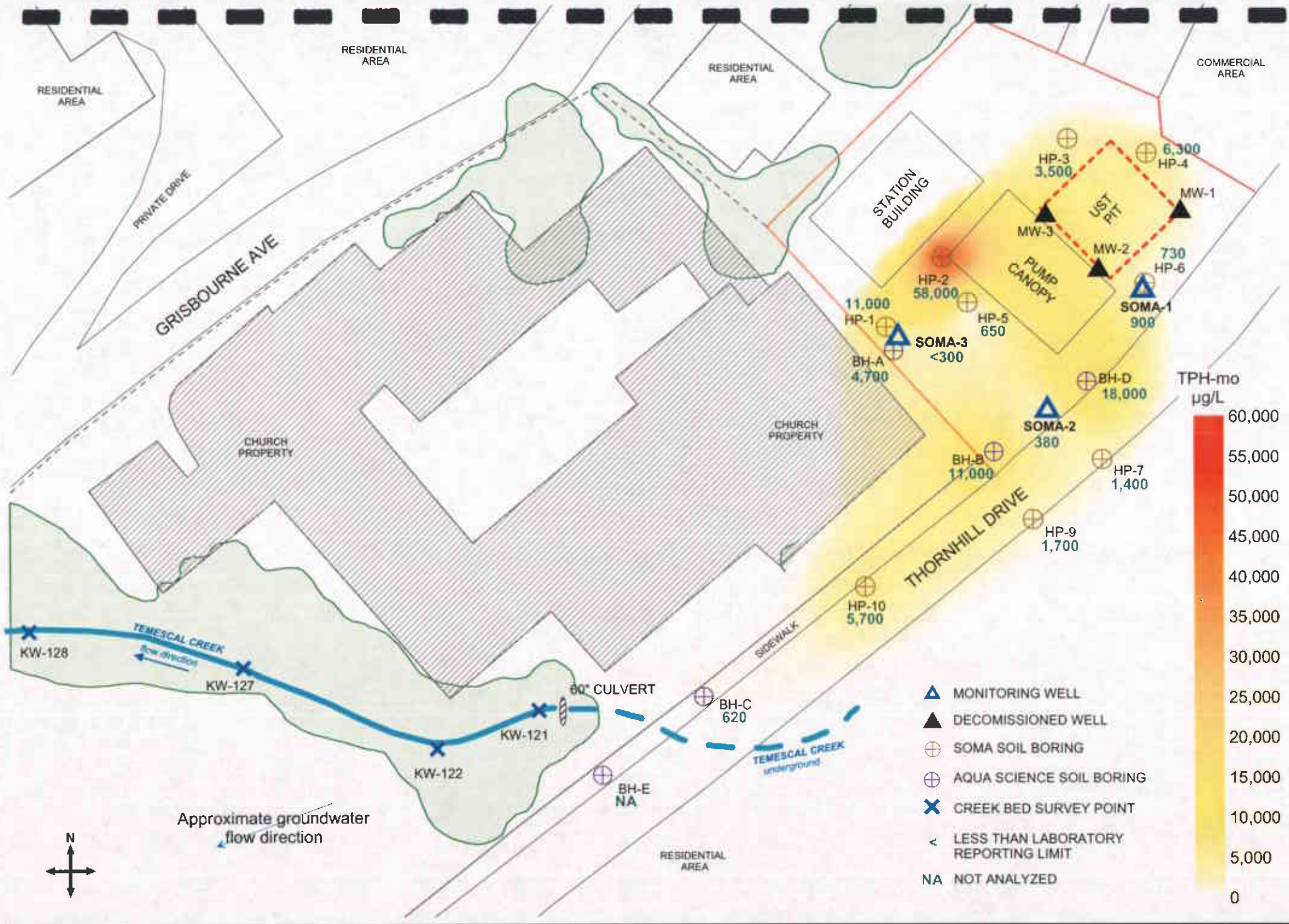


Figure 6: Contour map of TPH-mo concentrations in groundwater. January 2005.

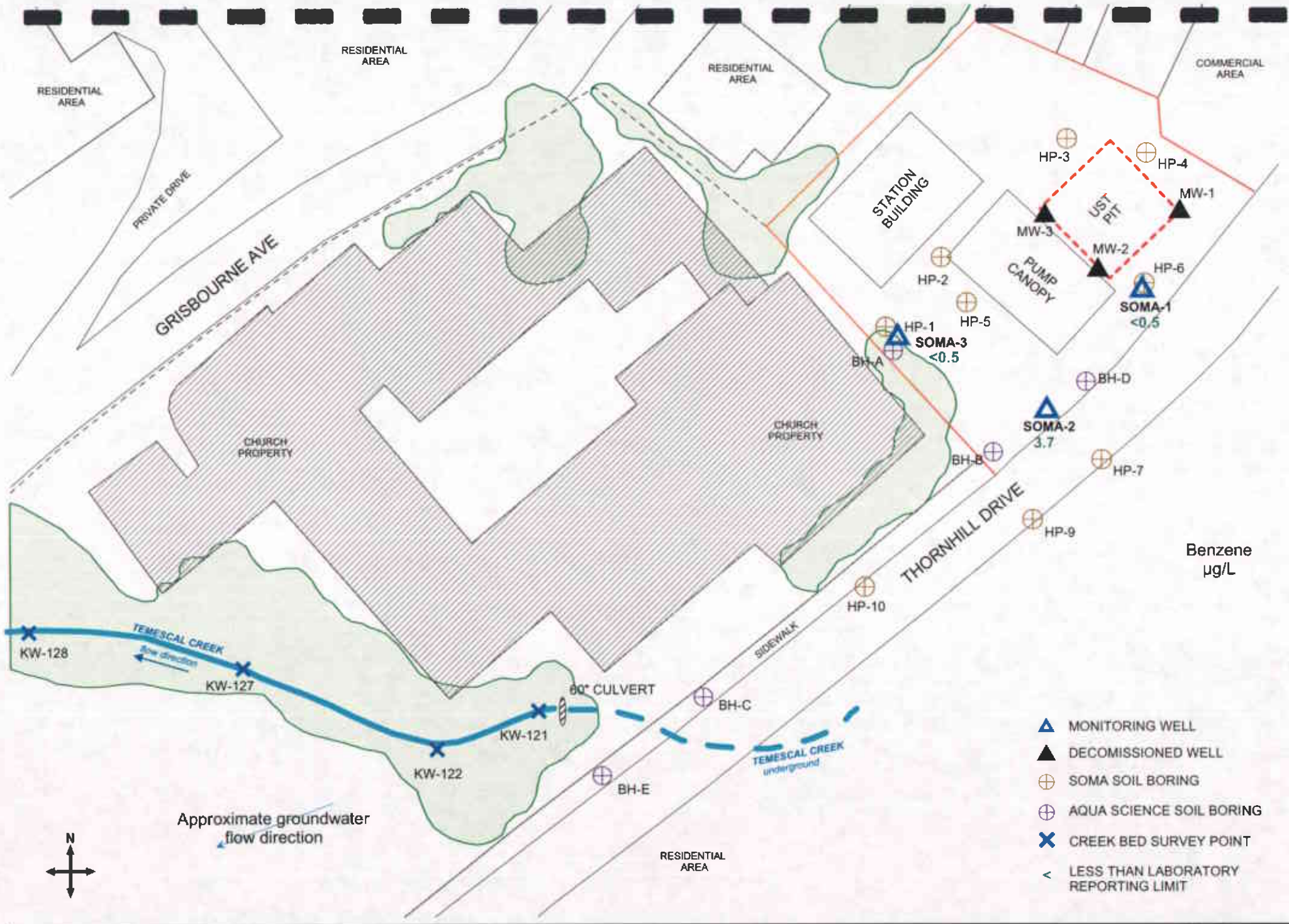


Figure 7: Map of Benzene concentrations in groundwater. January 2005.

