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First Quarter 2002
Groundwater Monitoring Report
Former Glovatorium Facility

3815 Broadway

Oakland, California

March 27, 2002

Project 01-2510

Prepared for

Smiland and Khachigian

601 West Fifth Street, 7th Floor

Los Angeles, California 90071-2004

Prepared by

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April 1, 2002

APR 03 2002

Mr. Scott Seery, CHMM
Alameda County Department of
Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Project: 01-2510

Subject: Site Located at 3815 Broadway, Oakland, California
Former Glovatorium Facility

Dear Mr. Seery:

A copy of SOMA's "First Quarter 2002 Groundwater Monitoring Report" for the subject property is enclosed.

Thank you for your time in reviewing our report. Please do not hesitate to call me at (925) 244-6600, if you have any questions or comments.

Sincerely,

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

REGISTERED PROFESSIONAL ENGINEER
MANSOUR SEPEHR
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STATE OF CALIFORNIA

Enclosure

cc: Mr. Stuart Depper, Clean Tech Machinery w/enclosure
Mr. Albert M. Cohen, Smiland & Khachigian w/enclosure
Ms. Betty Graham, Regional Water Quality Control Board w/enclosure
Dr. Bruce Page, Bruce W. Page Consulting w/enclosure

APR 03 2002

Certification

This report has been prepared by SOMA Environmental Engineering, Inc. for Smiland & Khachigian, to comply with Alameda County Department of Environmental Health's requirements for the First Quarter 2002 groundwater monitoring event and to provide information necessary to defend claims brought against the owners by Earl Thompson and Grace Johnson.

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) for the Law Offices of Smiland and Khachigian on behalf of their client, the owners of the former Glovatorium. The site is the former Glovatorium property located at 3815 Broadway Avenue, Oakland, California (the "Site"), as illustrated in Figure 1. The Site is located in an area consisting primarily of commercial and residential uses.

This report summarizes the results of the First Quarter 2002 groundwater monitoring event conducted on January 30 and 31, 2002 by SOMA at the Site, including the results of the laboratory analyses of the groundwater samples, which were analyzed for:

- Total petroleum hydrocarbons as gasoline (TPH-g), and as Stoddard solvents (TPH-ss) using EPA modified 8015;
- Volatile organic compounds (VOCs) using EPA Method 8260B;
- Benzene, toluene, ethylbenzene, total xylenes (collectively referred to as BTEX) and methyl tertiary butyl ether (MtBE) using EPA Method 8021B.

During the current groundwater monitoring event the newly installed groundwater monitoring wells SOMA-1 through SOMA-4 were sampled for the second time and analyzed for the above constituents. However, monitoring wells B-7 and B-10, which were replaced by the new wells, were not sampled.

In addition to the above laboratory analyses, the natural attenuation study which was initiated by Levine•Fricke Recon (LFR) in the Third Quarter of 2000 continued during this monitoring event. The objective of the natural attenuation study was to evaluate whether or not tetrachloroethylene (PCE) and other VOCs found in groundwater are biodegrading. Therefore, the groundwater samples

collected during this monitoring event were analyzed for common electron acceptors and other geochemical indicators, and the results are described in this report.

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 work is needed to determine the nature and extent of environmental contamination, and thus whether contamination is affecting the neighboring Thompson property. This information is needed to defend against the claim that Mr. Thompson brought against Glovatorium and the Deppers. This work may also provide data that could help determine when releases occurred, which is also significant to defending against the claims brought by a former owner of the property, Ms. Johnson.

1.1 Site Description

The Site is located between Manila Avenue and Broadway, near the intersection of 38th Street in Oakland, California. The ground surface at the Site is covered with concrete and asphalt and slopes gently southwest, with surface elevations ranging from approximately 78 to 84 feet above mean sea level (msl).

A 54-inch inside-diameter storm drain culvert passes under the property, from Manila Avenue on the west to 38th Street on the south (see Figure 2). The depth of the storm drain invert is approximately 8.5 feet under the sidewalk on the eastern side of Manila Avenue and approximately 13.2 feet below ground surface (bgs) at the far end approximately 60 feet south of GW-4.

In addition to a storm drain system, a 10-inch diameter cast iron sanitary sewer

conduit runs in a westerly direction from the on-site building and discharges into the sanitary sewer line, which runs north to south along Manila Avenue. The floor drain inside the building is less than 2 feet bgs. However, the depth of the sanitary sewer line inside the building gradually increases and then slopes more steeply downward near the western wall of the building, where it plunges underneath the 54-inch storm drain (LFR, January 2001). Figure 2 shows the location of the storm drain and sanitary sewer system.

Reportedly, there were six underground storage tanks (USTs) at the Site. Two USTs were located under the sidewalk on 38th Street and four USTs were located inside the building. The volumes of the USTs have been variously reported as ranging from 800 gallons up to 5,000 gallons. They reportedly contained Stoddard solvent, fuel oil and possibly waste oil. In August 1997, the six USTs were abandoned in-place by backfilling with either cement-sand slurry or pea gravel. In addition, there are three USTs owned by Earl Thompson, Sr., under the sidewalk on 38th Street, see Figure 2.

The surrounding properties are primarily commercial, businesses and residential housing. A TOSCO Marketing Company (TOSCO) site is located north and upgradient of the Site, at 40th Street and Broadway and contains a number of groundwater monitoring wells. 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 the presence of VOCs and petroleum hydrocarbons in the groundwater beneath the Site. The source of VOCs and Stoddard solvent is believed to be the former USTs, which were used to store Stoddard solvent and VOCs at the Site. There also has been testimony in the ongoing litigation concerning the Site that there were releases from the piping on the washer system and from washing the floors with Stoddard solvent. This report includes both the results of historical groundwater monitoring events and the results of the First Quarter 2002 groundwater monitoring event.

1.2 Background

The following is a brief description of previous Site investigations conducted by different environmental firms:

In August 1997, Geosolv, LLC (Geosolv) initiated the first soil and groundwater investigation at the Site. Geosolv drilled fourteen soil borings to approximate depths of 10 to 24 feet bgs using the direct push method. Seven of the soil borings (B-2, B-3, B-7 through B-10 and B-13; see Figure 2) were converted into temporary groundwater monitoring wells where grab groundwater samples were collected. In September 1998, Geosolv conducted further soil and groundwater investigations by drilling twelve additional soil borings to approximate depths of 19 to 25 feet bgs. All of the twelve soil borings were converted into temporary groundwater sampling points, and are labeled E-15 through E-26 in Figure 2. After collecting grab groundwater samples from the "E" temporary sampling points, they were abandoned and grouted.

In July 1999, based on the request of the ACEHS, an investigation of potential groundwater preferential flow paths was initiated by LFR. LFR drilled ten soil borings (GW-1 through GW-8, GW-5A, and GW-6A) primarily along the 54-inch diameter storm drain and sanitary sewer systems to depths ranging from 8 to 20 feet bgs using a direct push drilling method. During drilling operations, soil samples were collected from various depth intervals. In August 1999, LFR collected grab groundwater samples from seven of the nine "GW" wells.

In January and April 2000, LFR conducted quarterly groundwater monitoring events at the Site. During the groundwater monitoring events, groundwater elevations were measured in the temporary sampling points installed by LFR and Geolsolv, and in off-site wells MW-8, MW-9 and MW-11 owned by TOSCO. Groundwater samples were collected from the temporary sampling points installed by LFR and from the off-site well MW-11.

In July and August 2000, LFR installed four groundwater monitoring wells, namely LFR-1 through LFR-4, and conducted the Third Quarter 2000 groundwater monitoring event. This was the first sampling event in which bioattenuation parameters were collected. The measured bioattenuation parameters included: dissolved oxygen (DO), nitrate (NO_3^{-1}), sulfate (SO_4^{-2}) ferrous iron (Fe^{+2}), total iron, methane, oxidation reduction potential (ORP), alkalinity, chloride, carbon dioxide, nitrite, sulfide, ethene, and ethane. The bioattenuation parameters provided a baseline for these parameters and a means to compare their concentrations at locations within the apparent source area against surrounding upgradient, downgradient, and cross-gradient locations. During this monitoring event, groundwater elevations were measured and groundwater samples were collected from the newly installed groundwater monitoring wells LFR-1 through LFR-4, from temporary sampling points installed by LFR and Geosolv, and from off-site monitoring wells MW-8, MW-9, and MW-11 owned by TOSCO. No groundwater samples were collected from MW-8 or MW-9.

In late October and early November 2000, LFR conducted the Fourth Quarter 2000 groundwater monitoring event, including another bioattenuation study. During the fourth quarter monitoring event, LFR sampled nine groundwater monitoring wells and temporary groundwater sampling points and measured groundwater elevations in nineteen groundwater monitoring wells and temporary sampling points (LFR, January 2001).

Well completion details for the LFR wells and the Geosolv sampling points are presented in Table 1.

In late January, LFR conducted the First Quarter 2001 groundwater monitoring event. However, SOMA prepared the First Quarter 2001 monitoring report

(SOMA, May 2001). The results of the First Quarter 2001 groundwater monitoring event suggested the occurrence of strong anaerobic biodegradation activities and dechlorination of PCE beneath the Site.

The Second Quarter 2001 groundwater monitoring event was conducted by SOMA on April 26 and 27, 2001 and reported on July 5, 2001. During this period certain bioattenuation data, which were proved to be less useful, were not collected. The results of the Second Quarter 2001 monitoring event indicated a strong occurrence of the dechlorination process of PCE in the subsurface.

The Third Quarter 2001 groundwater monitoring event was conducted by SOMA on July 26 and 27, 2001. During this monitoring event ten groundwater monitoring wells were sampled and depths to groundwater was measured in 20 groundwater monitoring wells and temporary sampling points. To better evaluate the bioattenuation parameters including DO, SOMA recommended replacing the existing small diameter monitoring wells B-7 and B-10 with larger diameter wells as proposed in the SOMA June 15, 2001 Workplan.

After receiving approval of the workplan on August 27, 2001, on October 4, 11 and 12, 2001 SOMA installed five groundwater monitoring wells, SOMA-1 through SOMA-5, at the Site. During the installation of groundwater monitoring wells, boreholes were continuously logged and soil samples were collected at 5-foot depth intervals. The objective of this investigation was to delineate the vertical extent of soil and groundwater contamination and install larger diameter monitoring wells at the suspected chemical source areas in order to collect more reliable bioattenuation parameters (i. e., DO) in groundwater.

The Fourth Quarter 2001 groundwater monitoring event was conducted by SOMA on October 18 and 19, 2001. During this monitoring event eleven groundwater monitoring wells were sampled and depths to groundwater was measured in 20 groundwater monitoring wells and temporary sampling points.

1.3 Site Geology and Hydrogeology

The Site is located on the alluvial plain between the San Francisco Bay shoreline and the Oakland hills. Surface sediments in the Site's vicinity consist of Holocene alluvial deposits that are representative of an alluvial fan depositional environment. These deposits consist of brown, medium dense sand that fines upward to sandy or silty clay. The pattern of stream channel deposition results in a three-dimensional network of coarse-grained sediments interspersed with finer grained silts and clays. The individual units tend to be discontinuous lenses aligned parallel to the axis of the former stream flow direction (LFR, 2001).

According to LFR, sediments encountered in soil borings at the Site are typical of those encountered in an alluvial fan depositional environment. The sediments are predominantly fine-grained, consisting of clay, silty clay, sandy clay, gravelly clay and clayey silt. Discontinuous layers of coarse-grained sediments (clayey sand, silty sand, and clayey gravel) generally also contain relatively high percentages of silt and clay, which tend to reduce their permeability. Based on LFR (2001), during previous investigations conducted by Geosolv and LFR, a relatively coarse-grained layer of silty sand, clayey sand, and clayey gravel was encountered in soil borings E-23, E-25, E-26, GW-2, GW-3, GW-7, and GW-8 at depths of approximately 4.5 to 14 feet bgs. A discontinuous layer of silty to clayey sand was encountered at depths of 17 to 21 bgs in borings B-11, E-23, E-25, GW-7 and GW-8.

Based on the October 2001 results of the field investigation conducted by SOMA, no major water-bearing zone at a deeper depth was encountered. However, as the lithological logs of the newly installed groundwater monitoring wells indicate, the water-bearing zone is composed of fine-grained, clayey silt sediments which are separated by very low permeability intervening clay layers, which in some locations are unsaturated. For instance, SOMA-5, which has been screened within a significantly thick clay layer beneath the first water-bearing zone from 21

to 26 feet bgs using the dual tubing method, was a dry well until this sampling event. Due to the presence of unsaturated and low permeability of the intervening clay layers between shallow and deep layers, there is a significant vertical downward gradient between the shallow and deep wells.

According to the results of historical groundwater monitoring activities, groundwater occurs at 4 to 14 feet bgs. Based on the current and previous groundwater monitoring reports, groundwater flows from the northeast to the southwest with an approximate groundwater flow gradient of 0.019 ft/ft to 0.035 ft/ft. The results of the slug tests indicated that the hydraulic conductivity of the saturated sediments ranges between 1.2×10^{-4} and 6.9×10^{-4} cm/sec, which is equivalent to 0.34 ft/day to 1.95 ft/day. Using the average groundwater flow gradient of 0.027 and aquifer porosity of 0.32, the groundwater flow velocity ranges between 10.5 and 60.1 ft/year.

2.0 FIELD ACTIVITIES

Field activities were conducted on January 30 and 31, 2002, during which ten groundwater monitoring wells were sampled and water levels were measured in 25 groundwater monitoring wells and temporary sampling points. Because of the presence of floating product in SOMA-4 this well was not sampled. Figure 2 shows the location of the groundwater monitoring wells and temporary sampling points. Appendix A includes SOMA's site-specific field activities during the current groundwater monitoring event.

On January 30, 2002, SOMA's field crew measured the depths to groundwater in the monitoring wells and temporary groundwater sampling points from the top of the casings to the nearest 0.01 feet using an electrical sounder. The depth to groundwater and top of the casing elevation data at each groundwater monitoring well were used to calculate the groundwater elevation.

Groundwater sampling was conducted on January 30 and 31, 2002. During the groundwater sampling activities, certain biodegradation groundwater parameters such as DO, ORP, ferrous iron, total iron, nitrate, nitrite, sulfate and manganese were measured by the field crew. After collecting the groundwater samples, they were placed in an ice chest and delivered to Curtis & Tompkins, Ltd. of Berkeley, California for routine analyses and to Microseeps Analytical Laboratories of Pittsburgh, Pennsylvania (Microseeps) for methane analyses only. Additionally, the field crew measured certain groundwater parameters such as pH, temperature, electrical conductivity (EC) and turbidity in-situ during the groundwater monitoring event.

2.1 Laboratory Analysis

Curtis & Tompkins, Ltd. of Berkeley, California analyzed the groundwater samples. The measured constituents included TPH-g, TPH-ss, BTEX , MtBE and VOCs.

TPH-g and TPH-ss were measured using EPA Method 8015M. EPA Method 8021B was used to measure BTEX and MtBE. EPA Method 8260B was used to measure VOCs including verification of presence of MtBE.

Most of the groundwater constituents related to bio-degradation activities were measured by SOMA's field crew except dissolved methane, which was performed by Microseeps Laboratory. The analyses conducted by the field crew included ferrous iron, total iron, nitrate, nitrite, sulfate, dissolved manganese, and DO.

3.0 Results

This section describes the results of the First Quarter 2002 groundwater

monitoring event. It includes groundwater flow conditions, the status of groundwater contamination, and the occurrence of bioattenuation in the subsurface.

3.1 Groundwater Flow Condition

Table 2 presents the measured groundwater elevations at different groundwater monitoring wells and temporary groundwater sampling points. At each location, depth to watertable and elevation of the top of the casings were used to calculate the watertable elevation relative to the assumed datum. Appendix B presents the field notes. Table 3 shows the historical water level elevations at different groundwater monitoring wells.

As Table 2 shows, the watertable elevations ranged from 67.72 feet in LFR-1 and 79.41 feet above msl in MW-9; the watertable elevations were about 3 feet higher than those in the fourth quarter, particularly for the wells located inside the building. The higher water level elevation during this monitoring event can be attributed to the excessive rainfall amounts that we experienced during December and January. In evaluating the groundwater flow direction and gradient, water level data from GW-4, B-7, B-8, B-9, SOMA-3, SOMA-5, SOMA-1 and SOMA-4 were not utilized for the following reasons:

1. No accurate information about the construction details of the "B" wells installed by Geosolv is available, therefore water level data from these wells are questionable;
2. GW-4 was installed adjacent to the storm drain system in order to evaluate whether or not the storm drain system is leaking. This well was installed in the shallow formation, and may partially penetrate into the underlying water-bearing zone. Therefore, the water level elevation recorded inside GW-4 may not be representative of the underlying water-bearing zone.
3. SOMA-1, SOMA-3 and SOMA-5 have been completed in the deeper zone

and due to the strong vertical gradient, the water level elevation in the deeper zone is significantly lower than the shallow water-bearing zone.

4. Due to the presence of a significant amount of free product in SOMA-4, the recorded water level elevation in this well is not representative of the shallow water-bearing zone.
5. The water level elevation in SOMA-2 closely matches the water level elevation of the other groundwater monitoring well within the source area, therefore, it was used in drawing water level elevation contour map.

This is the first time that groundwater was encountered in SOMA-5. However, the well could not be sampled due to insufficient groundwater volume. This could be attributed to the excessive rainfall amounts during recent months. SOMA-5 has been completed within the intervening clay layers below the first water-bearing zone.

Figure 3 displays the groundwater elevation contour map. As Figure 3 shows, during the recent monitoring event, the groundwater was found to flow from the northeast to southwest. This is consistent with the findings of the previous monitoring events. It should be noted that our knowledge of groundwater flow direction does not extend beyond LFR-3, the most downgradient groundwater monitoring well.

The field measurements of some physical and chemical parameters of the groundwater samples are presented in detail in the field notes in Appendix B, and are summarized in Table 4, along with their historical values. Water temperatures ranged from 12.00 °C to 19.10 °C. The variation in temperature may reflect the changes in air temperature during sampling. The temperature measurements allowed the field crew to make corrections to the pH, EC, and DO measurements. pH measurements ranged from 6.30 to 6.70 units. The EC measurements ranged from 0.414 to 1.358 µS/cm.

3.2 Groundwater Quality

The groundwater samples were analyzed for petroleum hydrocarbons and VOCs using EPA Methods 8015M, 8021B, and 8260B. Table 5 displays the results of the laboratory analyses for TPH-ss, TPH-g, MtBE, benzene, toluene, ethylbenzene, and total xylenes. As Table 5 shows, TPH-g and TPH-ss were found at high concentrations beneath the Site. The maximum concentrations of TPH-g and TPH-ss were found in SOMA-2 and GW-4. Also, TPH-g was found in nine out of ten groundwater monitoring wells sampled during this monitoring event. TPH-ss was found in 6 out of ten groundwater monitoring wells. Historically, the maximum concentrations of TPH-g and TPH-ss occurred in B-7 and B-10. During the current groundwater monitoring event, the detected concentration of TPH-ss and TPH-g in SOMA-2 and GW-4 were comparable with historical concentrations of these chemicals in B-7 and B-10. Figures 4 and 5 show the concentration contour maps of TPH-g and TPH-ss in groundwater, respectively.

For the first time, during the current groundwater monitoring event, elevated levels of MtBE were detected in SOMA-1 and SOMA-3. For the first time floating product was reported in SOMA-4. SOMA is currently planning to conduct additional investigation to delineate the extent of free product in the vicinity of SOMA-4. MtBE was only detected in newly installed groundwater monitoring wells SOMA-1 and SOMA-3 at concentrations of 110 µg/L in SOMA-1 and 310 µg/L in SOMA-3. During the previous monitoring event, MtBE was also detected in SOMA-4 at a concentration of 650 µg/L. Surprisingly, no MtBE was detected in SOMA-2 (at a detection limit of 71 µg/L), despite its close proximity to SOMA-3. In the past, the maximum concentration of MtBE was detected in LFR-4 at 11 µg/L.

Benzene, toluene, ethylbenzene and xylenes were not detected in any of the

groundwater monitoring wells during this event. During the previous event BTEX were sporadically detected at low concentrations in B-7, LFR-2, LFR-4 and MW-11.

Table 7 shows the historical TPH-ss, TPH-g, TPH-d, MtBE and BTEX concentrations measured at different groundwater monitoring wells and groundwater sampling points.

Table 6 shows the concentrations of VOCs in the groundwater during this monitoring event. As Table 6 shows, cis-1,2-dichloroethene (cis-1,2-DCE) and tetrachloroethylene were found most frequently. Cis-1,2-DCE was detected at a maximum concentration of 1,800 µg/L in SOMA-2, which in comparison with the previous event decreased significantly. During the third quarter 2001 monitoring event, cis-1,2-DCE was detected at a maximum concentration of 6,600 in B-10. Cis-1,2-DCE is produced during the reductive dechlorination of PCE. In general, the reductive dechlorination process occurs by sequential dechlorination from PCE to trichloroethene (TCE) to DCE to vinyl chloride (VC). Bouwer (1994) reports that under the influence of biodegradation, cis-1,2-DCE is a more common intermediate compound than trans-1,2-DCE, and that 1,1-DCE is the least prevalent of the three DCE isomers when they are present as daughter products. Trans-1,2-DCE was not found in any of the groundwater monitoring wells during this event. Cis-1,2-DCE was reported in four out of ten groundwater monitoring wells. Figure 6 shows the distribution of cis-1,2-DCE concentration in groundwater.

PCE and TCE were reported at relatively high frequencies in the groundwater samples, especially in the source area. PCE was detected in five out of ten groundwater monitoring wells, while TCE was found in two of ten wells. The maximum reported concentrations of PCE and TCE were 370 and 35 µg/L, respectively, both in well LFR-1. In the previous monitoring event the maximum

concentrations of PCE, TCE and cis-1,2-DCE were reported in SOMA-2. During this monitoring event PCE and TCE concentrations in SOMA-2 were below detection limit of 71 µg/L. This could be attributed to the excess rainfall during the months of December 2001 and January 2002. Figures 7 and 8 show the distribution of PCE and TCE concentrations in the groundwater.

Vinyl chloride (VC) was not detected in any of the wells. As mentioned before, the reductive dechlorination process in general occurs by sequential dechlorination from PCE to TCE to DCE to VC. The depletion of PCE and TCE coupled with the presence of cis-1,2-DCE may indicate that the reductive dechlorination process of PCE and TCE is strongly occurring beneath the Site. Table 8 shows the historical concentration of VOCs in the groundwater.

3.3 Bioattenuation Parameter Analysis Results

This is the seventh groundwater quarterly monitoring event in which the natural attenuation parameters of groundwater were studied. The objective of the bioattenuation study is to evaluate whether or not intrinsic bioremediation processes are active at the Site. The results of this study will reveal whether or not PCE and other dissolved organic compounds are biodegrading beneath the Site.

Like the previous monitoring event, most of the bioattenuation parameters were measured in the field. Only dissolved methane was measured in the laboratory. In addition, DO was measured in-situ by the field crew. Based on Borden (1998) and Sepehr (1999), the ex-situ measurement of natural gases such as DO may introduce oxygen into the groundwater sample and result in certain errors. Therefore, DO was measured in the field inside the casing without collecting a groundwater sample.

During the degradation process, the indigenous bacteria that exist in the

subsurface consume electron acceptors such as DO. After the DO is consumed, anaerobic microorganisms typically use alternative electron acceptors in the following order of preference: nitrate, ferric iron, oxyhydroxide, sulfate, and, finally, carbon dioxide. Evaluating the distribution of these electron acceptors can provide evidence of where and to what extent chlorinated and aliphatic hydrocarbon biodegradation is occurring. The by-products of biodegradation processes are nitrite, ferrous iron, alkalinity, sulfide, methane, and carbon dioxide. For evaluation of the bioattenuation processes, groundwater samples were collected during the current groundwater monitoring event and analyzed for selected electron acceptors and the by-products of biodegradation activities, as described below:

Dissolved Oxygen. DO is the most favored electron acceptor used by microbes for the biodegradation of organic compounds. A concentration of DO less than 0.5 mg/L indicates anaerobic conditions. It is our experience that down-hole measurements of DO (i.e., in-situ measurements) yield more realistic results than ex-situ (laboratory) measurements. Significant differences in DO concentrations using in-situ and ex-situ measurements (conducted by Microseep) during the First Quarter 2001 can be attributed to cross contamination by atmospheric air during ex-situ measurement (R. Borden, 1998, M. Sepehr 1999). Therefore, during the current monitoring events, the DO measurements were conducted in-situ only by SOMA's field crew. Figure 9 presents the DO concentration contour map in groundwater using in-situ measurements.

For the second time, the new wells (SOMA-1 through SOMA-3) were used for DO measurements during this event. It should be noted that due to the limitation of drilling equipment, SOMA-3 still is a ¾ inch diameter well which was installed in the deeper zone within the suspected chemical source area inside the building. This well still is not suitable for DO measurements. As the results of field measurements indicate the measured DO in SOMA-1 through SOMA-4 and

GW-4 were quite low as expected, which seems to be representative of an anaerobic condition within the chemical source area. Table 9 presents the current and historical DO concentrations in the groundwater.

Nitrate. After DO has been depleted, nitrate may be used as an electron acceptor for anaerobic biodegradation. Nitrate concentrations less than 1.0 mg/L may indicate that reductive dechlorination is occurring. Low concentrations of nitrate near the apparent source area in SOMA-2, and in the downgradient wells LFR-2, GW-4 and SOMA-1 indicate conditions that are conducive to anaerobic biodegradation. Relatively, high concentrations of nitrate were observed in upgradient monitoring well MW-11, and downgradient well LFR-3 indicating a low likelihood of anaerobic biodegradation in these wells. Figure 10 shows the nitrate concentration contour map using the field data.

Manganese. After DO and nitrate have been depleted, manganese may be used as an electron acceptor for anaerobic biodegradation, and therefore, increased dissolved manganese concentrations are indicative of reductive dechlorination. Manganese concentrations ranged from non-detectable (ND) level in GW-2, LFR-2, MW-11, and SOMA-1, to 22 mg/L in SOMA-3, in the apparent source area, indicating conditions that are conducive to anaerobic biodegradation.

Sulfate. After DO, nitrate, and manganese have been depleted, sulfate may be used as an electron acceptor for anaerobic biodegradation. This process is termed sulfate reduction, and results in the production of sulfide. Sulfate concentrations less than 20 mg/L are indicative of reductive dechlorination (EPA 1998). Sulfate concentrations were ND in the apparent source area location SOMA-2 and first downgradient well GW-4 and 79 mg/L at MW-11. Figure 11 shows a sulfate concentration contour map in the groundwater using the field data.

Ferrous Iron. Increased ferrous iron accompanies anaerobic degradation. Ferric iron can be used as an electron acceptor during anaerobic biodegradation.

During this process, ferric iron is reduced to ferrous iron, which may be soluble in water. Ferrous iron concentrations can thus be used as an indicator of anaerobic biodegradation.

The highest ferrous iron concentrations were in the apparent source area (9 mg/L in SOMA-2). The minimum concentrations of ferrous iron were detected in GW-3, MW-11, SOMA-1 LFR-1 and LFR-3 (ND), where conditions are aerobic. Figure 12 shows a ferrous iron concentration contour map using the field data.

Methane. The presence of methane in groundwater is indicative of strongly reduced conditions, and suggests reductive dechlorination by the process of methanogenesis. Methane was detected in concentrations ranging from 0.0062 mg/L in LFR-1 to 13 mg/L in SOMA-2. The higher concentration of methane at GW-4 (3.5 mg/L) and at the source area (SOMA-2 and LFR-2) indicates conditions that are conducive to anaerobic biodegradation. Figure 13 shows a methane concentration contour map during the recent groundwater monitoring event, using the laboratory data.

Oxygen Reduction Potential. The ORP of groundwater is a measure of electron activity, and is an indicator of the relative tendency of a solution to accept or transfer electrons. ORP may range from greater than 800 milliVolts (mV) to less than -400 mV, with lower values expected in areas where anaerobic processes are occurring. ORP measurements obtained in this sampling event ranged from -103 mV in SOMA-2 to +218 mV in MW-11. The highest values were also found in downgradient locations (LFR-1, GW-3 and LFR-3) and upgradient locations (MW-11). The low values were found in the apparent source area (SOMA-2). These results indicate that conditions in and near the apparent source area are conducive to anaerobic biodegradation.

Other Parameters

Alkalinity. Alkalinity is a general water quality parameter. High alkalinity levels are a result of interaction between carbon dioxide (a product of several

biodegradation processes) and aquifer minerals. Due to the inconclusive nature of data collected during the previous groundwater monitoring events in connection with the bioattenuation process, no alkalinity data was collected during the current and previous groundwater monitoring events.

Chloride. Chloride is the final product of the reduction of chlorinated solvents, and is also a general water quality parameter.

Due to the inconclusive nature of data collected during the previous groundwater monitoring events in connection with the bioattenuation process, no chloride data was collected during the current groundwater monitoring event.

Carbon Dioxide. Carbon dioxide is a product of several biodegradation processes. Due to the inconclusive nature of data collected during the previous groundwater monitoring events in connection with the bioattenuation process, no carbon dioxide data was collected during the last two groundwater monitoring events.

Iron. Ferric iron may be used as an electron acceptor during anaerobic biodegradation. During this process, ferric iron is reduced to ferrous iron that may be soluble in water. Ferric iron concentrations may be obtained by subtracting ferrous iron concentrations from total iron concentrations. Total iron concentrations ranged from ND (SOMA-1) to 12.7 mg/L (GW-4). Table 4 presents the results of the total iron analyses, and Table 9 presents the results of the ferrous iron analyses.

Nitrite. Nitrate may reduce to nitrite during the process of anaerobic biodegradation. Nitrite measurements were not performed on any of the monitoring wells because of the limited value in interpretation of biodegradation processes.

Sulfide. When sulfate is used as an electron acceptor for anaerobic

biodegradation, it is reduced to sulfide. Due to the inconclusive nature of data collected during the previous groundwater monitoring events in connection with the bioattenuation process, no sulfide data was collected during the current groundwater monitoring event.

pH, Temperature, and Conductivity. The pH of groundwater has an effect on the activity of microbial populations in groundwater, with optimal pH values ranging from 6 to 8 standard units for microbes capable of degrading PCE and other chlorinated aliphatic hydrocarbons. The groundwater temperature affects the metabolic activity of bacteria, and groundwater conductivity is directly related to the concentration of ions in solution. The pH, temperature, and conductivity values are included in Table 4.

4.0 CONCLUSIONS AND RECOMMENDATIONS

The following is a summary of the work performed on January 30, and 31, 2002 and the results of this work.

Groundwater samples were collected from monitoring wells SOMA-1 through SOMA-3, (SOMA-5 has insufficient water and SOMA-4 contained floating product), LFR-1 through LFR-3, (LFR-4 was inaccessible) temporary sampling points GW-2, GW-3, GW-4, and from well MW-11. The samples were analyzed for TPH-ss, TPH-g, MtBE, BTEX, and VOCs.

A maximum concentration of PCE of 0.37 mg/L was detected in LFR-1, which is lower than its previous concentration at SOMA-2. PCE was also detected in GW-3 at 0.096 mg/L, which is lower than its concentration in this well during the previous monitoring event. The lower PCE concentration can be attributed to the excess rainfall during the first quarter 2002. Since PCE was detected at SOMA-3 at only 0.018 mg/L, it is apparent that the vertical extent of PCE is limited. The presence of intervening and unsaturated clay layers prevents its movement beyond the sampling depth of SOMA-3. SOMA-3 is a deep monitoring well

located adjacent to SOMA-2, where the concentration of PCE was less than 0.071 mg/L. SOMA-3 has been screened from 21 to 26 feet bgs, while SOMA-2 has been screened from 10 to 20 feet bgs. Historically, a maximum concentration of PCE was detected in LFR-1 at 2.8 mg/L during the Third Quarter 2000 groundwater monitoring event.

This was the seventh quarterly groundwater monitoring event in which bioattenuation parameters were analyzed. Selected samples were analyzed for the following: DO, nitrate, manganese, sulfate, ferrous iron, methane, ORP, and total iron. Certain parameters such as chloride, carbon dioxide, hydrogen, alkalinity, and sulfide were not measured due to their inconclusive role in the bioattenuation processes at this Site.

Cis-1,2-DCE is one of the breakdown products of PCE. It was detected at concentrations up 1.8 mg/L in the newly installed monitoring well SOMA-2. Previously it was detected at 7.3 mg/L in the temporary sampling point B-10 and its presence in groundwater indicates that reductive dechlorination is likely occurring.

Vinyl chloride was historically detected in wells GW-4 and LFR-2. However, during this current groundwater monitoring event it was not detected in any of the monitoring wells. The presence of vinyl chloride, a breakdown product of PCE, indicates reductive dechlorination is likely occurring.

Benzene was not detected in any of the groundwater monitoring wells during the current groundwater monitoring event. Elevated levels of MtBE were detected in new groundwater monitoring wells SOMA-1 and SOMA-3. Since no MtBE was detected in the upgradient monitoring well MW-11, the source of the high MtBE concentration in these wells is unknown.

The maximum concentrations of petroleum hydrocarbons were found in groundwater monitoring wells SOMA-2, GW-4 and LFR-2, as are shown in Table-

5. Table 6 shows the analytical results of groundwater samples analyzed for VOCs.

4.1 Conclusions

Based on the data obtained during the First Quarter 2002 groundwater monitoring event, our conclusions are as follows:

The farthest downgradient well, LFR-3, contained no detectable concentration of VOCs, TPH-ss and BTEX. It reportedly contained 0.067 mg/L of TPH-g.

The data collected to date regarding the distribution of PCE and other VOCs in groundwater indicates that PCE has been degraded into some of its breakdown products. PCE typically degrades into TCE, then cis-1,2-DCE and trans-1,2-DCE (at much lower concentrations than cis-1,2-DCE), then to VC, ethane and ethene and finally carbon dioxide, water, and chloride. This sequence of degradation would be anticipated where biological reductive dehalogenation of PCE is occurring. These breakdown products and relative concentrations are present at the Site. The presence of TCE in the apparent source area well SOMA-3 and in LFR-1 during the current sampling event indicates that PCE degradation is occurring. The presence of relatively high concentrations of cis-1,2-DCE in SOMA-2 and its presence in other wells such as SOMA-1, SOMA-3 and LFR-2 is also indicative of biodegradation. Historical data from temporary sampling point GW-8 indicates the presence of VC between July 1999 and April 2000. VC was also detected in LFR-2 since the October/November 2000 groundwater monitoring event and for the first time in GW-4 during the previous monitoring event. We expect to detect VC in the other groundwater monitoring wells in the future due to the progression of the dechlorination process of PCE in the subsurface.

The results of DO, nitrate, manganese, sulfate, ferrous iron, methane, and ORP measurements indicate that conditions in the apparent source area are

conducive to the reductive dechlorination processes.

DO concentrations of approximately less than 1.0 mg/L in the groundwater are indicative of anaerobic biodegradation conditions. During the recent groundwater monitoring event, anaerobic conditions were detected in SOMA-1, SOMA-2, LFR-2, GW-4 and SOMA-4. In the past several monitoring events, results indicated that conditions in the apparent source area were conducive to the anaerobic biodegradation processes. It appears that in-situ DO measurements in the newly installed monitoring wells SOMA-2 and SOMA-4 within the chemical source are more representative of actual anaerobic conditions in this area. This improvement over the previous monitoring event was due to the replacement of B-7 and B-10 with the newly installed monitoring wells SOMA-2, and SOMA-4.

Relatively low concentrations of nitrate (e.g. less than 1.0 mg/L) are anticipated in locations where the oxygen has been depleted, because nitrate ion can be an effective electron acceptor in anaerobic biodegradation processes. Low concentrations of nitrate occurred near the apparent source area in temporary sampling points SOMA-1, SOMA-2 and GW-4, indicating conditions that are conducive to anaerobic biodegradation.

Increased dissolved manganese concentrations are indicative of reductive dechlorination conditions. Manganese concentrations ranged from ND (MW-11, GW-2, SOMA-1, LFR-2) and 22 mg/L (SOMA-3) in the apparent source area, indicating conditions that are conducive to anaerobic biodegradation.

Relatively low concentrations of sulfate (e.g. less than 20 mg/L) are anticipated in locations where the oxygen has been depleted, because sulfate ion can be used as an effective electron acceptor in the anaerobic biodegradation processes. Sulfate concentrations were 52 mg/L in the GW-3 and ND in GW-4 and SOMA-2, indicating conditions that are conducive to anaerobic biodegradation.

The reducing conditions conducive to dehalogenation of VOCs can also reduce

iron to the soluble ferrous state. Therefore, a relatively high concentration of ferrous iron is anticipated in locations where biodegradation occurs. The highest ferrous iron concentrations were in the apparent source area (SOMA-2) and in the slightly downgradient location LFR-2 and GW-4, indicating conditions that are conducive to anaerobic biodegradation.

A relatively high concentration of methane is anticipated in locations where biodegradation occurs because methane is indicative of strongly reducing conditions and suggests reductive dechlorination by the process of methanogenesis. Methane concentrations ranged from 0.0062 mg/L in LFR-1 to 13 mg/L in SOMA-2 the apparent source area well, indicating conditions that are conducive to anaerobic biodegradation.

The ORP of groundwater is a measure of electron activity and is an indicator of the relative tendency of a solution to accept or transfer electrons. ORP may range from greater than 800 millivolts (mV) to less than -400 mV, with negative values expected in areas where anaerobic processes are occurring. The lowest value (-103 millivolts) was found in and near the apparent source area (SOMA-2). These results indicate that conditions in and near the apparent source area are conducive to anaerobic biodegradation.

4.2 Recommendations

SOMA's recommendations for future work at the Site are as follows:

1. Continue implementing the sampling and analysis plan for the routine parameters and natural bioattenuation parameters established through discussion with representatives of the ACEHS and the RWQCB.

2. Continue quarterly groundwater monitoring in the newly installed monitoring wells SOMA-1 through SOMA-5 (installed in October 2001), LFR-1 through LFR-4, (installed in July 2000), in the upgradient well MW-11, and in selected previously installed temporary sampling points.

3. Continue to evaluate PCE and potential breakdown product concentrations in on- and off-site wells.

4. Develop a workplan for delineation of the extent of the free product beneath the former Glovatorium building. Once the extent of free product is identified, the best free product removal alternative can be employed.

The second phase of SOMA's approved Workplan dated June 15, 2001 will be implemented in order to define the Site's regulatory status in the near future. Once the Site's regulatory status in terms of "Low Risk" or "High Risk" chemical release site is known, the most appropriate corrective action can be proposed to the ACEHS.

5.0 REFERENCES

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TABLES

Table 1
Construction Data for Temporary Sampling Points and Monitoring Wells
Former Glovatorium Site
3815 Broadway, Oakland, California

Location	Date Installed	Ground Surface Elevation (feet)	Top of Casing Elevation (feet)	Total Depth (feet)	Screen Interval Depth (feet)	Screen Interval Elevation (feet)	Notes
Temporary Sampling Points Installed by Geosolv, LLC:							
B-2	19-Aug-97	82.2	82.09	21	5 to 21	77.2 to 61.2	
B-3	19-Aug-97	82.6	82.57	18	5 to 18	77.6 to 64.6	1
B-7	20-Aug-97	77.33	76.96	17.5	5 to 17.5	72.3 to 59.8	
B-8	20-Aug-97	82.06	81.82	24	9 to 24	73.1 to 58.1	
B-9	21-Aug-97	77.57	77.37	19.5	4.5 to 19.5	73.1 to 58.1	
B-10	21-Aug-97	81.65	81.5	19	4 to 9	77.7 to 62.7	
B-13	22-Aug-97	85.12	84.58	20	5 to 20	80.1 to 65.1	
Temporary Sampling Points Installed by LFR:							
GW-1	16-Jul-99	80.24	79.94	8	3 to 8	77.2 to 72.2	
GW-2	16-Jul-99	79.44	79.14	20	10 to 20	69.4 to 59.4	
GW-3	15-Jul-99	78.48	77.92	20	10 to 20	68.5 to 58.5	
GW-4	16-Jul-99	82.55	82.37	12	7 to 12	75.6 to 70.6	
GW-5	15-Jul-99	81.31	81.01	13	8 to 13	73.3 to 68.3	
GW-6	15-Jul-99	81.91	81.65	13.5	7.5 to 13.5	74.4 to 68.4	2
GW-6A	16-Jul-99	81.93	81.61	15	5 to 15	76.9 to 66.9	
GW-7	15-Jul-99	81.3	NS	20	10 to 20	71.3 to 61.3	2
GW-8	16-Jul-99	80.28	80.1	20	10 to 20	70.3 to 60.3	2
Temporary Sampling Points Installed by TOSCO:							
MW-8	unknown	NS	87.44	unknown	unknown	unknown	
MW-9	unknown	NS	86.56	unknown	unknown	unknown	
MW-11	unknown	NS	84.13	unknown	unknown	unknown	
Groundwater Monitoring Wells Installed by LFR:							
LFR-1	28-Jul-00	NS	79.97	19	9 to 19		
LFR-2	27-Jul-00	NS	81.89	19	9 to 19		
LFR-3	27-Jul-00	NS	77.96	22	12 to 22		
LFR-4	28-Jul-00		81.65	19	9 to 19		
Groundwater Monitoring Wells Installed by SOMA:							
SOMA-1	4-Oct-01	82.31	81.64	40	25 to 40	42.31 to 57.71	
SOMA-2	11-Oct-01	81.62	81.39	20	10 to 20	61.62 to 71.62	
SOMA-3	11-Oct-01	81.65	81.42	30	21 to 26	60.65 to 71.51	
SOMA-4	12-Oct-01	81.51	81.09	20	10 to 20	61.51 to 71.51	
SOMA-5	12-Oct-01	61.68	81.5	26	21 to 26	55.68 to 60.68	

Notes:
(1) Top of casing surveyed on south side on January 21, 2000, because the casing was broken.
(2) GW-7 was abandoned on July 15, 1999, in accordance with LFR's workplan dated May 6, 1999. GW-6 and GW-8 were abandoned on July 26, 2000, in accordance with LFR's workplan dated June 14, 2000.
NS = Not surveyed.

Table 2
Groundwater Elevation Data, January 30-31, 2002
3815 Broadway, Oakland, California

Monitoring Well	Casing Elevation (feet)	Depth to Water (feet)	Water Elevation (feet)	Free Product (feet)
B-2	82.09	4.74	77.35	Detected
B-3	82.57	5.41	77.16	0.5
B-7	76.96	6.17	70.79	
B-8	81.82	6.79	75.03	0.5
B-9	77.37	6.94	70.43	
B-10	81.50	7.36	74.14	
B-13	84.58	7.05	77.53	0.7
GW-1	79.94	dry	-	
GW-2	79.14	9.37	69.77	
GW-3	77.92	9.64	68.28	
GW-4	82.37	7.54	74.83	
GW-5	81.01	12.23	68.78	
GW-6A	81.61	13.55	68.06	
LFR-1	79.97	9.41	70.56	
LFR-2	81.89	9.97	71.92	
LFR-3	77.96	10.24	67.72	
LFR-4	81.65	NM	NM	
MW-8	87.44	8.58	78.86	
MW-9	86.56	7.15	79.41	
MW-11	84.13	8.73	75.40	
SOMA-1	81.64	12.28	69.36	
SOMA-2	81.39	7.41	73.98	
SOMA-3	81.42	9.96	71.46	
SOMA-4	81.09	11.30	69.79	2.5
SOMA-5	81.50	24.12	57.38	

Notes:
(-) : well GW-1 was dry when measured during monitoring event
NM: well LFR-4 was not measured due to a car being parked over the well
Trace amount of free product detected in temporary well B-2

Table 3
Historical Groundwater Elevation Data
Former Glovatorium Site
3815 Broadway, Oakland, California

Date	B-2	B-3	B-7	B-8	B-9	B-10	B-13	GW-1	GW-2	GW-3	GW-4	GW-5
31-Jan-02	**77.35** (FP)	**77.16** (FP 0.5')	**70.79**	**75.03** (FP 0.5')	**70.43**	**74.14**	**77.53** (FP 0.7')	**-**	**69.77**	**68.28**	**74.83**	**68.78**
18-Oct-01	73.26 (0.25' FP)	73.24 (1' FP)	67.89	69.51 (2.1' FP)	67.98	71.96	DRY	NA	67.91	67.67	74.22	68.41
26-Jul-01	73.86	73.17	68.69	70.41	68.73	72.61	DRY	NA	68.55	67.84	73.85	68.77
26-Apr-01	75.26	74	69.60	73.19	69.8	73.61		NA	69.41	67.93	74.59	68.43
29-Jan-01	74.63	75.06	69.11	74.23	69.33	73.2		71.99	68.62	67.89	74.92	68.61
2-Nov-00												
31-Oct-00												
30-Oct-00	74.34	74.84 (FP)	69.01	73.32	69.42	73.35	DRY		68.45	67.95	74.55	68.64
10-Aug-00												
9-Aug-00	73.9 (FP)	74.55 (FP)	68.61	72.8 (FP)	68.82	72.65	75.23	DRY	69.11	66.54	DRY	68.71
27-Apr-00	75.41 (FP)	75.86 (FP)	69.85 (FP)	74.14 (FP)	69.96	73.7	75.87	DRY	70.59	68.16	73.97	68.7
25-Jan-00												
24-Jan-00	75.93 (FP)	75.83	69.66 (FP)	72.84	70.25 (FP)	74.15(FP)						
21-Jan-00							76.32		68.32		74.33	
20-Jan-00										67.93		68.61
19-Jan-00	73.97 (FP)	73.22 (2)	68.6 (FP)	71.81 (FP)	68.91(FP)	73.02(FP)	74.18	DRY	68.24	67.86	74.71	68.61
27-Aug-99								DRY	68.46	67.66	NM	68.71
18-Feb-98	78.16 (1)	78.04 (1)	71.57 (1)	76.64 (1)	71.44(1)	75.13(1)	78.51(1)					
26-Oct-97	72.66 (1)	73.64 (1)	68.09 (1)	71.11 (1)	68.39(1)	72.26(1)	73.02(1)					

Notes:

1= Survey elevation and water-level measurement taken at concrete surface. Elevations and water levels without a "1" in Notes Column were measured from top of casing.

2= Top of the casing was re-surveyed because it was broken.

NM = not measured

FP= Floating product or sheen was observed.

Table 3
Historical Groundwater Elevation Data
Former Glovatorium Site
3815 Broadway, Oakland, California

Date	GW-6A	GW-8	MW-8	MW-9	MW-11	LFR-1	LFR-2	LFR-3	LFR-4	SOMA-1	SOMA-2	SOMA-3	SOMA-4	SOMA-5
31-Jan-02	**68.06**		**78.86**	**79.41**	**75.48**	**70.56**	**71.92**	**67.72**	**NM**	**69.36**	**73.98**	**71.46**	**69.79**[FP 2.5']	**57.38**
18-Oct-01	67.81		76.81	76.46	72.97	70.04	70.53	66.09	67.74	67.89	71.86	68.32	69.77	NM
26-Jul-01	68		77.4	77.03	73.73	70.16	70.92	66.56	68.33					
26-Apr-01	68.43				74.81	70.23	71.9	67.62	68.87					
29-Jan-01	67.9		78.14	77.95	73.79	70.44	72.04	66.96	67.92					
2-Nov-00			78.38	78.31										
31-Oct-00									68.14					
30-Oct-00	68.16				73.62	70.22	71.62	66.99						
10-Aug-00			77.26	77.14										
9-Aug-00	67.88				74.12	70.16	69.99	66.76	68.39					
27-Apr-00	68	71.34	79.15	77.25	75.35									
25-Jan-00					73.48									
24-Jan-00														
21-Jan-00														
20-Jan-00		70.42												
19-Jan-00	67.63	70.44												
27-Aug-99	67.71	70.6												
18-Feb-98														
26-Oct-97														

Notes:
NM = not measured
FP= Floating product or sheen was observed.

