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January 11, 2002

JAN 15 2002

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

Subject: **StID#3337**
Site Address: 3609 International Blvd., Oakland, California

Dear Mr. Chan:

A copy of SOMA's "Fourth Quarter 2001 Groundwater Monitoring and Remediation System Operation Report" for the subject property is enclosed.

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., P.E.
Principal Hydrogeologist

REGISTERED PROFESSIONAL ENGINEER
MANSOUR SEPEHR
No. C042928
Exp. 3-31-04
CIVIL
STATE OF CALIFORNIA

Enclosure

cc: Mr. Abolghassem Razi w/enclosure
Tony's Express Auto Service

- VET System shut down due to low removal
- Possible new release - spike in MTBE in MW-1.

Certification

This report has been prepared by SOMA Environmental Engineering, Inc. on behalf of Mr. Abolghassem Razi, the property owner at 3609 International Boulevard, Oakland, California, to comply with Alameda County Department of Environmental Health Service's requirements for the Fourth Quarter 2001 groundwater monitoring event.

Mansour Sepehr, Ph.D., P.E.
Principal Hydrogeologist

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1.0 Introduction

This report has been prepared by SOMA Environmental Engineering, Inc. (SOMA) on behalf of Mr. Abolghassem Razi, the owner of the property. The site, Tony's Express Auto Service, is located at 3609 International Boulevard at the intersection of 36th Avenue in Oakland, California (the "Site"), as shown in Figure 1. The Site is located in an area consisting primarily of commercial and residential uses.

This report summarizes the results of the Fourth Quarter 2001 groundwater monitoring event conducted on November 19, 2001 at the Site, including the results of the laboratory analysis on groundwater samples, which were analyzed for:

- Total petroleum hydrocarbons as gasoline (TPH-g)
- Benzene, toluene, ethylbenzene, total xylenes (collectively referred to as BTEX)
- Methyl tertiary Butyl Ether (MtBE)

These activities were performed in accordance with the general guidelines of the Regional Water Quality Control Board (RWQCB) and the Alameda County Environmental Health Services (ACEHS).

This report also describes the operation of the groundwater and vapor extraction and treatment system installed by SOMA in December 1999 and July 2000, respectively.

1.1 Background

Currently, the Site is used as a gasoline service station. The environmental investigation at the subject property started in 1992, when Mr. Razi, the property

owner, retained Soil Tech Engineering, Inc. (STE) of San Jose to conduct a limited subsurface investigation. The purpose of STE's investigation was to determine whether or not the soil near the product lines and underground storage tanks (USTs) had been impacted with petroleum hydrocarbons.

In July 1993, STE removed one single-walled 10,000-gallon gasoline tank and one single-walled 6,000-gallon gasoline tank along with a 550-gallon waste oil tank from the Site. Three double-walled USTs replaced these tanks. Currently, there is one 10,000-gallon double-walled gasoline tank and two 6,000-gallon double-walled gasoline tanks beneath the Site (the locations are shown in Figure 2).

In December 1997, Mr. Razi retained Western Geo-Engineers (WEGE) to conduct additional investigations and perform groundwater monitoring on a quarterly basis. The results of the WEGE groundwater monitoring events indicated elevated levels of petroleum hydrocarbons and MtBE in the groundwater. The historical groundwater elevation data, for TPH-g, BTEX and MtBE concentrations reported by STE and WEGE are included in Tables 2 and 5 of this report.

In April 1999, Mr. Razi retained SOMA to conduct groundwater monitoring, risk based corrective action (RBCA), a corrective action plan (CAP) and soil and groundwater remediation at the Site. The results of the RBCA study indicated that the Site is a high-risk groundwater site, therefore, the soil and groundwater in on-and off-site areas needed to be remediated. The results of the CAP study indicated that the installation of a French drain combined with a vapor extraction system would be a cost effective alternative for site remediation.

In late August 1999, SOMA installed a French drain and groundwater treatment system to prevent further migration of the chemically impacted groundwater. This treatment system has been in operation since early December 1999.

In July 2000, SOMA installed a vapor extraction system based on the recommendation of the CAP document dated July 1, 1999 prepared by SOMA, followed by the approval from the Alameda County Department of Environmental Health.

The Site is located at the intersection of 36th Avenue and International Boulevard (formerly known as East 14th Street), Oakland, California. It currently houses a gasoline service station and mechanic shop. The Site is relatively flat, and the surrounding properties are primarily commercial businesses and residential housing. Figure 2 shows the location of the main building, fuel tank areas, and the on-site and off-site groundwater monitoring wells. The groundwater monitoring wells are currently monitored on a quarterly basis. Past groundwater monitoring events have indicated elevated levels of petroleum hydrocarbons in the groundwater beneath the Site. The source of the petroleum hydrocarbons in the groundwater is believed to be the former USTs, which were used to store gasoline at the Site. This report includes the results of the historical groundwater monitoring events, as well as the results of the Fourth Quarter 2001 groundwater monitoring event.

1.2 Site Hydrogeology

Previous investigations have shown that groundwater is encountered at depths of approximately 10 to 11 feet beneath the Site. Figure 2 shows the location of the on-site and off-site groundwater monitoring wells. Prior to the operation of the French drain, the groundwater was found to flow from the north to the south with an average gradient of 0.014 ft/ft. When the groundwater extraction system is in operation, the groundwater flows from all directions toward the French drain. The capture zone of the drain has extended down gradient past well MW-10.

Based on the results of a pumping test conducted by SOMA, the hydraulic

conductivity of the saturated sediments ranges from 1.5 to 18.3 feet per day. Assuming that the effective porosity of the saturated sediments is 0.35, the groundwater velocity ranges from 22 to 267 feet per year.

2.0 Field Activities

Field activities were performed in accordance with the procedures and guidelines of the California Regional Water Quality Control Board, San Francisco Bay Region.

On November 19, 2001, SOMA's field crew measured the depths to groundwater in the monitoring wells from the top of casings to the nearest 0.01 feet using an electrical sounder. The depth to groundwater and top of casing elevation data at each groundwater monitoring well were used to calculate the groundwater elevation. A total of 10 groundwater monitoring wells (on-site wells and off-site wells MW-10, MW-11, and MW-12) and three risers of the French drain were monitored during this event. Table 1 presents the groundwater elevations for the fourth quarter monitoring event. Table 2 shows the historical groundwater elevation data. Appendix A presents a detailed summary of the field notes for each groundwater monitoring well.

Prior to collecting the groundwater samples, each well was purged of at least three casing volumes of water, and field measurements of pH, temperature, and electrical conductivity (EC) were recorded. Table 3 depicts the field measurements of physical and chemical properties at the time of sampling. A 2-inch diameter submersible pump (model ES-60 DC) was used to purge each well. Groundwater samples were then collected using disposable bailers. Each groundwater sample was transferred into four 40-mL VOA vials and sealed properly to prevent the development of any air bubbles within the headspace area. The vials were placed in an ice chest and delivered on the next day to

Curtis and Tompkins Laboratories, Ltd of Berkeley, California for analysis. For field measurements, samples were transferred into 500-mL polyethylene containers.

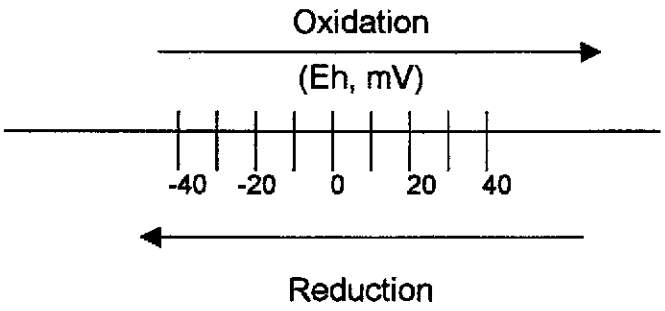
The groundwater samples that were kept in polyethylene bottles were immediately used for on-site biodegradation parameter measurements of nitrate-N (NO_3^--N), sulfate (SO_4^{-2}), and ferrous iron (Fe^{+2}). Table 4 shows the onsite measurements for these biodegradation parameters.

In order to obtain accurate measurements of other groundwater parameters and especially to avoid the intrusion of oxygen from ambient air to groundwater samples, these measurements were conducted in Situ (i.e., down-hole inside each monitoring well). The dissolved oxygen (DO) and temperature were measured with a dissolved oxygen meter, YSI Model 50B (YSI Incorporated, Yellow Springs, Ohio 45387 USA); see the field notes in Appendix A for the details of the field measurements. The instrument was calibrated at the Site according to a procedure provided by the manufacturer and prescribed by Taras *et.al.* (1975). Details of the calibration and measurement procedures can be found in the instrument's handbook. Other groundwater parameters such as pH, turbidity, EC, and Oxidation Reduction Potential were measured in Situ using Horiba, Model U-22 multi-parameter instrument. The equipment was calibrated at the Site using standard solutions and procedures provided by the manufacturer.

The Horiba U-22 portable microprocessor-based turbidity probe provides lab-grade accuracy, even in the field. The unit of measure adopted by the ISO Standard is the FTU (Formazine Turbidity Unit), which is identical to the NTU (Nephelometric Turbidity Unit). The instrument was calibrated at two points, 0 FTU and 10 FTU, using the two calibration solutions of primary standard AMCO-AEPA-1 at 0 FTU and 10 FTU that were supplied with the meter. Suspended materials cause the cloudy appearance of water or turbidity. Turbidity is one of

the most important parameters used to determine the quality of drinking water. It has been found that there is a strong correlation between the turbidity level and the Biological Oxygen Demand of the natural water bodies. Turbidity is an indicator and, as such, does not reveal the presence or quantity of specific pollutants in groundwater. It does, however, provide general information on the extent of the suspended solids in groundwater.

The Horiba U-22 ORP electrode was used to measure the Oxidation-Reduction Potential of the groundwater samples. Oxidation is a process in which a molecule or ion loses one or several electrons. Reduction is a process by which a molecule or ion gains one or several electrons. The Oxidation Reduction Potential, or Eh, is a measure of the potential for these processes to occur. The unit of Eh, which is commonly referred to as the redox potential, is the Volt or m-Volt. The most important redox reaction in petroleum contaminated groundwater is the oxidation of petroleum hydrocarbons in the presence of bacteria and free molecular oxygen. Because the solubility of O_2 in water is low (9 mg/L at 25 °C and 11 mg/L at 5 °C), and because the rate of O_2 replenishment in subsurface environments is limited, oxidation of only a small amount of petroleum hydrocarbons can result in the consumption of all the dissolved oxygen. When all the dissolved O_2 in groundwater is consumed, oxidation of petroleum hydrocarbons can still occur, but the oxidizing agents (i.e., the constituents that undergo reduction) are NO^-_3, MnO_2, $Fe(OH)_3$, SO_4^{2-} and others (Freeze and Cherry, 1979). As these oxidizing agents are consumed, the groundwater environment becomes more and more reduced. If the process proceeds far enough, the environment may become very strongly reduced, and the petroleum hydrocarbons may undergo anaerobic degradation, possibly resulting in the production of methane gas and carbon dioxide. The concept of oxidation and reduction in terms of changes in oxidation states is illustrated below:



Fe^{+2}, NO^{-}_{3}-N and SO_4^{-2} were measured colorimetrically using the Hach Model DR/850 colorimeter (Hach Company World Headquarters, P.O. Box 389, Loveland, Colorado 80539-0389). The Hach DR/800 Series Colorimeter is a microprocessor-controlled photometer suitable for colorimetric testing in the laboratory or the field. The required reagents for each specific test are provided in AccuVac ampuls.

Fe^{+2} was measured colorimetrically using Method 8146 (1,10-phenanthroline Method). The 1,10-phenathroline indicator in Ferrous Iron Reagent reacts with Fe^{+2} in the sample to form an orange color. The intensity of orange color is proportional to the iron concentration.

SO_4^{-2} was measured colorimetrically using Method 8051 of Sulfa Ver 4 Method. Sulfate ions in the sample react with Sulfa Ver 4 Sulfate Reagent to form insoluble barium sulfate. The amount of turbidity formed is proportional to the sulfate concentration. The Sulfa Ver 4 also contains a stabilizing agent to hold the barium sulfate in suspension.

NO^{-}_{3}-N was measured colorimetrically using Method 8039: the Cadmium Reduction Method. Cadmium metal in the Nitra Ver 5 Nitrate Reagent reduces nitrates present in the sample to nitrite; the nitrite ion reacts in an acidic medium with sulfanilic acid to form an intermediate diazonium salt, which couples with getistic acid to form an amber-colored product. The intensity of the color is proportional to nitrate-N concentration in the sample.

2.1 Laboratory Analysis

Curtis and Tompkins Laboratories of Berkeley analyzed the groundwater samples. The measured constituents included TPH-g, BTEX and MtBE.

TPH-g was measured using EPA Method 5030B/8015B(M). EPA Method 8260B was used to measure BTEX and MtBE levels in the groundwater. The results of the laboratory analysis are presented in Table 5 and discussed below.

3.0 Results

Table 1 presents the measured groundwater elevations at different groundwater monitoring wells and the risers of the French drain. At each location, depth to watertable and the elevation of the top of casing were used to calculate the watertable elevation relative to the assumed datum. Depths to the watertable in the monitoring wells and the risers of the French drain ranged from 12.06 feet below ground surface (bgs) in MW-10 to 17.82 feet bgs measured at the center of the French drain. The corresponding watertable elevations ranged from 79.28 feet at the center of the French drain to 85.32 feet at MW-5. Monitoring well MW-6 was not measured. The well was not accessible. Table 1 also shows that free product was detected in monitoring wells MW-1, MW-3 and MW-8.

During the recent monitoring event, the groundwater flow was found to be in the direction towards the center of the French drain, from the north towards the south on-site, and off-site the flow was northerly. The on-site flow was consistent with the findings of the previous monitoring events that were conducted prior to the installation of the French drain. The groundwater gradient towards the French drain was 0.028 ft/ft. The groundwater elevation contour map is shown in Figure 3.

Table 2 displays the historical static water level elevations measured at the monitoring wells and the risers of the French drain. During the recent monitoring event, in comparison with the previous monitoring event, the groundwater elevation decreased by 4.52 feet in the French drain and 0.52 feet at MW-12, and increased at MW-7 by 0.19 feet. The water level elevations increased in wells MW-2, MW-4, MW-5, and MW-7. This fluctuation in water levels is attributed to the operation of the treatment system and on-set of the rainy season.

The field measurements of some physical and chemical parameters of the groundwater samples at the time of sampling are presented in detail in the field notes in Appendix A, and are summarized in Table 3. Water temperatures ranged from 17.6°C in MW-4 to 19.7°C in both MW-1 and MW-2. The variation in temperature may reflect the changes in air temperature during sampling, see the field notes in Appendix A. The pH measurements ranged from 6.55 in MW-1 to 7.36 in MW-7. EC ranged from 445 µS/cm in MW-7 to 724 µS/cm in MW-1. Monitoring wells MW-3 and MW-6 were not measured during this monitoring event. Free product was detected in MW-3, and MW-6 was inaccessible.

The groundwater biodegradation parameters for this monitoring event, as well as, previous monitoring events, are shown in Table 4. The DO concentrations in the groundwater samples ranged from 0.36 mg/L in well MW-1 to 1.1 mg/L in well MW-5. The low oxygen content may suggest the presence of anaerobic biodegradation processes in this groundwater system. All DO measurements were below the previous monitoring event, with the exception of MW-11 which was not monitored in the previous monitoring event. Figure 4 shows the concentration contour map of DO concentrations in the groundwater. The DO has been largely consumed in the vicinity of the most polluted wells, with the lowest measurement at MW-1, which is in the vicinity of the USTs. Monitoring

wells MW-3 and MW-6 were not measured for biodegradation parameters.

The turbidity of the groundwater samples ranged from 3 NTU in MW-10 to 105 NTU in MW-2. Turbidity for all of the measured wells was below the previous monitoring event with the exception of MW-2. However, turbidity in MW-2 was below the historical peak.

The Redox potential in the groundwater samples ranged from –142 mV in well MW-8 to +45 mV in well MW-10. Monitoring wells MW-1, MW-4, MW-5, MW-7, MW-8, MW-11, and MW-12 showed strongly reduced conditions, while monitoring wells MW-2 and MW-10 showed strongly oxidized conditions. The low oxygen levels in wells MW-2 and MW-10, in combination with the positive redox potentials, suggest the presence of weak aerobic oxidation of the petroleum hydrocarbons in these wells. However, the other monitoring wells impacted by petroleum show strongly reduced conditions. In these oxygen-depleted environments, anaerobic processes utilizing alternate electron acceptors for oxidation of petroleum hydrocarbons may be responsible for the reduced conditions. Possible alternate electron acceptors include nitrate, iron (III) and sulfate (Lovley *et. al.*, 1994). Under strongly reduced conditions and a lack of other terminal electron acceptors, the occurrence of methanogenesis and production of methane gas is highly possible.

During this monitoring event, nitrate was detected in wells MW-1, MW-5, MW-10, and MW-11. As discussed earlier, the concentrations of DO in all wells were quite low, and because the replenishment of oxygen in subsurface environments is limited, oxidation of only a small amount of petroleum hydrocarbons depletes the oxygen. Under this condition, oxidation of petroleum hydrocarbons can still occur, but the oxidizing agents (i.e., constituents that undergo reduction) are NO^-_3, MnO_2, $Fe(OH)_3$, SO_4^{2-} and others (Lovley *et. al.*, 1994). The disappearance of nitrate in many of the wells may suggest that, under the observed anaerobic

conditions, nitrate may have been consumed as a source of terminal electron acceptors by microorganisms (Lovley *et. al.*, 1994). Figure 5 shows the contour map of nitrate concentrations in the groundwater.

Sulfate concentrations were detected in all wells monitored, ranging from 1 mg/L in well MW-8 to 41 mg/L in well MW-1. Sulfate-depleted subsurface contaminated environments may reveal a strong demand by microorganisms for a source of terminal electron acceptor for oxidizing contaminant hydrocarbons (Lovley *et. al.*, 1994). Figure 6 shows the groundwater sulfate concentration contour map, as measured on November 19, 2001.

Ferrous iron concentrations were detected in all the wells monitored. The concentrations ranged from 0.99 mg/L in MW-10 to >3.3 mg/L in well MW-8. High concentrations of ferrous iron in the groundwater is a good indication of biological activities. Figure 7 shows the groundwater ferrous iron concentration contour map, as measured on November 19, 2001. The presence of high ferrous iron concentrations in combination with low concentrations of electron receptors, such as nitrogen, sulfate and DO, is indicative of anaerobic biodegradation beneath the Site. Due to the presence of low levels of DO, as well as nutrients such as nitrates and sulfate, the generation of methane gas from the biodegradation of petroleum hydrocarbons seems likely.

Table 5 displays the results of the laboratory analyses of the groundwater samples. TPH-g was detected in every sample, with concentrations ranging from 300 µg/L in monitoring well MW-11 to 41,000 µg/L in monitoring well MW-1. Figure 8 displays the contour map of TPH-g in the groundwater.

Benzene concentrations ranged from 7.9 µg/L in monitoring well MW-11 to 2,700 µg/L in MW-1. Figure 9 displays the contour map of Benzene in the groundwater.

MtBE concentrations ranged from non-detectable levels in monitoring wells MW-4 and MW-11 to 74,000 µg/L in well MW-1. Presence of high levels of MtBE in MW-1 was unprecedented, since the previous maximum reported MtBE concentration at this well was about 2,000 µg/L, which was reported during the previous sampling event. High levels of MtBE in MW-1, located in close proximity of the current USTs, could be attributed to a new fuel release. Figure 10 displays the contour map of MtBE in the groundwater.

Table 6 presents the historical data of groundwater contamination. Nearly all contaminant concentrations have increased since last quarter. During this event, compared with the previous event, benzene concentrations increased in all wells sampled, with the exception of MW-11 which was not sampled in the previous event. MtBE concentrations increased in all wells, with the exception of MW-4 and MW-11 which were non-detectable and MW-12 which decreased from 142 µg/L in the previous event to 120 µg/L. MtBE in MW-1 reached a historical peak during this sampling event. TPH-g concentrations increased in all of the wells this quarter. MW-1 showed the greatest increase in TPH-g concentration since the previous sampling event.

4.0 Groundwater Treatment System Operation

The treatment system began operation on December 9, 1999. Since that time, 1,311,340 gallons of groundwater have been treated and discharged to the East Bay Municipal Utility District (EBMUD) under the existing discharge permit (as of December 12, 2001).

As required by the discharge permit and the ACEHS, sampling of the groundwater treatment system has been performed on a routine basis. The effluent sampling and maintenance of the system was performed on a weekly basis from the start of the system's operation to the end of July 2000. From August 2000 onward, maintenance of the system continued weekly, but sampling

was performed on a monthly basis. The result of the first effluent testing was used to acquire a discharge permit from EBMUD.

Table 7 presents the total volume and chemical composition of the Granulated Active Carbon (GAC)-1 and effluent treated at the Site. Table 7 shows that all of the effluent samples have maintained compliance with the permit, having concentrations below the laboratory detection limits from the effluent. The laboratory's reports are included in Appendix A of this report. A total of 68,240 gallons of chemically impacted groundwater was treated since the last reporting date of August 22, 2001. As discussed in the previous monitoring reports, the effluent passing both GAC units is regularly being collected for chemical analysis. The schedule for re-furbishing the GAC units is based on the analytical results of the effluent samples. The first GAC unit was re-furbished as soon as traces of chemicals broke through the unit. A carbon change-out was performed on the first GAC unit on November 26, 2001 (2,000 pounds of carbon were replaced). The second GAC unit is serving as a polishing unit and is always kept highly active. This procedure ensures that the effluent discharging to EBMUD has non-detectable levels of contaminants.

Figure 11 displays the cumulative weight of TPH-g and MtBE extracted from the subsurface by the groundwater treatment system. As Figure 11 shows, a total of approximately 112.63 pounds of TPH-g and 21.94 pounds of MtBE have been removed during the operation of the treatment system, over its entire life to date. The total mass of MtBE removed increased greatly during this monitoring event.

5.0 Vapor Extraction System Operation

The Vapor Extraction System (VES) consists of 6 vapor extraction wells, a de-moisturizing unit, a blower and four drums of GAC filters. The VES began operation on July 24, 2000. Since then, more than 3,000,000 liters/day of soil gas has been extracted from the vadose zone and treated with the GAC filters before

being discharged into the atmosphere. When the system first began to operate, the influent had a concentration of 394 ppmv petroleum hydrocarbons, but this gradually dropped, and after 31 days of operation decreased to 68 ppmv. On January 4, 2001, due to an entire month of extremely low influent concentrations (i.e., less than 10 ppm of hydrocarbons), the soil vapor extraction (SVE) system was turned off.

On October 23, 2001, the system was checked using Photo Ionization Detector (PID) equipment, the effluent concentration was detected above the permissible concentration of 10 ppm, the system was turned off and on October 25, 2001, one of the four GACs was replaced with a new one, and on October 29, 2001 three of the remaining GAC units were replaced. The system was under continuous operation and extracted 87 cubic feet per minute (CFM) of contaminated air from the vadose zone until the system was turned off on November 21, 2001. Based on the statistics that are presented in Table 8, the VES has removed 381.13 pounds of petroleum hydrocarbons from the vadose zone beneath the Site since it was installed.

6.0 Conclusions and Recommendations

The findings of the Fourth Quarter 2001 groundwater monitoring event can be summarized as follows:

1. Groundwater flow direction was found to be in the direction towards the French Drain, at a gradient of 0.028 ft/ft.

2. In comparison with the previous monitoring event, the water level elevations decreased in all wells, with the exception of MW-2, MW-4, MW-5, and MW-7, which showed slight increases in elevations. This result is attributable to the on-set of the rainy season and the operation of the

treatment system.

3. Benzene was detected in all wells with a peak concentration of 2,700 µg/L in MW-1.

4. MtBE concentrations were below the detection limit of 2.0 µg/L in MW-4 and MW-11, and peaked at 74,000 µg/L in well MW-1. Subsequent sampling results indicated significant concentrations of petroleum hydrocarbons and constituents at this well. MtBE reached a historical peak during this monitoring event. This could be the result of a new fuel release in the vicinity of MW-1.

5. TPH-g was detected in every monitoring well, with concentrations ranging up to 41,000 µg/L in monitoring well MW-1. TPH-g concentrations increased in all wells since the previous monitoring event.

6. Under the observed low levels of DO and nutrients such as nitrates and sulfate, in some of the wells, generation of methane gas from the biodegradation of petroleum hydrocarbon in on-site areas seems likely to occur. However, sulfate concentrations increased in MW-1, MW-4, MW-7, MW-10, MW-11, and MW-12 from the previous monitoring event. Nitrate concentrations increased in MW-1, MW-5, MW-10, and MW-11.

7. So far, more than 1,311,340 gallons of groundwater have been treated and discharged to the East Bay Municipal Utility District (EBMUD) under the existing discharge permit (as of December 12, 2001).

8. All effluent samples have maintained compliance with the permit, with all contaminant concentrations remaining below the laboratory detection limit.

9. An estimated total of 112.63 pounds of TPH-g and 21.94 pounds of MtBE have been removed since the installation of the groundwater treatment system. Between the sampling periods of November 2 and December 12, 2001, 15.51 pounds of MtBE were treated. This could be attributed to a new fuel release.

10. The Vapor Extraction System has removed over 381.13 pounds of petroleum hydrocarbons from the vadose zone beneath the Site since it was installed, as of November 21, 2001. The system was shut-down on November 21, 2001

7.0 Report Limitations

This report is the summary of work done by SOMA including observations and descriptions of the Site conditions. It includes the analytical results produced by Curtis and Tompkins Laboratories as well as summaries of data produced by previous environmental consultants. The number and location of the wells were selected to provide the required information, but may not be completely representative of the entire Site 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.