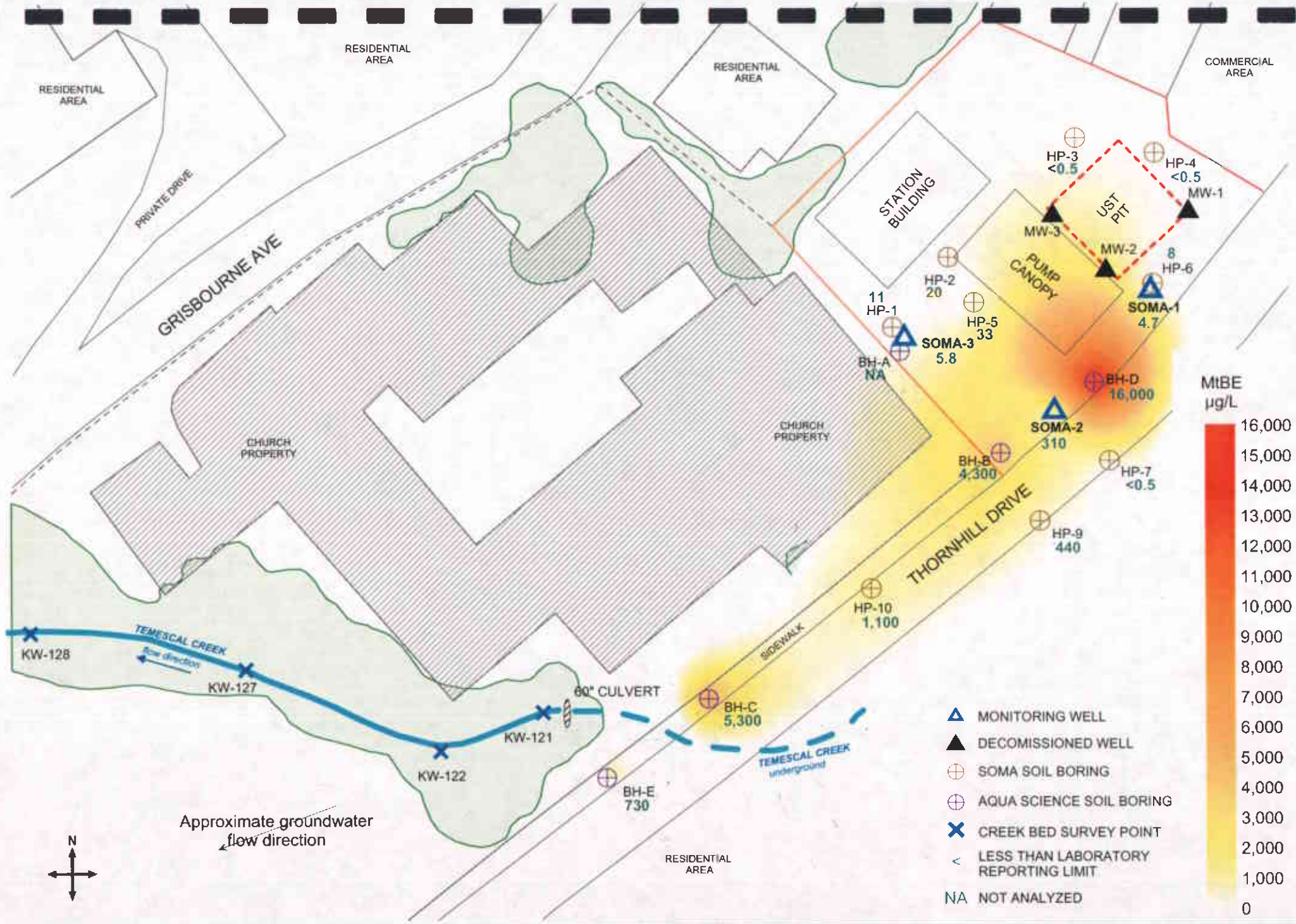
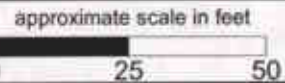


Figure 8: Contour map of MtBE concentrations in groundwater. (EPA Method 8260B). January 2005.



Approximate groundwater flow direction

APPENDIX A

SOMA's Groundwater Monitoring Procedures

Field Activities

On January 11, 2005, SOMA's field crew conducted a groundwater monitoring event in accordance with the procedures and guidelines of the California Regional Water Quality Control Board and the Alameda County Health Care Services. During this groundwater monitoring event three on-site wells (SOMA-1, SOMA-2, and SOMA-3) were monitored.

The depth to groundwater in each monitoring well was measured from the top of the casing to the nearest 0.01 foot using an electric sounder. The top of the casing elevation data and the depth to groundwater in each monitoring well were used to calculate the groundwater elevation. The top of casing elevation was based on an elevation datum of 37 feet NAVD88.

Prior to the collection of samples, each well was purged using a battery operated 2-inch diameter pump (Model ES-60 DC). In order to ensure that the final samples were in equilibrium with (and representative of) the surrounding groundwater, during purging, several samples were taken for field measurements of pH, temperature and EC. The field parameters were measured using a Hanna pH, conductivity, and temperature meter. The equipment was calibrated at the Site using standard solutions and procedures provided by the manufacturer.

Appendix B details the field measurements taken during the monitoring event.

The purging of the wells continued until the parameters for pH, temperature and EC stabilized or three casing volumes were purged. A disposable polyethylene bailer was used to collect sufficient samples from each well for laboratory analyses. The groundwater sample was transferred to five 40-mL VOA vials and preserved with hydrochloric acid. The vials were then sealed to prevent the development of air bubbles within the headspace. The groundwater sample collected from each well was also transferred into two 1-liter amber non-preserved glass containers.

After the groundwater samples were collected they were placed on ice in an ice chest and maintained at 4°C. A chain of custody (COC) form was written for all the samples. After the sampling was complete, on January 11, 2005, SOMA's field crew delivered the groundwater samples along with the COC form to Curtis and Tompkins, Ltd. in Berkeley, California.

Laboratory Analysis

Curtis and Tompkins, Ltd, a state certified laboratory, analyzed the groundwater samples for TPH-g, BTEX, TPH-d, TPH-mo, ethanol, gasoline oxygenates, and lead scavengers. TPH-g was prepared using EPA Method 5030B and analyzed using EPA Method 8015B. TPH-mo and TPH-d were prepared using EPA Method 3520C and analyzed using EPA Method 8015B. All BTEX, gasoline oxygenates, includes MtBE, lead scavenger, and ethanol constituents were prepared using EPA Method 5030B and analyzed using EPA Method 8260B.

Appendix B

Field Measurements of the Physical and Chemical
Properties of the Groundwater Samples
Collected During the First Quarter 2005



Well No.: SOMA-1
 Casing Diameter: 2 inches
 Depth of Well: 27.85 feet
 Top of Casing Elevation: 576.47 feet
 Depth to Groundwater: 3.73 feet
 Groundwater Elevation: 572.74 feet
 Water Column Height: 24.12 feet
 Purged Volume: 16 gallons

Project No.: 2831
 Address: 5725 Thornhill Drive
 Oakland, CA
 Date: January 11, 2005
 Sampler: John Lohman
 Eric Jennings

Purging Method: Bailer Pump
 Sampling Method: Bailer Pump
 Color: No Yes Describe: _____
 Sheen: No Yes Describe: _____
 Odor: No Yes Describe: _____

Field Measurements:

Time	Vol (gallons)	pH	Temp (°C)	E.C. (µs/cm)
10 ⁴²	4	8.80	18.1	573
10 ⁴⁶	8	6.46	17.1	960
10 ⁴⁸	12	6.61	17.0	790
10 ⁵⁰	16	6.62	16.9	760
10 ⁵⁵	SAMPLED			



ENVIRONMENTAL ENGINEERING, INC

Well No.: 40MA-2
Casing Diameter: 2 inches
Depth of Well: 280 feet
Top of Casing Elevation: 575.50 feet
Depth to Groundwater: 9.90 feet
Groundwater Elevation: 569.80 feet
Water Column Height: 22.30 feet
Purged Volume: 16 gallons

Project No.: 2831
Address: 5725 Thornhill Drive
Oakland, CA
Date: January 11, 2005
Sampler: John Lohman
Eric Jennings

Purging Method: Bailer Pump

Sampling Method: Bailer Pump

Color: No Yes Describe: _____

Sheen: No Yes Describe: _____

Odor: No Yes Describe: SMELL - MODERATE PHL ODOOR

Field Measurements:

Time	Vol (gallons)	pH	Temp (°C)	E.C. (µs/cm)
11	3.5	6.94	15.6	940
11 ¹³	8	6.94	16.0	940
11 ¹⁵	12	6.45	16.7	950
11 ¹⁷	16	7.00	16.5	950
11 ²²	4AMPED			



ENVIRONMENTAL ENGINEERING, INC

Well No.: 40NNA-3
 Casing Diameter: 2 inches
 Depth of Well: 27.8 feet
 Top of Casing Elevation: 572.92 feet
 Depth to Groundwater: 5.45 feet
 Groundwater Elevation: 567.47 feet
 Water Column Height: 22.35 feet
 Purged Volume: 16 gallons

Project No.: 2831
 Address: 5725 Thornhill Drive
 Oakland, CA
 Date: January 11, 2005
 Sampler: John Lohman
 Eric Jennings

Purging Method: Bailer Pump

Sampling Method: Bailer Pump

Color: No Yes Describe: _____

Sheen: No Yes Describe: _____

Odor: No Yes Describe: SMELL PNL ODOOR

Field Measurements:

Time	Vol (gallons)	pH	Temp (°C)	E.C. (µs/cm)
11:42	35	6.42	15.2	1240
11:44	8	6.69	16.2	1180
11:47	12	6.80	16.6	1090
11:49	16	6.87	16.8	1030
11:54	SAMPLED			

Appendix C

Chain of Custody Form and Laboratory Report
for the
First Quarter 2005 Monitoring Event



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

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

Prepared for:

SOMA Environmental Engineering Inc.
2680 Bishop Dr.
Suite 203
San Ramon, CA 94583

Date: 25-JAN-05
Lab Job Number: 177077
Project ID: 2831
Location: Thornhill Drive, Oakland

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

Reviewed by:


Project Manager

Reviewed by:


Operations Manager

This package may be reproduced only in its entirety.