Table 4
Historical Analytical Results and Field Measurements for Dissolved Anions, Cations, Gases, pH, Temperature, and Electrical Conductivity in Groundwater Samples
Former Glovatorium Site
3815 Broadway, Oakland, California
(Concentrations are in milligram per liter [mg/L] unless otherwise noted)

Well ID	Date Sampled	Alkalinity	Chloride	Carbon Dioxide	Total Iron	Nitrite	Sulfide	Ethane	Ethene	pH Standard Unit	Temp. Celcius	Electrical Cond. (uS/cm)
Temporary Sampling Points Installed by Geosolv, LLC												
B-7	11-Aug-00	760	39	202				<0.0005	<0.0005	6.86	17.55	1279
B-7 field	11-Aug-00					-1	0.049					
B-7	31-Oct-00	760	42	200	14	<0.1	<2.0					
B-7 field	31-Oct-00				17.22	-1	-1			6.16	16.05	1454
B-7	31-Jan-00	720	43	170	12	<0.1	<2.0					
B-7 field	31-Jan-00									6.79	13.9	1424
B-7	26-Apr-01				>3.3	0.243				6.59	16.3	1340
B-7	26-Jul-01				15.3	0.024				6.39	15.97	1400
B-10	10-Aug-01	520	74	145	6	<0.05	<0.04	<0.0005	0.00057	6.86	16.8	1130
B-10 field	10-Aug-00					0.023	0.06					
B-10	31-Oct-00	500	76	120	6.6	<0.1	<2.0					
B-10	31-Oct-00				8.35	0.001	0.004			6.21	16.62	1051
B-10	31-Jan-01	480	81	72	6.1	<0.1	<2.0					
B-10	31-Jan-01				1.44	0.073				6.81	14.66	1117
B-10	11-Jun-01				1.31					6.65	16.7	1090
B-10	26-Jul-01				6.5	0				6.38	16.09	1160
Temporary Sampling Points Installed by LFR												
GW-2	1-Nov-2000									6.31	18.97	1218
GW-2	30-Jan-2001			63								
GW-2 field	31-Jan-2001									6.82	13.75	846
GW-2	Apr-26-01				0.02					6.8	19.5	874
GW-2	Jul-26-01				0.03	0.024				6.74	20.3	803
GW-2	Oct-19-01	NM	NM	NM	NM	NM	NM	NM	NM	6.84	21.3	786
GW-2	**Jan-31-02**	**NM**	**NM**	**NM**	**1.05**	**0.013**	**NM**	**NM**	**NM**	**6.70**	**17.7**	**797**
GW-3	11-Aug-2000	340	25	54.3				<0.0005	<0.0005	7.05	21.43	860
GW-3 field	11-Aug-2000					0.046	-1					
GW-3 field	1-Nov-2000									6.52	18.83	967
GW-3	1-Feb-2001			54								
GW-3 field	29-Jan-2001									6.89	17.29	602
GW-3	Jun-11-01				0	0.7				5.68	16.2	673
GW-3	Jul-26-01				0.14	0.004				6.53	22.25	547
GW-3	Oct-19-01	NM	NM	NM	0	NM	NM	NM	NM	6.84	22.56	590
GW-3	**Jan-31-02**	**NM**	**NM**	**NM**	**0.14**	**0.014**	**NM**	**NM**	**NM**	**6.70**	**18.4**	**593**
GW-4	30-Jan-2001									6.6	13.48	479
GW-4	Jul-26-01				2	0.035				6.45	19.44	827
GW-4	Oct-19-01	NM	NM	NM	11	NM	NM	NM	NM	6.79	18.36	732
GW-4	**Jan-31-02**	**NM**	**NM**	**NM**	**12.7**	**0.010**	**NM**	**NM**	**NM**	**6.50**	**12**	**414**

Table 4
Historical Analytical Results and Field Measurements for Dissolved Anions, Cations, Gases, pH, Temperature, and Electrical Conductivity in Groundwater Samples
Former Glovatorium Site
3815 Broadway, Oakland, California
(Concentrations are in milligram per liter [mg/L] unless otherwise noted)

Well ID	Date Sampled	Alkalinity	Chloride	Carbon Dioxide	Total Iron	Nitrite	Sulfide	Ethane	Ethene	pH Standard Unit	Temp. Celcius	Electrical Cond. (uS/cm)
Monitoring Wells Owned by TOSCO												
MW-11	10-Aug-00	360	110	216	0.13	<0.05	<0.04	<0.0005	<0.0005	6.47	21.00	1,089
MW-11 field	10-Aug-00					0.036	0.002					
MW-11	1-Nov-00	300	120	190	<0.05	<0.1	<2.0					
MW-11 field	1-Nov-00				0.01	0.003	-1			5.83	20.13	1,264
MW-11	31-Jan-01	330	130	150	<0.05	<0.1	<2.0					
MW-11 field	31-Jan-01									6.35	13.67	1,098
MW-11	Apr-26-01				0.01					5.67	18.00	1210
MW-11	Jul-26-01				0	0.021				6.02	19.85	1120
MW-11	Oct-19-01	NM	NM	NM	0	NM	NM	NM	NM	6.41	21.25	130
MW-11	**Jan-31-02**	**NM**	**NM**	**NM**	**0.05**	**0.036**	**NM**	**NM**	**NM**	**6.60**	**18.50**	**1090**
Monitoring Wells installed by LFR												
LFR-1	11-Aug-00	250	110					<0.0005	<0.0005	6.97	19.73	936
LFR-1 field	09-Aug-00			51.1		0.02	-1					
LFR-1	30-Oct-00	240	100	25	<0.05	<0.1	<2					
LFR-1 field/sp	30-Oct-00				0.01/0.01	0.031/0.036	0.001/0.001			6.38	17.94	697
LFR-1-spl	30-Oct-00	220	100	40	<0.05	<0.1	<2					
LFR-1	29-Jan-01	150	76	28	<0.05	<0.1	<2					
LFR-1 field	29-Jan-01				0	0.037				6.82	15.00	870
LFR-1 Dup	29-Jan-01	150	75	26	<0.05	<0.1	<2					
LFR-1	Apr-26-01				0.004					5.76	16.80	980
LFR-1	Jul-26-01				0.05	0.008				6.48	19.38	772
LFR-1	Jul-26-01	NM	NM	NM	0.42	NM	NM	NM	NM	6.73	20.83	661
LFR-1	**Jan-31-02**	**NM**	**NM**	**NM**	**0.03**	**0.011**	**NM**	**NM**	**NM**	**6.50**	**16.50**	**879**
LFR-2	11-Aug-00	590	33	174				<0.0005	0.0017	6.8	19.87	1,088
LFR-2 field	11-Aug-00				2.95	-1	0.005					
LFR-2	02-Nov-00	550	40	180	6.2	<0.1	<2					
LFR-2 field	02-Nov-00				7.45	0.007	0.003			6.19	19.67	1,306
LFR-2	30-Jan-01	480	21	130	4.6	<0.1	<2					
LFR-2 field	30-Jan-01				1.04	0.007				6.6	12.73	945
LFR-2	Apr-27-01				2.97					5.64	16.40	921
LFR-2	Jul-26-01				4.6	0.011				6.31	18.66	970
LFR-2	Oct-18-01	NM	NM	NM	8.2	NM	NM	NM	NM	6.78	19.56	109
LFR-2	**Jan-31-02**	**NM**	**NM**	**NM**	**1.97**	**0.046**	**NM**	**NM**	**NM**	**6.50**	**16.60**	**644**

Table 4
Historical Analytical Results and Field Measurements for Dissolved Anions, Cations, Gases, pH, Temperature, and Electrical Conductivity in Groundwater Samples
Former Glovatorium Site
3815 Broadway, Oakland, California
(Concentrations are in milligram per liter [mg/L] unless otherwise noted)

Well ID	Date Sampled	Alkalinity	Chloride	Carbon Dioxide	Total Iron	Nitrite	Sulfide	Ethane	Ethene	pH Standard Unit	Temp. Celcius	Electrical Cond. (uS/cm)
LFR-3	10-Aug-00	310	85	162	<0.1	0.15	0.04	<0.0005	<0.0005	6.57	19.92	951
LFR-3 split	10-Aug-00	300	85	152				<0.0005	<0.0005			
LFR-3 field	10-Aug-00					0.058	-1					
LFR-3	01-Nov-00	350	86	160	<0.05	<0.1	<2					
LFR-3 field	01-Nov-00				0.01	0.011	0.002			6.16	17.71	1164
LFR-3	30-Jan-01	250	31	71	<0.05	<0.1	<2					
LFR-3 field	30-Jan-01				0.03					6.64	17.29	541
LFR-3	Jun-11-01				0.01					5.43	18.00	613
LFR-3	Jul-26-01				0.7	0.027				6.25	20.50	602
LFR-3	Oct-18-01	NM	NM	NM	0.12	NM	NM	NM	NM	6.5	21.39	645
LFR-3	**Jan-31-02**	**NM**	**NM**	**NM**	**0.06**	**0.024**	**NM**	**NM**	**NM**	**6.30**	**19.10**	**566**
LFR-4	11-Aug-00	630	71	161				<0.0005	<0.0005	6.9	20.11	1240
LFR-4 field	11-Aug-00				0.22	0.018	0.002					
LFR-4	31-Oct-00	490	28	130	1	<0.1	<2					
LFR-4 field	31-Oct-00				0.67	0.022	0			6.21	18.11	830
B-10 FB	10-Aug-00							<0.0005	<0.0005			
LFR-4	01-Feb-01	460	25	120	1.3	<0.1	<2					
LFR-4 field	01-Feb-01				1.43	0.017				6.55	15.28	916
LFR-4	Apr-27-01				1.44					5.79	18.30	1060
LFR-4	Jul-26-01				0.95	0				6.26	19.23	866
Monitoring Wells Installed by SOMA												
SOMA-1	Oct-19-01	NM	NM	NM	0.75	NM	NM	NM	NM	6.77	18.15	146
SOMA-1	**Jan-31-02**	**NM**	**NM**	**NM**	**0.0**	**0.00**	**NM**	**NM**	**NM**	**6.70**	**17.50**	**1160**
SOMA-2	Oct-19-01	NM	NM	NM	44	NM	NM	NM	NM	6.87	16.93	122
SOMA-2	**Jan-31-02**	**NM**	**NM**	**NM**	**10.6**	**0.344**	**NM**	**NM**	**NM**	**6.90**	**15.20**	**1140**
SOMA-3	Oct-19-01	NM	NM	NM	0.4	NM	NM	NM	NM	6.91	17.09	158
SOMA-3	**Jan-31-02**	**NM**	**NM**	**NM**	**0.78**	**0.376**	**NM**	**NM**	**NM**	**6.60**	**14.90**	**1320**
SOMA-4	Oct-19-01	NM	NM	NM	0.26	NM	NM	NM	NM	6.53	16.88	145

Notes
Samples with "field" in the well ID indicate that the results are from field measurements obtained using a Hach spectrometer or a Hydrolab Quanta flow-through instrument.
since April 2001, field measurements have been performed using a Hach Calorimeter
(1) Sample concentration was too dilute to be reproducibly measured using the Hach spectrometer.
*)Methane measured by Microseep Laboratory, Pittsburgh, PA
NM= not measured

Table 5

Analytical Results of Groundwater Samples Analyzed for Petroleum Hydrocarbons

January 30-31, 2002

Former Glovatorium Site

3815 Broadway, Oakland, California

Well	Stoddard Solvent C7-C12 (ug/L)	Gasoline C7-C12 (ug/L)	MTBE [1,5] (ug/L)	Benzene [5] (ug/L)	Toluene [5] (ug/L)	Ethyl-benzene [5] (ug/L)	Total Xylenes [5] (ug/L)
GW-2	<50	<50	<5.0	<5.0	<5.0	<5.0	<5.0
GW-3	<50	70 [2,3]	<5.0	<5.0	<5.0	<5.0	<5.0
GW-4	920	1700 [2,4]	<5.0	<5.0	<5.0	<5.0	<5.0
MW-11	<50	71 [2]	<5.0	<5.0	<5.0	<5.0	<5.0
LFR-1	150 [2,3]	270 [2,3]	<13	<13	<13	<13	<13
LFR-2	760	1400 [2,4]	<5.0	<5.0	<5.0	<5.0	<5.0
LFR-3	<50	67 [2]	<5.0	<5.0	<5.0	<5.0	<5.0
SOMA-1	58	100 [2,4]	110	<5.0	<5.0	<5.0	<5.0
SOMA-2	1,300	2400 [2,4]	<71	<71	<71	<71	<71
SOMA-3	230	410 [2,4]	310	<13	<13	<13	<13
SOMA-4	FP	FP	FP	FP	FP	FP	FP

< : not detected above the laboratory reporting limits

1 MTBE, BTEX data are reported using EPA Method 8260B

2 Sample exhibits fuel pattern which does not resemble standard

3 Sample exhibits unknown single peak or peaks

4 Heavier hydrocarbons contributed to the quantitation

5 Analysis was carried out past the the hold date, the client was informed and analysis proceeded no analytical problems were encountered

FP: Free product was observed in the well, and no analysis was performed on sample

Table 6

Anayltical Results of Groundwater Samples Analyzed for Volatile Organic Compounds

Former Glovatorium Site

3815 Broadway, Oakland, California

Sample ID	Date	Tetra Chloro ethene [1] (ug/L)	Trichloro ethene [1] (ug/L)	cis-1,2 Dichloro ethene [1] (ug/L)	trans-1,2 Dichloro ethene [1] (ug/L)	Vinyl Chloride [1] (ug/L)	1,2 Dichloro propane [1] (ug/L)	1,1-Dichloro ethene [1] (ug/L)
GW-2	31-Jan-02	9.2	<5.0	<5.0	<5.0	<10	<5.0	<5.0
GW-3	31-Jan-02	96	<5.0	<5.0	<5.0	<10	<5.0	<5.0
GW-4	31-Jan-02	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0
LFR-1	31-Jan-02	370	35	<13	<13	<25	<13	<13
LFR-2	31-Jan-02	<5.0	<5.0	6.9	<5.0	<10	<5.0	<5.0
LFR-3	30-Jan-02	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0
MW-11	30-Jan-02	<5.0	<5.0	<5.0	<5.0	<10	<5.0	<5.0
SOMA-1	31-Jan-02	5.6	<5.0	7.0	<5.0	<10	5.7	<5.0
SOMA-2	31-Jan-02	<71	<71	1,800	<71	<140	<71	<71
SOMA-3	31-Jan-02	18	23	380	<13	<25	<13	<13
SOMA-4	31-Jan-02	FP	FP	FP	FP	FP	FP	FP

FP: Free Product observed in well SOMA-4

< : not detected above laboratory reporting limits

[1] Analysis was carried out past the the hold date, the client was informed and analysis proceeded no analytical problems were encountered

Table 7

Historical Analytical Results for Total Petroleum Hydrocarbon, BTEX, and MtBE on Groundwater Samples

Former Glovatorium Site

3815 Broadway, Oakland, California

All results are expressed in milligrams per liter (mg/L)

Location	Date Sampled	TPH, Purgable Stoddard	TPH, Purgable Gasoline	MtBE	Benzene	Toluene	Ethyl benzene	Xylenes
Temporary Sampling Points Installed by Geosolv, LLC:								
B-2	24-Jan-00	20 J	31 YJ	<0.05	<0.013	<0.013	0.11 C	0.22 C
B-3	24-Jan-00	4.9 J	8.8 YJ	<0.01	0.0048	<0.0025	<0.0025	0.0714
B-7	24-Jan-00	19	30 J	<0.05	<0.013	0.062	<0.013	0.207
B-7	11-Aug-00	3.7 J	6.8 YHJ	0.02	0.0077 J	0.047 J	0.007 J	0.065 CJ
B-7	31-Oct-00	62 J	98 YHJ	0.01 J	0.0091 J	0.061 J	<0.0005	0.237 J
B-7	Jan-31-01	5.3	7.9	0.01	0.0089	0.059	0.0097	0.087
B-7	Apr-26-01	4.5	8.9 H	0.0069	0.011	0.071	0.077 C	0.208
B-7	Jul-27-01	2.5	5.2 HY	0.0057	0.007	0.051	0.0082	0.074
B-8	24-Jan-00	11 J	19 YJ	<0.01	<0.0025	<0.0025	<0.0025	0.17 C
B-9	24-Jan-00	1 YJ	1.8 YHJ	<0.002	<0.0005	<0.0005	0.01 C	0.0089 C
B-10	24-Jan-00	2.4 Y	4.2	0.014 c	0.0072	0.027	0.025 C	0.032
B-10	10-Aug-00	2.8 Y	6.1 Y	0.16	0.0073	0.012	<0.005	0.0241
B-10	31-Oct-00	2.2 YZ	3.5 Z	<0.002	0.0038	0.011	<0.0005	0.0182
B-10	Jan-31-01	2.4 Z	3.6 HYZ	<0.002	0.0031	0.01	0.00076 c	0.0197
B-10	Apr-26-01	2.4 Z	4.7 Z	0.0025	0.0041	0.013	ND	0.029
B-10	Jul-27-01	1.7	3.6 H	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
B-13	24-Jan-00	1.7 J	3 YJ	<0.01	<0.0025	<0.0025	<0.0025	0.02
Temporary Sampling Points Installed by LFR:								
GW-2	19-Jul-99	<0.05	<0.05	0.0025	<0.0005	0.00071	<0.0005	0.00074
GW-2	20-Jan-00	0.15	0.25 Y	0.0044	<0.0005	<0.0005	0.00097 C	0.0013
GW-2	28-Apr-00	<0.05	0.095 YZ	<0.0021	<0.0005	<0.0005	<0.0005	<0.0005
GW-2	2-Nov-00	<0.05	<0.05	<0.002	<0.0005	<0.0005	<0.0005	<0.0005
GW-2	1-Feb-01	<0.05	ND	<0.002	<0.0005	<0.0005	<0.0005	<0.0005
GW-2	Apr-27-01	<0.05	0.086 YZ	0.0022	<0.0005	0.024	<0.0005	<0.0005
GW-2	Jul-27-01	<0.05	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
GW-2	Oct-19-01	<0.05	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005
GW2	**Jan-31-01**	**<0.050**	**<0.050**	**<0.005** b	**<0.005** b	**<0.005** b	**<0.005** b	**<0.005** b
GW-3	19-Jul-99	0.07 Z	0.1 Z	<0.002	<0.0005	<0.0005	<0.0005	0.00064
GW-3	20-Jan-00	0.15	0.26 Y	<0.002	<0.0005	<0.0005	<0.0005	0.0013 C
GW-3	27-Apr-00	0.2 YZ	0.38 YZ	<0.002	<0.0005	<0.0005	<0.0005	<0.0005
Split	27-Apr-00	0.3 Z	0.57 YZ	<0.002	<0.0005	<0.0005	<0.0005	<0.0005
GW-3	11-Aug-00	<0.05	0.077 YZ	<0.002	<0.0005	<0.0005	<0.0005	0.00051
GW-3	2-Nov-00	<0.05	0.05 YZ	0.0026	<0.0005	<0.0005	<0.0005	<0.0005
GW-3	1-Feb-01	<.05	<0.05	<.002	<.0005	<.0005	<.0005	<.0005
GW-3	27-Apr-01	<.05	0.062 YZ	0.0056	<0.0005	<0.0005	<0.0005	<0.0005
GW-3	Jul-27-01	<.05	<0.05	0.0008	<0.0005	<0.0005	<0.0005	<0.0005
GW-3	Oct-19-01	0.054	0.11	<0.01	<0.01	<0.01	<0.01	<0.02
GW-3	**Jan-31-02**	**<0.050**	**0.07** YZ	**<0.005** b	**<0.005** b	**<0.005** b	**<0.005** b	**<0.005** b
GW-4	21-Jul-99	6.8 J	10 YHJ	0.0022	<0.0005	<0.0005	<0.0005	0.0029 J
GW-4	20-Jan-00	0.97 J	1.6 YJ	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Split	20-Jan-00	0.85 J	1.5 YJ	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
GW-4	27-Apr-00	0.31	0.6 Y	<0.002	<0.0005	<0.0005	<0.0005	0.0027
GW-4	Jan-30-01	0.39	0.58 HY	<0.002	<0.0005	<0.0005	<0.0005	<0.0005
GW-4	Jul-27-01	0.42	0.86 HY	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
GW-4	Oct-19-01	0.83	1.6	<0.005	<0.005	<0.005	<0.005	<0.01
GW-4	**Jan-31-02**	**0.920**	**1.7** HY	**<0.005** b	**<0.005** b	**<0.005** b	**<0.005** b	**<0.005** b

Table 7

Historical Analytical Results for Total Petroleum Hydrocarbon, BTEX, and MtBE on Groundwater Samples

Former Glovatorium Site

3815 Broadway, Oakland, California

All results are expressed in milligrams per liter (mg/L)

Location	Date Sampled	TPH, Purgable Stoddard	TPH, Purgable Gasoline	MtBE	Benzene	Toluene	Ethyl benzene	Xylenes
Temporary Sampling Points Installed by Geosolv, LLC:								
GW-5	27-Aug-99	<0.05	<0.05	<0.001	<0.001	<0.001	<0.001	<0.001
GW-5	20-Jan-00	<0.05	0.057 [Y]	0.0007	<0.0005	<0.0005	<0.0005	<0.0005
GW-5	27-Apr-00	0.05 [Y]	0.096 [Y]	<0.002	<0.0005	<0.0005	<0.0005	<0.0005
GW-6A	27-Aug-99	<0.05	0.054 [Y]	0.0089	<0.0005	<0.0005	<0.0005	<0.0005
Split	27-Aug-99	<0.05	0.057 [Y]	0.0087	<0.0005	<0.0005	<0.0005	<0.0005
GW-6A	25-Jan-00	<0.05	<0.05	0.0022	<0.0005	<0.0005	<0.0005	<0.0005
GW-6A	27-Apr-00	<0.05	0.087 [Y]	<0.002	<0.0005	<0.0005	<0.0005	<0.0005
GW-7	15-Jul-99	NA	NA	<0.0025	0.05 [J]	<0.0005	0.000727	0.00313 [J]
Split	15-Jul-99	NA	NA	NA	NA	NA	NA	NA
GW-7	15-Jul-99	NA	NA	NA	0.0567 [J]	<0.002	<0.002	<0.002
Split	15-Jul-99	NA	NA	NA	0.0755 [J]	<0.002	<0.002	<0.002
GW-8	19-Jul-99	<0.05	<0.05	0.0078	<0.0005	0.00064	<0.0005	0.00151
GW-8	20-Jan-00	0.19	0.33 [Y]	<0.002	<0.0005	<0.0005	<0.0005	<0.0005
Split	20-Jan-00	0.2	0.37 [Y]	<0.002	0.00058	<0.0005	<0.0005	<0.0005
GW-8	28-Apr-00	0.064 [YZ]	0.12 [YZ]	0.013	<0.0005	<0.0005	<0.0005	<0.0005
Monitoring Wells Owned by TOSCO:								
MW-11	25-Jan-00	<0.05	<0.05	0.009	<0.0005	<0.0005	<0.0005	<0.0005
MW-11	28-Apr-00	<0.05	<0.05	<0.0087	<0.0005	<0.0005	<0.0005	<0.0005
MW-11	10-Aug-00	<0.05	<0.05	0.011	<0.0005	<0.0005	<0.0005	<0.0005
MW-11	1-Nov-00	<0.05	<0.05	0.0068	<0.0005	<0.0005	<0.0005	<0.0005
MW-11	31-Jan-01	<.05	<.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
MW-11	Jul-27-01	<0.05	0.1 [HY]	0.001	<0.0005	<0.0005	<0.0005	0.0007
MW-11	Oct-19-01	<0.05	<0.05	<0.005	<0.005	<0.005	<0.005	<0.01
MW-11	**Jan-31-02**	**<0.050**	**0.071 [Y]**	**<0.005 [b]**	**<0.005 [b]**	**<0.005 [b]**	**<0.005 [b]**	**<0.005 [b]**
Monitoring Wells Installed by LFR:								
LFR-1	9-Aug-00	0.53	1.2	0.0095	<0.0005	<0.0005	<0.0005	<0.0005
LFR-1	30-Oct-00	0.24 [YZ]	0.37 [YZ]	<0.002	<0.0005	<0.0005	<0.0005	<0.0005
Split	30-Oct-00	0.24 [YZ]	0.37 [YZ]	0.0043	<0.0005	<0.0005	<0.0005	<0.0005
LFR-1	29-Jan-01	0.21 [YZ]	0.31 [YZ]	0.0033	<0.0005	<0.0005	<0.0005	<0.0005
LFR-1	Apr-26-01	0.092	0.18 [YZ]	0.0044	<0.0005	0.002	<0.0005	<0.0005
LFR-1	Jul-27-01	0.086	0.18 [YZ]	<0.0013	<0.0013	<0.0013	<0.0013	<0.0013
LFR-1	Oct-18-01	0.19	0.38	<0.031	<0.031	<0.031	<0.031	<0.062
LFR-1	**Jan-31-02**	**0.15 [YZ]**	**0.27 [YZ]**	**<0.013 [b]**	**<0.013 [b]**	**<0.013 [b]**	**<0.013 [b]**	**<0.013 [b]**
LFR-2	11-Aug-00	0.59	1.1 [YH]	0.0022	0.0018	<0.0005	<0.0005	0.0013 [C]
LFR-2	2-Nov-00	0.38	0.7 [YH]	0.003	0.0035	0.0011	0.0042	0.01184 [C]
LFR-2	30-Jan-01	0.36	0.54 [HY]	0.0034	0.00057	<0.0005	<0.0005	<0.0005
LFR-2	Apr-27-01	0.33	0.66 [HY]	<0.002	<0.0005	0.0013	<0.0005	<0.0005
LFR-2-2	Apr-27-01	0.36	0.72 [HY]	<0.002	0.00059	0.0019	<0.0005	0.013
LFR-2	Jul-27-01	0.33	0.76 [HY]	<0.0005	0.0013	<0.0005	<0.0005	0.0006
LFR-2	Oct-18-01	0.73	1.5	<0.0071	<0.0071	<0.0071	<0.0071	<0.0142
LFR-2	**Jan-31-02**	**0.760**	**1.4 [HY]**	**<0.005 [b]**	**<0.005 [b]**	**<0.005 [b]**	**<0.005 [b]**	**<0.005 [b]**

Table 7

Historical Analytical Results for Total Petroleum Hydrocarbon, BTEX, and MtBE on Groundwater Samples

Former Glovatorium Site

3815 Broadway, Oakland, California

All results are expressed in milligrams per liter (mg/L)

Location	Date Sampled	TPH, Purgable Stoddard	TPH, Purgable Gasoline	MtBE	Benzene	Toluene	Ethyl benzene	Xylenes
Temporary Sampling Points Installed by Geosolv, LLC:								
LFR-3	10-Aug-00	<0.05	<0.05	<0.002	<0.0005	<0.0005	<0.0005	<0.0005
Split	10-Aug-00	<0.05	<0.05	<0.002	<0.0005	<0.0005	<0.0005	<0.0005
LFR-3	1-Nov-00	<0.05	<0.05	<0.002	<0.0005	<0.0005	<0.0005	<0.0005
LFR-3	30-Jan-01	<.05	<.05	0.0036	<0.0005	<0.0005	<0.0005	<0.0005
LFR-3	Apr-27-01	<0.05	<0.05	0.0024	<0.0005	0.0054	<0.0005	<0.0005
LFR-3	Jul-27-01	<0.05	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
LFR-3	Oct-18-01	<0.05	<0.05	<0.005	<0.005	<0.005	<0.005	<0.01
LFR-3	**Jan-31-02**	**<0.050**	**0.067 Y**	**<0.005 b**	**<0.005 b**	**<0.005 b**	**<0.005 b**	**<0.005 b**
LFR-4	11-Aug-00	0.22 Y	0.41 Y	0.0051	0.011	<0.0005	<0.0005	0.00162 C
LFR-4	31-Oct-00	0.17 Y	0.27	0.0065	0.00084	<0.0005	<0.0005	<0.0005
LFR-4	1-Feb-01	0.16 Y	0.22	0.0097	0.0033	<0.0005	<0.0005	<0.0005
LFR-4	Apr-27-01	0.22 Y	0.44	0.0058	0.027	0.0036	<0.0005	<0.0005
LFR-4	Jul-27-01	0.091 Y	0.19	0.011	0.0009	<0.0005	<0.0005	<0.0005
LFR-4	**Jan-31-02**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**
Monitoring Wells Installed by SOMA:								
SOMA-1	Oct-19-01	0.22	0.44	0.034	<0.005	<0.005	<0.005	<0.01
SOMA-1	**Jan-31-02**	**0.058**	**0.1 HY**	**0.11 b**	**<0.005 b**	**<0.005 b**	**<0.005 b**	**<0.005 b**
SOMA-2	Oct-19-01	1.4	2.8	<0.25	<0.25	<0.25	<0.25	<0.5
SOMA-2	**Jan-31-02**	**1.300**	**2.4 HY**	**<0.071 b**	**<0.071 b**	**<0.071 b**	**<0.071 b**	**<0.071 b**
SOMA-3	Oct-19-01	0.42	0.83	0.65	<0.025	<0.025	<0.025	<0.05
SOMA-3	**Jan-31-02**	**0.230**	**0.41 HY**	**0.31 b**	**<0.013 b**	**<0.013 b**	**<0.013 b**	**<0.013 b**
SOMA-4	Oct-19-01	2.5	5	0.63	<0.13	<0.13	<0.13	<0.26
SOMA-4	**Jan-31-02**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**

Notes:

[b] Analysis was carried out npast the hold date, no analytical problems were encountered

[C] Presence of this compound confirmed by second column, however, the confirmation concentration different from reported results by more than a factor of two.

[J] Result is estimated.

[Y] Sample exhibits fuel pattern which does not resemble standard.

[H] Heavier hydrocarbons than the standard are present in the sample.

[Z] Sample exhibits unknown single peak or peaks.

NA = Not analyzed

NA = Not analyzed, LFR-4 was not analzed due to the well being inaccessible

TPH, purge = Total petroleum hydrocarbons (purgeable)

Groundwater samples collected from the temporary sampling points are considered grab samples, therefore, the results should be considered estimates of groundwater quality.

Table 8

Historical Analytical Results For Volatile Organic Compound (VOC) Analyses on Groundwater Samples at the Former Glovatorium Site 3815 Broadway, Oakland, California

All results expressed in milligrams per liter (mg/L)

Location	Date Sampled	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	Vinyl Chloride	1,2-DCP	Notes
Temporary Sampling Points Installed by Geosolv, LLC:								
B-2	24-Jan-00	<0.0013	<0.0013	0.27	0.0014	< 0.0013	< 0.0013	
B-3	24-Jan-00	< 0.002	< 0.002	0.61	< 0.002	< 0.002	< 0.002	
B-7	24-Jan-00	< 0.0036	< 0.0036	0.92	0.0043	< 0.0036	< 0.0036	
B-7	11-Aug-00	< 0.0031	< 0.0031	0.86	0.0048	< 0.0031	< 0.0031	
B-7	31-Oct-00	< 0.0042	< 0.0042	0.91	0.0042	< 0.0042	< 0.0042	
B-7	31-Jan-01	< 0.0042	< 0.0042	0.92	0.0048	< 0.0042	< 0.0042	
B-7	Apr-27-01	<0.0031	<0.0031	1.1	0.0069	<0.0031	<0.0031	
B-7	Jul-27-01	0.0098	0.017	0.86	0.005	<0.0031	<0.0031	
B-8	24-Jan-00	< 0.0005	< 0.0005	0.035	< 0.0005	< 0.0005	< 0.0005	
B-9	24-Jan-00	< 0.0005	0.0006	0.0032	< 0.0005	< 0.0005	< 0.0005	
B-10	24-Jan-00	1.2	2.4	14	0.09	< 0.063	< 0.063	
B-10	10-Aug-00	2.9	1.6	6.5	0.05	< 0.025	< 0.025	
B-10	31-Oct-00	2.4	1.9	7.1	0.061	< 0.025	< 0.025	
B-10	31-Jan-01	2.1	1.6	6.6	0.044	< 0.025	< 0.025	
B-10	Jul-27-01	1.7	1.4	7.3	0.043	<0.025	<0.025	
B-10	Jul-27-01	0.87	0.81	6.6	0.041	<0.025	<0.025	
B-13	24-Jan-00	0.02	0.029	0.13	0.0049	< 0.0005	< 0.0005	
Temporary Sampling Points Installed by LFR:								
GW-2	19-Jul-99	0.014	0.0014	< 0.0005	< 0.0005	< 0.0005	< 0.0005	
GW-2	20-Jan-00	0.13	0.019	0.0055	< 0.0005	< 0.0005	< 0.0005	
GW-2	28-Apr-00	0.12	0.016	0.0033	< 0.0005	< 0.0005	< 0.0005	
GW-2	2-Nov-00	0.0078	0.0008	0.0032	< 0.0005	< 0.0005	< 0.0005	
GW-2	1-Feb-01	0.0077	0.0006	0.0028	< 0.0005	< 0.0005	< 0.0005	
GW-2	Apr-27-01	0.0096	0.0018	0.0024	<0.0005	<0.0005	<0.0005	
GW-2	Jul-27-01	0.033	0.0043	0.0024	<0.0005	<0.0005	<0.0005	
GW-2	Oct-19-01	0.019	<0.005	<0.005	<0.005	<0.01	<0.005	
GW-2	**Jan-31-02**	**0.0092** [b]	**<0.005** [b]	**<0.005** [b]	**<0.005** [b]	**<0.010** [b]	**<0.005** [b]	
GW-3	19-Jul-99	0.22	<0.001	< 0.001	< 0.001	< 0.001	< 0.001	
GW-3	20-Jan-00	0.055	0.001	0.02	< 0.0005	< 0.0005	< 0.0005	
GW-3	27-Apr-00	0.35	0.0023	0.0056	< 0.0005	< 0.0005	< 0.0005	
Split	27-Apr-00	0.27	0.0015	0.0023	< 0.0013	< 0.0013	< 0.0013	
GW-3	11-Aug-00	0.068	0.0028	0.012	< 0.0005	< 0.0005	< 0.0005	
GW-3	2-Nov-00	0.059	0.0008	0.0024	< 0.0005	< 0.0005	< 0.0005	
GW-3	1-Feb-01	0.046	0.0006	0.0011	< 0.0005	< 0.0005	< 0.0005	
GW-3	Apr-27-01	0.079	0.0007	0.0015	<0.0005	<0.0005	<0.0005	
GW-3	Jul-27-01	0.09	0.0009	<0.0005	<0.0005	<0.0005	<0.0005	
GW-3	Oct-19-01	0.18	<0.01	<0.01	<0.01	<0.02	<0.01	
GW-3	**Jan-31-02**	**0.096** [b]	**<0.005** [b]	**<0.005** [b]	**<0.005** [b]	**<0.010** [b]	**<0.005** [b]	
GW-4	19-Jul-99	< 0.0005	< 0.0005	0.0035	< 0.0005	< 0.0005	0.0017	
GW-4	20-Jan-00	0.0008	< 0.0005	0.0036	< 0.0005	< 0.0005	0.0015	
Split	20-Jan-00	0.0006	< 0.0005	0.0044	< 0.0005	< 0.0005	0.0021	
GW-4	27-Apr-00	0.0017	< 0.0005	0.001	< 0.0005	< 0.0005	0.0006	
GW-4	30-Jan-01	< 0.0005	< 0.0005	0.0024	< 0.0005	< 0.0005	0.0014	
GW-4	Jul-27-01	< 0.0005	< 0.0005	0.003	< 0.0005	0.0006	0.0019	
GW-4	Oct-19-01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	
GW-4	**Jan-31-02**	**<0.005** [b]	**<0.005** [b]	**<0.005** [b]	**<0.005** [b]	**<0.010** [b]	**<0.005** [b]	

Table 8

Historical Analytical Results For Volatile Organic Compound (VOC) Analyses on Groundwater Samples
at the Former Glovatorium Site
3815 Broadway, Oakland, California
All results expressed in milligrams per liter (mg/L)

Location	Date Sampled	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	Vinyl Chloride	1,2-DCP	Notes
Temporary Sampling Points Installed by Geosolv, LLC:								
GW-5	27-Aug-99	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	
GW-5	20-Jan-00	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	
GW-5	27-Apr-00	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	
GW-6A	27-Aug-99	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	
Split	27-Aug-99	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	
GW-6A	25-Jan-00	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	
GW-6A	27-Apr-00	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	
GW-7	15-Jul-99	< 0.0005	< 0.0005	0.00358	< 0.0005	< 0.0005	0.000632	
GW-7	15-Jul-99	< 0.002	< 0.002	0.00398	< 0.002	< 0.002	< 0.002	
Split	15-Jul-99	< 0.002	< 0.002	0.00383	< 0.002	< 0.002	< 0.002	
GW-8	19-Jul-99	0.024	0.015	0.0038	0.0017	0.0012	< 0.0005	
GW-8	20-Jan-00	0.15	0.19	0.053	0.012	0.0045	< 0.0007	
Split	20-Jan-00	0.15	0.18	0.052	0.011	0.0046	< 0.0005	
GW-8	28-Apr-00	0.12	0.11	0.029	0.0053	0.0023	< 0.0005	
Monitoring wells owned by TOSCO:								
MW-11	25-Jan-00	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	
MW-11	28-Apr-00	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	
MW-11	10-Aug-00	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	
MW-11	1-Nov-00	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	
MW-11	31-Jan-01	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	
MW-11	Apr-27-01	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	
MW-11	Jul-27-01	0.0017	0.001	0.0062	< 0.0005	< 0.0005	< 0.0005	
MW-11	Oct-19-01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	
MW-11	**Jan-31-02**	**<0.005** [b]	**<0.005** [b]	**<0.005** [b]	**<0.005** [b]	**<0.010** [b]	**<0.005** [b]	
Monitoring wells installed by LFR:								
LFR-1	9-Aug-00	2.8	0.064	0.041	< 0.0083	< 0.0083	< 0.0083	
LFR-1	30-Oct-00	0.82	0.034	0.01	< 0.0031	< 0.0031	< 0.0031	
Split	30-Oct-00	0.87	0.035	0.014	< 0.0031	< 0.0031	< 0.0031	
LFR-1	29-Jan-01	0.77	0.026	0.0073	<0.0025	<0.0025	<0.0025	
LFR-1	Apr-26-01	0.44	0.013	0.005	<0.0013	<0.0013	<0.0013	
LFR-1	Jul-27-01	0.38	0.031	0.0098	<0.0013	<0.0013	<0.0013	
LFR-1	Oct-18-01	0.78	0.093	<0.031	<0.031	<0.063	<0.031	
LFR-1	**Jan-31-02**	**0.37** [b]	**0.035** [b]	**<0.013** [b]	**<0.013** [b]	**<0.025** [b]	**<0.013** [b]	
LFR-2	11-Aug-00	< 0.0005	< 0.0005	0.035	< 0.0005	0.0045	< 0.0005	
LFR-2	2-Nov-00	< 0.0005	< 0.0005	0.13	0.001	0.015	0.0006	
LFR-2	29-Jan-01	<0.0005	<0.0005	0.0056	<0.0005	0.0016	<0.0005	
LFR-2	Apr-27-01	0.0007	<0.0005	0.0056	<0.0005	0.0013	<0.0005	
LFR-2	Jul-27-01	0.0014	0.0007	0.019	<0.0005	<0.0005	<0.0005	
LFR-2	Oct-18-01	<0.0071	<0.0071	0.16	<0.0071	<0.014	<0.0071	
LFR-2-2	Apr-27-01	0.0007	<0.0005	0.0065	<0.0005	0.0019	<0.0005	
LFR-2	**Jan-31-02**	**<0.005** [b]	**<0.005** [b]	**0.0069** [b]	**<0.005** [b]	**<0.010** [b]	**<0.005** [b]	
LFR-3	10-Aug-00	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	
Split	10-Aug-00	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	
LFR-3	1-Nov-00	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	
LFR-3	30-Jan-01	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	
LFR-3	Apr-27-01	0.0019	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	
LFR-3	Jul-27-01	0.0022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	
LFR-3	Oct-18-01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	
LFR-3	**Jan-31-02**	**<0.005** [b]	**<0.005** [b]	**<0.005** [b]	**<0.005** [b]	**<0.010** [b]	**<0.005** [b]	

Table 8

Historical Analytical Results For Volatile Organic Compound (VOC) Analyses on Groundwater Samples
at the Former Glovatorium Site
3815 Broadway, Oakland, California
All results expressed in milligrams per liter (mg/L)

Location	Date Sampled	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	Vinyl Chloride	1,2-DCP	Notes
LFR-4	11-Aug-00	< 0.0005	< 0.0005	0.0012	< 0.0005	< 0.0005	< 0.0005	
LFR-4	31-Oct-00	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	
LFR-4	30-Jan-01	<0.0005	<0.0005	0.0006	<0.0005	< 0.0005	< 0.0005	
LFR-4	Apr-27-01	<0.0005	<0.0005	0.0016	<0.0005	<0.0005	<0.0005	
LFR-4	Jul-27-01	0.0005	<0.0005	0.0021	<0.0005	<0.0005	<0.0005	
Monitoring wells installed by SOMA								
SOMA-1	Oct-19-01	<0.005	<0.005	0.014	<0.005	<0.01	<0.005	
SOMA-1	**Jan-31-02**	**0.0056** [b]	**<0.005** [b]	**0.007** [b]	**<0.005** [b]	**<0.010** [b]	**0.0057** [b]	
SOMA-2	Oct-19-01	1.4	0.35	5	<0.25	<0.5	<0.25	
SOMA-2	**Jan-31-02**	**<0.071** [b]	**<0.071** [b]	**1.8** [b]	**<0.071** [b]	**<0.140** [b]	**<0.071** [b]	
SOMA-3	Oct-19-01	0.042	0.057	0.44	<0.025	<0.05	<0.025	
SOMA-3	**Jan-31-02**	**0.018** [b]	**0.023** [b]	**0.38** [b]	**<0.013** [b]	**<0.025** [b]	**<0.013** [b]	
SOMA-4	Oct-19-01	<0.13	<0.13	2.6	<0.13	<0.25	<0.13	
SOMA-4	**Jan-31-02**	**FP**	**FP**	**FP**	**FP**	**FP**	**FP**	

[b] analysis was carried out past hold date, no analytical problems were encountered
FP: Not Analyzed due to Free Product

Table 9

Historical In-Situ and Ex-Situ Analyses Results for Bioattenuation Parameters on Groundwater Samples at the Former Glovatorium Site 3815 Broadway, Oakland, California

(concentrations in milligrams per liter [mg/L] unless otherwise noted)

Well ID	Date Sampled	Dissolved Oxygen	Manganese (dissolved)	Nitrate	Sulfate	Ferrous Iron (Fe + 2)	Methane*	ORP (milliVolts)	Hydrogen (nano-Moles)
B-7	11-Aug-00						11	193	
B-7-field	11-Aug-00	0.63		-1	3				
B-7	31-Oct-00	0.62	2.6	< 0.10	< 1.0	11	2.4		
B-7-field	31-Oct-00	0.25		0.4	-1	15.85		-62.5	
B-7	1-Feb-01	0.78	2.2	0.78	<1.0	15	13		
B-7-field	31-Jan-01	0.48						28	
B-7 Field	Apr-26-01	0.6	1.7	2.5	5	>3.3	7.6	-28	
B-7 Field	Jul-26-01	1.98	7.3	0	8	11.6	7	-40	
B-8 field	31-Jan-01	0.45						58	
B-10	10-Aug-00			< 0.05	< 0.05	5.7	10	213	
B-10-field	10-Aug-00	0.44		-1	-2				0.81
B-10	31-Oct-00	2.4	1.4	< 0.10	< 1.0	5.9	6.7		
B-10-field	31-Oct-00	0.44		0	0	7.6		-22.2	
B-10	31-Jan-01	6.4	1.3	< 0.10	<2.0	7.7	24		1.3
B-10-field	31-Jan-01	0.46						64	
B-10 Field	Jun-11-01	0.9	0	0	0	1.25	3.9	-8	NM
B-10 Field	Jul-26-01	1.87	1.3	0	3	8.2	5.6	-22	
GW-2-field	1-Nov-00	2.32						77	
GW-2	1-Feb-01	3.8					0.041		
GW-2-field	1-Feb-01	0.58						159	
GW-2	Apr-26-01	4	1	7.1	36	0.015	0.00022	152	NM
GW-2	Jul-26-01	1.93	0	3.9	60	0	0.016	233	
GW-2 field	Not En. Sample						0.00091		
GW-2	**Jan-31-02**	**2.80**	**0**	**0.80**	**45**	**0.36**	**6.9**	**179**	**NM**
GW-3	11-Aug-00						< 0.0005	395	
GW-3-field	11-Aug-00	0.72		1	46				
GW-3	1-Nov-00							81	
GW-3-field		7.76					0.012		
GW-3	29-Jan-01	8.8						235	
GW-3-field	1-Feb-01	8.99						212	NM
GW-3	Apr-27-01	2.9	0	0.7	30	0	0.015	214	
GW-3	Jul-26-01	2.48	0	2.4	52	0.12	0.0083	131	NM
GW-3 field	Oct-18-01	3.76	0	5.2	4.9	0	0.0041	163	
GW-3	**Jan-31-02**	**3.70**	**0.2**	**1.3**	**52**	**0.00**	**8.1**	67	
GW-4-field	30-Jan-01	0.83						-3	
GW-4-field	Jul-26-01	2.59	0.2	10.5	25	1.29	0.0028	-84	NM
GW-4-field	Oct-18-01	1	0.1	0	0	4.8	4.8	-91.00	
GW-4	**Jan-31-02**	**0.90**	**0.8**	**0.0**	**0.0**	**8.0**	**3500**		

Table 9

Historical In-Situ and Ex-Situ Analyses Results for Bioattenuation Parameters
on Groundwater Samples
at the Former Glovatorium Site
3815 Broadway, Oakland, California
(concentrations in milligrams per liter [mg/L] unless otherwise noted)

Well ID	Date Sampled	Dissolved Oxygen	Manganese (dissolved)	Nitrate	Sulfate	Ferrous Iron (Fe + 2)	Methane*	ORP (millivolts)	Hydrogen (nano-Moles)
MW-11	10-Aug-00			2.8	63	< 0.1	< 0.0005	476	
MW-11-field	10-Aug-00	2.52		4.1	67				
MW-11	1-Nov-00	4.1	< 0.010	15	90	< 0.1	0.00004		130
MW-11-field	1-Nov-00	4.01		3.3	73	0		87.4	
MW-11	31-Jan-01	6.3	< 0.010	15	94	< 1.0	0.00005		1.1
MW-11-field	1-Nov-00	3.97		27.3	74	0		319	
MW-11 Field	Apr-26-01	7.4	0	6.8	52	0	0.0014	229	NM
MW-11 Field	Jul-26-01	1.85	0	5.2	77	0	0.0049	233	
MW-11 Field	Oct-18-01	5.58	0	10.1	NM	0	0.0066	155	NM
MW-11	**31-Jan-02**	**4.90**	**0**	**2.80**	**79**	**0.0**	**7.7**	**218**	
LFR-1	9-Aug-00							462	
	11-Aug-00						0.0096		
LFR-1-field	9-Aug-00	3.63		5.5	30				1.5
LFR-1	30-Oct-00	2.7	0.03	39	42	< 1.0	0.00038		
FR-1-field/sp	30-Oct-00	2.95		10.3/10.0	29/29	0.01/0.01		77.4	1
LFR-1 split	30-Oct-00	3.4	0.03	40	43	< 1.0	0.00069		
LFR-1	29-Jan-01	5.1	<0.01	<0.10	51	<1.0	0.00012		0.43
LFR-1-field	29-Jan-01	3.78	0		36	0		383	
LFR-1 Dup	29-Jan-01	4.6	<0.01	<0.10	50	<1.0	0.000011		0.32
LFR-1	Apr-26-01	3.2	0.02	12.9	16	0	0.0003	224	NM
LFR-1	Jul-26-01	1.07	0	8	25	0.01	0.0084	238	
LFR-1 filed	Oct-18-01	1.03	0	6.9	24	0.18	0.0054	119	NM
LFR-1	**Jan-31-02**	**1.80**	**0.3**	**5.50**	**31**	**0.00**	**6.2**	**163**	
LFR-2	11-Aug-00						5.6	270	
LFR-2-field	11-Aug-00	0.48		1.5	-1	2.7			1200
LFR-2	2-Nov-00	2.2	8.8	0.33	5.4	5.3	8.5		
LFR-2-field	2-Nov-00	0.47		0.5	-1	6.05		-23.7	
LFR-2	30-Jan-01	4.4	8.9	1	8.3	4.6	4.6		1.1
LFR-2-field	30-Jan-01	0.61	10.7	2.9		1.02		210	
LFR-2	Apr-27-01	1.4	0.4	1.6	1	2.66	14	9	NM
LFR-2	Jul-26-01	0.55	0.2	0	0	4.5	10	-20	
LFR-2 field	Oct-18-01	0.43	0	0	0	6.5	11	-75	NM
LFR-2	**Jan-31-02**	**1.00**	**0.0**	**2.60**	**19**	**1.81**	**11,000**	**-14**	
LFR-3	10-Aug-00			2.4	64	< 0.1	0.00051	464	
LFR-3 split	10-Aug-00							< 0.0005	
LFR-3-field	10-Aug-00	1.3		2.4	64				850
LFR-3	1-Nov-00	4.7	0.022	8.8	74	< 1.0	0.00028		
LFR-3-field	1-Nov-00	0.58		1.8	57	0		75.2	
LFR-3	31-Jan-01	4.1	<0.01	1.2	58	< 1.0	0.00038		
LFR-3-field	30-Jan-01	1.75		0.023	44	0		195	
LFR-3 Field	Jun-11-01	1	0	0.8	28	0	0.0086	201	NM
LFR-3 Field	Jul-26-01	1.29	0.4	0	51	0.6	0.0035	226	
LFR-3 Field	Oct-18-01	0.54	0	0.8	30	0.11	0.0093	139	NM
LFR-3	**Jan-31-02**	**0.80**	**0.4**	**2.60**	**32**	**0.00**	**7.2**	**212**	

Table 9
Historical In-Situ and Ex-Situ Analyses Results for Bioattenuation Parameters on Groundwater Samples at the Former Glovatorium Site 3815 Broadway, Oakland, California

(concentrations in milligrams per liter [mg/L] unless otherwise noted)

Well ID	Date Sampled	Dissolved Oxygen	Manganese (dissolved)	Nitrate	Sulfate	Ferrous Iron (Fe + 2)	Methane*	ORP (milliVolts)	Hydrogen (nano-Moles)
LFR-4	11-Aug-00						0.062	402	
LFR-4-field	11-Aug-00	1.13		0.7	1	0.14			1.1
LFR-4	31-Oct-00	1.9	2.2	< 0.10	2.9	1.1	3.2		
LFR-4-field	31-Oct-00	0.64		1		0.61		-80	
LFR-4	1-Feb-01	3.2	2.8	1.5	2.8	1.8	2.2		1.5
LFR-4-field	1-Feb-01	0.55	4.5	8	0	1.5		59	
LFR-4 Field	Apr-27-01	5.6	0	1.7	0	1.37	7	14	NM
LFR-4 Field	Jul-26-01	1.65	0	0	0	0.84	1.2	18	
SOMA-1	Oct-18-01	4.19	0.3	0.2	33	0.52	0.12	151	NM
SOMA-1	**Jan-31-02**	**0.40**	**0.0**	**0.0**	**18**	**0.0**	**580**	**141**	**NM**
SOMA-2	Oct-18-01	0.57	0	0.4	0	40	6.6	-89	NM
SOMA-2	**Jan-31-02**	**0.70**	**3.8**	**0.80**	**0.0**	**9**	**13000**	**103**	**NM**
SOMA-3	Oct-18-01	1.32	0	0	33	0.22	1	2	NM
SOMA-3	**Jan-31-02**	**1.00**	**22**	**2.0**	**54**	**0.62**	**460**	**-71**	**NM**
SOMA-4	Oct-18-01	0.83	4	22	17	0.22	1.2	88	NM
SOMA-5	Dry								

Notes:
Samples with "field" in the well number indicate that the results are from field measurements obtained using a Hach spectrophotometer or a Hydrolab Quanta flow-through instrument.
since April 2001, field measurements have been obtained by a Hach Calorimeter
*) Methane was messured in laboratory by Microseep Laboratory
(1) Sample concentration was too dilute to be reproducibly measured using the Hach spectrophotometer.
(2) Field measurement was not recorded.