8.0 References

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TABLES

Table 1

Groundwater Elevation Data, November 19, 2001

3609 International Boulevard, Oakland, California

Monitoring Well	Depth to Water (ft.)	Top of Casing Elevation (ft.)	Groundwater Elevation (ft.)	Free Product
MW-1	14.01	97.99	83.98	D
MW-2	13.43	98.58	85.15	ND
MW-3	14.32	97.78	83.46	D
MW-4	13.68	97.85	84.17	ND
MW-5	13.72	99.04	85.32	ND
MW-6	NA	98.77	-	ND
MW-7	12.83	97.83	85.00	ND
MW-8	13.19	97.25	84.06	D
MW-10	12.06	94.54	82.48	ND
MW-11	13.48	95.94	82.46	ND
MW-12	12.76	94.84	82.08	ND
F.D. Center	17.82	97.10	79.28	ND
F.D. East	13.92	97.90	83.98	ND
F.D. West	14.31	96.90	82.59	ND

note:
ND (not detected in monitoring well)
D (detected in monitoring well)

Table 2
Historical Groundwater Elevation Data
3609 International Boulevard, Oakland, California

Date	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-10	MW-11	MW-12	French Drain
Nov-01	**83.98**	**85.15**	**83.46**	**84.17**	**85.32**	-	**85.00**	**84.06**	**82.48**	**82.46**	**82.08**	**79.28**
Aug-01	84.48	85.05	83.68	84.05	85.25	-	84.81	84.28	82.90	82.90	82.60	83.80
May-01	86.49	87.58	85.97	86.35	87.92	86.95	87.23	86.10	84.74	84.79	84.32	81.25
Mar-01	89.03	90.03	88.35	88.61	90.37	89.28	89.79	88.50	86.47	86.33	85.80	87.71
Nov-00	84.79	85.98	84.38	84.80	85.49	85.37	85.88	84.70	83.19	83.39	82.79	80.25
Aug-00	84.63	85.55	84.05	84.5	85.82	84.99	85.2	84.38	83.02	81.07	82.77	81.4
May-00	86.50	87.70	86.10	86.39	88.01	87.07	87.31	86.10	85.09	82.14	84.36	81.50
Feb-00	86.79	88.73	86.83	86.60	89.19	87.82	88.33	86.40	85.29	82.34	84.64	81.70
Nov-99	83.54	84.48	83.08	83.75	84.74	84.02	84.58	83.60	82.04	82.09	81.64	-
Aug.99	84.64	85.08	83.93	84.65	85.49	84.87	85.03	84.50	82.94	83.19	-	-
Jun.99	86.89	87.34	85.98	86.55	87.54	86.87	87.13	86.45	84.59	84.44	-	-
Mar.99	88.08	90.98	89.34	89.39	91.31	90.37	90.83	89.67	87.24	87.13	-	-
Dec.98	86.89	87.64	86.23	86.72	87.84	87.17	87.31	86.50	84.35	84.36	-	-
Sep.98	84.41	85.00	83.10	84.21	85.22	84.67	84.74	84.23	82.61	82.70	-	-
Dec.97	88.69	89.54	-	88.42	89.89	89.47	89.18	88.30	85.76	85.54	-	-
Apr.97	86.85	87.18	86.05	86.62	87.69	87.01	84.88	84.30	84.47	84.47	-	-
Dec.96	86.32	86.91	85.76	86.27	87.56	86.73	86.86	86.12	84.10	83.95	-	-
Apr.96	89.70	90.45	89.02	89.50	90.80	90.01	90.08	89.27	-	-	-	-
Jan.96	87.92	88.65	87.23	87.74	89.01	88.22	88.26	87.46	-	-	-	-
Oct.95	84.70	85.16	84.87	-	85.47	84.83	84.88	84.39	-	-	-	-
Jun.95	88.46	88.99	87.53	-	-	-	-	-	-	-	-	-
Mar.95	89.92	90.90	89.09	-	-	-	-	-	-	-	-	-
Dec.94	88.67	89.98	87.99	-	-	-	-	-	-	-	-	-
Oct.94	82.60	83.22	81.99	-	-	-	-	-	-	-	-	-

Table 3
Field Measurements of Physical and Chemical Properties at Time of Sampling, November 19, 2001
3609 International Blvd., Oakland, CA

Monitoring Well	pH	Temp (°C)	E.C. (uS/cm)
MW-1	6.55	19.7	724
MW-2	7.27	19.7	487
MW-3*	NA	NA	NA
MW-4	6.92	17.6	529
MW-5	7.23	18.9	524
MW-6**	NA	NA	NA
MW-7	7.36	18.8	445
MW-8	6.95	18.5	569
MW-10	7.2	19.5	599
MW-11	7.12	18	530
MW-12	7.24	18.2	606

notes:
* MW-3 was not sampled due to presence of free product
** MW-6 was not sampled due to inaccessibility, station obstacles

Table 4
Groundwater Biodegradation Parameters
3609 International Boulevard, Oakland, California

Well	Date	Nitrate (mg/L)	Sulfate (mg/L)	Ferrous Iron (mg/L)	Dissolved Oxygen (mg/L)	Redox Potential (mV)	Turbidity (NTU)
MW-1	**11/19/01**	**0.6**	**41**	**1.89**	**0.36**	**-54**	**17**
	8/8/01	0.0	23	2.18	1.71	-35	200
	5/22/01	0.0	21	0.34	1.36	32.5	40.9
	3/13/01	4.4	80	0.50	0.53	-4.70	66
	11/2/00	0.0	33	1.14	0.56	-39.40	18
	8/9/00	0.0	0	1.70	0.32	-40	219
	5/31/00	2.8	0	0.57	0.30	-37	30
	2/7/00	0.0	1	3.30	0.77	-74	-
	11/9/99	0.0	26	5.10	0.20	-	-
	8/23/99	0.0	8	2.67	1.40	-	-
	6/10/99	0	1	3.17	0.14	-	-
	12/30/97	<0.1	<1	3.04	0.50	-	-
MW-2	**11/19/01**	**0.0**	**33**	**1.18**	**0.78**	**13**	**105**
	8/8/01	7.4	51	0.09	2.03	160	0
	5/22/01	0.0	25	0.71	0.80	274	160
	3/13/01	6.8	80	0.10	0.89	117.9	24.15
	11/2/00	0.0	7.9	0.69	1.35	111	ND
	8/9/00	5.4	0	0.72	0.76	-74	1000
	5/31/00	2.5	54	0.18	0.80	-55	30.9
	2/7/00	6.2	55	0.15	1.12	-20	-
	11/9/99	0.9	55	1.00	0.80	-	-
	8/23/99	1.0	60	0.62	0.70	-	-
	6/10/99	0.7	40	0.55	0.44	-	-
	6/30/98	<0.1	14	0.50	3.20	-	-
	12/30/97	<0.1	<1	3.35	<0.1	-	-
MW-3	**11/19/2001***	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**
	8/8/01	0.7	11	7.00	1.17	-54	28
	5/22/01	0.2	16	6.72	0.08	-32	98
	3/13/01	0	0	2.66	0.62	-60	26.91
	11/2/00	0	28	4.10	0.83	-94	4,816
	8/9/00	0	0	6.10	0.40	-72	123
	5/31/00	0	4	7.80	0.45	-117	188
	2/7/00	0	140	3.60	0.70	-82	-
	11/9/99	0	0	3.50	0.61	-	-
	8/23/99	0	0	3.90	0.80	-	-
	6/10/99	0	0	3.10	0.42	-	-
	6/30/98	0.10	77	0.37	2.00	-	-

Table 4
Groundwater Biodegradation Parameters
3609 International Boulevard, Oakland, California

Well	Date	Nitrate (mg/L)	Sulfate (mg/L)	Ferrous Iron (mg/L)	Dissolved Oxygen (mg/L)	Redox Potential (mV)	Turbidity (NTU)
MW-4	**11/19/01**	**0.00**	**37**	**3.20**	**0.56**	**-108**	**58.7**
	8/8/01	6.00	30	0.09	1.54	320	320
	5/22/01	0.10	31	0.47	1.27	193.9	50
	3/13/01	3.20	48	0.51	0.72	9.4	190
	11/2/00	4.50	45	0.00	0.60	-39	ND
	8/9/00	1.00	14	0.32	0.46	-50	83
	5/31/00	0.50	40	0.25	0.50	-40	26.8
	2/7/00	0.00	1	1.56	1.30	-31	-
	11/9/99	0.50	23	0.99	0.12	-	-
	8/23/99	0.50	28	0.67	0.15	-	-
	6/10/99	0.40	10	0.81	0.15	-	-
	6/30/98	0.90	7	0.93	1.30	-	-
	12/30/97	4.50	42	0.39	<0.1	-	-
MW-5	**11/19/01**	**3.50**	**27**	**1.05**	**1.10**	**-33**	**8.5**
	8/8/01	0.20	37	0.73	1.35	103	300
	5/22/01	14.80	13	1.10	1.20	167	593
	3/13/01	1.00	45	0.33	1.01	34.2	35.36
	11/2/00	6.50	31	1.02	0.56	49	ND
	8/9/00	0.00	26	0.00	1.97	80	490
	5/31/00	0.00	50	0.35	0.48	-25	27.2
	2/7/00	0.00	47	0.64	0.90	18	-
	11/9/99	2.00	32	0.72	0.27	-	-
	8/23/99	2.40	45	1.19	0.75	-	-
	6/10/99	2.50	33	0.34	0.25	-	-
	6/30/98	1.60	6	0.50	0.60	-	-
	12/30/97	0.30	18	0.94	<0.1	-	-
MW-6	**11/19/2001****	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**
	8/8/01	NA	NA	NA	NA	NA	NA
	5/22/01	0.00	17	1.30	0.12	-9.5	413
	3/13/01	1.30	79	2.63	0.75	-42.1	83
	11/2/00	0.00	16	2.65	0.80	-34.0	618
	8/9/00	2.50	0	4.10	0.65	-33.0	1000
	5/31/00	0.00	0	3.27	0.72	-62.0	111
	2/7/00	0.00	0	3.02	1.25	-51.0	-
	11/9/99	0.00	0	7.00	0.22	-	-
	8/23/99	0.00	9	3.30	0.55	-	-
	6/10/99	0.00	23	2.52	0.61	-	-
	6/30/98	0.70	4	0.40	2.50	-	-
	12/30/97	<0.1	5	0.30	<0.1	-	-

Table 4
Groundwater Biodegradation Parameters
3609 International Boulevard, Oakland, California

Well	Date	Nitrate (mg/L)	Sulfate (mg/L)	Ferrous Iron (mg/L)	Dissolved Oxygen (mg/L)	Redox Potential (mV)	Turbidity (NTU)
MW-7	**11/19/01**	**0.00**	**21**	**1.14**	**0.98**	**-14.0**	**8.9**
	8/8/01	0.00	13	0.51	1.62	-18.0	140
	5/22/01	0.00	12	0.79	1.71	56.0	49.8
	3/13/01	0.00	40	3.30	0.79	-10.4	110
	11/2/00	3.50	30	0.27	0.58	-11.6	ND
	8/9/00	0.00	17	0.95	0.26	-33.0	131
	5/31/00	0.00	28	0.72	0.30	-52.0	34.9
	2/7/00	0.00	41	0.53	0.91	-19.0	-
	11/9/99	0.00	25	0.99	0.14	-	-
	8/23/99	0.00	20	1.40	0.65	-	-
	6/10/99	0.00	22	0.19	0.15	-	-
	6/30/98	0.50	4	0.78	1.00	-	-
	12/30/97	0.20	32	0.23	1.20	-	-
MW-8	**11/19/01**	**0.00**	**1**	**>3.3**	**0.46**	**-142**	**53.5**
	8/8/01	0.80	25	1.50	1.24	-62	990
	5/22/01	0.00	5	3.30	1.16	-8.8	179
	3/13/01	2.10	12	3.30	0.48	-76	110
	11/2/00	-	16	7.33	-	-104.9	350
	8/9/00	0.00	7	3.30	0.50	-91	94
	5/31/00	0.00	0	3.30	0.45	-95	13
	2/7/00	0.00	0	3.46	0.65	-90	-
	11/9/99	0.00	0	8.90	0.38	-	-
	8/23/99	0.00	13	8.20	0.20	-	-
	6/10/99	0.00	0	4.70	0.10	-	-
	6/30/98	<0.1	3	2.82	1.30	-	-
	12/30/97	0.10	<1	3.35	2.50	-	-
MW-10	**11/19/01**	**2.7**	**12**	**0.99**	**0.89**	**45**	**3**
	8/8/01	0.0	11	0.00	1.56	52	19.6
	5/22/01	1.7	13	0.10	1.76	105	19.56
	3/13/01	0.0	0	0.23	0.65	28	32.11
	11/2/00	1.3	13	0.42	0.53	26.7	ND
	8/9/00	0.0	0	0.40	0.45	19	116
	5/31/00	0.0	0	0.29	0.40	17	22.4
	2/7/00	0.0	0	0.00	0.82	55	-
	11/9/99	0.0	12	0.37	0.44	-	-
	8/23/99	0.0	9	0.52	0.50	-	-
	6/10/99	0.0	0	0.25	0.20	-	-
	6/30/98	<0.1	<1	0.38	0.90	-	-
	12/30/97	0.3	<1	2.21	<0.1	-	-

Table 4
Groundwater Biodegradation Parameters
3609 International Boulevard, Oakland, California

Well	Date	Nitrate (mg/L)	Sulfate (mg/L)	Ferrous Iron (mg/L)	Dissolved Oxygen (mg/L)	Redox Potential (mV)	Turbidity (NTU)
MW-11	**11/19/01**	**1.0**	**30**	**2.30**	**0.72**	**-18**	**8.4**
	8/8/01	NA	NA	NA	NA	NA	NA
	5/22/01	0.0	20	0.53	2.13	40.5	32.3
	3/13/01	0.0	78	0.34	0.79	114.7	111
	11/2/00	1.5	21	0.44	0.60	17	ND
	8/9/00	1.5	0	0.80	0.48	10	42
	5/31/00	5.2	10	0.69	0.50	-15	12
	2/7/00	0.0	24	0.75	1.10	-14	-
	11/9/99	0.0	21	0.06	0.22	-	-
	8/23/99	0.0	52	0.92	0.60	-	-
	6/10/99	0.0	0	0.28	0.19	-	-
	6/30/98	1.2	6	0.15	2.20	-	-
	12/30/97	3.5	35	0.32	<0.1	-	-
MW-12	**11/19/01**	**0.0**	**2**	**2.29**	**0.92**	**-72**	**20**
	8/8/01	0.0	0	2.46	1.66	3	72
	5/22/01	1.9	0	2.38	1.76	-18.9	6.28
	3/13/01	0.0	0	1.44	0.64	-5.6	8.42
	11/2/00	0.0	6	1.93	0.60	12	19
	8/9/00	0.0	0	2.84	0.31	-48	56
	5/31/00	0.0	0	2.11	0.29	-54	7.7
	2/7/00	0.0	0	1.53	0.62	-42	-
	11/9/99	3.1	9	2.21	0.34	-	-

notes:
(*): MW-3 not analyzed on November 19, due to free product
(**): MW-6 not analyzed on November 19, 2001, well was inaccessible due to property obstacles

Table 5
Groundwater Analytical Data, November 19, 2001
3609 International Boulevard, Oakland, California

Monitoring Well	Benzene (µg/L)	Toluene (µg/L)	Ethyl-Benzene (µg/L)	Total Xylenes (µg/L)	MtBE* (µg/L)	TPH-g (µg/L)
MW-1 [1,3]	2,700	5,100	1,000	4,570	74,000	41,000
MW-2	13	64	22	83	14	470
MW-3	NS	NS	NS	NS	NS	NS
MW-4	180	5.3	17	53.2	ND	670
MW-5	17	160	26	135	40	920
MW-6	NS	NS	NS	NS	NS	NS
MW-7 [4]	24	220	41	205	69	1,700
MW-8 [2,5]	600	270	750	1,200	400	13,000
MW-10 [5]	900	260	310	258	410	3,500
MW-11	7.9	26	5.1	28.9	ND	300
MW-12	81	69	13	73	120	3,000
DL	0.5	0.5	0.5	0.5	2.0	50

NS Not Sampled
DL Minimum laboratory detection limit
ND Not Detected (i.e., below DL)
* MTBE analyzed with EPA Method 8260
1: dilution factor for TPH-g for MW-1 was 40, which increased detection limit to 2,000
2: dilution factor for TPH-g for MW-8 was 5, which increased detection limit to 250
3: dilution factor for BTEX, MtBE for MW-1 was 625, which increased detection limit to 310
4: dilution factor for BTEX, MtBE for MW-7 was 2, which increased detection limit to 1
5: dilution factor for BTEX, MtBE for MW-8 and MW-10 was 6.250, which increased detection limit to 3.1

Table 6
Historical Groundwater Analytical Data
3609 International Boulevard, Oakland, California

Well	Date	Benzene (µg/L)	Toluene (µg/L)	Ethyl-Benzene (µg/L)	Xylenes (µg/L)	MtBE (µg/L)	TPH-g (µg/L)
MW-1	11/19/01	2,700	5,100	1,000	4,570	74,000	41,000
	8/8/01	852	342	568	1,606	2,000	14,820
	5/22/01	310	81	82	388	150	4,900
	3/13/01	1,005	440	108	2,030	16	14,570
	11/2/00	435	52	ND	689	10	7,050
	8/9/00	638	<5	<5	<5	17.1	11,000
	5/31/00	610	350	310	1,400	<5	15,610
	2/7/00	2,280	1,380	8	6,130	47	40,000
	11/9/99	693	15	<5	3,471	50	10,000
	8/23/99	678	463	893	2,938	38	19,750
	6/10/99	1,110	1,460	1,330	5,265	77	25,000
	3/16/99	480	860	850	3,000	190	17,000
	12/16/98	2,500	2,400	2,300	9,500	160	65,000
	12/30/97	2,300	2,100	1,400	5,100	NA	27,000
	4/10/97	NA	NA	NA	NA	NA	NA
	12/9/96	NA	NA	NA	NA	NA	NA
	4/3/96	98	120	63	170	NA	31,000
	1/3/96	71	73	50	120	NA	30,000
	10/2/95	140	130	140	390	NA	59,000
	6/5/95	950	650	570	150	NA	21,000
	3/6/95	190	160	150	490	NA	32,000
	12/2/94	3,800	6,600	2,300	11,000	NA	80,000
	10/5/94	24,000	21,000	2,600	15,000	NA	320,000

Table 6
Historical Groundwater Analytical Data
3609 International Boulevard, Oakland, California

Well	Date	Benzene (µg/L)	Toluene (µg/L)	Ethyl-Benzene (µg/L)	Xylenes (µg/L)	MtBE (µg/L)	TPH-g (µg/L)
MW-2	11/19/01	13	64	22	83	14	470
	8/8/01	4	4	3	11	ND	125
	5/22/01	37	75	55	179	2.7	870
	3/13/01	18	34	1.3	225	ND	932
	11/2/00	ND	ND	ND	ND	ND	ND
	8/9/00	<5	<5	<5	<5	<5	<50
	5/31/00	130	330	130	570	<5	2,930
	2/7/00	372	639	46	134	8	6,400
	11/9/99	<5	<5	<5	<5	<5	<50
	8/23/99	6	9	4	11	ND	60
	6/10/99	290	428	211	744	ND	3,500
	3/16/99	730	830	610	1,900	55	7,600
	12/16/98	1,400	1,600	880	9,500	<5	26,000
	9/29/98	290	180	160	360	<0.5	29,000
	6/30/98	2,000	2,000	1,300	4,300	NA	25,000
	12/30/97	4,900	4,900	1,600	7,000	NA	35,000
	4/10/97	150	110	37	0	ND	53,000
	12/9/96	11	7	2	14	ND	6,200
	4/3/96	0	92	44	13	NA	27,000
	1/3/96	160	130	93	240	NA	46,000
	10/2/95	160	130	93	240	NA	46,000
	6/5/95	220	330	350	660	NA	8,000
	3/6/95	3	3	3	1	NA	490
	12/2/94	1,700	2,200	1,200	3,600	NA	42,000
MW-3	11/19/01	NA	NA	NA	NA	NA	NA
	8/8/01	3,485	2,670	1,255	5,420	52	41,750
	5/22/01	5,400	3,100	1,400	6,400	200	44,000
	3/13/01	2,250	140	ND	1,284	110	14,754
	11/2/00	6,789	4,816	676	7,258	83	48,000
	8/9/00	8,900	5,636	883	7,356	176	76,000
	5/31/00	15,000	8,900	1,500	7,400	<5	68,000
	2/7/00	6,090	3,360	<5	5,780	276	44,000
	11/9/99	3,218	1,319	<5	6,697	126	26,000
	8/23/99	7,484	8,052	1,744	9,749	141	64,000
	6/10/99	8,245	6,425	1,015	7,173	274	46,000
	3/16/99	4,100	6,400	1,000	6,100	470	45,000
	12/16/98	5,700	3,900	1,200	6,300	410	51,000
	1/3/96	510	410	210	650	NA	150,000
	10/2/95	510	410	210	65	NA	150,000
	6/5/95	20,000	42,000	5,800	36,000	NA	350,000
	3/6/95	20,000	42,000	5,800	36,000	NA	350,000
	12/2/94	19,000	22,000	4,400	28,000	NA	250,000
	10/5/94	190,000	740,000	310,000	130,000	NA	3,000,000

Table 6
Historical Groundwater Analytical Data
3609 International Boulevard, Oakland, California

Well	Date	Benzene (µg/L)	Toluene (µg/L)	Ethyl-Benzene (µg/L)	Xylenes (µg/L)	MtBE (µg/L)	TPH-g (µg/L)
MW-4	11/19/01	180	5	17	53	ND	670
	8/8/01	12	2.2	3.9	9	ND	133
	5/22/01	12	1.9	4.1	9.8	ND	80
	3/13/01	ND	ND	3.2	8.7	ND	62
	11/2/00	5.30	ND	ND	8	ND	ND
	8/9/00	5.08	<5	<5	<5	<5	370
	5/31/00	42	19	16	67	<5	552
	2/7/00	1,200	61	<5	781	<5	7,800
	11/9/99	<5	<5	<5	<5	<5	<50
	8/23/99	497	41	54	145	6	660
	6/10/99	298	44	19	64	13	1,000
	3/16/99	200	35	19	56	11	600
	12/16/98	590	33	28	94	24	1,400
	9/29/98	910	77	68	200	18	6,200
	6/30/98	780	160	54	200	NA	1,700
	12/30/97	410	270	100	1,500	NA	2,300
	4/10/97	ND	ND	ND	ND	ND	ND
	12/9/96	14	6	4	12	ND	4,000
	4/3/96	12	8	5	14	NA	1,900
	1/3/96	230	110	10	29	NA	9,300
	10/2/95	23	11	10	29	NA	9,300
MW-5	11/19/01	17	160	26	135	40	920
	8/8/01	1	1.1	3.4	7.3	1.4	258
	5/22/01	ND	ND	2.1	0.57	4.4	180
	3/13/01	6.1	1.9	6.6	5.9	ND	382
	11/2/00	ND	ND	ND	ND	ND	ND
	8/9/00	<5	<5	<5	<5	<5	<50
	5/31/00	7.4	24	12	32.4	<5	627.4
	2/7/00	<5	<5	<5	7	<5	70
	11/9/99	<5	<5	<5	<5	<5	<50
	8/23/99	ND	4	ND	4	ND	120
	6/10/99	4	3	6	4	ND	270
	3/16/99	3	1	16	2	10	650
	12/16/98	1	1	ND	2	ND	1,400
	9/29/98	2	1	3	3	<.5	270
	6/30/98	<5	<5	15	<10	NA	400
	12/30/97	82	66	59	160	NA	790
	4/10/97	NA	NA	NA	NA	NA	NA
	12/9/96	NA	NA	NA	NA	NA	NA
	4/3/96	1	1	5	4	NA	780
	1/3/96	1	1	4	5	NA	1,500
	10/2/95	1	1	4	5	NA	1,500

Table 6
Historical Groundwater Analytical Data
3609 International Boulevard, Oakland, California

Well	Date	Benzene (µg/L)	Toluene (µg/L)	Ethyl-Benzene (µg/L)	Xylenes (µg/L)	MtBE (µg/L)	TPH-g (µg/L)
MW-6	11/19/01	NA	NA	NA	NA	NA	NA
	8/8/01	NS	NS	NS	NS	NS	NS
	5/22/01	760	450	1,600	4,270	ND	27,000
	3/13/01	713	459	238	2,363	ND	15,637
	11/2/00	1,387	618	ND	5,250	ND	19,000
	8/9/00	1,306	870	<5	5,162	<5	24,000
	5/31/00	1,700	1,200	17	3,600	<5	21,700
	2/7/00	1,360	521	<5	4,150	6	17,000
	11/9/99	1,084	130	<5	10,940	<5	40,000
	8/23/99	3,806	3,649	1,554	7,996	10	42,000
	6/10/99	2,060	1,650	735	3,170	ND	18,500
	3/16/99	3,900	4,300	1,600	7,000	180	37,000
	1/3/96	350	310	200	610	NA	120,000
	10/2/95	350	310	200	610	NA	120,000
MW-7	11/19/01	24	220	41	205	69	1,700
	8/8/01	3.7	3	6.2	18.9	10	610
	5/22/01	ND	9.1	1.3	2.3	28	370
	3/13/01	0.97	ND	0.76	ND	78	82
	11/2/00	ND	ND	ND	ND	9.1	50
	8/9/00	<5	<5	<5	<5	11.7	80
	5/31/00	4.9	22	4.2	21.9	29	494.9
	2/7/00	<5	<5	<5	<5	23	80
	11/9/99	<5	9	<5	<5	12	290
	8/23/99	5	10	ND	ND	ND	570
	6/10/99	3	7	4	3	26	320
	3/16/99	3	1	1	1	62	300
	12/16/98	5	10	5	20	160	990
	9/29/98	1	1	1	2	68	1,800
	6/30/98	4	<5	9	<10	NA	620
	12/30/97	130	98	75	200	NA	1,400
	4/10/97	NA	NA	NA	NA	NA	NA
	12/9/96	NA	NA	NA	NA	NA	NA
	4/3/96	2	3	5	7	NA	1,900
	1/3/96	9	12	17	45	NA	3,300
	10/2/95	10	12	17	NA	3,300	NA

Table 6
Historical Groundwater Analytical Data
3609 International Boulevard, Oakland, California

Well	Date	Benzene (µg/L)	Toluene (µg/L)	Ethyl-Benzene (µg/L)	Xylenes (µg/L)	MtBE (µg/L)	TPH-g (µg/L)
MW-8	**11/19/01**	**600**	**270**	**750**	**1,200**	**400**	**13,000**
	8/8/01	153	46	373	345	174	5,620
	5/22/01	110	28	140	194	410	3,100
	3/13/01	81	16	71	270	221	2,360
	11/2/00	278	350	209	980	21	3,000
	8/9/00	632	5.38	<5	2,686	37.3	22,000
	5/31/00	940	130	1,600	3,960	75	25,940
	2/7/00	1,080	617	<5	4,160	240	44,200
	11/9/99	92	<5	<5	3,414	769	10,500
	8/23/99	5,379	2,438	3,001	6,960	639	58,000
	6/10/99	3,610	1,635	2,175	5,913	988	39,500
	3/16/99	1,800	470	2,000	2,000	820	22,000
	12/16/98	6,300	1,700	2,200	4,400	1,300	61,000
	6/30/98	4,600	2,800	3,500	7,300	NA	54,000
	12/30/97	6,000	1,600	2,100	4,700	NA	28,000
	4/10/97	86	55	50	100	ND	24,000
	12/9/96	88	43	44	80	ND	27,000
	4/3/96	250	170	140	330	NA	58,000
	1/3/96	310	250	180	460	NA	94,000
	10/2/95	310	250	180	460	NA	94,000
MW-10	11/19/01	900	260	310	258	410	3,500
	8/8/01	35	1	11	2	64	242
	5/22/01	630	11	200	31	270	2,900
	3/13/01	969	18	41	72	630	4,935
	11/2/00	ND	ND	ND	ND	145	ND
	8/9/00	1,055	26	54	53.8	1,283	6,800
	5/31/00	1,500	25	390	107.1	580	4,400
	2/7/00	<5	<5	<5	<5	448	<50
	11/9/99	1,134	20	<5	70	652	2,950
	8/23/99	2,135	97	600	248	1,800	3,250
	6/10/99	1,168	34	264	154	1,195	4,200
	3/16/99	15	28	420	250	2,800	4,100
	12/16/98	3,800	51	790	420	1,800	8,700
	9/29/98	5,400	66	970	620	2,600	9,900
	12/30/97	5,300	76	1,100	780	NA	10,000
	4/10/97	21	9	3	3	ND	1,000

Table 6
Historical Groundwater Analytical Data
3609 International Boulevard, Oakland, California

Well	Date	Benzene (µg/L)	Toluene (µg/L)	Ethyl-Benzene (µg/L)	Xylenes (µg/L)	MtBE (µg/L)	TPH-g (µg/L)
MW-11	11/19/01	7.9	26	5.1	28.9	ND	300
	8/8/01	NS	NS	NS	NS	NS	NS
	5/22/01	12	8.3	3.3	9.8	12	280
	3/13/01	8.6	2.1	10	14	ND	273
	11/2/00	ND	ND	ND	ND	ND	60
	8/9/00	10.5	5.94	<5	7.75	<5	590
	5/31/00	27	13	9.5	29.0	<5	477
	2/7/00	20	15	<5	35	<5	700
	11/9/99	<5	<5	<5	<5	<5	<50
	8/23/99	4	4	ND	6	ND	170
	6/10/99	1,240	35	290	159	1,291	4,600
	3/16/99	30	6	53	84	8	710
	12/16/98	27	4	25	33	>0.5	650
	9/29/98	7	1	4	9	22	170
	6/30/98	45	24	71	100	NA	1,100
	12/30/97	66	97	59	190	NA	710
	4/10/97	ND	ND	ND	ND	ND	ND
MW-12	11/19/01	81	69	13	73	120	3,000
	8/8/01	71	1.8	3	4	142	2,090
	5/22/01	1,200	ND	95	165	1,900	31,000
	3/13/01	13	5.6	5.5	11	214	1,517
	11/2/00	9.3	19.0	ND	7.40	215	1,010
	8/9/00	15.4	12.4	<5	<5	185	1,730
	5/31/00	230	10	34	12	200	3,930
	2/7/00	351	37	<5	24	513	4,000
	11/9/99	<5	<5	<5	<5	229	80

Table 7
Total Volume of Water Treated and GAC-1 and Effluent Chemistry
3609 International Boulevard, Oakland, California