CASE NARRATIVE

Laboratory number: 177077
Client: SOMA Environmental Engineering Inc.
Project: 2831
Location: Thornhill Drive, Oakland
Request Date: 01/11/05
Samples Received: 01/11/05

This hardcopy data package contains sample and QC results for three water samples, requested for the above referenced project on 01/11/05. The samples were received cold and intact.

TPH-Purgeables and/or BTXE by GC (EPA 8015B):

No analytical problems were encountered.

TPH-Extractables by GC (EPA 8015B):

No analytical problems were encountered.

Volatile Organics by GC/MS (EPA 8260B):

No analytical problems were encountered.

CHAIN OF CUSTODY

Curtis & Tompkins, Ltd.
 Analytical Laboratory Since 1878
 2323 Fifth Street
 Berkeley, CA 94710
 (510)486-0900 Phone
 (510)486-0532 Fax

Analyses

C&T LOGIN # 177077

Sampler: John Lohman / Eric Jennings

Project No: 2831

Report To: Tony Perini

Project Name: 5725 Thornhill Drive, Oakland

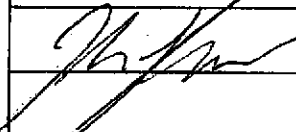
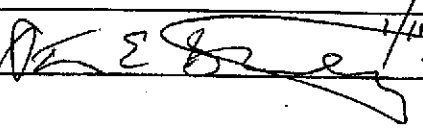
Company: SOMA Environmental

Turnaround Time: Standard

Telephone: 925-244-6600

Fax: 925-244-6601

Lab No.	Sample ID.	Sampling Date Time	Matrix			# of Containers	Preservative					TPHg, BTEX, MtBE 8260B	Gasoline Oxygenates, Lead Scavengers 8260B	Ethanol	TPHd 8015	TPHmo 3550/8015
			Soil	Water	Waste		HCL	H2SO4	HNO3	ICE	none					
<u>1</u>	<u>SOMA-1</u>	<u>1/11/05 10:55 AM</u>		*		<u>2L-Amber, 5-VOA</u>	*				*	*	*	*	*	*
<u>2</u>	<u>SOMA-2</u>	<u>1/11/05 11:22 AM</u>		*		<u>2L-Amber, 5-VOA</u>	*				*	*	*	*	*	*
<u>3</u>	<u>SOMA-3</u>	<u>1/11/05 11:54 AM</u>		*		<u>2L-Amber, 5-VOA</u>	*				*	*	*	*	*	*

Notes: EDF OUTPUT REQUIRED Gasoline Oxygenates: DIPE, ETBE, TAME, TBA Lead Scavengers: EDB, 1,2-DCA	RELINQUISHED BY: 		RECEIVED BY: 	
	<u>1/11/05 1:20 pm</u> DATE/TIME		<u>1/11/05 1:30</u> DATE/TIME	
	DATE/TIME		DATE/TIME	
	DATE/TIME		DATE/TIME	



Total Volatile Hydrocarbons

Lab #:	177077	Location:	Thornhill Drive, Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2831	Analysis:	EPA 8015B
Matrix:	Water	Sampled:	01/11/05
Units:	ug/L	Received:	01/11/05
Diln Fac:	1.000	Analyzed:	01/11/05
Batch#:	98180		

Field ID: SOMA-1 Lab ID: 177077-001
Type: SAMPLE

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	88	70-141
Bromofluorobenzene (FID)	88	80-143

Field ID: SOMA-2 Lab ID: 177077-002
Type: SAMPLE

Analyte	Result	RL
Gasoline C7-C12	3,700	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	136	70-141
Bromofluorobenzene (FID)	110	80-143

Field ID: SOMA-3 Lab ID: 177077-003
Type: SAMPLE

Analyte	Result	RL
Gasoline C7-C12	140	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	99	70-141
Bromofluorobenzene (FID)	96	80-143

Type: BLANK Lab ID: QC278942

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	105	70-141
Bromofluorobenzene (FID)	103	80-143

GC19 TVH 'X' Data File (FID)

Sample Name : 177077-002,98180,tvh only

Sample #: c1.0

Page 1 of 1

FileName : G:\GC19\DATA\011X017.raw

Date : 1/12/05 09:43 AM

Method : TVHBTXE

Time of Injection: 1/11/05 07:31 PM

Start Time : 0.00 min

End Time : 26.80 min

Low Point : 3.31 mV

High Point : 187.27 mV

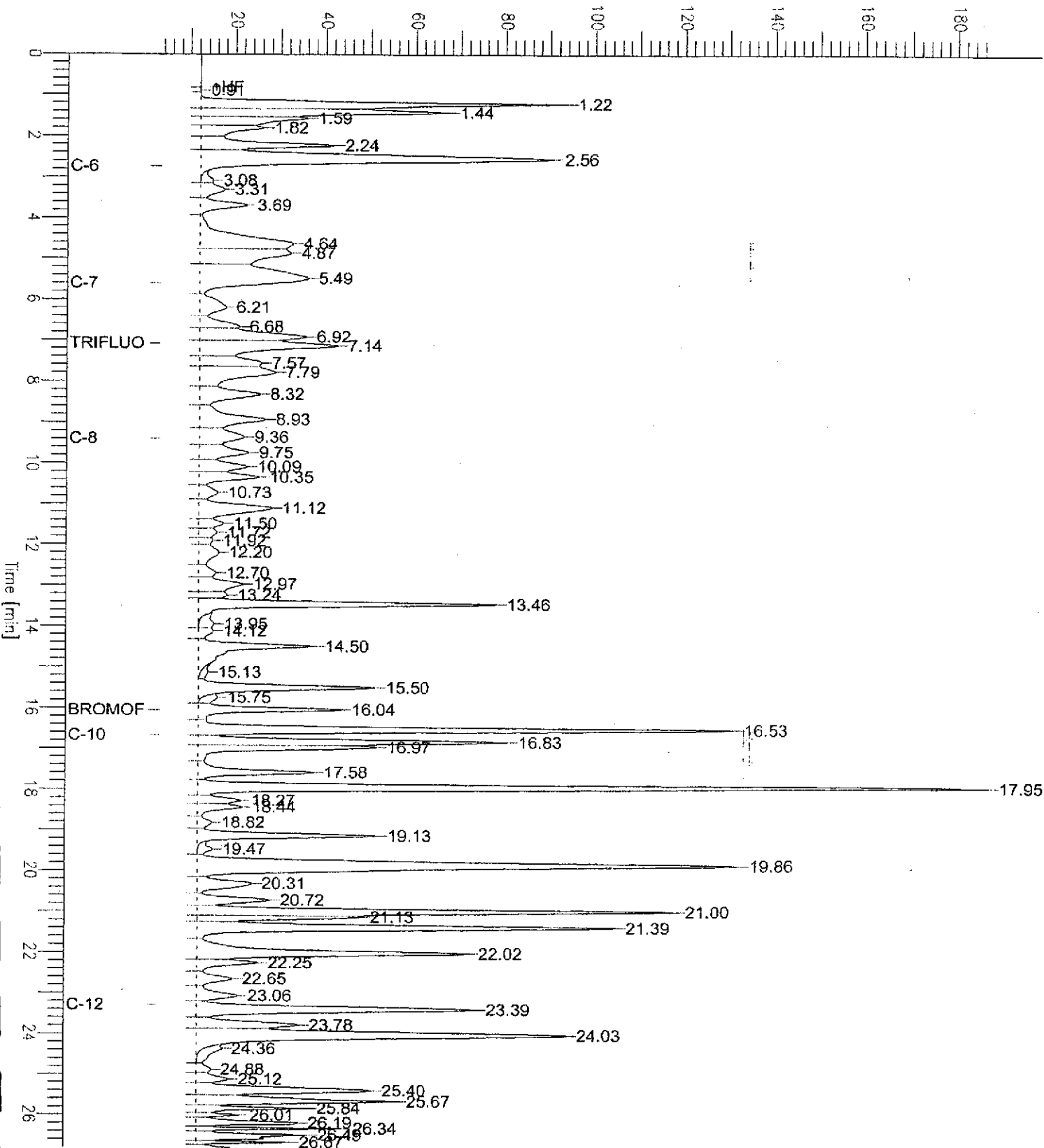
Scale Factor: 1.0

Plot Offset: 3 mV

Plot Scale: 184.0 mV

Soma-1

Response [mV]



GC19 TVH 'X' Data File (FID)