FIGURES

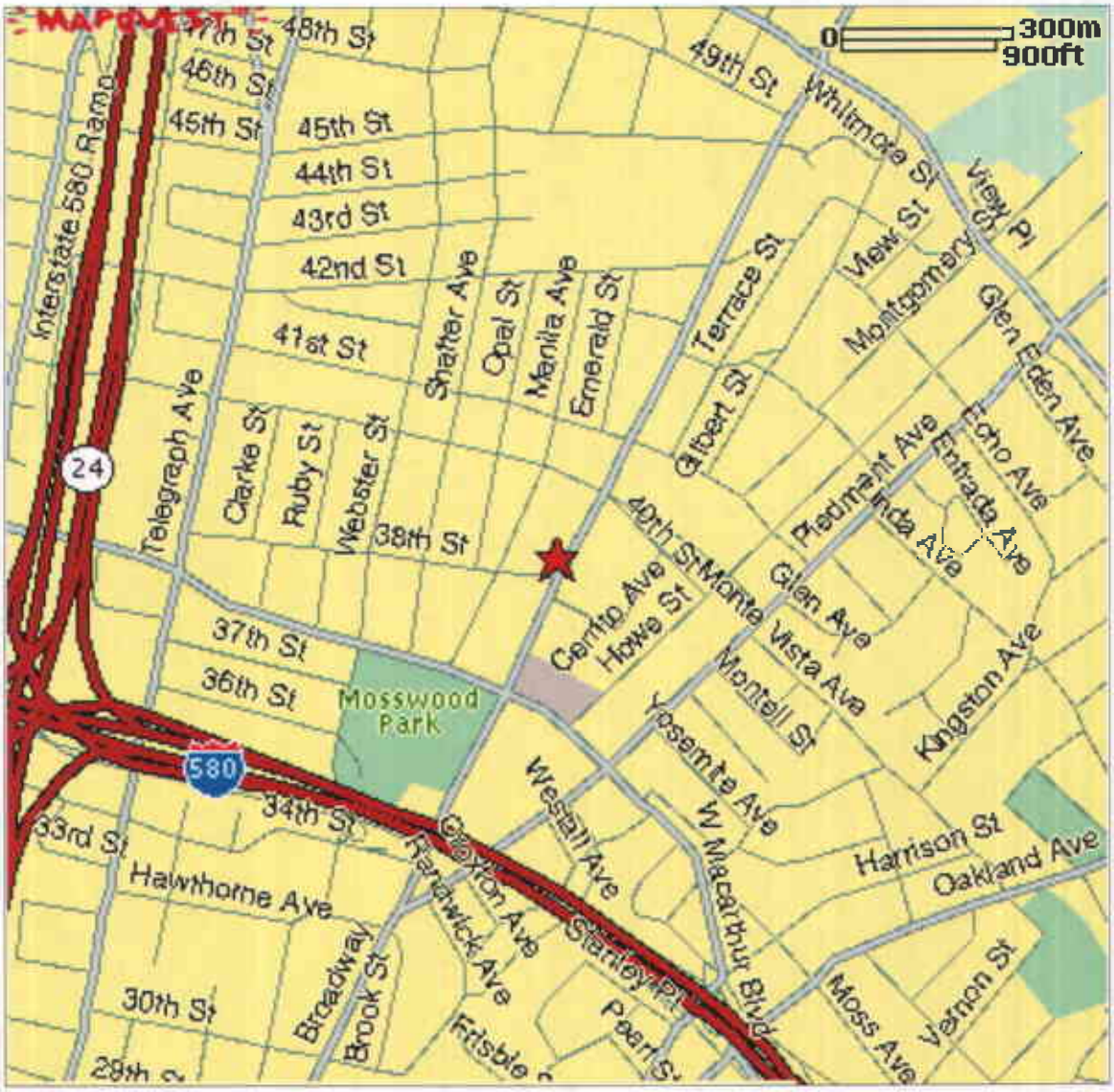

Figure 1: Site Location Map

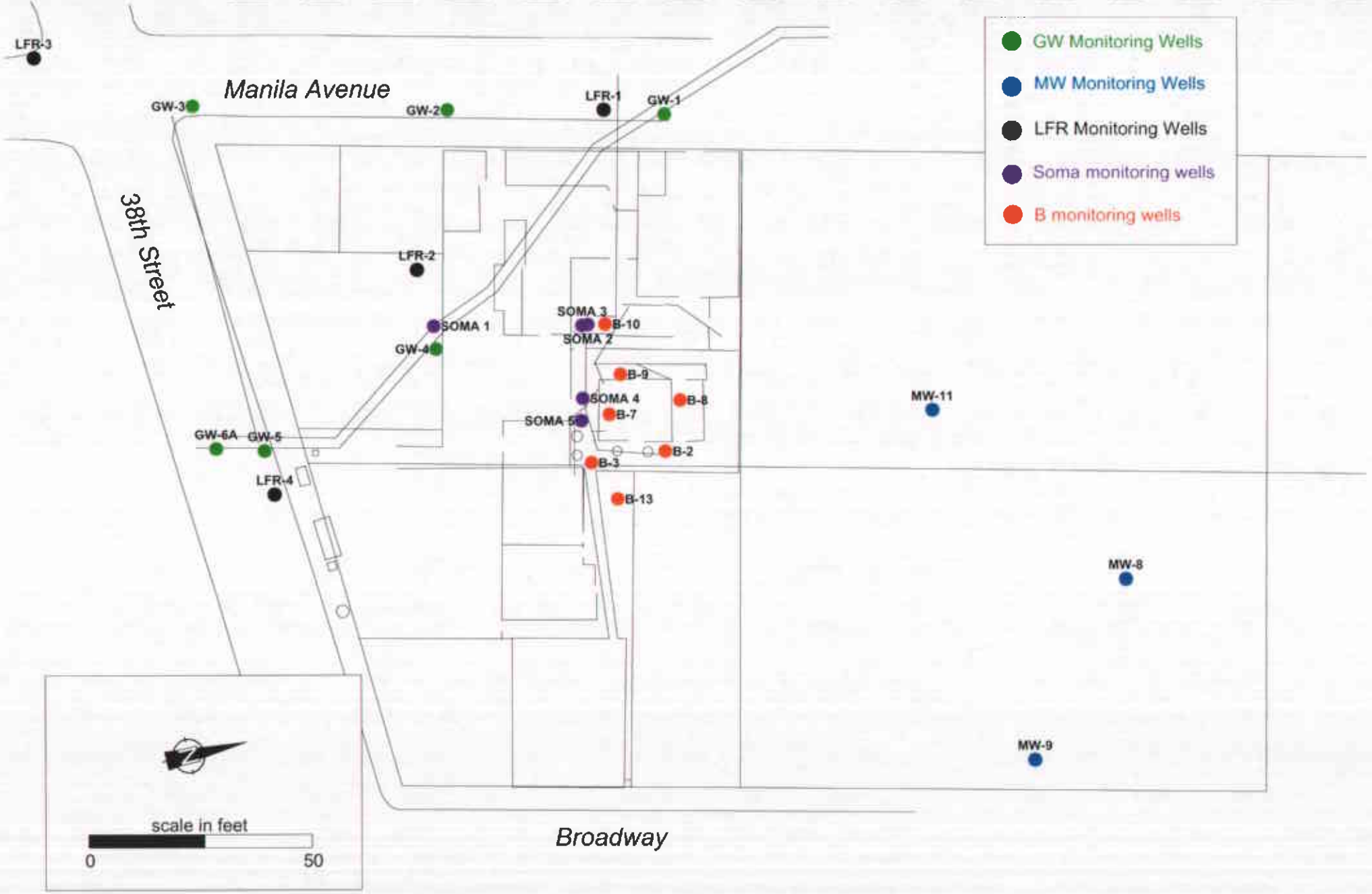

Figure 2: Location of Groundwater Monitoring Wells

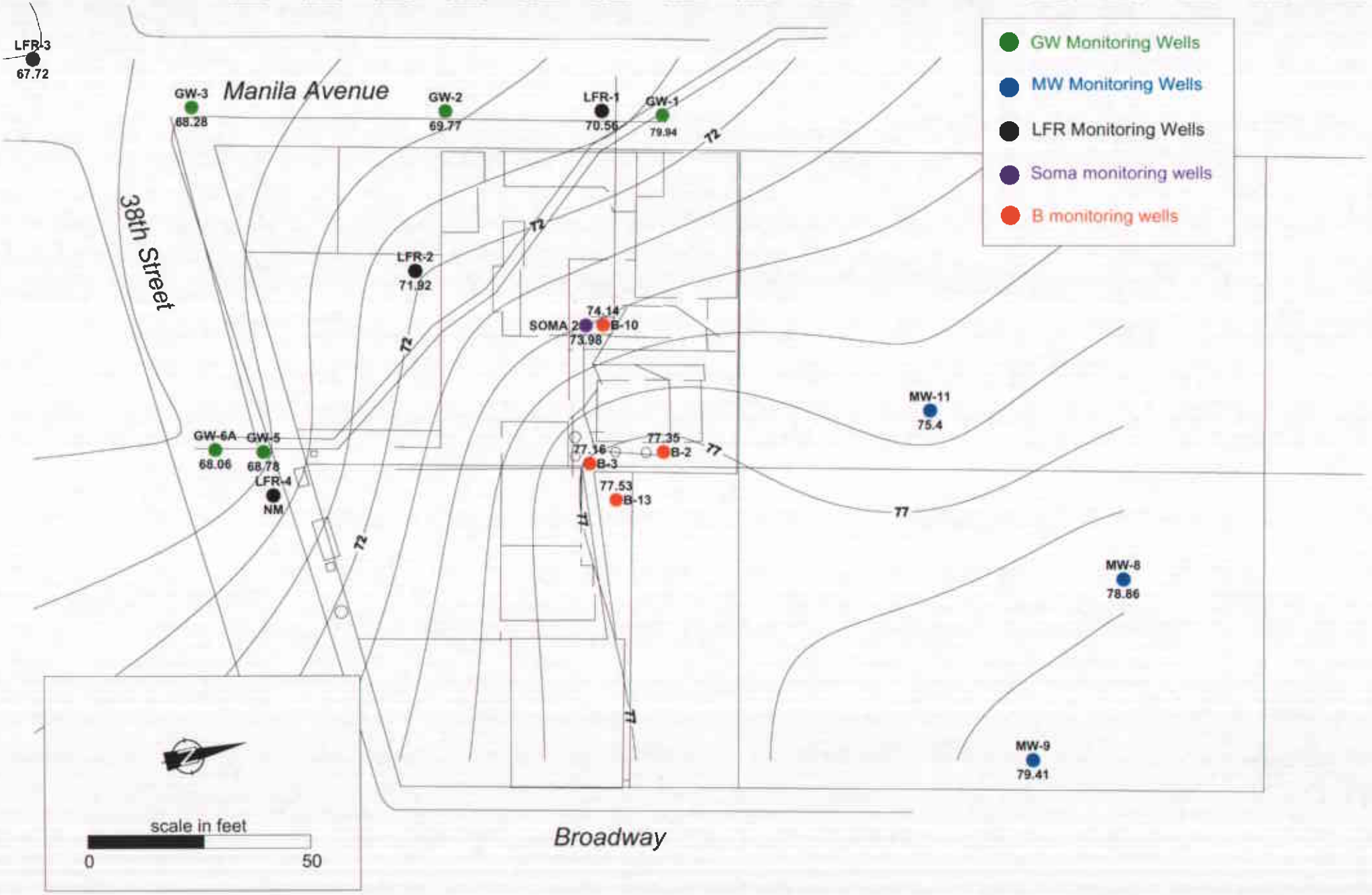

Figure 3: Groundwater Elevation Contour Map, January 30, 2002

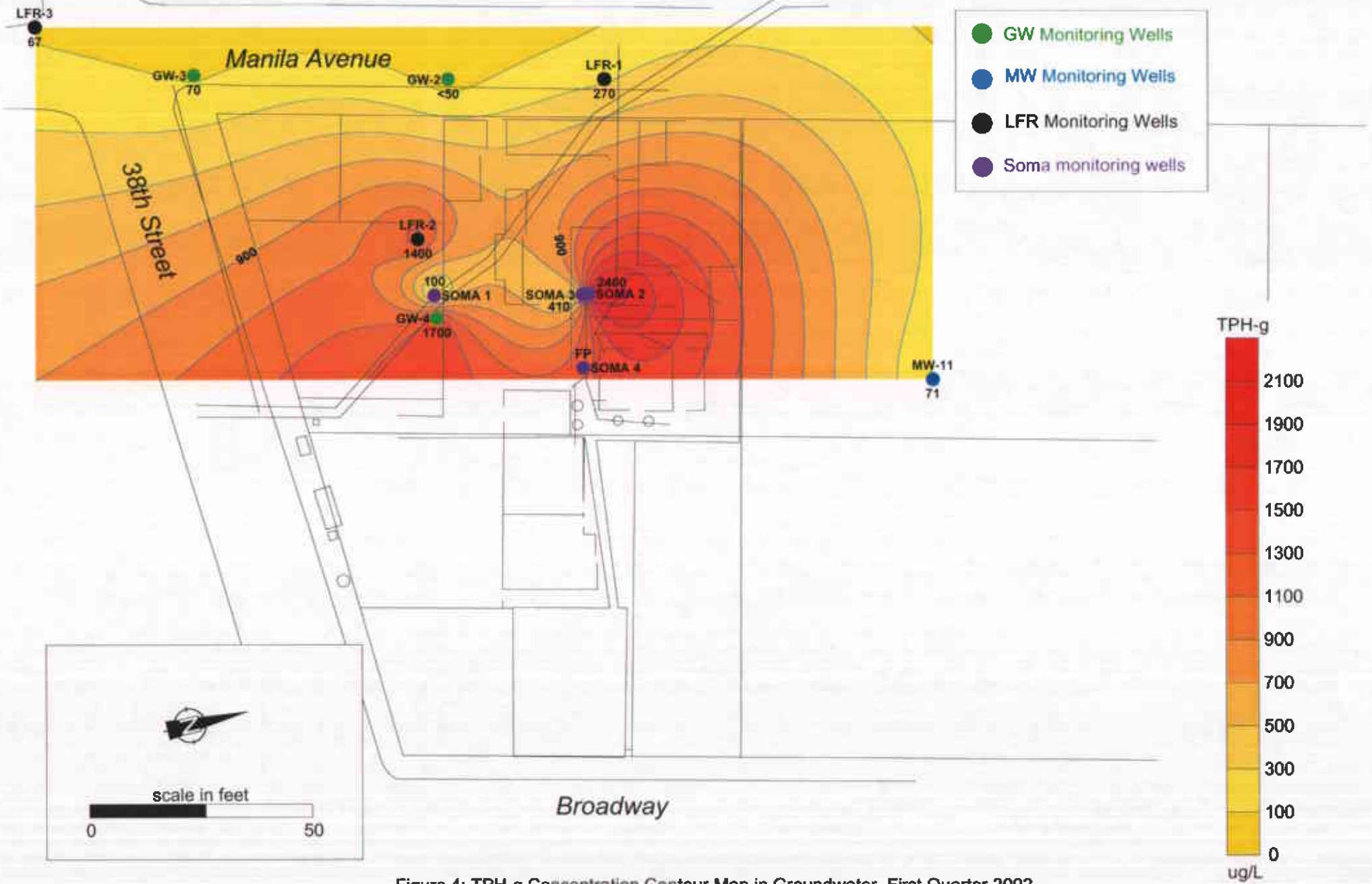

Figure 4: TPH-g Concentration Contour Map in Groundwater, First Quarter 2002

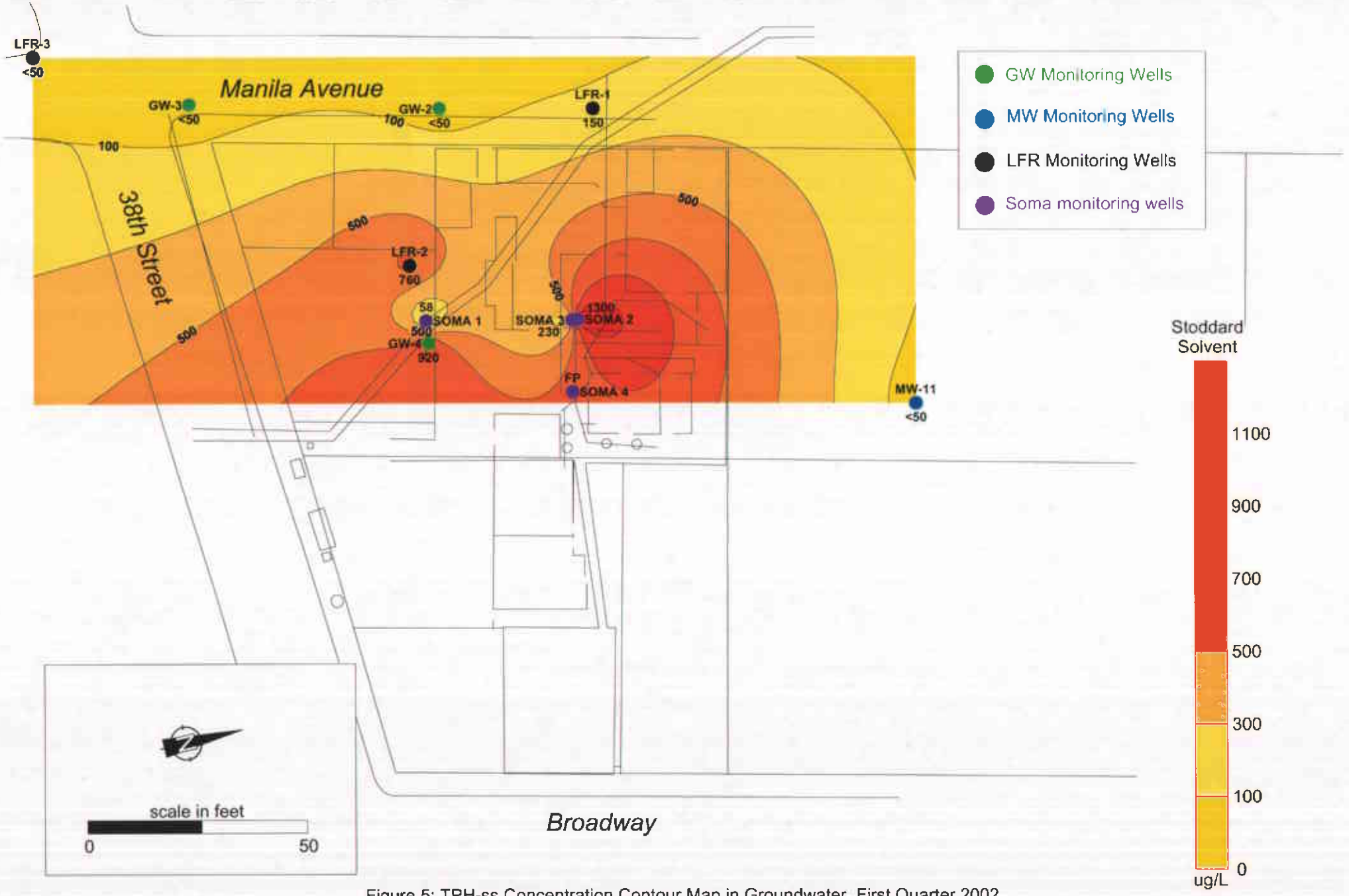

Figure 5: TPH-ss Concentration Contour Map in Groundwater, First Quarter 2002

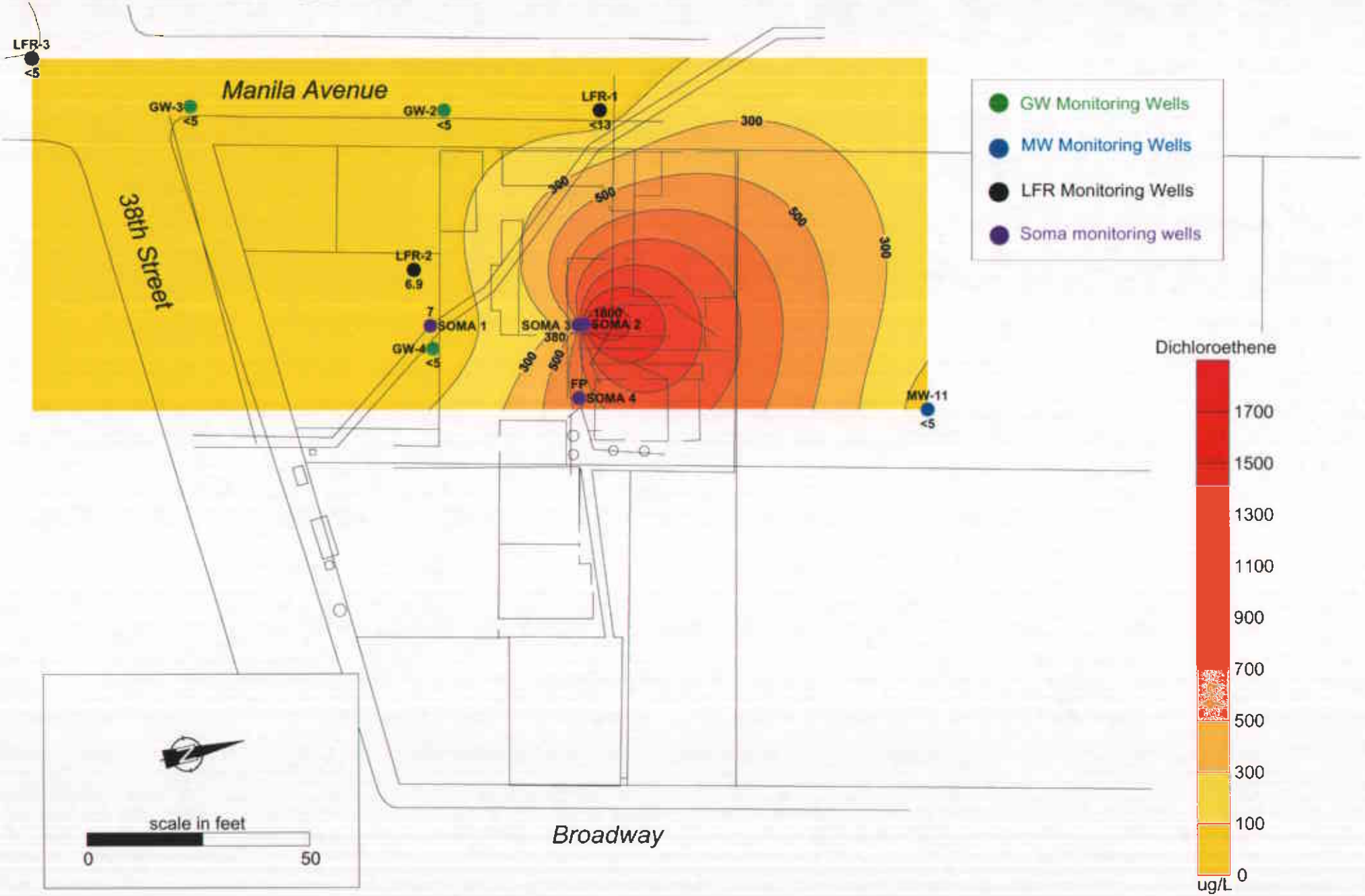

Figure 6: Cis-1,2-DCE Concentration Contour Map in Groundwater, First Quarter 2002

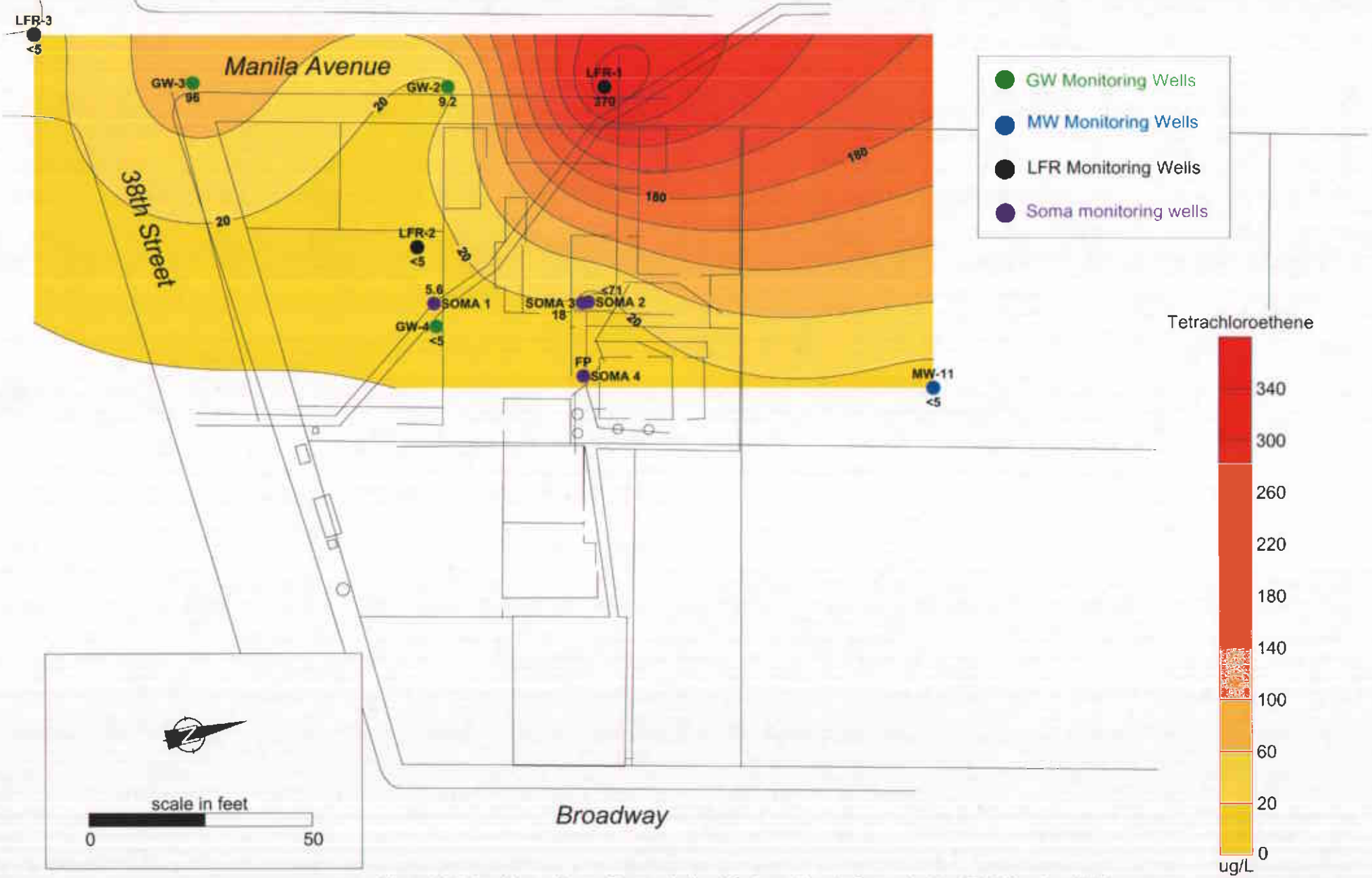

Figure 7: Tetrachloroethene Concentration Contour Map in Groundwater, First Quarter 2002

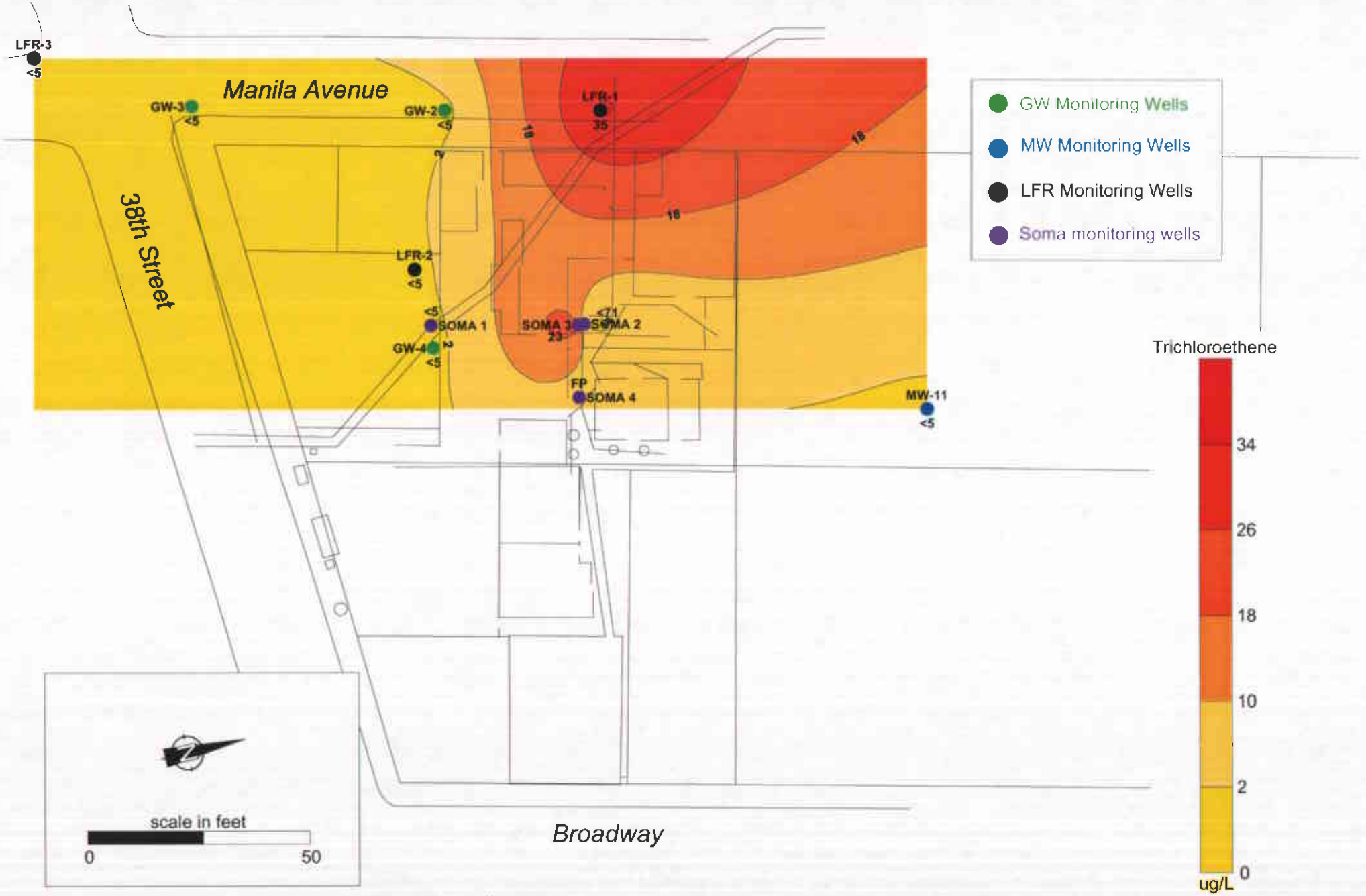

Figure 8: Trichloroethene Concentration Contour Map in Groundwater, First Quarter 2002

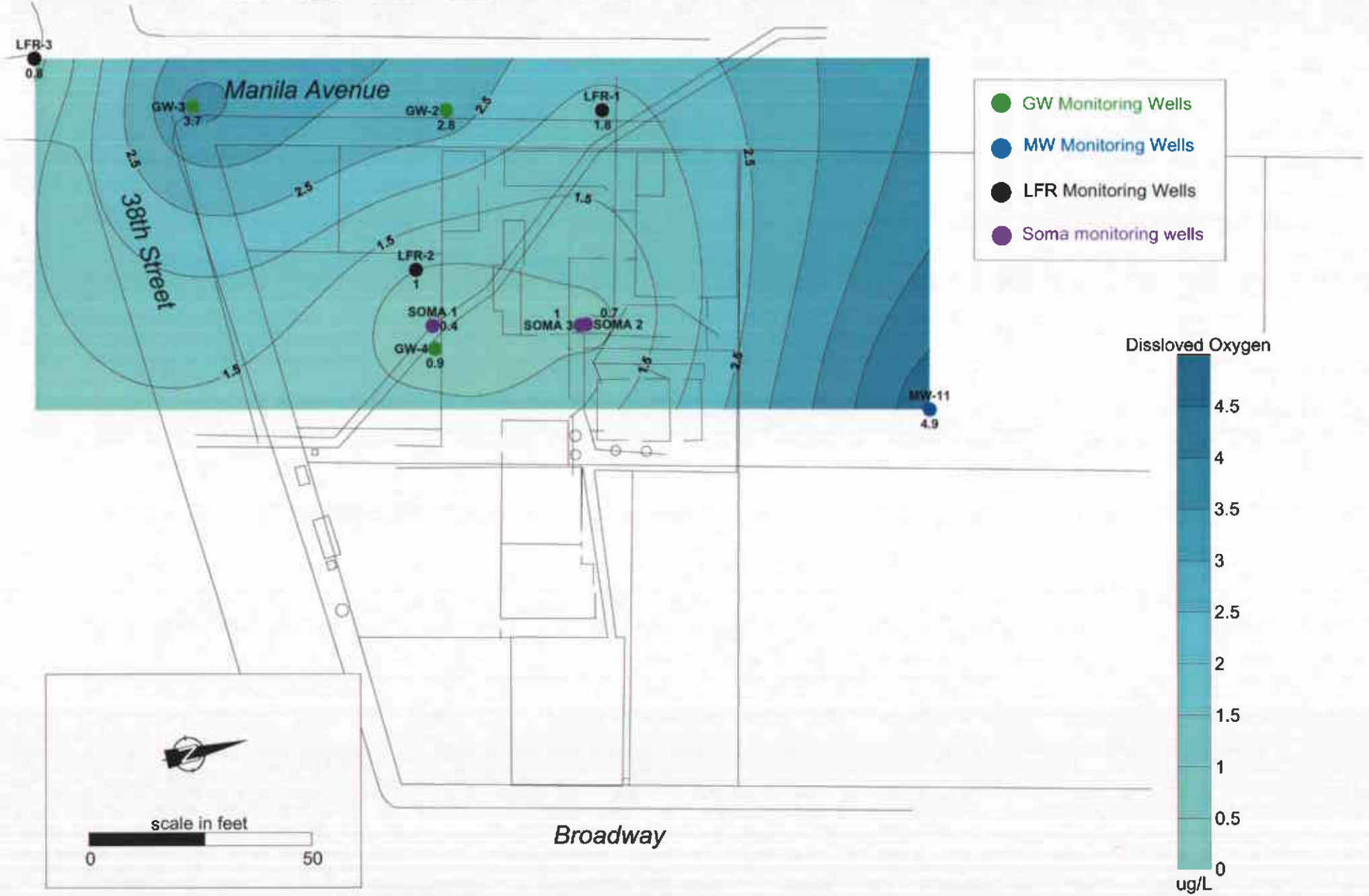

Figure 9: Dissolved Oxygen Concentration Contour Map in Groundwater, First Quarter 2002

Figure 10: Nitrate Concentration Contour Map in Groundwater, First Quarter 2002

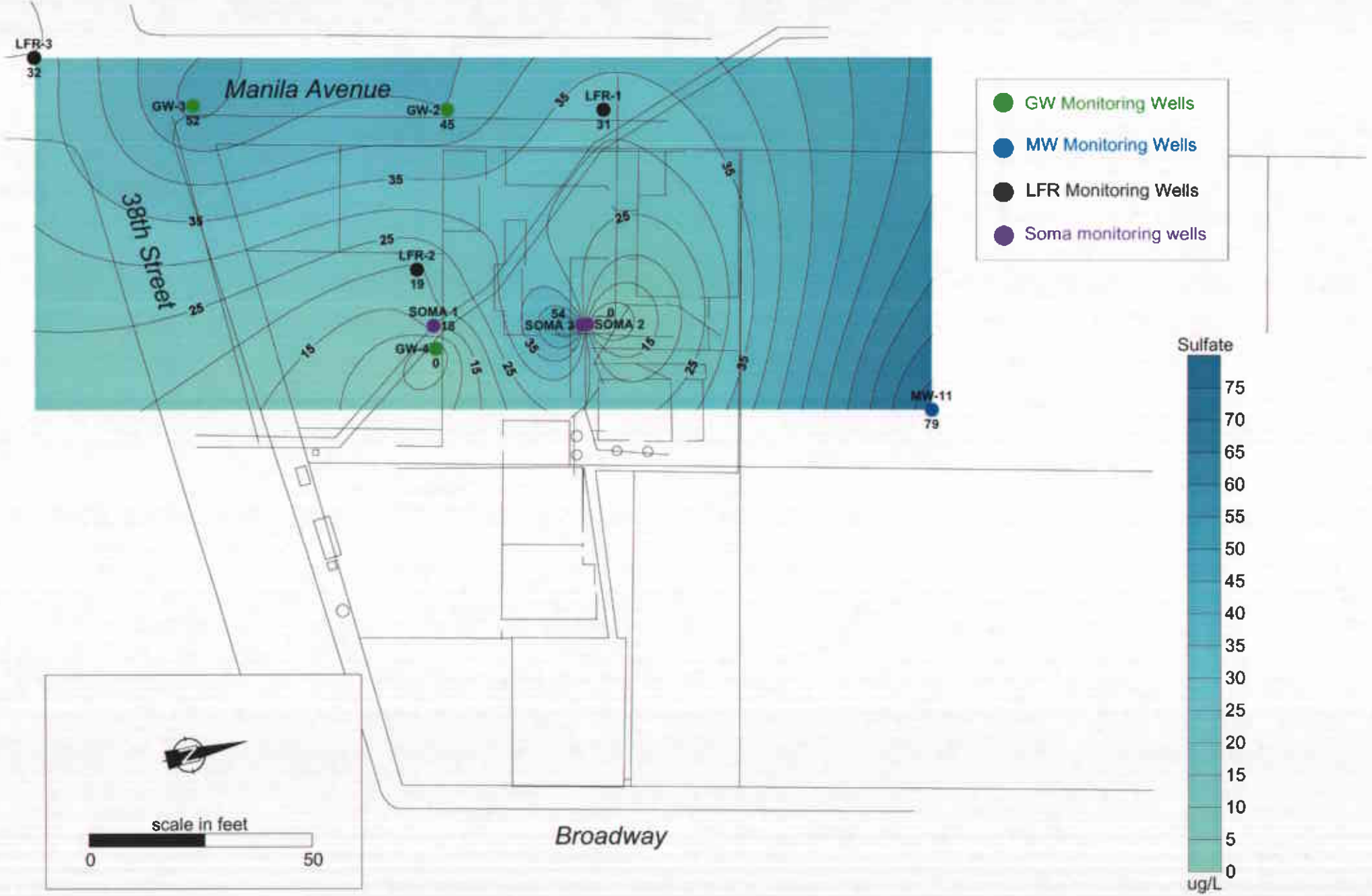

Figure 11: Sulfate Concentration Contour Map in Groundwater, First Quarter 2002

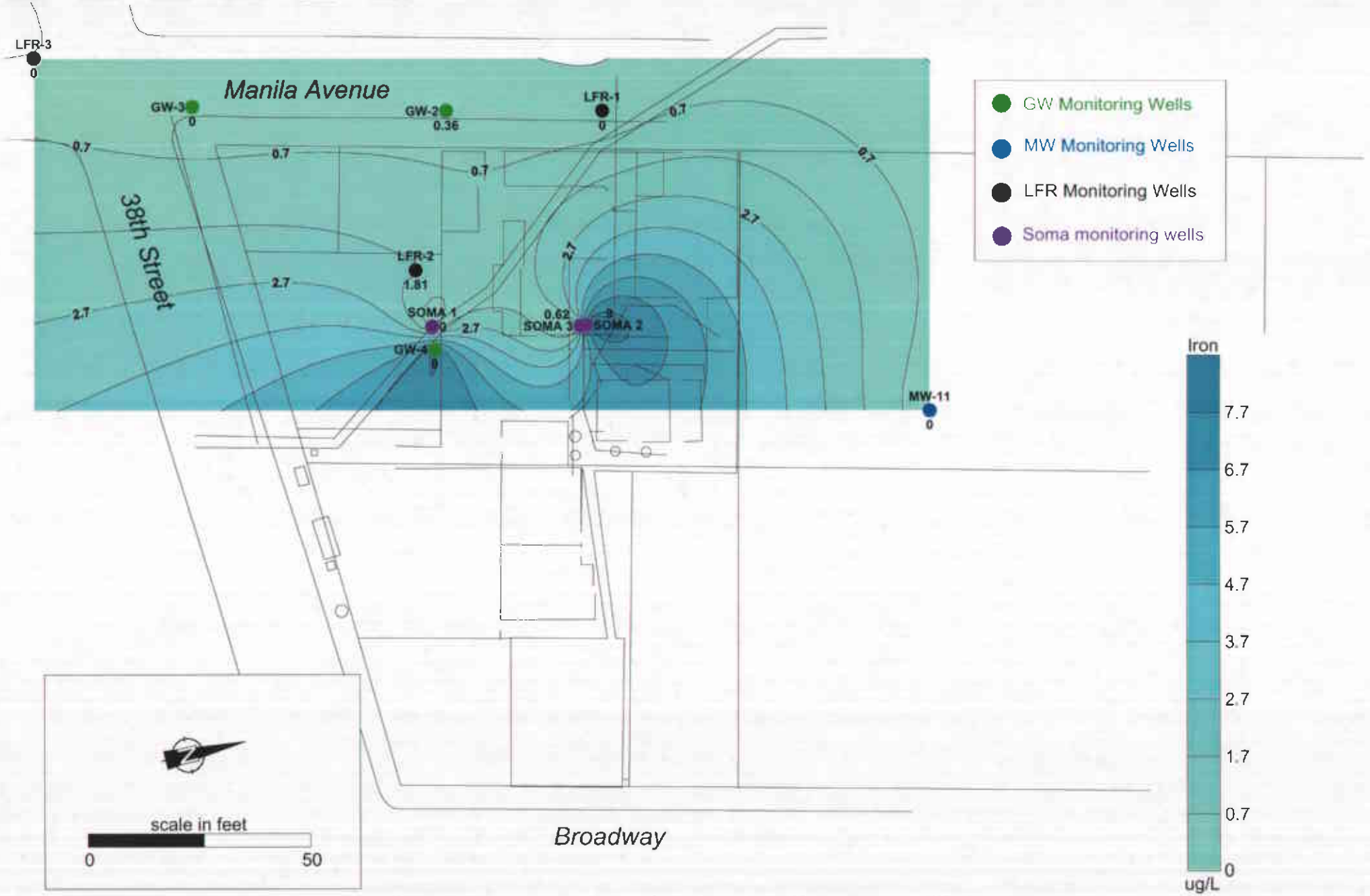

Figure 12: Ferrous Iron Concentration Contour Map in Groundwater, First Quarter 2002

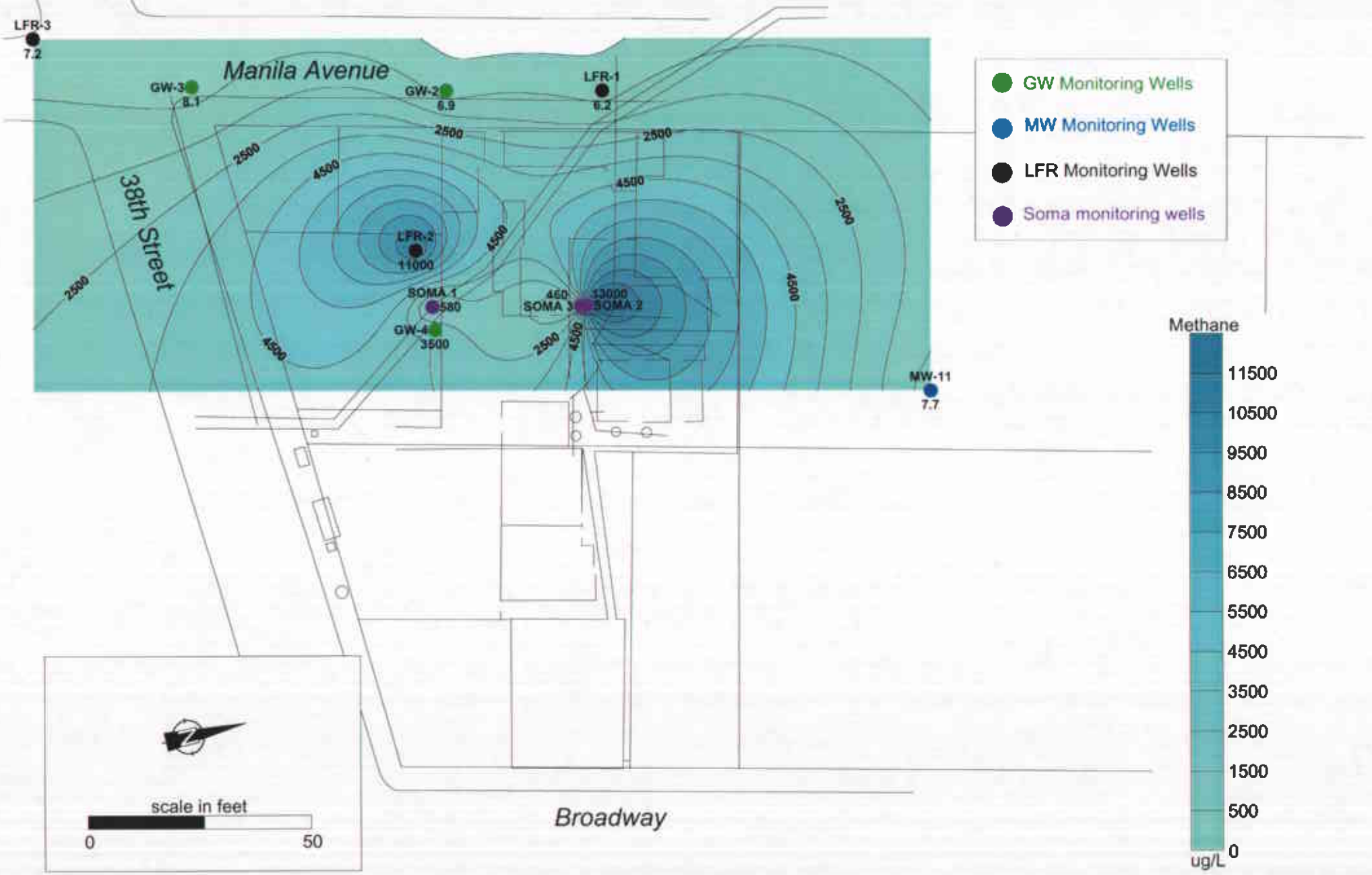

Figure 13: Methane Concentration Contour Map in Groundwater, First Quarter 2002

APPENDIX A

LABORATORY REPORTS, CHAIN OF CUSTODY FORMS

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: 04-MAR-02
Lab Job Number: 157104
Project ID: 2511
Location: Glovatorium

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:
Operations Manager

Curtis & Tompkins, Ltd.