Month	Date	Meter Reading (gallons)	Lab Results For GAC-1 and Effluent* (concentrations in µg/L) MtBE	TPH-g	Benzene	Toluene	Ethyl benzene	Total Xylenes
December	12/12/01	1,311,340	ND	ND	ND	ND	ND	ND
			ND	ND	ND	ND	ND	ND
November	11/2/01	1,272,660	ND	ND	ND	ND	ND	ND
			0.6	ND	ND	ND	ND	ND
September	9/28/01	NA	ND	ND	ND	ND	ND	ND
			ND	ND	ND	ND	ND	ND
August	8/22/01	1,243,100	ND	ND	ND	ND	ND	ND
			ND	ND	ND	ND	ND	ND
July	7/26/01	1,227,270	ND	ND	ND	ND	ND	ND
			ND	ND	ND	ND	ND	ND
	7/11/01	1,226,730	NA	NA	NA	NA	NA	NA
			NA	NA	NA	NA	NA	NA
June	6/29/01	1,224,600	NA	NA	NA	NA	NA	NA
		1,224,600	ND	ND	ND	ND	ND	ND
	6/16/01	1,216,580	NA	NA	NA	NA	NA	NA
		1,216,580	NA	NA	NA	NA	NA	NA
	6/7/01	1,216,580	NA	NA	NA	NA	NA	NA
		1,216,580	NA	NA	NA	NA	NA	NA
May	5/30/01	1,205,198	NA	NA	NA	NA	NA	NA
		1,205,198	NA	NA	NA	NA	NA	NA
	5/23/01	1,194,390	NA	NA	NA	NA	NA	NA
		1,194,390	NA	NA	NA	NA	NA	NA
	5/17/01	1,182,360	ND	ND	ND	ND	ND	ND
		1,182,360	ND	ND	ND	ND	ND	ND
	5/10/01	1,166,850	NA	NA	NA	NA	NA	NA
		1,166,850	NA	NA	NA	NA	NA	NA
	5/5/01	1,151,600	NA	NA	NA	NA	NA	NA
		1,151,600	NA	NA	NA	NA	NA	NA
April	4/28/01	1,135,690	NA	NA	NA	NA	NA	NA
		1,135,690	NA	NA	NA	NA	NA	NA
	4/21/01	1,113,570	NA	NA	NA	NA	NA	NA
		1,113,570	NA	NA	NA	NA	NA	NA
	4/11/01	1,082,700	NA	ND	ND	ND	ND	ND
		1,082,700	ND	ND	ND	ND	ND	ND
	4/6/01	1,065,540	NA	NA	NA	NA	NA	NA
		1,065,540	NA	NA	NA	NA	NA	NA

Table 7
Total Volume of Water Treated and GAC-1 and Effluent Chemistry
3609 International Boulevard, Oakland, California

Month	Date	Meter Reading (gallons)	Lab Results For GAC-1 and Effluent* (concentrations in µg/L) MtBE	TPH-g	Benzene	Toluene	Ethyl benzene	Total Xylenes
March	3/29/01	1,036,330	NA	NA	NA	NA	NA	NA
			NA	NA	NA	NA	NA	NA
	3/21/01	1,036,070	NA	NA	NA	NA	NA	NA
		1,036,070	NA	NA	NA	NA	NA	NA
	3/17/01	1,035,100	NA	NA	NA	NA	NA	NA
		1,035,100	NA	NA	NA	NA	NA	NA
	3/13/01	1,032,500	ND	ND	ND	ND	ND	ND
		1,032,500	NA	NA	NA	NA	NA	NA
	3/2/01	996,520	NA	NA	NA	NA	NA	NA
		996,520	NA	NA	NA	NA	NA	NA
February	2/10/01	975,490	System shut down for maintenance and cleaning.					
January	1/29/01	957,880	ND	ND	ND	ND	ND	ND
	1/29/01	957,880	ND	ND	ND	ND	ND	ND
December	12/5/00	883,000	ND	ND	ND	ND	ND	ND
	12/5/00	883,000	ND	ND	ND	ND	ND	ND
November	11/24/00		ND	ND	ND	ND	ND	ND
	11/24/00		ND	ND	ND	ND	ND	ND
	11/1/00	842,000	ND	ND	ND	ND	ND	ND
	11/1/00	842,000	ND	ND	ND	ND	ND	ND
October	10/1/00	809,000	ND	ND	ND	ND	ND	ND
	10/1/00	809,000	ND	ND	ND	ND	ND	ND
August	8/24/00	778,000	ND	ND	ND	ND	ND	ND
July	7/26/00	726,000	ND	ND	ND	ND	ND	ND
	7/19/00	718,000	ND	ND	ND	ND	ND	ND
	7/13/00	712,000	ND	ND	ND	ND	ND	ND
	7/7/00	706,000	ND	ND	ND	ND	ND	ND
June	06/29/00	700,000	ND	ND	ND	ND	ND	ND
	06/21/00	682,220	ND	ND	ND	ND	ND	ND
	06/16/00	669,720	ND	ND	ND	ND	ND	ND
	06/10/00	651,200	ND	ND	ND	ND	ND	ND
May	05/31/00	629,000	ND	ND	ND	ND	ND	ND
	05/23/00	603,700	ND	ND	ND	ND	ND	ND
	05/18/00	570,000	ND	ND	ND	ND	ND	ND
	05/10/00	530,400	ND	ND	ND	ND	ND	ND
April	04/30/00	488,300	ND	ND	ND	ND	ND	ND
	04/18/00	485,300	ND	ND	ND	ND	ND	0.51
	04/10/00	440,200	ND	ND	ND	ND	ND	ND
	04/04/00	390,100	ND	ND	ND	ND	ND	ND

Table 7

Total Volume of Water Treated and GAC-1 and Effluent Chemistry

3609 International Boulevard, Oakland, California

Month	Date	Meter Reading (gallons)	Lab Results For GAC-1 and Effluent* (concentrations in µg/L) MtBE	TPH-g	Benzene	Toluene	Ethyl benzene	Total Xylenes
March	03/24/00	388,000	ND	ND	ND	ND	ND	ND
	03/17/00	357,100	ND	ND	ND	ND	ND	ND
	03/10/00	329,000	ND	ND	ND	ND	ND	ND
	03/03/00	300,000						
February	02/25/00	274,000	ND	ND	ND	ND	ND	ND
	02/18/00	233,000	ND	ND	ND	ND	ND	ND
	02/11/00	190,000	ND	ND	ND	ND	ND	ND
	02/04/00	160,800	ND	ND	ND	ND	ND	ND
January	01/28/00	130,600	ND	ND	ND	ND	ND	ND
	01/21/00	103,435	ND	ND	ND	ND	ND	ND
	01/14/00	83,500	185	ND	ND	ND	ND	ND
December	12/23/99	51,680	1486	NA	ND	ND	ND	ND
	12/23/99	51,680	ND	NA	ND	ND	ND	ND
	12/16/99	30,450	963	NA	ND	ND	ND	ND
	12/16/99	30,450	ND	NA	ND	ND	ND	ND
	12/09/99	9,000	230	ND	ND	ND	ND	ND
Pumping began on December 6, 1999								

* Effluent is equivalent to GAC-2

Table 8

Total Mass of Petroleum Hydrocarbons Removed by Vapor Extraction System

3609 International Boulevard, Oakland, California

Date	Time	PID (ppmv)		Flow Rate (cfm)	Time Elapsed (Hours)	Air Flow (Liters)	Mass Removed [1] (pounds)
		Influent	Effluent				
7/24/00	5:00	394	0	85	0	0	0.00
7/25/00	5:15	38	2	95	24	3,914,096	1.01
7/26/00	5:05	207	1	80	48	3,228,121	4.52
7/27/00	9:00	160	5	92	64	2,500,944	2.71
7/28/00	4:30	141	7	87	96	4,656,139	4.44
7/29/00	1:30	225	8	85	117	3,032,734	4.62
7/30/00	9:00	226	12	85	136	2,816,110	4.31
7/31/00	3:00	141	5	85	166	4,332,478	4.13
8/1/00	5:00	135	4	80	192	3,533,942	3.23
8/2/00	4:00	80	4	80	215	3,126,180	1.69
8/3/00	5:00	60	5	85	240	3,610,398	1.47
8/4/00	3:00	57	4	85	262	3,177,150	1.23
8/5/00	2:00	97	8	87	285	3,399,721	2.23
8/6/00	12:00	114	8	80	307	2,990,259	2.31
8/7/00	12:00	93	9	85	331	3,465,982	2.18
8/8/00	4:30	152	10	85	360	4,115,854	4.23
8/10/00	10:00	173	1	85	377	2,527,279	2.96
8/11/00	7:00	78	4	70	410	3,924,715	2.07
8/12/00	9:00	100	6	70	424	1,665,031	1.13
8/13/00	5:00	107	9	70	456	3,805,784	2.75
8/14/00	12:30	122	5	70	476	2,319,150	1.91
8/15/00	6:00	103	12	70	505	3,508,457	2.44
8/16/00	12:30	112	0	70	524	2,200,219	1.67
8/18/00	9:00	90	0	75	568	5,670,449	3.45
8/21/00	12:00	74	5	80	643	10,194,065	5.10
8/24/00	12:00	68	13	80	712	9,378,540	4.31
8/27/00	12:30	68.5	2	80	785	9,854,263	4.57
8/31/00	1:30	52	6	80	882	13,184,324	4.64
9/4/00	12:30	54	5	80	977	12,912,482	4.72
9/7/00	12:00	55	3	80	1,048	9,718,342	3.62
9/11/00	4:30[2]	141	0	80	1,149	13,660,047	13.03
9/14/00	9:30	56	5	80	1,214	8,834,856	3.35
9/18/00	2:00	46	9.5	80	1,314	13,660,047	4.25
9/18/00	4:30[3]	34	0	80	1,317	339,802	0.08
9/21/00	4:30	43	1	80	1,389	9,786,302	2.85
9/25/00	5:30	55	6	80	1,486	13,184,324	4.91
9/28/00	9:00	47.5	7.5	80	1,550	8,766,896	2.82
10/1/00	1:00	38.5	6	80	1,626	10,329,986	2.69
10/5/00	3:00[4]	28.5	3	80	1,724	13,320,245	2.57
10/5/00	5:00	36	0	80	1,726	271,842	0.07
10/8/00	3:00	28.5	3	80	1,796	9,514,460	1.83
10/14/00	3:00	24.5	2.5	80	1,940	19,572,604	3.24
10/17/00	2:00	36.5	3.5	80	2,011	9,650,381	2.38
10/20/00	8:30	18.5	3.5	80	2,078	9,038,737	1.13

Table 8

Total Mass of Petroleum Hydrocarbons Removed by Vapor Extraction System

3609 International Boulevard, Oakland, California

Date	Time	PID (ppmv)		Flow Rate (cfm)	Time Elapsed (Hours)	Air Flow (Liters)	Mass Removed [1] (pounds)
		Influent	Effluent				
10/25/00	2:00	38	3.7	80	2,203	17,058,068	4.39
10/29/00	10:00	35	4	80	2,295	12,504,719	2.96
11/2/00	4:00	30.5	4	80	2,397	13,863,928	2.86
11/7/00	4:00	30	6	80	2,517	16,310,504	3.31
11/19/00	12:00	92.7	5.5	80	2,801	38,601,525	24.20
11/24/00	13:30	25	6.5	80	2,923	16,514,385	2.79
11/29/00	15:00	14.5	3.5	80	3,044	16,514,385	1.62
12/4/00	16:30	10.7	1	80	3,190	19,776,486	1.43
12/13/00	15:30	24	3	80	3,405	29,222,986	4.74
12/28/00	14:30	10	6	85	3,764	51,845,314	3.51
1/4/2001 [5]	14:00	8.7	3.7	85	3,907	20,723,684	1.22
8/8/01	15:00	217	0	85	3,907	0	0
9/6/01	12:00	85	0	85	4,048	20,362,644	11.71
9/13/01	16:00	186	8	85	4,220	24,839,538	31.26
9/18/01	15:00	184	9	85	4,344	17,907,574	22.29
9/21/2001 [6]		--	--	--	4,344	0	0
10/12/01 [7]		--	--	--	4,344	0	0
10/23/01	17:00	114	58	87	4,344	0	0
10/25/01 [4]	15:00	133	0	85	4,390	6,643,132	5.98
10/29/2001 [8]	13:20	569	0	85	4,485	13,647,304	52.53
11/7/01	15:30	177	0	87	4,679	28,675,904	34.34
11/16/01	15:00	117	0	87	4,894	31,853,904	25.21
11/21/2001 [9]	12:00	85	72	87	5,011	17,294,231	9.94
						Total Mass of Petroleum Hydrocarbons Removed =	**381.13**
						Average Daily Removal Rate (pounds / day)=	***2.32***

[1] The representative molecular weight of hydrocarbons was assumed to be 78 gram/mole and used the measured temperature of Vapor (36 °C) in converting ppm-v to ppm on mass basis.

[2] System accidentally shut down from main box, readings taken 30 minutes after startup.

[3] GAC Replaced

[4] GAC-1 removed, new GAC installed at effluent end

[5] SVE System turned off for rainy season due to low influent concentrations

[6] system down, hoses disconnected and GAC moved for replacement

[7] system down for electrical repair

[8] Carbon change-out of three drums, moved new effluent drum on 10/25/01 to GAC-1