Sample Name : 177077-003,98180,tvh only

Sample #: c1.0

Page 1 of 1

FileName : G:\GC19\DATA\011X018.raw

Date : 1/12/05 09:43 AM

Method : TVHBTXE

Time of Injection: 1/11/05 08:05 PM

Start Time : 0.00 min End Time : 26.80 min

Low Point : 8.31 mV

High Point : 87.49 mV

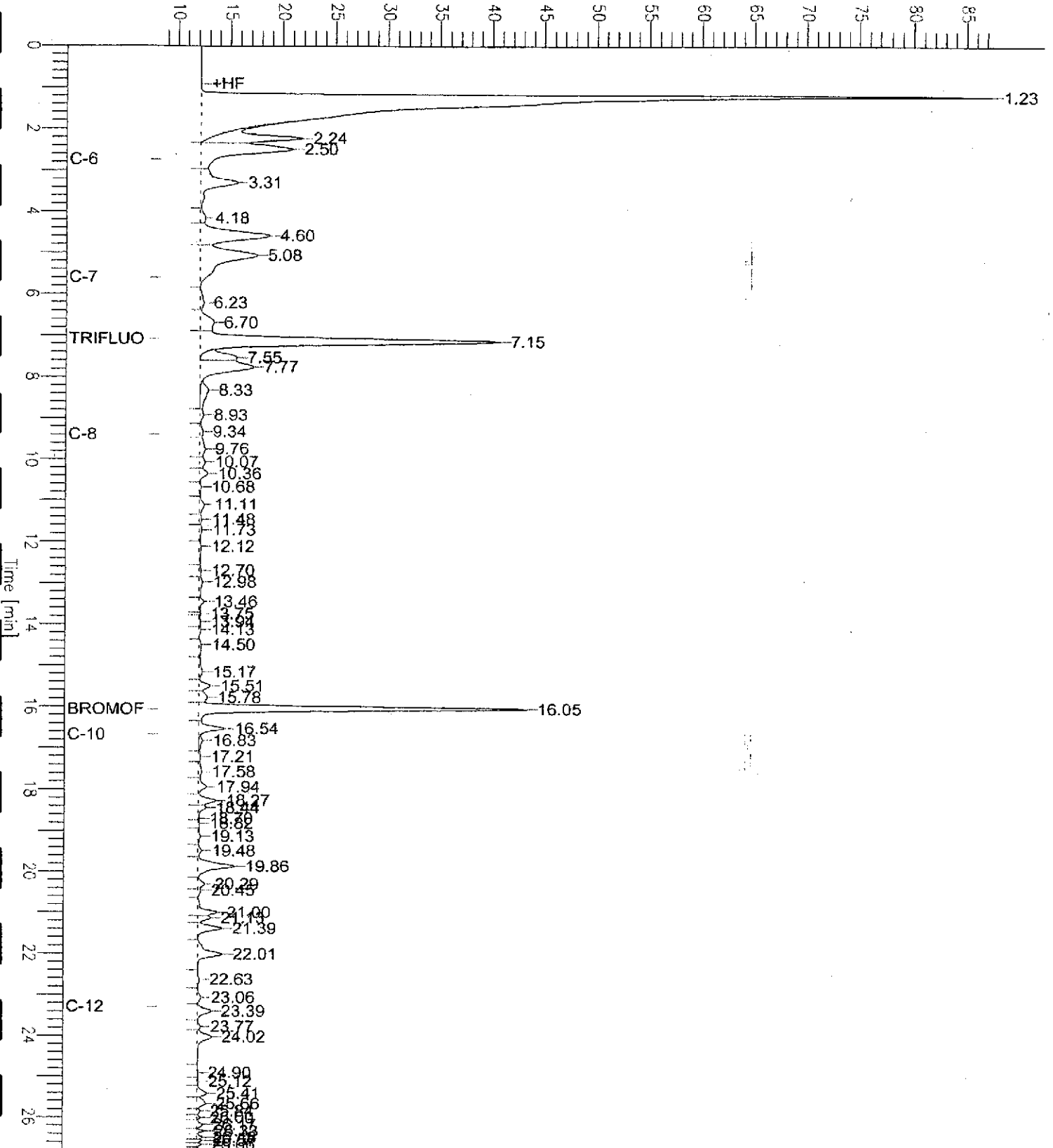
Scale Factor: 1.0

Plot Offset: 8 mV

Plot Scale: 79.2 mV

Soma-2

Response [mV]



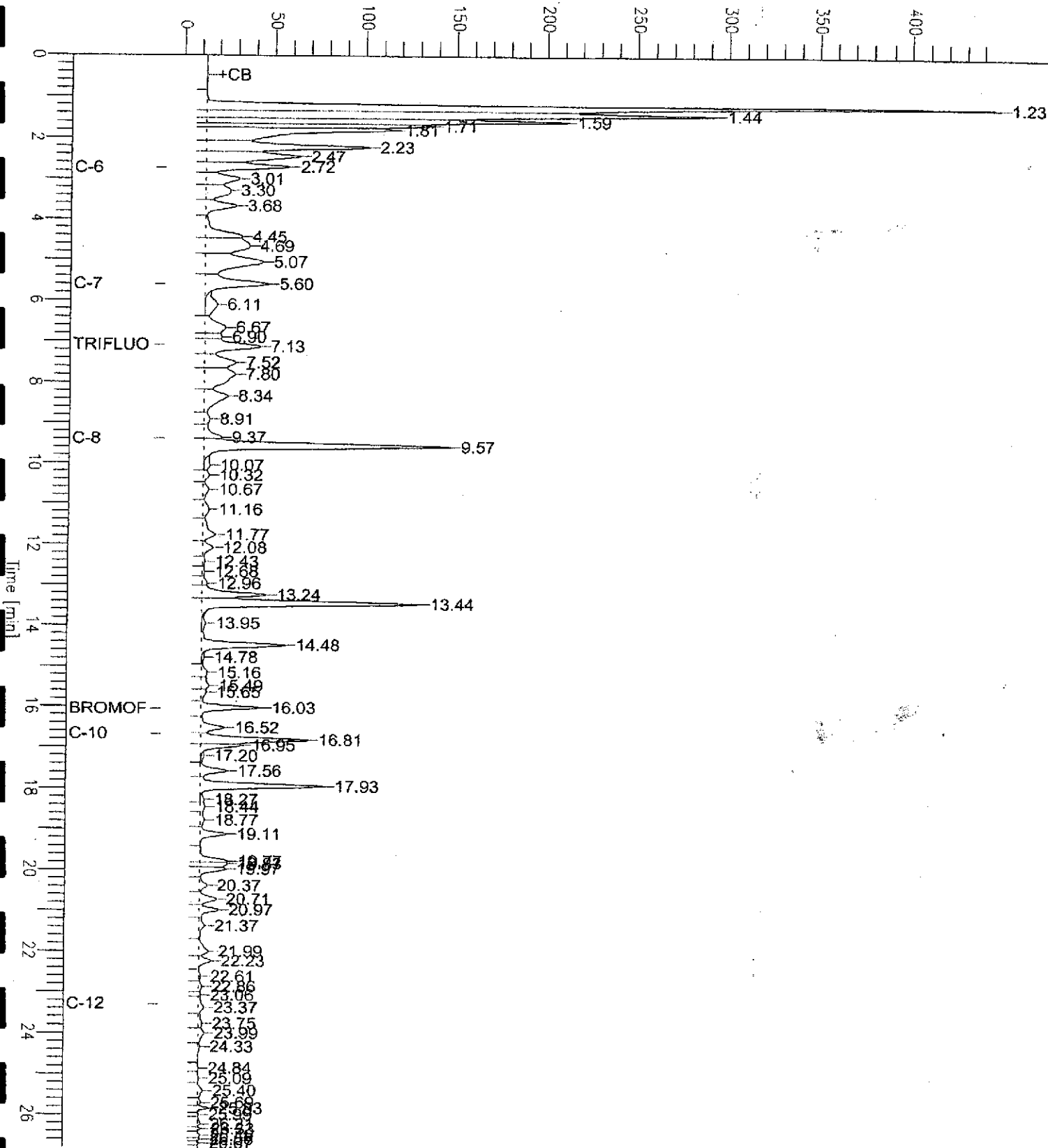
GC19 TVH 'X' Data File (FID)

Sample Name : ccv/lcs,qc278944,98180,04ws2408,5/5000
FileName : G:\GC19\DATA\011X003.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.80 min
Scale Factor: 1.0 Plot Offset: -10 mV

Sample # :
Date : 1/11/05 10:09 AM Page 1 of 1
Time of Injection: 1/11/05 09:42 AM
Low Point : -9.66 mV High Point : 448.91 mV
Plot Scale: 458.6 mV

Gasoline

Response [mV]



Batch QC Report

Total Volatile Hydrocarbons

Lab #:	177077	Location:	Thornhill Drive, Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2831	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC278944	Batch#:	98180
Matrix:	Water	Analyzed:	01/11/05
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	2,000	2,087	104	80-120

Surrogate	%REC	Limits
Trifluorotoluene (FID)	120	70-141
Bromofluorobenzene (FID)	105	80-143