Laboratory Number: **157104**
Client: **Soma Environmental Engineering, Inc.**
Project Name: **Glovatorium, Oakland**
Project #: **2511**
Receipt Date: **01/31/02**

CASE NARRATIVE

This hardcopy data package contains sample results and batch QC results for thirteen water samples received from the above referenced project on January 1st, 2002. The samples were received cold and intact.

Purgeable Organics by GCMS (EPA 8260B):

The 'b-flag' notation indicates that the analysis was carried out past the hold date. The client was duly informed and requested the analysis proceed. No analytical problems were encountered.

CURTIS & TOMPKINS, LTD. BERKELEY (SOMA) LOGIN CHANGE FORM

Reason for change: X Client Request: By: M. SEDEVR Date/Time: 2-20-02; Initials: PP

____ Login Review ____ Data Review

Current Lab ID	Previous Lab ID	Client ID	Matrix	Add/Cancel	Analysis	Duedate
157104-001	150784-001	LFR-3	WATER	ADD	8260	2-25-02
-002	-002	MW-11				
-003	-003	GW-2				
-004	-004	LFR-1				
-005	-005	GW-3				
-006	-006	GW-4				
-007	-007	SOMA-1				
-008	-008	LFR-2				
-011	-009	SOMA-3				
-012	-010	SOMA-2				
-013	-011	SOMA-4				

Curtis & Tompkins, Ltd.

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	157104	Location:	Glovatorium
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2511	Analysis:	EPA 8260B
Field ID:	LFR-3	Batch#:	70362
Lab ID:	157104-001	Sampled:	01/30/02
Matrix:	Water	Received:	01/31/02
Units:	ug/L	Analyzed:	02/25/02
Diln Fac:	1.000		

Analyte	Result	RL
Freon 12	ND b	10
Chloromethane	ND b	10
Vinyl Chloride	ND b	10
Bromomethane	ND b	10
Chloroethane	ND b	10
Trichlorofluoromethane	ND b	5.0
Acetone	ND b	20
Freon 113	ND b	5.0
1,1-Dichloroethene	ND b	5.0
Methylene Chloride	ND b	20
Carbon Disulfide	ND b	5.0
MTBE	ND b	5.0
trans-1,2-Dichloroethene	ND b	5.0
Vinyl Acetate	ND b	50
1,1-Dichloroethane	ND b	5.0
2-Butanone	ND b	10
cis-1,2-Dichloroethene	ND b	5.0
2,2-Dichloropropane	ND b	5.0
Chloroform	ND b	5.0
Bromochloromethane	ND b	10
1,1,1-Trichloroethane	ND b	5.0
1,1-Dichloropropene	ND b	5.0
Carbon Tetrachloride	ND b	5.0
1,2-Dichloroethane	ND b	5.0
Benzene	ND b	5.0
Trichloroethene	ND b	5.0
1,2-Dichloropropane	ND b	5.0
Bromodichloromethane	ND b	5.0
Dibromomethane	ND b	5.0
4-Methyl-2-Pentanone	ND b	10
cis-1,3-Dichloropropene	ND b	5.0
Toluene	ND b	5.0
trans-1,3-Dichloropropene	ND b	5.0
1,1,2-Trichloroethane	ND b	5.0
2-Hexanone	ND b	10
1,3-Dichloropropane	ND b	5.0
Tetrachloroethene	ND b	5.0
Dibromochloromethane	ND b	5.0
1,2-Dibromoethane	ND b	5.0
Chlorobenzene	ND b	5.0
1,1,1,2-Tetrachloroethane	ND b	5.0
Ethylbenzene	ND b	5.0
m,p-Xylenes	ND b	5.0
o-Xylene	ND b	5.0
Styrene	ND b	5.0
Bromoform	ND b	5.0
Isopropylbenzene	ND b	5.0
1,1,2,2-Tetrachloroethane	ND b	5.0
1,2,3-Trichloropropane	ND b	5.0
Propylbenzene	ND b	5.0
Bromobenzene	ND b	5.0
1,3,5-Trimethylbenzene	ND b	5.0
2-Chlorotoluene	ND b	5.0
4-Chlorotoluene	ND b	5.0

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

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	157104	Location:	Glovatorium
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2511	Analysis:	EPA 8260B
Field ID:	LFR-3	Batch#:	70362
Lab ID:	157104-001	Sampled:	01/30/02
Matrix:	Water	Received:	01/31/02
Units:	ug/L	Analyzed:	02/25/02
Diln Fac:	1.000		

Analyte	Result	RL
tert-Butylbenzene	ND b	5.0
1,2,4-Trimethylbenzene	ND b	5.0
sec-Butylbenzene	ND b	5.0
para-Isopropyl Toluene	ND b	5.0
1,3-Dichlorobenzene	ND b	5.0
1,4-Dichlorobenzene	ND b	5.0
n-Butylbenzene	ND b	5.0
1,2-Dichlorobenzene	ND b	5.0
1,2-Dibromo-3-Chloropropane	ND b	5.0
1,2,4-Trichlorobenzene	ND b	5.0
Hexachlorobutadiene	ND b	5.0
Naphthalene	ND b	5.0
1,2,3-Trichlorobenzene	ND b	5.0

Surrogate	%REC	Limits
Dibromofluoromethane	104 b	80-121
1,2-Dichloroethane-d4	102 b	77-130
Toluene-d8	92 b	80-120
Bromofluorobenzene	106 b	80-120

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

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	157104	Location:	Glovatorium
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2511	Analysis:	EPA 8260B
Field ID:	MW-11	Batch#:	70351
Lab ID:	157104-002	Sampled:	01/30/02
Matrix:	Water	Received:	01/31/02
Units:	ug/L	Analyzed:	02/22/02
Diln Fac:	1.000		

Analyte	Result	RL
Freon 12	ND b	10
Chloromethane	ND b	10
Vinyl Chloride	ND b	10
Bromomethane	ND b	10
Chloroethane	ND b	10
Trichlorofluoromethane	ND b	5.0
Acetone	ND b	20
Freon 113	ND b	5.0
1,1-Dichloroethene	ND b	5.0
Methylene Chloride	ND b	20
Carbon Disulfide	ND b	5.0
MTBE	ND b	5.0
trans-1,2-Dichloroethene	ND b	5.0
Vinyl Acetate	ND b	50
1,1-Dichloroethane	ND b	5.0
2-Butanone	ND b	10
cis-1,2-Dichloroethene	ND b	5.0
2,2-Dichloropropane	ND b	5.0
Chloroform	ND b	5.0
Bromochloromethane	ND b	10
1,1,1-Trichloroethane	ND b	5.0
1,1-Dichloropropene	ND b	5.0
Carbon Tetrachloride	ND b	5.0
1,2-Dichloroethane	ND b	5.0
Benzene	ND b	5.0
Trichloroethene	ND b	5.0
1,2-Dichloropropane	ND b	5.0
Bromodichloromethane	ND b	5.0
Dibromomethane	ND b	5.0
4-Methyl-2-Pentanone	ND b	10
cis-1,3-Dichloropropene	ND b	5.0
Toluene	ND b	5.0
trans-1,3-Dichloropropene	ND b	5.0
1,1,2-Trichloroethane	ND b	5.0
2-Hexanone	ND b	10
1,3-Dichloropropane	ND b	5.0
Tetrachloroethene	ND b	5.0
Dibromochloromethane	ND b	5.0
1,2-Dibromoethane	ND b	5.0
Chlorobenzene	ND b	5.0
1,1,1,2-Tetrachloroethane	ND b	5.0
Ethylbenzene	ND b	5.0
m,p-Xylenes	ND b	5.0
o-Xylene	ND b	5.0
Styrene	ND b	5.0
Bromoform	ND b	5.0
Isopropylbenzene	ND b	5.0
1,1,2,2-Tetrachloroethane	ND b	5.0
1,2,3-Trichloropropane	ND b	5.0
Propylbenzene	ND b	5.0
Bromobenzene	ND b	5.0
1,3,5-Trimethylbenzene	ND b	5.0
2-Chlorotoluene	ND b	5.0
4-Chlorotoluene	ND b	5.0

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

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	157104	Location:	Glovatorium
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2511	Analysis:	EPA 8260B
Field ID:	MW-11	Batch#:	70351
Lab ID:	157104-002	Sampled:	01/30/02
Matrix:	Water	Received:	01/31/02
Units:	ug/L	Analyzed:	02/22/02
Diln Fac:	1.000		

Analyte	Result	RL
tert-Butylbenzene	ND b	5.0
1,2,4-Trimethylbenzene	ND b	5.0
sec-Butylbenzene	ND b	5.0
para-Isopropyl Toluene	ND b	5.0
1,3-Dichlorobenzene	ND b	5.0
1,4-Dichlorobenzene	ND b	5.0
n-Butylbenzene	ND b	5.0
1,2-Dichlorobenzene	ND b	5.0
1,2-Dibromo-3-Chloropropane	ND b	5.0
1,2,4-Trichlorobenzene	ND b	5.0
Hexachlorobutadiene	ND b	5.0
Naphthalene	ND b	5.0
1,2,3-Trichlorobenzene	ND b	5.0

Surrogate	%REC	Limits
Dibromofluoromethane	97 b	80-122
1,2-Dichloroethane-d4	84 b	78-123
Toluene-d8	95 b	80-110
Bromofluorobenzene	104 b	80-115

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

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	157104	Location:	Glovatorium
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2511	Analysis:	EPA 8260B
Field ID:	GW-2	Batch#:	70351
Lab ID:	157104-003	Sampled:	01/31/02
Matrix:	Water	Received:	01/31/02
Units:	ug/L	Analyzed:	02/22/02
Diln Fac:	1.000		

Analyte	Result	RL
Freon 12	ND b	10
Chloromethane	ND b	10
Vinyl Chloride	ND b	10
Bromomethane	ND b	10
Chloroethane	ND b	10
Trichlorofluoromethane	ND b	5.0
Acetone	ND b	20
Freon 113	ND b	5.0
1,1-Dichloroethene	ND b	5.0
Methylene Chloride	ND b	20
Carbon Disulfide	ND b	5.0
MTBE	ND b	5.0
trans-1,2-Dichloroethene	ND b	5.0
Vinyl Acetate	ND b	50
1,1-Dichloroethane	ND b	5.0
2-Butanone	ND b	10
cis-1,2-Dichloroethene	ND b	5.0
2,2-Dichloropropane	ND b	5.0
Chloroform	ND b	5.0
Bromochloromethane	ND b	10
1,1,1-Trichloroethane	ND b	5.0
1,1-Dichloropropene	ND b	5.0
Carbon Tetrachloride	ND b	5.0
1,2-Dichloroethane	ND b	5.0
Benzene	ND b	5.0
Trichloroethene	ND b	5.0
1,2-Dichloropropane	ND b	5.0
Bromodichloromethane	ND b	5.0
Dibromomethane	ND b	5.0
4-Methyl-2-Pentanone	ND b	10
cis-1,3-Dichloropropene	ND b	5.0
Toluene	ND b	5.0
trans-1,3-Dichloropropene	ND b	5.0
1,1,2-Trichloroethane	ND b	5.0
2-Hexanone	ND b	10
1,3-Dichloropropane	ND b	5.0
Tetrachloroethene	9.2 b	5.0
Dibromochloromethane	ND b	5.0
1,2-Dibromoethane	ND b	5.0
Chlorobenzene	ND b	5.0
1,1,1,2-Tetrachloroethane	ND b	5.0
Ethylbenzene	ND b	5.0
m,p-Xylenes	ND b	5.0
o-Xylene	ND b	5.0
Styrene	ND b	5.0
Bromoform	ND b	5.0
Isopropylbenzene	ND b	5.0
1,1,2,2-Tetrachloroethane	ND b	5.0
1,2,3-Trichloropropane	ND b	5.0
Propylbenzene	ND b	5.0
Bromobenzene	ND b	5.0
1,3,5-Trimethylbenzene	ND b	5.0
2-Chlorotoluene	ND b	5.0
4-Chlorotoluene	ND b	5.0

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

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	157104	Location:	Glovatorium
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2511	Analysis:	EPA 8260B
Field ID:	GW-2	Batch#:	70351
Lab ID:	157104-003	Sampled:	01/31/02
Matrix:	Water	Received:	01/31/02
Units:	ug/L	Analyzed:	02/22/02
Diln Fac:	1.000		

Analyte	Result	RL
tert-Butylbenzene	ND b	5.0
1,2,4-Trimethylbenzene	ND b	5.0
sec-Butylbenzene	ND b	5.0
para-Isopropyl Toluene	ND b	5.0
1,3-Dichlorobenzene	ND b	5.0
1,4-Dichlorobenzene	ND b	5.0
n-Butylbenzene	ND b	5.0
1,2-Dichlorobenzene	ND b	5.0
1,2-Dibromo-3-Chloropropane	ND b	5.0
1,2,4-Trichlorobenzene	ND b	5.0
Hexachlorobutadiene	ND b	5.0
Naphthalene	ND b	5.0
1,2,3-Trichlorobenzene	ND b	5.0

Surrogate	%REC	Limits
Dibromofluoromethane	96 b	80-122
1,2-Dichloroethane-d4	84 b	78-123
Toluene-d8	96 b	80-110
Bromofluorobenzene	101 b	80-115

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

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	157104	Location:	Glovatorium
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2511	Analysis:	EPA 8260B
Field ID:	LFR-1	Batch#:	70351
Lab ID:	157104-004	Sampled:	01/31/02
Matrix:	Water	Received:	01/31/02
Units:	ug/L	Analyzed:	02/22/02
Diln Fac:	2.500		

Analyte	Result	RL
Freon 12	ND b	25
Chloromethane	ND b	25
Vinyl Chloride	ND b	25
Bromomethane	ND b	25
Chloroethane	ND b	25
Trichlorofluoromethane	ND b	13
Acetone	ND b	50
Freon 113	ND b	13
1,1-Dichloroethene	ND b	13
Methylene Chloride	ND b	50
Carbon Disulfide	ND b	13
MTBE	ND b	13
trans-1,2-Dichloroethene	ND b	13
Vinyl Acetate	ND b	130
1,1-Dichloroethane	ND b	13
2-Butanone	ND b	25
cis-1,2-Dichloroethene	ND b	13
2,2-Dichloropropane	ND b	13
Chloroform	ND b	13
Bromochloromethane	ND b	25
1,1,1-Trichloroethane	ND b	13
1,1-Dichloropropene	ND b	13
Carbon Tetrachloride	ND b	13
1,2-Dichloroethane	ND b	13
Benzene	ND b	13
Trichloroethene	35 b	13
1,2-Dichloropropane	ND b	13
Bromodichloromethane	ND b	13
Dibromomethane	ND b	13
4-Methyl-2-Pentanone	ND b	25
cis-1,3-Dichloropropene	ND b	13
Toluene	ND b	13
trans-1,3-Dichloropropene	ND b	13
1,1,2-Trichloroethane	ND b	13
2-Hexanone	ND b	25
1,3-Dichloropropane	ND b	13
Tetrachloroethene	370 b	13
Dibromochloromethane	ND b	13
1,2-Dibromoethane	ND b	13
Chlorobenzene	ND b	13
1,1,1,2-Tetrachloroethane	ND b	13
Ethylbenzene	ND b	13
m,p-Xylenes	ND b	13
o-Xylene	ND b	13
Styrene	ND b	13
Bromoform	ND b	13
Isopropylbenzene	ND b	13
1,1,2,2-Tetrachloroethane	ND b	13
1,2,3-Trichloropropane	ND b	13
Propylbenzene	ND b	13
Bromobenzene	ND b	13
1,3,5-Trimethylbenzene	ND b	13
2-Chlorotoluene	ND b	13
4-Chlorotoluene	ND b	13

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

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	157104	Location:	Glovatorium
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2511	Analysis:	EPA 8260B
Field ID:	LFR-1	Batch#:	70351
Lab ID:	157104-004	Sampled:	01/31/02
Matrix:	Water	Received:	01/31/02
Units:	ug/L	Analyzed:	02/22/02
Diln Fac:	2.500		

Analyte	Result	RL
tert-Butylbenzene	ND b	13
1,2,4-Trimethylbenzene	ND b	13
sec-Butylbenzene	ND b	13
para-Isopropyl Toluene	ND b	13
1,3-Dichlorobenzene	ND b	13
1,4-Dichlorobenzene	ND b	13
n-Butylbenzene	ND b	13
1,2-Dichlorobenzene	ND b	13
1,2-Dibromo-3-Chloropropane	ND b	13
1,2,4-Trichlorobenzene	ND b	13
Hexachlorobutadiene	ND b	13
Naphthalene	ND b	13
1,2,3-Trichlorobenzene	ND b	13

Surrogate	%REC	Limits
Dibromofluoromethane	100 b	80-122
1,2-Dichloroethane-d4	89 b	78-123
Toluene-d8	94 b	80-110
Bromofluorobenzene	101 b	80-115

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

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	157104	Location:	Glovatorium
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2511	Analysis:	EPA 8260B
Field ID:	GW-3	Batch#:	70351
Lab ID:	157104-005	Sampled:	01/31/02
Matrix:	Water	Received:	01/31/02
Units:	ug/L	Analyzed:	02/22/02
Diln Fac:	1.000		

Analyte	Result	RL
Freon 12	ND b	10
Chloromethane	ND b	10
Vinyl Chloride	ND b	10
Bromomethane	ND b	10
Chloroethane	ND b	10
Trichlorofluoromethane	ND b	5.0
Acetone	ND b	20
Freon 113	ND b	5.0
1,1-Dichloroethene	ND b	5.0
Methylene Chloride	ND b	20
Carbon Disulfide	ND b	5.0
MTBE	ND b	5.0
trans-1,2-Dichloroethene	ND b	5.0
Vinyl Acetate	ND b	50
1,1-Dichloroethane	ND b	5.0
2-Butanone	ND b	10
cis-1,2-Dichloroethene	ND b	5.0
2,2-Dichloropropane	ND b	5.0
Chloroform	ND b	5.0
Bromochloromethane	ND b	10
1,1,1-Trichloroethane	ND b	5.0
1,1-Dichloropropene	ND b	5.0
Carbon Tetrachloride	ND b	5.0
1,2-Dichloroethane	ND b	5.0
Benzene	ND b	5.0
Trichloroethene	ND b	5.0
1,2-Dichloropropane	ND b	5.0
Bromodichloromethane	ND b	5.0
Dibromomethane	ND b	5.0
4-Methyl-2-Pentanone	ND b	10
cis-1,3-Dichloropropene	ND b	5.0
Toluene	ND b	5.0
trans-1,3-Dichloropropene	ND b	5.0
1,1,2-Trichloroethane	ND b	5.0
2-Hexanone	ND b	10
1,3-Dichloropropane	ND b	5.0
Tetrachloroethene	96 b	5.0
Dibromochloromethane	ND b	5.0
1,2-Dibromoethane	ND b	5.0
Chlorobenzene	ND b	5.0
1,1,1,2-Tetrachloroethane	ND b	5.0
Ethylbenzene	ND b	5.0
m,p-Xylenes	ND b	5.0
o-Xylene	ND b	5.0
Styrene	ND b	5.0
Bromoform	ND b	5.0
Isopropylbenzene	ND b	5.0
1,1,2,2-Tetrachloroethane	ND b	5.0
1,2,3-Trichloropropane	ND b	5.0
Propylbenzene	ND b	5.0
Bromobenzene	ND b	5.0
1,3,5-Trimethylbenzene	ND b	5.0
2-Chlorotoluene	ND b	5.0
4-Chlorotoluene	ND b	5.0

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

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	157104	Location:	Glovatorium
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2511	Analysis:	EPA 8260B
Field ID:	GW-3	Batch#:	70351
Lab ID:	157104-005	Sampled:	01/31/02
Matrix:	Water	Received:	01/31/02
Units:	ug/L	Analyzed:	02/22/02
Diln Fac:	1.000		

Analyte	Result	RL
tert-Butylbenzene	ND b	5.0
1,2,4-Trimethylbenzene	ND b	5.0
sec-Butylbenzene	ND b	5.0
para-Isopropyl Toluene	ND b	5.0
1,3-Dichlorobenzene	ND b	5.0
1,4-Dichlorobenzene	ND b	5.0
n-Butylbenzene	ND b	5.0
1,2-Dichlorobenzene	ND b	5.0
1,2-Dibromo-3-Chloropropane	ND b	5.0
1,2,4-Trichlorobenzene	ND b	5.0
Hexachlorobutadiene	ND b	5.0
Naphthalene	ND b	5.0
1,2,3-Trichlorobenzene	ND b	5.0

Surrogate	%REC	Limits
Dibromofluoromethane	96 b	80-122
1,2-Dichloroethane-d4	84 b	78-123
Toluene-d8	95 b	80-110
Bromofluorobenzene	99 b	80-115

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

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	157104	Location:	Glovatorium
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2511	Analysis:	EPA 8260B
Field ID:	GW-4	Batch#:	70351
Lab ID:	157104-006	Sampled:	01/31/02
Matrix:	Water	Received:	01/31/02
Units:	ug/L	Analyzed:	02/22/02
Diln Fac:	1.000		

Analyte	Result	RL
Freon 12	ND b	10
Chloromethane	ND b	10
Vinyl Chloride	ND b	10
Bromomethane	ND b	10
Chloroethane	ND b	10
Trichlorofluoromethane	ND b	5.0
Acetone	ND b	20
Freon 113	ND b	5.0
1,1-Dichloroethene	ND b	5.0
Methylene Chloride	ND b	20
Carbon Disulfide	ND b	5.0
MTBE	ND b	5.0
trans-1,2-Dichloroethene	ND b	5.0
Vinyl Acetate	ND b	50
1,1-Dichloroethane	ND b	5.0
2-Butanone	ND b	10
cis-1,2-Dichloroethene	ND b	5.0
2,2-Dichloropropane	ND b	5.0
Chloroform	ND b	5.0
Bromochloromethane	ND b	10
1,1,1-Trichloroethane	ND b	5.0
1,1-Dichloropropene	ND b	5.0
Carbon Tetrachloride	ND b	5.0
1,2-Dichloroethane	ND b	5.0
Benzene	ND b	5.0
Trichloroethene	ND b	5.0
1,2-Dichloropropane	ND b	5.0
Bromodichloromethane	ND b	5.0
Dibromomethane	ND b	5.0
4-Methyl-2-Pentanone	ND b	10
cis-1,3-Dichloropropene	ND b	5.0
Toluene	ND b	5.0
trans-1,3-Dichloropropene	ND b	5.0
1,1,2-Trichloroethane	ND b	5.0
2-Hexanone	ND b	10
1,3-Dichloropropane	ND b	5.0
Tetrachloroethene	ND b	5.0
Dibromochloromethane	ND b	5.0
1,2-Dibromoethane	ND b	5.0
Chlorobenzene	ND b	5.0
1,1,1,2-Tetrachloroethane	ND b	5.0
Ethylbenzene	ND b	5.0
m,p-Xylenes	ND b	5.0
o-Xylene	ND b	5.0
Styrene	ND b	5.0
Bromoform	ND b	5.0
Isopropylbenzene	ND b	5.0
1,1,2,2-Tetrachloroethane	ND b	5.0
1,2,3-Trichloropropane	ND b	5.0
Propylbenzene	ND b	5.0
Bromobenzene	ND b	5.0
1,3,5-Trimethylbenzene	ND b	5.0
2-Chlorotoluene	ND b	5.0
4-Chlorotoluene	ND b	5.0

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

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	157104	Location:	Glovatorium
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2511	Analysis:	EPA 8260B
Field ID:	GW-4	Batch#:	70351
Lab ID:	157104-006	Sampled:	01/31/02
Matrix:	Water	Received:	01/31/02
Units:	ug/L	Analyzed:	02/22/02
Diln Fac:	1.000		

Analyte	Result	RL
tert-Butylbenzene	ND b	5.0
1,2,4-Trimethylbenzene	ND b	5.0
sec-Butylbenzene	14 b	5.0
para-Isopropyl Toluene	ND b	5.0
1,3-Dichlorobenzene	ND b	5.0
1,4-Dichlorobenzene	ND b	5.0
n-Butylbenzene	6.6 b	5.0
1,2-Dichlorobenzene	ND b	5.0
1,2-Dibromo-3-Chloropropane	ND b	5.0
1,2,4-Trichlorobenzene	ND b	5.0
Hexachlorobutadiene	ND b	5.0
Naphthalene	ND b	5.0
1,2,3-Trichlorobenzene	ND b	5.0

Surrogate	%REC	Limits
Dibromofluoromethane	97 b	80-122
1,2-Dichloroethane-d4	85 b	78-123
Toluene-d8	95 b	80-110
Bromofluorobenzene	103 b	80-115

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

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	157104	Location:	Glovatorium
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2511	Analysis:	EPA 8260B
Field ID:	SOMA-1	Batch#:	70351
Lab ID:	157104-007	Sampled:	01/31/02
Matrix:	Water	Received:	01/31/02
Units:	ug/L	Analyzed:	02/22/02
Diln Fac:	1.000		

Analyte	Result	RL
Freon 12	ND b	10
Chloromethane	ND b	10
Vinyl Chloride	ND b	10
Bromomethane	ND b	10
Chloroethane	ND b	10
Trichlorofluoromethane	ND b	5.0
Acetone	ND b	20
Freon 113	ND b	5.0
1,1-Dichloroethene	ND b	5.0
Methylene Chloride	ND b	20
Carbon Disulfide	ND b	5.0
MTBE	110 b	5.0
trans-1,2-Dichloroethene	ND b	5.0
Vinyl Acetate	ND b	50
1,1-Dichloroethane	ND b	5.0
2-Butanone	ND b	10
cis-1,2-Dichloroethene	7.0 b	5.0
2,2-Dichloropropane	ND b	5.0
Chloroform	ND b	5.0
Bromochloromethane	ND b	10
1,1,1-Trichloroethane	ND b	5.0
1,1-Dichloropropene	ND b	5.0
Carbon Tetrachloride	ND b	5.0
1,2-Dichloroethane	ND b	5.0
Benzene	ND b	5.0
Trichloroethene	ND b	5.0
1,2-Dichloropropane	5.7 b	5.0
Bromodichloromethane	ND b	5.0
Dibromomethane	ND b	5.0
4-Methyl-2-Pentanone	ND b	10
cis-1,3-Dichloropropene	ND b	5.0
Toluene	ND b	5.0
trans-1,3-Dichloropropene	ND b	5.0
1,1,2-Trichloroethane	ND b	5.0
2-Hexanone	ND b	10
1,3-Dichloropropane	ND b	5.0
Tetrachloroethene	5.6 b	5.0
Dibromochloromethane	ND b	5.0
1,2-Dibromoethane	ND b	5.0
Chlorobenzene	ND b	5.0
1,1,1,2-Tetrachloroethane	ND b	5.0
Ethylbenzene	ND b	5.0
m,p-Xylenes	ND b	5.0
o-Xylene	ND b	5.0
Styrene	ND b	5.0
Bromoform	ND b	5.0
Isopropylbenzene	ND b	5.0
1,1,2,2-Tetrachloroethane	ND b	5.0
1,2,3-Trichloropropane	ND b	5.0
Propylbenzene	ND b	5.0
Bromobenzene	ND b	5.0
1,3,5-Trimethylbenzene	ND b	5.0
2-Chlorotoluene	ND b	5.0
4-Chlorotoluene	ND b	5.0

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

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	157104	Location:	Glovatorium
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2511	Analysis:	EPA 8260B
Field ID:	SOMA-1	Batch#:	70351
Lab ID:	157104-007	Sampled:	01/31/02
Matrix:	Water	Received:	01/31/02
Units:	ug/L	Analyzed:	02/22/02
Diln Fac:	1.000		

Analyte	Result	RL
tert-Butylbenzene	ND b	5.0
1,2,4-Trimethylbenzene	ND b	5.0
sec-Butylbenzene	ND b	5.0
para-Isopropyl Toluene	ND b	5.0
1,3-Dichlorobenzene	ND b	5.0
1,4-Dichlorobenzene	ND b	5.0
n-Butylbenzene	ND b	5.0
1,2-Dichlorobenzene	ND b	5.0
1,2-Dibromo-3-Chloropropane	ND b	5.0
1,2,4-Trichlorobenzene	ND b	5.0
Hexachlorobutadiene	ND b	5.0
Naphthalene	ND b	5.0
1,2,3-Trichlorobenzene	ND b	5.0

Surrogate	%REC	Limits
Dibromofluoromethane	100 b	80-122
1,2-Dichloroethane-d4	91 b	78-123
Toluene-d8	94 b	80-110
Bromofluorobenzene	103 b	80-115

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

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	157104	Location:	Glovatorium
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2511	Analysis:	EPA 8260B
Field ID:	LFR-2	Batch#:	70351
Lab ID:	157104-008	Sampled:	01/31/02
Matrix:	Water	Received:	01/31/02
Units:	ug/L	Analyzed:	02/22/02
Diln Fac:	1.000		

Analyte	Result	RL
Freon 12	ND b	10
Chloromethane	ND b	10
Vinyl Chloride	ND b	10
Bromomethane	ND b	10
Chloroethane	ND b	10
Trichlorofluoromethane	ND b	5.0
Acetone	ND b	20
Freon 113	ND b	5.0
1,1-Dichloroethene	ND b	5.0
Methylene Chloride	ND b	20
Carbon Disulfide	ND b	5.0
MTBE	ND b	5.0
trans-1,2-Dichloroethene	ND b	5.0
Vinyl Acetate	ND b	50
1,1-Dichloroethane	ND b	5.0
2-Butanone	ND b	10
cis-1,2-Dichloroethene	6.9 b	5.0
2,2-Dichloropropane	ND b	5.0
Chloroform	ND b	5.0
Bromochloromethane	ND b	10
1,1,1-Trichloroethane	ND b	5.0
1,1-Dichloropropene	ND b	5.0
Carbon Tetrachloride	ND b	5.0
1,2-Dichloroethane	ND b	5.0
Benzene	ND b	5.0
Trichloroethene	ND b	5.0
1,2-Dichloropropane	ND b	5.0
Bromodichloromethane	ND b	5.0
Dibromomethane	ND b	5.0
4-Methyl-2-Pentanone	ND b	10
cis-1,3-Dichloropropene	ND b	5.0
Toluene	ND b	5.0
trans-1,3-Dichloropropene	ND b	5.0
1,1,2-Trichloroethane	ND b	5.0
2-Hexanone	ND b	10
1,3-Dichloropropane	ND b	5.0
Tetrachloroethene	ND b	5.0
Dibromochloromethane	ND b	5.0
1,2-Dibromoethane	ND b	5.0
Chlorobenzene	ND b	5.0
1,1,1,2-Tetrachloroethane	ND b	5.0
Ethylbenzene	ND b	5.0
m,p-Xylenes	ND b	5.0
o-Xylene	ND b	5.0
Styrene	ND b	5.0
Bromoform	ND b	5.0
Isopropylbenzene	ND b	5.0
1,1,2,2-Tetrachloroethane	ND b	5.0
1,2,3-Trichloropropane	ND b	5.0
Propylbenzene	ND b	5.0
Bromobenzene	ND b	5.0
1,3,5-Trimethylbenzene	ND b	5.0
2-Chlorotoluene	ND b	5.0
4-Chlorotoluene	ND b	5.0

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

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	157104	Location:	Glovatorium
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2511	Analysis:	EPA 8260B
Field ID:	LFR-2	Batch#:	70351
Lab ID:	157104-008	Sampled:	01/31/02
Matrix:	Water	Received:	01/31/02
Units:	ug/L	Analyzed:	02/22/02
Dil Fac:	1.000		

Analyte	Result	RL
tert-Butylbenzene	ND b	5.0
1,2,4-Trimethylbenzene	ND b	5.0
sec-Butylbenzene	ND b	5.0
para-Isopropyl Toluene	ND b	5.0
1,3-Dichlorobenzene	ND b	5.0
1,4-Dichlorobenzene	ND b	5.0
n-Butylbenzene	ND b	5.0
1,2-Dichlorobenzene	ND b	5.0
1,2-Dibromo-3-Chloropropane	ND b	5.0
1,2,4-Trichlorobenzene	ND b	5.0
Hexachlorobutadiene	ND b	5.0
Naphthalene	ND b	5.0
1,2,3-Trichlorobenzene	ND b	5.0

Surrogate	%REC	Limits
Dibromofluoromethane	102 b	80-122
1,2-Dichloroethane-d4	93 b	78-123
Toluene-d8	95 b	80-110
Bromofluorobenzene	105 b	80-115

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

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	157104	Location:	Glovatorium
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2511	Analysis:	EPA 8260B
Field ID:	SOMA-3	Batch#:	70362
Lab ID:	157104-011	Sampled:	01/31/02
Matrix:	Water	Received:	01/31/02
Units:	ug/L	Analyzed:	02/25/02
Diln Fac:	2.500		

Analyte	Result	RL
Freon 12	ND b	25
Chloromethane	ND b	25
Vinyl Chloride	ND b	25
Bromomethane	ND b	25
Chloroethane	ND b	25
Trichlorofluoromethane	ND b	13
Acetone	ND b	50
Freon 113	ND b	13
1,1-Dichloroethene	ND b	13
Methylene Chloride	ND b	50
Carbon Disulfide	ND b	13
MTBE	310 b	13
trans-1,2-Dichloroethene	ND b	13
Vinyl Acetate	ND b	130
1,1-Dichloroethane	ND b	13
2-Butanone	ND b	25
cis-1,2-Dichloroethene	380 b	13
2,2-Dichloropropane	ND b	13
Chloroform	ND b	13
Bromochloromethane	ND b	25
1,1,1-Trichloroethane	ND b	13
1,1-Dichloropropene	ND b	13
Carbon Tetrachloride	ND b	13
1,2-Dichloroethane	ND b	13
Benzene	ND b	13
Trichloroethene	23 b	13
1,2-Dichloropropane	ND b	13
Bromodichloromethane	ND b	13
Dibromomethane	ND b	13
4-Methyl-2-Pentanone	ND b	25
cis-1,3-Dichloropropene	ND b	13
Toluene	ND b	13
trans-1,3-Dichloropropene	ND b	13
1,1,2-Trichloroethane	ND b	13
2-Hexanone	ND b	25
1,3-Dichloropropane	ND b	13
Tetrachloroethene	18 b	13
Dibromochloromethane	ND b	13
1,2-Dibromoethane	ND b	13
Chlorobenzene	ND b	13
1,1,1,2-Tetrachloroethane	ND b	13
Ethylbenzene	ND b	13
m,p-Xylenes	ND b	13
o-Xylene	ND b	13
Styrene	ND b	13
Bromoform	ND b	13
Isopropylbenzene	ND b	13
1,1,2,2-Tetrachloroethane	ND b	13
1,2,3-Trichloropropane	ND b	13
Propylbenzene	ND b	13
Bromobenzene	ND b	13
1,3,5-Trimethylbenzene	ND b	13
2-Chlorotoluene	ND b	13
4-Chlorotoluene	ND b	13

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

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	157104	Location:	Glovatorium
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2511	Analysis:	EPA 8260B
Field ID:	SOMA-3	Batch#:	70362
Lab ID:	157104-011	Sampled:	01/31/02
Matrix:	Water	Received:	01/31/02
Units:	ug/L	Analyzed:	02/25/02
Diln Fac:	2.500		

Analyte	Result	RL
tert-Butylbenzene	ND b	13
1,2,4-Trimethylbenzene	ND b	13
sec-Butylbenzene	ND b	13
para-Isopropyl Toluene	ND b	13
1,3-Dichlorobenzene	ND b	13
1,4-Dichlorobenzene	ND b	13
n-Butylbenzene	ND b	13
1,2-Dichlorobenzene	ND b	13
1,2-Dibromo-3-Chloropropane	ND b	13
1,2,4-Trichlorobenzene	ND b	13
Hexachlorobutadiene	ND b	13
Naphthalene	ND b	13
1,2,3-Trichlorobenzene	ND b	13

Surrogate	%REC	Limits
Dibromofluoromethane	104 b	80-122
1,2-Dichloroethane-d4	102 b	78-123
Toluene-d8	92 b	80-110
Bromofluorobenzene	102 b	80-115

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

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	157104	Location:	Glovatorium
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2511	Analysis:	EPA 8260B
Field ID:	SOMA-2	Batch#:	70351
Lab ID:	157104-012	Sampled:	01/31/02
Matrix:	Water	Received:	01/31/02
Units:	ug/L	Analyzed:	02/23/02
Diln Fac:	14.29		

Analyte	Result	RL
Freon 12	ND b	140
Chloromethane	ND b	140
Vinyl Chloride	ND b	140
Bromomethane	ND b	140
Chloroethane	ND b	140
Trichlorofluoromethane	ND b	71
Acetone	ND b	290
Freon 113	ND b	71
1,1-Dichloroethene	ND b	71
Methylene Chloride	ND b	290
Carbon Disulfide	ND b	71
MTBE	ND b	71
trans-1,2-Dichloroethene	ND b	71
Vinyl Acetate	ND b	710
1,1-Dichloroethane	ND b	71
2-Butanone	ND b	140
cis-1,2-Dichloroethene	1,800 b	71
2,2-Dichloropropane	ND b	71
Chloroform	ND b	71
Bromochloromethane	ND b	140
1,1,1-Trichloroethane	ND b	71
1,1-Dichloropropene	ND b	71
Carbon Tetrachloride	ND b	71
1,2-Dichloroethane	ND b	71
Benzene	ND b	71
Trichloroethene	ND b	71
1,2-Dichloropropane	ND b	71
Bromodichloromethane	ND b	71
Dibromomethane	ND b	71
4-Methyl-2-Pentanone	ND b	140
cis-1,3-Dichloropropene	ND b	71
Toluene	ND b	71
trans-1,3-Dichloropropene	ND b	71
1,1,2-Trichloroethane	ND b	71
2-Hexanone	ND b	140
1,3-Dichloropropane	ND b	71
Tetrachloroethene	ND b	71
Dibromochloromethane	ND b	71
1,2-Dibromoethane	ND b	71
Chlorobenzene	ND b	71
1,1,1,2-Tetrachloroethane	ND b	71
Ethylbenzene	ND b	71
m,p-Xylenes	ND b	71
o-Xylene	ND b	71
Styrene	ND b	71
Bromoform	ND b	71
Isopropylbenzene	ND b	71
1,1,2,2-Tetrachloroethane	ND b	71
1,2,3-Trichloropropane	ND b	71
Propylbenzene	ND b	71
Bromobenzene	ND b	71
1,3,5-Trimethylbenzene	ND b	71
2-Chlorotoluene	ND b	71
4-Chlorotoluene	ND b	71

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

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	157104	Location:	Glovatorium
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2511	Analysis:	EPA 8260B
Field ID:	SOMA-2	Batch#:	70351
Lab ID:	157104-012	Sampled:	01/31/02
Matrix:	Water	Received:	01/31/02
Units:	ug/L	Analyzed:	02/23/02
Diln Fac:	14.29		

Analyte	Result	RL
tert-Butylbenzene	ND b	71
1,2,4-Trimethylbenzene	ND b	71
sec-Butylbenzene	ND b	71
para-Isopropyl Toluene	ND b	71
1,3-Dichlorobenzene	ND b	71
1,4-Dichlorobenzene	ND b	71
n-Butylbenzene	ND b	71
1,2-Dichlorobenzene	ND b	71
1,2-Dibromo-3-Chloropropane	ND b	71
1,2,4-Trichlorobenzene	ND b	71
Hexachlorobutadiene	ND b	71
Naphthalene	ND b	71
1,2,3-Trichlorobenzene	ND b	71

Surrogate	%REC	Limits
Dibromofluoromethane	100 b	80-122
1,2-Dichloroethane-d4	89 b	78-123
Toluene-d8	94 b	80-110
Bromofluorobenzene	99 b	80-115

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

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	157104	Location:	Glovatorium
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2511	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC171139	Batch#:	70351
Matrix:	Water	Analyzed:	02/22/02
Units:	ug/L		

Analyte	Result	RL
Freon 12	ND	10
Chloromethane	ND	10
Vinyl Chloride	ND	10
Bromomethane	ND	10
Chloroethane	ND	10
Trichlorofluoromethane	ND	5.0
Acetone	ND	20
Freon 113	ND	5.0
1,1-Dichloroethene	ND	5.0
Methylene Chloride	ND	20
Carbon Disulfide	ND	5.0
MTBE	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
Vinyl Acetate	ND	50
1,1-Dichloroethane	ND	5.0
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	5.0
2,2-Dichloropropane	ND	5.0
Chloroform	ND	5.0
Bromochloromethane	ND	10
1,1,1-Trichloroethane	ND	5.0
1,1-Dichloropropene	ND	5.0
Carbon Tetrachloride	ND	5.0
1,2-Dichloroethane	ND	5.0
Benzene	ND	5.0
Trichloroethene	ND	5.0
1,2-Dichloropropane	ND	5.0
Bromodichloromethane	ND	5.0
Dibromomethane	ND	5.0
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	5.0
Toluene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
1,1,2-Trichloroethane	ND	5.0
2-Hexanone	ND	10
1,3-Dichloropropane	ND	5.0
Tetrachloroethene	ND	5.0
Dibromochloromethane	ND	5.0

ND = Not Detected
RL = Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	157104	Location:	Glovatorium
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2511	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC171139	Batch#:	70351
Matrix:	Water	Analyzed:	02/22/02
Units:	ug/L		

Analyte	Result	RL
1,2-Dibromoethane	ND	5.0
Chlorobenzene	ND	5.0
1,1,1,2-Tetrachloroethane	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Styrene	ND	5.0
Bromoform	ND	5.0
Isopropylbenzene	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
1,2,3-Trichloropropane	ND	5.0
Propylbenzene	ND	5.0
Bromobenzene	ND	5.0
1,3,5-Trimethylbenzene	ND	5.0
2-Chlorotoluene	ND	5.0
4-Chlorotoluene	ND	5.0
tert-Butylbenzene	ND	5.0
1,2,4-Trimethylbenzene	ND	5.0
sec-Butylbenzene	ND	5.0
para-Isopropyl Toluene	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,4-Dichlorobenzene	ND	5.0
n-Butylbenzene	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,2-Dibromo-3-Chloropropane	ND	5.0
1,2,4-Trichlorobenzene	ND	5.0
Hexachlorobutadiene	ND	5.0
Naphthalene	ND	5.0
1,2,3-Trichlorobenzene	ND	5.0

Surrogate	%REC	Limits
Dibromofluoromethane	96	80-122
1,2-Dichloroethane-d4	84	78-123
Toluene-d8	92	80-110
Bromofluorobenzene	101	80-115

ND = Not Detected
RL = Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	157104	Location:	Glovatorium
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2511	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC171183	Batch#:	70362
Matrix:	Water	Analyzed:	02/25/02
Units:	ug/L		

Analyte	Result	RL
Freon 12	ND	10
Chloromethane	ND	10
Vinyl Chloride	ND	10
Bromomethane	ND	10
Chloroethane	ND	10
Trichlorofluoromethane	ND	5.0
Acetone	ND	20
Freon 113	ND	5.0
1,1-Dichloroethene	ND	5.0
Methylene Chloride	ND	20
Carbon Disulfide	ND	5.0
MTBE	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
Vinyl Acetate	ND	50
1,1-Dichloroethane	ND	5.0
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	5.0
2,2-Dichloropropane	ND	5.0
Chloroform	ND	5.0
Bromochloromethane	ND	10
1,1,1-Trichloroethane	ND	5.0
1,1-Dichloropropene	ND	5.0
Carbon Tetrachloride	ND	5.0
1,2-Dichloroethane	ND	5.0
Benzene	ND	5.0
Trichloroethene	ND	5.0
1,2-Dichloropropane	ND	5.0
Bromodichloromethane	ND	5.0
Dibromomethane	ND	5.0
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	5.0
Toluene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
1,1,2-Trichloroethane	ND	5.0
2-Hexanone	ND	10
1,3-Dichloropropane	ND	5.0
Tetrachloroethene	ND	5.0
Dibromochloromethane	ND	5.0

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	157104	Location:	Glovatorium
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2511	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC171183	Batch#:	70362
Matrix:	Water	Analyzed:	02/25/02
Units:	ug/L		

Analyte	Result	RL
1,2-Dibromoethane	ND	5.0
Chlorobenzene	ND	5.0
1,1,1,2-Tetrachloroethane	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Styrene	ND	5.0
Bromoform	ND	5.0
Isopropylbenzene	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
1,2,3-Trichloropropane	ND	5.0
Propylbenzene	ND	5.0
Bromobenzene	ND	5.0
1,3,5-Trimethylbenzene	ND	5.0
2-Chlorotoluene	ND	5.0
4-Chlorotoluene	ND	5.0
tert-Butylbenzene	ND	5.0
1,2,4-Trimethylbenzene	ND	5.0
sec-Butylbenzene	ND	5.0
para-Isopropyl Toluene	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,4-Dichlorobenzene	ND	5.0
n-Butylbenzene	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,2-Dibromo-3-Chloropropane	ND	5.0
1,2,4-Trichlorobenzene	ND	5.0
Hexachlorobutadiene	ND	5.0
Naphthalene	ND	5.0
1,2,3-Trichlorobenzene	ND	5.0

Surrogate	%REC	Limits
Dibromofluoromethane	110	80-122
1,2-Dichloroethane-d4	105	78-123
Toluene-d8	93	80-110
Bromofluorobenzene	104	80-115

ND = Not Detected
RL = Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	157104	Location:	Glovatorium
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2511	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	70351
Units:	ug/L	Analyzed:	02/22/02
Diln Fac:	1.000		

Type: BS Lab ID: QC171137

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	50.00	46.61	93	74-132
Benzene	50.00	50.15	100	80-116
Trichloroethene	50.00	47.72	95	80-119
Toluene	50.00	48.64	97	80-120
Chlorobenzene	50.00	51.97	104	80-117

Surrogate	%REC	Limits
Dibromofluoromethane	103	80-122
1,2-Dichloroethane-d4	82	78-123
Toluene-d8	90	80-110
Bromofluorobenzene	102	80-115

Type: BSD Lab ID: QC171138

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	50.00	54.25	108	74-132	15	20
Benzene	50.00	49.26	99	80-116	2	20
Trichloroethene	50.00	43.95	88	80-119	8	20
Toluene	50.00	48.11	96	80-120	1	20
Chlorobenzene	50.00	47.65	95	80-117	9	20

Surrogate	%REC	Limits
Dibromofluoromethane	100	80-122
1,2-Dichloroethane-d4	84	78-123
Toluene-d8	96	80-110
Bromofluorobenzene	101	80-115

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	157104	Location:	Glovatorium
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2511	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	70362
Units:	ug/L	Analyzed:	02/25/02
Diln Fac:	1.000		

Type: BS Lab ID: QC171181

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	50.00	46.09	92	74-132
Benzene	50.00	48.49	97	80-116
Trichloroethene	50.00	47.79	96	80-119
Toluene	50.00	49.27	99	80-120
Chlorobenzene	50.00	50.46	101	80-117

Surrogate	%REC	Limits
Dibromofluoromethane	106	80-122
1,2-Dichloroethane-d4	106	78-123
Toluene-d8	95	80-110
Bromofluorobenzene	102	80-115

Type: BSD Lab ID: QC171182

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	50.00	50.24	100	74-132	9	20
Benzene	50.00	44.90	90	80-116	8	20
Trichloroethene	50.00	43.88	88	80-119	9	20
Toluene	50.00	46.03	92	80-120	7	20
Chlorobenzene	50.00	50.81	102	80-117	1	20

Surrogate	%REC	Limits
Dibromofluoromethane	104	80-122
1,2-Dichloroethane-d4	98	78-123
Toluene-d8	94	80-110
Bromofluorobenzene	99	80-115

RPD= 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: 08-FEB-02
Lab Job Number: 156784
Project ID: 2511
Location: Glovatorium

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:
Operations Manager

Curtis & Tompkins, Ltd.