[9] system shut-down due to high effluent value

FIGURES

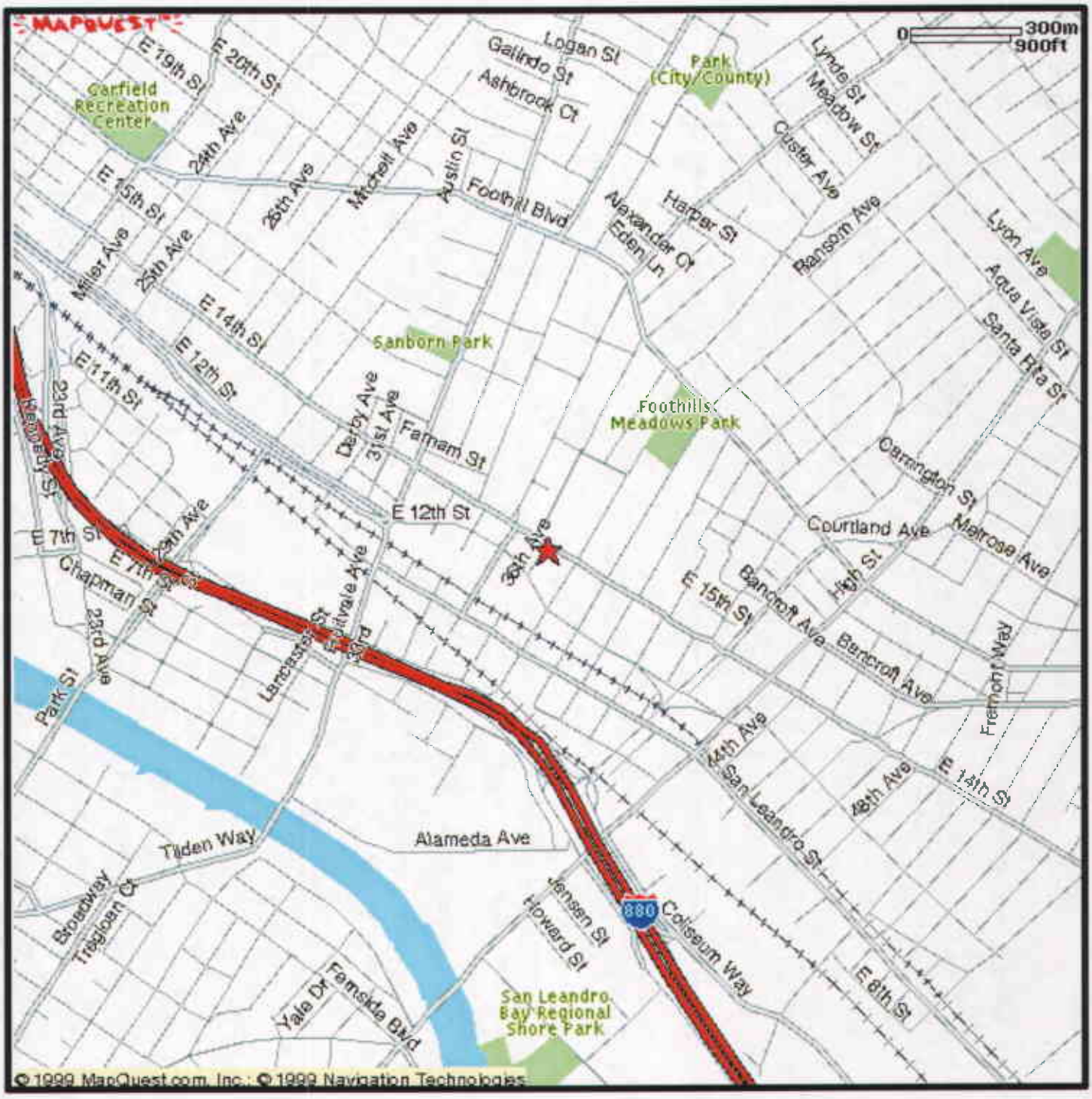


Figure 1: Site Location Map

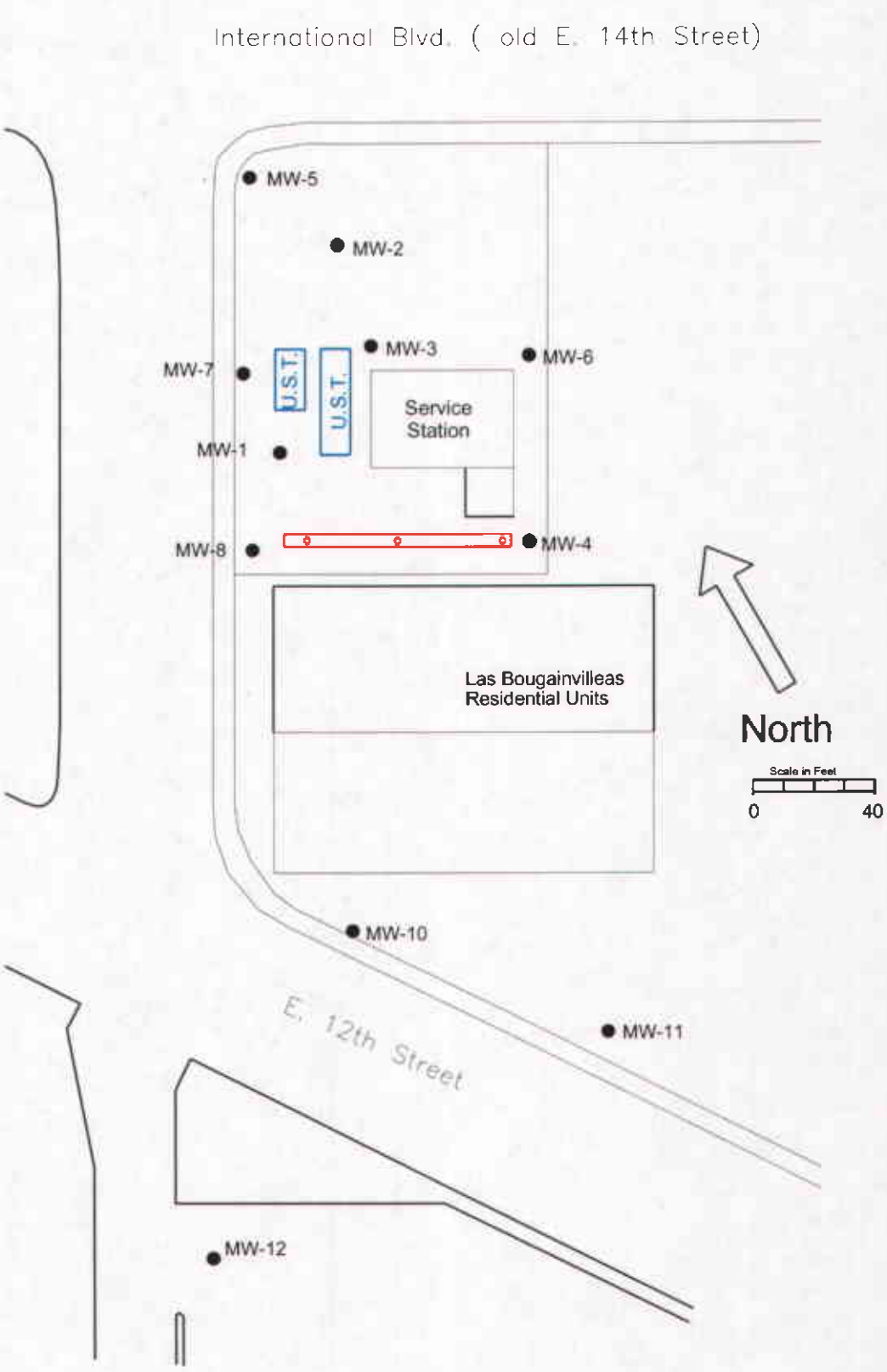


Figure 2: Location of Groundwater Monitoring Wells

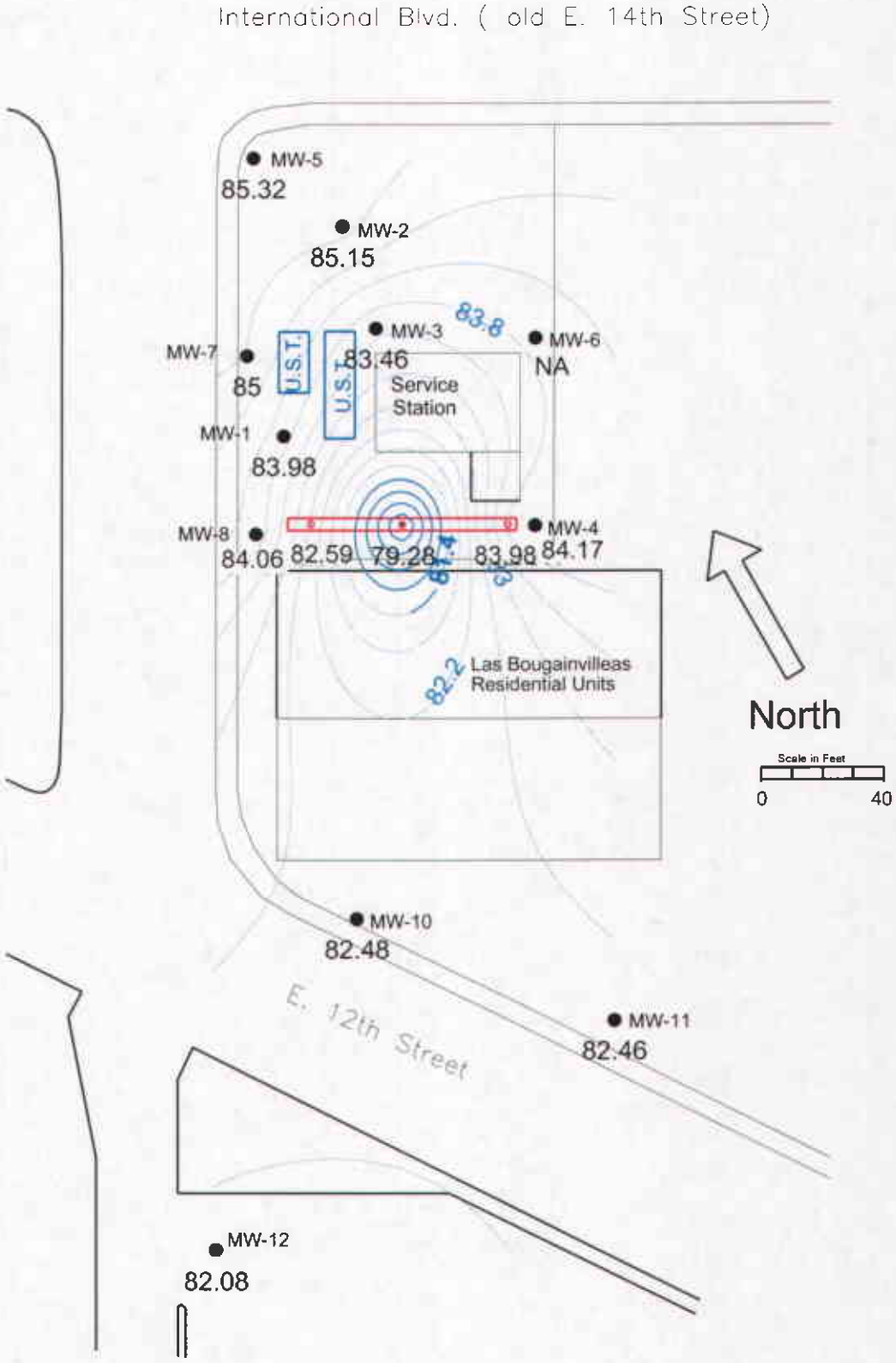


Figure 3: Groundwater Elevation Contour Map, November 19, 2001

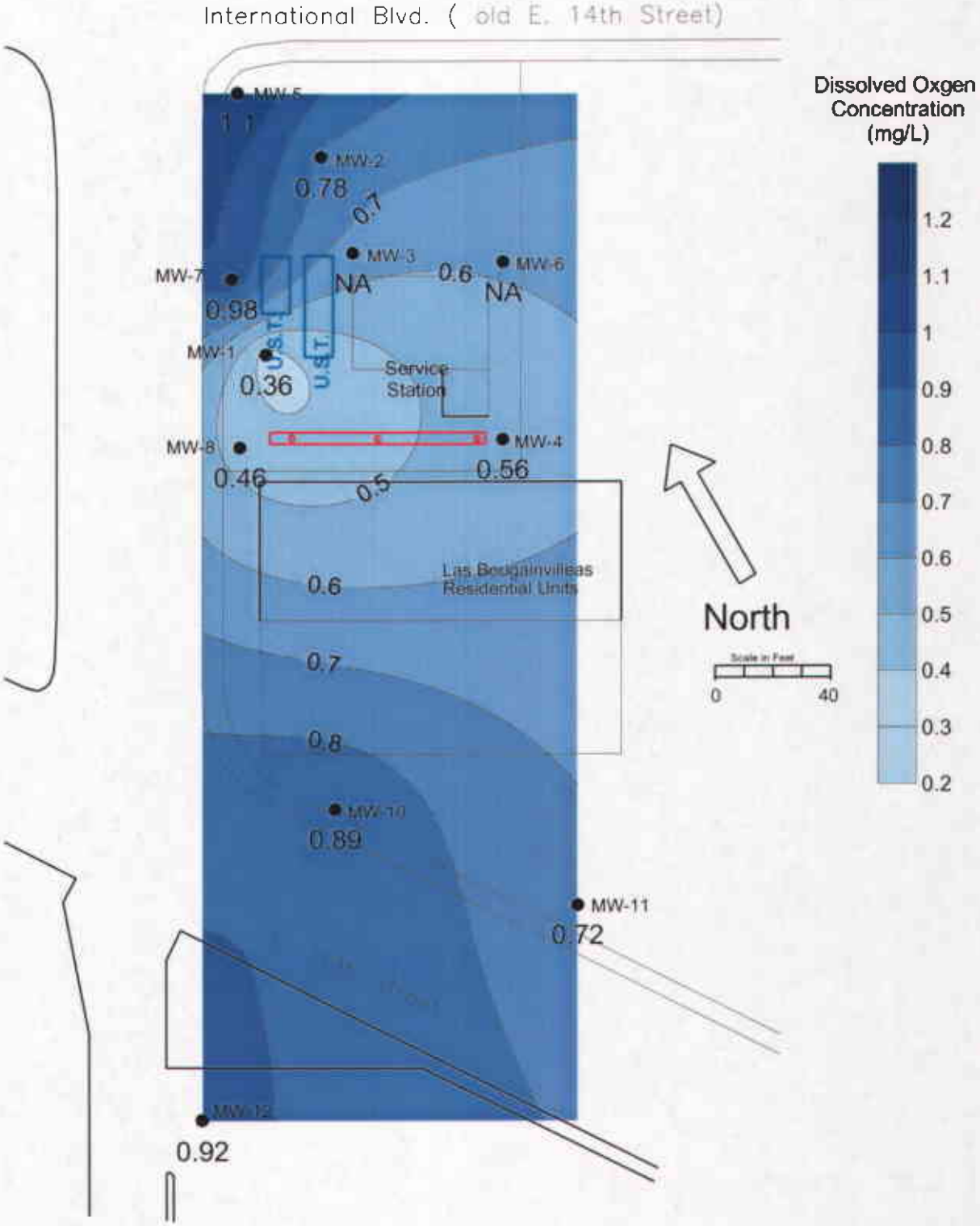


Figure 4: Dissolved Oxygen Concentration in Groundwater, November 19, 2001

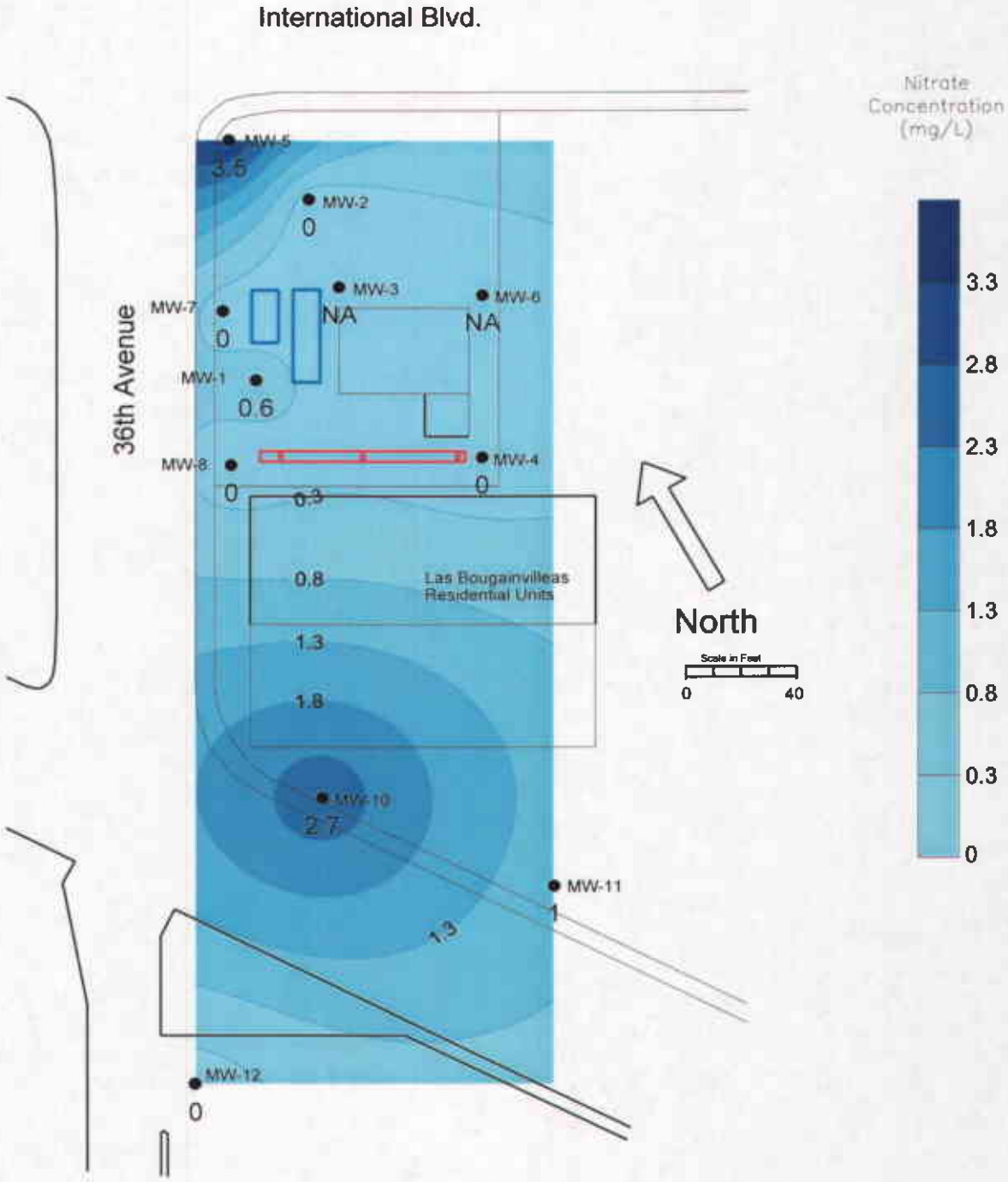


Figure 5: Nitrate Concentration Contour Map in Groundwater, November 19, 2001

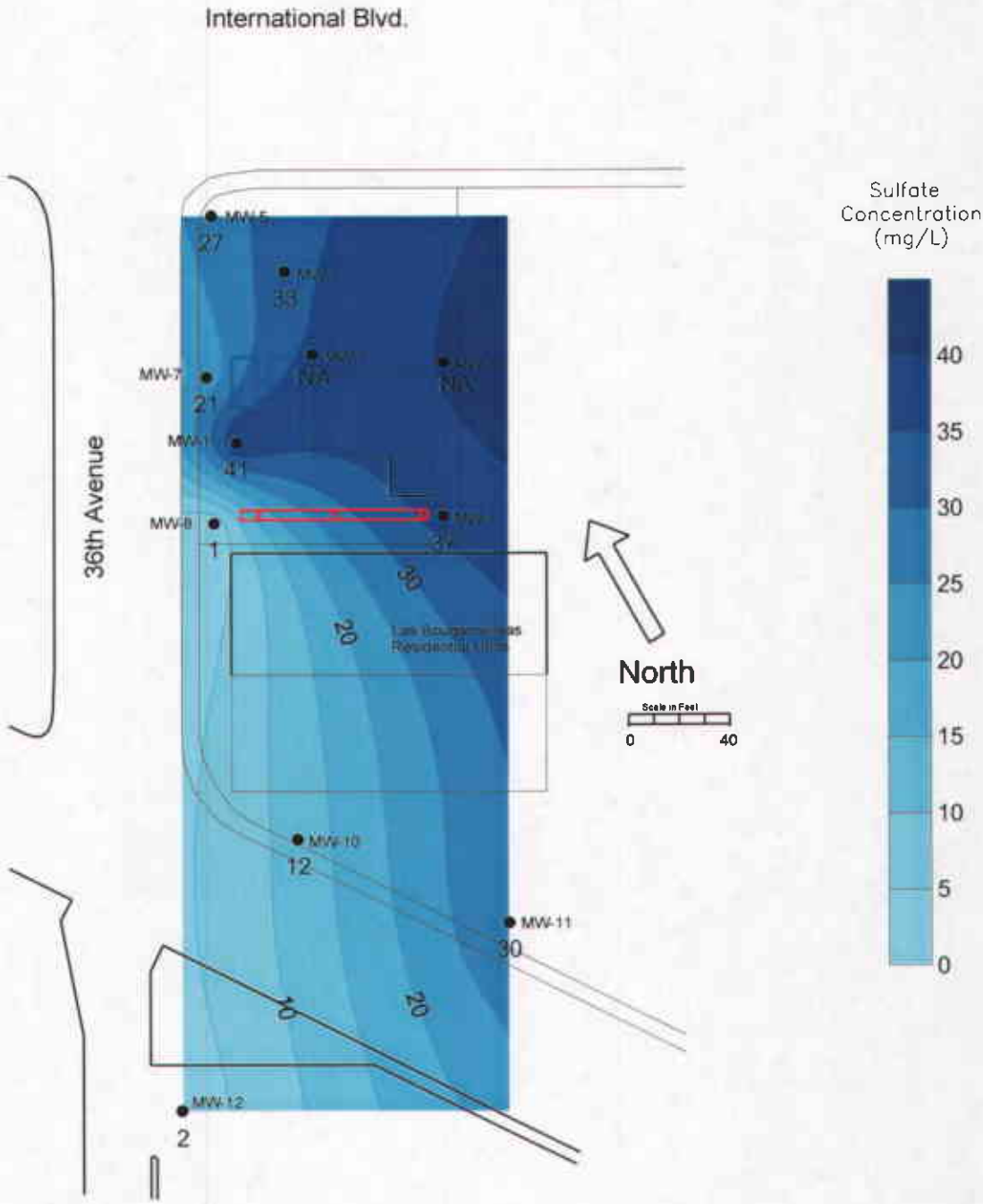


Figure 6: Sulfate Concentration Contour Map in Groundwater, November 19, 2001

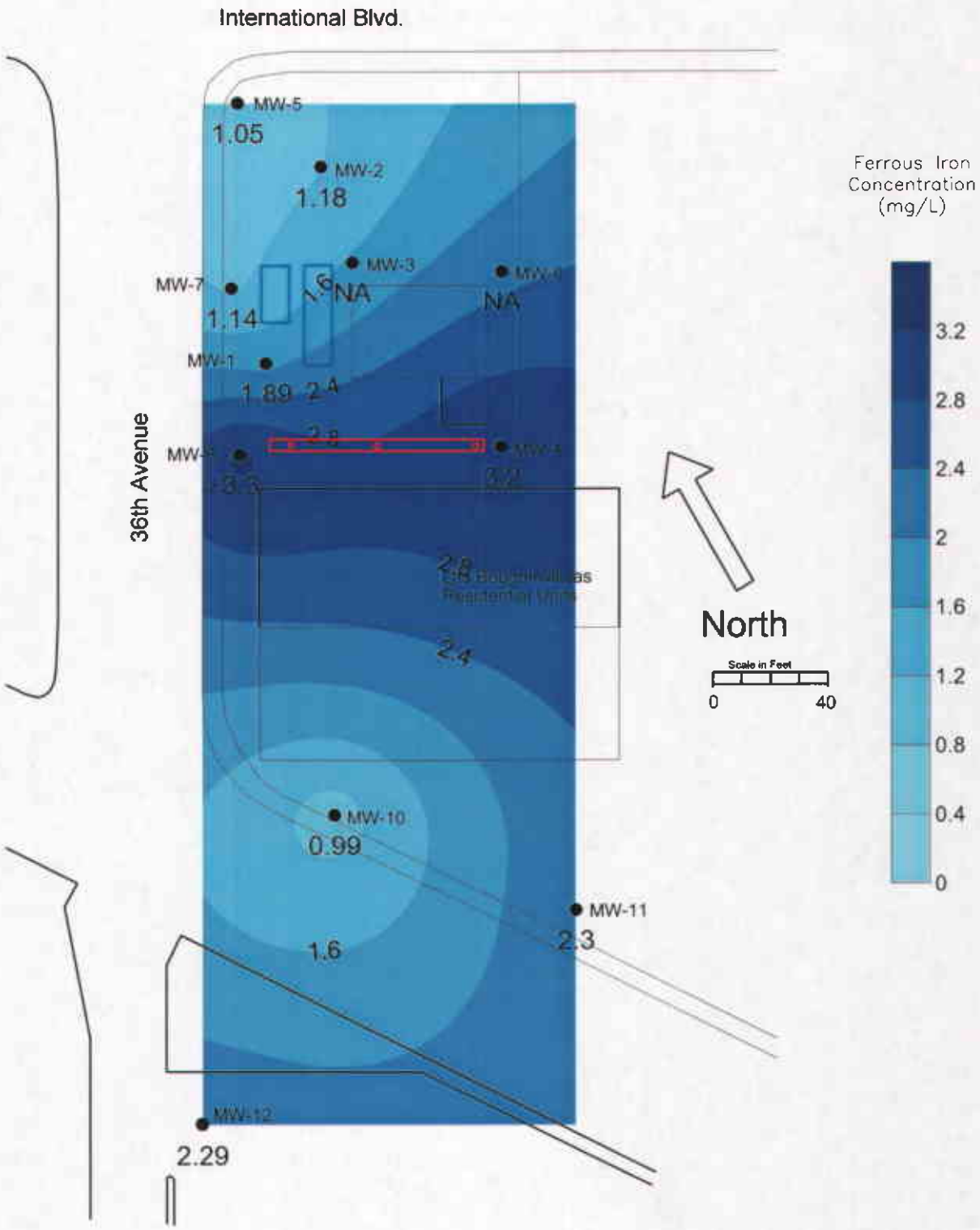


Figure 7: Ferrous Iron Concentration Contour Map in Groundwater, November 19, 2001

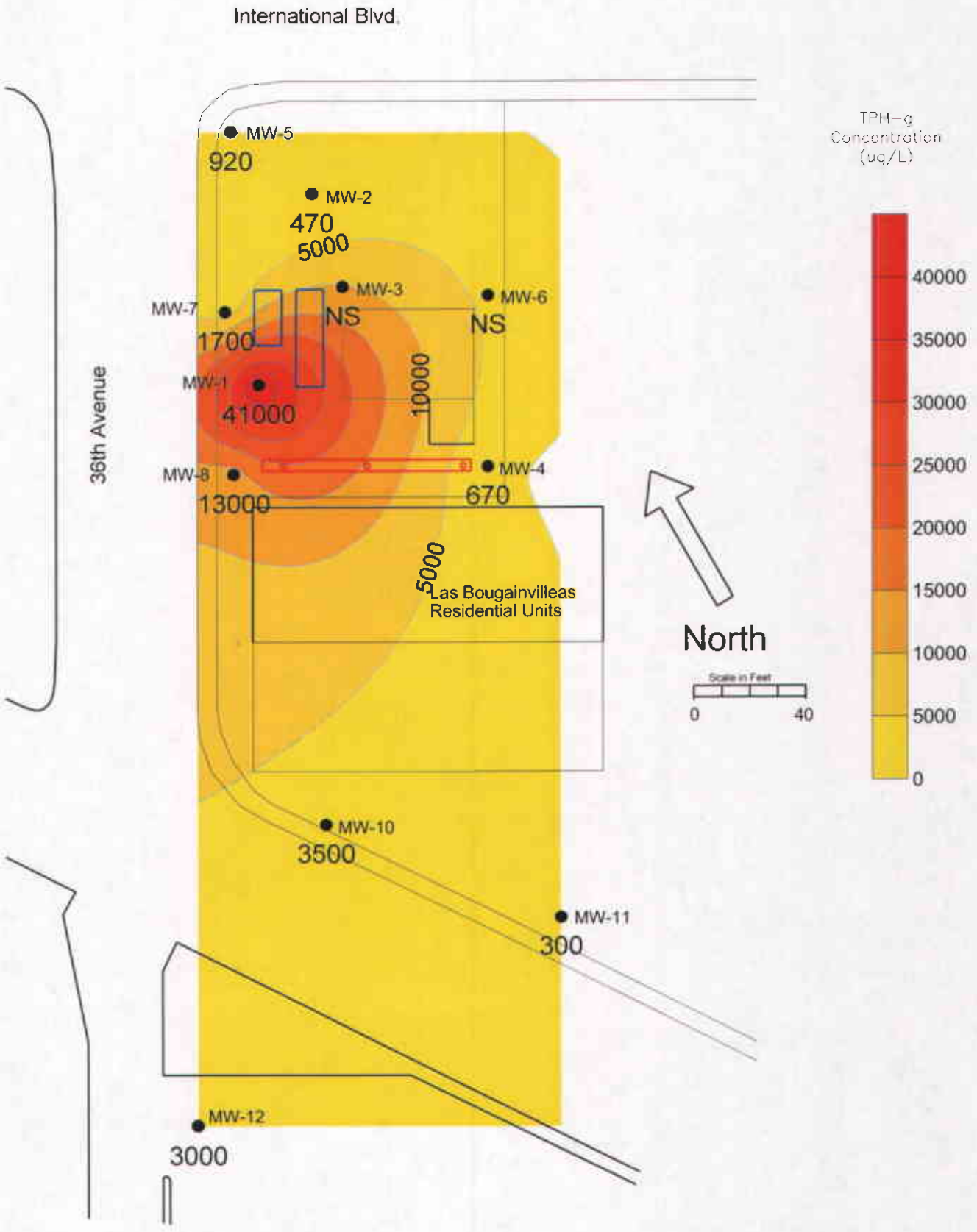


Figure 8: TPH-g Concentration Contour Map in Groundwater, November 19, 2001

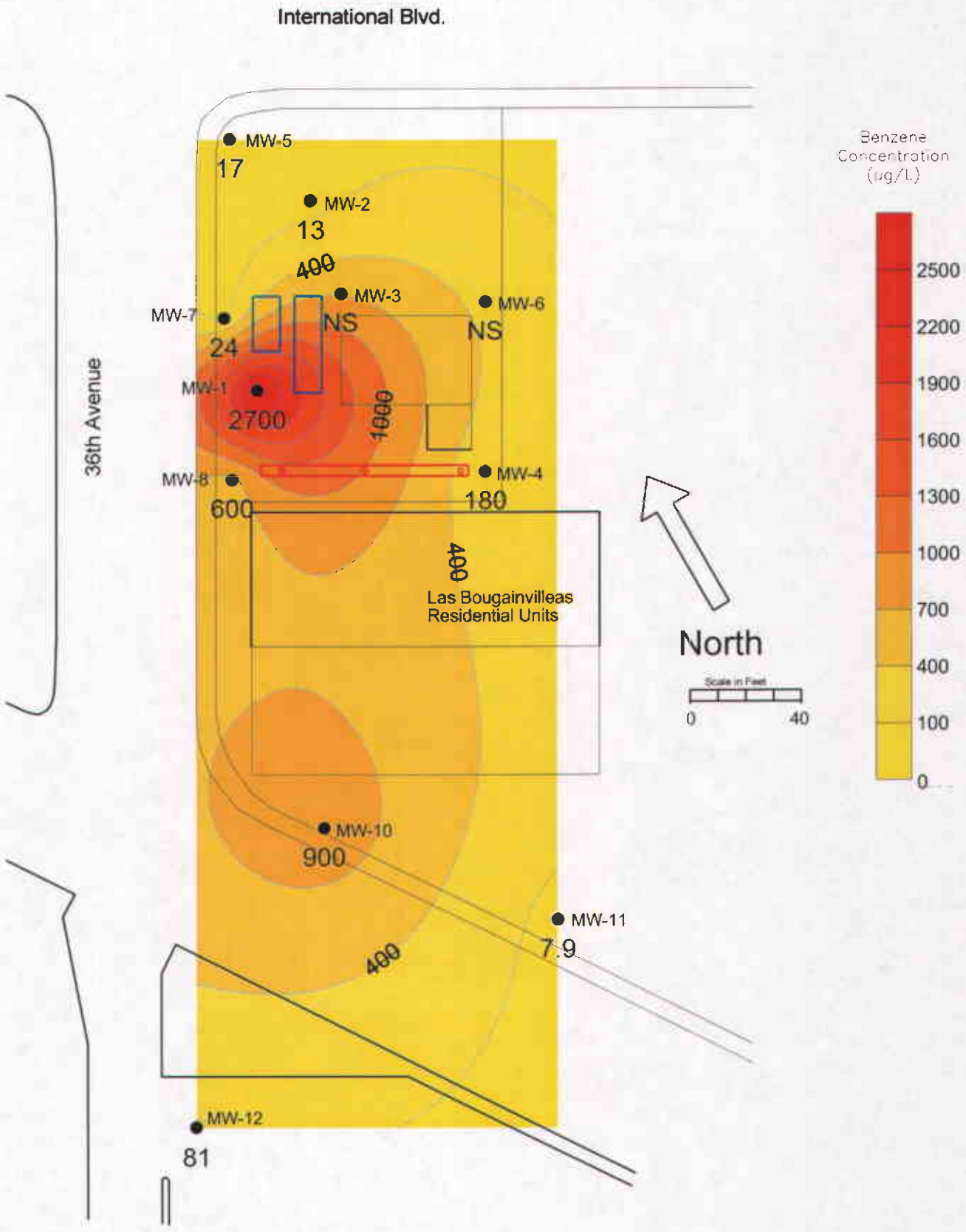


Figure 9: Benzene Concentration Contour Map in Groundwater, November 19, 2001

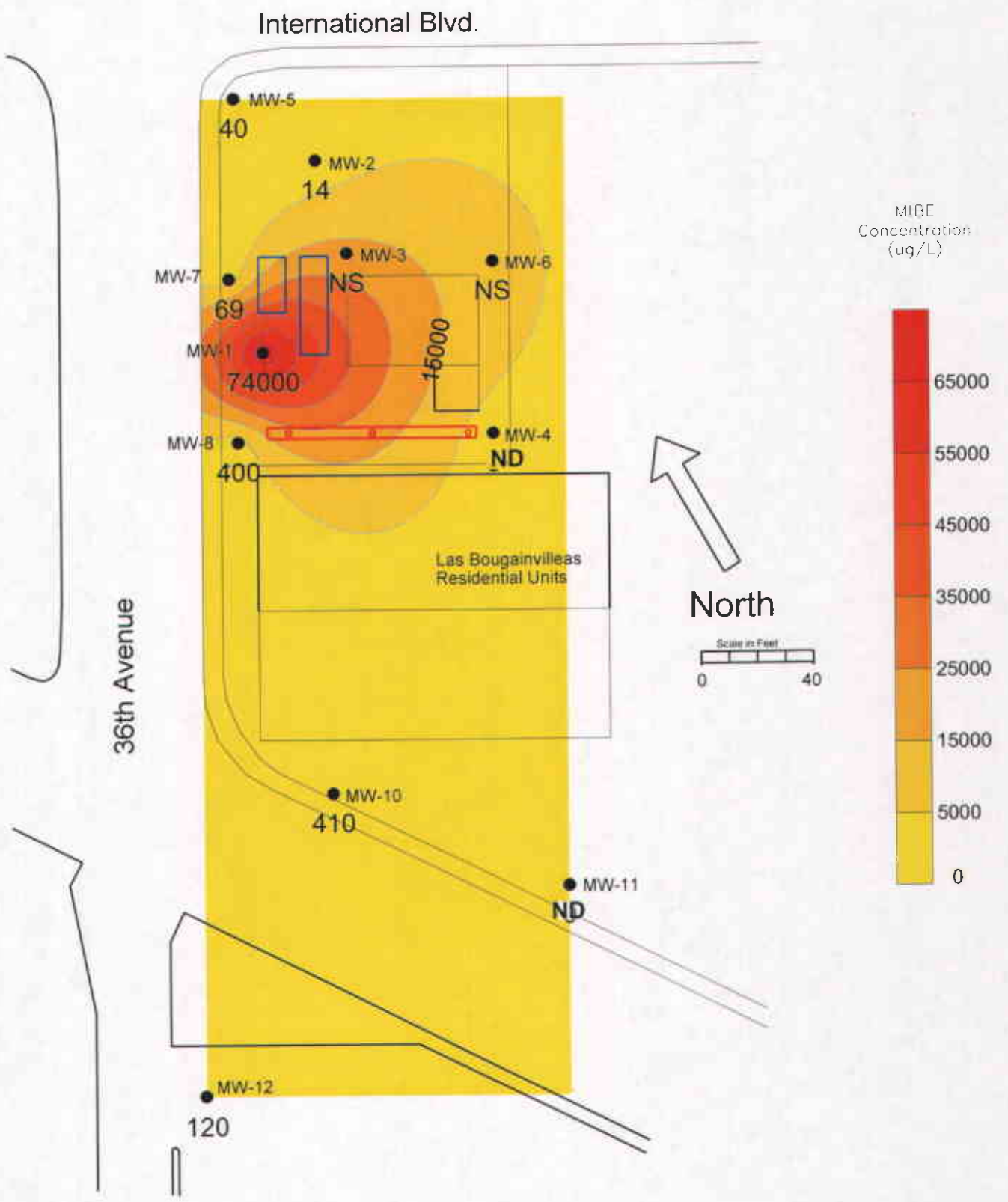
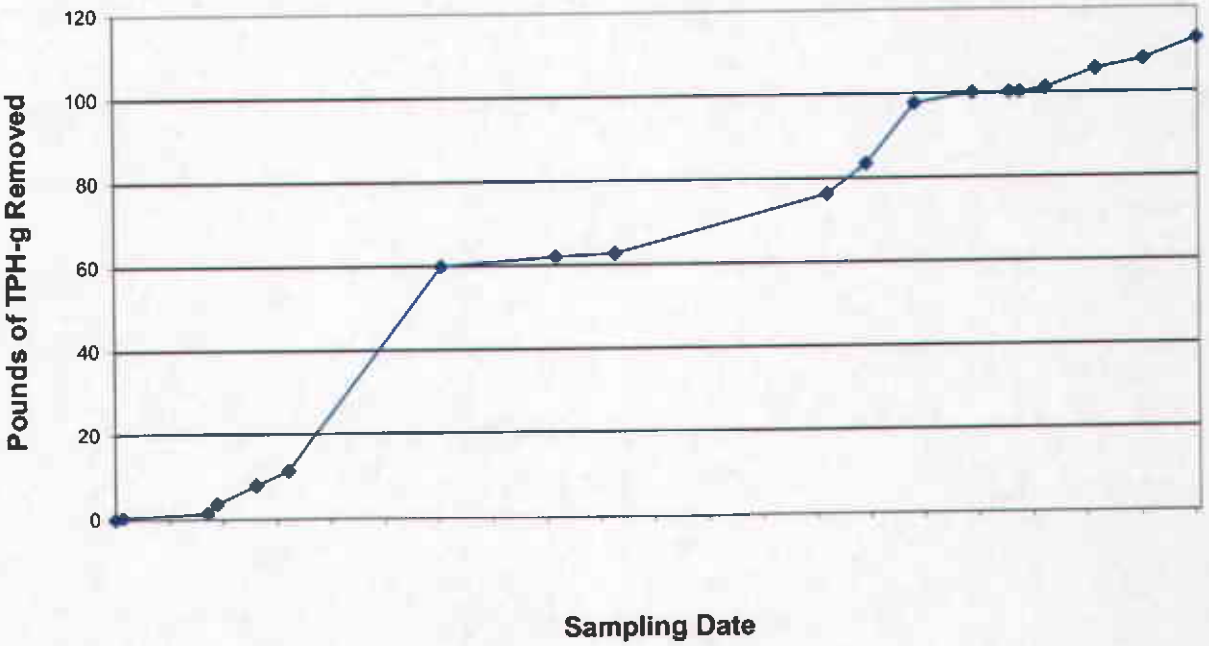


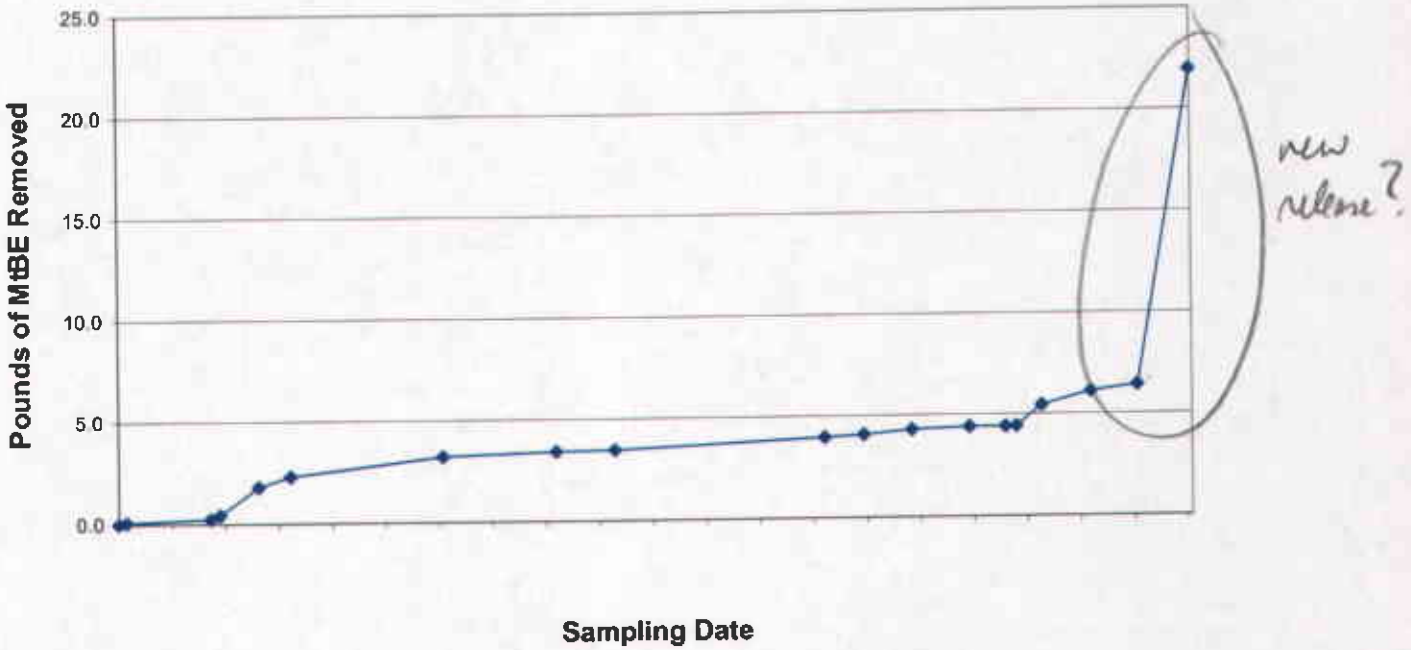
Figure 10: MtBE Concentration Contour Map in Groundwater, November 19, 2001