Batch QC Report

Total Volatile Hydrocarbons

Lab #:	177077	Location:	Thornhill Drive, Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2831	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Batch#:	98180
MSS Lab ID:	177071-007	Sampled:	01/10/05
Matrix:	Water	Received:	01/11/05
Units:	ug/L	Analyzed:	01/11/05
Diln Fac:	1.000		

Type: MS Lab ID: QC278987

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	<22.03	2,000	2,064	103	80-120

Surrogate	%REC	Limits
Trifluorotoluene (FID)	126	70-141
Bromofluorobenzene (FID)	115	80-143

Type: MSD Lab ID: QC278988

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	2,064	103	80-120	0	20

Surrogate	%REC	Limits
Trifluorotoluene (FID)	124	70-141
Bromofluorobenzene (FID)	110	80-143

Total Extractable Hydrocarbons

Lab #:	177077	Location:	Thornhill Drive, Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 3520C
Project#:	2831	Analysis:	EPA 8015B
Matrix:	Water	Sampled:	01/11/05
Units:	ug/L	Received:	01/11/05
Diln Fac:	1.000	Prepared:	01/13/05
Batch#:	98264	Analyzed:	01/14/05

Field ID: SOMA-1 Lab ID: 177077-001
 Type: SAMPLE

Analyte	Result	RL
Diesel C10-C24	200 H Y	50
Motor Oil C24-C36	900	300

Surrogate	%REC	Limits
Hexacosane	123	53-143

Field ID: SOMA-2 Lab ID: 177077-002
 Type: SAMPLE

Analyte	Result	RL
Diesel C10-C24	2,100 L Y	50
Motor Oil C24-C36	380	300

Surrogate	%REC	Limits
Hexacosane	125	53-143

Field ID: SOMA-3 Lab ID: 177077-003
 Type: SAMPLE

Analyte	Result	RL
Diesel C10-C24	210 Y	50
Motor Oil C24-C36	ND	300

Surrogate	%REC	Limits
Hexacosane	122	53-143

Type: BLANK Cleanup Method: EPA 3630C
 Lab ID: QC279281

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

Surrogate	%REC	Limits
Hexacosane	82	53-143

H= Heavier hydrocarbons contributed to the quantitation
 L= Lighter hydrocarbons contributed to the quantitation
 Y= Sample exhibits chromatographic pattern which does not resemble standard
 ND= Not Detected
 RL= Reporting Limit

Chromatogram

Sample Name : 177077-001,98264

Sample #: 98264

Page 1 of 1

FileName : G:\GC11\CHA\014A010.RAW

Date : 1/14/05 04:02 PM

Method : ATEH003S.MTH

Time of Injection: 1/14/05 03:23 PM

Start Time : 0.01 min End Time : 20.45 min

Low Point : 22.48 mV

High Point : 536.54 mV

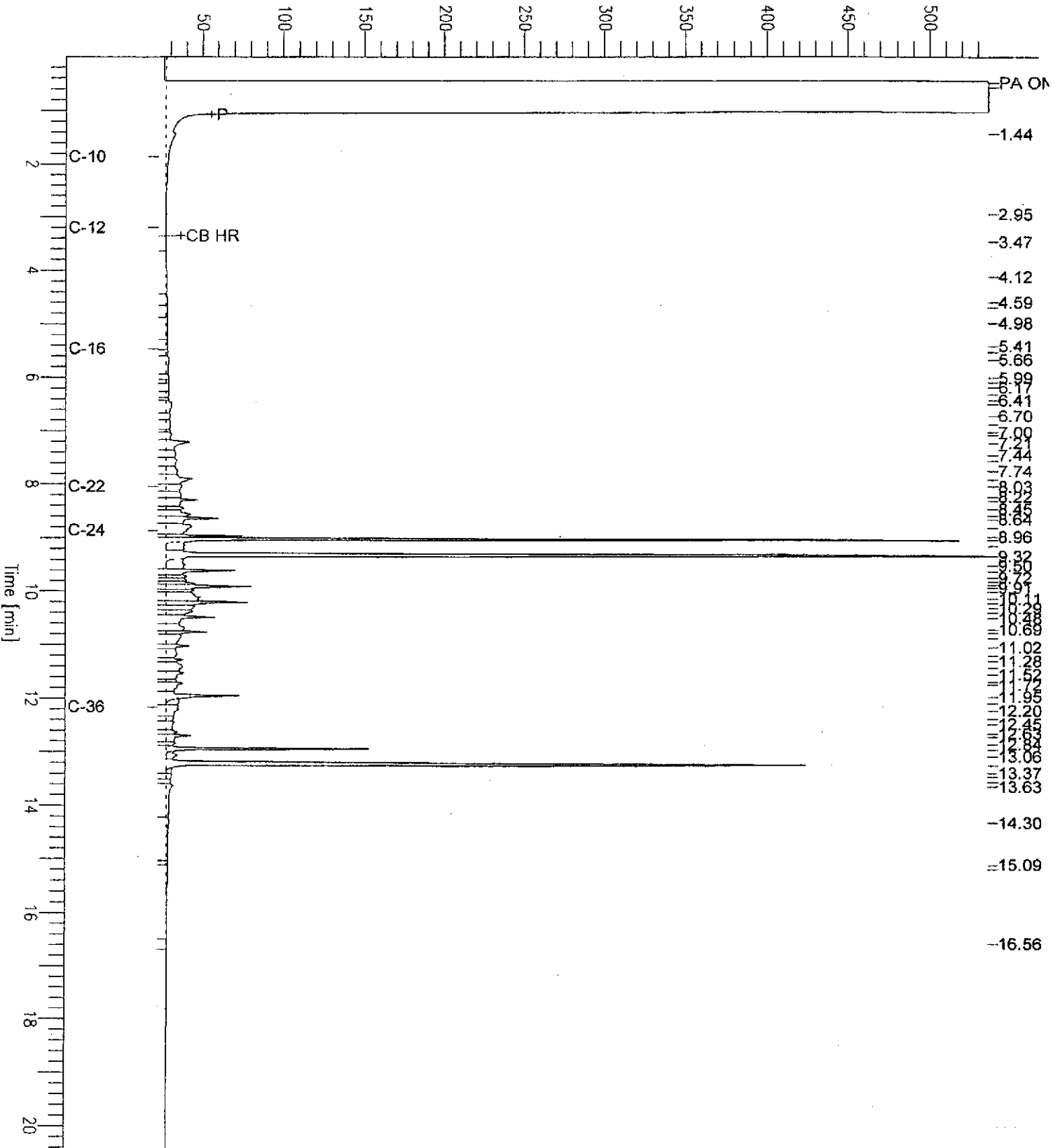
Scale Factor: 0.0

Plot Offset: 22 mV

Plot Scale: 514.1 mV

SOMA-1

Response [mV]