Laboratory Number:	**156784**
Client:	**Soma Environmental Engineering, Inc.**
Project Name:	**Oakland – Glovatorium**
Project #:	**2511**
Receipt Date:	**01/31/02**

CASE NARRATIVE

This hardcopy data package contains sample results and batch QC results for eleven water samples received from the above referenced project on January 31st, 2002. The samples were received cold and intact.

Gasoline by GC/FID CA LUFT (EPA 8015B(M)):

The recoveries for the bromofluorobenzene surrogates were over the acceptable QC limits for client ID GW-4 (C&T ID 156784-006), client ID LFR-2 (C&T ID 156784-008) and client ID SOMA-2 (C&T ID T156784-010) due to coelution of sample hydrocarbons with this surrogate. No other analytical problems were encountered.

MBTXE (EPA 8021B):

The recovery for the bromofluorobenzene surrogate was over the acceptable QC limit for client ID LFR-2 (C&T ID 156784-008) due to coelution of sample hydrocarbons with this surrogate. No other analytical problems were encountered.

Hydrocarbon Fingerprint:

On February 5th, client ID Soma-4 (C&T ID 156784-011) was analyzed for gasoline and diesel range hydrocarbons by EPA modified 8015. Fuel identification is based on comparing the pattern of peaks observed in the sample at various retention time windows to the pattern observed in the same ranges for known fuel standards. This peak pattern is sometimes referred to as the hydrocarbon "fingerprint".

The chromatogram for this sample indicates the presence of hydrocarbon peaks within C7 – C12 range. The peak patterns of this sample most closely resemble the stoddard standard.

CHAIN OF CUSTODY FORM

Page _____ of _____

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Analytical Laboratory Since 1878
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C&T LOGIN # 156784

Analyses

Sampler: Naser Pakrou
Report To: Naser Pakrou
Company: SOMA ENV ENG
Telephone: 925- 244-6600
Fax: 925- 244-6601

Project No: 2511
Project Name: Oakland- Glov
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_4	Preservative: HNO_3	Preservative: ICE	Field Notes
-1		LFR-3	1/30/02 1340		✓		4	✓			✓	
-2		MW-11	1/30/02 1605		✓		4					
-3	For Laboratory Use	GW-2	1/31/02 0830		✓		4					
-4		LFR-1	1/31/02 0905		✓		4					
-5		GW-3	1/31/02 1000		✓		4					
-6		GW-4	1/31/02 1030		✓		4					
-7		SOMA-1	1/31/02 1715		✓		4					
-8		LFR-2	1/31/02 1330		✓		4					
-9		SOMA-3	1/31/02 1735		✓		4					
-10		SOMA-2	1/31/02 1600		✓		4					
-11		SOMA-4	1/31/02 1620				2					

TPHg
TPHss
BTX, MTBE, VOCs 8260

Notes:

RELINQUISHED BY:

Naser Pakrou — 1/31 5:40 DATE/TIME

DATE/TIME

DATE/TIME

RECEIVED BY:

1/31/02 17:54 DATE/TIME

DATE/TIME

DATE/TIME

Received ☒ On Ice ☐ Cold ☐ Ambient ☒ Intact

Preservation Correct? ☒ Yes ☐ No ☐ N/A

Signature

Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	156784	Location:	Glovatorium
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2511	Analysis:	8015B(M)
Matrix:	Water	Batch#:	69964
Units:	ug/L	Received:	01/31/02
Diln Fac:	1.000		

Field ID:	LFR-3	Sampled:	01/30/02
Type:	SAMPLE	Analyzed:	02/06/02
Lab ID:	156784-001		

Analyte	Result	RL
Gasoline C7-C12	67 Y	50
Stoddard Solvent C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	98	59-135
Bromofluorobenzene (FID)	112	60-140

Field ID:	MW-11	Sampled:	01/30/02
Type:	SAMPLE	Analyzed:	02/06/02
Lab ID:	156784-002		

Analyte	Result	RL
Gasoline C7-C12	71 Y	50
Stoddard Solvent C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	104	59-135
Bromofluorobenzene (FID)	114	60-140

Field ID:	GW-2	Sampled:	01/31/02
Type:	SAMPLE	Analyzed:	02/06/02
Lab ID:	156784-003		

Analyte	Result	RL
Gasoline C7-C12	ND	50
Stoddard Solvent C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	109	59-135
Bromofluorobenzene (FID)	108	60-140

*= Value outside of QC limits; see narrative
H= Heavier hydrocarbons contributed to the quantitation
Y= Sample exhibits fuel pattern which does not resemble standard
Z= Sample exhibits unknown single peak or peaks
b= See narrative
ND= Not Detected
RL= Reporting Limit
LR= Response exceeds instrument's linear range

Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	156784	Location:	Glovatorium
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2511	Analysis:	8015B(M)
Matrix:	Water	Batch#:	69964
Units:	ug/L	Received:	01/31/02
Diln Fac:	1.000		

Field ID:	LFR-1	Sampled:	01/31/02
Type:	SAMPLE	Analyzed:	02/07/02
Lab ID:	156784-004		

Analyte	Result	RL
Gasoline C7-C12	270 Y Z	50
Stoddard Solvent C7-C12	150 Y Z	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	99	59-135
Bromofluorobenzene (FID)	110	60-140

Field ID:	GW-3	Sampled:	01/31/02
Type:	SAMPLE	Analyzed:	02/07/02
Lab ID:	156784-005		

Analyte	Result	RL
Gasoline C7-C12	70 Y Z	50
Stoddard Solvent C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	110	59-135
Bromofluorobenzene (FID)	108	60-140

Field ID:	GW-4	Sampled:	01/31/02
Type:	SAMPLE	Analyzed:	02/07/02
Lab ID:	156784-006		

Analyte	Result	RL
Gasoline C7-C12	1,700 H Y	50
Stoddard Solvent C7-C12	920	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	110	59-135
Bromofluorobenzene (FID)	221 * >LR b	60-140

*= Value outside of QC limits; see narrative
H= Heavier hydrocarbons contributed to the quantitation
Y= Sample exhibits fuel pattern which does not resemble standard
Z= Sample exhibits unknown single peak or peaks
b= See narrative
ND= Not Detected
RL= Reporting Limit
LR= Response exceeds instrument's linear range

Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	156784	Location:	Glovatorium
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2511	Analysis:	8015B(M)
Matrix:	Water	Batch#:	69964
Units:	ug/L	Received:	01/31/02
Diln Fac:	1.000		

Field ID:	SOMA-1	Sampled:	01/31/02
Type:	SAMPLE	Analyzed:	02/07/02
Lab ID:	156784-007		

Analyte	Result	RL
Gasoline C7-C12	100 H Y	50
Stoddard Solvent C7-C12	58	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	103	59-135
Bromofluorobenzene (FID)	109	60-140

Field ID:	LFR-2	Sampled:	01/31/02
Type:	SAMPLE	Analyzed:	02/07/02
Lab ID:	156784-008		

Analyte	Result	RL
Gasoline C7-C12	1,400 H Y	50
Stoddard Solvent C7-C12	760	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	113	59-135
Bromofluorobenzene (FID)	201 *	60-140

Field ID:	SOMA-3	Sampled:	01/31/02
Type:	SAMPLE	Analyzed:	02/07/02
Lab ID:	156784-009		

Analyte	Result	RL
Gasoline C7-C12	410 H Y	50
Stoddard Solvent C7-C12	230	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	106	59-135
Bromofluorobenzene (FID)	114	60-140

*= Value outside of QC limits; see narrative
H= Heavier hydrocarbons contributed to the quantitation
Y= Sample exhibits fuel pattern which does not resemble standard
Z= Sample exhibits unknown single peak or peaks
b= See narrative
ND= Not Detected
RL= Reporting Limit
LR= Response exceeds instrument's linear range

Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	156784	Location:	Glovatorium
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2511	Analysis:	8015B(M)
Matrix:	Water	Batch#:	69964
Units:	ug/L	Received:	01/31/02
Diln Fac:	1.000		

Field ID:	SOMA-2	Sampled:	01/31/02
Type:	SAMPLE	Analyzed:	02/07/02
Lab ID:	156784-010		

Analyte	Result	RL
Gasoline C7-C12	2,400 H Y	50
Stoddard Solvent C7-C12	1,300	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	110	59-135
Bromofluorobenzene (FID)	166 *	60-140

Type:	BLANK	Analyzed:	02/06/02
Lab ID:	QC169726		

Analyte	Result	RL
Gasoline C7-C12	ND	50
Stoddard Solvent C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	98	59-135
Bromofluorobenzene (FID)	94	60-140

*= Value outside of QC limits; see narrative
H= Heavier hydrocarbons contributed to the quantitation
Y= Sample exhibits fuel pattern which does not resemble standard
Z= Sample exhibits unknown single peak or peaks
b= See narrative
ND= Not Detected
RL= Reporting Limit
LR= Response exceeds instrument's linear range

Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	156784	Location:	Glovatorium
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2511	Analysis:	8015B(M)
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC169727	Batch#:	69964
Matrix:	Water	Analyzed:	02/06/02
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	2,000	1,890	95	73-121

Surrogate	%REC	Limits
Trifluorotoluene (FID)	111	59-135
Bromofluorobenzene (FID)	108	60-140

Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	156784	Location:	Glovatorium
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2511	Analysis:	8015B(M)
Field ID:	LFR-3	Batch#:	69964
MSS Lab ID:	156784-001	Sampled:	01/30/02
Matrix:	Water	Received:	01/31/02
Units:	ug/L	Analyzed:	02/06/02
Diln Fac:	1.000		

Type: MS Lab ID: QC169728

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	67.13	2,000	1,926	93	65-131

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

Type: MSD Lab ID: QC169729

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	1,943	94	65-131	1	20

Surrogate	%REC	Limits
Trifluorotoluene (FID)	118	59-135
Bromofluorobenzene (FID)	115	60-140

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	156784	Location:	Glovatorium
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2511	Analysis:	EPA 8021B
Matrix:	Water	Diln Fac:	1.000
Units:	ug/L	Received:	01/31/02

Field ID:	LFR-1	Batch#:	69893
Type:	SAMPLE	Sampled:	01/31/02
Lab ID:	156784-004	Analyzed:	02/05/02

Analyte	Result	RL
MTBE	2.1	2.0
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Trifluorotoluene (PID)	123	56-142
Bromofluorobenzene (PID)	131	55-149

Field ID:	GW-3	Batch#:	69893
Type:	SAMPLE	Sampled:	01/31/02
Lab ID:	156784-005	Analyzed:	02/05/02

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

Surrogate	%REC	Limits
Trifluorotoluene (PID)	125	56-142
Bromofluorobenzene (PID)	130	55-149

Field ID:	GW-4	Batch#:	69970
Type:	SAMPLE	Sampled:	01/31/02
Lab ID:	156784-006	Analyzed:	02/07/02

Analyte	Result	RL
MTBE	ND	2.0
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	13	0.50

Surrogate	%REC	Limits
Trifluorotoluene (PID)	98	56-142
Bromofluorobenzene (PID)	126	55-149

*= Value outside of QC limits; see narrative
C= Presence confirmed, but confirmation concentration differed by more than a factor of two
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	156784	Location:	Glovatorium
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2511	Analysis:	EPA 8021B
Matrix:	Water	Diln Fac:	1.000
Units:	ug/L	Received:	01/31/02

Field ID:	LFR-3	Batch#:	69893
Type:	SAMPLE	Sampled:	01/30/02
Lab ID:	156784-001	Analyzed:	02/04/02

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

Surrogate	%REC	Limits
Trifluorotoluene (PID)	125	56-142
Bromofluorobenzene (PID)	131	55-149

Field ID:	MW-11	Batch#:	69893
Type:	SAMPLE	Sampled:	01/30/02
Lab ID:	156784-002	Analyzed:	02/04/02

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

Surrogate	%REC	Limits
Trifluorotoluene (PID)	125	56-142
Bromofluorobenzene (PID)	132	55-149

Field ID:	GW-2	Batch#:	69893
Type:	SAMPLE	Sampled:	01/31/02
Lab ID:	156784-003	Analyzed:	02/05/02

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

Surrogate	%REC	Limits
Trifluorotoluene (PID)	128	56-142
Bromofluorobenzene (PID)	130	55-149

*= Value outside of QC limits; see narrative
C= Presence confirmed, but confirmation concentration differed by more than a factor of two
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	156784	Location:	Glovatorium
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2511	Analysis:	EPA 8021B
Matrix:	Water	Diln Fac:	1.000
Units:	ug/L	Received:	01/31/02

Field ID:	SOMA-1	Batch#:	69893
Type:	SAMPLE	Sampled:	01/31/02
Lab ID:	156784-007	Analyzed:	02/05/02

Analyte	Result	RL
MTBE	100	2.0
Benzene	0.67	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Trifluorotoluene (PID)	124	56-142
Bromofluorobenzene (PID)	129	55-149

Field ID:	LFR-2	Batch#:	69893
Type:	SAMPLE	Sampled:	01/31/02
Lab ID:	156784-008	Analyzed:	02/05/02

Analyte	Result	RL
MTBE	2.6	2.0
Benzene	0.92 C	0.50
Toluene	ND	0.50
Ethylbenzene	42 C	0.50
m,p-Xylenes	ND	0.50
o-Xylene	25	0.50

Surrogate	%REC	Limits
Trifluorotoluene (PID)	129	56-142
Bromofluorobenzene (PID)	171 *	55-149

Field ID:	SOMA-3	Batch#:	69893
Type:	SAMPLE	Sampled:	01/31/02
Lab ID:	156784-009	Analyzed:	02/05/02

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

Surrogate	%REC	Limits
Trifluorotoluene (PID)	122	56-142
Bromofluorobenzene (PID)	130	55-149

*= Value outside of QC limits; see narrative
C= Presence confirmed, but confirmation concentration differed by more than a factor of two
D= Not Detected
L= Reporting Limit

Curtis & Tompkins, Ltd.

Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	156784	Location:	Glovatorium
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2511	Analysis:	EPA 8021B
Matrix:	Water	Diln Fac:	1.000
Units:	ug/L	Received:	01/31/02

Field ID:	SOMA-2	Batch#:	69893
Type:	SAMPLE	Sampled:	01/31/02
Lab ID:	156784-010	Analyzed:	02/05/02

Analyte	Result	RL
MTBE	3.7	2.0
Benzene	7.3	0.50
Toluene	43	0.50
Ethylbenzene	21 C	0.50
m,p-Xylenes	33	0.50
o-Xylene	31	0.50

Surrogate	%REC	Limits
Trifluorotoluene (PID)	133	56-142
Bromofluorobenzene (PID)	147	55-149

Type:	BLANK	Batch#:	69893
Lab ID:	QC169455	Analyzed:	02/04/02

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

Surrogate	%REC	Limits
Trifluorotoluene (PID)	115	56-142
Bromofluorobenzene (PID)	116	55-149

Type:	BLANK	Batch#:	69970
Lab ID:	QC169752	Analyzed:	02/07/02

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

Surrogate	%REC	Limits
Trifluorotoluene (PID)	96	56-142
Bromofluorobenzene (PID)	97	55-149

*= Value outside of QC limits; see narrative
C= Presence confirmed, but confirmation concentration differed by more than a factor of two
D= Not Detected
L= Reporting Limit

Curtis & Tompkins, Ltd.

Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	156784	Location:	Glovatorium
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2511	Analysis:	EPA 8021B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC169454	Batch#:	69893
Matrix:	Water	Analyzed:	02/04/02
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
MTBE	20.00	19.02	95	51-125
Benzene	20.00	17.04	85	67-117
Toluene	20.00	17.25	86	69-117
Ethylbenzene	20.00	17.03	85	68-124
m,p-Xylenes	40.00	34.54	86	70-125
o-Xylene	20.00	18.04	90	65-129

Surrogate	%REC	Limits
Trifluorotoluene (PID)	117	56-142
Bromofluorobenzene (PID)	119	55-149

Curtis & Tompkins, Ltd.

Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	156784	Location:	Glovatorium
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2511	Analysis:	EPA 8021B
Matrix:	Water	Batch#:	69970
Units:	ug/L	Analyzed:	02/07/02
Diln Fac:	1.000		

Type: BS Lab ID: QC169753

Analyte	Spiked	Result	%REC	Limits
MTBE	20.00	18.26	91	51-125
Benzene	20.00	16.25	81	67-117
Toluene	20.00	15.57	78	69-117
Ethylbenzene	20.00	15.75	79	68-124
m,p-Xylenes	40.00	32.87	82	70-125
o-Xylene	20.00	16.90	85	65-129

Surrogate	%REC	Limits
Trifluorotoluene (PID)	96	56-142
Bromofluorobenzene (PID)	97	55-149

Type: BSD Lab ID: QC169754

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	20.00	18.35	92	51-125	1	20
Benzene	20.00	16.85	84	67-117	4	20
Toluene	20.00	16.04	80	69-117	3	20
Ethylbenzene	20.00	16.19	81	68-124	3	20
m,p-Xylenes	40.00	34.17	85	70-125	4	20
o-Xylene	20.00	17.02	85	65-129	1	20

Surrogate	%REC	Limits
Trifluorotoluene (PID)	97	56-142
Bromofluorobenzene (PID)	98	55-149

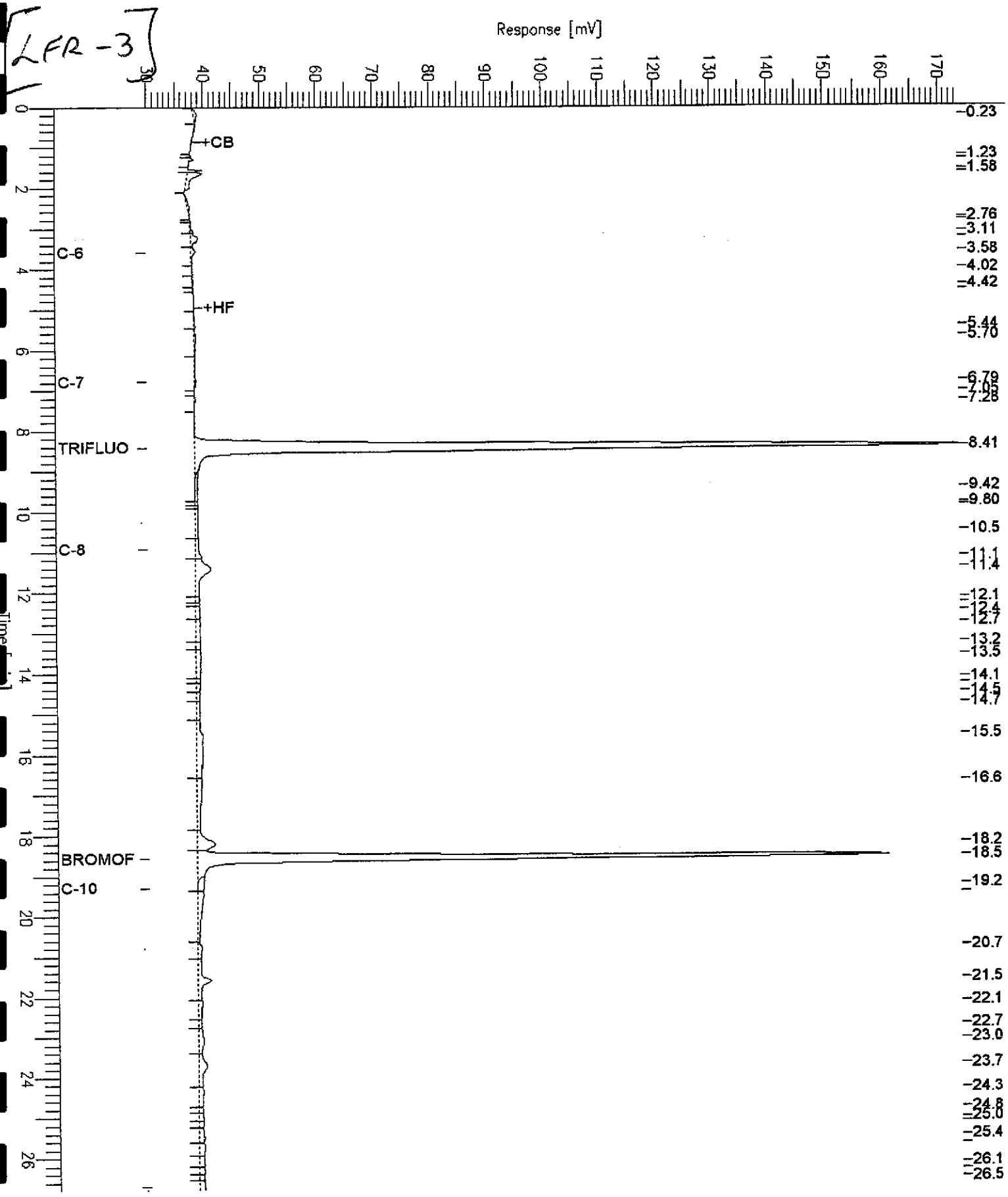
RPD= Relative Percent Difference

GC19 TVH 'X' Data File (FID)

Sample Name : mss,156784-001,69964,tvh+stodd
leName : G:\GC19\DATA\037X006.raw
thod : TVHBTXE
tart Time : 0.00 min End Time : 26.80 min
Scale Factor: 1.0 Plot Offset: 30 mV

Sample #: Page 1 of 1
Date : 2/7/02 11:14 AM
Time of Injection: 2/6/02 08:30 PM
Low Point : 29.82 mV High Point : 173.58 mV
Plot Scale: 143.8 mV

LFR-3

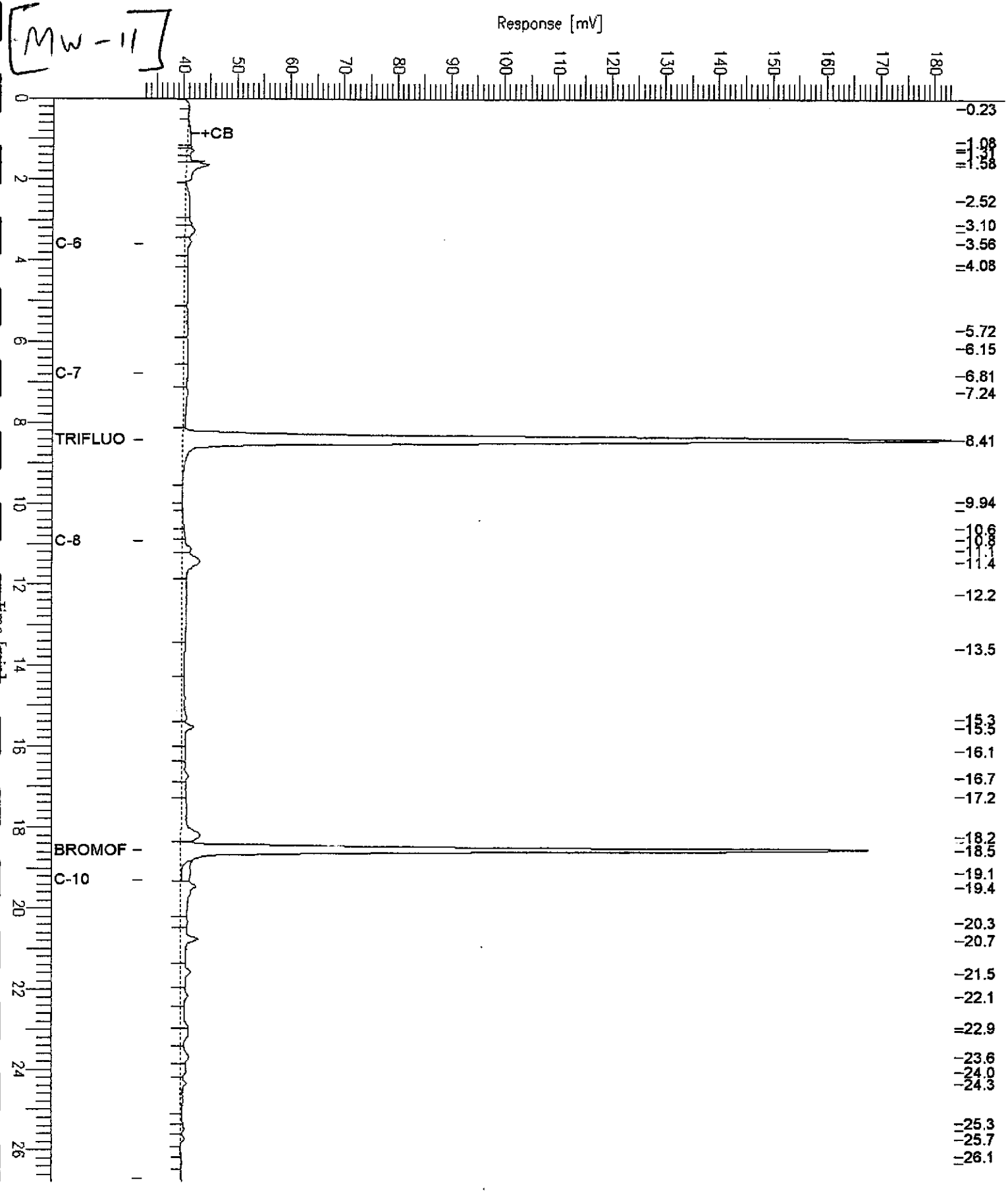


GC19 TVH 'X' Data File (FID)

Sample Name : 156784-002,69964,tvh+stodd
FileName : G:\GC19\DATA\037X009.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.80 min
Scale Factor: 1.0 Plot Offset: 33 mV

Sample #: Page 1 of 1
Date : 2/6/02 11:07 PM
Time of Injection: 2/6/02 10:40 PM
Low Point : 32.54 mV High Point : 184.00 mV
Plot Scale: 151.5 mV

MW-11

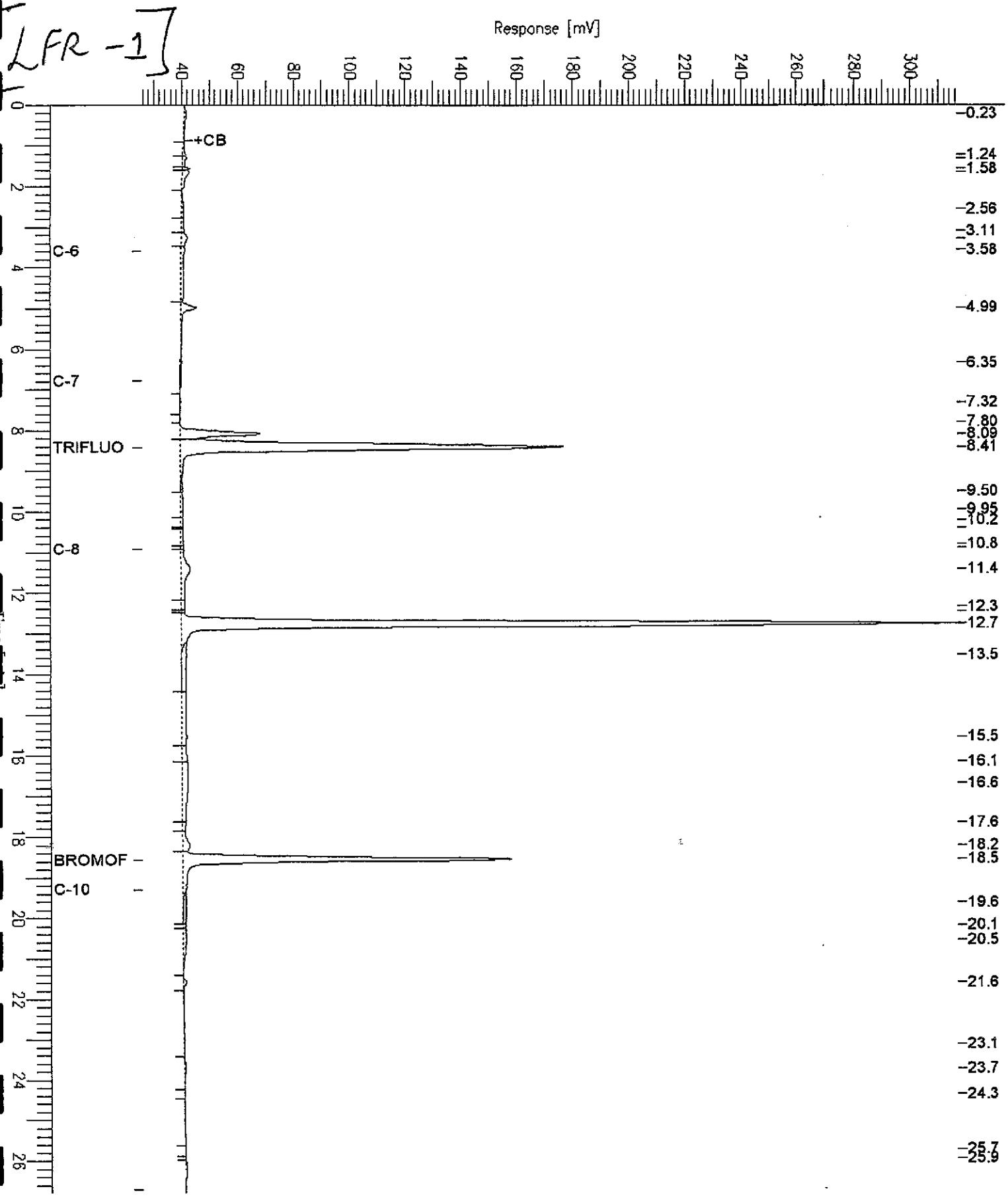


GC19 TVH 'X' Data File (FID)

Sample Name : 156784-004,69964,tvh+stodd
leName : G:\GC19\DATA\037X011.raw
thod : TVHBTXE
tart Time : 0.00 min End Time : 26.80 min
Scale Factor: 1.0 Plot Offset: 26 mV

Sample #: Page 1 of 1
Date : 2/7/02 12:34 AM
Time of Injection: 2/7/02 12:07 AM
Low Point : 25.54 mV High Point : 316.53 mV
Plot Scale: 291.0 mV

LFR -1

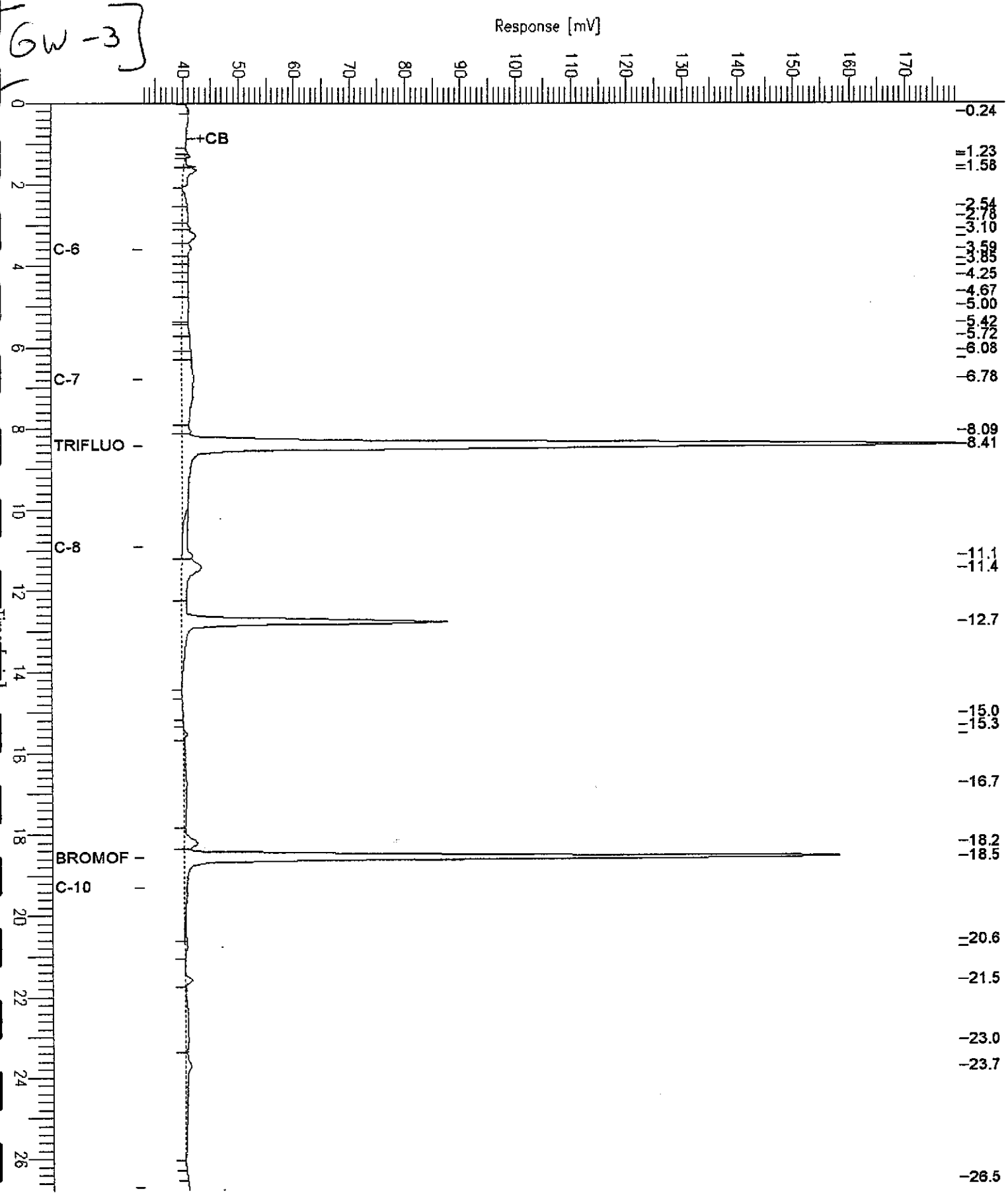


GC19 TVH 'X' Data File (FID)

Sample Name : 156784-005,69964,tvh+stodd
FileName : G:\GC19\DATA\037X012.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.80 min
Scale Factor: 1.0 Plot Offset: 33 mV

Sample #: Page 1 of 1
Date : 2/7/02 01:17 AM
Time of Injection: 2/7/02 12:50 AM
Low Point : 32.57 mV High Point : 179.31 mV
Plot Scale: 146.7 mV

GW-3

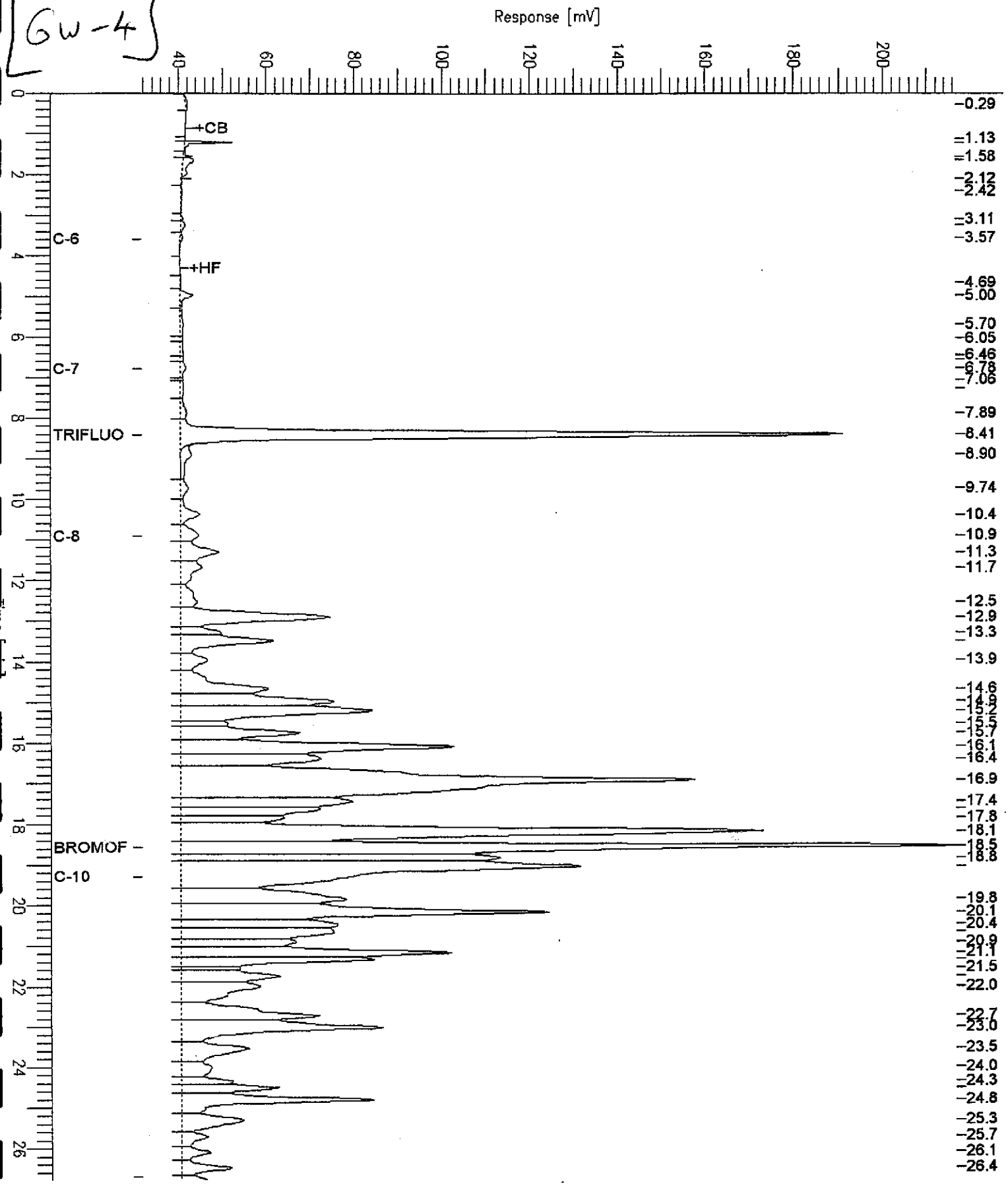


GC19 TVH 'X' Data File (FID)

Sample Name : 156784-006,69964,tvh+stodd
FileName : G:\GC19\DATA\037X013.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.80 min
Scale Factor: 1.0 Plot Offset: 32 mV

Sample #: Page 1 of 1
Date : 2/7/02 11:14 AM
Time of Injection: 2/7/02 01:33 AM
Low Point : 31.59 mV High Point : 216.62 mV
Plot Scale: 185.0 mV

[GW-4]

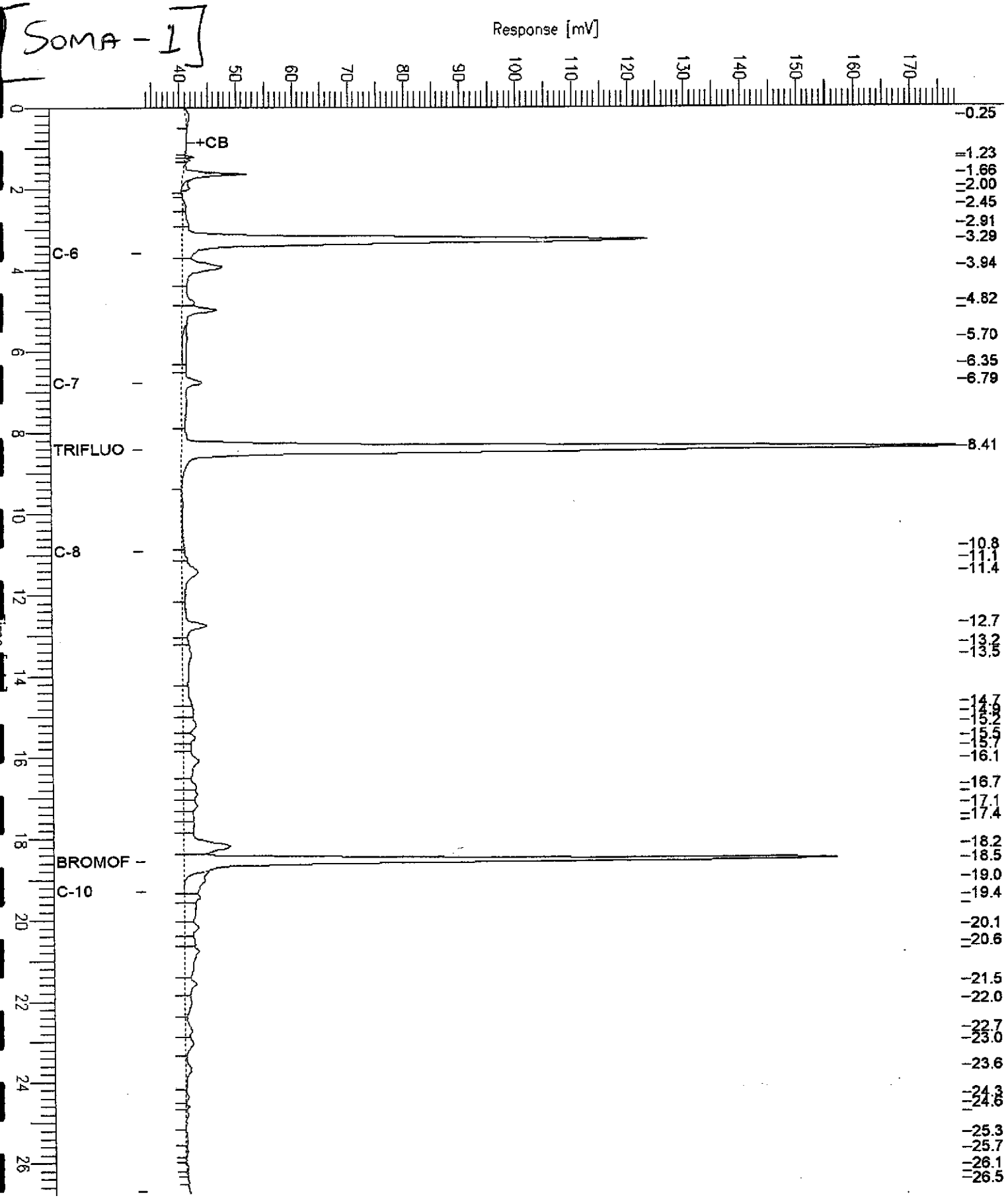


GC19 TVH 'X' Data File (FID)

Sample Name : 156784-007,69964,tvh+stodd
leName : G:\GC19\DATA\037X018.raw
thod : TVHBTXE
art Time : 0.00 min End Time : 26.80 min
Scale Factor: 1.0 Plot Offset: 33 mV