Figure 11

Cumulative Weight of TPH-g and MtBE Extracted from Groundwater Since Installation of the Treatment System

3609 International Boulevard, Oakland, California





APPENDIX A

FIELD NOTES, CHAIN OF CUSTODY FORMS, LABORATORY REPORTS

ENVIRONMENTAL ENGINEERING, INC

Well No.:	MW-1	**Project No.:**	2331
Casing Diameter:	2 inches	**Address:**	3609 International Blvd.
Depth of Well:	29.7 feet		Oakland, CA
Elevation of the Casing:	97.99 feet		
Depth to Water Table:	14.01 feet	**Date:**	November 19,2001
Elevation of Water Table:	83.98 feet	**Sampler:**	Naser Pakrou
Height of Water:	15.69 feet		Tony Perini
Purged Volume:	7.0 gallons		

Purging Method: **Bailer** ☐ **Pump** ☑

Sampling Method: **Bailer** ☑ **Pump** ☐

Color: **Yes** ☐ **No** ☑ **Describe** _____

Sheen: **Yes** ☑ **No** ☐ **Describe** Rainbow sheen

Odor: **Yes** ☑ **No** ☐ **Describe** Strong Petroleum odor

Field Measurements

Time	DO (mg/L)	pH	EC (µS/cm	Turbidity (NTU)	ORP (mV)	Fe^{+2} (mg/L)	NO_3^{-1} (mg/L)	SO_4^{+2} (mg/L)	Temp (°C)
10:00	0.36	6.55	724	17.2	-54	1.89	0.6	41	19.7

ENVIRONMENTAL ENGINEERING, INC

Well No.:	MW-2	**Project No.:**	2331
Casing Diameter:	4 inches	**Address:**	3609 International Blvd.
Depth of Well:	30 feet		Oakland, CA
Elevation of the Casing:	98.58 feet		
Depth to Water Table:	13.43 feet	**Date:**	November 19,2001
Elevation of Water Table:	85.15 feet	**Sampler:**	Naser Pakrou
Height of Water:	16.57 feet		Tony Perini
Purged Volume:	19.0 gallons		

Purging Method: **Bailer** ☐ **Pump** ☑

Sampling Method: **Bailer** ☑ **Pump** ☐

Color: **Yes** ☐ **No** ☑ **Describe** _____

Sheen: **Yes** ☐ **No** ☑ **Describe** _____

Odor: **Yes** ☐ **No** ☑ **Describe** _____

Field Measurements

Time	DO (mg/L)	pH	EC (µS/cm	Turbidity (NTU)	ORP (mV)	Fe^{+2} (mg/L)	NO_3^{-1} (mg/L)	SO_4^{+2} (mg/L)	Temp (°C)
~~1200~~ 1255	0.78	~~6183~~ 7.27	~~3883~~ 487	~~4449~~ 105	~~-89~~ +13	1.18	0.0	33	~~18.3~~ 19.7

ENVIRONMENTAL ENGINEERING, INC

Well No.:	MW-3	**Project No.:**	2331
Casing Diameter:	4 inches	**Address:**	3609 International Blvd.
Depth of Well:	29.75 feet		Oakland, CA
Elevation of the Casing:	97.78 feet		
Depth to Water Table:	14.32 feet	**Date:**	November 19,2001
Elevation of Water Table:	83.46 feet	**Sampler:**	Naser Pakrou
Height of Water:	15.43 feet		Tony Perini
Purged Volume:	18.5 gallons		

Free Product
no sampling, no purging

Purging Method: Bailer ☐ Pump ☑

Sampling Method: Bailer ☑ Pump ☐

Color: Yes ☐ No ☑ Describe _____

Sheen: Yes ☑ No ☐ Describe Rainbow Sheen

Odor: Yes ☑ No ☐ Describe Strong Petroleum Odor

Field Measurements

Time	DO (mg/L)	pH	EC (µS/cm	Turbidity (NTU)	ORP (mV)	Fe^{+2} (mg/L)	NO_3^{-1} (mg/L)	SO_4^{+2} (mg/L)	Temp (°C)
Did not purge									

ENVIRONMENTAL ENGINEERING, INC

Well No.:	MW-4	**Project No.:**	2331
Casing Diameter:	2 inches	**Address:**	3609 International Blvd.
Depth of Well:	26.5 feet		Oakland, CA
Elevation of the Casing:	97.85 feet		
Depth to Water Table:	13.68 feet	**Date:**	November 19,2001
Elevation of Water Table:	84.17 feet	**Sampler:**	Naser Pakrou
Height of Water:	12.82 feet		Tony Perini
Purged Volume:	8.0 gallons		

Purging Method: Bailer ☐ Pump ☑

Sampling Method: Bailer ☑ Pump ☐

Color: Yes ☐ No ☑ Describe _____

Sheen: Yes ☐ No ☑ Describe _____

Odor: Yes ☑ No ☐ Describe slight Petroleum odor

Field Measurements

Time	DO (mg/L)	pH	EC (µS/cm	Turbidity (NTU)	ORP (mV)	Fe^{+2} (mg/L)	NO_3^{-1} (mg/L)	SO_4^{+2} (mg/L)	Temp (°C)
11:00	0.56	6.92	529	58.7	-108	3.2	0.0	37.0	17.6

ENVIRONMENTAL ENGINEERING, INC

Well No.:	MW-5	**Project No.:**	2331
Casing Diameter:	2 inches	**Address:**	3609 International Blvd.
Depth of Well:	26.40 feet		Oakland, CA
Elevation of the Casing:	99.04 feet		
Depth to Water Table:	13.72 feet	**Date:**	November 19,2001
Elevation of Water Table:	85.32 feet	**Sampler:**	Naser Pakrou
Height of Water:	12.68 feet		Tony Perini
Purged Volume:	7.5 gallons		

Purging Method: **Bailer** ☐ **Pump** ☐

Sampling Method: **Bailer** ☐ **Pump** ☐

Color: **Yes** ☐ **No** ☑ **Describe** _____

Sheen: **Yes** ☐ **No** ☑ **Describe** _____

Odor: **Yes** ☐ **No** ☑ **Describe** _____

Field Measurements

Time	DO (mg/L)	pH	EC (µS/cm	Turbidity (NTU)	ORP (mV)	Fe^{+2} (mg/L)	NO_3^{-1} (mg/L)	SO_4^{+2} (mg/L)	Temp (°C)
1340	1.10	7.23	524	8.5	-33	1.05	3.5	27	18.9

ENVIRONMENTAL ENGINEERING, INC

Well No.:	MW-7	**Project No.:**	2331
Casing Diameter:	2 inches	**Address:**	3609 International Blvd.
Depth of Well:	24.60 feet		Oakland, CA
Elevation of the Casing:	97.83 feet		
Depth to Water Table:	12.83 feet	**Date:**	November 19,2001
Elevation of Water Table:	85 feet	**Sampler:**	Naser Pakrou
Height of Water:	11.77 feet		Tony Perini
Purged Volume:	7.00 gallons		

Purging Method: **Bailer** ☐ **Pump** ☐

Sampling Method: **Bailer** ☐ **Pump** ☐

Color: **Yes** ☐ **No** ☑ **Describe** _____

Sheen: **Yes** ☐ **No** ☑ **Describe** _____

Odor: **Yes** ☐ **No** ☑ **Describe** _____

Field Measurements

Time	DO (mg/L)	pH	EC (µS/cm	Turbidity (NTU)	ORP (mV)	Fe^{+2} (mg/L)	NO_3^{-1} (mg/L)	SO_4^{+2} (mg/L)	Temp (°C)
1:15	0.98	7.36	445	8.9	-14	1.14	0.0	21	18.8

ENVIRONMENTAL ENGINEERING, INC

Well No.:	MW-8	**Project No.:**	2331
Casing Diameter:	2 inches	**Address:**	3609 International Blvd.
Depth of Well:	26.34 feet		Oakland, CA
Elevation of the Casing:	97.25 feet		
Depth to Water Table:	13.19 feet	**Date:**	November 19,2001
Elevation of Water Table:	84.06 feet	**Sampler:**	Naser Pakrou
Height of Water:	13.15 feet		Tony Perini
Purged Volume:	6.0 gallons		

Purging Method: Bailer ☐ Pump ☑

Sampling Method: Bailer ☐ Pump ☐

Color: Yes ☑ No ☐ Describe Black

Sheen: Yes ☑ No ☐ Describe Rainbow Sheen

Odor: Yes ☑ No ☐ Describe Strong Petroleum odor

Field Measurements

Time	DO (mg/L)	pH	EC (µS/cm	Turbidity (NTU)	ORP (mV)	Fe^{+2} (mg/L)	NO_3^{-1} (mg/L)	SO_4^{+2} (mg/L)	Temp (°C)
11:47 AM	0.46	6.95	569	53.5	-42	>3.3	0.0	1.0	18.5

ENVIRONMENTAL ENGINEERING, INC

Well No.:	MW-10	**Project No.:**	2331
Casing Diameter:	2 inches	**Address:**	3609 International Blvd.
Depth of Well:	23.5 feet		Oakland, CA
Elevation of the Casing:	94.54 feet		
Depth to Water Table:	12.06 feet	**Date:**	November 19,2001
Elevation of Water Table:	82.48 feet	**Sampler:**	Naser Pakrou
Height of Water:	11.44 feet		Tony Perini
Purged Volume:	7.5 gallons		

Purging Method: **Bailer** ☐ **Pump** ☐

Sampling Method: **Bailer** ☐ **Pump** ☐

Color: **Yes** ☐ **No** ☑ **Describe** _____

Sheen: **Yes** ☐ **No** ☑ **Describe** _____

Odor: **Yes** ☐ **No** ☑ **Describe** _____

Field Measurements

Time	DO (mg/L)	pH	EC (µS/cm	Turbidity (NTU)	ORP (mV)	Fe^{+2} (mg/L)	NO_3^{-1} (mg/L)	SO_4^{+2} (mg/L)	Temp (°C)
2:40	0.89	7.20	599	3.0	45	0.99	2.7	12.0	19.5

ENVIRONMENTAL ENGINEERING, INC

Well No.:	MW-11	**Project No.:**	2331
Casing Diameter:	2 inches	**Address:**	3609 International Blvd.
Depth of Well:	25.52 feet		Oakland, CA
Elevation of the Casing:	95.94 feet		
Depth to Water Table:	13.48 feet	**Date:**	November 19,2001
Elevation of Water Table:	82.46 feet	**Sampler:**	Naser Pakrou
Height of Water:	12.04 feet		Tony Perini
Purged Volume:	7.5 gallons		

Purging Method: **Bailer** ☐ **Pump** ☐

Sampling Method: **Bailer** ☐ **Pump** ☐

Color: **Yes** ☐ **No** ☑ **Describe** _____

Sheen: **Yes** ☐ **No** ☑ **Describe** _____

Odor: **Yes** ☐ **No** ☑ **Describe** _____

Field Measurements

Time	DO (mg/L)	pH	EC (µS/cm	Turbidity (NTU)	ORP (mV)	Fe^{+2} (mg/L)	NO_3^{-1} (mg/L)	SO_4^{+2} (mg/L)	Temp (°C)
4:00	0.72	7.12	530	8.4	-18	2.3	1.0	30	18.0

ENVIRONMENTAL ENGINEERING, INC

Well No.:	MW-12	**Project No.:**	2331
Casing Diameter:	4 inches	**Address:**	3609 International Blvd.
Depth of Well:	29.92 feet		Oakland, CA
Elevation of the Casing:	94.84 feet		
Depth to Water Table:	12.76 feet	**Date:**	November 19,2001
Elevation of Water Table:	82.08 feet	**Sampler:**	Naser Pakrou
Height of Water:	17.16 feet		Tony Perini
Purged Volume:	21.0 gallons		

Purging Method: **Bailer** ☐ **Pump** ☐

Sampling Method: **Bailer** ☐ **Pump** ☐

Color: **Yes** ☐ **No** ☐ **Describe** _____

Sheen: **Yes** ☐ **No** ☐ **Describe** _____

Odor: **Yes** ☐ **No** ☐ **Describe** _____

Field Measurements

Time	DO (mg/L)	pH	EC (µS/cm	Turbidity (NTU)	ORP (mV)	Fe^{+2} (mg/L)	NO_3^{-1} (mg/L)	SO_4^{+2} (mg/L)	Temp (°C)
1130	0.92	7.24	606	20	-72	229	0.0	2.0	18.2

CHAIN OF CUSTODY FORM

Page 1 of 1

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

C&T LOGIN # 155563

Sampler: Naser Pakrou
Report To: Naser Pakrou
Company: SOMA Env. Eng.
Telephone: 925 244 6600
Fax: 925 244 6601

Project No: 2331
Project Name: Tony's Auto express
Project P.O.:
Turnaround Time: Standard

Laboratory Number	Sample ID.	Sampling Date Time	Matrix: Soil	Matrix: Water	Matrix: Waste	# of Containers	Preservative: HCL	Preservative: H_2SO	Preservative: HNO_3	Preservative: ICE	Field Notes	Analyses: TPH-g	Analyses: BTEX, MTBE	Analyses: MTBE 8260
-1	MW-1	11/19 10:00		✓		4	✓				please run 8260	✓	✓	
-2	MW-2	12:55		✓			✓				Just for BTEX	✓	✓	
-3	MW-4	11:00		✓			✓				and MTBE	✓	✓	
-4	MW-5	1:40		✓			✓					✓	✓	
-5	MW-7	1:15		✓			✓					✓	✓	
-6	MW-8	11:47		✓			✓					✓	✓	
-7	MW-10	2:40		✓			✓					✓	✓	
-8	MW-11	4:00		✓			✓					✓	✓	
-9	MW-12	4:30		✓			✓					✓	✓	

For Laboratory Use

Notes:

Received: ☑ On Ice ☑ Cold ☐ Ambient ☑ Intact

Preservation Correct? ☑ Yes ☐ No ☑ N/A

RELINQUISHED BY:	RECEIVED BY:
Naser Pakrou 11/20 10:35 DATE/TIME	DATE/TIME
DATE/TIME	DATE/TIME
DATE/TIME	DATE/TIME

Signature

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: 18-DEC-01
Lab Job Number: 155563
Project ID: 2331
Location: Tony's, 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: PAUL PRENDERGAST
Project Manager

Reviewed by: Teresa K Morris for TG
Operations Manager

Curtis & Tompkins, Ltd.

Laboratory Number:	**155563**
Client:	**Soma Environmental Engineering, Inc.**
Project Name:	**Tony's Auto Express**
Project No.	**2331**
Receipt Date:	**11/20/01**

CASE NARRATIVE

This hardcopy data package contains sample results and batch QC results for nine water samples received from the above referenced project on November 20th, 2001. The samples were received cold and intact.

Total Volatile Hydrocarbons (EPA 8015M):

The recovery for the trifluorotoluene surrogate was over the acceptable QC limits for client ID MW-12 (C&T ID 155563-009) due to coelution of sample hydrocarbons with this surrogate. No other analytical problems were encountered. No other analytical problems were encountered.

Purgeable Aromatics (EPA 8260B):

No analytical problems were encountered.

Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	155563	Location:	Tony's, Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2331	Analysis:	8015B(M)
Matrix:	Water	Sampled:	11/19/01
Units:	ug/L	Received:	11/20/01

Field ID:	MW-1	Diln Fac:	40.00
Type:	SAMPLE	Batch#:	68323
Lab ID:	155563-001	Analyzed:	11/29/01

Analyte	Result	RL
Gasoline C7-C12	41,000	2,000

Surrogate	%REC	Limits
Trifluorotoluene (FID)	115	59-135
Bromofluorobenzene (FID)	95	60-140

Field ID:	MW-2	Diln Fac:	1.000
Type:	SAMPLE	Batch#:	68186
Lab ID:	155563-002	Analyzed:	11/21/01

Analyte	Result	RL
Gasoline C7-C12	470	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	108	59-135
Bromofluorobenzene (FID)	112	60-140

Field ID:	MW-4	Diln Fac:	1.000
Type:	SAMPLE	Batch#:	68186
Lab ID:	155563-003	Analyzed:	11/22/01

Analyte	Result	RL
Gasoline C7-C12	670	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	115	59-135
Bromofluorobenzene (FID)	110	60-140

Field ID:	MW-5	Diln Fac:	1.000
Type:	SAMPLE	Batch#:	68186
Lab ID:	155563-004	Analyzed:	11/21/01

Analyte	Result	RL
Gasoline C7-C12	920	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	109	59-135
Bromofluorobenzene (FID)	114	60-140

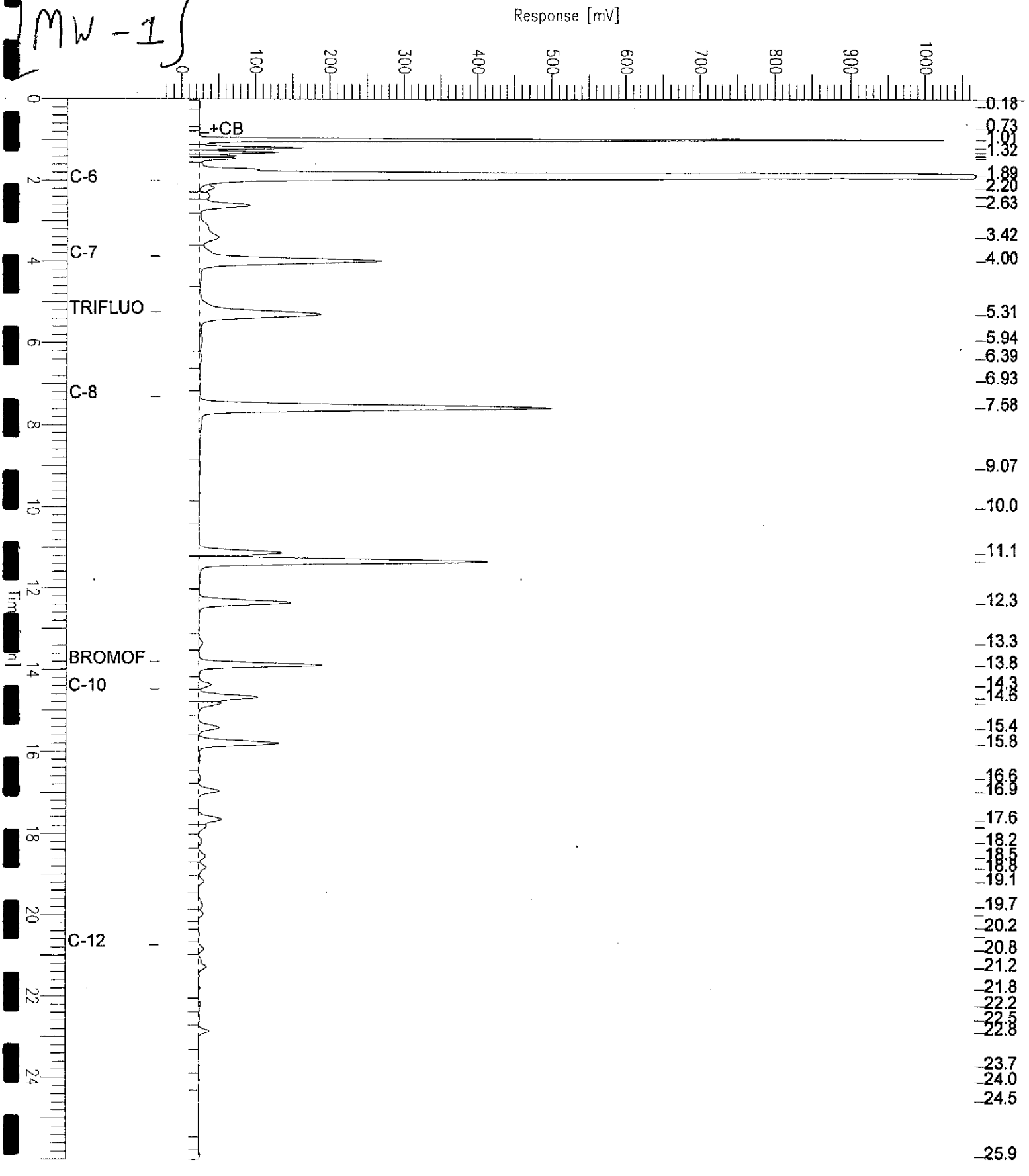
*= Value outside of QC limits; see narrative
ND= Not Detected
RL= Reporting Limit

GC07 TVH 'A' Data File RTX 502

Sample Name : 155563-001,68323,TVH ONLY
FileName : G:\GC07\DATA\332A013.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.00 min
Scale Factor: 1.0 Plot Offset: -29 mV

Sample #: B1 Page 1 of 1
Date : 11/29/01 05:58 AM
Time of Injection: 11/29/01 05:32 AM
Low Point : -28.53 mV High Point : 1068.39 mV
Plot Scale: 1096.9 mV

MW-1

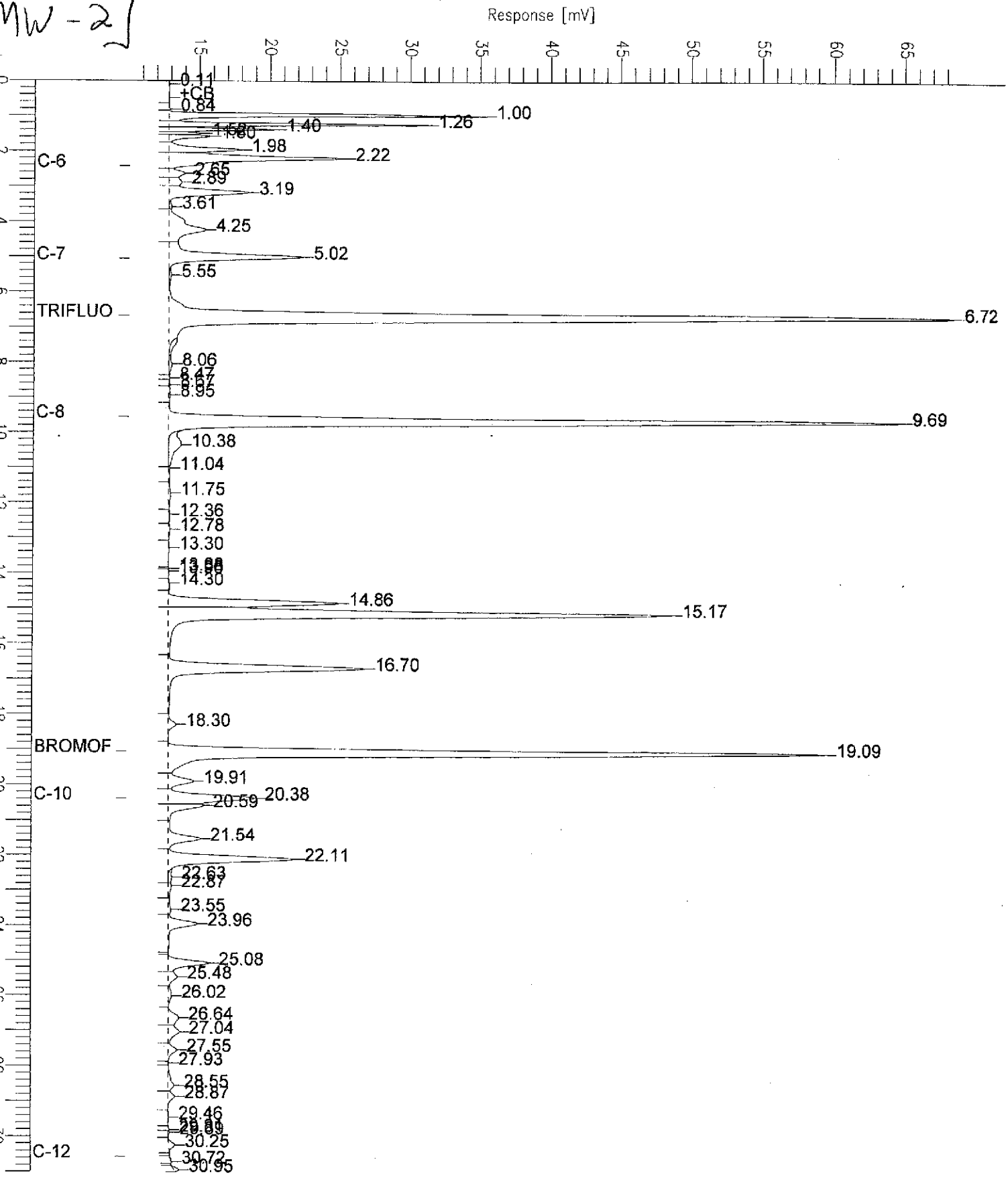


Chromatogram

Sample Name : 155563-002,68186,TVH ONLY
FileName : G:\GC05\DATA\325G012.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 31.00 min
Scale Factor: 1.0 Plot Offset: 10 mV

Sample #: A1 Page 1 of 1
Date : 11/26/01 06:55 AM
Time of Injection: 11/21/01 07:50 PM
Low Point : 10.01 mV High Point : 68.51 mV
Plot Scale: 58.5 mV

MW-27

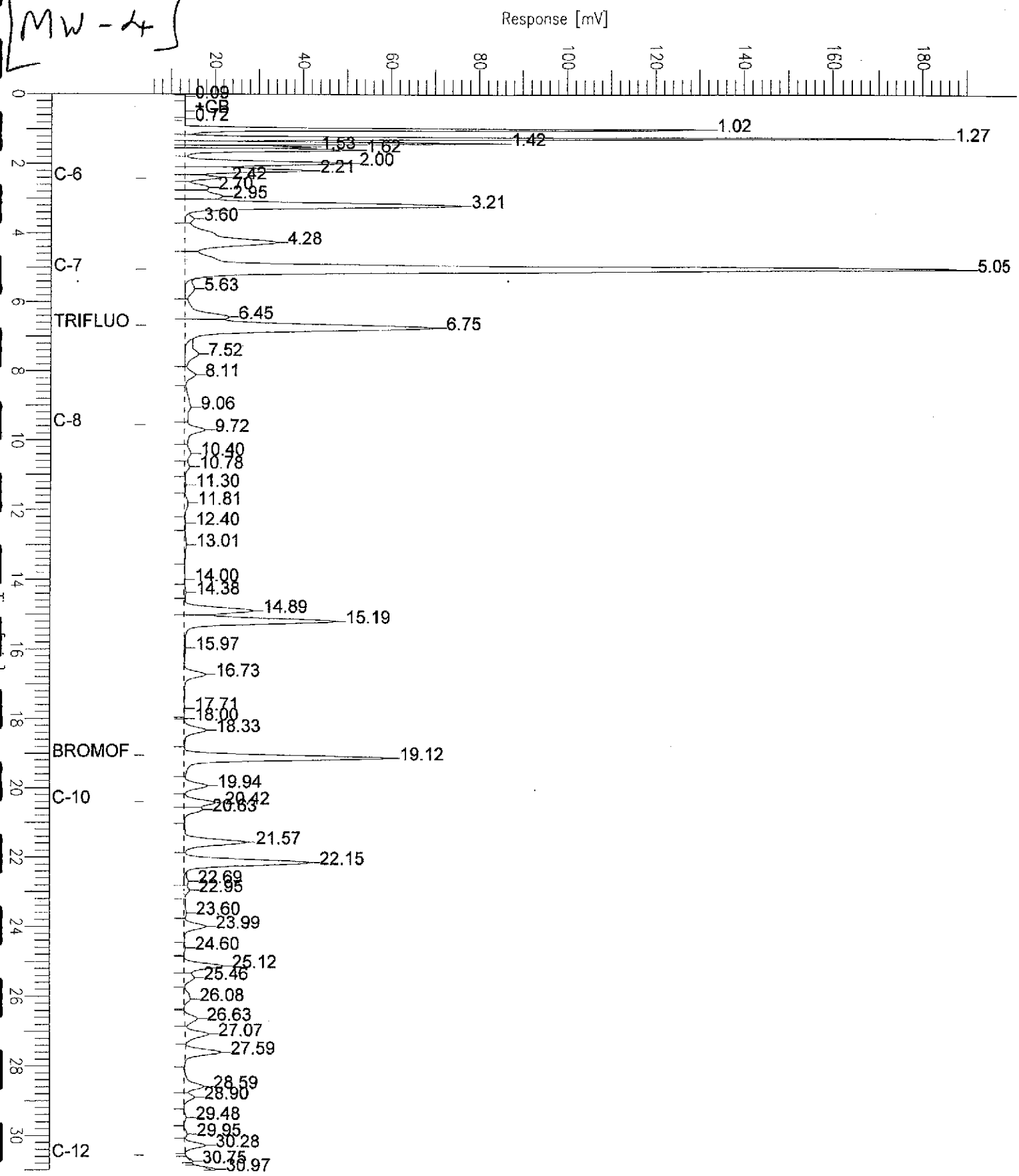


Chromatogram

Sample Name : 155563-003,68186,TVH ONLY
FileName : G:\GC05\DATA\325G018.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 31.00 min
Scale Factor: 1.0 Plot Offset: 4 mV