Chromatogram

Sample Name : 177077-002,98264

Sample #: 98264

Page 1 of 1

FileName : G:\GC11\CHA\014A011.RAW

Date : 1/14/05 04:46 PM

Method : ATEH003S.MTH

Time of Injection: 1/14/05 03:52 PM

Start Time : 0.01 min End Time : 20.45 min

Low Point : 18.75 mV

High Point : 502.44 mV

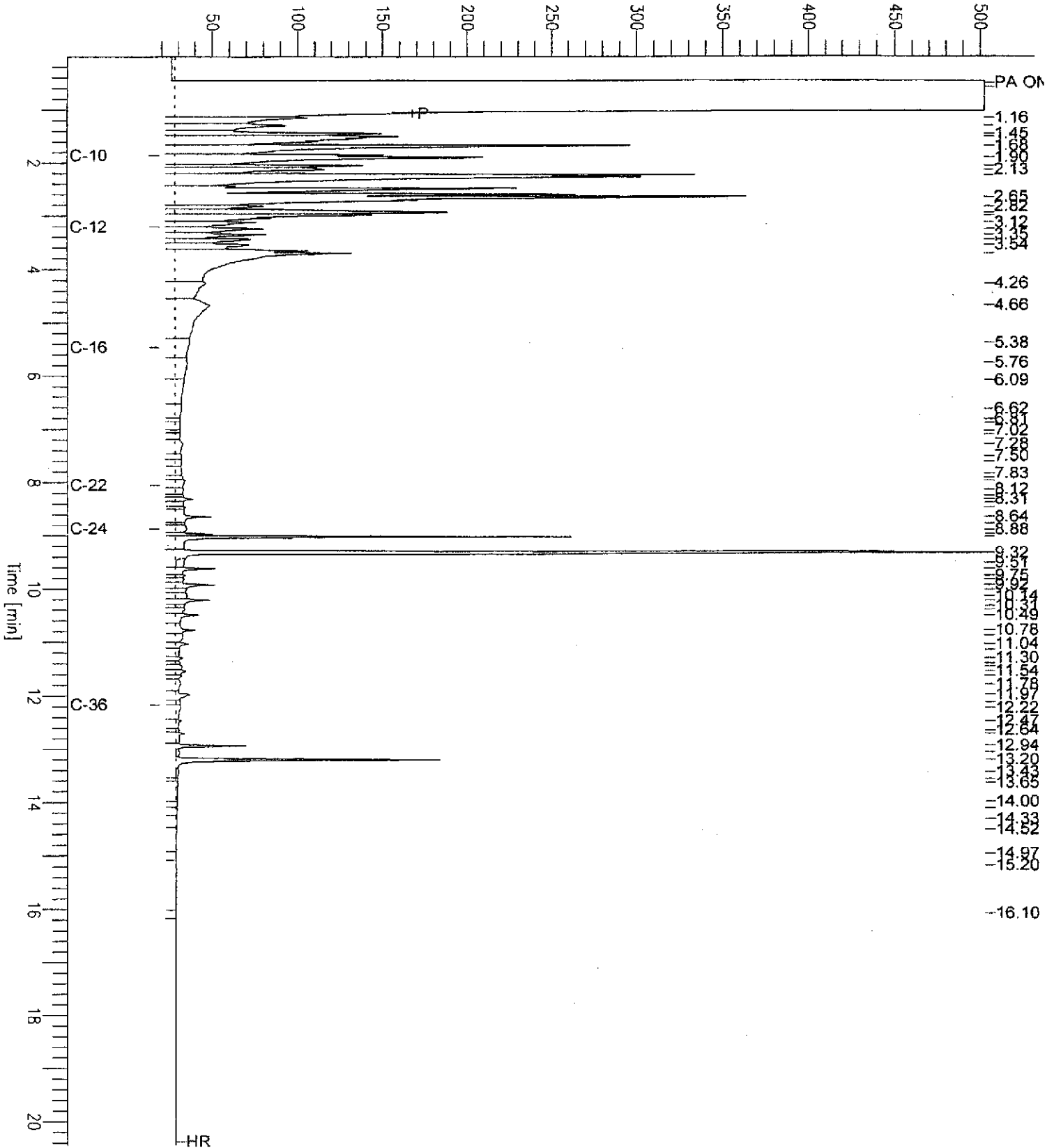
Scale Factor: 0.0

Plot Offset: 19 mV

Plot Scale: 483.7 mV

SOMA-2

Response [mV]



Chromatogram

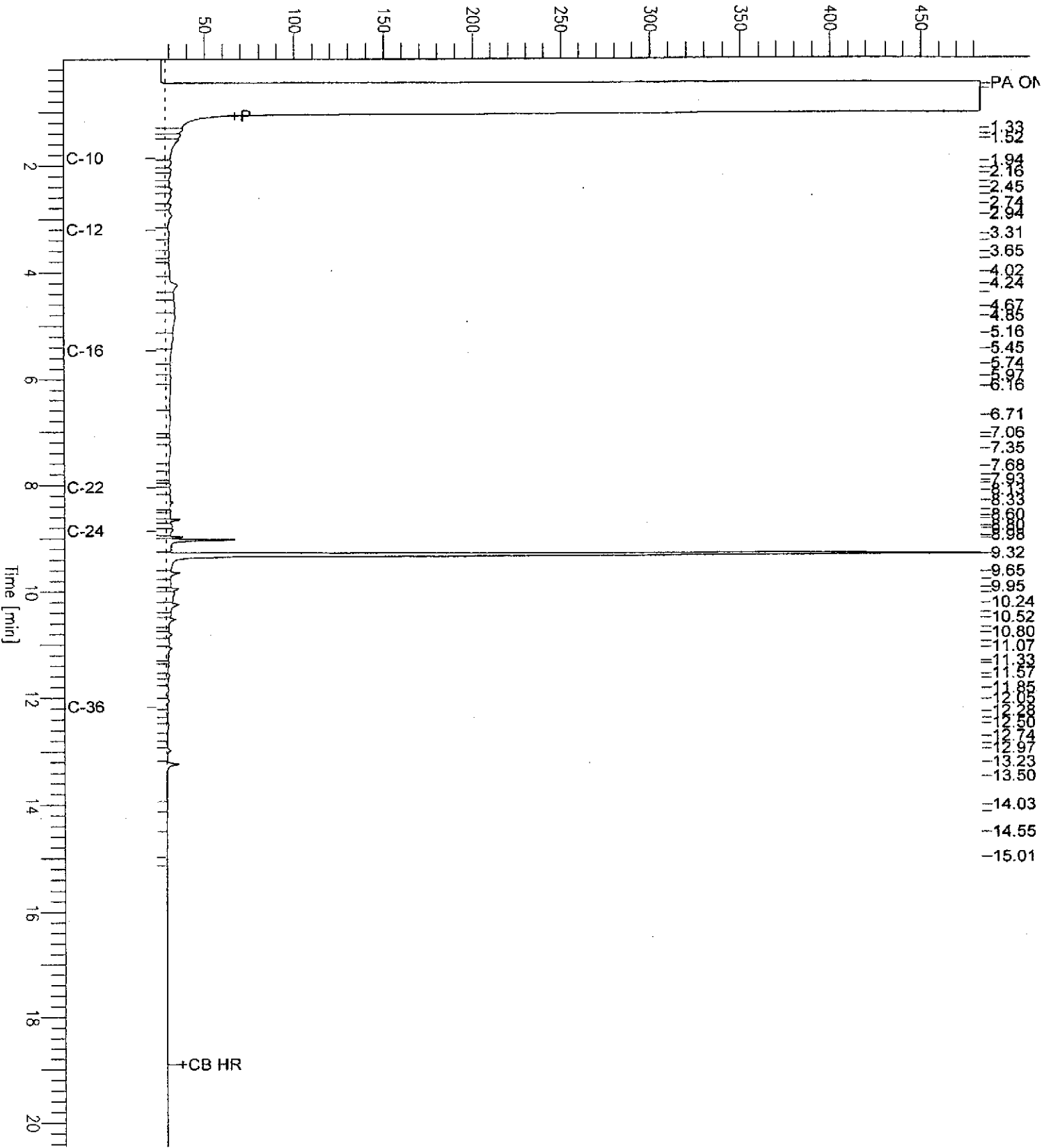
Sample Name : 177077-003,98264
 FileName : G:\GC11\CHA\014A012.RAW
 Method : ATEH003S.MTH
 Start Time : 0.01 min
 Scale Factor: 0.0

End Time : 20.45 min
 Plot Offset: 22 mV

Sample #: 98264
 Date : 1/14/05 04:47 PM
 Time of Injection: 1/14/05 04:21 PM
 Low Point : 22.48 mV
 High Point : 483.49 mV
 Plot Scale: 461.0 mV

SOMA-3

Response [mV]



PA ON

- 1.33
- 1.94
- 2.16
- 2.45
- 2.74
- 2.94
- 3.31
- 3.65
- 4.02
- 4.24
- 4.67
- 4.85
- 5.16
- 5.45
- 5.74
- 5.97
- 6.16
- 6.71
- 7.06
- 7.35
- 7.68
- 7.93
- 8.33
- 8.60
- 8.98
- 9.32
- 9.65
- 9.95
- 10.24
- 10.52
- 10.80
- 11.07
- 11.33
- 11.57
- 11.85
- 12.05
- 12.38
- 12.74
- 12.97
- 13.23
- 13.50
- 14.03
- 14.55
- 15.01

Time [min]