Sample #:
Date : 2/7/02 05:37 AM
Time of Injection: 2/7/02 05:10 AM
Low Point : 33.15 mV High Point : 178.24 mV
Plot Scale: 145.1 mV

SOMA - 1

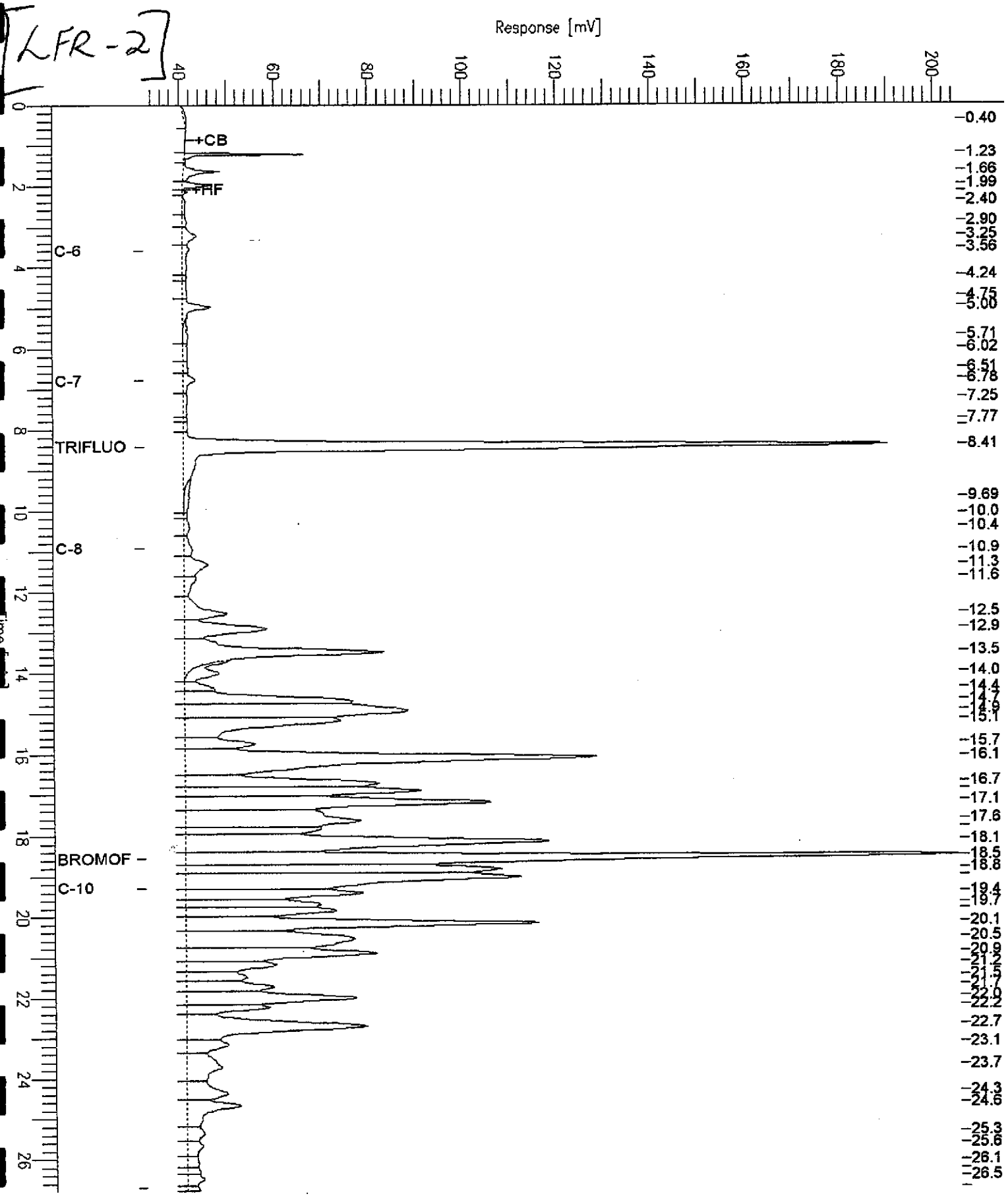


GC19 TVH 'X' Data File (FID)

Sample Name : 156784-008,69964,tvh+stodd
leName : G:\GC19\DATA\037X019.raw
thod : TVHBTXE
art Time : 0.00 min End Time : 26.80 min
Scale Factor: 1.0 Plot Offset: 32 mV

Sample #: Page 1 of 1
Date : 2/7/02 11:14 AM
Time of Injection: 2/7/02 05:53 AM
Low Point : 32.36 mV High Point : 205.14 mV
Plot Scale: 172.8 mV

LFR-2

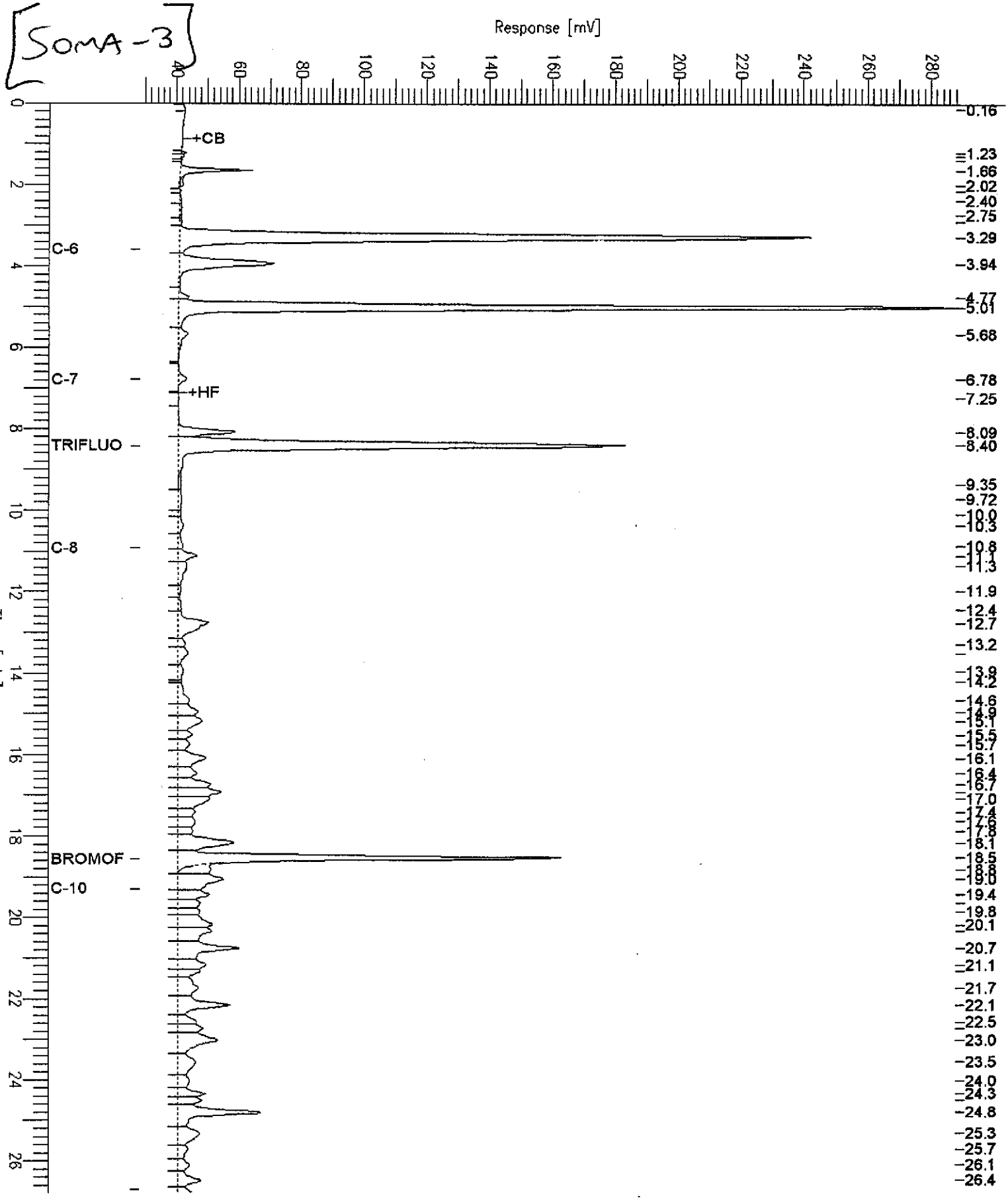


GC19 TVH 'X' Data File (FID)

Sample Name : 156784-009,69964,tvh+stodd
FileName : G:\GC19\DATA\037X020.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.80 min
Scale Factor: 1.0 Plot Offset: 28 mV

Sample #: Page 1 of 1
Date : 2/7/02 11:14 AM
Time of Injection: 2/7/02 06:37 AM
Low Point : 28.46 mV High Point : 288.05 mV
Plot Scale: 259.6 mV

[SOMA-3]

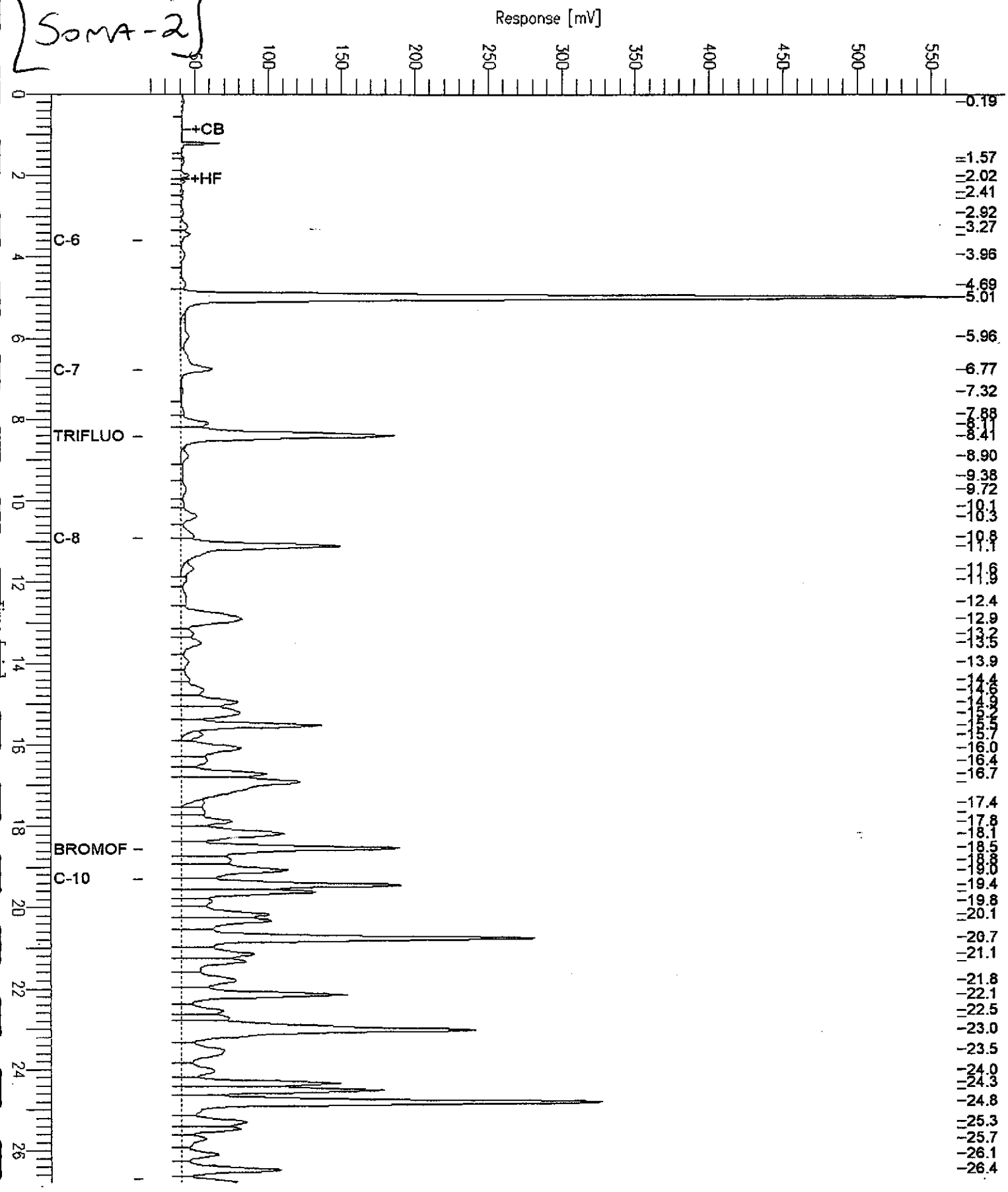


GC19 TVH 'X' Data File (FID)

Sample Name : 156784-010,69964,tvh+stodd
FileName : G:\GC19\DATA\037X021.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.80 min
Scale Factor: 1.0 Plot Offset: 14 mV

Sample #: Page 1 of 1
Date : 2/7/02 11:14 AM
Time of Injection: 2/7/02 07:20 AM
Low Point : 14.41 mV High Point : 567.07 mV
Plot Scale: 552.7 mV

[SOMA-2]

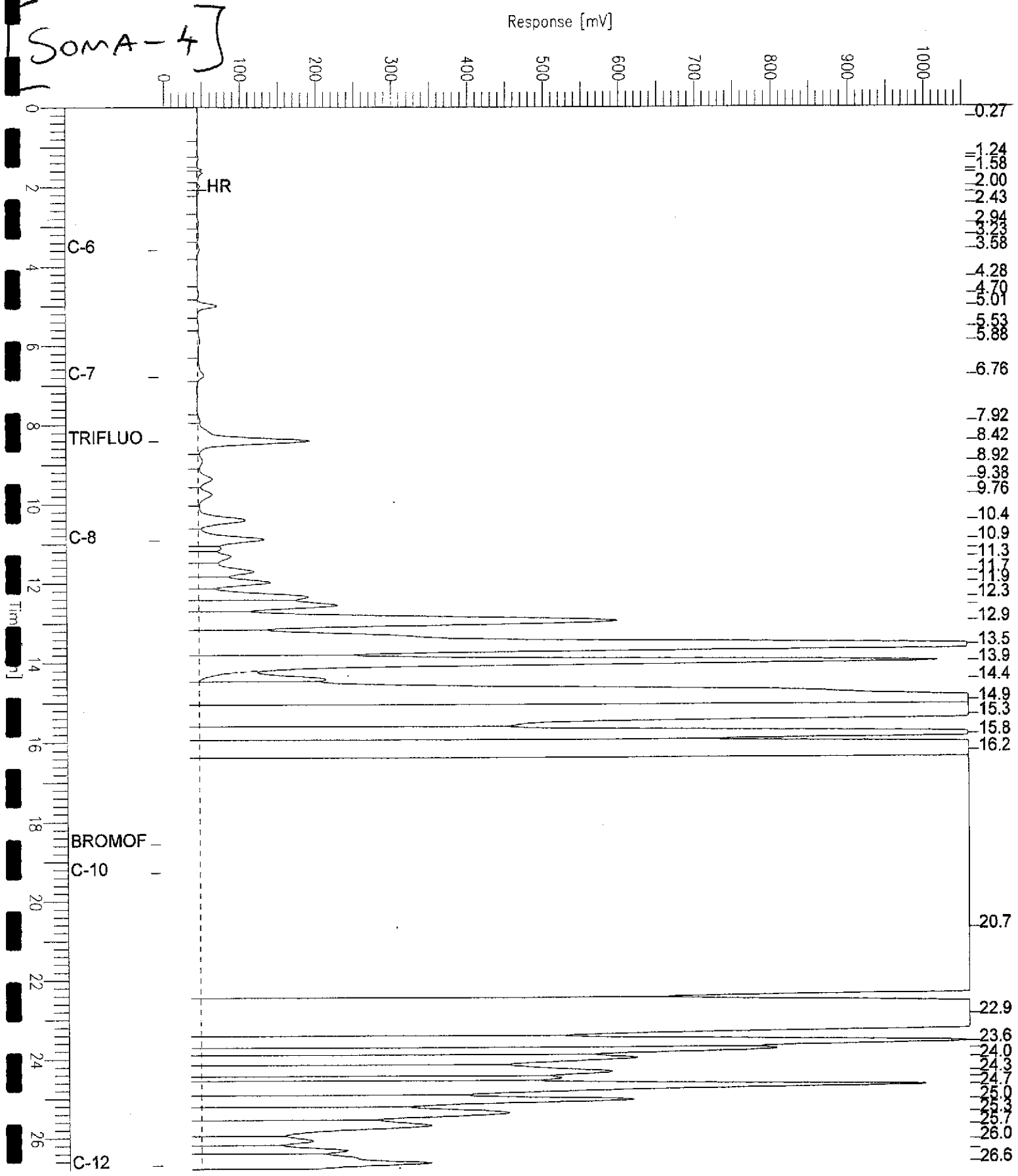


GC19 TVH 'X' Data File (FID)

Sample Name : 156784-011,69879,tvh only
FileName : G:\GC19\DATA\035X012.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.80 min
Scale Factor: 1.0 Plot Offset: -8 mV

Sample #: a
Date : 2/5/02 11:20 AM
Time of Injection: 2/4/02 10:31 PM
Low Point : -7.61 mV High Point : 1055.99 mV
Plot Scale: 1063.6 mV

[SOMA-4]

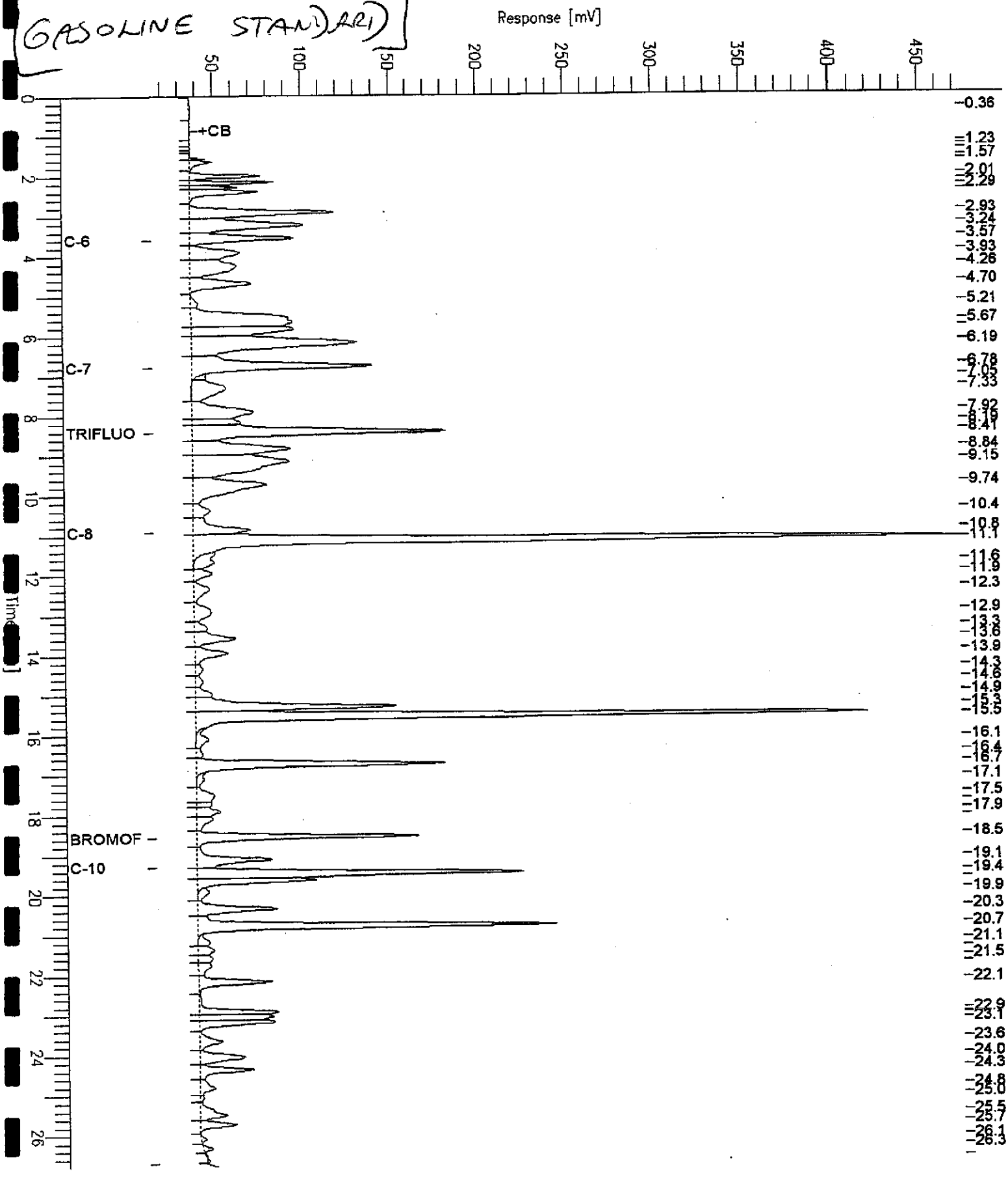


GC19 TVH 'X' Data File (FID)

Sample Name : CCV/LCS,QC169727,69964,01WS2371,5/5000
FileName : G:\GC19\DATA\037X004.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.80 min
Scale Factor: 1.0 Plot Offset: 15 mV

Sample #: Page 1 of 1
Date : 2/6/02 07:31 PM
Time of Injection: 2/6/02 07:04 PM
Low Point : 14.83 mV High Point : 472.12 mV
Plot Scale: 457.3 mV

[GASOLINE STANDARD]

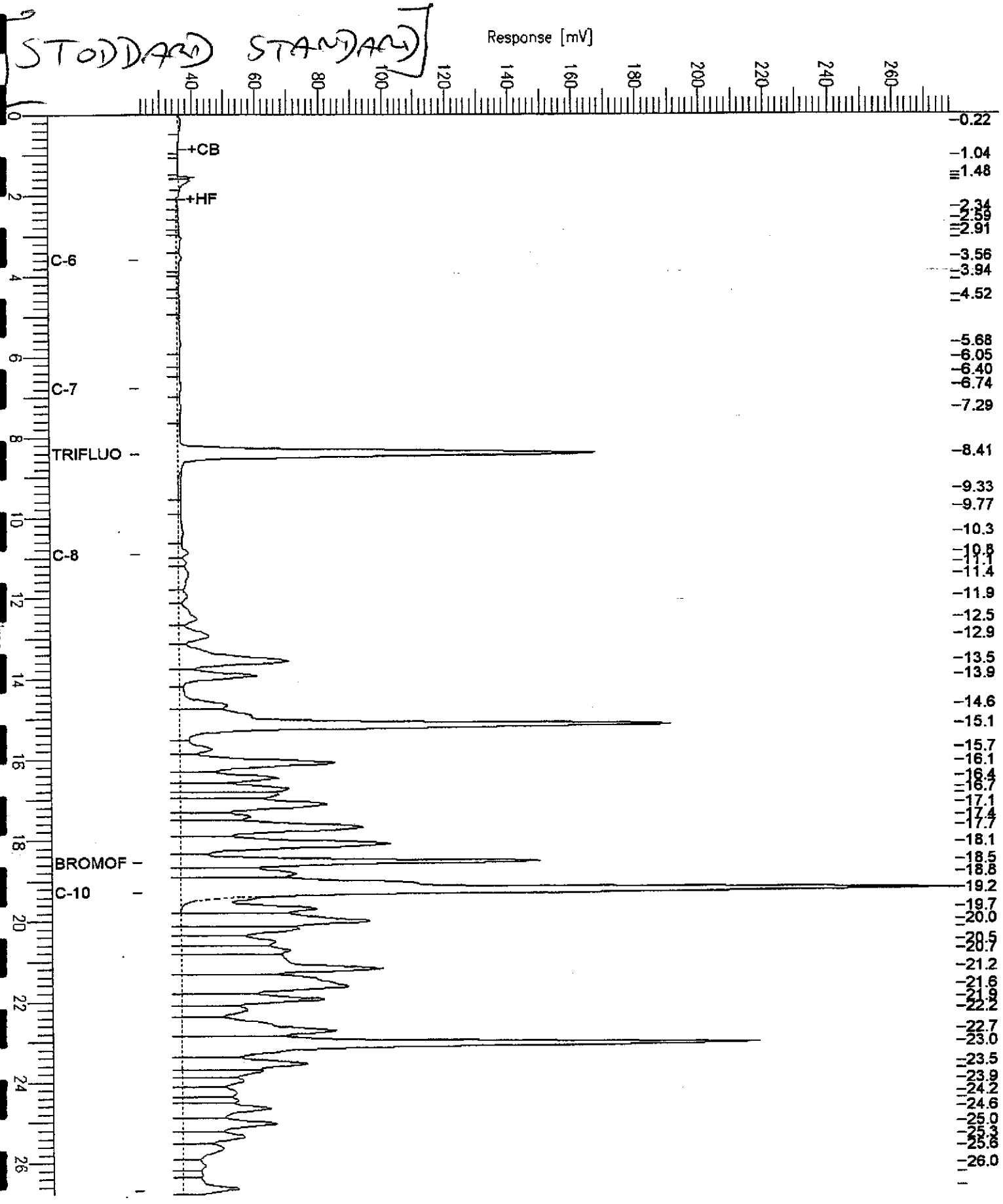


GC19 TVH 'X' Data File (FID)

Sample Name : ccv,stodd,69964,01ws0137,2.5/5000
FileName : G:\GC19\DATA\037X003.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.80 min
Scale Factor: 1.0 Plot Offset: 23 mV

Sample #: Page 1 of 1
Date : 2/7/02 11:14 AM
Time of Injection: 2/6/02 06:21 PM
Low Point : 23.03 mV High Point : 278.50 mV
Plot Scale: 255.5 mV

STODDARD STANDARD



Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	156784	Location:	Glovatorium
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2511	Analysis:	8015B(M)
Matrix:	Water	Batch#:	69964
Units:	ug/L	Received:	01/31/02
Diln Fac:	1.000		

Field ID:	LFR-3	Sampled:	01/30/02
Type:	SAMPLE	Analyzed:	02/06/02
Lab ID:	156784-001		

Analyte	Result	RL
Gasoline C7-C12	67 Y	50
Stoddard Solvent C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	98	59-135
Bromofluorobenzene (FID)	112	60-140

Field ID:	MW-11	Sampled:	01/30/02
Type:	SAMPLE	Analyzed:	02/06/02
Lab ID:	156784-002		

Analyte	Result	RL
Gasoline C7-C12	71 Y	50
Stoddard Solvent C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	104	59-135
Bromofluorobenzene (FID)	114	60-140

Field ID:	GW-2	Sampled:	01/31/02
Type:	SAMPLE	Analyzed:	02/06/02
Lab ID:	156784-003		

Analyte	Result	RL
Gasoline C7-C12	ND	50
Stoddard Solvent C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	109	59-135
Bromofluorobenzene (FID)	108	60-140

*= Value outside of QC limits; see narrative
H= Heavier hydrocarbons contributed to the quantitation
Y= Sample exhibits fuel pattern which does not resemble standard
Z= Sample exhibits unknown single peak or peaks
b= See narrative
ND= Not Detected
RL= Reporting Limit
>LR= Response exceeds instrument's linear range

Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	156784	Location:	Glovatorium
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2511	Analysis:	8015B(M)
Matrix:	Water	Batch#:	69964
Units:	ug/L	Received:	01/31/02
Diln Fac:	1.000		

Field ID: LFR-1 Sampled: 01/31/02
Type: SAMPLE Analyzed: 02/07/02
Lab ID: 156784-004

Analyte	Result	RL
Gasoline C7-C12	270 Y Z	50
Stoddard Solvent C7-C12	150 Y Z	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	99	59-135
Bromofluorobenzene (FID)	110	60-140

Field ID: GW-3 Sampled: 01/31/02
Type: SAMPLE Analyzed: 02/07/02
Lab ID: 156784-005

Analyte	Result	RL
Gasoline C7-C12	70 Y Z	50
Stoddard Solvent C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	110	59-135
Bromofluorobenzene (FID)	108	60-140

Field ID: GW-4 Sampled: 01/31/02
Type: SAMPLE Analyzed: 02/07/02
Lab ID: 156784-006

Analyte	Result	RL
Gasoline C7-C12	1,700 H Y	50
Stoddard Solvent C7-C12	920	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	110	59-135
Bromofluorobenzene (FID)	221 *	>LR b 60-140

*= Value outside of QC limits; see narrative
H= Heavier hydrocarbons contributed to the quantitation
Y= Sample exhibits fuel pattern which does not resemble standard
Z= Sample exhibits unknown single peak or peaks
b= See narrative
ND= Not Detected
RL= Reporting Limit
>LR= Response exceeds instrument's linear range

Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	156784	Location:	Glovatorium
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2511	Analysis:	8015B(M)
Matrix:	Water	Batch#:	69964
Units:	ug/L	Received:	01/31/02
Diln Fac:	1.000		

Field ID: SOMA-1 Sampled: 01/31/02
Type: SAMPLE Analyzed: 02/07/02
Lab ID: 156784-007

Analyte	Result	RL
Gasoline C7-C12	100 H Y	50
Stoddard Solvent C7-C12	58	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	103	59-135
Bromofluorobenzene (FID)	109	60-140

Field ID: LFR-2 Sampled: 01/31/02
Type: SAMPLE Analyzed: 02/07/02
Lab ID: 156784-008

Analyte	Result	RL
Gasoline C7-C12	1,400 H Y	50
Stoddard Solvent C7-C12	760	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	113	59-135
Bromofluorobenzene (FID)	201 *	60-140

Field ID: SOMA-3 Sampled: 01/31/02
Type: SAMPLE Analyzed: 02/07/02
Lab ID: 156784-009

Analyte	Result	RL
Gasoline C7-C12	410 H Y	50
Stoddard Solvent C7-C12	230	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	106	59-135
Bromofluorobenzene (FID)	114	60-140

*= Value outside of QC limits; see narrative
H= Heavier hydrocarbons contributed to the quantitation
Y= Sample exhibits fuel pattern which does not resemble standard
Z= Sample exhibits unknown single peak or peaks
b= See narrative
ND= Not Detected
RL= Reporting Limit
>LR= Response exceeds instrument's linear range

Curtis & Tompkins, Ltd.

Gasoline by GC/FID CA LUFT

Lab #:	156784	Location:	Glovatorium
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2511	Analysis:	8015B(M)
Matrix:	Water	Batch#:	69964
Units:	ug/L	Received:	01/31/02
Diln Fac:	1.000		

Field ID:	SOMA-2	Sampled:	01/31/02
Type:	SAMPLE	Analyzed:	02/07/02
Lab ID:	156784-010		

Analyte	Result	RL
Gasoline C7-C12	2,400 H Y	50
Stoddard Solvent C7-C12	1,300	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	110	59-135
Bromofluorobenzene (FID)	166 *	60-140

Type:	BLANK	Analyzed:	02/06/02
Lab ID:	QC169726		

Analyte	Result	RL
Gasoline C7-C12	ND	50
Stoddard Solvent C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	98	59-135
Bromofluorobenzene (FID)	94	60-140

*= Value outside of QC limits; see narrative
H= Heavier hydrocarbons contributed to the quantitation
Y= Sample exhibits fuel pattern which does not resemble standard
Z= Sample exhibits unknown single peak or peaks
b= See narrative
ND= Not Detected
RL= Reporting Limit
>LR= Response exceeds instrument's linear range

Curtis & Tompkins, Ltd.

Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	156784	Location:	Glovatorium
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2511	Analysis:	EPA 8021B
Matrix:	Water	Diln Fac:	1.000
Units:	ug/L	Received:	01/31/02

Field ID:	SOMA-2	Batch#:	69893
Type:	SAMPLE	Sampled:	01/31/02
Lab ID:	156784-010	Analyzed:	02/05/02

Analyte	Result	RL
MTBE	3.7	2.0
Benzene	7.3	0.50
Toluene	43	0.50
Ethylbenzene	21 C	0.50
m,p-Xylenes	33	0.50
o-Xylene	31	0.50

Surrogate	%REC	Limits
Trifluorotoluene (PID)	133	56-142
Bromofluorobenzene (PID)	147	55-149

Type:	BLANK	Batch#:	69893
Lab ID:	QC169455	Analyzed:	02/04/02

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

Surrogate	%REC	Limits
Trifluorotoluene (PID)	115	56-142
Bromofluorobenzene (PID)	116	55-149

Type:	BLANK	Batch#:	69970
Lab ID:	QC169752	Analyzed:	02/07/02

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

Surrogate	%REC	Limits
Trifluorotoluene (PID)	96	56-142
Bromofluorobenzene (PID)	97	55-149

*= Value outside of QC limits; see narrative
C= Presence confirmed, but confirmation concentration differed by more than a factor of two
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	156784	Location:	Glovatorium
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2511	Analysis:	EPA 8021B
Matrix:	Water	Diln Fac:	1.000
Units:	ug/L	Received:	01/31/02

Field ID:	LFR-3	Batch#:	69893
Type:	SAMPLE	Sampled:	01/30/02
Lab ID:	156784-001	Analyzed:	02/04/02

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

Surrogate	%REC	Limits
Trifluorotoluene (PID)	125	56-142
Bromofluorobenzene (PID)	131	55-149

Field ID:	MW-11	Batch#:	69893
Type:	SAMPLE	Sampled:	01/30/02
Lab ID:	156784-002	Analyzed:	02/04/02

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

Surrogate	%REC	Limits
Trifluorotoluene (PID)	125	56-142
Bromofluorobenzene (PID)	132	55-149

Field ID:	GW-2	Batch#:	69893
Type:	SAMPLE	Sampled:	01/31/02
Lab ID:	156784-003	Analyzed:	02/05/02

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

Surrogate	%REC	Limits
Trifluorotoluene (PID)	128	56-142
Bromofluorobenzene (PID)	130	55-149

*= Value outside of QC limits; see narrative
C= Presence confirmed, but confirmation concentration differed by more than a factor of two
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	156784	Location:	Glovatorium
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2511	Analysis:	EPA 8021B
Matrix:	Water	Diln Fac:	1.000
Units:	ug/L	Received:	01/31/02

Field ID:	LFR-1	Batch#:	69893
Type:	SAMPLE	Sampled:	01/31/02
Lab ID:	156784-004	Analyzed:	02/05/02

Analyte	Result	RL
MTBE	2.1	2.0
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Trifluorotoluene (PID)	123	56-142
Bromofluorobenzene (PID)	131	55-149

Field ID:	GW-3	Batch#:	69893
Type:	SAMPLE	Sampled:	01/31/02
Lab ID:	156784-005	Analyzed:	02/05/02

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

Surrogate	%REC	Limits
Trifluorotoluene (PID)	125	56-142
Bromofluorobenzene (PID)	130	55-149

Field ID:	GW-4	Batch#:	69970
Type:	SAMPLE	Sampled:	01/31/02
Lab ID:	156784-006	Analyzed:	02/07/02

Analyte	Result	RL
MTBE	ND	2.0
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	13	0.50

Surrogate	%REC	Limits
Trifluorotoluene (PID)	98	56-142
Bromofluorobenzene (PID)	126	55-149

*= Value outside of QC limits; see narrative
C= Presence confirmed, but confirmation concentration differed by more than a factor of two
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	156784	Location:	Glovatorium
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2511	Analysis:	EPA 8021B
Matrix:	Water	Diln Fac:	1.000
Units:	ug/L	Received:	01/31/02

Field ID: SOMA-1
Type: SAMPLE
Lab ID: 156784-007
Batch#: 69893
Sampled: 01/31/02
Analyzed: 02/05/02

Analyte	Result	RL
MTBE	100	2.0
Benzene	0.67	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Trifluorotoluene (PID)	124	56-142
Bromofluorobenzene (PID)	129	55-149

Field ID: LFR-2
Type: SAMPLE
Lab ID: 156784-008
Batch#: 69893
Sampled: 01/31/02
Analyzed: 02/05/02

Analyte	Result	RL
MTBE	2.6	2.0
Benzene	0.92 C	0.50
Toluene	ND	0.50
Ethylbenzene	42 C	0.50
m,p-Xylenes	ND	0.50
o-Xylene	25	0.50

Surrogate	%REC	Limits
Trifluorotoluene (PID)	129	56-142
Bromofluorobenzene (PID)	171 *	55-149

Field ID: SOMA-3
Type: SAMPLE
Lab ID: 156784-009
Batch#: 69893
Sampled: 01/31/02
Analyzed: 02/05/02

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

Surrogate	%REC	Limits
Trifluorotoluene (PID)	122	56-142
Bromofluorobenzene (PID)	130	55-149

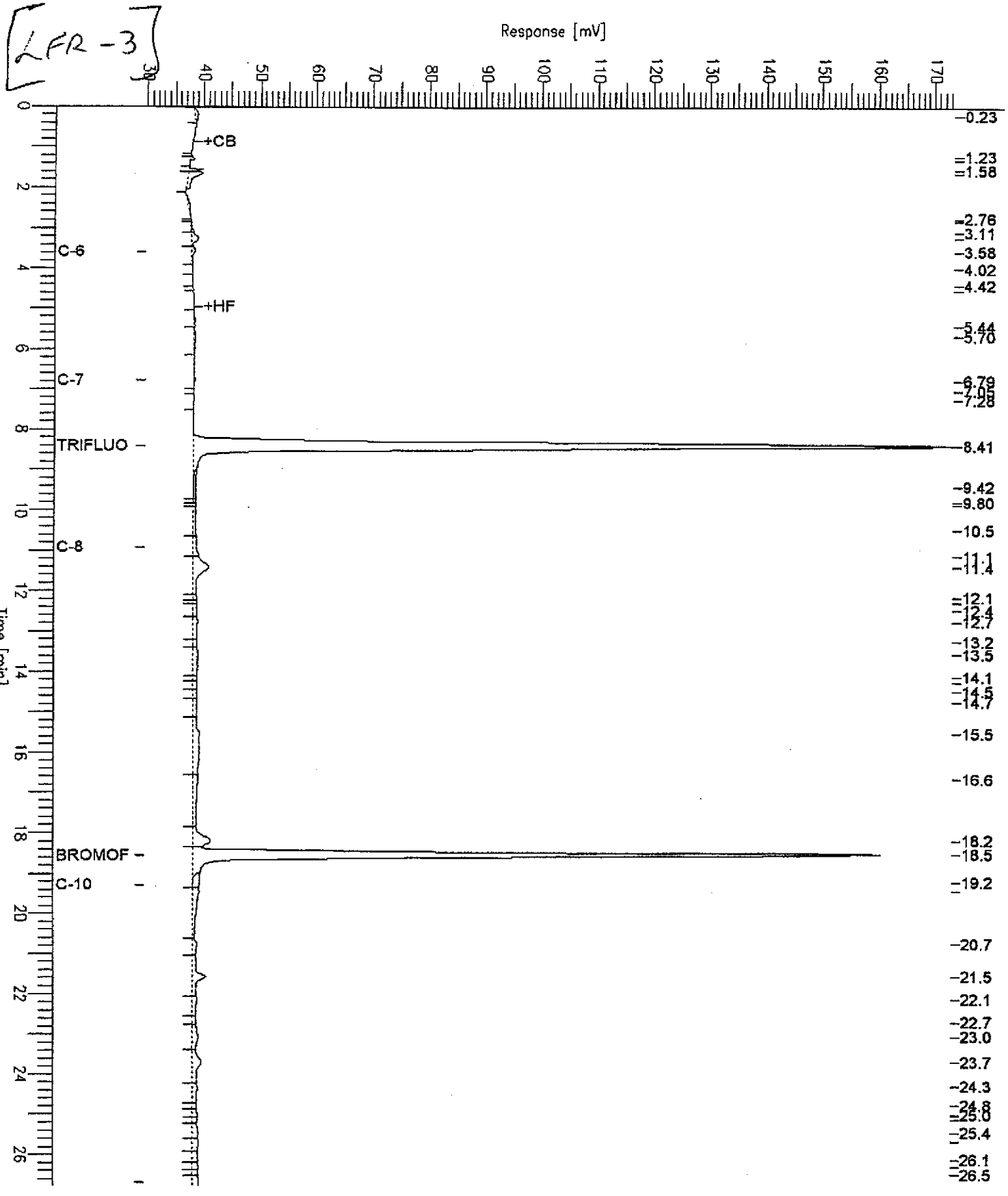
*= Value outside of QC limits; see narrative
C= Presence confirmed, but confirmation concentration differed by more than a factor of two
ND= Not Detected
RL= Reporting Limit

GC19 TVH 'X' Data File (FID)

Sample Name : mss,156784-001,69964,tvh+stodd
FileName : G:\GC19\DATA\037X006.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.80 min
Scale Factor: 1.0 Plot Offset: 30 mV

Sample #: Page 1 of 1
Date : 2/7/02 11:14 AM
Time of Injection: 2/6/02 08:30 PM
Low Point : 29.82 mV High Point : 173.58 mV
Plot Scale: 143.8 mV

LFR-3

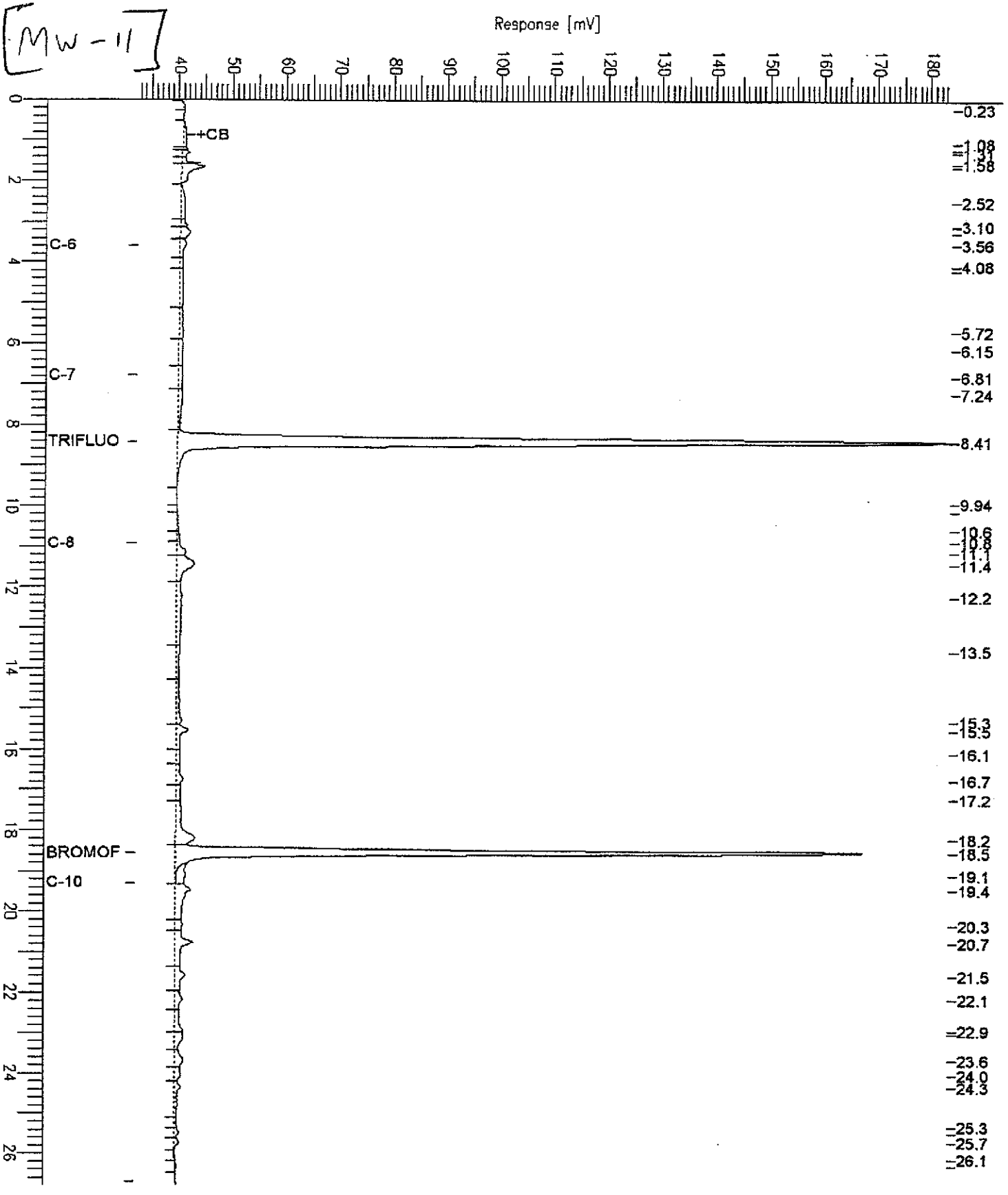


GC19 TVH 'X' Data File (FID)

Sample Name : 156784-002,69964,tvh+stodd
FileName : G:\GC19\DATA\037X009.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.80 min
Scale Factor: 1.0 Plot Offset: 33 mV

Sample #: Page 1 of 1
Date : 2/6/02 11:07 PM
Time of Injection: 2/6/02 10:40 PM
Low Point : 32.54 mV High Point : 184.00 mV
Plot Scale: 151.5 mV

MW-11

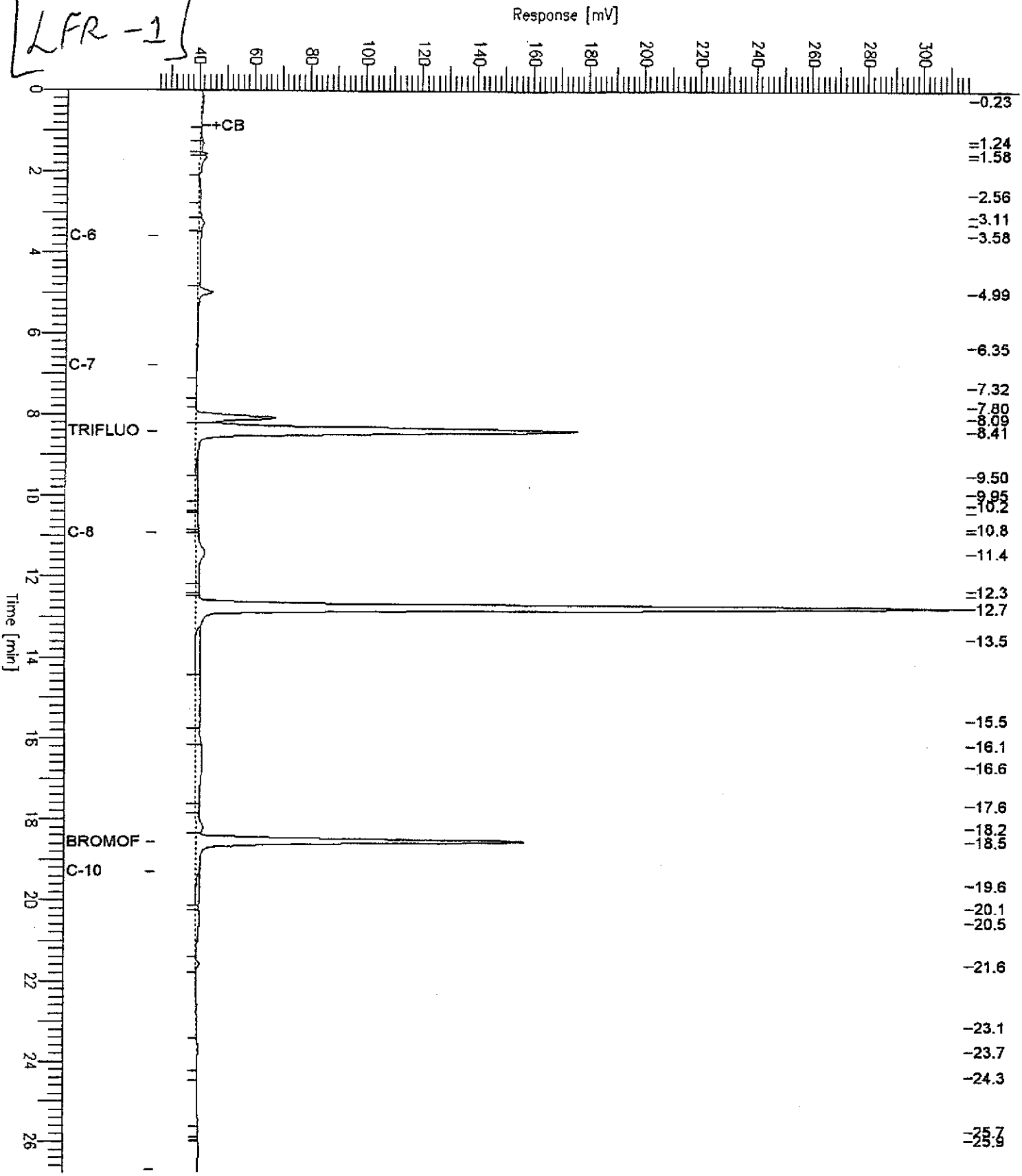


GC19 TVH 'X' Data File (FID)