Sample #: A1 Page 1 of 1
Date : 11/26/01 06:58 AM
Time of Injection: 11/22/01 12:16 AM
Low Point : 4.19 mV High Point : 190.14 mV
Plot Scale: 186.0 mV

[MW-4]

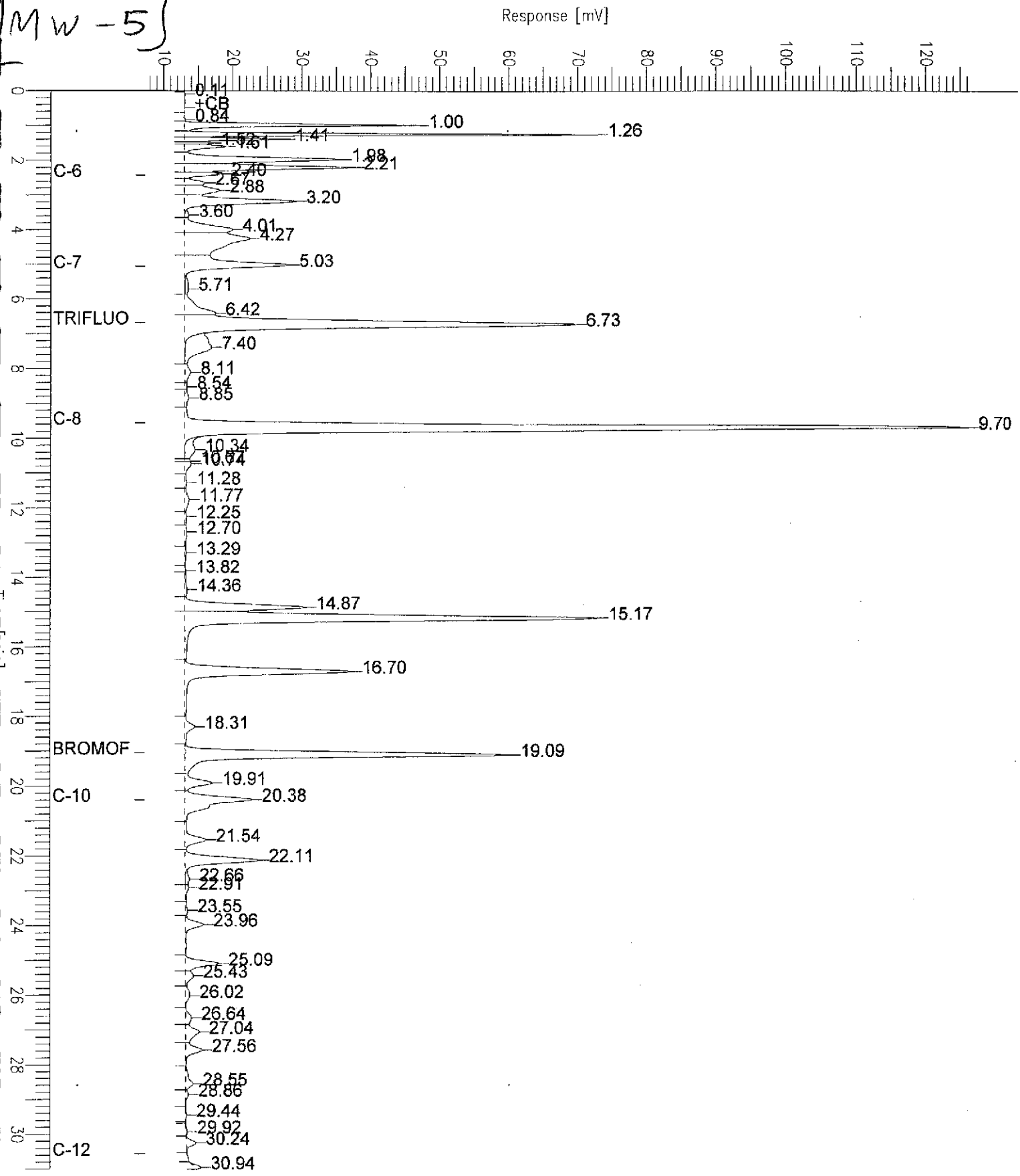


Chromatogram

Sample Name : 155563-004,68186,TVH ONLY
FileName : G:\GC05\DATA\325G013.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 31.00 min
Scale Factor: 1.0 Plot Offset: 7 mV

Sample #: A1 Page 1 of 1
Date : 11/26/01 06:55 AM
Time of Injection: 11/21/01 08:35 PM
Low Point : 7.35 mV High Point : 126.17 mV
Plot Scale: 118.8 mV

MW-5



Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	155563	Location:	Tony's, Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2331	Analysis:	8015B(M)
Matrix:	Water	Sampled:	11/19/01
Units:	ug/L	Received:	11/20/01

Field ID:	MW-7	Diln Fac:	1.000
Type:	SAMPLE	Batch#:	68186
Lab ID:	155563-005	Analyzed:	11/21/01

Analyte	Result	RL
Gasoline C7-C12	1,700	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	117	59-135
Bromofluorobenzene (FID)	120	60-140

Field ID:	MW-8	Diln Fac:	5.000
Type:	SAMPLE	Batch#:	68186
Lab ID:	155563-006	Analyzed:	11/22/01

Analyte	Result	RL
Gasoline C7-C12	13,000	250

Surrogate	%REC	Limits
Trifluorotoluene (FID)	124	59-135
Bromofluorobenzene (FID)	114	60-140

Field ID:	MW-10	Diln Fac:	1.000
Type:	SAMPLE	Batch#:	68186
Lab ID:	155563-007	Analyzed:	11/21/01

Analyte	Result	RL
Gasoline C7-C12	3,500	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	130	59-135
Bromofluorobenzene (FID)	118	60-140

Field ID:	MW-11	Diln Fac:	1.000
Type:	SAMPLE	Batch#:	68186
Lab ID:	155563-008	Analyzed:	11/21/01

Analyte	Result	RL
Gasoline C7-C12	300	50

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

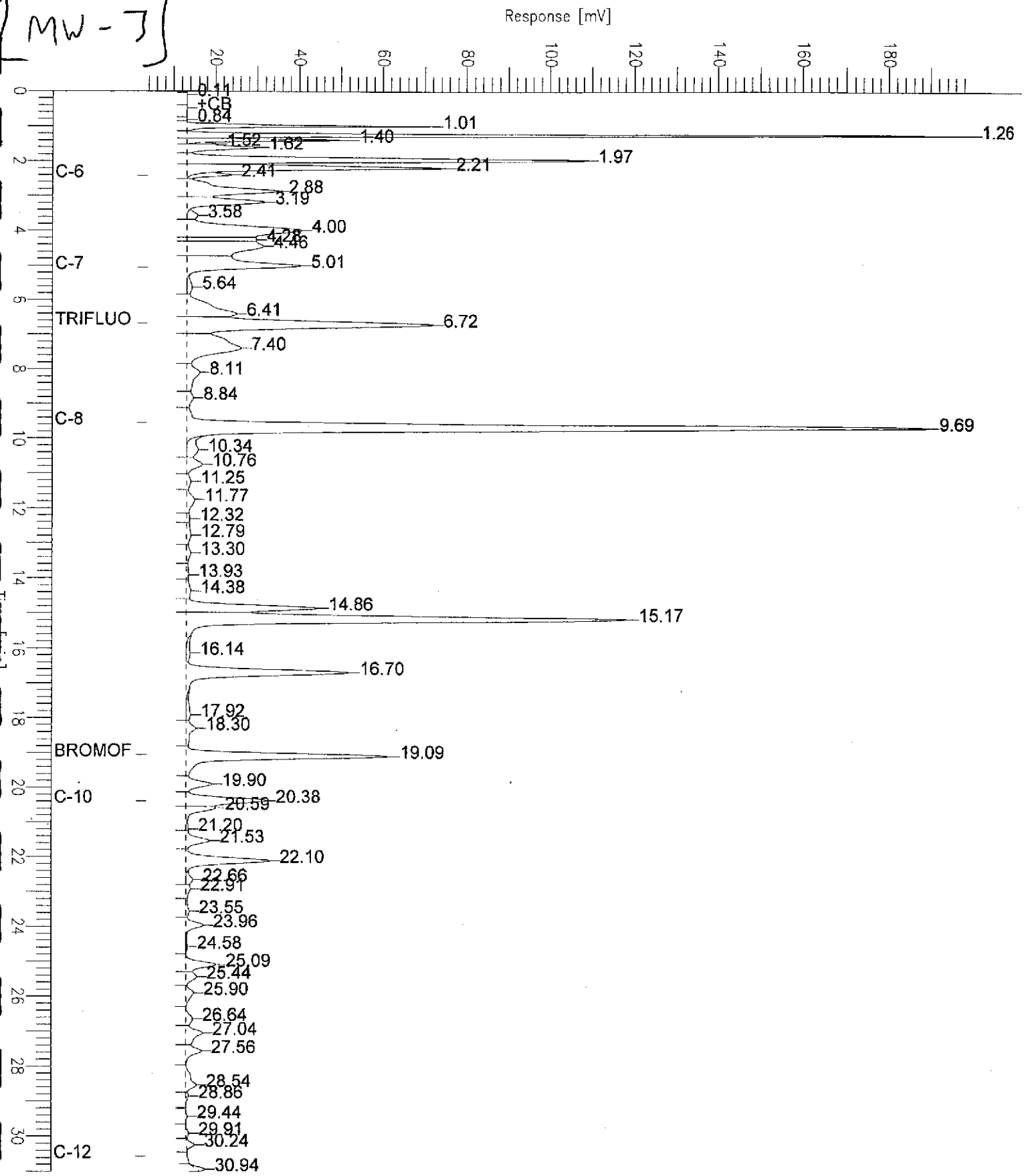
*= Value outside of QC limits; see narrative
ND= Not Detected
RL= Reporting Limit

Chromatogram

Sample Name : 155563-005,68186,TVH ONLY
FileName : G:\GC05\DATA\325G014.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 31.00 min
Scale Factor: 1.0 Plot Offset: 4 mV

Sample #: A1 Page 1 of 1
Date : 11/26/01 06:56 AM
Time of Injection: 11/21/01 09:19 PM
Low Point : 3.79 mV High Point : 199.57 mV
Plot Scale: 195.8 mV

[MW-7]

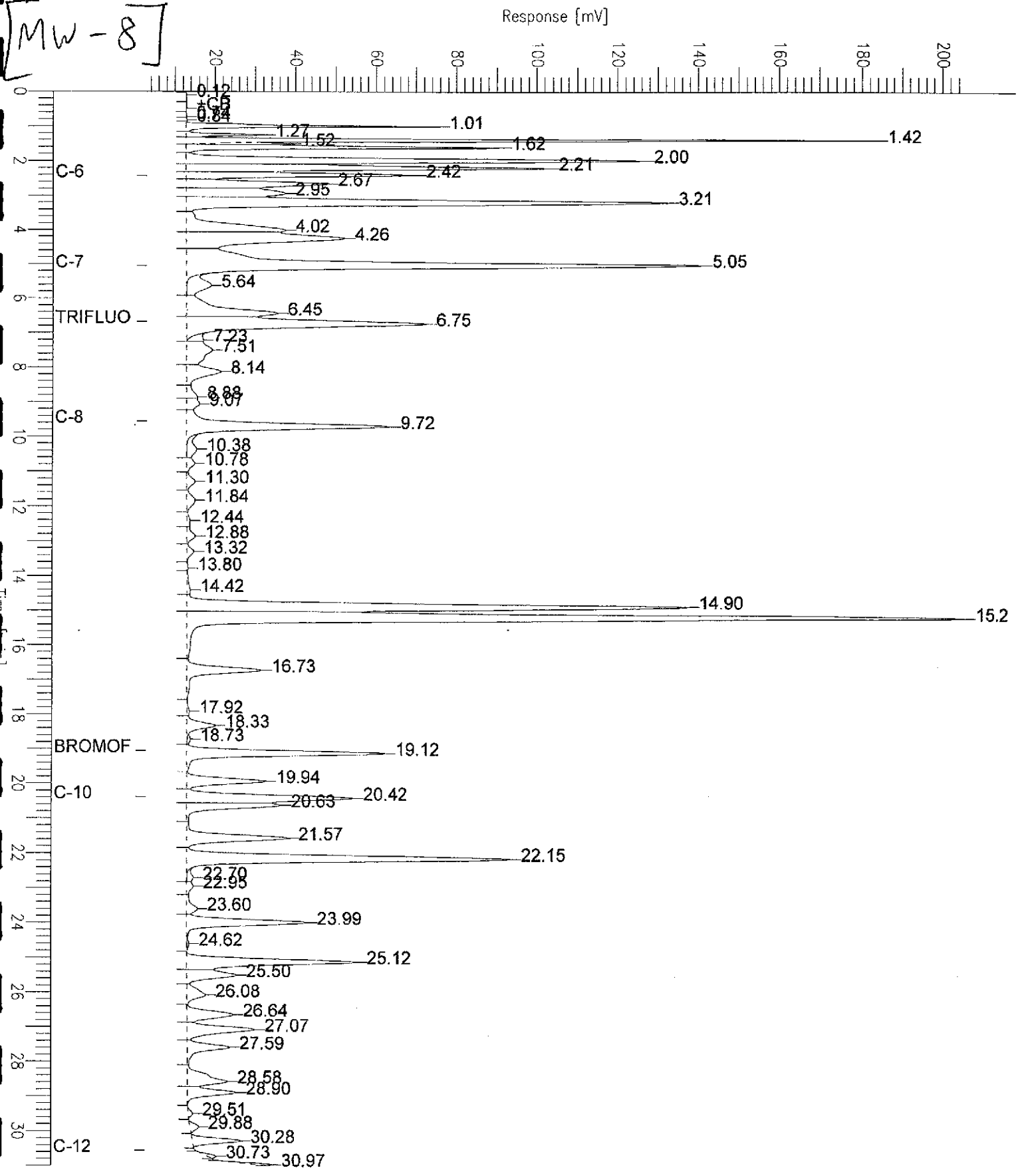


Chromatogram

Sample Name : 155563-006,68186,TVH ONLY
FileName : G:\GC05\DATA\325G022.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 31.00 min
Scale Factor: 1.0 Plot Offset: 3 mV

Sample #: A1 Page 1 of 1
Date : 11/26/01 07:00 AM
Time of Injection: 11/22/01 03:15 AM
Low Point : 3.07 mV High Point : 205.86 mV
Plot Scale: 202.8 mV

[MW-8]

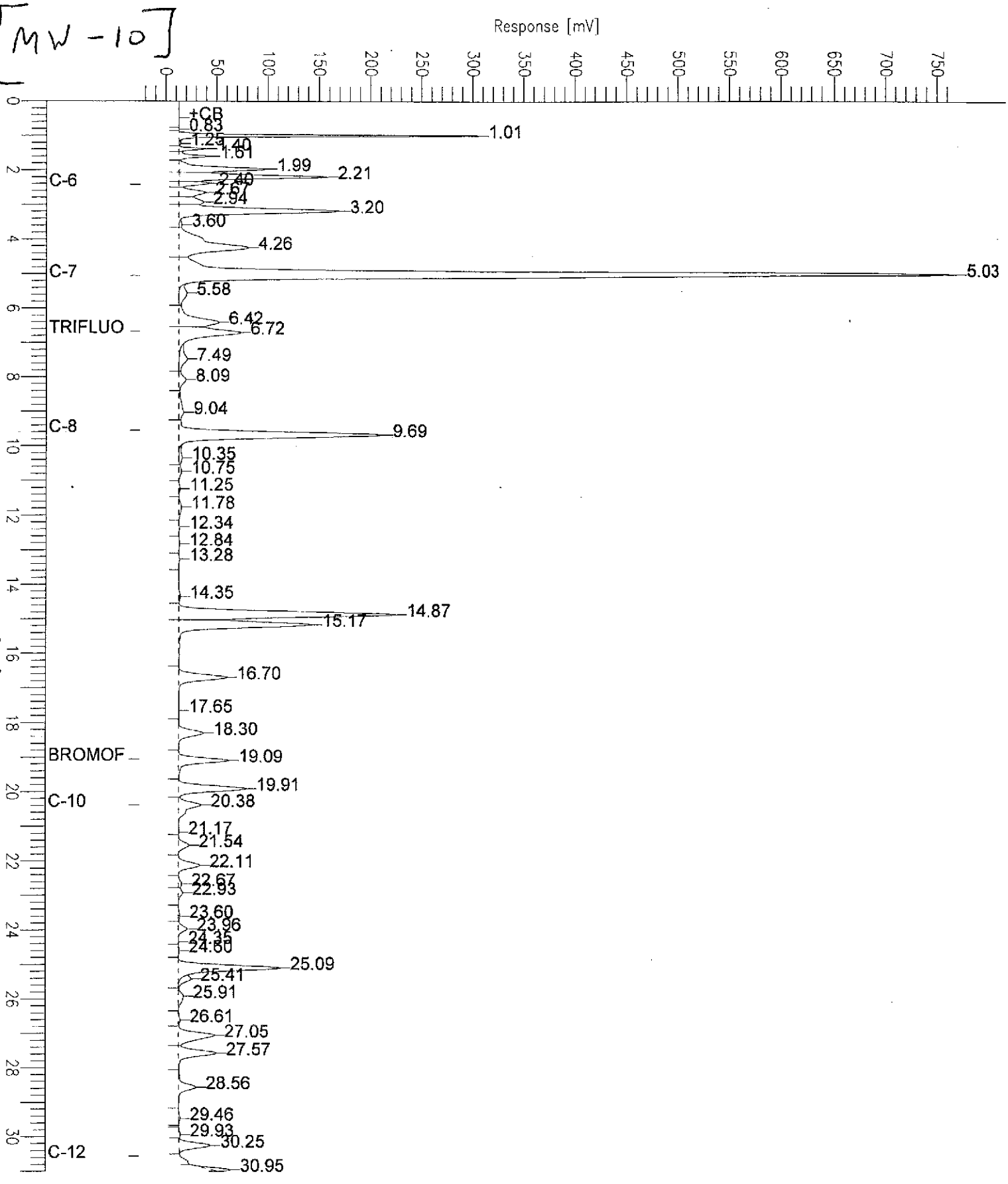


Chromatogram

Sample Name : 155563-007,68186,TVH ONLY
FileName : G:\GC05\DATA\325G015.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 31.00 min
Scale Factor: 1.0 Plot Offset: -25 mV

Sample #: A1 Page 1 of 1
Date : 11/26/01 06:56 AM
Time of Injection: 11/21/01 10:03 PM
Low Point : -24.87 mV High Point : 769.13 mV
Plot Scale: 794.0 mV

[MW-10]

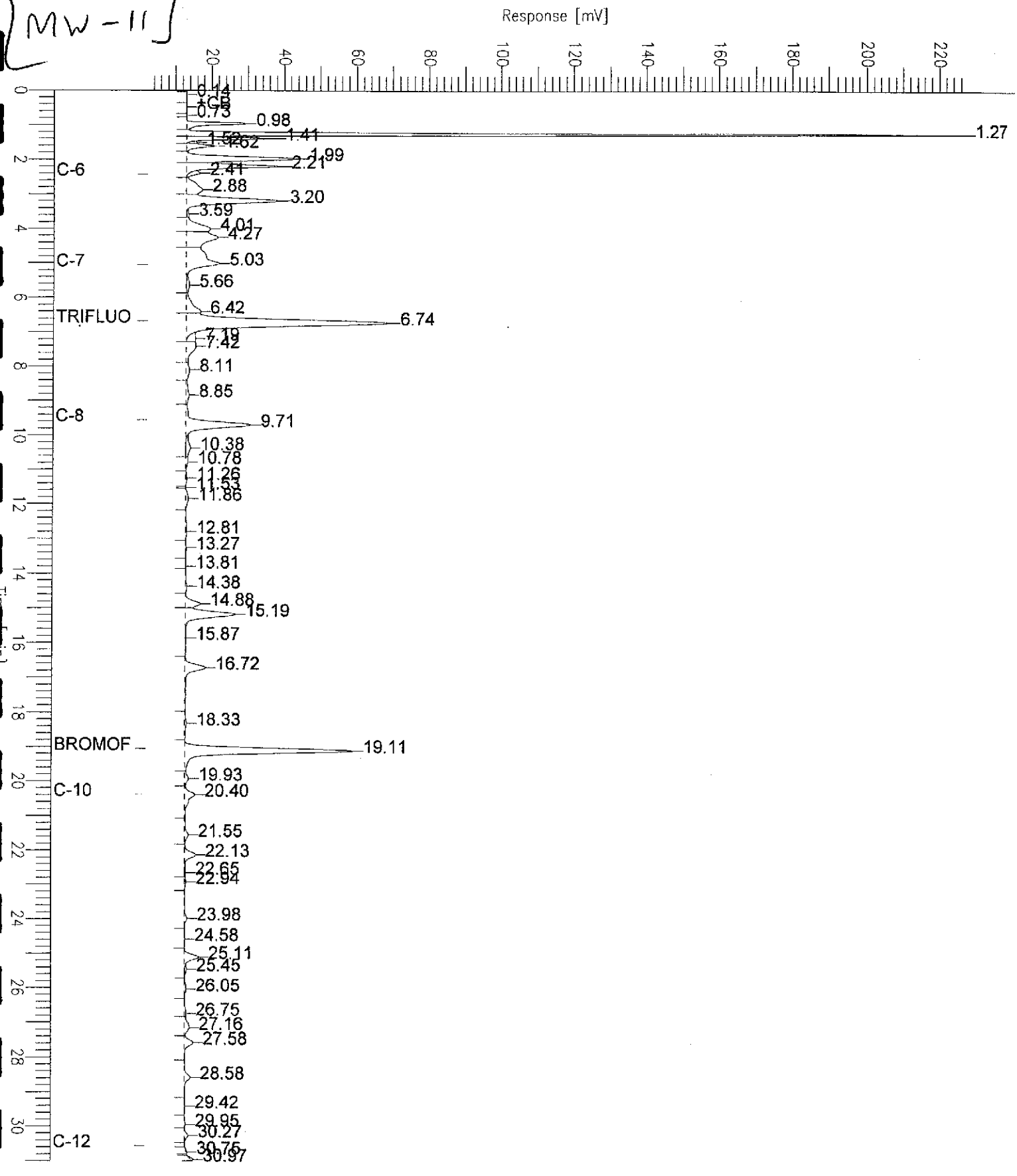


Chromatogram

Sample Name : 155563-008,68186,TVH ONLY
FileName : G:\GC05\DATA\325G016.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 31.00 min
Scale Factor: 1.0 Plot Offset: 2 mV

Sample #: A1 Page 1 of 1
Date : 11/26/01 06:57 AM
Time of Injection: 11/21/01 10:47 PM
Low Point : 2.23 mV High Point : 227.10 mV
Plot Scale: 224.9 mV

[MW-11]



Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	155563	Location:	Tony's, Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2331	Analysis:	8015B(M)
Matrix:	Water	Sampled:	11/19/01
Units:	ug/L	Received:	11/20/01

ield ID:	MW-12	Diln Fac:	1.000
ype:	SAMPLE	Batch#:	68186
Lab ID:	155563-009	Analyzed:	11/21/01

Analyte	Result	RL
Gasoline C7-C12	3,000	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	161 *	59-135
Bromofluorobenzene (FID)	122	60-140

ype:	BLANK	Batch#:	68186
ab ID:	QC162997	Analyzed:	11/21/01
Diln Fac:	1.000		

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	100	59-135
Bromofluorobenzene (FID)	101	60-140

Type:	BLANK	Batch#:	68323
ab ID:	QC163524	Analyzed:	11/29/01
iln Fac:	1.000		

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	91	59-135
Bromofluorobenzene (FID)	79	60-140

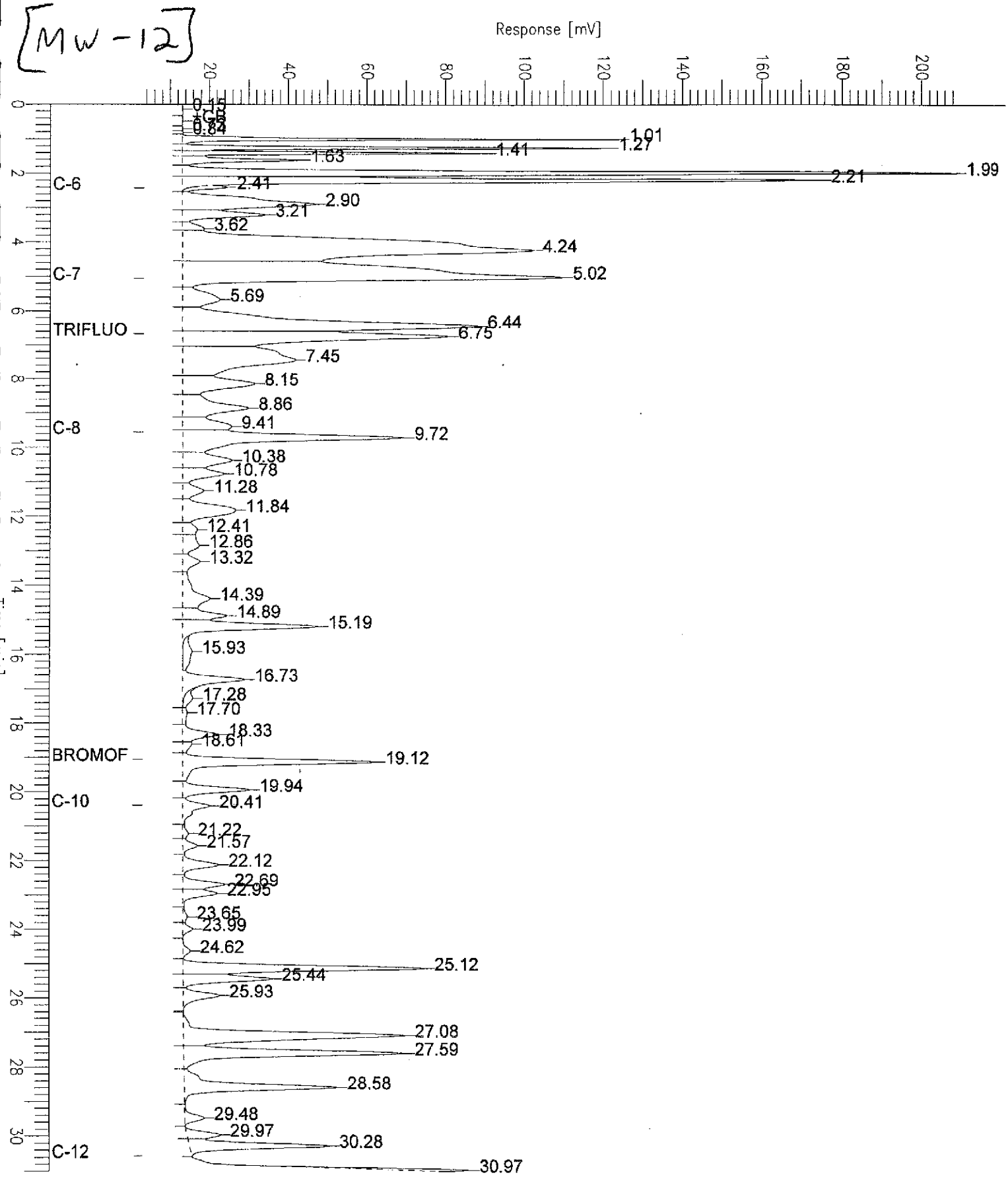
*= Value outside of QC limits; see narrative
D= Not Detected
L= Reporting Limit

Chromatogram

Sample Name : 155563-009,68186,TVH ONLY
FileName : G:\GC05\DATA\325G017.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 31.00 min
Scale Factor: 1.0 Plot Offset: 3 mV