C-10

C-12

C-16

C-22

C-24

C-36

CB HR

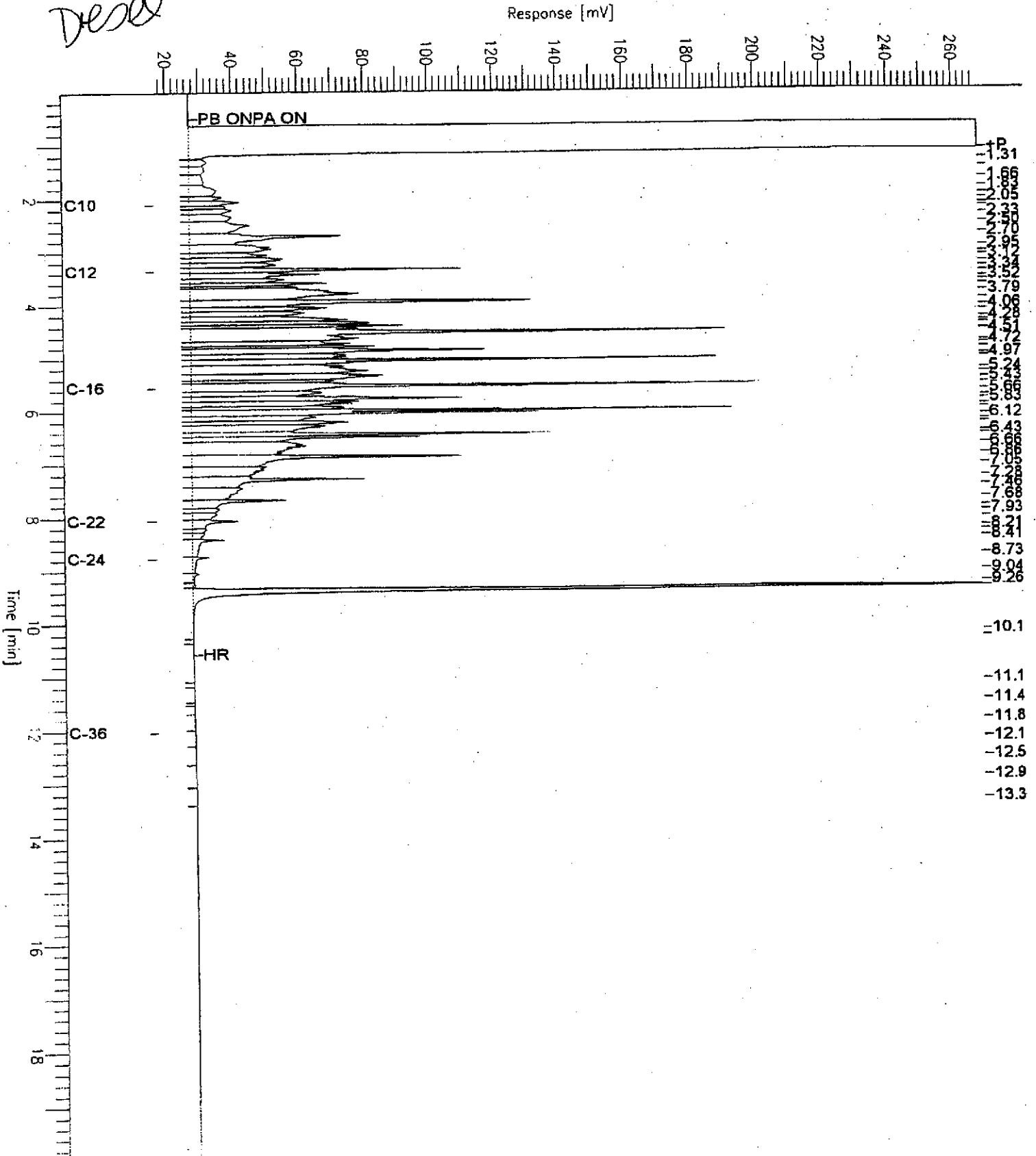
Chromatogram

Sample Name : ccv,04ws2358,ds1
FileName : G:\GC15\CHB\014B003.RAW
Method : BTEH005S.MTH
Start Time : 0.01 min
Scale Factor : 0.0

Sample #: 500mg/L
Date : 1/14/05 10:17 AM
Time of Injection: 1/14/05 09:47 AM
Low Point : 16.51 mV
Plot Scale: 251.3 mV

Page 1 of 1

Diesel



Chromatogram

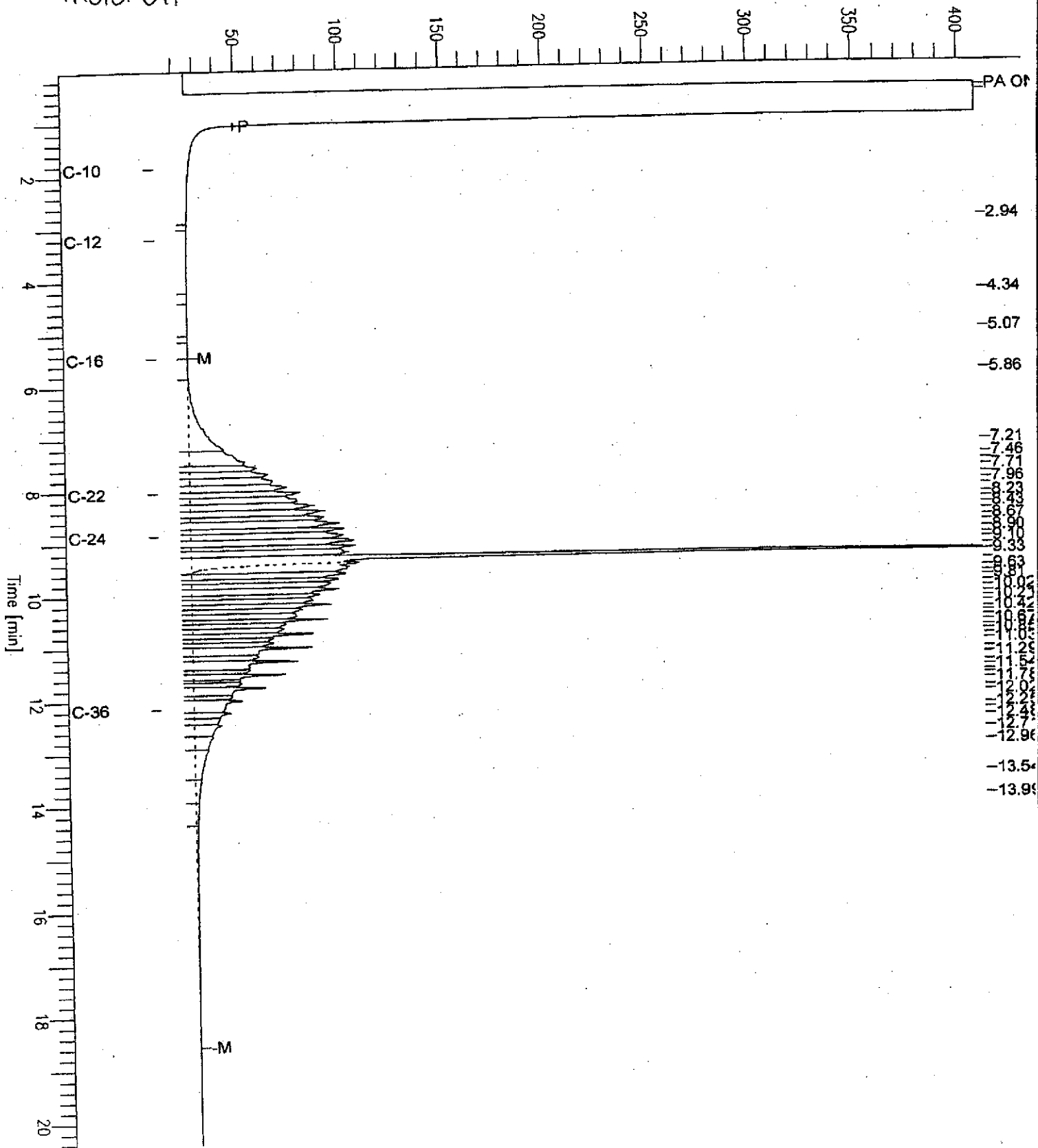
Sample Name : ccv_05ws0066.mo
FileName : G:\GC11\CHA\010A008.RAW
Method : ATEH003S.MTH
Start Time : 0.04 min
Scale Factor: 0.0

Sample #: 500mg/L
Date : 1/10/05 04:06 PM
Time of Injection: 1/10/05 03:42 PM
Low Point : 11.34 mV
Plot Scale: 396.9 mV
End Time : 20.45 min
Plot Offset: 11 mV
High Point : 408.21 mV

Page 1 of 1

Motor Oil

Response [mV]



Batch QC Report

Total Extractable Hydrocarbons

Lab #:	177077	Location:	Thornhill Drive, Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 3520C
Project#:	2831	Analysis:	EPA 8015B
Matrix:	Water	Batch#:	98264
Units:	ug/L	Prepared:	01/13/05
Diln Fac:	1.000	Analyzed:	01/14/05

Type: BS Cleanup Method: EPA 3630C
 Lab ID: QC279282

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	2,500	2,069	83	51-131

Surrogate	%REC	Limits
Hexacosane	82	53-143

Type: BSD Cleanup Method: EPA 3630C
 Lab ID: QC279283

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	2,500	2,158	86	51-131	4	42

Surrogate	%REC	Limits
Hexacosane	84	53-143

Purgeable Aromatics by GC/MS

Lab #:	177077	Location:	Thornhill Drive, Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2831	Analysis:	EPA 8260B
Field ID:	SOMA-1	Batch#:	98188
Lab ID:	177077-001	Sampled:	01/11/05
Matrix:	Water	Received:	01/11/05
Units:	ug/L	Analyzed:	01/11/05
Diln Fac:	1.000		

Analyte	Result	RL
MTBE	4.7	0.5
Benzene	ND	0.5
Toluene	ND	0.5
Chlorobenzene	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	98	80-120
Toluene-d8	100	80-120
Bromofluorobenzene	101	80-122

ND= Not Detected
 RL= Reporting Limit
 Page 1 of 1

Purgeable Aromatics by GC/MS

Lab #:	177077	Location:	Thornhill Drive, Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2831	Analysis:	EPA 8260B
Field ID:	SOMA-2	Batch#:	98188
Lab ID:	177077-002	Sampled:	01/11/05
Matrix:	Water	Received:	01/11/05
Units:	ug/L	Analyzed:	01/11/05
Diln Fac:	4.000		