Sample Name : 156784-004,69964,tvh+stodd
FileName : G:\GC19\DATA\037X011.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.80 min
Scale Factor: 1.0 Plot Offset: 26 mV

Sample #: Page 1 of 1
Date : 2/7/02 12:34 AM
Time of Injection: 2/7/02 12:07 AM
Low Point : 25.54 mV High Point : 316.53 mV
Plot Scale: 291.0 mV

[LFR -1]

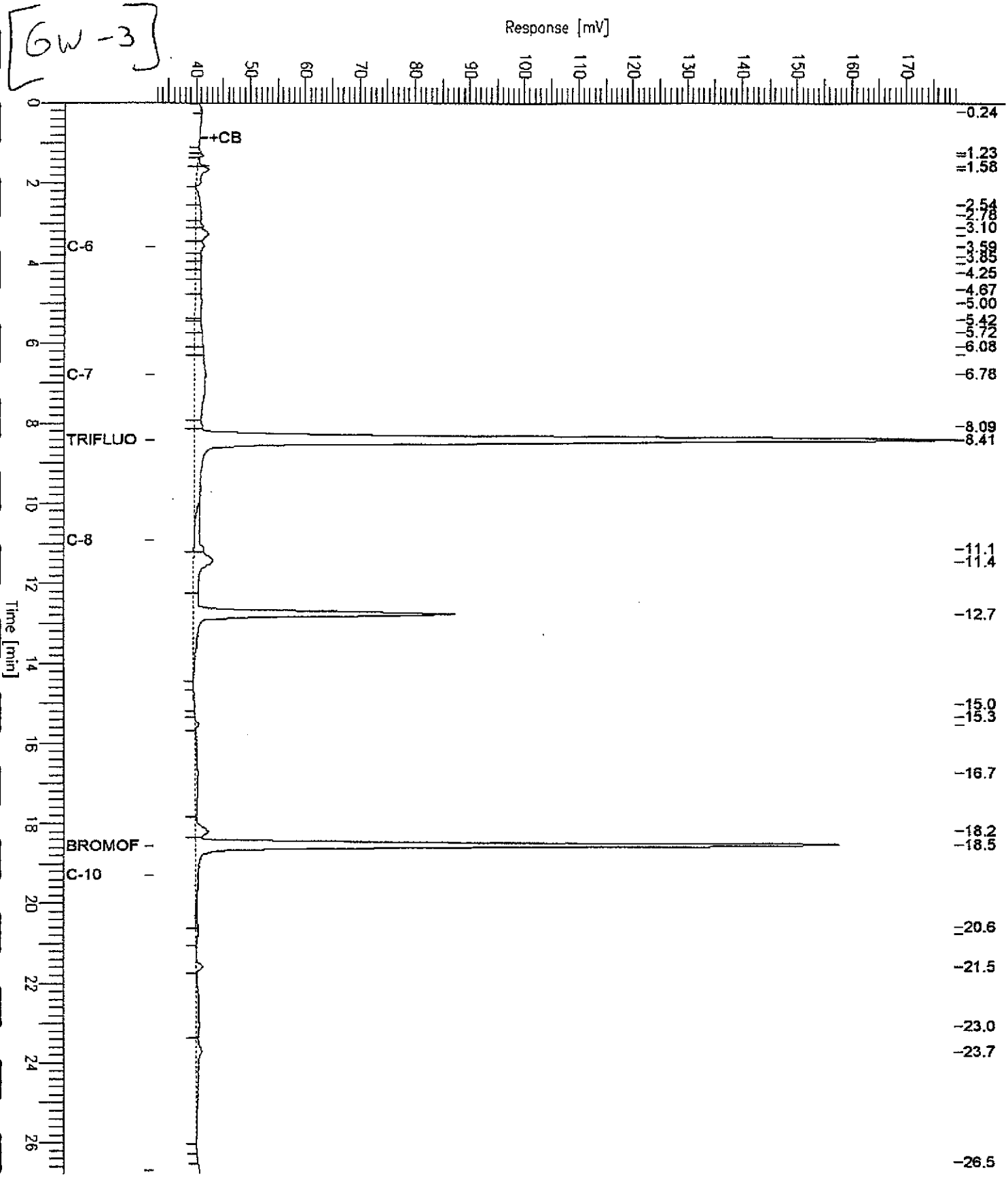


GC19 TVH 'X' Data File (FID)

Sample Name : 156784-005,69964,tvh+stodd
FileName : G:\GC19\DATA\037X012.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.80 min
Scale Factor: 1.0 Plot Offset: 33 mV

Sample #: Page 1 of 1
Date : 2/7/02 01:17 AM
Time of Injection: 2/7/02 12:50 AM
Low Point : 32.57 mV High Point : 179.31 mV
Plot Scale: 146.7 mV

GW-3

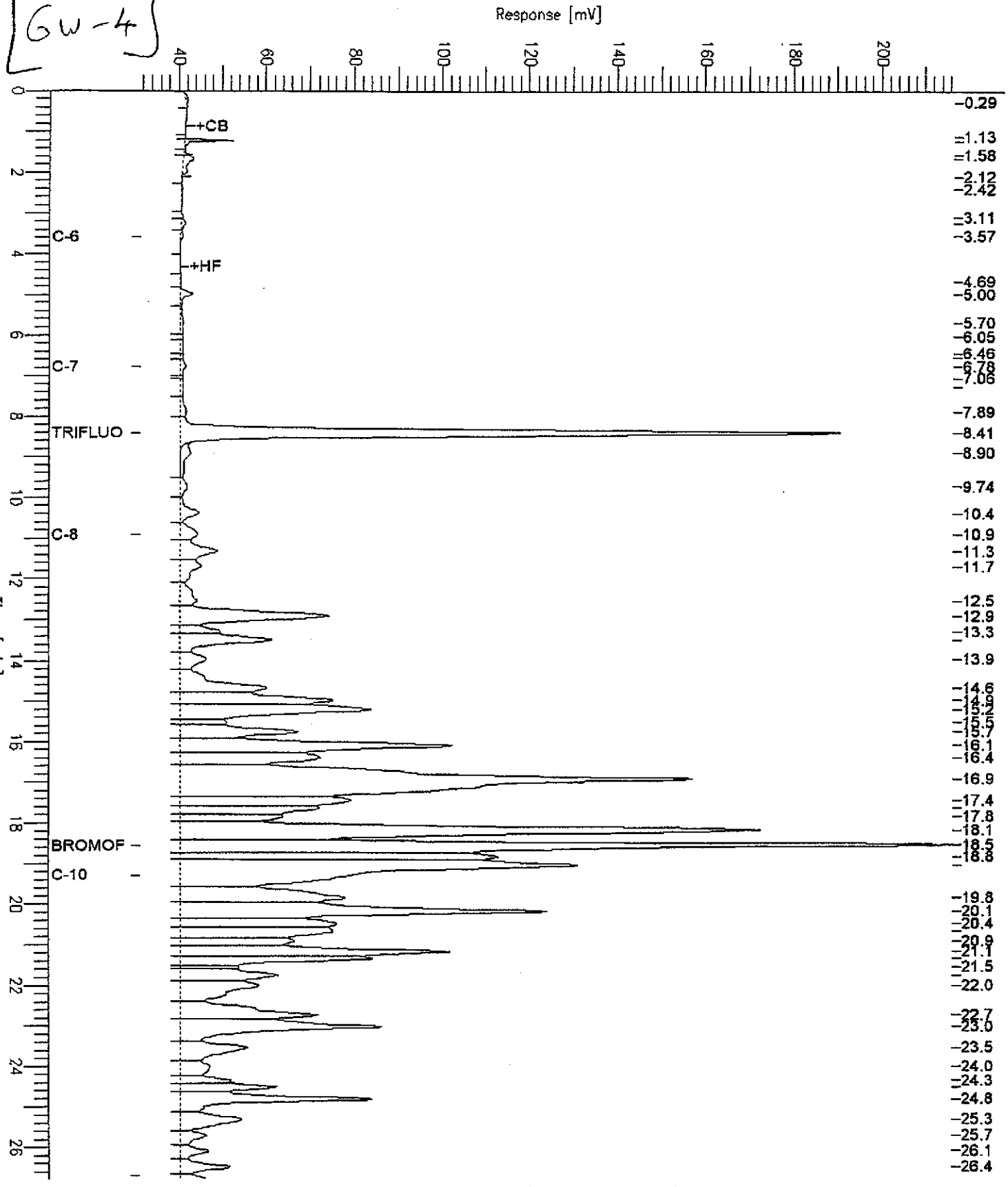


GC19 TVH 'X' Data File (FID)

Sample Name : 156784-006,69964,tvh+stodd
FileName : G:\GC19\DATA\037X013.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.80 min
Scale Factor: 1.0 Plot Offset: 32 mV

Sample #: Page 1 of 1
Date : 2/7/02 11:14 AM
Time of Injection: 2/7/02 01:33 AM
Low Point : 31.59 mV High Point : 216.62 mV
Plot Scale: 185.0 mV

[GW-4]

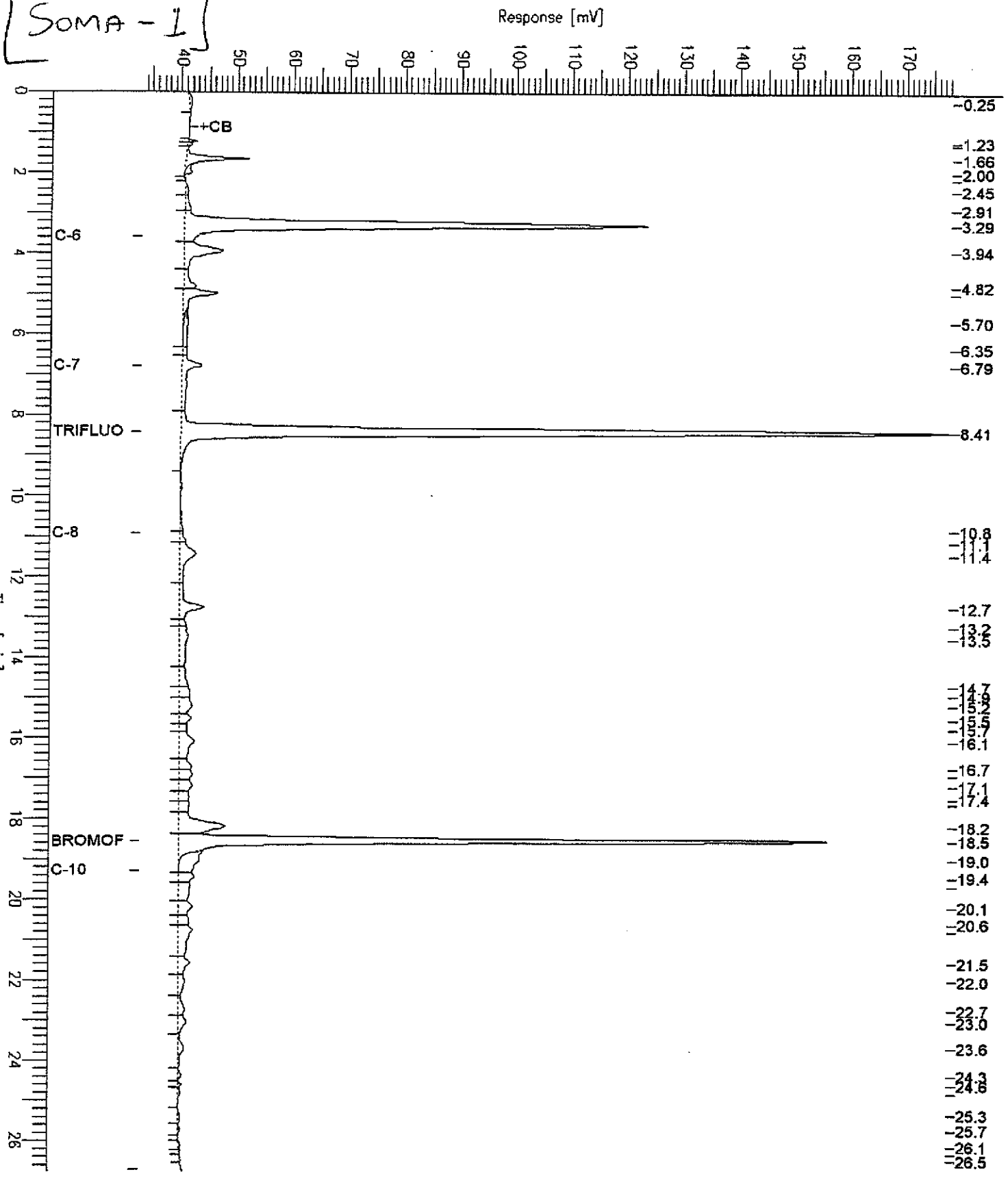


GC19 TVH 'X' Data File (FID)

Sample Name : 156784-007,69964,tvh+stodd
FileName : G:\GC19\DATA\037X018.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.80 min
Scale Factor: 1.0 Plot Offset: 33 mV

Sample #: Page 1 of 1
Date : 2/7/02 05:37 AM
Time of Injection: 2/7/02 05:10 AM
Low Point : 33.15 mV High Point : 178.24 mV
Plot Scale: 145.1 mV

[SOMA - 1]

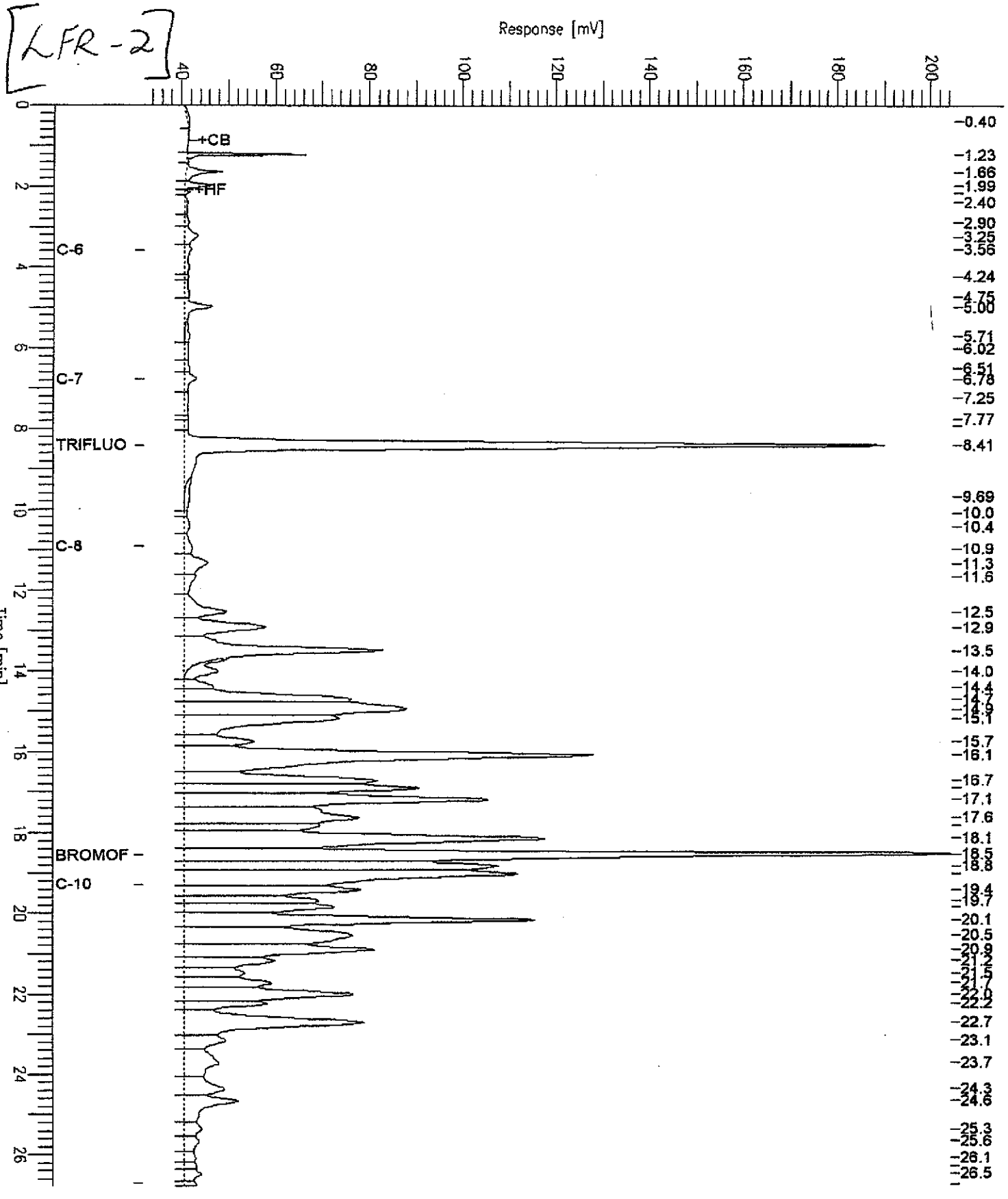


GC19 TVH 'X' Data File (FID)

Sample Name : 156784-008,69964,tvh+stodd
FileName : G:\GC19\DATA\037X019.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.80 min
Scale Factor: 1.0 Plot Offset: 32 mV

Sample #: Page 1 of 1
Date : 2/7/02 11:14 AM
Time of Injection: 2/7/02 05:53 AM
Low Point : 32.36 mV High Point : 205.14 mV
Plot Scale: 172.8 mV

[LFR-2]

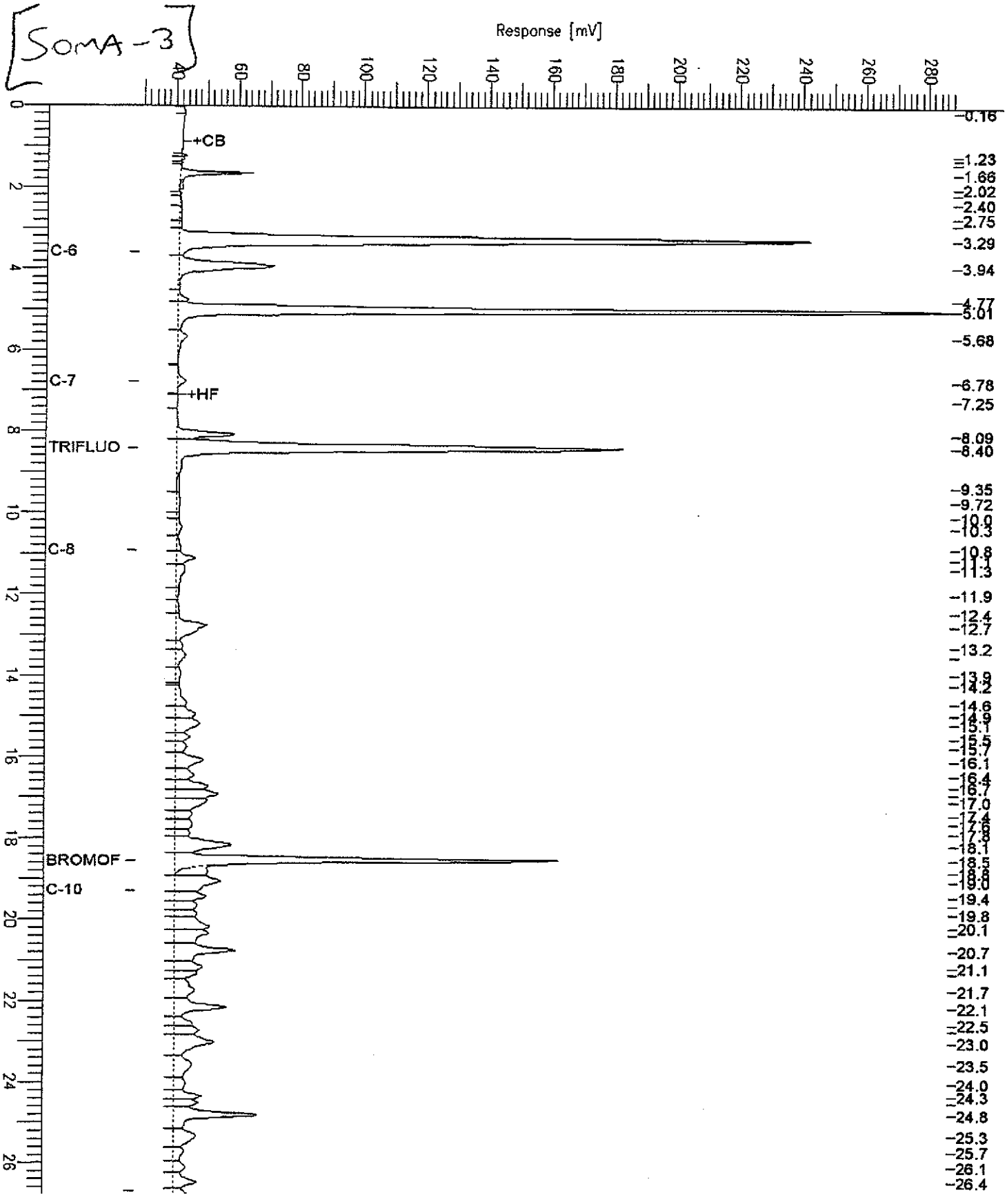


GC19 TVH 'X' Data File (FID)

Sample Name : 156784-009,69964,tvh+stodd
FileName : G:\GC19\DATA\037X020.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.80 min
Scale Factor: 1.0 Plot Offset: 28 mV

Sample #: Page 1 of 1
Date : 2/7/02 11:14 AM
Time of Injection: 2/7/02 06:37 AM
Low Point : 28.46 mV High Point : 288.05 mV
Plot Scale: 259.6 mV

SOMA-3

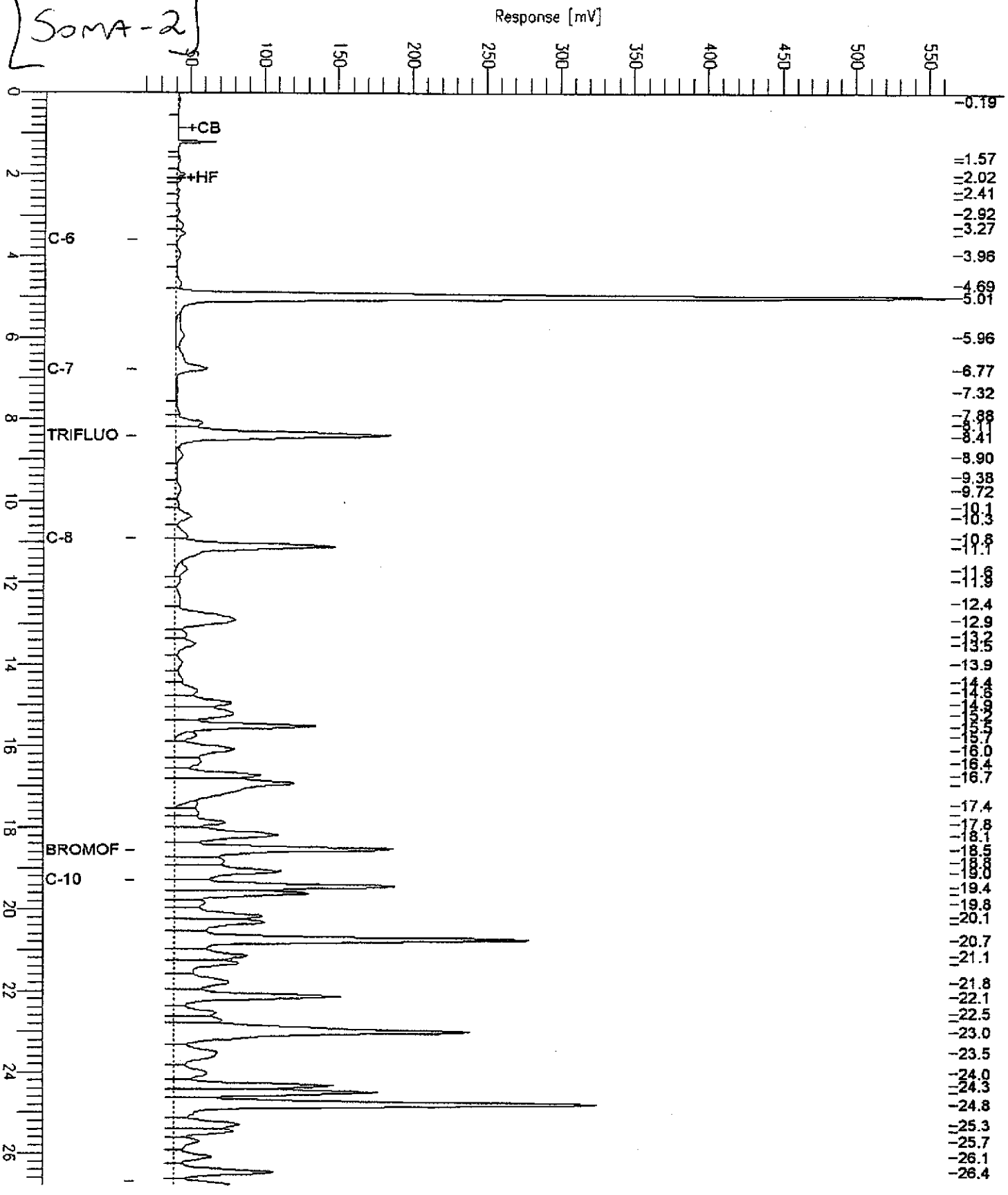


GC19 TVH 'X' Data File (FID)

Sample Name : 156784-010,69964,tvh+stodd
FileName : G:\GC19\DATA\037X021.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.80 min
Scale Factor: 1.0 Plot Offset: 14 mV

Sample #: Page 1 of 1
Date : 2/7/02 11:14 AM
Time of Injection: 2/7/02 07:20 AM
Low Point : 14.41 mV High Point : 567.07 mV
Plot Scale: 552.7 mV

[SOMA-2]

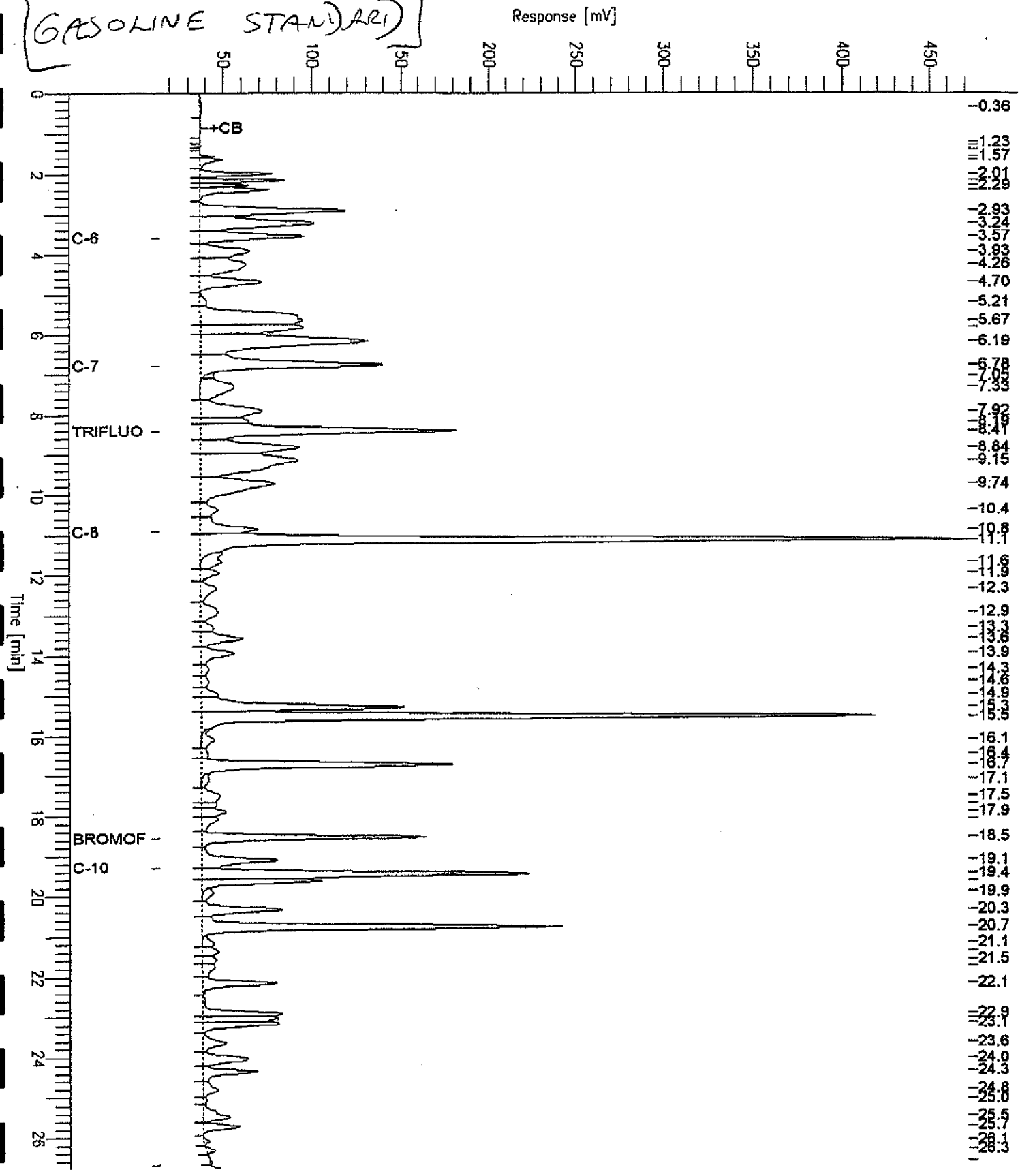


GC19 TVH 'X' Data File (FID)

Sample Name : CCV/LCS,QC169727,69964,01WS2371,5/5000
FileName : G:\GC19\DATA\037X004.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.80 min
Scale Factor: 1.0 Plot Offset: 15 mV

Sample #: Page 1 of 1
Date : 2/6/02 07:31 PM
Time of Injection: 2/6/02 07:04 PM
Low Point : 14.83 mV High Point : 472.12 mV
Plot Scale: 457.3 mV

[GASOLINE STANDARD]

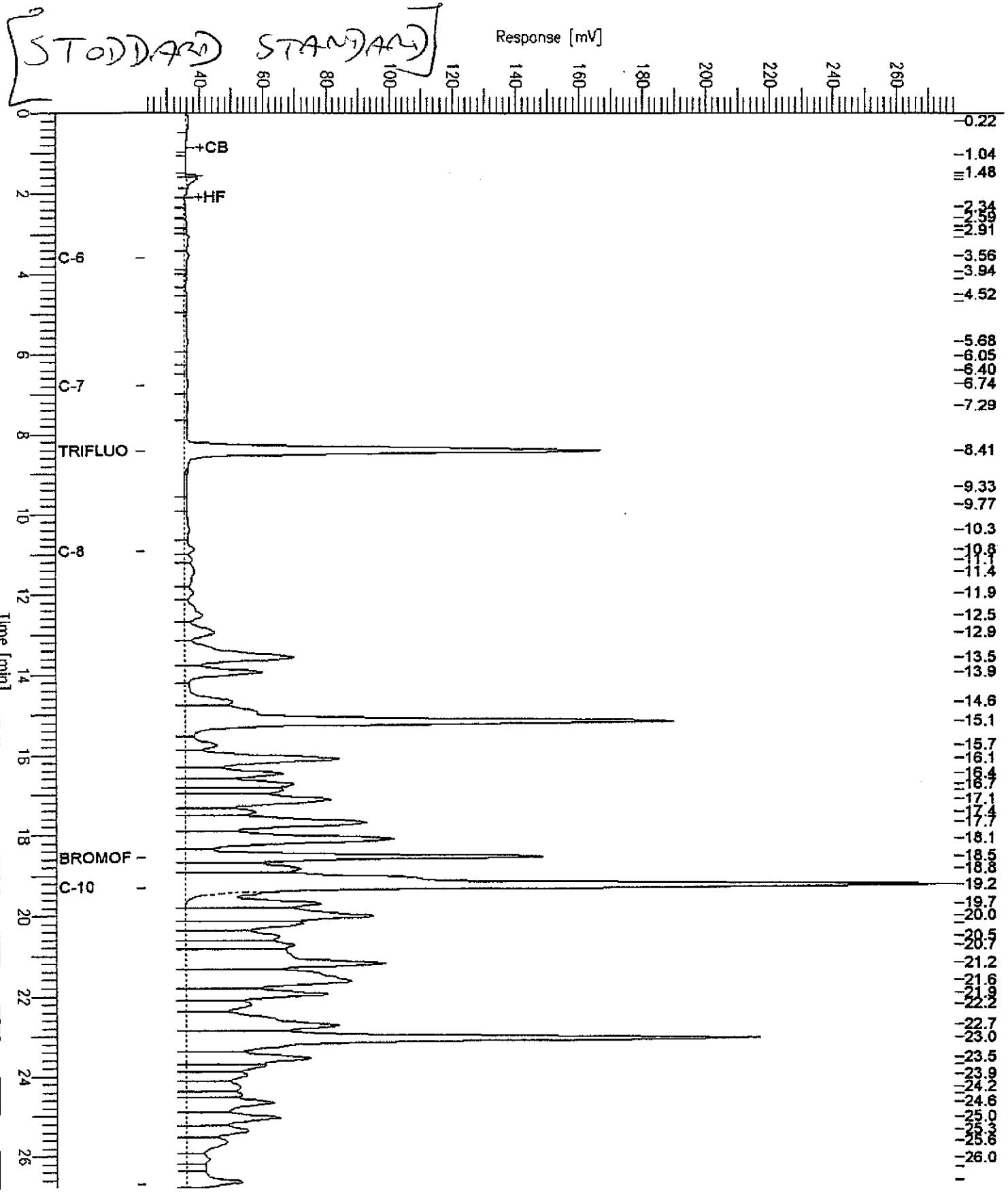


GC19 TVH 'X' Data File (FID)

Sample Name : ccv,stodd,69964,01ws0137,2.5/5000
FileName : G:\GC19\DATA\037X003.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.80 min
Scale Factor: 1.0 Plot Offset: 23 mV

Sample #: Page 1 of 1
Date : 2/7/02 11:14 AM
Time of Injection: 2/6/02 06:21 PM
Low Point : 23.03 mV High Point : 278.50 mV
Plot Scale: 255.5 mV

[STODDARD STANDARD]

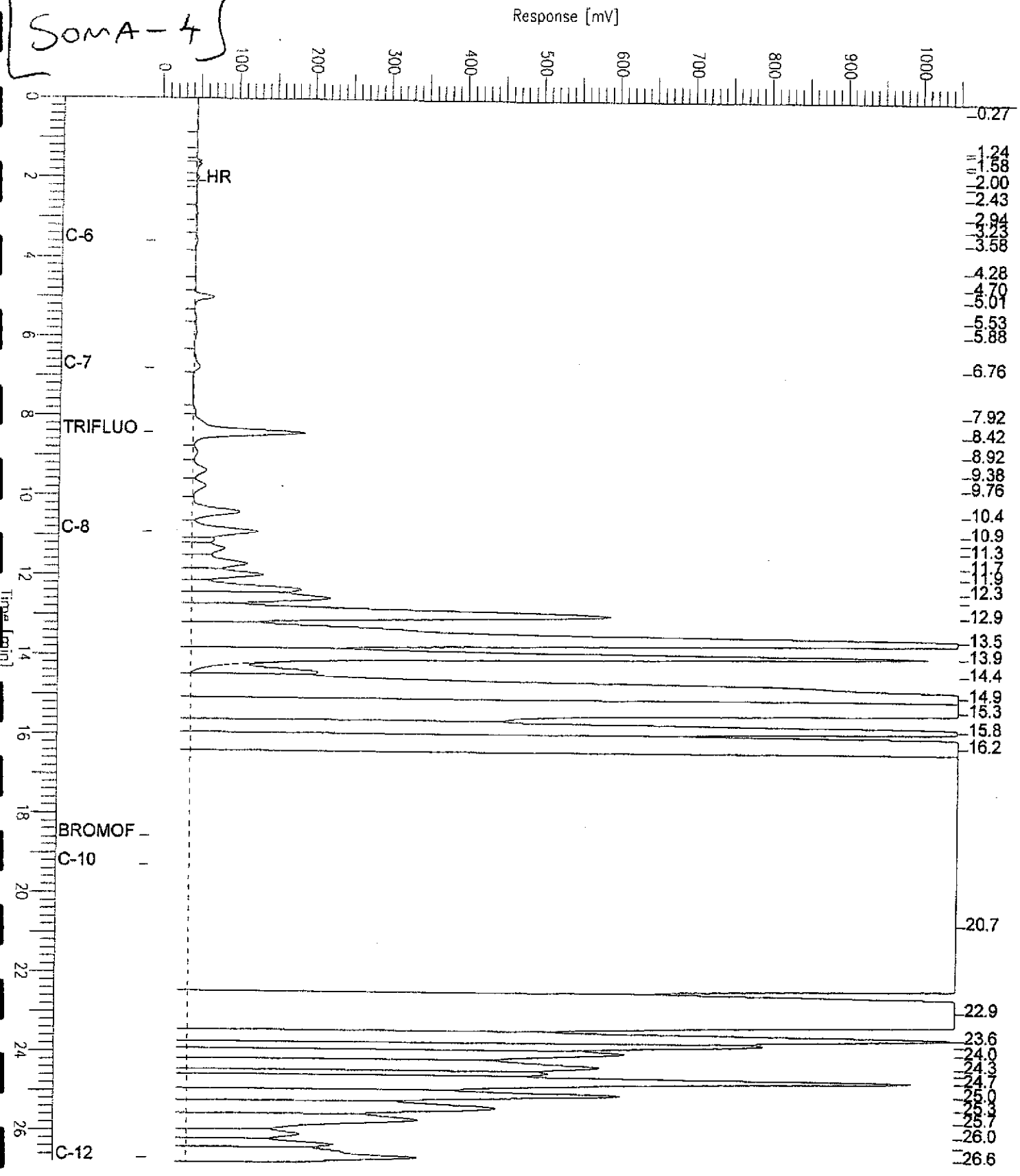


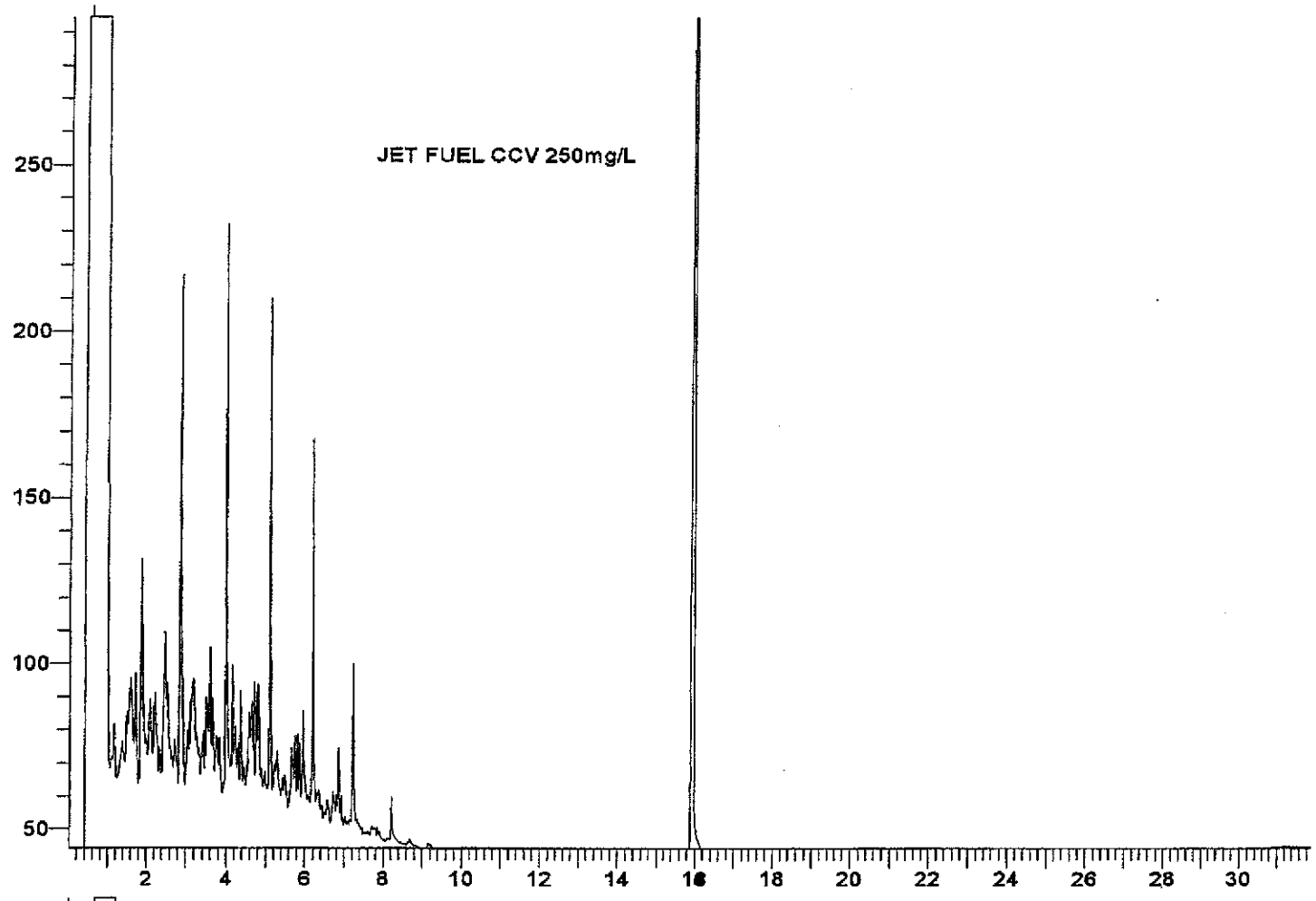
GC19 TVH 'X' Data File (FID)

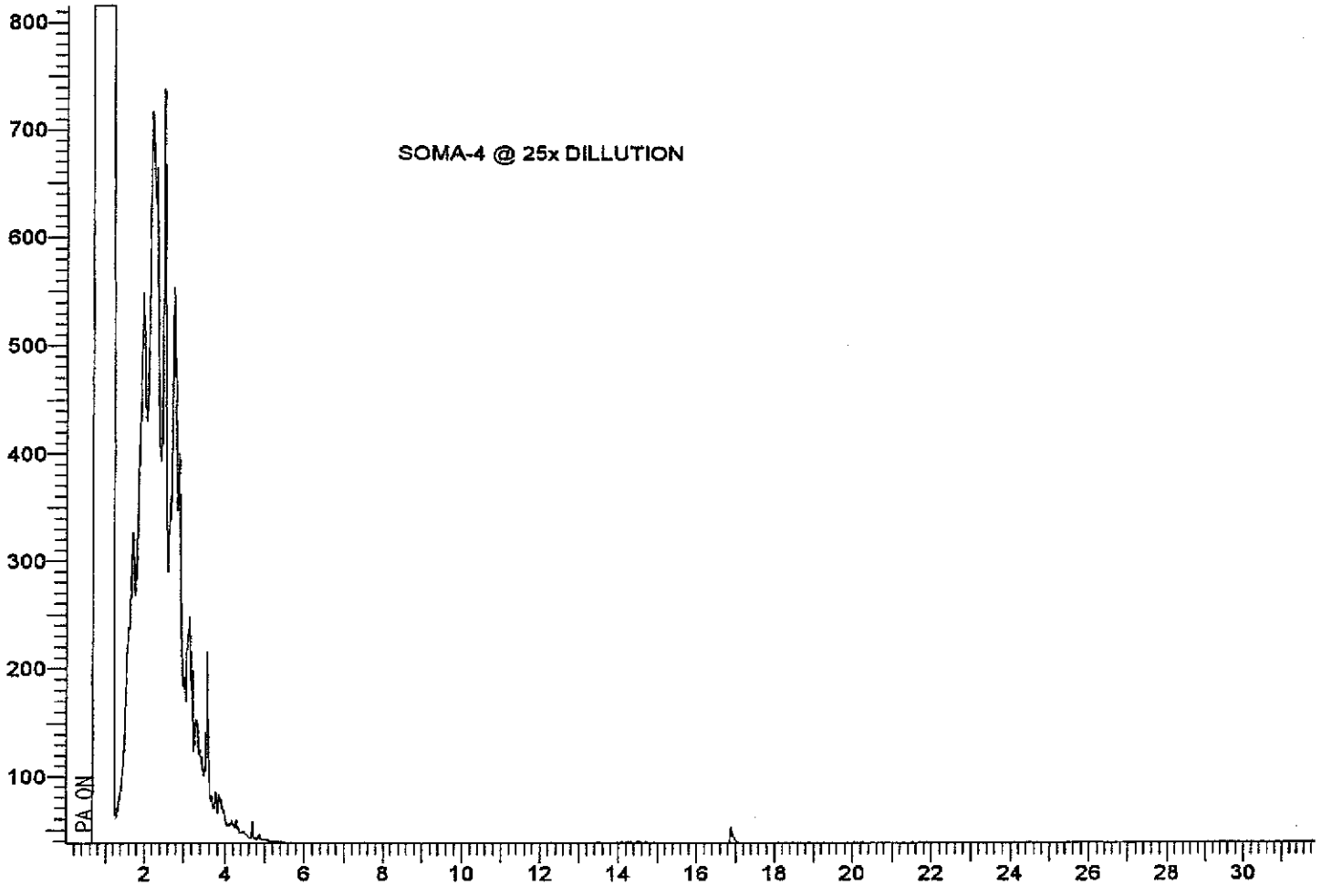
Sample Name : 156784-011,69879,tvh only
FileName : G:\GC19\DATA\035X012.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.80 min
Scale Factor: 1.0 Plot Offset: -8 mV