Sample #: A1 Page 1 of 1
Date : 11/26/01 06:57 AM
Time of Injection: 11/21/01 11:31 PM
Low Point : 3.33 mV High Point : 208.90 mV
Plot Scale: 205.6 mV

[Mw-12]

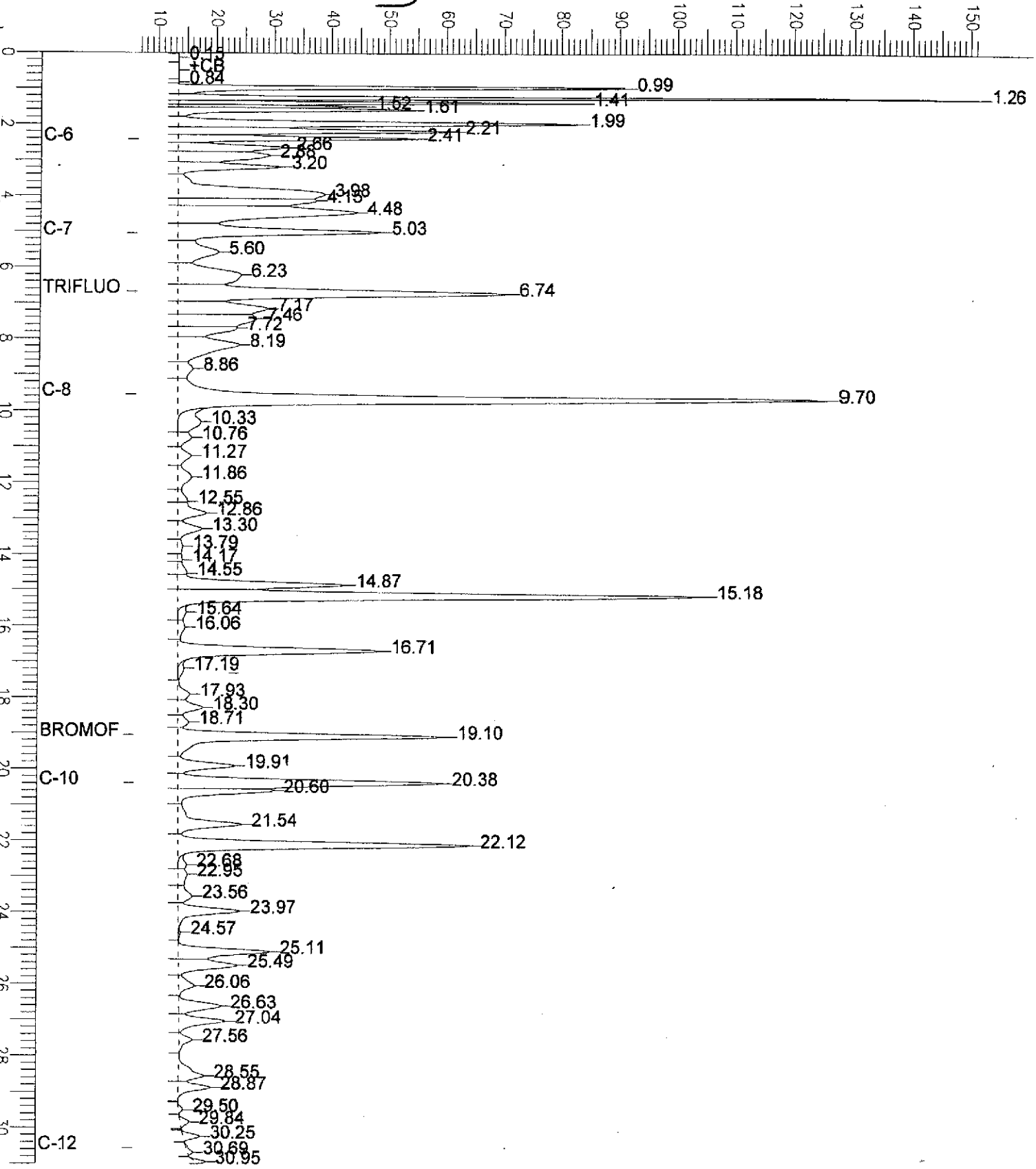


Chromatogram

Sample Name : CCV/LCS,QC162996,68186,01WS2177,5/5000
FileName : G:\GC05\DATA\325G001.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 31.00 min
Scale Factor: 1.0 Plot Offset: 6 mV

Sample #: Page 1 of 1
Date : 11/21/01 11:57 AM
Time of Injection: 11/21/01 11:26 AM
Low Point : 6.47 mV High Point : 151.87 mV
Plot Scale: 145.4 mV

GASOLINE STANDARD



Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	155563	Location:	Tony's, Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2331	Analysis:	8015B(M)
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC162996	Batch#:	68186
Matrix:	Water	Analyzed:	11/21/01
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	2,000	2,082	104	73-121

Surrogate	%REC	Limits
Trifluorotoluene (FID)	113	59-135
Bromofluorobenzene (FID)	116	60-140

Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	155563	Location:	Tony's, Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2331	Analysis:	8015B(M)
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC163522	Batch#:	68323
Matrix:	Water	Analyzed:	11/28/01
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	2,000	1,837	92	73-121

Surrogate	%REC	Limits
Trifluorotoluene (FID)	120	59-135
Bromofluorobenzene (FID)	87	60-140

Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	155563	Location:	Tony's, Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2331	Analysis:	8015B(M)
Field ID:	ZZZZZZZZZZ	Batch#:	68186
MSS Lab ID:	155544-008	Sampled:	11/19/01
Matrix:	Water	Received:	11/19/01
Units:	ug/L	Analyzed:	11/22/01
Diln Fac:	1.000		

Type: MS Lab ID: QC162998

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	45.52	2,000	2,004	98	65-131

Surrogate	%REC	Limits
Trifluorotoluene (FID)	115	59-135
Bromofluorobenzene (FID)	117	60-140

Type: MSD Lab ID: QC162999

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	1,989	97	65-131	1	20

Surrogate	%REC	Limits
Trifluorotoluene (FID)	116	59-135
Bromofluorobenzene (FID)	118	60-140

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	155563	Location:	Tony's, Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2331	Analysis:	8015B(M)
Field ID:	ZZZZZZZZZZ	Batch#:	68186
MSS Lab ID:	155567-001	Sampled:	11/20/01
Matrix:	Water	Received:	11/20/01
Units:	ug/L	Analyzed:	11/22/01
Diln Fac:	1.000		

Type: MS Lab ID: QC163000

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	<27.00	2,000	1,954	98	65-131

Surrogate	%REC	Limits
Trifluorotoluene (FID)	115	59-135
Bromofluorobenzene (FID)	117	60-140

Type: MSD Lab ID: QC163001

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	1,972	99	65-131	1	20

Surrogate	%REC	Limits
Trifluorotoluene (FID)	115	59-135
Bromofluorobenzene (FID)	119	60-140

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	155563	Location:	Tony's, Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2331	Analysis:	8015B(M)
Field ID:	ZZZZZZZZZZ	Batch#:	68323
MSS Lab ID:	155619-017	Sampled:	11/26/01
Matrix:	Water	Received:	11/26/01
Units:	ug/L	Analyzed:	11/29/01
Diln Fac:	1.000		

Type: MS Lab ID: QC163525

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	<20.00	2,000	1,831	92	65-131

Surrogate	%REC	Limits
Trifluorotoluene (FID)	126	59-135
Bromofluorobenzene (FID)	110	60-140

Type: MSD Lab ID: QC163526

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	1,660	83	65-131	10	20

Surrogate	%REC	Limits
Trifluorotoluene (FID)	125	59-135
Bromofluorobenzene (FID)	104	60-140

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	155563	Location:	Tony's, Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2331	Analysis:	EPA 8260B
Field ID:	MW-1	Batch#:	68410
Lab ID:	155563-001	Sampled:	11/19/01
Matrix:	Water	Received:	11/20/01
Units:	ug/L	Analyzed:	12/01/01
Diln Fac:	625.0		

Analyte	Result	RL
MTBE	74,000	310
Benzene	2,700	310
Toluene	5,100	310
Chlorobenzene	ND	310
Ethylbenzene	1,000	310
m,p-Xylenes	3,600	310
o-Xylene	970	310
1,3-Dichlorobenzene	ND	310
1,4-Dichlorobenzene	ND	310
1,2-Dichlorobenzene	ND	310

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	103	78-123
Toluene-d8	89	80-110
Bromofluorobenzene	95	80-115

D= Not Detected
L= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	155563	Location:	Tony's, Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2331	Analysis:	EPA 8260B
Field ID:	MW-2	Batch#:	68365
Lab ID:	155563-002	Sampled:	11/19/01
Matrix:	Water	Received:	11/20/01
Units:	ug/L	Analyzed:	11/30/01
Diln Fac:	1.000		

Analyte	Result	RL
MTBE	14	0.5
Benzene	13	0.5
Toluene	64	0.5
Chlorobenzene	ND	0.5
Ethylbenzene	22	0.5
m,p-Xylenes	61	0.5
o-Xylene	22	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	100	78-123
Toluene-d8	94	80-110
Bromofluorobenzene	93	80-115

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	155563	Location:	Tony's, Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2331	Analysis:	EPA 8260B
Field ID:	MW-4	Batch#:	68426
Lab ID:	155563-003	Sampled:	11/19/01
Matrix:	Water	Received:	11/20/01
Units:	ug/L	Analyzed:	12/03/01
Diln Fac:	1.000		

Analyte	Result	RL
MTBE	ND	0.5
Benzene	180	0.5
Toluene	5.3	0.5
Chlorobenzene	ND	0.5
Ethylbenzene	17	0.5
m,p-Xylenes	47	0.5
o-Xylene	6.2	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	107	78-123
Toluene-d8	93	80-110
Bromofluorobenzene	90	80-115

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	155563	Location:	Tony's, Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2331	Analysis:	EPA 8260B
Field ID:	MW-5	Batch#:	68365
Lab ID:	155563-004	Sampled:	11/19/01
Matrix:	Water	Received:	11/20/01
Units:	ug/L	Analyzed:	11/30/01
Diln Fac:	1.000		

Analyte	Result	RL
MTBE	40	0.5
Benzene	17	0.5
Toluene	160	0.5
Chlorobenzene	ND	0.5
Ethylbenzene	26	0.5
m,p-Xylenes	96	0.5
o-Xylene	39	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	100	78-123
Toluene-d8	93	80-110
Bromofluorobenzene	93	80-115

D= Not Detected
L= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	155563	Location:	Tony's, Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2331	Analysis:	EPA 8260B
Field ID:	MW-7	Batch#:	68365
Lab ID:	155563-005	Sampled:	11/19/01
Matrix:	Water	Received:	11/20/01
Units:	ug/L	Analyzed:	11/30/01
Diln Fac:	2.000		

Analyte	Result	RL
MTBE	69	1.0
Benzene	24	1.0
Toluene	220	1.0
Chlorobenzene	ND	1.0
Ethylbenzene	41	1.0
m,p-Xylenes	150	1.0
o-Xylene	55	1.0
1,3-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0
1,2-Dichlorobenzene	ND	1.0

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	102	78-123
Toluene-d8	94	80-110
Bromofluorobenzene	93	80-115

D= Not Detected
L= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	155563	Location:	Tony's, Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2331	Analysis:	EPA 8260B
Field ID:	MW-8	Batch#:	68365
Lab ID:	155563-006	Sampled:	11/19/01
Matrix:	Water	Received:	11/20/01
Units:	ug/L	Analyzed:	11/30/01
Diln Fac:	6.250		

Analyte	Result	RL
MTBE	400	3.1
Benzene	600	3.1
Toluene	270	3.1
Chlorobenzene	ND	3.1
Ethylbenzene	750	3.1
m,p-Xylenes	1,100	3.1
o-Xylene	110	3.1
1,3-Dichlorobenzene	ND	3.1
1,4-Dichlorobenzene	ND	3.1
1,2-Dichlorobenzene	ND	3.1

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	102	78-123
Toluene-d8	93	80-110
Bromofluorobenzene	92	80-115

D= Not Detected
L= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	155563	Location:	Tony's, Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2331	Analysis:	EPA 8260B
Field ID:	MW-10	Batch#:	68365
Lab ID:	155563-007	Sampled:	11/19/01
Matrix:	Water	Received:	11/20/01
Units:	ug/L	Analyzed:	11/30/01
Diln Fac:	6.250		

Analyte	Result	RL
MTBE	410	3.1
Benzene	900	3.1
Toluene	260	3.1
Chlorobenzene	ND	3.1
Ethylbenzene	310	3.1
m,p-Xylenes	190	3.1
o-Xylene	68	3.1
1,3-Dichlorobenzene	ND	3.1
1,4-Dichlorobenzene	ND	3.1
1,2-Dichlorobenzene	ND	3.1

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	102	78-123
Toluene-d8	93	80-110
Bromofluorobenzene	93	80-115

D= Not Detected
L= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	155563	Location:	Tony's, Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2331	Analysis:	EPA 8260B
Field ID:	MW-11	Batch#:	68365
Lab ID:	155563-008	Sampled:	11/19/01
Matrix:	Water	Received:	11/20/01
Units:	ug/L	Analyzed:	11/30/01
Diln Fac:	1.000		

Analyte	Result	RL
MTBE	ND	0.5
Benzene	7.9	0.5
Toluene	26	0.5
Chlorobenzene	ND	0.5
Ethylbenzene	5.1	0.5
m,p-Xylenes	21	0.5
o-Xylene	7.9	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	78-123
Toluene-d8	96	80-110
Bromofluorobenzene	92	80-115

D= Not Detected
L= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	155563	Location:	Tony's, Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2331	Analysis:	EPA 8260B
Field ID:	MW-12	Batch#:	68338
Lab ID:	155563-009	Sampled:	11/19/01
Matrix:	Water	Received:	11/20/01
Units:	ug/L	Analyzed:	11/30/01
Diln Fac:	1.000		

Analyte	Result	RL
MTBE	120	0.5
Benzene	81	0.5
Toluene	69	0.5
Chlorobenzene	ND	0.5
Ethylbenzene	13	0.5
m,p-Xylenes	51	0.5
o-Xylene	22	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	90	78-123
Toluene-d8	94	80-110
Bromofluorobenzene	96	80-115

D= Not Detected
L= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	155563	Location:	Tony's, Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2331	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC163593	Batch#:	68338
Matrix:	Water	Analyzed:	11/29/01
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	101	78-123
Toluene-d8	96	80-110
Bromofluorobenzene	97	80-115

D= Not Detected
L= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	155563	Location:	Tony's, Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2331	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC163703	Batch#:	68365
Matrix:	Water	Analyzed:	11/30/01
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	98	78-123
Toluene-d8	95	80-110
Bromofluorobenzene	94	80-115

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	155563	Location:	Tony's, Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2331	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC163704	Batch#:	68365
Matrix:	Water	Analyzed:	11/30/01
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	103	78-123
Toluene-d8	94	80-110
Bromofluorobenzene	94	80-115

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	155563	Location:	Tony's, Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2331	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC163869	Batch#:	68410
Matrix:	Water	Analyzed:	12/01/01
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	107	78-123
Toluene-d8	89	80-110
Bromofluorobenzene	92	80-115

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	155563	Location:	Tony's, Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2331	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC163938	Batch#:	68426
Matrix:	Water	Analyzed:	12/03/01
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	102	78-123
Toluene-d8	87	80-110
Bromofluorobenzene	91	80-115

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	155563	Location:	Tony's, Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2331	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	68338
Units:	ug/L	Analyzed:	11/29/01
Diln Fac:	1.000		

Type: BS Lab ID: QC163590

Analyte	Spiked	Result	%REC	Limits
Benzene	50.00	47.93	96	80-116
Toluene	50.00	47.46	95	80-120
Chlorobenzene	50.00	50.05	100	80-117

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	98	78-123
Toluene-d8	93	80-110
Bromofluorobenzene	92	80-115

Type: BSD Lab ID: QC163591

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Benzene	50.00	46.59	93	80-116	3	20
Toluene	50.00	47.01	94	80-120	1	20
Chlorobenzene	50.00	49.84	100	80-117	0	20

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	96	78-123
Toluene-d8	93	80-110
Bromofluorobenzene	92	80-115

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	155563	Location:	Tony's, Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2331	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	68365
Units:	ug/L	Analyzed:	11/30/01
Diln Fac:	1.000		

Type: BS Lab ID: QC163701

Analyte	Spiked	Result	%REC	Limits
Benzene	50.00	49.34	99	80-116
Toluene	50.00	47.98	96	80-120
Chlorobenzene	50.00	49.77	100	80-117

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	94	78-123
Toluene-d8	95	80-110
Bromofluorobenzene	94	80-115

Type: BSD Lab ID: QC163702

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Benzene	50.00	47.74	95	80-116	3	20
Toluene	50.00	48.01	96	80-120	0	20
Chlorobenzene	50.00	50.53	101	80-117	2	20

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	95	78-123
Toluene-d8	96	80-110
Bromofluorobenzene	92	80-115

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	155563	Location:	Tony's, Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2331	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	68410
Units:	ug/L	Analyzed:	12/01/01
Diln Fac:	1.000		

Type: BS Lab ID: QC163867

Analyte	Spiked	Result	%REC	Limits
Benzene	50.00	48.63	97	80-116
Toluene	50.00	46.23	92	80-120
Chlorobenzene	50.00	49.59	99	80-117

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	105	78-123
Toluene-d8	91	80-110
Bromofluorobenzene	93	80-115

Type: BSD Lab ID: QC163868

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Benzene	50.00	47.46	95	80-116	2	20
Toluene	50.00	45.13	90	80-120	2	20
Chlorobenzene	50.00	48.03	96	80-117	3	20

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	105	78-123
Toluene-d8	92	80-110
Bromofluorobenzene	91	80-115

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	155563	Location:	Tony's, Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2331	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	68426
Units:	ug/L	Analyzed:	12/03/01
Diln Fac:	1.000		

Type: BS Lab ID: QC163936

Analyte	Spiked	Result	%REC	Limits
Benzene	50.00	47.10	94	80-116
Toluene	50.00	46.00	92	80-120
Chlorobenzene	50.00	49.32	99	80-117

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	109	78-123
Toluene-d8	91	80-110
Bromofluorobenzene	90	80-115

Type: BSD Lab ID: QC163937

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Benzene	50.00	45.37	91	80-116	4	20
Toluene	50.00	44.21	88	80-120	4	20
Chlorobenzene	50.00	48.80	98	80-117	1	20

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	106	78-123
Toluene-d8	92	80-110
Bromofluorobenzene	91	80-115

RPD= Relative Percent Difference

Appendix B

Laboratory Reports and Chain of Custody Forms for Treatment System

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

ANALYTICAL REPORT

Prepared for:

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

Date: 15-NOV-01
Lab Job Number: 155202
Project ID: 2333
Location: Tony's, 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: Paul Predergast
Project Manager

Reviewed by:
Operations Manager

Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	155202	Location:	Tony's, Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2333	Analysis:	8015B(M)
Matrix:	Water	Sampled:	11/02/01
Units:	ug/L	Received:	11/02/01
Batch#:	67725		

Field ID:	INFLUENT	Diln Fac:	10.00
Type:	SAMPLE	Analyzed:	11/08/01
Lab ID:	155202-001		

Analyte	Result	RL
Gasoline C7-C12	25,000	500

Surrogate	%REC	Limits
Trifluorotoluene (FID)	127	59-135
Bromofluorobenzene (FID)	104	60-140

Field ID:	GAC-1	Diln Fac:	1.000
Type:	SAMPLE	Analyzed:	11/08/01
Lab ID:	155202-002		

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	101	59-135
Bromofluorobenzene (FID)	103	60-140

Field ID:	PSP#1	Diln Fac:	1.000
Type:	SAMPLE	Analyzed:	11/08/01
Lab ID:	155202-003		

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	101	59-135
Bromofluorobenzene (FID)	103	60-140

Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC161199	Analyzed:	11/07/01

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	98	59-135
Bromofluorobenzene (FID)	96	60-140

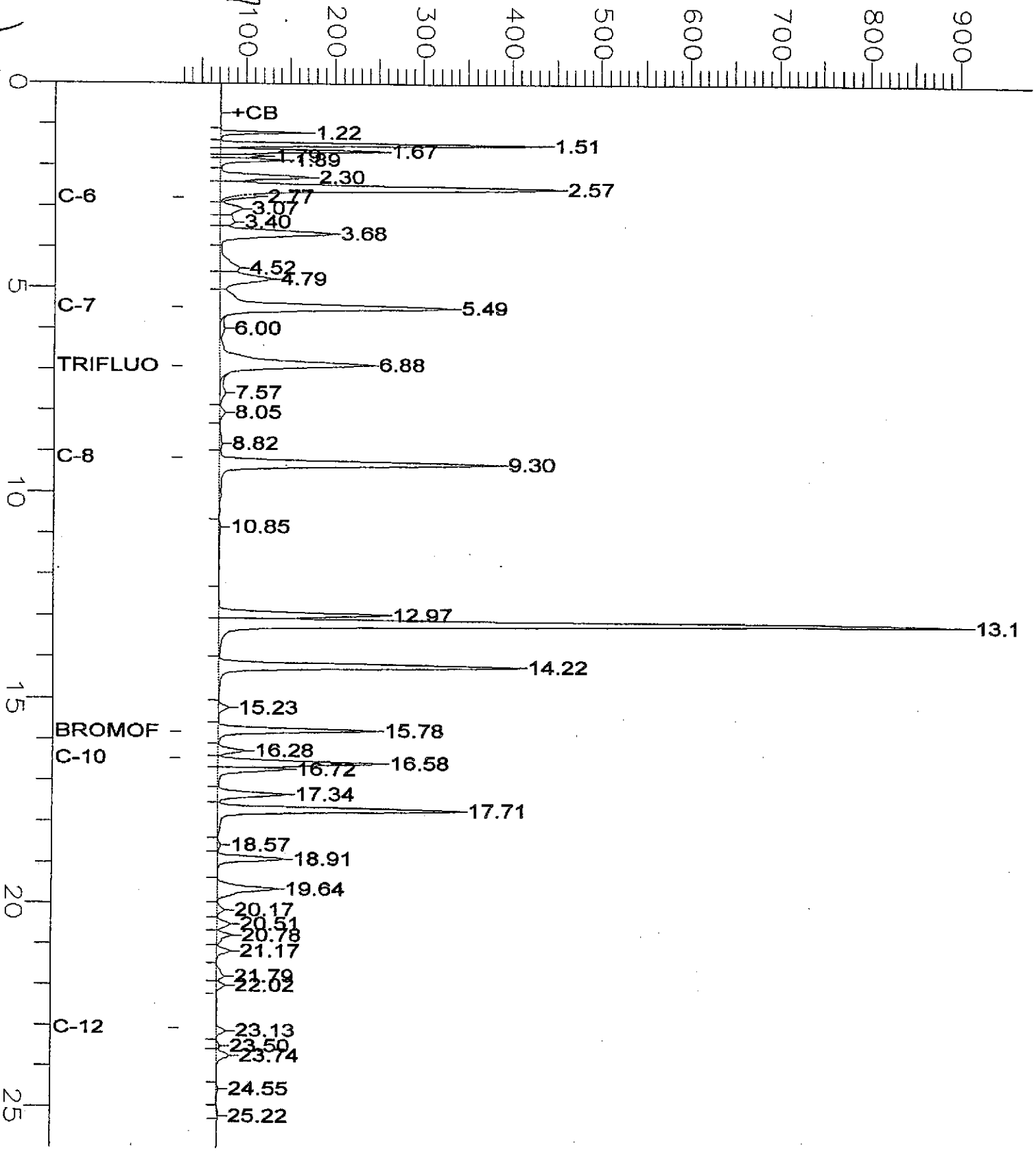
ND= Not Detected
RL= Reporting Limit

GC04 TVH 'J' Data File FID

Sample Name : 155202-001,67725,tvh only
FileName : G:\GC04\DATA\311J029.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.00 min
Scale Factor: 1.0 Plot Offset: 29 mV

Sample #: B1 Page 1 of 1
Date : 11/8/01 09:12 AM
Time of Injection: 11/8/01 07:34 AM
Low Point : 29.27 mV High Point : 908.68 mV
Plot Scale: 879.4 mV

[INFLUENT]

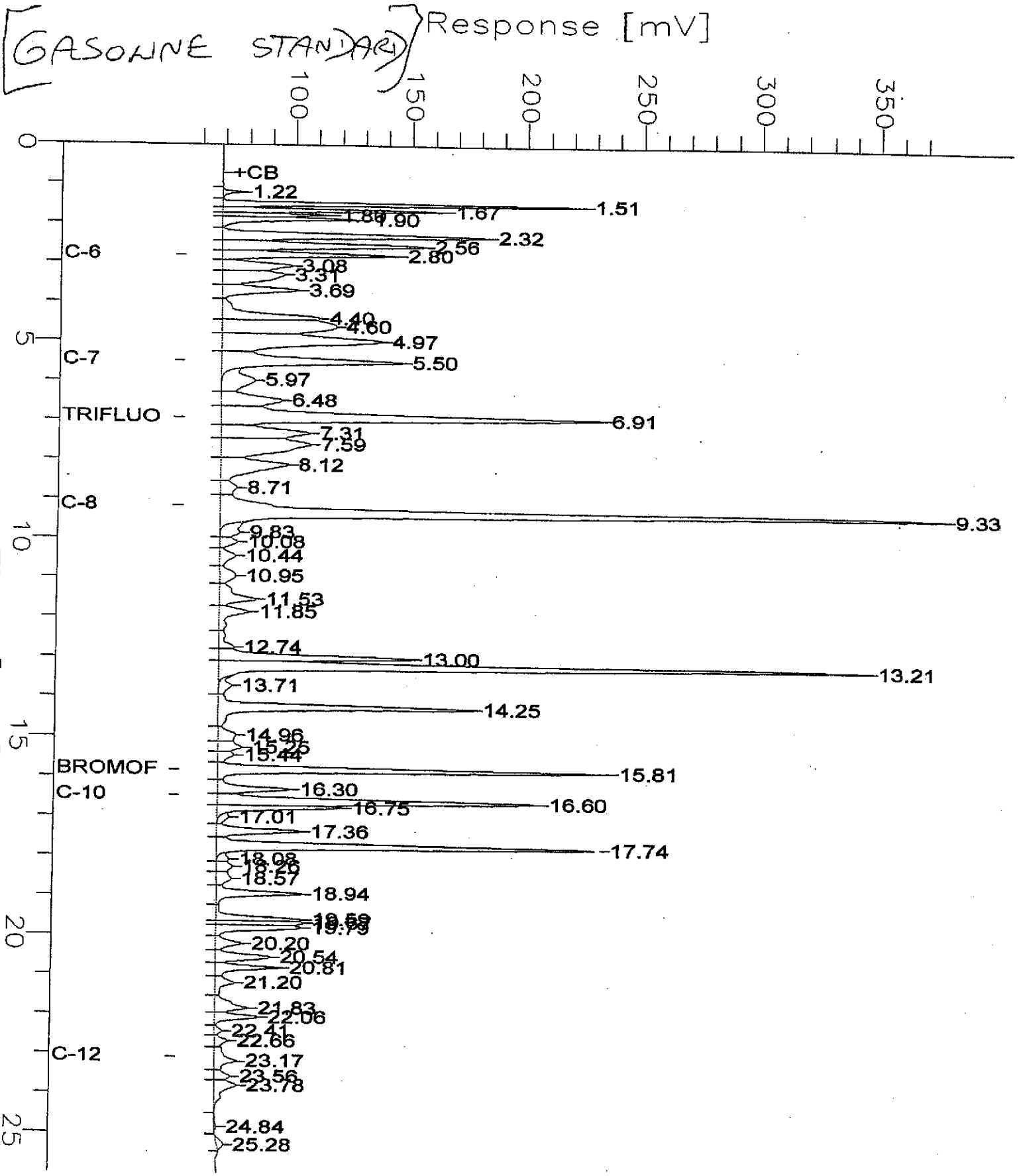


GC04 TVH 'J' Data File FID

Sample Name : CCV/LCS,QC161200,01WS2019,5/5000
FileName : G:\GC04\DATA\311J002.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 : 11/7/01 03:48 PM
Time of Injection: 11/7/01 03:22 PM
Low Point : 52.51 mV High Point : 379.07 mV
Plot Scale: 326.6 mV

[GASOLINE STANDARD]



Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	155202	Location:	Tony's, Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2333	Analysis:	8015B(M)
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC161200	Batch#:	67725
Matrix:	Water	Analyzed:	11/07/01
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	2,000	1,928	96	73-121

Surrogate	%REC	Limits
Trifluorotoluene (FID)	112	59-135
Bromofluorobenzene (FID)	101	60-140

Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	155202	Location:	Tony's, Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2333	Analysis:	8015B(M)
Field ID:	ZZZZZZZZZZ	Batch#:	67725
MSS Lab ID:	155189-025	Sampled:	11/02/01
Matrix:	Water	Received:	11/02/01
Units:	ug/L	Analyzed:	11/07/01
Diln Fac:	1.000		

Type: MS Lab ID: QC161201

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	<33.00	2,000	1,744	87	65-131

Surrogate	%REC	Limits
Trifluorotoluene (FID)	113	59-135
Bromofluorobenzene (FID)	107	60-140

Type: MSD Lab ID: QC161202

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	1,813	91	65-131	4	20

Surrogate	%REC	Limits
Trifluorotoluene (FID)	114	59-135
Bromofluorobenzene (FID)	108	60-140

RPD= Relative Percent Difference

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Purgeable Aromatics by GC/MS

Lab #:	155202	Location:	Tony's, Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2333	Analysis:	EPA 8260B
Field ID:	INFLUENT	Batch#:	67868
Lab ID:	155202-001	Sampled:	11/02/01
Matrix:	Water	Received:	11/02/01
Units:	ug/L	Analyzed:	11/10/01
Diln Fac:	25.00		

Analyte	Result	RL
MTBE	3,700	13
Benzene	1,100	13
Toluene	1,300	13
Chlorobenzene	ND	13
Ethylbenzene	600	13
m,p-Xylenes	3,700	13
o-Xylene	1,500	13
1,3-Dichlorobenzene	ND	13
1,4-Dichlorobenzene	ND	13
1,2-Dichlorobenzene	ND	13

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	106	78-123
Toluene-d8	98	80-110
Bromofluorobenzene	103	80-115

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	155202	Location:	Tony's, Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2333	Analysis:	EPA 8260B
Field ID:	GAC-1	Batch#:	67868
Lab ID:	155202-002	Sampled:	11/02/01
Matrix:	Water	Received:	11/02/01
Units:	ug/L	Analyzed:	11/10/01
Diln Fac:	1.000		

Analyte	Result	RL
MTBE	0.6	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	105	78-123
Toluene-d8	99	80-110
Bromofluorobenzene	107	80-115

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	155202	Location:	Tony's, Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2333	Analysis:	EPA 8260B
Field ID:	PSP#1	Batch#:	67868
Lab ID:	155202-003	Sampled:	11/02/01
Matrix:	Water	Received:	11/02/01
Units:	ug/L	Analyzed:	11/10/01
Diln Fac:	1.000		

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	109	78-123
Toluene-d8	101	80-110
Bromofluorobenzene	109	80-115

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	155202	Location:	Tony's, Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2333	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC161769	Batch#:	67868
Matrix:	Water	Analyzed:	11/09/01
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	105	78-123
Toluene-d8	99	80-110
Bromofluorobenzene	109	80-115

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	155202	Location:	Tony's, Oakland
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2333	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	67868
Units:	ug/L	Analyzed:	11/09/01
Diln Fac:	1.000		

Type: BS Lab ID: QC161763

Analyte	Spiked	Result	%REC	Limits
Benzene	50.00	52.01	104	80-116
Toluene	50.00	53.89	108	80-120
Chlorobenzene	50.00	51.91	104	80-117

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	101	78-123
Toluene-d8	102	80-110
Bromofluorobenzene	97	80-115

Type: BSD Lab ID: QC161764

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Benzene	50.00	50.24	100	80-116	3	20
Toluene	50.00	50.51	101	80-120	6	20
Chlorobenzene	50.00	49.89	100	80-117	4	20

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	98	78-123
Toluene-d8	100	80-110
Bromofluorobenzene	96	80-115

PD= Relative Percent Difference

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: 12-OCT-01
Lab Job Number: 154468
Project ID: 2333
Location: Tony's Auto Express-Oak

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: _____ for PP
Project Manager

Reviewed by: _____
Operations Manager

Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	154468	Location:	Tony's Auto Express-Oak
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2333	Analysis:	8015B(M)
Matrix:	Water	Sampled:	09/28/01
Units:	ug/L	Received:	09/28/01

Field ID:	INFLUENT	Diln Fac:	50.00
Type:	SAMPLE	Batch#:	66866
Lab ID:	154468-001	Analyzed:	10/04/01

Analyte	Result	RL
Gasoline C7-C12	28,000	2,500

Surrogate	%REC	Limits
Trifluorotoluene (FID)	104	59-135
Bromofluorobenzene (FID)	92	60-140

Field ID:	GAC-1	Diln Fac:	1.000
Type:	SAMPLE	Batch#:	66866
Lab ID:	154468-002	Analyzed:	10/04/01

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	94	59-135
Bromofluorobenzene (FID)	88	60-140

Field ID:	PSP#9	Diln Fac:	1.000
Type:	SAMPLE	Batch#:	66803
Lab ID:	154468-003	Analyzed:	10/03/01

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	101	59-135
Bromofluorobenzene (FID)	117	60-140

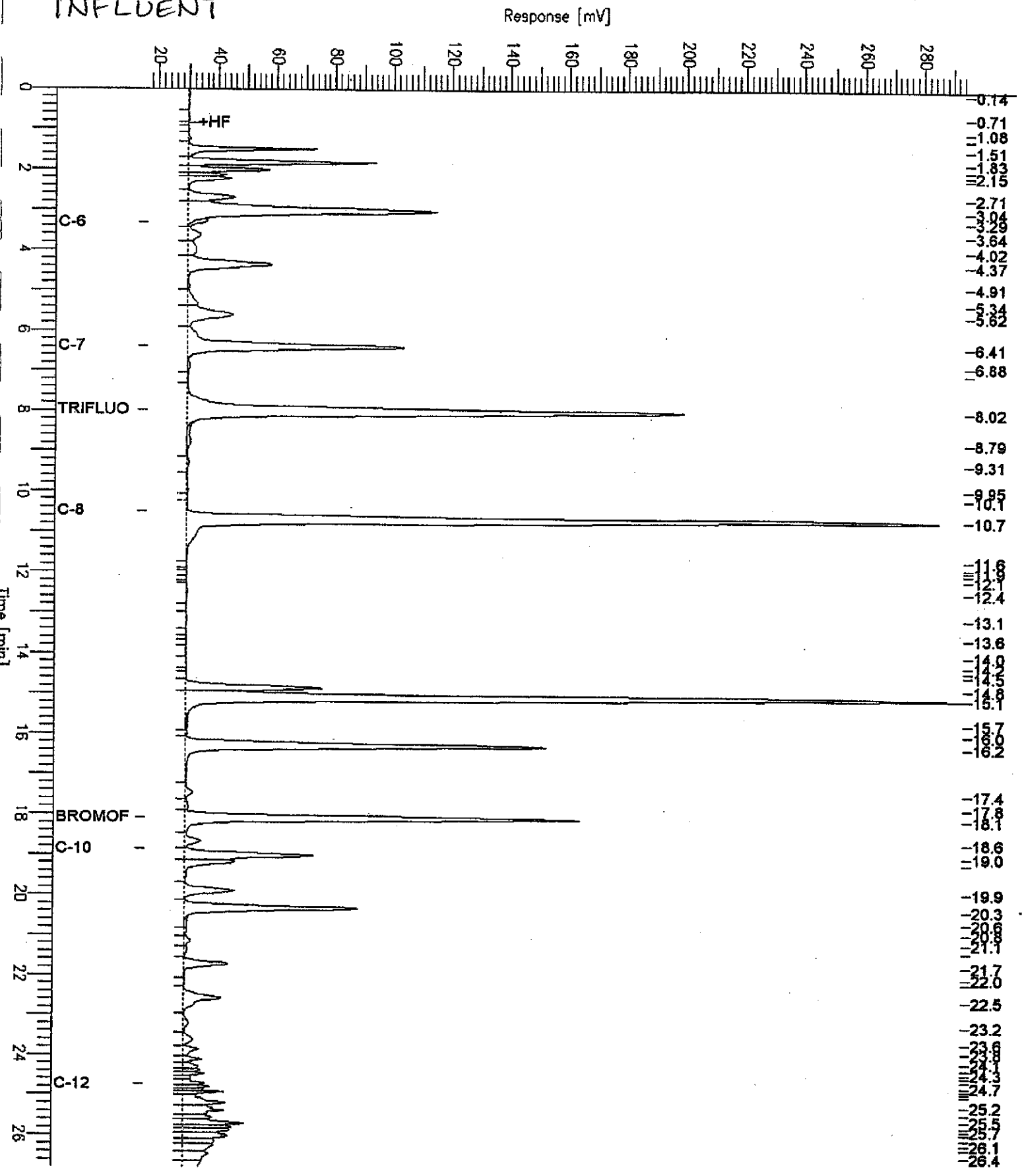
ND= Not Detected
RL= Reporting Limit

GC19 TVH 'X' Data File (FID)

Sample Name : 154468-001,66866,tvh only
FileName : G:\GC19\DATA\277X008.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.80 min
Scale Factor: 1.0 Plot Offset: 16 mV

Sample #: A1 Page 1 of 1
Date : 10/5/01 12:44 PM
Time of Injection: 10/4/01 08:47 PM
Low Point : 16.19 mV High Point : 294.10 mV
Plot Scale: 277.9 mV

INFLUENT



Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	154468	Location:	Tony's Auto Express-Oak
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2333	Analysis:	8015B(M)
Matrix:	Water	Sampled:	09/28/01
Units:	ug/L	Received:	09/28/01

Type:	BLANK	Batch#:	66803
Lab ID:	QC157576	Analyzed:	10/02/01
Diln Fac:	1.000		

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	77	59-135
Bromofluorobenzene (FID)	74	60-140

Type:	BLANK	Batch#:	66866
Lab ID:	QC157855	Analyzed:	10/04/01
Diln Fac:	1.000		

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	98	59-135
Bromofluorobenzene (FID)	87	60-140

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	154468	Location:	Tony's Auto Express-Oak
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2333	Analysis:	8015B(M)
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC157577	Batch#:	66803
Matrix:	Water	Analyzed:	10/02/01
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	2,000	2,062	103	73-121

Surrogate	%REC	Limits
Trifluorotoluene (FID)	108	59-135
Bromofluorobenzene (FID)	99	60-140

Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	154468	Location:	Tony's Auto Express-Oak
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2333	Analysis:	8015B(M)
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC157856	Batch#:	66866
Matrix:	Water	Analyzed:	10/04/01
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	2,000	1,735	87	73-121

Surrogate	%REC	Limits
Trifluorotoluene (FID)	108	59-135
Bromofluorobenzene (FID)	91	60-140

Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	154468	Location:	Tony's Auto Express-Oak
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2333	Analysis:	8015B(M)
Field ID:	ZZZZZZZZZZ	Batch#:	66803
MSS Lab ID:	154470-001	Sampled:	09/28/01
Matrix:	Water	Received:	09/28/01
Units:	ug/L	Analyzed:	10/03/01
Diln Fac:	1.000		

Type: MS Lab ID: QC157580

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	<20.00	2,000	2,028	101	65-131

Surrogate	%REC	Limits
Trifluorotoluene (FID)	120	59-135
Bromofluorobenzene (FID)	116	60-140

Type: MSD Lab ID: QC157581

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	1,986	99	65-131	2	20

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

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	154468	Location:	Tony's Auto Express-Oak
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2333	Analysis:	8015B(M)
Field ID:	ZZZZZZZZZZ	Batch#:	66803
MSS Lab ID:	154495-001	Sampled:	10/01/01
Matrix:	Water	Received:	10/01/01
Units:	ug/L	Analyzed:	10/03/01
Diln Fac:	1.000		

ype: MS Lab ID: QC157582

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	<20.00	2,000	2,017	101	65-131

Surrogate	%REC	Limits
Trifluorotoluene (FID)	119	59-135
Bromofluorobenzene (FID)	110	60-140

ype: MSD Lab ID: QC157583

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	2,032	102	65-131	1	20

Surrogate	%REC	Limits
Trifluorotoluene (FID)	119	59-135
Bromofluorobenzene (FID)	111	60-140

PD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	154468	Location:	Tony's Auto Express-Oak
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2333	Analysis:	8015B(M)
Field ID:	ZZZZZZZZZZ	Batch#:	66866
MSS Lab ID:	154559-001	Sampled:	10/03/01
Matrix:	Water	Received:	10/03/01
Units:	ug/L	Analyzed:	10/05/01
Diln Fac:	1.000		

Type: MS Lab ID: QC157857

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	<33.00	2,000	1,770	88	65-131

Surrogate	%REC	Limits
Trifluorotoluene (FID)	110	59-135
Bromofluorobenzene (FID)	93	60-140

Type: MSD Lab ID: QC157858

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	1,753	88	65-131	1	20

Surrogate	%REC	Limits
Trifluorotoluene (FID)	109	59-135
Bromofluorobenzene (FID)	93	60-140

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	154468	Location:	Tony's Auto Express-Oak
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2333	Analysis:	8015B(M)
Field ID:	ZZZZZZZZZZ	Batch#:	66866
MSS Lab ID:	154534-001	Sampled:	10/02/01
Matrix:	Water	Received:	10/02/01
Units:	ug/L	Analyzed:	10/05/01
Diln Fac:	1.000		

Type: MS Lab ID: QC157859

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	<33.00	2,000	1,754	88	65-131

Surrogate	%REC	Limits
Trifluorotoluene (FID)	110	59-135
Bromofluorobenzene (FID)	94	60-140

Type: MSD Lab ID: QC157860

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	1,748	87	65-131	0	20

Surrogate	%REC	Limits
Trifluorotoluene (FID)	110	59-135
Bromofluorobenzene (FID)	94	60-140

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	154468	Location:	Tony's Auto Express-Oak
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2333	Analysis:	EPA 8260B
Field ID:	INFLUENT	Batch#:	66813
Lab ID:	154468-001	Sampled:	09/28/01
Matrix:	Water	Received:	09/28/01
Units:	ug/L	Analyzed:	10/02/01
Diln Fac:	25.00		

Analyte	Result	RL
MTBE	4,100	13
Benzene	1,100	13
Toluene	3,700	13
Chlorobenzene	ND	13
Ethylbenzene	620	13
m,p-Xylenes	3,500	13
o-Xylene	1,700	13
1,3-Dichlorobenzene	ND	13
1,4-Dichlorobenzene	ND	13
1,2-Dichlorobenzene	ND	13

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	93	78-123
Toluene-d8	97	80-110
Bromofluorobenzene	102	80-115

D= Not Detected
L= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	154468	Location:	Tony's Auto Express-Oak
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2333	Analysis:	EPA 8260B
Field ID:	GAC-1	Batch#:	66776
Lab ID:	154468-002	Sampled:	09/28/01
Matrix:	Water	Received:	09/28/01
Units:	ug/L	Analyzed:	10/01/01
Diln Fac:	1.000		

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	107	78-123
Toluene-d8	100	80-110
Bromofluorobenzene	97	80-115

D= Not Detected
L= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	154468	Location:	Tony's Auto Express-Oak
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2333	Analysis:	EPA 8260B
Field ID:	PSP#9	Batch#:	66776
Lab ID:	154468-003	Sampled:	09/28/01
Matrix:	Water	Received:	09/28/01
Units:	ug/L	Analyzed:	10/01/01
Diln Fac:	1.000		

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	101	78-123
Toluene-d8	103	80-110
Bromofluorobenzene	106	80-115

= Not Detected
= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	154468	Location:	Tony's Auto Express-Oak
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2333	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC157470	Batch#:	66776
Matrix:	Water	Analyzed:	10/01/01
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	115	78-123
Toluene-d8	102	80-110
Bromofluorobenzene	96	80-115

D= Not Detected
L= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	154468	Location:	Tony's Auto Express-Oak
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2333	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC157620	Batch#:	66813
Matrix:	Water	Analyzed:	10/02/01
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	93	78-123
Toluene-d8	97	80-110
Bromofluorobenzene	101	80-115

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	154468	Location:	Tony's Auto Express-Oak
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2333	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	66776
Units:	ug/L	Analyzed:	10/01/01
Diln Fac:	1.000		

Type: BS Lab ID: QC157467

Analyte	Spiked	Result	%REC	Limits
Benzene	50.00	50.58	101	80-116
Toluene	50.00	48.09	96	80-120
Chlorobenzene	50.00	45.37	91	80-117

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	107	78-123
Toluene-d8	100	80-110
Bromofluorobenzene	105	80-115

Type: BSD Lab ID: QC157468

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Benzene	50.00	47.41	95	80-116	6	20
Toluene	50.00	47.81	96	80-120	1	20
Chlorobenzene	50.00	45.05	90	80-117	1	20

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	112	78-123
Toluene-d8	107	80-110
Bromofluorobenzene	98	80-115

PD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	154468	Location:	Tony's Auto Express-Oak
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2333	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	66813
Units:	ug/L	Analyzed:	10/02/01
Diln Fac:	1.000		

Type: BS Lab ID: QC157617

Analyte	Spiked	Result	%REC	Limits
Benzene	50.00	45.11	90	80-116
Toluene	50.00	45.28	91	80-120
Chlorobenzene	50.00	46.01	92	80-117

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	93	78-123
Toluene-d8	99	80-110
Bromofluorobenzene	101	80-115

Type: BSD Lab ID: QC157618

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Benzene	50.00	46.74	93	80-116	4	20
Toluene	50.00	46.78	94	80-120	3	20
Chlorobenzene	50.00	46.77	94	80-117	2	20

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	93	78-123
Toluene-d8	98	80-110
Bromofluorobenzene	100	80-115

RPD= Relative Percent Difference

Delta Environmental Laboratories, LLC

Chain of Custody (COC) Form

685 Stone Road #11 & 12
Benicia, Ca, 94510
(707(747-6081, 800-7476082 FAX (707) 747-6082

Results to:Naser Pakrou
SOMA Environmental Engineering
2680 Bishop Dr., #203
San Ramon, CA 94503
Telephone 1-925-244-6600 Fax 925-244-6601
Sampler's Signature Naser Pakrou
Turnaround Time Standard

Project Name: 2333 Tony's Auto Express Int Blv. Oakland
LAB ID
Ref #

6243

Special Instructions::

#	Sample ID	Date	Time	Matrix	No. of containers	pH	Temperature	Hcl preservative	TPH#	BTEX, MTBE (8260B)									Others	Comments
1	Influent	8/22	7:45	H2O	3			✓	✓	✓										Grab sample
2	GAC-1	"	7:50	"	3			✓	✓	✓										"
3	PSP#1	"	8:00	"	3			✓	✓	✓										"
																				"

Relinquished by: Naser Pakrou Date 8/23
Received By: Aileen Date 8/23/01
Relinquished by: Date
Received By: Date
For Lab Use Only:

Laboratory Comments:
Sample received on ice and in good condition

orion\Delta2\deltastuff

SOMA
2680 Bishop Drive #203
San Ramon, CA 94503

Client Project ID:
2333
Tony's Auto express
Int Blv, Oakland

Ref.	R6243_100
Method:	EPA 8260B
Sampled:	08/22/01
Received:	08/23/01
Matrix	Water
Prepared	08/28/01
Analyzed:	8/28-30/01
Reported:	08/31/01
Analyst:	DS
Unit	ug/L
QC batch	8283001
COC no.	6243
Work Order:	2333

Attention: Naser Pakrou

QC Batch: 8283001

Laboratory Results of Analysis for BTEX & MTBE

Analyte	CAS#	Detection Limit ug/L	Results		
			Sample ID		
			Influent	GAC-1	PSP#1
BTEX					
Benzene	71-43-2	0.5	880	ND	ND
Toluene	108-88-3	0.5	758	ND	ND
Ethylbenzene	100-41-4	0.5	131	ND	ND
m-p-Xylenes	1330-20-7	0.5	684	ND	ND
o-xylene	95-47-6	0.5	350	ND	ND
MTBE	01634-04-4	0.5	11,570	ND	ND
Surrogate	**Conc.**		**% Recovery**		
Bromofluorobenzene	20		98	97	98

ND:Not Detected

Delta Environmental Laboratories,

Hossein Khosh Khoo, Ph.D.
Laboratory Director/ President

SOMA
2680 Bishop Drive #203
San Ramon, CA 94503

Client Project ID:
2333
Tony's Auto express
Int Blv, Oakland

Ref.	R6243_B100
Method:	EPA 8260B
Sampled:	08/22/01
Received:	08/23/01
Matrix	Water
Prepared	08/28/01
Analyzed:	8/28-30/01
Reported:	08/31/01
Analyst:	DS
Unit	ug/L
QC batch	8283001
COC no.	6243
Work Order:	2333

QC Batch: 8283001

Attention: Naser Pakrou

Laboratory Results of Analysis for BTEX & MTBE

Analyte	CAS#	Detection Limit ug/L	Results
			Sample ID
			Blank
BTEX			
Benzene	71-43-2	0.5	ND
Toluene	108-88-3	0.5	ND
Ethylbenzene	100-41-4	0.5	ND
m-p-Xylenes	1330-20-7	0.5	ND
o-xylene	95-47-6	0.5	ND
MTBE	01634-04-4	0.5	ND
Surrogate	Conc.		% Recovery
Bromofluorobenzene	20		103

ND:Not Detected

Delta Environmental Laboratories,

Hossein Khosh Khoo, Ph.D.
Laboratory Director/ President

DELTA
ENVIRONMENTAL LABORATORIES, Ltd

SOMA
2680 Bishop Drive #203
San Ramon, CA 94503

Client Project ID:
2333
Tony's Auto express
Int Blv, Oakland

QC Batch: 82801

Attention: Naser Pakrou

Ref.	R6243_400
Method:	EPA 5030/8015M
Sampled:	08/22/01
Received:	08/23/01
Matrix	Water
Prepared	08/28/01
Analyzed:	08/28/01
Reported:	08/31/01
Analyst:	DS
Unit	ug/L
QC batch	82801
COC no.	6243
Work Order:	2333

Laboratory Results of Analysis forTPH-G

Analyte	Detection Limit ug/L	Results		
		Sample ID		
		Influent	GAC-1	PSP#1
TPH-G	50	10,190	ND	ND
Surrogate		% Recovery		
Bromofluorobenzene		102	99	98

ND:Not Detected

Delta Environmental Laboratories,

Hossein Khosh Khoo, Ph.D.
Laboratory Director/ President

SOMA
2680 Bishop Drive #203
San Ramon, CA 94503

Client Project ID:
2333
Tony's Auto express
Int Blv, Oakland

QC Batch: 82801

Attention: Naser Pakrou

Ref.	R6243_B400
Method:	EPA 5030/8015M
Sampled:	08/22/01
Received:	08/23/01
Matrix	Water
Prepared	08/28/01
Analyzed:	08/28/01
Reported:	08/31/01
Analyst:	DS
Unit	ug/L
QC batch	82801
COC no.	6243
Work Order:	2333

Laboratory Results of Analysis forTPH-G

Analyte	Detection Limit ug/L	Results
		Sample ID
		Blank
TPH-G	50	ND
Surrogate		% Recovery
Bromofluorobenzene		101

ND:Not Detected

Delta Environmental Laboratories,

Hossein Khosh Khoo, Ph.D.
Laboratory Director/ President

Quality Control Report

Client:
SOMA
2680 Bishop Drive, #203
San Ramon, CA 94503

Client Project ID:
2333
Tony's Auto express
Int Blv, Oakland

QC Batch: 82801

Ref.:	Q6243_400
Method	EPA 5030/8015M
Sampled:	8/22/2001
Received:	8/23/2001
Matrix:	Water
Analyzed:	8/28/2001
Analyst	DS
Reported:	8/31/2001
Units:	ug/L
Sample ID	Blank

Quality Control Report for TPH-G Analysis

Analyte	Detection Limit ug/L	Sample Result ug/L	Spike Added ug/L	% MS Recovery	% MSD Recovery	Relative % Difference RPD	Method
TPH-G	50	ND	400	94	91	3.2	5030/8015M
Surrogate	**Conc.**			**% Recovery**			
Bromofluorobenzene	20			115	115		

Delta Environmental Laboratories

H.Khosh Khoo, PhD.
Laboratory Director/President

Quality Control Report

Client:
SOMA
2680 Bishop Drive, #203
San Ramon, CA 94503

Client Project ID:
2333
Tony's Auto express
Int Blv, Oakland

QC Batch: 8283001

Ref.: Q6243_100
Method EPA 8260B
Sampled: 8/22/2001
Received: 8/23/2001
Matrix: Water
Analyzed: 8/28-30/01
Analyst DS
Reported: 8/31/2001
Units: ug/L
Sample ID Blank

Quality Control Report for MTBE & BTEX Analysis

Analyte	Detection Limit ug/L	Sample Result ug/L	Spike Added ug/L	% MS Recovery	% MSD Recovery	Relative % Difference RPD	Method
Benzene	0.5	ND	20	94	96	2.1	8260B
Toulene	0.5	ND	20	95	94	1.1	8260B
Ethylbenzene	0.5	ND	20	95	93	2.1	8260B
Total-Xylene	1.0	ND	40	96	92	4.3	8260B
MTBE	0.5	ND	20	100	108	7.7	8260B
Surrogate	**Conc.**			**% Recovery**			
Bromofluorobenzene	20			108	103		

Delta Environmental Laboratories

H.Khosh Khoo, PhD.,
Laboratory Director/President

CHAIN OF CUSTODY FORM

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

C&T LOGIN # 155202

Analyses

Sampler: TONY PERINI

Project No: PROJ 2333

Report To: TONY PERINI

Project Name: OAKLAND - TONY'S

Company: SOMA ENVIRONMENTAL

Project P.O.:

Telephone: 925-244-6600

Turnaround Time: STANDARD

Fax: 925-244-6601

Laboratory Number	Sample ID.	Sampling Date Time	Matrix: Soil	Matrix: Water	Matrix: Waste	# of Containers	Preservative: HCL	Preservative: H_2SO	Preservative: HNO_3	Preservative: ICE	Field Notes	TPH, BTEX, MTBE 8260
	DIFFUENT	11/2/01 1445		✓		3	✓			✓	GRAB SAMPLE	✓
	GAC-1	11/2/01 1440		✓		3	✓			✓	GRAB SAMPLE	✓
	PSP#1	11/2/01 1435		✓		3	✓			✓	GRAB SAMPLE	✓

For Laboratory Use

Received ☐ On Ice ☐ Cold ☐ Ambient ☐ Intact

Preservation Correct? ☐ Yes ☐ No ☐ N/A

Notes:

RELINQUISHED BY:	RECEIVED BY:
Tony Perini 11/2/01 1530 DATE/TIME	DATE/TIME 11/2/01 1530
TONY PERINI DATE/TIME	DATE/TIME
DATE/TIME	DATE/TIME

Signature

CHAIN OF CUSTODY FORM

Curtis & Tompkins, Ltd.
Analytical Laboratory Since 1878
2323 Fifth Street
Berkeley, CA 94710
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C&T LOGIN # 154466

Sampler: TONY PERINI / Naser Pakrou

Project No: 2333

Report To: TONY PERINI

Project Name: TONY'S Auto Express OAKLAND

Company: SOMA

Project P.O.:

Telephone: 925-244-6600

Turnaround Time: standard

Fax: 925-244-6601

Laboratory Number	Sample ID.	Sampling Date Time	Matrix: Soil	Water	Waste	# of Containers	Preservative: HCL	H_2SO	HNO_3	ICE		Field Notes	Analyses: TPHg	BTEX, MTBE 8260B
	INFluent	9/28/01 1308		✓		4	✓					Grab Samples	✓	✓
	GAC-1	9/28/01 1340		✓		4	✓					Grab Samples	✓	✓
	PSP#1	9/28/01 1350		✓		4	✓					Grab Samples	✓	✓
For Laboratory Use														

Preservation Correct?
☐ Yes ☐ No ☒ N/A

Received ☐ On Ice ☒ Cold ☐ Ambient ☒ Intact

Notes:

RELINQUISHED BY:	RECEIVED BY:
Naser Pakrou 9/28/01 1230 DATE/TIME	9/28/01 2:30 pm DATE/TIME
DATE/TIME	DATE/TIME
DATE/TIME	DATE/TIME

Signature