Analyte	Result	RL
MTBE	310	2.0
Benzene	3.7	2.0
Toluene	ND	2.0
Chlorobenzene	ND	2.0
Ethylbenzene	3.5	2.0
m,p-Xylenes	73	2.0
o-Xylene	29	2.0
1,3-Dichlorobenzene	ND	2.0
1,4-Dichlorobenzene	ND	2.0
1,2-Dichlorobenzene	ND	2.0

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	102	80-120
Toluene-d8	101	80-120
Bromofluorobenzene	99	80-122



Purgeable Aromatics by GC/MS

Lab #:	177077	Location:	Thornhill Drive, Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2831	Analysis:	EPA 8260B
Field ID:	SOMA-3	Batch#:	98188
Lab ID:	177077-003	Sampled:	01/11/05
Matrix:	Water	Received:	01/11/05
Units:	ug/L	Analyzed:	01/11/05
Diln Fac:	1.000		

Analyte	Result	RL
MTBE	5.8	0.5
Benzene	ND	0.5
Toluene	ND	0.5
Chlorobenzene	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5

Surrogate	%REC	Limit#
1,2-Dichloroethane-d4	100	80-120
Toluene-d8	101	80-120
Bromofluorobenzene	102	80-122

ND= Not Detected
RL= Reporting Limit
Page 1 of 1

Batch QC Report

Purgeable Aromatics by GC/MS

Lab #:	177077	Location:	Thornhill Drive, Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2831	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC278966	Batch#:	98188
Matrix:	Water	Analyzed:	01/11/05
Units:	ug/L		

Analyte	Result	RL
MTBE	ND	0.5
Benzene	ND	0.5
Toluene	ND	0.5
Chlorobenzene	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	97	80-120
Toluene-d8	99	80-120
Bromofluorobenzene	100	80-122

ND= Not Detected
 RL= Reporting Limit
 Page 1 of 1

Batch QC Report

Purgeable Aromatics by GC/MS

Lab #:	177077	Location:	Thornhill Drive, Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2831	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	98188
Units:	ug/L	Analyzed:	01/11/05
Diln Fac:	1.000		

Type: BS Lab ID: QC278964

Analyte	Spiked	Result	%REC	Limits
MTBE	25.00	24.26	97	74-128
Benzene	25.00	28.07	112	79-120
Toluene	25.00	28.44	114	80-120
Chlorobenzene	25.00	28.17	113	80-120
Ethylbenzene	25.00	28.00	112	80-121
m,p-Xylenes	50.00	57.71	115	80-120
o-Xylene	25.00	29.14	117	80-120

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	93	80-120
Toluene-d8	99	80-120
Bromofluorobenzene	94	80-122

Type: BSD Lab ID: QC278965

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	25.00	21.05	84	74-128	14	20
Benzene	25.00	23.16	93	79-120	19	20
Toluene	25.00	23.73	95	80-120	18	20
Chlorobenzene	25.00	24.06	96	80-120	16	20
Ethylbenzene	25.00	23.46	94	80-121	18	20
m,p-Xylenes	50.00	48.69	97	80-120	17	20
o-Xylene	25.00	24.48	98	80-120	17	20

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	93	80-120
Toluene-d8	100	80-120
Bromofluorobenzene	95	80-122



Gasoline Oxygenates by GC/MS

Lab #:	177077	Location:	Thornhill Drive, Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2831	Analysis:	EPA 8260B
Matrix:	Water	Sampled:	01/11/05
Units:	ug/L	Received:	01/11/05
Batch#:	98188	Analyzed:	01/11/05

Field ID: SOMA-1 Lab ID: 177077-001
Type: SAMPLE Diln Fac: 1.000

Analyte	Result	RL
tert-Butyl Alcohol (TBA)	ND	10
MTBE	4.7	0.5
Isopropyl Ether (DIPE)	ND	0.5
Ethyl tert-Butyl Ether (ETBE)	ND	0.5
Methyl tert-Amyl Ether (TAME)	ND	0.5
1,2-Dichloroethane	ND	0.5
1,2-Dibromoethane	ND	0.5
Ethanol	ND	1,000

Surrogate	%REC	Limits
Dibromofluoromethane	102	80-120
1,2-Dichloroethane-d4	98	80-120
Toluene-d8	100	80-120
Bromofluorobenzene	101	80-122

Field ID: SOMA-2 Lab ID: 177077-002
Type: SAMPLE Diln Fac: 4.000

Analyte	Result	RL
tert-Butyl Alcohol (TBA)	67	40
MTBE	310	2.0
Isopropyl Ether (DIPE)	ND	2.0
Ethyl tert-Butyl Ether (ETBE)	ND	2.0
Methyl tert-Amyl Ether (TAME)	6.7	2.0
1,2-Dichloroethane	ND	2.0
1,2-Dibromoethane	ND	2.0
Ethanol	ND	4,000

Surrogate	%REC	Limits
Dibromofluoromethane	105	80-120
1,2-Dichloroethane-d4	102	80-120
Toluene-d8	101	80-120
Bromofluorobenzene	99	80-122



Gasoline Oxygenates by GC/MS

Lab #:	177077	Location:	Thornhill Drive, Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2831	Analysis:	EPA 8260B
Matrix:	Water	Sampled:	01/11/05
Units:	ug/L	Received:	01/11/05
Batch#:	98188	Analyzed:	01/11/05

Field ID:	SOMA-3	Lab ID:	177077-003
Type:	SAMPLE	Diln Fac:	1.000

Analyte	Result	RL
tert-Butyl Alcohol (TBA)	ND	10
MTBE	5.8	0.5
Isopropyl Ether (DIPE)	ND	0.5
Ethyl tert-Butyl Ether (ETBE)	ND	0.5
Methyl tert-Amyl Ether (TAME)	ND	0.5
1,2-Dichloroethane	ND	0.5
1,2-Dibromoethane	ND	0.5
Ethanol	ND	1,000

Surrogate	%REC	Limits
Dibromofluoromethane	105	80-120
1,2-Dichloroethane-d4	100	80-120
Toluene-d8	101	80-120
Bromofluorobenzene	102	80-122

Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC278966		

Analyte	Result	RL
tert-Butyl Alcohol (TBA)	ND	10
MTBE	ND	0.5
Isopropyl Ether (DIPE)	ND	0.5
Ethyl tert-Butyl Ether (ETBE)	ND	0.5
Methyl tert-Amyl Ether (TAME)	ND	0.5
1,2-Dichloroethane	ND	0.5
1,2-Dibromoethane	ND	0.5
Ethanol	ND	1,000

Surrogate	%REC	Limits
Dibromofluoromethane	101	80-120
1,2-Dichloroethane-d4	97	80-120
Toluene-d8	99	80-120
Bromofluorobenzene	100	80-122

ND= Not Detected
 RL= Reporting Limit
 Page 2 of 2

Batch QC Report

Gasoline Oxygenates by GC/MS

Lab #:	177077	Location:	Thornhill Drive, Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2831	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	98188
Units:	ug/L	Analyzed:	01/11/05
Diln Fac:	1.000		

Type: BS Lab ID: QC278964

Analyte	Spiked	Result	%REC	Limits
tert-Butyl Alcohol (TBA)	125.0	121.3	97	74-135
MTBE	25.00	24.26	97	74-128
Isopropyl Ether (DIPE)	25.00	24.63	99	80-120
Ethyl tert-Butyl Ether (ETBE)	25.00	25.28	101	80-120
Methyl tert-Amyl Ether (TAME)	25.00	25.11	100	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	98	80-120
1,2-Dichloroethane-d4	93	80-120
Toluene-d8	99	80-120
Bromofluorobenzene	94	80-122

Type: BSD Lab ID: QC278965

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
tert-Butyl Alcohol (TBA)	125.0	103.2	83	74-135	16	25
MTBE	25.00	21.05	84	74-128	14	20
Isopropyl Ether (DIPE)	25.00	21.04	84	80-120	16	20
Ethyl tert-Butyl Ether (ETBE)	25.00	21.80	87	80-120	15	20
Methyl tert-Amyl Ether (TAME)	25.00	21.50	86	80-120	16	20

Surrogate	%REC	Limits
Dibromofluoromethane	98	80-120
1,2-Dichloroethane-d4	93	80-120
Toluene-d8	100	80-120
Bromofluorobenzene	95	80-122

RPD= Relative Percent Difference



ENVIRONMENTAL ENGINEERING, INC
2680 Bishop Drive • Suite 203 • San Ramon, CA 94583
TEL (925) 244-6600 • FAX (925) 244-6601

February 4, 2005

Mr. Don Hwang
Alameda County
Department of Environmental Health Services
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Environmental Services
FEB 9 9 2005
Alameda County

Subject: Fuel Leak Case No. R00000317-5725 Thornhill Drive, Oakland, CA

Dear Don:

Enclosed for your review is a copy of SOMA's "First Quarter 2005 Groundwater Monitoring Report" for the subject property.

Thank you for your time in reviewing our report. If you have any questions or comments, please call me at (925) 244-6600.

Sincerely,

Mansour Sepehr, Ph.D., PE
Principal Hydrogeologist

Enclosure

cc: Mr. Mo Mashhoon