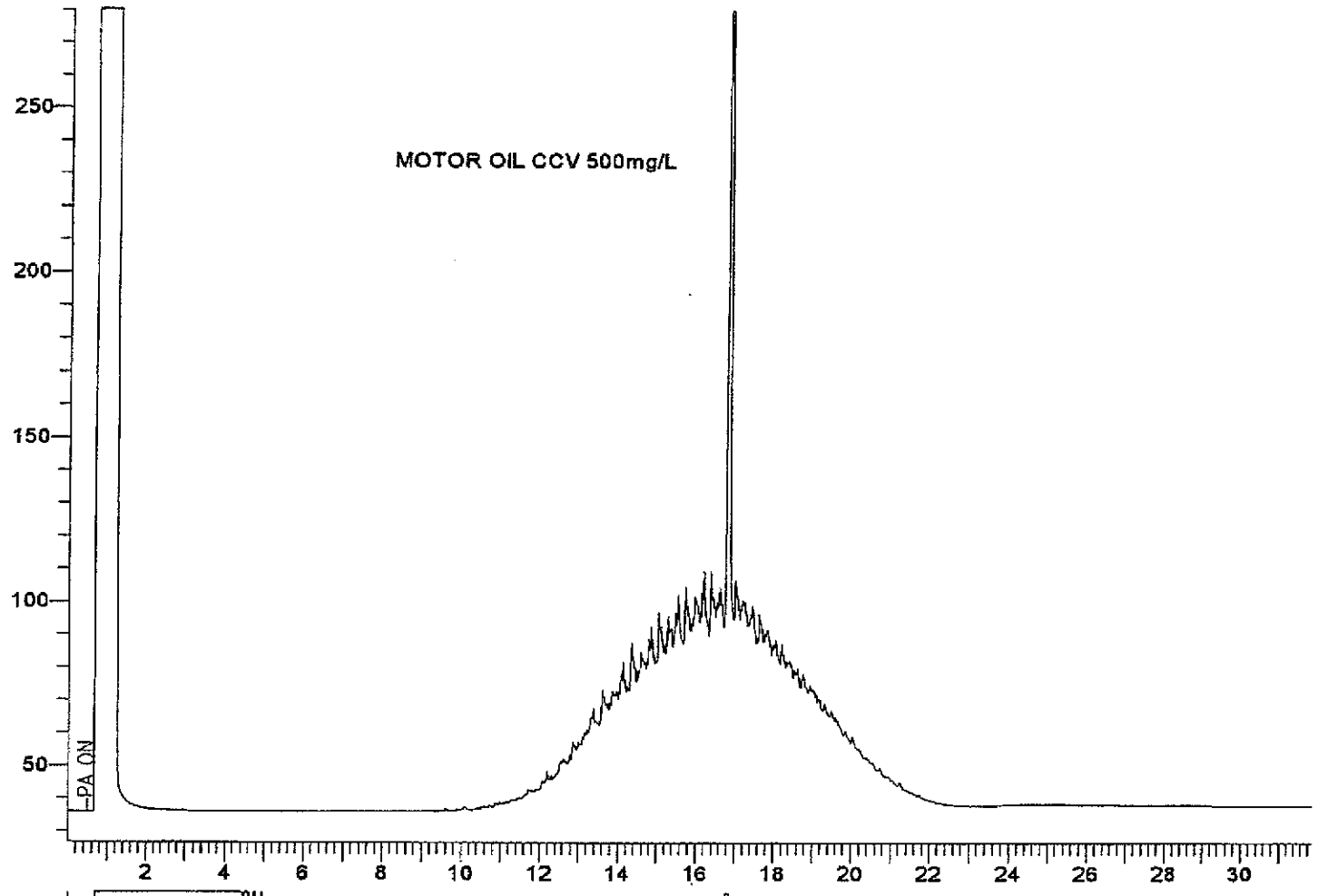
Sample #: a Page 1 of 1
Date : 2/5/02 11:20 AM
Time of Injection: 2/4/02 10:31 PM
Low Point : -7.61 mV High Point : 1055.99 mV
Plot Scale: 1063.6 mV

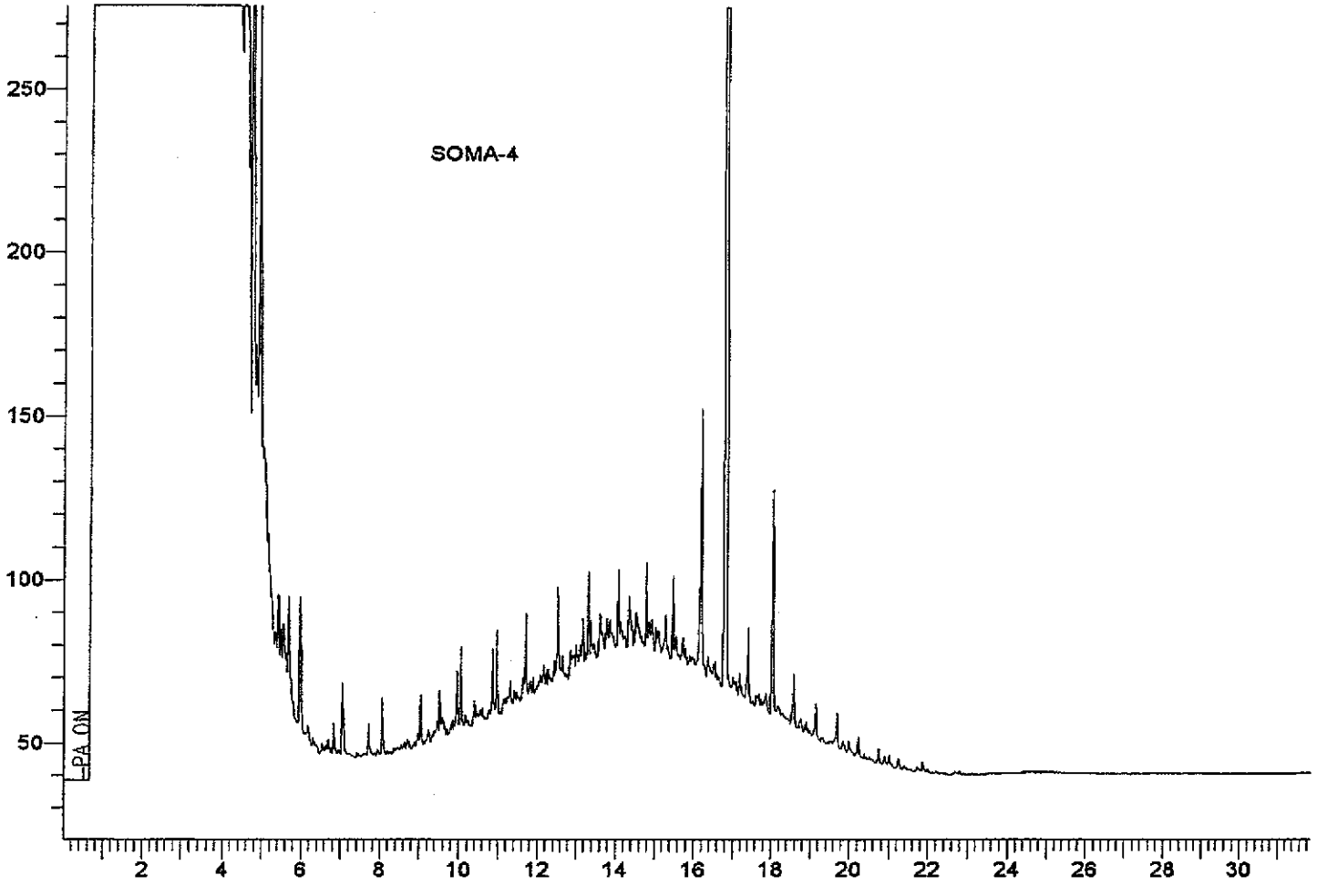
[SOMA-4]




JET FUEL CCV 250mg/L
250
200
150
100
50
2
4
6
8
10
12
14
16
18
20
22
24
26
28
30


SOMA-4 @ 25x DILLUTION
800
700
600
500
400
300
200
100
PA ON
2
4
6
8
10
12
14
16
18
20
22
24
26
28
30


MOTOR OIL CCV 500mg/L
250
200
150
100
50
LPA ON
2
4
6
8
10
12
14
16
18
20
22
24
26
28
30


SOMA-4
250
200
150
100
50
LPA ON
2
4
6
8
10
12
14
16
18
20
22
24
26
28
30

MICROSEEPS

Client Name: Soma Environmental Engineering
Contact: Mansour Sepher
Address: 2680 Bishop Drive
Suite 203

San Ramon, CA 94583

Order #: P0202032
Report Date: 02/18/02
Client Proj Name: Oakland CA 2511
Client Proj #: Oakland CA 2511

Sample Identification

Lab Sample #	Client Sample ID
P0202032-01	LFR-3
P0202032-02	MW-11
P0202032-03	GW-2
P0202032-04	LFR-1
P0202032-05	GW-3
P0202032-06	GW-4
P0202032-07	SOMA-1
P0202032-08	LFR-2
P0202032-09	SOMA-3
P0202032-10	SOMA-2

Approved By: Debbie Hallo

CHAIN - OF - CUSTODY RECORD

R02022

Phone: (412) 826-5245 **Microseeps, Inc. - 220 William Pitt Way - Pittsburgh, PA 15238** Fax No.: (412) 826-3433

Company : SOMA ENV. ENG

Co. Address : 2680 Bishop Drive Suite 203 San Ramon, CA

Proj. Manager: Mansour Sepehr

Proj. Location: Oakland

Proj. Number: 2511

Phone # : 925-244-6600 **Fax # :** 925-244-6601

Sampler's signature : Tony Perini

Parameters Requested

Methane, CH4

Results to : Mansour Sepehr

Invoice to : SOMA ENV ENG

Cooler ID	Cooler Temp.

Sample ID	Sample Description	Date	Time	Comp.	Grab	# Cont.	Remarks
	water						
LFR-3		1/30/02	1340		X		
MW-11		1/30/02	1605				
GW-2		1/31/02	0830				
LFR-1			0905				
GW-3			1000				
GW-4			1030				
SOMA-1			1215				
LFR-2			1330				
SOMA-3			1435				
SOMA 2			1600				

Relinquished by :	Company :	Date :	Time :	Received by :	Company :	Date :	Time :
Tony Perini Tony Perini	SOMA ENV ENG	2/1/02	9AM				
Relinquished by :	Company :	Date :	Time :	Received by :	Company :	Date :	Time :
Relinquished by :	Company :	Date :	Time :	Received by :	Company :	Date :	Time :

WHITE COPY : Accompany Samples YELLOW COPY : Laboratory File PINK COPY : Submitter

Order #: P0202032
Report Date: 02/18/02
Client Proj Name: Oakland CA 2511
Client Proj #: Oakland CA 2511

Client Name: Soma Environmental Engineering
Contact: Mansour Sepher
Address: 2680 Bishop Drive
Suite 203
San Ramon, CA 94583

Lab Sample #: P0202032-01

Sample Description	Matrix	Sampled Date/Time	Received
[redacted]R-3	Water	30 Jan. 02 13:40	04 Feb. 02

Analyte(s)	Result	PQL	Units	Method #	Analyst	Analysis Date
RiskAnalysis						
Water						
Methane	7.2	0.015	ug/L	AM20GAX	pd	2/14/02

Order #: P0202032
Report Date: 02/18/02
Client Proj Name: Oakland CA 2511
Client Proj #: Oakland CA 2511

Client Name: Soma Environmental Engineering
Contact: Mansour Sepher
Address: 2680 Bishop Drive
Suite 203
San Ramon, CA 94583

Lab Sample #: P0202032-02

Sample Description	Matrix	Sampled Date/Time	Received
MW-11	Water	30 Jan. 02 16:05	04 Feb. 02

Analyte(s)	Result	PQL	Units	Method #	Analyst	Analysis Date
RiskAnalysis						
Water						
Methane	7.7	0.015	ug/L	AM20GAX	pd	2/14/02

Order #: P0202032
Report Date: 02/18/02
Client Proj Name: Oakland CA 2511
Client Proj #: Oakland CA 2511

Client Name: Soma Environmental Engineering
Contact: Mansour Sepher
Address: 2680 Bishop Drive
Suite 203
San Ramon, CA 94583

Lab Sample #: P0202032-03

Sample Description	Matrix	Sampled Date/Time	Received
[redacted]V-2	Water	30 Jan. 02 8:30	04 Feb. 02

Analyte(s)	Result	PQL	Units	Method #	Analyst	Analysis Date
[redacted]kAnalysis						
[redacted]ter						
Methane	6.9	0.015	ug/L	AM20GAX	pd	2/14/02

Order #: P0202032
Report Date: 02/18/02
Client Proj Name: Oakland CA 2511
Client Proj #: Oakland CA 2511

Client Name: Soma Environmental Engineering
Contact: Mansour Sepher
Address: 2680 Bishop Drive
Suite 203
San Ramon, CA 94583

Lab Sample #: P0202032-04

Sample Description	Matrix	Sampled Date/Time	Received
[redacted]R-1	Water	30 Jan. 02 9:05	04 Feb. 02

Analyte(s)	Result	PQL	Units	Method #	Analyst	Analysis Date
[redacted]skAnalysis						
[redacted]ter						
Methane	6.2	0.015	ug/L	AM20GAX	pd	2/14/02

Order #: P0202032
Report Date: 02/18/02
Client Proj Name: Oakland CA 2511
Client Proj #: Oakland CA 2511

Client Name: Soma Environmental Engineering
Contact: Mansour Sepher
Address: 2680 Bishop Drive
Suite 203
San Ramon, CA 94583

Lab Sample #: P0202032-05

Sample Description	Matrix	Sampled Date/Time	Received
[illegible]V-3	Water	30 Jan. 02 10:00	04 Feb. 02

Analyte(s)	Result	PQL	Units	Method #	Analyst	Analysis Date
RiskAnalysis						
Water						
Methane	8.1	0.015	ug/L	AM20GAX	pd	2/14/02

Order #: P0202032
Report Date: 02/18/02
Client Proj Name: Oakland CA 2511
Client Proj #: Oakland CA 2511

Client Name: Soma Environmental Engineering
Contact: Mansour Sepher
Address: 2680 Bishop Drive
Suite 203
San Ramon, CA 94583

Lab Sample #: P0202032-06

Sample Description	Matrix	Sampled Date/Time	Received
[illegible]V-4	Water	30 Jan. 02 10:30	04 Feb. 02

Analyte(s)	Result	PQL	Units	Method #	Analyst	Analysis Date
[illegible]iskAnalysis						
[illegible]ter						
Methane	3500	0.015	ug/L	AM20GAX	pd	2/14/02

Order #: P0202032
Report Date: 02/18/02
Client Proj Name: Oakland CA 2511
Client Proj #: Oakland CA 2511

Client Name: Soma Environmental Engineering
Contact: Mansour Sepher
Address: 2680 Bishop Drive
Suite 203
San Ramon, CA 94583

Lab Sample #: P0202032-07

Sample Description	Matrix	Sampled Date/Time	Received
SOMA-1	Water	30 Jan. 02 12:15	04 Feb. 02

Analyte(s)	Result	PQL	Units	Method #	Analyst	Analysis Date
RSKAnalysis						
Water						
Methane	580	0.015	ug/L	AM20GAX	pd	2/14/02

Order #: P0202032
Report Date: 02/18/02
Client Proj Name: Oakland CA 2511
Client Proj #: Oakland CA 2511

Client Name: Soma Environmental Engineering
Contact: Mansour Sepher
Address: 2680 Bishop Drive
Suite 203
San Ramon, CA 94583

Lab Sample #: P0202032-08

Sample Description	Matrix	Sampled Date/Time	Received
LP[redacted]-2	Water	30 Jan. 02 13:30	04 Feb. 02

Analyte(s)	Result	PQL	Units	Method #	Analyst	Analysis Date
Ri[redacted]kAnalysis						
W[redacted]er						
Methane	11000	0.015	ug/L	AM20GAX	pd	2/14/02

Order #: P0202032
Report Date: 02/18/02
Client Proj Name: Oakland CA 2511
Client Proj #: Oakland CA 2511

Client Name: Soma Environmental Engineering
Contact: Mansour Sepher
Address: 2680 Bishop Drive
Suite 203
San Ramon, CA 94583

Lab Sample #: P0202032-09

Sample Description	Matrix	Sampled Date/Time	Received
SOMA-3	Water	30 Jan. 02 14:35	04 Feb. 02

Analyte(s)	Result	PQL	Units	Method #	Analyst	Analysis Date
RiskAnalysis						
Water						
Methane	460	0.015	ug/L	AM20GAX	pd	2/14/02

Order #: P0202032
Report Date: 02/18/02
Client Proj Name: Oakland CA 2511
Client Proj #: Oakland CA 2511

Client Name: Soma Environmental Engineering
Contact: Mansour Sepher
Address: 2680 Bishop Drive
Suite 203
San Ramon, CA 94583

Lab Sample #: P0202032-10

Sample Description	Matrix	Sampled Date/Time	Received
SOMA-2	Water	30 Jan. 02 16:00	04 Feb. 02

Analyte(s)	Result	PQL	Units	Method #	Analyst	Analysis Date
RSKAnalysis						
Water						
Methane	13000	0.015	ug/L	AM20GAX	pd	2/14/02

APPENDIX B

Field Notes, Field Measured Physical and Chemical Parameter Values and DO Correction Tables

Project #:	2511	Address:	2815 Broadway	Date:	11/30/02
Project Name:	Glovatorium		Oakland, CA	Sampler:	Naser Pakrou
					Tony Perini

Well/Sample ID:	MW-11	TOC ELEV:	84.13 ft	Purge:	☑ Pump	☐ Bailer		
Dup:	—	Well Depth:	19 ft	Sample:	☐ Pump	☑ Bailer		
Blank:	—	DTW:	8.73 ft	Odor:	☑ No	☐ Yes	Describe:	
Purge Volume:	3.3 GAL	Water Table Elev.:	75.40 ft	Sheen:	☑ No	☐ Yes	Describe:	
Well Diameter:	2 inch	Height of Water:	10.27 ft	Color:	☑ No	☐ Yes	Describe:	

Laboratory: Curtis & Tompkins, LTD

Delivery: 11/31/02, Delivered by SOMA ENV ENG

Analysis/preservative:

Sulfide:	1 Poly w/ $Zn(C_2H_3O_2)_2$ + NAOH	Disolved H_2:	1 Septum Vial
Total Iron, Manganese:	1 HNO_3 preserved poly	Dissolved Perm Gases:	2 Unpreserved VOAs
8260 (8010 list) & MtBE & BTEX & TPH-g & TPH-ss:	6 VOAs w/ HCL	Cation & Anion w/ Nitrate & Nitrite:	1 Unpres. Poly and 1 H2SO4 Poly
		Ferrous Iron:	1 HCl Pres. Poly

Alk, Cl-, Sulfate: 1 unpreserved poly L

TIME	DTW	VOLUME	TEMP (°F)	COND (µS/cm)	DO (mg/L)	ORP (mV)	TURBIDITY (NTU)	pH	COMMENTS
Stabilization: 3 successive parameters within				+/- 3%	+/- 10%	+/- 10 mV	+/- 10%	+/- 0.1%	
3:41 PM		started purging							
3:43PM		0.15	19.0	1090	6.2	188	0	6.6	
3:47PM		0.40	18.9	1.090	5.1	193	16	6.6	
3:52PM		1.0	18.5	1.080	4.9	198	25	6.6	
3:57PM		2.2	18.3	1.090	5.0	205	30	6.6	
4PM		3.3	18.5	1.090	4.9	218	45	6.6	
4:09 PM		sampled							

Result	Ferrous Iron	Total Iron	Nitrate	Nitrite	Sulfate	Dissolved Manganese
4:05	0.0	0.05	2.8	0.036	79	0.0
Dilution:						
Comments:						

(Results in mg/L)

Downhole D.O 4.89 (4 PM)

Project #: 2511 Address: 2815 Broadway Date: 1/30/02 - 1/31/02
Project Name: Glovatorium Oakland, CA Sampler: Naser Pakrou
Tony Perini

Well/Sample ID: GW-2 TOC ELEV: 79.14 ft Purge: ☑ Pump ☐ Bailer
Dup: — Well Depth: 20 ft Sample: ☐ Pump ☑ Bailer
Blank: — DTW: 9.37 ft Odor: ☐ No ☐ Yes Describe:
Purge Volume: 0.5 GAL Water Table Elev.: 69.77 ft Sheen: ☑ No ☐ Yes Describe:
Well Diameter: 3/4 inch Height of Water: 10.63 ft Color: ☑ No ☐ Yes Describe:

Laboratory: Curtis & Tompkins, LTD
Delivery: 1/31/02, Dropped off at LAB by Soma
Analysis/preservative:

Sulfide:	1 Poly w/ $Zn(C_2H_3O_2)_2$ + NAOH	Disolved H_2:	1 Septum Vial	Alk, Cl-, Sulfate:	1 unpreserved poly L
Total Iron, Manganese:	1 HNO_3 preserved poly	Dissolved Perm Gases:	2 Unpreserved VOAs		
8260 (8010 list) & MtBE &		Cation & Anion w/ Nitrate & Nitrite:	1 Unpres. Poly and 1 H2SO4 Poly		
BTEX & TPH-g & TPH-ss:	6 VOAs w/ HCL	Ferrous Iron:	1 HCl Pres. Poly		

TIME	DTW	VOLUME	TEMP (C)	COND (uS/cm)	DO (mg/L)	ORP (mV)	TURBIDITY (NTU)	pH	COMMENTS
Stabilization if 3 successive parameters within:				+/- 3%	+/- 10%	+/- 10 mV	+/- 10%	+/- 0.1	
3 PM		started purging							
3:06		0.10	17.8	713	4.3	169	1	7.0	
3:08		0.15	17.4	683	4.7	169	8	6.9	
3:11		0.25	17.6	693	4.0	173	2	6.9	
3:14		0.5	17.7	797	2.8	179	7	6.7	
3.16		DRIED							
1/31/02 0830		SAMPLED							

Result	Ferrous Iron	Total Iron	Nitrate	Nitrite	Sulfate	Dissolved Manganese
8:30 1/31	0.36	1.05	0.8	0.013	45	0.0
Dilution:						
Comments:						

(Results in mg/L)

Project #:	2511	Address:	2815 Broadway	Date:	1/30/02 - 1/31/02
Project Name:	Glovatorium		Oakland, CA	Sampler:	Naser Pakrou
					Tony Perini

Well/Sample ID:	GW-3	TOC ELEV:	77.92 ft	Purge:	☑ Pump	☐ Bailer		
Dup:	—	Well Depth:	20 ft	Sample:	☐ Pump	☑ Bailer		
Blank:	—	DTW:	9.64 ft	Odor:	☑ No	☐ Yes	Describe:	
Purge Volume:	0.60	Water Table Elev.:	68.28 ft	Sheen:	☑ No	☐ Yes	Describe:	
Well Diameter:	3/4 inch	Height of Water:	10.36 ft	Color:	☑ No	☐ Yes	Describe:	

Laboratory: Curtis & Tompkins, LTD

Delivery: 1/31/02, Dropped off at LAB by SOMA

Analysis/preservative:

Sulfide:	1 Poly w/ $Zn(C_2H_3O_2)_2$ + NAOH	Disolved H_2:	1 Septum Vial	Alk, Cl-, Sulfate:	1 unpreserved poly L
Total Iron, Manganese:	1 HNO_3 preserved poly	Dissolved Perm Gases:	2 Unpreserved VOAs		
8260 (8010 list) & MtBE & BTEX & TPH-g & TPH-ss:	6 VOAs w/ HCL	Cation & Anion w/ Nitrate & Nitrite:	1 Unpres. Poly and 1 H2SO4 Poly		
		Ferrous Iron:	1 HCl Pres. Poly		

TIME	DTW	VOLUME	TEMP (°C)	COND (uS/cm)	DO (mg/L)	ORP (mV)	TURBIDITY (NTU)	pH	COMMENTS
Stabilization if 3 successive parameters within				+/- 3%	+/- 10%	+/- 10 mV	+/- 10%	+/- 0.1	
1430		started pumping well							
1435		0.05	18.2	545	5.2	128	17	6.9	
1437		0.10	17.9	479	4.6	152	12	6.7	
1440		0.20	18	495	3.9	126	24	6.7	
1445		0.60	18.4	593	3.7	163	33	6.7	
1446		DRIED							
1/31/02 1000		sampled							

Result	Ferrous Iron	Total Iron	Nitrate	Nitrite	Sulfate	Dissolved Manganese
10:1/31	0.0	0.14	1.3	0.014	52	0.2
Dilution:						
Comments:						

(Results in mg/L)

Project #:	2511	Address:	2815 Broadway	Date:	1/30/02 - 1/31/02
Project Name:	Glovatorium		Oakland, CA	Sampler:	Naser Pakrou, Tony Perini

Well/Sample ID:	GW-4	TOC ELEV:	82.37 ft	Purge:	☑ Pump	☐ Bailer	
Dup:	—	Well Depth:	12 ft	Sample:	☐ Pump	☑ Bailer	
Blank:	—	DTW:	7.54 ft	Odor:	☑ No	☐ Yes	Describe:
Purge Volume:	0.96AL	Water Table Elev.:	74.83 ft	Sheen:	☑ No	☐ Yes	Describe:
Well Diameter:	3/4 inch	Height of Water:	4.46 ft	Color:	☑ No	☐ Yes	Describe:

Laboratory: Curtis & Tompkins, Ltd

Delivery: 1/31/02, Dropped off at LAB by SOMA

Analysis/preservative:

Sulfide:	1 Poly w/ $Zn(C_2H_3O_2)_2$ + NAOH	Disolved H_2:	1 Septum Vial	Alk, Cl-, Sulfate: 1 unpreserved poly L
Total Iron, Manganese:	1 HNO_3 preserved poly	Dissolved Perm Gases:	2 Unpreserved VOAs	
8260 (8010 list) & MtBE &		Cation & Anion w/ Nitrate & Nitrite:	1 Unpres. Poly and 1 H2SO4 Poly	
BTEX & TPH-g & TPH-ss:	6 VOAs w/ HCL	Ferrous Iron:	1 HCl Pres. Poly	

TIME	DTW	VOLUME	TEMP (C)	COND (us/cm)	DO (mg/L)	ORP (mV)	TURBIDITY (NTU)	pH	COMMENTS
Stabilization if 3 successive parameters within			+/- 3%	+/- 10%	+/- 10%	+/- 10 mV	+/- 10%	+/- 0.1%	
4:45	start	pumping well							
4:48		0.05	12.3	411	3.3	-96	710	6.9	
4:51		0.10	12.1	409	1.9	-90	250	6.7	
4:54		0.13	12	415	1.5	-73	14	6.6	
4:59		0.20	12	432	1.2	-65	0	6.5	
5:06		0.45	11.9	436	1.1	-70	0	6.5	
5:13		0.90	12	414	0.9	-91	22	6.5	
1/31/02 1030		sampled							

Result	Ferrous Iron	Total Iron	Nitrate	Nitrite	Sulfate	Dissolved Manganese
10:30 1/31	8.0	12.7	0-0	0-010	0-0	0-8
Dilution:						
Comments:						

(Results in mg/L)

Project #:	2511	**Address:**	2815 Broadway	**Date:**	1/31/02
Project Name:	Glovatorium		Oakland, CA	**Sampler:**	Naser Pakrou
					Tony Perini

Well/Sample ID:	LFR-1	TOC ELEV:	79.97 ft	**Purge:**	☑ Pump	☐ Bailer		
Dup:	—	**Well Depth:**	19 ft	**Sample:**	☐ Pump	☑ Bailer		
Blank:	—	**DTW:**	9.41 ft	**Odor:**	☑ No	☐ Yes	**Describe:**	
Purge Volume:	3.5 GAL	**Water Table Elev.:**	70.56 ft	**Sheen:**	☑ No	☐ Yes	**Describe:**	
Well Diameter:	2 inch	**Height of Water:**	9.59 ft	**Color:**	☑ No	☐ Yes	**Describe:**	

Laboratory: Curtis & Tompkins, LTD

Delivery: 1/31/02, Dropped off at LAB by SOMA

Analysis/preservative:

Sulfide:	1 Poly w/ $Zn(C_2H_3O_2)_2$ + NAOH	Disolved H_2:	1 Septum Vial	Alk, Cl-, Sulfate: 1 unpreserved poly L
Total Iron, Manganese:	1 HNO_3 preserved poly	Dissolved Perm Gases:	2 Unpreserved VOAs	
8260 (8010 list) & MtBE &		Cation & Anion w/ Nitrate & Nitrite:	1 Unpres. Poly and 1 H2SO4 Poly	
BTEX & TPH-g & TPH-ss:	6 VOAs w/ HCL	Ferrous Iron:	1 HCl Pres. Poly	

TIME	DTW	VOLUME	TEMP (C)	COND (uS/cm)	DO (mg/L)	ORP (mV)	TURBIDITY (NTU)	pH	COMMENTS
Stabilization if 3 successive parameters within:				+/- 3%	+/- 10%	+/- 10 mV	+/- 10%	+/- 0.1	
8:15 AM		started purging							
8:17 AM		0.05	15.2	971	5.7	167	53	5.6	
8:22 AM		0.25	15.9	962	3.5	174	130	6.2	
8:28 AM		0.70	16.4	924	3.1	185	74	6.1	
8:35 AM		1.50	16.4	918	2.8	178	52	6.2	
8:42 AM		2.30	16.4	849	2.4	171	65	6.3	
8:47 AM		3.00	16.4	850	2.3	167	47	6.4	
8:56 AM		3.50	16.5	879	1.8	163	51	6.5	
9:05		sampled							

Result	Ferrous Iron	Total Iron	Nitrate	Nitrite	Sulfate	Dissolved Manganese
9-05	0.0	0.03	5.5	0.011	31	0.3
Dilution:						
Comments:						

(Results in mg/L)

Down hole
DO 1.78

Project #:	2511	Address:	2815 Broadway	Date:	1/31/02
Project Name:	Glovatorium		Oakland, CA	Sampler:	Naser Pakrou
					Tony Perini

Well/Sample ID:	LFR-2	TOC ELEV:	81.89 ft	Purge:	☑ Pump	☐ Bailer	
Dup:	—	Well Depth:	19 ft	Sample:	☐ Pump	☑ Bailer	
Blank:	—	DTW:	9.97 ft	Odor:	☐ No	☑ Yes	Describe: Strong Petroleum odor
Purge Volume:	3.3 GAL	Water Table Elev.:	71.92 ft	Sheen:	☑ No	☐ Yes	Describe:
Well Diameter:	2 in	Height of Water:	9.03 ft	Color:	☑ No	☐ Yes	Describe:

Laboratory: Curtis & Tompkins, LTD

Delivery: 1/31/02, Delivered to LAB by SOMA

Analysis/preservative:

Sulfide:	1 Poly w/ $Zn(C_2H_3O_2)_2$ + NAOH	Disolved H_2:	1 Septum Vial	Alk, Cl-, Sulfate:	1 unpreserved poly L
Total Iron, Manganese:	1 HNO_3 preserved poly	Dissolved Perm Gases:	2 Unpreserved VOAs		
8260 (8010 list) & MtBE &		Cation & Anion w/ Nitrate & Nitrite:	1 Unpres. Poly and 1 H2SO4 Poly		
BTEX & TPH-g & TPH-ss:	6 VOAs w/ HCL	Ferrous Iron:	1 HCl Pres. Poly		

TIME	DTW	VOLUME	TEMP (C)	COND (mS/cm)	DO (mg/L)	ORP (mV)	TURBIDITY (NTU)	pH	COMMENTS
Stabilization: 3 successive parameters within:			+/- 3%		+/- 10%	+/- 10 mV	+/- 10%	+/- 0.1	
12:55 PM		started purging well							
1 PM		0.05	17.2	960	4.2	-79	160	6.7	
1:06 PM		0.50	17.0	920	1.9	-65	47	6.6	
1:11 PM		1.10	16.7	717	1.6	-31	37	6.6	
1:16 PM		1.80	16.6	666	1.4	-18	18	6.5	
1:21 PM		2.30	16.6	646	1.0	-13	8	6.5	
1:28 PM		3.30	16.6	644	1.0	-14	0	6.5	
1:30 PM		Sampled							

Result	Ferrous Iron	Total Iron	Nitrate	Nitrite	Sulfate	Dissolved Manganese
1:30	1.81	1.97	2.6	0.046	19.0	0.0
Dilution:						
Comments:						

(Results in mg/L)

Project #:	2511	Address:	2815 Broadway	Date:	11/30/02
Project Name:	Glovatorium		Oakland, CA	Sampler:	Naser Pakrou
					Tony Perini

Well/Sample ID:	~~EFR-3~~	TOC ELEV	77.96 ft	Purge:	☑ Pump	☐ Bailer		
Dup:	—	Well Depth:	22 ft	Sample:	☐ Pump	☑ Bailer		
Blank:	—	DTW:	10.24 ft	Odor:	☑ No	☐ Yes	Describe:	
Purge Volume:	3.6 GAL	Water Table Elev.:	67.72 ft	Sheen:	☑ No	☐ Yes	Describe:	
Well Diameter:	2 INCH	Height of Water:	11.76 ft	Color:	☑ No	☐ Yes	Describe:	

Laboratory: Curtis & Tompkins, LTD

Delivery: 11/31/02, Dropped off at LAB by SOMA

Analysis/preservative:

Sulfide:	1 Poly w/ $Zn(C_2H_3O_2)_2$ + NAOH	Disolved H_2:	1 Septum Vial	Alk, Cl-, Sulfate: 1 unpreserved poly L
Total Iron, Manganese:	1 HNO_3 preserved poly	Dissolved Perm Gases:	2 Unpreserved VOAs	
8260 (8010 list) & MtBE &		Cation & Anion w/ Nitrate & Nitrite:	1 Unpres. Poly and 1 H2SO4 Poly	
BTEX & TPH-g & TPH-ss:	6 VOAs w/ HCL	Ferrous Iron:	1 HCl Pres. Poly	

TIME	DTW	VOLUME	TEMP (°C)	COND (µS/cm)	DO (mg/L)	ORP (mV)	TURBIDITY (NTU)	pH	COMMENTS
Stabilization of 3 successive parameters within:				+/- 3%	+/- 10%	+/- 10 mV	+/- 10%	+/- 0.1%	
12:57		Start to Purging							
1301		0.1	18.5	472	3.0	254	37	6.4	
1306		0.25	18.4	460	2.3	244	45	6.3	
1313		0.40	18.8	544	2.0	239	42	6.2	
1319		0.75	19.0	586	1.2	227	42	6.1	
1324		2.2	19.2	589	0.7	219	13	6.2	
1329		3.2	19.1	562	0.8	215	8	6.3	
1333		3.6	19.1	566	0.8	212	7	6.3	
1340		Sampled							

Result	Ferrous Iron	Total Iron	Nitrate	Nitrite	Sulfate	Dissolved Manganese
1:40	0.0	0.06	2.6	0.024	32	0.4
Dilution:						
Comments:						

(Results in mg/L)

Down Hole 2:17PM
D.O. 1.25

Project #: 2511 Address: 2815 Broadway Date: 1/31/02

Project Name: Glovatorium Oakland, CA Sampler: Naser Pakrou

Tony Perini

Well/Sample ID: SOMA-1 TOC ELEV: 81.64 ft Purge: ☑ Pump ☐ Bailer

Dup: — Well Depth: 40 ft Sample: ☐ Pump ☑ Bailer

Blank: — DTW: 12.28 ft Odor: ☐ No ☑ Yes Describe: Strong Petroleum odor

Purge Volume: 5 GAL Water Table Elev.: 69.36 ft Sheen: ☑ No ☐ Yes Describe:

Well Diameter: 4 inch Height of Water: 27.72 ft Color: ☑ No ☐ Yes Describe:

Laboratory: Curtis & Tompkins, Ltd

Delivery: 1/31/02, Delivered to LAB by SOMA

Analysis/preservative:

Sulfide:	1 Poly w/ $Zn(C_2H_3O_2)_2$ + NAOH	Disolved H_2:	1 Septum Vial
Total Iron, Manganese:	1 HNO_3 preserved poly	Dissolved Perm Gases:	2 Unpreserved VOAs
8260 (8010 list) & MtBE & BTEX & TPH-g & TPH-ss:	6 VOAs w/ HCL	Cation & Anion w/ Nitrate & Nitrite:	1 Unpres. Poly and 1 H2SO4 Poly
		Ferrous Iron:	1 HCl Pres. Poly
		Alk, Cl-, Sulfate:	1 unpreserved poly L

TIME	DTW	VOLUME	TEMP (C)	COND (uS/cm)	DO (mg/L)	ORP (mV)	TURBIDITY (NTU)	pH	COMMENTS
Stabilization if 3 successive parameters within			+/- 3%	+/- 10%	+/- 10 mV	5 to 10%	+/- 0.1%		
11:20 AM		started purging							
11:24 AM		0.10	16.7	1.210	2.6	115	64	6.8	
11:25 AM		0.40	16.8	1.200	1.3	126	110	6.8	
11:34 AM		1.10	16.8	1.190	1.0	132	140	6.7	
11:38 AM		2.10	16.8	1.190	0.9	136	140	6.7	
11:50 AM		3.50	17.4	1.180	1.10	146	140	6.7	
11:55 AM		4.00	17.5	1.170	0.70	143	140	6.7	
12:06 PM		5.00	17.5	1.160	0.40	141	140	6.7	
12:15 PM		Sampled							

Result	Ferrous Iron	Total Iron	Nitrate	Nitrite	Sulfate	Dissolved Manganese
12:15	0.0	0.0	0.0	0.0	18	0.0
Dilution:						
nts:						

(Results in mg/L)

Project #:	2511	Address:	2815 Broadway	Date:	1/31/02
Project Name:	Glovatorium		Oakland, CA	Sampler:	Naser Pakrou
					Tony Perini

Well/Sample ID:	SOMA-2 TOC ELEV	81.39 ft	Purge:	☑ Pump	☐ Bailer			
Dup:	—	Well Depth:	20 ft	Sample:	☐ Pump	☑ Bailer		
Blank:	—	DTW:	7.41 ft	Odor:	☐ No	☑ Yes	Describe:	Strong petroleum odor
Purge Volume:	3.0 GAL	Water Table Elev.:	73.98 ft	Sheen:	☑ No	☐ Yes	Describe:	
Well Diameter:	2 inch	Height of Water:	12.59 ft	Color:	☑ No	☐ Yes	Describe:	

Laboratory:	Curtis & Tompkins, LTD		
Delivery:	1/31/02, Dropped off at LAB by SOMA		
Analysis/preservative:			
Sulfide:	1 Poly w/ $Zn(C_2H_3O_2)_2$ + NAOH	Disolved H_2:	1 Septum Vial
Total Iron, Manganese:	1 HNO_3 preserved poly	Dissolved Perm Gases:	2 Unpreserved VOAs
8260 (8010 list) & MtBE &		Cation & Anion w/ Nitrate & Nitrite:	1 Unpres. Poly and 1 H2SO4 Poly
BTEX & TPH-g & TPH-ss:	6 VOAs w/ HCL	Ferrous Iron:	1 HCl Pres. Poly
		Alk, Cl-, Sulfate:	1 unpreserved poly L

TIME	DTW	VOLUME	TEMP (°C)	COND (mS/cm)	DO (mg/L)	ORP (mV)	TURBIDITY (NTU)	pH	COMMENTS
Stabilization (successive parameters within)			+/- 3%		+/- 10%	+/- 10 mV	+/- 10%	+/- 0.1	
3:20 PM	Started purging well								
3:27 PM		0.10	15.0	1150	2.0	-94	990	6.8	
3:32 PM		0.25	15.1	1150	1.3	-94	400	6.8	
3:37 PM		0.50	15.0	1150	1.1	-94	55	6.8	
3:42 PM		0.80	15.0	1150	1.1	-96	110	6.8	
3:48 PM		1.20	15.0	1150	0.9	-98	140	6.8	
3:52 PM		1.60	15.1	1140	0.8	-100	18	6.9	
3:55 PM		3.0	15.2	1140	0.9	-103	5	6.9	
4 PM		Sampled							

Result	Ferrous Iron	Total Iron	Nitrate	Nitrite	Sulfate	Dissolved Manganese
4:00	9.0	10.5	0.8	0.344	0.0	3.8
Dilution:						
Comments:						

(Results in mg/L)

Project #:	2511	Address:	2815 Broadway	Date:	1/31/02
Project Name:	Glovatorium		Oakland, CA	Sampler:	Naser Pakrou
					Tony Perini

Well/Sample ID:	SOMA-3	TOC ELEV:	81.42 ft	Purge:	☑ Pump	☐ Bailer		
Dup:	—	Well Depth:	30 ft	Sample:	☐ Pump	☑ Bailer		
Blank:	—	DTW:	9.96 ft	Odor:	☐ No	☑ Yes	Describe:	STRONG petroleum odor.
Purge Volume:	0.6 GAL	Water Table Elev.:	71.46	Sheen:	☑ No	☐ Yes	Describe:	
Well Diameter:	3/4 "	Height of Water:	20.04	Color:	☑ No	☐ Yes	Describe:	

Laboratory:	Curtis & Tompkins, LTD
Delivery:	1/31/02, Dropped off at LAB by SOMA
Analysis/preservative:	

Sulfide:	1 Poly w/ $Zn(C_2H_3O_2)_2$ + NAOH	Disolved H_2:	1 Septum Vial	Alk, Cl-, Sulfate:	1 unpreserved poly L
Total Iron, Manganese:	1 HNO_3 preserved poly	Dissolved Perm Gases:	2 Unpreserved VOAs		
8260 (8010 list) & MtBE &		Cation & Anion w/ Nitrate & Nitrite:	1 Unpres. Poly and 1 H2SO4 Poly		
BTEX & TPH-g & TPH-ss:	6 VOAs w/ HCL	Ferrous Iron:	1 HCl Pres. Poly		

TIME	DTW	VOLUME	TEMP (F)	COND (uS/cm)	DO (mg/L)	ORP (mV)	TURBIDITY (NTU)	pH	COMMENTS
Stabilization of 3 successive parameters within:				+/- 3%	+/- 10%	+/- 10 mV	+/- 10%	+/- 0.1	
2:10 PM	started purging well								
2:17		0.15	15.9	1270	3.6	-132	76	7.1	
2:20		0.20	15.8	1250	1.5	-130	120	6.9	
2:25		0.35	15.4	1280	1.0	-112	150	6.8	
2:30		0.45	15.1	1300	1.0	-96	90	6.6	
2:35		0.60	14.9	1320	1.0	-71	80	6.5	
2:35		Sampled							

Result	Ferrous Iron	Total Iron	Nitrate	Nitrite	Sulfate	Dissolved Manganese
2:35	0.62	0.78	2.0	0.315	54	22
Dilution:						
Comments:						

(Results in mg/L)

!!

Project #: 2511 Address: 2815 Broadway Date: 1/30/02- 1/31/02

Project Name: Glovatorium Oakland, CA Sampler: Naser Pakrou

Tony Perini

Well/Sample ID: SOMA-4 TOC Elev: 81.09 feet Purge: ☐ Pump ☐ Bailer

Dup: _____ Well Depth: 20 feet Sample: ☐ Pump ☐ Bailer

Blank: _____ DTW: 11.30 feet Odor: ☐ No ☐ Yes Describe: _____

Purge Volume: _____ Water Table Elev.: 69.79 feet Sheen: ☐ No ☐ Yes Describe: _____

Well Diameter: _____ Height of Water: 8.70 feet Color: ☐ No ☐ Yes Describe: _____

Laboratory: _____

Delivery: _____

Analysis/preservative:

Sulfide:	1 Poly w/ $Zn(C_2H_3O_2)_2$ + NAOH	Disolved H_2:	1 Septum Vial	Alk, Cl-, Sulfate: 1 unpreserved poly L
Total Iron, Manganese:	1 HNO_3 preserved poly	Dissolved Perm Gases:	2 Unpreserved VOAs	
8260 (8010 list) & MtBE &		Cation & Anion w/ Nitrate & Nitrite:	1 Unpres. Poly and 1 H2SO4 Poly	
BTEX & TPH-g & TPH-ss:	6 VOAs w/ HCL	Ferrous Iron:	1 HCl Pres. Poly	

TIME	DTW	VOLUME	TEMP (F)	COND (uS/cm)	DO (mg/L)	ORP (mV)	TURBIDITY (NTU)	pH	COMMENTS
Stabilization Criteria: 3 successive parameters within				+/- 3%	+/- 10%	+/- 10mV	+/- 10%	+/- 0.1%	
			Free Product of 2.5 feet was observed in well no purging and no sampling was performed during this monitoring event (First Quarter 2002)						

Result	Ferrous Iron	Total Iron	Nitrate	Nitrite	Sulfate	Dissolved Manganese
Dilution:						
Comments:						

(Results in mg/L)

TABLE A — Solubility of Oxygen in mg/L in Water Exposed to Air at 760 mm Hg Pressure

Temp °C	Chlorinity: 0 Salinity: 0	5.0 9.0	10.0 18.1	15.0 27.1	20.0 36.1	25.0 45.2
0.0	14.62	13.73	12.89	12.10	11.36	10.66
1.0	14.22	13.36	12.55	11.78	11.07	10.39
2.0	13.83	13.00	12.22	11.48	10.79	10.14
3.0	13.46	12.66	11.91	11.20	10.53	9.90
4.0	13.11	12.34	11.61	10.92	10.27	9.66
5.0	12.77	12.02	11.32	10.66	10.03	9.44
6.0	12.45	11.73	11.05	10.40	9.80	9.23
7.0	12.14	11.44	10.78	10.16	9.58	9.02
8.0	11.84	11.17	10.53	9.93	9.36	8.83
9.0	11.56	10.91	10.29	9.71	9.16	8.64
10.0	11.29	10.66	10.06	9.49	8.96	8.45
11.0	11.03	10.42	9.84	9.29	8.77	8.28
12.0	10.78	10.18	9.62	9.09	8.59	8.11
13.0	10.54	9.96	9.42	8.90	8.41	7.95
14.0	10.31	9.75	9.22	8.72	8.24	7.79
15.0	10.08	9.54	9.03	8.54	8.08	7.64
16.0	9.87	9.34	8.84	8.37	7.92	7.50
17.0	9.67	9.15	8.67	8.21	7.77	7.36
18.0	9.47	8.97	8.50	8.05	7.62	7.22
19.0	9.28	8.79	8.33	7.90	7.48	7.09
20.0	9.09	8.62	8.17	7.75	7.35	6.96
21.0	8.92	8.46	8.02	7.61	7.21	6.84
22.0	8.74	8.30	7.87	7.47	7.09	6.72
23.0	8.58	8.14	7.73	7.34	6.96	6.61
24.0	8.42	7.99	7.59	7.21	6.84	6.50
25.0	8.26	7.85	7.46	7.08	6.73	6.39
26.0	8.11	7.71	7.33	6.96	6.62	6.29
27.0	7.97	7.58	7.20	6.85	6.51	6.18
28.0	7.83	7.44	7.08	6.73	6.40	6.09
29.0	7.69	7.32	6.96	6.62	6.30	5.99
30.0	7.56	7.19	6.85	6.51	6.20	5.90
31.0	7.43	7.07	6.73	6.41	6.10	5.81
32.0	7.31	6.96	6.62	6.31	6.01	5.72
33.0	7.18	6.84	6.52	6.21	5.91	5.63
34.0	7.07	6.73	6.42	6.11	5.82	5.55
35.0	6.95	6.62	6.31	6.02	5.73	5.46
36.0	6.84	6.52	6.22	5.93	5.65	5.38
37.0	6.73	6.42	6.12	5.84	5.56	5.31
38.0	6.62	6.32	6.03	5.75	5.48	5.23
39.0	6.52	6.22	5.93	5.66	5.40	5.15
40.0	6.41	6.12	5.84	5.58	5.32	5.08
41.0	6.31	6.03	5.75	5.49	5.24	5.01
42.0	6.21	5.93	5.67	5.41	5.17	4.93
43.0	6.12	5.84	5.58	5.33	5.09	4.86
44.0	6.02	5.75	5.50	5.25	5.02	4.79
45.0	5.93	5.67	5.41	5.17	4.94	4.72